

The Catalog 2024

Cutting Tools

North American Selection

CERATIZIT is a high-technology engineering group specialised in cutting tools and hard material solutions.

Tooling a Sustainable Future

ceratizit.com

CERATIZIT GROUP

Tooling a Sustainable Future

CERATIZIT: Your specialist in sustainable cutting tools and hard material solutions.

Are you looking for a reliable partner for your tooling and machining needs? Then look no further! CERATIZIT is much more than just a supplier of tools. Our technical experts are available to share their extensive industry knowledge and decades of experience.

Is an optimized carbon footprint just as important to you as efficient production processes? With the Product Carbon Footprint (PCF) classification system for our innovative carbide solutions, you can choose the best sustainable product for you. Good for the environment, good for your production line.

For more than 100 years, CERATIZIT has been a pioneer in developing exceptional hard material solutions for machining and protection against wear. Our customers receive the highest level of quality and access to the latest developments in the carbide sector. CERATIZIT is your all around cutting tool expert.



Contact us



It couldn't be easier

Ordering via the Online Shop

cutting.tools/en



Manufacturing consulting and process optimization on site

Your personal application engineer

Your customer number

Solid drilling and bore machining	Metric Catalog	HSS drilling	1
	Metric Catalog	Solid carbide drilling	2
		Indexable drilling	3
		Reaming and Countersinking	4
		Indexable Boring	5
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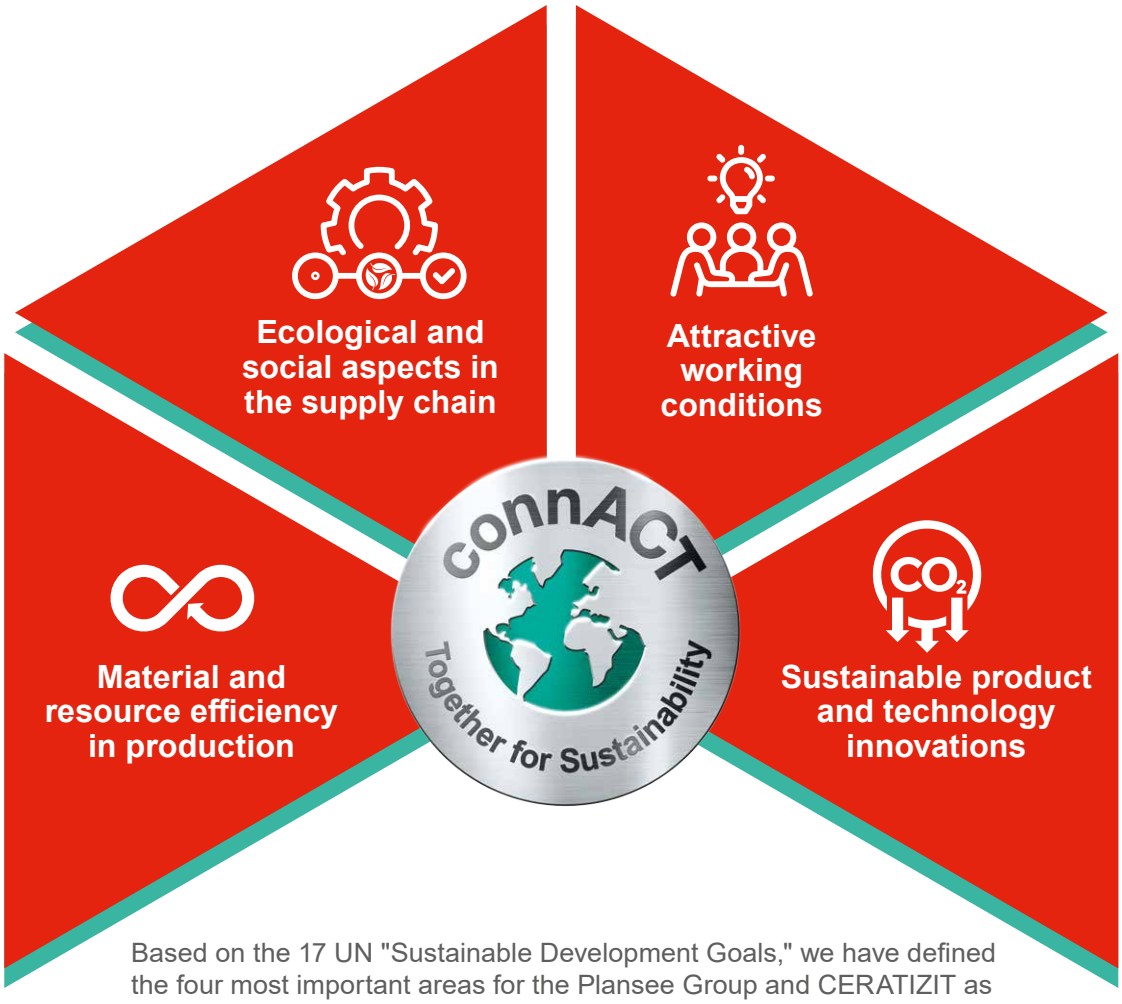
Sustainability is not a goal, it's a mission.

We take our environmental responsibility seriously. By 2025, we want to become the sustainability leader in the carbide and machining industry, which is why we are implementing our sustainability mission throughout the entire value chain.



Based on the 17 UN "Sustainable Development Goals," we have defined the four most important areas for the Plansee Group and CERATIZIT as part of a top-down and bottom-up process. In the first step, we will devote a greater focus to those aspects that have the greatest impact: climate neutrality and the circular economy.

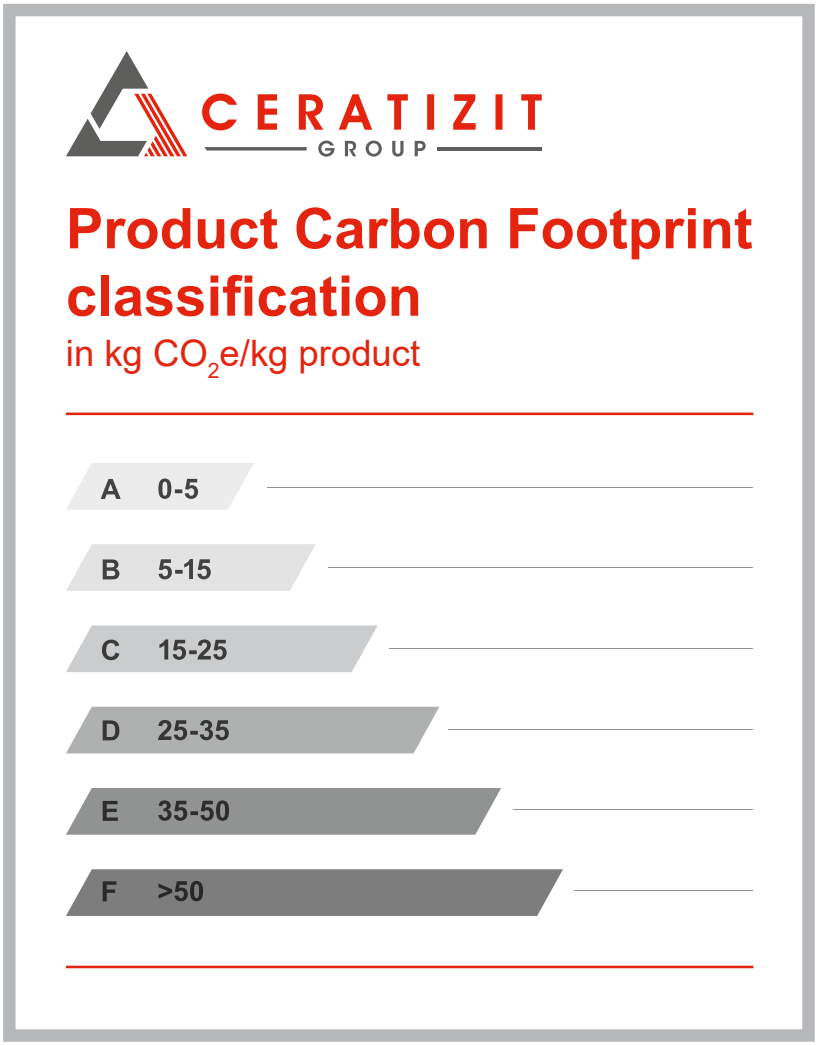
Mission #1: Carbon-neutral by 2025

Mission #2: Reduce the use of virgin raw materials

Discover more about our commitment to sustainability on our website.
cutting.tools/en/sustainability

Product Carbon Footprint

"Our goal is to establish a common market standard for calculating and classifying the carbon footprint of cutting tools and carbide powders. In this way we can offer our customers the transparency they want in regard to the carbon footprint," explains board spokesman, Dr. Andreas Lackner.



Similar to other evaluation systems, the carbon footprint of a product should be identifiable and comparable at a glance.

We have adopted the alphabetic PCF classification (Product Carbon Footprint) in every product data sheet or quote. Since September 2023 the PCF rating for the assessed products has been visible to all customers.

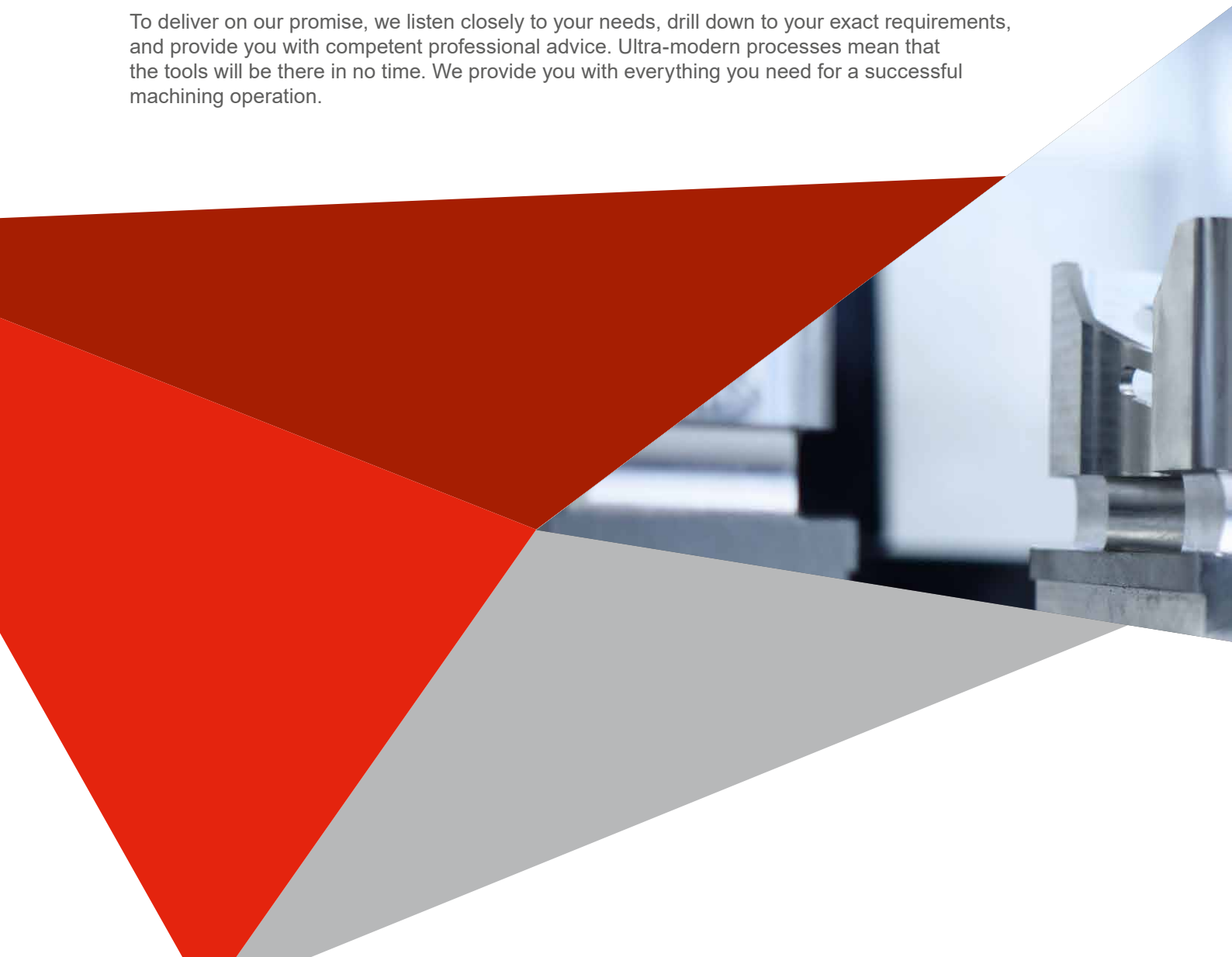
JUST
OUR
THING

THE machining solution

Everything required for machining - all from a single source

We develop a complete package for you and your machining needs. We stand by your side as a reliable solutions partner and ensure you have the best, high-quality tool every time.

To deliver on our promise, we listen closely to your needs, drill down to your exact requirements, and provide you with competent professional advice. Ultra-modern processes mean that the tools will be there in no time. We provide you with everything you need for a successful machining operation.





JUST OUR THING



An extensive selection of high-quality products.

Precision machining with high-quality tools

We promise to deliver quality tools that offer precision and process security.
With more than 65,000 items, our broad portfolio is one of the largest in the world.
Your production process will benefit from longer tool life and cost savings.





Specialists on hand to help. Always a solution at the ready.

Working together for the best solution

We work together with you to improve your machining operation. CERATIZIT has dedicated application engineers and an experienced project team who are constantly developing innovative tool solutions. With our global network and specialist knowledge in the machining industry and digital sector, we help you the best results form your production processes.

JUST OUR THING



DIGITAL SOLUTIONS

CERAsmart

The CERAsmart label bundles all of CERATIZIT's digital process optimisation solutions all along the production chain.

If you have any questions about CERAsmart, contact our sales team directly to find out how we can optimize your processes, too.

- Save money and time
- Improve quality
- Conserve and optimize resources
- Guarantee transparent operation around the clock
- Ensure reliable planning

cutting.tools/en/cerasmart





CERAsmart

ToolScope

Full process control thanks to digital monitoring for optimizing your production processes.

cutting.tools/en/toolscope



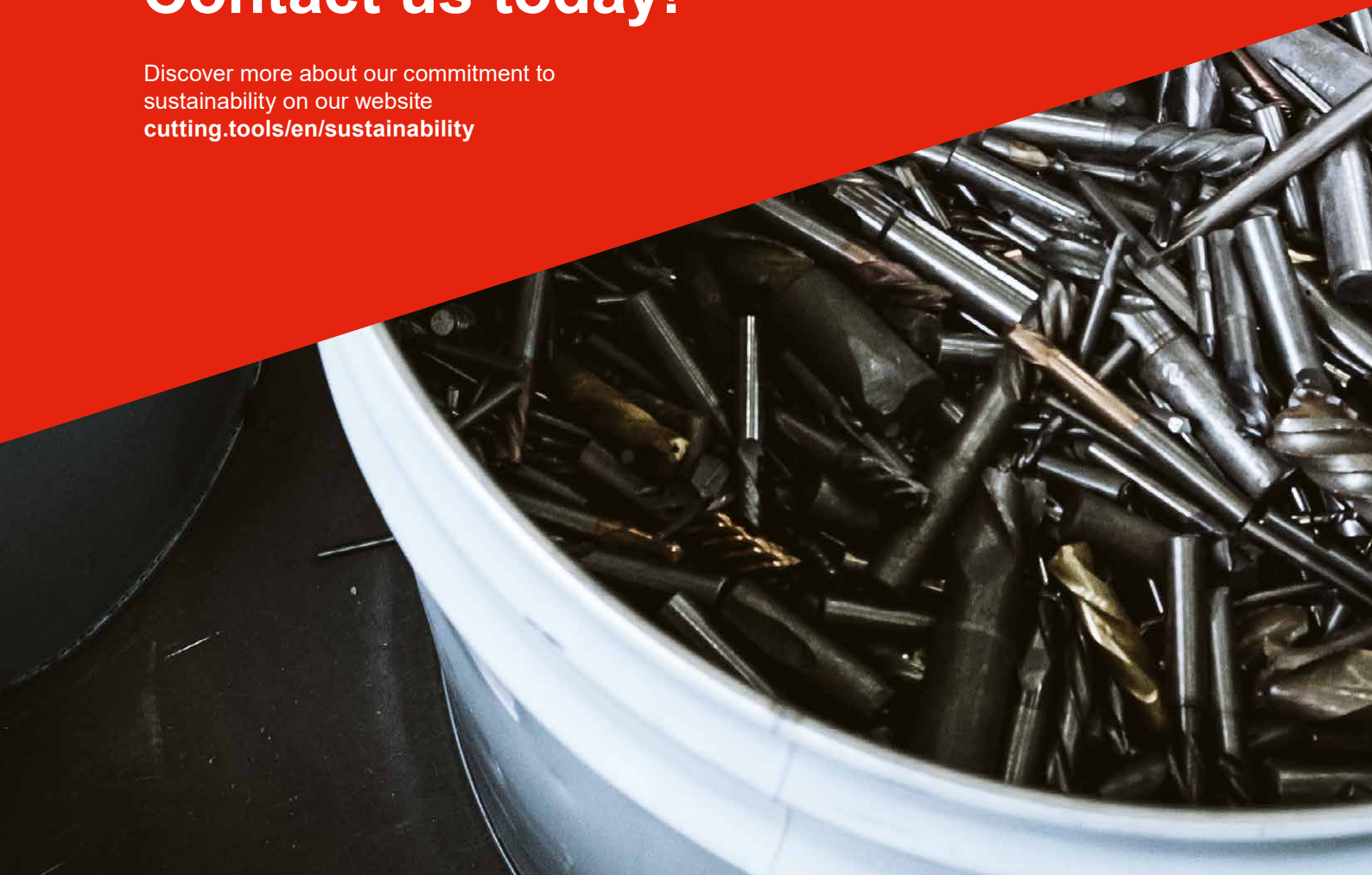
Is sustainability also part of your agenda? We help you along the way:

- **Let us help you in your sustainable business**
  Packaging – recycled plastic protects high-quality tools and the environment*
- **CERATIZIT Recycling**
  Recycled materials reduce the use of scarce primary resources

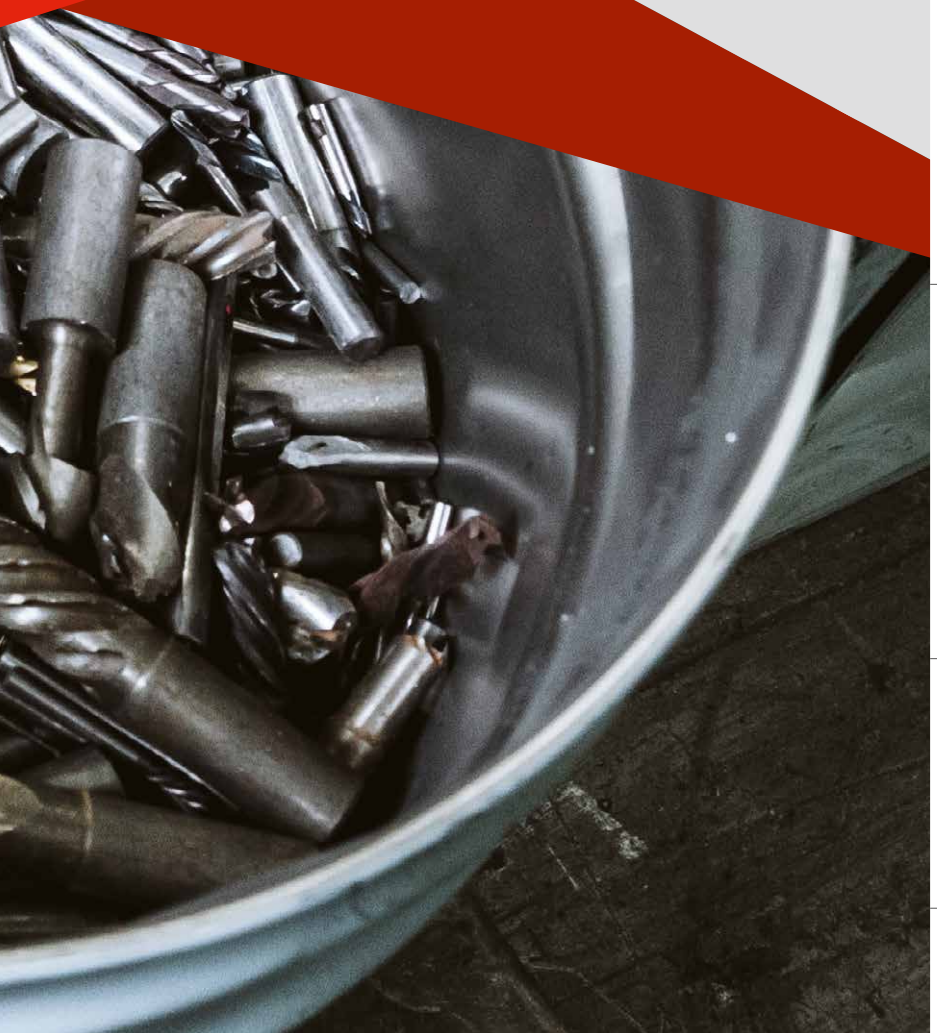
*for tools shipped from Europe

Contact us today!

Discover more about our commitment to sustainability on our website
cutting.tools/en/sustainability







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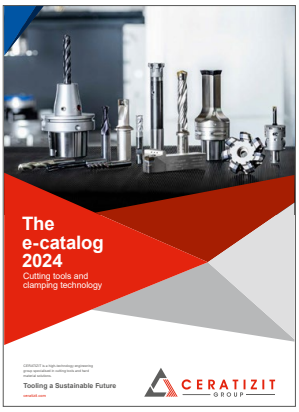
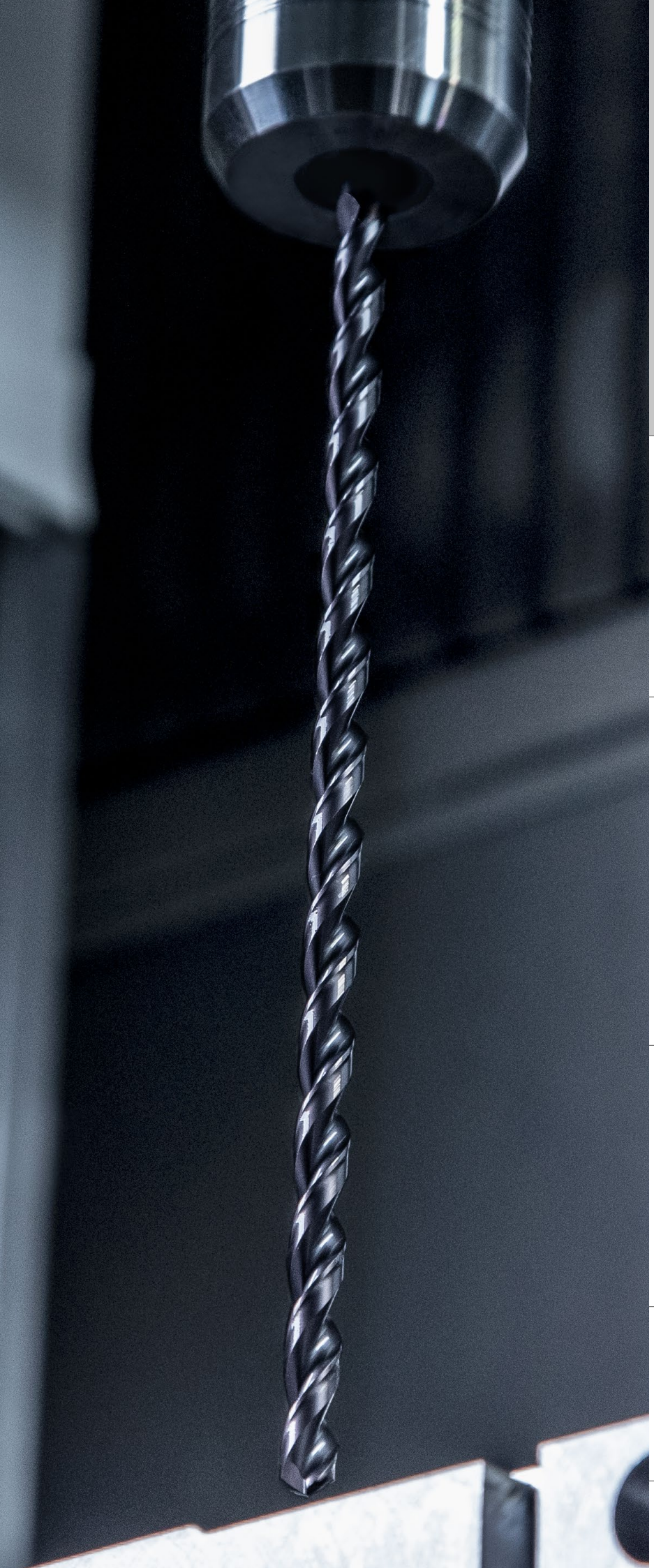
Metric Products

The entire content of this chapter can be found
in the Metric Catalog.
Use the QR code or the link shown below.



https://cutting.tools/us/en/digitalcatalogmetric



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WNT \ Performance

Premium quality tools for high performance.

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

Symbol explanation

Shank


Plain cylindrical shank


Cylindrical shank with lateral driving face „Weldon“


Morse taper



Version


Int. coolant supply


self-centering

● = **Main Application**

○ = Extended application

Toolfinder

	Tool type	Cutting material/ Coating	Description	DIN 1897	DIN 338	DIN 340	Series 1	series 2	series 3
				3xD	5xD	10xD	> 10xD		
Steel – Universal	VX	HSS-E TiN	▲ Universal high-performance drill ▲ Shank DIN 1835A ▲ self centering	9	15				
	UNI	HSS-E-PM TiN	▲ Wear-resistant due to HSS-E-PM and TiN coating ▲ Universal high-performance drill	10–14	16–21				
	UNI	HSS-E TiN	▲ As for Type VX ▲ Without standard shank to DIN 1835 A ▲ Available as a set	10–14	16–21	24–26			
	N	HSS vap.	▲ stable twist drill ▲ also suitable for portable drills ▲ available in set	10–14	16–21				
	WT	HSS-E vap.	▲ for high alloy steel and special alloys (Hastelloy, Inconel, Nimonic)	10–14					
	WT	HSS-E TiN	▲ as Type WT HSS-E vap. ▲ higher wear resistance due to coating	10–14					
	WTL	HSS-E F.-nit	▲ special flute profile with large chip gullet ▲ nitrided cutting edge giving increased wear protection to cutting corners and guide lands		16–21	24–26			
	WTL	HSS-E TiN	▲ as WTL HSS-E, but higher v_c and wear resistance due to coating ▲ suitable for steel and cast iron		16–21				
	WTL	HSS-E TiAlN	▲ Special flute profile with large chip spaces ▲ Higher wear resistance due to TiAlN coating				27	28	28
	WTL	HSS F.-nit	▲ special flute profile with large chip gullet ▲ nitrided cutting edge giving increased wear protection to cutting corners and guide lands				27	28	28
	WTL	HSS TiN	▲ as WTL HSS, but higher v_c and wear resistance due to coating			24–26			
	WNX	HSS-E	▲ Wide chip flutes for long-chipping materials ▲ Self-centring	10–14					
	NC	HSS TiAlN	▲ suitable for use with drill bushes ▲ very good chip evacuation with thro' coolant ▲ higher v_c and wear resistance due to coating			23			
Stainless steel	VA	HSS-E	▲ Specialist for stainless and acid-resistant materials ▲ special geometry	10–14	16–21				
Non-ferrous metals	W	HSS	▲ Specialist for non-ferrous metals		16–21				
	WTW	HSS	▲ for non-ferrous metals to 500 N/mm² ▲ for deep holes			24–26			

HSS Drills Overview

	Tool type	Cutting material | Coating	Point angle SIG	Diameter in mm DC	Steel P	Stainless steel M	Cast iron K	Non-ferrous metals N	Heat-resistant S	Tempered steel H	Non metal materials O		coated ■	uncoated □	WNT \ Performance
3xD without thro' coolant															
	VX	HSS-E TiN	118°	2–20	●	●	●	○	○		○		■		9
	UNI	HSS-E-PM TiN	130°	1–14	●		●	○	○	○	○		■		10–14
	UNI	HSS-E TiN	118°	1–14	●	●	●	○	○		○		■		10–14
	N	HSS vap.	118°	0,4–20	○		●	○			○		■		10–14
	VA	HSS-E	130°	1–12	○	●		●	○					□	10–14
	WNX	HSS-E	130°	1–20	●		●	○	○	○	○			□	10–14
	WT	HSS-E vap.	130°	0,4–25	●	●	●	○	○	○			■		10–14
	WT	HSS-E TiN	130°	1–20	●	●	●	○	●	○			■		10–14
5xD without thro' coolant															
	VX	HSS-E TiN	118°	2–20	●	●	●	○	○		○		■		15
	UNI	HSS-E-PM TiN	130°	1–14	●		●	○	○	○	○		■		16–21
	UNI	HSS-E TiN	118°	0,9–14	●	●	●	○	○		○		■		16–21
	N	HSS vap.	118°	0,2–20	○		●	○			○		■		16–21
	VA	HSS-E	130°	1–12	○	●		●	○					□	16–21
	W	HSS	130°	0,20–20				●						□	16–21
	WTL	HSS-E F-nit.	130°	1–16	●	○	●	●	○	○	○		■		16–21
	WTL	HSS-E TiN	130°	1–16	●	○	●	○	○	○	○		■		16–21
up to 10xD without thro' coolant															
	UNI	HSS-E TiN	118°	1–14	●	●	●	○	○		○		■		24–26
	WTL	HSS-E F-nit.	130°	1–12	●	○	●	●	○	○	○		■		24–26
	WTL	HSS TiN	130°	1–14	○		●	○			○		■		24–26
	WTW	HSS	130°	1–14				●						□	24–26

HSS Drills Overview

	Tool type	Cutting material | Coating	Point angle SIG	Diameter in mm DC	Steel P	Stainless steel M	Cast iron K	Non-ferrous metals N	Heat-resistant S	Tempered steel H	Non metal materials O		coated ■	uncoated □	WNT \ Performance
up to 10xD with thro' coolant															
	NC	HSS TiAlN	130°	3–13	○	○	●	○			○		■		23
over 10xD without thro' coolant															
	WTL	HSS F-nit. Series 1	130°	2–13	●		●	●			○		■		27
	WTL	HSS F-nit. series 2	130°	2–13	●		●	●			○		■		28
	WTL	HSS F-nit. series 3	130°	2,5–13	●		●	●			○		■		28
	WTL	HSS-E TiAlN Series 1	130°	3–10,2	●		●	●			○		■		27
	WTL	HSS-E TiAlN series 2	130°	3–12	●		●	●			○		■		28
	WTL	HSS-E TiAlN series 3	130°	4–10	●		●	●			○		■		28
Mini-drill															
	N	HSS-E-PM	118°	0,15–1,45	●	○	●	●	○		○			□	29
Twist Drill Sets															
	N	HSS vap.	118°	1–10	○		●	○			○		■		22
	UNI	HSS-E TiN	118°	1–10	●	●	●	○	○		○		■		22
NC Spot Drill															
	NC-A	HSS	90°	3–20	●	○	●	○	○		○			□	33–35
	NC-A	HSS TiN	90°	3–20	●	○	●	○	○		○		■		33+34
	NC-A	HSS	120°	3–20	●	○	●	○	○		○			□	33+34
	NC-A	HSS TiN	120°	3–20	●	○	●	○	○		○		■		33+34
Centre drills															
	ZB	HSS	118°	0,5–6,3	●	○	●	○	○		○	DIN 333 – Form A/B/R		□	35–37
	ZB	HSS TiN	118°	0,5–6,3	●	○	●	○	○		○	DIN 333 – Form A	■		36
	ZB	HSS-E	118°	0,5–6,3	●	○	●	○	○		○	DIN 333 – Form A		□	36

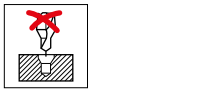
HSS Drills Overview

	Tool type	Cutting material | Coating	Point angle SIG	Diameter in mm DC	Steel P	Stainless steel M	Cast iron K	Non-ferrous metals N	Heat-resistant S	Tempered steel H	Non metal materials O		coated ■	uncoated □	WNT \ Performance
Stepped drills															
	SB	HSS vap.	118°	2,5–10,2	●	○	●	○	○		○	Countersinking angle 90°	■		39
	SB	HSS	118°	2,5–10,2	●	○	●	○	○		○	Countersinking angle 90°		□	39
	SB	HSS vap.	118°	3,2–10,5	●	○	●	○	○		○	Countersinking angle 90°	■		39
	SB	HSS	118°	3,2–10,5	●	○	●	○	○		○	Countersinking angle 90°		□	39
	SB	HSS vap.	118°	3,4–11	●	○	●	○	○		○	Countersinking angle 180°	■		40
	SB	HSS	118°	3,4–11	●	○	●	○	○		○	Countersinking angle 180°		□	40
	SB	HSS vap.	118°	3,3–17,5	●	○	●	○	○		○	Countersinking angle 60°	■		42
Drills with Morse taper															
3xD															
	WT	HSS-E vap.	130°	13–30	●	●	●	○	○	○			■		29
5xD															
	N	HSS vap.	118°	10–55	○		●	○			○		■		30
	WTL	HSS-E F.-nit/vap.	130°	10–27	●	○	●	●	○	○	○		■		30
10xD															
	N	HSS vap.	118°	10–50	○		●	○			○		■		31
	WTL	HSS-E F.-nit/vap.	130°	10–25	●	○	●	●	○	○	○		■		31
above 10xD															
	WTL	HSS F.-nit/vap. Series 1	130°	10–30	●			●	●		○		■		32
	WTL	HSS F.-nit/vap. series 2	130°	10–30	●		●	●			○		■		32
Core drills															
	N	HSS vap.	120°	12–30	●	○	●	○	○		○	3 Edges	■		38
Stepped drills															
	SB	HSS vap.	118°	6,6–17,5	●	○	●	○	○		○	Countersinking angle 180°	■		41

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

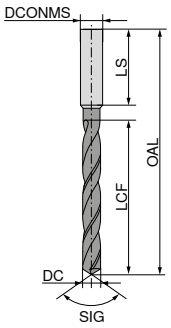
- ▲ Shank to DIN 1835 A
- ▲ Special point thinning
- ▲ Very good centering behaviour
- ▲ 4 facet
- ▲ Highest Performance

≤ 3xD



VX

TiN





SIG 118°
HSS-E

10 122 ...

DC h8 mm	OAL mm	LCF mm	DCONMS h6 mm	LS mm	
2,00	44	12	3	28	020
2,10	44	12	3	28	021
2,20	45	13	3	28	022
2,30	45	13	3	28	023
2,40	46	14	3	28	024
2,50	46	14	3	28	025
2,60	46	14	3	28	026
2,70	48	16	3	28	027
2,80	48	16	3	28	028
2,90	48	16	3	28	029
3,00	48	16	3	28	030
3,10	50	18	4	28	031
3,20	50	18	4	28	032
3,30	50	18	4	28	033
3,40	52	20	4	28	034
3,50	52	20	4	28	035
3,60	52	20	4	28	036
3,70	52	20	4	28	037
3,80	54	22	4	28	038
3,90	54	22	4	28	039
4,00	54	22	4	28	040
4,10	66	22	6	36	041
4,20	66	22	6	36	042
4,30	68	24	6	36	043
4,40	68	24	6	36	044
4,50	68	24	6	36	045
4,60	68	24	6	36	046
4,70	68	24	6	36	047
4,80	70	26	6	36	048
4,90	70	26	6	36	049
5,00	70	26	6	36	050
5,10	70	26	6	36	051
5,20	70	26	6	36	052
5,30	70	26	6	36	053
5,40	72	28	6	36	054
5,50	72	28	6	36	055
5,55	72	28	6	36	555
5,60	72	28	6	36	056
5,70	72	28	6	36	057
5,80	72	28	6	36	058
5,90	72	28	6	36	059
6,00	72	28	6	36	060
6,10	75	31	8	36	061
6,20	75	31	8	36	062
6,30	75	31	8	36	063
6,40	75	31	8	36	064
6,50	75	31	8	36	065
6,60	75	31	8	36	066
6,70	75	31	8	36	067
6,80	78	34	8	36	068
6,90	78	34	8	36	069
7,00	78	34	8	36	070
7,10	78	34	8	36	071

10 122 ...

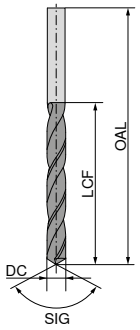
DC h8 mm	OAL mm	LCF mm	DCONMS h6 mm	LS mm	
7,20	78	34	8	36	072
7,30	78	34	8	36	073
7,40	78	34	8	36	074
7,45	78	34	8	36	745
7,50	78	34	8	36	075
7,60	81	37	8	36	076
7,70	81	37	8	36	077
7,80	81	37	8	36	078
7,90	81	37	8	36	079
8,00	81	37	8	36	080
8,10	87	37	10	40	081
8,20	87	37	10	40	082
8,30	87	37	10	40	083
8,40	87	37	10	40	084
8,50	87	37	10	40	085
8,60	91	40	10	40	086
8,70	91	40	10	40	087
8,80	91	40	10	40	088
8,90	91	40	10	40	089
9,00	91	40	10	40	090
9,10	91	40	10	40	091
9,20	91	40	10	40	092
9,30	91	40	10	40	093
9,35	91	40	10	40	935
9,40	91	40	10	40	094
9,50	91	40	10	40	095
9,60	93	43	10	40	096
9,70	93	43	10	40	097
9,80	93	43	10	40	098
9,90	93	43	10	40	099
10,00	93	43	10	40	100
10,20	100	43	12	45	102
10,30	100	43	12	45	103
10,50	100	43	12	45	105
10,70	104	47	12	45	107
10,80	104	47	12	45	108
11,00	104	47	12	45	110
11,10	104	47	12	45	111
11,50	104	47	12	45	115
11,70	104	47	12	45	117
11,80	104	47	12	45	118
11,90	108	51	12	45	119
12,00	108	51	12	45	120
12,10	111	51	16	48	121
12,30	111	51	16	48	123
12,50	111	51	16	48	125
12,70	111	51	16	48	127
12,80	111	51	16	48	128
13,00	111	51	16	48	130
13,50	114	54	16	48	135
14,00	114	54	16	48	140
14,50	116	56	16	48	145
15,00	116	56	16	48	150
15,50	118	58	16	48	155
16,00	118	58	16	48	160
16,50	126	60	20	50	165
17,00	126	60	20	50	170
17,50	128	62	20	50	175
18,00	128	62	20	50	180
18,50	130	64	20	50	185
19,00	130	64	20	50	190
19,50	132	66	20	50	195
20,00	132	66	20	50	200

P	●
M	●
K	●
N	○
S	○
H	
O	○

→ v_c Page 44

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

≤ 3xD



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

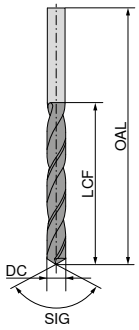


SIG 130° HSS-E-PM	SIG 118° HSS-E	SIG 118° HSS	SIG 130° HSS-E	SIG 130° HSS-E	SIG 130° HSS-E	SIG 130° HSS-E
10 113 ...	**10 107 ...**	**10 105 ...**	**10 130 ...**	**10 106 ...**	**10 109 ...**	**10 110 ...**

| DC $_{h8}$ mm | DC inch | OAL mm | LCF mm | | |

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

≤ 3xD

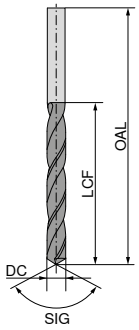


	UNI	UNI	N	VA	WNX	WT	WT
	TiN	TiN	vap.			vap.	TiN
							
	SIG 130°	SIG 118°	SIG 118°	SIG 130°	SIG 130°	SIG 130°	SIG 130°
	HSS-E-PM	HSS-E	HSS	HSS-E	HSS-E	HSS-E	HSS-E
	10 113 ...	10 107 ...	10 105 ...	10 130 ...	10 106 ...	10 109 ...	10 110 ...

| DC $_{h8}$ mm | DC inch | OAL mm | LCF mm | | |

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

≤ 3xD



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

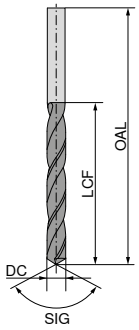


SIG 130° HSS-E-PM	SIG 118° HSS-E	SIG 118° HSS	SIG 130° HSS-E	SIG 130° HSS-E	SIG 130° HSS-E	SIG 130° HSS-E
10 113 ...	**10 107 ...**	**10 105 ...**	**10 130 ...**	**10 106 ...**	**10 109 ...**	**10 110 ...**

| DC $_{h8}$ mm | DC inch | OAL mm | LCF mm | | |

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

≤ 3xD



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



SIG 130° HSS-E-PM	SIG 118° HSS-E	SIG 118° HSS	SIG 130° HSS-E	SIG 130° HSS-E	SIG 130° HSS-E	SIG 130° HSS-E
10 113 ...	**10 107 ...**	**10 105 ...**	**10 130 ...**	**10 106 ...**	**10 109 ...**	**10 110 ...**

DC $_{h8}$ mm	DC inch	OAL mm	LCF mm													
7,94	5/16	79	37,0	794 [2]		794 [2]										
8,00		79	37,0	080 [2]		080 [2]		080		080		080		08000		080
8,05		79	37,0											08050		
8,10		79	37,0	081 [2]		081 [2]		081								
8,15		79	37,0											08150		
8,20		79	37,0	082 [2]		082 [2]		082								082
8,30		79	37,0	083 [2]		083 [2]		083								
8,40		79	37,0	084 [2]		084 [2]		084		084		084		08400		084
8,50		79	37,0	085 [2]		085 [2]		085		085		085		08500		085
8,55		84	40,0											08550		
8,60		84	40,0			086 [2]		086		086						
8,70		84	40,0			087 [2]		087		087						087
8,73	11/32	84	40,0	873 [2]		873 [2]										
8,80		84	40,0	088 [2]		088 [2]		088				088		08800		088
8,90		84	40,0			089 [2]		089								
9,00		84	40,0	090 [2]		090 [2]		090		090		090		09000		090
9,10		84	40,0			091 [2]		091								
9,20		84	40,0			092 [2]		092		092		092		09200		092
9,30		84	40,0	093 [2]		093 [2]		093		093		093		09300		093
9,40		84	40,0			094 [2]		094				094		09400		094
9,50		84	40,0	095 [2]		095 [2]		095		095		095		09500		095
9,60		89	43,0			096 [2]		096				096		09600		096
9,65		89	43,0											09650		
9,70		89	43,0			097 [2]		097				097		09700		097
9,75		89	43,0											09750		
9,80		89	43,0	098 [2]		098 [2]		098		098		098		09800		098
9,90		89	43,0			099 [2]		099				099		09900		099
10,00		89	43,0	100 [2]		100 [2]		100		100		100		10000		100
10,10		89	43,0			101 [2]		101								
10,20		89	43,0	102 [2]		102 [2]		102		102		102		10200		102
10,30		89	43,0			103 [2]		103						10300		
10,40		89	43,0			104 [2]		104								
10,50		89	43,0	105 [2]		105 [2]		105		105		105		10500		105
10,60		95	47,0					106								
10,70		95	47,0					107						10700		
10,80		95	47,0					108								108
10,90		95	47,0					109								
11,00		95	47,0	110 [2]		110 [2]		110		110		110		11000		110
11,10		95	47,0					111								
11,11	7/16	95	47,0	111 [2]		111 [2]										
11,20		95	47,0					112						11200		
11,30		95	47,0					113						11300		
11,40		95	47,0					114						11400		
11,50		95	47,0	115 [2]		115 [2]		115		115		115		11500		115
11,60		95	47,0					116								
11,70		95	47,0					117		117				11700		
11,75		95	47,0											11750		
11,80		95	47,0					118				118		11800		118

P	●	●	○	○	●	●	●
M		●		●		●	●
K	●	●	●		●	●	●
N	○	○	○	●	○	○	○
S	○	○		○	○	○	●
H	○				○	○	○
O	○	○	○		○		

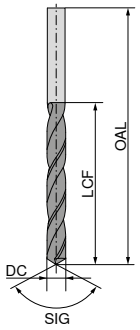
1) uncoated
2) self-centering

→ v_c Page 44+45

Continued on next page

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

≤ 3xD



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



SIG 130° HSS-E-PM	SIG 118° HSS-E	SIG 118° HSS	SIG 130° HSS-E	SIG 130° HSS-E	SIG 130° HSS-E	SIG 130° HSS-E
10 113 ...	**10 107 ...**	**10 105 ...**	**10 130 ...**	**10 106 ...**	**10 109 ...**	**10 110 ...**

DC $_{h8}$ mm	DC inch	OAL mm	LCF mm												
11,90		102	51,0					119							
12,00		102	51,0	120	2)	120	2)	120	120	120	12000		120		
12,10		102	51,0					121							
12,20		102	51,0					122							
12,30		102	51,0	123	2)	123	2)	123		123	12300		123		
12,40		102	51,0					124							
12,50		102	51,0	125	2)	125	2)	125		125	12500		125		
12,60		102	51,0					126							
12,70		102	51,0	127	2)	127	2)	127			12700				
12,80		102	51,0					128		128	12800		128		
12,90		102	51,0					129							
13,00		102	51,0	130	2)	130	2)	130		130	13000		130		
13,20		102	51,0					132							
13,30		107	54,0					133							
13,50		107	54,0	135	2)	135	2)	135		135	13500		135		
13,80		107	54,0					138		138					
14,00		107	54,0	140	2)	140	2)	140		140	14000		140		
14,50		111	56,0					145		145	14500		145		
14,75		111	56,0					147							
15,00		111	56,0					150		150	15000		150		
15,25		115	58,0					152							
15,50		115	58,0					155		155	15500		155		
15,75		115	58,0										157		
16,00		115	58,0					160		160	16000		160		
16,50		119	60,0					165		165	16500		165		
17,00		119	60,0					170		170	17000		170		
17,50		123	62,0					175		175	17500		175		
17,75		123	62,0										177		
18,00		123	62,0					180		180	18000		180		
18,50		127	64,0					185			18500		185		
19,00		127	64,0					190		190	19000		190		
19,50		131	66,0					195			19500		195		
20,00		131	66,0					200		200	20000		200		
20,50		136	68,0								20500				
21,00		136	68,0								21000				
21,50		141	70,0								21500				
22,00		141	70,0								22000				
23,00		146	72,0								23000				
24,00		151	75,0								24000				
25,00		151	75,0								25000				

P	●	●	○	○	●	●	●
M		●		●		●	●
K	●	●	●		●	●	●
N	○	○	○	●	○	○	○
S	○	○		○	○	○	●
H	○				○	○	○
O	○	○	○		○		

1) uncoated
2) self-centering

→ v_c Page 44+45

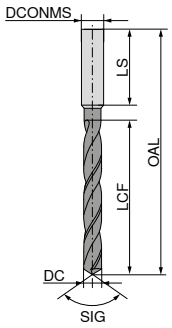
High-performance twist drill similar to DIN 338, short

- With shank to DIN 1835 A
- Special point thinning
- 4 facet
- Highest Performance
- Very good centering behaviour

≤ 5xD

VX

TiN





SIG 118°
HSS-E

10 124 ...

DC h8 mm	OAL mm	LCF mm	DCONMS h6 mm	LS mm	
2,00	56	24	3	28	020
2,10	56	24	3	28	021
2,20	59	27	3	28	022
2,30	59	27	3	28	023
2,40	62	30	3	28	024
2,50	62	30	3	28	025
2,60	62	30	3	28	026
2,70	65	33	3	28	027
2,80	65	33	3	28	028
2,90	65	33	3	28	029
3,00	65	33	3	28	030
3,10	68	36	4	28	031
3,20	68	36	4	28	032
3,30	68	36	4	28	033
3,40	71	39	4	28	034
3,50	71	39	4	28	035
3,60	71	39	4	28	036
3,70	71	39	4	28	037
3,80	75	43	4	28	038
3,90	75	43	4	28	039
4,00	75	43	4	28	040
4,10	87	43	6	36	041
4,20	87	43	6	36	042
4,30	91	47	6	36	043
4,40	91	47	6	36	044
4,50	91	47	6	36	045
4,60	91	47	6	36	046
4,65	91	47	6	36	465
4,70	91	47	6	36	047
4,80	96	52	6	36	048
4,90	96	52	6	36	049
5,00	96	52	6	36	050
5,10	96	52	6	36	051
5,20	96	52	6	36	052
5,30	96	52	6	36	053
5,40	101	57	6	36	054
5,50	101	57	6	36	055
5,55	101	57	6	36	555
5,60	101	57	6	36	056
5,70	101	57	6	36	057
5,80	101	57	6	36	058
5,90	101	57	6	36	059
6,00	101	57	6	36	060
6,10	107	63	8	36	061
6,20	107	63	8	36	062
6,30	107	63	8	36	063
6,40	107	63	8	36	064
6,50	107	63	8	36	065
6,60	107	63	8	36	066
6,70	107	63	8	36	067
6,80	113	69	8	36	068
6,90	113	69	8	36	069
7,00	113	69	8	36	070
7,10	113	69	8	36	071
7,20	113	69	8	36	072
7,30	113	69	8	36	073

10 124 ...

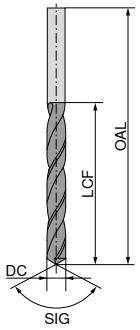
DC h8 mm	OAL mm	LCF mm	DCONMS h6 mm	LS mm	
7,40	113	69	8	36	074
7,50	113	69	8	36	075
7,55	119	75	8	36	755
7,60	119	75	8	36	076
7,70	119	75	8	36	077
7,80	119	75	8	36	078
7,90	119	75	8	36	079
8,00	119	75	8	36	080
8,10	125	75	10	40	081
8,20	125	75	10	40	082
8,30	125	75	10	40	083
8,40	125	75	10	40	084
8,50	125	75	10	40	085
8,60	131	81	10	40	086
8,70	131	81	10	40	087
8,80	131	81	10	40	088
8,90	131	81	10	40	089
9,00	131	81	10	40	090
9,10	131	81	10	40	091
9,20	131	81	10	40	092
9,30	131	81	10	40	093
9,40	131	81	10	40	094
9,50	131	81	10	40	095
9,55	137	87	10	40	955
9,60	137	87	10	40	096
9,70	137	87	10	40	097
9,80	137	87	10	40	098
9,90	137	87	10	40	099
10,00	137	87	10	40	100
10,10	144	87	12	45	101
10,20	144	87	12	45	102
10,30	144	87	12	45	103
10,40	144	87	12	45	104
10,50	144	87	12	45	105
10,70	151	94	12	45	107
10,80	151	94	12	45	108
11,00	151	94	12	45	110
11,20	151	94	12	45	112
11,30	151	94	12	45	113
11,40	151	94	12	45	114
11,50	151	94	12	45	115
11,60	151	94	12	45	116
11,70	151	94	12	45	117
11,80	151	94	12	45	118
11,90	158	101	12	45	119
12,00	158	101	12	45	120
12,20	161	101	16	48	122
12,30	161	101	16	48	123
12,50	161	101	16	48	125
12,70	161	101	16	48	127
12,80	161	101	16	48	128
13,00	161	101	16	48	130
13,50	166	106	16	48	135
14,00	166	106	16	48	140
14,50	169	109	16	48	145
15,00	169	109	16	48	150
15,50	172	112	16	48	155
16,00	172	112	16	48	160
16,50	181	115	20	50	165
17,00	181	115	20	50	170
17,50	184	118	20	50	175
18,00	184	118	20	50	180
18,50	188	122	20	50	185
19,00	188	122	20	50	190
19,50	191	125	20	50	195
20,00	191	125	20	50	200

P	●
M	●
K	●
N	○
S	○
H	
O	○

→ v_c Page 46

Twist drill to DIN 338, short

≤ 5xD



	UNI	UNI	N	VA	W	WTL	WTL
	TiN	TiN	vap.			F.-nit	TiN
							
	SIG 130°	SIG 118°	SIG 118°	SIG 130°	SIG 130°	SIG 130°	SIG 130°
	HSS-E-PM	HSS-E	HSS	HSS-E	HSS	HSS-E	HSS-E
	10 173 ...	10 171 ...	10 152 ...	10 175 ...	10 161 ...	10 168 ...	10 170 ...

DC h8 mm	DC inch	OAL mm	LCF mm																
0,20		19	2,5						00200[1]			00200							
0,25		19	3,0						00250[1]			00250							
0,30		19	3,0						00300[1]			00300							
0,35		19	4,0						00350[1]			00350							
0,40		20	5,0						00400[1]			00400							
0,45		20	5,0						00450[1]			00450							
0,50		22	6,0						00500[1]			00500							
0,55		24	7,0						00550[1]			00550							
0,60		24	7,0						00600[1]			00600							
0,65		26	8,0						00650[1]			00650							
0,70		28	9,0						00700[1]			00700							
0,75		28	9,0						00750[1]			00750							
0,80		30	10,0						00800[1]			00800							
0,85		30	10,0						00850[1]			00850							
0,90		32	11,0			009[2]			00900[1]			00900							
0,95		32	11,0						00950[1]			00950							
1,00		34	12,0	010[2]		010[2]			01000[1]		010	01000			010[1]			010	
1,05		34	12,0						01050[1]			01050							
1,10		36	14,0	011[2]		011[2]			01100[1]		011	01100			011[1]			011	
1,15		36	14,0						01150[1]			01150							
1,20		38	16,0	012[2]		012[2]			01200[1]		012	01200			012[1]			012	
1,25		38	16,0			125[2]			01250[1]			01250							
1,30		38	16,0	013[2]		013[2]			01300[1]		013	01300			013[1]			013	
1,35		40	18,0						01350[1]			01350							
1,40		40	18,0	014[2]		014[2]			01400[1]		014	01400			014[1]			014	
1,45		40	18,0			145[2]			01450[1]			01450						901	
1,50		40	18,0	015[2]		015[2]			01500[1]		015	01500			015[1]			015	
1,55		43	20,0			155[2]			01550[1]			01550						902	
1,60		43	20,0	016[2]		016[2]			01600[1]		016	01600			016[1]			016	
1,65		43	20,0			165[2]			01650[1]			01650						903	
1,70		43	20,0	017[2]		017[2]			01700[1]		017	01700			017[1]			017	
1,75		46	22,0						01750[1]			01750							
1,80		46	22,0	018[2]		018[2]			01800[1]		018	01800			018[1]			018	
1,85		46	22,0						01850[1]			01850						904	
1,90		46	22,0	019[2]		019[2]			01900[1]		019	01900			019[1]			019	
1,95		49	24,0						01950[1]			01950							
2,00		49	24,0	020[2]		020[2]			02000[1]		020	02000			020[1]			020	
2,05		49	24,0						02050[1]			02050						905	
2,10		49	24,0	021[2]		021[2]			02100[1]		021	02100			021[1]			021	
2,15		53	27,0						02150[1]			02150							
2,20		53	27,0	022[2]		022[2]			02200[1]		022	02200			022[1]			022	
2,25		53	27,0						02250[1]			02250							
2,30		53	27,0	023[2]		023[2]			02300[1]		023	02300			023[1]			023	
2,35		53	27,0						02350[1]			02350							
2,38	3/32	57	30,0	238[2]		238[2]													
2,40		57	30,0	024[2]		024[2]			02400		024	02400			024			024	

P	●	●	○	○		●	●
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K	●	●	●			●	●
N	○	○	○	●	●	●	○
S	○	○		○		○	○
H	○					○	○
O	○	○	○			○	○

1) uncoated
2) self-centering

→ v_c Page 46+47

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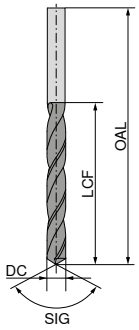
Twist drill to DIN 338, short

≤ 5xD



	UNI	UNI	N	VA	W	WTL	WTL
	TiN	TiN	vap.			F.-nit	TiN
							
	SIG 130°	SIG 118°	SIG 118°	SIG 130°	SIG 130°	SIG 130°	SIG 130°
	HSS-E-PM	HSS-E	HSS	HSS-E	HSS	HSS-E	HSS-E
	10 173 ...	10 171 ...	10 152 ...	10 175 ...	10 161 ...	10 168 ...	10 170 ...

DC h8 mm	DC inch	OAL mm	LCF mm														
2,45		57	30,0						02450			02450					
2,50		57	30,0		025 2)		025 2)		02500		025	02500		025		025	
2,55		57	30,0				255 2)		02550			02550					
2,60		57	30,0		026 2)		026 2)		02600		026	02600		026		026	
2,65		57	30,0						02650			02650					
2,70		61	33,0		027 2)		027 2)		02700		027	02700		027		027	
2,75		61	33,0						02750			02750					
2,78	7/64	61	33,0		278 2)		278 2)										
2,80		61	33,0		028 2)		028 2)		02800		028	02800		028		028	
2,85		61	33,0						02850			02850					
2,90		61	33,0		029 2)		029 2)		02900		029	02900		029		029	
2,95		61	33,0						02950			02950					
3,00		61	33,0		030 2)		030 2)		03000		030	03000		030		030	
3,05		65	36,0						03050			03050					
3,10		65	36,0		031 2)		031 2)		03100		031	03100		031		031	
3,15		65	36,0						03150			03150					
3,17	1/8	65	36,0		317 2)		317 2)										
3,20		65	36,0		032 2)		032 2)		03200		032	03200		032		032	
3,25		65	36,0				325 2)		03250			03250					
3,30		65	36,0		033 2)		033 2)		03300		033	03300		033		033	
3,35		65	36,0						03350			03350					
3,40		70	39,0		034 2)		034 2)		03400		034	03400		034		034	
3,45		70	39,0						03450			03450					
3,50		70	39,0		035 2)		035 2)		03500		035	03500		035		035	
3,55		70	39,0						03550			03550					
3,57	9/64	70	39,0		357 2)		357 2)										
3,60		70	39,0		036 2)		036 2)		03600		036	03600		036		036	
3,65		70	39,0						03650			03650					
3,70		70	39,0		037 2)		037 2)		03700		037	03700		037		037	
3,75		70	39,0						03750			03750					
3,80		75	43,0		038 2)		038 2)		03800		038	03800		038		038	
3,85		75	43,0						03850			03850					
3,90		75	43,0		039 2)		039 2)		03900		039	03900		039		039	
3,95		75	43,0						03950			03950					
3,97	5/32	75	43,0		397 2)		397 2)										
4,00		75	43,0		040 2)		040 2)		04000		040	04000		040		040	
4,05		75	43,0						04050			04050					
4,10		75	43,0		041 2)		041 2)		04100		041	04100		041		041	
4,15		75	43,0						04150			04150					
4,20		75	43,0		042 2)		042 2)		04200		042	04200		042		042	
4,25		75	43,0				425 2)		04250			04250					
4,30		80	47,0		043 2)		043 2)		04300		043	04300		043		043	
4,35		80	47,0						04350			04350					
4,37	11/64	80	47,0		437 2)		437 2)										
4,40		80	47,0		044 2)		044 2)		04400		044	04400		044		044	
4,45		80	47,0						04450								

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N	○	○	○	●	●	●	○
S	○	○		○		○	○
H	○					○	○
O	○	○	○			○	○

1) uncoated
2) self-centering

→ v_c Page 46+47

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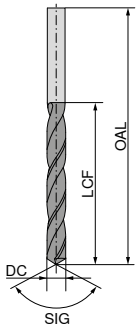
Twist drill to DIN 338, short

≤ 5xD



	UNI	UNI	N	VA	W	WTL	WTL
	TiN	TiN	vap.			F.-nit	TiN
							
	SIG 130°	SIG 118°	SIG 118°	SIG 130°	SIG 130°	SIG 130°	SIG 130°
	HSS-E-PM	HSS-E	HSS	HSS-E	HSS	HSS-E	HSS-E
	10 173 ...	10 171 ...	10 152 ...	10 175 ...	10 161 ...	10 168 ...	10 170 ...

DC h8 mm	DC inch	OAL mm	LCF mm														
4,50		80	47,0		045 2)		045 2)		04500		045		04500		045		045
4,55		80	47,0						04550				04550				
4,60		80	47,0		046 2)		046 2)		04600		046		04600		046		046
4,65		80	47,0				465 2)		04650				04650				
4,70		80	47,0		047 2)		047 2)		04700		047		04700		047		047
4,75		80	47,0						04750				04750				
4,76	3/16	86	52,0		476 2)		476 2)										
4,80		86	52,0		048 2)		048 2)		04800		048		04800		048		048
4,85		86	52,0						04850				04850				
4,90		86	52,0		049 2)		049 2)		04900		049		04900		049		049
4,95		86	52,0				495 2)		04950				04950				
5,00		86	52,0		050 2)		050 2)		05000		050		05000		050		050
5,05		86	52,0				505 2)		05050				05050				
5,10		86	52,0		051 2)		051 2)		05100		051		05100		051		
5,15		86	52,0						05150								
5,16	13/64	86	52,0		516 2)		516 2)										
5,20		86	52,0		052 2)		052 2)		05200		052		05200		052		052
5,25		86	52,0						05250				05250				
5,30		86	52,0		053 2)		053 2)		05300		053		05300				
5,35		93	57,0						05350								
5,40		93	57,0		054 2)		054 2)		05400				05400				
5,45		93	57,0						05450				05450				
5,50		93	57,0		055 2)		055 2)		05500		055		05500		055		055
5,55		93	57,0				555 2)		05550				05550				
5,56	7/32	93	57,0		556 2)		556 2)										
5,60		93	57,0		056 2)		056 2)		05600		056		05600		056		056
5,65		93	57,0						05650				05650				
5,70		93	57,0		057 2)		057 2)		05700		057		05700		057		057
5,75		93	57,0				575 2)		05750				05750				
5,80		93	57,0		058 2)		058 2)		05800		058		05800		058		058
5,85		93	57,0						05850				05850				
5,90		93	57,0		059 2)		059 2)		05900		059		05900		059		059
5,95	15/64	93	57,0		595 2)		595 2)		05950				05950				
6,00		93	57,0		060 2)		060 2)		06000		060		06000		060		060
6,05		101	63,0						06050				06050				
6,10		101	63,0		061 2)		061 2)		06100				06100				
6,15		101	63,0						06150				06150				
6,20		101	63,0		062 2)		062 2)		06200		062		06200				062
6,25		101	63,0						06250				06250				
6,30		101	63,0		063 2)		063 2)		06300				06300				
6,35	1/4	101	63,0		635 2)		635 2)		06350				06350				
6,40		101	63,0		064 2)		064 2)		06400				06400				
6,45		101	63,0						06450								
6,50		101	63,0		065 2)		065 2)		06500		065		06500		065		065
6,55		101	63,0						06550				06550				
6,60		101	63,0		066 2)		066 2)		06600				06600				

P	●	●	○	○		●	●
M		●		●		○	○
K	●	●	●			●	●
N	○	○	○	●	●	●	○
S	○	○		○		○	○
H	○					○	○
O	○	○	○			○	○

1) uncoated
2) self-centering

→ v_c Page 46+47

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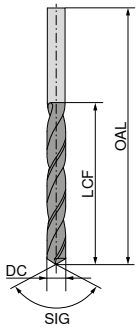
Twist drill to DIN 338, short

≤ 5xD



	UNI	UNI	N	VA	W	WTL	WTL
	TiN	TiN	vap.			F.-nit	TiN
							
	SIG 130° HSS-E-PM	SIG 118° HSS-E	SIG 118° HSS	SIG 130° HSS-E	SIG 130° HSS	SIG 130° HSS-E	SIG 130° HSS-E
	10 173 ...	10 171 ...	10 152 ...	10 175 ...	10 161 ...	10 168 ...	10 170 ...

DC $_{h8}$ mm	DC inch	OAL mm	LCF mm																
6,65		101	63,0					06650			06650								
6,70		101	63,0	067 [2]		067 [2]		06700			06700								
6,75		109	69,0	675 [2]		675 [2]		06750			06750								
6,80		109	69,0	068 [2]		068 [2]		06800		068	06800		068		068				
6,85		109	69,0					06850			06850								
6,90		109	69,0	069 [2]		069 [2]		06900		069	06900								
6,95		109	69,0					06950			06950								
7,00		109	69,0	070 [2]		070 [2]		07000		070	07000		070		070				
7,05		109	69,0					07050			07050								
7,10		109	69,0	071 [2]		071 [2]		07100			07100								
7,14	9/32	109	69,0	714 [2]		714 [2]													
7,15		109	69,0					07150											
7,20		109	69,0	072 [2]		072 [2]		07200		072	07200		072		072				
7,25		109	69,0					07250			07250								
7,30		109	69,0	073 [2]		073 [2]		07300			07300								
7,35		109	69,0					07350											
7,40		109	69,0	074 [2]		074 [2]		07400		074	07400		074		074				
7,45		109	69,0			745 [2]		07450											
7,50		109	69,0	075 [2]		075 [2]		07500		075	07500		075		075				
7,55		117	75,0					07550											
7,60		117	75,0	076 [2]		076 [2]		07600		076	07600		076		076				
7,65		117	75,0					07650											
7,70		117	75,0	077 [2]		077 [2]		07700		077	07700		077		077				
7,75		117	75,0					07750			07750								
7,80		117	75,0	078 [2]		078 [2]		07800		078	07800		078		078				
7,85		117	75,0					07850											
7,90		117	75,0	079 [2]		079 [2]		07900		079	07900		079		079				
7,94	5/16	117	75,0	794 [2]		794 [2]													
7,95		117	75,0					07950											
8,00		117	75,0	080 [2]		080 [2]		08000		080	08000		080		080				
8,05		117	75,0					08050			08050								
8,10		117	75,0	081 [2]		081 [2]		08100			08100								
8,15		117	75,0					08150			08150								
8,20		117	75,0	082 [2]		082 [2]		08200			08200								
8,25		117	75,0					08250			08250								
8,30		117	75,0	083 [2]		083 [2]		08300			08300								
8,35		117	75,0					08350											
8,40		117	75,0	084 [2]		084 [2]		08400		084	08400		084		084				
8,45		117	75,0					08450			08450								
8,50		117	75,0	085 [2]		085 [2]		08500		085	08500		085		085				
8,55		125	81,0					08550			08550								
8,60		125	81,0			086 [2]		08600		086	08600				086				
8,65		125	81,0					08650											
8,70		125	81,0			087 [2]		08700			08700								
8,73	11/32	125	81,0	873 [2]		873 [2]													
8,75		125	81,0					08750			08750								

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M						●				●					○			○	
K				●		●		●							●			●	
N				○		○		○		●		●			●			○	
S				○		○				○					○			○	
H				○											○			○	
O				○		○		○							○			○	

1) uncoated
2) self-centering

→ v_c Page 46+47

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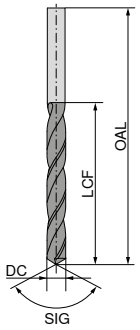
Twist drill to DIN 338, short

≤ 5xD



	UNI	UNI	N	VA	W	WTL	WTL
	TiN	TiN	vap.			F.-nit	TiN
							
	SIG 130°	SIG 118°	SIG 118°	SIG 130°	SIG 130°	SIG 130°	SIG 130°
	HSS-E-PM	HSS-E	HSS	HSS-E	HSS	HSS-E	HSS-E
	10 173 ...	10 171 ...	10 152 ...	10 175 ...	10 161 ...	10 168 ...	10 170 ...

DC h8 mm	DC inch	OAL mm	LCF mm																
8,80		125	81,0		088 2)		088 2)		08800		088		08800		088		088
8,90		125	81,0				089 2)		08900				08900				
8,95		125	81,0						08950								
9,00		125	81,0		090 2)		090 2)		09000		090		09000		090		090
9,05		125	81,0						09050								
9,10		125	81,0				091 2)		09100				09100				
9,15		125	81,0						09150								
9,20		125	81,0				092 2)		09200		092		09200		092		092
9,25		125	81,0						09250				09250				
9,30		125	81,0		093 2)		093 2)		09300		093		09300		093		093
9,35		125	81,0				935 2)		09350								
9,40		125	81,0				094 2)		09400		094		09400		094		094
9,45		125	81,0						09450								
9,50		125	81,0		095 2)		095 2)		09500		095		09500		095		095
9,55		133	87,0						09550								
9,60		133	87,0				096 2)		09600		096		09600		096		096
9,65		133	87,0						09650								
9,70		133	87,0				097 2)		09700		097		09700		097		097
9,75		133	87,0						09750								
9,80		133	87,0		098 2)		098 2)		09800		098		09800		098		098
9,85		133	87,0						09850								
9,90		133	87,0				099 2)		09900		099		09900		099		099
9,95		133	87,0						09950								
10,00		133	87,0		100 2)		100 2)		10000		100		10000		100		100
10,05		133	87,0						10050				10050				
10,10		133	87,0				101 2)		10100				10100				
10,15		133	87,0						10150								
10,20		133	87,0		102 2)		102 2)		10200		102		10200		102		102
10,25		133	87,0						10250				10250				
10,30		133	87,0				103 2)		10300		103		10300		103		103
10,35		133	87,0						10350								
10,40		133	87,0				104 2)		10400				10400				
10,45		133	87,0						10450								
10,50		133	87,0		105 2)		105 2)		10500		105		10500		105		105
10,55		133	87,0				955 2)		10550								
10,60		133	87,0						10600				10600				
10,70		142	94,0						10700		107		10700		107		
10,75		142	94,0						10750				10750				
10,80		142	94,0						10800				10800				
10,90		142	94,0						10900				10900				
11,00		142	94,0		110 2)		110 2)		11000		110		11000		110		110
11,10		142	94,0						11100				11100				
11,11	7/16	142	94,0		111 2)		111 2)										
11,20		142	94,0				112 2)		11200		112		11200		112		112
11,30		142	94,0				113 2)				113				113		
11,40		142	94,0				114 2)		11400		114		11400		114		

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N	○	○	○	●	●		●	○
S	○	○		○			○	○
H	○						○	○
O	○	○	○				○	○

1) uncoated
2) self-centering

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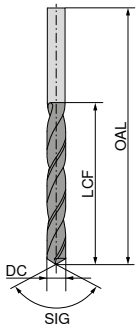
Twist drill to DIN 338, short

≤ 5xD



	UNI	UNI	N	VA	W	WTL	WTL
	TiN	TiN	vap.			F.-nit	TiN
							
	SIG 130° HSS-E-PM	SIG 118° HSS-E	SIG 118° HSS	SIG 130° HSS-E	SIG 130° HSS	SIG 130° HSS-E	SIG 130° HSS-E
	10 173 ...	10 171 ...	10 152 ...	10 175 ...	10 161 ...	10 168 ...	10 170 ...

DC $_{h8}$ mm	DC inch	OAL mm	LCF mm																
11,50		142	94,0		115 2)		115 2)		11500		115		11500		115		115
11,60		142	94,0				116 2)		11600		116		11600		116		
11,70		142	94,0						11700		117		11700		117		117
11,80		142	94,0						11800		118		11800		118		118
11,90		151	101,0						11900		119		11900				
12,00		151	101,0		120 2)		120 2)		12000		120		12000		120		120
12,15		151	101,0				121 2)										
12,20		151	101,0						12200				12200				
12,25		151	101,0						12250								
12,30		151	101,0		123 2)		123 2)										
12,50		151	101,0		125 2)		925 2)		12500				12500		125		125
12,70		151	101,0		127 2)		127 2)		12700				12700				
12,80		151	101,0						12800				12800		128		128
13,00		151	101,0		130 2)		130 2)		13000				13000		130		130
13,10		151	101,0				131 2)										
13,20		151	101,0						13200				13200				
13,30		160	108,0				133 2)										
13,50		160	108,0		135 2)		135 2)		13500				13500		135		135
13,80		160	108,0						13800				13800		138		138
14,00		160	108,0		140 2)		140 2)		14000				14000		140		140
14,50		169	114,0						14500				14500		145		145
14,80		169	114,0												148		
15,00		169	114,0						15000				15000		150		150
15,25		178	120,0						15250								
15,50		178	120,0						15500				15500		155		155
15,80		178	120,0						15800								
16,00		178	120,0						16000				16000		160		160
16,50		184	125,0						16500				16500				
17,00		184	125,0						17000				17000				
17,50		191	130,0						17500				17500				
18,00		191	130,0						18000				18000				
18,50		198	135,0						18500								
19,00		198	135,0						19000				19000				
19,50		205	140,0						19500								
20,00		205	140,0						20000				20000				

P					●		●		○		○				●		●
M							●				●				○		○
K					●		●		●						●		●
N					○		○		○		●		●		●		○
S					○		○				○				○		○
H					○										○		○
O					○		○		○						○		○

1) uncoated
2) self-centering

→ v_c Page 46+47

Twist drill sets DIN 338, short

▲ In a box
▲ In 0.1 mm steps

≤ 5xD



	N	UNI
	vap.	TiN
		
	Drill set type N	Drill set type UNI TiN
	HSS	HSS-E
	10 158 ...	10 158 ...
DC h8 mm		
1,0 - 5,9	050	054 1)
6,0 - 10,0	100	104 1)
P	○	●
M		●
K	●	●
N	○	○
S		○
H		
O	○	○

1) self-centering

→ v_c Page 46

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

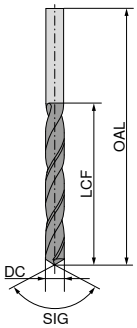
Twist drills with coolant hole, factory standard, long

≤ 10xD



NC

TiAlN





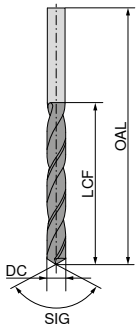
SIG 130°
HSS

DC h8 mm	OAL mm	LCF mm	10 224 ...
3,0	100	66	030
3,3	106	69	033
3,5	112	73	035
3,8	119	78	038
4,0	119	78	040
4,2	119	78	042
4,5	126	82	045
4,8	132	87	048
5,0	132	87	050
5,5	139	91	055
5,8	139	91	058
6,0	139	91	060
6,5	148	97	065
6,8	156	102	068
7,0	156	102	070
7,5	156	102	075
7,8	165	109	078
8,0	165	109	080
8,5	165	109	085
8,8	175	115	088
9,0	175	115	090
9,5	175	115	095
9,8	184	121	098
10,0	184	121	100
10,2	184	121	102
10,5	184	121	105
10,8	195	128	108
11,0	195	128	110
11,5	195	128	115
11,8	205	134	118
12,0	205	134	120
12,8	205	134	128
13,0	205	134	130
P			○
M			○
K			●
N			○
S			
H			
O			○

→ v_c Page 48

Twist drills, DIN 340, long

≤ 10xD



	UNI	WTL	WTL	WTW
	TiN	F.-nit	TiN	
				
	SIG 118° HSS-E	SIG 130° HSS-E	SIG 130° HSS	SIG 130° HSS
DC h8 mm	10 270 ...	10 225 ...	10 210 ...	10 200 ...
1,0	56	33	010	010 1)	010	010
1,1	60	37	011	011 1)	011	011
1,2	65	41	012	012 1)		012
1,3	65	41	013	013 1)		
1,4	70	45	014	014 1)		014
1,5	70	45	015	015 1)	015	015
1,6	76	50	016	016 1)	016	016
1,7	76	50	017	017 1)		
1,8	80	53	018	018 1)		018
1,9	80	53	019	019 1)	019	019
2,0	85	56	020	020 1)	020	020
2,1	85	56	021	021 1)	021	021
2,2	90	59	022	022 1)		
2,3	90	59	023	023 1)	023	023
2,4	95	62	024	024	024	024
2,5	95	62	025	025	025	025
2,6	95	62	026	026	026	026
2,7	100	66	027	027	027	027
2,8	100	66	028	028	028	028
2,9	100	66	029	029	029	029
3,0	100	66	030	030	030	030
3,1	106	69	031	031		
3,2	106	69	032	032		
3,3	106	69	033	033	033	033
3,4	112	73	034	034		
3,5	112	73	035	035	035	035
3,6	112	73	036	036	036	036
3,7	112	73	037	037	037	037
3,8	119	78	038	038	038	038
3,9	119	78	039	039	039	039
4,0	119	78	040	040	040	040
4,1	119	78	041	041		
4,2	119	78	042	042	042	042
4,3	126	82	043	043	043	043
4,4	126	82	044	044		
4,5	126	82	045	045	045	045
4,6	126	82	046	046	046	046
4,7	126	82	047	047	047	047
4,8	132	87	048	048	048	048
4,9	132	87	049	049	049	049
5,0	132	87	050	050	050	050
5,1	132	87	051	051		
P			●	●	○	
M			●	○		
K			●	●	●	
N			○	●	○	●
S			○	○		
H				○		
O			○	○	○	

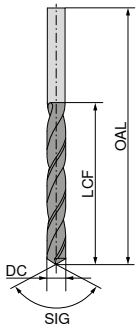
1) uncoated

→ v_c Page 48+49

Continued on next page

Twist drills, DIN 340, long

≤ 10xD



	UNI	WTL	WTL	WTW
	TiN	F.-nit	TiN	
				
	SIG 118° HSS-E	SIG 130° HSS-E	SIG 130° HSS	SIG 130° HSS
DC h8 mm	10 270 ...	10 225 ...	10 210 ...	10 200 ...
5,2	132	87	052	052	052	052
5,3	132	87	053	053	053	053
5,4	139	91	054	054		
5,5	139	91	055	055	055	055
5,6	139	91	056	056	056	056
5,7	139	91	057	057	057	057
5,8	139	91	058	058	058	058
5,9	139	91	059	059	059	059
6,0	139	91	060	060	060	060
6,1	148	97	061	061		
6,2	148	97	062	062		
6,3	148	97	063	063	063	063
6,4	148	97	064	064		
6,5	148	97	065	065	065	065
6,6	148	97	066	066		
6,7	148	97	067	067		
6,8	156	102	068	068	068	068
6,9	156	102	069	069		
7,0	156	102	070	070	070	070
7,1	156	102	071	071		
7,2	156	102	072	072	072	072
7,3	156	102	073	073		
7,4	156	102	074	074	074	074
7,5	156	102	075	075	075	075
7,6	165	109	076		076	076
7,7	165	109	077	077		077
7,8	165	109	078	078	078	078
7,9	165	109	079	079	079	079
8,0	165	109	080	080	080	080
8,1	165	109	081	081		
8,2	165	109	082	082		
8,3	165	109	083	083		
8,4	165	109	084	084	084	084
8,5	165	109	085	085	085	085
8,6	175	115	086	086		
8,7	175	115	087	087		
8,8	175	115	088	088	088	088
8,9	175	115	089	089		
9,0	175	115	090	090	090	090
9,1	175	115	091	091		
9,2	175	115	092	092		092
9,3	175	115	093	093		093
P			●	●	○	
M			●	○		
K			●	●	●	
N			○	●	○	●
S			○	○		
H				○		
O			○	○	○	

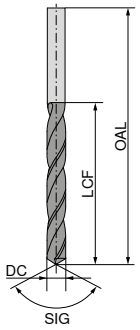
1) uncoated

→ v_c Page 48+49

Continued on next page

Twist drills, DIN 340, long

≤ 10xD



	UNI	WTL	WTL	WTW
	TiN	F.-nit	TiN	
				
	SIG 118° HSS-E	SIG 130° HSS-E	SIG 130° HSS	SIG 130° HSS
DC h8 mm / OAL mm / LCF mm	10 270 ...	10 225 ...	10 210 ...	10 200 ...
9,4 / 175 / 115	094	094		094
9,5 / 175 / 115	095	095	095	095
9,6 / 184 / 121	096			096
9,7 / 184 / 121	097	097	097	
9,8 / 184 / 121	098	098	098	098
9,9 / 184 / 121	099	099	099	
10,0 / 184 / 121	100	100	100	100
10,1 / 184 / 121	101			
10,2 / 184 / 121	102	102	102	102
10,3 / 184 / 121	103			103
10,4 / 184 / 121	104			
10,5 / 184 / 121	105	105	105	105
10,8 / 195 / 128		108		
11,0 / 195 / 128	110	110	110	110
11,5 / 195 / 128	115	115	115	115
11,6 / 195 / 128				116
11,8 / 195 / 128		118		118
12,0 / 205 / 134	120	120	120	120
12,2 / 205 / 134				122
12,3 / 205 / 134				123
12,5 / 205 / 134	125		125	125
13,0 / 205 / 134	130		130	130
13,5 / 214 / 140	135			
14,0 / 214 / 140	140		140	140
P	●	●	○	
M	●	○		
K	●	●	●	
N	○	●	○	●
S	○	○		
H		○		
O	○	○	○	

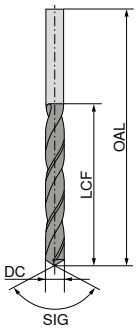
1) uncoated

→ v_c Page 48+49

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

▲ Up to diameter DC of 2.30 mm in uncoated version

> 10xD





SIG 130°
HSS-E



SIG 130°
HSS

DC h8 mm	OAL mm	LCF mm	10 236 ...	10 235 ...
2,0	125	85		020 1)
2,1	125	85		021 1)
2,2	135	90		022 1)
2,3	135	90		023 1)
2,4	140	95		024
2,5	140	95		025
2,6	140	95		026
2,7	150	100		027
2,8	150	100		028
2,9	150	100		029
3,0	150	100	03000	030
3,1	155	105		031
3,2	155	105		032
3,3	155	105	03300	033
3,4	165	115		034
3,5	165	115	03500	035
3,6	165	115		036
3,7	165	115		037
3,8	175	120		038
3,9	175	120		039
4,0	175	120	04000	040
4,1	175	120		041
4,2	175	120	04200	042
4,3	185	125		043
4,4	185	125		044
4,5	185	125	04500	045
4,6	185	125		046
4,7	185	125		047
4,8	195	135		048
4,9	195	135		049
5,0	195	135	05000	050
5,1	195	135		051
5,2	195	135		052
5,3	195	135		053
5,4	205	140		054
5,5	205	140	05500	055
5,6	205	140		056
5,7	205	140		057
5,8	205	140		058
5,9	205	140		059
6,0	205	140	06000	060
6,1	215	150		061
6,2	215	150		062
6,3	215	150		063
6,4	215	150		064
6,5	215	150	06500	065
6,6	215	150		066
6,7	215	150		067
6,8	225	155	06800	068
6,9	225	155		069
7,0	225	155	07000	070
7,1	225	155		071
7,3	225	155		073
7,4	225	155		074
7,5	225	155	07500	075
7,7	240	165		077
7,8	240	165		078
7,9	240	165		079
8,0	240	165	08000	080
8,1	240	165		081
8,2	240	165		082
8,3	240	165		083
8,4	240	165		084
8,5	240	165	08500	085
8,6	250	175		086
8,7	250	175		087
8,8	250	175		088
9,0	250	175	09000	090
9,2	250	175		092
9,4	250	175		094
9,5	250	175	09500	095
9,6	265	185		096
9,7	265	185		097
9,8	265	185		098
9,9	265	185		099
10,0	265	185	10000	100
10,2	265	185	10200	
10,5	265	185		105
11,0	280	195		110
11,5	280	195		115
12,0	295	205		120
12,5	295	205		125
13,0	295	205		130
P			●	●
M				
K			●	●
N			●	●
S				
H				
O			○	○

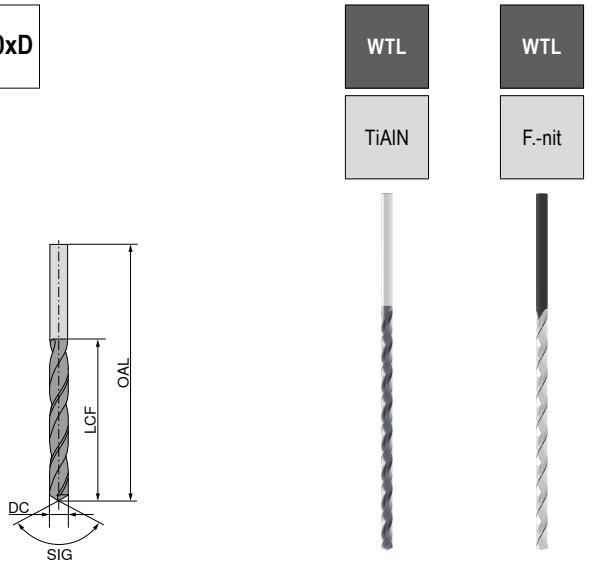
1) uncoated

→ v_c Page 50

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

▲ Up to diameter DC of 2.00 mm in uncoated version

> 10xD



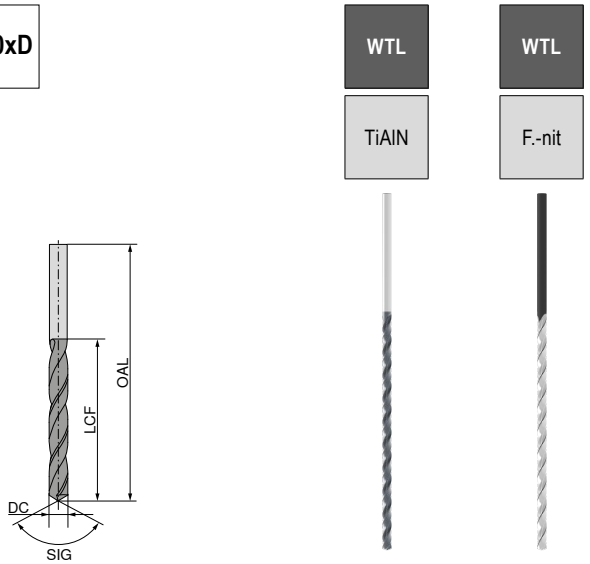
DC h8 mm	OAL mm	LCF mm	10 246 ...	10 245 ...
2,0	160	110		020 [1]
2,5	180	120		025
3,0	190	130	03000	030
3,5	210	145	03500	035
4,0	220	150	04000	040
4,5	235	160	04500	045
5,0	245	170	05000	050
5,5	260	180	05500	055
6,0	260	180	06000	060
6,5	275	190	06500	065
7,0	290	200	07000	070
7,5	290	200	07500	075
8,0	305	210	08000	080
8,5	305	210	08500	085
9,0	320	220	09000	090
9,5	320	220	09500	095
10,0	340	235	10000	100
10,2	340	235	10200	
10,5	340	235		105
11,0	365	250		110
11,5	365	250		115
12,0	375	260	12000	120
12,5	375	260		125
13,0	375	260		130
P			●	●
M				
K			●	●
N			●	●
S				
H				
O			○	○

1) uncoated

→ v_c Page 50+51

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

> 10xD



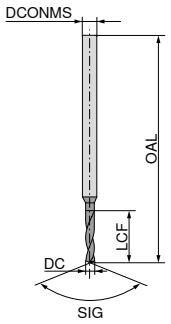
DC h8 mm	OAL mm	LCF mm	10 256 ...	10 255 ...
2,5	225	150		025
3,0	240	160		030
3,5	265	180		035
4,0	280	190	04000	040
4,5	295	200		045
5,0	315	210	05000	050
5,5	330	225		055
6,0	330	225	06000	060
6,5	350	235		065
7,0	370	250		070
7,5	370	250		075
8,0	390	265	08000	080
8,5	390	265		085
9,0	410	280		090
9,5	410	280		095
10,0	430	295	10000	100
10,5	430	295		105
11,0	455	310		110
11,5	455	310		115
12,0	480	330		120
12,5	480	330		125
13,0	480	330		130
P			●	●
M				
K			●	●
N			●	●
S				
H				
O			○	○

→ v_c Page 50+51

Twist drills, DIN 1899

▲ 4 facet
▲ with reinforced shank

Scope of supply:
Packing quantity 5 pieces (Ø 0.15 mm packing quantity 10 pieces)
price per piece



N



SIG 118°
HSS-E-PM

10 103 ...

DC -0,004 mm	OAL mm	LCF mm	DCONMS h8 mm	
0,15	25	0,8	1,0	00150
0,20	25	1,5	1,0	00200
0,25	25	1,9	1,0	00250
0,30	25	1,9	1,0	00300
0,35	25	2,4	1,0	00350
0,40	25	3,0	1,0	00400
0,45	25	3,0	1,0	00450
0,50	25	3,4	1,0	00500
0,55	25	3,9	1,0	00550
0,60	25	3,9	1,0	00600
0,65	25	4,2	1,0	00650
0,70	25	4,8	1,0	00700
0,75	25	4,8	1,0	00750
0,80	25	5,3	1,5	00800
0,85	25	5,3	1,5	00850
0,90	25	6,0	1,5	00900
0,95	25	6,0	1,5	00950
1,00	25	6,8	1,5	01000
1,05	25	6,8	1,5	01050
1,10	25	7,6	1,5	01100
1,15	25	7,6	1,5	01150
1,20	25	8,5	1,5	01200
1,25	25	8,5	1,5	01250
1,30	25	8,5	1,5	01300
1,35	25	9,5	1,5	01350
1,40	25	9,5	1,5	01400
1,45	25	9,5	1,5	01450

P	●
M	○
K	●
N	●
S	○
H	
O	○

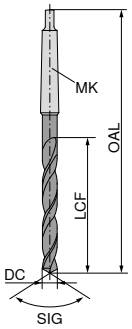
→ v_c Page 52

Twist drill, factory standard, short

≤ 3xD

WT

vap.





SIG 130°
HSS-E

10 285 ...

DC h8 mm	OAL mm	LCF mm	MK	
13,0	147	66	1	130
13,5	168	70	2	135
14,0	168	70	2	140
14,5	172	74	2	145
15,0	172	74	2	150
15,5	176	78	2	155
16,0	176	78	2	160
16,5	179	81	2	165
17,0	179	81	2	170
17,5	183	85	2	175
18,0	183	85	2	180
18,5	186	88	2	185
19,0	186	88	2	190
19,5	212	91	3	195
20,0	212	91	3	200
21,0	216	95	3	210
22,0	219	98	3	220
23,0	222	101	3	230
24,0	225	104	3	240
25,0	225	104	3	250
26,0	256	107	4	260
27,0	259	110	4	270
28,0	259	110	4	280
30,0	263	114	4	300

P	●
M	●
K	●
N	○
S	○
H	○
O	

→ v_c Page 45

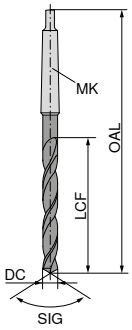
Twist drills, DIN 345

≤ 5xD

N

vap.

WTL





SIG 118°
HSS



SIG 130°
HSS-E

DC h8 mm	OAL mm	LCF mm	MK	10 265 ...	10 280 ...
10,00	168	87	1	100	100 1)
10,20	168	87	1	102	102 1)
10,50	168	87	1	105	105 1)
10,80	175	94	1	108	108 1)
11,00	175	94	1	110	110 1)
11,20	175	94	1	112	
11,50	175	94	1	115	115 1)
11,80	175	94	1	118	
12,00	182	101	1	120	120 1)
12,20	182	101	1	122	122 1)
12,50	182	101	1	125	125 1)
12,80	182	101	1	128	
13,00	182	101	1	130	130 1)
13,20	182	101	1	132	
13,50	189	108	1	135	135 1)
13,80	189	108	1	138	
14,00	189	108	1	140	140 1)
14,25	212	114	2	142	142 1)
14,50	212	114	2	145	145 1)
14,75	212	114	2	147	
15,00	212	114	2	150	150 1)
15,25	218	120	2	152	152 1)
15,50	218	120	2	155	155 1)
15,75	218	120	2	157	157 1)
16,00	218	120	2	160	160 1)
16,25	223	125	2	162	
16,50	223	125	2	165	165 2)
16,75	223	125	2	167	
17,00	223	125	2	170	170 2)
17,25	228	130	2	172	172 2)
17,50	228	130	2	175	175 2)
17,75	228	130	2	177	177 2)
18,00	228	130	2	180	180 2)
18,25	233	135	2	182	
18,50	233	135	2	185	185 2)
18,75	233	135	2	187	
19,00	233	135	2	190	190 2)
19,25	238	140	2	192	
19,50	238	140	2	195	
19,75	238	140	2	197	
20,00	238	140	2	200	200 2)
20,25	243	145	2	202	
20,50	243	145	2	205	
20,75	243	145	2	207	
21,00	243	145	2	210	210 2)
21,25	248	150	2	212	
21,50	248	150	2	215	
21,75	248	150	2	217	
22,00	248	150	2	220	220 2)
22,25	248	150	2	222	
22,50	253	155	2	225	225 2)
22,75	253	155	2	227	
23,00	253	155	2	230	230 2)
23,50	276	155	3	235	
23,75	281	160	3	237	
24,00	281	160	3	240	240 2)
24,50	281	160	3	245	
24,75	281	160	3	247	
25,00	281	160	3	250	250 2)
25,50	286	165	3	255	
25,75	286	165	3	257	
26,00	286	165	3	260	260 2)
26,50	286	165	3	265	
26,75	291	170	3	267	
27,00	291	170	3	270	270 2)
27,50	291	170	3	275	
27,75	291	170	3	277	
28,00	291	170	3	280	
28,50	296	175	3	285	
28,75	296	175	3	287	
29,00	296	175	3	290	
29,50	296	175	3	295	
29,75	296	175	3	297	
30,00	296	175	3	300	
30,50	301	180	3	305	
31,00	301	180	3	310	
31,50	301	180	3	315	
32,00	334	185	4	320	
32,50	334	185	4	325	
33,00	334	185	4	330	
33,50	334	185	4	335	
34,00	339	190	4	340	
34,50	339	190	4	345	
35,00	339	190	4	350	
35,50	339	190	4	355	
36,00	344	195	4	360	
36,50	344	195	4	365	
37,00	344	195	4	370	
37,50	344	195	4	375	
38,00	349	200	4	380	
38,50	349	200	4	385	
39,00	349	200	4	390	
39,50	349	200	4	395	
40,00	349	200	4	400	
41,00	354	205	4	410	
42,00	354	205	4	420	
43,00	359	210	4	430	
44,00	359	210	4	440	
45,00	359	210	4	450	
46,00	364	215	4	460	
47,00	364	215	4	470	
48,00	369	220	4	480	
49,00	369	220	4	490	
50,00	369	220	4	500	
51,00	412	225	5	510	
52,00	412	225	5	520	
53,00	412	225	5	530	
54,00	417	230	5	540	
55,00	417	230	5	550	

	10 265 ...	10 280 ...
P	○	●
M		○
K	●	●
N	○	●
S		○
H		○
O	○	○

1) nitrided chamfer
2) vaporised

→ v_c Page 47

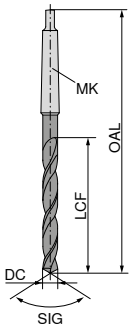
Twist drills, DIN 341, long

≤ 10xD

N

vap.

WTL





SIG 118°
HSS



SIG 130°
HSS-E

DC h8 mm	OAL mm	LCF mm	MK	10 295 ...	10 297 ...
10,00	197	116	1	100	100 1)
10,20	197	116	1	102	102 1)
10,50	197	116	1	105	105 1)
10,80	206	125	1	108	
11,00	206	125	1	110	110 1)
11,20	206	125	1	112	112 1)
11,50	206	125	1	115	115 1)
11,80	206	125	1	118	118 1)
12,00	215	134	1	120	120 1)
12,20	215	134	1	122	122 1)
12,50	215	134	1	125	125 1)
12,80	215	134	1	128	128 1)
13,00	215	134	1	130	130 1)
13,20	215	134	1	132	
13,50	223	142	1	135	135 1)
13,80	223	142	1	138	138 1)
14,00	223	142	1	140	140 1)
14,25	245	147	2	142	
14,50	245	147	2	145	145 1)
14,75	245	147	2	147	
15,00	245	147	2	150	150 1)
15,25	251	153	2	152	
15,50	251	153	2	155	155 1)
15,75	251	153	2	157	
16,00	251	153	2	160	160 1)
16,25	257	159	2	162	
16,50	257	159	2	165	165 2)
16,75	257	159	2	167	
17,00	257	159	2	170	170 2)
17,50	263	165	2	175	175 2)
17,75	263	165	2	177	
18,00	263	165	2	180	180 2)
18,50	269	171	2	185	185 2)
19,00	269	171	2	190	190 2)
19,50	275	177	2	195	195 2)
20,00	275	177	2	200	200 2)
20,50	282	184	2	205	205 2)
21,00	282	184	2	210	210 2)
21,50	289	191	2	215	
22,00	289	191	2	220	220 2)
22,50	296	198	2	225	
23,00	296	198	2	230	
23,50	319	198	3	235	
24,00	327	206	3	240	240 2)
24,50	327	206	3	245	
25,00	327	206	3	250	250 2)
25,50	335	214	3	255	
26,00	335	214	3	260	
26,50	335	214	3	265	
27,00	343	222	3	270	
27,50	343	222	3	275	
28,00	343	222	3	280	
29,00	351	230	3	290	
29,50	351	230	3	295	
30,00	351	230	3	300	
30,50	360	239	3	305	
31,00	360	239	3	310	
31,50	360	239	3	315	
32,00	397	248	4	320	
33,00	397	248	4	330	
33,50	397	248	4	335	
34,00	406	257	4	340	
35,00	406	257	4	350	
36,00	416	267	4	360	
37,00	416	267	4	370	
37,50	416	267	4	375	
38,00	426	277	4	380	
39,00	426	277	4	390	
40,00	426	277	4	400	
42,00	436	287	4	420	
43,00	447	298	4	430	
44,00	447	298	4	440	
45,00	447	298	4	450	
50,00	470	321	4	500	

	10 295 ...	10 297 ...
P	○	●
M		○
K	●	●
N	○	●
S		○
H		○
O	○	○

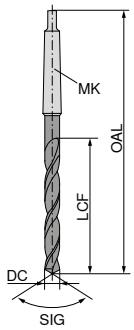
1) nitrided chamfer
2) vaporised

→ v_c Page 49

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

> 10xD

WTL





SIG 130°
HSS

10 305 ...

DC h8 mm	OAL mm	LCF mm	MK	
10,0	285	185	1	100 1)
10,5	285	185	1	105 1)
11,0	300	195	1	110 1)
11,5	300	195	1	115 1)
12,0	310	205	1	120 1)
12,5	310	205	1	125 1)
13,0	310	205	1	130 1)
13,5	325	220	1	135 1)
14,0	325	220	1	140 1)
14,5	340	220	2	145 1)
15,0	340	220	2	150 1)
15,5	355	230	2	155 1)
16,0	355	230	2	160 1)
16,5	355	230	2	165 2)
17,0	355	230	2	170 2)
17,5	370	245	2	175 2)
18,0	370	245	2	180 2)
18,5	370	245	2	185 2)
19,0	370	245	2	190 2)
19,5	385	260	2	195 2)
20,0	385	260	2	200 2)
21,0	385	260	2	210 2)
22,0	405	270	2	220 2)
23,0	405	270	2	230 2)
24,0	440	290	3	240 2)
25,0	440	290	3	250 2)
26,0	440	290	3	260 2)
28,0	460	305	3	280 2)
30,0	460	305	3	300 2)

P	●
M	
K	●
N	●
S	
H	
O	○

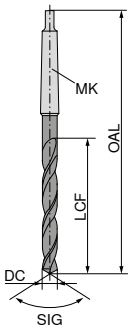
1) nitrided chamfer
2) vaporised

→ v_c Page 51

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

> 10xD

WTL





SIG 130°
HSS

10 315 ...

DC h8 mm	OAL mm	LCF mm	MK	
10,0	360	235	1	100 1)
10,5	360	235	1	105 1)
11,0	375	250	1	110 1)
11,5	375	250	1	115 1)
12,0	395	260	1	120 1)
13,0	395	260	1	130 1)
13,5	410	275	1	135 1)
14,0	410	275	1	140 1)
14,5	425	275	2	145 1)
15,0	425	275	2	150 1)
15,5	445	295	2	155 1)
16,0	445	295	2	160 1)
16,5	445	295	2	165 2)
17,0	445	295	2	170 2)
17,5	465	310	2	175 2)
18,0	465	310	2	180 2)
18,5	465	310	2	185 2)
19,0	465	310	2	190 2)
19,5	490	325	2	195 2)
20,0	490	325	2	200 2)
21,0	490	325	2	210 2)
22,0	515	345	2	220 2)
23,0	515	345	2	230 2)
24,0	555	365	3	240 2)
25,0	555	365	3	250 2)
26,0	555	365	3	260 2)
28,0	580	385	3	280 2)
30,0	580	385	3	300 2)

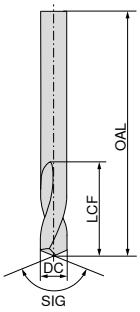
P	●
M	
K	●
N	●
S	
H	
O	○

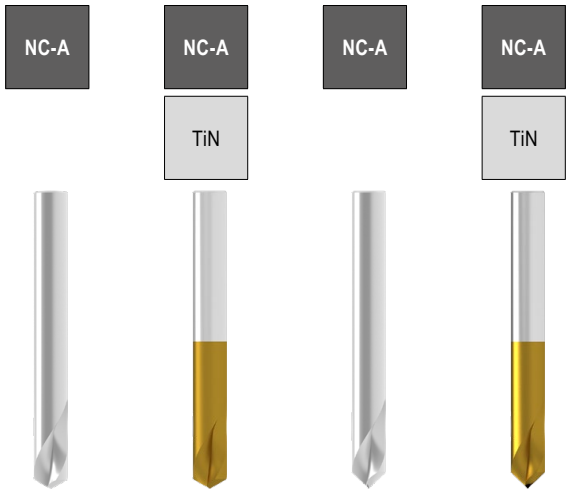
1) nitrided chamfer
2) vaporised

→ v_c Page 51

NC spot drills, factory standard

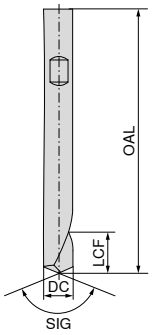
▲ helical flutes

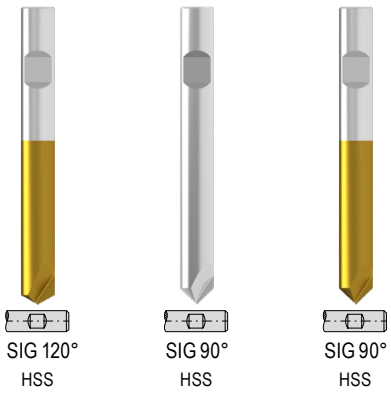




DC h6 mm	OAL mm	LCF mm	SIG 120° HSS 10 510 ...	SIG 120° HSS 10 512 ...	SIG 90° HSS 10 520 ...	SIG 90° HSS 10 522 ...
3	46	12,0	030	030	030	030
4	55	12,0	040	040	040	040
5	62	14,0	050	050	050	050
6	66	16,0	060	060	060	060
8	79	21,0	080	080	080	080
10	89	25,0	100	100	100	100
12	102	30,0	120	120	120	120
16	115	37,5	160	160	160	160
20	131	45,0	200	200	200	200

▲ with clamping flat to DIN 1835 B





DC h6 mm	OAL mm	LCF mm	SIG 120° HSS 10 513 ...	SIG 90° HSS 10 521 ...	SIG 90° HSS 10 523 ...
6	66	7,0	060	060	060
8	79	9,0	080	080	080
10	89	11,5	100	100	100
12	102	14,0	120	120	120
16	115	18,0	160	160	160
20	131	23,0	200	200	200

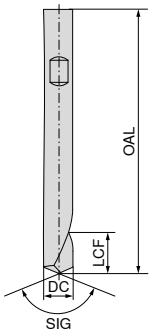
P	●	●	●	●
M	○	○	○	○
K	●	●	●	●
N	○	○	○	○
S	○	○	○	○
H				
O	○	○	○	○

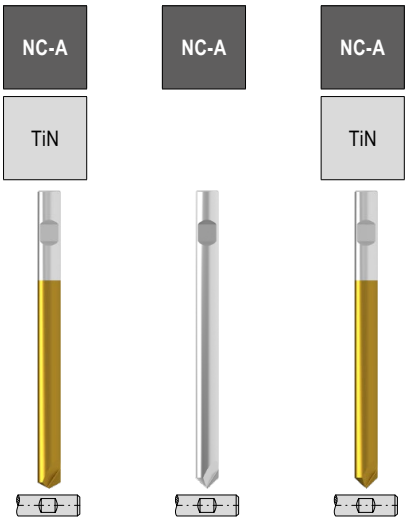
→ v_c Page 53

Suitable only for spot drilling!

NC spot drill factory standard long

▲ with clamping flat to DIN 1835 B





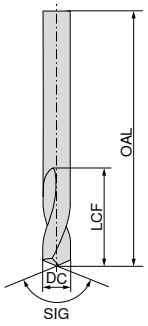
DC h6 mm	OAL mm	LCF mm	SIG 120° HSS 10 532 ...	SIG 90° HSS 10 526 ...	SIG 90° HSS 10 528 ...
6	93	7,0	060	060	060
8	117	9,0	080	080	080
10	133	11,5	100	100	100
12	151	14,0	120	120	120
16	178	18,0	160	160	160
20	205	23,0	200	200	200
P			●	●	●
M			○	○	○
K			●	●	●
N			○	○	○
S			○	○	○
H					
O			○	○	○

→ v_c Page 53

Suitable only for spot drilling!

NC spot drills, factory standard, long

▲ helical flutes



NC-A



SIG 90°
HSS

10 525 ...

DC h6 mm	OAL mm	LCF mm	
6,35	105	17	**025**
8,00	118	21	**030**
9,52	132	25	**040**
12,70	159	30	**050**
15,87	186	37	**060**

P	●
M	○
K	●
N	○
S	○
H	
O	○

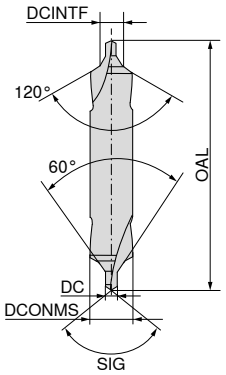
→ v_c Page 53

Suitable only for spot drilling!

Centre drills, DIN 333, form B

▲ with protective countersink 120°

ZB





Right-hand
SIG 118°
HSS

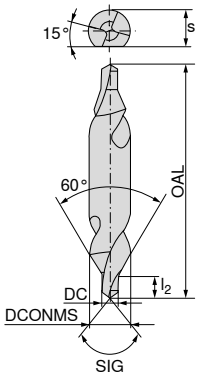
10 480 ...

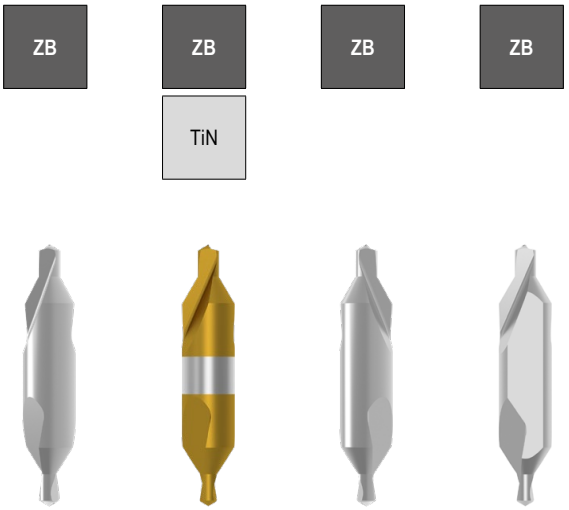
DC mm	DCONMS h8 mm	DCINTF k12 mm	OAL mm	
1,00	4,0	2,12	35,5	**100**
1,25	5,0	2,65	40,0	**125**
1,60	6,3	3,35	45,0	**160**
2,00	8,0	4,25	50,0	**200**
2,50	10,0	5,30	56,0	**250**
3,15	11,2	6,70	62,0	**315**
4,00	14,0	8,50	69,0	**400**
5,00	18,0	10,60	77,0	**500**

P	●
M	○
K	●
N	○
S	○
H	
O	○

→ v_c Page 53

Centre drills, DIN 333, form A





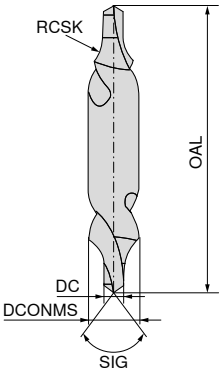
DC	s	DCONMS $_{h8}$	OAL	l_2	Right-hand SIG 118° HSS 10 415 ...		Right-hand SIG 118° HSS 10 425 ...		Left-hand SIG 118° HSS 10 435 ...		Right-hand SIG 118° HSS-E 10 445 ...	
mm	mm	mm	mm	mm								
0,50		3,15	25,0	0,8	**050** [2]		**050** [2]		**050** [2]			
0,80		3,15	25,0	1,1	**080** [2]		**080** [2]		**080** [2]			
1,00		3,15	31,5	1,3	**100**		**100**		**100**			
1,25		3,15	31,5	1,6	**125**		**125**		**125**			
1,60		4,00	35,5	2,0	**160**		**160**		**160**			
1,60	3,25	4,00	35,5	2,0							**160** [1]	
2,00		5,00	40,0	2,5	**200**		**200**		**200**			
2,00	4,20	5,00	40,0	2,5							**200** [1]	
2,50		6,30	45,0	3,1	**250**		**250**		**250**			
2,50	5,35	6,30	45,0	3,1							**250** [1]	
3,15		8,00	50,0	3,9	**315**		**315**		**315**			
3,15	6,95	8,00	50,0	3,9							**315** [1]	
4,00		10,00	56,0	5,0	**400**		**400**		**400**			
4,00	8,40	10,00	56,0	5,0							**400** [1]	
5,00		12,50	63,0	6,3	**500**		**500**		**500**			
5,00	10,95	12,50	63,0	6,3							**500** [1]	
6,30		16,00	71,0	8,0	**630**		**630**		**630**			
6,30	14,00	16,00	71,0	8,0							**630** [1]	
P					●		●		●		●	
M					○		○		○		○	
K					●		●		●		●	
N					○		○		○		○	
S					○		○		○		○	
H												
O					○		○		○		○	

1) with flat
2) Single ended

→ v_c Page 53

Centre drills, DIN 333, form R

ZB ZB





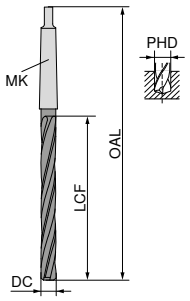


DC mm	DCONMS h8 mm	OAL mm	RCSK mm	Right-hand SIG 118° HSS 10 455 ...	Left-hand SIG 118° HSS 10 475 ...
0,50	3,15	25,0	2,00	**050** [1]	
0,80	3,15	25,0	2,50	**080** [1]	**080** [1]
1,00	3,15	31,5	2,90	**100**	**100**
1,25	3,15	31,5	3,15	**125**	**125**
1,60	4,00	35,5	4,00	**160**	**160**
2,00	5,00	40,0	5,00	**200**	**200**
2,50	6,30	45,0	6,30	**250**	**250**
3,15	8,00	50,0	8,00	**315**	**315**
4,00	10,00	56,0	10,00	**400**	**400**
5,00	12,50	63,0	12,50	**500**	**500**
6,30	16,00	71,0	16,00	**630**	
P				●	●
M				○	○
K				●	●
N				○	○
S				○	○
H					
O				○	○

1) Single ended

→ v_c Page 53

Core drills (spiral countersinks)



N

vap.



SIG 120°
HSS

DC h8 mm	OAL mm	LCF mm	PHD mm	MK	10 228 ...
12,00	182	101	8,4	1	120
12,75	182	101	9,1	1	127
13,00	182	101	9,1	1	130
13,75	189	108	9,8	1	137
14,00	189	108	9,8	1	140
14,75	212	114	10,5	2	147
15,00	212	114	10,5	2	150
15,75	218	120	11,2	2	157
16,00	218	120	11,2	2	160
16,75	223	125	11,9	2	167
17,00	223	125	11,9	2	170
17,75	228	130	12,6	2	177
18,00	228	130	12,6	2	180
18,70	233	135	13,3	2	187
19,00	233	135	13,3	2	190
19,70	238	140	14,0	2	197
20,00	238	140	14,0	2	200
20,70	243	145	14,6	2	207
21,00	243	145	14,6	2	210
21,70	248	150	15,3	2	217
22,00	248	150	15,3	2	220
22,70	253	155	16,0	2	227
23,00	253	155	16,0	2	230
23,70	281	160	16,6	3	237
24,00	281	160	16,6	3	240
24,70	281	160	17,3	3	247
25,00	281	160	17,3	3	250
25,70	286	165	18,0	3	257
26,00	286	165	18,0	3	260
26,70	291	170	18,6	3	267
27,00	291	170	18,6	3	270
27,70	291	170	19,3	3	277
28,00	291	170	19,3	3	280
28,70	296	175	20,0	3	287
29,00	296	175	20,0	3	290
29,70	296	175	20,5	3	297
30,00	296	175	20,5	3	300

P	●
M	○
K	●
N	○
S	○
H	
O	○

→ v_c Page 53

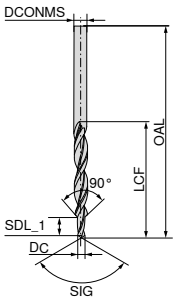
Stepped drills, DIN 8378

▲ Countersinking angle 90°
▲ for tapping drill holes according to DIN 336, Table 1 with 90 ° chamfer and for through holes according to DIN EN 20273 – medium
▲ the feed rate has to be selected based on the small Ø DC

DIN 8378

SB

vap.





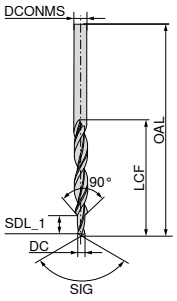
SIG 118°
HSS

10 365 ...

For threads	DC h9 mm	DCONMS h8 mm	OAL mm	SDL_1 mm	LCF mm	
M3	2,5	3,4	70	8,8	39	030
M4	3,3	4,5	80	11,4	47	040
M5	4,2	5,5	93	13,6	57	050
M6	5,0	6,6	101	16,5	63	060
M8	6,8	9,0	125	21,0	81	080
M10	8,5	11,0	142	25,5	94	100
M12	10,2	13,5	160	30,0	108	120

▲ for through holes according to DIN EN 20273 – fine
▲ with 90° screw head countersink
▲ the feed rate has to be selected based on the small Ø DC

DIN 8374





SIG 118°
HSS

10 355 ...

For threads	DC h9 mm	DCONMS h8 mm	OAL mm	SDL_1 mm	LCF mm	
M3	3,2	6,0	93	9	57	030
M4	4,3	8,0	117	11	75	040
M5	5,3	10,0	133	13	87	050
M6	6,4	11,5	142	15	94	060
M8	8,4	15,0	169	19	114	080
M10	10,5	19,0	198	23	135	100

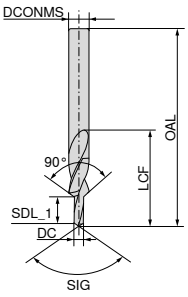
P	●
M	○
K	●
N	○
S	○
H	
O	○

→ v_c Page 53

Stepped drills, overall length to DIN 1897

▲ Countersinking angle 90°
▲ for tapping drill holes according to DIN 336, Table 1 with 90 ° chamfer and for through holes according to DIN EN 20273 – medium
▲ the feed rate has to be selected based on the small Ø DC

SB





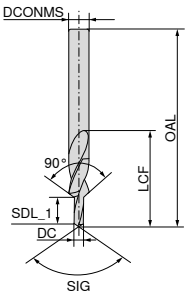
SIG 118°
HSS

10 320 ...

For threads	DC h6 mm	DCONMS h6 mm	OAL mm	SDL_1 mm	LCF mm	
M3	2,5	3,4	52	8,8	20	030
M4	3,3	4,5	58	11,4	24	040
M5	4,2	5,5	66	13,6	28	050
M6	5,0	6,6	70	16,5	31	060
M8	6,8	9,0	84	21,0	40	080
M10	8,5	11,0	95	25,5	47	100
M12	10,2	13,5	107	30,0	54	120

▲ for through holes according to DIN EN 20273 – fine
▲ with 90° screw head countersink
▲ the feed rate has to be selected based on the small Ø DC

DIN 8374





SIG 118°
HSS

10 330 ...

For threads	DC h6 mm	DCONMS h6 mm	OAL mm	SDL_1 mm	LCF mm	
M3	3,2	6,0	66	9	28	030
M4	4,3	8,0	79	11	37	040
M5	5,3	10,0	89	13	43	050
M6	6,4	11,5	95	15	47	060
M8	8,4	15,0	111	19	56	080
M10	10,5	19,0	127	23	64	100

P	●
M	○
K	●
N	○
S	○
H	
O	○

→ v_c Page 53

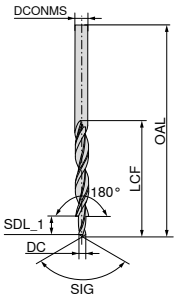
Stepped drills, DIN 8376

▲ Countersinking angle 180°
▲ for through holes according to DIN EN 20273 – Medium
▲ for screw heads to DIN 974-1 – Series 1
▲ the feed rate has to be selected based on the small Ø DC

DIN 8376

SB

vap.





SIG 118°
HSS

10 375 ...

For threads	DC h9 mm	DCONMS h8 mm	OAL mm	SDL_1 mm	LCF mm	
M3	3,4	6	93	9	57	**030** 1)
M4	4,5	8	117	11	75	**040**
M5	5,5	10	133	13	87	**050**
M6	6,6	11	142	15	94	**060**
M8	9,0	15	169	19	114	**080**
M10	11,0	18	191	23	130	**100**

P	●
M	○
K	●
N	○
S	○
H	
O	○

1) DCONMS not according to DIN 974-1

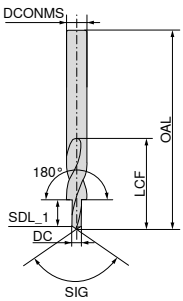
→ v_c Page 53

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

▲ Countersinking angle 180°
▲ for through holes according to DIN EN 20273 – Medium
▲ for screw heads to DIN 974-1 – Series 1
▲ the feed rate has to be selected based on the small Ø DC

DIN 8376

SB





SIG 118°
HSS

10 340 ...

For threads	DC h6 mm	DCONMS h6 mm	OAL mm	SDL_1 mm	LCF mm	
M3	3,4	6	66	9	28	**030** 1)
M4	4,5	8	79	11	37	**040**
M5	5,5	10	89	13	43	**050**
M6	6,6	11	95	15	47	**060**
M8	9,0	15	111	19	56	**080**
M10	11,0	18	123	23	62	**100**

P	●
M	○
K	●
N	○
S	○
H	
O	○

1) DCONMS not according to DIN 974-1

→ v_c Page 53

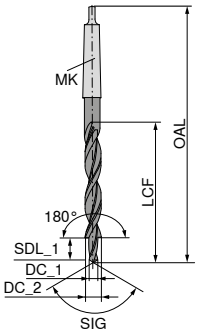
Stepped drills, DIN 8377

▲ Countersinking angle 180°
▲ for through holes according to DIN EN 20273 – Medium
▲ for screw heads to DIN 974-1 – Series 1
▲ the feed rate has to be selected based on the small Ø DC

DIN 8377

SB

vap.





SIG 118°
HSS

For threads	DC_1 h9 mm	DC_2 mm	OAL mm	SDL_1 mm	LCF mm	MK	10 405 ...
M6	6,6	11	175	15	94	1	**060**
M8	9,0	15	212	19	114	2	**080**
M10	11,0	18	228	23	130	2	**100**
M12	13,5	20	238	27	140	2	**120**
M14	15,5	24	281	31	160	3	**140**
M16	17,5	26	286	35	165	3	**160**

P	●
M	○
K	●
N	○
S	○
H	
O	○

→ v_c Page 53

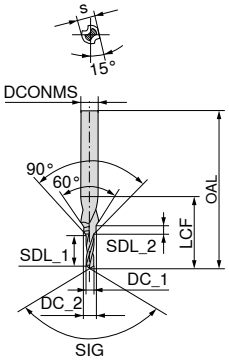
Stepped drills for centring, factory standard

- ▲ with flat
- ▲ Countersinking angle 60°
- ▲ Special drill for creating tapping drill holes with centring, 60° countersinking angle according to DIN 332, sheet 2, form D.
- ▲ Point thinning ≥ Ø 3,3 mm
- ▲ the feed rate has to be selected based on the small Ø DC



SB

vap.





SIG 118°
HSS

10 350 ...

For threads	DC_1 h8 mm	DCONMS h7 mm	DC_2 mm	s mm	OAL mm	SDL_1 mm	LCF mm	SDL_2 mm	
M4	3,3	8,0	4,3	6,75	63	11,0	23	1,60	**040**
M5	4,2	10,0	5,3	8,45	67	13,0	27	2,15	**050**
M6	5,0	12,5	6,4	10,45	71	16,0	33	2,90	**060**
M8	6,8	14,0	8,4	12,50	88	19,5	41	3,50	**080**
M10	8,5	16,0	10,5	14,85	94	23,0	47	4,70	**100**
M12	10,2	20,0	13,0	18,45	105	28,0	59	6,50	**120**
M16	14,0	25,0	17,0	23,40	132	33,0	67	8,30	**160**
M20	17,5	31,5	21,0	29,35	145	38,0	77	10,35	**200**

P	●
M	○
K	●
N	○
S	○
H	
O	○

→ v_c Page 53

Material examples for cutting data tables

	Material sub-group	Index	Composition / Structure / Heat treatment		Tensile strength N/mm²* / HB / HRC	Material number	Material designation	Material number	Material designation
P	Unalloyed steel	P.1.1	< 0,15 % C	Annealed	420 N/mm² / 125 HB	1.0401	C15	1.1141	Ck15
		P.1.2	< 0,45 % C	Annealed	640 N/mm² / 190 HB	1.1191	C45E	1.0718	9SMnPb28
		P.1.3		Tempered	840 N/mm² / 250 HB	1.1191	C45E	1.0535	C55
		P.1.4	< 0,75 % C	Annealed	910 N/mm² / 270 HB	1.1223	C60R	1.0535	C55
		P.1.5		Tempered	1010 N/mm² / 300 HB	1.1223	C60R	1.0727	45S20
	Low-alloy steel	P.2.1		Annealed	610 N/mm² / 180 HB	1.7131	16MnCr5	1.6587	17CrNiMo6
		P.2.2		Tempered	930 N/mm² / 275 HB	1.7131	16MnCr5	1.6587	17CrNiMo6
		P.2.3		Tempered	1010 N/mm² / 300 HB	1.7225	42CrMo4	1.3505	100Cr6
		P.2.4		Tempered	1200 N/mm² / 375 HB	1.7225	42CrMo4	1.3505	100Cr6
	High-alloy steel and high-alloy tool steel	P.3.1		Annealed	680 N/mm² / 200 HB	1.4021	X20Cr13	1.4034	X46Cr13
		P.3.2		Hardened and tempered	1100 N/mm² / 300 HB	1.2343	X38CrMoV5-1	1.4034	X46Cr13
		P.3.3		Hardened and tempered	1300 N/mm² / 400 HB	1.2343	X38CrMoV5-1	1.4034	X46Cr13
	Stainless steel	P.4.1	Ferritic / martensitic	Annealed	680 N/mm² / 200 HB	1.4016	X6Cr17	1.2316	X36CrMo16
		P.4.2	Martensitic	Tempered	1010 N/mm² / 300 HB	1.4112	X90CrMoV18	1.2316	X36CrMo16
M	Stainless steel	M.1.1	Austenitic / austenitic-ferritic	Quenched	610 N/mm² / 180 HB	1.4301	X5CrNi18-10	1.4571	X6CrNiMoTi17-12-2
		M.2.1	Austenitic	Tempered	300 HB	1.4841	X15CrNiSi25-21	1.4539	X1NiCrMoCu25-20-5
		M.3.1	Austenitic / ferritic (Duplex)		780 N/mm² / 230 HB	1.4462	X2CrNiMoN22-5-3	1.4501	X2CrNiMoCuWN25-7-4
K	Grey cast iron	K.1.1	Pearlitic / ferritic		350 N/mm² / 180 HB	0.6010	GG-10	0.6025	GG-25
		K.1.2	Pearlitic (martensitic)		500 N/mm² / 260 HB	0.6030	GG-30	0.6045	GG-45
	Spherulitic graphite cast iron	K.2.1	Ferritic		540 N/mm² / 160 HB	0.7040	GGG-40	0.7060	GGG-60
		K.2.2	Pearlitic		845 N/mm² / 250 HB	0.7070	GGG-70	0.7080	GGG-80
	Malleable iron	K.3.1	Ferritic		440 N/mm² / 130 HB	0.8035	GTW-35-04	0.8045	GTW-45
		K.3.2	Pearlitic		780 N/mm² / 230 HB	0.8165	GTS-65-02	0.8170	GTS-70-02
N	Aluminium wrought alloy	N.1.1	Non-hardenable		60 HB	3.0255	Al99,5	3.3315	AlMg1
		N.1.2	Hardenable	Age-hardened	340 N/mm² / 100 HB	3.1355	AlCuMg2	3.2315	AlMgSi1
	Cast aluminium alloy	N.2.1	≤ 12 % Si, non-hardenable		250 N/mm² / 75 HB	3.2581	G-AlSi12	3.2163	G-AlSi9Cu3
		N.2.2	≤ 12 % Si, hardenable	Age-hardened	300 N/mm² / 90 HB	3.2134	G-AlSi5Cu1Mg	3.2373	G-AlSi9Mg
		N.2.3	> 12 % Si, non-hardenable		440 N/mm² / 130 HB		G-AlSi17Cu4Mg		G-AlSi18CuNiMg
	Copper and copper alloys (bronze/brass)	N.3.1	Free-machining alloys, PB > 1 %		375 N/mm² / 110 HB	2.0380	CuZn39Pb2 (Ms58)	2.0410	CuZn44Pb2
		N.3.2	CuZn, CuSnZn		300 N/mm² / 90 HB	2.0331	CuZn15	2.4070	CuZn28Sn1As
		N.3.3	CuSn, lead-free copper and electrolytic copper		340 N/mm² / 100 HB	2.0060	E-Cu57	2.0590	CuZn40Fe
	Magnesium alloys	N.4.1	Magnesium and magnesium alloys		70 HB	3.5612	MgAl6Zn	3.5312	MgAl3Zn
S	Heat-resistant alloys	S.1.1	Fe - basis	Annealed	680 N/mm² / 200 HB	1.4864	X12NiCrSi 36-16	1.4865	G-X40NiCrSi38-18
		S.1.2		Age-hardened	950 N/mm² / 280 HB	1.4980	X6NiCrTiMoVB25-15-2	1.4876	X10NiCrAlTi32-20
		S.2.1	Ni or Co basis	Annealed	840 N/mm² / 250 HB	2.4631	NiCr20TiAl (Nimonic80A)	3.4856	NiCr22Mo9Nb
		S.2.2		Age-hardened	1180 N/mm² / 350 HB	2.4668	NiCr19Nb5Mo3 (Inconel 718)	2.4955	NiFe25Cr20NbTi
		S.2.3		Cast	1080 N/mm² / 320 HB	2.4765	CoCr20W15Ni	1.3401	G-X120Mn12
	Titanium alloys	S.3.1	Pure titanium		400 N/mm²	3.7025	Ti99,8	3.7034	Ti99,7
		S.3.2	Alpha + beta alloys	Age-hardened	1050 N/mm² / 320 HB	3.7165	TiAl6V4	Ti-6246	Ti-6Al-2Sn-4Zr-6Mo
		S.3.3	Beta alloys		1400 N/mm² / 410 HB	Ti555.3	Ti-5Al-5V-5Mo-3Cr	R56410	Ti-10V-2Fe-3Al
H	Hardened steel	H.1.1		Hardened and tempered	46–55 HRC				
		H.1.2		Hardened and tempered	56–60 HRC				
		H.1.3		Hardened and tempered	61–65 HRC				
		H.1.4		Hardened and tempered	66–70 HRC				
	Chilled iron	H.2.1		Cast	400 HB				
	Hardened cast iron	H.3.1		Hardened and tempered	55 HRC				
O	Non-metal materials	O.1.1	Plastics, duroplastic		≤ 150 N/mm²				
		O.1.2	Plastics, thermoplastic		≤ 100 N/mm²				
		O.2.1	Aramid fibre-reinforced		≤ 1000 N/mm²				
		O.2.2	Glass/carbon-fibre reinforced		≤ 1000 N/mm²				
		O.3.1	Graphite						

*** Tensile strength**

Cutting data standard values – Hole depth 3xD

Index	10 122 ... Type VX-TiN		10 113 ... Type UNI-PM-TiN		10 107 ... Type UNI-TiN		10 105 ... Type N		10 130 ... Type VA	
	v_c m/min	F	v_c m/min	F	v_c m/min	F	v_c m/min	F	v_c m/min	F
P.1.1	46	6	44	6	46	6	28	6	38	5
P.1.2	39	5	37	5	39	5	24	5	32	4
P.1.3	35	5	33	5	35	5	21	5	29	4
P.1.4	32	5	31	5	32	5	20	5	27	4
P.1.5	28	5	26	5	28	5	17	5		
P.2.1	35	5	32	6	35	5	17	4	25	5
P.2.2	24	4	23	5	24	4	12	3	18	4
P.2.3	21	4	19	5	21	4	10	3		
P.2.4	19	3	18	4	19	3	9	2		
P.3.1	17	4	21	4	17	4	13	4		
P.3.2	13	3	16	3	13	3				
P.3.3	12	3	15	3	12	3				
P.4.1	18	4	14	3	18	4			15	3
P.4.2	17	3	14	2	17	3			14	2
M.1.1	15	4			15	4			13	3
M.2.1	12	3			12	3			11	2
M.3.1	10	3			10	3			9	2
K.1.1	41	6	46	6	41	6	30	6		
K.1.2	33	6	37	6	33	6	24	6		
K.2.1	35	6	39	6	35	6	26	6		
K.2.2	27	5	30	5	27	5	20	5		
K.3.1	35	6	39	6	35	6	26	6		
K.3.2	27	5	30	5	27	5	20	5		
N.1.1									80	7
N.1.2									80	7
N.2.1	75	6	69	6	75	6	50	6	65	6
N.2.2	60	5	55	5	60	5	40	5	52	5
N.2.3	52	5	48	5	52	5	35	5	46	5
N.3.1	69	5	64	5	69	5	60	5	60	5
N.3.2	41	4	39	4	41	4	36	4	36	4
N.3.3	55	4	52	4	55	4	48	4	48	4
N.4.1	70	5	60	5	70	5	45	5	6	5
S.1.1			7	2					8	1
S.1.2			6	1					6	1
S.2.1			6	2					7	1
S.2.2										
S.2.3										
S.3.1	9	2			9	2			10	2
S.3.2	6	1			6	1			7	1
S.3.3									6	2
H.1.1			6	1						
H.1.2										
H.1.3										
H.1.4										
H.2.1			10	3						
H.3.1										
O.1.1	29	4	23	4	29	4	20	5		
O.1.2	29	4			29	4	20	5		
O.2.1	29	4	23	4	29	4	20	5		
O.2.2	29	4	23	4	29	4	20	5		
O.3.1										

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

Index	10 106 ... Type WNX		10 109 ... Type WT		10 110 ... Type WT-TiN		10 285 ... Type WT-MK	
	v_c m/min	F	v_c m/min	F	v_c m/min	F	v_c m/min	F
P.1.1	38	6	38	6	44	6	38	6
P.1.2	32	5	32	5	37	5	32	5
P.1.3	29	5	29	5	33	5	29	5
P.1.4	27	5	27	5	31	5	27	5
P.1.5	23	5	23	5	26	5	23	5
P.2.1	28	6	25	5	29	5	25	5
P.2.2	20	5	18	4	20	4	18	4
P.2.3	17	5	15	4	17	4	15	4
P.2.4	15	4	14	3	16	3	14	3
P.3.1	18	4	16	4	18	4	16	4
P.3.2	14	3	12	3	14	3	12	3
P.3.3	13	3	12	3	14	3	12	3
P.4.1	13	3	14	3	17	3	14	3
P.4.2	12	2	14	2	16	2	14	2
M.1.1			12	3	14	3	12	3
M.2.1			10	2	12	2	10	2
M.3.1			8	2	10	2	8	2
K.1.1	40	6	35	6	40	6	35	6
K.1.2	32	6	28	6	32	6	28	6
K.2.1	34	6	30	6	34	6	30	6
K.2.2	26	5	23	5	26	5	23	5
K.3.1	34	6	30	6	34	6	30	6
K.3.2	26	5	23	5	26	5	23	5
N.1.1								
N.1.2								
N.2.1	60	6						
N.2.2	48	5						
N.2.3	42	5						
N.3.1	56	5	62	5	71	5	62	5
N.3.2	34	4	37	4	43	4	37	4
N.3.3	45	4						
N.4.1	55	5						
S.1.1	6	2	8	1	9	1	8	1
S.1.2	5	1	6	1	7	1	6	1
S.2.1	5	2	7	1	8	1	7	1
S.2.2					5	1		
S.2.3					6	1		
S.3.1			10	2	12	2	10	2
S.3.2			7	1	7	1	7	1
S.3.3			6	2	7	2	6	2
H.1.1	5	1	4	1	5	1	4	1
H.1.2								
H.1.3								
H.1.4								
H.2.1	9	3	8	3	9	3	8	3
H.3.1								
O.1.1	20	4						
O.1.2								
O.2.1	20	4						
O.2.2	20	4						
O.3.1								

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

v_c = Cutting speed in m/min.
F = Factor for feed selection
Feed approximate values see → **Page 54**

Cutting data standard values – Hole depth 5xD

Index	10 124 ... Type VX-TiN		10 173 ... Type UNI-PM-TiN		10 171 ... Type UNI-TiN		10 152 ... Type N		10 175 ... Type VA	
	v_c m/min	F	v_c m/min	F	v_c m/min	F	v_c m/min	F	v_c m/min	F
P.1.1	**46**	6	**44**	6	**46**	6	28	6	38	5
P.1.2	**39**	5	**37**	5	**39**	5	24	5	32	4
P.1.3	**35**	5	**33**	5	**35**	5	21	5	29	4
P.1.4	**32**	5	**31**	5	**32**	5	20	5	27	4
P.1.5	**28**	5	**26**	5	**28**	5	17	5		
P.2.1	**35**	5	**32**	6	**35**	5	17	4	25	5
P.2.2	**24**	4	**23**	5	**24**	4	12	3	18	4
P.2.3	**21**	4	**19**	5	**21**	4	10	3		
P.2.4	**19**	3	**18**	4	**19**	3	9	2		
P.3.1	**17**	4	**21**	4	**17**	4	13	4		
P.3.2	**13**	3	**16**	3	**13**	3				
P.3.3	**12**	3	**15**	3	**12**	3				
P.4.1	**18**	4	**14**	3	**18**	4			15	3
P.4.2	**17**	3	**14**	2	**17**	3			14	2
M.1.1	**15**	4			**15**	4			**13**	3
M.2.1	**14**	4			**14**	4			**12**	3
M.3.1	**10**	3			**10**	3			**9**	2
K.1.1	**41**	6	**46**	6	**41**	6	**30**	6		
K.1.2	**33**	6	**37**	6	**33**	6	**24**	6		
K.2.1	**35**	6	**39**	6	**35**	6	**26**	6		
K.2.2	**27**	5	**30**	5	**27**	5	**20**	5		
K.3.1	**35**	6	**39**	6	**35**	6	**26**	6		
K.3.2	**27**	5	**30**	5	**27**	5	**20**	5		
N.1.1									**80**	7
N.1.2									**80**	7
N.2.1	75	6	69	6	75	6	50	6	**65**	6
N.2.2	60	5	55	5	60	5	40	5	**52**	5
N.2.3	52	5	48	5	52	5	35	5	**46**	5
N.3.1	69	5	64	5	69	5	60	5	**60**	5
N.3.2	41	4	39	4	41	4	36	4	**36**	4
N.3.3	55	4	52	4	55	4	48	4	**48**	4
N.4.1	75	6	65	6	70	6	45	6	**60**	6
S.1.1			7	2					8	1
S.1.2			6	1					6	1
S.2.1			6	2					7	1
S.2.2										
S.2.3										
S.3.1	9	2			9	2			10	2
S.3.2	6	1			6	1			7	1
S.3.3									6	1
H.1.1			6	1						
H.1.2										
H.1.3										
H.1.4										
H.2.1			10	3						
H.3.1										
O.1.1	29	4	23	4	29	4	20	5		
O.1.2	29	4			29	4	20	5		
O.2.1	29	4	23	4	29	4	20	5		
O.2.2	29	4	23	4	29	4	20	5		
O.3.1										

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

Index	10 161 ... Type W		10 168 ... Type WTL		10 170 ... Type WTL-TiN		10 265 ... Type N-MK		10 280 ... Type WTL-MK	
	v_c m/min	F	v_c m/min	F	v_c m/min	F	v_c m/min	F	v_c m/min	F
P.1.1			**32**	6	**37**	6	28	6	**32**	6
P.1.2			**27**	5	**31**	5	24	5	**27**	5
P.1.3			**24**	5	**28**	5	21	5	**24**	5
P.1.4			**23**	5	**26**	5	20	5	**23**	5
P.1.5			**19**	5	**22**	5	17	5	**19**	5
P.2.1			**20**	5	**22**	5	17	4	**20**	5
P.2.2			**14**	4	**16**	4	12	3	**14**	4
P.2.3			**12**	4	**13**	4	10	3	**12**	4
P.2.4			**11**	3	**12**	3	9	2	**11**	3
P.3.1			**15**	4	**17**	4	13	4	**15**	4
P.3.2			**11**	3	**13**	3			**11**	3
P.3.3			**10**	3	**12**	3			**10**	3
P.4.1			**10**	3	**12**	3			**10**	3
P.4.2			**10**	2	**11**	2			**10**	2
M.1.1			9	3	11	3			9	3
M.2.1			8	2					8	2
M.3.1										
K.1.1			**35**	6	**40**	6	**30**	6	**35**	6
K.1.2			**28**	6	**32**	6	**24**	6	**28**	6
K.2.1			**29**	6	**34**	6	**26**	6	**29**	6
K.2.2			**22**	5	**26**	5	**20**	5	**22**	5
K.3.1			**29**	6	**34**	6	**26**	6	**29**	6
K.3.2			**22**	5	**26**	5	**20**	5	**22**	5
N.1.1	**70**	7	**69**	7					**69**	7
N.1.2	**70**	7	**69**	7					**69**	7
N.2.1	**60**	6	**58**	6	66	6	50	6	**58**	6
N.2.2			**46**	5	53	5	40	5	**46**	5
N.2.3			**40**	5	46	5	35	5	**40**	5
N.3.1			**69**	5	79	5	60	5	**69**	5
N.3.2			**41**	4	48	4	36	4	**41**	4
N.3.3	**56**	4	**55**	4	63	4	48	4	**55**	4
N.4.1	**60**	6	**6**	6	60	6	45	6	**50**	6
S.1.1			7	2	8	2			7	2
S.1.2			6	1	6	1			6	1
S.2.1			6	2	7	2			6	2
S.2.2			3	1	4	1			3	1
S.2.3			4	1	5	1			4	1
S.3.1			6	2	7	2			6	2
S.3.2			4	1	4	1			4	1
S.3.3										
H.1.1			5	1	5	1			5	1
H.1.2										
H.1.3										
H.1.4										
H.2.1			9	3	11	3			9	3
H.3.1										
O.1.1			23	4	26	4	20	5	23	4
O.1.2			23	4	26	4	20	5	23	4
O.2.1			23	4	26	4	20	5	23	4
O.2.2			23	4	26	4	20	5	23	4
O.3.1										

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

v_c = Cutting speed in m/min.
F = Factor for feed selection
Feed approximate values see → **Page 54**

Cutting data standard values – Hole depth 10xD

Index	10 224 ... Type NC-TiALN		10 270 ... Type UNI-TiN		10 225 ... Type WTL		10 210 ... Type WTL-TiN	
	v_c m/min	F	v_c m/min	F	v_c m/min	F	v_c m/min	F
P.1.1	41	7	**41**	6	**29**	6	29	6
P.1.2	34	6	**35**	5	**25**	5	25	5
P.1.3	30	6	**31**	5	**22**	5	22	5
P.1.4	28	6	**29**	5	**20**	5	20	5
P.1.5	24	6	**25**	5	**17**	5	17	5
P.2.1	25	5	**31**	5	**18**	5	18	5
P.2.2	17	4	**22**	4	**12**	4	12	4
P.2.3	15	4	**19**	4	**11**	4	11	4
P.2.4	14	3	**17**	3	**10**	3	10	3
P.3.1	19	5	**16**	4	**13**	4	13	4
P.3.2			**12**	3	**10**	3	10	3
P.3.3			**10**	2	**8**	3	8	3
P.4.1	13	4	**16**	4	**9**	3		
P.4.2	12	3	**15**	3	**9**	2		
M.1.1	12	4	**13**	4	8	3		
M.2.1	8	3	**8**	3	2	2		
M.3.1			**9**	3				
K.1.1	**43**	7	**37**	6	**31**	6	**31**	6
K.1.2	**35**	7	**30**	6	**25**	6	**25**	6
K.2.1	**37**	7	**32**	6	**26**	6	**26**	6
K.2.2	**28**	6	**24**	5	**20**	5	**20**	5
K.3.1	**37**	7	**32**	6	**26**	6	**26**	6
K.3.2	**28**	6	**24**	5	**20**	5	**20**	5
N.1.1					**62**	7		
N.1.2					**62**	7		
N.2.1	72	7	67	6	**52**	6	52	6
N.2.2	58	6	54	5	**41**	5	41	5
N.2.3	51	6	47	5	**36**	5	36	5
N.3.1	87	6	62	5	**62**	5	62	5
N.3.2	52	5	37	4	**37**	4	37	4
N.3.3	70	5	50	4	**50**	4	50	4
N.4.1	50	6	50	6	**50**	6	50	5
S.1.1					6	2		
S.1.2					5	1		
S.2.1					5	2		
S.2.2					3	1		
S.2.3					4	1		
S.3.1			8	2	5	2		
S.3.2			5	1	3	1		
S.3.3								
H.1.1					4	1		
H.1.2								
H.1.3								
H.1.4								
H.2.1					8	3		
H.3.1								
O.1.1	29	6	26	4	21	4	21	4
O.1.2	29	6	26	4	21	4	21	4
O.2.1	29	6	26	4	21	4	21	4
O.2.2	29	6	26	4	21	4	21	4
O.3.1								

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

Index	10 200 ... Type WTW		10 295 ... Type N-MK		10 297 ... Type WTL-MK	
	v_c m/min	F	v_c m/min	F	v_c m/min	F
P.1.1			25	6	**29**	6
P.1.2			21	5	**25**	5
P.1.3			19	5	**22**	5
P.1.4			18	5	**20**	5
P.1.5			15	5	**17**	5
P.2.1			15	4	**18**	5
P.2.2			11	3	**12**	4
P.2.3			9	3	**11**	4
P.2.4			8	2	**10**	3
P.3.1			12	4	**13**	4
P.3.2					**10**	3
P.3.3					**8**	3
P.4.1					**9**	3
P.4.2					**9**	2
M.1.1					8	3
M.2.1					2	2
M.3.1						
K.1.1			**27**	6	**31**	6
K.1.2			**22**	6	**25**	6
K.2.1			**23**	6	**26**	6
K.2.2			**18**	5	**20**	5
K.3.1			**23**	6	**26**	6
K.3.2			**18**	5	**20**	5
N.1.1	**72**	7			**62**	7
N.1.2	**72**	7			**62**	7
N.2.1			45	6	**52**	6
N.2.2			36	5	**41**	5
N.2.3			32	5	**36**	5
N.3.1			54	5	**62**	5
N.3.2			32	4	**37**	4
N.3.3			43	4	**50**	4
N.4.1			60	6	**50**	6
S.1.1					6	2
S.1.2					5	1
S.2.1					5	2
S.2.2					3	1
S.2.3					4	1
S.3.1					5	2
S.3.2					3	1
S.3.3						
H.1.1					4	1
H.1.2						
H.1.3						
H.1.4						
H.2.1					8	3
H.3.1						
O.1.1			18	5	21	4
O.1.2			18	5	21	4
O.2.1			18	5	21	4
O.2.2			18	5	21	4
O.3.1						

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

v_c = Cutting speed in m/min.
F = Factor for feed selection
Feed approximate values see → **Page 54**

Cutting data standard values – hole depth greater than 10xD

Index	10 235 ... Type WTL-R1		10 245 ... Type WTL-R2		10 255 ... Type WTL-R3		10 236 ... Type WTL-TiAlN-R1	
	v_c m/min	F	v_c m/min	F	v_c m/min	F	v_c m/min	F
P.1.1	21	5	21	5	21	5	24	5
P.1.2	18	4	18	4	18	4	21	4
P.1.3	16	4	16	4	16	4	18	4
P.1.4	15	4	15	4	15	4	17	4
P.1.5	13	4	13	4	13	4	14	4
P.2.1	13	4	13	4	13	4	15	4
P.2.2	9	3	9	3	9	3	10	3
P.2.3	8	3	8	3	8	3	9	3
P.2.4	7	2	7	2	7	2	8	2
P.3.1	10	3	10	3	10	3	11	3
P.3.2	7	2	7	2	7	2	8	2
P.3.3	6	2	6	2	6	2	7	2
P.4.1								
P.4.2								
M.1.1								
M.2.1								
M.3.1								
K.1.1	23	5	23	5	23	5	26	5
K.1.2	18	5	18	5	18	5	21	5
K.2.1	19	5	19	5	19	5	22	5
K.2.2	15	4	15	4	15	4	17	4
K.3.1	19	5	19	5	19	5	22	5
K.3.2	15	4	15	4	15	4	17	4
N.1.1	45	6	45	6	45	6	52	6
N.1.2	45	6	45	6	45	6	52	6
N.2.1	38	5	38	5	38	5	43	5
N.2.2	30	4	30	4	30	4	35	4
N.2.3	26	4	26	4	26	4	30	4
N.3.1	45	4	45	4	45	4	52	4
N.3.2	27	3	27	3	27	3	31	3
N.3.3	36	3	36	3	36	3	41	3
N.4.1	55	5	55	5	55	5	60	6
S.1.1								
S.1.2								
S.2.1								
S.2.2								
S.2.3								
S.3.1								
S.3.2								
S.3.3								
H.1.1								
H.1.2								
H.1.3								
H.1.4								
H.2.1								
H.3.1								
O.1.1	15	3	15	3	15	3	17	3
O.1.2	15	3	15	3	15	3	17	3
O.2.1	15	3	15	3	15	3	17	3
O.2.2	15	3	15	3	15	3	17	3
O.3.1								

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

Index	10 246 ... Type WTL-TiAlN-R2		10 256 ... Type WTL-TiAlN-R3		10 305 ... Type WTL-MK-R1		10 315 ... Type WTL-MK-R2	
	v_c m/min	F	v_c m/min	F	v_c m/min	F	v_c m/min	F
P.1.1	24	5	24	5	21	5	21	5
P.1.2	21	4	21	4	18	4	18	4
P.1.3	18	4	18	4	16	4	16	4
P.1.4	17	4	17	4	15	4	15	4
P.1.5	14	4	14	4	13	4	13	4
P.2.1	15	4	15	4	13	4	13	4
P.2.2	10	3	10	3	9	3	9	3
P.2.3	9	3	9	3	8	3	8	3
P.2.4	8	2	8	2	7	2	7	2
P.3.1	11	3	11	3	10	3	10	3
P.3.2	8	2	8	2	7	2	7	2
P.3.3	7	2	7	2	6	2	6	2
P.4.1								
P.4.2								
M.1.1								
M.2.1								
M.3.1								
K.1.1	26	5	26	5	23	5	23	5
K.1.2	21	5	21	5	18	5	18	5
K.2.1	22	5	22	5	19	5	19	5
K.2.2	17	4	17	4	15	4	15	4
K.3.1	22	5	22	5	19	5	19	5
K.3.2	17	4	17	4	15	4	15	4
N.1.1	52	6	52	6	45	6	45	6
N.1.2	52	6	52	6	45	6	45	6
N.2.1	43	5	43	5	38	5	38	5
N.2.2	35	4	35	4	30	4	30	4
N.2.3	30	4	30	4	26	4	26	4
N.3.1	52	4	52	4	45	4	45	4
N.3.2	31	3	31	3	27	3	27	3
N.3.3	41	3	41	3	36	3	36	3
N.4.1	60	6	60	6	55	5	55	5
S.1.1								
S.1.2								
S.2.1								
S.2.2								
S.2.3								
S.3.1								
S.3.2								
S.3.3								
H.1.1								
H.1.2								
H.1.3								
H.1.4								
H.2.1								
H.3.1								
O.1.1	17	3	17	3	15	3	15	3
O.1.2	17	3	17	3	15	3	15	3
O.2.1	17	3	17	3	15	3	15	3
O.2.2	17	3	17	3	15	3	15	3
O.3.1								

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

v_c = Cutting speed in m/min.
F = Factor for feed selection
Feed approximate values see → **Page 54**

Cutting data standard values – micro drills

Index	v_c m/min	10 103 ...						
		Ø 0,15	Ø 0,20–0,25	Ø 0,30–0,35	Ø 0,40–0,55	Ø 0,60–0,75	Ø 0,80–0,95	Ø 1,00–1,45
		f (mm/rev)						
P.1.1	33	0,009	0,011	0,015	0,019	0,026	0,031	0,050
P.1.2	28	0,007	0,009	0,011	0,014	0,020	0,024	0,041
P.1.3	25	0,007	0,009	0,011	0,014	0,020	0,024	0,041
P.1.4	23	0,007	0,009	0,011	0,014	0,020	0,024	0,041
P.1.5	20	0,007	0,009	0,011	0,014	0,020	0,024	0,041
P.2.1	20	0,005	0,007	0,009	0,011	0,015	0,020	0,035
P.2.2	14	0,004	0,005	0,007	0,008	0,012	0,016	0,029
P.2.3	12	0,004	0,005	0,007	0,008	0,012	0,016	0,029
P.2.4	11	0,003	0,004	0,005	0,007	0,009	0,013	0,024
P.3.1	15	0,005	0,007	0,009	0,011	0,015	0,020	0,035
P.3.2	11	0,004	0,005	0,007	0,008	0,012	0,016	0,029
P.3.3	10	0,004	0,005	0,007	0,008	0,012	0,016	0,029
P.4.1	11	0,004	0,005	0,007	0,008	0,012	0,016	0,029
P.4.2	10	0,003	0,004	0,005	0,007	0,009	0,013	0,024
M.1.1	9	0,004	0,005	0,007	0,008	0,012	0,016	0,029
M.2.1	8	0,004	0,005	0,007	0,008	0,012	0,016	0,029
M.3.1								
K.1.1	35	0,009	0,011	0,015	0,019	0,026	0,031	0,050
K.1.2	28	0,009	0,011	0,015	0,019	0,026	0,031	0,050
K.2.1	30	0,009	0,011	0,015	0,019	0,026	0,031	0,050
K.2.2	23	0,007	0,009	0,011	0,014	0,020	0,024	0,041
K.3.1	30	0,009	0,011	0,015	0,019	0,026	0,031	0,050
K.3.2	23	0,007	0,009	0,011	0,014	0,020	0,024	0,041
N.1.1	70	0,012	0,014	0,019	0,024	0,034	0,038	0,060
N.1.2	70	0,012	0,014	0,019	0,024	0,034	0,038	0,060
N.2.1	59	0,009	0,011	0,015	0,019	0,026	0,031	0,050
N.2.2	47	0,007	0,009	0,011	0,014	0,020	0,024	0,041
N.2.3	41	0,007	0,009	0,011	0,014	0,020	0,024	0,041
N.3.1	70	0,007	0,009	0,011	0,014	0,020	0,024	0,041
N.3.2	42	0,005	0,007	0,009	0,011	0,015	0,020	0,035
N.3.3	56	0,005	0,007	0,009	0,011	0,015	0,020	0,035
N.4.1	42	0,007	0,009	0,011	0,014	0,020	0,024	0,041
S.1.1	7	0,003	0,004	0,005	0,007	0,009	0,013	0,024
S.1.2	6	0,002	0,003	0,004	0,005	0,007	0,010	0,020
S.2.1	6	0,003	0,004	0,005	0,007	0,009	0,013	0,024
S.2.2	4	0,002	0,003	0,004	0,005	0,007	0,010	0,020
S.2.3	4	0,002	0,003	0,004	0,005	0,007	0,010	0,020
S.3.1	6	0,003	0,004	0,005	0,007	0,009	0,013	0,024
S.3.2	4	0,002	0,003	0,004	0,005	0,007	0,010	0,020
S.3.3								
H.1.1								
H.1.2								
H.1.3								
H.1.4								
H.2.1								
H.3.1								
O.1.1	23	0,007	0,009	0,011	0,014	0,020	0,024	0,041
O.1.2	23	0,007	0,009	0,011	0,014	0,020	0,024	0,041
O.2.1	23	0,007	0,009	0,011	0,014	0,020	0,024	0,041
O.2.2	23	0,007	0,009	0,011	0,014	0,020	0,024	0,041
O.3.1								

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

Cutting data standard values – NC spot drills, Centre drills, Core drills, Stepped drills

Index	10 510 ... / 10 520 ... / 10 521 ... / 10 526 ... / 10 525 ...		10 512 ... / 10 522 ... / 10 513 ... / 10 523 ... / 10 532 ... / 10 528 ...		10 480 ... / 10 415 ... / 10 435 ... / 10 445 ... / 10 455 ... / 10 475 ...		10 425 ...		10 228 ... / 10 365 ... / 10 355 ... / 10 320 ... / 10 330 ... / 10 375 ... / 10 340 ... / 10 405 ... / 10 350 ...	
	Type NC-A		Type NC-A TiN		Type ZB		Type ZB TiN		Type N / SB / SB vap.	
	v_c m/min	F	v_c m/min	F	v_c m/min	F	v_c m/min	F	v_c m/min	F
P.1.1	28	6	32	6	28	6	32	6	28	6
P.1.2	24	5	27	5	24	5	27	5	24	5
P.1.3	24	5	27	5	24	5	27	5	24	5
P.1.4	20	5	23	5	20	5	23	5	20	5
P.1.5	17	5	19	5	17	5	19	5	17	5
P.2.1	17	4	20	4	17	4	20	4	17	4
P.2.2	12	3	14	3	12	3	14	3	12	3
P.2.3	10	3	12	3	10	3	12	3	10	3
P.2.4	9	2	11	2	9	2	11	2	9	2
P.3.1	13	4	15	4	13	4	15	4	13	4
P.3.2	13	4	15	4	13	4	15	4	13	4
P.3.3										
P.4.1	9	3	10	3	9	3	10	3	9	3
P.4.2	8	2	9	2	9	2	10	2	9	2
M.1.1	8	3	9	3	8	3	9	3	8	3
M.2.1	7	2	8	2	7	2	9	2	7	2
M.3.1	7	2	8	2	6	2	7	2	6	2
K.1.1	30	6	35	6	30	6	35	6	30	6
K.1.2	24	6	28	6	24	6	28	6	24	6
K.2.1	26	6	29	6	26	6	29	6	26	6
K.2.2	20	5	22	5	20	5	22	5	20	5
K.3.1	26	6	29	6	26	6	29	6	26	6
K.3.2	20	5	22	5	20	5	22	5	20	5
N.1.1	60	6	65	6	60	7	65	7	60	7
N.1.2	60	6	65	6	60	7	65	7	60	7
N.2.1	50	6	58	6	50	6	58	6	50	6
N.2.2	40	5	46	5	40	5	46	5	40	5
N.2.3	35	5	40	5	35	5	40	5	35	5
N.3.1	60	5	69	5	60	5	69	5	60	5
N.3.2	36	4	41	4	36	4	41	4	36	4
N.3.3	48	4	55	4	48	4	55	4	48	4
N.4.1	20	5	23	5	20	5	23	5	20	5
S.1.1	6	2	7	2	6	2	7	2	6	2
S.1.2	5	1	6	1	5	1	6	1	5	1
S.2.1	5	2	6	2	5	2	6	2	5	2
S.2.2	3	1	3	1	3	1	3	1	3	1
S.2.3	4	1	4	1	4	1	4	1	4	1
S.3.1	5	2	6	2	5	2	6	2	5	2
S.3.2	3	1	4	1	3	1	4	1	3	1
S.3.3										
H.1.1										
H.1.2										
H.1.3										
H.1.4										
H.2.1										
H.3.1										
O.1.1	20	5	23	5	20	5	23	5	20	5
O.1.2	20	5	23	5	20	5	23	5	20	5
O.2.1										
O.2.2	20	5	23	5	20	5	23	5	20	5
O.3.1										

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

v_c = Cutting speed in m/min.
F = Factor for feed selection
Feed approximate values see → **Page 54**

Feed rate guide values for HSS twist drills

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

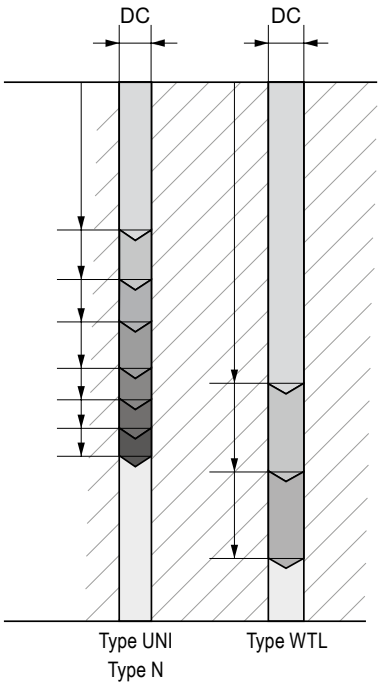
All the indicated data are guide values only and represent average values.

Speed for HSS drills

v_c m/min	Drill diameter in mm															
	2,0	2,5	3,15	4,0	5,0	6,3	8,0	10,0	12,5	16,0	20,0	25,0	31,5	40,0	50,0	63,0	80,0
	Speed in U/min																
80	12.500	10.000	8.000	6.300	5.000	4.000	3.200	2.500	2.000	1.600	1.250	1.000	800	630	500	400	320
63	10.000	8.000	6.300	5.000	4.000	3.200	2.500	2.000	1.600	1.250	1.000	800	630	500	400	320	250
50	8.000	6.300	5.000	4.000	3.200	2.500	2.000	1.600	1.250	1.000	800	630	500	400	320	250	200
40	6.300	5.000	4.000	3.200	2.500	2.000	1.600	1.250	1.000	800	630	500	400	320	250	200	160
32	5.000	4.000	3.200	2.500	2.000	1.600	1.250	1.000	800	630	500	400	320	250	200	160	125
25	4.000	3.200	2.500	2.000	1.600	1.250	1.000	800	630	500	400	320	250	200	160	125	100
20	3.200	2.500	2.000	1.600	1.250	1.000	800	630	500	400	320	250	200	160	125	100	80
16	2.500	2.000	1.600	1.250	1.000	800	630	500	400	320	250	200	160	125	100	80	63
12	2.000	1.600	1.250	1.000	800	630	500	400	320	250	200	160	125	100	80	63	50
10	1.600	1.250	1.000	800	630	500	400	320	250	200	160	125	100	80	63	50	40
8	1.250	1.000	800	630	500	400	320	250	200	160	125	100	80	63	50	40	32
6	1.000	800	630	500	400	320	250	200	160	125	100	80	63	50	40	32	25
5	800	630	500	400	320	250	200	160	125	100	80	63	50	40	32	25	20
4	630	500	400	320	250	200	160	125	100	80	63	50	40	32	25	20	16
3	500	400	320	250	200	160	125	100	80	63	50	40	32	25	20	16	12

Peck frequency for deep drilling

- Cutting edge needs to be sufficiently cooled; this is achieved by removing chips from the hole
- Chip removal frequency depends on the material to be machined, the hole depth and the drill type used
- Using a drill with a flat flute profile (WTL) significantly improves chip transport, which makes it possible to reduce the number of chip removal processes
- When drilling into tough materials and materials that tend to jam, chips should be removed for hole depths ≥ 4xD and the cutting speed v_c reduced as follows: by 10% for hole depths > 4xD, by 15-20% for hole depths > 6xD. It is also recommended to cool using emulsion.
- In the case of deep holes and to improve the positional accuracy, it is recommended to bore a pilot/centring hole.
- Drills with coolant holes and a thro' coolant supply are recommended for extremely deep holes or horizontal drilling applications



Coatings

TiN
- TiN coating
- Maximum application temperature: 450°C

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

vap.
- Vaporised
- Vaporisation (vapour-deposition) prevents cold welds from forming on the tool and increases the surface hardness and thus the wear resistance

F.-nit
- Titanium carbon nitride based PVD coating particularly suitable for steel machining
- Applicable up to approx. 450°C

Cutting materials

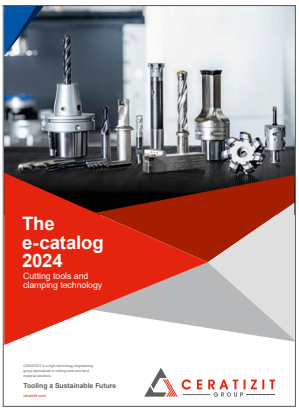
HSS
- Conventional high speed steel
- Universal cutting material

HSS-E
- Cobalt-alloyed high speed steel
- Cutting material with increased elevated-temperature hardness and heat resistance as well as wear resistance
- Suitable for high cutting temperatures and difficult-to-machine materials

HSS-E-PM
- Cobalt-alloyed high speed steel, produced using powder metallurgy
- Cutting material with a very tight and homogeneous structure
- High hardness, heat resistance and wear resistance

Metric Products

The entire content of this chapter can be found
in the Metric Catalog.
Use the QR code or the link shown below.



https://cutting.tools/us/en/digitalcatalogmetric



Solid drilling and bore machining	Metric Catalog	HSS drilling	1
	Metric Catalog	Solid carbide drilling	2
		Indexable drilling	3
		Reaming and Countersinking	4
		Indexable Boring	5
Threading	Metric Catalog	Taps and thread formers	6
	Metric Catalog	Circular and Thread Milling	7
	Metric Catalog	Thread turning	8
Turning		Indexable Turning	9
		Multifunction	10
		Parting and Grooving	11
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WNT \ Performance

Premium quality tools for high performance.

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

WNT \ Standard

Quality tools for standard applications.

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

Symbol explanation

Shank


Plain cylindrical shank


Cylindrical shank with lateral driving face „Weldon“


Cylindrical shank with angled clamping flat „Whistle Notch“


Cylindrical shank with lateral driving face (similar to ISO 9766)

Tool types

HFDS

An explanation of the tool types can be found on → **Page 158**.



Version


Int. coolant supply


self-centering


▲ Pilot hole necessary
▲ min. 2xD

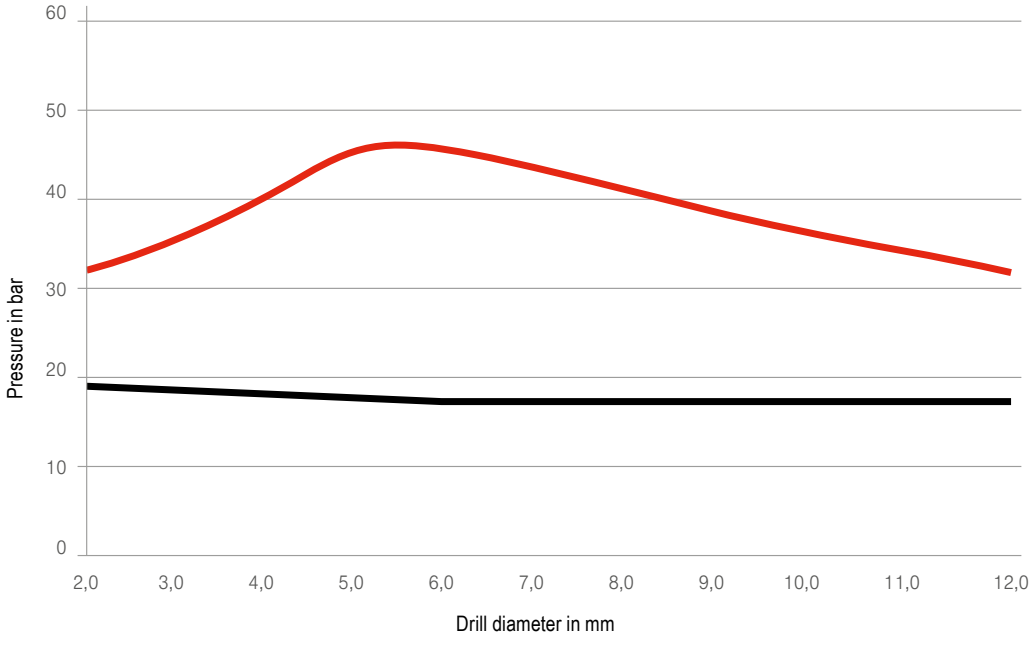
● = **Main Application**
○ = Extended application

Recommended application – WTX Performance Tools

● = Main Application
○ = Extended application

	WTX – Type	Solid drilling	Flat bottom hole	High-feed machining	High speed machining	Stack plate drilling	Drilling through a transverse hole	Angled hole entrance	Angled drill exit	Drilling a precise fit	deep holes	miniature holes
												
Monobloc Tool	WTX – UNI	●				●	●					
	WTX – Speed UNI	●			●	●						
	WTX – HFDS	●		●		●	●					
	WTX – Feed UNI	●		●		●	●	●	●			
	WTX – Speed VA	●			●							
	WTX – VA	●										
	WTX – Ti	●					●					
	WTX – AL	●										
	WTX – 180	●	●				●	●	●			
	WTX – Quattro 4F	●							○			
	WTX – Feed BR	●		●		○	○	○	○	●		
	WTX – H	●										
	WTX – TB	●									●	
	WTX – Micro	●									●	●
	WTX – Mini	●										●
Modular	WTX – Change Feed UNI	●		●				●	●			
	WTX – Change Drill heads	●										

Coolant diagram



Recommended coolant pressure
Minimum coolant Pressure

Additional application criteria for WTX drills can be found on → **page 159.**

Toolfinder

	Product name	Tool type	Description	Int. coolant supply	Replaceable cutting heads	1xD	3xD	5xD	8xD	12xD	Video
Steel/Universal	**Solid carbide drilling**										
	WTX	UNI	▲ highest performance for all materials up to 1200 N/mm² ▲ suitable for volume production	✗ ✓			13–17 24–27	36–39 42–46	60–63		▶
		UNI	▲ Quality tool for standard applications ▲ Attractive price-performance ratio	✗ ✓			18–21 28–31	40 51–54	64	72	▶
	WTX	Speed UNI	▲ High-performance drill for high cutting speeds ▲ Innovative DPX14S Dragonskin ▲ New cutting edge geometry	✓			24–27	42–46	60–63		▶
	WTX	HFDS	▲ High-feed drill with four cutting edges ▲ Innovative cutting edge geometry enables maximum positioning accuracy ▲ Optimal cooling with four spiral coolant holes	✓			35	59			▶
	WTX	Feed UNI	▲ High-feed drill with three cutting edges ▲ Suitable for difficult drilling applications ▲ High positioning accuracy	✓				58	68	73	▶
	WTX	Quattro 4F	▲ with additional guide land for best alignment accuracy, concentricity and positional accuracy	✓				42–46	60–63	69–71	
	WTX	180	▲ for inclined surfaces up to 45° and flat bottom holes	✓			34	57			
		N	▲ uncoated solid carbide drills ▲ universal application	✗			23	41			
	Mini-drill										
	WTX	MINI	▲ Available from Ø 0.1 mm ▲ Standard shank Ø 3.0 mm for use in heat shrink adapters	✗				78			
	WTX	MICRO	▲ Universal high-performance micro drill ▲ Specialised geometry and coating ▲ WTX – Micro (5xD) pilot drill for deep hole twist drill	✓				79	79	80	▶
	Drill Reamers										
	WTX	Feed BR/ BR100	▲ solid carbide high performance drill reamer ▲ excellent surface quality ▲ for blind and through holes	✓			83+85	84+85			
	Stepped drills										
	WTX	SB	▲ Solid carbide short step drill for core hole plus countersink for thread cutting and thread forming	✗ ✓			86 87				
	NC Spot Drill										
		NC-A	▲ spiral fluted ▲ 90°, 120°, 142°	✗		88+89					
	Centre drills										
		ZB	▲ spiral fluted ▲ 120°	✗		90					
	Drill with replaceable cutting heads										
	WTX	Change Feed UNI	▲ three-edged exchangeable head drill with solid carbide drill head type Feed UNI from Ø 14.0 mm to 32.0 mm ▲ universal application (steel, cast iron)	✓	91+92		93	93	94		▶
	WTX	Change UNI	▲ exchangeable head drill with type UNI solid carbide drill head from Ø 12.0 mm to 41.0 mm ▲ for steels <700 N/mm²	✓	95–100	101	101	102	102	103	▶
	WTX	Change P	▲ exchangeable head drill with type P solid carbide drill head from Ø 12.0 mm to 41.0 mm ▲ for steels >700 N/mm²	✓	95–100	101	101	102	102	103	▶
	WPC	Change UNI	▲ Indexable insert drill with solid carbide indexable insert type UNI from Ø 14.0 to 30.0 mm ▲ Universal application on steel and cast iron materials	✓	104		105	105			
	Exchangeable head NC spot drill										
		NC-A	▲ NC spot drill – exchange head system ▲ 90°, 120°, 142°	✗	107						

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

Toolfinder

	Product name	Tool type	Description	Int. coolant supply	Replaceable cutting heads	1xD	3xD	5xD	8xD	12xD	Video
Stainless steel	**Solid carbide drilling**										
	WTX	VA	▲ highest performance for corrosion and acid resistant steels and aluminium ▲ for volume production	✗ ✓			13–17 24–27	36–39 47–50	 65–67		
		VA	▲ Quality tool for corrosion-resistant and acid-resistant steels and aluminium ▲ Attractive price-performance ratio	✗ ✓			18–21 28–31	 51–54			
	WTX	Speed VA	▲ double the cutting speed in corrosion and acid-resistant steels and aluminum	✓				47–50		69–71	
	Drill with replaceable cutting heads										
	WTX	Change VA	▲ exchangeable head drill with solid carbide drill head type VA from Ø 12.0 mm to 32.0 mm	✓	95–100	101	101	102	102	103	▶
Cast iron	**Solid carbide drilling**										
	WTX	UNI	▲ highest performance for all materials up to 1200 N/mm² ▲ suitable for volume production	✗ ✓			13–17 24–27	36–39 42–46	 60–63		▶
	Drill with replaceable cutting heads										
	WTX	Change GG	▲ exchangeable head drill with solid carbide drill head type GG from Ø 12.0 mm to 32.0 mm	✓	95–100	101	101	102	102	103	▶
Non-ferrous metals	**Solid carbide drilling**										
	WTX	AL	▲ solid carbide high performance drill, especially for the machining of aluminum, copper and brass ▲ for volume production	✓				47–50	65–67	69–71	
	Drill with replaceable cutting heads										
	WTX	Change AL	▲ exchangeable head drill with solid carbide drill head type AL from Ø 12.0 mm to 32.0 mm	✓	95–100	101	101	102	102	103	▶
Heat-resistant	**Solid carbide drilling**										
	WTX	Ti	▲ highest performance in titanium, titanium alloys and heat resistant alloys	✓			32+33	55+56			
Tempered steel	**Solid carbide drilling**										
	WTX	H	▲ highest performance in hardened steel from 46 to 70 HRC	✗			22				▶

	Product name	Tool type	Description	Int. coolant supply	16xD	20xD	25xD	30xD	40xD	50xD	Video
	Deep Hole Drills										
Steel/Universal	WTX	MICRO	▲ Available from Ø 0.8 mm ▲ Universal high-performance micro deep hole twist drill ▲ Specialised geometry and coating ▲ Hole depths up to 30xD possible	✓	80	81	81	82			▶
	WTX	CP 20 UNI	▲ Ensures an even safer deep hole drilling process ▲ Excellent alignment precision ▲ For optimal guidance of the deep hole twist drill for hole depths > 30xD	✓		74					
	WTX	TB UNI	▲ solid carbide deep hole drill to 50xD without peck ▲ 4 facet geometry for excellent alignment accuracy	✓	75	75	76	76	77	77	
Non-ferrous metals	WTX	TB ALU	▲ solid carbide deep hole drills, up to 30xD without pecking ▲ 6-facet head geometry for excellent alignment accuracy	✓	75	75	76	76			

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

Overview Solid Carbide Drills

	Product name	Tool type	Boring depth	Diameter in mm Ø DC	P Steel	M Stainless steel	K Cast iron	N Non-ferrous metals	S Heat-resistant	H Tempered steel	O Non metal materials		coated ■	uncoated □	WNT \ Performance / WNT \ Standard Page No.
3xD without thro' coolant															
	WTX	UNI	≤ 3xD	3–25	●		●			○			■		13–17
	WTX	VA	≤ 3xD	2–20	○	●	○	○	●				■		13–17
		UNI	≤ 3xD	1–20	●		●						■		18–21
		VA	≤ 3xD	1–20	○	●		○	○		○		■		18–21
	WTX	H	≤ 3xD	2,55–14	○		●			●		up to 70 HRC	■		22
		N	≤ 3xD	0,5–20	○		●	●	○					□	23
3xD with thro' coolant															
	WTX	Speed UNI	≤ 3xD	3–20	●	●	●						■		24–27
	WTX	UNI	≤ 3xD	3–25	●		●			○			■		24–27
	WTX	VA	≤ 3xD	3–20	○	●	○	○	●				■		24–27
		UNI	≤ 3xD	1–20	●	●	●	○					■		28–31
		VA	≤ 3xD	1–20	○	●		●	○		○		■		28–31
	WTX	Ti	≤ 3xD	3–20	○	●			●				■		32+33
	WTX	180	≤ 3xD	3–20	●	●	●					180° Point angle	■		34
	WTX	HFDS	≤ 3xD	6–16	●	○	●	○			○	4 flute	■		35
5xD without thro' coolant															
	WTX	UNI	≤ 5xD	3–20	●		●			○			■		36–39
	WTX	VA	≤ 5xD	3–20	○	●	○	○	●				■		36–39
		UNI	≤ 5xD	3–20	●		●						■		40
		N	≤ 5xD	0,5–16	○		●	●	○					□	41

Overview Solid Carbide Drills

	Product name	Tool type	Boring depth	Diameter in mm Ø DC	P Steel	M Stainless steel	K Cast iron	N Non-ferrous metals	S Heat-resistant	H Tempered steel	O Non metal materials		coated ■	uncoated □	WNT \ Performance / WNT \ Standard Page No.
5xD with thro' coolant															
	WTX	Speed UNI	≤ 5xD	3–18	●	●	●						■		42–46
	WTX	UNI	≤ 5xD	3–25	●		●				○		■		42–46
	WTX	Quattro 4F	≤ 5xD	3–18	●		●				○		■		42–46
	WTX	Speed VA	≤ 5xD	3–20	●	●	●	○	●				■		47–50
	WTX	VA	≤ 5xD	3–20	○	●	○	○	●				■		47–50
	WTX	AL	≤ 5xD	2,5–20				●					■		47–50
		UNI	≤ 5xD	1–20	●	●	●	○					■		51–54
		VA	≤ 5xD	1–20	○	●		●	○		○		■		51–54
	WTX	Ti	≤ 5xD	3–20	○	●			●				■		55+56
	WTX	180	≤ 5xD	3–20	●	●	●					180° Point angle	■		57
	WTX	Feed UNI	≤ 5xD	4–20	●	●	●	○				3 flute	■		58
	WTX	HFDS	≤ 5xD	6–16	●	○	●	○			○	4 flute	■		59
8xD with thro' coolant															
	WTX	Speed UNI	≤ 8xD	3–18	●	●	●						■		60–63
	WTX	UNI	≤ 8xD	3–20	●		●				○		■		60–63
	WTX	Quattro 4F	≤ 8xD	3–18	●		●				○		■		60–63
		UNI	≤ 8xD	3–20	●	●	●						■		64
	WTX	VA	≤ 8xD	3–20	○	●	○	○	●				■		65–67
	WTX	AL	≤ 8xD	3–20				●					■		65–67
	WTX	Feed UNI	≤ 8xD	4–20	●	●	●	○				3 flute	■		68

Overview Solid Carbide Drills

	Product name	Tool type	Boring depth	Diameter in mm Ø DC	Steel P	Stainless steel M	Cast iron K	Non-ferrous metals N	Heat-resistant S	Tempered steel H	Non metal materials O		coated ■	uncoated □	WNT \ Performance Page No.	WNT \ Standard
12xD with thro' coolant																
	WTX	Speed VA	≤ 12xD	3 – 17,5	●	●	●	○	●				■		69–71	
	WTX	Quattro 4F	≤ 12xD	3 – 18	●		●			○			■		69–71	
	WTX	AL	≤ 12xD	3 – 20				●					■		69–71	
		UNI	≤ 12xD	3 – 20	●	●	●						■			72
	WTX	Feed UNI	≤ 12xD	4 – 20	●	●	●	○				3 flute	■		73	
Deep hole twist drill 16xD to 50xD																
	WTX	CP 20 UNI	≤ 20xD	3 – 9	●	●	●		○			Co-pilot drill	■		74	
	WTX	TB UNI	≤ 16xD ≤ 20xD	2 – 12	●	●	●		○				■		75	
	WTX	TB UNI	≤ 25xD ≤ 30xD	2 – 12	●	●	●		○				■		76	
	WTX	TB UNI	≤ 40xD	3 – 9	●	●	●		○				■		77	
	WTX	TB UNI	≤ 50xD	3 – 6,8	●	●	●		○				■		77	
	WTX	TB ALU	≤ 16xD ≤ 20xD	2 – 12				●					■		75	
	WTX	TB ALU	≤ 25xD ≤ 30xD	2 – 12				●					■		76	

Overview Solid Carbide Drills

	Product name	Tool type	Boring depth	Diameter in mm Ø DC	Steel P	Stainless steel M	Cast iron K	Non-ferrous metals N	Heat-resistant S	Tempered steel H	Non metal materials O		coated ■	uncoated □	WNT \ Performance / WNT \ Standard	Page No.
Micro drill 5xD to 30xD																
	WTX	MINI	≤ 5xD	0,1 – 2,9	○		●	●	○				■			78
	WTX	MICRO	≤ 5xD	0,8 – 2,9	●	●	●		○			with thro' coolant	■			79
	WTX	MICRO	≤ 8xD	0,8 – 2,9	●	●	●		○			with thro' coolant	■			79
	WTX	MICRO	≤ 12xD	0,8 – 2,9	●	●	●		○			with thro' coolant	■			80
	WTX	MICRO	≤ 16xD	0,8 – 2,9	●	●	●					with thro' coolant	■			80
	WTX	MICRO	≤ 20xD	0,8 – 2,9	●	●	●					with thro' coolant	■			81
	WTX	MICRO	≤ 25xD	0,8 – 2,9	●	●	●					with thro' coolant	■			81
	WTX	MICRO	≤ 30xD	0,8 – 2,9	●	●	●					with thro' coolant	■			82
Drill Reamers																
	WTX	Feed BR100	≤ 3xD ≤ 5xD	3,97 – 12,02	●	●	●					1/100 3 flute	■			83+84
	WTX	Feed BR	≤ 3xD	4 – 16	●	●	●					Tolerance H7 3 flute	■			85
	WTX	Feed BR	≤ 5xD	4 – 20	●	●	●					Tolerance H7 3 flute	■			85
Stepped drills																
	WTX	SB		2,5 – 14	●		●				○	Thread cutting	■			86
	WTX	SB		2,8 – 15	●		●				○	Thread forming	■			86
	WTX	SB		3,3 – 14	●		●				○	Thread cutting with thro' coolant	■			87
	WTX	SB		3,7 – 15	●		●				○	Thread forming with thro' coolant	■			87

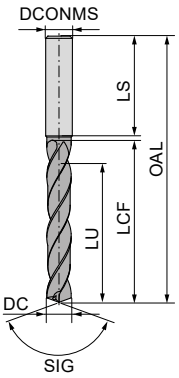
Overview Solid Carbide Drills

	Product name	Tool type	Point angle SIG	Diameter in mm Ø DC	P Steel	M Stainless steel	K Cast iron	N Non-ferrous metals	S Heat-resistant	H Tempered steel	O Non metal materials		■ coated	□ uncoated	WNT \ Performance / WNT \ Standard Page No.
NC Spot Drill															
		NC–A	90° 120° 142°	2–20	●		●	●						□	88
		NC–A	90° 120° 142°	2–20	●		●	●			○		■		88
		NC–A	90° 120° 142°	3–16	●		●	●			○	long version	■		89
Centre drills															
		ZB	120°	0,5–6,3	●		●	●						□	90
Drill with replaceable cutting heads															
Replaceable cutting heads															
	WTX	Change Feed		14–32	●		●					3 Edges	■		91+92
	WTX	Change UNI		12–41	●		●						■		95–100
	WTX	Change P		12–41	●		●						■		95–100
	WTX	Change VA		12–32	○	●	●		●				■		95–100
	WTX	Change GG		12–32			●						■		95–100
	WTX	Change ALU		12–32				●					■		95–100
	WPC	Change UNI		14–30	●		●						■		104
Tool holder															
	WTX	Change Feed		14–32								3xD / 5xD / 8xD			93+94
	WTX	Change		12–41								1xD / 3xD / 5xD / 8xD / 12xD			101–103
	WPC	Change		14–30								3xD / 5xD			105
MultiChange NC spot drill															
		NC–A	90° 120° 142°	8–20	●	●	●	●					■		107

WTX – High Performance Drill, DIN 6537

≤ 3xD

NOF = 2





SIG 140°
Solid carbide

SIG 140°
Solid carbide

SIG 140°
Solid carbide

SIG 140°
Solid carbide

DC m7 mm	DCONMS h6 mm	OAL mm	LCF mm	LU mm	LS mm	11 777 ...	11 778 ...	11 776 ...	10 731 ...
2,00	6	58	16	11	36				020
2,10	6	58	16	11	36				021
2,20	6	58	16	11	36				022
2,30	6	58	16	11	36				023
2,33	6	58	16	11	36				823
2,40	6	58	16	11	36				024
2,43	6	58	16	11	36				824
2,50	6	58	16	11	36				025
2,55	6	58	16	11	36				825
2,60	6	58	16	11	36				026
2,62	6	58	16	11	36				826
2,70	6	58	16	11	36				027
2,80	6	58	16	11	36				028
2,90	6	58	16	11	36				029
3,00	6	62	20	14	36	03000	03000	03000	030
3,10	6	62	20	14	36	03100	03100	03100	031
3,15	6	62	20	14	36	03150	03150	03150	831
3,20	6	62	20	14	36	03200	03200	03200	032
3,22	6	62	20	14	36	03220	03220	03220	832
3,25	6	62	20	14	36	03250	03250	03250	890
3,30	6	62	20	14	36	03300	03300	03300	033
3,40	6	62	20	14	36	03400	03400	03400	034
3,50	6	62	20	14	36	03500	03500	03500	035
3,60	6	62	20	14	36	03600	03600	03600	036
3,70	6	62	20	14	36	03700	03700	03700	037
3,80	6	66	24	17	36	03800	03800	03800	038
3,85	6	66	24	17	36	03850	03850	03850	838
3,90	6	66	24	17	36	03900	03900	03900	039
4,00	6	66	24	17	36	04000	04000	04000	040
4,10	6	66	24	17	36	04100	04100	04100	041
4,20	6	66	24	17	36	04200	04200	04200	042
4,25	6	66	24	17	36	04250	04250	04250	
4,30	6	66	24	17	36	04300	04300	04300	043
4,35	6	66	24	17	36	04350	04350	04350	843
4,40	6	66	24	17	36	04400	04400	04400	044
4,45	6	66	24	17	36	04450	04450	04450	844
4,50	6	66	24	17	36	04500	04500	04500	045
4,60	6	66	24	17	36	04600	04600	04600	046
4,65	6	66	24	17	36	04650	04650	04650	900
4,70	6	66	24	17	36	04700	04700	04700	047
4,80	6	66	28	20	36	04800	04800	04800	048
P						●	●	●	○
M									●
K						●	●	●	○
N									○
S									●
H						○	○	○	
O									

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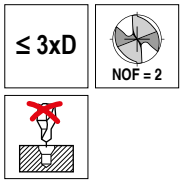
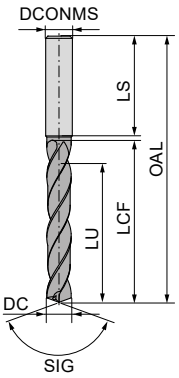
WTX – High Performance Drill, DIN 6537







						SIG 140° Solid carbide	SIG 140° Solid carbide	SIG 140° Solid carbide	SIG 140° Solid carbide
						11 777 ...	**11 778 ...**	**11 776 ...**	**10 731 ...**
DC_{m7} mm	$DCONMS_{h6}$ mm	OAL mm	LCF mm	LU mm	LS mm				
4,90	6	66	28	20	36	**04900**	**04900**	**04900**	**049**
4,95	6	66	28	20	36	**04950**	**04950**	**04950**	
5,00	6	66	28	20	36	**05000**	**05000**	**05000**	**050**
5,05	6	66	28	20	36	**05050**	**05050**	**05050**	
5,10	6	66	28	20	36	**05100**	**05100**	**05100**	**051**
5,20	6	66	28	20	36	**05200**	**05200**	**05200**	**052**
5,30	6	66	28	20	36	**05300**	**05300**	**05300**	**053**
5,40	6	66	28	20	36	**05400**	**05400**	**05400**	**054**
5,50	6	66	28	20	36	**05500**	**05500**	**05500**	**055**
5,55	6	66	28	20	36	**05550**	**05550**	**05550**	**902**
5,60	6	66	28	20	36	**05600**	**05600**	**05600**	**056**
5,70	6	66	28	20	36	**05700**	**05700**	**05700**	**057**
5,75	6	66	28	20	36	**05750**	**05750**	**05750**	**916**
5,80	6	66	28	20	36	**05800**	**05800**	**05800**	**058**
5,90	6	66	28	20	36	**05900**	**05900**	**05900**	**059**
5,95	6	66	28	20	36	**05950**	**05950**	**05950**	**959**
6,00	6	66	28	20	36	**06000**	**06000**	**06000**	**060**
6,10	8	79	34	24	36	**06100**	**06100**	**06100**	**061**
6,20	8	79	34	24	36	**06200**	**06200**	**06200**	**062**
6,30	8	79	34	24	36	**06300**	**06300**	**06300**	**063**
6,40	8	79	34	24	36	**06400**	**06400**	**06400**	**064**
6,50	8	79	34	24	36	**06500**	**06500**	**06500**	**065**
6,60	8	79	34	24	36	**06600**	**06600**	**06600**	**066**
6,70	8	79	34	24	36	**06700**	**06700**	**06700**	**067**
6,80	8	79	34	24	36	**06800**	**06800**	**06800**	**068**
6,90	8	79	34	24	36	**06900**	**06900**	**06900**	**069**
7,00	8	79	34	24	36	**07000**	**07000**	**07000**	**070**
7,10	8	79	41	29	36	**07100**	**07100**	**07100**	**071**
7,20	8	79	41	29	36	**07200**	**07200**	**07200**	**072**
7,30	8	79	41	29	36	**07300**	**07300**	**07300**	**073**
7,40	8	79	41	29	36	**07400**	**07400**	**07400**	**074**
7,45	8	79	41	29	36	**07450**	**07450**	**07450**	**924**
7,50	8	79	41	29	36	**07500**	**07500**	**07500**	**075**
7,60	8	79	41	29	36	**07600**	**07600**	**07600**	**076**
7,70	8	79	41	29	36	**07700**	**07700**	**07700**	**077**
7,80	8	79	41	29	36	**07800**	**07800**	**07800**	**078**
7,90	8	79	41	29	36	**07900**	**07900**	**07900**	**079**
8,00	8	79	41	29	36	**08000**	**08000**	**08000**	**080**
8,10	10	89	47	35	40	**08100**	**08100**	**08100**	**081**
8,20	10	89	47	35	40	**08200**	**08200**	**08200**	**082**
8,30	10	89	47	35	40	**08300**	**08300**	**08300**	**083**
P						●	●	●	○
M									●
K						●	●	●	○
N									○
S									●
H						○	○	○	
O									

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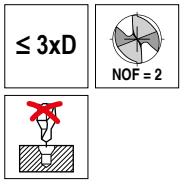
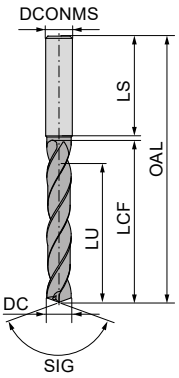
WTX – High Performance Drill, DIN 6537







SIG 140°
Solid carbide

SIG 140°
Solid carbide

SIG 140°
Solid carbide

SIG 140°
Solid carbide

DC m7 mm	DCONMS h6 mm	OAL mm	LCF mm	LU mm	LS mm	11 777 ...	11 778 ...	11 776 ...	10 731 ...
8,40	10	89	47	35	40	08400	08400	08400	084
8,50	10	89	47	35	40	08500	08500	08500	085
8,60	10	89	47	35	40	08600	08600	08600	086
8,70	10	89	47	35	40	08700	08700	08700	087
8,80	10	89	47	35	40	08800	08800	08800	088
8,90	10	89	47	35	40	08900	08900	08900	089
9,00	10	89	47	35	40	09000	09000	09000	090
9,10	10	89	47	35	40	09100	09100	09100	091
9,20	10	89	47	35	40	09200	09200	09200	092
9,30	10	89	47	35	40	09300	09300	09300	093
9,35	10	89	47	35	40	09350	09350	09350	930
9,40	10	89	47	35	40	09400	09400	09400	094
9,45	10	89	47	35	40	09450	09450	09450	994
9,50	10	89	47	35	40	09500	09500	09500	095
9,60	10	89	47	35	40	09600	09600	09600	096
9,70	10	89	47	35	40	09700	09700	09700	097
9,80	10	89	47	35	40	09800	09800	09800	098
9,90	10	89	47	35	40	09900	09900	09900	099
10,00	10	89	47	35	40	10000	10000	10000	100
10,10	12	102	55	40	45	10100	10100	10100	101
10,20	12	102	55	40	45	10200	10200	10200	102
10,30	12	102	55	40	45	10300	10300	10300	103
10,40	12	102	55	40	45	10400	10400	10400	104
10,50	12	102	55	40	45	10500	10500	10500	105
10,55	12	102	55	40	45	10550	10550	10550	932
10,60	12	102	55	40	45	10600	10600	10600	106
10,70	12	102	55	40	45	10700	10700	10700	107
10,75	12	102	55	40	45	10750	10750	10750	
10,80	12	102	55	40	45	10800	10800	10800	108
10,90	12	102	55	40	45	10900	10900	10900	109
11,00	12	102	55	40	45	11000	11000	11000	110
11,10	12	102	55	40	45	11100	11100	11100	111
11,20	12	102	55	40	45	11200	11200	11200	112
11,25	12	102	55	40	45	11250	11250	11250	912
11,30	12	102	55	40	45	11300	11300	11300	113
11,35	12	102	55	40	45	11350	11350	11350	913
11,40	12	102	55	40	45	11400	11400	11400	114
11,45	12	102	55	40	45	11450	11450	11450	914
11,50	12	102	55	40	45	11500	11500	11500	115
11,60	12	102	55	40	45	11600	11600	11600	116
11,70	12	102	55	40	45	11700	11700	11700	117
P						●	●	●	○
M									●
K						●	●	●	○
N									○
S									●
H						○	○	○	
O									

→ v_c Page 110+112

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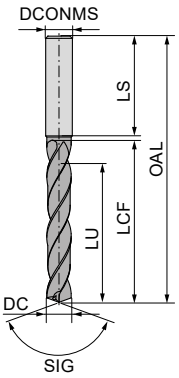
WTX – High Performance Drill, DIN 6537

≤ 3xD

NOF = 2





SIG 140°
Solid carbide

SIG 140°
Solid carbide

SIG 140°
Solid carbide

SIG 140°
Solid carbide

DC m7 mm	DCONMS h6 mm	OAL mm	LCF mm	LU mm	LS mm	11 777 ...	11 778 ...	11 776 ...	10 731 ...
11,80	12	102	55	40	45	11800	11800	11800	118
11,90	12	102	55	40	45	11900	11900	11900	119
12,00	12	102	55	40	45	12000	12000	12000	120
12,15	14	107	60	43	45	12150	12150	12150	921
12,25	14	107	60	43	45	12250	12250	12250	
12,50	14	107	60	43	45	12500	12500	12500	125
12,55	14	107	60	43	45	12550	12550	12550	925
12,70	14	107	60	43	45	12700	12700	12700	
12,80	14	107	60	43	45	12800	12800	12800	128
12,90	14	107	60	43	45	12900	12900	12900	
13,00	14	107	60	43	45	13000	13000	13000	130
13,10	14	107	60	43	45	13100	13100	13100	
13,30	14	107	60	43	45	13300	13300	13300	
13,35	14	107	60	43	45	13350	13350	13350	933
13,50	14	107	60	43	45	13500	13500	13500	135
13,70	14	107	60	43	45	13700	13700	13700	
13,80	14	107	60	43	45	13800	13800	13800	138
14,00	14	107	60	43	45	14000	14000	14000	140
14,20	16	115	65	45	48	14200	14200	14200	
14,50	16	115	65	45	48	14500	14500	14500	145
14,80	16	115	65	45	48	14800	14800	14800	148
15,00	16	115	65	45	48	15000	15000	15000	150
15,10	16	115	65	45	48	15100	15100	15100	
15,25	16	115	65	45	48	15250	15250	15250	
15,30	16	115	65	45	48	15300	15300	15300	
15,35	16	115	65	45	48	15350	15350	15350	953
15,50	16	115	65	45	48	15500	15500	15500	155
15,60	16	115	65	45	48	15600	15600	15600	
15,80	16	115	65	45	48	15800	15800	15800	158
16,00	16	115	65	45	48	16000	16000	16000	160
16,05	18	123	73	51	48	16050	16050	16050	960
16,50	18	123	73	51	48	16500	16500	16500	165
16,80	18	123	73	51	48	16800	16800	16800	168
16,90	18	123	73	51	48	16900	16900	16900	
17,00	18	123	73	51	48	17000	17000	17000	170
17,50	18	123	73	51	48	17500	17500	17500	175
17,60	18	123	73	51	48	17600	17600	17600	
17,80	18	123	73	51	48	17800	17800	17800	178
18,00	18	123	73	51	48	18000	18000	18000	180
18,50	20	131	79	55	50	18500	18500	18500	185
18,80	20	131	79	55	50	18800	18800	18800	188
P						●	●	●	○
M									●
K						●	●	●	○
N									○
S									●
H						○	○	○	
O									

→ v_c Page 110+112

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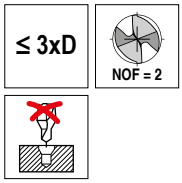
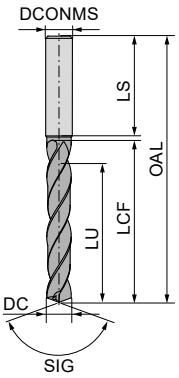
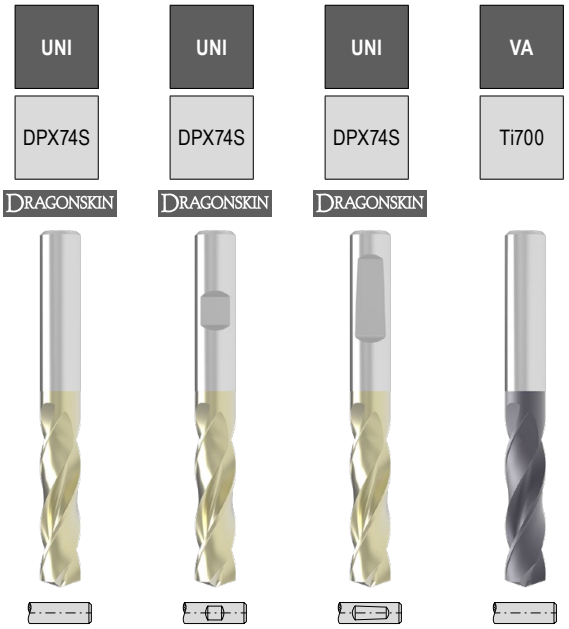
WTX – High Performance Drill, DIN 6537



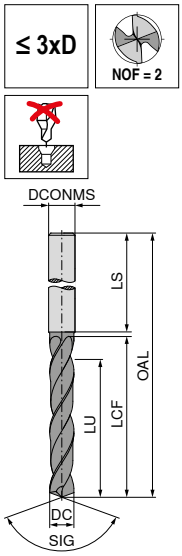


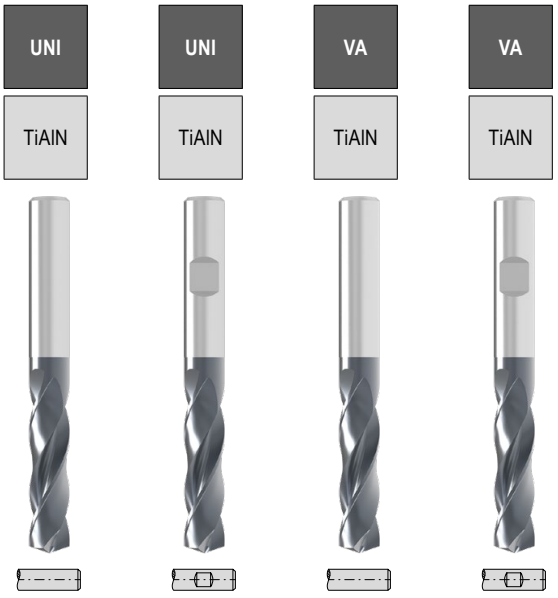


						SIG 140°		SIG 140°		SIG 140°		SIG 140°			
						Solid carbide		Solid carbide		Solid carbide		Solid carbide			
						11 777 ...		11 778 ...		11 776 ...		10 731 ...			
DC $_{m7}$ **mm**	DCONMS $_{h6}$ mm	OAL mm	LCF mm	LU mm	LS mm										
18,90	20	131	79	55	50	**18900**		**18900**		**18900**					
19,00	20	131	79	55	50	**19000**		**19000**		**19000**		**190**			
19,35	20	131	79	55	50	**19350**		**19350**		**19350**		**993**			
19,50	20	131	79	55	50	**19500**		**19500**		**19500**		**195**			
19,60	20	131	79	55	50	**19600**		**19600**		**19600**					
19,80	20	131	79	55	50	**19800**		**19800**		**19800**		**198**			
20,00	20	131	79	55	50	**20000**		**20000**		**20000**		**200**			
20,50	25	151	93	66	56	**20500**		**20500**		**20500**					
21,00	25	151	93	66	56	**21000**		**21000**		**21000**					
21,50	25	151	93	66	56	**21500**		**21500**		**21500**					
22,00	25	151	93	66	56	**22000**		**22000**		**22000**					
22,50	25	153	96	72	56	**22500**		**22500**		**22500**					
23,00	25	153	96	72	56	**23000**		**23000**		**23000**					
23,50	25	153	96	72	56	**23500**		**23500**		**23500**					
24,00	25	153	96	72	56	**24000**		**24000**		**24000**					
24,50	25	153	96	75	56	**24500**		**24500**		**24500**					
25,00	25	153	96	75	56	**25000**		**25000**		**25000**					
P						●		●		●		○			
M												●			
K						●		●		●		○			
N												○			
S												●			
H						○		○		○					
O															

→ v_c Page 110+112

High Performance Drill, DIN 6537





SIG 140° Solid carbide

SIG 140° Solid carbide

SIG 140° Solid carbide

SIG 140° Solid carbide

DC m7/h7 mm	DCONMS h6 mm	OAL mm	LCF mm	LU mm	LS mm	11 706 ...		11 707 ...		11 711 ...		11 712 ...	
1,00	4	45	7	5,5	28	01000				01000			
1,10	4	45	7	5,3	28	01100				01100			
1,20	4	45	7	5,2	28	01200				01200			
1,30	4	45	7	5,0	28	01300				01300			
1,40	4	45	7	4,9	28	01400				01400			
1,50	4	55	14	11,7	28	01500				01500			
1,60	4	55	14	11,6	28	01600				01600			
1,70	4	55	14	11,4	28	01700				01700			
1,80	4	55	14	11,3	28	01800				01800			
1,90	4	55	14	11,1	28	01900				01900			
2,00	4	55	20	17,0	28	02000				02000			
2,10	4	55	20	16,8	28	02100				02100			
2,20	4	55	20	16,7	28	02200				02200			
2,30	4	55	20	16,5	28	02300				02300			
2,40	4	55	20	16,4	28	02400				02400			
2,50	4	55	20	16,2	28	02500				02500			
2,60	4	55	20	16,1	28	02600				02600			
2,70	4	55	20	15,9	28	02700				02700			
2,80	4	55	20	15,8	28	02800				02800			
2,90	4	55	20	15,6	28	02900				02900			
3,00	6	62	20	15,5	36	03000		03000		03000		03000	
3,10	6	62	20	15,3	36	03100		03100		03100		03100	
3,20	6	62	20	15,2	36	03200		03200		03200		03200	
3,25	6	62	20	15,1	36	03250		03250					
3,30	6	62	20	15,0	36	03300		03300		03300		03300	
3,40	6	62	20	14,9	36	03400		03400		03400		03400	
3,50	6	62	20	14,7	36	03500		03500		03500		03500	
3,60	6	62	20	14,6	36	03600		03600		03600		03600	
3,70	6	62	20	14,4	36	03700		03700		03700		03700	
3,80	6	66	24	18,3	36	03800		03800		03800		03800	
3,90	6	66	24	18,1	36	03900		03900		03900		03900	
4,00	6	66	24	18,0	36	04000		04000		04000		04000	
4,10	6	66	24	17,8	36	04100		04100		04100		04100	
4,20	6	66	24	17,7	36	04200		04200		04200		04200	
4,30	6	66	24	17,5	36	04300		04300		04300		04300	
4,40	6	66	24	17,4	36	04400		04400		04400		04400	
4,50	6	66	24	17,2	36	04500		04500		04500		04500	
4,60	6	66	24	17,1	36	04600		04600		04600		04600	
4,65	6	66	24	17,0	36	04650		04650					
4,70	6	66	24	16,9	36	04700		04700		04700		04700	
P						●		●		○		○	
M										●		●	
K						●		●					
N										○		○	
S										○		○	
H													
O										○		○	

→ v_c Page 128+132

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

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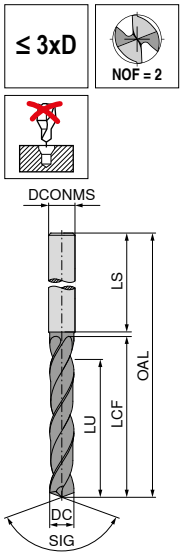
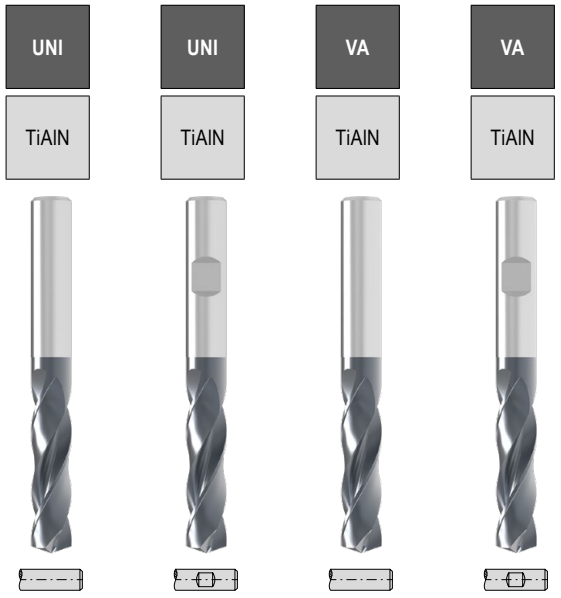
High Performance Drill, DIN 6537





SIG 140° Solid carbide | SIG 140° Solid carbide | SIG 140° Solid carbide | SIG 140° Solid carbide

DC m7/h7 mm	DCONMS h6 mm	OAL mm	LCF mm	LU mm	LS mm	11 706 ...	11 707 ...	11 711 ...	11 712 ...
4,80	6	66	28	20,8	36	04800	04800	04800	04800
4,90	6	66	28	20,6	36	04900	04900	04900	04900
5,00	6	66	28	20,5	36	05000	05000	05000	05000
5,10	6	66	28	20,3	36	05100	05100	05100	05100
5,20	6	66	28	20,2	36	05200	05200	05200	05200
5,30	6	66	28	20,0	36	05300	05300	05300	05300
5,40	6	66	28	19,9	36	05400	05400	05400	05400
5,50	6	66	28	19,7	36	05500	05500	05500	05500
5,55	6	66	28	19,6	36	05550	05550		
5,60	6	66	28	19,6	36	05600	05600	05600	05600
5,65	6	66	28	19,5	36	05650	05650		
5,70	6	66	28	19,4	36	05700	05700	05700	05700
5,80	6	66	28	19,3	36	05800	05800	05800	05800
5,90	6	66	28	19,1	36	05900	05900	05900	05900
6,00	6	66	28	19,0	36	06000	06000	06000	06000
6,10	8	79	34	24,8	36	06100	06100	06100	06100
6,20	8	79	34	24,7	36	06200	06200	06200	06200
6,30	8	79	34	24,5	36	06300	06300	06300	06300
6,40	8	79	34	24,4	36	06400	06400	06400	06400
6,50	8	79	34	24,2	36	06500	06500	06500	06500
6,60	8	79	34	24,1	36	06600	06600	06600	06600
6,70	8	79	34	23,9	36	06700	06700	06700	06700
6,80	8	79	34	23,8	36	06800	06800	06800	06800
6,90	8	79	34	23,6	36	06900	06900	06900	06900
7,00	8	79	34	23,5	36	07000	07000	07000	07000
7,10	8	79	41	30,3	36	07100	07100	07100	07100
7,20	8	79	41	30,2	36	07200	07200	07200	07200
7,30	8	79	41	30,0	36	07300	07300	07300	07300
7,40	8	79	41	29,9	36	07400	07400	07400	07400
7,50	8	79	41	29,7	36	07500	07500	07500	07500
7,55	8	79	41	29,6	36	07550	07550		
7,60	8	79	41	29,6	36	07600	07600	07600	07600
7,65	8	79	41	29,5	36	07650	07650		
7,70	8	79	41	29,4	36	07700	07700	07700	07700
7,80	8	79	41	29,3	36	07800	07800	07800	07800
7,90	8	79	41	29,1	36	07900	07900	07900	07900
8,00	8	79	41	29,0	36	08000	08000	08000	08000
8,10	10	89	47	34,8	40	08100	08100	08100	08100
8,20	10	89	47	34,7	40	08200	08200	08200	08200
8,30	10	89	47	34,5	40	08300	08300	08300	08300
P						●	●	○	○
M								●	●
K						●	●		
N								○	○
S								○	○
H									
O								○	○

→ v_c Page 128+132

Ø DC_{h7} for Type UNI / Ø DC_{m7} for Type VA

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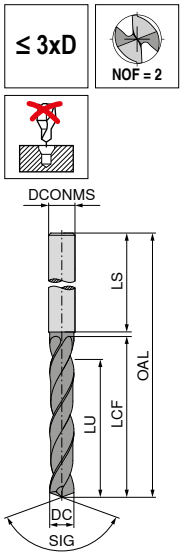
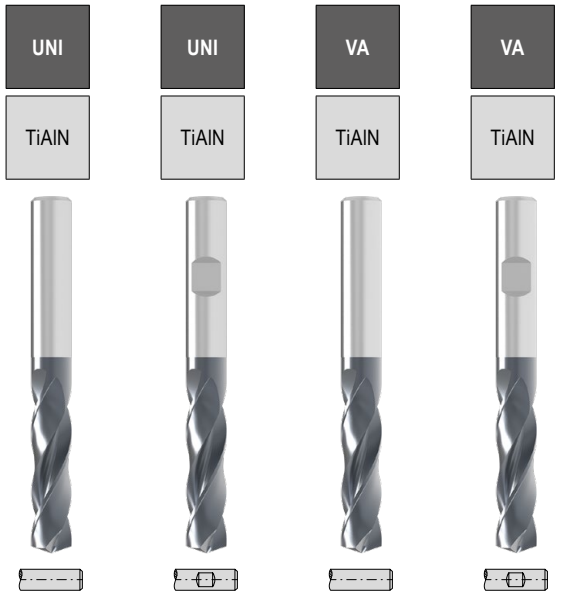
High Performance Drill, DIN 6537





SIG 140°
Solid carbide

SIG 140°
Solid carbide

SIG 140°
Solid carbide

SIG 140°
Solid carbide

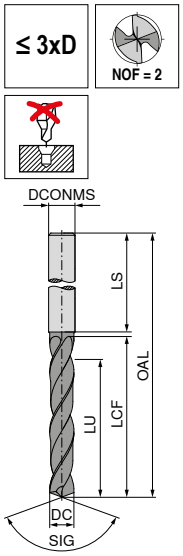
DC $_{m7/h7}$ mm	DCONMS $_{h6}$ mm	OAL mm	LCF mm	LU mm	LS mm	11 706 ...	11 707 ...	11 711 ...	11 712 ...
8,40	10	89	47	34,4	40	08400	08400	08400	08400
8,50	10	89	47	34,2	40	08500	08500	08500	08500
8,60	10	89	47	34,1	40	08600	08600	08600	08600
8,70	10	89	47	33,9	40	08700	08700	08700	08700
8,80	10	89	47	33,8	40	08800	08800	08800	08800
8,90	10	89	47	33,6	40	08900	08900	08900	08900
9,00	10	89	47	33,5	40	09000	09000	09000	09000
9,10	10	89	47	33,3	40	09100	09100	09100	09100
9,20	10	89	47	33,2	40	09200	09200	09200	09200
9,30	10	89	47	33,0	40	09300	09300	09300	09300
9,40	10	89	47	32,9	40	09400	09400	09400	09400
9,50	10	89	47	32,7	40	09500	09500	09500	09500
9,60	10	89	47	32,6	40	09600	09600	09600	09600
9,70	10	89	47	32,4	40	09700	09700	09700	09700
9,80	10	89	47	32,3	40	09800	09800	09800	09800
9,90	10	89	47	32,1	40	09900	09900	09900	09900
10,00	10	89	47	32,0	40	10000	10000	10000	10000
10,10	12	102	55	39,8	45	10100	10100	10100	10100
10,20	12	102	55	39,7	45	10200	10200	10200	10200
10,30	12	102	55	39,5	45	10300	10300	10300	10300
10,40	12	102	55	39,4	45	10400	10400	10400	10400
10,50	12	102	55	39,2	45	10500	10500	10500	10500
10,60	12	102	55	39,1	45	10600	10600	10600	10600
10,70	12	102	55	38,9	45	10700	10700	10700	10700
10,80	12	102	55	38,8	45	10800	10800	10800	10800
10,90	12	102	55	38,6	45	10900	10900	10900	10900
11,00	12	102	55	38,5	45	11000	11000	11000	11000
11,10	12	102	55	38,3	45	11100	11100	11100	11100
11,20	12	102	55	38,2	45	11200	11200	11200	11200
11,30	12	102	55	38,0	45	11300	11300	11300	11300
11,40	12	102	55	37,9	45	11400	11400	11400	11400
11,50	12	102	55	37,7	45	11500	11500	11500	11500
11,60	12	102	55	37,6	45	11600	11600	11600	11600
11,70	12	102	55	37,4	45	11700	11700	11700	11700
11,80	12	102	55	37,3	45	11800	11800	11800	11800
11,90	12	102	55	37,1	45	11900	11900	11900	11900
12,00	12	102	55	37,0	45	12000	12000	12000	12000
12,20	14	107	60	41,7	45	12200	12200	12200	12200
12,50	14	107	60	41,2	45	12500	12500	12500	12500
12,70	14	107	60	40,9	45	12700	12700	12700	12700
P						●	●	○	○
M								●	●
K						●	●		
N								○	○
S								○	○
H									
O								○	○

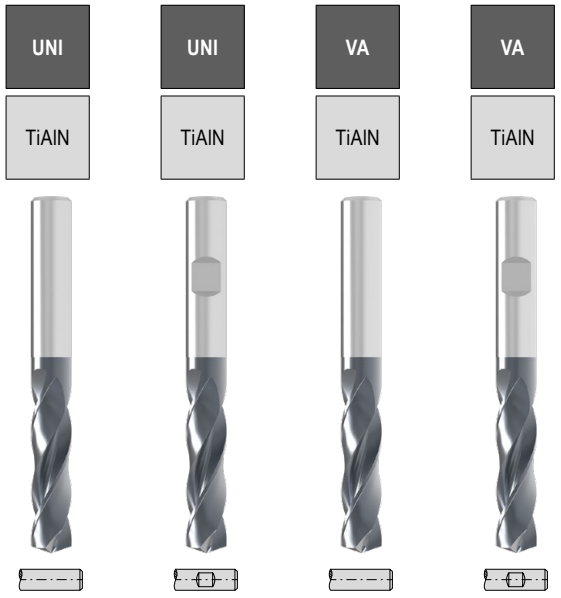
→ v_c Page 128+132

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

Continued on next page

High Performance Drill, DIN 6537





SIG 140° Solid carbide | SIG 140° Solid carbide | SIG 140° Solid carbide | SIG 140° Solid carbide

DC $_{m7/h7}$ mm	DCONMS $_{h6}$ mm	OAL mm	LCF mm	LU mm	LS mm	11 706 ...	11 707 ...	11 711 ...	11 712 ...
12,80	14	107	60	40,8	45	12800	12800	12800	12800
13,00	14	107	60	40,5	45	13000	13000	13000	13000
13,10	14	107	60	40,3	45	13100	13100	13100	13100
13,50	14	107	60	39,7	45	13500	13500	13500	13500
13,70	14	107	60	39,4	45			13700	13700
13,80	14	107	60	39,3	45	13800	13800	13800	13800
14,00	14	107	60	39,0	45	14000	14000	14000	14000
14,20	16	115	65	43,7	48	14200	14200	14200	14200
14,40	16	115	65	43,4	48	14400	14400	14400	14400
14,50	16	115	65	43,2	48	14500	14500	14500	14500
14,70	16	115	65	42,9	48			14700	14700
14,80	16	115	65	42,8	48	14800	14800	14800	14800
15,00	16	115	65	42,5	48	15000	15000	15000	15000
15,10	16	115	65	42,3	48	15100	15100	15100	15100
15,20	16	115	65	42,2	48	15200	15200	15200	15200
15,50	16	115	65	41,7	48	15500	15500	15500	15500
15,70	16	115	65	41,4	48			15700	15700
15,80	16	115	65	41,3	48	15800	15800	15800	15800
16,00	16	115	65	41,0	48	16000	16000	16000	16000
16,50	18	123	73	48,2	48	16500	16500	16500	16500
17,00	18	123	73	47,5	48	17000	17000	17000	17000
17,50	18	123	73	46,7	48	17500	17500	17500	17500
18,00	18	123	73	46,0	48	18000	18000	18000	18000
18,50	20	131	79	51,2	50	18500	18500	18500	18500
18,90	20	131	79	50,6	50	18900	18900	18900	18900
19,00	20	131	79	50,5	50	19000	19000	19000	19000
19,50	20	131	79	49,7	50	19500	19500	19500	19500
20,00	20	131	79	49,0	50	20000	20000	20000	20000
P						●	●	○	○
M								●	●
K						●	●		
N								○	○
S								○	○
H									
O								○	○

→ v_c Page 128+132

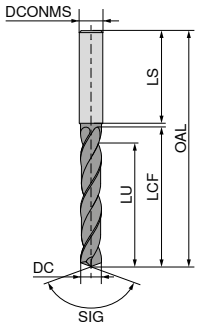
Ø DC_{h7} for Type UNI / **Ø DC_{m7}** for Type VA

WTX – High Performance Drill, factory standard

- ▲ Special cutting edge geometry
- ▲ Special flute geometry
- ▲ Optimised core thickness
- ▲ 46 to 70 HRC

≤ 3xD

NOF = 2



H

DPX64U

DRAGONSKIN



SIG 140°

Solid carbide

10 777 ...

DC h7 mm	DCONMS h6 mm	OAL mm	LCF mm	LU mm	LS mm	
2,55	4	55	20	16,1	28	02550
2,60	4	55	20	16,1	28	02600
2,70	4	55	20	15,9	28	02700
2,80	4	55	20	15,8	28	02800
2,90	4	55	20	15,6	28	02900
3,00	6	62	20	15,5	36	03000
3,10	6	62	20	15,3	36	03100
3,20	6	62	20	15,2	36	03200
3,30	6	62	20	15,0	36	03300
3,40	6	62	20	14,9	36	03400
3,50	6	62	20	14,7	36	03500
3,60	6	62	20	14,6	36	03600
3,70	6	62	20	14,4	36	03700
3,80	6	66	24	18,3	36	03800
3,90	6	66	24	18,1	36	03900
4,00	6	66	24	18,0	36	04000
4,10	6	66	24	17,8	36	04100
4,20	6	66	24	17,7	36	04200
4,30	6	66	24	17,5	36	04300
4,40	6	66	24	17,4	36	04400
4,50	6	66	24	17,2	36	04500
4,60	6	66	24	17,1	36	04600
4,70	6	66	24	16,9	36	04700
4,80	6	66	28	20,8	36	04800
4,90	6	66	28	20,6	36	04900
5,00	6	66	28	20,5	36	05000
5,10	6	66	28	20,3	36	05100
5,20	6	66	28	20,2	36	05200
5,30	6	66	28	20,0	36	05300
5,40	6	66	28	19,9	36	05400
5,50	6	66	28	19,7	36	05500
5,60	6	66	28	19,6	36	05600
5,70	6	66	28	19,4	36	05700
5,80	6	66	28	19,3	36	05800
5,90	6	66	28	19,1	36	05900
6,00	6	66	28	19,0	36	06000
6,10	8	79	34	24,8	36	06100
6,20	8	79	34	24,7	36	06200
6,30	8	79	34	24,5	36	06300
6,40	8	79	34	24,4	36	06400
6,50	8	79	34	24,2	36	06500
6,60	8	79	34	24,1	36	06600
6,70	8	79	34	23,9	36	06700
6,80	8	79	34	23,8	36	06800
6,90	8	79	34	23,6	36	06900
7,00	8	79	34	23,5	36	07000
7,10	8	79	41	30,3	36	07100
7,20	8	79	41	30,2	36	07200
7,30	8	79	41	30,0	36	07300
7,40	8	79	41	29,9	36	07400
7,50	8	79	41	29,7	36	07500

10 777 ...

DC h7 mm	DCONMS h6 mm	OAL mm	LCF mm	LU mm	LS mm	
7,60	8	79	41	29,6	36	07600
7,70	8	79	41	29,4	36	07700
7,80	8	79	41	29,3	36	07800
7,90	8	79	41	29,1	36	07900
8,00	8	79	41	29,0	36	08000
8,10	10	89	47	34,8	40	08100
8,20	10	89	47	34,7	40	08200
8,30	10	89	47	34,5	40	08300
8,40	10	89	47	34,4	40	08400
8,50	10	89	47	34,2	40	08500
8,60	10	89	47	34,1	40	08600
8,70	10	89	47	33,9	40	08700
8,80	10	89	47	33,8	40	08800
8,90	10	89	47	33,6	40	08900
9,00	10	89	47	33,5	40	09000
9,10	10	89	47	33,3	40	09100
9,20	10	89	47	33,2	40	09200
9,30	10	89	47	33,0	40	09300
9,40	10	89	47	32,9	40	09400
9,50	10	89	47	32,7	40	09500
9,60	10	89	47	32,6	40	09600
9,70	10	89	47	32,4	40	09700
9,80	10	89	47	32,3	40	09800
9,90	10	89	47	32,1	40	09900
10,00	10	89	47	32,0	40	10000
10,10	12	102	55	39,8	45	10100
10,20	12	102	55	39,7	45	10200
10,30	12	102	55	39,5	45	10300
10,40	12	102	55	39,4	45	10400
10,50	12	102	55	39,2	45	10500
10,60	12	102	55	39,1	45	10600
10,70	12	102	55	38,9	45	10700
10,80	12	102	55	38,8	45	10800
10,90	12	102	55	38,6	45	10900
11,00	12	102	55	38,5	45	11000
11,10	12	102	55	38,3	45	11100
11,20	12	102	55	38,2	45	11200
11,30	12	102	55	38,0	45	11300
11,40	12	102	55	37,9	45	11400
11,50	12	102	55	37,7	45	11500
11,60	12	102	55	37,6	45	11600
11,70	12	102	55	37,4	45	11700
11,80	12	102	55	37,3	45	11800
11,90	12	102	55	37,1	45	11900
12,00	12	102	55	37,0	45	12000
12,10	14	107	60	41,8	45	12100
12,20	14	107	60	41,7	45	12200
12,30	14	107	60	41,5	45	12300
12,40	14	107	60	41,4	45	12400
12,50	14	107	60	41,2	45	12500
12,60	14	107	60	41,1	45	12600
12,70	14	107	60	40,9	45	12700
12,80	14	107	60	40,8	45	12800
12,90	14	107	60	40,6	45	12900
13,00	14	107	60	40,5	45	13000
13,10	14	107	60	40,3	45	13100
13,20	14	107	60	40,2	45	13200
13,30	14	107	60	40,0	45	13300
13,40	14	107	60	39,9	45	13400
13,50	14	107	60	39,7	45	13500
13,60	14	107	60	39,6	45	13600
13,70	14	107	60	39,4	45	13700
13,80	14	107	60	39,3	45	13800
13,90	14	107	60	39,1	45	13900
14,00	14	107	60	39,0	45	14000

P	○
K	●
S	
H.1.1	●
H.1.2	●
H.1.3	●
H.1.4	●

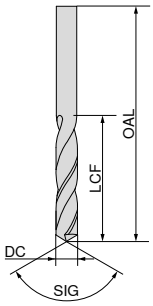
→ v_c Page 119

Twist drill similar to DIN 1897

▲ Helix angle 30°
▲ Shank Ø h7

≤ 3xD

NOF = 2



N



SIG 118°
Solid carbide

10 700 ...

DC h7 mm	OAL mm	LCF mm	
0,5	20	3,0	005
0,6	21	3,5	006
0,7	23	4,5	007
0,8	24	5,0	008
0,9	25	5,5	009
1,0	26	6,0	010
1,2	30	8,0	012
1,3	30	8,0	013
1,4	32	9,0	014
1,5	32	9,0	015
1,6	34	10,0	016
1,7	34	10,0	017
1,8	36	11,0	018
1,9	36	11,0	019
2,0	38	12,0	020
2,1	38	12,0	021
2,2	40	13,0	022
2,3	40	13,0	023
2,4	43	14,0	024
2,5	43	14,0	025
2,6	43	14,0	026
2,7	46	16,0	027
2,8	46	16,0	028
2,9	46	16,0	029
3,0	46	16,0	030
3,1	49	18,0	031
3,2	49	18,0	032
3,3	49	18,0	033
3,4	52	20,0	034
3,5	52	20,0	035
3,6	52	20,0	036
3,7	52	20,0	037
3,8	55	22,0	038
3,9	55	22,0	039
4,0	55	22,0	040
4,1	55	22,0	041
4,2	55	22,0	042
4,3	58	24,0	043
4,4	58	24,0	044
4,5	58	24,0	045
4,6	58	24,0	046
4,7	58	24,0	047
4,8	62	26,0	048
4,9	62	26,0	049
5,0	62	26,0	050
5,1	62	26,0	051
5,2	62	26,0	052
5,3	62	26,0	053
5,4	66	28,0	054
5,5	66	28,0	055
5,6	66	28,0	056
5,7	66	28,0	057

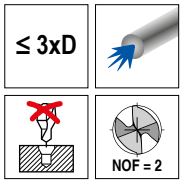
10 700 ...

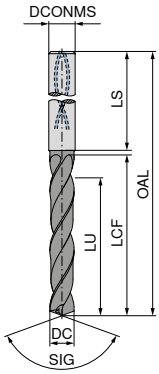
DC h7 mm	OAL mm	LCF mm	
5,8	66	28,0	058
5,9	66	28,0	059
6,0	66	28,0	060
6,1	70	31,0	061
6,2	70	31,0	062
6,3	70	31,0	063
6,4	70	31,0	064
6,5	70	31,0	065
6,6	70	31,0	066
6,7	70	31,0	067
6,8	74	34,0	068
6,9	74	34,0	069
7,0	74	34,0	070
7,1	74	34,0	071
7,2	74	34,0	072
7,3	74	34,0	073
7,4	74	34,0	074
7,5	74	34,0	075
7,6	79	37,0	076
7,7	79	37,0	077
7,8	79	37,0	078
7,9	79	37,0	079
8,0	79	37,0	080
8,1	79	37,0	081
8,2	79	37,0	082
8,3	79	37,0	083
8,4	79	37,0	084
8,5	79	37,0	085
8,6	84	40,0	086
8,7	84	40,0	087
8,8	84	40,0	088
8,9	84	40,0	089
9,0	84	40,0	090
9,1	84	40,0	091
9,2	84	40,0	092
9,3	84	40,0	093
9,4	84	40,0	094
9,5	84	40,0	095
9,6	89	43,0	096
9,7	89	43,0	097
9,8	89	43,0	098
9,9	89	43,0	099
10,0	89	43,0	100
10,2	89	43,0	102
10,5	89	43,0	105
10,8	95	47,0	108
11,0	95	47,0	110
11,2	95	47,0	112
11,5	95	47,0	115
11,8	95	47,0	118
12,0	102	51,0	120
12,5	102	51,0	125
13,0	102	51,0	130
13,5	107	54,0	135
14,0	107	54,0	140
14,5	111	56,0	145
15,0	111	56,0	150
15,5	115	58,0	155
16,0	115	58,0	160
18,0	123	62,0	180
20,0	131	66,0	200

P	○
M	
K	●
N	●
S	○
H	
O	

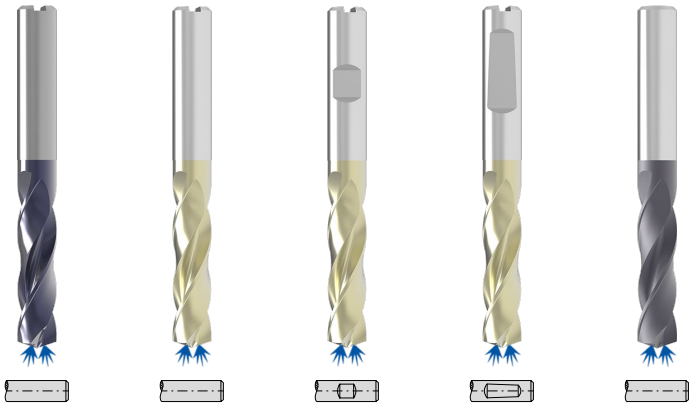
→ v_c Page 134

WTX – High Performance Drill, DIN 6537





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



SIG 145° Solid carbide	SIG 140° Solid carbide	SIG 140° Solid carbide	SIG 140° Solid carbide	SIG 140° Solid carbide
10 781 ...	**11 780 ...**	**11 781 ...**	**11 779 ...**	**10 734 ...**

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

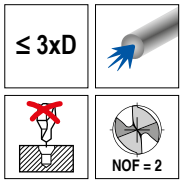
P	●	●	●	●	○
M	●				●
K	●	●	●	●	○
N					○
S					●
H		○	○	○	
O					

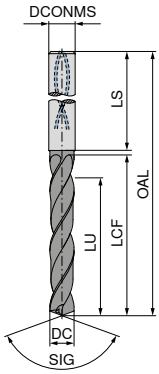
→ v_c Page 110–114

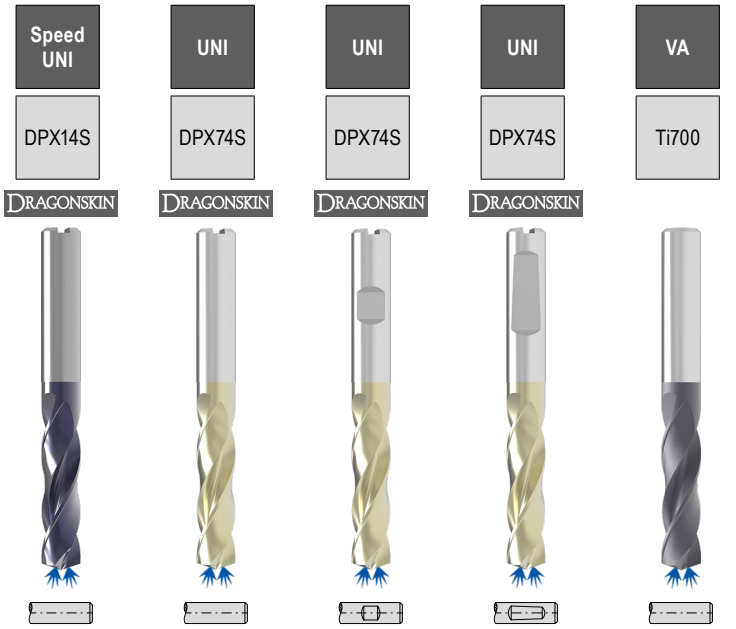
Ø DC_{m7} for Type UNI and VA / Ø DC_{h7} for Type Speed UNI

Continued on next page

WTX – High Performance Drill, DIN 6537







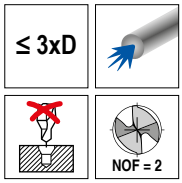
SIG 145° Solid carbide	SIG 140° Solid carbide	SIG 140° Solid carbide	SIG 140° Solid carbide	SIG 140° Solid carbide	
10 781 ...	**11 780 ...**	**11 781 ...**	**11 779 ...**	**10 734 ...**	
DC $_{m7/h7}$ **mm**	DCONMS $_{h6}$ mm	OAL mm	LCF mm	LU mm	LS mm
5,95	6	66	28	20	36		**05950**	**05950**	**05950**	**959**
6,00	6	66	28	20	36	**06000**	**06000**	**06000**	**06000**	**060**
6,10	8	79	34	24	36	**06100**	**06100**	**06100**	**06100**	**061**
6,20	8	79	34	24	36	**06200**	**06200**	**06200**	**06200**	**062**
6,30	8	79	34	24	36	**06300**	**06300**	**06300**	**06300**	**063**
6,40	8	79	34	24	36	**06400**	**06400**	**06400**	**06400**	**064**
6,50	8	79	34	24	36	**06500**	**06500**	**06500**	**06500**	**065**
6,60	8	79	34	24	36	**06600**	**06600**	**06600**	**06600**	**066**
6,70	8	79	34	24	36	**06700**	**06700**	**06700**	**06700**	**067**
6,80	8	79	34	24	36	**06800**	**06800**	**06800**	**06800**	**068**
6,90	8	79	34	24	36	**06900**	**06900**	**06900**	**06900**	**069**
7,00	8	79	34	24	36	**07000**	**07000**	**07000**	**07000**	**070**
7,10	8	79	41	29	36	**07100**	**07100**	**07100**	**07100**	**071**
7,20	8	79	41	29	36	**07200**	**07200**	**07200**	**07200**	**072**
7,30	8	79	41	29	36	**07300**	**07300**	**07300**	**07300**	**073**
7,40	8	79	41	29	36	**07400**	**07400**	**07400**	**07400**	**074**
7,45	8	79	41	29	36		**07450**	**07450**	**07450**	**924**
7,50	8	79	41	29	36	**07500**	**07500**	**07500**	**07500**	**075**
7,60	8	79	41	29	36	**07600**	**07600**	**07600**	**07600**	**076**
7,70	8	79	41	29	36	**07700**	**07700**	**07700**	**07700**	**077**
7,80	8	79	41	29	36	**07800**	**07800**	**07800**	**07800**	**078**
7,90	8	79	41	29	36	**07900**	**07900**	**07900**	**07900**	**079**
8,00	8	79	41	29	36	**08000**	**08000**	**08000**	**08000**	**080**
8,10	10	89	47	35	40	**08100**	**08100**	**08100**	**08100**	**081**
8,20	10	89	47	35	40	**08200**	**08200**	**08200**	**08200**	**082**
8,30	10	89	47	35	40	**08300**	**08300**	**08300**	**08300**	**083**
8,40	10	89	47	35	40	**08400**	**08400**	**08400**	**08400**	**084**
8,50	10	89	47	35	40	**08500**	**08500**	**08500**	**08500**	**085**
8,60	10	89	47	35	40	**08600**	**08600**	**08600**	**08600**	**086**
8,70	10	89	47	35	40	**08700**	**08700**	**08700**	**08700**	**087**
8,80	10	89	47	35	40	**08800**	**08800**	**08800**	**08800**	**088**
8,90	10	89	47	35	40	**08900**	**08900**	**08900**	**08900**	**089**
9,00	10	89	47	35	40	**09000**	**09000**	**09000**	**09000**	**090**
9,10	10	89	47	35	40	**09100**	**09100**	**09100**	**09100**	**091**
9,20	10	89	47	35	40	**09200**	**09200**	**09200**	**09200**	**092**
9,30	10	89	47	35	40	**09300**	**09300**	**09300**	**09300**	**093**
9,35	10	89	47	35	40		**09350**	**09350**	**09350**	**930**
9,40	10	89	47	35	40	**09400**	**09400**	**09400**	**09400**	**094**
9,45	10	89	47	35	40		**09450**	**09450**	**09450**	**994**
9,50	10	89	47	35	40	**09500**	**09500**	**09500**	**09500**	**095**
9,60	10	89	47	35	40	**09600**	**09600**	**09600**	**09600**	**096**
9,70	10	89	47	35	40	**09700**	**09700**	**09700**	**09700**	**097**
P						●	●	●	●	○
M						●				●
K						●	●	●	●	○
N										○
S										●
H							○	○	○	
O										

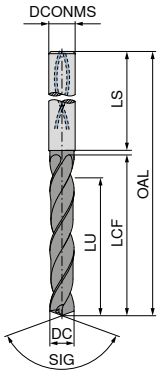
→ v_c Page 110–114

Ø DC$_{m7}$ for Type UNI and VA / **Ø DC$_{h7}$** for Type Speed UNI

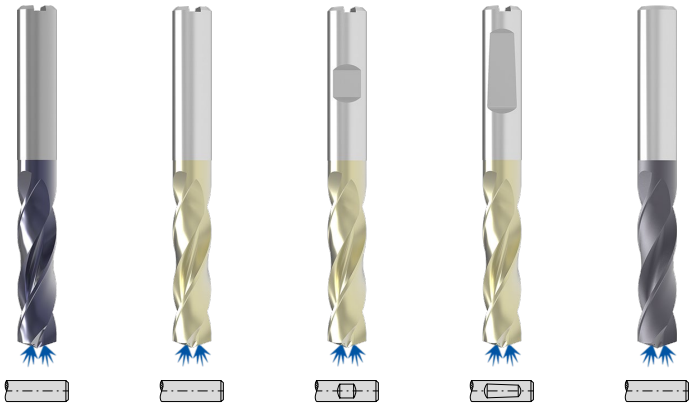
Continued on next page

WTX – High Performance Drill, DIN 6537





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



SIG 145° Solid carbide	SIG 140° Solid carbide	SIG 140° Solid carbide	SIG 140° Solid carbide	SIG 140° Solid carbide
10 781 ...	**11 780 ...**	**11 781 ...**	**11 779 ...**	**10 734 ...**

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

→ v_c Page 110–114

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

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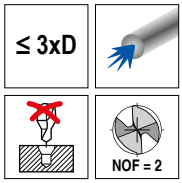
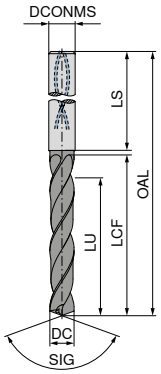
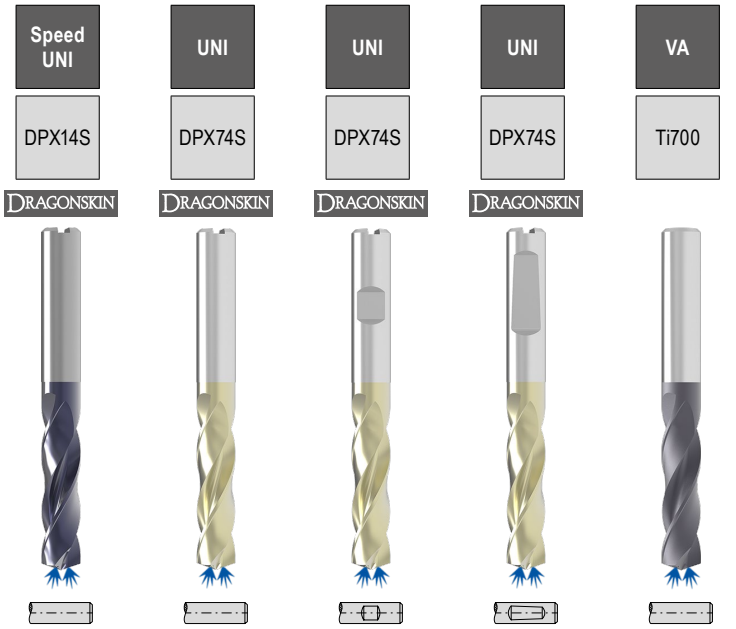
WTX – High Performance Drill, DIN 6537





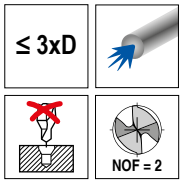


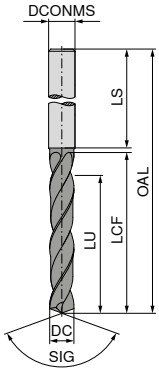
						SIG 145° Solid carbide	SIG 140° Solid carbide	SIG 140° Solid carbide	SIG 140° Solid carbide	SIG 140° Solid carbide
						10 781 ...	11 780 ...	11 781 ...	11 779 ...	10 734 ...
DC $_{m7/h7}$ mm	DCONMS $_{h6}$ mm	OAL mm	LCF mm	LU mm	LS mm					
14,00	14	107	60	43	45	14000	14000	14000	14000	140
14,20	16	115	65	45	48		14200	14200	14200	
14,50	16	115	65	45	48	14500	14500	14500	14500	145
14,80	16	115	65	45	48	14800	14800	14800	14800	148
15,00	16	115	65	45	48	15000	15000	15000	15000	150
15,10	16	115	65	45	48		15100	15100	15100	
15,25	16	115	65	45	48		15250	15250	15250	
15,30	16	115	65	45	48		15300	15300	15300	
15,35	16	115	65	45	48		15350	15350	15350	953
15,50	16	115	65	45	48	15500	15500	15500	15500	155
15,60	16	115	65	45	48		15600	15600	15600	
15,80	16	115	65	45	48	15800	15800	15800	15800	158
16,00	16	115	65	45	48	16000	16000	16000	16000	160
16,05	18	123	73	51	48		16050	16050	16050	960
16,50	18	123	73	51	48	16500	16500	16500	16500	165
16,80	18	123	73	51	48	16800	16800	16800	16800	168
16,90	18	123	73	51	48		16900	16900	16900	
17,00	18	123	73	51	48	17000	17000	17000	17000	170
17,50	18	123	73	51	48	17500	17500	17500	17500	175
17,60	18	123	73	51	48		17600	17600	17600	
17,80	18	123	73	51	48	17800	17800	17800	17800	178
18,00	18	123	73	51	48	18000	18000	18000	18000	180
18,50	20	131	79	55	50	18500	18500	18500	18500	185
18,80	20	131	79	55	50	18800	18800	18800	18800	188
18,90	20	131	79	55	50		18900	18900	18900	
19,00	20	131	79	55	50	19000	19000	19000	19000	190
19,35	20	131	79	55	50		19350	19350	19350	993
19,50	20	131	79	55	50	19500	19500	19500	19500	195
19,60	20	131	79	55	50		19600	19600	19600	
19,80	20	131	79	55	50	19800	19800	19800	19800	198
20,00	20	131	79	55	50	20000	20000	20000	20000	200
20,50	25	151	93	66	56		20500	20500	20500	
21,00	25	151	93	66	56		21000	21000	21000	
21,50	25	151	93	66	56		21500	21500	21500	
22,00	25	151	93	66	56		22000	22000	22000	
22,50	25	153	96	72	56		22500	22500	22500	
23,00	25	153	96	72	56		23000	23000	23000	
23,50	25	153	96	72	56		23500	23500	23500	
24,00	25	153	96	72	56		24000	24000	24000	
24,50	25	153	96	75	56		24500	24500	24500	
25,00	25	153	96	75	56		25000	25000	25000	
P						●	●	●	●	○
M						●				●
K						●	●	●	●	○
N										○
S										●
H							○	○	○	
O										

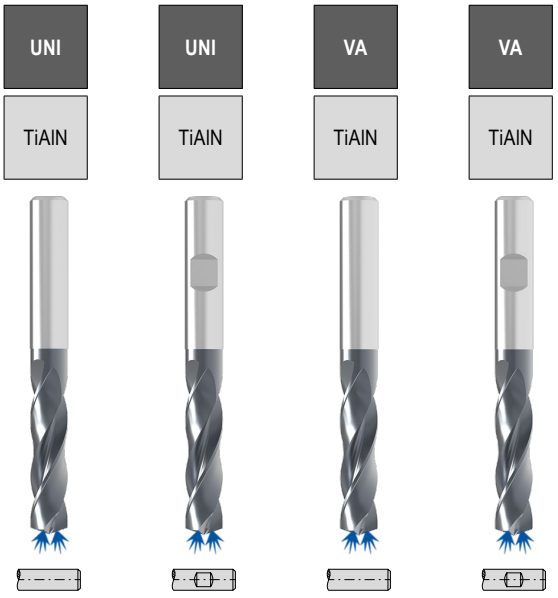
→ v_c Page 110–114

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

High Performance Drill, DIN 6537







SIG 140° Solid carbide

SIG 140° Solid carbide

SIG 140° Solid carbide

SIG 140° Solid carbide

DC $_{m7/h7}$ mm	DCONMS $_{h6}$ mm	OAL mm	LCF mm	LU mm	LS mm	11 700 ...	11 701 ...	11 713 ...	11 714 ...
1,00	4	45	7	5,5	28	01000		01000	
1,10	4	45	7	5,3	28	01100		01100	
1,20	4	45	7	5,2	28	01200		01200	
1,30	4	45	7	5,0	28	01300		01300	
1,40	4	45	7	4,9	28	01400		01400	
1,50	4	55	14	11,7	28	01500		01500	
1,60	4	55	14	11,6	28	01600		01600	
1,70	4	55	14	11,4	28	01700		01700	
1,80	4	55	14	11,3	28	01800		01800	
1,90	4	55	14	11,1	28	01900		01900	
2,00	4	55	20	17,0	28	02000		02000	
2,10	4	55	20	16,8	28	02100		02100	
2,20	4	55	20	16,7	28	02200		02200	
2,30	4	55	20	16,5	28	02300		02300	
2,40	4	55	20	16,4	28	02400		02400	
2,50	4	55	20	16,2	28	02500		02500	
2,60	4	55	20	16,1	28	02600		02600	
2,70	4	55	20	15,9	28	02700		02700	
2,80	4	55	20	15,8	28	02800		02800	
2,90	4	55	20	15,6	28	02900		02900	
3,00	6	62	20	15,5	36	03000	03000	03000	03000
3,10	6	62	20	15,3	36	03100	03100	03100	03100
3,20	6	62	20	15,2	36	03200	03200	03200	03200
3,25	6	62	20	15,1	36	03250	03250		
3,30	6	62	20	15,0	36	03300	03300	03300	03300
3,40	6	62	20	14,9	36	03400	03400	03400	03400
3,50	6	62	20	14,7	36	03500	03500	03500	03500
3,60	6	62	20	14,6	36	03600	03600	03600	03600
3,70	6	62	20	14,4	36	03700	03700	03700	03700
3,80	6	66	24	18,3	36	03800	03800	03800	03800
3,90	6	66	24	18,1	36	03900	03900	03900	03900
4,00	6	66	24	18,0	36	04000	04000	04000	04000
4,10	6	66	24	17,8	36	04100	04100	04100	04100
4,20	6	66	24	17,7	36	04200	04200	04200	04200
4,30	6	66	24	17,5	36	04300	04300	04300	04300
4,40	6	66	24	17,4	36	04400	04400	04400	04400
4,50	6	66	24	17,2	36	04500	04500	04500	04500
4,60	6	66	24	17,1	36	04600	04600	04600	04600
4,65	6	66	24	17,0	36	04650	04650		
4,70	6	66	24	16,9	36	04700	04700	04700	04700
4,80	6	66	28	20,8	36	04800	04800	04800	04800

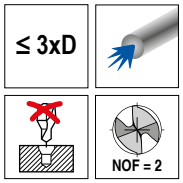
P	●	●	○	○
M	●	●	●	●
K	●	●		
N	○	○	●	●
S			○	○
H				
O			○	○

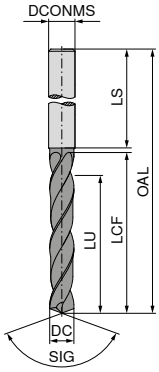
→ v_c Page 129+133

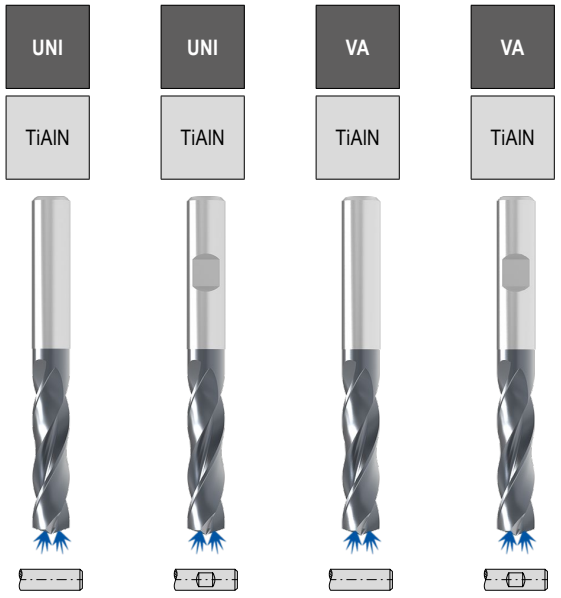
Ø DC_{h7} for Type UNI / Ø DC_{m7} for Type VA

Continued on next page

High Performance Drill, DIN 6537







SIG 140°
Solid carbide

SIG 140°
Solid carbide

SIG 140°
Solid carbide

SIG 140°
Solid carbide

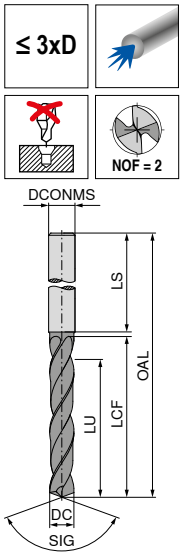
DC $_{m7/h7}$ mm	DCONMS $_{h6}$ mm	OAL mm	LCF mm	LU mm	LS mm	11 700 ...	11 701 ...	11 713 ...	11 714 ...
4,90	6	66	28	20,6	36	04900	04900	04900	04900
5,00	6	66	28	20,5	36	05000	05000	05000	05000
5,10	6	66	28	20,3	36	05100	05100	05100	05100
5,20	6	66	28	20,2	36	05200	05200	05200	05200
5,30	6	66	28	20,0	36	05300	05300	05300	05300
5,40	6	66	28	19,9	36	05400	05400	05400	05400
5,50	6	66	28	19,7	36	05500	05500	05500	05500
5,55	6	66	28	19,6	36	05550	05550		
5,60	6	66	28	19,6	36	05600	05600	05600	05600
5,65	6	66	28	19,5	36	05650	05650		
5,70	6	66	28	19,4	36	05700	05700	05700	05700
5,80	6	66	28	19,3	36	05800	05800	05800	05800
5,90	6	66	28	19,1	36	05900	05900	05900	05900
6,00	6	66	28	19,0	36	06000	06000	06000	06000
6,10	8	79	34	24,8	36	06100	06100	06100	06100
6,20	8	79	34	24,7	36	06200	06200	06200	06200
6,30	8	79	34	24,5	36	06300	06300	06300	06300
6,40	8	79	34	24,4	36	06400	06400	06400	06400
6,50	8	79	34	24,2	36	06500	06500	06500	06500
6,60	8	79	34	24,1	36	06600	06600	06600	06600
6,70	8	79	34	23,9	36	06700	06700	06700	06700
6,80	8	79	34	23,8	36	06800	06800	06800	06800
6,90	8	79	34	23,6	36	06900	06900	06900	06900
7,00	8	79	34	23,5	36	07000	07000	07000	07000
7,10	8	79	41	30,3	36	07100	07100	07100	07100
7,20	8	79	41	30,2	36	07200	07200	07200	07200
7,30	8	79	41	30,0	36	07300	07300	07300	07300
7,40	8	79	41	29,9	36	07400	07400	07400	07400
7,50	8	79	41	29,7	36	07500	07500	07500	07500
7,55	8	79	41	29,6	36	07550	07550		
7,60	8	79	41	29,6	36	07600	07600	07600	07600
7,65	8	79	41	29,5	36	07650	07650		
7,70	8	79	41	29,4	36	07700	07700	07700	07700
7,80	8	79	41	29,3	36	07800	07800	07800	07800
7,90	8	79	41	29,1	36	07900	07900	07900	07900
8,00	8	79	41	29,0	36	08000	08000	08000	08000
8,10	10	89	47	34,8	40	08100	08100	08100	08100
8,20	10	89	47	34,7	40	08200	08200	08200	08200
8,30	10	89	47	34,5	40	08300	08300	08300	08300
8,40	10	89	47	34,4	40	08400	08400	08400	08400
8,50	10	89	47	34,2	40	08500	08500	08500	08500
P						●	●	○	○
M						●	●	●	●
K						●	●		
N						○	○	●	●
S								○	○
H									
O								○	○

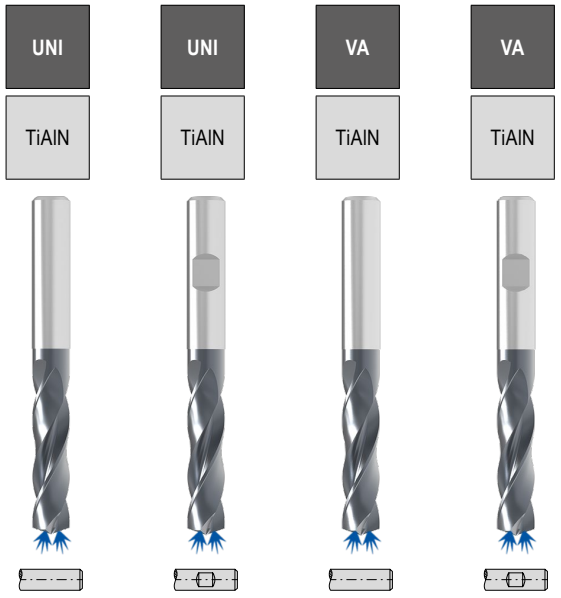
→ v_c Page 129+133

Ø DC_{h7} for Type UNI / Ø DC_{m7} for Type VA

Continued on next page

High Performance Drill, DIN 6537





SIG 140° Solid carbide | SIG 140° Solid carbide | SIG 140° Solid carbide | SIG 140° Solid carbide

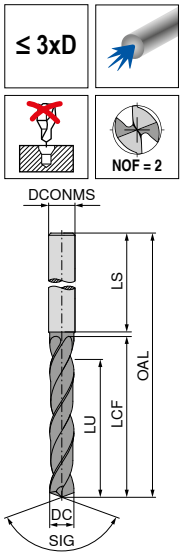
DC $_{m7/h7}$ mm	DCONMS $_{h6}$ mm	OAL mm	LCF mm	LU mm	LS mm	11 700 ...	11 701 ...	11 713 ...	11 714 ...
8,60	10	89	47	34,1	40	08600	08600	08600	08600
8,70	10	89	47	33,9	40	08700	08700	08700	08700
8,80	10	89	47	33,8	40	08800	08800	08800	08800
8,90	10	89	47	33,6	40	08900	08900	08900	08900
9,00	10	89	47	33,5	40	09000	09000	09000	09000
9,10	10	89	47	33,3	40	09100	09100	09100	09100
9,20	10	89	47	33,2	40	09200	09200	09200	09200
9,30	10	89	47	33,0	40	09300	09300	09300	09300
9,40	10	89	47	32,9	40	09400	09400	09400	09400
9,50	10	89	47	32,7	40	09500	09500	09500	09500
9,60	10	89	47	32,6	40	09600	09600	09600	09600
9,70	10	89	47	32,4	40	09700	09700	09700	09700
9,80	10	89	47	32,3	40	09800	09800	09800	09800
9,90	10	89	47	32,1	40	09900	09900	09900	09900
10,00	10	89	47	32,0	40	10000	10000	10000	10000
10,10	12	102	55	39,8	45	10100	10100	10100	10100
10,20	12	102	55	39,7	45	10200	10200	10200	10200
10,30	12	102	55	39,5	45	10300	10300	10300	10300
10,40	12	102	55	39,4	45	10400	10400	10400	10400
10,50	12	102	55	39,2	45	10500	10500	10500	10500
10,60	12	102	55	39,1	45	10600	10600	10600	10600
10,70	12	102	55	38,9	45	10700	10700	10700	10700
10,80	12	102	55	38,8	45	10800	10800	10800	10800
10,90	12	102	55	38,6	45	10900	10900	10900	10900
11,00	12	102	55	38,5	45	11000	11000	11000	11000
11,10	12	102	55	38,3	45	11100	11100	11100	11100
11,20	12	102	55	38,2	45	11200	11200	11200	11200
11,30	12	102	55	38,0	45	11300	11300	11300	11300
11,40	12	102	55	37,9	45	11400	11400	11400	11400
11,50	12	102	55	37,7	45	11500	11500	11500	11500
11,60	12	102	55	37,6	45	11600	11600	11600	11600
11,70	12	102	55	37,4	45	11700	11700	11700	11700
11,80	12	102	55	37,3	45	11800	11800	11800	11800
11,90	12	102	55	37,1	45	11900	11900	11900	11900
12,00	12	102	55	37,0	45	12000	12000	12000	12000
12,20	14	107	60	41,7	45	12200	12200	12200	12200
12,30	14	107	60	41,5	45	12300	12300	12300	12300
12,50	14	107	60	41,2	45	12500	12500	12500	12500
12,70	14	107	60	40,9	45	12700	12700	12700	12700
12,80	14	107	60	40,8	45	12800	12800	12800	12800
12,90	14	107	60	40,6	45	12900	12900	12900	12900
P						●	●	○	○
M						●	●	●	●
K						●	●		
N						○	○	●	●
S								○	○
H									
O								○	○

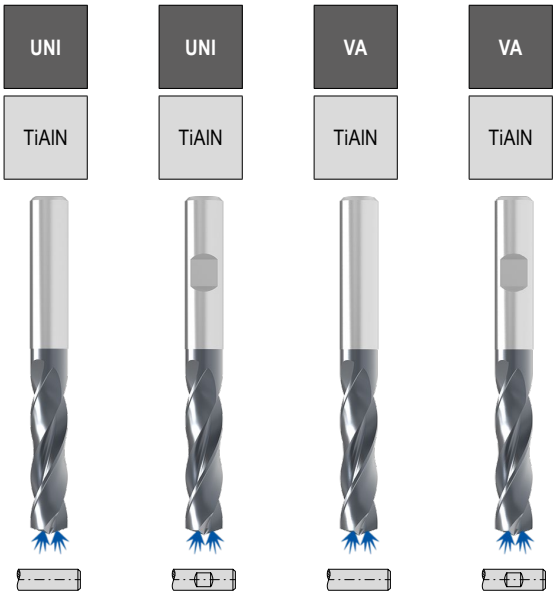
→ v_c Page 129+133

Ø DC_{h7} for Type UNI / Ø DC_{m7} for Type VA

Continued on next page

High Performance Drill, DIN 6537





SIG 140° Solid carbide

SIG 140° Solid carbide

SIG 140° Solid carbide

SIG 140° Solid carbide

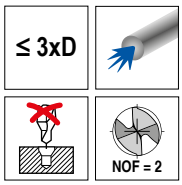
DC $_{m7/h7}$ mm	DCONMS $_{h6}$ mm	OAL mm	LCF mm	LU mm	LS mm	11 700 ...	11 701 ...	11 713 ...	11 714 ...
13,00	14	107	60	40,5	45	13000	13000	13000	13000
13,50	14	107	60	39,7	45	13500	13500	13500	13500
13,70	14	107	60	39,4	45			13700	13700
13,80	14	107	60	39,3	45	13800	13800	13800	13800
14,00	14	107	60	39,0	45	14000	14000	14000	14000
14,20	16	115	65	43,7	48	14200	14200	14200	14200
14,40	16	115	65	43,4	48	14400	14400	14400	14400
14,50	16	115	65	43,2	48	14500	14500	14500	14500
14,70	16	115	65	42,9	48			14700	14700
14,80	16	115	65	42,8	48	14800	14800	14800	14800
15,00	16	115	65	42,5	48	15000	15000	15000	15000
15,10	16	115	65	42,3	48	15100	15100	15100	15100
15,20	16	115	65	42,2	48	15200	15200	15200	15200
15,50	16	115	65	41,7	48	15500	15500	15500	15500
15,70	16	115	65	41,4	48			15700	15700
15,80	16	115	65	41,3	48	15800	15800	15800	15800
16,00	16	115	65	41,0	48	16000	16000	16000	16000
16,50	18	123	73	48,2	48	16500	16500	16500	16500
17,00	18	123	73	47,5	48	17000	17000	17000	17000
17,50	18	123	73	46,7	48	17500	17500	17500	17500
18,00	18	123	73	46,0	48	18000	18000	18000	18000
18,50	20	131	79	51,2	50	18500	18500	18500	18500
18,90	20	131	79	50,6	50	18900	18900	18900	18900
19,00	20	131	79	50,5	50	19000	19000	19000	19000
19,30	20	131	79	50,0	50	19300	19300	19300	19300
19,50	20	131	79	49,7	50	19500	19500	19500	19500
20,00	20	131	79	49,0	50	20000	20000	20000	20000
P						●	●	○	○
M						●	●	●	●
K						●	●		
N						○	○	●	●
S								○	○
H									
O								○	○

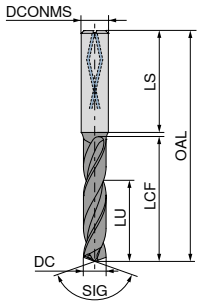
→ v_c Page 129+133

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

WTX – High-performance drill, DIN 6537

▲ Specialist for difficult to machine materials





Ti

DPA54

DRAGONSKIN



SIG 140°

Solid carbide

10 786 ...

DC m7 mm	DCONMS h6 mm	OAL mm	LCF mm	LU mm	LS mm	
3,00	6	62	20	14	36	030
3,10	6	62	20	14	36	031
3,20	6	62	20	14	36	032
3,30	6	62	20	14	36	033
3,40	6	62	20	14	36	034
3,50	6	62	20	14	36	035
3,60	6	62	20	14	36	036
3,70	6	62	20	14	36	037
3,80	6	66	24	17	36	038
3,90	6	66	24	17	36	039
3,97	6	66	24	17	36	900
4,00	6	66	24	17	36	040
4,10	6	66	24	17	36	041
4,20	6	66	24	17	36	042
4,23	6	66	24	17	36	901
4,30	6	66	24	17	36	043
4,40	6	66	24	17	36	044
4,50	6	66	24	17	36	045
4,60	6	66	24	17	36	046
4,70	6	66	24	17	36	047
4,80	6	66	28	20	36	048
4,90	6	66	28	20	36	049
5,00	6	66	28	20	36	050
5,10	6	66	28	20	36	051
5,20	6	66	28	20	36	052
5,30	6	66	28	20	36	053
5,40	6	66	28	20	36	054
5,50	6	66	28	20	36	055
5,56	6	66	28	20	36	902
5,60	6	66	28	20	36	056
5,70	6	66	28	20	36	057
5,80	6	66	28	20	36	058
5,90	6	66	28	20	36	059
6,00	6	66	28	20	36	060
6,10	8	79	34	24	36	061
6,20	8	79	34	24	36	062
6,30	8	79	34	24	36	063
6,35	8	79	34	24	36	903
6,40	8	79	34	24	36	064
6,50	8	79	34	24	36	065
6,60	8	79	34	24	36	066
6,70	8	79	34	24	36	067
6,80	8	79	34	24	36	068
6,90	8	79	34	24	36	069
7,00	8	79	34	24	36	070
7,10	8	79	41	29	36	071
7,20	8	79	41	29	36	072
7,30	8	79	41	29	36	073
7,40	8	79	41	29	36	074
7,50	8	79	41	29	36	075
7,60	8	79	41	29	36	076

10 786 ...

DC m7 mm	DCONMS h6 mm	OAL mm	LCF mm	LU mm	LS mm	
7,70	8	79	41	29	36	077
7,80	8	79	41	29	36	078
7,90	8	79	41	29	36	079
7,94	8	79	41	29	36	904
8,00	8	79	41	29	36	080
8,10	10	89	47	35	40	081
8,20	10	89	47	35	40	082
8,30	10	89	47	35	40	083
8,40	10	89	47	35	40	084
8,50	10	89	47	35	40	085
8,60	10	89	47	35	40	086
8,70	10	89	47	35	40	087
8,80	10	89	47	35	40	088
8,90	10	89	47	35	40	089
9,00	10	89	47	35	40	090
9,10	10	89	47	35	40	091
9,20	10	89	47	35	40	092
9,30	10	89	47	35	40	093
9,40	10	89	47	35	40	094
9,50	10	89	47	35	40	095
9,53	10	89	47	35	40	905
9,60	10	89	47	35	40	096
9,70	10	89	47	35	40	097
9,80	10	89	47	35	40	098
9,90	10	89	47	35	40	099
10,00	10	89	47	35	40	100
10,10	12	102	55	40	45	101
10,20	12	102	55	40	45	102
10,30	12	102	55	40	45	103
10,40	12	102	55	40	45	104
10,50	12	102	55	40	45	105
10,60	12	102	55	40	45	106
10,70	12	102	55	40	45	107
10,80	12	102	55	40	45	108
10,90	12	102	55	40	45	109
11,00	12	102	55	40	45	110
11,10	12	102	55	40	45	111
11,11	12	102	55	40	45	906
11,20	12	102	55	40	45	112
11,30	12	102	55	40	45	113
11,40	12	102	55	40	45	114
11,50	12	102	55	40	45	115
11,60	12	102	55	40	45	116
11,70	12	102	55	40	45	117
11,80	12	102	55	40	45	118
11,90	12	102	55	40	45	119
12,00	12	102	55	40	45	120
12,10	14	107	60	43	45	121
12,20	14	107	60	43	45	122
12,30	14	107	60	43	45	123
12,40	14	107	60	43	45	124
12,50	14	107	60	43	45	125
12,60	14	107	60	43	45	126
12,70	14	107	60	43	45	907
12,80	14	107	60	43	45	128
12,90	14	107	60	43	45	129
13,00	14	107	60	43	45	130
13,10	14	107	60	43	45	131
13,20	14	107	60	43	45	132
13,30	14	107	60	43	45	133
13,40	14	107	60	43	45	134
13,50	14	107	60	43	45	135
13,60	14	107	60	43	45	136
13,70	14	107	60	43	45	137
13,80	14	107	60	43	45	138
13,90	14	107	60	43	45	139

P	○
M	●
K	
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→ v_c Page 109

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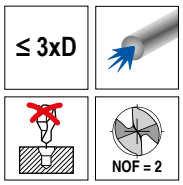
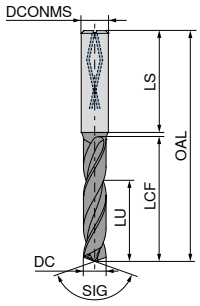
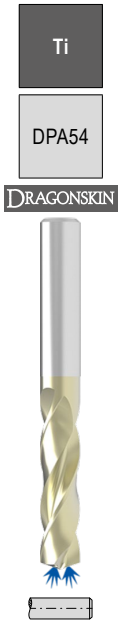
WTX – High-performance drill, DIN 6537

▲ Specialist for difficult to machine materials







SIG 140°
Solid carbide

10 786 ...

DC m7 mm	DCONMS h6 mm	OAL mm	LCF mm	LU mm	LS mm	
14,0	14	107	60	43	45	140
14,1	16	115	65	45	48	141
14,2	16	115	65	45	48	142
14,3	16	115	65	45	48	143
14,4	16	115	65	45	48	144
14,5	16	115	65	45	48	145
14,6	16	115	65	45	48	146
14,7	16	115	65	45	48	147
14,8	16	115	65	45	48	148
14,9	16	115	65	45	48	149
15,0	16	115	65	45	48	150
15,1	16	115	65	45	48	151
15,2	16	115	65	45	48	152
15,3	16	115	65	45	48	153
15,4	16	115	65	45	48	154
15,5	16	115	65	45	48	155
15,6	16	115	65	45	48	156
15,7	16	115	65	45	48	157
15,8	16	115	65	45	48	158
15,9	16	115	65	45	48	159
16,0	16	115	65	45	48	160
16,1	18	123	73	51	48	161
16,2	18	123	73	51	48	162
16,3	18	123	73	51	48	163
16,4	18	123	73	51	48	164
16,5	18	123	73	51	48	165
16,6	18	123	73	51	48	166
16,7	18	123	73	51	48	167
16,8	18	123	73	51	48	168
16,9	18	123	73	51	48	169
17,0	18	123	73	51	48	170
17,1	18	123	73	51	48	171
17,2	18	123	73	51	48	172
17,3	18	123	73	51	48	173
17,4	18	123	73	51	48	174
17,5	18	123	73	51	48	175
17,6	18	123	73	51	48	176
17,7	18	123	73	51	48	177
17,8	18	123	73	51	48	178
17,9	18	123	73	51	48	179
18,0	18	123	73	51	48	180
18,1	20	131	79	55	50	181
18,2	20	131	79	55	50	182
18,3	20	131	79	55	50	183
18,4	20	131	79	55	50	184
18,5	20	131	79	55	50	185
18,6	20	131	79	55	50	186
18,7	20	131	79	55	50	187
18,8	20	131	79	55	50	188
18,9	20	131	79	55	50	189
19,0	20	131	79	55	50	190

10 786 ...

DC m7 mm	DCONMS h6 mm	OAL mm	LCF mm	LU mm	LS mm	
19,1	20	131	79	55	50	191
19,2	20	131	79	55	50	192
19,3	20	131	79	55	50	193
19,4	20	131	79	55	50	194
19,5	20	131	79	55	50	195
19,6	20	131	79	55	50	196
19,7	20	131	79	55	50	197
19,8	20	131	79	55	50	198
19,9	20	131	79	55	50	199
20,0	20	131	79	55	50	200

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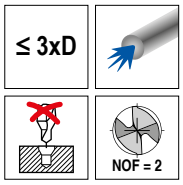
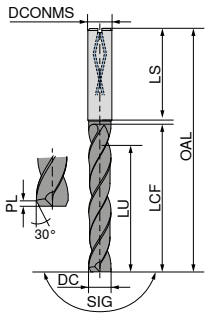
→ v_c Page 109

WTX – High Performance Drill, DIN 6537

▲ universal application
▲ four guidance lands
▲ polished chip flutes
▲ Type ALU 3xD on request
▲ PL = corner chamfers





180

Ti800





SIG 180°
Solid carbide

10 720 ...

DC m7 mm	DCONMS h6 mm	OAL mm	LCF mm	LU mm	LS mm	PL mm	
3,00	6	62	20	14	36	0,15	030
3,10	6	62	20	14	36	0,16	031
3,20	6	62	20	14	36	0,16	032
3,30	6	62	20	14	36	0,17	033
3,40	6	62	20	14	36	0,17	034
3,50	6	62	20	14	36	0,18	035
3,60	6	62	20	14	36	0,18	036
3,70	6	62	20	14	36	0,19	037
3,80	6	66	24	17	36	0,19	038
3,90	6	66	24	17	36	0,20	039
4,00	6	66	24	17	36	0,20	040
4,10	6	66	24	17	36	0,21	041
4,20	6	66	24	17	36	0,21	042
4,30	6	66	24	17	36	0,22	043
4,40	6	66	24	17	36	0,22	044
4,50	6	66	24	17	36	0,23	045
4,60	6	66	24	17	36	0,23	046
4,65	6	66	24	17	36	0,23	900
4,70	6	66	24	17	36	0,24	047
4,80	6	66	28	20	36	0,24	048
4,90	6	66	28	20	36	0,25	049
5,00	6	66	28	20	36	0,25	050
5,10	6	66	28	20	36	0,26	051
5,20	6	66	28	20	36	0,26	052
5,30	6	66	28	20	36	0,27	053
5,40	6	66	28	20	36	0,27	054
5,50	6	66	28	20	36	0,28	055
5,55	6	66	28	20	36	0,28	902
5,60	6	66	28	20	36	0,28	056
5,70	6	66	28	20	36	0,29	057
5,80	6	66	28	20	36	0,29	058
5,90	6	66	28	20	36	0,30	059
6,00	6	66	28	20	36	0,30	060
6,10	8	79	34	24	36	0,31	061
6,20	8	79	34	24	36	0,31	062
6,30	8	79	34	24	36	0,32	063
6,40	8	79	34	24	36	0,32	064
6,50	8	79	34	24	36	0,33	065
6,60	8	79	34	24	36	0,33	066
6,70	8	79	34	24	36	0,34	067
6,80	8	79	34	24	36	0,34	068
6,90	8	79	34	24	36	0,35	069
7,00	8	79	34	24	36	0,35	070
7,10	8	79	41	29	36	0,36	071
7,20	8	79	41	29	36	0,36	072
7,30	8	79	41	29	36	0,37	073
7,40	8	79	41	29	36	0,37	074
7,50	8	79	41	29	36	0,38	075
7,60	8	79	41	29	36	0,38	076
7,70	8	79	41	29	36	0,39	077
7,80	8	79	41	29	36	0,39	078
7,90	8	79	41	29	36	0,40	079
8,00	8	79	41	29	36	0,40	080
8,10	10	89	47	35	40	0,41	081

10 720 ...

DC m7 mm	DCONMS h6 mm	OAL mm	LCF mm	LU mm	LS mm	PL mm	
8,20	10	89	47	35	40	0,41	082
8,30	10	89	47	35	40	0,42	083
8,40	10	89	47	35	40	0,42	084
8,50	10	89	47	35	40	0,43	085
8,60	10	89	47	35	40	0,43	086
8,70	10	89	47	35	40	0,44	087
8,80	10	89	47	35	40	0,44	088
8,90	10	89	47	35	40	0,45	089
9,00	10	89	47	35	40	0,45	090
9,10	10	89	47	35	40	0,46	091
9,20	10	89	47	35	40	0,46	092
9,30	10	89	47	35	40	0,47	093
9,40	10	89	47	35	40	0,47	094
9,50	10	89	47	35	40	0,48	095
9,60	10	89	47	35	40	0,48	096
9,70	10	89	47	35	40	0,49	097
9,80	10	89	47	35	40	0,49	098
9,90	10	89	47	35	40	0,50	099
10,00	10	89	47	35	40	0,50	100
10,10	12	100	53	38	45	0,51	101
10,20	12	100	53	38	45	0,51	102
10,30	12	100	53	38	45	0,52	103
10,40	12	100	53	38	45	0,52	104
10,50	12	100	53	38	45	0,53	105
10,60	12	100	53	38	45	0,53	106
10,70	12	100	53	38	45	0,54	107
10,80	12	100	53	38	45	0,54	108
10,90	12	100	53	38	45	0,55	109
11,00	12	100	53	38	45	0,55	110
11,10	12	100	53	38	45	0,56	111
11,20	12	100	53	38	45	0,56	112
11,30	12	100	53	38	45	0,57	113
11,40	12	100	53	38	45	0,57	114
11,50	12	100	53	38	45	0,58	115
11,60	12	100	53	38	45	0,58	116
11,70	12	100	53	38	45	0,59	117
11,80	12	100	53	38	45	0,59	118
11,90	12	100	53	38	45	0,60	119
12,00	12	100	53	38	45	0,60	120
12,50	14	105	58	41	45	0,63	125
12,80	14	105	58	41	45	0,64	128
13,00	14	105	58	41	45	0,65	130
13,50	14	105	58	41	45	0,68	135
13,80	14	105	58	41	45	0,69	138
14,00	14	105	58	41	45	0,70	140
14,50	16	113	63	43	48	0,73	145
14,80	16	113	63	43	48	0,74	148
15,00	16	113	63	43	48	0,75	150
15,50	16	113	63	43	48	0,78	155
15,80	16	113	63	43	48	0,79	158
16,00	16	113	63	43	48	0,80	160
16,50	18	121	71	49	48	0,83	165
16,80	18	121	71	49	48	0,84	168
17,00	18	121	71	49	48	0,85	170
17,50	18	121	71	49	48	0,88	175
17,80	18	121	71	49	48	0,89	178
18,00	18	121	71	49	48	0,90	180
18,50	20	129	77	53	50	0,93	185
18,80	20	129	77	53	50	0,94	188
19,00	20	129	77	53	50	0,95	190
19,50	20	129	77	53	50	0,98	195
19,80	20	129	77	53	50	0,99	198
20,00	20	129	77	53	50	1,00	200

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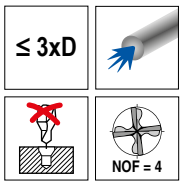
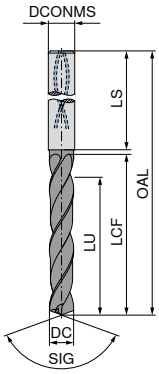
→ Machining information: Page 127

WTX – High Speed Drill, DIN 6537

- ▲ Four fluted high-feed drill
- ▲ Specially designed for steel and cast iron machining
- ▲ Has four spiral coolant holes
- ▲ Innovative cutting edge geometry guarantees high positioning accuracy
- ▲ Outstanding drilling quality in terms of tolerance, surface finish and position





HFDS

DPX14S

DRAGONSKIN



SIG 130°

Solid carbide

10 797 ...

DC m7 mm	DCONMS h6 mm	OAL mm	LCF mm	LU mm	LS mm	
14,0	16	115	65	45	48	**14000**
14,3	18	123	73	51	48	**14300**
14,5	18	123	73	51	48	**14500**
15,0	18	123	73	51	48	**15000**
16,0	18	123	73	51	48	**16000**

P	●
M	○
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N	○
S	
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O	○

→ v_c Page 125

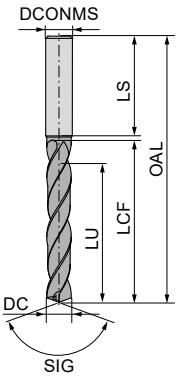
10 797 ...

DC m7 mm	DCONMS h6 mm	OAL mm	LCF mm	LU mm	LS mm	
6,0	8	79	41	29	36	**06000**
6,1	10	89	47	35	40	**06100**
6,2	10	89	47	35	40	**06200**
6,3	10	89	47	35	40	**06300**
6,4	10	89	47	35	40	**06400**
6,5	10	89	47	35	40	**06500**
6,6	10	89	47	35	40	**06600**
6,7	10	89	47	35	40	**06700**
6,8	10	89	47	35	40	**06800**
6,9	10	89	47	35	40	**06900**
7,0	10	89	47	35	40	**07000**
7,1	10	89	47	35	40	**07100**
7,2	10	89	47	35	40	**07200**
7,3	10	89	47	35	40	**07300**
7,4	10	89	47	35	40	**07400**
7,5	10	89	47	35	40	**07500**
7,6	10	89	47	35	40	**07600**
7,7	10	89	47	35	40	**07700**
7,8	10	89	47	35	40	**07800**
7,9	10	89	47	35	40	**07900**
8,0	10	89	47	35	40	**08000**
8,1	12	102	55	40	45	**08100**
8,2	12	102	55	40	45	**08200**
8,3	12	102	55	40	45	**08300**
8,4	12	102	55	40	45	**08400**
8,5	12	102	55	40	45	**08500**
8,6	12	102	55	40	45	**08600**
8,7	12	102	55	40	45	**08700**
8,8	12	102	55	40	45	**08800**
8,9	12	102	55	40	45	**08900**
9,0	12	102	55	40	45	**09000**
9,1	12	102	55	40	45	**09100**
9,2	12	102	55	40	45	**09200**
9,3	12	102	55	40	45	**09300**
9,4	12	102	55	40	45	**09400**
9,5	12	102	55	40	45	**09500**
9,6	12	102	55	40	45	**09600**
9,7	12	102	55	40	45	**09700**
9,8	12	102	55	40	45	**09800**
9,9	12	102	55	40	45	**09900**
10,0	12	102	55	40	45	**10000**
10,2	14	107	60	43	45	**10200**
10,5	14	107	60	43	45	**10500**
11,0	14	107	60	43	45	**11000**
11,5	14	107	60	43	45	**11500**
12,0	14	107	60	43	45	**12000**
12,5	16	115	65	45	48	**12500**
13,0	16	115	65	45	48	**13000**

WTX – High Performance Drill, DIN 6537

≤ 5xD

NOF = 2





SIG 140°
Solid carbide

SIG 140°
Solid carbide

SIG 140°
Solid carbide

SIG 140°
Solid carbide

DC m7 mm	DCONMS h6 mm	OAL mm	LCF mm	LU mm	LS mm	11 783 ...	11 784 ...	11 782 ...	10 740 ...
3,00	6	66	28	23	36	03000	03000	03000	030
3,10	6	66	28	23	36	03100	03100	03100	031
3,15	6	66	28	23	36	03150	03150	03150	
3,20	6	66	28	23	36	03200	03200	03200	032
3,22	6	66	28	23	36	03220	03220	03220	
3,25	6	66	28	23	36	03250	03250	03250	
3,30	6	66	28	23	36	03300	03300	03300	033
3,40	6	66	28	23	36	03400	03400	03400	034
3,50	6	66	28	23	36	03500	03500	03500	035
3,60	6	66	28	23	36	03600	03600	03600	036
3,70	6	66	28	23	36	03700	03700	03700	037
3,80	6	74	36	29	36	03800	03800	03800	038
3,85	6	74	36	29	36	03850	03850	03850	
3,90	6	74	36	29	36	03900	03900	03900	039
4,00	6	74	36	29	36	04000	04000	04000	040
4,10	6	74	36	29	36	04100	04100	04100	041
4,20	6	74	36	29	36	04200	04200	04200	042
4,25	6	74	36	29	36	04250	04250	04250	
4,30	6	74	36	29	36	04300	04300	04300	043
4,35	6	74	36	29	36	04350	04350	04350	
4,40	6	74	36	29	36	04400	04400	04400	044
4,45	6	74	36	29	36	04450	04450	04450	
4,50	6	74	36	29	36	04500	04500	04500	045
4,60	6	74	36	29	36	04600	04600	04600	046
4,65	6	74	36	29	36	04650	04650	04650	
4,70	6	74	36	29	36	04700	04700	04700	047
4,80	6	82	44	35	36	04800	04800	04800	048
4,90	6	82	44	35	36	04900	04900	04900	049
4,95	6	82	44	35	36	04950	04950	04950	
5,00	6	82	44	35	36	05000	05000	05000	050
5,05	6	82	44	35	36	05050	05050	05050	
5,10	6	82	44	35	36	05100	05100	05100	051
5,20	6	82	44	35	36	05200	05200	05200	052
5,30	6	82	44	35	36	05300	05300	05300	053
5,40	6	82	44	35	36	05400	05400	05400	054
5,50	6	82	44	35	36	05500	05500	05500	055
5,55	6	82	44	35	36	05550	05550	05550	
5,60	6	82	44	35	36	05600	05600	05600	056
5,70	6	82	44	35	36	05700	05700	05700	057
5,75	6	82	44	35	36	05750	05750	05750	
5,80	6	82	44	35	36	05800	05800	05800	058
5,90	6	82	44	35	36	05900	05900	05900	059
P						●	●	●	○
M									●
K						●	●	●	○
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S									●
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→ v_c Page 111+112

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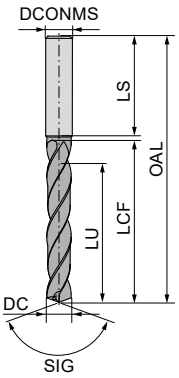
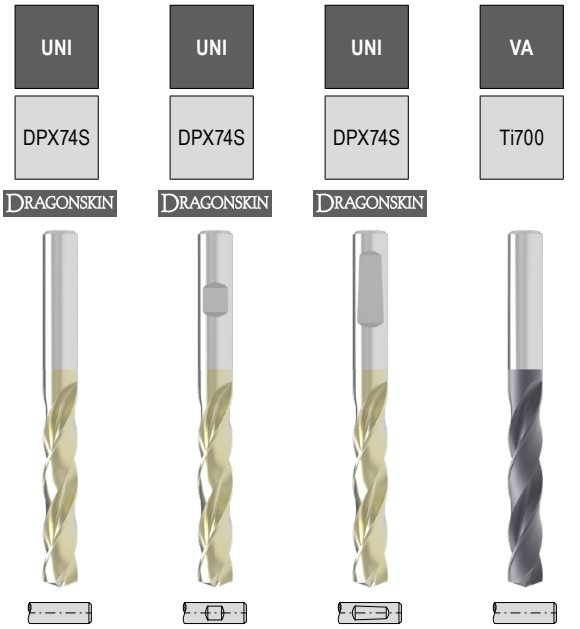
WTX – High Performance Drill, DIN 6537

≤ 5xD

NOF = 2





SIG 140°
Solid carbide

SIG 140°
Solid carbide

SIG 140°
Solid carbide

SIG 140°
Solid carbide

DC m7 mm	DCONMS h6 mm	OAL mm	LCF mm	LU mm	LS mm	11 783 ...	11 784 ...	11 782 ...	10 740 ...
5,95	6	82	44	35	36	05950	05950	05950	
6,00	6	82	44	35	36	06000	06000	06000	060
6,10	8	91	53	43	36	06100	06100	06100	061
6,20	8	91	53	43	36	06200	06200	06200	062
6,30	8	91	53	43	36	06300	06300	06300	063
6,40	8	91	53	43	36	06400	06400	06400	064
6,50	8	91	53	43	36	06500	06500	06500	065
6,60	8	91	53	43	36	06600	06600	06600	066
6,70	8	91	53	43	36	06700	06700	06700	067
6,80	8	91	53	43	36	06800	06800	06800	068
6,90	8	91	53	43	36	06900	06900	06900	069
7,00	8	91	53	43	36	07000	07000	07000	070
7,10	8	91	53	43	36	07100	07100	07100	071
7,20	8	91	53	43	36	07200	07200	07200	072
7,30	8	91	53	43	36	07300	07300	07300	073
7,40	8	91	53	43	36	07400	07400	07400	074
7,45	8	91	53	43	36	07450	07450	07450	
7,50	8	91	53	43	36	07500	07500	07500	075
7,60	8	91	53	43	36	07600	07600	07600	076
7,70	8	91	53	43	36	07700	07700	07700	077
7,80	8	91	53	43	36	07800	07800	07800	078
7,90	8	91	53	43	36	07900	07900	07900	079
8,00	8	91	53	43	36	08000	08000	08000	080
8,10	10	103	61	49	40	08100	08100	08100	081
8,20	10	103	61	49	40	08200	08200	08200	082
8,30	10	103	61	49	40	08300	08300	08300	083
8,40	10	103	61	49	40	08400	08400	08400	084
8,50	10	103	61	49	40	08500	08500	08500	085
8,60	10	103	61	49	40	08600	08600	08600	086
8,70	10	103	61	49	40	08700	08700	08700	087
8,80	10	103	61	49	40	08800	08800	08800	088
8,90	10	103	61	49	40	08900	08900	08900	089
9,00	10	103	61	49	40	09000	09000	09000	090
9,10	10	103	61	49	40	09100	09100	09100	091
9,20	10	103	61	49	40	09200	09200	09200	092
9,30	10	103	61	49	40	09300	09300	09300	093
9,35	10	103	61	49	40	09350	09350	09350	
9,40	10	103	61	49	40	09400	09400	09400	094
9,45	10	103	61	49	40	09450	09450	09450	
9,50	10	103	61	49	40	09500	09500	09500	095
9,60	10	103	61	49	40	09600	09600	09600	096
9,70	10	103	61	49	40	09700	09700	09700	097
P						●	●	●	○
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→ v_c Page 111+112

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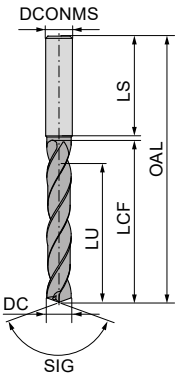
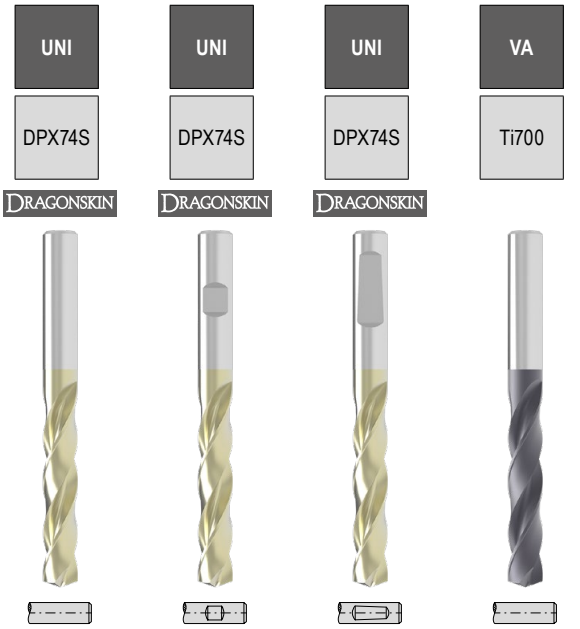
WTX – High Performance Drill, DIN 6537

≤ 5xD

NOF = 2





SIG 140°
Solid carbide

SIG 140°
Solid carbide

SIG 140°
Solid carbide

SIG 140°
Solid carbide

DC m7 mm	DCONMS h6 mm	OAL mm	LCF mm	LU mm	LS mm	11 783 ...	11 784 ...	11 782 ...	10 740 ...
9,80	10	103	61	49	40	09800	09800	09800	098
9,90	10	103	61	49	40	09900	09900	09900	099
10,00	10	103	61	49	40	10000	10000	10000	100
10,10	12	118	71	56	45	10100	10100	10100	101
10,20	12	118	71	56	45	10200	10200	10200	102
10,30	12	118	71	56	45	10300	10300	10300	103
10,40	12	118	71	56	45	10400	10400	10400	104
10,50	12	118	71	56	45	10500	10500	10500	105
10,55	12	118	71	56	45	10550	10550	10550	
10,60	12	118	71	56	45	10600	10600	10600	106
10,70	12	118	71	56	45	10700	10700	10700	107
10,75	12	118	71	56	45	10750	10750	10750	
10,80	12	118	71	56	45	10800	10800	10800	108
10,90	12	118	71	56	45	10900	10900	10900	109
11,00	12	118	71	56	45	11000	11000	11000	110
11,10	12	118	71	56	45	11100	11100	11100	111
11,20	12	118	71	56	45	11200	11200	11200	112
11,25	12	118	71	56	45	11250	11250	11250	
11,30	12	118	71	56	45	11300	11300	11300	113
11,35	12	118	71	56	45	11350	11350	11350	
11,40	12	118	71	56	45	11400	11400	11400	114
11,45	12	118	71	56	45	11450	11450	11450	
11,50	12	118	71	56	45	11500	11500	11500	115
11,60	12	118	71	56	45	11600	11600	11600	116
11,70	12	118	71	56	45	11700	11700	11700	117
11,80	12	118	71	56	45	11800	11800	11800	118
11,90	12	118	71	56	45	11900	11900	11900	119
12,00	12	118	71	56	45	12000	12000	12000	120
12,15	14	124	77	60	45	12150	12150	12150	
12,25	14	124	77	60	45	12250	12250	12250	
12,50	14	124	77	60	45	12500	12500	12500	125
12,55	14	124	77	60	45	12550	12550	12550	
12,70	14	124	77	60	45	12700	12700	12700	
12,80	14	124	77	60	45	12800	12800	12800	128
12,90	14	124	77	60	45	12900	12900	12900	
13,00	14	124	77	60	45	13000	13000	13000	130
13,10	14	124	77	60	45	13100	13100	13100	
13,30	14	124	77	60	45	13300	13300	13300	
13,35	14	124	77	60	45	13350	13350	13350	
13,50	14	124	77	60	45	13500	13500	13500	135
13,70	14	124	77	60	45	13700	13700	13700	
13,80	14	124	77	60	45	13800	13800	13800	138
P						●	●	●	○
M									●
K						●	●	●	○
N									○
S									●
H						○	○	○	
O									

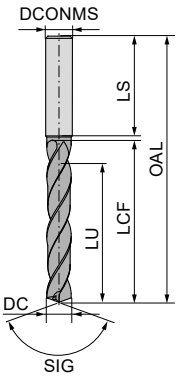
→ v_c Page 111+112

Continued on next page

WTX – High Performance Drill, DIN 6537

≤ 5xD

NOF = 2





SIG 140°
Solid carbide

SIG 140°
Solid carbide

SIG 140°
Solid carbide

SIG 140°
Solid carbide

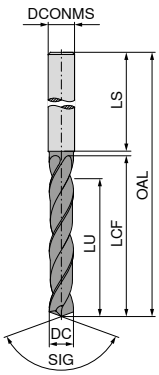
DC m7 mm	DCONMS h6 mm	OAL mm	LCF mm	LU mm	LS mm	11 783 ...	11 784 ...	11 782 ...	10 740 ...
14,00	14	124	77	60	45	14000	14000	14000	140
14,20	16	133	83	63	48	14200	14200	14200	
14,50	16	133	83	63	48	14500	14500	14500	145
14,80	16	133	83	63	48	14800	14800	14800	148
15,00	16	133	83	63	48	15000	15000	15000	150
15,10	16	133	83	63	48	15100	15100	15100	
15,25	16	133	83	63	48	15250	15250	15250	
15,30	16	133	83	63	48	15300	15300	15300	
15,35	16	133	83	63	48	15350	15350	15350	
15,50	16	133	83	63	48	15500	15500	15500	155
15,60	16	133	83	63	48	15600	15600	15600	
15,80	16	133	83	63	48	15800	15800	15800	158
16,00	16	133	83	63	48	16000	16000	16000	160
16,05	18	143	93	71	48	16050	16050	16050	
16,50	18	143	93	71	48	16500	16500	16500	165
16,80	18	143	93	71	48	16800	16800	16800	168
16,90	18	143	93	71	48	16900	16900	16900	
17,00	18	143	93	71	48	17000	17000	17000	170
17,50	18	143	93	71	48	17500	17500	17500	175
17,60	18	143	93	71	48	17600	17600	17600	
17,80	18	143	93	71	48	17800	17800	17800	178
18,00	18	143	93	71	48	18000	18000	18000	180
18,50	20	153	101	77	50	18500	18500	18500	185
18,80	20	153	101	77	50	18800	18800	18800	188
18,90	20	153	101	77	50	18900	18900	18900	
19,00	20	153	101	77	50	19000	19000	19000	190
19,35	20	153	101	77	50	19350	19350	19350	
19,50	20	153	101	77	50	19500	19500	19500	195
19,60	20	153	101	77	50	19600	19600	19600	
19,80	20	153	101	77	50	19800	19800	19800	198
20,00	20	153	101	77	50	20000	20000	20000	200
P						●	●	●	○
M									●
K						●	●	●	○
N									○
S									●
H						○	○	○	
O									

→ v_c Page 111+112

High Performance Drill, DIN 6537

≤ 5xD

NOF = 2



UNI

TiAlN



SIG 140°

Solid carbide

UNI

TiAlN



SIG 140°

Solid carbide

DC h7 mm	DCONMS h6 mm	OAL mm	LCF mm	LU mm	LS mm	11 710 ...	11 709 ...
3,00	6	66	28	23,5	36	03000	03000
3,10	6	66	28	23,3	36	03100	03100
3,20	6	66	28	23,2	36	03200	03200
3,25	6	66	28	23,1	36	03250	03250
3,30	6	66	28	23,0	36	03300	03300
3,40	6	66	28	22,9	36	03400	03400
3,50	6	66	28	22,7	36	03500	03500
3,60	6	66	28	22,6	36	03600	03600
3,70	6	66	28	22,4	36	03700	03700
3,80	6	74	36	30,3	36	03800	03800
3,90	6	74	36	30,1	36	03900	03900
4,00	6	74	36	30,0	36	04000	04000
4,10	6	74	36	29,8	36	04100	04100
4,20	6	74	36	29,7	36	04200	04200
4,30	6	74	36	29,5	36	04300	04300
4,40	6	74	36	29,4	36	04400	04400
4,50	6	74	36	29,2	36	04500	04500
4,60	6	74	36	29,1	36	04600	04600
4,65	6	74	36	29,0	36	04650	04650
4,70	6	74	36	28,9	36	04700	04700
4,80	6	82	44	36,8	36	04800	04800
4,90	6	82	44	36,6	36	04900	04900
5,00	6	82	44	36,5	36	05000	05000
5,10	6	82	44	36,3	36	05100	05100
5,20	6	82	44	36,2	36	05200	05200
5,30	6	82	44	36,0	36	05300	05300
5,40	6	82	44	35,9	36	05400	05400
5,50	6	82	44	35,7	36	05500	05500
5,55	6	82	44	35,6	36	05550	05550
5,60	6	82	44	35,6	36	05600	05600
5,65	6	82	44	35,5	36	05650	05650
5,70	6	82	44	35,4	36	05700	05700
5,80	6	82	44	35,3	36	05800	05800
5,90	6	82	44	35,1	36	05900	05900
6,00	6	82	44	35,0	36	06000	06000
6,10	8	91	53	43,8	36	06100	06100
6,20	8	91	53	43,7	36	06200	06200
6,30	8	91	53	43,5	36	06300	06300
6,40	8	91	53	43,4	36	06400	06400
6,50	8	91	53	43,2	36	06500	06500
6,60	8	91	53	43,1	36	06600	06600
6,70	8	91	53	42,9	36	06700	06700
6,80	8	91	53	42,8	36	06800	06800
6,90	8	91	53	42,6	36	06900	06900
7,00	8	91	53	42,5	36	07000	07000
7,10	8	91	53	42,3	36	07100	07100
7,20	8	91	53	42,2	36	07200	07200
7,30	8	91	53	42,0	36	07300	07300
7,40	8	91	53	41,9	36	07400	07400
7,50	8	91	53	41,7	36	07500	07500
7,55	8	91	53	41,6	36	07550	07550
7,60	8	91	53	41,6	36	07600	07600
7,65	8	91	53	41,5	36	07650	07650
7,70	8	91	53	41,4	36	07700	07700
7,80	8	91	53	41,3	36	07800	07800
7,90	8	91	53	41,1	36	07900	07900
8,00	8	91	53	41,0	36	08000	08000
8,10	10	103	61	48,8	40	08100	08100
8,20	10	103	61	48,7	40	08200	08200
8,30	10	103	61	48,5	40	08300	08300
8,40	10	103	61	48,4	40	08400	08400
8,50	10	103	61	48,2	40	08500	08500
8,60	10	103	61	48,1	40	08600	08600
8,70	10	103	61	47,9	40	08700	08700
8,80	10	103	61	47,8	40	08800	08800
8,90	10	103	61	47,6	40	08900	08900
9,00	10	103	61	47,5	40	09000	09000
9,10	10	103	61	47,3	40	09100	09100
9,20	10	103	61	47,2	40	09200	09200
9,30	10	103	61	47,0	40	09300	09300
9,40	10	103	61	46,9	40	09400	09400
9,50	10	103	61	46,7	40	09500	09500
9,60	10	103	61	46,6	40	09600	09600
9,70	10	103	61	46,4	40	09700	09700
9,80	10	103	61	46,3	40	09800	09800
9,90	10	103	61	46,1	40	09900	09900
10,00	10	103	61	46,0	40	10000	10000
10,10	12	118	71	55,8	45	10100	10100
10,20	12	118	71	55,7	45	10200	10200
10,30	12	118	71	55,5	45	10300	10300
10,40	12	118	71	55,4	45	10400	10400
10,50	12	118	71	55,2	45	10500	10500
10,60	12	118	71	55,1	45	10600	10600
10,70	12	118	71	54,9	45	10700	10700
10,80	12	118	71	54,8	45	10800	10800
10,90	12	118	71	54,6	45	10900	10900
11,00	12	118	71	54,5	45	11000	11000
11,10	12	118	71	54,3	45	11100	11100
11,20	12	118	71	54,2	45	11200	11200
11,30	12	118	71	54,0	45	11300	11300
11,40	12	118	71	53,9	45	11400	11400
11,50	12	118	71	53,7	45	11500	11500
11,60	12	118	71	53,6	45	11600	11600
11,70	12	118	71	53,4	45	11700	11700
11,80	12	118	71	53,3	45	11800	11800
11,90	12	118	71	53,1	45	11900	11900
12,00	12	118	71	53,0	45	12000	12000
12,10	14	124	77	58,8	45	12100	12100
12,20	14	124	77	58,7	45	12200	12200
12,50	14	124	77	58,2	45	12500	12500
12,70	14	124	77	57,9	45	12700	12700
12,80	14	124	77	57,8	45	12800	12800
13,00	14	124	77	57,5	45	13000	13000
13,20	14	124	77	57,2	45	13200	13200
13,50	14	124	77	56,7	45	13500	13500
13,80	14	124	77	56,3	45	13800	13800
14,00	14	124	77	56,0	45	14000	14000
14,20	16	133	83	61,7	48	14200	14200
14,40	16	133	83	61,4	48	14400	14400
14,50	16	133	83	61,2	48	14500	14500
14,80	16	133	83	60,8	48	14800	14800
15,00	16	133	83	60,5	48	15000	15000
15,20	16	133	83	60,2	48	15200	15200
15,50	16	133	83	59,7	48	15500	15500
15,80	16	133	83	59,3	48	15800	15800
16,00	16	133	83	59,0	48	16000	16000
16,50	18	143	93	68,2	48	16500	16500
17,00	18	143	93	67,5	48	17000	17000
17,50	18	143	93	66,7	48	17500	17500
18,00	18	143	93	66,0	48	18000	18000
18,50	20	153	101	73,2	50	18500	18500
18,90	20	153	101	72,6	50	18900	18900
19,00	20	153	101	72,5	50	19000	19000
19,50	20	153	101	71,7	50	19500	19500
20,00	20	153	101	71,0	50	20000	20000

	11 710 ...	11 709 ...
P	●	●
M		
K	●	●
N		
S		
H		
O		

→ v_c Page 128

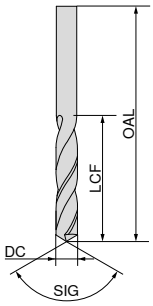
Twist drill similar to DIN 338

▲ Helix angle 30°
▲ Shank Ø h7

2

≤ 5xD

NOF = 2



N



SIG 118°
Solid carbide

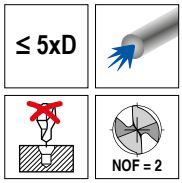
DC h7 mm	OAL mm	LCF mm	10 710 ...
0,5	22	6	005
0,6	24	7	006
0,7	28	9	007
0,8	30	10	008
0,9	32	11	009
1,0	34	12	010
1,1	36	14	011
1,2	38	16	012
1,3	38	16	013
1,4	40	18	014
1,5	40	18	015
1,6	43	20	016
1,7	43	20	017
1,8	46	22	018
1,9	46	22	019
2,0	49	24	020
2,1	49	24	021
2,2	53	27	022
2,3	53	27	023
2,4	57	30	024
2,5	57	30	025
2,6	57	30	026
2,7	61	33	027
2,8	61	33	028
2,9	61	33	029
3,0	61	33	030
3,1	65	36	031
3,2	65	36	032
3,3	65	36	033
3,4	70	39	034
3,5	70	39	035
3,6	70	39	036
3,7	70	39	037
3,8	75	43	038
3,9	75	43	039
4,0	75	43	040
4,1	75	43	041
4,2	75	43	042
4,3	80	47	043
4,4	80	47	044
4,5	80	47	045
4,6	80	47	046
4,7	80	47	047
4,8	86	52	048
4,9	86	52	049
5,0	86	52	050
5,1	86	52	051
5,2	86	52	052
5,3	86	52	053

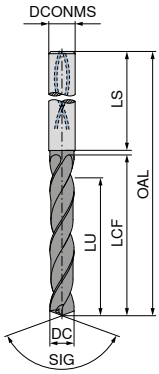
DC h7 mm	OAL mm	LCF mm	10 710 ...
5,4	93	57	054
5,5	93	57	055
5,6	93	57	056
5,7	93	57	057
5,8	93	57	058
5,9	93	57	059
6,0	93	57	060
6,1	101	63	061
6,2	101	63	062
6,3	101	63	063
6,4	101	63	064
6,5	101	63	065
6,6	109	69	066
6,8	109	69	068
7,0	109	69	070
7,5	109	69	075
7,8	117	75	078
8,0	117	75	080
8,5	117	75	085
8,8	125	81	088
9,0	125	81	090
9,5	125	81	095
9,8	133	87	098
10,0	133	87	100
10,2	133	87	102
10,5	133	87	105
11,0	142	94	110
11,5	142	94	115
12,0	151	101	120
13,0	151	101	130
14,0	160	108	140
16,0	178	120	160

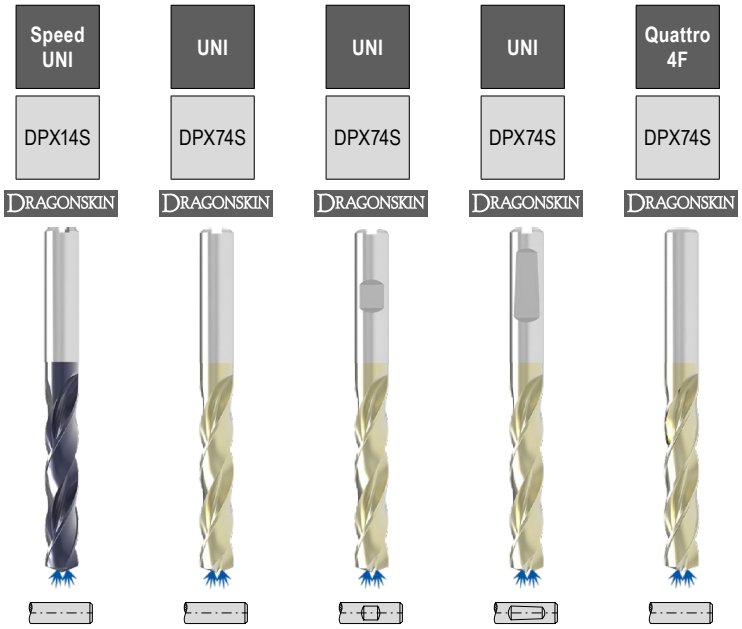
P	○
M	
K	●
N	●
S	○
H	
O	

→ v_c Page 134

WTX – High Performance Drill, DIN 6537







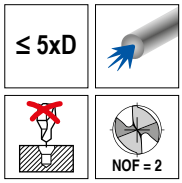
						SIG 145° Solid carbide	SIG 140° Solid carbide	SIG 140° Solid carbide	SIG 140° Solid carbide	SIG 140° Solid carbide
						10 771 ...	**11 786 ...**	**11 787 ...**	**11 785 ...**	**10 735 ...**
DC $_{m7/h7}$ **mm**	DCONMS $_{h6}$ mm	OAL mm	LCF mm	LU mm	LS mm					
3,00	6	66	28	23	36	03000	03000	03000	03000	03000
3,10	6	66	28	23	36	03100	03100	03100	03100	03100
3,15	6	66	28	23	36		03150	03150	03150	
3,20	6	66	28	23	36	03200	03200	03200	03200	03200
3,22	6	66	28	23	36		03220	03220	03220	
3,25	6	66	28	23	36		03250	03250	03250	
3,30	6	66	28	23	36	03300	03300	03300	03300	03300
3,40	6	66	28	23	36	03400	03400	03400	03400	03400
3,50	6	66	28	23	36	03500	03500	03500	03500	03500
3,60	6	66	28	23	36	03600	03600	03600	03600	03600
3,70	6	66	28	23	36	03700	03700	03700	03700	03700
3,80	6	74	36	29	36	03800	03800	03800	03800	03800
3,85	6	74	36	29	36		03850	03850	03850	
3,90	6	74	36	29	36	03900	03900	03900	03900	03900
4,00	6	74	36	29	36	04000	04000	04000	04000	04000
4,10	6	74	36	29	36	04100	04100	04100	04100	04100
4,20	6	74	36	29	36	04200	04200	04200	04200	04200
4,25	6	74	36	29	36		04250	04250	04250	
4,30	6	74	36	29	36	04300	04300	04300	04300	04300
4,35	6	74	36	29	36		04350	04350	04350	
4,40	6	74	36	29	36	04400	04400	04400	04400	04400
4,45	6	74	36	29	36		04450	04450	04450	
4,50	6	74	36	29	36	04500	04500	04500	04500	04500
4,60	6	74	36	29	36	04600	04600	04600	04600	04600
4,65	6	74	36	29	36	04650	04650	04650	04650	
4,70	6	74	36	29	36	04700	04700	04700	04700	04700
4,80	6	82	44	35	36	04800	04800	04800	04800	04800
4,90	6	82	44	35	36	04900	04900	04900	04900	04900
4,95	6	82	44	35	36		04950	04950	04950	
5,00	6	82	44	35	36	05000	05000	05000	05000	05000
5,05	6	82	44	35	36		05050	05050	05050	
5,10	6	82	44	35	36	05100	05100	05100	05100	05100
5,20	6	82	44	35	36	05200	05200	05200	05200	05200
5,30	6	82	44	35	36	05300	05300	05300	05300	05300
P						●	●	●	●	●
M						●				
K						●	●	●	●	●
N										
S										
H							○	○	○	○
O										

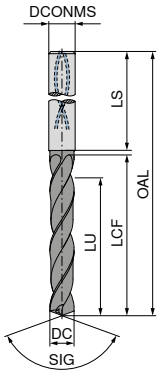
→ v_c Page 111–120

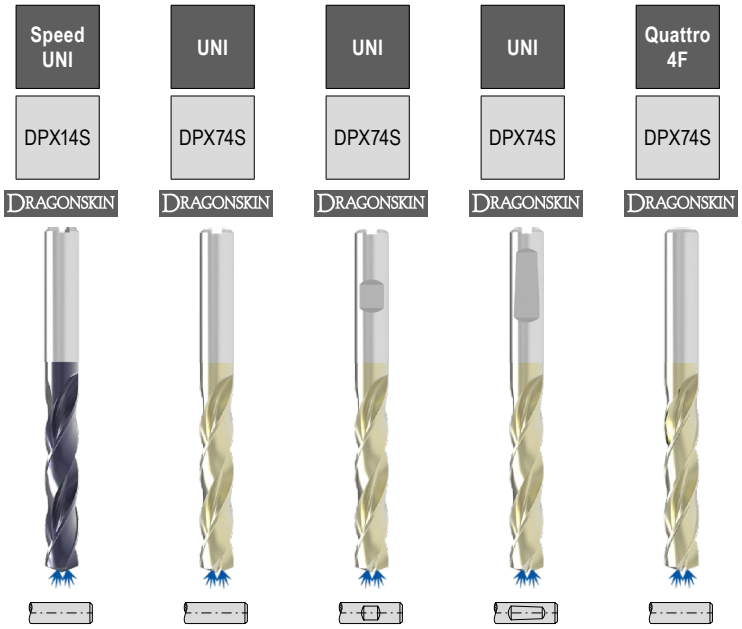
Ø DC_{m7} for Type UNI and Quattro 4F/ **Ø DC_{h7}** for Type Speed UNI

Continued on next page

WTX – High Performance Drill, DIN 6537







SIG 145° Solid carbide	SIG 140° Solid carbide	SIG 140° Solid carbide	SIG 140° Solid carbide	SIG 140° Solid carbide
10 771 ...	**11 786 ...**	**11 787 ...**	**11 785 ...**	**10 735 ...**

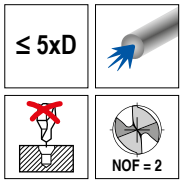
DC $_{m7/h7}$ mm	DCONMS $_{h6}$ mm	OAL mm	LCF mm	LU mm	LS mm					
5,40	6	82	44	35	36	05400	05400	05400	05400	05400
5,50	6	82	44	35	36	05500	05500	05500	05500	05500
5,55	6	82	44	35	36	05550	05550	05550	05550	
5,60	6	82	44	35	36	05600	05600	05600	05600	05600
5,70	6	82	44	35	36	05700	05700	05700	05700	05700
5,75	6	82	44	35	36		05750	05750	05750	
5,80	6	82	44	35	36	05800	05800	05800	05800	05800
5,90	6	82	44	35	36	05900	05900	05900	05900	05900
5,95	6	82	44	35	36		05950	05950	05950	
6,00	6	82	44	35	36	06000	06000	06000	06000	06000
6,10	8	91	53	43	36	06100	06100	06100	06100	06100
6,20	8	91	53	43	36	06200	06200	06200	06200	06200
6,30	8	91	53	43	36	06300	06300	06300	06300	06300
6,40	8	91	53	43	36	06400	06400	06400	06400	06400
6,50	8	91	53	43	36	06500	06500	06500	06500	06500
6,60	8	91	53	43	36	06600	06600	06600	06600	06600
6,70	8	91	53	43	36	06700	06700	06700	06700	06700
6,80	8	91	53	43	36	06800	06800	06800	06800	06800
6,90	8	91	53	43	36	06900	06900	06900	06900	06900
7,00	8	91	53	43	36	07000	07000	07000	07000	07000
7,10	8	91	53	43	36	07100	07100	07100	07100	07100
7,20	8	91	53	43	36	07200	07200	07200	07200	07200
7,30	8	91	53	43	36	07300	07300	07300	07300	07300
7,40	8	91	53	43	36	07400	07400	07400	07400	07400
7,45	8	91	53	43	36		07450	07450	07450	
7,50	8	91	53	43	36	07500	07500	07500	07500	07500
7,60	8	91	53	43	36	07600	07600	07600	07600	07600
7,70	8	91	53	43	36	07700	07700	07700	07700	07700
7,80	8	91	53	43	36	07800	07800	07800	07800	07800
7,90	8	91	53	43	36	07900	07900	07900	07900	07900
8,00	8	91	53	43	36	08000	08000	08000	08000	08000
8,10	10	103	61	49	40	08100	08100	08100	08100	08100
8,20	10	103	61	49	40	08200	08200	08200	08200	08200
8,30	10	103	61	49	40	08300	08300	08300	08300	08300
P						●	●	●	●	●
M						●				
K						●	●	●	●	●
N										
S										
H							○	○	○	○
O										

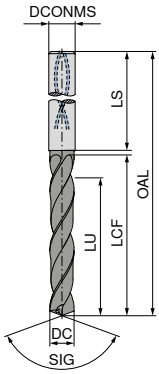
→ v_c Page 111–120

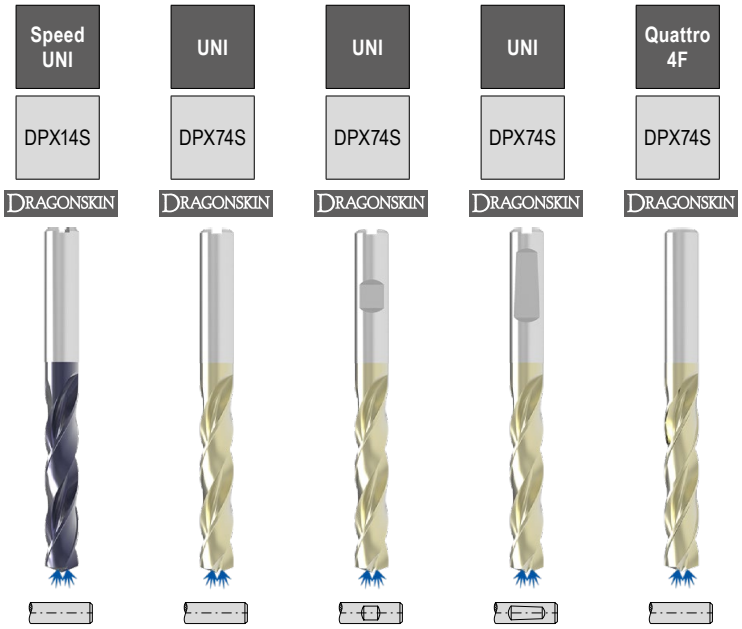
Ø DC_{m7} for Type UNI and Quattro 4F/ Ø DC_{h7} for Type Speed UNI

Continued on next page

WTX – High Performance Drill, DIN 6537







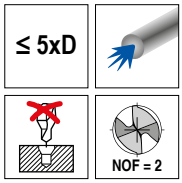
	SIG 145° Solid carbide	SIG 140° Solid carbide	SIG 140° Solid carbide	SIG 140° Solid carbide	SIG 140° Solid carbide
	10 771 ...	**11 786 ...**	**11 787 ...**	**11 785 ...**	**10 735 ...**
DC $_{m7/h7}$ mm					
8,40	08400	08400	08400	08400	08400
8,50	08500	08500	08500	08500	08500
8,60	08600	08600	08600	08600	08600
8,70	08700	08700	08700	08700	08700
8,80	08800	08800	08800	08800	08800
8,90	08900	08900	08900	08900	08900
9,00	09000	09000	09000	09000	09000
9,10	09100	09100	09100	09100	09100
9,20	09200	09200	09200	09200	09200
9,30	09300	09300	09300	09300	09300
9,35		09350	09350	09350	
9,40	09400	09400	09400	09400	09400
9,45		09450	09450	09450	
9,50	09500	09500	09500	09500	09500
9,60	09600	09600	09600	09600	09600
9,70	09700	09700	09700	09700	09700
9,80	09800	09800	09800	09800	09800
9,90	09900	09900	09900	09900	09900
10,00	10000	10000	10000	10000	10000
10,10	10100	10100	10100	10100	10100
10,20	10200	10200	10200	10200	10200
10,30	10300	10300	10300	10300	10300
10,40	10400	10400	10400	10400	10400
10,50	10500	10500	10500	10500	10500
10,55		10550	10550	10550	
10,60	10600	10600	10600	10600	10600
10,70	10700	10700	10700	10700	10700
10,75		10750	10750	10750	
10,80	10800	10800	10800	10800	10800
10,90	10900	10900	10900	10900	10900
11,00	11000	11000	11000	11000	11000
11,10	11100	11100	11100	11100	11100
11,20	11200	11200	11200	11200	11200
11,25		11250	11250	11250	
DCONMS $_{h6}$ mm	10	10	10	10	10
OAL mm	103	103	103	103	103
LCF mm	61	61	61	61	61
LU mm	49	49	49	49	49
LS mm	40	40	40	40	40
P	●	●	●	●	●
M	●				
K	●	●	●	●	●
N					
S					
H		○	○	○	○
O					

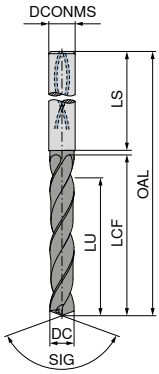
→ v_c Page 111–120

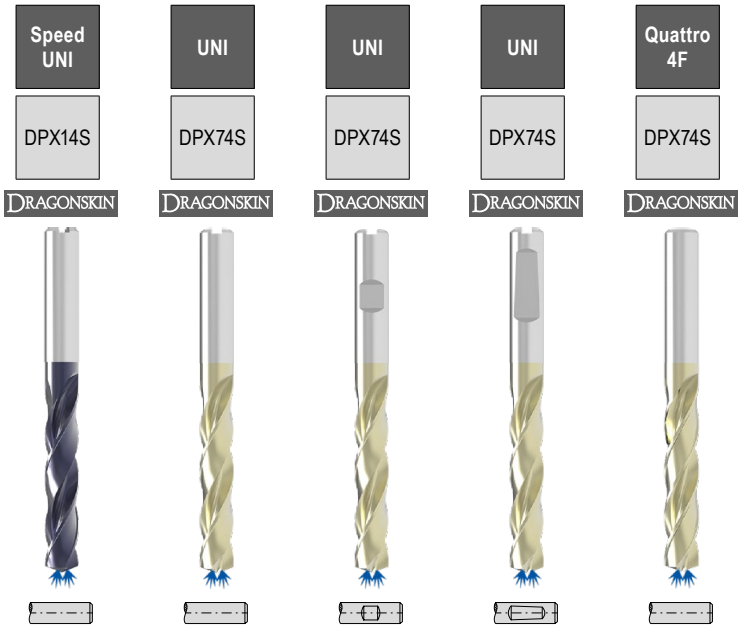
ⓘ **Ø DC$_{m7}$** for Type UNI and Quattro 4F/ **Ø DC$_{h7}$** for Type Speed UNI

Continued on next page

WTX – High Performance Drill, DIN 6537







SIG 145° Solid carbide	SIG 140° Solid carbide	SIG 140° Solid carbide	SIG 140° Solid carbide	SIG 140° Solid carbide
10 771 ...	**11 786 ...**	**11 787 ...**	**11 785 ...**	**10 735 ...**

DC $_{m7/h7}$ mm	DCONMS $_{h6}$ mm	OAL mm	LCF mm	LU mm	LS mm									
11,30	12	118	71	56	45	11300		11300		11300		11300		11300
11,35	12	118	71	56	45			11350		11350		11350		
11,40	12	118	71	56	45	11400		11400		11400		11400		11400
11,45	12	118	71	56	45			11450		11450		11450		
11,50	12	118	71	56	45	11500		11500		11500		11500		11500
11,60	12	118	71	56	45	11600		11600		11600		11600		11600
11,70	12	118	71	56	45	11700		11700		11700		11700		11700
11,80	12	118	71	56	45	11800		11800		11800		11800		11800
11,90	12	118	71	56	45	11900		11900		11900		11900		11900
12,00	12	118	71	56	45	12000		12000		12000		12000		12000
12,15	14	124	77	60	45			12150		12150		12150		
12,20	14	124	77	60	45	12200								
12,25	14	124	77	60	45			12250		12250		12250		
12,50	14	124	77	60	45	12500		12500		12500		12500		12500
12,55	14	124	77	60	45			12550		12550		12550		
12,70	14	124	77	60	45			12700		12700		12700		
12,80	14	124	77	60	45	12800		12800		12800		12800		12800
12,90	14	124	77	60	45			12900		12900		12900		
13,00	14	124	77	60	45	13000		13000		13000		13000		13000
13,10	14	124	77	60	45			13100		13100		13100		
13,30	14	124	77	60	45			13300		13300		13300		
13,35	14	124	77	60	45			13350		13350		13350		
13,50	14	124	77	60	45	13500		13500		13500		13500		13500
13,70	14	124	77	60	45			13700		13700		13700		
13,80	14	124	77	60	45	13800		13800		13800		13800		13800
14,00	14	124	77	60	45	14000		14000		14000		14000		14000
14,20	16	133	83	63	48	14200		14200		14200		14200		
14,50	16	133	83	63	48	14500		14500		14500		14500		14500
14,80	16	133	83	63	48	14800		14800		14800		14800		14800
15,00	16	133	83	63	48	15000		15000		15000		15000		15000
15,10	16	133	83	63	48			15100		15100		15100		
15,20	16	133	83	63	48	15200								
15,25	16	133	83	63	48			15250		15250		15250		
15,30	16	133	83	63	48			15300		15300		15300		

P	●	●	●	●	●
M	●				
K	●	●	●	●	●
N					
S					
H		○	○	○	○
O					

→ v_c Page 111–120

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

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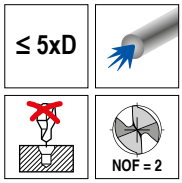
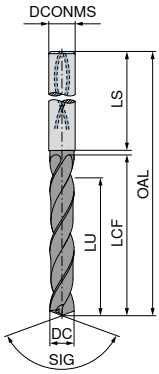
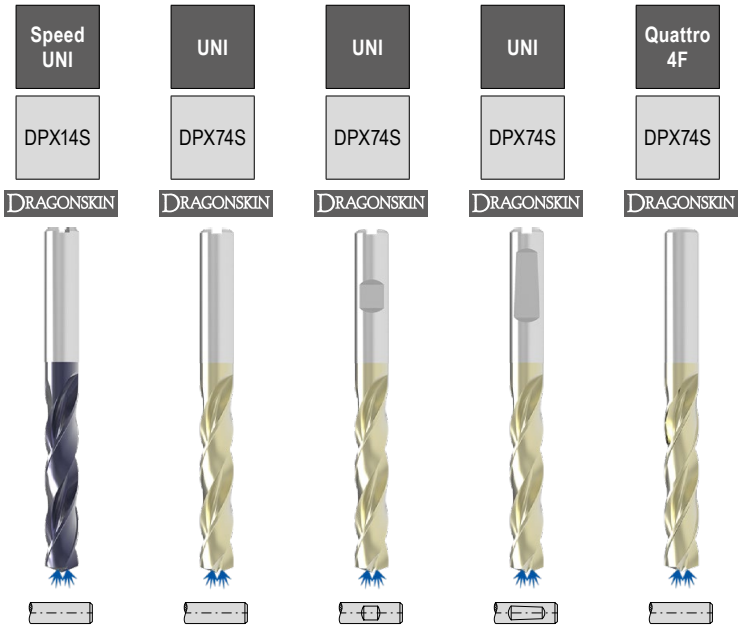
WTX – High Performance Drill, DIN 6537







SIG 145° Solid carbide	SIG 140° Solid carbide	SIG 140° Solid carbide	SIG 140° Solid carbide	SIG 140° Solid carbide
10 771 ...	**11 786 ...**	**11 787 ...**	**11 785 ...**	**10 735 ...**

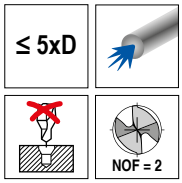
DC $_{m7/h7}$ mm	DCONMS $_{h6}$ mm	OAL mm	LCF mm	LU mm	LS mm									
15,35	16	133	83	63	48		15350		15350		15350			
15,50	16	133	83	63	48	15500	15500		15500		15500		15500	
15,60	16	133	83	63	48		15600		15600		15600			
15,80	16	133	83	63	48	15800	15800		15800		15800		15800	
16,00	16	133	83	63	48	16000	16000		16000		16000		16000	
16,05	18	143	93	71	48		16050		16050		16050			
16,50	18	143	93	71	48	16500	16500		16500		16500		16500	
16,80	18	143	93	71	48	16800	16800		16800		16800		16800	
16,90	18	143	93	71	48		16900		16900		16900			
17,00	18	143	93	71	48	17000	17000		17000		17000		17000	
17,50	18	143	93	71	48	17500	17500		17500		17500		17500	
17,60	18	143	93	71	48		17600		17600		17600			
17,80	18	143	93	71	48	17800	17800		17800		17800		17800	
18,00	18	143	93	71	48	18000	18000		18000		18000		18000	
18,50	20	153	101	77	50		18500		18500		18500			
18,80	20	153	101	77	50		18800		18800		18800			
18,90	20	153	101	77	50		18900		18900		18900			
19,00	20	153	101	77	50		19000		19000		19000			
19,35	20	153	101	77	50		19350		19350		19350			
19,50	20	153	101	77	50		19500		19500		19500			
19,60	20	153	101	77	50		19600		19600		19600			
19,80	20	153	101	77	50		19800		19800		19800			
20,00	20	153	101	77	50		20000		20000		20000			
20,50	25	200	135	110	56		20500		20500		20500			
21,00	25	200	135	110	56		21000		21000		21000			
21,50	25	200	135	110	56		21500		21500		21500			
22,00	25	200	135	110	56		22000		22000		22000			
22,50	25	200	140	120	56		22500		22500		22500			
23,00	25	200	140	120	56		23000		23000		23000			
23,50	25	200	140	120	56		23500		23500		23500			
24,00	25	200	140	120	56		24000		24000		24000			
24,50	25	200	140	120	56		24500		24500		24500			
25,00	25	200	140	120	56		25000		25000		25000			

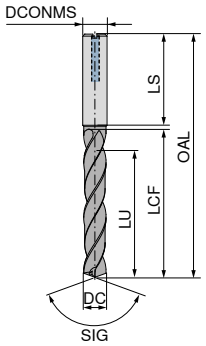
P	●	●	●	●	●
M	●				
K	●	●	●	●	●
N					
S					
H		○	○	○	○
O					

→ v_c Page 111–120

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

WTX – High Performance Drill, DIN 6537





Speed VA | VA | AL

Ti800 | Ti700 | DLC

DRAGONSKIN



SIG 135° Solid carbide | SIG 140° Solid carbide | SIG 135° Solid carbide

10 773 ... | **10 745 ...** | **10 791 ...**

DC h7/m7 mm	DCONMS h6 mm	OAL mm	LCF mm	LU mm	LS mm					
2,50	4	57	21	17	28					**02500**
2,60	4	57	21	17	28					**02600**
2,70	4	57	21	17	28					**02700**
2,80	4	57	21	17	28					**02800**
2,90	4	57	21	17	28					**02900**
3,00	6	66	28	23	36	**030**		**030**		**03000**
3,10	6	66	28	23	36	**031**		**031**		**03100**
3,15	6	66	28	23	36			**831**		
3,20	6	66	28	23	36	**032**		**032**		**03200**
3,22	6	66	28	23	36			**832**		
3,25	6	66	28	23	36			**890**		
3,30	6	66	28	23	36	**033**		**033**		**03300**
3,40	6	66	28	23	36	**034**		**034**		**03400**
3,50	6	66	28	23	36	**035**		**035**		**03500**
3,60	6	66	28	23	36	**036**		**036**		**03600**
3,70	6	66	28	23	36	**037**		**037**		**03700**
3,80	6	74	36	29	36	**038**		**038**		**03800**
3,85	6	74	36	29	36			**838**		
3,90	6	74	36	29	36	**039**		**039**		**03900**
4,00	6	74	36	29	36	**040**		**040**		**04000**
4,10	6	74	36	29	36	**041**		**041**		**04100**
4,20	6	74	36	29	36	**042**		**042**		**04200**
4,30	6	74	36	29	36	**043**		**043**		**04300**
4,35	6	74	36	29	36			**843**		
4,40	6	74	36	29	36	**044**		**044**		**04400**
4,45	6	74	36	29	36			**844**		
4,50	6	74	36	29	36	**045**		**045**		**04500**
4,60	6	74	36	29	36	**046**		**046**		**04600**
4,65	6	74	36	29	36	**900**		**900**		
4,70	6	74	36	29	36	**047**		**047**		**04700**
4,80	6	82	44	35	36	**048**		**048**		**04800**
4,90	6	82	44	35	36	**049**		**049**		**04900**
5,00	6	82	44	35	36	**050**		**050**		**05000**
5,10	6	82	44	35	36	**051**		**051**		**05100**
5,20	6	82	44	35	36	**052**		**052**		**05200**
5,30	6	82	44	35	36	**053**		**053**		**05300**
5,40	6	82	44	35	36	**054**		**054**		**05400**

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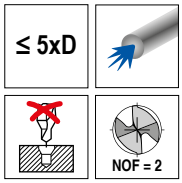
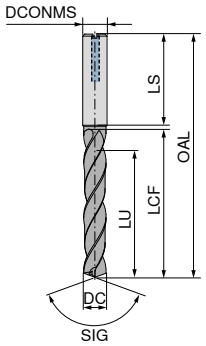
→ v_c Page 112–122

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

Continued on next page

WTX – High Performance Drill, DIN 6537





Speed VA | VA | AL

Ti800 | Ti700 | DLC

DRAGONSKIN



SIG 135° Solid carbide | SIG 140° Solid carbide | SIG 135° Solid carbide

10 773 ... | **10 745 ...** | **10 791 ...**

DC h7/m7 mm	DCONMS h6 mm	OAL mm	LCF mm	LU mm	LS mm					
5,50	6	82	44	35	36	055		055		05500
5,55	6	82	44	35	36	902				
5,60	6	82	44	35	36	056		056		05600
5,70	6	82	44	35	36	057		057		05700
5,75	6	82	44	35	36			916		
5,80	6	82	44	35	36	058		058		05800
5,90	6	82	44	35	36	059		059		05900
5,95	6	82	44	35	36			959		
6,00	6	82	44	35	36	060		060		06000
6,10	8	91	53	43	36	061		061		06100
6,20	8	91	53	43	36	062		062		06200
6,30	8	91	53	43	36	063		063		06300
6,40	8	91	53	43	36	064		064		06400
6,50	8	91	53	43	36	065		065		06500
6,60	8	91	53	43	36	066		066		06600
6,70	8	91	53	43	36	067		067		06700
6,80	8	91	53	43	36	068		068		06800
6,90	8	91	53	43	36	069		069		06900
7,00	8	91	53	43	36	070		070		07000
7,10	8	91	53	43	36	071		071		07100
7,20	8	91	53	43	36	072		072		07200
7,30	8	91	53	43	36	073		073		07300
7,40	8	91	53	43	36	074		074		07400
7,45	8	91	53	43	36			924		
7,50	8	91	53	43	36	075		075		07500
7,60	8	91	53	43	36	076		076		07600
7,70	8	91	53	43	36	077		077		07700
7,80	8	91	53	43	36	078		078		07800
7,90	8	91	53	43	36	079		079		07900
8,00	8	91	53	43	36	080		080		08000
8,10	10	103	61	49	40	081		081		08100
8,20	10	103	61	49	40	082		082		08200
8,30	10	103	61	49	40	083		083		08300
8,40	10	103	61	49	40	084		084		08400
8,50	10	103	61	49	40	085		085		08500
8,60	10	103	61	49	40	086		086		08600
8,70	10	103	61	49	40	087		087		08700

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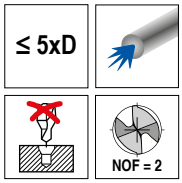
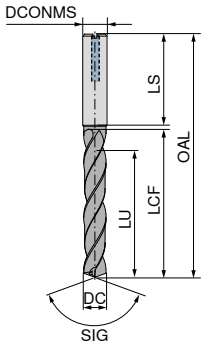
→ v_c Page 112–122

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

Continued on next page

WTX – High Performance Drill, DIN 6537





Speed VA | VA | AL

Ti800 | Ti700 | DLC

DRAGONSKIN



SIG 135° Solid carbide | SIG 140° Solid carbide | SIG 135° Solid carbide

10 773 ... | **10 745 ...** | **10 791 ...**

DC h7/m7 mm	DCONMS h6 mm	OAL mm	LCF mm	LU mm	LS mm					
8,80	10	103	61	49	40		088		088	08800
8,90	10	103	61	49	40		089		089	08900
9,00	10	103	61	49	40		090		090	09000
9,10	10	103	61	49	40		091		091	09100
9,20	10	103	61	49	40		092		092	09200
9,30	10	103	61	49	40		093		093	09300
9,35	10	103	61	49	40				930	
9,40	10	103	61	49	40		094		094	09400
9,45	10	103	61	49	40				994	
9,50	10	103	61	49	40		095		095	09500
9,60	10	103	61	49	40		096		096	09600
9,70	10	103	61	49	40		097		097	09700
9,80	10	103	61	49	40		098		098	09800
9,90	10	103	61	49	40		099		099	09900
10,00	10	103	61	49	40		100		100	10000
10,10	12	118	71	56	45		101		101	10100
10,20	12	118	71	56	45		102		102	10200
10,30	12	118	71	56	45		103		103	10300
10,40	12	118	71	56	45		104		104	10400
10,50	12	118	71	56	45		105		105	10500
10,55	12	118	71	56	45				932	
10,60	12	118	71	56	45		106		106	10600
10,70	12	118	71	56	45		107		107	10700
10,80	12	118	71	56	45		108		108	10800
10,90	12	118	71	56	45		109		109	
11,00	12	118	71	56	45		110		110	11000
11,10	12	118	71	56	45		111		111	11100
11,20	12	118	71	56	45		112		112	11200
11,25	12	118	71	56	45				912	
11,30	12	118	71	56	45		113		113	11300
11,35	12	118	71	56	45				913	
11,40	12	118	71	56	45		114		114	11400
11,45	12	118	71	56	45				914	
11,50	12	118	71	56	45		115		115	11500
11,60	12	118	71	56	45		116		116	
11,70	12	118	71	56	45		117		117	11700
11,80	12	118	71	56	45		118		118	11800

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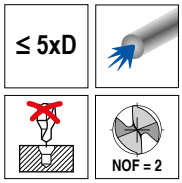
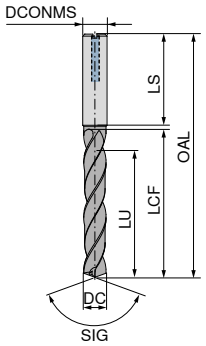
→ v_c Page 112–122

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

Continued on next page

WTX – High Performance Drill, DIN 6537





Speed VA | VA | AL

Ti800 | Ti700 | DLC

DRAGONSKIN



SIG 135° Solid carbide | SIG 140° Solid carbide | SIG 135° Solid carbide

10 773 ... | **10 745 ...** | **10 791 ...**

DC h7/m7 mm	DCONMS h6 mm	OAL mm	LCF mm	LU mm	LS mm					
11,90	12	118	71	56	45	**119**		**119**		
12,00	12	118	71	56	45	**120**		**120**		**12000**
12,15	14	124	77	60	45			**921**		
12,20	14	124	77	60	45	**12200**				**12200**
12,50	14	124	77	60	45	**125**		**125**		**12500**
12,55	14	124	77	60	45			**925**		
12,60	14	124	77	60	45					**12600**
12,80	14	124	77	60	45	**128**		**128**		**12800**
13,00	14	124	77	60	45	**130**		**130**		**13000**
13,35	14	124	77	60	45			**933**		
13,50	14	124	77	60	45	**135**		**135**		**13500**
13,80	14	124	77	60	45	**138**		**138**		**13800**
14,00	14	124	77	60	45	**140**		**140**		**14000**
14,20	16	133	83	63	48					**14200**
14,50	16	133	83	63	48	**145**		**145**		**14500**
14,80	16	133	83	63	48	**148**		**148**		**14800**
15,00	16	133	83	63	48	**150**		**150**		**15000**
15,20	16	133	83	63	48					**15200**
15,35	16	133	83	63	48			**953**		
15,50	16	133	83	63	48	**155**		**155**		**15500**
15,80	16	133	83	63	48	**158**		**158**		**15800**
16,00	16	133	83	63	48	**160**		**160**		**16000**
16,05	18	143	93	71	48			**960**		
16,50	18	143	93	71	48	**165**		**165**		**16500**
16,80	18	143	93	71	48	**168**		**168**		
17,00	18	143	93	71	48	**170**		**170**		**17000**
17,50	18	143	93	71	48	**175**		**175**		**17500**
17,80	18	143	93	71	48	**178**		**178**		
18,00	18	143	93	71	48	**180**		**180**		**18000**
18,50	20	153	101	77	50	**185**		**185**		**18500**
18,80	20	153	101	77	50	**188**		**188**		
19,00	20	153	101	77	50	**190**		**190**		**19000**
19,35	20	153	101	77	50			**993**		
19,50	20	153	101	77	50	**195**		**195**		**19500**
19,80	20	153	101	77	50	**198**		**198**		
20,00	20	153	101	77	50	**200**		**200**		**20000**
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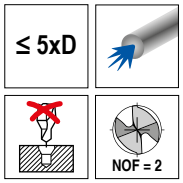
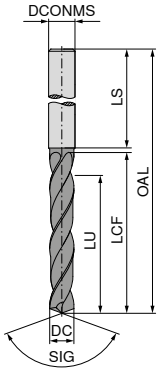
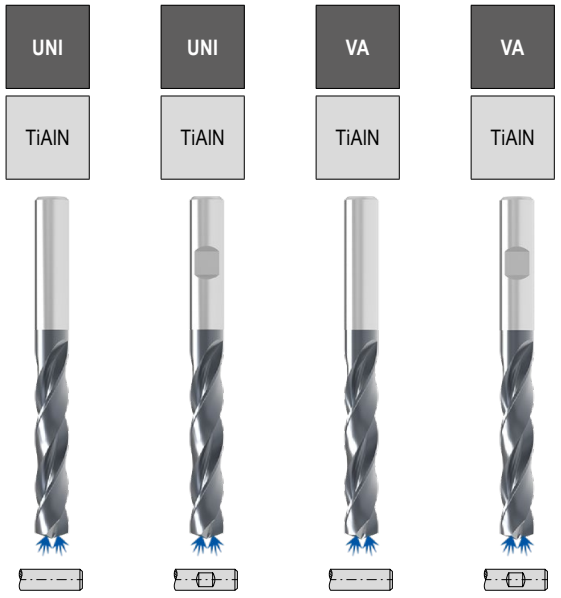
→ v_c Page 112–122

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

High Performance Drill, DIN 6537







SIG 140° Solid carbide | SIG 140° Solid carbide | SIG 140° Solid carbide | SIG 140° Solid carbide

DC $_{m7/h7}$ mm	DCONMS $_{h6}$ mm	OAL mm	LCF mm	LU mm	LS mm	11 702 ...	11 703 ...	11 715 ...	11 716 ...
1,00	4	55	8	6,5	28	01000		01000	
1,10	4	55	12	10,3	28	01100		01100	
1,20	4	55	12	10,2	28	01200		01200	
1,30	4	55	12	10,0	28	01300		01300	
1,40	4	55	12	9,9	28	01400		01400	
1,50	4	55	12	9,7	28	01500		01500	
1,60	4	55	16	13,6	28	01600		01600	
1,70	4	55	16	13,4	28	01700		01700	
1,80	4	55	16	13,3	28	01800		01800	
1,90	4	55	16	13,1	28	01900		01900	
2,00	4	57	21	18,0	28	02000		02000	
2,10	4	57	21	17,8	28	02100		02100	
2,20	4	57	21	17,7	28	02200		02200	
2,30	4	57	21	17,5	28	02300		02300	
2,40	4	57	21	17,4	28	02400		02400	
2,50	4	57	21	17,2	28	02500		02500	
2,60	4	57	21	17,1	28	02600		02600	
2,70	4	57	21	16,9	28	02700		02700	
2,80	4	57	21	16,8	28	02800		02800	
2,90	4	57	21	16,6	28	02900		02900	
3,00	6	66	28	23,5	36	03000	03000	03000	03000
3,10	6	66	28	23,3	36	03100	03100	03100	03100
3,20	6	66	28	23,2	36	03200	03200	03200	03200
3,25	6	66	28	23,1	36	03250	03250		
3,30	6	66	28	23,0	36	03300	03300	03300	03300
3,40	6	66	28	22,9	36	03400	03400	03400	03400
3,50	6	66	28	22,7	36	03500	03500	03500	03500
3,60	6	66	28	22,6	36	03600	03600	03600	03600
3,70	6	66	28	22,4	36	03700	03700	03700	03700
3,80	6	74	36	30,3	36	03800	03800	03800	03800
3,85	6	74	36	30,2	36	03850	03850		
3,90	6	74	36	30,1	36	03900	03900	03900	03900
4,00	6	74	36	30,0	36	04000	04000	04000	04000
4,10	6	74	36	29,8	36	04100	04100	04100	04100
4,20	6	74	36	29,7	36	04200	04200	04200	04200
4,30	6	74	36	29,5	36	04300	04300	04300	04300
4,40	6	74	36	29,4	36	04400	04400	04400	04400
4,50	6	74	36	29,2	36	04500	04500	04500	04500
4,60	6	74	36	29,1	36	04600	04600	04600	04600
4,65	6	74	36	29,0	36	04650	04650		
4,70	6	74	36	28,9	36	04700	04700	04700	04700
4,80	6	82	44	36,8	36	04800	04800	04800	04800
4,90	6	82	44	36,6	36	04900	04900	04900	04900
5,00	6	82	44	36,5	36	05000	05000	05000	05000
5,10	6	82	44	36,3	36	05100	05100	05100	05100

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→ v_c Page 129+133

Ø DC_{h7} for Type UNI / Ø DC_{m7} for Type VA

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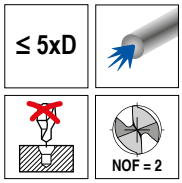
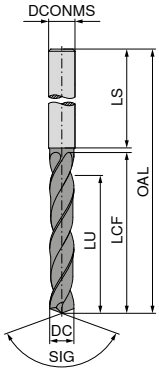
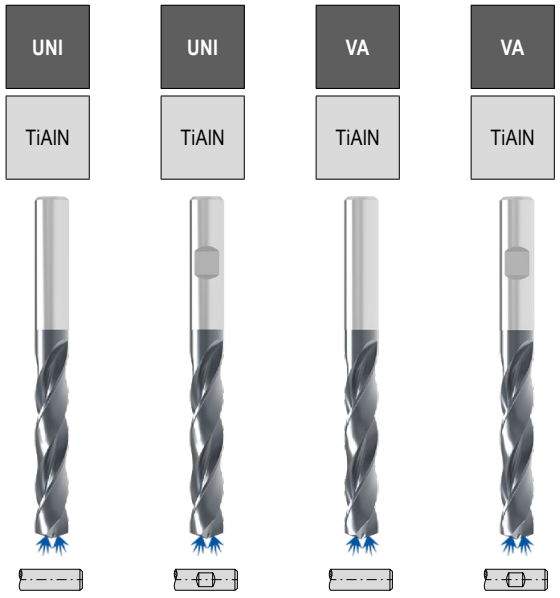
High Performance Drill, DIN 6537







SIG 140°
Solid carbide

SIG 140°
Solid carbide

SIG 140°
Solid carbide

SIG 140°
Solid carbide

DC $_{m7/h7}$ mm	DCONMS $_{h6}$ mm	OAL mm	LCF mm	LU mm	LS mm	11 702 ...	11 703 ...	11 715 ...	11 716 ...
5,20	6	82	44	36,2	36	05200	05200	05200	05200
5,30	6	82	44	36,0	36	05300	05300	05300	05300
5,40	6	82	44	35,9	36	05400	05400	05400	05400
5,50	6	82	44	35,7	36	05500	05500	05500	05500
5,55	6	82	44	35,6	36	05550	05550		
5,60	6	82	44	35,6	36	05600	05600	05600	05600
5,65	6	82	44	35,5	36	05650	05650		
5,70	6	82	44	35,4	36	05700	05700	05700	05700
5,80	6	82	44	35,3	36	05800	05800	05800	05800
5,90	6	82	44	35,1	36	05900	05900	05900	05900
6,00	6	82	44	35,0	36	06000	06000	06000	06000
6,10	8	91	53	43,8	36	06100	06100	06100	06100
6,20	8	91	53	43,7	36	06200	06200	06200	06200
6,30	8	91	53	43,5	36	06300	06300	06300	06300
6,40	8	91	53	43,4	36	06400	06400	06400	06400
6,50	8	91	53	43,2	36	06500	06500	06500	06500
6,60	8	91	53	43,1	36	06600	06600	06600	06600
6,70	8	91	53	42,9	36	06700	06700	06700	06700
6,80	8	91	53	42,8	36	06800	06800	06800	06800
6,90	8	91	53	42,6	36	06900	06900	06900	06900
7,00	8	91	53	42,5	36	07000	07000	07000	07000
7,10	8	91	53	42,3	36	07100	07100	07100	07100
7,20	8	91	53	42,2	36	07200	07200	07200	07200
7,30	8	91	53	42,0	36	07300	07300	07300	07300
7,40	8	91	53	41,9	36	07400	07400	07400	07400
7,45	8	91	53	41,8	36			07450	07450
7,50	8	91	53	41,7	36	07500	07500	07500	07500
7,55	8	91	53	41,6	36	07550	07550	07550	07550
7,60	8	91	53	41,6	36	07600	07600	07600	07600
7,65	8	91	53	41,5	36	07650	07650		
7,70	8	91	53	41,4	36	07700	07700	07700	07700
7,80	8	91	53	41,3	36	07800	07800	07800	07800
7,90	8	91	53	41,1	36	07900	07900	07900	07900
8,00	8	91	53	41,0	36	08000	08000	08000	08000
8,10	10	103	61	48,8	40	08100	08100	08100	08100
8,20	10	103	61	48,7	40	08200	08200	08200	08200
8,30	10	103	61	48,5	40	08300	08300	08300	08300
8,40	10	103	61	48,4	40	08400	08400	08400	08400
8,50	10	103	61	48,2	40	08500	08500	08500	08500
8,60	10	103	61	48,1	40	08600	08600	08600	08600
8,70	10	103	61	47,9	40	08700	08700	08700	08700
8,80	10	103	61	47,8	40	08800	08800	08800	08800
8,90	10	103	61	47,6	40	08900	08900	08900	08900
9,00	10	103	61	47,5	40	09000	09000	09000	09000
9,10	10	103	61	47,3	40	09100	09100	09100	09100
P						●	●	○	○
M						●	●	●	●
K						●	●		
N						○	○	●	●
S								○	○
H									
O								○	○

→ v_c Page 129+133

Ø DC_{h7} for Type UNI / Ø DC_{m7} for Type VA

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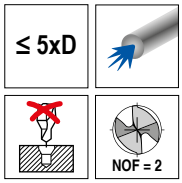
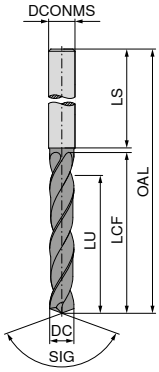
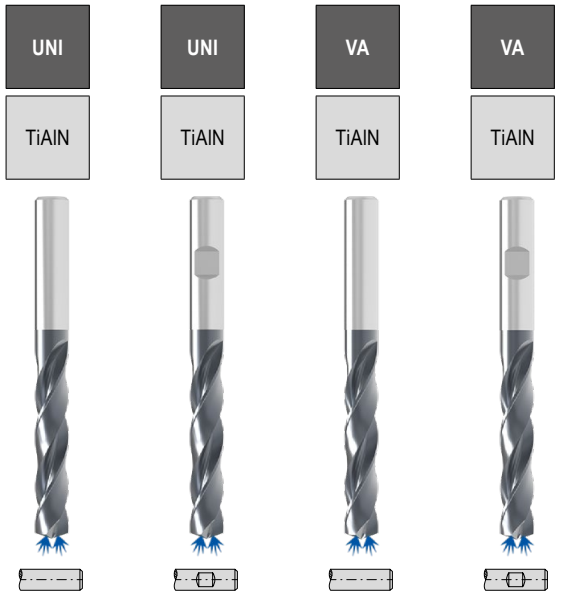
High Performance Drill, DIN 6537







SIG 140°
Solid carbide

SIG 140°
Solid carbide

SIG 140°
Solid carbide

SIG 140°
Solid carbide

DC $_{m7/h7}$ mm	DCONMS $_{h6}$ mm	OAL mm	LCF mm	LU mm	LS mm	11 702 ...	11 703 ...	11 715 ...	11 716 ...
9,20	10	103	61	47,2	40	09200	09200	09200	09200
9,30	10	103	61	47,0	40	09300	09300	09300	09300
9,40	10	103	61	46,9	40	09400	09400	09400	09400
9,50	10	103	61	46,7	40	09500	09500	09500	09500
9,55	10	103	61	46,6	40	09550	09550		
9,60	10	103	61	46,6	40	09600	09600	09600	09600
9,70	10	103	61	46,4	40	09700	09700	09700	09700
9,80	10	103	61	46,3	40	09800	09800	09800	09800
9,90	10	103	61	46,1	40	09900	09900	09900	09900
10,00	10	103	61	46,0	40	10000	10000	10000	10000
10,10	12	118	71	55,8	45	10100	10100	10100	10100
10,20	12	118	71	55,7	45	10200	10200	10200	10200
10,30	12	118	71	55,5	45	10300	10300	10300	10300
10,40	12	118	71	55,4	45	10400	10400	10400	10400
10,50	12	118	71	55,2	45	10500	10500	10500	10500
10,60	12	118	71	55,1	45	10600	10600	10600	10600
10,70	12	118	71	54,9	45	10700	10700	10700	10700
10,80	12	118	71	54,8	45	10800	10800	10800	10800
10,90	12	118	71	54,6	45	10900	10900	10900	10900
11,00	12	118	71	54,5	45	11000	11000	11000	11000
11,10	12	118	71	54,3	45	11100	11100	11100	11100
11,20	12	118	71	54,2	45	11200	11200	11200	11200
11,30	12	118	71	54,0	45	11300	11300	11300	11300
11,40	12	118	71	53,9	45	11400	11400	11400	11400
11,50	12	118	71	53,7	45	11500	11500	11500	11500
11,60	12	118	71	53,6	45	11600	11600	11600	11600
11,70	12	118	71	53,4	45	11700	11700	11700	11700
11,80	12	118	71	53,3	45	11800	11800	11800	11800
11,90	12	118	71	53,1	45	11900	11900	11900	11900
12,00	12	118	71	53,0	45	12000	12000	12000	12000
12,10	14	124	77	58,8	45	12100	12100	12100	12100
12,20	14	124	77	58,7	45	12200	12200	12200	12200
12,40	14	124	77	58,4	45	12400	12400	12400	12400
12,50	14	124	77	58,2	45	12500	12500	12500	12500
12,60	14	124	77	58,1	45	12600	12600	12600	12600
12,70	14	124	77	57,9	45	12700	12700	12700	12700
12,80	14	124	77	57,8	45	12800	12800	12800	12800
13,00	14	124	77	57,5	45	13000	13000	13000	13000
13,10	14	124	77	57,3	45	13100	13100	13100	13100
13,20	14	124	77	57,2	45	13200	13200	13200	13200
13,30	14	124	77	57,0	45	13300	13300	13300	13300
13,50	14	124	77	56,7	45	13500	13500	13500	13500
13,70	14	124	77	56,4	45			13700	13700
13,80	14	124	77	56,3	45	13800	13800	13800	13800
14,00	14	124	77	56,0	45	14000	14000	14000	14000
P						●	●	○	○
M						●	●	●	●
K						●	●		
N						○	○	●	●
S								○	○
H									
O								○	○

→ v_c Page 129+133

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

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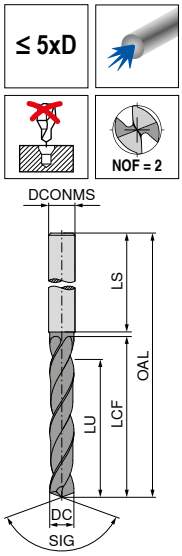
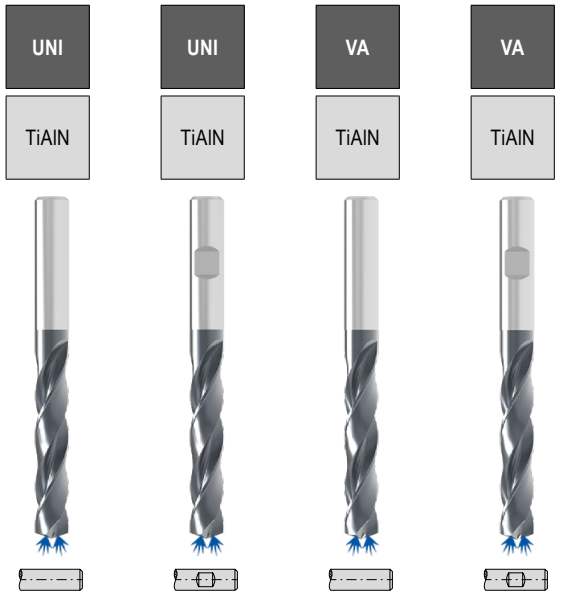
High Performance Drill, DIN 6537





SIG 140° Solid carbide

SIG 140° Solid carbide

SIG 140° Solid carbide

SIG 140° Solid carbide

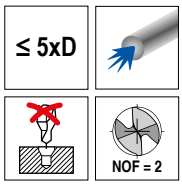
DC $_{m7/h7}$ mm	DCONMS $_{h6}$ mm	OAL mm	LCF mm	LU mm	LS mm	11 702 ...	11 703 ...	11 715 ...	11 716 ...
14,20	16	133	83	61,7	48	14200	14200	14200	14200
14,30	16	133	83	61,5	48	14300	14300	14300	14300
14,40	16	133	83	61,4	48	14400	14400	14400	14400
14,50	16	133	83	61,2	48	14500	14500	14500	14500
14,70	16	133	83	60,9	48			14700	14700
14,80	16	133	83	60,8	48	14800	14800	14800	14800
15,00	16	133	83	60,5	48	15000	15000	15000	15000
15,10	16	133	83	60,3	48	15100	15100	15100	15100
15,20	16	133	83	60,2	48	15200	15200	15200	15200
15,25	16	133	83	60,1	48	15250	15250		
15,30	16	133	83	60,0	48	15300	15300	15300	15300
15,50	16	133	83	59,7	48	15500	15500	15500	15500
15,70	16	133	83	59,4	48			15700	15700
15,80	16	133	83	59,3	48	15800	15800	15800	15800
16,00	16	133	83	59,0	48	16000	16000	16000	16000
16,20	18	143	93	68,7	48	16200	16200	16200	16200
16,30	18	143	93	68,5	48	16300	16300	16300	16300
16,50	18	143	93	68,2	48	16500	16500	16500	16500
16,80	18	143	93	67,8	48	16800	16800	16800	16800
17,00	18	143	93	67,5	48	17000	17000	17000	17000
17,30	18	143	93	67,0	48	17300	17300	17300	17300
17,50	18	143	93	66,7	48	17500	17500	17500	17500
18,00	18	143	93	66,0	48	18000	18000	18000	18000
18,50	20	153	101	73,2	50	18500	18500	18500	18500
18,90	20	153	101	72,6	50	18900	18900	18900	18900
19,00	20	153	101	72,5	50	19000	19000	19000	19000
19,20	20	153	101	72,2	50	19200	19200	19200	19200
19,30	20	153	101	72,0	50	19300	19300	19300	19300
19,50	20	153	101	71,7	50	19500	19500	19500	19500
19,70	20	153	101	71,4	50	19700	19700	19700	19700
20,00	20	153	101	71,0	50	20000	20000	20000	20000
P						●	●	○	○
M						●	●	●	●
K						●	●		
N						○	○	●	●
S								○	○
H									
O								○	○

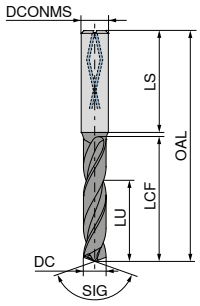
→ v_c Page 129+133

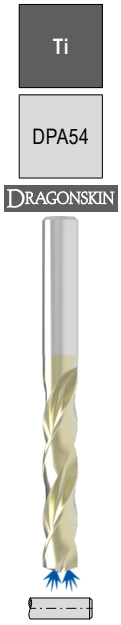
Ø DC_{h7} for Type UNI / **Ø DC_{m7}** for Type VA

WTX – High-performance drill, DIN 6537

▲ Specialist for difficult to machine materials







SIG 140°

Solid carbide

10 787 ...

DC m7 mm	DCONMS h6 mm	OAL mm	LCF mm	LU mm	LS mm	
3,00	6	66	28	23	36	030
3,10	6	66	28	23	36	031
3,20	6	66	28	23	36	032
3,30	6	66	28	23	36	033
3,40	6	66	28	23	36	034
3,50	6	66	28	23	36	035
3,60	6	66	28	23	36	036
3,70	6	66	28	23	36	037
3,80	6	74	36	29	36	038
3,90	6	74	36	29	36	039
3,97	6	74	36	29	36	900
4,00	6	74	36	29	36	040
4,10	6	74	36	29	36	041
4,20	6	74	36	29	36	042
4,23	6	74	36	29	36	901
4,30	6	74	36	29	36	043
4,40	6	74	36	29	36	044
4,50	6	74	36	29	36	045
4,60	6	74	36	29	36	046
4,70	6	74	36	29	36	047
4,80	6	82	44	35	36	048
4,90	6	82	44	35	36	049
5,00	6	82	44	35	36	050
5,10	6	82	44	35	36	051
5,20	6	82	44	35	36	052
5,30	6	82	44	35	36	053
5,40	6	82	44	35	36	054
5,50	6	82	44	35	36	055
5,56	6	82	44	35	36	902
5,60	6	82	44	35	36	056
5,70	6	82	44	35	36	057
5,80	6	82	44	35	36	058
5,90	6	82	44	35	36	059
6,00	6	82	44	35	36	060
6,10	8	91	53	43	36	061
6,20	8	91	53	43	36	062
6,30	8	91	53	43	36	063
6,35	8	91	53	43	36	903
6,40	8	91	53	43	36	064
6,50	8	91	53	43	36	065
6,60	8	91	53	43	36	066
6,70	8	91	53	43	36	067
6,80	8	91	53	43	36	068
6,90	8	91	53	43	36	069
7,00	8	91	53	43	36	070
7,10	8	91	53	43	36	071
7,20	8	91	53	43	36	072
7,30	8	91	53	43	36	073
7,40	8	91	53	43	36	074
7,50	8	91	53	43	36	075
7,60	8	91	53	43	36	076

10 787 ...

DC m7 mm	DCONMS h6 mm	OAL mm	LCF mm	LU mm	LS mm	
7,70	8	91	53	43	36	077
7,80	8	91	53	43	36	078
7,90	8	91	53	43	36	079
7,94	8	91	53	43	36	904
8,00	8	91	53	43	36	080
8,10	10	103	61	49	40	081
8,20	10	103	61	49	40	082
8,30	10	103	61	49	40	083
8,40	10	103	61	49	40	084
8,50	10	103	61	49	40	085
8,60	10	103	61	49	40	086
8,70	10	103	61	49	40	087
8,80	10	103	61	49	40	088
8,90	10	103	61	49	40	089
9,00	10	103	61	49	40	090
9,10	10	103	61	49	40	091
9,20	10	103	61	49	40	092
9,30	10	103	61	49	40	093
9,40	10	103	61	49	40	094
9,50	10	103	61	49	40	095
9,53	10	103	61	49	40	905
9,60	10	103	61	49	40	096
9,70	10	103	61	49	40	097
9,80	10	103	61	49	40	098
9,90	10	103	61	49	40	099
10,00	10	103	61	49	40	100
10,10	12	118	71	54	45	101
10,20	12	118	71	54	45	102
10,30	12	118	71	54	45	103
10,40	12	118	71	54	45	104
10,50	12	118	71	54	45	105
10,60	12	118	71	54	45	106
10,70	12	118	71	54	45	107
10,80	12	118	71	54	45	108
10,90	12	118	71	54	45	109
11,00	12	118	71	54	45	110
11,10	12	118	71	54	45	111
11,11	12	118	71	54	45	906
11,20	12	118	71	54	45	112
11,30	12	118	71	54	45	113
11,40	12	118	71	54	45	114
11,50	12	118	71	54	45	115
11,60	12	118	71	54	45	116
11,70	12	118	71	54	45	117
11,80	12	118	71	54	45	118
11,90	12	118	71	54	45	119
12,00	12	118	71	54	45	120
12,10	14	124	77	58	45	121
12,20	14	124	77	58	45	122
12,30	14	124	77	58	45	123
12,40	14	124	77	58	45	124
12,50	14	124	77	58	45	125
12,60	14	124	77	58	45	126
12,70	14	124	77	58	45	907
12,80	14	124	77	58	45	128
12,90	14	124	77	58	45	129
13,00	14	124	77	58	45	130
13,10	14	124	77	58	45	131
13,20	14	124	77	58	45	132
13,30	14	124	77	58	45	133
13,40	14	124	77	58	45	134
13,50	14	124	77	58	45	135
13,60	14	124	77	58	45	136
13,70	14	124	77	58	45	137
13,80	14	124	77	58	45	138
13,90	14	124	77	58	45	139

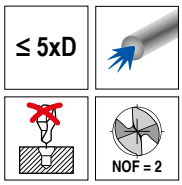
P	○
M	●
K	
N	
S	●
H	
O	

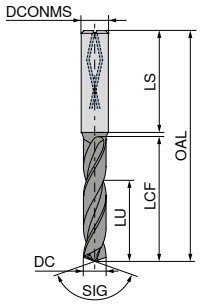
→ v_c Page 109

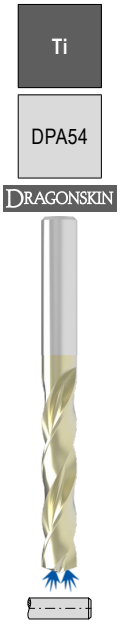
Continued on next page

WTX – High-performance drill, DIN 6537

▲ Specialist for difficult to machine materials







SIG 140°

Solid carbide

10 787 ...

DC m7 mm	DCONMS h6 mm	OAL mm	LCF mm	LU mm	LS mm	
14,0	14	124	77	58	45	140
14,1	16	133	83	61	48	141
14,2	16	133	83	61	48	142
14,3	16	133	83	61	48	143
14,4	16	133	83	61	48	144
14,5	16	133	83	61	48	145
14,6	16	133	83	61	48	146
14,7	16	133	83	61	48	147
14,8	16	133	83	61	48	148
14,9	16	133	83	61	48	149
15,0	16	133	83	61	48	150
15,1	16	133	83	61	48	151
15,2	16	133	83	61	48	152
15,3	16	133	83	61	48	153
15,4	16	133	83	61	48	154
15,5	16	133	83	61	48	155
15,6	16	133	83	61	48	156
15,7	16	133	83	61	48	157
15,8	16	133	83	61	48	158
15,9	16	133	83	61	48	159
16,0	16	133	83	61	48	160
16,1	18	143	93	69	48	161
16,2	18	143	93	69	48	162
16,3	18	143	93	69	48	163
16,4	18	143	93	69	48	164
16,5	18	143	93	69	48	165
16,6	18	143	93	69	48	166
16,7	18	143	93	69	48	167
16,8	18	143	93	69	48	168
16,9	18	143	93	69	48	169
17,0	18	143	93	69	48	170
17,1	18	143	93	69	48	171
17,2	18	143	93	69	48	172
17,3	18	143	93	69	48	173
17,4	18	143	93	69	48	174
17,5	18	143	93	69	48	175
17,6	18	143	93	69	48	176
17,7	18	143	93	69	48	177
17,8	18	143	93	69	48	178
17,9	18	143	93	69	48	179
18,0	18	143	93	69	48	180
18,1	20	153	101	75	50	181
18,2	20	153	101	75	50	182
18,3	20	153	101	75	50	183
18,4	20	153	101	75	50	184
18,5	20	153	101	75	50	185
18,6	20	153	101	75	50	186
18,7	20	153	101	75	50	187
18,8	20	153	101	75	50	188
18,9	20	153	101	75	50	189
19,0	20	153	101	75	50	190

10 787 ...

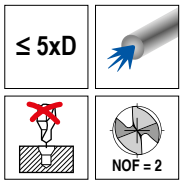
DC m7 mm	DCONMS h6 mm	OAL mm	LCF mm	LU mm	LS mm	
19,1	20	153	101	75	50	191
19,2	20	153	101	75	50	192
19,3	20	153	101	75	50	193
19,4	20	153	101	75	50	194
19,5	20	153	101	75	50	195
19,6	20	153	101	75	50	196
19,7	20	153	101	75	50	197
19,8	20	153	101	75	50	198
19,9	20	153	101	75	50	199
20,0	20	153	101	75	50	200

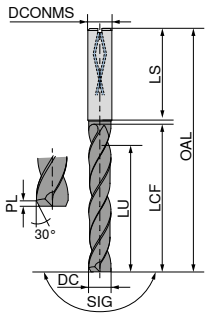
P	○
M	●
K	
N	
S	●
H	
O	

→ v_c Page 109

WTX – High Performance Drill, DIN 6537

▲ universal application
▲ four guidance lands
▲ polished chip flutes
▲ Type ALU 5xD on request
▲ PL = corner chamfers





180
Ti800



SIG 180°
Solid carbide

10 721 ...

DC m7 mm	DCONMS h6 mm	OAL mm	LCF mm	LU mm	LS mm	PL mm	
3,00	6	66	28	23	36	0,15	030
3,10	6	66	28	23	36	0,16	031
3,20	6	66	28	23	36	0,16	032
3,30	6	66	28	23	36	0,17	033
3,40	6	66	28	23	36	0,17	034
3,50	6	66	28	23	36	0,18	035
3,60	6	66	28	23	36	0,18	036
3,70	6	66	28	23	36	0,19	037
3,80	6	74	36	29	36	0,19	038
3,90	6	74	36	29	36	0,20	039
4,00	6	74	36	29	36	0,20	040
4,10	6	74	36	29	36	0,21	041
4,20	6	74	36	29	36	0,21	042
4,30	6	74	36	29	36	0,22	043
4,40	6	74	36	29	36	0,22	044
4,50	6	74	36	29	36	0,23	045
4,60	6	74	36	29	36	0,23	046
4,65	6	74	36	29	36	0,23	900
4,70	6	74	36	29	36	0,24	047
4,80	6	82	44	35	36	0,24	048
4,90	6	82	44	35	36	0,25	049
5,00	6	82	44	35	36	0,25	050
5,10	6	82	44	35	36	0,26	051
5,20	6	82	44	35	36	0,26	052
5,30	6	82	44	35	36	0,27	053
5,40	6	82	44	35	36	0,27	054
5,50	6	82	44	35	36	0,28	055
5,55	6	82	44	35	36	0,28	902
5,60	6	82	44	35	36	0,28	056
5,70	6	82	44	35	36	0,29	057
5,80	6	82	44	35	36	0,29	058
5,90	6	82	44	35	36	0,30	059
6,00	6	82	44	35	36	0,30	060
6,10	8	91	53	43	36	0,31	061
6,20	8	91	53	43	36	0,31	062
6,30	8	91	53	43	36	0,32	063
6,40	8	91	53	43	36	0,32	064
6,50	8	91	53	43	36	0,33	065
6,60	8	91	53	43	36	0,33	066
6,70	8	91	53	43	36	0,34	067
6,80	8	91	53	43	36	0,34	068
6,90	8	91	53	43	36	0,35	069
7,00	8	91	53	43	36	0,35	070
7,10	8	91	53	43	36	0,36	071
7,20	8	91	53	43	36	0,36	072
7,30	8	91	53	43	36	0,37	073
7,40	8	91	53	43	36	0,37	074
7,50	8	91	53	43	36	0,38	075
7,60	8	91	53	43	36	0,38	076
7,70	8	91	53	43	36	0,39	077
7,80	8	91	53	43	36	0,39	078
7,90	8	91	53	43	36	0,40	079
8,00	8	91	53	43	36	0,40	080
8,10	10	103	61	49	40	0,41	081

10 721 ...

DC m7 mm	DCONMS h6 mm	OAL mm	LCF mm	LU mm	LS mm	PL mm	
8,20	10	103	61	49	40	0,41	082
8,30	10	103	61	49	40	0,42	083
8,40	10	103	61	49	40	0,42	084
8,50	10	103	61	49	40	0,43	085
8,60	10	103	61	49	40	0,43	086
8,70	10	103	61	49	40	0,44	087
8,80	10	103	61	49	40	0,44	088
8,90	10	103	61	49	40	0,45	089
9,00	10	103	61	49	40	0,45	090
9,10	10	103	61	49	40	0,46	091
9,20	10	103	61	49	40	0,46	092
9,30	10	103	61	49	40	0,47	093
9,40	10	103	61	49	40	0,47	094
9,50	10	103	61	49	40	0,48	095
9,60	10	103	61	49	40	0,48	096
9,70	10	103	61	49	40	0,49	097
9,80	10	103	61	49	40	0,49	098
9,90	10	103	61	49	40	0,50	099
10,00	10	103	61	49	40	0,50	100
10,10	12	116	69	54	45	0,51	101
10,20	12	116	69	54	45	0,51	102
10,30	12	116	69	54	45	0,52	103
10,40	12	116	69	54	45	0,52	104
10,50	12	116	69	54	45	0,53	105
10,60	12	116	69	54	45	0,53	106
10,70	12	116	69	54	45	0,54	107
10,80	12	116	69	54	45	0,54	108
10,90	12	116	69	54	45	0,55	109
11,00	12	116	69	54	45	0,55	110
11,10	12	116	69	54	45	0,56	111
11,20	12	116	69	54	45	0,56	112
11,30	12	116	69	54	45	0,57	113
11,40	12	116	69	54	45	0,57	114
11,50	12	116	69	54	45	0,58	115
11,60	12	116	69	54	45	0,58	116
11,70	12	116	69	54	45	0,59	117
11,80	12	116	69	54	45	0,59	118
11,90	12	116	69	54	45	0,60	119
12,00	12	116	69	54	45	0,60	120
12,50	14	122	75	58	45	0,63	125
12,80	14	122	75	58	45	0,64	128
13,00	14	122	75	58	45	0,65	130
13,50	14	122	75	58	45	0,68	135
13,80	14	122	75	58	45	0,69	138
14,00	14	122	75	58	45	0,70	140
14,50	16	131	81	61	48	0,73	145
14,80	16	131	81	61	48	0,74	148
15,00	16	131	81	61	48	0,75	150
15,50	16	131	81	61	48	0,78	155
15,80	16	131	81	61	48	0,79	158
16,00	16	131	81	61	48	0,80	160
16,50	18	141	91	69	48	0,83	165
16,80	18	141	91	69	48	0,84	168
17,00	18	141	91	69	48	0,85	170
17,50	18	141	91	69	48	0,88	175
17,80	18	141	91	69	48	0,89	178
18,00	18	141	91	69	48	0,90	180
18,50	20	151	99	75	50	0,93	185
18,80	20	151	99	75	50	0,94	188
19,00	20	151	99	75	50	0,95	190
19,50	20	151	99	75	50	0,98	195
19,80	20	151	99	75	50	0,99	198
20,00	20	151	99	75	50	1,00	200

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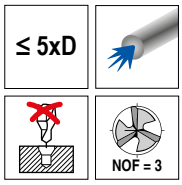
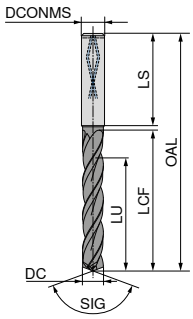
→ Machining information: Page 127

WTX – High Feed Drill, factory standard

- ▲ Three fluted high-feed drill
- ▲ Universal application
- ▲ High positioning accuracy
- ▲ Suitable for difficult drilling applications





Feed UNI

DPX74S

DRAGONSKIN



SIG 140°

Solid carbide

10 789 ...

DC m7 mm	DCONMS h6 mm	OAL mm	LCF mm	LU mm	LS mm	
4,00	6	74	36	29	36	04000
4,10	6	74	36	29	36	04100
4,20	6	74	36	29	36	04200
4,30	6	74	36	29	36	04300
4,40	6	74	36	29	36	04400
4,50	6	74	36	29	36	04500
4,60	6	74	36	29	36	04600
4,70	6	74	36	29	36	04700
4,80	6	82	44	35	36	04800
4,90	6	82	44	35	36	04900
5,00	6	82	44	35	36	05000
5,10	6	82	44	35	36	05100
5,20	6	82	44	35	36	05200
5,30	6	82	44	35	36	05300
5,40	6	82	44	35	36	05400
5,50	6	82	44	35	36	05500
5,55	6	82	44	35	36	05550
5,60	6	82	44	35	36	05600
5,70	6	82	44	35	36	05700
5,80	6	82	44	35	36	05800
5,90	6	82	44	35	36	05900
6,00	6	82	44	35	36	06000
6,10	8	91	53	43	36	06100
6,20	8	91	53	43	36	06200
6,30	8	91	53	43	36	06300
6,40	8	91	53	43	36	06400
6,50	8	91	53	43	36	06500
6,60	8	91	53	43	36	06600
6,70	8	91	53	43	36	06700
6,80	8	91	53	43	36	06800
6,90	8	91	53	43	36	06900
7,00	8	91	53	43	36	07000
7,10	8	91	53	43	36	07100
7,20	8	91	53	43	36	07200
7,30	8	91	53	43	36	07300
7,40	8	91	53	43	36	07400
7,50	8	91	53	43	36	07500
7,60	8	91	53	43	36	07600
7,70	8	91	53	43	36	07700
7,80	8	91	53	43	36	07800
7,90	8	91	53	43	36	07900
8,00	8	91	53	43	36	08000
8,10	10	103	61	49	40	08100
8,20	10	103	61	49	40	08200
8,30	10	103	61	49	40	08300
8,40	10	103	61	49	40	08400
8,50	10	103	61	49	40	08500
8,60	10	103	61	49	40	08600
8,70	10	103	61	49	40	08700
8,80	10	103	61	49	40	08800
8,90	10	103	61	49	40	08900
9,00	10	103	61	49	40	09000

10 789 ...

DC m7 mm	DCONMS h6 mm	OAL mm	LCF mm	LU mm	LS mm	
9,10	10	103	61	49	40	09100
9,20	10	103	61	49	40	09200
9,30	10	103	61	49	40	09300
9,40	10	103	61	49	40	09400
9,50	10	103	61	49	40	09500
9,60	10	103	61	49	40	09600
9,70	10	103	61	49	40	09700
9,80	10	103	61	49	40	09800
9,90	10	103	61	49	40	09900
10,00	10	103	61	49	40	10000
10,10	12	118	71	56	45	10100
10,20	12	118	71	56	45	10200
10,30	12	118	71	56	45	10300
10,40	12	118	71	56	45	10400
10,50	12	118	71	56	45	10500
10,60	12	118	71	56	45	10600
10,70	12	118	71	56	45	10700
10,80	12	118	71	56	45	10800
10,90	12	118	71	56	45	10900
11,00	12	118	71	56	45	11000
11,10	12	118	71	56	45	11100
11,20	12	118	71	56	45	11200
11,30	12	118	71	56	45	11300
11,40	12	118	71	56	45	11400
11,50	12	118	71	56	45	11500
11,60	12	118	71	56	45	11600
11,70	12	118	71	56	45	11700
11,80	12	118	71	56	45	11800
11,90	12	118	71	56	45	11900
12,00	12	118	71	56	45	12000
12,20	14	124	77	60	45	12200
12,50	14	124	77	60	45	12500
12,80	14	124	77	60	45	12800
13,00	14	124	77	60	45	13000
13,50	14	124	77	60	45	13500
13,80	14	124	77	60	45	13800
14,00	14	124	77	60	45	14000
14,50	16	133	83	63	48	14500
14,80	16	133	83	63	48	14800
15,00	16	133	83	63	48	15000
15,50	16	133	83	63	48	15500
15,80	16	133	83	63	48	15800
16,00	16	133	83	63	48	16000
16,50	18	143	93	71	48	16500
16,80	18	143	93	71	48	16800
17,00	18	143	93	71	48	17000
17,50	18	143	93	71	48	17500
17,80	18	143	93	71	48	17800
18,00	18	143	93	71	48	18000
18,50	20	153	101	77	50	18500
18,80	20	153	101	77	50	18800
19,00	20	153	101	77	50	19000
19,50	20	153	101	77	50	19500
19,80	20	153	101	77	50	19800
20,00	20	153	101	77	50	20000

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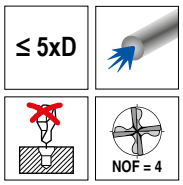
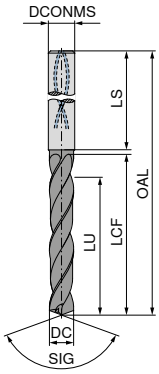
WTX – High Speed Drill, DIN 6537

- ▲ Four fluted high-feed drill
- ▲ Specially designed for steel and cast iron machining
- ▲ Has four spiral coolant holes
- ▲ Innovative cutting edge geometry guarantees high positioning accuracy
- ▲ Outstanding drilling quality in terms of tolerance, surface finish and position





HFDS

DPX14S

DRAGONSKIN



SIG 130°

Solid carbide

10 798 ...

DC m7 mm	DCONMS h6 mm	OAL mm	LCF mm	LU mm	LS mm	
6,0	8	89	51	40	36	**06000**
6,1	10	102	59	47	40	**06100**
6,2	10	102	59	47	40	**06200**
6,3	10	102	59	47	40	**06300**
6,4	10	102	59	47	40	**06400**
6,5	10	102	59	47	40	**06500**
6,6	10	102	59	47	40	**06600**
6,7	10	102	59	47	40	**06700**
6,8	10	102	59	47	40	**06800**
6,9	10	102	59	47	40	**06900**
7,0	10	102	59	47	40	**07000**
7,1	10	102	59	47	40	**07100**
7,2	10	102	59	47	40	**07200**
7,3	10	102	59	47	40	**07300**
7,4	10	102	59	47	40	**07400**
7,5	10	102	59	47	40	**07500**
7,6	10	102	59	47	40	**07600**
7,7	10	102	59	47	40	**07700**
7,8	10	102	59	47	40	**07800**
7,9	10	102	59	47	40	**07900**
8,0	10	102	59	47	40	**08000**
8,1	12	118	70	55	45	**08100**
8,2	12	118	70	55	45	**08200**
8,3	12	118	70	55	45	**08300**
8,4	12	118	70	55	45	**08400**
8,5	12	118	70	55	45	**08500**
8,6	12	118	70	55	45	**08600**
8,7	12	118	70	55	45	**08700**
8,8	12	118	70	55	45	**08800**
8,9	12	118	70	55	45	**08900**
9,0	12	118	70	55	45	**09000**
9,1	12	118	70	55	45	**09100**
9,2	12	118	70	55	45	**09200**
9,3	12	118	70	55	45	**09300**
9,4	12	118	70	55	45	**09400**
9,5	12	118	70	55	45	**09500**
9,6	12	118	70	55	45	**09600**
9,7	12	118	70	55	45	**09700**
9,8	12	118	70	55	45	**09800**
9,9	12	118	70	55	45	**09900**
10,0	12	118	70	55	45	**10000**
10,2	14	124	76	60	45	**10200**
10,5	14	124	76	60	45	**10500**
11,0	14	124	76	60	45	**11000**
11,5	14	124	76	60	45	**11500**
12,0	14	124	76	60	45	**12000**
12,5	16	142	91	73	48	**12500**
13,0	16	142	91	73	48	**13000**

10 798 ...

DC m7 mm	DCONMS h6 mm	OAL mm	LCF mm	LU mm	LS mm	
14,0	16	142	91	73	48	**14000**
14,3	16	142	91	73	48	**14300**
14,5	16	142	91	73	48	**14500**
15,0	18	142	91	73	48	**15000**
16,0	18	142	91	73	48	**16000**

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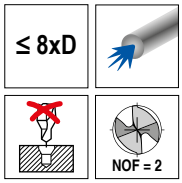
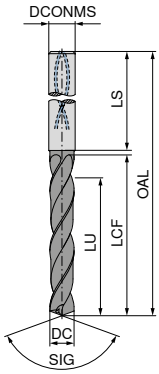
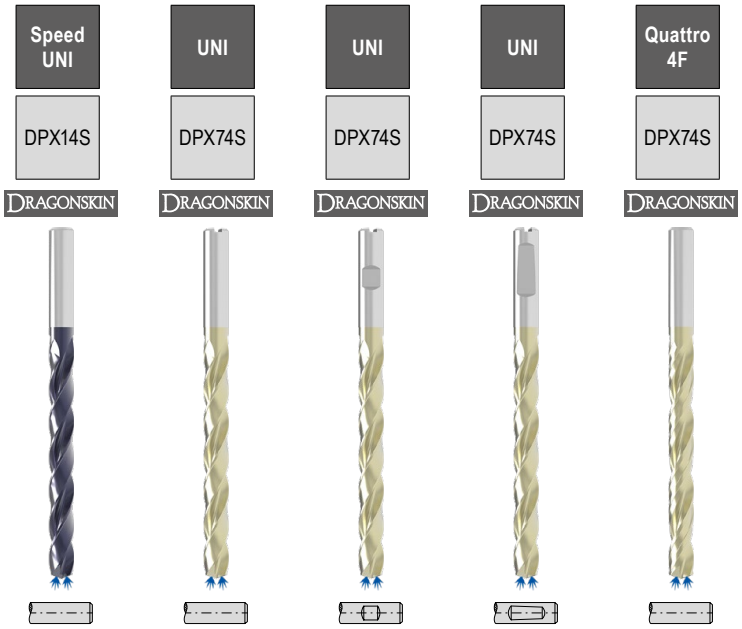
WTX – High Performance Drill, factory standard







	SIG 145° Solid carbide	SIG 135° Solid carbide	SIG 135° Solid carbide	SIG 135° Solid carbide	SIG 140° Solid carbide
	10 782 ...	**11 789 ...**	**11 790 ...**	**11 788 ...**	**10 736 ...**
DC $_{m7/h7}$ mm	DCONMS $_{h6}$ mm	OAL mm	LCF mm	LU mm	LS mm										
3,00	6	72	34	29	36	03000	030	030	030	03000
3,10	6	72	34	29	36	03100	031	031	031	03100
3,20	6	72	34	29	36	03200	032	032	032	03200
3,30	6	72	34	29	36	03300	033	033	033	03300
3,40	6	72	34	29	36	03400	034	034	034	03400
3,50	6	72	34	29	36	03500	035	035	035	03500
3,60	6	72	34	29	36	03600	036	036	036	03600
3,70	6	72	34	29	36	03700	037	037	037	03700
3,80	6	81	43	36	36	03800	038	038	038	03800
3,90	6	81	43	36	36	03900	039	039	039	03900
4,00	6	81	43	36	36	04000	040	040	040	04000
4,10	6	81	43	36	36	04100	041	041	041	04100
4,20	6	81	43	36	36	04200	042	042	042	04200
4,30	6	81	43	36	36	04300	043	043	043	04300
4,40	6	81	43	36	36	04400	044	044	044	04400
4,50	6	81	43	36	36	04500	045	045	045	04500
4,60	6	81	43	36	36	04600	046	046	046	04600
4,65	6	81	43	36	36	04650				
4,70	6	81	43	36	36	04700	047	047	047	04700
4,80	6	95	57	48	36	04800	048	048	048	04800
4,90	6	95	57	48	36	04900	049	049	049	04900
5,00	6	95	57	48	36	05000	050	050	050	05000
5,10	6	95	57	48	36	05100	051	051	051	05100
5,20	6	95	57	48	36	05200	052	052	052	05200
5,30	6	95	57	48	36	05300	053	053	053	05300
5,40	6	95	57	48	36	05400	054	054	054	05400
5,50	6	95	57	48	36	05500	055	055	055	05500
5,55	6	95	57	48	36	05550				
5,60	6	95	57	48	36	05600	056	056	056	05600
5,70	6	95	57	48	36	05700	057	057	057	05700
5,80	6	95	57	48	36	05800	058	058	058	05800
5,90	6	95	57	48	36	05900	059	059	059	05900
6,00	6	95	57	48	36	06000	060	060	060	06000
6,10	8	114	76	64	36	06100	061	061	061	06100
P						●	●	●	●	●
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K						●	●	●	●	●
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S										
H							○	○	○	○
O										

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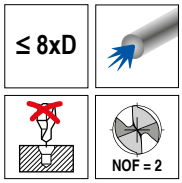
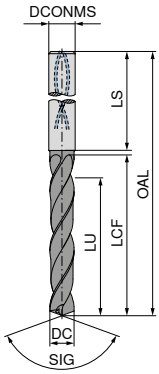
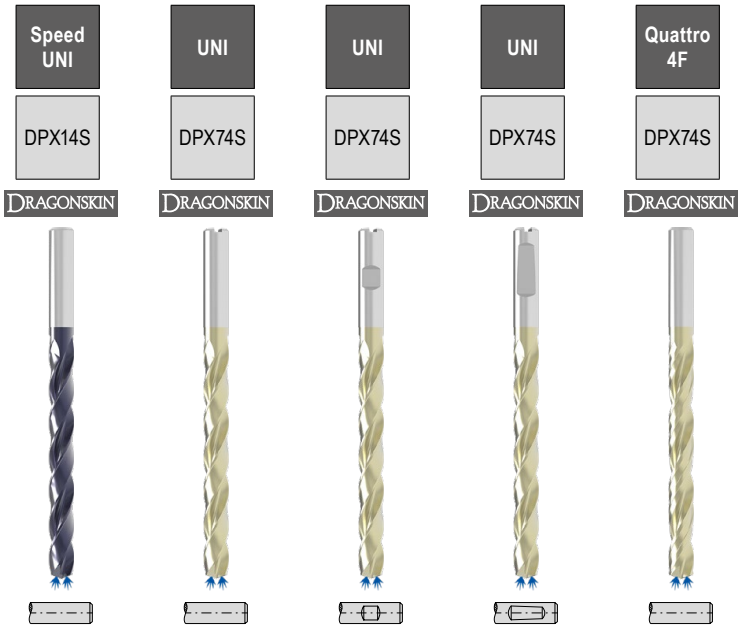
Ø DC_{m7} for Type UNI and Quattro 4F / **Ø DC_{h7}** for Type Speed UNI

Continued on next page

WTX – High Performance Drill, factory standard







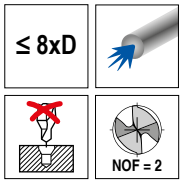
	SIG 145° Solid carbide	SIG 135° Solid carbide	SIG 135° Solid carbide	SIG 135° Solid carbide	SIG 140° Solid carbide
	10 782 ...	**11 789 ...**	**11 790 ...**	**11 788 ...**	**10 736 ...**
DC $_{m7/h7}$ mm					
6,20	06200	062	062	062	06200
6,30	06300	063	063	063	06300
6,40	06400	064	064	064	06400
6,50	06500	065	065	065	06500
6,60	06600	066	066	066	06600
6,70	06700	067	067	067	06700
6,80	06800	068	068	068	06800
6,90	06900	069	069	069	06900
7,00	07000	070	070	070	07000
7,10	07100	071	071	071	07100
7,20	07200	072	072	072	07200
7,30	07300	073	073	073	07300
7,40	07400	074	074	074	07400
7,50	07500	075	075	075	07500
7,60	07600	076	076	076	07600
7,70	07700	077	077	077	07700
7,80	07800	078	078	078	07800
7,90	07900	079	079	079	07900
8,00	08000	080	080	080	08000
8,10	08100	081	081	081	08100
8,20	08200	082	082	082	08200
8,30	08300	083	083	083	08300
8,40	08400	084	084	084	08400
8,50	08500	085	085	085	08500
8,60	08600	086	086	086	08600
8,70	08700	087	087	087	08700
8,80	08800	088	088	088	08800
8,90	08900	089	089	089	08900
9,00	09000	090	090	090	09000
9,10	09100	091	091	091	09100
9,20	09200	092	092	092	09200
9,30	09300	093	093	093	09300
9,40	09400	094	094	094	09400
9,50	09500	095	095	095	09500
DCONMS $_{h6}$ mm					
8	●	●	●	●	●
10	●				
8	●	●	●	●	●
		○	○	○	○
OAL mm					
114	●	●	●	●	●
142	●				
114	●	●	●	●	●
		○	○	○	○
LCF mm					
76	●	●	●	●	●
95	●				
76	●	●	●	●	●
		○	○	○	○
LU mm					
64	●	●	●	●	●
80	●				
64	●	●	●	●	●
		○	○	○	○
LS mm					
36	●	●	●	●	●
40	●				
36	●	●	●	●	●
		○	○	○	○
P	●	●	●	●	●
M	●				
K	●	●	●	●	●
N					
S					
H		○	○	○	○
O					

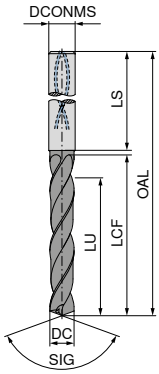
→ v_c Page 115–120

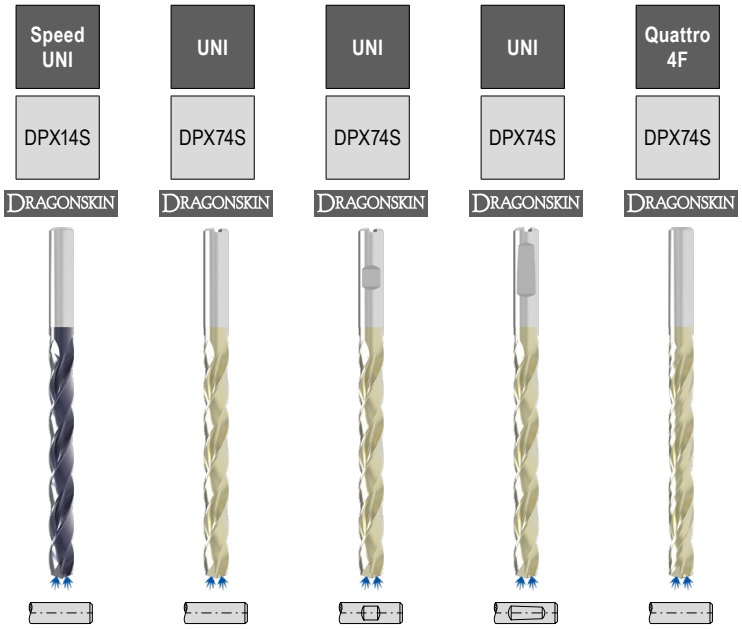
Ø DC_{m7} for Type UNI and Quattro 4F / **Ø DC_{h7}** for Type Speed UNI

Continued on next page

WTX – High Performance Drill, factory standard







SIG 145° Solid carbide | SIG 135° Solid carbide | SIG 135° Solid carbide | SIG 135° Solid carbide | SIG 140° Solid carbide

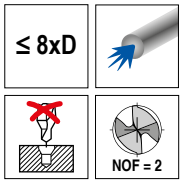
DC $_{m7/h7}$ mm	DCONMS $_{h6}$ mm	OAL mm	LCF mm	LU mm	LS mm	10 782 ...	11 789 ...	11 790 ...	11 788 ...	10 736 ...
9,60	10	142	95	80	40	09600	096	096	096	09600
9,70	10	142	95	80	40	09700	097	097	097	09700
9,80	10	142	95	80	40	09800	098	098	098	09800
9,90	10	142	95	80	40	09900	099	099	099	09900
10,00	10	142	95	80	40	10000	100	100	100	10000
10,10	12	162	114	96	45	10100	101	101	101	10100
10,20	12	162	114	96	45	10200	102	102	102	10200
10,30	12	162	114	96	45	10300	103	103	103	10300
10,40	12	162	114	96	45	10400	104	104	104	10400
10,50	12	162	114	96	45	10500	105	105	105	10500
10,60	12	162	114	96	45	10600	106	106	106	10600
10,70	12	162	114	96	45	10700	107	107	107	10700
10,80	12	162	114	96	45	10800	108	108	108	10800
10,90	12	162	114	96	45	10900	109	109	109	10900
11,00	12	162	114	96	45	11000	110	110	110	11000
11,10	12	162	114	96	45	11100	111	111	111	11100
11,20	12	162	114	96	45	11200	112	112	112	11200
11,30	12	162	114	96	45	11300	113	113	113	11300
11,40	12	162	114	96	45	11400	114	114	114	11400
11,50	12	162	114	96	45	11500	115	115	115	11500
11,60	12	162	114	96	45	11600	116	116	116	11600
11,70	12	162	114	96	45	11700	117	117	117	11700
11,80	12	162	114	96	45	11800	118	118	118	11800
11,90	12	162	114	96	45	11900	119	119	119	11900
12,00	12	162	114	96	45	12000	120	120	120	12000
12,50	14	178	131	112	45	12500	125	125	125	12500
12,80	14	178	131	112	45	12800	128	128	128	12800
13,00	14	178	131	112	45	13000	130	130	130	13000
13,50	14	178	131	112	45	13500	135	135	135	13500
13,80	14	178	131	112	45	13800	138	138	138	13800
14,00	14	178	131	112	45	14000	140	140	140	14000
14,50	16	203	152	128	48	14500	145	145	145	14500
14,80	16	203	152	128	48	14800	148	148	148	14800
15,00	16	203	152	128	48	15000	150	150	150	15000
P						●	●	●	●	●
M						●				
K						●	●	●	●	●
N										
S										
H							○	○	○	○
O										

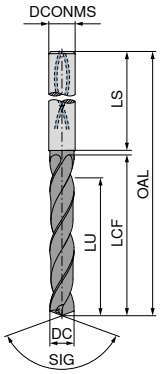
→ v_c Page 115–120

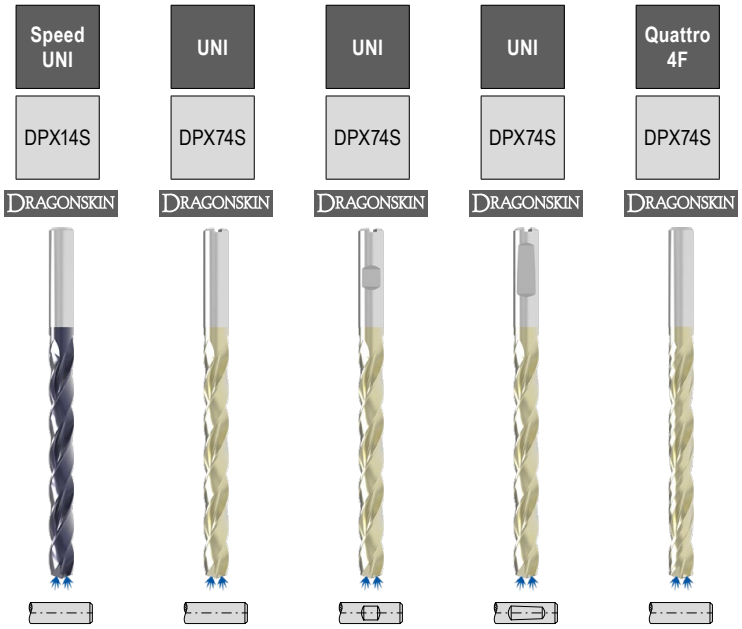
Ø DC_{m7} for Type UNI and Quattro 4F / Ø DC_{h7} for Type Speed UNI

Continued on next page

WTX – High Performance Drill, factory standard





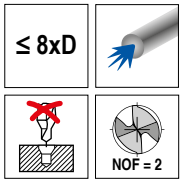


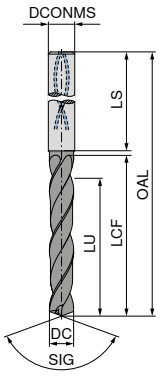
						SIG 145° Solid carbide		SIG 135° Solid carbide		SIG 135° Solid carbide		SIG 135° Solid carbide		SIG 140° Solid carbide		
						10 782 ...		11 789 ...		11 790 ...		11 788 ...		10 736 ...		
DC m7/h7 mm	DCONMS h6 mm	OAL mm	LCF mm	LU mm	LS mm											
15,50	16	203	152	128	48		15500		155		155		155		15500	
15,80	16	203	152	128	48		15800		158		158		158		15800	
16,00	16	203	152	128	48		16000		160		160		160		16000	
16,50	18	222	171	144	48		16500		165		165		165		16500	
16,80	18	222	171	144	48		16800		168		168		168		16800	
17,00	18	222	171	144	48		17000		170		170		170		17000	
17,50	18	222	171	144	48		17500		175		175		175		17500	
17,80	18	222	171	144	48		17800		178		178		178		17800	
18,00	18	222	171	144	48		18000		180		180		180		18000	
18,50	20	243	190	160	50				185		185		185			
18,80	20	243	190	160	50				188		188		188			
19,00	20	243	190	160	50				190		190		190			
19,50	20	243	190	160	50				195		195		195			
19,80	20	243	190	160	50				198		198		198			
20,00	20	243	190	160	50				200		200		200			
P						●		●		●		●		●		
M						●										
K						●		●		●		●		●		
N																
S																
H								○		○		○		○		
O																

→ v_c Page 115–120

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

High Performance Drill, factory standard





UNI

TiAlN



SIG 135°
Solid carbide

11 704 ...

DC h7 mm	DCONMS h6 mm	OAL mm	LCF mm	LU mm	LS mm	
3,0	6	72	34	29,5	36	03000
3,1	6	72	34	29,3	36	03100
3,2	6	72	34	29,2	36	03200
3,3	6	72	34	29,0	36	03300
3,4	6	72	34	28,9	36	03400
3,5	6	72	34	28,7	36	03500
3,6	6	72	34	28,6	36	03600
3,7	6	72	34	28,4	36	03700
3,8	6	81	43	37,3	36	03800
3,9	6	81	43	37,1	36	03900
4,0	6	81	43	37,0	36	04000
4,1	6	81	43	36,8	36	04100
4,2	6	81	43	36,7	36	04200
4,3	6	81	43	36,5	36	04300
4,4	6	81	43	36,4	36	04400
4,5	6	81	43	36,2	36	04500
4,6	6	81	43	36,1	36	04600
4,7	6	81	43	35,9	36	04700
4,8	6	95	57	49,8	36	04800
4,9	6	95	57	49,6	36	04900
5,0	6	95	57	49,5	36	05000
5,1	6	95	57	49,3	36	05100
5,2	6	95	57	49,2	36	05200
5,3	6	95	57	49,0	36	05300
5,4	6	95	57	48,9	36	05400
5,5	6	95	57	48,7	36	05500
5,6	6	95	57	48,6	36	05600
5,7	6	95	57	48,4	36	05700
5,8	6	95	57	48,3	36	05800
5,9	6	95	57	48,1	36	05900
6,0	6	95	57	48,0	36	06000
6,1	8	114	76	66,8	36	06100
6,2	8	114	76	66,7	36	06200
6,3	8	114	76	66,5	36	06300
6,4	8	114	76	66,4	36	06400
6,5	8	114	76	66,2	36	06500
6,6	8	114	76	66,1	36	06600
6,7	8	114	76	65,9	36	06700
6,8	8	114	76	65,8	36	06800
6,9	8	114	76	65,6	36	06900
7,0	8	114	76	65,5	36	07000
7,1	8	114	76	65,3	36	07100
7,2	8	114	76	65,2	36	07200
7,3	8	114	76	65,0	36	07300
7,4	8	114	76	64,9	36	07400
7,5	8	114	76	64,7	36	07500
7,6	8	114	76	64,6	36	07600
7,7	8	114	76	64,4	36	07700
7,8	8	114	76	64,3	36	07800
7,9	8	114	76	64,1	36	07900
8,0	8	114	76	64,0	36	08000
8,1	10	142	95	82,8	40	08100

11 704 ...

DC h7 mm	DCONMS h6 mm	OAL mm	LCF mm	LU mm	LS mm	
8,2	10	142	95	82,7	40	08200
8,3	10	142	95	82,5	40	08300
8,4	10	142	95	82,4	40	08400
8,5	10	142	95	82,2	40	08500
8,6	10	142	95	82,1	40	08600
8,7	10	142	95	81,9	40	08700
8,8	10	142	95	81,8	40	08800
8,9	10	142	95	81,6	40	08900
9,0	10	142	95	81,5	40	09000
9,1	10	142	95	81,3	40	09100
9,2	10	142	95	81,2	40	09200
9,3	10	142	95	81,0	40	09300
9,4	10	142	95	80,9	40	09400
9,5	10	142	95	80,7	40	09500
9,6	10	142	95	80,6	40	09600
9,7	10	142	95	80,4	40	09700
9,8	10	142	95	80,3	40	09800
9,9	10	142	95	80,1	40	09900
10,0	10	142	95	80,0	40	10000
10,2	12	162	114	98,7	45	10200
10,5	12	162	114	98,2	45	10500
10,8	12	162	114	97,8	45	10800
11,0	12	162	114	97,5	45	11000
11,5	12	162	114	96,7	45	11500
11,8	12	162	114	96,3	45	11800
12,0	12	162	114	96,0	45	12000
12,2	14	178	131	112,7	45	12200
12,5	14	178	131	112,2	45	12500
12,7	14	178	131	111,9	45	12700
13,0	14	178	131	111,5	45	13000
13,5	14	178	131	110,7	45	13500
14,0	14	178	131	110,0	45	14000
14,5	16	203	152	130,2	48	14500
15,0	16	203	152	129,5	48	15000
15,5	16	203	152	128,7	48	15500
16,0	16	203	152	128,0	48	16000
16,5	18	222	171	146,2	48	16500
17,0	18	222	171	145,5	48	17000
17,5	18	222	171	144,7	48	17500
18,0	18	222	171	144,0	48	18000
18,5	20	243	190	162,2	50	18500
19,0	20	243	190	161,5	50	19000
19,5	20	243	190	160,7	50	19500
20,0	20	243	190	160,0	50	20000

P	●
M	●
K	●
N	
S	
H	
O	

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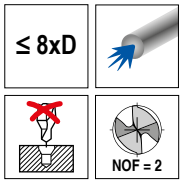
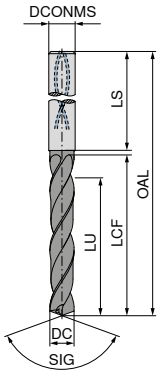
WTX – High Performance Drill, factory standard





VA
Ti700

AL
DLC
DRAGONSKIN



SIG 140°
Solid carbide

SIG 135°
Solid carbide

DC h7/m7 mm	DCONMS h6 mm	OAL mm	LCF mm	LU mm	LS mm	10 770 ...	10 792 ...
3,0	6	72	34	29	36	030	03000
3,1	6	72	34	29	36	031	03100
3,2	6	72	34	29	36	032	03200
3,3	6	72	34	29	36	033	03300
3,4	6	72	34	29	36	034	03400
3,5	6	72	34	29	36	035	03500
3,6	6	72	34	29	36	036	03600
3,7	6	72	34	29	36	037	03700
3,8	6	81	43	36	36	038	03800
3,9	6	81	43	36	36	039	03900
4,0	6	81	43	36	36	040	04000
4,1	6	81	43	36	36	041	04100
4,2	6	81	43	36	36	042	04200
4,3	6	81	43	36	36	043	04300
4,4	6	81	43	36	36	044	04400
4,5	6	81	43	36	36	045	04500
4,6	6	81	43	36	36	046	04600
4,7	6	81	43	36	36	047	04700
4,8	6	95	57	48	36	048	04800
4,9	6	95	57	48	36	049	04900
5,0	6	95	57	48	36	050	05000
5,1	6	95	57	48	36	051	05100
5,2	6	95	57	48	36	052	05200
5,3	6	95	57	48	36	053	05300
5,4	6	95	57	48	36	054	05400
5,5	6	95	57	48	36	055	05500
5,6	6	95	57	48	36	056	05600
5,7	6	95	57	48	36	057	05700
5,8	6	95	57	48	36	058	05800
5,9	6	95	57	48	36	059	05900
6,0	6	95	57	48	36	060	06000
6,1	8	114	76	64	36	061	06100
6,2	8	114	76	64	36	062	06200
6,3	8	114	76	64	36	063	06300
6,4	8	114	76	64	36	064	06400
6,5	8	114	76	64	36	065	06500
6,6	8	114	76	64	36	066	06600
6,7	8	114	76	64	36	067	06700
6,8	8	114	76	64	36	068	06800
6,9	8	114	76	64	36	069	06900
7,0	8	114	76	64	36	070	07000
7,1	8	114	76	64	36	071	07100
7,2	8	114	76	64	36	072	07200
7,3	8	114	76	64	36	073	07300
7,4	8	114	76	64	36	074	07400

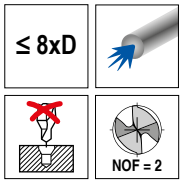
P	○	
M	●	
K	○	
N	○	●
S	●	
H		
O		

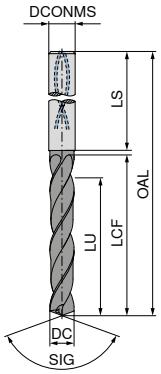
→ v_c Page 113+123

Ø DC_{m7} for Type VA / Ø DC_{h7} for Type AL

Continued on next page

WTX – High Performance Drill, factory standard







SIG 140°
Solid carbide

SIG 135°
Solid carbide

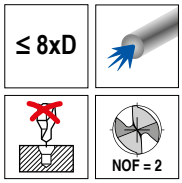
DC h7/m7 mm	DCONMS h6 mm	OAL mm	LCF mm	LU mm	LS mm	10 770 ...	10 792 ...
7,5	8	114	76	64	36	075	07500
7,6	8	114	76	64	36	076	07600
7,7	8	114	76	64	36	077	07700
7,8	8	114	76	64	36	078	07800
7,9	8	114	76	64	36	079	07900
8,0	8	114	76	64	36	080	08000
8,1	10	142	95	80	40	081	08100
8,2	10	142	95	80	40	082	08200
8,3	10	142	95	80	40	083	08300
8,4	10	142	95	80	40	084	08400
8,5	10	142	95	80	40	085	08500
8,6	10	142	95	80	40	086	08600
8,7	10	142	95	80	40	087	08700
8,8	10	142	95	80	40	088	08800
8,9	10	142	95	80	40	089	08900
9,0	10	142	95	80	40	090	09000
9,1	10	142	95	80	40	091	09100
9,2	10	142	95	80	40	092	09200
9,3	10	142	95	80	40	093	09300
9,4	10	142	95	80	40	094	09400
9,5	10	142	95	80	40	095	09500
9,6	10	142	95	80	40	096	09600
9,7	10	142	95	80	40	097	09700
9,8	10	142	95	80	40	098	09800
9,9	10	142	95	80	40	099	09900
10,0	10	142	95	80	40	100	10000
10,1	12	162	114	96	45	101	
10,2	12	162	114	96	45	102	10200
10,3	12	162	114	96	45	103	10300
10,4	12	162	114	96	45	104	10400
10,5	12	162	114	96	45	105	10500
10,6	12	162	114	96	45	106	
10,7	12	162	114	96	45	107	10700
10,8	12	162	114	96	45	108	10800
10,9	12	162	114	96	45	109	
11,0	12	162	114	96	45	110	11000
11,1	12	162	114	96	45	111	
11,2	12	162	114	96	45	112	11200
11,3	12	162	114	96	45	113	
11,4	12	162	114	96	45	114	
11,5	12	162	114	96	45	115	11500
11,6	12	162	114	96	45	116	11600
11,7	12	162	114	96	45	117	
11,8	12	162	114	96	45	118	11800
11,9	12	162	114	96	45	119	
P						○	
M						●	
K						○	
N						○	●
S						●	
H							
O							

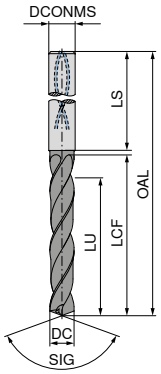
→ v_c Page 113+123

Ø DC_{m7} for Type VA / Ø DC_{h7} for Type AL

Continued on next page

WTX – High Performance Drill, factory standard





VA
Ti700

AL
DLC
DRAGONSKIN



SIG 140°
Solid carbide

SIG 135°
Solid carbide

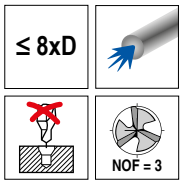
DC h7/m7 mm	DCONMS h6 mm	OAL mm	LCF mm	LU mm	LS mm	10 770 ...		10 792 ...	
12,0	12	162	114	96	45	120			12000
12,2	14	178	131	112	45				12200
12,5	14	178	133	112	45	125			
12,5	14	178	131	112	45				12500
12,8	14	178	133	112	45	128			
12,8	14	178	131	112	45				12800
13,0	14	178	133	112	45	130			
13,0	14	178	131	112	45				13000
13,2	14	178	131	112	45				13200
13,5	14	178	131	112	45				13500
13,5	14	178	133	112	45	135			
13,8	14	178	131	112	45				13800
13,8	14	178	133	112	45	138			
14,0	14	178	133	112	45	140			
14,0	14	178	131	112	45				14000
14,2	16	203	152	128	48				14200
14,5	16	203	152	128	48	145			14500
14,8	16	203	152	128	48	148			14800
15,0	16	203	152	128	48	150			15000
15,2	16	203	152	128	48				15200
15,5	16	203	152	128	48	155			15500
15,8	16	203	152	128	48	158			15800
16,0	16	203	152	128	48	160			16000
16,2	18	222	171	144	48				16200
16,5	18	222	171	144	48	165			16500
16,8	18	222	171	144	48	168			16800
17,0	18	222	171	144	48	170			17000
17,2	18	222	171	144	48				17200
17,5	18	222	171	144	48	175			17500
17,8	18	222	171	144	48	178			17800
18,0	18	222	171	144	48	180			18000
18,2	20	243	190	160	50				18200
18,5	20	243	190	160	50	185			18500
18,8	20	243	190	160	50	188			18800
19,0	20	243	190	160	50	190			19000
19,1	20	243	190	160	50				19100
19,2	20	243	190	160	50				19200
19,5	20	243	190	160	50	195			19500
19,8	20	243	190	160	50	198			19800
20,0	20	243	190	160	50	200			20000
P						○			
M						●			
K						○			
N						○		●	
S						●			
H									
O									

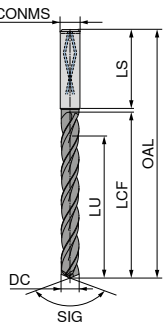
→ v_c Page 113+123

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

WTX – High Feed Drill, factory standard

▲ Three fluted high-feed drill
▲ Universal application
▲ High positioning accuracy
▲ Suitable for difficult drilling applications





Feed UNI

DPX74S

DRAGONSKIN



SIG 135°

Solid carbide

10 794 ...

DC m7 mm	DCONMS h6 mm	OAL mm	LCF mm	LU mm	LS mm	
4,00	6	81	43	36	36	04000
4,10	6	81	43	36	36	04100
4,20	6	81	43	36	36	04200
4,30	6	81	43	36	36	04300
4,40	6	81	43	36	36	04400
4,50	6	81	43	36	36	04500
4,60	6	81	43	36	36	04600
4,70	6	81	43	36	36	04700
4,80	6	95	57	48	36	04800
4,90	6	95	57	48	36	04900
5,00	6	95	57	48	36	05000
5,10	6	95	57	48	36	05100
5,20	6	95	57	48	36	05200
5,30	6	95	57	48	36	05300
5,40	6	95	57	48	36	05400
5,50	6	95	57	48	36	05500
5,55	6	95	57	48	36	05550
5,60	6	95	57	48	36	05600
5,70	6	95	57	48	36	05700
5,80	6	95	57	48	36	05800
5,90	6	95	57	48	36	05900
6,00	6	95	57	48	36	06000
6,10	8	114	76	64	36	06100
6,20	8	114	76	64	36	06200
6,30	8	114	76	64	36	06300
6,40	8	114	76	64	36	06400
6,50	8	114	76	64	36	06500
6,60	8	114	76	64	36	06600
6,70	8	114	76	64	36	06700
6,80	8	114	76	64	36	06800
6,90	8	114	76	64	36	06900
7,00	8	114	76	64	36	07000
7,10	8	114	76	64	36	07100
7,20	8	114	76	64	36	07200
7,30	8	114	76	64	36	07300
7,40	8	114	76	64	36	07400
7,50	8	114	76	64	36	07500
7,60	8	114	76	64	36	07600
7,70	8	114	76	64	36	07700
7,80	8	114	76	64	36	07800
7,90	8	114	76	64	36	07900
8,00	8	114	76	64	36	08000
8,10	10	142	95	80	40	08100
8,20	10	142	95	80	40	08200
8,30	10	142	95	80	40	08300
8,40	10	142	95	80	40	08400
8,50	10	142	95	80	40	08500
8,60	10	142	95	80	40	08600
8,70	10	142	95	80	40	08700
8,80	10	142	95	80	40	08800
8,90	10	142	95	80	40	08900
9,00	10	142	95	80	40	09000

10 794 ...

DC m7 mm	DCONMS h6 mm	OAL mm	LCF mm	LU mm	LS mm	
9,10	10	142	95	80	40	09100
9,20	10	142	95	80	40	09200
9,30	10	142	95	80	40	09300
9,40	10	142	95	80	40	09400
9,50	10	142	95	80	40	09500
9,60	10	142	95	80	40	09600
9,70	10	142	95	80	40	09700
9,80	10	142	95	80	40	09800
9,90	10	142	95	80	40	09900
10,00	10	142	95	80	40	10000
10,10	12	162	114	96	45	10100
10,20	12	162	114	96	45	10200
10,30	12	162	114	96	45	10300
10,40	12	162	114	96	45	10400
10,50	12	162	114	96	45	10500
10,60	12	162	114	96	45	10600
10,70	12	162	114	96	45	10700
10,80	12	162	114	96	45	10800
10,90	12	162	114	96	45	10900
11,00	12	162	114	96	45	11000
11,10	12	162	114	96	45	11100
11,20	12	162	114	96	45	11200
11,30	12	162	114	96	45	11300
11,40	12	162	114	96	45	11400
11,50	12	162	114	96	45	11500
11,60	12	162	114	96	45	11600
11,70	12	162	114	96	45	11700
11,80	12	162	114	96	45	11800
11,90	12	162	114	96	45	11900
12,00	12	162	114	96	45	12000
12,20	14	178	131	112	45	12200
12,50	14	178	131	112	45	12500
12,80	14	178	131	112	45	12800
13,00	14	178	131	112	45	13000
13,50	14	178	131	112	45	13500
13,80	14	178	131	112	45	13800
14,00	14	178	131	112	45	14000
14,50	16	203	152	128	48	14500
14,80	16	203	152	128	48	14800
15,00	16	203	152	128	48	15000
15,50	16	203	152	128	48	15500
15,80	16	203	152	128	48	15800
16,00	16	203	152	128	48	16000
16,50	18	222	171	144	48	16500
16,80	18	222	171	144	48	16800
17,00	18	222	171	144	48	17000
17,50	18	222	171	144	48	17500
17,80	18	222	171	144	48	17800
18,00	18	222	171	144	48	18000
18,50	20	243	190	160	50	18500
18,80	20	243	190	160	50	18800
19,00	20	243	190	160	50	19000
19,50	20	243	190	160	50	19500
19,80	20	243	190	160	50	19800
20,00	20	243	190	160	50	20000

P	●
M	●
K	●
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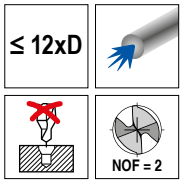
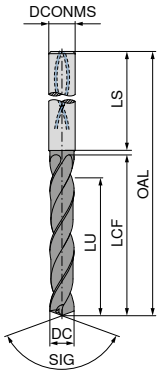
→ v_c Page 117

WTX – High Performance Drill, factory standard







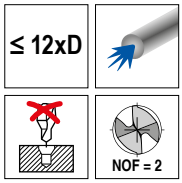
DC h7/m7	DCONMS h6	OAL	LCF	LU	LS	SIG 135° Solid carbide	SIG 140° Solid carbide	SIG 135° Solid carbide
mm	mm	mm	mm	mm	mm	10 774 ...	10 737 ...	10 793 ...
3,0	6	92	54	48	36	03000	03000	03000
3,1	6	92	54	48	36	03100	03100	03100
3,2	6	92	54	48	36	03200	03200	03200
3,3	6	92	54	48	36	03300	03300	03300
3,4	6	92	54	48	36	03400	03400	03400
3,5	6	92	54	48	36	03500	03500	03500
3,6	6	92	54	48	36	03600	03600	03600
3,7	6	92	54	48	36	03700	03700	03700
3,8	6	102	64	58	36	03800	03800	03800
3,9	6	102	64	58	36	03900	03900	03900
4,0	6	102	64	58	36	04000	04000	04000
4,1	6	102	64	58	36	04100	04100	04100
4,2	6	102	64	58	36	04200	04200	04200
4,3	6	102	64	58	36	04300	04300	04300
4,4	6	102	64	58	36	04400	04400	04400
4,5	6	102	64	58	36	04500	04500	04500
4,6	6	102	64	58	36	04600	04600	04600
4,7	6	102	64	58	36	04700	04700	04700
4,8	6	116	78	70	36	04800	04800	04800
4,9	6	116	78	70	36	04900	04900	04900
5,0	6	116	78	70	36	05000	05000	05000
5,1	6	116	78	70	36	05100	05100	05100
5,2	6	116	78	70	36	05200	05200	05200
5,3	6	116	78	70	36	05300	05300	05300
5,4	6	116	78	70	36	05400	05400	05400
5,5	6	116	78	70	36	05500	05500	05500
5,6	6	116	78	70	36	05600	05600	05600
5,7	6	116	78	70	36	05700	05700	05700
5,8	6	116	78	70	36	05800	05800	05800
5,9	6	116	78	70	36	05900	05900	05900
6,0	6	116	78	70	36	06000	06000	06000
6,1	8	146	108	94	36	06100	06100	06100
6,2	8	146	108	94	36	06200	06200	06200
6,3	8	146	108	94	36	06300	06300	06300
6,4	8	146	108	94	36	06400	06400	06400
6,5	8	146	108	94	36	06500	06500	06500
6,6	8	146	108	94	36	06600	06600	06600
6,7	8	146	108	94	36	06700	06700	06700
6,8	8	146	108	94	36	06800	06800	06800
6,9	8	146	108	94	36	06900	06900	06900
7,0	8	146	108	94	36	07000	07000	07000
7,1	8	146	108	94	36	07100	07100	07100
7,2	8	146	108	94	36	07200	07200	07200
P						●	●	
M						●		
K						●	●	
N						○		●
S						●		
H							○	
O								

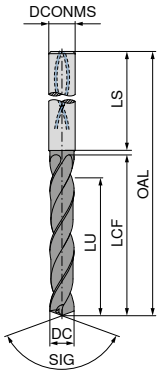
→ v_c Page 118–124

Ø DC_{h7} for Type Speed VA and AL / Ø DC_{m7} for Type Quattro 4F

Continued on next page

WTX – High Performance Drill, factory standard







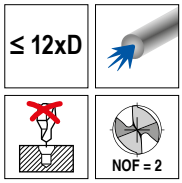
						SIG 135° Solid carbide	SIG 140° Solid carbide	SIG 135° Solid carbide
						10 774 ...	10 737 ...	10 793 ...
DC $_{h7/m7}$ mm	DCONMS $_{h6}$ mm	OAL mm	LCF mm	LU mm	LS mm			
7,3	8	146	108	94	36	07300	07300	07300
7,4	8	146	108	94	36	07400	07400	07400
7,5	8	146	108	94	36	07500	07500	07500
7,6	8	146	108	94	36	07600	07600	07600
7,7	8	146	108	94	36	07700	07700	07700
7,8	8	146	108	94	36	07800	07800	07800
7,9	8	146	108	94	36	07900	07900	07900
8,0	8	146	108	94	36	08000	08000	08000
8,1	10	162	120	110	40	08100	08100	08100
8,2	10	162	120	110	40	08200	08200	08200
8,3	10	162	120	110	40	08300	08300	08300
8,4	10	162	120	110	40	08400	08400	08400
8,5	10	162	120	110	40	08500	08500	08500
8,6	10	162	120	110	40	08600	08600	08600
8,7	10	162	120	110	40	08700	08700	08700
8,8	10	162	120	110	40	08800	08800	08800
8,9	10	162	120	110	40	08900	08900	08900
9,0	10	162	120	110	40	09000	09000	09000
9,1	10	162	120	110	40	09100	09100	09100
9,2	10	162	120	110	40	09200	09200	09200
9,3	10	162	120	110	40	09300	09300	09300
9,4	10	162	120	110	40	09400	09400	09400
9,5	10	162	120	110	40	09500	09500	09500
9,6	10	162	120	110	40	09600	09600	09600
9,7	10	162	120	110	40	09700	09700	09700
9,8	10	162	120	110	40	09800	09800	09800
9,9	10	162	120	110	40	09900	09900	09900
10,0	10	162	120	110	40	10000	10000	10000
10,1	12	204	156	142	45	10100	10100	
10,2	12	204	156	142	45	10200	10200	10200
10,3	12	204	156	142	45	10300	10300	
10,4	12	204	156	142	45	10400	10400	
10,5	12	204	156	142	45	10500	10500	10500
10,6	12	204	156	142	45	10600	10600	
10,7	12	204	156	142	45	10700	10700	10700
10,8	12	204	156	142	45	10800	10800	10800
10,9	12	204	156	142	45	10900	10900	
11,0	12	204	156	142	45	11000	11000	11000
11,1	12	204	156	142	45	11100	11100	
11,2	12	204	156	142	45	11200	11200	11200
11,3	12	204	156	142	45	11300	11300	11300
11,4	12	204	156	142	45	11400	11400	
11,5	12	204	156	142	45	11500	11500	11500
P						●	●	
M						●		
K						●	●	
N						○		●
S						●		
H							○	
O								

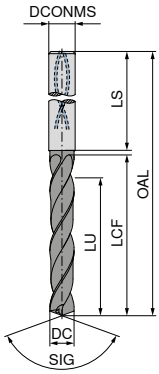
→ v_c Page 118–124

Ø DC_{h7} for Type Speed VA and AL / Ø DC_{m7} for Type Quattro 4F

Continued on next page

WTX – High Performance Drill, factory standard





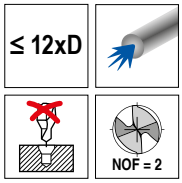


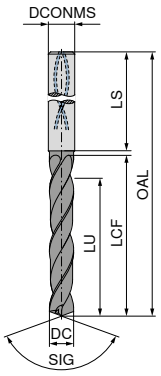
						SIG 135° Solid carbide	SIG 140° Solid carbide	SIG 135° Solid carbide
DC h7/m7	DCONMS h6	OAL	LCF	LU	LS	10 774 ...	10 737 ...	10 793 ...
mm	mm	mm	mm	mm	mm			
11,6	12	204	156	142	45	11600	11600	
11,7	12	204	156	142	45	11700	11700	
11,8	12	204	156	142	45	11800	11800	11800
11,9	12	204	156	142	45	11900	11900	
12,0	12	204	156	142	45	12000	12000	12000
12,1	14	230	182	166	45			12100
12,2	14	230	182	166	45	12200		12200
12,5	14	230	182	166	45	12500	12500	12500
12,8	14	230	182	166	45	12800	12800	12800
13,0	14	230	182	166	45	13000	13000	13000
13,2	14	230	182	166	45			13200
13,5	14	230	182	166	45	13500	13500	13500
13,8	14	230	182	166	45	13800	13800	13800
14,0	14	230	182	166	45	14000	14000	14000
14,2	16	260	208	192	48	14200		14200
14,5	16	260	208	192	48	14500	14500	14500
14,7	16	260	208	192	48			14700
14,8	16	260	208	192	48		14800	14800
15,0	16	260	208	192	48	15000	15000	15000
15,1	16	260	208	192	48	15100		
15,2	16	260	208	192	48	15200		15200
15,5	16	260	208	192	48	15500	15500	15500
15,7	16	260	208	192	48			15700
15,8	16	260	208	192	48	15800	15800	15800
16,0	16	260	208	192	48	16000	16000	16000
16,2	18	285	234	216	48			16200
16,5	18	285	234	216	48		16500	16500
16,8	18	285	234	216	48		16800	16800
17,0	18	285	234	216	48	17000	17000	17000
17,2	18	285	234	216	48			17200
17,5	18	285	234	216	48	17500	17500	17500
17,8	18	285	234	216	48		17800	17800
18,0	18	285	234	216	48		18000	18000
18,2	20	310	258	240	50			18200
18,5	20	310	258	240	50			18500
18,7	20	310	258	240	50			18700
18,8	20	310	258	240	50			18800
19,0	20	310	258	240	50			19000
19,2	20	310	258	240	50			19200
19,5	20	310	258	240	50			19500
19,8	20	310	258	240	50			19800
20,0	20	310	258	240	50			20000
P						●	●	
M						●		
K						●	●	
N						○		●
S						●		
H							○	
O								

→ v_c Page 118–124

Ø DC_{h7} for Type Speed VA and AL / **Ø DC_{m7}** for Type Quattro 4F

High Performance Drill, factory standard





UNI

TiAlN



SIG 135°
Solid carbide

11 705 ...

DC h7 mm	DCONMS h6 mm	OAL mm	LCF mm	LU mm	LS mm	
3,0	6	92	54	49,5	36	03000
3,1	6	92	54	49,3	36	03100
3,2	6	92	54	49,2	36	03200
3,3	6	92	54	49,0	36	03300
3,4	6	92	54	48,9	36	03400
3,5	6	92	54	48,7	36	03500
3,6	6	92	54	48,6	36	03600
3,7	6	92	54	48,4	36	03700
3,8	6	102	64	58,3	36	03800
3,9	6	102	64	58,1	36	03900
4,0	6	102	64	58,0	36	04000
4,1	6	102	64	57,8	36	04100
4,2	6	102	64	57,7	36	04200
4,3	6	102	64	57,5	36	04300
4,4	6	102	64	57,4	36	04400
4,5	6	102	64	57,2	36	04500
4,6	6	102	64	57,1	36	04600
4,7	6	102	64	56,9	36	04700
4,8	6	116	78	70,8	36	04800
4,9	6	116	78	70,6	36	04900
5,0	6	116	78	70,5	36	05000
5,1	6	116	78	70,3	36	05100
5,2	6	116	78	70,2	36	05200
5,3	6	116	78	70,0	36	05300
5,4	6	116	78	69,9	36	05400
5,5	6	116	78	69,7	36	05500
5,6	6	116	78	69,6	36	05600
5,7	6	116	78	69,4	36	05700
5,8	6	116	78	69,3	36	05800
5,9	6	116	78	69,1	36	05900
6,0	6	116	78	69,0	36	06000
6,1	8	146	108	98,8	36	06100
6,2	8	146	108	98,7	36	06200
6,3	8	146	108	98,5	36	06300
6,4	8	146	108	98,4	36	06400
6,5	8	146	108	98,2	36	06500
6,6	8	146	108	98,1	36	06600
6,7	8	146	108	97,9	36	06700
6,8	8	146	108	97,8	36	06800
6,9	8	146	108	97,6	36	06900
7,0	8	146	108	97,5	36	07000
7,1	8	146	108	97,3	36	07100
7,2	8	146	108	97,2	36	07200
7,3	8	146	108	97,0	36	07300
7,4	8	146	108	96,9	36	07400
7,5	8	146	108	96,7	36	07500

11 705 ...

DC h7 mm	DCONMS h6 mm	OAL mm	LCF mm	LU mm	LS mm	
7,6	8	146	108	96,6	36	07600
7,7	8	146	108	96,4	36	07700
7,8	8	146	108	96,3	36	07800
7,9	8	146	108	96,1	36	07900
8,0	8	146	108	96,0	36	08000
8,1	10	162	120	107,8	40	08100
8,2	10	162	120	107,7	40	08200
8,3	10	162	120	107,5	40	08300
8,4	10	162	120	107,4	40	08400
8,5	10	162	120	107,2	40	08500
8,6	10	162	120	107,1	40	08600
8,7	10	162	120	106,9	40	08700
8,8	10	162	120	106,8	40	08800
8,9	10	162	120	106,6	40	08900
9,0	10	162	120	106,5	40	09000
9,1	10	162	120	106,3	40	09100
9,2	10	162	120	106,2	40	09200
9,3	10	162	120	106,0	40	09300
9,4	10	162	120	105,9	40	09400
9,5	10	162	120	105,7	40	09500
9,6	10	162	120	105,6	40	09600
9,7	10	162	120	105,4	40	09700
9,8	10	162	120	105,3	40	09800
9,9	10	162	120	105,1	40	09900
10,0	10	162	120	105,0	40	10000
10,2	12	204	156	140,7	45	10200
10,5	12	204	156	140,2	45	10500
10,8	12	204	156	139,8	45	10800
11,0	12	204	156	139,5	45	11000
11,5	12	204	156	138,7	45	11500
11,8	12	204	156	138,3	45	11800
12,0	12	204	156	138,0	45	12000
12,5	14	230	182	163,2	45	12500
12,7	14	230	182	162,9	45	12700
12,8	14	230	182	162,8	45	12800
13,0	14	230	182	162,5	45	13000
13,5	14	230	182	161,7	45	13500
13,8	14	230	182	161,3	45	13800
14,0	14	230	182	161,0	45	14000
14,5	16	260	208	186,2	48	14500
14,8	16	260	208	185,8	48	14800
15,0	16	260	208	185,5	48	15000
15,5	16	260	208	184,7	48	15500
15,8	16	260	208	184,3	48	15800
16,0	16	260	208	184,0	48	16000
16,5	18	285	234	209,2	48	16500
17,0	18	285	234	208,5	48	17000
17,5	18	285	234	207,7	48	17500
18,0	18	285	234	207,0	48	18000
18,5	20	310	258	230,2	50	18500
19,0	20	310	258	229,5	50	19000
19,5	20	310	258	228,7	50	19500
20,0	20	310	258	228,0	50	20000

P	●
M	●
K	●
N	
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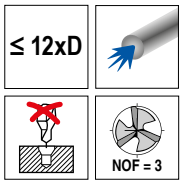
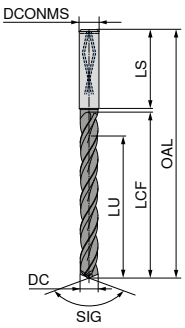
H	
O	

→ v_c Page 131

WTX – High Feed Drill, factory standard

- ▲ Three fluted high-feed drill
- ▲ Universal application
- ▲ High positioning accuracy
- ▲ Suitable for difficult drilling applications







SIG 135°
Solid carbide

10 796 ...

DC m7 mm	DCONMS h6 mm	OAL mm	LCF mm	LU mm	LS mm	
4,0	6	102	64	58	36	04000
4,1	6	102	64	58	36	04100
4,2	6	102	64	58	36	04200
4,3	6	102	64	58	36	04300
4,4	6	102	64	58	36	04400
4,5	6	102	64	58	36	04500
4,6	6	102	64	58	36	04600
4,7	6	102	64	58	36	04700
4,8	6	116	78	70	36	04800
4,9	6	116	78	70	36	04900
5,0	6	116	78	70	36	05000
5,1	6	116	78	70	36	05100
5,2	6	116	78	70	36	05200
5,3	6	116	78	70	36	05300
5,4	6	116	78	70	36	05400
5,5	6	116	78	70	36	05500
5,6	6	116	78	70	36	05600
5,7	6	116	78	70	36	05700
5,8	6	116	78	70	36	05800
5,9	6	116	78	70	36	05900
6,0	6	116	78	70	36	06000
6,1	8	146	108	94	36	06100
6,2	8	146	108	94	36	06200
6,3	8	146	108	94	36	06300
6,4	8	146	108	94	36	06400
6,5	8	146	108	94	36	06500
6,6	8	146	108	94	36	06600
6,7	8	146	108	94	36	06700
6,8	8	146	108	94	36	06800
6,9	8	146	108	94	36	06900
7,0	8	146	108	94	36	07000
7,1	8	146	108	94	36	07100
7,2	8	146	108	94	36	07200
7,3	8	146	108	94	36	07300
7,4	8	146	108	94	36	07400
7,5	8	146	108	94	36	07500
7,6	8	146	108	94	36	07600
7,7	8	146	108	94	36	07700
7,8	8	146	108	94	36	07800
7,9	8	146	108	94	36	07900
8,0	8	146	108	94	36	08000
8,1	10	162	120	110	40	08100
8,2	10	162	120	110	40	08200
8,3	10	162	120	110	40	08300
8,4	10	162	120	110	40	08400
8,5	10	162	120	110	40	08500
8,6	10	162	120	110	40	08600
8,7	10	162	120	110	40	08700
8,8	10	162	120	110	40	08800
8,9	10	162	120	110	40	08900
9,0	10	162	120	110	40	09000
9,1	10	162	120	110	40	09100

10 796 ...

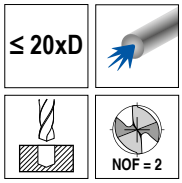
DC m7 mm	DCONMS h6 mm	OAL mm	LCF mm	LU mm	LS mm	
9,2	10	162	120	110	40	09200
9,3	10	162	120	110	40	09300
9,4	10	162	120	110	40	09400
9,5	10	162	120	110	40	09500
9,6	10	162	120	110	40	09600
9,7	10	162	120	110	40	09700
9,8	10	162	120	110	40	09800
9,9	10	162	120	110	40	09900
10,0	10	162	120	110	40	10000
10,1	12	204	156	142	45	10100
10,2	12	204	156	142	45	10200
10,3	12	204	156	142	45	10300
10,4	12	204	156	142	45	10400
10,5	12	204	156	142	45	10500
10,6	12	204	156	142	45	10600
10,7	12	204	156	142	45	10700
10,8	12	204	156	142	45	10800
10,9	12	204	156	142	45	10900
11,0	12	204	156	142	45	11000
11,1	12	204	156	142	45	11100
11,2	12	204	156	142	45	11200
11,3	12	204	156	142	45	11300
11,4	12	204	156	142	45	11400
11,5	12	204	156	142	45	11500
11,6	12	204	156	142	45	11600
11,7	12	204	156	142	45	11700
11,8	12	204	156	142	45	11800
11,9	12	204	156	142	45	11900
12,0	12	204	156	142	45	12000
12,2	14	230	182	166	45	12200
12,5	14	230	182	166	45	12500
12,8	14	230	182	166	45	12800
13,0	14	230	182	166	45	13000
13,5	14	230	182	166	45	13500
13,8	14	230	182	166	45	13800
14,0	14	230	182	166	45	14000
14,5	16	260	208	192	48	14500
14,8	16	260	208	192	48	14800
15,0	16	260	208	192	48	15000
15,5	16	260	208	192	48	15500
15,8	16	260	208	192	48	15800
16,0	16	260	208	192	48	16000
16,5	18	285	234	216	48	16500
16,8	18	285	234	216	48	16800
17,0	18	285	234	216	48	17000
17,5	18	285	234	216	48	17500
17,8	18	285	234	216	48	17800
18,0	18	285	234	216	48	18000
18,5	20	310	258	240	50	18500
18,8	20	310	258	240	50	18800
19,0	20	310	258	240	50	19000
19,5	20	310	258	240	50	19500
19,8	20	310	258	240	50	19800
20,0	20	310	258	240	50	20000

P	●
M	●
K	●
N	○
S	
H	
O	

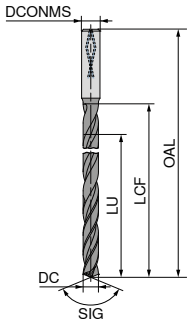
→ v_c Page 117

WTX – Co-pilot deep hole twist drills

- ▲ Cutting tolerance j6 optimally coordinated as an intermediate tolerance between the pilot drill and deep hole twist drill
- ▲ For optimal guidance and reduction of the cutting time of the deep hole twist drill for hole depths > 30xD
- ▲ Pilot hole necessary
- ▲ up to 20xD without peck drilling
- ▲ Excellent alignment precision
- ▲ Reliable chip removal









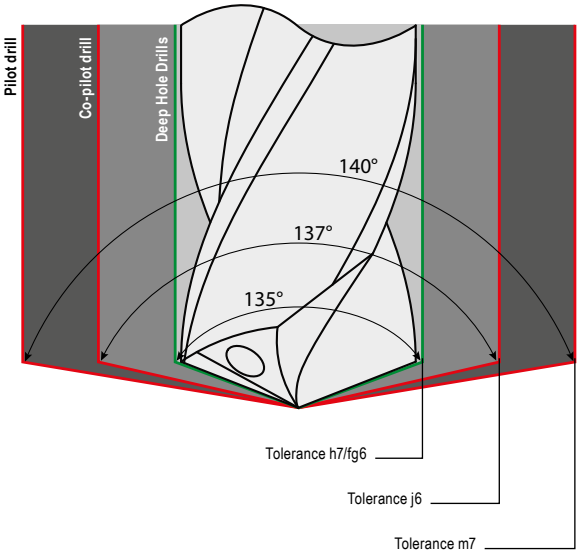
SIG 137°
Solid carbide

11 018 ...

DC j6 mm	DCONMS h5 mm	OAL mm	LCF mm	LU mm	
3,0	6	120	80	60	03000
4,0	6	130	90	80	04000
4,2	6	160	110	84	04200
4,5	6	160	110	90	04500
4,8	6	160	120	96	04800
5,0	6	160	120	100	05000
5,5	6	185	140	110	05500
5,8	6	185	140	116	05800
6,0	6	185	140	120	06000
6,5	8	210	160	130	06500
6,8	8	210	160	136	06800
7,0	8	210	160	140	07000
7,5	8	230	180	150	07500
7,8	8	230	180	156	07800
8,0	8	230	180	160	08000
8,5	10	260	195	170	08500
8,8	10	290	230	176	08800
9,0	10	290	230	180	09000
P					●
M					●
K					●
N					
S					○
H					
O					

→ v_c Page 142

Tolerances and angles



Tolerance table

ISO tolerances for shafts and holes

Tolerance designation	of Ø	3	6	10	18	
	up to and including	6	10	18	30	
p6		20	24	29	35	
		12	15	18	22	
h7		0	0	0	0	Deep hole twist drill 16xD to 30xD
		-12	-15	-18	-21	
j6		6	7	8	9	Co-pilot drill
		-2	-2	-3	-4	
fg6		-6	-8			Deep hole twist drill > 30xD
		-14	-17			
m6		12	15	18	21	
		4	6	7	8	
m7		16	21	25	29	WTX UNI / WTX VA
		4	6	7	8	

Pilot drill for WTX deep hole twist drill:

- ▲ WTX-TB UNI: WTX-UNI 3xD / 5xD
- ▲ WTX-TB ALU: WTX-VA 3xD / 5xD

WTX – High performance deep hole drills

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

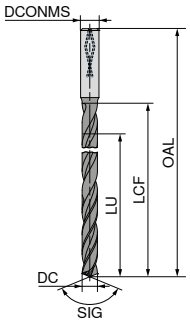
≤ 16xD

NOF = 2

TB 16 UNI | TB 16 ALU

TiAlN | DLC

DRAGONSKIN







SIG 135°
Solid carbide

11 016 ...

SIG 135°
Solid carbide

11 017 ...

DC h7 mm	DCONMS h6 mm	OAL mm	LCF mm	LU mm		
2,0	4	84	42	39	020	020
2,2	4	84	42	39	022	022
2,3	4	84	42	39	023	023
2,4	4	96	54	50	024	024
2,5	4	96	54	50	025	025
2,7	4	96	54	50	027	027
2,8	4	96	54	50	028	028
3,0	6	100	60	55	030	030
3,2	6	100	60	55	032	032
3,3	6	100	60	55	033	033
3,5	6	100	60	55	035	035
3,8	6	115	75	69	038	038
4,0	6	115	75	69	040	040
4,2	6	115	75	69	042	042
4,5	6	130	90	83	045	045
4,8	6	130	90	83	048	048
5,0	6	130	90	83	050	050
5,5	6	150	108	99	055	055
5,8	6	150	108	99	058	058
6,0	6	150	108	99	060	060
6,5	8	165	125	115	065	065
6,8	8	165	125	115	068	068
7,0	8	165	125	115	070	070
7,5	8	180	140	128	075	075
7,8	8	180	140	128	078	078
8,0	8	180	140	128	080	080
8,5	10	205	160	147	085	085
8,8	10	205	160	147	088	088
9,0	10	205	160	147	090	090
9,8	10	225	180	165	098	098
10,0	10	225	180	165	100	100
10,2	12	240	190	174	102	102
10,8	12	240	190	174	108	108
11,8	12	265	215	197	118	118
12,0	12	265	215	197	120	120

P	●	
M	●	
K	●	
N		●
S	○	
H		
O		

→ v_c Page 143+146
→ Machining information: Page 160

WTX – High performance deep hole drills

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

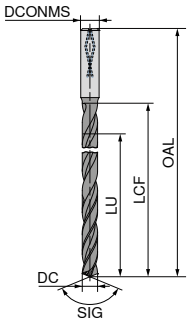
≤ 20xD

NOF = 2

TB 20 UNI | TB 20 ALU

TiAlN | DLC

DRAGONSKIN







SIG 135°
Solid carbide

11 020 ...

SIG 135°
Solid carbide

11 021 ...

DC h7 mm	DCONMS h6 mm	OAL mm	LCF mm	LU mm		
2,0	4	92	50	47	020	020
2,2	4	92	50	47	022	022
2,3	4	92	50	47	023	023
2,4	4	112	70	66	024	024
2,5	4	112	70	66	025	025
2,7	4	112	70	66	027	027
2,8	4	112	70	66	028	028
3,0	6	120	80	75	030	030
3,2	6	120	80	75	032	032
3,3	6	120	80	75	033	033
3,5	6	120	80	75	035	035
3,8	6	130	90	84	038	038
4,0	6	130	90	84	040	040
4,2	6	160	110	103	042	042
4,5	6	160	110	103	045	045
4,8	6	160	120	113	048	048
5,0	6	160	120	113	050	050
5,5	6	185	140	131	055	055
5,8	6	185	140	131	058	058
6,0	6	185	140	131	060	060
6,5	8	210	160	150	065	065
6,8	8	210	160	150	068	068
7,0	8	210	160	150	070	070
7,5	8	230	180	168	075	075
7,8	8	230	180	168	078	078
8,0	8	230	180	168	080	080
8,5	10	260	195	182	085	085
8,8	10	290	230	216	088	088
9,0	10	290	230	216	090	090
9,8	10	290	230	216	098	098
10,0	10	290	230	216	100	100
10,2	12	315	268	251	102	102
10,8	12	315	268	251	108	108
11,8	12	315	268	251	118	118
12,0	12	315	268	251	120	120

P	●	
M	●	
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S	○	
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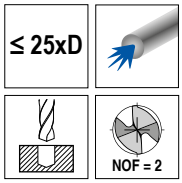
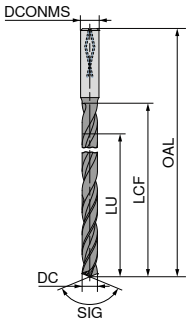
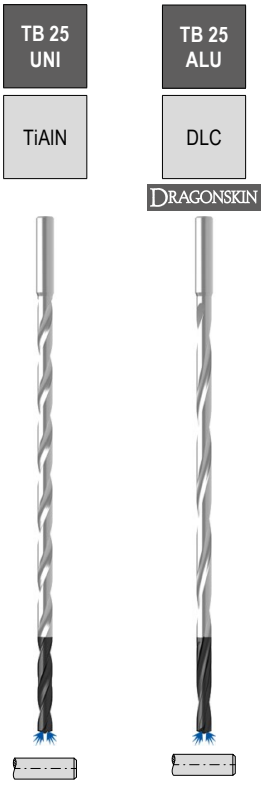
→ v_c Page 143+146
→ Machining information: Page 160

WTX – High performance deep hole drills

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







SIG 135°
Solid carbide

11 025 ...

SIG 135°
Solid carbide

11 026 ...

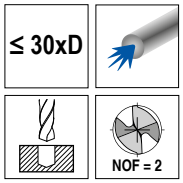
DC h7 mm	DCONMS h6 mm	OAL mm	LCF mm	LU mm		
2,0	4	104	60	57	020	020
2,2	4	104	60	57	022	022
2,3	4	104	60	57	023	023
2,4	4	125	80	76	024	024
2,5	4	125	80	76	025	025
2,7	4	125	80	76	027	027
2,8	4	125	80	76	028	028
3,0	6	135	98	93	030	030
3,2	6	135	98	93	032	032
3,3	6	150	110	105	033	033
3,5	6	150	110	105	035	035
3,8	6	160	120	114	038	038
4,0	6	160	120	114	040	040
4,2	6	160	120	114	042	042
4,5	6	180	135	128	045	045
4,8	6	180	135	128	048	048
5,0	6	180	135	128	050	050
5,5	6	205	168	159	055	055
5,8	6	205	168	159	058	058
6,0	6	205	168	159	060	060
6,5	8	240	200	190	065	065
6,8	8	240	200	190	068	068
7,0	8	240	200	190	070	070
7,5	8	260	220	208	075	075
7,8	8	260	220	208	078	078
8,0	8	260	220	208	080	080
8,5	10	285	240	227	085	085
8,8	10	310	268	254	088	088
9,0	10	310	268	254	090	090
9,8	10	310	268	254	098	098
10,0	10	310	268	254	100	100
10,2	12	375	325	308	102	102
10,8	12	375	325	308	108	108
11,8	12	375	325	308	118	118
12,0	12	375	325	308	120	120

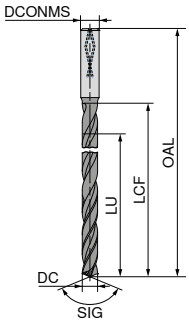
P	●	
M	●	
K	●	
N		●
S	○	
H		
O		

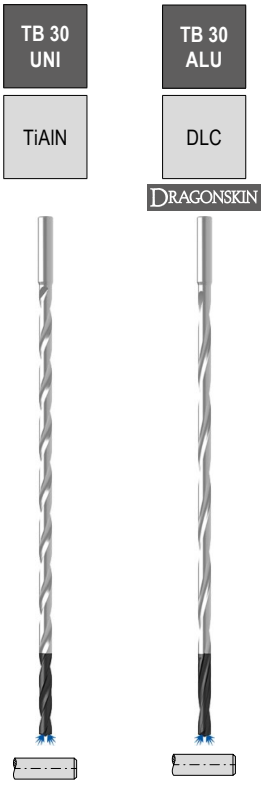
→ v_c Page 144+147
→ Machining information: Page 160

WTX – High performance deep hole drills

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







SIG 135°
Solid carbide

11 030 ...

SIG 135°
Solid carbide

11 031 ...

DC h7 mm	DCONMS h6 mm	OAL mm	LCF mm	LU mm		
2,0	4	115	70	67	020	020
2,2	4	115	70	67	022	022
2,3	4	115	70	67	023	023
2,4	4	138	90	86	024	024
2,5	4	138	90	86	025	025
2,7	4	138	90	86	027	027
2,8	4	138	90	86	028	028
3,0	6	150	105	100	030	030
3,2	6	150	105	100	032	032
3,3	6	185	135	130	033	033
3,5	6	185	135	130	035	035
3,8	6	185	135	130	038	038
4,0	6	185	135	130	040	040
4,2	6	185	135	130	042	042
4,5	6	215	165	158	045	045
4,8	6	215	165	158	048	048
5,0	6	215	165	158	050	050
5,5	6	230	180	171	055	055
5,8	6	230	180	171	058	058
6,0	6	230	180	171	060	060
6,5	8	280	215	205	065	065
6,8	8	280	230	220	068	068
7,0	8	280	230	220	070	070
7,5	8	280	230	220	075	075
7,8	8	315	265	253	078	078
8,0	8	315	265	253	080	080
8,5	10	350	295	282	085	085
8,8	10	380	330	316	088	088
9,0	10	380	330	316	090	090
9,8	10	380	330	316	098	098
10,0	10	380	330	316	100	100
10,2	12	430	380	365	102	102
10,8	12	430	380	365	108	108
11,8	12	430	380	365	118	118
12,0	12	430	380	365	120	120

P	●	
M	●	
K	●	
N		●
S	○	
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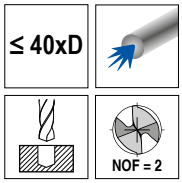
O		

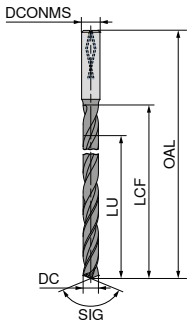
→ v_c Page 144+147
→ Machining information: Page 160

WTX – High performance deep hole drills

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









SIG 135°

Solid carbide

11 040 ...

DC fg6 mm	DCONMS h6 mm	OAL mm	LCF mm	LU mm	
3,0	6	195	150	146	030
4,0	6	220	175	169	040
4,2	6	245	200	194	042
4,5	6	245	200	194	045
4,8	6	275	230	223	048
5,0	6	275	230	223	050
5,5	6	305	260	251	055
5,8	6	305	260	251	058
6,0	6	305	260	251	060
6,5	8	345	300	290	065
6,8	8	345	300	290	068
7,0	8	345	300	290	070
7,5	8	385	340	328	075
7,8	8	385	340	328	078
8,0	8	385	340	328	080
8,5	10	430	380	367	085
8,8	10	430	380	367	088
9,0	10	430	380	367	090

P	●
M	●
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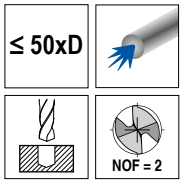
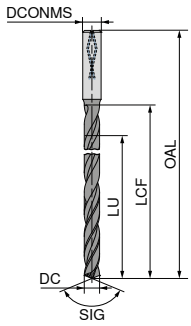
→ v_c Page 145
→ Machining information: Page 160

WTX – High performance deep hole drills

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









SIG 135°

Solid carbide

11 050 ...

DC fg6 mm	DCONMS h6 mm	OAL mm	LCF mm	LU mm	
3,0	6	220	175	170	030
4,0	6	265	220	214	040
4,2	6	290	245	238	042
4,5	6	290	245	238	045
4,8	6	320	275	268	048
5,0	6	320	275	268	050
5,5	6	355	310	302	055
5,8	6	355	315	306	058
6,0	6	355	315	306	060
6,5	8	395	350	340	065
6,8	8	425	380	370	068

P	●
M	●
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→ v_c Page 145
→ Machining information: Page 160

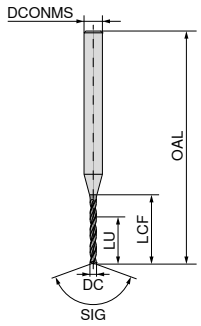
The deep hole twist drills are also available in other dimensions on request.

WTX – High Performance Drills

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

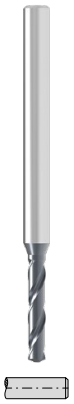
≤ 5xD

NOF = 2



MINI

TiAlN



SIG 140°

Solid carbide

11 770 ...

DC +0,004 mm	DCONMS h6 mm	OAL mm	LCF mm	LU mm	
0,10	3	38	1,2	1,0	00100
0,15	3	38	2,0	1,7	00150
0,20	3	38	3,5	3,0	00200
0,25	3	38	3,5	3,0	00250
0,30	3	38	5,5	5,0	00300
0,35	3	38	5,5	5,0	00350
0,40	3	38	7,0	6,0	00400
0,45	3	38	7,0	6,0	00450
0,50	3	38	7,0	6,0	00500
0,55	3	38	7,0	6,0	00550
0,60	3	38	7,0	6,0	00600
0,65	3	38	7,0	6,0	00650
0,70	3	38	10,5	8,0	00700
0,75	3	38	10,5	8,0	00750
0,80	3	38	10,5	8,0	00800
0,85	3	38	10,5	8,0	00850
0,90	3	38	10,5	8,0	00900
0,95	3	38	10,5	8,0	00950
0,97	3	38	10,5	8,0	00970
0,98	3	38	10,5	8,0	00980
0,99	3	38	10,5	8,0	00990
1,00	3	38	10,5	8,0	01000
1,01	3	38	10,5	8,0	01010
1,02	3	38	10,5	8,0	01020
1,03	3	38	10,5	8,0	01030
1,05	3	38	10,5	8,0	01050
1,10	3	38	10,5	8,0	01100
1,15	3	38	10,5	8,0	01150
1,20	3	38	10,5	8,0	01200
1,25	3	38	10,5	8,0	01250
1,30	3	38	10,5	8,0	01300
1,35	3	38	10,5	8,0	01350
1,40	3	38	10,5	8,0	01400
1,45	3	38	10,5	8,0	01450
1,47	3	38	10,5	8,0	01470
1,48	3	38	10,5	8,0	01480
1,49	3	38	10,5	8,0	01490
1,50	3	38	10,5	8,0	01500
1,51	3	38	10,5	8,0	01510
1,52	3	38	10,5	8,0	01520
1,53	3	38	10,5	8,0	01530
1,55	3	38	10,5	8,0	01550
1,60	3	38	10,5	8,0	01600
1,65	3	38	10,5	8,0	01650
1,70	3	38	10,5	8,0	01700
1,75	3	38	10,5	8,0	01750

11 770 ...

DC +0,004 mm	DCONMS h6 mm	OAL mm	LCF mm	LU mm	
1,80	3	38	10,5	8,0	01800
1,85	3	38	12,0	8,0	01850
1,90	3	38	12,0	8,0	01900
1,95	3	38	12,0	8,0	01950
1,97	3	38	12,0	8,0	01970
1,98	3	38	12,0	8,0	01980
1,99	3	38	12,0	8,0	01990
2,00	3	42	13,0	9,0	02000
2,01	3	42	13,0	9,0	02010
2,02	3	42	13,0	9,0	02020
2,03	3	42	13,0	9,0	02030
2,05	3	42	13,0	9,0	02050
2,10	3	42	13,0	9,0	02100
2,15	3	42	13,0	9,0	02150
2,20	3	46	15,0	10,0	02200
2,25	3	46	15,0	10,0	02250
2,30	3	46	15,0	10,0	02300
2,35	3	46	15,0	10,0	02350
2,40	3	46	15,0	10,0	02400
2,45	3	46	15,0	10,0	02450
2,47	3	46	15,0	10,0	02470
2,48	3	46	15,0	10,0	02480
2,49	3	46	15,0	10,0	02490
2,50	3	46	15,0	10,0	02500
2,51	3	46	15,0	10,0	02510
2,52	3	46	15,0	10,0	02520
2,53	3	46	15,0	10,0	02530
2,60	3	46	15,0	10,0	02600
2,70	3	46	15,0	10,0	02700
2,80	3	46	15,0	10,0	02800
2,90	3	46	15,0	10,0	02900

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S	○
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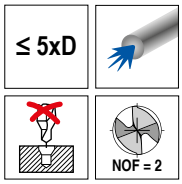
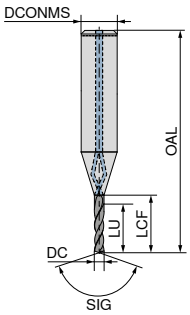
→ v_c Page 136

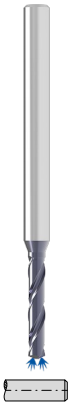
WTX – High Performance Drills

▲ Specialised micro drill
▲ Universal application
▲ Extremely high process security
▲ Pilot drill for WTX Micro – high-performance deep hole drill



MICRO
DPX74M
DRAGONSKIN





SIG 135°
Solid carbide

10 693 ...

DC m6 mm	DCONMS h6 mm	OAL mm	LCF mm	LU mm	
0,8	3	39	5,6	4,0	00800
0,9	3	39	6,3	4,5	00900
1,0	3	40	7,0	5,0	01000
1,1	3	41	7,7	5,5	01100
1,2	3	41	8,4	6,0	01200
1,3	3	42	9,1	6,5	01300
1,4	3	42	9,8	7,0	01400
1,5	3	43	10,5	7,5	01500
1,6	3	44	11,2	8,0	01600
1,7	3	44	11,9	8,5	01700
1,8	3	45	12,6	9,0	01800
1,9	3	45	13,3	9,5	01900
2,0	3	46	14,0	10,0	02000
2,1	3	47	14,7	10,5	02100
2,2	3	47	15,4	11,0	02200
2,3	3	48	16,1	11,5	02300
2,4	3	48	16,8	12,0	02400
2,5	3	49	17,5	12,5	02500
2,6	3	50	18,2	13,0	02600
2,7	3	50	18,9	13,5	02700
2,8	3	51	19,6	14,0	02800
2,9	3	51	20,3	14,5	02900

P	●
M	●
K	●
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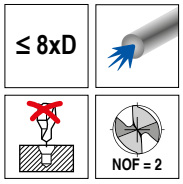
→ v_c Page 137
→ Machining information: Page 161

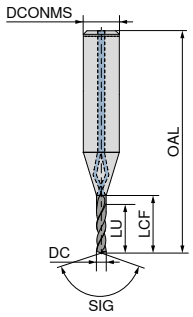
Minimum coolant pressure: 30 bar

WTX – High Performance Drills

▲ Specialised micro drill
▲ Universal application
▲ Extremely high process security



MICRO
DPX74M
DRAGONSKIN





SIG 128°
Solid carbide

10 694 ...

DC h6 mm	DCONMS h6 mm	OAL mm	LCF mm	LU mm	
0,8	3	41	8	6,4	00800
0,9	3	42	9	7,2	00900
1,0	3	43	10	8,0	01000
1,1	3	44	11	8,8	01100
1,2	3	45	12	9,6	01200
1,3	3	46	13	10,4	01300
1,4	3	47	14	11,2	01400
1,5	3	47	15	12,0	01500
1,6	3	48	16	12,8	01600
1,7	3	49	17	13,6	01700
1,8	3	50	18	14,4	01800
1,9	3	51	19	15,2	01900
2,0	3	52	20	16,0	02000
2,1	3	53	21	16,8	02100
2,2	3	54	22	17,6	02200
2,3	3	55	23	18,4	02300
2,4	3	56	24	19,2	02400
2,5	3	56	25	20,0	02500
2,6	3	57	26	20,8	02600
2,7	3	58	27	21,6	02700
2,8	3	59	28	22,4	02800
2,9	3	60	29	23,2	02900

P	●
M	●
K	●
N	
S	○
H	
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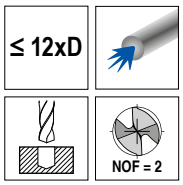
→ v_c Page 138
→ Machining information: Page 161

Minimum coolant pressure: 30 bar

WTX – High Performance Drills

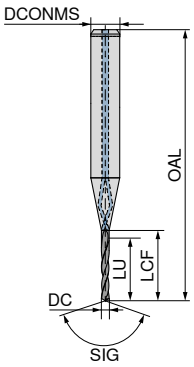
- ▲ Specialised micro drill
- ▲ Universal application
- ▲ Extremely high process security
- ▲ Pilot drill: 5xD WTX Micro – high-performance drill



MICRO

DPX74M

DRAGONSKIN





SIG 128°

Solid carbide

10 695 ...

DC h6 mm	DCONMS h6 mm	OAL mm	LCF mm	LU mm	
0,8	3	44	11,2	9,6	00800
0,9	3	46	12,6	10,8	00900
1,0	3	47	14,0	12,0	01000
1,1	3	48	15,4	13,2	01100
1,2	3	50	16,8	14,4	01200
1,3	3	51	18,2	15,6	01300
1,4	3	52	19,6	16,8	01400
1,5	3	53	21,0	18,0	01500
1,6	3	55	22,4	19,2	01600
1,7	3	56	23,8	20,4	01700
1,8	3	57	25,2	21,6	01800
1,9	3	59	26,6	22,8	01900
2,0	3	60	28,0	24,0	02000
2,1	3	61	29,4	25,2	02100
2,2	3	63	30,8	26,4	02200
2,3	3	64	32,2	27,6	02300
2,4	3	65	33,6	28,8	02400
2,5	3	67	35,0	30,0	02500
2,6	3	68	36,4	31,2	02600
2,7	3	69	37,8	32,4	02700
2,8	3	70	39,2	33,6	02800
2,9	3	72	40,6	34,8	02900

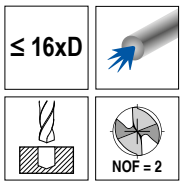
P	●
M	●
K	●
N	
S	○
H	
O	

→ v_c Page 138
→ Machining information: Page 161

Minimum coolant pressure: 30 bar

WTX – High performance deep hole drills

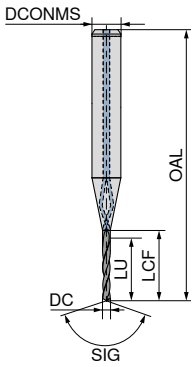
- ▲ Specialised micro deep hole drill
- ▲ Universal application
- ▲ Extremely high process security
- ▲ Pilot drill: 5xD WTX Micro – high-performance drill



MICRO

DPX74M

DRAGONSKIN





SIG 128°

Solid carbide

10 696 ...

DC h6 mm	DCONMS h6 mm	OAL mm	LCF mm	LU mm	
0,8	3	48	14,4	12,8	00800
0,9	3	49	16,2	14,4	00900
1,0	3	51	18,0	16,0	01000
1,1	3	53	19,8	17,6	01100
1,2	3	54	21,6	19,2	01200
1,3	3	56	23,4	20,8	01300
1,4	3	58	25,2	22,4	01400
1,5	3	60	27,0	24,0	01500
1,6	3	61	28,8	25,6	01600
1,7	3	63	30,6	27,2	01700
1,8	3	65	32,4	28,8	01800
1,9	3	66	34,2	30,4	01900
2,0	3	68	36,0	32,0	02000
2,1	3	70	37,8	33,6	02100
2,2	3	71	39,6	35,2	02200
2,3	3	73	41,4	36,8	02300
2,4	3	75	43,2	38,4	02400
2,5	3	77	45,0	40,0	02500
2,6	3	78	46,8	41,6	02600
2,7	3	80	48,6	43,2	02700
2,8	3	82	50,4	44,8	02800
2,9	3	83	52,2	46,4	02900

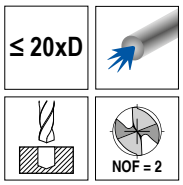
P	●
M	●
K	●
N	
S	
H	
O	

→ v_c Page 139
→ Machining information: Page 161

Minimum coolant pressure: 30 bar

WTX – High performance deep hole drills

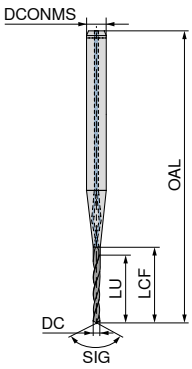
- ▲ Specialised micro deep hole drill
- ▲ Universal application
- ▲ Extremely high process security
- ▲ Pilot drill: 5xD WTX Micro – high-performance drill



MICRO

DPX74M

DRAGONSKIN





SIG 128°

Solid carbide

10 697 ...

DC h6 mm	DCONMS h6 mm	OAL mm	LCF mm	LU mm	
0,8	3	51	17,6	16	00800
0,9	3	53	19,8	18	00900
1,0	3	55	22,0	20	01000
1,1	3	57	24,2	22	01100
1,2	3	59	26,4	24	01200
1,3	3	61	28,6	26	01300
1,4	3	63	30,8	28	01400
1,5	3	66	33,0	30	01500
1,6	3	68	35,2	32	01600
1,7	3	70	37,4	34	01700
1,8	3	72	39,6	36	01800
1,9	3	74	41,8	38	01900
2,0	3	76	44,0	40	02000
2,1	3	78	46,2	42	02100
2,2	3	80	48,4	44	02200
2,3	3	82	50,6	46	02300
2,4	3	85	52,8	48	02400
2,5	3	87	55,0	50	02500
2,6	3	89	57,2	52	02600
2,7	3	91	59,4	54	02700
2,8	3	93	61,6	56	02800
2,9	3	95	63,8	58	02900

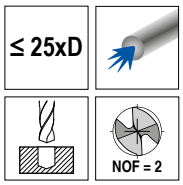
P	●
M	●
K	●
N	
S	
H	
O	

→ v_c Page 139
→ Machining information: Page 161

Minimum coolant pressure: 30 bar

WTX – High performance deep hole drills

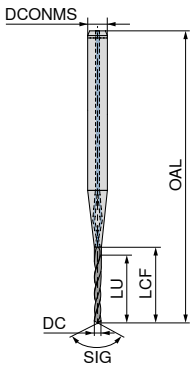
- ▲ Specialised micro deep hole drill
- ▲ Universal application
- ▲ Extremely high process security
- ▲ Pilot drill: 5xD WTX Micro – high-performance drill



MICRO

DPX74M

DRAGONSKIN





SIG 128°

Solid carbide

10 698 ...

DC h6 mm	DCONMS h6 mm	OAL mm	LCF mm	LU mm	
0,8	3	54	21,6	16,0	00800
0,9	3	57	24,3	20,5	00900
1,0	3	60	27,0	25,0	01000
1,1	3	63	29,7	27,5	01100
1,2	3	65	32,4	30,0	01200
1,3	3	68	35,1	32,5	01300
1,4	3	71	37,8	35,0	01400
1,5	3	73	40,5	37,5	01500
1,6	3	76	43,2	40,0	01600
1,7	3	78	45,9	42,5	01700
1,8	3	81	48,6	45,0	01800
1,9	3	84	51,3	47,5	01900
2,0	3	86	54,0	50,0	02000
2,1	3	89	56,7	52,5	02100
2,2	3	91	59,4	55,0	02200
2,3	3	94	62,1	57,5	02300
2,4	3	97	64,8	60,0	02400
2,5	3	99	67,5	62,5	02500
2,6	3	102	70,2	65,0	02600
2,7	3	104	72,9	67,5	02700
2,8	3	107	75,6	70,0	02800
2,9	3	110	78,3	72,5	02900

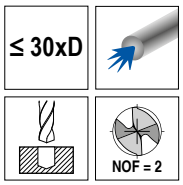
P	●
M	●
K	●
N	
S	
H	
O	

→ v_c Page 139
→ Machining information: Page 161

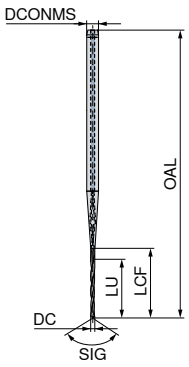
Minimum coolant pressure: 30 bar

WTX – High performance deep hole drills

- ▲ Specialised micro deep hole drill
- ▲ Universal application
- ▲ Extremely high process security
- ▲ Pilot drill: 5xD WTX Micro – high-performance drill







SIG 128°
Solid carbide

10 699 ...

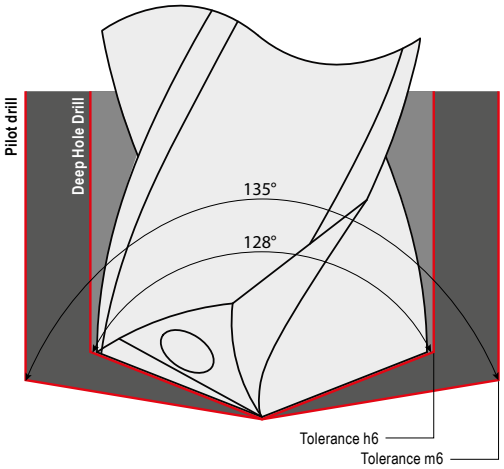
DC h6 mm	DCONMS h6 mm	OAL mm	LCF mm	LU mm	
0,8	3	59	25,6	19,2	00800
0,9	3	62	28,8	24,5	00900
1,0	3	65	32,0	30,0	01000
1,1	3	68	35,2	33,0	01100
1,2	3	71	38,4	36,0	01200
1,3	3	74	41,6	39,0	01300
1,4	3	78	44,8	42,0	01400
1,5	3	81	48,0	45,0	01500
1,6	3	84	51,2	48,0	01600
1,7	3	87	54,4	51,0	01700
1,8	3	90	57,6	54,0	01800
1,9	3	93	60,8	57,0	01900
2,0	3	96	64,0	60,0	02000
2,1	3	99	67,2	63,0	02100
2,2	3	102	70,4	66,0	02200
2,3	3	106	73,6	69,0	02300
2,4	3	109	76,8	72,0	02400
2,5	3	112	80,0	75,0	02500
2,6	3	115	83,2	78,0	02600
2,7	3	118	86,4	81,0	02700
2,8	3	121	89,6	84,0	02800
2,9	3	124	92,8	87,0	02900

P	●
M	●
K	●
N	
S	
H	
O	

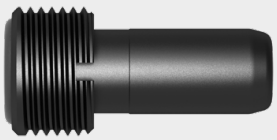
→ v_c Page 139
→ Machining information: Page 161

Minimum coolant pressure: 30 bar

Tolerances and angles



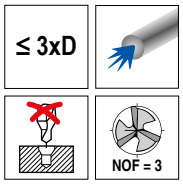
Coolant transfer pipe with strainer
HSK-A 63 / HSK-A 100

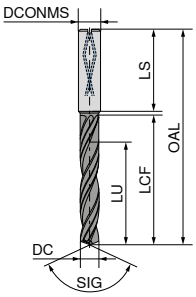


With the help of the new coolant transfer pipe, it is possible to filter very small chips and impurities out of the coolant.
More information on this can be found in the
→ **Catalogue Clamping Technology, chapter 16, page 156**.

WTX – Drill-Reamer 1/100

- ▲ Solid carbide high-performance drill-reaming tool
- ▲ Drilling and reaming in one operation
- ▲ 3 drilling edges
- ▲ 6 reaming edges
- ▲ High feeds
- ▲ Good surface quality
- ▲ For blind holes and through holes





Feed BR100

DPX14S

DRAGONSKIN





SIG 140°

Solid carbide

10 707 ...

DC ±0,003 mm	DCONMS h6 mm	OAL mm	LCF mm	LU mm	LS mm	
3,97	6	66	24	17	36	03970
3,98	6	66	24	17	36	03980
3,99	6	66	24	17	36	03990
4,00	6	66	24	17	36	04000
4,01	6	66	24	17	36	04010
4,02	6	66	24	17	36	04020
4,97	6	66	28	20	36	04970
4,98	6	66	28	20	36	04980
4,99	6	66	28	20	36	04990
5,00	6	66	28	20	36	05000
5,01	6	66	28	20	36	05010
5,02	6	66	28	20	36	05020
5,97	6	66	28	20	36	05970
5,98	6	66	28	20	36	05980
5,99	6	66	28	20	36	05990
6,00	6	66	28	20	36	06000
6,01	6	66	28	20	36	06010
6,02	6	66	28	20	36	06020
7,97	8	79	41	29	36	07970
7,98	8	79	41	29	36	07980
7,99	8	79	41	29	36	07990
8,00	8	79	41	29	36	08000
8,01	8	79	41	29	36	08010
8,02	8	79	41	29	36	08020
9,97	10	89	47	35	40	09970
9,98	10	89	47	35	40	09980
9,99	10	89	47	35	40	09990
10,00	10	89	47	35	40	10000
10,01	10	89	47	35	40	10010
10,02	10	89	47	35	40	10020
11,97	12	102	55	40	45	11970
11,98	12	102	55	40	45	11980
11,99	12	102	55	40	45	11990
12,00	12	102	55	40	45	12000
12,01	12	102	55	40	45	12010
12,02	12	102	55	40	45	12020

P	●
M	●
K	●
N	
S	
H	
O	

Tolerances

e.g. Ø 8 F7 = 8.02 mm

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

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

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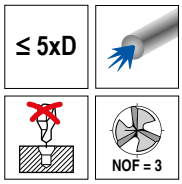
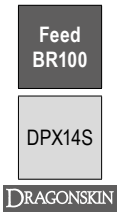
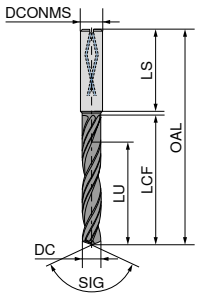
WTX – Drill-Reamer 1/100

- ▲ Solid carbide high-performance drill-reaming tool
- ▲ Drilling and reaming in one operation
- ▲ 3 drilling edges
- ▲ 6 reaming edges
- ▲ High feeds
- ▲ Good surface quality
- ▲ For blind holes and through holes











SIG 140°

Solid carbide

10 713 ...

DC ±0,003 mm	DCONMS h6 mm	OAL mm	LCF mm	LU mm	LS mm	
3,97	6	74	36	29	36	**03970**
3,98	6	74	36	29	36	**03980**
3,99	6	74	36	29	36	**03990**
4,00	6	74	36	29	36	**04000**
4,01	6	74	36	29	36	**04010**
4,02	6	74	36	29	36	**04020**
4,97	6	82	44	35	36	**04970**
4,98	6	82	44	35	36	**04980**
4,99	6	82	44	35	36	**04990**
5,00	6	82	44	35	36	**05000**
5,01	6	82	44	35	36	**05010**
5,02	6	82	44	35	36	**05020**
5,97	6	82	44	35	36	**05970**
5,98	6	82	44	35	36	**05980**
5,99	6	82	44	35	36	**05990**
6,00	6	82	44	35	36	**06000**
6,01	6	82	44	35	36	**06010**
6,02	6	82	44	35	36	**06020**
7,97	8	91	53	43	36	**07970**
7,98	8	91	53	43	36	**07980**
7,99	8	91	53	43	36	**07990**
8,00	8	91	53	43	36	**08000**
8,01	8	91	53	43	36	**08010**
8,02	8	91	53	43	36	**08020**
9,97	10	103	61	49	40	**09970**
9,98	10	103	61	49	40	**09980**
9,99	10	103	61	49	40	**09990**
10,00	10	103	61	49	40	**10000**
10,01	10	103	61	49	40	**10010**
10,02	10	103	61	49	40	**10020**
11,97	12	118	71	56	45	**11970**
11,98	12	118	71	56	45	**11980**
11,99	12	118	71	56	45	**11990**
12,00	12	118	71	56	45	**12000**
12,01	12	118	71	56	45	**12010**
12,02	12	118	71	56	45	**12020**

P	●
M	●
K	●
N	
S	
H	
O	

Tolerances

e.g. Ø 8 F7 = 8.02 mm

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

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

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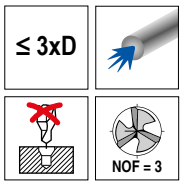
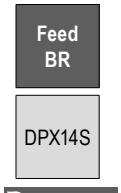
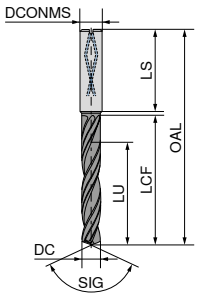
WTX – Drill-Reamer H7

- ▲ Solid carbide high-performance drill-reaming tool
- ▲ Drilling and reaming to tolerance H7 in one operation
- ▲ 3 drilling edges
- ▲ 6 reaming edges
- ▲ High feeds
- ▲ Good surface quality
- ▲ For blind holes and through holes
- ▲ Optimum roundness – tolerance H7









SIG 140°

Solid carbide

10 711 ...

DC H7 mm	DCONMS h6 mm	OAL mm	LCF mm	LU mm	LS mm	
4	6	66	24	17	36	**04000**
5	6	66	28	20	36	**05000**
6	6	66	28	20	36	**06000**
8	8	79	41	29	36	**08000**
10	10	89	47	35	40	**10000**
12	12	102	55	40	45	**12000**
14	14	107	60	43	45	**14000**
16	16	115	65	45	48	**16000**

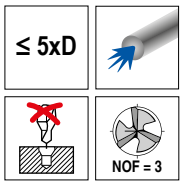
P	●
M	●
K	●
N	
S	
H	
O	

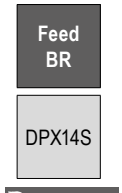
→ v_c Page 140

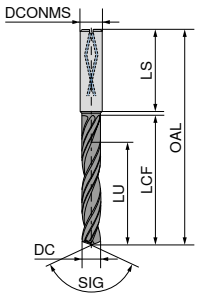
Special dimensions available upon request

WTX – Drill-Reamer H7

- ▲ Solid carbide high-performance drill-reaming tool
- ▲ Drilling and reaming to tolerance H7 in one operation
- ▲ 3 drilling edges
- ▲ 6 reaming edges
- ▲ High feeds
- ▲ Good surface quality
- ▲ For blind holes and through holes
- ▲ Optimum roundness – tolerance H7









SIG 140°

Solid carbide

10 719 ...

DC H7 mm	DCONMS h6 mm	OAL mm	LCF mm	LU mm	LS mm	
4	6	74	36	29	36	**04000**
5	6	82	44	35	36	**05000**
6	6	82	44	35	36	**06000**
8	8	91	53	43	36	**08000**
10	10	103	61	49	40	**10000**
12	12	118	71	56	45	**12000**
14	14	124	77	60	45	**14000**
16	16	133	83	63	48	**16000**
18	18	143	93	71	48	**18000**
20	20	153	101	77	50	**20000**

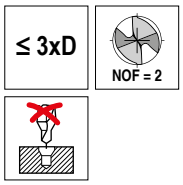
P	●
M	●
K	●
N	
S	
H	
O	

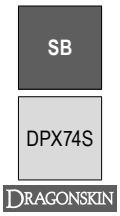
→ v_c Page 141

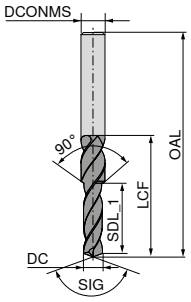
Special dimensions available upon request

WTX – Short 90° step drill

▲ for core hole plus countersink for thread cutting











SIG 140°

Solid carbide

10 767 ...

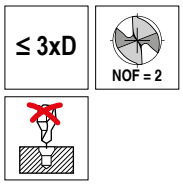
For threads	DC m7 mm	DCONMS h6 mm	OAL mm	SDL_1 mm	LCF mm	
M3	2,5	6	62	8,8	20	**02500**
M4	3,3	6	62	11,4	24	**03300**
M5	4,2	6	66	13,6	28	**04200**
M6	5,0	8	79	16,5	34	**05000**
M8	6,8	10	89	21,0	47	**06800**
M10	8,5	12	102	25,5	55	**08500**
M12	10,2	14	107	30,0	60	**10200**
M14	12,0	16	115	34,5	65	**12000**
M16	14,0	18	123	38,5	73	**14000**

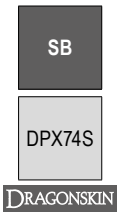
P	●
M	
K	●
N	
S	
H	○
O	

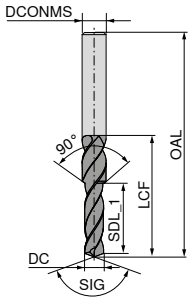
→ v_c Page 135

WTX – Short 90° step drill

▲ for core hole plus countersink for thread forming











SIG 140°

Solid carbide

10 772 ...

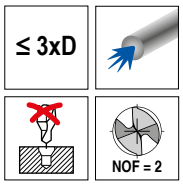
For threads	DC m7 mm	DCONMS h6 mm	OAL mm	SDL_1 mm	LCF mm	
M3	2,80	6	62	8,8	20	**02800**
M4	3,70	6	62	11,4	24	**03700**
M5	4,65	6	66	13,6	28	**04650**
M6	5,55	8	79	16,5	34	**05550**
M8	7,45	10	89	21,0	47	**07450**
M10	9,30	12	102	25,5	55	**09300**
M12	11,20	14	107	30,0	60	**11200**
M14	13,00	16	115	34,5	65	**13000**
M16	15,00	18	123	38,5	73	**15000**

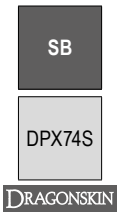
P	●
M	
K	●
N	
S	
H	○
O	

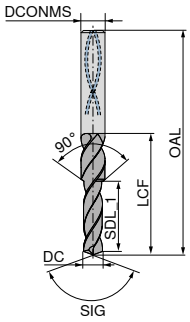
→ v_c Page 135

WTX – Short 90° step drill

▲ for core hole plus countersink for thread cutting











SIG 140°

Solid carbide

10 783 ...

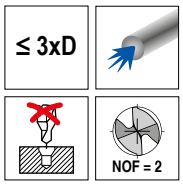
For threads	DC $_{m7}$ mm	DCONMS $_{h6}$ mm	OAL mm	SDL_1 mm	LCF mm	
M4	3,3	6	62	11,4	24	**03300**
M5	4,2	6	66	13,6	28	**04200**
M6	5,0	8	79	16,5	34	**05000**
M8	6,8	10	89	21,0	47	**06800**
M10	8,5	12	102	25,5	55	**08500**
M12	10,2	14	107	30,0	60	**10200**
M14	12,0	16	115	34,5	65	**12000**
M16	14,0	18	123	38,5	73	**14000**

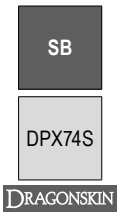
P	●
M	
K	●
N	
S	
H	○
O	

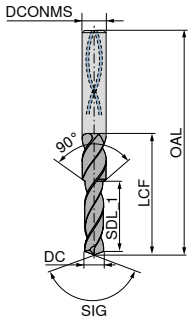
→ v_c Page 135

WTX – Short 90° step drill

▲ for core hole plus countersink for thread forming











SIG 140°

Solid carbide

10 788 ...

For threads	DC $_{m7}$ mm	DCONMS $_{h6}$ mm	OAL mm	SDL_1 mm	LCF mm	
M4	3,70	6	62	11,4	24	**03700**
M5	4,65	6	66	13,6	28	**04650**
M6	5,55	8	79	16,5	34	**05550**
M8	7,45	10	89	21,0	47	**07450**
M10	9,30	12	102	25,5	55	**09300**
M12	11,20	14	107	30,0	60	**11200**
M14	13,00	16	115	34,5	65	**13000**
M16	15,00	18	123	38,5	73	**15000**

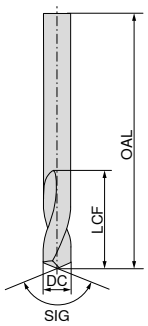
P	●
M	
K	●
N	
S	
H	○
O	

→ v_c Page 135

NC Spot Drill, factory standard

▲ spiral flute





			NC-A	NC-A TiAlN	NC-A	NC-A TiAlN	NC-A	NC-A TiAlN				
												
			SIG 90°	SIG 90°	SIG 120°	SIG 120°	SIG 142°	SIG 142°				
			Solid carbide	Solid carbide	Solid carbide	Solid carbide	Solid carbide	Solid carbide				
			10 702 ...	**10 716 ...**	**10 703 ...**	**10 717 ...**	**10 704 ...**	**10 718 ...**				
DC $_{js8}$ **mm**	OAL mm	LCF mm										
2	32	6	**002**	**002** [1]	**002**	**002** [1]	**002**	**002** [1]				
3	32	8	**003**	**003** [1]	**003**	**003** [1]	**003**	**003** [1]				
4	40	10	**004**	**004** [1]	**004**	**004** [1]	**004**	**004** [1]				
5	50	13	**005**	**005** [1]	**005**	**005** [1]	**005**	**005** [1]				
6	50	13	**006**	**006**	**006**	**006**	**006**	**006**				
8	60	23	**008**	**008**	**008**	**008**	**008**	**008**				
10	70	24	**010**	**010**	**010**	**010**	**010**	**010**				
12	70	24	**012**	**012**	**012**	**012**	**012**	**012**				
14	75	26	**014**	**014**	**014**	**014**	**014**	**014**				
16	75	29	**016**	**016**	**016**	**016**	**016**	**016**				
18	100	35	**018**	**018**	**018**	**018**	**018**	**018**				
20	100	35	**020**	**020**	**020**	**020**	**020**	**020**				
P			●	●	●	●	●	●				
M												
K			●	●	●	●	●	●				
N			●	●	●	●	●	●				
S												
H				○		○		○				
O												

1) DIN 6535 HA Shank

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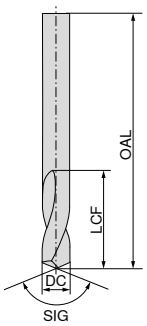
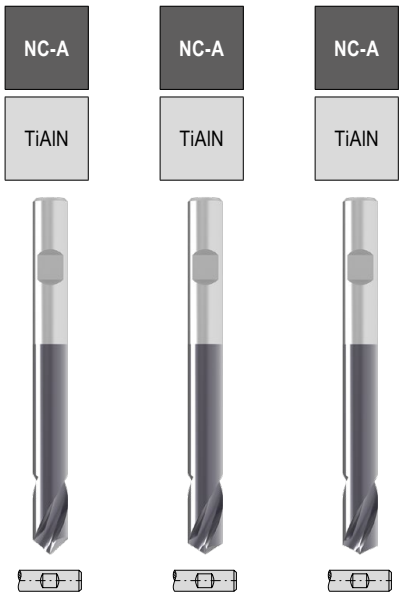
NC Spot Drill, factory standard, long

▲ spiral flutes

2

NOF = 2





DC js8 mm	OAL mm	LCF mm	SIG 90° Solid carbide 10 724 ...	SIG 120° Solid carbide 10 726 ...	SIG 142° Solid carbide 10 727 ...
3	66	8	003 1)	003 1)	003 1)
4	74	10	004 1)	004 1)	004 1)
6	82	13	006	006	006
8	91	23	008	008	008
10	103	24	010	010	010
12	118	24	012	012	012
16	133	29	016	016	016
P			●	●	●
M					
K			●	●	●
N			●	●	●
S					
H			○	○	○
O					

1) DIN 6535 HA Shank

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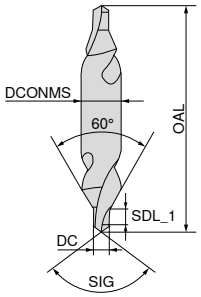
Centre drills, DIN 333, form A

▲ Spiral-fluted
▲ Up to and including diameter DC of 0.8 mm suitable for use on one side only



ZB





SIG 120°
Solid carbide

DC k13 mm	DCONMS h6 mm	OAL mm	SDL_1 mm	10 708 ...
0,50	3,15	20,0	0,76	**050** 1)
0,80	3,15	20,0	1,07	**080** 1)
1,00	3,15	31,5	1,31	**100**
1,25	3,15	31,5	1,54	**125**
1,60	4,00	35,5	1,94	**160**
2,00	5,00	40,0	2,32	**200**
2,50	6,30	45,0	2,88	**250**
3,15	8,00	50,0	3,49	**315**
4,00	10,00	56,0	4,45	**400**
5,00	12,50	63,0	5,46	**500**
6,30	16,00	71,0	6,78	**630**
P				●
M				
K				●
N				●
S				
H				
O				

1) Single ended

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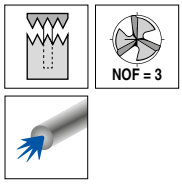
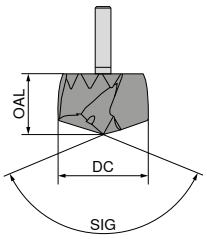
WTX – Drilling Head for Exchangeable drills

▲ extra long head type
▲ three-edged

Scope of supply:
Drill head incl. differential screw





Change Feed UNI
Ti750



SIG 140°
Solid carbide

DC m7 mm	OAL mm	10 925 ...
14,0	13,5	140
14,1	13,5	141
14,2	13,5	142
14,3	13,5	143
14,4	13,5	144
14,5	14,0	145
14,6	14,0	146
14,7	14,0	147
14,8	14,0	148
14,9	14,0	149
15,0	14,4	150
15,1	14,4	151
15,2	14,4	152
15,3	14,4	153
15,4	14,4	154
15,5	15,4	155
15,6	15,4	156
15,7	15,4	157
15,8	15,4	158
15,9	15,4	159
16,0	15,4	160
16,1	15,4	161
16,2	15,4	162
16,3	15,4	163
16,4	15,4	164
16,5	16,3	165
16,6	16,3	166
16,7	16,3	167
16,8	16,3	168
16,9	16,3	169
17,0	16,3	170
17,1	16,3	171
17,2	16,3	172
17,3	16,3	173
17,4	16,3	174
17,5	17,2	175
17,6	17,2	176
17,7	17,2	177
17,8	17,2	178
17,9	17,2	179
18,0	17,2	180
18,1	17,2	181
18,2	17,2	182
18,3	17,2	183
18,4	17,2	184
18,5	18,2	185
18,6	18,2	186
18,7	18,2	187
18,8	18,2	188
18,9	18,2	189

DC m7 mm	OAL mm	10 925 ...
19,0	18,2	190
19,1	18,2	191
19,2	18,2	192
19,3	18,2	193
19,4	18,2	194
19,5	19,1	195
19,6	19,1	196
19,7	19,1	197
19,8	19,1	198
19,9	19,1	199
20,0	19,1	200
20,1	19,1	201
20,2	19,1	202
20,3	19,1	203
20,4	19,1	204
20,5	20,0	205
20,6	20,0	206
20,7	20,0	207
20,8	20,0	208
20,9	20,0	209
21,0	20,0	210
21,1	20,0	211
21,2	20,0	212
21,3	20,0	213
21,4	20,0	214
21,5	21,0	215
21,6	21,0	216
21,7	21,0	217
21,8	21,0	218
21,9	21,0	219
22,0	21,0	220
22,1	21,0	221
22,2	21,0	222
22,3	21,0	223
22,4	21,0	224
22,5	21,9	225
22,6	21,9	226
22,7	21,9	227
22,8	21,9	228
22,9	21,9	229
23,0	21,9	230
23,1	21,9	231
23,2	21,9	232
23,3	21,9	233
23,4	21,9	234
23,5	22,8	235
23,6	22,8	236
23,7	22,8	237
23,8	22,8	238
23,9	22,8	239
24,0	22,8	240
24,1	22,8	241
24,2	22,8	242
24,3	22,8	243
24,4	22,8	244
24,5	23,8	245
24,6	23,8	246
24,7	23,8	247
24,8	23,8	248
24,9	23,8	249
25,0	23,8	250

	10 925 ...
P	●
M	
K	●
N	
S	
H	
O	

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→ Application recommendation on page 162

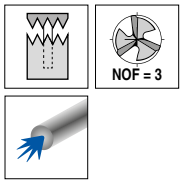
When changing the head, please observe the specified tightening torque.

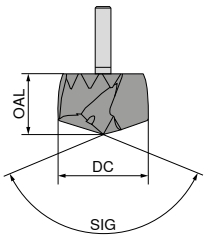
Continued on next page

WTX – Drilling Head for Exchangeable drills

▲ extra long head type
▲ three-edged

Scope of supply:
Drill head incl. differential screw





Change Feed UNI
Ti750



SIG 140°
Solid carbide

DC m7 mm	OAL mm	10 925 ...
25,1	23,8	251
25,2	23,8	252
25,3	23,8	253
25,4	23,8	254
25,5	24,7	255
25,6	24,7	256
25,7	24,7	257
25,8	24,7	258
25,9	24,7	259
26,0	24,7	260
26,1	24,7	261
26,2	24,7	262
26,3	24,7	263
26,4	24,7	264
26,5	25,6	265
26,6	25,6	266
26,7	25,6	267
26,8	25,6	268
26,9	25,6	269
27,0	25,6	270
27,1	25,6	271
27,2	25,6	272
27,3	25,6	273
27,4	25,6	274
27,5	26,6	275
27,6	26,6	276
27,7	26,6	277
27,8	26,6	278
27,9	26,6	279
28,0	26,6	280
28,1	26,6	281
28,2	26,6	282
28,3	26,6	283
28,4	26,6	284
28,5	27,5	285
28,6	27,5	286
28,7	27,5	287
28,8	27,5	288
28,9	27,5	289
29,0	27,5	290
29,1	27,5	291
29,2	27,5	292
29,3	27,5	293
29,4	27,5	294
29,5	28,4	295
29,6	28,4	296
29,7	28,4	297
29,8	28,4	298
29,9	28,4	299
30,0	28,4	300

DC m7 mm	OAL mm	10 925 ...
30,1	28,4	301
30,2	28,4	302
30,3	28,4	303
30,4	28,4	304
30,5	29,3	305
30,6	29,3	306
30,7	29,3	307
30,8	29,3	308
30,9	29,3	309
31,0	29,3	310
31,1	29,3	311
31,2	29,3	312
31,3	29,3	313
31,4	29,3	314
31,5	30,3	315
31,6	30,3	316
31,7	30,3	317
31,8	30,3	318
31,9	30,3	319
32,0	30,3	320

P	●
M	
K	●
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→ v_c Page 156
→ Application recommendation on page 162

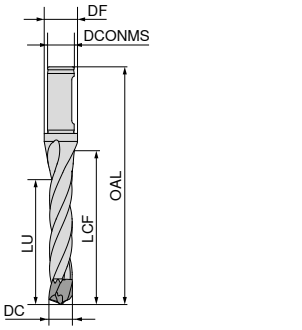
When changing the head, please observe the specified tightening torque.

WTX – Holder for Exchangeable drills

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

≤ 3xD

Change Feed





10 914 ...

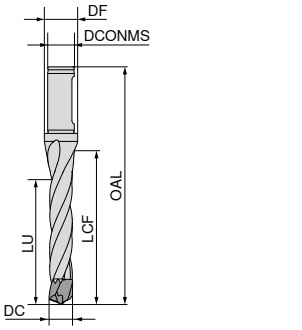
DC mm	DCONMS h6 mm	OAL mm	LCF mm	LU mm	DF mm	torque moment Nm	
14,00 - 14,49	16	120	72	48	20	0,7	140
14,50 - 14,99	16	122	74	49	20	0,7	145
15,00 - 15,49	16	124	76	51	25	0,7	150
15,50 - 16,49	20	131	81	54	25	0,7	155
16,50 - 17,49	20	135	85	58	25	0,7	165
17,50 - 18,49	20	140	90	61	25	1,3	175
18,50 - 19,49	25	150	94	64	31	1,3	185
19,50 - 20,49	25	155	99	68	31	2,0	195
20,50 - 21,49	25	159	103	71	31	2,0	205
21,50 - 22,49	25	164	108	74	31	2,0	215
22,50 - 23,49	25	168	112	78	31	2,0	225
23,50 - 24,49	25	173	117	81	31	2,0	235
24,50 - 25,49	32	182	122	84	38	3,1	245
25,50 - 26,49	32	186	126	87	38	3,1	255
26,50 - 27,49	32	191	131	91	38	3,1	265
27,50 - 28,49	32	195	135	94	38	3,1	275
28,50 - 29,49	32	200	140	97	38	5,6	285
29,50 - 30,49	32	204	144	101	38	5,6	295
30,50 - 31,49	32	209	149	104	38	5,6	305
31,50 - 32,49	32	213	153	107	38	5,6	315

WTX – Holder for Exchangeable drills

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

≤ 5xD

Change Feed





10 916 ...

DC mm	DCONMS h6 mm	OAL mm	LCF mm	LU mm	DF mm	torque moment Nm	
14,00 - 14,49	16	149	101	77	20	0,7	140
14,50 - 14,99	16	152	104	79	20	0,7	145
15,00 - 15,49	16	155	107	82	25	0,7	150
15,50 - 16,49	20	164	114	87	25	0,7	155
16,50 - 17,49	20	170	120	93	25	0,7	165
17,50 - 18,49	20	177	127	98	25	1,3	175
18,50 - 19,49	25	189	133	103	31	1,3	185
19,50 - 20,49	25	196	140	109	31	2,0	195
20,50 - 21,49	25	202	146	114	31	2,0	205
21,50 - 22,49	25	209	153	119	31	2,0	215
22,50 - 23,49	25	215	159	124	31	2,0	225
23,50 - 24,49	25	222	166	130	31	2,0	235
24,50 - 25,49	32	233	173	135	38	3,1	245
25,50 - 26,49	32	239	179	140	38	3,1	255
26,50 - 27,49	32	246	186	146	38	3,1	265
27,50 - 28,49	32	252	192	151	38	3,1	275
28,50 - 29,49	32	259	199	156	38	5,6	285
29,50 - 30,49	32	265	205	162	38	5,6	295
30,50 - 31,49	32	272	212	167	38	5,6	305
31,50 - 32,49	32	278	218	172	38	5,6	315

Interchangeable blade



Blade holder

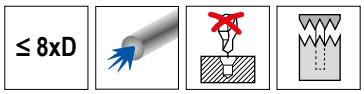

Torque handle

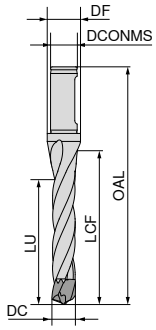

Differential screw

Spare parts DC	80 022 ...	80 020 ...	80 023 ...	10 950 ...
14,00 - 14,49	007	025	012	064
14,50 - 14,99	007	025	012	064
15,00 - 15,49	007	025	012	064
15,50 - 16,49	007	025	012	064
16,50 - 17,49	007	025	012	064
17,50 - 18,49	008	025	060	065
18,50 - 19,49	008	025	060	065
19,50 - 20,49	010	025	060	066
20,50 - 21,49	010	025	060	066
21,50 - 22,49	010	025	060	066
22,50 - 23,49	010	025	060	066
23,50 - 24,49	010	025	060	066
24,50 - 25,49	015	025	060	067
25,50 - 26,49	015	025	060	067
26,50 - 27,49	015	025	060	067
27,50 - 28,49	015	025	060	067
28,50 - 29,49	015	025	060	068
29,50 - 30,49	015	025	060	068
30,50 - 31,49	015	025	060	068
31,50 - 32,49	015	025	060	068

WTX – Holder for Exchangeable drills

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











DC mm	DCONMS $_{h6}$ mm	OAL mm	LCF mm	LU mm	DF mm	torque moment Nm	10 917 ...
14,00 - 14,49	16	192	144	120	20	0,7	14000
14,50 - 14,99	16	197	149	124	20	0,7	14500
15,00 - 15,49	16	202	154	129	25	0,7	15000
15,50 - 16,49	20	213	163	137	25	0,7	15500
16,50 - 17,49	20	223	173	145	25	0,7	16500
17,50 - 18,49	20	232	182	153	25	1,3	17500
18,50 - 19,49	25	248	192	162	31	1,3	18500
19,50 - 20,49	25	257	201	170	31	2,0	19500
20,50 - 21,49	25	267	211	178	31	2,0	20500
21,50 - 22,49	25	276	220	187	31	2,0	21500
22,50 - 23,49	25	286	230	195	31	2,0	22500
23,50 - 24,49	25	295	239	203	31	2,0	23500
24,50 - 25,49	32	309	249	212	38	3,1	24500
25,50 - 26,49	32	319	259	220	38	3,1	25500
26,50 - 27,49	32	328	268	228	38	3,1	26500
27,50 - 28,49	32	338	278	236	38	3,1	27500
28,50 - 29,49	32	342	282	245	38	5,6	28500
29,50 - 30,49	32	352	292	253	38	5,6	29500
30,50 - 31,49	32	361	301	261	38	5,6	30500
31,50 - 32,49	32	371	311	270	38	5,6	31500

Interchangeable blade



Blade holder

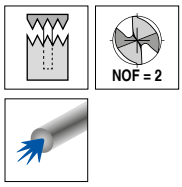

Torque handle


Differential screw

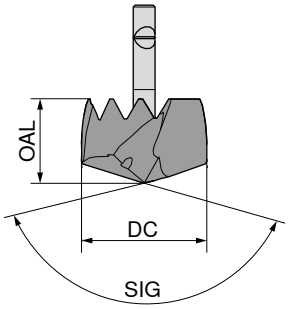
Spare parts DC	80 022 ...	80 020 ...	80 023 ...	10 950 ...
14,00 - 14,49	007	025	012	064
14,50 - 14,99	007	025	012	064
15,00 - 15,49	007	025	012	064
15,50 - 16,49	007	025	012	064
16,50 - 17,49	007	025	012	064
17,50 - 18,49	008	025	060	065
18,50 - 19,49	008	025	060	065
19,50 - 20,49	010	025	060	066
20,50 - 21,49	010	025	060	066
21,50 - 22,49	010	025	060	066
22,50 - 23,49	010	025	060	066
23,50 - 24,49	010	025	060	066
24,50 - 25,49	015	025	060	067
25,50 - 26,49	015	025	060	067
26,50 - 27,49	015	025	060	067
27,50 - 28,49	015	025	060	067
28,50 - 29,49	015	025	060	068
29,50 - 30,49	015	025	060	068
30,50 - 31,49	015	025	060	068
31,50 - 32,49	015	025	060	068

WTX – Drilling Head for Exchangeable drills

▲ extra long head type



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





DC $_{h7/m7}$ mm	OAL mm	SIG 140° Solid carbide 10 919 ...	SIG 138° Solid carbide 10 923 ...	SIG 138° Solid carbide 10 921 ...	SIG 140° Solid carbide 10 924 ...	SIG 140° Solid carbide 10 922 ...
12,0	10,7	12000	120	120	120	120
12,1	10,7	12100	121	121	121	121
12,2	10,7	12200	122	122	122	122
12,3	10,7	12300	123	123	123	123
12,4	10,7	12400	124	124	124	124
12,5	10,7	12500	125	125	125	125
12,6	10,7	12600	126	126	126	126
12,7	10,7	12700	127	127	127	127
12,8	10,7	12800	128	128	128	128
12,9	10,7	12900	129	129	129	129
13,0	10,7	13000	130	130	130	130
13,1	10,7	13100	131	131	131	131
13,2	10,7	13200	132	132	132	132
13,3	10,7	13300	133	133	133	133
13,4	10,7	13400	134	134	134	134
13,5	11,3	13500	135	135	135	135
13,6	11,3	13600	136	136	136	136
13,7	11,3	13700	137	137	137	137
13,8	11,3	13800	138	138	138	138
13,9	11,3	13900	139	139	139	139
14,0	11,3	14000	140	140	140	140
14,1	11,3	14100	141	141	141	141
14,2	11,3	14200	142	142	142	142
14,3	11,3	14300	143	143	143	143
14,4	11,3	14400	144	144	144	144
14,5	11,3	14500	145	145	145	145
14,6	11,3	14600	146	146	146	146
14,7	11,3	14700	147	147	147	147
14,8	11,3	14800	148	148	148	148
14,9	11,3	14900	149	149	149	149
15,0	11,3	15000	150	150	150	150
15,1	11,3	15100	151	151	151	151
15,2	11,3	15200	152	152	152	152
15,3	11,3	15300	153	153	153	153
15,4	11,3	15400	154	154	154	154
15,5	11,9	15500	155	155	155	155
15,6	11,9	15600	156	156	156	156
15,7	11,9	15700	157	157	157	157
P		●	●	○		
M				●		
K		●	●	●	●	
N						●
S				●		
H						
O						

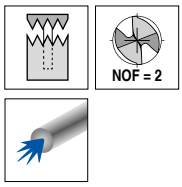
→ v_c Page 152–155
→ Application recommendation on page 162

ⓘ **Ø DC$_{m7}$** for Type UNI, P, GG und AL / **Ø DC$_{h7}$** for Type VA

Continued on next page

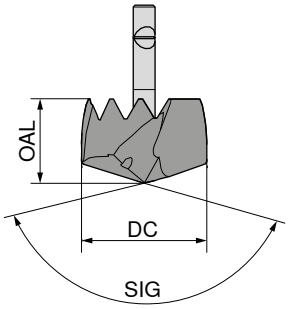
WTX – Drilling Head for Exchangeable drills

▲ extra long head type



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

DRAGONSKIN





DC $_{h7/m7}$ mm	OAL mm	SIG 140° Solid carbide 10 919 ...	SIG 138° Solid carbide 10 923 ...	SIG 138° Solid carbide 10 921 ...	SIG 140° Solid carbide 10 924 ...	SIG 140° Solid carbide 10 922 ...
15,8	11,9	15800	158	158	158	158
15,9	11,9	15900	159	159	159	159
16,0	11,9	16000	160	160	160	160
16,1	11,9	16100	161	161	161	161
16,2	11,9	16200	162	162	162	162
16,3	11,9	16300	163	163	163	163
16,4	11,9	16400	164	164	164	164
16,5	13,4	16500	165	165	165	165
16,6	13,4	16600	166	166	166	166
16,7	13,4	16700	167	167	167	167
16,8	13,4	16800	168	168	168	168
16,9	13,4	16900	169	169	169	169
17,0	13,4	17000	170	170	170	170
17,1	13,4	17100	171	171	171	171
17,2	13,4	17200	172	172	172	172
17,3	13,4	17300	173	173	173	173
17,4	13,4	17400	174	174	174	174
17,5	13,4	17500	175	175	175	175
17,6	13,4	17600	176	176	176	176
17,7	13,4	17700	177	177	177	177
17,8	13,4	17800	178	178	178	178
17,9	13,4	17900	179	179	179	179
18,0	13,4	18000	180	180	180	180
18,1	13,4	18100	181	181	181	181
18,2	13,4	18200	182	182	182	182
18,3	13,4	18300	183	183	183	183
18,4	13,4	18400	184	184	184	184
18,5	13,4	18500	185	185	185	185
18,6	13,4	18600	186	186	186	186
18,7	13,4	18700	187	187	187	187
18,8	13,4	18800	188	188	188	188
18,9	13,4	18900	189	189	189	189
19,0	13,4	19000	190	190	190	190
19,1	13,4	19100	191	191	191	191
19,2	13,4	19200	192	192	192	192
19,3	13,4	19300	193	193	193	193
19,4	13,4	19400	194	194	194	194
19,5	13,4	19500	195	195	195	195
P		●	●	○		
M				●		
K		●	●	●	●	
N						●
S				●		
H						
O						

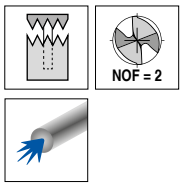
→ v_c Page 152–155
→ Application recommendation on page 162

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

Continued on next page

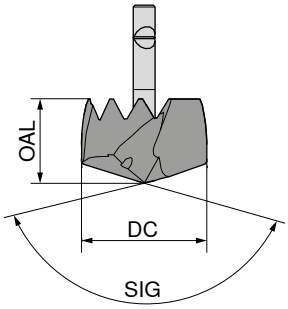
WTX – Drilling Head for Exchangeable drills

▲ extra long head type



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

DRAGONSKIN





DC $_{h7/m7}$ mm	OAL mm	SIG 140° Solid carbide 10 919 ...	SIG 138° Solid carbide 10 923 ...	SIG 138° Solid carbide 10 921 ...	SIG 140° Solid carbide 10 924 ...	SIG 140° Solid carbide 10 922 ...
19,6	13,4	19600	196	196	196	196
19,7	13,4	19700	197	197	197	197
19,8	13,4	19800	198	198	198	198
19,9	13,4	19900	199	199	199	199
20,0	13,4	20000	200	200	200	200
20,1	13,4	20100	201	201	201	201
20,2	13,4	20200	202	202	202	202
20,3	13,4	20300	203	203	203	203
20,4	13,4	20400	204	204	204	204
20,5	15,4	20500	205	205	205	205
20,6	15,4	20600	206	206	206	206
20,7	15,4	20700	207	207	207	207
20,8	15,4	20800	208	208	208	208
20,9	15,4	20900	209	209	209	209
21,0	15,4	21000	210	210	210	210
21,1	15,4	21100	211	211	211	211
21,2	15,4	21200	212	212	212	212
21,3	15,4	21300	213	213	213	213
21,4	15,4	21400	214	214	214	214
21,5	15,4	21500	215	215	215	215
21,6	15,4	21600	216	216	216	216
21,7	15,4	21700	217	217	217	217
21,8	15,4	21800	218	218	218	218
21,9	15,4	21900	219	219	219	219
22,0	15,4	22000	220	220	220	220
22,1	15,4	22100	221	221	221	221
22,2	15,4	22200	222	222	222	222
22,3	15,4	22300	223	223	223	223
22,4	15,4	22400	224	224	224	224
22,5	15,4	22500	225	225	225	225
22,6	15,4	22600	226	226	226	226
22,7	15,4	22700	227	227	227	227
22,8	15,4	22800	228	228	228	228
22,9	15,4	22900	229	229	229	229
23,0	15,4	23000	230	230	230	230
23,1	15,4	23100	231	231	231	231
23,2	15,4	23200	232	232	232	232
23,3	15,4	23300	233	233	233	233
P		●	●	○		
M				●		
K		●	●	●	●	
N						●
S				●		
H						
O						

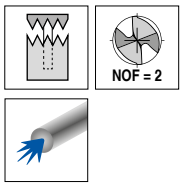
→ v_c Page 152–155
→ Application recommendation on page 162

ⓘ **Ø DC$_{m7}$** for Type UNI, P, GG und AL / **Ø DC$_{h7}$** for Type VA

Continued on next page

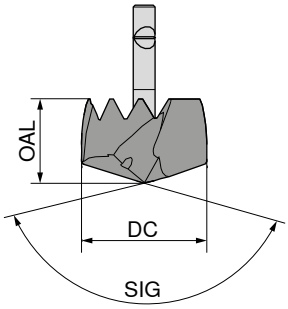
WTX – Drilling Head for Exchangeable drills

▲ extra long head type



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

DRAGONSKIN





DC $_{h7/m7}$ mm	OAL mm	SIG 140° Solid carbide 10 919 ...	SIG 138° Solid carbide 10 923 ...	SIG 138° Solid carbide 10 921 ...	SIG 140° Solid carbide 10 924 ...	SIG 140° Solid carbide 10 922 ...
23,4	15,4	23400	234	234	234	234
23,5	15,4	23500	235	235	235	235
23,6	15,4	23600	236	236	236	236
23,7	15,4	23700	237	237	237	237
23,8	15,4	23800	238	238	238	238
23,9	15,4	23900	239	239	239	239
24,0	15,4	24000	240	240	240	240
24,1	15,4	24100	241	241	241	241
24,2	15,4	24200	242	242	242	242
24,3	15,4	24300	243	243	243	243
24,4	15,4	24400	244	244	244	244
24,5	17,4	24500	245	245	245	245
24,6	17,4	24600	246	246	246	246
24,7	17,4	24700	247	247	247	247
24,8	17,4	24800	248	248	248	248
24,9	17,4	24900	249	249	249	249
25,0	17,4	25000	250	250	250	250
25,1	17,4	25100	251	251	251	251
25,2	17,4	25200	252	252	252	252
25,3	17,4	25300	253	253	253	253
25,4	17,4	25400	254	254	254	254
25,5	17,4	25500	255	255	255	255
25,6	17,4	25600	256	256	256	256
25,7	17,4	25700	257	257	257	257
25,8	17,4	25800	258	258	258	258
25,9	17,4	25900	259	259	259	259
26,0	17,4	26000	260	260	260	260
26,1	17,4	26100	261	261	261	261
26,2	17,4	26200	262	262	262	262
26,3	17,4	26300	263	263	263	263
26,4	17,4	26400	264	264	264	264
26,5	17,4	26500	265	265	265	265
26,6	17,4	26600	266	266	266	266
26,7	17,4	26700	267	267	267	267
26,8	17,4	26800	268	268	268	268
26,9	17,4	26900	269	269	269	269
27,0	17,4	27000	270	270	270	270
27,1	17,4	27100	271	271	271	271
P		●	●	○		
M				●		
K		●	●	●	●	
N						●
S				●		
H						
O						

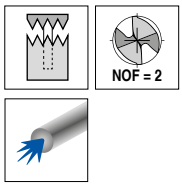
→ v_c Page 152–155
→ Application recommendation on page 162

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

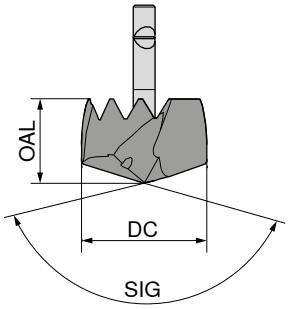
Continued on next page

WTX – Drilling Head for Exchangeable drills

▲ extra long head type



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





		SIG 140° Solid carbide	SIG 138° Solid carbide	SIG 138° Solid carbide	SIG 140° Solid carbide	SIG 140° Solid carbide
		10 919 ...	10 923 ...	10 921 ...	10 924 ...	10 922 ...
DC $_{h7/m7}$ mm	OAL mm					
27,2	17,4	27200	272	272	272	272
27,3	17,4	27300	273	273	273	273
27,4	17,4	27400	274	274	274	274
27,5	17,4	27500	275	275	275	275
27,6	17,4	27600	276	276	276	276
27,7	17,4	27700	277	277	277	277
27,8	17,4	27800	278	278	278	278
27,9	17,4	27900	279	279	279	279
28,0	17,4	28000	280	280	280	280
28,1	17,4	28100	281	281	281	281
28,2	17,4	28200	282	282	282	282
28,3	17,4	28300	283	283	283	283
28,4	17,4	28400	284	284	284	284
28,5	18,4	28500	285	285	285	285
28,6	18,4	28600	286	286	286	286
28,7	18,4	28700	287	287	287	287
28,8	18,4	28800	288	288	288	288
28,9	18,4	28900	289	289	289	289
29,0	18,4	29000	290	290	290	290
29,1	18,4	29100	291	291	291	291
29,2	18,4	29200	292	292	292	292
29,3	18,4	29300	293	293	293	293
29,4	18,4	29400	294	294	294	294
29,5	18,4	29500	295	295	295	295
29,6	18,4	29600	296	296	296	296
29,7	18,4	29700	297	297	297	297
29,8	18,4	29800	298	298	298	298
29,9	18,4	29900	299	299	299	299
30,0	18,4	30000	300	300	300	300
30,1	18,4	30100	301	301	301	301
30,2	18,4	30200	302	302	302	302
30,3	18,4	30300	303	303	303	303
30,4	18,4	30400	304	304	304	304
30,5	18,4	30500	305	305	305	305
30,6	18,4	30600	306	306	306	306
30,7	18,4	30700	307	307	307	307
30,8	18,4	30800	308	308	308	308
30,9	18,4	30900	309	309	309	309
P		●	●	○		
M				●		
K		●	●	●	●	
N						●
S				●		
H						
O						

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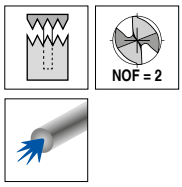
→ Application recommendation on page 162

ⓘ **Ø DC$_{m7}$** for Type UNI, P, GG und AL / **Ø DC$_{h7}$** for Type VA

Continued on next page

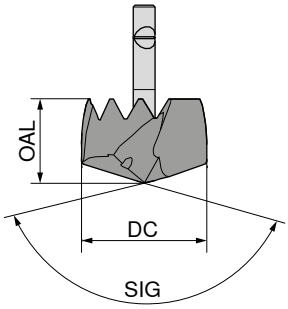
WTX – Drilling Head for Exchangeable drills

▲ extra long head type



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

DRAGONSKIN





DC h7/m7 mm	OAL mm	SIG 140° Solid carbide 10 919 ...		SIG 138° Solid carbide 10 923 ...		SIG 138° Solid carbide 10 921 ...		SIG 140° Solid carbide 10 924 ...		SIG 140° Solid carbide 10 922 ...	
31,0	18,4	31000		310		310		310		310	
31,1	18,4	31100		311		311		311		311	
31,2	18,4	31200		312		312		312		312	
31,3	18,4	31300		313		313		313		313	
31,4	18,4	31400		314		314		314		314	
31,5	18,4	31500		315		315		315		315	
31,6	18,4	31600		316		316		316		316	
31,7	18,4	31700		317		317		317		317	
31,8	18,4	31800		318		318		318		318	
31,9	18,4	31900		319		319		319		319	
32,0	18,4	32000		320		320		320		320	
32,5	24,3	32500		325							
33,0	24,3	33000		330							
33,5	24,3	33500		335							
34,0	24,3	34000		340							
34,5	24,3	34500		345							
35,0	24,3	35000		350							
35,5	26,3	35500		355							
36,0	26,3	36000		360							
36,5	26,3	36500		365							
37,0	26,3	37000		370							
37,5	26,3	37500		375							
38,0	26,3	38000		380							
38,5	26,3	38500		385							
39,0	26,3	39000		390							
39,5	26,3	39500		395							
40,0	26,3	40000		400							
40,5	26,3	40500		405							
41,0	26,3	41000		410							
P		●		●		○					
M						●					
K		●		●		●		●			
N										●	
S						●					
H											
O											

→ v_c Page 152–155
→ Application recommendation on page 162

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

When changing the head, please observe the specified tightening torque.

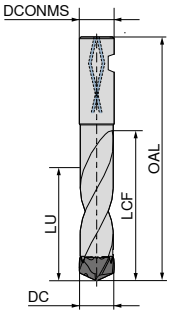
WTX – Holder for Exchangeable drills

▲ with radial teeth

Scope of supply:
Holder incl. screw driver

≤ 1xD

Change





10 911 ...

DC mm	DCONMS h6 mm	OAL mm	LCF mm	LU mm	torque moment Nm	
12,00 - 12,49	14	81	29	12,5	1,0	120
12,50 - 12,99	14	81	29	13,0	1,0	125
13,00 - 13,49	14	81	31	13,5	1,0	130
13,50 - 13,99	16	86	32	14,0	1,3	135
14,00 - 14,49	16	86	33	14,5	1,3	140
14,50 - 14,99	16	91	34	15,0	1,3	145
15,00 - 15,49	16	91	36	15,5	1,3	150
15,50 - 16,49	20	97	38	16,5	1,3	161
15,50 - 16,49	18	92	38	16,5	1,3	160
16,50 - 17,49	20	99	40	17,5	3,5	166
16,50 - 17,49	18	94	40	17,5	3,5	165
17,50 - 18,49	20	104	43	18,5	3,5	176
17,50 - 18,49	18	99	43	18,5	3,5	175
18,50 - 19,49	20	99	45	19,5	3,5	185
19,50 - 20,49	20	104	47	20,5	3,5	195
20,50 - 21,49	25	111	49	21,5	3,5	205
21,50 - 22,49	25	116	52	22,5	3,5	215
22,50 - 23,49	25	116	54	23,5	3,5	225
23,50 - 24,49	25	121	56	24,5	4,0	235
24,50 - 25,49	25	123	59	25,5	4,0	245
25,50 - 26,49	25	123	61	26,5	4,0	255
26,50 - 27,49	25	128	63	27,5	4,0	265
27,50 - 28,49	25	128	66	28,5	4,0	275
28,50 - 29,49	32	134	68	29,5	4,0	285
29,50 - 30,49	32	139	70	30,5	4,0	295
30,50 - 31,49	32	139	75	31,5	4,0	305
31,50 - 32,49	32	139	75	32,5	4,0	315
32,50 - 33,49	32	150	78	33,5	6,0	325
33,50 - 34,49	32	150	79	34,5	6,0	335
34,50 - 35,49	32	150	82	35,5	6,0	345
35,50 - 37,49	32	152	86	37,5	6,0	355
37,50 - 39,49	32	157	91	39,5	6,0	375
39,50 - 41,00	32	167	95	41,5	6,0	395

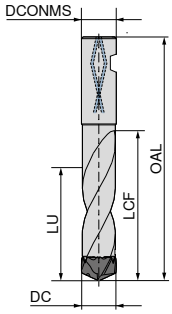
WTX – Holder for Exchangeable drills

▲ with radial teeth

Scope of supply:
Holder incl. screw driver

≤ 3xD

Change





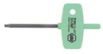
10 913 ...

DC mm	DCONMS h6 mm	OAL mm	LCF mm	LU mm	torque moment Nm	
12,00 - 12,49	14	100	53	38,0	1,0	120
12,50 - 12,99	14	105	55	39,0	1,0	125
13,00 - 13,49	14	105	57	40,0	1,0	130
13,50 - 13,99	16	110	59	42,0	1,3	135
14,00 - 14,49	16	115	61	43,0	1,3	140
14,50 - 14,99	16	115	63	45,0	1,3	145
15,00 - 15,49	16	115	65	46,0	1,3	150
15,50 - 16,49	18	120	70	50,0	1,3	160
15,50 - 16,49	20	125	70	50,0	1,3	161
16,50 - 17,49	18	125	74	53,0	3,5	165
16,50 - 17,49	20	130	74	50,0	3,5	166
17,50 - 18,49	18	130	78	55,0	3,5	175
17,50 - 18,49	20	135	78	50,0	3,5	176
18,50 - 19,49	20	135	82	58,0	3,5	185
19,50 - 20,49	20	140	87	62,0	3,5	195
20,50 - 21,49	25	150	91	65,0	3,5	205
21,50 - 22,49	25	155	95	67,0	3,5	215
22,50 - 23,49	25	160	99	70,0	3,5	225
23,50 - 24,49	25	165	103	73,0	3,5	235
24,50 - 25,49	25	165	108	77,0	4,0	245
25,50 - 26,49	25	175	112	80,0	4,0	255
26,50 - 27,49	25	175	116	82,0	4,0	265
27,50 - 28,49	25	180	120	85,0	4,0	275
28,50 - 29,49	32	190	124	88,0	4,0	285
29,50 - 30,49	32	195	129	92,0	4,0	295
30,50 - 31,49	32	195	133	94,0	4,0	305
31,50 - 32,49	32	200	137	97,0	4,0	315
32,50 - 33,49	32	210	144	100,5	6,0	325
33,50 - 34,49	32	215	148	103,5	6,0	335
34,50 - 35,49	32	220	153	106,5	6,0	345
35,50 - 37,49	32	227	161	112,5	6,0	355
37,50 - 39,49	32	237	170	118,5	6,0	375
39,50 - 41,00	32	247	178	124,5	6,0	395



Screw driver

80 950 ...



Screw driver

80 950 ...



Grub screw

10 950 ...

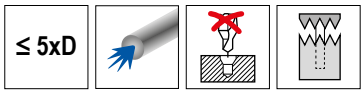
Spare parts DC									
12,00 - 12,49	SW 1,3	132				M2,5 x 0,45 x 5	025
12,50 - 13,49	SW 1,3	132				M2,5 x 0,45 x 6	026
13,50 - 14,49			SW 1,5	133		M3 x 0,5 x 6	031
14,50 - 16,49			SW 1,5	133		M3 x 0,5 x 7	030
16,50 - 20,49			SW 2	134		M4 x 0,5 x 7,5	040
20,50 - 24,49			SW 2	134		M4 x 0,5 x 10	041
24,50 - 28,49			SW 2,5	135		M5 x 0,5 x 11	050
28,50 - 32,49			SW 2,5	135		M5 x 0,5 x 14	051
32,50 - 35,49			SW 3	136		M6 x 0,5 x 16	060
35,50 - 39,49			SW 3	136		M6 x 0,5 x 18	061
39,50 - 41,00			SW 3	136		M6 x 0,5 x 20	062

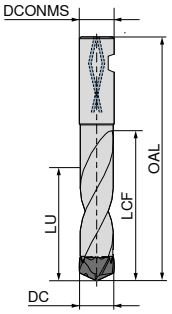
WTX – Holder for Exchangeable drills

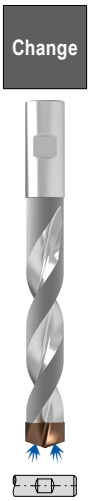
▲ with radial teeth

Scope of supply:

Holder incl. screw driver







10 915 ...

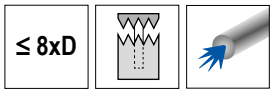
DC mm	DCONMS h6 mm	OAL mm	LCF mm	LU mm	torque moment Nm	
12,00 - 12,49	14	125	78	62,0	1,0	120
12,50 - 12,99	14	130	81	65,0	1,0	125
13,00 - 13,49	14	130	84	67,0	1,0	130
13,50 - 13,99	16	140	88	70,0	1,3	135
14,00 - 14,49	16	140	90	72,0	1,3	140
14,50 - 14,99	16	145	94	75,0	1,3	145
15,00 - 15,49	16	145	96	77,0	1,3	150
15,50 - 16,49	18	155	103	82,0	1,3	160
15,50 - 16,49	20	160	103	82,0	1,3	161
16,50 - 17,49	18	160	109	87,0	3,5	165
16,50 - 17,49	20	165	109	87,0	3,5	166
17,50 - 18,49	18	165	115	92,0	3,5	175
17,50 - 18,49	20	170	115	92,0	3,5	176
18,50 - 19,49	20	175	121	97,0	3,5	185
19,50 - 20,49	20	180	128	102,0	3,5	195
20,50 - 21,49	25	195	134	107,0	3,5	205
21,50 - 22,49	25	200	140	112,0	3,5	215
22,50 - 23,49	25	205	146	117,0	3,5	225
23,50 - 24,49	25	210	152	122,0	3,5	235
24,50 - 25,49	25	220	159	127,0	4,0	245
25,50 - 26,49	25	225	165	132,0	4,0	255
26,50 - 27,49	25	230	171	137,0	4,0	265
27,50 - 28,49	25	240	177	142,0	4,0	275
28,50 - 29,49	32	250	183	146,0	4,0	285
29,50 - 30,49	32	255	190	152,0	4,0	295
30,50 - 31,49	32	260	196	157,0	4,0	305
31,50 - 32,49	32	265	202	162,0	4,0	315
32,50 - 33,49	32	275	210	167,5	6,0	325
33,50 - 34,49	32	285	217	172,5	6,0	335
34,50 - 35,49	32	290	224	177,5	6,0	345
35,50 - 37,49	32	302	236	187,5	6,0	355
37,50 - 39,49	32	317	249	197,5	6,0	375
39,50 - 41,00	32	327	261	207,5	6,0	395

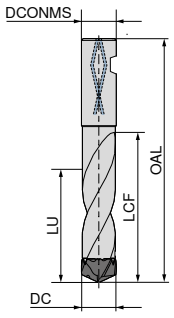
WTX – Holder for Exchangeable drills

▲ Pilot hole is recommended
▲ With radial teeth

Scope of supply:

Holder incl. screw driver





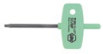


10 918 ...

DC mm	DCONMS h6 mm	OAL mm	LCF mm	LU mm	torque moment Nm	
12,00 - 12,49	14	165	116	100	1,0	120
12,50 - 12,99	14	170	121	104	1,0	125
13,00 - 13,49	14	175	126	108	1,0	130
13,50 - 13,99	16	180	129	111	1,3	135
14,00 - 14,49	16	185	134	115	1,3	140
14,50 - 14,99	16	190	139	120	1,3	145
15,00 - 15,49	16	195	144	124	1,3	150
15,50 - 16,49	18	205	152	131	1,3	160
15,50 - 16,49	20	210	152	131	1,3	161
16,50 - 17,49	18	215	161	138	3,5	165
16,50 - 17,49	20	220	161	138	3,5	166
17,50 - 18,49	18	220	171	147	3,5	175
17,50 - 18,49	20	225	171	147	3,5	176
18,50 - 19,49	20	235	180	155	3,5	185
19,50 - 20,49	20	240	189	163	3,5	195
20,50 - 21,49	25	260	198	170	3,5	205
21,50 - 22,49	25	270	207	178	3,5	215
22,50 - 23,49	25	275	217	187	3,5	225
23,50 - 24,49	25	285	226	194	3,5	235
24,50 - 25,49	25	295	235	202	4,0	245
25,50 - 26,49	25	305	244	210	4,0	255
26,50 - 27,49	25	315	253	218	4,0	265
27,50 - 28,49	25	325	263	226	4,0	275
28,50 - 29,49	32	340	272	234	4,0	285
29,50 - 30,49	32	345	281	242	4,0	295
30,50 - 31,49	32	355	290	249	4,0	305
31,50 - 32,00	32	360	299	257	4,0	315


Screw driver

80 950 ...


Screw driver

80 950 ...


Grub screw

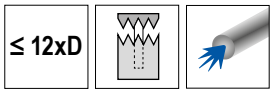
10 950 ...

Spare parts DC								
12,00 - 12,49	SW 1,3	132				M2,5 x 0,45 x 5	025
12,50 - 13,49	SW 1,3	132				M2,5 x 0,45 x 6	026
13,50 - 14,49			SW 1,5	133		M3 x 0,5 x 6	031
14,50 - 16,49			SW 1,5	133		M3 x 0,5 x 7	030
16,50 - 20,49			SW 2	134		M4 x 0,5 x 7,5	040
20,50 - 24,49			SW 2	134		M4 x 0,5 x 10	041
24,50 - 28,49			SW 2,5	135		M5 x 0,5 x 11	050
28,50 - 32,49			SW 2,5	135		M5 x 0,5 x 14	051
32,50 - 35,49			SW 3	136		M6 x 0,5 x 16	060
35,50 - 39,49			SW 3	136		M6 x 0,5 x 18	061
39,50 - 41,00			SW 3	136		M6 x 0,5 x 20	062

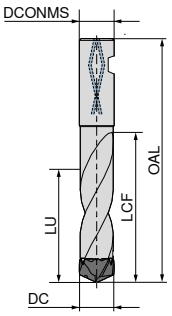
WTX – Holder for Exchangeable drills

▲ Pilot hole is recommended
▲ With radial teeth

Scope of supply:
Holder incl. screw driver









DC mm	DCONMS h6 mm	OAL mm	LCF mm	LU mm	torque moment Nm	10 912 ...
12,00 - 12,49	14	210	162	150	1,0	12000
12,50 - 12,99	14	216	168	156	1,0	12500
13,00 - 13,49	14	223	175	162	1,0	13000
13,50 - 13,99	16	235	182	168	1,3	13500
14,00 - 14,49	16	242	189	174	1,3	14000
14,50 - 14,99	16	248	195	180	1,3	14500
15,00 - 15,49	16	255	202	186	1,3	15000
15,50 - 16,49	18	262	209	198	1,3	15500
16,50 - 17,49	18	275	222	210	3,5	16500
17,50 - 18,49	18	289	236	222	3,5	17500
18,50 - 19,49	20	304	249	234	3,5	18500
19,50 - 20,49	20	318	263	246	3,5	19500
20,50 - 21,49	25	337	276	258	3,5	20500
21,50 - 22,49	25	351	290	270	3,5	21500
22,50 - 23,49	25	364	303	282	3,5	22500
23,50 - 24,49	25	378	317	294	3,5	23500
24,50 - 25,49	25	391	330	306	4,0	24500
25,50 - 26,49	25	405	344	318	4,0	25500
26,50 - 27,49	25	418	357	330	4,0	26500
27,50 - 28,49	25	432	371	342	4,0	27500
28,50 - 29,49	32	449	384	354	4,0	28500
29,50 - 30,49	32	463	398	366	4,0	29500
30,50 - 31,49	32	476	411	378	4,0	30500
31,50 - 32,00	32	490	425	390	4,0	31500



Screw driver



Screw driver



Grub screw

Spare parts DC		80 950 ...		80 950 ...		10 950 ...
12,00 - 12,49	SW 1,3	132			M2,5 x 0,45 x 5	025
12,50 - 13,49	SW 1,3	132			M2,5 x 0,45 x 6	026
13,50 - 14,49			SW 1,5	133	M3 x 0,5 x 6	031
14,50 - 16,49			SW 1,5	133	M3 x 0,5 x 7	030
16,50 - 20,49			SW 2	134	M4 x 0,5 x 7,5	040
20,50 - 24,49			SW 2	134	M4 x 0,5 x 10	041
24,50 - 28,49			SW 2,5	135	M5 x 0,5 x 11	050
28,50 - 32,49			SW 2,5	135	M5 x 0,5 x 14	051
32,50 - 35,49			SW 3	136	M6 x 0,5 x 16	060
35,50 - 39,49			SW 3	136	M6 x 0,5 x 18	061
39,50 - 41,00			SW 3	136	M6 x 0,5 x 20	062

WPC – Indexable insert for indexable insert drill

Scope of supply:

Indexable insert (clamping screws can be ordered separately, if necessary)

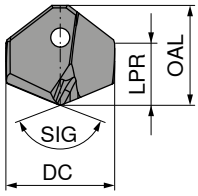


NEW

Change UNI

TPX74S







SIG 135°

HM

11 910 ...

DC $_{m7}$ mm	OAL mm	LPR mm	S mm	
14,0	12,8	7,73	5,00	**14000**
14,1	12,8	7,73	5,00	**14100**
14,2	12,8	7,73	5,00	**14200**
14,3	12,8	7,73	5,00	**14300**
14,4	12,8	7,73	5,00	**14400**
14,5	13,1	7,84	5,00	**14500**
14,6	13,1	7,84	5,00	**14600**
14,7	13,1	7,84	5,00	**14700**
14,8	13,1	7,84	5,00	**14800**
14,9	13,1	7,84	5,00	**14900**
15,0	13,4	7,95	5,00	**15000**
15,1	13,4	7,95	5,00	**15100**
15,2	13,4	7,95	5,00	**15200**
15,3	13,4	7,95	5,00	**15300**
15,4	13,4	7,95	5,00	**15400**
15,5	13,7	8,05	5,00	**15500**
15,6	13,7	8,05	5,00	**15600**
15,7	13,7	8,05	5,00	**15700**
15,8	13,7	8,05	5,00	**15800**
15,9	13,7	8,05	5,00	**15900**
16,0	14,4	9,06	5,80	**16000**
16,1	14,4	9,06	5,80	**16100**
16,2	14,4	9,06	5,80	**16200**
16,3	14,4	9,06	5,80	**16300**
16,4	14,4	9,06	5,80	**16400**
16,5	14,7	9,17	5,80	**16500**
16,6	14,7	9,17	5,80	**16600**
16,7	14,7	9,17	5,80	**16700**
16,8	14,7	9,17	5,80	**16800**
16,9	14,7	9,17	5,80	**16900**
17,0	15,0	9,28	5,80	**17000**
17,1	15,0	9,28	5,80	**17100**
17,2	15,0	9,28	5,80	**17200**
17,3	15,0	9,28	5,80	**17300**
17,4	15,0	9,28	5,80	**17400**
17,5	15,3	9,39	5,80	**17500**
17,6	15,3	9,39	5,80	**17600**
17,7	15,3	9,39	5,80	**17700**
17,8	15,3	9,39	5,80	**17800**
17,9	15,3	9,39	5,80	**17900**
18,0	16,3	10,19	6,50	**18000**
18,1	16,3	10,19	6,50	**18100**
18,2	16,3	10,19	6,50	**18200**
18,3	16,3	10,19	6,50	**18300**
18,4	16,3	10,19	6,50	**18400**
18,5	16,6	10,30	6,50	**18500**
18,6	16,6	10,30	6,50	**18600**
18,7	16,6	10,30	6,50	**18700**
18,8	16,6	10,30	6,50	**18800**
18,9	16,6	10,30	6,50	**18900**
19,0	16,9	10,41	6,50	**19000**
19,1	16,9	10,41	6,50	**19100**
19,2	16,9	10,41	6,50	**19200**
19,3	16,9	10,41	6,50	**19300**
19,4	16,9	10,41	6,50	**19400**
19,5	17,2	10,52	6,50	**19500**
19,6	17,2	10,52	6,50	**19600**
19,7	17,2	10,52	6,50	**19700**
19,8	17,2	10,52	6,50	**19800**
19,9	17,2	10,52	6,50	**19900**

11 910 ...

DC $_{m7}$ mm	OAL mm	LPR mm	S mm	
20,0	18,2	11,33	7,20	**20000**
20,1	18,2	11,33	7,20	**20100**
20,2	18,2	11,33	7,20	**20200**
20,3	18,2	11,33	7,20	**20300**
20,4	18,2	11,33	7,20	**20400**
20,5	18,5	11,43	7,20	**20500**
20,6	18,5	11,43	7,20	**20600**
20,7	18,5	11,43	7,20	**20700**
20,8	18,5	11,43	7,20	**20800**
20,9	18,5	11,43	7,20	**20900**
21,0	18,8	11,54	7,20	**21000**
21,1	18,8	11,54	7,20	**21100**
21,2	18,8	11,54	7,20	**21200**
21,3	18,8	11,54	7,20	**21300**
21,4	18,8	11,54	7,20	**21400**
21,5	19,1	11,65	7,20	**21500**
21,6	19,1	11,65	7,20	**21600**
21,7	19,1	11,65	7,20	**21700**
21,8	19,1	11,65	7,20	**21800**
21,9	19,1	11,65	7,20	**21900**
22,0	20,2	12,56	7,90	**22000**
22,1	20,2	12,56	7,90	**22100**
22,2	20,2	12,56	7,90	**22200**
22,3	20,2	12,56	7,90	**22300**
22,4	20,2	12,56	7,90	**22400**
22,5	20,5	12,67	7,90	**22500**
22,6	20,5	12,67	7,90	**22600**
22,7	20,5	12,67	7,90	**22700**
22,8	20,5	12,67	7,90	**22800**
22,9	20,5	12,67	7,90	**22900**
23,0	20,8	12,78	7,90	**23000**
23,1	20,8	12,78	7,90	**23100**
23,2	20,8	12,78	7,90	**23200**
23,3	20,8	12,78	7,90	**23300**
23,4	20,8	12,78	7,90	**23400**
23,5	21,1	12,88	7,90	**23500**
23,6	21,1	12,88	7,90	**23600**
23,7	21,1	12,88	7,90	**23700**
23,8	21,1	12,88	7,90	**23800**
23,9	21,1	12,88	7,90	**23900**
24,0	22,1	13,69	8,60	**24000**
24,1	22,1	13,69	8,60	**24100**
24,2	22,1	13,69	8,60	**24200**
24,3	22,1	13,69	8,60	**24300**
24,4	22,1	13,69	8,60	**24400**
24,5	22,4	13,80	8,60	**24500**
24,6	22,4	13,80	8,60	**24600**
24,7	22,4	13,80	8,60	**24700**
24,8	22,4	13,80	8,60	**24800**
24,9	22,4	13,80	8,60	**24900**
25,0	22,7	13,91	8,60	**25000**
25,1	22,7	13,91	8,60	**25100**
25,2	22,7	13,91	8,60	**25200**
25,3	22,7	13,91	8,60	**25300**
25,4	22,7	13,91	8,60	**25400**
25,5	23,0	14,02	8,60	**25500**
25,6	23,0	14,02	8,60	**25600**
25,7	23,0	14,02	8,60	**25700**
25,8	23,0	14,02	8,60	**25800**
25,9	23,0	14,02	8,60	**25900**
26,0	24,1	14,92	9,40	**26000**
26,5	24,4	15,03	9,40	**26500**
27,0	24,7	15,14	9,40	**27000**
27,5	25,0	15,25	9,40	**27500**
28,0	25,3	15,36	9,40	**28000**
28,5	25,6	15,47	9,40	**28500**
29,0	25,9	15,57	9,40	**29000**
29,5	26,2	15,68	9,40	**29500**
30,0	26,2	15,49	9,40	**30000**

P	●
M	
K	●
N	
S	
H	
O	

→ v_c Page 157
→ Application recommendation on page 163

When changing inserts, please observe the specified tightening torque.

WPC – Holder for indexable insert drill

WPC – Holder for indexable insert drill

2

- ▲ Easy handling
- ▲ Insert can be changed in the machine
- ▲ Precise and stable insert seat, clamping via Torx Plus® screw

Scope of supply:
Holder incl. clamping screw

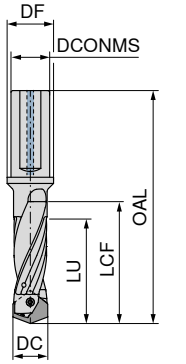
- ▲ Easy handling
- ▲ Insert can be changed in the machine
- ▲ Precise and stable insert seat, clamping via Torx Plus® screw

Scope of supply:
Holder incl. clamping screw

≤ 3xD

NEW

Change



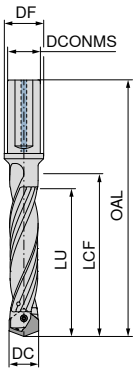




≤ 5xD

NEW

Change







11 903 ...

DC mm	DCONMS mm	OAL mm	LCF mm	LU mm	DF mm	torque moment Nm	
14,00 - 14,49	16	108,9	50,8	43,5	20	0.9	**14000**
14,50 - 14,99	16	111,0	52,5	45,0	20	0.9	**14500**
15,00 - 15,49	20	115,1	54,3	46,5	25	0.9	**15000**
15,50 - 15,99	20	117,2	56,0	48,0	25	0.9	**15500**
16,00 - 16,49	20	119,3	57,8	49,5	25	1.2	**16000**
16,50 - 16,99	20	121,4	59,5	51,0	25	1.2	**16500**
17,00 - 17,49	20	123,5	61,3	52,5	25	1.2	**17000**
17,50 - 17,99	20	125,6	63,0	54,0	25	1.2	**17500**
18,00 - 18,49	20	127,7	64,8	55,5	25	2.2	**18000**
18,50 - 18,99	20	129,8	66,5	57,0	25	2.2	**18500**
19,00 - 19,49	25	137,9	68,3	58,5	30	2.2	**19000**
19,50 - 19,99	25	140,0	70,0	60,0	30	2.2	**19500**
20,00 - 20,49	25	142,1	71,8	61,5	30	2.2	**20000**
20,50 - 20,99	25	144,2	73,5	63,0	30	2.2	**20500**
21,00 - 21,49	25	146,3	75,3	64,5	30	2.2	**21000**
21,50 - 21,99	25	148,4	77,0	66,0	30	2.2	**21500**
22,00 - 22,49	25	150,5	78,8	67,5	30	3.2	**22000**
22,50 - 22,99	25	152,6	80,5	69,0	30	3.2	**22500**
23,00 - 23,49	25	154,7	82,3	70,5	30	3.2	**23000**
23,50 - 23,99	25	156,8	84,0	72,0	30	3.2	**23500**
24,00 - 24,49	32	162,9	85,8	73,5	39	5	**24000**
24,50 - 24,99	32	165,0	87,5	75,0	39	5	**24500**
25,00 - 25,49	32	167,1	89,3	76,5	39	5	**25000**
25,50 - 25,99	32	169,2	91,0	78,0	39	5	**25500**
26,00 - 26,49	32	171,3	92,8	79,5	39	6	**26000**
26,50 - 26,99	32	173,4	94,5	81,0	39	6	**26500**
27,00 - 27,49	32	175,5	96,3	82,5	39	6	**27000**
27,50 - 27,99	32	177,6	98,0	84,0	39	6	**27500**
28,00 - 28,49	32	179,7	99,8	85,5	39	6	**28000**
28,50 - 28,99	32	181,8	101,5	87,0	39	6	**28500**
29,00 - 29,49	32	183,9	103,3	88,5	39	6	**29000**
29,50 - 30,00	32	186,0	105,0	90,0	39	6	**29500**

11 905 ...

DC mm	DCONMS mm	OAL mm	LCF mm	LU mm	DF mm	torque moment Nm	
14,00 - 14,49	16	137,9	79,8	72,5	20	0.9	**14000**
14,50 - 14,99	16	141,0	82,5	75,0	20	0.9	**14500**
15,00 - 15,49	20	146,1	85,3	77,5	25	0.9	**15000**
15,50 - 15,99	20	149,2	88,0	80,0	25	0.9	**15500**
16,00 - 16,49	20	152,3	90,8	82,5	25	1.2	**16000**
16,50 - 16,99	20	155,4	93,5	85,0	25	1.2	**16500**
17,00 - 17,49	20	158,5	96,3	87,5	25	1.2	**17000**
17,50 - 17,99	20	161,6	99,0	90,0	25	1.2	**17500**
18,00 - 18,49	20	164,7	101,8	92,5	25	2.2	**18000**
18,50 - 18,99	20	167,8	104,5	95,0	25	2.2	**18500**
19,00 - 19,49	25	176,9	107,3	97,5	30	2.2	**19000**
19,50 - 19,99	25	180,0	110,0	100,0	30	2.2	**19500**
20,00 - 20,49	25	183,1	112,8	102,5	30	2.2	**20000**
20,50 - 20,99	25	186,2	115,5	105,0	30	2.2	**20500**
21,00 - 21,49	25	189,3	118,3	107,5	30	2.2	**21000**
21,50 - 21,99	25	192,4	121,0	110,0	30	2.2	**21500**
22,00 - 22,49	25	195,5	123,8	112,5	30	3.2	**22000**
22,50 - 22,99	25	198,6	126,5	115,0	30	3.2	**22500**
23,00 - 23,49	25	201,7	129,3	117,5	30	3.2	**23000**
23,50 - 23,99	25	204,8	132,0	120,0	30	3.2	**23500**
24,00 - 24,49	32	211,9	134,8	122,5	39	5	**24000**
24,50 - 24,99	32	215,0	137,5	125,0	39	5	**24500**
25,00 - 25,49	32	218,1	140,3	127,5	39	5	**25000**
25,50 - 25,99	32	221,2	143,0	130,0	39	5	**25500**
26,00 - 26,49	32	224,3	145,8	132,5	39	6	**26000**
26,50 - 26,99	32	227,4	148,5	135,0	39	6	**26500**
27,00 - 27,49	32	230,5	151,3	137,5	39	6	**27000**
27,50 - 27,99	32	233,6	154,0	140,0	39	6	**27500**
28,00 - 28,49	32	236,7	156,8	142,5	39	6	**28000**
28,50 - 28,99	32	239,8	159,5	145,0	39	6	**28500**
29,00 - 29,49	32	242,9	162,3	147,5	39	6	**29000**
29,50 - 30,00	32	246,0	165,0	150,0	39	6	**29500**



Screwdriver

80 950 ...

Replaceable Blade for TORX PLUS®

80 950 ...



Torque screwdrivers

80 950 ...



Clamping screw

11 950 ...

Spare parts DC									
14,00 - 15,99	T08 - IP	**060**	T08 - IP	**043**	0,5 - 2,0 Nm	**191**	M2,2x13 - 08IP	**00100**
16,00 - 17,99	T08 - IP	**060**	T08 - IP	**043**	0,5 - 2,0 Nm	**191**	M2,5x15 - 08IP	**00200**
18,00 - 21,99	T10 - IP	**062**	T10 - IP	**053**	2,0 - 7,0 Nm	**193**	M3,0x17 - 10IP	**00300**
22,00 - 23,99	T10 - IP	**062**	T10 - IP	**053**	2,0 - 7,0 Nm	**193**	M3,5x21 - 10IP	**00400**
24,00 - 25,99	T15 - IP	**063**	T15 - IP	**054**	2,0 - 7,0 Nm	**193**	M4,0x23 - 15IP	**00500**
26,00 - 30,00	T20 - IP	**064**	T20 - IP	**055**	2,0 - 7,0 Nm	**193**	M4,5x25 - 20IP	**00600**

MultiChange – Programme Overview

The "MultiChange" interchangeable head system enables an extremely fast and problem free tool change. Provides quick changeover and concentricity with the highest stability at the same time. For a multitude of applications, the suitable interchangeable heads are available in the following chapters.

Exchangeable heads

→ Chapter 2, Solid carbide drilling

Page No. 2|107

Solid Carbide NC Spot Drills

Ø 8, 10, 12, 16, 20 mm
NOF 2


SIG 90°


SIG 120°


SIG 142°

→ Chapter 4, Reaming and countersinking

Page No. 4|18 + 4|19

Replaceable reaming heads

Ø 8,00 – 30,20 mm


Through hole

Ø 12,20 – 30,20 mm


Blind hole

→ Chapter 14, Solid carbide milling cutters

Page No. 14|198 – 14|202

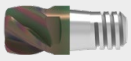
Solid carbide shoulder mills
Ø 8, 10, 12, 16, 20 mm /
ZEFP 3+4


Type PCR-UNI


Type PCR-ALU


Type N

Solid carbide torus bull nose milling cutters
Ø 8, 10, 12, 16, 20 mm / ZEFP 3+4


Type W


Type N

Solid carbide rough and finish milling cutters
Ø 8, 10, 12, 16, 20 mm / ZEFP 4+6


Type NF

Solid carbide finish milling cutters
Ø 8, 10, 12, 16, 20 mm / ZEFP 6


Type N

Solid carbide ball-nosed end mills
Ø 10, 12, 16, 20 mm / ZEFP 4


Type N

Solid carbide high-feed cutters
Ø 8, 10, 12, 16, 20 mm / ZEFP 6


Type N

Solid carbide quarter round cutter
Ø 8, 10, 12, 16, 20 mm / ZEFP 6


Type N

Solid carbide deburring cutters
Ø 10, 12, 16, 20 mm / ZEFP 4+6


Type N


Type N

NOF / ZEFP = Number of cutting edges

Tool holder

→ Catalogue – Clamping technology, Chapter 16 Accessories

Page No. 16|259 – 16|261

OAL 60 – 90 mm


Tapered 87° / Steel

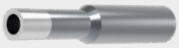

Cylindrical* / Steel

OAL 85 – 120 mm


Tapered 87° / Steel


Cylindrical* / Steel


Tapered 87° /
Solid carbide


Cylindrical* /
Solid carbide

OAL 110 – 150 mm


Tapered 87° / Solid carbide


Cylindrical* / Solid carbide

OAL 150 – 200 mm


Tapered 87° / Solid carbide


Cylindrical* / Steel


Cylindrical* / Solid carbide

OAL 200 – 250 mm


Cylindrical* / Steel

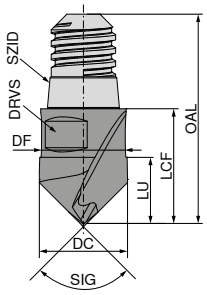

Cylindrical* / Solid carbide

* only conditionally suitable for milling

MultiChange – NC Spot Drill

▲ SZID = Coupling Size
▲ NOF = No. of cutting edges





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Material examples for cutting data tables

	Material sub-group	Index	Composition / Structure / Heat treatment		Tensile strength N/mm²* / HB / HRC	Material number	Material designation	Material number	Material designation
P	Unalloyed steel	P.1.1	< 0,15 % C	Annealed	420 N/mm² / 125 HB	1.0401	C15	1.1141	Ck15
		P.1.2	< 0,45 % C	Annealed	640 N/mm² / 190 HB	1.1191	C45E	1.0718	9SMnPb28
		P.1.3		Tempered	840 N/mm² / 250 HB	1.1191	C45E	1.0535	C55
		P.1.4	< 0,75 % C	Annealed	910 N/mm² / 270 HB	1.1223	C60R	1.0535	C55
		P.1.5		Tempered	1010 N/mm² / 300 HB	1.1223	C60R	1.0727	45S20
	Low-alloy steel	P.2.1		Annealed	610 N/mm² / 180 HB	1.7131	16MnCr5	1.6587	17CrNiMo6
		P.2.2		Tempered	930 N/mm² / 275 HB	1.7131	16MnCr5	1.6587	17CrNiMo6
		P.2.3		Tempered	1010 N/mm² / 300 HB	1.7225	42CrMo4	1.3505	100Cr6
		P.2.4		Tempered	1200 N/mm² / 375 HB	1.7225	42CrMo4	1.3505	100Cr6
	High-alloy steel and high-alloy tool steel	P.3.1		Annealed	680 N/mm² / 200 HB	1.4021	X20Cr13	1.4034	X46Cr13
		P.3.2		Hardened and tempered	1100 N/mm² / 300 HB	1.2343	X38CrMoV5-1	1.4034	X46Cr13
		P.3.3		Hardened and tempered	1300 N/mm² / 400 HB	1.2343	X38CrMoV5-1	1.4034	X46Cr13
	Stainless steel	P.4.1	Ferritic / martensitic	Annealed	680 N/mm² / 200 HB	1.4016	X6Cr17	1.2316	X36CrMo16
		P.4.2	Martensitic	Tempered	1010 N/mm² / 300 HB	1.4112	X90CrMoV18	1.2316	X36CrMo16
M	Stainless steel	M.1.1	Austenitic / austenitic-ferritic	Quenched	610 N/mm² / 180 HB	1.4301	X5CrNi18-10	1.4571	X6CrNiMoTi17-12-2
		M.2.1	Austenitic	Tempered	300 HB	1.4841	X15CrNiSi25-21	1.4539	X1NiCrMoCu25-20-5
		M.3.1	Austenitic / ferritic (Duplex)		780 N/mm² / 230 HB	1.4462	X2CrNiMoN22-5-3	1.4501	X2CrNiMoCuWN25-7-4
K	Grey cast iron	K.1.1	Pearlitic / ferritic		350 N/mm² / 180 HB	0.6010	GG-10	0.6025	GG-25
		K.1.2	Pearlitic (martensitic)		500 N/mm² / 260 HB	0.6030	GG-30	0.6045	GG-45
	Spherulitic graphite cast iron	K.2.1	Ferritic		540 N/mm² / 160 HB	0.7040	GGG-40	0.7060	GGG-60
		K.2.2	Pearlitic		845 N/mm² / 250 HB	0.7070	GGG-70	0.7080	GGG-80
	Malleable iron	K.3.1	Ferritic		440 N/mm² / 130 HB	0.8035	GTW-35-04	0.8045	GTW-45
		K.3.2	Pearlitic		780 N/mm² / 230 HB	0.8165	GTS-65-02	0.8170	GTS-70-02
N	Aluminium wrought alloy	N.1.1	Non-hardenable		60 HB	3.0255	Al99,5	3.3315	AlMg1
		N.1.2	Hardenable	Age-hardened	340 N/mm² / 100 HB	3.1355	AlCuMg2	3.2315	AlMgSi1
	Cast aluminium alloy	N.2.1	≤ 12 % Si, non-hardenable		250 N/mm² / 75 HB	3.2581	G-AlSi12	3.2163	G-AlSi9Cu3
		N.2.2	≤ 12 % Si, hardenable	Age-hardened	300 N/mm² / 90 HB	3.2134	G-AlSi5Cu1Mg	3.2373	G-AlSi9Mg
		N.2.3	> 12 % Si, non-hardenable		440 N/mm² / 130 HB		G-AlSi17Cu4Mg		G-AlSi18CuNiMg
	Copper and copper alloys (bronze/brass)	N.3.1	Free-machining alloys, PB > 1 %		375 N/mm² / 110 HB	2.0380	CuZn39Pb2 (Ms58)	2.0410	CuZn44Pb2
		N.3.2	CuZn, CuSnZn		300 N/mm² / 90 HB	2.0331	CuZn15	2.4070	CuZn28Sn1As
		N.3.3	CuSn, lead-free copper and electrolytic copper		340 N/mm² / 100 HB	2.0060	E-Cu57	2.0590	CuZn40Fe
	Magnesium alloys	N.4.1	Magnesium and magnesium alloys		70 HB	3.5612	MgAl6Zn	3.5312	MgAl3Zn
S	Heat-resistant alloys	S.1.1	Fe - basis	Annealed	680 N/mm² / 200 HB	1.4864	X12NiCrSi 36-16	1.4865	G-X40NiCrSi38-18
		S.1.2		Age-hardened	950 N/mm² / 280 HB	1.4980	X6NiCrTiMoVB25-15-2	1.4876	X10NiCrAlTi32-20
		S.2.1	Ni or Co basis	Annealed	840 N/mm² / 250 HB	2.4631	NiCr20TiAl (Nimonic80A)	3.4856	NiCr22Mo9Nb
		S.2.2		Age-hardened	1180 N/mm² / 350 HB	2.4668	NiCr19Nb5Mo3 (Inconel 718)	2.4955	NiFe25Cr20NbTi
		S.2.3		Cast	1080 N/mm² / 320 HB	2.4765	CoCr20W15Ni	1.3401	G-X120Mn12
	Titanium alloys	S.3.1	Pure titanium		400 N/mm²	3.7025	Ti99,8	3.7034	Ti99,7
		S.3.2	Alpha + beta alloys	Age-hardened	1050 N/mm² / 320 HB	3.7165	TiAl6V4	Ti-6246	Ti-6Al-2Sn-4Zr-6Mo
		S.3.3	Beta alloys		1400 N/mm² / 410 HB	Ti555.3	Ti-5Al-5V-5Mo-3Cr	R56410	Ti-10V-2Fe-3Al
H	Hardened steel	H.1.1		Hardened and tempered	46–55 HRC				
		H.1.2		Hardened and tempered	56–60 HRC				
		H.1.3		Hardened and tempered	61–65 HRC				
		H.1.4		Hardened and tempered	66–70 HRC				
	Chilled iron	H.2.1		Cast	400 HB				
	Hardened cast iron	H.3.1		Hardened and tempered	55 HRC				
O	Non-metal materials	O.1.1	Plastics, duroplastic		≤ 150 N/mm²				
		O.1.2	Plastics, thermoplastic		≤ 100 N/mm²				
		O.2.1	Aramid fibre-reinforced		≤ 1000 N/mm²				
		O.2.2	Glass/carbon-fibre reinforced		≤ 1000 N/mm²				
		O.3.1	Graphite						

*** Tensile strength**

Cutting data standard values – WTX – Ti

Index	10 786 ..., 10 787 ...											
	3xD / 5xD											
	with through coolant	> Ø 2,5–3	> Ø 3–4	> Ø 4–5	> Ø 5–6	> Ø 6–8	> Ø 8–10	> Ø 10–12	> Ø 12–14	> Ø 14–16	> Ø 16–18	> Ø 18–20
	v_c (m/min)	f (mm/rev)										
P.1.1												
P.1.2	130	0,08	0,10	0,13	0,15	0,18	0,20	0,23	0,26	0,30	0,34	0,38
P.1.3	130	0,08	0,10	0,13	0,15	0,18	0,20	0,23	0,26	0,30	0,34	0,38
P.1.4	115	0,08	0,10	0,13	0,15	0,18	0,20	0,23	0,26	0,30	0,34	0,38
P.1.5	115	0,08	0,10	0,13	0,15	0,18	0,20	0,23	0,26	0,30	0,34	0,38
P.2.1												
P.2.2												
P.2.3	115	0,08	0,10	0,13	0,15	0,18	0,20	0,23	0,26	0,30	0,34	0,38
P.2.4	90	0,08	0,10	0,13	0,15	0,18	0,20	0,23	0,26	0,30	0,34	0,38
P.3.1												
P.3.2												
P.3.3	55	0,08	0,10	0,13	0,15	0,18	0,20	0,23	0,26	0,30	0,34	0,38
P.4.1	75	0,05	0,06	0,08	0,10	0,12	0,14	0,15	0,18	0,20	0,23	0,25
P.4.2	65	0,05	0,06	0,08	0,10	0,12	0,14	0,15	0,18	0,20	0,23	0,25
M.1.1	**70**	0,05	0,06	0,08	0,10	0,12	0,14	0,15	0,18	0,20	0,23	0,25
M.2.1	**70**	0,05	0,06	0,08	0,10	0,12	0,14	0,15	0,18	0,20	0,23	0,25
M.3.1	**70**	0,05	0,06	0,08	0,10	0,12	0,14	0,15	0,18	0,20	0,23	0,25
K.1.1												
K.1.2												
K.2.1												
K.2.2												
K.3.1												
K.3.2												
N.1.1												
N.1.2												
N.2.1												
N.2.2												
N.2.3												
N.3.1												
N.3.2												
N.3.3												
N.4.1												
S.1.1	**45**	0,02	0,04	0,05	0,07	0,09	0,11	0,13	0,16	0,18	0,20	0,22
S.1.2	**45**	0,02	0,04	0,05	0,07	0,09	0,11	0,13	0,16	0,18	0,20	0,22
S.2.1	**40**	0,02	0,04	0,05	0,07	0,09	0,11	0,13	0,16	0,18	0,20	0,22
S.2.2	**40**	0,02	0,04	0,05	0,07	0,09	0,11	0,13	0,16	0,18	0,20	0,22
S.2.3	**40**	0,02	0,04	0,05	0,07	0,09	0,11	0,13	0,16	0,18	0,20	0,22
S.3.1	**55**	0,02	0,04	0,05	0,07	0,09	0,11	0,13	0,16	0,18	0,20	0,22
S.3.2	**45**	0,02	0,04	0,05	0,07	0,09	0,11	0,13	0,16	0,18	0,20	0,22
S.3.3												
H.1.1												
H.1.2												
H.1.3												
H.1.4												
H.2.1												
H.3.1												
O.1.1												
O.1.2												
O.2.1												
O.2.2												
O.3.1												

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

Cutting data standard values – WTX – UNI

Index	11 776 ..., 11 777 ..., 11 778 ..., 11 779 ..., 11 780 ..., 11 781 ...							
	3xD							
	without through coolant	with through coolant	Ø 3–5	Ø 5–8	Ø 8–12	Ø 12–16	Ø 16–20	Ø 20–25
	v_c (m/min)		f (mm/rev)					
P.1.1	110	120	0,13	0,18	0,25	0,30	0,34	0,37
P.1.2	105	115	0,12	0,18	0,24	0,29	0,33	0,36
P.1.3	100	110	0,12	0,17	0,23	0,28	0,31	0,34
P.1.4	95	105	0,11	0,16	0,21	0,26	0,30	0,32
P.1.5	90	100	0,11	0,15	0,20	0,25	0,28	0,30
P.2.1	105	120	0,15	0,22	0,29	0,36	0,41	0,44
P.2.2	95	110	0,14	0,20	0,27	0,33	0,37	0,40
P.2.3	85	100	0,13	0,18	0,24	0,29	0,33	0,36
P.2.4	65	75	0,12	0,16	0,21	0,26	0,29	0,32
P.3.1	70	85	0,12	0,18	0,24	0,29	0,33	0,36
P.3.2	60	65	0,11	0,15	0,20	0,24	0,27	0,29
P.3.3	50	65	0,09	0,12	0,15	0,19	0,21	0,23
P.4.1	50	65	0,08	0,12	0,16	0,19	0,22	0,24
P.4.2	50	65	0,08	0,12	0,16	0,19	0,22	0,24
M.1.1								
M.2.1								
M.3.1								
K.1.1	85	120	0,17	0,26	0,36	0,45	0,52	0,56
K.1.2	75	100	0,15	0,22	0,29	0,36	0,41	0,45
K.2.1	100	160	0,17	0,25	0,34	0,42	0,48	0,52
K.2.2	75	100	0,15	0,22	0,29	0,36	0,41	0,45
K.3.1	80	90	0,16	0,23	0,32	0,39	0,44	0,48
K.3.2	70	80	0,14	0,19	0,25	0,31	0,35	0,38
N.1.1								
N.1.2								
N.2.1								
N.2.2								
N.2.3								
N.3.1								
N.3.2								
N.3.3								
N.4.1								
S.1.1								
S.1.2								
S.2.1								
S.2.2								
S.2.3								
S.3.1								
S.3.2								
S.3.3								
H.1.1	25	25	0,06	0,08	0,11	0,14	0,15	0,17
H.1.2								
H.1.3								
H.1.4								
H.2.1	35	35	0,08	0,11	0,14	0,18	0,20	0,22
H.3.1								
O.1.1								
O.1.2								
O.2.1								
O.2.2								
O.3.1								

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

Index	11 782 ..., 11 783 ..., 11 784 ..., 11 785 ..., 11 786 ..., 11 787 ...								11 788 ..., 11 789 ..., 11 790 ...					
	5xD								8xD					
	without through coolant	with through coolant	Ø 3–5	Ø 5–8	Ø 8–12	Ø 12–16	Ø 16–20	Ø 20–25	with through coolant	Ø 3–5	Ø 5–8	Ø 8–12	Ø 12–16	Ø 16–20
	v_c (m/min)		f (mm/rev)						v_c (m/min)	f (mm/rev)				
P.1.1	110	120	0,13	0,18	0,25	0,30	0,34	0,37	110	0,13	0,18	0,25	0,30	0,34
P.1.2	105	115	0,12	0,18	0,24	0,29	0,33	0,36	105	0,12	0,18	0,24	0,29	0,33
P.1.3	100	110	0,12	0,17	0,23	0,28	0,31	0,34	100	0,12	0,17	0,23	0,28	0,31
P.1.4	95	105	0,11	0,16	0,21	0,26	0,30	0,32	95	0,11	0,16	0,21	0,26	0,30
P.1.5	90	100	0,11	0,15	0,20	0,25	0,28	0,30	90	0,11	0,15	0,20	0,25	0,28
P.2.1	105	120	0,15	0,22	0,29	0,36	0,41	0,44	105	0,15	0,22	0,29	0,36	0,41
P.2.2	95	110	0,14	0,20	0,27	0,33	0,37	0,40	95	0,14	0,20	0,27	0,33	0,37
P.2.3	85	100	0,13	0,18	0,24	0,29	0,33	0,36	85	0,13	0,18	0,24	0,29	0,33
P.2.4	65	75	0,12	0,16	0,21	0,26	0,29	0,32	65	0,12	0,16	0,21	0,26	0,29
P.3.1	70	85	0,12	0,18	0,24	0,29	0,33	0,36	70	0,12	0,18	0,24	0,29	0,33
P.3.2	60	65	0,11	0,15	0,20	0,24	0,27	0,29	60	0,11	0,15	0,20	0,24	0,27
P.3.3	50	65	0,09	0,12	0,15	0,19	0,21	0,23	50	0,09	0,12	0,15	0,19	0,21
P.4.1	50	65	0,08	0,12	0,16	0,19	0,22	0,24	50	0,08	0,12	0,16	0,19	0,22
P.4.2	50	65	0,08	0,12	0,16	0,19	0,22	0,24	50	0,08	0,12	0,16	0,19	0,22
M.1.1														
M.2.1														
M.3.1														
K.1.1	85	120	0,17	0,26	0,36	0,45	0,52	0,56	85	0,17	0,26	0,36	0,45	0,52
K.1.2	75	100	0,15	0,22	0,29	0,36	0,41	0,45	75	0,15	0,22	0,29	0,36	0,41
K.2.1	100	160	0,17	0,25	0,34	0,42	0,48	0,52	100	0,17	0,25	0,34	0,42	0,48
K.2.2	75	100	0,15	0,22	0,29	0,36	0,41	0,45	75	0,15	0,22	0,29	0,36	0,41
K.3.1	80	90	0,16	0,23	0,32	0,39	0,44	0,48	80	0,16	0,23	0,32	0,39	0,44
K.3.2	70	80	0,14	0,19	0,25	0,31	0,35	0,38	70	0,14	0,19	0,25	0,31	0,35
N.1.1														
N.1.2														
N.2.1														
N.2.2														
N.2.3														
N.3.1														
N.3.2														
N.3.3														
N.4.1														
S.1.1														
S.1.2														
S.2.1														
S.2.2														
S.2.3														
S.3.1														
S.3.2														
S.3.3														
H.1.1	25	25	0,06	0,08	0,11	0,14	0,15	0,17	25	0,06	0,08	0,11	0,14	0,15
H.1.2														
H.1.3														
H.1.4														
H.2.1	35	35	0,08	0,11	0,14	0,18	0,20	0,22	35	0,08	0,11	0,14	0,18	0,20
H.3.1														
O.1.1														
O.1.2														
O.2.1														
O.2.2														
O.3.1														

Cutting data standard values – WTX – VA

Index	10 731 ..., 10 734 ...							10 740 ..., 10 745 ...						
	3xD							5xD						
	without through coolant	with through coolant	Ø 2–5	Ø 5–8	Ø 8–12	Ø 12–16	Ø 16–20	without through coolant	with through coolant	Ø 2–5	Ø 5–8	Ø 8–12	Ø 12–16	Ø 16–20
	v_c (m/min)		f (mm/rev)					v_c (m/min)		f (mm/rev)				
P.1.1	100	110	0,09	0,13	0,18	0,22	0,25	100	110	0,09	0,13	0,18	0,22	0,25
P.1.2	95	105	0,09	0,13	0,17	0,21	0,24	95	105	0,09	0,13	0,17	0,21	0,24
P.1.3	90	100	0,09	0,12	0,16	0,20	0,23	90	100	0,09	0,12	0,16	0,20	0,23
P.1.4	85	95	0,08	0,12	0,16	0,19	0,22	85	95	0,08	0,12	0,16	0,19	0,22
P.1.5	80	90	0,08	0,11	0,15	0,18	0,20	80	90	0,08	0,11	0,15	0,18	0,20
P.2.1	95	110	0,11	0,16	0,21	0,26	0,29	95	110	0,11	0,16	0,21	0,26	0,29
P.2.2	85	100	0,10	0,14	0,19	0,24	0,27	85	100	0,10	0,14	0,19	0,24	0,27
P.2.3	75	90	0,09	0,13	0,17	0,21	0,24	75	90	0,09	0,13	0,17	0,21	0,24
P.2.4	60	70	0,09	0,12	0,16	0,19	0,21	60	70	0,09	0,12	0,16	0,19	0,21
P.3.1	65	75	0,09	0,13	0,17	0,21	0,24	65	75	0,09	0,13	0,17	0,21	0,24
P.3.2	55	60	0,08	0,11	0,14	0,17	0,20	55	60	0,08	0,11	0,14	0,17	0,20
P.3.3	45	60	0,06	0,09	0,11	0,14	0,15	45	60	0,06	0,09	0,11	0,14	0,15
P.4.1	45	60	0,06	0,09	0,11	0,14	0,16	45	60	0,06	0,09	0,11	0,14	0,16
P.4.2	45	60	0,06	0,09	0,11	0,14	0,16	45	60	0,06	0,09	0,11	0,14	0,16
M.1.1	**35**	**55**	0,08	0,11	0,14	0,18	0,20	**35**	**55**	0,08	0,11	0,14	0,18	0,20
M.2.1	**30**	**50**	0,06	0,09	0,12	0,15	0,17	**30**	**50**	0,06	0,09	0,12	0,15	0,17
M.3.1	**30**	**50**	0,06	0,09	0,12	0,15	0,17	**30**	**50**	0,06	0,09	0,12	0,15	0,17
K.1.1	85	120	0,15	0,24	0,33	0,41	0,47	85	120	0,15	0,24	0,33	0,41	0,47
K.1.2	75	100	0,14	0,20	0,27	0,33	0,37	75	100	0,14	0,20	0,27	0,33	0,37
K.2.1	100	160	0,15	0,22	0,31	0,38	0,43	100	160	0,15	0,22	0,31	0,38	0,43
K.2.2	75	100	0,14	0,20	0,27	0,33	0,37	75	100	0,14	0,20	0,27	0,33	0,37
K.3.1	80	90	0,15	0,21	0,29	0,35	0,40	80	90	0,15	0,21	0,29	0,35	0,40
K.3.2	70	80	0,12	0,17	0,23	0,28	0,32	70	80	0,12	0,17	0,23	0,28	0,32
N.1.1	220	330	0,10	0,16	0,22	0,30	0,33	220	330	0,10	0,16	0,22	0,30	0,33
N.1.2	200	300	0,09	0,12	0,20	0,25	0,30	200	300	0,09	0,12	0,20	0,25	0,30
N.2.1	180	250	0,11	0,15	0,26	0,33	0,39	180	250	0,11	0,15	0,26	0,33	0,39
N.2.2	150	220	0,11	0,15	0,26	0,33	0,39	150	220	0,11	0,15	0,26	0,33	0,39
N.2.3	120	180	0,11	0,15	0,26	0,33	0,39	120	180	0,11	0,15	0,26	0,33	0,39
N.3.1	160	200	0,15	0,24	0,33	0,41	0,47	160	200	0,15	0,24	0,33	0,41	0,47
N.3.2	90	120	0,14	0,20	0,27	0,33	0,37	90	120	0,14	0,20	0,27	0,33	0,37
N.3.3	100	140	0,12	0,15	0,21	0,25	0,28	100	140	0,12	0,15	0,21	0,25	0,28
N.4.1														
S.1.1	**20**	**30**	0,06	0,09	0,11	0,14	0,16	**20**	**30**	0,06	0,09	0,11	0,14	0,16
S.1.2	**15**	**20**	0,04	0,06	0,08	0,10	0,11	**15**	**20**	0,04	0,06	0,08	0,10	0,11
S.2.1	**15**	**20**	0,04	0,06	0,08	0,10	0,11	**15**	**20**	0,04	0,06	0,08	0,10	0,11
S.2.2	**10**	**15**	0,05	0,08	0,10	0,13	0,14	**10**	**15**	0,05	0,08	0,10	0,13	0,14
S.2.3	**10**	**15**	0,04	0,06	0,08	0,10	0,11	**10**	**15**	0,04	0,06	0,08	0,10	0,11
S.3.1														
S.3.2	**20**	**30**	0,06	0,09	0,12	0,15	0,17	**20**	**30**	0,06	0,09	0,12	0,15	0,17
S.3.3	**15**	**25**	0,05	0,08	0,10	0,13	0,14	**15**	**25**	0,05	0,08	0,10	0,13	0,14
H.1.1														
H.1.2														
H.1.3														
H.1.4														
H.2.1														
H.3.1														
O.1.1														
O.1.2														
O.2.1														
O.2.2														
O.3.1														

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

Index	10 770 ...					
	8xD					
	with through coolant	Ø 3–5	Ø 5–8	Ø 8–12	Ø 12–16	Ø 16–20
	v_c (m/min)	f (mm/rev)				
P.1.1	110	0,09	0,13	0,18	0,22	0,25
P.1.2	105	0,09	0,13	0,17	0,21	0,24
P.1.3	100	0,09	0,12	0,16	0,20	0,23
P.1.4	95	0,08	0,12	0,16	0,19	0,22
P.1.5	90	0,08	0,11	0,15	0,18	0,20
P.2.1	110	0,11	0,16	0,21	0,26	0,29
P.2.2	100	0,10	0,14	0,19	0,24	0,27
P.2.3	90	0,09	0,13	0,17	0,21	0,24
P.2.4	70	0,09	0,12	0,16	0,19	0,21
P.3.1	75	0,09	0,13	0,17	0,21	0,24
P.3.2	60	0,08	0,11	0,14	0,17	0,20
P.3.3	60	0,06	0,09	0,11	0,14	0,15
P.4.1	60	0,06	0,09	0,11	0,14	0,16
P.4.2	60	0,06	0,09	0,11	0,14	0,16
M.1.1	**55**	0,08	0,11	0,14	0,18	0,20
M.2.1	**50**	0,06	0,09	0,12	0,15	0,17
M.3.1	**50**	0,06	0,09	0,12	0,15	0,17
K.1.1	120	0,15	0,24	0,33	0,41	0,47
K.1.2	100	0,14	0,20	0,27	0,33	0,37
K.2.1	160	0,15	0,22	0,31	0,38	0,43
K.2.2	100	0,14	0,20	0,27	0,33	0,37
K.3.1	90	0,15	0,21	0,29	0,35	0,40
K.3.2	80	0,12	0,17	0,23	0,28	0,32
N.1.1	330	0,10	0,16	0,22	0,30	0,33
N.1.2	300	0,09	0,12	0,20	0,25	0,30
N.2.1	250	0,11	0,15	0,26	0,33	0,39
N.2.2	220	0,11	0,15	0,26	0,33	0,39
N.2.3	180	0,11	0,15	0,26	0,33	0,39
N.3.1	200	0,15	0,24	0,33	0,41	0,47
N.3.2	120	0,14	0,20	0,27	0,33	0,37
N.3.3	140	0,12	0,15	0,21	0,25	0,28
N.4.1						
S.1.1	**30**	0,06	0,09	0,11	0,14	0,16
S.1.2	**20**	0,04	0,06	0,08	0,10	0,11
S.2.1	**20**	0,04	0,06	0,08	0,10	0,11
S.2.2	**15**	0,05	0,08	0,10	0,13	0,14
S.2.3	**15**	0,04	0,06	0,08	0,10	0,11
S.3.1						
S.3.2	**30**	0,06	0,09	0,12	0,15	0,17
S.3.3	**25**	0,05	0,08	0,10	0,13	0,14
H.1.1						
H.1.2						
H.1.3						
H.1.4						
H.2.1						
H.3.1						
O.1.1						
O.1.2						
O.2.1						
O.2.2						
O.3.1						

Cutting data standard values – WTX – Speed UNI

Index	10 781 ...						10 771 ...					
	3xD						5xD					
	with through coolant	Ø 3–5	Ø 5–8	Ø 8–12	Ø 12–16	Ø 16–20	with through coolant	Ø 3–5	Ø 5–8	Ø 8–12	Ø 12–16	Ø 16–20
	v_c (m/min)	f (mm/rev)					v_c (m/min)	f (mm/rev)				
P.1.1	185	0,17	0,24	0,33	0,40	0,45	185	0,17	0,24	0,33	0,40	0,45
P.1.2	180	0,16	0,23	0,31	0,38	0,43	180	0,16	0,23	0,31	0,38	0,43
P.1.3	170	0,16	0,22	0,30	0,36	0,41	170	0,16	0,22	0,30	0,36	0,41
P.1.4	160	0,15	0,21	0,28	0,35	0,39	160	0,15	0,21	0,28	0,35	0,39
P.1.5	155	0,14	0,20	0,27	0,33	0,37	155	0,14	0,20	0,27	0,33	0,37
P.2.1	185	0,20	0,29	0,39	0,47	0,53	185	0,20	0,29	0,39	0,47	0,53
P.2.2	170	0,18	0,26	0,35	0,43	0,49	170	0,18	0,26	0,35	0,43	0,49
P.2.3	155	0,17	0,24	0,32	0,39	0,44	155	0,17	0,24	0,32	0,39	0,44
P.2.4	120	0,16	0,21	0,28	0,34	0,38	120	0,16	0,21	0,28	0,34	0,38
P.3.1	130	0,16	0,23	0,32	0,39	0,44	130	0,16	0,23	0,32	0,39	0,44
P.3.2	100	0,14	0,20	0,26	0,32	0,36	100	0,14	0,20	0,26	0,32	0,36
P.3.3	100	0,12	0,16	0,20	0,25	0,28	100	0,12	0,16	0,20	0,25	0,28
P.4.1	100	0,11	0,16	0,21	0,25	0,29	100	0,11	0,16	0,21	0,25	0,29
P.4.2	100	0,11	0,16	0,21	0,25	0,29	100	0,11	0,16	0,21	0,25	0,29
M.1.1	65	0,08	0,12	0,16	0,19	0,22	65	0,08	0,12	0,16	0,19	0,22
M.2.1	60	0,07	0,10	0,14	0,17	0,19	60	0,07	0,10	0,14	0,17	0,19
M.3.1	60	0,07	0,10	0,14	0,17	0,19	60	0,07	0,10	0,14	0,17	0,19
K.1.1	150	0,18	0,28	0,40	0,49	0,56	150	0,18	0,28	0,40	0,49	0,56
K.1.2	125	0,16	0,24	0,32	0,39	0,45	125	0,16	0,24	0,32	0,39	0,45
K.2.1	200	0,18	0,27	0,37	0,46	0,52	200	0,18	0,27	0,37	0,46	0,52
K.2.2	125	0,16	0,24	0,32	0,39	0,45	125	0,16	0,24	0,32	0,39	0,45
K.3.1	115	0,18	0,25	0,34	0,42	0,48	115	0,18	0,25	0,34	0,42	0,48
K.3.2	100	0,15	0,21	0,28	0,34	0,38	100	0,15	0,21	0,28	0,34	0,38
N.1.1												
N.1.2												
N.2.1												
N.2.2												
N.2.3												
N.3.1												
N.3.2												
N.3.3												
N.4.1												
S.1.1												
S.1.2												
S.2.1												
S.2.2												
S.2.3												
S.3.1												
S.3.2												
S.3.3												
H.1.1												
H.1.2												
H.1.3												
H.1.4												
H.2.1												
H.3.1												
O.1.1												
O.1.2												
O.2.1												
O.2.2												
O.3.1												

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

Index	10 782 ...					
	8xD					
	with through coolant	Ø 3–5	Ø 5–8	Ø 8–12	Ø 12–16	Ø 16–20
	v_c (m/min)	f (mm/rev)				
P.1.1	185	0,17	0,24	0,33	0,40	0,45
P.1.2	180	0,16	0,23	0,31	0,38	0,43
P.1.3	170	0,16	0,22	0,30	0,36	0,41
P.1.4	160	0,15	0,21	0,28	0,35	0,39
P.1.5	155	0,14	0,20	0,27	0,33	0,37
P.2.1	185	0,20	0,29	0,39	0,47	0,53
P.2.2	170	0,18	0,26	0,35	0,43	0,49
P.2.3	155	0,17	0,24	0,32	0,39	0,44
P.2.4	120	0,16	0,21	0,28	0,34	0,38
P.3.1	130	0,16	0,23	0,32	0,39	0,44
P.3.2	100	0,14	0,20	0,26	0,32	0,36
P.3.3	100	0,12	0,16	0,20	0,25	0,28
P.4.1	100	0,11	0,16	0,21	0,25	0,29
P.4.2	100	0,11	0,16	0,21	0,25	0,29
M.1.1	65	0,08	0,12	0,16	0,19	0,22
M.2.1	60	0,07	0,10	0,14	0,17	0,19
M.3.1	60	0,07	0,10	0,14	0,17	0,19
K.1.1	150	0,18	0,28	0,40	0,49	0,56
K.1.2	125	0,16	0,24	0,32	0,39	0,45
K.2.1	200	0,18	0,27	0,37	0,46	0,52
K.2.2	125	0,16	0,24	0,32	0,39	0,45
K.3.1	115	0,18	0,25	0,34	0,42	0,48
K.3.2	100	0,15	0,21	0,28	0,34	0,38
N.1.1						
N.1.2						
N.2.1						
N.2.2						
N.2.3						
N.3.1						
N.3.2						
N.3.3						
N.4.1						
S.1.1						
S.1.2						
S.2.1						
S.2.2						
S.2.3						
S.3.1						
S.3.2						
S.3.3						
H.1.1						
H.1.2						
H.1.3						
H.1.4						
H.2.1						
H.3.1						
O.1.1						
O.1.2						
O.2.1						
O.2.2						
O.3.1						

Cutting data standard values – WTX – Feed UNI

Index	10 789 ...								
	5xD								
	with through coolant	Ø 4–6	Ø 6–7	Ø 7–8	Ø 8–10	Ø 10–12	Ø 12–15	Ø 15–17	Ø 17–20
	v_c (m/min)	f (mm/rev)							
P.1.1	125	0,28	0,34	0,37	0,42	0,48	0,54	0,59	0,63
P.1.2	120	0,27	0,32	0,35	0,40	0,46	0,52	0,56	0,60
P.1.3	115	0,25	0,31	0,34	0,38	0,44	0,49	0,54	0,57
P.1.4	110	0,24	0,29	0,32	0,36	0,41	0,47	0,51	0,54
P.1.5	105	0,23	0,27	0,30	0,34	0,39	0,44	0,48	0,52
P.2.1	125	0,33	0,40	0,44	0,50	0,57	0,64	0,70	0,75
P.2.2	115	0,30	0,36	0,40	0,45	0,51	0,58	0,63	0,68
P.2.3	105	0,27	0,32	0,36	0,41	0,46	0,52	0,57	0,61
P.2.4	80	0,25	0,29	0,32	0,36	0,41	0,46	0,50	0,54
P.3.1	85	0,27	0,32	0,36	0,41	0,46	0,52	0,57	0,61
P.3.2	70	0,23	0,27	0,30	0,33	0,38	0,43	0,47	0,50
P.3.3	70	0,18	0,22	0,24	0,26	0,30	0,33	0,36	0,38
P.4.1	70	0,18	0,21	0,24	0,27	0,30	0,34	0,38	0,40
P.4.2	70	0,18	0,21	0,24	0,27	0,30	0,34	0,38	0,40
M.1.1	55	0,13	0,16	0,18	0,20	0,23	0,26	0,28	0,30
M.2.1	50	0,11	0,14	0,15	0,17	0,20	0,22	0,24	0,26
M.3.1	50	0,11	0,14	0,15	0,17	0,20	0,22	0,24	0,26
K.1.1	140	0,38	0,47	0,53	0,61	0,70	0,80	0,89	0,95
K.1.2	115	0,32	0,39	0,44	0,50	0,57	0,64	0,70	0,75
K.2.1	185	0,37	0,45	0,50	0,57	0,66	0,75	0,82	0,88
K.2.2	115	0,32	0,39	0,44	0,50	0,57	0,64	0,70	0,75
K.3.1	105	0,35	0,42	0,47	0,53	0,61	0,69	0,76	0,81
K.3.2	90	0,29	0,35	0,38	0,43	0,49	0,55	0,60	0,64
N.1.1	380	0,28	0,34	0,37	0,42	0,48	0,54	0,59	0,63
N.1.2	345	0,25	0,31	0,34	0,38	0,44	0,49	0,54	0,57
N.2.1	290	0,32	0,39	0,44	0,50	0,57	0,64	0,70	0,75
N.2.2	255	0,32	0,39	0,44	0,50	0,57	0,64	0,70	0,75
N.2.3	205	0,32	0,39	0,44	0,50	0,57	0,64	0,70	0,75
N.3.1	230	0,38	0,47	0,53	0,61	0,70	0,80	0,89	0,95
N.3.2	140	0,24	0,29	0,33	0,37	0,43	0,48	0,53	0,57
N.3.3									
N.4.1									
S.1.1									
S.1.2									
S.2.1									
S.2.2									
S.2.3									
S.3.1									
S.3.2									
S.3.3									
H.1.1									
H.1.2									
H.1.3									
H.1.4									
H.2.1									
H.3.1									
O.1.1									
O.1.2									
O.2.1									
O.2.2									
O.3.1									

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

Index	with through coolant v_c (m/min)	10 794 ..., 10 796 ... 8xD / 12xD Ø 4–6 f (mm/rev)	Ø 6–7	Ø 7–8	Ø 8–10	Ø 10–12	Ø 12–15	Ø 15–17	Ø 17–20
P.1.1	125	0,28	0,34	0,37	0,42	0,48	0,54	0,59	0,63
P.1.2	120	0,27	0,32	0,35	0,40	0,46	0,52	0,56	0,60
P.1.3	115	0,25	0,31	0,34	0,38	0,44	0,49	0,54	0,57
P.1.4	110	0,24	0,29	0,32	0,36	0,41	0,47	0,51	0,54
P.1.5	105	0,23	0,27	0,30	0,34	0,39	0,44	0,48	0,52
P.2.1	125	0,33	0,40	0,44	0,50	0,57	0,64	0,70	0,75
P.2.2	115	0,30	0,36	0,40	0,45	0,51	0,58	0,63	0,68
P.2.3	105	0,27	0,32	0,36	0,41	0,46	0,52	0,57	0,61
P.2.4	80	0,25	0,29	0,32	0,36	0,41	0,46	0,50	0,54
P.3.1	85	0,27	0,32	0,36	0,41	0,46	0,52	0,57	0,61
P.3.2	70	0,23	0,27	0,30	0,33	0,38	0,43	0,47	0,50
P.3.3	70	0,18	0,22	0,24	0,26	0,30	0,33	0,36	0,38
P.4.1	70	0,18	0,21	0,24	0,27	0,30	0,34	0,38	0,40
P.4.2	70	0,18	0,21	0,24	0,27	0,30	0,34	0,38	0,40
M.1.1	55	0,13	0,16	0,18	0,20	0,23	0,26	0,28	0,30
M.2.1	50	0,11	0,14	0,15	0,17	0,20	0,22	0,24	0,26
M.3.1	50	0,11	0,14	0,15	0,17	0,20	0,22	0,24	0,26
K.1.1	140	0,38	0,47	0,53	0,61	0,70	0,80	0,89	0,95
K.1.2	115	0,32	0,39	0,44	0,50	0,57	0,64	0,70	0,75
K.2.1	185	0,37	0,45	0,50	0,57	0,66	0,75	0,82	0,88
K.2.2	115	0,32	0,39	0,44	0,50	0,57	0,64	0,70	0,75
K.3.1	105	0,35	0,42	0,47	0,53	0,61	0,69	0,76	0,81
K.3.2	90	0,29	0,35	0,38	0,43	0,49	0,55	0,60	0,64
N.1.1	380	0,28	0,34	0,37	0,42	0,48	0,54	0,59	0,63
N.1.2	345	0,25	0,31	0,34	0,38	0,44	0,49	0,54	0,57
N.2.1	290	0,32	0,39	0,44	0,50	0,57	0,64	0,70	0,75
N.2.2	255	0,32	0,39	0,44	0,50	0,57	0,64	0,70	0,75
N.2.3	205	0,32	0,39	0,44	0,50	0,57	0,64	0,70	0,75
N.3.1	230	0,38	0,47	0,53	0,61	0,70	0,80	0,89	0,95
N.3.2	140	0,24	0,29	0,33	0,37	0,43	0,48	0,53	0,57
N.3.3									
N.4.1									
S.1.1									
S.1.2									
S.2.1									
S.2.2									
S.2.3									
S.3.1									
S.3.2									
S.3.3									
H.1.1									
H.1.2									
H.1.3									
H.1.4									
H.2.1									
H.3.1									
O.1.1									
O.1.2									
O.2.1									
O.2.2									
O.3.1									

Cutting data standard values – WTX – Speed VA

Index	10 773 ...						10 774 ...					
	5xD						12xD					
	with through coolant	Ø 3–5	Ø 5–8	Ø 8–12	Ø 12–16	Ø 16–20	with through coolant	Ø 3–5	Ø 5–8	Ø 8–12	Ø 12–16	Ø 16–20
	v_c (m/min)	f (mm/rev)					v_c (m/min)	f (mm/rev)				
P.1.1	165	0,12	0,17	0,23	0,28	0,31	110	0,09	0,13	0,18	0,22	0,25
P.1.2	160	0,11	0,16	0,22	0,26	0,30	105	0,09	0,13	0,17	0,21	0,24
P.1.3	150	0,11	0,15	0,20	0,25	0,28	100	0,09	0,12	0,16	0,20	0,23
P.1.4	145	0,10	0,15	0,19	0,24	0,27	95	0,08	0,12	0,16	0,19	0,22
P.1.5	135	0,10	0,14	0,18	0,23	0,26	90	0,08	0,11	0,15	0,18	0,20
P.2.1	165	0,14	0,20	0,27	0,33	0,37	110	0,11	0,16	0,21	0,26	0,29
P.2.2	150	0,13	0,18	0,24	0,30	0,34	100	0,10	0,14	0,19	0,24	0,27
P.2.3	135	0,11	0,16	0,22	0,27	0,30	90	0,09	0,13	0,17	0,21	0,24
P.2.4	105	0,11	0,15	0,19	0,24	0,27	70	0,09	0,12	0,16	0,19	0,21
P.3.1	115	0,11	0,16	0,22	0,27	0,30	75	0,09	0,13	0,17	0,21	0,24
P.3.2	90	0,10	0,13	0,18	0,22	0,25	60	0,08	0,11	0,14	0,17	0,20
P.3.3	90	0,08	0,11	0,14	0,17	0,19	60	0,06	0,09	0,11	0,14	0,15
P.4.1	70	0,08	0,11	0,14	0,18	0,20	60	0,06	0,09	0,11	0,14	0,16
P.4.2	70	0,08	0,11	0,14	0,18	0,20	60	0,06	0,09	0,11	0,14	0,16
M.1.1	80	0,09	0,13	0,18	0,22	0,25	55	0,08	0,11	0,14	0,18	0,20
M.2.1	75	0,08	0,11	0,15	0,19	0,21	50	0,06	0,09	0,12	0,15	0,17
M.3.1	75	0,08	0,11	0,15	0,19	0,21	50	0,06	0,09	0,12	0,15	0,17
K.1.1	150	0,15	0,24	0,33	0,41	0,47	120	0,15	0,24	0,33	0,41	0,47
K.1.2	125	0,14	0,20	0,27	0,33	0,37	100	0,14	0,20	0,27	0,33	0,37
K.2.1	200	0,15	0,22	0,31	0,38	0,43	160	0,15	0,22	0,31	0,38	0,43
K.2.2	125	0,14	0,20	0,27	0,33	0,37	100	0,14	0,20	0,27	0,33	0,37
K.3.1	115	0,15	0,21	0,29	0,35	0,40	90	0,15	0,21	0,29	0,35	0,40
K.3.2	100	0,12	0,17	0,23	0,28	0,32	80	0,12	0,17	0,23	0,28	0,32
N.1.1												
N.1.2												
N.2.1												
N.2.2												
N.2.3												
N.3.1							200	0,15	0,24	0,33	0,41	0,47
N.3.2	145	0,14	0,20	0,27	0,33	0,37	120	0,14	0,20	0,27	0,33	0,37
N.3.3												
N.4.1												
S.1.1	35	0,07	0,10	0,14	0,17	0,19	30	0,06	0,09	0,11	0,14	0,16
S.1.2	25	0,05	0,07	0,10	0,12	0,14	20	0,04	0,06	0,08	0,10	0,11
S.2.1	25	0,05	0,07	0,10	0,12	0,14	20	0,04	0,06	0,08	0,10	0,11
S.2.2	20	0,06	0,09	0,12	0,15	0,17	15	0,05	0,08	0,10	0,13	0,14
S.2.3	20	0,05	0,07	0,10	0,12	0,14	15	0,04	0,06	0,08	0,10	0,11
S.3.1												
S.3.2	35	0,08	0,11	0,15	0,18	0,20	30	0,06	0,09	0,12	0,15	0,17
S.3.3	30	0,06	0,09	0,12	0,15	0,17	25	0,05	0,08	0,10	0,13	0,14
H.1.1												
H.1.2												
H.1.3												
H.1.4												
H.2.1												
H.3.1												
O.1.1												
O.1.2												
O.2.1												
O.2.2												
O.3.1												

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

Cutting data standard values – WTX – H

Index	10 777 ...								
		3xD							
	without through coolant	Ø 2–3	Ø 3–4	Ø 4–5	Ø 5–6	Ø 6–8	Ø 8–10	Ø 10–12	Ø 12–14
	v_c (m/min)	f (mm/rev)							
P.1.1	80	0,05	0,07	0,08	0,10	0,14	0,18	0,21	0,24
P.1.2	70	0,04	0,05	0,07	0,08	0,12	0,15	0,18	0,21
P.1.3	70	0,04	0,05	0,07	0,08	0,12	0,15	0,18	0,21
P.1.4	70	0,04	0,05	0,07	0,08	0,12	0,15	0,18	0,21
P.1.5	80	0,05	0,07	0,08	0,10	0,14	0,18	0,21	0,24
P.2.1	75	0,05	0,07	0,08	0,10	0,14	0,18	0,21	0,24
P.2.2	70	0,05	0,06	0,08	0,09	0,13	0,16	0,19	0,22
P.2.3	70	0,04	0,05	0,07	0,08	0,12	0,15	0,18	0,21
P.2.4	70	0,04	0,05	0,07	0,08	0,12	0,15	0,18	0,21
P.3.1									
P.3.2									
P.3.3									
P.4.1									
P.4.2									
M.1.1									
M.2.1									
M.3.1									
K.1.1	**85**	0,08	0,10	0,13	0,15	0,19	0,23	0,27	0,34
K.1.2	**80**	0,08	0,10	0,13	0,15	0,19	0,23	0,27	0,34
K.2.1	**85**	0,06	0,08	0,10	0,13	0,16	0,18	0,22	0,25
K.2.2	**80**	0,06	0,08	0,10	0,13	0,16	0,18	0,22	0,25
K.3.1	**85**	0,06	0,08	0,10	0,13	0,16	0,18	0,22	0,25
K.3.2	**80**	0,06	0,08	0,10	0,13	0,16	0,18	0,22	0,25
N.1.1									
N.1.2									
N.2.1									
N.2.2									
N.2.3									
N.3.1									
N.3.2									
N.3.3									
N.4.1									
S.1.1									
S.1.2									
S.2.1									
S.2.2									
S.2.3									
S.3.1									
S.3.2									
S.3.3									
H.1.1	**30**	0,04	0,05	0,05	0,06	0,07	0,08	0,09	0,10
H.1.2	**15**	0,04	0,05	0,05	0,06	0,07	0,08	0,09	0,10
H.1.3	**10**	0,03	0,04	0,04	0,05	0,06	0,06	0,07	0,07
H.1.4	**10**	0,03	0,04	0,04	0,05	0,06	0,06	0,07	0,07
H.2.1									
H.3.1									
O.1.1									
O.1.2									
O.2.1									
O.2.2									
O.3.1									

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

Cutting data standard values – WTX – Quattro 4F

Index	10 735 ...						10 736 ...					
	5xD						8xD					
	with through coolant	Ø 3–5	Ø 5–8	Ø 8–12	Ø 12–16	Ø 16–20	with through coolant	Ø 3–5	Ø 5–8	Ø 8–12	Ø 12–16	Ø 16–20
	v_c (m/min)	f (mm/rev)					v_c (m/min)	f (mm/rev)				
P.1.1	110	0,12	0,17	0,23	0,28	0,31	110	0,12	0,17	0,23	0,28	0,31
P.1.2	105	0,11	0,16	0,22	0,26	0,30	105	0,11	0,16	0,22	0,26	0,30
P.1.3	100	0,11	0,15	0,20	0,25	0,28	100	0,11	0,15	0,20	0,25	0,28
P.1.4	95	0,10	0,15	0,19	0,24	0,27	95	0,10	0,15	0,19	0,24	0,27
P.1.5	90	0,10	0,14	0,18	0,23	0,26	90	0,10	0,14	0,18	0,23	0,26
P.2.1	110	0,14	0,20	0,27	0,33	0,37	110	0,14	0,20	0,27	0,33	0,37
P.2.2	100	0,13	0,18	0,24	0,30	0,34	100	0,13	0,18	0,24	0,30	0,34
P.2.3	90	0,11	0,16	0,22	0,27	0,30	90	0,11	0,16	0,22	0,27	0,30
P.2.4	70	0,11	0,15	0,19	0,24	0,27	70	0,11	0,15	0,19	0,24	0,27
P.3.1	75	0,11	0,16	0,22	0,27	0,30	75	0,11	0,16	0,22	0,27	0,30
P.3.2	60	0,10	0,13	0,18	0,22	0,25	60	0,10	0,13	0,18	0,22	0,25
P.3.3	60	0,08	0,11	0,14	0,17	0,19	60	0,08	0,11	0,14	0,17	0,19
P.4.1	60	0,08	0,11	0,14	0,18	0,20	60	0,08	0,11	0,14	0,18	0,20
P.4.2	60	0,08	0,11	0,14	0,18	0,20	60	0,08	0,11	0,14	0,18	0,20
M.1.1												
M.2.1												
M.3.1												
K.1.1	120	0,15	0,24	0,33	0,41	0,47	120	0,15	0,24	0,33	0,41	0,47
K.1.2	100	0,14	0,20	0,27	0,33	0,37	100	0,14	0,20	0,27	0,33	0,37
K.2.1	160	0,15	0,22	0,31	0,38	0,43	160	0,15	0,22	0,31	0,38	0,43
K.2.2	100	0,14	0,20	0,27	0,33	0,37	100	0,14	0,20	0,27	0,33	0,37
K.3.1	90	0,15	0,21	0,29	0,35	0,40	90	0,15	0,21	0,29	0,35	0,40
K.3.2	80	0,12	0,17	0,23	0,28	0,32	80	0,12	0,17	0,23	0,28	0,32
N.1.1												
N.1.2												
N.2.1												
N.2.2												
N.2.3												
N.3.1												
N.3.2												
N.3.3												
N.4.1												
S.1.1												
S.1.2												
S.2.1												
S.2.2												
S.2.3												
S.3.1												
S.3.2												
S.3.3												
H.1.1	25	0,05	0,07	0,09	0,12	0,13	25	0,05	0,07	0,09	0,12	0,13
H.1.2												
H.1.3												
H.1.4												
H.2.1	30	0,06	0,09	0,12	0,15	0,17	30	0,06	0,09	0,12	0,15	0,17
H.3.1												
O.1.1												
O.1.2												
O.2.1												
O.2.2												
O.3.1												

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

Index	10 737 ...					
	12xD					
	with through coolant	Ø 3–5	Ø 5–8	Ø 8–12	Ø 12–16	Ø 16–20
	v_c (m/min)	f (mm/rev)				
P.1.1	110	0,12	0,17	0,23	0,28	0,31
P.1.2	105	0,11	0,16	0,22	0,26	0,30
P.1.3	100	0,11	0,15	0,20	0,25	0,28
P.1.4	95	0,10	0,15	0,19	0,24	0,27
P.1.5	90	0,10	0,14	0,18	0,23	0,26
P.2.1	110	0,14	0,20	0,27	0,33	0,37
P.2.2	100	0,13	0,18	0,24	0,30	0,34
P.2.3	90	0,11	0,16	0,22	0,27	0,30
P.2.4	70	0,11	0,15	0,19	0,24	0,27
P.3.1	75	0,11	0,16	0,22	0,27	0,30
P.3.2	60	0,10	0,13	0,18	0,22	0,25
P.3.3	60	0,08	0,11	0,14	0,17	0,19
P.4.1	60	0,08	0,11	0,14	0,18	0,20
P.4.2	60	0,08	0,11	0,14	0,18	0,20
M.1.1						
M.2.1						
M.3.1						
K.1.1	120	0,15	0,24	0,33	0,41	0,47
K.1.2	100	0,14	0,20	0,27	0,33	0,37
K.2.1	160	0,15	0,22	0,31	0,38	0,43
K.2.2	100	0,14	0,20	0,27	0,33	0,37
K.3.1	90	0,15	0,21	0,29	0,35	0,40
K.3.2	80	0,12	0,17	0,23	0,28	0,32
N.1.1						
N.1.2						
N.2.1						
N.2.2						
N.2.3						
N.3.1						
N.3.2						
N.3.3						
N.4.1						
S.1.1						
S.1.2						
S.2.1						
S.2.2						
S.2.3						
S.3.1						
S.3.2						
S.3.3						
H.1.1	25	0,05	0,07	0,09	0,12	0,13
H.1.2						
H.1.3						
H.1.4						
H.2.1	30	0,06	0,09	0,12	0,15	0,17
H.3.1						
O.1.1						
O.1.2						
O.2.1						
O.2.2						
O.3.1						

Cutting data standard values – WTX – AL

Index	10 791 ...											
	5xD											
	with through coolant	Ø 2–3	Ø 3–4	Ø 4–5	Ø 5–6	Ø 6–8	Ø 8–10	Ø 10–12	Ø 12–14	Ø 14–16	Ø 16–18	Ø 18–20
	v_c (m/min)	f (mm/rev)										
P.1.1												
P.1.2												
P.1.3												
P.1.4												
P.1.5												
P.2.1												
P.2.2												
P.2.3												
P.2.4												
P.3.1												
P.3.2												
P.3.3												
P.4.1												
P.4.2												
M.1.1												
M.2.1												
M.3.1												
K.1.1												
K.1.2												
K.2.1												
K.2.2												
K.3.1												
K.3.2												
N.1.1	360	0,15	0,20	0,23	0,25	0,29	0,32	0,35	0,40	0,45	0,50	0,55
N.1.2	400	0,15	0,20	0,23	0,25	0,29	0,32	0,35	0,40	0,45	0,50	0,55
N.2.1	360	0,20	0,23	0,25	0,28	0,32	0,35	0,38	0,45	0,50	0,55	0,60
N.2.2	400	0,20	0,23	0,25	0,28	0,32	0,35	0,38	0,45	0,50	0,55	0,60
N.2.3	350	0,15	0,20	0,23	0,25	0,29	0,32	0,35	0,40	0,45	0,50	0,55
N.3.1	200	0,08	0,11	0,13	0,15	0,19	0,23	0,26	0,30	0,34	0,38	0,42
N.3.2	200	0,08	0,11	0,13	0,15	0,19	0,23	0,26	0,30	0,34	0,38	0,42
N.3.3	160	0,08	0,11	0,13	0,15	0,19	0,23	0,26	0,30	0,34	0,38	0,42
N.4.1												
S.1.1												
S.1.2												
S.2.1												
S.2.2												
S.2.3												
S.3.1												
S.3.2												
S.3.3												
H.1.1												
H.1.2												
H.1.3												
H.1.4												
H.2.1												
H.3.1												
O.1.1												
O.1.2												
O.2.1												
O.2.2												
O.3.1												

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

Index	10 792 ...										
	8xD										
	with through coolant	Ø 3–4	Ø 4–5	Ø 5–6	Ø 6–8	Ø 8–10	Ø 10–12	Ø 12–14	Ø 14–16	Ø 16–18	Ø 18–20
	v_c (m/min)	f (mm/rev)									
P.1.1											
P.1.2											
P.1.3											
P.1.4											
P.1.5											
P.2.1											
P.2.2											
P.2.3											
P.2.4											
P.3.1											
P.3.2											
P.3.3											
P.4.1											
P.4.2											
M.1.1											
M.2.1											
M.3.1											
K.1.1											
K.1.2											
K.2.1											
K.2.2											
K.3.1											
K.3.2											
N.1.1	320	0,20	0,23	0,25	0,29	0,32	0,35	0,40	0,45	0,50	0,55
N.1.2	360	0,20	0,23	0,25	0,29	0,32	0,35	0,40	0,45	0,50	0,55
N.2.1	320	0,23	0,25	0,28	0,32	0,35	0,38	0,45	0,50	0,55	0,60
N.2.2	360	0,23	0,25	0,28	0,32	0,35	0,38	0,45	0,50	0,55	0,60
N.2.3	310	0,20	0,23	0,25	0,29	0,32	0,35	0,40	0,45	0,50	0,55
N.3.1	160	0,11	0,13	0,15	0,19	0,23	0,26	0,30	0,34	0,38	0,42
N.3.2	160	0,11	0,13	0,15	0,19	0,23	0,26	0,30	0,34	0,38	0,42
N.3.3	140	0,11	0,13	0,15	0,19	0,23	0,26	0,30	0,34	0,38	0,42
N.4.1											
S.1.1											
S.1.2											
S.2.1											
S.2.2											
S.2.3											
S.3.1											
S.3.2											
S.3.3											
H.1.1											
H.1.2											
H.1.3											
H.1.4											
H.2.1											
H.3.1											
O.1.1											
O.1.2											
O.2.1											
O.2.2											
O.3.1											

Cutting data standard values – WTX – AL

Index	10 793 ...										
	12xD										
	with through coolant	Ø 3–4	Ø 4–5	Ø 5–6	Ø 6–8	Ø 8–10	Ø 10–12	Ø 12–14	Ø 14–16	Ø 16–18	Ø 18–20
	v_c (m/min)	f (mm/rev)									
P.1.1											
P.1.2											
P.1.3											
P.1.4											
P.1.5											
P.2.1											
P.2.2											
P.2.3											
P.2.4											
P.3.1											
P.3.2											
P.3.3											
P.4.1											
P.4.2											
M.1.1											
M.2.1											
M.3.1											
K.1.1											
K.1.2											
K.2.1											
K.2.2											
K.3.1											
K.3.2											
N.1.1	**250**	0,20	0,23	0,25	0,29	0,32	0,35	0,40	0,45	0,50	0,55
N.1.2	**280**	0,20	0,23	0,25	0,29	0,32	0,35	0,40	0,45	0,50	0,55
N.2.1	**250**	0,23	0,25	0,28	0,32	0,35	0,38	0,45	0,50	0,55	0,60
N.2.2	**280**	0,23	0,25	0,28	0,32	0,35	0,38	0,45	0,50	0,55	0,60
N.2.3	**245**	0,20	0,23	0,25	0,29	0,32	0,35	0,40	0,45	0,50	0,55
N.3.1	**150**	0,11	0,13	0,15	0,19	0,23	0,26	0,30	0,34	0,38	0,42
N.3.2	**150**	0,11	0,13	0,15	0,19	0,23	0,26	0,30	0,34	0,38	0,42
N.3.3	**120**	0,11	0,13	0,15	0,19	0,23	0,26	0,30	0,34	0,38	0,42
N.4.1											
S.1.1											
S.1.2											
S.2.1											
S.2.2											
S.2.3											
S.3.1											
S.3.2											
S.3.3											
H.1.1											
H.1.2											
H.1.3											
H.1.4											
H.2.1											
H.3.1											
O.1.1											
O.1.2											
O.2.1											
O.2.2											
O.3.1											

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

Cutting data standard values – WTX – HFDS – high-feed drill

Index	10 797 ...						10 798 ...					
	3xD						5xD					
	with through coolant	Ø 6–8	Ø 8–10	Ø 10–12	Ø 12–14	Ø 14–16	with through coolant	Ø 6–8	Ø 8–10	Ø 10–12	Ø 12–14	Ø 14–16
	v_c (m/min)	f (mm/rev)					v_c (m/min)	f (mm/rev)				
P.1.1	**100**	0,3–0,4	0,5–0,6	0,7–0,8	0,8–0,9	0,8–0,9	**100**	0,3–0,4	0,5–0,6	0,7–0,8	0,8–0,9	0,8–0,9
P.1.2	**100**	0,3–0,4	0,5–0,6	0,7–0,8	0,8–0,9	0,8–0,9	**100**	0,3–0,4	0,5–0,6	0,7–0,8	0,8–0,9	0,8–0,9
P.1.3	**100**	0,3–0,4	0,5–0,6	0,7–0,8	0,8–0,9	0,8–0,9	**100**	0,3–0,4	0,5–0,6	0,7–0,8	0,8–0,9	0,8–0,9
P.1.4	**100**	0,3–0,4	0,5–0,6	0,7–0,8	0,8–0,9	0,8–0,9	**100**	0,3–0,4	0,5–0,6	0,7–0,8	0,8–0,9	0,8–0,9
P.1.5	**100**	0,3–0,4	0,5–0,6	0,7–0,8	0,8–0,9	0,8–0,9	**100**	0,3–0,4	0,5–0,6	0,7–0,8	0,8–0,9	0,8–0,9
P.2.1	**100**	0,3–0,4	0,5–0,6	0,7–0,8	0,8–0,9	0,8–0,9	**100**	0,3–0,4	0,5–0,6	0,7–0,8	0,8–0,9	0,8–0,9
P.2.2	**100**	0,3–0,4	0,5–0,6	0,7–0,8	0,8–0,9	0,8–0,9	**100**	0,3–0,4	0,5–0,6	0,7–0,8	0,8–0,9	0,8–0,9
P.2.3	**90**	0,3–0,4	0,5–0,6	0,7–0,8	0,8–0,9	0,8–0,9	**90**	0,3–0,4	0,5–0,6	0,7–0,8	0,8–0,9	0,8–0,9
P.2.4	**90**	0,3–0,4	0,5–0,6	0,7–0,8	0,8–0,9	0,8–0,9	**90**	0,3–0,4	0,5–0,6	0,7–0,8	0,8–0,9	0,8–0,9
P.3.1	**85**	0,2–0,3	0,3–0,4	0,5–0,6	0,6–0,7	0,6–0,7	**85**	0,2–0,3	0,3–0,4	0,5–0,6	0,6–0,7	0,6–0,7
P.3.2	**70**	0,2–0,3	0,3–0,4	0,5–0,6	0,6–0,7	0,6–0,7	**70**	0,2–0,3	0,3–0,4	0,5–0,6	0,6–0,7	0,6–0,7
P.3.3	**70**	0,2–0,3	0,3–0,4	0,5–0,6	0,6–0,7	0,6–0,7	**70**	0,2–0,3	0,3–0,4	0,5–0,6	0,6–0,7	0,6–0,7
P.4.1	**65**	0,2–0,3	0,3–0,4	0,5–0,6	0,6–0,7	0,6–0,7	**65**	0,2–0,3	0,3–0,4	0,5–0,6	0,6–0,7	0,6–0,7
P.4.2	**65**	0,2–0,3	0,3–0,4	0,5–0,6	0,6–0,7	0,6–0,7	**65**	0,2–0,3	0,3–0,4	0,5–0,6	0,6–0,7	0,6–0,7
M.1.1	65	0,2–0,25	0,3–0,4	0,5–0,6	0,6–0,6	0,6–0,6	65	0,2–0,25	0,3–0,4	0,5–0,6	0,6–0,6	0,6–0,6
M.2.1	65	0,2–0,25	0,3–0,4	0,5–0,6	0,6–0,6	0,6–0,6	65	0,2–0,25	0,3–0,4	0,5–0,6	0,6–0,6	0,6–0,6
M.3.1	55	0,2–0,25	0,3–0,4	0,5–0,6	0,6–0,6	0,6–0,6	55	0,2–0,25	0,3–0,4	0,5–0,6	0,6–0,6	0,6–0,6
K.1.1	**130**	0,4–0,6	0,5–0,7	0,6–0,8	0,7–0,9	0,7–0,9	**130**	0,4–0,6	0,5–0,7	0,6–0,8	0,7–0,9	0,7–0,9
K.1.2	**130**	0,4–0,6	0,5–0,7	0,6–0,8	0,7–0,9	0,7–0,9	**130**	0,4–0,6	0,5–0,7	0,6–0,8	0,7–0,9	0,7–0,9
K.2.1	**130**	0,4–0,6	0,5–0,7	0,6–0,8	0,7–0,9	0,7–0,9	**130**	0,4–0,6	0,5–0,7	0,6–0,8	0,7–0,9	0,7–0,9
K.2.2	**130**	0,4–0,6	0,5–0,7	0,6–0,8	0,7–0,9	0,7–0,9	**130**	0,4–0,6	0,5–0,7	0,6–0,8	0,7–0,9	0,7–0,9
K.3.1	**130**	0,4–0,6	0,5–0,7	0,6–0,8	0,7–0,9	0,7–0,9	**130**	0,4–0,6	0,5–0,7	0,6–0,8	0,7–0,9	0,7–0,9
K.3.2	**130**	0,4–0,6	0,5–0,7	0,6–0,8	0,7–0,9	0,7–0,9	**130**	0,4–0,6	0,5–0,7	0,6–0,8	0,7–0,9	0,7–0,9
N.1.1												
N.1.2												
N.2.1												
N.2.2												
N.2.3												
N.3.1	130	0,4–0,6	0,5–0,7	0,6–0,8	0,7–0,9	0,7–0,9	130	0,4–0,6	0,5–0,7	0,6–0,8	0,7–0,9	0,7–0,9
N.3.2	130	0,4–0,6	0,5–0,7	0,6–0,8	0,7–0,9	0,7–0,9	130	0,4–0,6	0,5–0,7	0,6–0,8	0,7–0,9	0,7–0,9
N.3.3	130	0,4–0,6	0,5–0,7	0,6–0,8	0,7–0,9	0,7–0,9	130	0,4–0,6	0,5–0,7	0,6–0,8	0,7–0,9	0,7–0,9
N.4.1	130	0,4–0,6	0,5–0,7	0,6–0,8	0,7–0,9	0,7–0,9	130	0,4–0,6	0,5–0,7	0,6–0,8	0,7–0,9	0,7–0,9
S.1.1												
S.1.2												
S.2.1												
S.2.2												
S.2.3												
S.3.1												
S.3.2												
S.3.3												
H.1.1												
H.1.2												
H.1.3												
H.1.4												
H.2.1												
H.3.1												
O.1.1												
O.1.2												
O.2.1												
O.2.2												
O.3.1	110	0,6	0,6	0,8	0,9	1,0	110	0,6	0,6	0,8	0,9	1,0

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

Cutting data standard values – WTX – 180

Index	10 720 ...					
	3xD					
	with through coolant	Ø 3–5	Ø 5–8	Ø 8–12	Ø 12–16	Ø 16–20
	v_c (m/min)	f (mm/rev)				
P.1.1	90	0,09	0,13	0,18	0,22	0,25
P.1.2	85	0,09	0,13	0,17	0,21	0,24
P.1.3	80	0,09	0,12	0,16	0,20	0,23
P.1.4	75	0,08	0,12	0,16	0,19	0,22
P.1.5	70	0,08	0,11	0,15	0,18	0,20
P.2.1	90	0,11	0,16	0,21	0,26	0,29
P.2.2	80	0,10	0,14	0,19	0,24	0,27
P.2.3	70	0,09	0,13	0,17	0,21	0,24
P.2.4	55	0,09	0,12	0,16	0,19	0,21
P.3.1	60	0,09	0,13	0,17	0,21	0,24
P.3.2	50	0,08	0,11	0,14	0,17	0,20
P.3.3	50	0,06	0,09	0,11	0,14	0,15
P.4.1	50	0,06	0,09	0,11	0,14	0,16
P.4.2	50	0,06	0,09	0,11	0,14	0,16
M.1.1	45	0,06	0,09	0,11	0,14	0,16
M.2.1	40	0,05	0,07	0,10	0,12	0,14
M.3.1	40	0,05	0,07	0,10	0,12	0,14
K.1.1	95	0,12	0,19	0,26	0,33	0,38
K.1.2	80	0,11	0,16	0,21	0,26	0,30
K.2.1	130	0,12	0,18	0,25	0,30	0,35
K.2.2	80	0,11	0,16	0,21	0,26	0,30
K.3.1	70	0,12	0,17	0,23	0,28	0,32
K.3.2	65	0,10	0,14	0,18	0,22	0,25
N.1.1						
N.1.2						
N.2.1						
N.2.2						
N.2.3						
N.3.1						
N.3.2						
N.3.3						
N.4.1						
S.1.1						
S.1.2						
S.2.1						
S.2.2						
S.2.3						
S.3.1						
S.3.2						
S.3.3						
H.1.1						
H.1.2						
H.1.3						
H.1.4						
H.2.1						
H.3.1						
O.1.1						
O.1.2						
O.2.1						
O.2.2						
O.3.1						

Index	10 721 ... 5xD with through coolant v_c (m/min)	Ø 3–5	Ø 5–8	Ø 8–12	Ø 12–16	Ø 16–20
		f (mm/rev)				
P.1.1	90	0,09	0,13	0,18	0,22	0,25
P.1.2	85	0,09	0,13	0,17	0,21	0,24
P.1.3	80	0,09	0,12	0,16	0,20	0,23
P.1.4	75	0,08	0,12	0,16	0,19	0,22
P.1.5	70	0,08	0,11	0,15	0,18	0,20
P.2.1	90	0,11	0,16	0,21	0,26	0,29
P.2.2	80	0,10	0,14	0,19	0,24	0,27
P.2.3	70	0,09	0,13	0,17	0,21	0,24
P.2.4	55	0,09	0,12	0,16	0,19	0,21
P.3.1	60	0,09	0,13	0,17	0,21	0,24
P.3.2	50	0,08	0,11	0,14	0,17	0,20
P.3.3	50	0,06	0,09	0,11	0,14	0,15
P.4.1	50	0,06	0,09	0,11	0,14	0,16
P.4.2	50	0,06	0,09	0,11	0,14	0,16
M.1.1	45	0,06	0,09	0,11	0,14	0,16
M.2.1	40	0,05	0,07	0,10	0,12	0,14
M.3.1	40	0,05	0,07	0,10	0,12	0,14
K.1.1	95	0,12	0,19	0,26	0,33	0,38
K.1.2	80	0,11	0,16	0,21	0,26	0,30
K.2.1	130	0,12	0,18	0,25	0,30	0,35
K.2.2	80	0,11	0,16	0,21	0,26	0,30
K.3.1	70	0,12	0,17	0,23	0,28	0,32
K.3.2	65	0,10	0,14	0,18	0,22	0,25
N.1.1						
N.1.2						
N.2.1						
N.2.2						
N.2.3						
N.3.1						
N.3.2						
N.3.3						
N.4.1						
S.1.1						
S.1.2						
S.2.1						
S.2.2						
S.2.3						
S.3.1						
S.3.2						
S.3.3						
H.1.1						
H.1.2						
H.1.3						
H.1.4						
H.2.1						
H.3.1						
O.1.1						
O.1.2						
O.2.1						
O.2.2						
O.3.1						

Application Note:

Spot drilling with reduced feedrate

1. Feedrate f [mm/U] should be multiplied by correction factor A_k
2. Drill with reduced feed rate until tool is fully engaged in workpiece by approximately 0.25 x D
3. Retract from the hole at double the feed rate f in mm/U – only with inclined surfaces

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

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

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

Cutting data standard values – type UNI

Index	11 706 ..., 11 707 ..., 11 709 ..., 11 710 ...																
		3xD / 5xD															
	without through coolant	≤ Ø 1	Ø 1–1,25	Ø 1,25–1,5	Ø 1,5–2	Ø 2–2,5	Ø 2,5–3	Ø 3–4	Ø 4–5	Ø 5–6	Ø 6–8	Ø 8–10	Ø 10–12	Ø 12–14	Ø 14–16	Ø 16–18	Ø 18–20
	v_c (m/min)	f (mm/rev)															
P.1.1	90	0,03	0,04	0,05	0,06	0,08	0,09	0,13	0,16	0,19	0,22	0,25	0,28	0,31	0,34	0,36	0,38
P.1.2	75	0,03	0,03	0,04	0,05	0,07	0,08	0,12	0,15	0,18	0,21	0,24	0,27	0,30	0,32	0,35	0,37
P.1.3	75	0,03	0,03	0,04	0,05	0,07	0,08	0,12	0,15	0,18	0,21	0,24	0,27	0,30	0,32	0,35	0,37
P.1.4	70	0,02	0,02	0,03	0,03	0,04	0,05	0,06	0,08	0,10	0,12	0,14	0,15	0,18	0,20	0,23	0,25
P.1.5	70	0,02	0,02	0,03	0,03	0,04	0,05	0,06	0,08	0,10	0,12	0,14	0,15	0,18	0,20	0,23	0,25
P.2.1	80	0,03	0,04	0,05	0,06	0,08	0,09	0,13	0,16	0,19	0,22	0,25	0,28	0,31	0,34	0,36	0,38
P.2.2	70	0,03	0,03	0,04	0,05	0,07	0,08	0,12	0,15	0,18	0,21	0,24	0,27	0,30	0,32	0,35	0,37
P.2.3	70	0,02	0,02	0,03	0,03	0,04	0,05	0,06	0,08	0,10	0,12	0,14	0,15	0,18	0,20	0,23	0,25
P.2.4	55	0,02	0,02	0,03	0,03	0,04	0,05	0,06	0,08	0,10	0,12	0,14	0,15	0,18	0,20	0,23	0,25
P.3.1	70	0,02	0,02	0,03	0,03	0,04	0,05	0,06	0,08	0,10	0,12	0,14	0,15	0,18	0,20	0,23	0,25
P.3.2	55	0,02	0,02	0,03	0,03	0,04	0,05	0,06	0,08	0,10	0,12	0,14	0,15	0,18	0,20	0,23	0,25
P.3.3																	
P.4.1																	
P.4.2																	
M.1.1																	
M.2.1																	
M.3.1																	
K.1.1	90	0,04	0,05	0,06	0,08	0,10	0,13	0,16	0,18	0,22	0,25	0,29	0,33	0,37	0,40	0,43	0,46
K.1.2	75	0,04	0,05	0,06	0,08	0,10	0,13	0,16	0,18	0,22	0,25	0,29	0,33	0,37	0,40	0,43	0,46
K.2.1	75	0,03	0,03	0,04	0,05	0,06	0,08	0,10	0,13	0,15	0,18	0,20	0,23	0,26	0,30	0,34	0,38
K.2.2	70	0,03	0,03	0,04	0,05	0,06	0,08	0,10	0,13	0,15	0,18	0,20	0,23	0,26	0,30	0,34	0,38
K.3.1	75	0,03	0,03	0,04	0,05	0,06	0,08	0,10	0,13	0,15	0,18	0,20	0,23	0,26	0,30	0,34	0,38
K.3.2	70	0,03	0,03	0,04	0,05	0,06	0,08	0,10	0,13	0,15	0,18	0,20	0,23	0,26	0,30	0,34	0,38
N.1.1																	
N.1.2																	
N.2.1																	
N.2.2																	
N.2.3																	
N.3.1																	
N.3.2																	
N.3.3																	
N.4.1																	
S.1.1																	
S.1.2																	
S.2.1																	
S.2.2																	
S.2.3																	
S.3.1																	
S.3.2																	
S.3.3																	
H.1.1																	
H.1.2																	
H.1.3																	
H.1.4																	
H.2.1																	
H.3.1																	
O.1.1																	
O.1.2																	
O.2.1																	
O.2.2																	
O.3.1																	

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

Index	11 700 ..., 11 701 ..., 11 702 ..., 11 703 ...																
		3xD / 5xD															
	with through coolant	≤ Ø 1	Ø 1–1,25	Ø 1,25–1,5	Ø 1,5–2	Ø 2–2,5	Ø 2,5–3	Ø 3–4	Ø 4–5	Ø 5–6	Ø 6–8	Ø 8–10	Ø 10–12	Ø 12–14	Ø 14–16	Ø 16–18	Ø 18–20
	v_c (m/min)	f (mm/rev)															
P.1.1	115	0,03	0,04	0,05	0,06	0,08	0,09	0,13	0,16	0,19	0,22	0,25	0,28	0,31	0,34	0,36	0,38
P.1.2	95	0,03	0,03	0,04	0,05	0,07	0,08	0,12	0,15	0,18	0,21	0,24	0,27	0,30	0,32	0,35	0,37
P.1.3	95	0,03	0,03	0,04	0,05	0,07	0,08	0,12	0,15	0,18	0,21	0,24	0,27	0,30	0,32	0,35	0,37
P.1.4	85	0,02	0,02	0,03	0,03	0,04	0,05	0,06	0,08	0,10	0,12	0,14	0,15	0,18	0,20	0,23	0,25
P.1.5	85	0,02	0,02	0,03	0,03	0,04	0,05	0,06	0,08	0,10	0,12	0,14	0,15	0,18	0,20	0,23	0,25
P.2.1	95	0,03	0,04	0,05	0,06	0,08	0,09	0,13	0,16	0,19	0,22	0,25	0,28	0,31	0,34	0,36	0,38
P.2.2	85	0,03	0,03	0,04	0,05	0,07	0,08	0,12	0,15	0,18	0,21	0,24	0,27	0,30	0,32	0,35	0,37
P.2.3	85	0,02	0,02	0,03	0,03	0,04	0,05	0,06	0,08	0,10	0,12	0,14	0,15	0,18	0,20	0,23	0,25
P.2.4	70	0,02	0,02	0,03	0,03	0,04	0,05	0,06	0,08	0,10	0,12	0,14	0,15	0,18	0,20	0,23	0,25
P.3.1	85	0,02	0,02	0,03	0,03	0,04	0,05	0,06	0,08	0,10	0,12	0,14	0,15	0,18	0,20	0,23	0,25
P.3.2	70	0,02	0,02	0,03	0,03	0,04	0,05	0,06	0,08	0,10	0,12	0,14	0,15	0,18	0,20	0,23	0,25
P.3.3	40	0,02	0,02	0,03	0,03	0,04	0,05	0,06	0,08	0,10	0,12	0,14	0,15	0,18	0,20	0,23	0,25
P.4.1	50	0,02	0,02	0,03	0,03	0,04	0,05	0,06	0,08	0,10	0,12	0,14	0,15	0,18	0,20	0,23	0,25
P.4.2	30	0,02	0,02	0,03	0,03	0,04	0,05	0,06	0,08	0,10	0,12	0,14	0,15	0,18	0,20	0,23	0,25
M.1.1	35	0,02	0,02	0,03	0,03	0,04	0,05	0,06	0,08	0,10	0,12	0,14	0,15	0,18	0,20	0,23	0,25
M.2.1	35	0,02	0,02	0,03	0,03	0,04	0,05	0,06	0,08	0,10	0,12	0,14	0,15	0,18	0,20	0,23	0,25
M.3.1	35	0,02	0,02	0,03	0,03	0,04	0,05	0,06	0,08	0,10	0,12	0,14	0,15	0,18	0,20	0,23	0,25
K.1.1	115	0,04	0,05	0,06	0,08	0,10	0,13	0,16	0,18	0,22	0,25	0,29	0,33	0,37	0,40	0,43	0,46
K.1.2	95	0,04	0,05	0,06	0,08	0,10	0,13	0,16	0,18	0,22	0,25	0,29	0,33	0,37	0,40	0,43	0,46
K.2.1	95	0,03	0,03	0,04	0,05	0,06	0,08	0,10	0,13	0,15	0,18	0,20	0,23	0,26	0,30	0,34	0,38
K.2.2	90	0,03	0,03	0,04	0,05	0,06	0,08	0,10	0,13	0,15	0,18	0,20	0,23	0,26	0,30	0,34	0,38
K.3.1	95	0,03	0,03	0,04	0,05	0,06	0,08	0,10	0,13	0,15	0,18	0,20	0,23	0,26	0,30	0,34	0,38
K.3.2	90	0,03	0,03	0,04	0,05	0,06	0,08	0,10	0,13	0,15	0,18	0,20	0,23	0,26	0,30	0,34	0,38
N.1.1	200	0,03	0,03	0,04	0,05	0,07	0,08	0,12	0,15	0,18	0,21	0,24	0,27	0,30	0,32	0,35	0,37
N.1.2	200	0,03	0,03	0,04	0,05	0,07	0,08	0,12	0,15	0,18	0,21	0,24	0,27	0,30	0,32	0,35	0,37
N.2.1	160	0,03	0,03	0,04	0,05	0,06	0,08	0,10	0,11	0,13	0,15	0,18	0,20	0,23	0,26	0,29	0,33
N.2.2	160	0,03	0,03	0,04	0,05	0,06	0,08	0,10	0,11	0,13	0,15	0,18	0,20	0,23	0,26	0,29	0,33
N.2.3	140	0,02	0,02	0,03	0,03	0,04	0,05	0,06	0,08	0,10	0,12	0,14	0,15	0,18	0,20	0,23	0,25
N.3.1	120	0,02	0,02	0,03	0,03	0,04	0,05	0,07	0,08	0,10	0,11	0,12	0,13	0,14	0,15	0,16	0,18
N.3.2	120	0,02	0,02	0,03	0,03	0,04	0,05	0,07	0,08	0,10	0,11	0,12	0,13	0,14	0,15	0,16	0,18
N.3.3	100	0,02	0,02	0,03	0,03	0,04	0,05	0,07	0,08	0,10	0,11	0,12	0,13	0,14	0,15	0,16	0,18
N.4.1																	
S.1.1																	
S.1.2																	
S.2.1																	
S.2.2																	
S.2.3																	
S.3.1																	
S.3.2																	
S.3.3																	
H.1.1																	
H.1.2																	
H.1.3																	
H.1.4																	
H.2.1																	
H.3.1																	
O.1.1																	
O.1.2																	
O.2.1																	
O.2.2																	
O.3.1																	

Cutting data standard values – type UNI

Index	11 704 ...										
		8xD									
	with through coolant	Ø 3–4	Ø 4–5	Ø 5–6	Ø 6–8	Ø 8–10	Ø 10–12	Ø 12–14	Ø 14–16	Ø 16–18	Ø 18–20
	v_c (m/min)	f (mm/rev)									
P.1.1	100	0,13	0,16	0,19	0,22	0,25	0,28	0,31	0,34	0,36	0,38
P.1.2	80	0,12	0,15	0,18	0,21	0,24	0,27	0,30	0,32	0,35	0,37
P.1.3	80	0,12	0,15	0,18	0,21	0,24	0,27	0,30	0,32	0,35	0,37
P.1.4	75	0,06	0,08	0,10	0,12	0,14	0,15	0,18	0,20	0,23	0,25
P.1.5	75	0,06	0,08	0,10	0,12	0,14	0,15	0,18	0,20	0,23	0,25
P.2.1	80	0,13	0,16	0,19	0,22	0,25	0,28	0,31	0,34	0,36	0,38
P.2.2	75	0,12	0,15	0,18	0,21	0,24	0,27	0,30	0,32	0,35	0,37
P.2.3	75	0,06	0,08	0,10	0,12	0,14	0,15	0,18	0,20	0,23	0,25
P.2.4	60	0,06	0,08	0,10	0,12	0,14	0,15	0,18	0,20	0,23	0,25
P.3.1	75	0,06	0,08	0,10	0,12	0,14	0,15	0,18	0,20	0,23	0,25
P.3.2	60	0,06	0,08	0,10	0,12	0,14	0,15	0,18	0,20	0,23	0,25
P.3.3	35	0,06	0,08	0,10	0,12	0,14	0,15	0,18	0,20	0,23	0,25
P.4.1	40	0,06	0,08	0,10	0,12	0,14	0,15	0,18	0,20	0,23	0,25
P.4.2	25	0,06	0,08	0,10	0,12	0,14	0,15	0,18	0,20	0,23	0,25
M.1.1	30	0,06	0,08	0,10	0,12	0,14	0,15	0,18	0,20	0,23	0,25
M.2.1	30	0,06	0,08	0,10	0,12	0,14	0,15	0,18	0,20	0,23	0,25
M.3.1	30	0,06	0,08	0,10	0,12	0,14	0,15	0,18	0,20	0,23	0,25
K.1.1	100	0,16	0,18	0,22	0,25	0,29	0,33	0,37	0,40	0,43	0,46
K.1.2	80	0,16	0,18	0,22	0,25	0,29	0,33	0,37	0,40	0,43	0,46
K.2.1	80	0,10	0,13	0,15	0,18	0,20	0,23	0,26	0,30	0,34	0,38
K.2.2	75	0,10	0,13	0,15	0,18	0,20	0,23	0,26	0,30	0,34	0,38
K.3.1	80	0,10	0,13	0,15	0,18	0,20	0,23	0,26	0,30	0,34	0,38
K.3.2	75	0,10	0,13	0,15	0,18	0,20	0,23	0,26	0,30	0,34	0,38
N.1.1											
N.1.2											
N.2.1											
N.2.2											
N.2.3											
N.3.1											
N.3.2											
N.3.3											
N.4.1											
S.1.1											
S.1.2											
S.2.1											
S.2.2											
S.2.3											
S.3.1											
S.3.2											
S.3.3											
H.1.1											
H.1.2											
H.1.3											
H.1.4											
H.2.1											
H.3.1											
O.1.1											
O.1.2											
O.2.1											
O.2.2											
O.3.1											

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

Index	with through coolant	11 705 ... 12xD Ø 3–4	Ø 4–5	Ø 5–6	Ø 6–8	Ø 8–10	Ø 10–12	Ø 12–14	Ø 14–16	Ø 16–18	Ø 18–20
	v_c (m/min)	f (mm/rev)									
P.1.1	90	0,13	0,16	0,19	0,22	0,25	0,28	0,31	0,34	0,36	0,38
P.1.2	75	0,12	0,15	0,18	0,21	0,24	0,27	0,30	0,32	0,35	0,37
P.1.3	75	0,12	0,15	0,18	0,21	0,24	0,27	0,30	0,32	0,35	0,37
P.1.4	70	0,06	0,08	0,10	0,12	0,14	0,15	0,18	0,20	0,23	0,25
P.1.5	70	0,06	0,08	0,10	0,12	0,14	0,15	0,18	0,20	0,23	0,25
P.2.1	80	0,13	0,16	0,19	0,22	0,25	0,28	0,31	0,34	0,36	0,38
P.2.2	70	0,12	0,15	0,18	0,21	0,24	0,27	0,30	0,32	0,35	0,37
P.2.3	70	0,06	0,08	0,10	0,12	0,14	0,15	0,18	0,20	0,23	0,25
P.2.4	55	0,06	0,08	0,10	0,12	0,14	0,15	0,18	0,20	0,23	0,25
P.3.1	70	0,06	0,08	0,10	0,12	0,14	0,15	0,18	0,20	0,23	0,25
P.3.2	55	0,06	0,08	0,10	0,12	0,14	0,15	0,18	0,20	0,23	0,25
P.3.3	35	0,06	0,08	0,10	0,12	0,14	0,15	0,18	0,20	0,23	0,25
P.4.1	40	0,06	0,08	0,10	0,12	0,14	0,15	0,18	0,20	0,23	0,25
P.4.2	25	0,06	0,08	0,10	0,12	0,14	0,15	0,18	0,20	0,23	0,25
M.1.1	30	0,06	0,08	0,10	0,12	0,14	0,15	0,18	0,20	0,23	0,25
M.2.1	30	0,06	0,08	0,10	0,12	0,14	0,15	0,18	0,20	0,23	0,25
M.3.1	30	0,06	0,08	0,10	0,12	0,14	0,15	0,18	0,20	0,23	0,25
K.1.1	90	0,16	0,18	0,22	0,25	0,29	0,33	0,37	0,40	0,43	0,46
K.1.2	75	0,16	0,18	0,22	0,25	0,29	0,33	0,37	0,40	0,43	0,46
K.2.1	75	0,10	0,13	0,15	0,18	0,20	0,23	0,26	0,30	0,34	0,38
K.2.2	70	0,10	0,13	0,15	0,18	0,20	0,23	0,26	0,30	0,34	0,38
K.3.1	75	0,10	0,13	0,15	0,18	0,20	0,23	0,26	0,30	0,34	0,38
K.3.2	70	0,10	0,13	0,15	0,18	0,20	0,23	0,26	0,30	0,34	0,38
N.1.1											
N.1.2											
N.2.1											
N.2.2											
N.2.3											
N.3.1											
N.3.2											
N.3.3											
N.4.1											
S.1.1											
S.1.2											
S.2.1											
S.2.2											
S.2.3											
S.3.1											
S.3.2											
S.3.3											
H.1.1											
H.1.2											
H.1.3											
H.1.4											
H.2.1											
H.3.1											
O.1.1											
O.1.2											
O.2.1											
O.2.2											
O.3.1											

Cutting data standard values – type VA

Index	11 711 ..., 11 712 ...																
		3xD															
	without through coolant	≤ Ø 1	Ø 1–1,25	Ø 1,25–1,5	Ø 1,5–2	Ø 2–2,5	Ø 2,5–3	Ø 3–4	Ø 4–5	Ø 5–6	Ø 6–8	Ø 8–10	Ø 10–12	Ø 12–14	Ø 14–16	Ø 16–18	Ø 18–20
	v_c (m/min)	f (mm/rev)															
P.1.1	75	0,03	0,03	0,04	0,05	0,07	0,08	0,10	0,11	0,12	0,15	0,18	0,20	0,23	0,24	0,26	0,27
P.1.2																	
P.1.3																	
P.1.4																	
P.1.5																	
P.2.1	65	0,03	0,03	0,04	0,05	0,07	0,08	0,10	0,11	0,12	0,15	0,18	0,20	0,23	0,24	0,26	0,27
P.2.2	60	0,03	0,03	0,04	0,05	0,07	0,08	0,10	0,11	0,12	0,15	0,18	0,20	0,23	0,24	0,26	0,27
P.2.3																	
P.2.4																	
P.3.1																	
P.3.2																	
P.3.3																	
P.4.1	**45**	0,03	0,03	0,04	0,05	0,07	0,08	0,10	0,11	0,12	0,15	0,18	0,20	0,23	0,24	0,26	0,27
P.4.2	**30**	0,01	0,02	0,02	0,03	0,04	0,05	0,06	0,08	0,09	0,11	0,13	0,15	0,17	0,19	0,20	0,21
M.1.1	**35**	0,01	0,02	0,02	0,03	0,04	0,05	0,06	0,08	0,09	0,11	0,13	0,15	0,17	0,19	0,20	0,21
M.2.1	**35**	0,01	0,02	0,02	0,03	0,04	0,05	0,06	0,08	0,09	0,11	0,13	0,15	0,17	0,19	0,20	0,21
M.3.1	**35**	0,01	0,02	0,02	0,03	0,04	0,05	0,06	0,08	0,09	0,11	0,13	0,15	0,17	0,19	0,20	0,21
K.1.1																	
K.1.2																	
K.2.1																	
K.2.2																	
K.3.1																	
K.3.2																	
N.1.1	160	0,04	0,05	0,06	0,08	0,09	0,11	0,13	0,15	0,16	0,20	0,24	0,27	0,31	0,32	0,34	0,36
N.1.2	160	0,04	0,05	0,06	0,08	0,09	0,11	0,13	0,15	0,16	0,20	0,24	0,27	0,31	0,32	0,34	0,36
N.2.1	130	0,04	0,05	0,06	0,08	0,09	0,11	0,13	0,15	0,16	0,20	0,24	0,27	0,31	0,32	0,34	0,36
N.2.2	130	0,04	0,05	0,06	0,08	0,09	0,11	0,13	0,15	0,16	0,20	0,24	0,27	0,31	0,32	0,34	0,36
N.2.3	110	0,03	0,04	0,04	0,05	0,07	0,08	0,10	0,11	0,12	0,15	0,18	0,20	0,23	0,24	0,26	0,27
N.3.1	160	0,04	0,05	0,06	0,08	0,09	0,11	0,13	0,15	0,16	0,20	0,24	0,27	0,31	0,32	0,34	0,36
N.3.2	160	0,04	0,05	0,06	0,08	0,09	0,11	0,13	0,15	0,16	0,20	0,24	0,27	0,31	0,32	0,34	0,36
N.3.3	225	0,03	0,04	0,04	0,05	0,07	0,08	0,10	0,11	0,12	0,15	0,18	0,20	0,23	0,24	0,26	0,27
N.4.1																	
S.1.1																	
S.1.2																	
S.2.1																	
S.2.2																	
S.2.3																	
S.3.1	30	0,002	0,004	0,01	0,01	0,01	0,02	0,03	0,03	0,04	0,06	0,07	0,09	0,10	0,11	0,12	0,12
S.3.2	20	0,002	0,004	0,01	0,01	0,01	0,02	0,03	0,03	0,04	0,06	0,07	0,09	0,10	0,11	0,12	0,12
S.3.3																	
H.1.1																	
H.1.2																	
H.1.3																	
H.1.4																	
H.2.1																	
H.3.1																	
O.1.1	100	0,01	0,02	0,02	0,03	0,04	0,05	0,06	0,08	0,09	0,11	0,13	0,15	0,17	0,19	0,2	0,21
O.1.2	80	0,002	0,004	0,01	0,01	0,02	0,02	0,03	0,04	0,05	0,07	0,09	0,11	0,13	0,13	0,14	0,15
O.2.1																	
O.2.2																	
O.3.1																	

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

Index	11 713 ..., 11 714 ..., 11 715 ..., 11 716 ...																	
		3xD / 5xD																
	with through coolant	≤ Ø 1	Ø 1–1,25	Ø 1,25–1,5	Ø 1,5–2	Ø 2–2,5	Ø 2,5–3	Ø 3–4	Ø 4–5	Ø 5–6	Ø 6–8	Ø 8–10	Ø 10–12	Ø 12–14	Ø 14–16	Ø 16–18	Ø 18–20
	v_c (m/min)	f (mm/rev)																
P.1.1	85	0,03	0,03	0,04	0,05	0,07	0,08	0,10	0,11	0,12	0,15	0,18	0,20	0,23	0,24	0,26	0,27
P.1.2																		
P.1.3																		
P.1.4																		
P.1.5																		
P.2.1	75	0,03	0,03	0,04	0,05	0,07	0,08	0,10	0,11	0,12	0,15	0,18	0,20	0,23	0,24	0,26	0,27
P.2.2	65	0,03	0,03	0,04	0,05	0,07	0,08	0,10	0,11	0,12	0,15	0,18	0,20	0,23	0,24	0,26	0,27
P.2.3																		
P.2.4																		
P.3.1																		
P.3.2																		
P.3.3																		
P.4.1	**55**	0,03	0,03	0,04	0,05	0,07	0,08	0,10	0,11	0,12	0,15	0,18	0,20	0,23	0,24	0,26	0,27
P.4.2	**40**	0,01	0,02	0,02	0,03	0,04	0,05	0,06	0,08	0,09	0,11	0,13	0,15	0,17	0,19	0,20	0,21
M.1.1	**45**	0,01	0,02	0,02	0,03	0,04	0,05	0,06	0,08	0,09	0,11	0,13	0,15	0,17	0,19	0,20	0,21
M.2.1	**45**	0,01	0,02	0,02	0,03	0,04	0,05	0,06	0,08	0,09	0,11	0,13	0,15	0,17	0,19	0,20	0,21
M.3.1	**45**	0,01	0,02	0,02	0,03	0,04	0,05	0,06	0,08	0,09	0,11	0,13	0,15	0,17	0,19	0,20	0,21
K.1.1																		
K.1.2																		
K.2.1																		
K.2.2																		
K.3.1																		
K.3.2																		
N.1.1	**200**	0,04	0,05	0,06	0,08	0,09	0,11	0,13	0,15	0,16	0,20	0,24	0,27	0,31	0,32	0,34	0,36
N.1.2	**200**	0,04	0,05	0,06	0,08	0,09	0,11	0,13	0,15	0,16	0,20	0,24	0,27	0,31	0,32	0,34	0,36
N.2.1	**160**	0,04	0,05	0,06	0,08	0,09	0,11	0,13	0,15	0,16	0,20	0,24	0,27	0,31	0,32	0,34	0,36
N.2.2	**160**	0,04	0,05	0,06	0,08	0,09	0,11	0,13	0,15	0,16	0,20	0,24	0,27	0,31	0,32	0,34	0,36
N.2.3	**140**	0,03	0,03	0,04	0,05	0,07	0,08	0,10	0,11	0,12	0,15	0,18	0,2	0,23	0,24	0,26	0,27
N.3.1	**200**	0,04	0,05	0,06	0,08	0,09	0,11	0,13	0,15	0,16	0,20	0,24	0,27	0,31	0,32	0,34	0,36
N.3.2	**200**	0,04	0,05	0,06	0,08	0,09	0,11	0,13	0,15	0,16	0,20	0,24	0,27	0,31	0,32	0,34	0,36
N.3.3	**280**	0,03	0,03	0,04	0,05	0,07	0,08	0,10	0,11	0,12	0,15	0,18	0,20	0,23	0,24	0,26	0,27
N.4.1																		
S.1.1																		
S.1.2																		
S.2.1	15	0,002	0,004	0,01	0,01	0,01	0,02	0,03	0,03	0,04	0,06	0,07	0,09	0,10	0,11	0,12	0,12
S.2.2	15	0,002	0,004	0,01	0,01	0,01	0,02	0,03	0,03	0,04	0,06	0,07	0,09	0,10	0,11	0,12	0,12
S.2.3	15	0,002	0,004	0,01	0,01	0,01	0,02	0,03	0,03	0,04	0,06	0,07	0,09	0,10	0,11	0,12	0,12
S.3.1	35	0,002	0,004	0,01	0,01	0,01	0,02	0,03	0,03	0,04	0,06	0,07	0,09	0,10	0,11	0,12	0,12
S.3.2	25	0,002	0,004	0,01	0,01	0,01	0,02	0,03	0,03	0,04	0,06	0,07	0,09	0,10	0,11	0,12	0,12
S.3.3																		
H.1.1																		
H.1.2																		
H.1.3																		
H.1.4																		
H.2.1																		
H.3.1																		
O.1.1	120	0,01	0,02	0,02	0,03	0,04	0,05	0,06	0,08	0,09	0,11	0,13	0,15	0,17	0,19	0,20	0,21
O.1.2	100	0,002	0,004	0,01	0,01	0,02	0,02	0,03	0,04	0,05	0,07	0,09	0,11	0,13	0,13	0,14	0,15
O.2.1																		
O.2.2																		
O.3.1																		

Cutting data standard values – Type N – Twist drills

Index	10 700 ..., 10 710 ...														
	3xD / 5xD														
	without through coolant	≤ Ø 1	Ø 1–1,5	Ø 1,5–2	Ø 2–3	Ø 3–4	Ø 4–5	Ø 5–6	Ø 6–8	Ø 8–10	Ø 10–12	Ø 12–14	Ø 14–16	Ø 16–18	Ø 18–20
	v_c (m/min)	f (mm/rev)													
P.1.1	75	0,03	0,05	0,07	0,10	0,12	0,14	0,16	0,2	0,24	0,28	0,31	0,35	0,40	0,45
P.1.2	65	0,03	0,05	0,07	0,10	0,12	0,14	0,16	0,2	0,24	0,28	0,31	0,35	0,40	0,45
P.1.3	65	0,03	0,05	0,07	0,10	0,12	0,14	0,16	0,2	0,24	0,28	0,31	0,35	0,40	0,45
P.1.4	65	0,03	0,04	0,05	0,08	0,10	0,11	0,13	0,15	0,18	0,20	0,23	0,26	0,29	0,33
P.1.5	65	0,03	0,04	0,05	0,08	0,10	0,11	0,13	0,15	0,18	0,20	0,23	0,26	0,29	0,33
P.2.1	70	0,03	0,05	0,07	0,10	0,12	0,14	0,16	0,20	0,24	0,28	0,31	0,35	0,40	0,45
P.2.2	65	0,03	0,04	0,05	0,08	0,10	0,11	0,13	0,15	0,18	0,20	0,23	0,26	0,29	0,33
P.2.3	65	0,03	0,04	0,05	0,08	0,10	0,11	0,13	0,15	0,18	0,20	0,23	0,26	0,29	0,33
P.2.4	50	0,03	0,04	0,05	0,08	0,10	0,11	0,13	0,15	0,18	0,20	0,23	0,26	0,29	0,33
P.3.1	65	0,03	0,04	0,05	0,08	0,10	0,11	0,13	0,15	0,18	0,20	0,23	0,26	0,29	0,33
P.3.2	50	0,03	0,04	0,05	0,08	0,10	0,11	0,13	0,15	0,18	0,20	0,23	0,26	0,29	0,33
P.3.3															
P.4.1															
P.4.2															
M.1.1															
M.2.1															
M.3.1															
K.1.1	70	0,03	0,04	0,05	0,08	0,10	0,11	0,13	0,15	0,18	0,20	0,23	0,26	0,29	0,33
K.1.2	70	0,03	0,04	0,05	0,08	0,10	0,11	0,13	0,15	0,18	0,20	0,23	0,26	0,29	0,33
K.2.1	70	0,03	0,04	0,05	0,08	0,10	0,11	0,13	0,15	0,18	0,20	0,23	0,26	0,29	0,33
K.2.2	70	0,03	0,04	0,05	0,08	0,10	0,11	0,13	0,15	0,18	0,20	0,23	0,26	0,29	0,33
K.3.1	70	0,03	0,04	0,05	0,08	0,10	0,11	0,13	0,15	0,18	0,20	0,23	0,26	0,29	0,33
K.3.2	70	0,03	0,04	0,05	0,08	0,10	0,11	0,13	0,15	0,18	0,20	0,23	0,26	0,29	0,33
N.1.1	200	0,01	0,01	0,01	0,02	0,03	0,04	0,05	0,07	0,09	0,11	0,13	0,15	0,18	0,20
N.1.2	200	0,01	0,01	0,01	0,02	0,03	0,04	0,05	0,07	0,09	0,11	0,13	0,15	0,18	0,20
N.2.1	160	0,01	0,01	0,01	0,02	0,03	0,04	0,05	0,07	0,09	0,11	0,13	0,15	0,18	0,20
N.2.2	160	0,01	0,01	0,01	0,02	0,03	0,04	0,05	0,07	0,09	0,11	0,13	0,15	0,18	0,20
N.2.3	130	0,01	0,01	0,01	0,02	0,03	0,04	0,05	0,07	0,09	0,11	0,13	0,15	0,18	0,20
N.3.1	160	0,003	0,01	0,01	0,01	0,02	0,03	0,04	0,06	0,09	0,11	0,14	0,16	0,18	0,20
N.3.2	160	0,003	0,01	0,01	0,01	0,02	0,03	0,04	0,06	0,09	0,11	0,14	0,16	0,18	0,20
N.3.3	100	0,003	0,01	0,01	0,01	0,02	0,03	0,04	0,06	0,09	0,11	0,14	0,16	0,18	0,20
N.4.1	200	0,01	0,01	0,01	0,02	0,03	0,04	0,05	0,07	0,09	0,11	0,13	0,15	0,18	0,20
S.1.1															
S.1.2															
S.2.1															
S.2.2															
S.2.3															
S.3.1	30	0,002	0,003	0,003	0,01	0,01	0,02	0,03	0,04	0,05	0,06	0,07	0,08	0,09	0,10
S.3.2	20	0,002	0,003	0,003	0,01	0,01	0,02	0,03	0,04	0,05	0,06	0,07	0,08	0,09	0,10
S.3.3															
H.1.1															
H.1.2															
H.1.3															
H.1.4															
H.2.1															
H.3.1															
O.1.1															
O.1.2															
O.2.1															
O.2.2															
O.3.1															

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

Cutting data standard values – WTX – SB

Index	10 767 ..., 10 772 ..., 10 783 ..., 10 788 ...					
	3xD					
	without through coolant	with through coolant	Ø 2–5	Ø 5–8	Ø 8–12	Ø 12–16
	v_c (m/min)		f (mm/rev)			
P.1.1	110	120	0,13	0,18	0,25	0,30
P.1.2	105	115	0,12	0,18	0,24	0,29
P.1.3	100	110	0,12	0,17	0,23	0,28
P.1.4	95	105	0,11	0,16	0,21	0,26
P.1.5	90	100	0,11	0,15	0,20	0,25
P.2.1	105	120	0,15	0,22	0,29	0,36
P.2.2	95	110	0,14	0,20	0,27	0,33
P.2.3	85	100	0,13	0,18	0,24	0,29
P.2.4	65	75	0,12	0,16	0,21	0,26
P.3.1	70	85	0,12	0,18	0,24	0,29
P.3.2	60	65	0,11	0,15	0,20	0,24
P.3.3	50	65	0,09	0,12	0,15	0,19
P.4.1	50	65	0,08	0,12	0,16	0,19
P.4.2	50	65	0,08	0,12	0,16	0,19
M.1.1						
M.2.1						
M.3.1						
K.1.1	85	120	0,17	0,26	0,36	0,45
K.1.2	75	100	0,15	0,22	0,29	0,36
K.2.1	100	160	0,17	0,25	0,34	0,42
K.2.2	75	100	0,15	0,22	0,29	0,36
K.3.1	80	90	0,16	0,23	0,32	0,39
K.3.2	70	80	0,14	0,19	0,25	0,31
N.1.1						
N.1.2						
N.2.1						
N.2.2						
N.2.3						
N.3.1						
N.3.2						
N.3.3						
N.4.1						
S.1.1						
S.1.2						
S.2.1						
S.2.2						
S.2.3						
S.3.1						
S.3.2						
S.3.3						
H.1.1	25	25	0,06	0,08	0,11	0,14
H.1.2						
H.1.3						
H.1.4						
H.2.1	35	35	0,08	0,11	0,14	0,18
H.3.1						
O.1.1						
O.1.2						
O.2.1						
O.2.2						
O.3.1						

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

Cutting data standard values – WTX – Mini

Index	11 770 ...				
	5xD				
	without through coolant	≤ Ø 1,0	> Ø 1,0–1,5	> Ø 1,5–2,0	> Ø 2,0–2,9
	v_c (m/min)	f (mm/rev)			
P.1.1	75	0,01	0,01	0,013	0,015
P.1.2	65	0,02	0,02	0,025	0,03
P.1.3	65	0,01	0,01	0,013	0,015
P.1.4	65	0,01	0,01	0,013	0,015
P.1.5	70	0,01	0,01	0,013	0,015
P.2.1	70	0,01	0,01	0,013	0,015
P.2.2	65	0,01	0,01	0,013	0,015
P.2.3	65	0,02	0,02	0,025	0,03
P.2.4	65	0,01	0,01	0,013	0,015
P.3.1					
P.3.2					
P.3.3					
P.4.1					
P.4.2					
M.1.1					
M.2.1					
M.3.1					
K.1.1	70	0,01	0,01	0,013	0,015
K.1.2	70	0,01	0,01	0,013	0,015
K.2.1	70	0,01	0,01	0,013	0,015
K.2.2	70	0,01	0,01	0,013	0,015
K.3.1	70	0,01	0,01	0,013	0,015
K.3.2	70	0,01	0,01	0,013	0,015
N.1.1	200	0,01	0,01	0,013	0,015
N.1.2	200	0,01	0,01	0,013	0,015
N.2.1	160	0,01	0,01	0,013	0,015
N.2.2	180	0,01	0,01	0,013	0,015
N.2.3	130	0,01	0,01	0,013	0,015
N.3.1	160	0,01	0,01	0,013	0,015
N.3.2	160	0,01	0,01	0,013	0,015
N.3.3	100	0,01	0,01	0,013	0,015
N.4.1	200	0,01	0,01	0,013	0,015
S.1.1					
S.1.2					
S.2.1					
S.2.2					
S.2.3					
S.3.1	30	0,01	0,01	0,013	0,015
S.3.2	20	0,01	0,01	0,013	0,015
S.3.3					
H.1.1					
H.1.2					
H.1.3					
H.1.4					
H.2.1					
H.3.1					
O.1.1					
O.1.2					
O.2.1					
O.2.2					
O.3.1					

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

Cutting data standard values – WTX – Micro

Index	10 693 ...							
	5xD							
	with through coolant	MMS	≤ Ø 1,0	> Ø 1,0–1,25	> Ø 1,25–1,5	> Ø 1,5–2,0	> Ø 2,0–2,5	> Ø 2,5–3,0
	v_c (m/min)		f (mm/rev)					
P.1.1	70	51	0,028	0,034	0,045	0,070	0,095	0,115
P.1.2	60	43	0,028	0,034	0,045	0,070	0,095	0,115
P.1.3	60	43	0,028	0,034	0,045	0,070	0,095	0,115
P.1.4	60	43	0,028	0,034	0,045	0,070	0,095	0,115
P.1.5	60	43	0,028	0,034	0,045	0,070	0,095	0,115
P.2.1	70	51	0,028	0,034	0,045	0,070	0,095	0,115
P.2.2	60	43	0,028	0,034	0,045	0,070	0,095	0,115
P.2.3	60	43	0,028	0,034	0,045	0,070	0,095	0,115
P.2.4								
P.3.1	60	43	0,028	0,034	0,045	0,070	0,095	0,115
P.3.2	50	34	0,028	0,034	0,045	0,070	0,095	0,115
P.3.3								
P.4.1	50		0,015	0,018	0,024	0,040	0,060	0,080
P.4.2	35		0,015	0,018	0,024	0,040	0,060	0,080
M.1.1	40		0,015	0,018	0,024	0,040	0,060	0,080
M.2.1	40		0,015	0,018	0,024	0,040	0,060	0,080
M.3.1	40		0,015	0,018	0,024	0,040	0,060	0,080
K.1.1	70	51	0,028	0,034	0,045	0,070	0,095	0,115
K.1.2	70	51	0,028	0,034	0,045	0,070	0,095	0,115
K.2.1	70	51	0,028	0,034	0,045	0,070	0,095	0,115
K.2.2	70	51	0,028	0,034	0,045	0,070	0,095	0,115
K.3.1	70	51	0,028	0,034	0,045	0,070	0,095	0,115
K.3.2	70	51	0,028	0,034	0,045	0,070	0,095	0,115
N.1.1								
N.1.2								
N.2.1								
N.2.2								
N.2.3								
N.3.1								
N.3.2								
N.3.3								
N.4.1								
S.1.1	15		0,015	0,018	0,024	0,040	0,060	0,080
S.1.2	15		0,015	0,018	0,024	0,040	0,060	0,080
S.2.1	10		0,015	0,018	0,024	0,040	0,060	0,080
S.2.2	10		0,015	0,018	0,024	0,040	0,060	0,080
S.2.3								
S.3.1	30		0,015	0,018	0,024	0,040	0,060	0,080
S.3.2	20		0,015	0,018	0,024	0,040	0,060	0,080
S.3.3								
H.1.1								
H.1.2								
H.1.3								
H.1.4								
H.2.1								
H.3.1								
O.1.1								
O.1.2								
O.2.1								
O.2.2								
O.3.1								

Cutting data standard values – WTX – Micro

Index	10 694 ..., 10 695 ...							
	8xD / 12xD							
	with through coolant	MMS	≤ Ø 1,0	> Ø 1,0–1,25	> Ø 1,25–1,5	> Ø 1,5–2,0	> Ø 2,0–2,5	> Ø 2,5–3,0
	v_c (m/min)		f (mm/rev)					
P.1.1	70	51	0,028	0,034	0,045	0,070	0,095	0,115
P.1.2	60	43	0,028	0,034	0,045	0,070	0,095	0,115
P.1.3	60	43	0,028	0,034	0,045	0,070	0,095	0,115
P.1.4	60	43	0,028	0,034	0,045	0,070	0,095	0,115
P.1.5	60	43	0,028	0,034	0,045	0,070	0,095	0,115
P.2.1	70	51	0,028	0,034	0,045	0,070	0,095	0,115
P.2.2	60	43	0,028	0,034	0,045	0,070	0,095	0,115
P.2.3	60	43	0,028	0,034	0,045	0,070	0,095	0,115
P.2.4								
P.3.1	60	43	0,028	0,034	0,045	0,070	0,095	0,115
P.3.2	50	34	0,028	0,034	0,045	0,070	0,095	0,115
P.3.3								
P.4.1	50		0,015	0,018	0,024	0,040	0,060	0,080
P.4.2	35		0,015	0,018	0,024	0,040	0,060	0,080
M.1.1	40		0,015	0,018	0,024	0,040	0,060	0,080
M.2.1	40		0,015	0,018	0,024	0,040	0,060	0,080
M.3.1	40		0,015	0,018	0,024	0,040	0,060	0,080
K.1.1	70	51	0,028	0,034	0,045	0,070	0,095	0,115
K.1.2	70	51	0,028	0,034	0,045	0,070	0,095	0,115
K.2.1	70	51	0,028	0,034	0,045	0,070	0,095	0,115
K.2.2	70	51	0,028	0,034	0,045	0,070	0,095	0,115
K.3.1	70	51	0,028	0,034	0,045	0,070	0,095	0,115
K.3.2	70	51	0,028	0,034	0,045	0,070	0,095	0,115
N.1.1								
N.1.2								
N.2.1								
N.2.2								
N.2.3								
N.3.1								
N.3.2								
N.3.3								
N.4.1								
S.1.1	15		0,015	0,018	0,024	0,040	0,060	0,080
S.1.2	15		0,015	0,018	0,024	0,040	0,060	0,080
S.2.1	10		0,015	0,018	0,024	0,040	0,060	0,080
S.2.2	10		0,015	0,018	0,024	0,040	0,060	0,080
S.2.3								
S.3.1	30		0,015	0,018	0,024	0,040	0,060	0,080
S.3.2	20		0,015	0,018	0,024	0,040	0,060	0,080
S.3.3								
H.1.1								
H.1.2								
H.1.3								
H.1.4								
H.2.1								
H.3.1								
O.1.1								
O.1.2								
O.2.1								
O.2.2								
O.3.1								

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

Index	10 696 ..., 10 697 ..., 10 698 ..., 10 699 ...						
	16xD / 20xD / 25xD / 30xD						
	with through coolant	≤ Ø 1,0	> Ø 1,0–1,25	> Ø 1,25–1,5	> Ø 1,5–2,0	> Ø 2,0–2,5	> Ø 2,5–3,0
	v_c (m/min)	f (mm/rev)					
P.1.1	58	0,028	0,034	0,045	0,070	0,095	0,115
P.1.2	50	0,028	0,034	0,045	0,070	0,095	0,115
P.1.3	50	0,028	0,034	0,045	0,070	0,095	0,115
P.1.4	50	0,028	0,034	0,045	0,070	0,095	0,115
P.1.5	50	0,028	0,034	0,045	0,070	0,095	0,115
P.2.1	58	0,028	0,034	0,045	0,070	0,095	0,115
P.2.2	50	0,028	0,034	0,045	0,070	0,095	0,115
P.2.3	50	0,028	0,034	0,045	0,070	0,095	0,115
P.2.4							
P.3.1	50	0,028	0,034	0,045	0,070	0,095	0,115
P.3.2	42	0,028	0,034	0,045	0,070	0,095	0,115
P.3.3							
P.4.1	42	0,015	0,018	0,024	0,040	0,060	0,080
P.4.2	30	0,015	0,018	0,024	0,040	0,060	0,080
M.1.1	34	0,015	0,018	0,024	0,040	0,060	0,080
M.2.1	34	0,015	0,018	0,024	0,040	0,060	0,080
M.3.1	34	0,015	0,018	0,024	0,040	0,060	0,080
K.1.1	58	0,028	0,034	0,045	0,070	0,095	0,115
K.1.2	58	0,028	0,034	0,045	0,070	0,095	0,115
K.2.1	58	0,028	0,034	0,045	0,070	0,095	0,115
K.2.2	58	0,028	0,034	0,045	0,070	0,095	0,115
K.3.1	58	0,028	0,034	0,045	0,070	0,095	0,115
K.3.2	58	0,028	0,034	0,045	0,070	0,095	0,115
N.1.1							
N.1.2							
N.2.1							
N.2.2							
N.2.3							
N.3.1							
N.3.2							
N.3.3							
N.4.1							
S.1.1							
S.1.2							
S.2.1							
S.2.2							
S.2.3							
S.3.1							
S.3.2							
S.3.3							
H.1.1							
H.1.2							
H.1.3							
H.1.4							
H.2.1							
H.3.1							
O.1.1							
O.1.2							
O.2.1							
O.2.2							
O.3.1							

Pilot hole required for WTX – Micro deep hole twist drill – see recommended application for WTX – Micro on → **page 161**

Cutting data standard values – WTX – Feed BR

Index	10 707 ..., 10 711 ...										
	3xD										
	with through coolant	With external coolant	MMS	Ø 4	Ø 5	Ø 6	Ø 8	Ø 10	Ø 12	Ø 14	Ø 16
	v_c (m/min)			f (mm/rev)							
P.1.1	75	70	70	0,19	0,22	0,25	0,31	0,36	0,40	0,44	0,47
P.1.2	75	65	65	0,18	0,21	0,24	0,30	0,34	0,39	0,42	0,45
P.1.3	70	65	65	0,17	0,20	0,23	0,28	0,33	0,37	0,40	0,43
P.1.4	65	60	60	0,16	0,19	0,22	0,27	0,31	0,35	0,38	0,41
P.1.5	65	55	55	0,16	0,18	0,21	0,25	0,29	0,33	0,36	0,39
P.2.1	75	65	65	0,22	0,26	0,30	0,37	0,43	0,48	0,52	0,56
P.2.2	70	60	60	0,20	0,24	0,27	0,33	0,39	0,43	0,47	0,51
P.2.3	65	55	55	0,18	0,22	0,25	0,30	0,35	0,39	0,43	0,46
P.2.4	50	40	40	0,17	0,20	0,22	0,27	0,31	0,35	0,38	0,40
P.3.1	55	45	45	0,18	0,21	0,24	0,30	0,35	0,39	0,43	0,46
P.3.2	40	40	40	0,15	0,18	0,20	0,25	0,29	0,32	0,35	0,37
P.3.3	40	30	35	0,13	0,15	0,16	0,20	0,23	0,25	0,27	0,29
P.4.1	40	30	35	0,12	0,14	0,16	0,20	0,23	0,26	0,28	0,30
P.4.2	40	30	35	0,12	0,14	0,16	0,20	0,23	0,26	0,28	0,30
M.1.1	40	25	25	0,09	0,11	0,12	0,15	0,17	0,19	0,21	0,23
M.2.1	35	20	20	0,08	0,09	0,10	0,13	0,15	0,17	0,18	0,19
M.3.1	35	20	20	0,08	0,09	0,10	0,13	0,15	0,17	0,18	0,19
K.1.1	100	70	70	0,25	0,30	0,35	0,45	0,53	0,60	0,66	0,71
K.1.2	85	65	65	0,22	0,26	0,30	0,37	0,43	0,48	0,53	0,56
K.2.1	135	85	100	0,24	0,29	0,34	0,42	0,49	0,56	0,61	0,66
K.2.2	85	65	65	0,22	0,26	0,30	0,37	0,43	0,48	0,53	0,56
K.3.1	75	70	70	0,23	0,28	0,32	0,39	0,46	0,52	0,57	0,61
K.3.2	70	60	60	0,20	0,23	0,26	0,32	0,37	0,41	0,45	0,48
N.1.1											
N.1.2											
N.2.1											
N.2.2											
N.2.3											
N.3.1											
N.3.2											
N.3.3											
N.4.1											
S.1.1											
S.1.2											
S.2.1											
S.2.2											
S.2.3											
S.3.1											
S.3.2											
S.3.3											
H.1.1											
H.1.2											
H.1.3											
H.1.4											
H.2.1											
H.3.1											
O.1.1											
O.1.2											
O.2.1											
O.2.2											
O.3.1											

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

Index	10 713 ..., 10 719 ...												
	5xD												
	with through coolant	With external coolant	MMS	Ø 4	Ø 5	Ø 6	Ø 8	Ø 10	Ø 12	Ø 14	Ø 16	Ø 18	Ø 20
	v_c (m/min)			f (mm/rev)									
P.1.1	75	70	70	0,19	0,22	0,25	0,31	0,36	0,40	0,44	0,47	0,50	0,52
P.1.2	75	65	65	0,18	0,21	0,24	0,30	0,34	0,39	0,42	0,45	0,48	0,50
P.1.3	70	65	65	0,17	0,20	0,23	0,28	0,33	0,37	0,40	0,43	0,45	0,47
P.1.4	65	60	60	0,16	0,19	0,22	0,27	0,31	0,35	0,38	0,41	0,43	0,45
P.1.5	65	55	55	0,16	0,18	0,21	0,25	0,29	0,33	0,36	0,39	0,41	0,43
P.2.1	75	65	65	0,22	0,26	0,30	0,37	0,43	0,48	0,52	0,56	0,59	0,62
P.2.2	70	60	60	0,20	0,24	0,27	0,33	0,39	0,43	0,47	0,51	0,54	0,56
P.2.3	65	55	55	0,18	0,22	0,25	0,30	0,35	0,39	0,43	0,46	0,48	0,50
P.2.4	50	40	40	0,17	0,20	0,22	0,27	0,31	0,35	0,38	0,40	0,42	0,44
P.3.1	55	45	45	0,18	0,21	0,24	0,30	0,35	0,39	0,43	0,46	0,48	0,50
P.3.2	40	40	40	0,15	0,18	0,20	0,25	0,29	0,32	0,35	0,37	0,39	0,41
P.3.3	40	30	35	0,13	0,15	0,16	0,20	0,23	0,25	0,27	0,29	0,30	0,32
P.4.1	40	30	35	0,12	0,14	0,16	0,20	0,23	0,26	0,28	0,30	0,32	0,33
P.4.2	40	30	35	0,12	0,14	0,16	0,20	0,23	0,26	0,28	0,30	0,32	0,33
M.1.1	40	25	25	0,09	0,11	0,12	0,15	0,17	0,19	0,21	0,23	0,24	0,25
M.2.1	35	20	20	0,08	0,09	0,10	0,13	0,15	0,17	0,18	0,19	0,20	0,21
M.3.1	35	20	20	0,08	0,09	0,10	0,13	0,15	0,17	0,18	0,19	0,20	0,21
K.1.1	100	70	70	0,25	0,30	0,35	0,45	0,53	0,60	0,66	0,71	0,75	0,79
K.1.2	85	65	65	0,22	0,26	0,30	0,37	0,43	0,48	0,53	0,56	0,60	0,62
K.2.1	135	85	100	0,24	0,29	0,34	0,42	0,49	0,56	0,61	0,66	0,69	0,72
K.2.2	85	65	65	0,22	0,26	0,30	0,37	0,43	0,48	0,53	0,56	0,60	0,62
K.3.1	75	70	70	0,23	0,28	0,32	0,39	0,46	0,52	0,57	0,61	0,64	0,67
K.3.2	70	60	60	0,20	0,23	0,26	0,32	0,37	0,41	0,45	0,48	0,51	0,53
N.1.1													
N.1.2													
N.2.1													
N.2.2													
N.2.3													
N.3.1													
N.3.2													
N.3.3													
N.4.1													
S.1.1													
S.1.2													
S.2.1													
S.2.2													
S.2.3													
S.3.1													
S.3.2													
S.3.3													
H.1.1													
H.1.2													
H.1.3													
H.1.4													
H.2.1													
H.3.1													
O.1.1													
O.1.2													
O.2.1													
O.2.2													
O.3.1													

Cutting data standard values – WTX – Co-pilot deep hole twist drills

Index	11 018 ...					
	20xD					
	with through coolant	Ø 3–4	Ø > 4–5	Ø > 5–6	Ø > 6–8	Ø > 8–10
	v_c (m/min)	f (mm/rev)				
P.1.1	100	0,07	0,08	0,10	0,12	0,14
P.1.2	90	0,07	0,08	0,10	0,12	0,14
P.1.3	90	0,05	0,06	0,08	0,10	0,11
P.1.4	90	0,05	0,06	0,08	0,10	0,11
P.1.5	95	0,05	0,06	0,08	0,10	0,11
P.2.1	95	0,07	0,08	0,10	0,12	0,14
P.2.2	90	0,05	0,06	0,08	0,10	0,11
P.2.3	90	0,07	0,08	0,10	0,12	0,14
P.2.4	90	0,05	0,06	0,08	0,10	0,11
P.3.1	45	0,03	0,04	0,05	0,06	0,08
P.3.2	70	0,05	0,06	0,08	0,10	0,11
P.3.3	70	0,05	0,06	0,08	0,10	0,11
P.4.1	70	0,03	0,04	0,05	0,06	0,08
P.4.2	45	0,03	0,04	0,05	0,06	0,08
M.1.1	50	0,03	0,04	0,05	0,06	0,08
M.2.1	50	0,03	0,04	0,05	0,06	0,08
M.3.1	50	0,03	0,04	0,05	0,06	0,08
K.1.1	100	0,10	0,13	0,15	0,19	0,23
K.1.2	95	0,10	0,13	0,15	0,19	0,23
K.2.1	100	0,08	0,10	0,13	0,16	0,18
K.2.2	95	0,08	0,10	0,13	0,16	0,18
K.3.1	100	0,08	0,10	0,13	0,16	0,18
K.3.2	95	0,08	0,10	0,13	0,16	0,18
N.1.1						
N.1.2						
N.2.1						
N.2.2						
N.2.3						
N.3.1						
N.3.2						
N.3.3						
N.4.1						
S.1.1						
S.1.2						
S.2.1						
S.2.2						
S.2.3	70	0,05	0,06	0,08	0,10	0,11
S.3.1	30	0,01	0,02	0,02	0,03	0,04
S.3.2	20	0,01	0,02	0,02	0,03	0,04
S.3.3						
H.1.1						
H.1.2						
H.1.3						
H.1.4						
H.2.1						
H.3.1						
O.1.1						
O.1.2						
O.2.1						
O.2.2						
O.3.1						

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

Cutting data standard values – WTX – TB UNI

Index	11 016 ... 16xD with through coolant v_c (m/min)	Ø 2–3	Ø > 3–4	Ø > 4–5	Ø > 5–6	Ø > 6–8	Ø > 8–10	Ø > 10–12	11 020 ... 20xD with through coolant v_c (m/min)	Ø 2–3	Ø > 3–4	Ø > 4–5	Ø > 5–6	Ø > 6–8	Ø > 8–10	Ø > 10–12
		f (mm/rev)								f (mm/rev)						
P.1.1	105	0,05	0,07	0,08	0,10	0,12	0,14	0,16	100	0,05	0,07	0,08	0,10	0,12	0,14	0,16
P.1.2	95	0,05	0,07	0,08	0,10	0,12	0,14	0,16	90	0,05	0,07	0,08	0,10	0,12	0,14	0,16
P.1.3	95	0,04	0,05	0,06	0,08	0,10	0,11	0,13	90	0,04	0,05	0,06	0,08	0,10	0,11	0,13
P.1.4	95	0,04	0,05	0,06	0,08	0,10	0,11	0,13	90	0,04	0,05	0,06	0,08	0,10	0,11	0,13
P.1.5	100	0,04	0,05	0,06	0,01	0,10	0,11	0,13	95	0,04	0,05	0,06	0,08	0,10	0,11	0,13
P.2.1	100	0,05	0,07	0,08	0,10	0,12	0,14	0,16	95	0,05	0,07	0,08	0,10	0,12	0,14	0,16
P.2.2	95	0,04	0,05	0,06	0,10	0,10	0,11	0,13	90	0,04	0,05	0,06	0,08	0,10	0,11	0,13
P.2.3	95	0,05	0,07	0,08	0,10	0,12	0,14	0,16	90	0,05	0,07	0,08	0,10	0,12	0,14	0,16
P.2.4	95	0,04	0,05	0,06	0,10	0,10	0,11	0,13	90	0,04	0,05	0,06	0,08	0,10	0,11	0,13
P.3.1	50	0,03	0,03	0,04	0,05	0,06	0,08	0,10	45	0,03	0,03	0,04	0,05	0,06	0,08	0,10
P.3.2	75	0,04	0,05	0,06	0,10	0,10	0,11	0,13	70	0,04	0,05	0,06	0,08	0,10	0,11	0,13
P.3.3	75	0,04	0,05	0,06	0,10	0,10	0,11	0,13	70	0,04	0,05	0,06	0,08	0,10	0,11	0,13
P.4.1	75	0,03	0,03	0,04	0,05	0,06	0,08	0,10	70	0,03	0,03	0,04	0,05	0,06	0,08	0,10
P.4.2	50	0,03	0,03	0,04	0,05	0,06	0,08	0,10	45	0,03	0,03	0,04	0,05	0,06	0,08	0,10
M.1.1	55	0,03	0,03	0,04	0,05	0,06	0,08	0,10	50	0,03	0,03	0,04	0,05	0,06	0,08	0,10
M.2.1	55	0,03	0,03	0,04	0,05	0,06	0,08	0,10	50	0,03	0,03	0,04	0,05	0,06	0,08	0,10
M.3.1	55	0,03	0,03	0,04	0,05	0,06	0,08	0,10	50	0,03	0,03	0,04	0,05	0,06	0,08	0,10
K.1.1	105	0,08	0,10	0,13	0,15	0,19	0,23	0,27	100	0,08	0,10	0,13	0,15	0,19	0,23	0,27
K.1.2	100	0,08	0,10	0,13	0,15	0,19	0,23	0,27	95	0,08	0,10	0,13	0,15	0,19	0,23	0,27
K.2.1	105	0,06	0,08	0,10	0,13	0,16	0,18	0,22	100	0,06	0,08	0,10	0,13	0,16	0,18	0,22
K.2.2	100	0,06	0,08	0,10	0,13	0,16	0,18	0,22	95	0,06	0,08	0,10	0,13	0,16	0,18	0,22
K.3.1	105	0,06	0,08	0,10	0,13	0,16	0,18	0,22	100	0,06	0,08	0,10	0,13	0,16	0,18	0,22
K.3.2	100	0,06	0,08	0,10	0,13	0,16	0,18	0,22	95	0,06	0,08	0,10	0,13	0,16	0,18	0,22
N.1.1																
N.1.2																
N.2.1																
N.2.2																
N.2.3																
N.3.1																
N.3.2																
N.3.3																
N.4.1																
S.1.1																
S.1.2																
S.2.1																
S.2.2																
S.2.3	75	0,04	0,05	0,06	0,08	0,10	0,11	0,13	70	0,04	0,05	0,06	0,08	0,10	0,11	0,13
S.3.1	35	0,01	0,01	0,02	0,02	0,03	0,04	0,05	30	0,01	0,01	0,02	0,02	0,03	0,04	0,05
S.3.2	25	0,01	0,01	0,02	0,02	0,03	0,04	0,05	20	0,01	0,01	0,02	0,02	0,03	0,04	0,05
S.3.3																
H.1.1																
H.1.2																
H.1.3																
H.1.4																
H.2.1																
H.3.1																
O.1.1																
O.1.2																
O.2.1																
O.2.2																
O.3.1																

All solid carbide WTX deep hole drills must be used with a pilot bore. The tool must never be run at high speed while not engaged in a material.
Please refer to the strategy for the production of deep holes on → **Page 160**.

Cutting data standard values – WTX – TB UNI

Index	11 025 ...								11 030 ...							
	25xD								30xD							
	with through coolant	Ø 2–3	Ø > 3–4	Ø > 4–5	Ø > 5–6	Ø > 6–8	Ø > 8–10	Ø > 10–12	with through coolant	Ø 2–3	Ø > 3–4	Ø > 4–5	Ø > 5–6	Ø > 6–8	Ø > 8–10	Ø > 10–12
	v_c (m/min)	f (mm/rev)							v_c (m/min)	f (mm/rev)						
P.1.1	90	0,05	0,07	0,09	0,10	0,12	0,14	0,16	85	0,05	0,07	0,09	0,10	0,12	0,14	0,16
P.1.2	80	0,05	0,07	0,09	0,10	0,12	0,14	0,16	75	0,05	0,07	0,09	0,10	0,12	0,14	0,16
P.1.3	80	0,04	0,05	0,06	0,08	0,10	0,11	0,13	75	0,04	0,05	0,06	0,08	0,10	0,11	0,13
P.1.4	80	0,04	0,05	0,06	0,08	0,10	0,11	0,13	75	0,04	0,05	0,06	0,08	0,10	0,11	0,13
P.1.5	85	0,04	0,05	0,06	0,08	0,10	0,11	0,13	80	0,04	0,05	0,06	0,08	0,10	0,11	0,13
P.2.1	85	0,05	0,07	0,09	0,10	0,12	0,14	0,16	80	0,05	0,07	0,09	0,10	0,12	0,14	0,16
P.2.2	80	0,04	0,05	0,06	0,08	0,10	0,11	0,13	75	0,04	0,05	0,06	0,08	0,10	0,11	0,13
P.2.3	80	0,05	0,07	0,09	0,10	0,12	0,14	0,16	75	0,05	0,07	0,09	0,10	0,12	0,14	0,16
P.2.4	80	0,04	0,05	0,06	0,08	0,10	0,11	0,13	75	0,04	0,05	0,06	0,08	0,10	0,11	0,13
P.3.1	45	0,03	0,03	0,04	0,05	0,06	0,08	0,10	40	0,03	0,03	0,04	0,05	0,06	0,08	0,10
P.3.2	65	0,04	0,05	0,06	0,08	0,10	0,11	0,13	60	0,04	0,05	0,06	0,08	0,10	0,11	0,13
P.3.3	65	0,04	0,05	0,06	0,08	0,10	0,11	0,13	60	0,04	0,05	0,06	0,08	0,10	0,11	0,13
P.4.1	65	0,03	0,03	0,04	0,05	0,06	0,08	0,10	60	0,03	0,03	0,04	0,05	0,06	0,08	0,10
P.4.2	45	0,03	0,03	0,04	0,05	0,06	0,08	0,10	40	0,03	0,03	0,04	0,05	0,06	0,08	0,10
M.1.1	50	0,03	0,03	0,04	0,05	0,06	0,08	0,10	45	0,03	0,03	0,04	0,05	0,06	0,08	0,10
M.2.1	50	0,03	0,03	0,04	0,05	0,06	0,08	0,10	45	0,03	0,03	0,04	0,05	0,06	0,08	0,10
M.3.1	50	0,03	0,03	0,04	0,05	0,06	0,08	0,10	45	0,03	0,03	0,04	0,05	0,06	0,08	0,10
K.1.1	90	0,08	0,10	0,13	0,15	0,19	0,23	0,27	85	0,08	0,10	0,13	0,15	0,19	0,23	0,27
K.1.2	85	0,08	0,10	0,13	0,15	0,19	0,23	0,27	80	0,08	0,10	0,13	0,15	0,19	0,23	0,27
K.2.1	90	0,06	0,08	0,10	0,13	0,16	0,18	0,22	85	0,06	0,08	0,10	0,13	0,16	0,18	0,22
K.2.2	85	0,06	0,08	0,10	0,13	0,16	0,18	0,22	80	0,06	0,08	0,10	0,13	0,16	0,18	0,22
K.3.1	90	0,06	0,08	0,10	0,13	0,16	0,18	0,22	85	0,06	0,08	0,10	0,13	0,16	0,18	0,22
K.3.2	85	0,06	0,08	0,10	0,13	0,16	0,18	0,22	80	0,06	0,08	0,10	0,13	0,16	0,18	0,22
N.1.1																
N.1.2																
N.2.1																
N.2.2																
N.2.3																
N.3.1																
N.3.2																
N.3.3																
N.4.1																
S.1.1																
S.1.2																
S.2.1																
S.2.2																
S.2.3	65	0,04	0,05	0,06	0,08	0,10	0,11	0,13	60	0,04	0,05	0,06	0,08	0,10	0,11	0,13
S.3.1																
S.3.2																
S.3.3																
H.1.1																
H.1.2																
H.1.3																
H.1.4																
H.2.1																
H.3.1																
O.1.1																
O.1.2																
O.2.1																
O.2.2																
O.3.1																

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

Index	11 040 ... 40xD						11 050 ... 50xD				
	with through coolant	Ø 3–4	Ø > 4–5	Ø > 5–6	Ø > 6–8	Ø > 8–10	with through coolant	Ø 3–4	Ø > 4–5	Ø > 5–6	Ø > 6–8
	v_c (m/min)	f (mm/rev)					v_c (m/min)	f (mm/rev)			
P.1.1	70	0,05	0,06	0,08	0,10	0,11	70	0,05	0,06	0,08	0,10
P.1.2	60	0,05	0,06	0,08	0,10	0,11	60	0,05	0,06	0,08	0,10
P.1.3	60	0,03	0,04	0,05	0,06	0,08	60	0,03	0,04	0,05	0,06
P.1.4	60	0,03	0,04	0,05	0,06	0,08	60	0,03	0,04	0,05	0,06
P.1.5	65	0,03	0,04	0,05	0,06	0,08	65	0,03	0,04	0,05	0,06
P.2.1	65	0,05	0,06	0,08	0,10	0,11	65	0,05	0,06	0,08	0,10
P.2.2	60	0,03	0,04	0,05	0,06	0,08	60	0,03	0,04	0,05	0,06
P.2.3	60	0,05	0,06	0,08	0,10	0,11	60	0,05	0,06	0,08	0,10
P.2.4	60	0,03	0,04	0,05	0,06	0,08	60	0,03	0,04	0,05	0,06
P.3.1	35	0,03	0,03	0,04	0,05	0,06	35	0,03	0,03	0,04	0,05
P.3.2	50	0,03	0,04	0,05	0,06	0,08	50	0,03	0,04	0,05	0,06
P.3.3	50	0,03	0,04	0,05	0,06	0,08	50	0,03	0,04	0,05	0,06
P.4.1	50	0,03	0,03	0,04	0,05	0,06	50	0,03	0,03	0,04	0,05
P.4.2	35	0,03	0,03	0,04	0,05	0,06	35	0,03	0,03	0,04	0,05
M.1.1	40	0,03	0,03	0,04	0,05	0,06	40	0,03	0,03	0,04	0,05
M.2.1	40	0,03	0,03	0,04	0,05	0,06	40	0,03	0,03	0,04	0,05
M.3.1	40	0,03	0,03	0,04	0,05	0,06	40	0,03	0,03	0,04	0,05
K.1.1	70	0,08	0,10	0,13	0,16	0,18	70	0,08	0,10	0,13	0,16
K.1.2	65	0,08	0,10	0,13	0,16	0,18	65	0,08	0,10	0,13	0,16
K.2.1	70	0,07	0,09	0,10	0,12	0,14	70	0,07	0,09	0,10	0,12
K.2.2	65	0,07	0,09	0,10	0,12	0,14	65	0,07	0,09	0,10	0,12
K.3.1	70	0,07	0,09	0,10	0,12	0,14	70	0,07	0,09	0,10	0,12
K.3.2	65	0,07	0,09	0,10	0,12	0,14	65	0,07	0,09	0,10	0,12
N.1.1											
N.1.2											
N.2.1											
N.2.2											
N.2.3											
N.3.1											
N.3.2											
N.3.3											
N.4.1											
S.1.1											
S.1.2											
S.2.1											
S.2.2											
S.2.3	50	0,03	0,04	0,05	0,06	0,08	50	0,03	0,04	0,05	0,06
S.3.1											
S.3.2											
S.3.3											
H.1.1											
H.1.2											
H.1.3											
H.1.4											
H.2.1											
H.3.1											
O.1.1											
O.1.2											
O.2.1											
O.2.2											
O.3.1											

All solid carbide WTX deep hole drills must be used with a pilot bore. The tool must never be run at high speed while not engaged in a material.
Please refer to the strategy for the production of deep holes on → **Page 160**.

Cutting data standard values – WTX – TB ALU

Index	11 017 ... 16xD								11 021 ... 20xD							
	with through coolant	Ø 2–3	Ø > 3–4	Ø > 4–5	Ø > 5–6	Ø > 6–8	Ø > 8–10	Ø > 10–12	with through coolant	Ø 2–3	Ø > 3–4	Ø > 4–5	Ø > 5–6	Ø > 6–8	Ø > 8–10	Ø > 10–12
	v_c (m/min)	f (mm/rev)							v_c (m/min)	f (mm/rev)						
P.1.1																
P.1.2																
P.1.3																
P.1.4																
P.1.5																
P.2.1																
P.2.2																
P.2.3																
P.2.4																
P.3.1																
P.3.2																
P.3.3																
P.4.1																
P.4.2																
M.1.1																
M.2.1																
M.3.1																
K.1.1																
K.1.2																
K.2.1																
K.2.2																
K.3.1																
K.3.2																
N.1.1	**160**	0,06	0,08	0,10	0,13	0,16	0,18	0,22	**150**	0,06	0,08	0,10	0,13	0,16	0,18	0,22
N.1.2	**180**	0,06	0,08	0,10	0,13	0,16	0,18	0,22	**170**	0,06	0,08	0,10	0,13	0,16	0,18	0,22
N.2.1	**160**	0,08	0,11	0,13	0,15	0,19	0,23	0,26	**150**	0,08	0,11	0,13	0,15	0,19	0,23	0,26
N.2.2	**190**	0,08	0,11	0,13	0,15	0,19	0,23	0,26	**180**	0,08	0,11	0,13	0,15	0,19	0,23	0,26
N.2.3	**140**	0,06	0,08	0,10	0,13	0,16	0,18	0,22	**130**	0,06	0,08	0,10	0,13	0,16	0,18	0,22
N.3.1	**115**	0,06	0,08	0,10	0,13	0,16	0,18	0,22	**100**	0,06	0,08	0,10	0,13	0,16	0,18	0,22
N.3.2	**115**	0,06	0,08	0,10	0,13	0,16	0,18	0,22	**100**	0,06	0,08	0,10	0,13	0,16	0,18	0,22
N.3.3	**90**	0,06	0,08	0,10	0,13	0,16	0,18	0,22	**80**	0,06	0,08	0,10	0,13	0,16	0,18	0,22
N.4.1																
S.1.1																
S.1.2																
S.2.1																
S.2.2																
S.2.3																
S.3.1																
S.3.2																
S.3.3																
H.1.1																
H.1.2																
H.1.3																
H.1.4																
H.2.1																
H.3.1																
O.1.1																
O.1.2																
O.2.1																
O.2.2																
O.3.1																

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

Index	11 026 ... 25xD with through coolant	Ø 2–3	> 3–4	> 4–5	> 5–6	> 6–8	> 8–10	> 10–12	11 031 ... 30xD with through coolant	Ø 2–3	> 3–4	> 4–5	> 5–6	> 6–8	> 8–10	> 10–12
	v_c (m/min)	f (mm/rev)							v_c (m/min)	f (mm/rev)						
P.1.1																
P.1.2																
P.1.3																
P.1.4																
P.1.5																
P.2.1																
P.2.2																
P.2.3																
P.2.4																
P.3.1																
P.3.2																
P.3.3																
P.4.1																
P.4.2																
M.1.1																
M.2.1																
M.3.1																
K.1.1																
K.1.2																
K.2.1																
K.2.2																
K.3.1																
K.3.2																
N.1.1	**130**	0,06	0,08	0,10	0,13	0,16	0,18	0,22	**120**	0,04	0,05	0,07	0,08	0,12	0,15	0,18
N.1.2	**150**	0,06	0,08	0,10	0,13	0,16	0,18	0,22	**140**	0,04	0,05	0,07	0,08	0,12	0,15	0,18
N.2.1	**130**	0,08	0,11	0,13	0,15	0,19	0,23	0,26	**120**	0,08	0,11	0,13	0,15	0,19	0,23	0,26
N.2.2	**160**	0,08	0,11	0,13	0,15	0,19	0,23	0,26	**150**	0,08	0,11	0,13	0,15	0,19	0,23	0,26
N.2.3	**120**	0,06	0,08	0,10	0,13	0,16	0,18	0,22	**110**	0,04	0,05	0,07	0,08	0,12	0,15	0,18
N.3.1	**90**	0,06	0,08	0,10	0,13	0,16	0,18	0,22	**80**	0,04	0,05	0,07	0,08	0,12	0,15	0,18
N.3.2	**90**	0,06	0,08	0,10	0,13	0,16	0,18	0,22	**80**	0,04	0,05	0,07	0,08	0,12	0,15	0,18
N.3.3	**75**	0,06	0,08	0,10	0,13	0,16	0,18	0,22	**70**	0,01	0,01	0,02	0,02	0,03	0,04	0,05
N.4.1																
S.1.1																
S.1.2																
S.2.1																
S.2.2																
S.2.3																
S.3.1																
S.3.2																
S.3.3																
H.1.1																
H.1.2																
H.1.3																
H.1.4																
H.2.1																
H.3.1																
O.1.1																
O.1.2																
O.2.1																
O.2.2																
O.3.1																

All solid carbide WTX deep hole drills must be used with a pilot bore. The tool must never be run at high speed while not engaged in a material.
Please refer to the strategy for the production of deep holes on → **Page 160**.

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

Index	10 709 ..., 10 712 ..., 10 714 ... MultiChange						10 708 ... ZB							
	without through coolant	Ø 8	Ø 10	Ø 12	Ø 16	Ø 20	without through coolant	Ø 0,5–1,5	Ø 1,5–2	Ø 2–3	Ø 3–4	Ø 4–5	Ø 5–6	Ø 6–8
	v_c (m/min)	f (mm/rev)					v_c (m/min)	f (mm/rev)						
P.1.1	160	0,08	0,10	0,11	0,14	0,16	75	0,03	0,04	0,05	0,07	0,08	0,10	0,12
P.1.2	160	0,08	0,10	0,11	0,14	0,16	65	0,03	0,04	0,05	0,07	0,08	0,10	0,12
P.1.3	160	0,08	0,10	0,11	0,14	0,16	65	0,03	0,03	0,04	0,05	0,06	0,08	0,10
P.1.4	160	0,08	0,10	0,11	0,14	0,16	65	0,03	0,03	0,04	0,05	0,06	0,08	0,10
P.1.5	130	0,08	0,09	0,11	0,13	0,15	70	0,03	0,03	0,04	0,05	0,06	0,08	0,10
P.2.1	145	0,08	0,10	0,11	0,14	0,16	70	0,03	0,04	0,05	0,07	0,08	0,10	0,12
P.2.2	100	0,07	0,08	0,10	0,12	0,14	65	0,03	0,03	0,04	0,05	0,06	0,08	0,10
P.2.3	80	0,07	0,08	0,10	0,12	0,14	65	0,03	0,04	0,05	0,07	0,08	0,10	0,12
P.2.4	80	0,07	0,08	0,10	0,12	0,14	65	0,03	0,03	0,04	0,05	0,06	0,08	0,10
P.3.1	95	0,08	0,09	0,11	0,13	0,16								
P.3.2	95	0,08	0,09	0,11	0,13	0,16								
P.3.3	95	0,08	0,09	0,11	0,13	0,16								
P.4.1	65	0,04	0,05	0,05	0,07	0,08								
P.4.2	65	0,04	0,05	0,05	0,07	0,08								
M.1.1	45	0,05	0,06	0,07	0,08	0,10								
M.2.1	45	0,05	0,06	0,07	0,08	0,10								
M.3.1	40	0,04	0,05	0,06	0,07	0,08								
K.1.1	175	0,13	0,16	0,19	0,24	0,27	70	0,03	0,03	0,04	0,05	0,06	0,08	0,10
K.1.2	160	0,11	0,14	0,16	0,20	0,23	70	0,03	0,03	0,04	0,05	0,06	0,08	0,10
K.2.1	130	0,09	0,11	0,13	0,17	0,19	70	0,03	0,03	0,04	0,05	0,06	0,08	0,10
K.2.2	130	0,09	0,11	0,13	0,17	0,19	70	0,03	0,03	0,04	0,05	0,06	0,08	0,10
K.3.1	160	0,11	0,14	0,16	0,20	0,23	70	0,03	0,03	0,04	0,05	0,06	0,08	0,10
K.3.2	130	0,09	0,11	0,13	0,17	0,19	70	0,03	0,03	0,04	0,05	0,06	0,08	0,10
N.1.1	600	0,13	0,16	0,19	0,24	0,27	200	0,01	0,01	0,01	0,01	0,02	0,02	0,03
N.1.2	400	0,14	0,17	0,20	0,25	0,29	200	0,01	0,01	0,01	0,01	0,02	0,02	0,03
N.2.1	320	0,15	0,18	0,21	0,26	0,30	160	0,01	0,01	0,01	0,01	0,02	0,02	0,03
N.2.2	320	0,15	0,18	0,21	0,26	0,30	180	0,01	0,01	0,01	0,01	0,02	0,02	0,03
N.2.3	230	0,16	0,19	0,23	0,28	0,33	130	0,01	0,01	0,01	0,01	0,02	0,02	0,03
N.3.1	175	0,11	0,13	0,15	0,19	0,22	160	0,01	0,01	0,01	0,01	0,01	0,01	0,02
N.3.2	230	0,11	0,13	0,15	0,19	0,22	160	0,01	0,01	0,01	0,01	0,01	0,01	0,02
N.3.3	175	0,11	0,13	0,15	0,19	0,22	100	0,01	0,01	0,01	0,01	0,01	0,01	0,02
N.4.1	290	0,07	0,08	0,09	0,12	0,14								
S.1.1														
S.1.2														
S.2.1														
S.2.2														
S.2.3														
S.3.1														
S.3.2														
S.3.3														
H.1.1														
H.1.2														
H.1.3														
H.1.4														
H.2.1														
H.3.1														
O.1.1														
O.1.2														
O.2.1														
O.2.2														
O.3.1														

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

Index	10 702 ..., 10 703 ..., 10 704 ...											
	NC-A											
	without through coolant	Ø 2–3	Ø 3–4	Ø 4–5	Ø 5–6	Ø 6–8	Ø 8–10	Ø 10–12	Ø 12–14	Ø 14–16	Ø 16–18	Ø 18–20
	v_c (m/min)	f (mm/rev)										
P.1.1	75	0,05	0,07	0,08	0,10	0,12	0,14	0,16	0,20	0,24	0,28	0,31
P.1.2	65	0,05	0,07	0,08	0,10	0,12	0,14	0,16	0,20	0,24	0,28	0,31
P.1.3	65	0,04	0,05	0,06	0,08	0,10	0,11	0,13	0,15	0,18	0,20	0,23
P.1.4	65	0,04	0,05	0,06	0,08	0,10	0,11	0,13	0,15	0,18	0,20	0,23
P.1.5	70	0,04	0,05	0,06	0,08	0,10	0,11	0,13	0,15	0,18	0,20	0,23
P.2.1	70	0,05	0,07	0,08	0,10	0,12	0,14	0,16	0,20	0,24	0,28	0,31
P.2.2	65	0,04	0,05	0,06	0,08	0,10	0,11	0,13	0,15	0,18	0,20	0,23
P.2.3	65	0,05	0,07	0,08	0,10	0,12	0,14	0,16	0,20	0,24	0,28	0,31
P.2.4	65	0,04	0,05	0,06	0,08	0,10	0,11	0,13	0,15	0,18	0,20	0,23
P.3.1												
P.3.2												
P.3.3												
P.4.1												
P.4.2												
M.1.1												
M.2.1												
M.3.1												
K.1.1	70	0,04	0,05	0,06	0,08	0,10	0,13	0,15	0,18	0,20	0,23	0,27
K.1.2	70	0,04	0,05	0,06	0,08	0,10	0,11	0,13	0,15	0,18	0,20	0,23
K.2.1	70	0,04	0,05	0,06	0,08	0,10	0,11	0,13	0,15	0,18	0,20	0,23
K.2.2	70	0,04	0,05	0,06	0,08	0,10	0,11	0,13	0,15	0,18	0,20	0,23
K.3.1	70	0,04	0,05	0,06	0,08	0,10	0,11	0,13	0,15	0,18	0,20	0,23
K.3.2	70	0,04	0,05	0,06	0,08	0,10	0,11	0,13	0,15	0,18	0,20	0,23
N.1.1	200	0,01	0,01	0,02	0,02	0,03	0,04	0,05	0,07	0,09	0,11	0,13
N.1.2	200	0,01	0,01	0,02	0,02	0,03	0,04	0,05	0,07	0,09	0,11	0,13
N.2.1	160	0,01	0,01	0,02	0,02	0,03	0,04	0,05	0,07	0,09	0,11	0,13
N.2.2	180	0,01	0,01	0,02	0,02	0,03	0,04	0,05	0,07	0,09	0,11	0,13
N.2.3	130	0,01	0,01	0,02	0,02	0,03	0,04	0,05	0,07	0,09	0,11	0,13
N.3.1	160	0,01	0,01	0,01	0,01	0,02	0,03	0,04	0,06	0,09	0,11	0,14
N.3.2	160	0,01	0,01	0,01	0,01	0,02	0,03	0,04	0,06	0,09	0,11	0,14
N.3.3	100	0,01	0,01	0,01	0,01	0,02	0,03	0,04	0,06	0,09	0,11	0,14
N.4.1												
S.1.1												
S.1.2												
S.2.1												
S.2.2												
S.2.3												
S.3.1												
S.3.2												
S.3.3												
H.1.1												
H.1.2												
H.1.3												
H.1.4												
H.2.1												
H.3.1												
O.1.1												
O.1.2												
O.2.1												
O.2.2												
O.3.1												

Cutting data standard values – Solid Carbide NC-A TiAlN

Index	10 716 ..., 10 717 ..., 10 718 ... NC-A TiAlN											
	without through coolant	Ø 2–3	Ø 3–4	Ø 4–5	Ø 5–6	Ø 6–8	Ø 8–10	Ø 10–12	Ø 12–14	Ø 14–16	Ø 16–18	Ø 18–20
	v_c (m/min)	f (mm/rev)										
P.1.1	75	0,05	0,07	0,08	0,10	0,12	0,14	0,16	0,20	0,24	0,28	0,31
P.1.2	65	0,05	0,07	0,08	0,10	0,12	0,14	0,16	0,20	0,24	0,28	0,31
P.1.3	65	0,04	0,05	0,06	0,08	0,10	0,11	0,13	0,15	0,18	0,20	0,23
P.1.4	65	0,04	0,05	0,06	0,08	0,10	0,11	0,13	0,15	0,18	0,20	0,23
P.1.5	70	0,04	0,05	0,06	0,08	0,10	0,11	0,13	0,15	0,18	0,20	0,23
P.2.1	70	0,05	0,07	0,08	0,10	0,12	0,14	0,16	0,20	0,24	0,28	0,31
P.2.2	65	0,04	0,05	0,06	0,08	0,10	0,11	0,13	0,15	0,18	0,20	0,23
P.2.3	65	0,05	0,07	0,08	0,10	0,12	0,14	0,16	0,20	0,24	0,28	0,31
P.2.4	65	0,04	0,05	0,06	0,08	0,10	0,11	0,13	0,15	0,18	0,20	0,23
P.3.1												
P.3.2												
P.3.3												
P.4.1												
P.4.2												
M.1.1												
M.2.1												
M.3.1												
K.1.1	70	0,04	0,05	0,06	0,08	0,10	0,13	0,15	0,18	0,20	0,23	0,26
K.1.2	70	0,04	0,05	0,06	0,08	0,10	0,11	0,13	0,15	0,18	0,20	0,23
K.2.1	70	0,04	0,05	0,06	0,08	0,10	0,11	0,13	0,15	0,18	0,20	0,23
K.2.2	70	0,04	0,05	0,06	0,08	0,10	0,11	0,13	0,15	0,18	0,20	0,23
K.3.1	70	0,04	0,05	0,06	0,08	0,10	0,11	0,13	0,15	0,18	0,20	0,23
K.3.2	70	0,04	0,05	0,06	0,08	0,10	0,11	0,13	0,15	0,18	0,20	0,23
N.1.1	200	0,01	0,01	0,02	0,02	0,03	0,04	0,05	0,07	0,09	0,11	0,13
N.1.2	200	0,01	0,01	0,02	0,02	0,03	0,04	0,05	0,07	0,09	0,11	0,13
N.2.1	160	0,01	0,01	0,02	0,02	0,03	0,04	0,05	0,07	0,09	0,11	0,13
N.2.2	180	0,01	0,01	0,02	0,02	0,03	0,04	0,05	0,07	0,09	0,11	0,13
N.2.3	130	0,01	0,01	0,02	0,02	0,03	0,04	0,05	0,07	0,09	0,11	0,13
N.3.1	160	0,01	0,01	0,01	0,01	0,02	0,03	0,04	0,06	0,09	0,11	0,14
N.3.2	160	0,01	0,01	0,01	0,01	0,02	0,03	0,04	0,06	0,09	0,11	0,14
N.3.3	100	0,01	0,01	0,01	0,01	0,02	0,03	0,04	0,06	0,09	0,11	0,14
N.4.1												
S.1.1												
S.1.2												
S.2.1												
S.2.2												
S.2.3												
S.3.1												
S.3.2												
S.3.3												
H.1.1	28	0,02	0,03	0,04	0,04	0,05	0,06	0,06	0,07	0,07	0,08	0,08
H.1.2	16	0,02	0,03	0,04	0,04	0,05	0,06	0,06	0,07	0,07	0,08	0,08
H.1.3												
H.1.4												
H.2.1												
H.3.1												
O.1.1												
O.1.2												
O.2.1												
O.2.2												
O.3.1												

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

Index	10 724 ..., 10 726 ..., 10 727 ...								
	NC-A TiAlN								
	without through coolant	Ø 3–4	Ø 4–5	Ø 5–6	Ø 6–8	Ø 8–10	Ø 10–12	Ø 12–14	Ø 14–16
	v_c (m/min)	f (mm/rev)							
P.1.1	75	0,07	0,08	0,10	0,12	0,14	0,16	0,20	0,24
P.1.2	65	0,07	0,08	0,10	0,12	0,14	0,16	0,20	0,24
P.1.3	65	0,05	0,06	0,08	0,10	0,11	0,13	0,15	0,18
P.1.4	65	0,05	0,06	0,08	0,10	0,11	0,13	0,15	0,18
P.1.5	70	0,05	0,06	0,08	0,10	0,11	0,13	0,15	0,18
P.2.1	70	0,07	0,08	0,10	0,12	0,14	0,16	0,20	0,24
P.2.2	65	0,05	0,06	0,08	0,10	0,11	0,13	0,15	0,18
P.2.3	65	0,07	0,08	0,10	0,12	0,14	0,16	0,20	0,24
P.2.4	65	0,05	0,06	0,08	0,10	0,11	0,13	0,15	0,18
P.3.1									
P.3.2									
P.3.3									
P.4.1									
P.4.2									
M.1.1									
M.2.1									
M.3.1									
K.1.1	70	0,05	0,06	0,08	0,10	0,13	0,15	0,18	0,20
K.1.2	70	0,05	0,06	0,08	0,10	0,11	0,13	0,15	0,18
K.2.1	70	0,05	0,06	0,08	0,10	0,11	0,13	0,15	0,18
K.2.2	70	0,05	0,06	0,08	0,10	0,11	0,13	0,15	0,18
K.3.1	70	0,05	0,06	0,08	0,10	0,11	0,13	0,15	0,18
K.3.2	70	0,05	0,06	0,08	0,10	0,11	0,13	0,15	0,18
N.1.1	200	0,01	0,02	0,02	0,03	0,04	0,05	0,07	0,09
N.1.2	200	0,01	0,02	0,02	0,03	0,04	0,05	0,07	0,09
N.2.1	160	0,01	0,02	0,02	0,03	0,04	0,05	0,07	0,09
N.2.2	180	0,01	0,02	0,02	0,03	0,04	0,05	0,07	0,09
N.2.3	130	0,01	0,02	0,02	0,03	0,04	0,05	0,07	0,09
N.3.1	160	0,01	0,01	0,01	0,02	0,03	0,04	0,06	0,09
N.3.2	160	0,01	0,01	0,01	0,02	0,03	0,04	0,06	0,09
N.3.3	100	0,01	0,01	0,01	0,02	0,03	0,04	0,06	0,09
N.4.1									
S.1.1									
S.1.2									
S.2.1									
S.2.2									
S.2.3									
S.3.1									
S.3.2									
S.3.3									
H.1.1	30	0,03	0,04	0,04	0,05	0,06	0,06	0,07	0,07
H.1.2	15	0,03	0,04	0,04	0,05	0,06	0,06	0,07	0,07
H.1.3									
H.1.4									
H.2.1									
H.3.1									
O.1.1									
O.1.2									
O.2.1									
O.2.2									
O.3.1									

Cutting data standard values – WTX – Change

Index	10 919 ...					
	UNI					
	v_c (m/min)	≥ Ø 12–15,7	> Ø 15,7–20	> Ø 20–25	> Ø 25–32	> Ø 32–41
		f (mm/rev)				
P.1.1	120	0,27	0,31	0,34	0,36	0,36
P.1.2	115	0,26	0,30	0,32	0,34	0,35
P.1.3	110	0,25	0,28	0,31	0,32	0,33
P.1.4	105	0,24	0,27	0,29	0,31	0,31
P.1.5	100	0,22	0,25	0,28	0,29	0,30
P.2.1	120	0,32	0,37	0,40	0,42	0,43
P.2.2	110	0,29	0,33	0,36	0,38	0,39
P.2.3	100	0,26	0,30	0,33	0,35	0,35
P.2.4	75	0,23	0,26	0,29	0,30	0,31
P.3.1	85	0,26	0,30	0,33	0,35	0,35
P.3.2	65	0,22	0,25	0,27	0,28	0,29
P.3.3	65	0,17	0,19	0,21	0,22	0,22
P.4.1	65	0,17	0,20	0,22	0,23	0,23
P.4.2	65	0,17	0,20	0,22	0,23	0,23
M.1.1						
M.2.1						
M.3.1						
K.1.1	110	0,37	0,42	0,46	0,49	0,50
K.1.2	90	0,29	0,33	0,36	0,38	0,39
K.2.1	145	0,34	0,39	0,42	0,45	0,46
K.2.2	90	0,29	0,33	0,36	0,38	0,39
K.3.1	80	0,35	0,40	0,44	0,46	0,47
K.3.2	70	0,28	0,32	0,34	0,36	0,37
N.1.1						
N.1.2						
N.2.1						
N.2.2						
N.2.3						
N.3.1						
N.3.2						
N.3.3						
N.4.1						
S.1.1						
S.1.2						
S.2.1						
S.2.2						
S.2.3						
S.3.1						
S.3.2						
S.3.3						
H.1.1						
H.1.2						
H.1.3						
H.1.4						
H.2.1						
H.3.1						
O.1.1						
O.1.2						
O.2.1						
O.2.2						
O.3.1						

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

Index	10 923 ...					
	P					
	v_c (m/min)	≥ Ø 12–15,7	> Ø 15,7–20	> Ø 20–25	> Ø 25–32	> Ø 32–41
		f (mm/rev)				
P.1.1	120	0,32	0,36	0,39	0,41	0,42
P.1.2	115	0,30	0,34	0,37	0,39	0,40
P.1.3	110	0,29	0,32	0,35	0,37	0,38
P.1.4	105	0,27	0,31	0,34	0,35	0,36
P.1.5	100	0,26	0,29	0,32	0,34	0,34
P.2.1	120	0,37	0,42	0,46	0,49	0,49
P.2.2	110	0,34	0,38	0,42	0,44	0,45
P.2.3	100	0,30	0,35	0,38	0,40	0,40
P.2.4	75	0,27	0,30	0,33	0,35	0,35
P.3.1	85	0,30	0,35	0,38	0,40	0,40
P.3.2	65	0,25	0,28	0,31	0,32	0,33
P.3.3	65	0,19	0,22	0,24	0,25	0,25
P.4.1	65	0,20	0,23	0,25	0,26	0,27
P.4.2	65	0,20	0,23	0,25	0,26	0,27
M.1.1						
M.2.1						
M.3.1						
K.1.1	110	0,41	0,47	0,51	0,54	0,55
K.1.2	90	0,33	0,37	0,41	0,43	0,43
K.2.1	145	0,38	0,43	0,47	0,50	0,51
K.2.2	90	0,33	0,37	0,41	0,43	0,43
K.3.1	80	0,35	0,40	0,44	0,46	0,47
K.3.2	70	0,28	0,32	0,34	0,36	0,37
N.1.1						
N.1.2						
N.2.1						
N.2.2						
N.2.3						
N.3.1						
N.3.2						
N.3.3						
N.4.1						
S.1.1						
S.1.2						
S.2.1						
S.2.2						
S.2.3						
S.3.1						
S.3.2						
S.3.3						
H.1.1						
H.1.2						
H.1.3						
H.1.4						
H.2.1						
H.3.1						
O.1.1						
O.1.2						
O.2.1						
O.2.2						
O.3.1						

For through holes, the feed must be reduced by approx. 30% when exiting the hole. For more accurate positioning, precentre with a 142° NC spot drill.
With Type VA 5xD and 8xD, enter the hole with reduced feed of 0.05 – 0.06 mm/revolution.

Cutting data standard values – WTX – Change

Index	10 921 ... VA					10 924 ... GG				
	v_c (m/min)	f (mm/rev)				v_c (m/min)	f (mm/rev)			
		≥ Ø 12–15,7	> Ø 15,7–20	> Ø 20–25	> Ø 25–32		≥ Ø 12–15,7	> Ø 15,7–20	> Ø 20–25	> Ø 25–32
P.1.1	110	0,25	0,28	0,30	0,32					
P.1.2	105	0,24	0,27	0,29	0,31					
P.1.3	100	0,22	0,25	0,28	0,29					
P.1.4	95	0,21	0,24	0,26	0,28					
P.1.5	90	0,20	0,23	0,25	0,26					
P.2.1	110	0,29	0,33	0,36	0,38					
P.2.2	100	0,26	0,30	0,33	0,35					
P.2.3	90	0,24	0,27	0,29	0,31					
P.2.4	70	0,21	0,24	0,26	0,27					
P.3.1	75	0,24	0,27	0,30	0,31					
P.3.2	60	0,19	0,22	0,24	0,25					
P.3.3	60	0,15	0,17	0,18	0,19					
P.4.1	60	0,16	0,18	0,19	0,20					
P.4.2	60	0,16	0,18	0,19	0,20					
M.1.1	**55**	0,20	0,23	0,25	0,26					
M.2.1	**50**	0,17	0,19	0,21	0,22					
M.3.1	**50**	0,17	0,19	0,21	0,22					
K.1.1	**95**	0,37	0,42	0,46	0,49	**120**	0,49	0,56	0,62	0,65
K.1.2	**80**	0,29	0,33	0,36	0,38	**100**	0,39	0,45	0,49	0,51
K.2.1	**130**	0,34	0,39	0,42	0,45	**160**	0,45	0,52	0,57	0,60
K.2.2	**80**	0,29	0,33	0,36	0,38	**100**	0,39	0,45	0,49	0,51
K.3.1	**70**	0,32	0,36	0,39	0,41	**90**	0,42	0,48	0,52	0,55
K.3.2	**65**	0,25	0,28	0,31	0,33	**80**	0,34	0,38	0,41	0,44
N.1.1										
N.1.2										
N.2.1										
N.2.2										
N.2.3										
N.3.1										
N.3.2										
N.3.3										
N.4.1										
S.1.1	**30**	0,14	0,16	0,17	0,18					
S.1.2	**20**	0,10	0,11	0,12	0,13					
S.2.1	**20**	0,10	0,11	0,12	0,13					
S.2.2	**15**	0,12	0,14	0,15	0,16					
S.2.3	**15**	0,10	0,11	0,12	0,13					
S.3.1	**40**	0,17	0,20	0,22	0,23					
S.3.2	**30**	0,15	0,17	0,18	0,19					
S.3.3	**25**	0,12	0,14	0,15	0,16					
H.1.1										
H.1.2										
H.1.3										
H.1.4										
H.2.1										
H.3.1										
O.1.1										
O.1.2										
O.2.1										
O.2.2										
O.3.1										

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

Index	10 922 ... AL				
		≥ Ø 12–15,7	> Ø 15,7–20	> Ø 20–25	> Ø 25–32
	v_c (m/min)	f (mm/rev)			
P.1.1					
P.1.2					
P.1.3					
P.1.4					
P.1.5					
P.2.1					
P.2.2					
P.2.3					
P.2.4					
P.3.1					
P.3.2					
P.3.3					
P.4.1					
P.4.2					
M.1.1					
M.2.1					
M.3.1					
K.1.1					
K.1.2					
K.2.1					
K.2.2					
K.3.1					
K.3.2					
N.1.1	330	0,27	0,31	0,34	0,36
N.1.2	300	0,25	0,28	0,31	0,32
N.2.1	250	0,33	0,37	0,41	0,43
N.2.2	220	0,33	0,37	0,41	0,43
N.2.3	180	0,33	0,37	0,41	0,43
N.3.1	200	0,41	0,47	0,51	0,54
N.3.2	120	0,33	0,37	0,41	0,43
N.3.3	140	0,25	0,28	0,31	0,32
N.4.1					
S.1.1					
S.1.2					
S.2.1					
S.2.2					
S.2.3					
S.3.1					
S.3.2					
S.3.3					
H.1.1					
H.1.2					
H.1.3					
H.1.4					
H.2.1					
H.3.1					
O.1.1					
O.1.2					
O.2.1					
O.2.2					
O.3.1					

With through-holes the feedrate should be reduced at the break out by approx. 30 %. Use 142° NC Spot Drill to ensure positional accuracy.
Use reduced feedrate of 0.05 – 0.06 mm/U when using type VA 5xD and 8xD drill.

Cutting data standard values – WTX – Change Feed

Index	10 925 ...							
	UNI							
	with through coolant	With external coolant	MMS	≥ Ø 14,0	> Ø 17,5	> Ø 21,5	> Ø 26,0	Ø 32,0
	v_c (m/min)			f (mm/rev)				
P.1.1	100	90	90	0,45	0,51	0,55	0,58	0,60
P.1.2	95	85	85	0,43	0,48	0,53	0,55	0,57
P.1.3	90	80	80	0,41	0,46	0,50	0,53	0,54
P.1.4	85	75	75	0,39	0,44	0,48	0,50	0,51
P.1.5	80	75	75	0,37	0,42	0,45	0,47	0,49
P.2.1	100	85	85	0,54	0,60	0,65	0,69	0,71
P.2.2	90	75	75	0,49	0,55	0,59	0,62	0,64
P.2.3	80	70	70	0,44	0,49	0,53	0,56	0,58
P.2.4	65	55	55	0,39	0,43	0,47	0,49	0,51
P.3.1	70	60	60	0,44	0,49	0,53	0,56	0,58
P.3.2	55	50	50	0,36	0,40	0,43	0,46	0,47
P.3.3	55	40	45	0,28	0,31	0,33	0,35	0,36
P.4.1	55	40	45	0,29	0,32	0,35	0,37	0,38
P.4.2	55	40	45	0,29	0,32	0,35	0,37	0,38
M.1.1								
M.2.1								
M.3.1								
K.1.1	110	75	75	0,68	0,77	0,83	0,88	0,90
K.1.2	90	70	70	0,54	0,61	0,66	0,69	0,71
K.2.1	145	90	110	0,63	0,71	0,77	0,81	0,83
K.2.2	90	70	70	0,54	0,61	0,66	0,69	0,71
K.3.1	80	70	70	0,58	0,65	0,71	0,75	0,77
K.3.2	70	65	65	0,46	0,52	0,56	0,59	0,61
N.1.1								
N.1.2								
N.2.1								
N.2.2								
N.2.3								
N.3.1								
N.3.2								
N.3.3								
N.4.1								
S.1.1								
S.1.2								
S.2.1								
S.2.2								
S.2.3								
S.3.1								
S.3.2								
S.3.3								
H.1.1								
H.1.2								
H.1.3								
H.1.4								
H.2.1								
H.3.1								
O.1.1								
O.1.2								
O.2.1								
O.2.2								
O.3.1								



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

Cutting data standard values – WPC – Change

Index	11 910 ...				
	UNI				
		Ø 14–16	> Ø 16–20	> Ø 20–25	> Ø 25–30
	v_c (m/min)	f (mm/rev)			
P.1.1	100	0,22	0,25	0,28	0,32
P.1.2	100	0,27	0,31	0,35	0,39
P.1.3	100	0,27	0,31	0,35	0,39
P.1.4	90	0,25	0,28	0,32	0,35
P.1.5	90	0,25	0,28	0,32	0,35
P.2.1	100	0,25	0,28	0,32	0,35
P.2.2	100	0,25	0,28	0,32	0,35
P.2.3	100	0,25	0,28	0,32	0,35
P.2.4	80	0,21	0,24	0,27	0,30
P.3.1	70	0,20	0,22	0,25	0,28
P.3.2	70	0,18	0,21	0,24	0,26
P.3.3	60	0,17	0,19	0,22	0,24
P.4.1	55	0,17	0,19	0,22	0,24
P.4.2	55	0,17	0,19	0,22	0,24
M.1.1					
M.2.1					
M.3.1					
K.1.1	110	0,37	0,42	0,47	0,53
K.1.2	100	0,31	0,35	0,39	0,44
K.2.1	100	0,37	0,42	0,47	0,53
K.2.2	90	0,31	0,35	0,39	0,44
K.3.1	100	0,37	0,42	0,47	0,53
K.3.2	90	0,31	0,35	0,39	0,44
N.1.1					
N.1.2					
N.2.1					
N.2.2					
N.2.3					
N.3.1					
N.3.2					
N.3.3					
N.4.1					
S.1.1					
S.1.2					
S.2.1					
S.2.2					
S.2.3					
S.3.1					
S.3.2					
S.3.3					
H.1.1					
H.1.2					
H.1.3					
H.1.4					
H.2.1					
H.3.1					
O.1.1					
O.1.2					
O.2.1					
O.2.2					
O.3.1					

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

Type overview – WTX High performance drilling tools

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

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

UNI		▲ high-performance solid carbide drill for universal application, for all materials up to 1200 N/mm²	DRAGONSKIN	▶
Feed UNI		▲ solid carbide high feed drills with 3 cutting edges ▲ very good positional accuracy	DRAGONSKIN	▶
Speed UNI		▲ for double the cutting speed ▲ asymetric point geometry permits performance improvement when drilling steel and cast iron by up to 60 %	DRAGONSKIN	▶
Quattro 4F		▲ with additional guide land for best alignment accuracy, concentricity and positional accuracy	DRAGONSKIN	
180		▲ for inclined surfaces up to 45° and flat bottom holes		
TB		▲ solid carbide deep hole drill, up to 50xD without peck drilling ▲ 4 or 6 facet head geometry for excellent alignment accuracy		
CP		▲ Ensures an even safer deep hole drilling process ▲ For optimal guidance of the deep hole twist drill for hole depths > 30xD		
VA		▲ first choice for corrosion and acid resistant seels ▲ for volume production		
Speed VA		▲ Designed for high cutting speeds in corrosion and acid-resistant steels		
AL		▲ solid carbide high performance drill specailly for the machining of aluminium, copper and brass ▲ 6 facet geometry for excellent hole quality	DRAGONSKIN	
Ti		▲ Specialist for the cost-effective machining of titanium, titanium alloys and heat-resistant alloys ▲ Also suitable for machining corrosion-resistant and acid-resistant steels	DRAGONSKIN	
H		▲ high-performance drill for hardened steels from 45 to 70 HRC	DRAGONSKIN	▶
HFDS		▲ Four fluted high-feed drill ▲ Specially designed for steel processing ▲ Innovative cutting edge geometry guarantees high positioning accuracy	DRAGONSKIN	▶
MINI		▲ solid carbide micro drill for the precise manufacture of very small holes from Ø 0.1 to 2.9 mm		
MICRO		▲ Universal high-performance micro drill ▲ Specialised geometry and coating ▲ Pilot drill for WTX Micro deep hole twist drill	DRAGONSKIN	▶
Change		▲ replaceable head drills with the performance level of a solid carbide drill, from Ø 12.0 mm to 41.0 mm		▶
Change Feed		▲ exchangeable head drill with three cutting edges for even greater performance, from Ø 14.0 mm to 32.0 mm		▶
Feed BR		▲ Solid carbide high-performance drill reamer ▲ Drilling and reaming in one operation ▲ Three drilling edges and six reaming edges	DRAGONSKIN	
SB		▲ Solid carbide short step drill for steels and cast iron materials ▲ For core hole plus countersink for thread cutting and forming	DRAGONSKIN	

Important application criteria for WTX drills

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

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

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

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

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

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

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

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

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

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

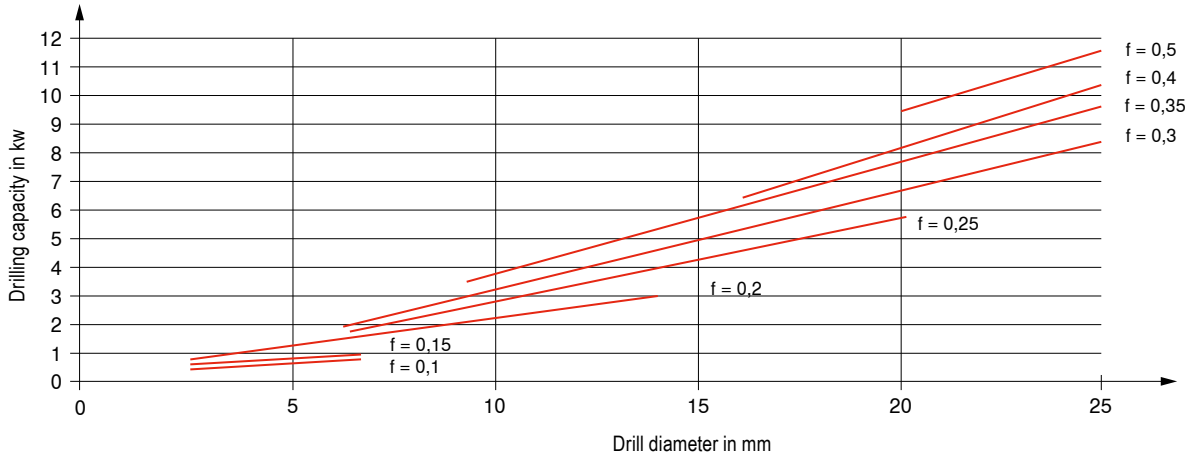
Tool Clamping
With optimum clamping high alignment accuracy and tolerances (IT7-8) are possible.
Due to the high surface quality reaming operations can often be dispensed with.

Machine Requirements
Please note the performance diagram

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

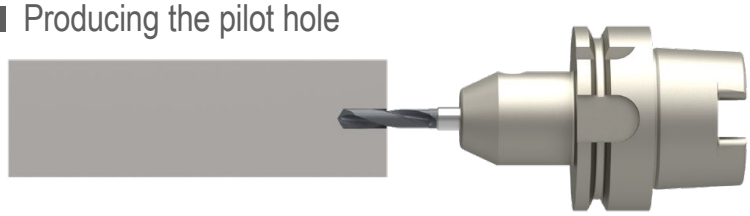
Feed rate f in mm/rev.
Drilling capacity relative to the diameter: v_c = 80 m/min.

Tensile strength of the material = 600 N/mm²



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

1 Producing the pilot hole



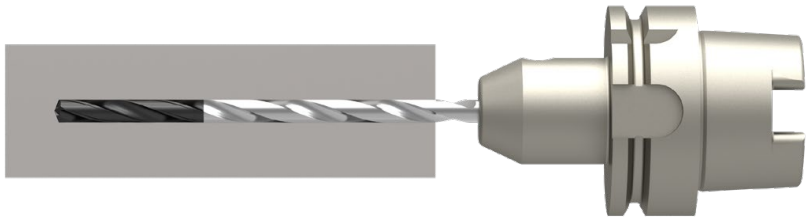
- For the pilot hole, we recommend a WTX drill 3xD / 5xD with the same nominal diameter
- The pilot hole should be 0.01–0.03 mm larger in diameter and at least 3xD deep.
- It is essential to ensure that the point angle of the pilot drill is bigger than the point angle of the deep hole drill.
- From a hole depth of 40xD, we recommend a pilot hole with our Co-Pilot deep hole twist drill CP 20 UNI.

2 Movement of the deep hole drill into the pilot hole



- Move the WTX deep hole drill without coolant pressure and with reduced speed (n = 200–300 1/min) into the pilot hole at a feed of v_f = 1.000 mm/min
- Approx. 2 mm before reaching the bottom of the hole (end of the pilot hole), stop the feed, switch on the coolant and wait for a short time until the recommended pressure is reached. Then increase the spindle speed to the recommended speed as smoothly as possible.

3 Drilling to required depth without pecking



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

4 Retracting the drill



- Retract the drill to approximately the depth of the pilot hole.
- Reduce the rpm to a low speed (n = 200–300 1/min).
- Use normal rapid feed (V_f = 3.000 mm/min) when exiting the hole.

For horizontal deep drilling operations from 40xD, move the deep hole drill into the hole counter-clockwise at 200 1/min. This prevents sagging of the deep hole drill.

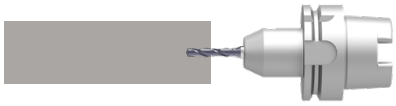
It is essential to ensure that deep hole drills **never** run unsupported at full speed in the machine !

WTX – Micro – recommended application

General references

- During vertical machining, a pilot hole is not required for regular and straight surfaces from Ø 1.0 mm up to a length of 12xD due to the excellent self-centring. During horizontal drilling, a pilot drill must be used for irregular and angled surfaces.
  The WTX Micro 5xD is recommended as a pilot drill.
- To guarantee problem-free insertion of the deep hole twist drill in the pilot hole, during horizontal machining 90° countersinking with suitable NC countersink is recommended.
- During vertical machining, drills from Ø 1.0 mm up to a length of 12xD can also be operated outside the pilot hole without a reduction in speed.
- For through holes, the feed per revolution must be reduced by 50% before exiting the hole.
- For long-chipping materials, pecking may be required every 3xD from a hole depth of 10xD. Peck drilling (retraction) should occur at the pilot hole depth.
- Due to the small thro' coolant Ø during micro drilling, effective filtration of the cooling medium is of the utmost importance.
  Drill < Ø 2.0 mm Filter ≤ 0.010 mm
  Drill < Ø 3.0 mm Filter ≤ 0.020 mm
- The longer the coolant is in the machine, suspended particles and particulate matter in the cooling medium prevent effective coolant flow. Regular replacement of the coolant is therefore recommended.
- A suitable clamping device with maximum radial run-out accuracy and balance quality is required for process-secure production.
  Radial run-out accuracy ≤ 0.003 mm
  Suitable for high-speed areas
- To guarantee a process-secure drilling process, a minimum pressure of 30 bar must be present.

1 Producing the pilot hole



- Pilot hole depth: min. 3xD
- It must be ensured that the prepared pilot hole is free from chips to avoid blocking of the micro deep hole twist drill cutting edges

2 Entering the pilot hole with a deep hole twist drill



- Speed 300 1/min (reverse rotation sometimes possible)
- Entry speed approx. 1.000 mm/min
- Switch on cooling
- Increase parameters 0.5–1.0 mm before reaching the bottom of the pilot hole

3 Deep hole drilling



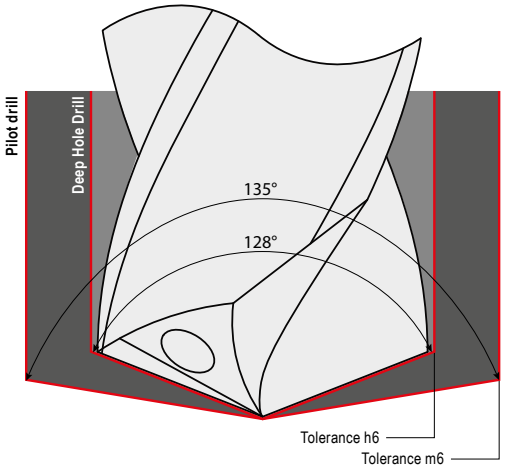
- At hole depth without pecking

4 Retracting the drill

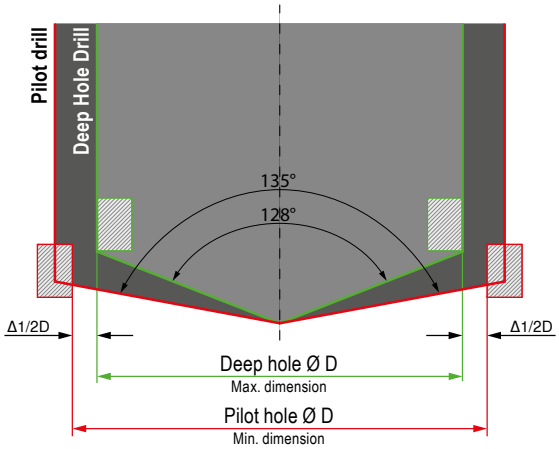


- Retract drill approx. 1xD
- Reduce speed to 300 1/min
- Exit speed approx. 1.000 mm/min
- Switch off emulsion before exiting the hole

Tolerances and angles



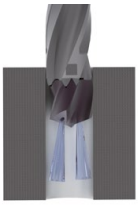
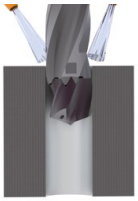
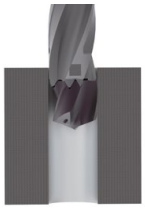
The following must apply to use the pilot and deep hole twist drill consecutively and without collisions:
$\Delta D = ØD$ (pilot hole) – $ØD$ (deep hole) > 0



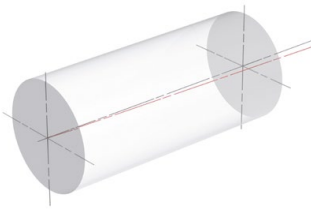
Application notes for WTX – Change Feed and WTX – Change exchangeable head drills

Coolant conditions

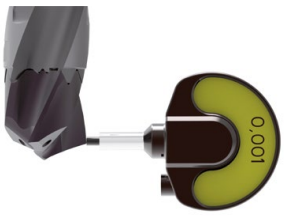
Coolant pressure dependent on drilling depth:

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

Runout accuracy

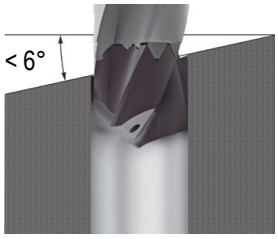


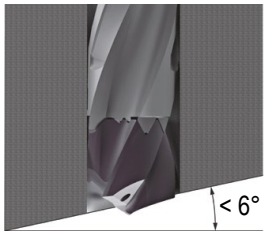
max. 0,02 mm



max. 0,04 mm

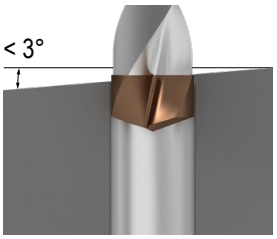
Max. entry and exit angle for the WTX – Change Feed

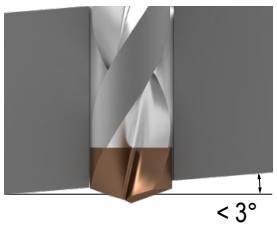




When entering and exiting angled surfaces, reduce v_f by 50 %.

Max. entry and exit angle for the WTX – Change





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

Exiting a through hole

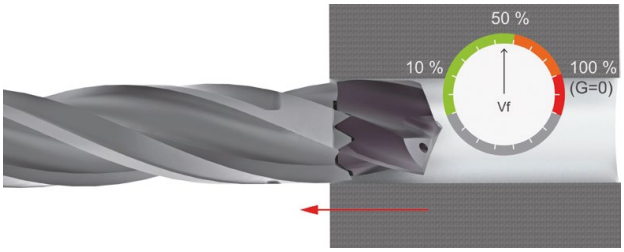
▲ WTX – Change Feed and WTX – Change



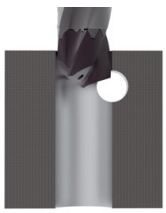
For through holes, it must be ensured that the exchangeable head does not fully protrude from the hole.

Do not retract at rapid feedrate

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

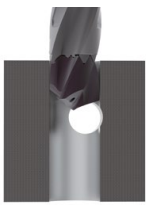


Machining situations



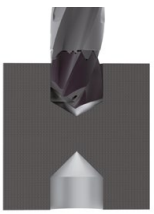
Offset cross hole point is engaged

WTX – Change Feed ✓
WTX – Change ✓



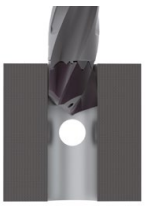
Offset cross hole point is not engaged

WTX – Change Feed ✗
WTX – Change ✗



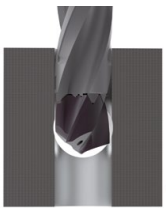
Breakthrough at counterbore

WTX – Change Feed ✓
WTX – Change ✗



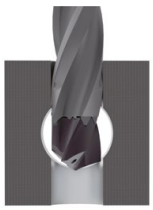
Hole on centre and smaller Ø

WTX – Change Feed ✓
WTX – Change ✓



Hole on centre and same Ø

WTX – Change Feed ✗
WTX – Change ✗

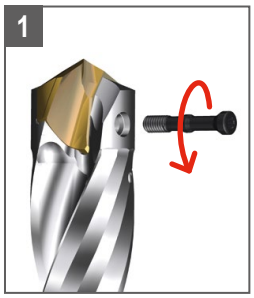


Hole on centre and larger Ø

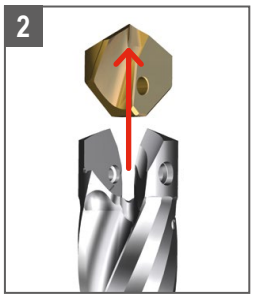
WTX – Change Feed ✗
WTX – Change ✗

Application notes for WPC – Change indexable insert drill

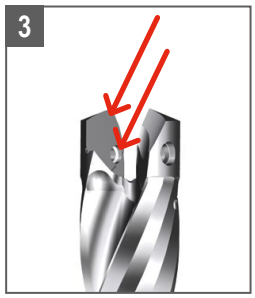
Assembly of the indexable insert



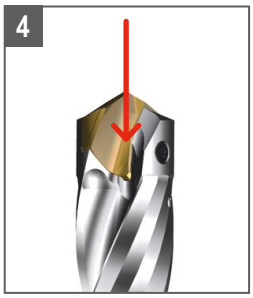
Loosen the clamping screw anti-clockwise using a TORX PLUS® screwdriver (screwdriver not included in the scope of supply).



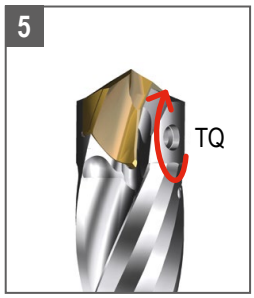
Remove the indexable insert from the insert seat.



Clean the insert seat and screw thread with compressed air.



Insert the new indexable insert in the insert seat.



Insert clamping screw from correct side and tighten clockwise with the specified torque.
Observe the change interval of the clamping screw!

Notes

- ▲ Only insert indexable inserts in the diameter range designated for the respective holder.
- ▲ The clamping screw must also be replaced upon every fifth replacement of the indexable insert.
- ▲ The tightening torque and item number of the clamping screw are labelled on the holder.
- ▲ Use only original spare parts.

Clamping screws and tightening torques

Diameter range	Article no. Clamping screw	Drive	Torque moment TQ
14,00–15,99 mm	11 950 00100	08IP	0,9 Nm
16,00–17,99 mm	11 950 00200	08IP	1,2 Nm
18,00–21,99 mm	11 950 00300	10IP	2,2 Nm
22,00–23,99 mm	11 950 00400	10IP	3,2 Nm
24,00–25,99 mm	11 950 00500	15IP	5,0 Nm
26,00–30,00 mm	11 950 00600	20IP	6,0 Nm

Notes on drilling technology



Solid drilling



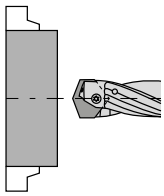
Stack plate drilling: stable clamping of closely spaced stack plates required.



When drilling into angled surfaces < 3°, reduce the feed by approx. 50%.
For an angled drill entrance > 3°, prior spot facing is required.



When exiting at an angle < 3°, reduce the feed by approx. 50%.
Machining angled drill exits > 3° is not recommended.



When machining with a stationary tool (turning machines), a precise centre position of the tool in relation to the rotational axis of the workpiece must be ensured. Maximum permissible offset ± 0.02 mm.



To achieve the optimal results, it is recommended to use the tool with thro' coolant only.
The recommended minimum coolant pressure should be 12 bar.

Recommendations for solid carbide drilling operations

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

Further information
cutting.tools/int/en/tips-solid-carbide-drilling

Coatings

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

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

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

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

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

Ti1050
- Ti multilayer coating
- $HV_{0.005}$ = 3300
- Coefficient of friction (against steel) = 0.3 – 0.5
- Maximum application temperature: 900 °C

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

TPX74S
- TiAlN-based PVD multilayer coating
- Universally applicable grade with high wear-resistance
- Maximum application temperature: 900 °C

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

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

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

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

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

DPX74M DRAGONSKIN
- Universal AlCrN-based monolayer coating developed for micro tools
- High oxidation, heat and wear resistance
- Maximum application temperature 1100 °C

New products for machining technicians

NEW

KUB Pentron – ABS

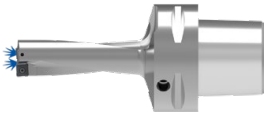


ABS | ≤ 2xD | ≤ 3xD

→ Page 10–17

NEW

KUB Pentron – PSC



PSC | ≤ 3xD

→ Page 24–26

NEW

KUB Pentron – C



C | ≤ 2xD | ≤ 3xD

→ Page 27–32

NEW

KUB Pentron – CS



ABS | ≤ 3xD

→ Page 39–41

NEW

KUB Trigon – K



K | ≤ 2xD | ≤ 3xD | ≤ 4xD

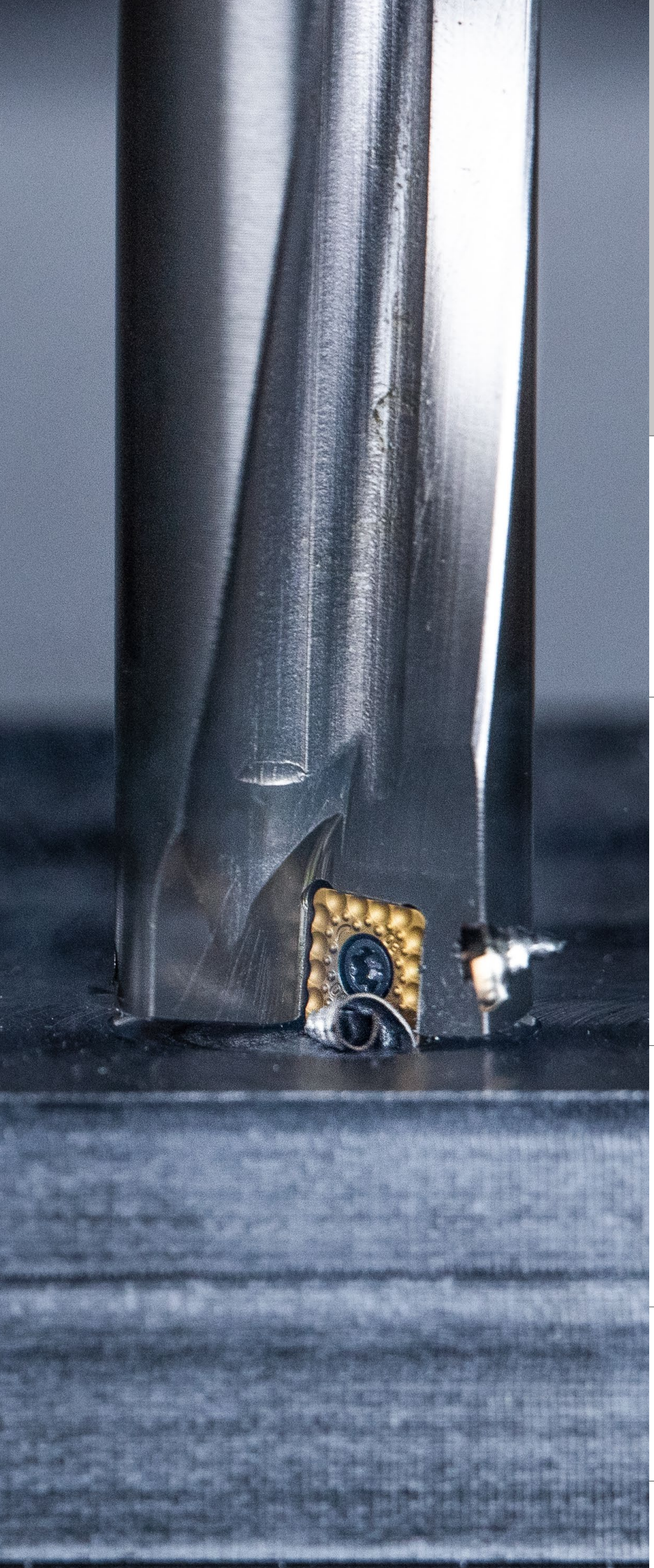
→ Page 57–59

NEW

Adjuster with ABS connection



→ Page 76



Solid drilling and bore machining	Metric Catalog	HSS drilling	1
	Metric Catalog	Solid carbide drilling	2
		Indexable drilling	3
		Reaming and Countersinking	4
		Indexable Boring	5
Threading	Metric Catalog	Taps and thread formers	6
	Metric Catalog	Circular and Thread Milling	7
	Metric Catalog	Thread turning	8
Turning		Indexable Turning	9
		Multifunction	10
		Parting and Grooving	11
	Metric Catalog	Miniature turning tools	12
Milling	Metric Catalog	HSS Milling Cutters	13
		Solid Milling	14
		Indexable Milling	15
Clamping technology		Adaptors and Accessories	16
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KOMET \ Performance

Premium quality tools for high performance.

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

Symbol explanation

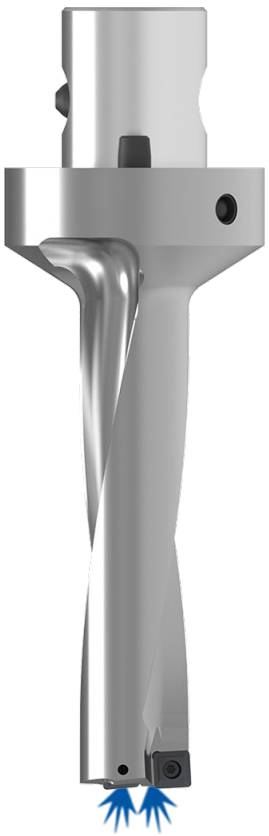
Shank

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

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

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

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



Version

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

left-hand cutting

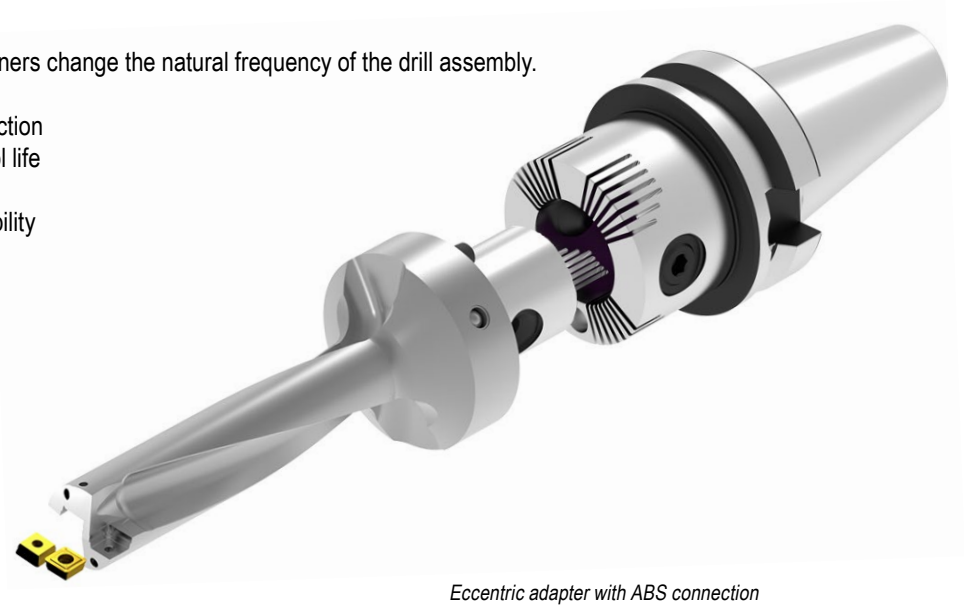
● = **Main Application**
○ = Extended application

Application tips – Torsional vibration dampeners and eccentric adjusting devices

The modular concept of the ABS connection, will allow you to easily and quickly optimize your drilling operation.
Two example of this are the torsional dampening devices and the eccentric adjusting devices.

Torsional vibration dampeners change the natural frequency of the drill assembly.
This results in:

- ▲ A significant noise reduction
- ▲ Considerably longer tool life
- ▲ Improved surface finish
- ▲ Improved process reliability



Eccentric adapter with ABS connection



Using an eccentric adapter, along with an ABS drill, you can easily vary and adjust the diameter of the hole by +/- 0.25 mm (+/- .010").



Additional metric items are available in our Online-Shop at cuttingtools.ceratizit.com and in the metric main catalog.

metric



Toolfinder

KUB Pentron
KOMET \ Performance



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

	Solid drilling	Boring	Drilling through a cross hole	Stack plate drilling	Entering on uneven surfaces	Entering on an edge	Entering on convex surfaces	Angled hole entrance	Entering on pointed contours	Chain drilling	Drilling through a center or pre-op
2xD	●	○	●	●	●	●	●	●	●	●	●
3xD	●	○	●	●	●	●	●	●	●	●	●
4xD	●	-	●	●	○	●	●	●	●	○	●
5xD	●	-	●	○	○	●	○	●	○	-	○

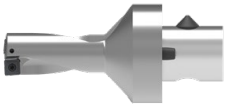
KUB Pentron CS
KOMET \ Performance



- ▲ Process-secure, reliable, modular system for creating large holes with a diameter of up to 96.00 mm

3xD	●	-	●	○	●	●	●	●	●	●	●

KUB Quatron
KOMET \ Performance



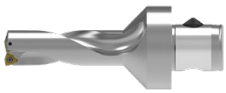
- ▲ Provides perfect drilling quality even under enormous loads
- ▲ For stable machining situations

2xD	●	○	●	●	●	○	●	●	○	●	●
3xD	●	○	●	●	●	○	●	●	○	●	●
2xD	●	○	●	●	●	○	●	●	○	●	●
3xD	●	○	●	●	●	○	●	●	○	●	●

Shank	Diameter Ø DC	Direction of cut	Page No.	Insert type		Cutting edges per insert	P Steel / M Stainless steel / K Cast iron / N Non-ferrous metals / S Heat-resistant / H Tempered steel / O Non-metal materials	Page No.
ABS	0.562–2.500 inch	R	10+11					
	14–65 mm	R	12+13					
C	0.562–1.750 inch	R	27					
	14–46 mm	R	28+29					
ABS	0.562–2.500 inch	R	14+15					
	14–65 mm	R	16+17					
PSC	0.875–1.687 inch	R	24					
	14–37 mm	R	25+26					
C	0.562–1.750 inch	R	30		SOGX	4	● ● ● ● ● ○ ○ v_c (inch) → 78 v_c (mm) → 92	42+43
	14–46 mm	R	31+32					
ABS	0.562–1.687 inch	R	18					
	14–46 mm	R	19+20					
C	0.562–1.750 inch	R	33					
	14–46 mm	R	34+35					
ABS	0.562–1.687 inch	R	21					
	14–46 mm	R	22+23					
C	0.562–1.750 inch	R	37					
	14–46 mm	R	37+38					
ABS	64–96 mm	R	39–41		SOGX	4	● ● ● ● ● ○ ○ v_c (inch) → 78 v_c (mm) → 92	42+43
ABS	0.562–2.500 inch	R						
					SOEX	4	● ● ● ● ● ○ ○	
C	0.562–1.750 inch	R						

Toolfinder

KUB Trigon
KOMET \ Performance



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

	Solid drilling	Boring	Drilling through a cross hole	Stack plate drilling	Entering on uneven surfaces	Entering on an edge	Entering on convex surfaces	Angled hole entrance	Entering on pointed contours	Chain drilling	Drilling through a center or pre-op
2xD	●	●	●	-	●	○	●	●	○	●	○
2.5xD	●	●	●	-	●	○	●	●	○	●	○
3xD	●	●	●	-	●	○	●	●	○	●	○
4xD	●	-	○	-	○	-	○	○	-	○	○

MaxiDrill 900
KOMET \ Standard



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

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

KUB Centron
KOMET \ Performance



- Cost-effective and process-secure drilling
- Hole depths up to 9xD in virtually all materials
- HSS or solid carbide center drill for optimum positioning accuracy

4xD	●	-	○	-	●	-	○	-	-	○	●
6xD	●	-	○	-	●	-	○	-	-	○	●
9xD	●	-	○	-	●	-	○	-	-	○	●

Shank	Diameter Ø DC	Direction of cut	Page No.	Insert type	Cutting edges per insert	P Steel	M Stainless steel	K Cast iron	N Non-ferrous metals	S Heat-resistant	H Tempered steel	O Non-metal materials	Page No.
ABS	0.562–3.250 inch	R	44+45										
ABS	14–82 mm	R	46+47										
K	14–44 mm	R	57										
C	0.562–3.250 inch	R	60–62										
ABS	0.562–3.250 inch	R	49+50		WOEX 3	●	●	●	○	●	○	○	74+75
ABS	14–82 mm	R	51+52										
ABS	14–44 mm	L	54										
K	14–44 mm	R	58										
ABS	0.562 – 1.750 inch	R	55										
ABS	14–44 mm	R	56										
K	14–44 mm	R	59										
C	0.562 – 1.750 inch	R	63+64										
C	12–63 mm	R	 metric		SONT 2 / 4	●	●	●	○	○			 metric
C	12–63 mm	R											
C	12–54 mm	R											
C	12–41 mm	R											
ABS	0.812–2.500 inch	R	65		WOEX 3	●	●	●	○	●	○	○	74+75
ABS	20–81 mm	R	69										
ABS	0.812–2.500 inch	R	65										
ABS	20–81 mm	R	69										
ABS	0.812–2.500 inch	R	65										
ABS	20–81 mm	R	69										

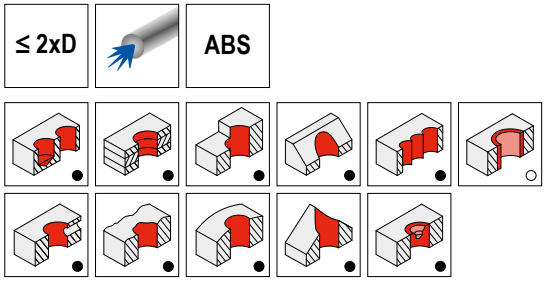
KUB Centron – center drills

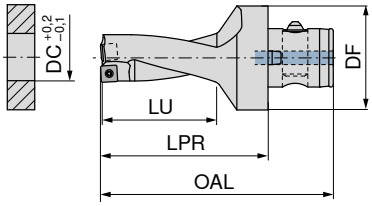
	Ø 0.197 – 0.394 inch	●	●	●	●	○		○	68
	Ø 5 – 12 mm	v_c (inch) → 90 v_c (mm) → 102							73

KUB Pentron – Indexable insert drill

Scope of supply:

Indexable Insert Drill incl. clamping screws







15 872 ...

Designation	KOMET no.	DC inch	DF inch	OAL inch	LU inch	LPR inch	Insert	ZEFF	torque moment Nm	
KUB-P.2D.0562.R.04-ABS50-F	U42 51430	0.562	1.969	3.504	1.181	2.283	SOGX 040204	2	0.38	14395
KUB-P.2D.0593.R.04-ABS50-F	U42 51510	0.593	1.969	3.661	1.260	2.441	SOGX 040204	2	0.38	15195
KUB-P.2D.0625.R.04-ABS50-F	U42 51590	0.625	1.969	3.661	1.260	2.441	SOGX 040204	2	0.38	15995
KUB-P.2D.0656.R.05-ABS50-F	U42 51670	0.656	1.969	3.780	1.339	2.559	SOGX 050204	2	0.62	16795
KUB-P.2D.0703.R.05-ABS50-F	U42 51790	0.703	1.969	3.858	1.417	2.638	SOGX 050204	2	0.62	17995
KUB-P.2D.0718.R.06-ABS50-F	U42 51820	0.718	1.969	3.976	1.496	2.756	SOGX 060206	2	1.01	18295
KUB-P.2D.0750.R.06-ABS50-F	U42 51910	0.750	1.969	4.055	1.575	2.835	SOGX 060206	2	1.01	19195
KUB-P.2D.0765.R.06-ABS50-F	U42 51940	0.765	1.969	4.055	1.575	2.835	SOGX 060206	2	1.01	19495
KUB-P.2D.0781.R.06-ABS50-F	U42 51980	0.781	1.969	4.055	1.575	2.835	SOGX 060206	2	1.01	19895
KUB-P.2D.0812.R.07-ABS50-F	U42 52060	0.812	1.969	4.134	1.654	2.913	SOGX 07T208	2	1.01	20695
KUB-P.2D.0843.R.07-ABS50-F	U42 52140	0.843	1.969	4.213	1.732	2.992	SOGX 07T208	2	1.01	21495
KUB-P.2D.0875.R.07-ABS50-F	U42 52220	0.875	1.969	4.291	1.811	3.071	SOGX 07T208	2	1.01	22295
KUB-P.2D.0937.R.08-ABS50-F	U42 52380	0.937	1.969	4.370	1.890	3.150	SOGX 080308	2	1.28	23895
KUB-P.2D.0968.R.08-ABS50-F	U42 52460	0.968	1.969	4.488	1.969	3.268	SOGX 080308	2	1.28	24695
KUB-P.2D.1000.R.08-ABS50-F	U42 52540	1.000	1.969	4.567	2.047	3.346	SOGX 080308	2	1.28	25495
KUB-P.2D.1031.R.09-ABS50-F	U42 52620	1.031	1.969	4.685	2.126	3.465	SOGX 09T308	2	2.25	26295
KUB-P.2D.1109.R.09-ABS50-F	U42 52820	1.109	1.969	4.882	2.283	3.661	SOGX 09T308	2	2.25	28295
KUB-P.2D.1125.R.09-ABS50-F	U42 52860	1.125	1.969	4.882	2.283	3.661	SOGX 09T308	2	2.25	28695
KUB-P.2D.1165.R.09-ABS50-F	U42 52940	1.156	1.969	4.961	2.362	3.740	SOGX 09T308	2	2.25	29495
KUB-P.2D.1187.R.10-ABS63-F	U42 63020	1.187	2.480	5.472	2.441	3.976	SOGX 100408	2	2.8	30196
KUB-P.2D.1218.R.10-ABS63-F	U42 63090	1.218	2.480	5.472	2.441	3.976	SOGX 100408	2	2.8	30996
KUB-P.2D.1250.R.10-ABS63-F	U42 63180	1.250	2.480	5.551	2.520	4.055	SOGX 100408	2	2.8	31896
KUB-P.2D.1312.R.11-ABS63-F	U42 63330	1.312	2.480	5.748	2.677	4.252	SOGX 110408	2	2.8	33396
KUB-P.2D.1328.R.11-ABS63-F	U42 63370	1.328	2.480	5.748	2.677	4.252	SOGX 110408	2	2.8	33796
KUB-P.2D.1375.R.11-ABS63-F	U42 63490	1.375	2.480	5.866	2.756	4.370	SOGX 110408	2	2.8	34996
KUB-P.2D.1406.R.11-ABS63-F	U42 63570	1.406	2.480	5.945	2.835	4.449	SOGX 110408	2	2.8	35796
KUB-P.2D.1469.R.12-ABS63-F	U42 63730	1.469	2.480	6.142	2.992	4.646	SOGX 120408	2	6.25	37396
KUB-P.2D.1500.R.12-ABS63-F	U42 63810	1.500	2.480	6.260	3.071	4.764	SOGX 120408	2	6.25	38196
KUB-P.2D.1531.R.12-ABS63-F	U42 63890	1.531	2.480	6.260	3.071	4.764	SOGX 120408	2	6.25	38996
KUB-P.2D.1562.R.12-ABS63-F	U42 63970	1.562	2.480	6.339	3.150	4.843	SOGX 120408	2	6.25	39796
KUB-P.2D.1625.R.12-ABS63-F	U42 64130	1.625	2.480	6.535	3.307	5.039	SOGX 120408	2	6.25	41396
KUB-P.2D.1656.R.13-ABS63-F	U42 64210	1.656	2.480	6.654	3.386	5.157	SOGX 130508	2	6.25	42196
KUB-P.2D.1687.R.13-ABS63-F	U42 64280	1.687	2.480	6.654	3.386	5.157	SOGX 130508	2	6.25	42896
KUB-P.2D.1781.R.13-ABS63-F	U42 64520	1.781	2.480	6.811	3.622	5.315	SOGX 130508	2	6.25	45296
KUB-P.2D.1875.R.08-ABS63-F	U42 64760	1.875	2.480	7.441	3.780	5.945	SOGX 080308	4	1.28	47696
KUB-P.2D.1937.R.08-ABS63-F	U42 64920	1.937	2.480	7.598	3.937	6.102	SOGX 080308	4	1.28	49296
KUB-P.2D.1975.R.08-ABS63-F	U42 65020	1.975	2.480	7.677	4.016	6.181	SOGX 080308	4	1.28	50296
KUB-P.2D.2000.R.08-ABS63-F	U42 65080	2.000	2.480	7.677	4.016	6.181	SOGX 080308	4	1.28	50896
KUB-P.2D.2062.R.10-ABS63-F	U42 65240	2.062	2.480	7.835	4.173	6.339	SOGX 100408	4	2.8	52496
KUB-P.2D.2250.R.10-ABS80-F	U42 75720	2.250	3.150	8.425	4.567	6.732	SOGX 100408	4	2.8	57298
KUB-P.2D.2281.R.10-ABS80-F	U42 75790	2.281	3.150	8.425	4.567	6.732	SOGX 100408	4	2.8	57998
KUB-P.2D.2375.R.10-ABS80-F	U42 76030	2.375	3.150	8.661	4.803	6.969	SOGX 100408	4	2.8	60398
KUB-P.2D.2437.R.10-ABS80-F	U42 76190	2.437	3.150	8.740	4.882	7.047	SOGX 100408	4	2.8	61998
KUB-P.2D.2500.R.10-ABS80-F	U42 76350	2.500	3.150	8.898	5.039	7.205	SOGX 100408	4	2.8	63598

		 Key		 Screwdriver		 Clamping screw	
		80 950 ...		**80 950 ...**		**10 950 ...**	
Spare parts							
DC							
0.562 - 0.625	T05 - IP	**057**				M1.8x3.8 - 05IP	**10100**
0.656 - 0.703			T06 - IP	**123**		M2.0x4.3 - 06IP	**10000**
0.718 - 0.875			T06 - IP	**123**		M2.2x5.5 - 06IP	**10700**
0.937 - 1.000			T08 - IP	**125**		M2.5x6.3 - 08IP	**10800**
1.031 - 1.156			T08 - IP	**125**		M3.0x7.6 - 08IP	**10200**
1.187 - 1.406			T15 - IP	**128**		M3.5x7.5 - 15IP	**10300**
1.469 - 1.781			T20 - IP	**129**		M4.5x10 - 20IP	**10400**
1.875 - 2.000			T08 - IP	**125**		M2.5x6.3 - 08IP	**10800**
2.062 - 2.500			T15 - IP	**128**		M3.5x7.5 - 15IP	**10300**

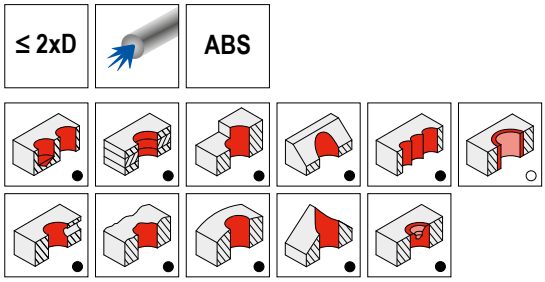
Matching holders can be found in → **Chapter 16 Adapters and accessories**

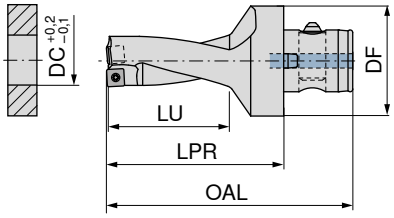
KUB Pentron – Indexable insert drill

▲ ZEFF = Number of Inserts

Scope of supply:

Indexable Insert Drill incl. clamping screws







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Designation	KOMET no.	DC	DF	OAL	LU	LPR	Insert	ZEFF	torque moment	
		mm	mm	mm	mm	mm			Nm	
KUB-P.2D.140.R.04-ABS50	U42 51400	**14**	50	86	28	55	SOGX 040204	2	0.38	**14095**
KUB-P.2D.145.R.04-ABS50	U42 51450	**14.5**	50	89	30	58	SOGX 040204	2	0.38	**14595**
KUB-P.2D.150.R.04-ABS50	U42 51500	**15**	50	89	30	58	SOGX 040204	2	0.38	**15095**
KUB-P.2D.155.R.04-ABS50	U42 51550	**15.5**	50	93	32	62	SOGX 040204	2	0.38	**15595**
KUB-P.2D.160.R.04-ABS50	U42 51600	**16**	50	93	32	62	SOGX 040204	2	0.38	**16095**
KUB-P.2D.165.R.05-ABS50	U42 51650	**16.5**	50	96	34	65	SOGX 050204	2	0.62	**16595**
KUB-P.2D.170.R.05-ABS50	U42 51700	**17**	50	96	34	65	SOGX 050204	2	0.62	**17095**
KUB-P.2D.175.R.05-ABS50	U42 51750	**17.5**	50	98	36	67	SOGX 050204	2	0.62	**17595**
KUB-P.2D.180.R.05-ABS50	U42 51800	**18**	50	98	36	67	SOGX 050204	2	0.62	**18095**
KUB-P.2D.185.R.06-ABS50	U42 51850	**18.5**	50	101	38	70	SOGX 060206	2	1.01	**18595**
KUB-P.2D.190.R.06-ABS50	U42 51900	**19**	50	101	38	70	SOGX 060206	2	1.01	**19095**
KUB-P.2D.195.R.06-ABS50	U42 51950	**19.5**	50	103	40	72	SOGX 060206	2	1.01	**19595**
KUB-P.2D.200.R.06-ABS50	U42 52000	**20**	50	103	40	72	SOGX 060206	2	1.01	**20095**
KUB-P.2D.205.R.07-ABS50	U42 52050	**20.5**	50	105	42	74	SOGX 07T208	2	1.01	**20595**
KUB-P.2D.210.R.07-ABS50	U42 52100	**21**	50	105	42	74	SOGX 07T208	2	1.01	**21095**
KUB-P.2D.215.R.07-ABS50	U42 52150	**21.5**	50	107	44	76	SOGX 07T208	2	1.01	**21595**
KUB-P.2D.220.R.07-ABS50	U42 52200	**22**	50	107	44	76	SOGX 07T208	2	1.01	**22095**
KUB-P.2D.225.R.07-ABS50	U42 52250	**22.5**	50	109	46	78	SOGX 07T208	2	1.01	**22595**
KUB-P.2D.230.R.07-ABS50	U42 52300	**23**	50	109	46	78	SOGX 07T208	2	1.01	**23095**
KUB-P.2D.235.R.08-ABS50	U42 52350	**23.5**	50	111	48	80	SOGX 080308	2	1.28	**23595**
KUB-P.2D.240.R.08-ABS50	U42 52400	**24**	50	111	48	80	SOGX 080308	2	1.28	**24095**
KUB-P.2D.245.R.08-ABS50	U42 52450	**24.5**	50	114	50	83	SOGX 080308	2	1.28	**24595**
KUB-P.2D.250.R.08-ABS50	U42 52500	**25**	50	114	50	83	SOGX 080308	2	1.28	**25095**
KUB-P.2D.255.R.08-ABS50	U42 52550	**25.5**	50	116	52	85	SOGX 080308	2	1.28	**25595**
KUB-P.2D.260.R.08-ABS50	U42 52600	**26**	50	116	52	85	SOGX 080308	2	1.28	**26095**
KUB-P.2D.265.R.09-ABS50	U42 52650	**26.5**	50	119	54	88	SOGX 09T308	2	2.25	**26595**
KUB-P.2D.270.R.09-ABS50	U42 52700	**27**	50	119	54	88	SOGX 09T308	2	2.25	**27095**
KUB-P.2D.275.R.09-ABS50	U42 52750	**27.5**	50	121	56	90	SOGX 09T308	2	2.25	**27595**
KUB-P.2D.280.R.09-ABS50	U42 52800	**28**	50	121	56	90	SOGX 09T308	2	2.25	**28095**
KUB-P.2D.285.R.09-ABS50	U42 52850	**28.5**	50	124	58	93	SOGX 09T308	2	2.25	**28595**
KUB-P.2D.290.R.09-ABS50	U42 52900	**29**	50	124	58	93	SOGX 09T308	2	2.25	**29095**
KUB-P.2D.295.R.09-ABS50	U42 52950	**29.5**	50	126	60	95	SOGX 09T308	2	2.25	**29595**
KUB-P.2D.300.R.09-ABS50	U42 53000	**30**	50	126	60	95	SOGX 09T308	2	2.25	**30095**
KUB-P.2D.305.R.10-ABS63	U42 63050	**30.5**	63	139	62	101	SOGX 100408	2	2.8	**30596**
KUB-P.2D.310.R.10-ABS63	U42 63100	**31**	63	139	62	101	SOGX 100408	2	2.8	**31096**
KUB-P.2D.315.R.10-ABS63	U42 63150	**31.5**	63	141	64	103	SOGX 100408	2	2.8	**31596**
KUB-P.2D.320.R.10-ABS63	U42 63200	**32**	63	141	64	103	SOGX 100408	2	2.8	**32096**
KUB-P.2D.325.R.10-ABS63	U42 63250	**32.5**	63	144	66	106	SOGX 100408	2	2.8	**32596**
KUB-P.2D.330.R.10-ABS63	U42 63300	**33**	63	144	66	106	SOGX 100408	2	2.8	**33096**
KUB-P.2D.335.R.11-ABS63	U42 63350	**33.5**	63	146	68	108	SOGX 110408	2	2.8	**33596**
KUB-P.2D.340.R.11-ABS63	U42 63400	**34**	63	146	68	108	SOGX 110408	2	2.8	**34096**
KUB-P.2D.345.R.11-ABS63	U42 63450	**34.5**	63	149	70	111	SOGX 110408	2	2.8	**34596**
KUB-P.2D.350.R.11-ABS63	U42 63500	**35**	63	149	70	111	SOGX 110408	2	2.8	**35096**
KUB-P.2D.355.R.11-ABS63	U42 63550	**35.5**	63	152	72	113	SOGX 110408	2	2.8	**35596**
KUB-P.2D.360.R.11-ABS63	U42 63600	**36**	63	152	72	113	SOGX 110408	2	2.8	**36096**
KUB-P.2D.365.R.11-ABS63	U42 63650	**36.5**	63	154	74	116	SOGX 110408	2	2.8	**36596**
KUB-P.2D.370.R.11-ABS63	U42 63700	**37**	63	154	74	116	SOGX 110408	2	2.8	**37096**
KUB-P.2D.375.R.12-ABS63	U42 63750	**37.5**	63	156	76	118	SOGX 120408	2	6.25	**37596**
KUB-P.2D.380.R.12-ABS63	U42 63800	**38**	63	156	76	118	SOGX 120408	2	6.25	**38096**
KUB-P.2D.385.R.12-ABS63	U42 63850	**38.5**	63	159	78	121	SOGX 120408	2	6.25	**38596**
KUB-P.2D.390.R.12-ABS63	U42 63900	**39**	63	159	78	121	SOGX 120408	2	6.25	**39096**
KUB-P.2D.395.R.12-ABS63	U42 63950	**39.5**	63	161	80	123	SOGX 120408	2	6.25	**39596**
KUB-P.2D.400.R.12-ABS63	U42 64000	**40**	63	161	80	123	SOGX 120408	2	6.25	**40096**
KUB-P.2D.405.R.12-ABS63	U42 64050	**40.5**	63	164	82	126	SOGX 120408	2	6.25	**40596**
KUB-P.2D.410.R.12-ABS63	U42 64100	**41**	63	164	82	126	SOGX 120408	2	6.25	**41096**

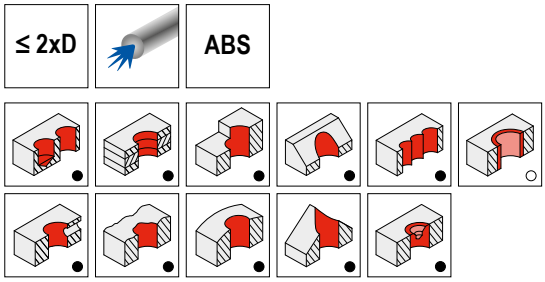
Continued on next page

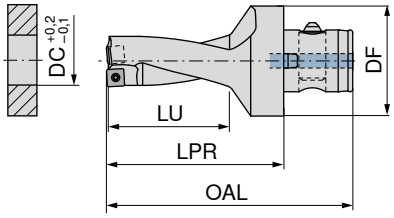
KUB Pentron – Indexable insert drill

▲ ZEFF = Number of Inserts

Scope of supply:

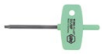
Indexable Insert Drill incl. clamping screws







										10 872 ...
Designation	KOMET no.	**DC** mm	DF mm	OAL mm	LU mm	LPR mm	Insert	ZEFF	torque moment Nm	
KUB-P.2D.415.R.12-ABS63	U42 64150	**41.5**	63	166	84	128	SOGX 120408	2	6.25	**41596**
KUB-P.2D.420.R.12-ABS63	U42 64200	**42**	63	166	84	128	SOGX 120408	2	6.25	**42096**
KUB-P.2D.425.R.13-ABS63	U42 64250	**42.5**	63	169	86	131	SOGX 130508	2	6.25	**42596**
KUB-P.2D.430.R.13-ABS63	U42 64300	**43**	63	169	86	131	SOGX 130508	2	6.25	**43096**
KUB-P.2D.435.R.13-ABS63	U42 64350	**43.5**	63	171	88	133	SOGX 130508	2	6.25	**43596**
KUB-P.2D.440.R.13-ABS63	U42 64400	**44**	63	171	88	133	SOGX 130508	2	6.25	**44096**
KUB-P.2D.445.R.13-ABS63	U42 64450	**44.5**	63	174	90	136	SOGX 130508	2	6.25	**44596**
KUB-P.2D.450.R.13-ABS63	U42 64500	**45**	63	174	90	136	SOGX 130508	2	6.25	**45096**
KUB-P.2D.455.R.13-ABS63	U42 64550	**45.5**	63	173	92	135	SOGX 130508	2	6.25	**45596**
KUB-P.2D.460.R.13-ABS63	U42 64600	**46**	63	173	92	135	SOGX 130508	2	6.25	**46096**
KUB-P.2D.470.R.08-ABS63	U42 64700	**47**	63	187	94	149	SOGX 080308	4	1.28	**47096**
KUB-P.2D.480.R.08-ABS63	U42 64800	**48**	63	189	96	151	SOGX 080308	4	1.28	**48096**
KUB-P.2D.490.R.08-ABS63	U42 64900	**49**	63	191	98	153	SOGX 080308	4	1.28	**49096**
KUB-P.2D.500.R.08-ABS63	U42 65000	**50**	63	193	100	155	SOGX 080308	4	1.28	**50096**
KUB-P.2D.510.R.08-ABS63	U42 65100	**51**	63	195	102	157	SOGX 080308	4	1.28	**51096**
KUB-P.2D.520.R.08-ABS63	U42 65200	**52**	63	197	104	159	SOGX 080308	4	1.28	**52096**
KUB-P.2D.530.R.10-ABS63	U42 65300	**53**	63	199	106	161	SOGX 100408	4	2.8	**53096**
KUB-P.2D.540.R.10-ABS63	U42 65400	**54**	63	201	108	163	SOGX 100408	4	2.8	**54096**
KUB-P.2D.550.R.10-ABS80	U42 75500	**55**	80	208	110	165	SOGX 100408	4	2.8	**55098**
KUB-P.2D.560.R.10-ABS80	U42 75600	**56**	80	210	112	167	SOGX 100408	4	2.8	**56098**
KUB-P.2D.570.R.10-ABS80	U42 75700	**57**	80	212	114	169	SOGX 100408	4	2.8	**57098**
KUB-P.2D.580.R.10-ABS80	U42 75800	**58**	80	214	116	171	SOGX 100408	4	2.8	**58098**
KUB-P.2D.590.R.10-ABS80	U42 75900	**59**	80	216	118	173	SOGX 100408	4	2.8	**59098**
KUB-P.2D.600.R.10-ABS80	U42 76000	**60**	80	218	120	175	SOGX 100408	4	2.8	**60098**
KUB-P.2D.610.R.10-ABS80	U42 76100	**61**	80	220	122	177	SOGX 100408	4	2.8	**61098**
KUB-P.2D.620.R.10-ABS80	U42 76200	**62**	80	222	124	179	SOGX 100408	4	2.8	**62098**
KUB-P.2D.630.R.10-ABS80	U42 76300	**63**	80	224	126	181	SOGX 100408	4	2.8	**63098**
KUB-P.2D.640.R.10-ABS80	U42 76400	**64**	80	226	128	183	SOGX 100408	4	2.8	**64098**
KUB-P.2D.650.R.10-ABS80	U42 76500	**65**	80	228	130	185	SOGX 100408	4	2.8	**65098**



Key



Screwdriver



Clamping screw

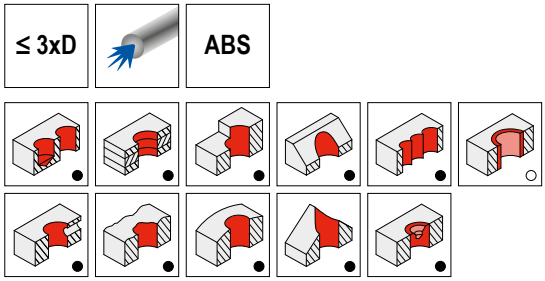
Spare parts DC							
			80 950 ...			**10 950 ...**	
14 - 16	T05 - IP	**057**				M1.8x3.8 - 05IP	**10100**
16.5 - 18			T06 - IP	**123**		M2.0x4.3 - 06IP	**10000**
18.5 - 23			T06 - IP	**123**		M2.2x5.5 - 06IP	**10700**
23.5 - 26			T08 - IP	**125**		M2.5x6.3 - 08IP	**10800**
26.5 - 30			T08 - IP	**125**		M3.0x7.6 - 08IP	**10200**
30.5 - 37			T15 - IP	**128**		M3.5x7.5 - 15IP	**10300**
37.5 - 46			T20 - IP	**129**		M4.5x10 - 20IP	**10400**
47 - 52			T08 - IP	**125**		M2.5x6.3 - 08IP	**10800**
53 - 65			T08 - IP	**125**		M3.5x7.5 - 15IP	**10300**

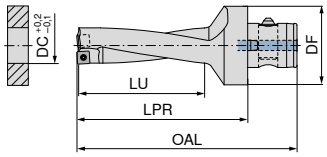
Matching holders can be found in → **Chapter 16 Adapters and accessories**

KUB Pentron – Indexable insert drill

Scope of supply:

Indexable Insert Drill incl. clamping screws







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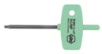
Designation	KOMET no.	DC inch	DF inch	OAL inch	LU inch	LPR inch	Insert	ZEFF	torque moment Nm	
KUB-P.3D.0562.R.04-ABS50-F	U43 51430	0.562	1.969	4.094	1.772	2.874	SOGX 040204	2	0.38	14395
KUB-P.3D.0593.R.04-ABS50-F	U43 51510	0.593	1.969	4.291	1.890	3.071	SOGX 040204	2	0.38	15195
KUB-P.3D.0625.R.04-ABS50-F	U43 51590	0.625	1.969	4.291	1.890	3.071	SOGX 040204	2	0.38	15995
KUB-P.3D.0656.R.05-ABS50-F	U43 51670	0.656	1.969	4.449	2.008	3.228	SOGX 050204	2	0.62	16795
KUB-P.3D.0703.R.05-ABS50-F	U43 51790	0.703	1.969	4.567	2.126	3.346	SOGX 050204	2	0.62	17995
KUB-P.3D.0718.R.06-ABS50-F	U43 51820	0.718	1.969	4.685	2.244	3.465	SOGX 060206	2	1.01	18295
KUB-P.3D.0750.R.06-ABS50-F	U43 51910	0.750	1.969	4.843	2.362	3.622	SOGX 060206	2	1.01	19195
KUB-P.3D.0765.R.06-ABS50-F	U43 51940	0.765	1.969	4.843	2.362	3.622	SOGX 060206	2	1.01	19495
KUB-P.3D.0781.R.06-ABS50-F	U43 51980	0.781	1.969	4.843	2.362	3.622	SOGX 060206	2	1.01	19895
KUB-P.3D.205.R.07-ABS50-F	U43 52060	0.812	1.969	4.961	2.480	3.740	SOGX 07T208	2	1.01	20695
KUB-P.3D.205.R.07-ABS50-F	U43 52140	0.843	1.969	5.079	2.598	3.858	SOGX 07T208	2	1.01	21495
KUB-P.3D.205.R.07-ABS50-F	U43 52220	0.875	1.969	5.197	2.717	3.976	SOGX 07T208	2	1.01	22295
KUB-P.3D.0937.R.08-ABS50-F	U43 52380	0.937	1.969	5.315	2.835	4.094	SOGX 080308	2	1.28	23895
KUB-P.3D.0968.R.08-ABS50-F	U43 52460	0.968	1.969	5.472	2.953	4.252	SOGX 080308	2	1.28	24695
KUB-P.3D.1000.R.08-ABS50-F	U43 52540	1.000	1.969	5.591	3.071	4.370	SOGX 080308	2	1.28	25495
KUB-P.3D.1031.R.09-ABS50-F	U43 52620	1.031	1.969	5.748	3.189	4.528	SOGX 09T308	2	2.25	26295
KUB-P.3D.1109.R.09-ABS50-F	U43 52820	1.109	1.969	6.024	3.425	4.803	SOGX 09T308	2	2.25	28295
KUB-P.3D.1125.R.09-ABS50-F	U43 52860	1.125	1.969	6.024	3.425	4.803	SOGX 09T308	2	2.25	28695
KUB-P.3D.1156.R.09-ABS50-F	U43 52940	1.156	1.969	6.142	3.543	4.921	SOGX 09T308	2	2.25	29495
KUB-P.3D.1187.R.11-ABS63-F	U43 63020	1.187	2.480	6.693	3.661	5.197	SOGX 100408	2	2.8	30196
KUB-P.3D.1218.R.11-ABS63-F	U43 63090	1.218	2.480	6.693	3.661	5.197	SOGX 100408	2	2.8	30996
KUB-P.3D.1250.R.11-ABS63-F	U43 63180	1.250	2.480	6.811	3.780	5.315	SOGX 100408	2	2.8	31896
KUB-P.3D.1312.R.11-ABS63-F	U43 63330	1.312	2.480	7.087	4.016	5.591	SOGX 110408	2	2.8	33396
KUB-P.3D.1328.R.11-ABS63-F	U43 63370	1.328	2.480	7.087	4.016	5.591	SOGX 110408	2	2.8	33796
KUB-P.3D.1375.R.11-ABS63-F	U43 63490	1.375	2.480	7.244	4.134	5.748	SOGX 110408	2	2.8	34996
KUB-P.3D.1406.R.11-ABS63-F	U43 63570	1.406	2.480	7.362	4.252	5.866	SOGX 110408	2	2.8	35796
KUB-P.3D.1469.R.12-ABS63-F	U43 63730	1.469	2.480	7.638	4.488	6.142	SOGX 120408	2	6.25	37396
KUB-P.3D.1500.R.12-ABS63-F	U43 63810	1.500	2.480	7.795	4.606	6.299	SOGX 120408	2	6.25	38196
KUB-P.3D.1531.R.12-ABS63-F	U43 63890	1.531	2.480	7.795	4.606	6.299	SOGX 120408	2	6.25	38996
KUB-P.3D.1562.R.12-ABS63-F	U43 63970	1.562	2.480	7.913	4.724	6.417	SOGX 120408	2	6.25	39796
KUB-P.3D.1625.R.12-ABS63-F	U43 64130	1.625	2.480	8.189	4.961	6.693	SOGX 120408	2	6.25	41396
KUB-P.3D.1656.R.13-ABS63-F	U43 64210	1.656	2.480	8.346	5.079	6.850	SOGX 130508	4	6.25	42196
KUB-P.3D.1687.R.13-ABS63-F	U43 64280	1.687	2.480	8.346	5.079	6.850	SOGX 130508	4	6.25	42896
KUB-P.3D.1781.R.13-ABS63-F	U43 64520	1.781	2.480	8.622	5.433	7.126	SOGX 130508	4	6.25	45296
KUB-P.3D.1875.R.08-ABS63-F	U43 64760	1.875	2.480	9.331	5.669	7.835	SOGX 080308	4	1.28	47696
KUB-P.3D.1937.R.08-ABS63-F	U43 64920	1.937	2.480	9.567	5.906	8.071	SOGX 080308	4	1.28	49296
KUB-P.3D.1975.R.08-ABS63-F	U43 65020	1.975	2.480	9.685	6.024	8.189	SOGX 080308	4	1.28	50296
KUB-P.3D.2000.R.08-ABS63-F	U43 65080	2.000	2.480	9.685	6.024	8.189	SOGX 080308	4	1.28	50896
KUB-P.3D.2062.R.10-ABS63-F	U43 65240	2.062	2.480	9.921	6.260	8.425	SOGX 100408	4	2.8	52496
KUB-P.3D.2250.R.10-ABS80-F	U43 75720	2.250	3.150	10.709	6.850	9.016	SOGX 100408	4	2.8	57298
KUB-P.3D.2281.R.10-ABS80-F	U43 75790	2.281	3.150	10.709	6.850	9.016	SOGX 100408	4	2.8	57998
KUB-P.3D.2375.R.10-ABS80-F	U43 76030	2.375	3.150	11.063	7.205	9.370	SOGX 100408	4	2.8	60398
KUB-P.3D.2437.R.10-ABS80-F	U43 76190	2.437	3.150	11.181	7.323	9.488	SOGX 100408	4	2.8	61998
KUB-P.3D.2500.R.10-ABS80-F	U43 76350	2.500	3.150	11.417	7.559	9.724	SOGX 100408	4	2.8	63598

		 Key		 Screwdriver		 Clamping screw	
		80 950 ...		**80 950 ...**		**10 950 ...**	
Spare parts							
DC							
0.562 - 0.625	T05 - IP	**057**				M1.8x3.8 - 05IP	**10100**
0.656 - 0.703				T06 - IP	**123**	M2.0x4.3 - 06IP	**10000**
0.718 - 0.875				T06 - IP	**123**	M2.2x5.5 - 06IP	**10700**
0.937 - 1.000				T08 - IP	**125**	M2.5x6.3 - 08IP	**10800**
1.031 - 1.156				T08 - IP	**125**	M3.0x7.6 - 08IP	**10200**
1.187 - 1.406				T15 - IP	**128**	M3.5x7.5 - 15IP	**10300**
1.469 - 1.781				T20 - IP	**129**	M4.5x10 - 20IP	**10400**
1.875 - 2.000				T08 - IP	**125**	M2.5x6.3 - 08IP	**10800**
2.062 - 2.500				T15 - IP	**128**	M3.5x7.5 - 15IP	**10300**

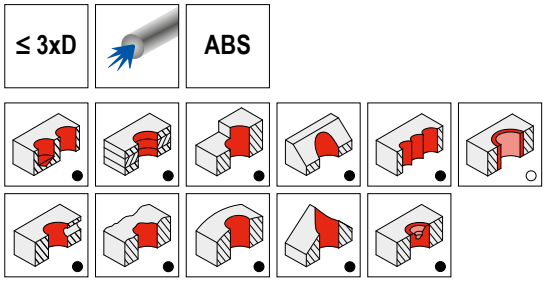
Matching holders can be found in → **Chapter 16 Adapters and accessories**

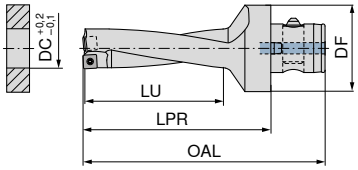
KUB Pentron – Indexable insert drill

▲ ZEFF = Number of Inserts

Scope of supply:

Indexable Insert Drill incl. clamping screws







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Designation	KOMET no.	DC mm	DF mm	OAL mm	LU mm	LPR mm	Insert	ZEFF	torque moment Nm	
KUB-P.3D.140.R.04-ABS50	U43 51400	14	50	100	42	69	SOGX 040204	2	0.38	14095
KUB-P.3D.145.R.04-ABS50	U43 51450	14.5	50	104	45	73	SOGX 040204	2	0.38	14595
KUB-P.3D.150.R.04-ABS50	U43 51500	15	50	104	45	73	SOGX 040204	2	0.38	15095
KUB-P.3D.155.R.04-ABS50	U43 51550	15.5	50	109	48	78	SOGX 040204	2	0.38	15595
KUB-P.3D.160.R.04-ABS50	U43 51600	16	50	109	48	78	SOGX 040204	2	0.38	16095
KUB-P.3D.165.R.05-ABS50	U43 51650	16.5	50	113	51	82	SOGX 050204	2	0.62	16595
KUB-P.3D.170.R.05-ABS50	U43 51700	17	50	113	51	82	SOGX 050204	2	0.62	17095
KUB-P.3D.175.R.05-ABS50	U43 51750	17.5	50	116	54	85	SOGX 050204	2	0.62	17595
KUB-P.3D.180.R.05-ABS50	U43 51800	18	50	116	54	85	SOGX 050204	2	0.62	18095
KUB-P.3D.185.R.06-ABS50	U43 51850	18.5	50	120	57	89	SOGX 060206	2	1.01	18595
KUB-P.3D.190.R.06-ABS50	U43 51900	19	50	120	57	89	SOGX 060206	2	1.01	19095
KUB-P.3D.195.R.06-ABS50	U43 51950	19.5	50	123	60	92	SOGX 060206	2	1.01	19595
KUB-P.3D.200.R.06-ABS50	U43 52000	20	50	123	60	92	SOGX 060206	2	1.01	20095
KUB-P.3D.205.R.07-ABS50	U43 52050	20.5	50	126	63	95	SOGX 07T208	2	1.01	20595
KUB-P.3D.210.R.07-ABS50	U43 52100	21	50	126	63	95	SOGX 07T208	2	1.01	21095
KUB-P.3D.215.R.07-ABS50	U43 52150	21.5	50	129	66	98	SOGX 07T208	2	1.01	21595
KUB-P.3D.220.R.07-ABS50	U43 52200	22	50	129	66	98	SOGX 07T208	2	1.01	22095
KUB-P.3D.225.R.07-ABS50	U43 52250	22.5	50	132	69	101	SOGX 07T208	2	1.01	22595
KUB-P.3D.230.R.07-ABS50	U43 52300	23	50	132	69	101	SOGX 07T208	2	1.01	23095
KUB-P.3D.235.R.08-ABS50	U43 52350	23.5	50	135	72	104	SOGX 080308	2	1.28	23595
KUB-P.3D.240.R.08-ABS50	U43 52400	24	50	135	72	104	SOGX 080308	2	1.28	24095
KUB-P.3D.245.R.08-ABS50	U43 52450	24.5	50	139	75	108	SOGX 080308	2	1.28	24595
KUB-P.3D.250.R.08-ABS50	U43 52500	25	50	139	75	108	SOGX 080308	2	1.28	25095
KUB-P.3D.255.R.08-ABS50	U43 52550	25.5	50	142	78	111	SOGX 080308	2	1.28	25595
KUB-P.3D.260.R.08-ABS50	U43 52600	26	50	142	78	111	SOGX 080308	2	1.28	26095
KUB-P.3D.265.R.09-ABS50	U43 52650	26.5	50	146	81	115	SOGX 09T308	2	2.25	26595
KUB-P.3D.270.R.09-ABS50	U43 52700	27	50	146	81	115	SOGX 09T308	2	2.25	27095
KUB-P.3D.275.R.09-ABS50	U43 52750	27.5	50	149	84	118	SOGX 09T308	2	2.25	27595
KUB-P.3D.280.R.09-ABS50	U43 52800	28	50	149	84	118	SOGX 09T308	2	2.25	28095
KUB-P.3D.285.R.09-ABS50	U43 52850	28.5	50	153	87	122	SOGX 09T308	2	2.25	28595
KUB-P.3D.290.R.09-ABS50	U43 52900	29	50	153	87	122	SOGX 09T308	2	2.25	29095
KUB-P.3D.295.R.09-ABS50	U43 52950	29.5	50	156	90	125	SOGX 09T308	2	2.25	29595
KUB-P.3D.300.R.09-ABS50	U43 53000	30	50	156	90	125	SOGX 09T308	2	2.25	30095
KUB-P.3D.305.R.10-ABS63	U43 63050	30.5	63	170	93	132	SOGX 100408	2	2.8	30596
KUB-P.3D.310.R.10-ABS63	U43 63100	31	63	170	93	132	SOGX 100408	2	2.8	31096
KUB-P.3D.315.R.10-ABS63	U43 63150	31.5	63	173	96	135	SOGX 100408	2	2.8	31596
KUB-P.3D.320.R.10-ABS63	U43 63200	32	63	173	96	135	SOGX 100408	2	2.8	32096
KUB-P.3D.325.R.10-ABS63	U43 63250	32.5	63	177	99	139	SOGX 100408	2	2.8	32596
KUB-P.3D.330.R.10-ABS63	U43 63300	33	63	177	99	139	SOGX 100408	2	2.8	33096
KUB-P.3D.335.R.11-ABS63	U43 63350	33.5	63	180	102	142	SOGX 110408	2	2.8	33596
KUB-P.3D.340.R.11-ABS63	U43 63400	34	63	180	102	142	SOGX 110408	2	2.8	34096
KUB-P.3D.345.R.11-ABS63	U43 63450	34.5	63	184	105	146	SOGX 110408	2	2.8	34596
KUB-P.3D.350.R.11-ABS63	U43 63500	35	63	184	105	146	SOGX 110408	2	2.8	35096
KUB-P.3D.355.R.11-ABS63	U43 63550	35.5	63	187	108	149	SOGX 110408	2	2.8	35596
KUB-P.3D.360.R.11-ABS63	U43 63600	36	63	187	108	149	SOGX 110408	2	2.8	36096
KUB-P.3D.365.R.11-ABS63	U43 63650	36.5	63	191	111	153	SOGX 110408	2	2.8	36596
KUB-P.3D.370.R.11-ABS63	U43 63700	37	63	191	111	153	SOGX 110408	2	2.8	37096
KUB-P.3D.375.R.12-ABS63	U43 63750	37.5	63	194	114	156	SOGX 120408	2	6.25	37596
KUB-P.3D.380.R.12-ABS63	U43 63800	38	63	194	114	156	SOGX 120408	2	6.25	38096
KUB-P.3D.385.R.12-ABS63	U43 63850	38.5	63	198	117	160	SOGX 120408	2	6.25	38596
KUB-P.3D.390.R.12-ABS63	U43 63900	39	63	198	117	160	SOGX 120408	2	6.25	39096
KUB-P.3D.395.R.12-ABS63	U43 63950	39.5	63	201	120	163	SOGX 120408	2	6.25	39596
KUB-P.3D.400.R.12-ABS63	U43 64000	40	63	201	120	163	SOGX 120408	2	6.25	40096
KUB-P.3D.405.R.12-ABS63	U43 64050	40.5	63	205	123	167	SOGX 120408	2	6.25	40596
KUB-P.3D.410.R.12-ABS63	U43 64100	41	63	205	123	167	SOGX 120408	2	6.25	41096

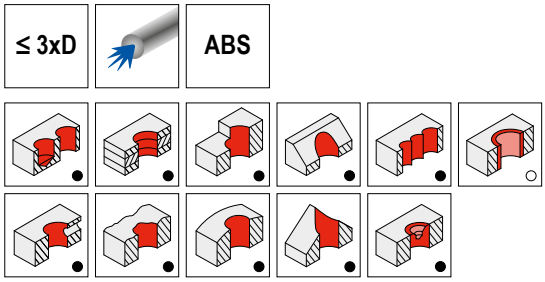
Continued on next page

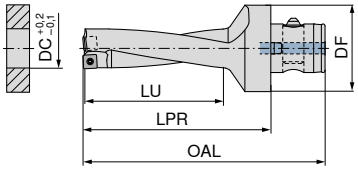
KUB Pentron – Indexable insert drill

▲ ZEFF = Number of Inserts

Scope of supply:

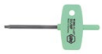
Indexable Insert Drill incl. clamping screws







Designation	KOMET no.	DC	DF	OAL	LU	LPR	Insert	ZEFF	torque moment	10 873 ...
		mm	mm	mm	mm	mm			Nm	
KUB-P.3D.415.R.12-ABS63	U43 64150	**41.5**	63	208	126	170	SOGX 120408	2	6.25	**41596**
KUB-P.3D.420.R.12-ABS63	U43 64200	**42**	63	208	126	170	SOGX 120408	2	6.25	**42096**
KUB-P.3D.425.R.13-ABS63	U43 64250	**42.5**	63	212	129	174	SOGX 130508	2	6.25	**42596**
KUB-P.3D.430.R.13-ABS63	U43 64300	**43**	63	212	129	174	SOGX 130508	2	6.25	**43096**
KUB-P.3D.435.R.13-ABS63	U43 64350	**43.5**	63	215	132	177	SOGX 130508	2	6.25	**43596**
KUB-P.3D.440.R.13-ABS63	U43 64400	**44**	63	215	132	177	SOGX 130508	2	6.25	**44096**
KUB-P.3D.445.R.13-ABS63	U43 64450	**44.5**	63	219	135	181	SOGX 130508	2	6.25	**44596**
KUB-P.3D.450.R.13-ABS63	U43 64500	**45**	63	219	135	181	SOGX 130508	2	6.25	**45096**
KUB-P.3D.455.R.13-ABS63	U43 64550	**45.5**	63	219	138	181	SOGX 130508	2	6.25	**45596**
KUB-P.3D.460.R.13-ABS63	U43 64600	**46**	63	219	138	181	SOGX 130508	2	6.25	**46096**
KUB-P.3D.470.R.08-ABS63	U43 64700	**47**	63	234	141	196	SOGX 080308	4	1.28	**47096**
KUB-P.3D.480.R.08-ABS63	U43 64800	**48**	63	237	144	199	SOGX 080308	4	1.28	**48096**
KUB-P.3D.490.R.08-ABS63	U43 64900	**49**	63	240	147	202	SOGX 080308	4	1.28	**49096**
KUB-P.3D.500.R.08-ABS63	U43 65000	**50**	63	243	150	205	SOGX 080308	4	1.28	**50096**
KUB-P.3D.510.R.08-ABS63	U43 65100	**51**	63	246	153	208	SOGX 080308	4	1.28	**51096**
KUB-P.3D.520.R.08-ABS63	U43 65200	**52**	63	249	156	211	SOGX 080308	4	1.28	**52096**
KUB-P.3D.530.R.10-ABS63	U43 65300	**53**	63	252	159	214	SOGX 100408	4	2.8	**53096**
KUB-P.3D.540.R.10-ABS63	U43 65400	**54**	63	255	162	217	SOGX 100408	4	2.8	**54096**
KUB-P.3D.550.R.10-ABS80	U43 75500	**55**	80	263	165	220	SOGX 100408	4	2.8	**55098**
KUB-P.3D.560.R.10-ABS80	U43 75600	**56**	80	266	168	223	SOGX 100408	4	2.8	**56098**
KUB-P.3D.570.R.10-ABS80	U43 75700	**57**	80	269	171	226	SOGX 100408	4	2.8	**57098**
KUB-P.3D.580.R.10-ABS80	U43 75800	**58**	80	272	174	229	SOGX 100408	4	2.8	**58098**
KUB-P.3D.590.R.10-ABS80	U43 75900	**59**	80	275	177	232	SOGX 100408	4	2.8	**59098**
KUB-P.3D.600.R.10-ABS80	U43 76000	**60**	80	278	180	235	SOGX 100408	4	2.8	**60098**
KUB-P.3D.610.R.10-ABS80	U43 76100	**61**	80	281	183	238	SOGX 100408	4	2.8	**61098**
KUB-P.3D.620.R.10-ABS80	U43 76200	**62**	80	284	186	241	SOGX 100408	4	2.8	**62098**
KUB-P.3D.630.R.10-ABS80	U43 76300	**63**	80	287	189	244	SOGX 100408	4	2.8	**63098**
KUB-P.3D.640.R.10-ABS80	U43 76400	**64**	80	290	192	247	SOGX 100408	4	2.8	**64098**
KUB-P.3D.650.R.10-ABS80	U43 76500	**65**	80	293	195	250	SOGX 100408	4	2.8	**65098**



Key



Screwdriver



Clamping screw

Spare parts DC		80 950 ...		80 950 ...		10 950 ...
14 - 16	T05 - IP	**057**			M1.8x3.8 - 05IP	**10100**
16.5 - 18			T06 - IP	**123**	M2.0x4.3 - 06IP	**10000**
18.5 - 23			T06 - IP	**123**	M2.2x5.5 - 06IP	**10700**
23.5 - 26			T08 - IP	**125**	M2.5x6.3 - 08IP	**10800**
26.5 - 30			T08 - IP	**125**	M3.0x7.6 - 08IP	**10200**
30.5 - 37			T15 - IP	**128**	M3.5x7.5 - 15IP	**10300**
37.5 - 46			T20 - IP	**129**	M4.5x10 - 20IP	**10400**
47 - 52			T08 - IP	**125**	M2.5x6.3 - 08IP	**10800**
53 - 65			T08 - IP	**125**	M3.5x7.5 - 15IP	**10300**

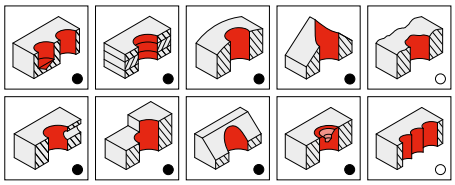
Matching holders can be found in → **Chapter 16 Adapters and accessories**

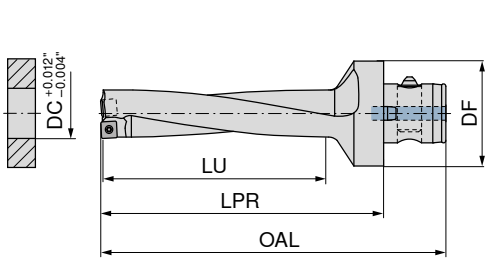
KUB Pentron – Indexable insert drill

Scope of supply:

Indexable Insert Drill incl. clamping screws









Designation	KOMET no.	DC inch	DF inch	OAL inch	LU inch	LPR inch	Insert	ZEFF	torque moment Nm	10 874 ...	15 874 ...
KUB-P.4D.0562.R.04.ABS50-F	U44 51430	0.562	1.969	4.685	2.362	3.465	SOGX 040204	2	0.38		14395
KUB-P.4D.0593.R.04.ABS50-F	U44 51510	0.593	1.969	4.921	2.520	3.701	SOGX 040204	2	0.38		15195
KUB-P.4D.0625.R.04.ABS50-F	U44 51590	0.625	1.969	4.921	2.520	3.701	SOGX 040204	2	0.38		15995
KUB-P.4D.0656.R.05.ABS50-F	U44 51670	0.656	1.969	5.118	2.677	3.898	SOGX 050204	2	0.62		16795
KUB-P.4D.0687.R.05.ABS50	U44 51750	0.689	1.969	5.276	2.835	4.055	SOGX 050204	2	0.62	17595	
KUB-P.4D.0703.R.05.ABS50-F	U44 51790	0.703	1.969	5.275	2.835	4.055	SOGX 050204	2	0.62		17995
KUB-P.4D.0750.R.06.ABS50-F	U44 51910	0.750	1.969	5.629	3.150	4.409	SOGX 060206	2	1.01		19195
KUB-P.4D.0765.R.06.ABS50-F	U44 51940	0.765	1.969	5.629	3.150	4.409	SOGX 060206	2	1.01		19495
KUB-P.4D.0781.R.06.ABS50-F	U44 51980	0.781	1.969	5.629	3.150	4.409	SOGX 060206	2	1.01		19895
KUB-P.4D.0812.R.07.ABS50-F	U44 52060	0.812	1.969	5.787	3.307	4.567	SOGX 07T208	2	1.01		20695
KUB-P.4D.0828.R.07.ABS50	U44 52100	0.827	1.969	5.787	3.307	4.567	SOGX 07T208	2	1.01	21095	
KUB-P.4D.0875.R.07.ABS50-F	U44 52220	0.875	1.969	6.102	3.622	4.882	SOGX 07T208	2	1.01		22295
KUB-P.4D.0906.R.07.ABS50	U44 52300	0.906	1.969	6.102	3.622	4.882	SOGX 07T208	2	1.01	23095	
KUB-P.4D.0937.R.08.ABS50-F	U44 52380	0.937	1.969	6.259	3.780	5.039	SOGX 080308	2	1.28		23895
KUB-P.4D.0985.R.08.ABS50	U44 52500	0.984	1.969	6.457	3.937	5.236	SOGX 080308	2	1.28	25095	
KUB-P.4D.1000.R.08.ABS50-F	U44 52540	1.000	1.969	6.614	4.094	5.394	SOGX 080308	2	1.28		25495
KUB-P.4D.1031.R.09.ABS50-F	U44 52620	1.031	1.969	6.811	4.252	5.591	SOGX 09T308	2	2.25		26295
KUB-P.4D.1062.R.09.ABS50	U44 52700	1.063	1.969	6.811	4.252	5.591	SOGX 09T308	2	2.25	27095	
KUB-P.4D.1109.R.09.ABS50-F	U44 52820	1.109	1.969	7.165	4.567	5.945	SOGX 09T308	2	2.25		28295
KUB-P.4D.1125.R.09.ABS50-F	U44 52860	1.125	1.969	7.165	4.567	5.945	SOGX 09T308	2	2.25		28695
KUB-P.4D.1156.R.09.ABS50-F	U44 52940	1.156	1.969	7.322	4.724	6.102	SOGX 09T308	2	2.25		29495
KUB-P.4D.1187.R.10.ABS63-F	U44 63020	1.187	2.480	7.913	4.882	6.417	SOGX 100408	2	2.8		30196
KUB-P.4D.1218.R.10.ABS63-F	U44 63090	1.218	2.480	7.913	4.882	6.417	SOGX 100408	2	2.8		30996
KUB-P.4D.1250.R.10.ABS63-F	U44 63180	1.250	2.480	8.071	5.039	6.575	SOGX 100408	2	2.8		31896
KUB-P.4D.1281.R.10.ABS63	U44 63250	1.280	2.480	8.268	5.197	6.772	SOGX 100408	2	2.8	32596	
KUB-P.4D.1312.R.11.ABS63-F	U44 63330	1.312	2.480	8.425	5.354	6.929	SOGX 110408	2	2.8		33396
KUB-P.4D.1328.R.11.ABS63-F	U44 63370	1.328	2.480	8.425	5.354	6.929	SOGX 110408	2	2.8		33796
KUB-P.4D.1375.R.11.ABS63-F	U44 63490	1.375	2.480	8.622	5.512	7.126	SOGX 110408	2	2.8		34996
KUB-P.4D.1437.R.11.ABS63	U44 63650	1.437	2.480	8.976	5.827	7.480	SOGX 110408	2	2.8	36596	
KUB-P.4D.1469.R.12.ABS63-F	U44 63730	1.469	2.480	9.134	5.984	7.638	SOGX 120408	2	6.25		37396
KUB-P.4D.1500.R.12.ABS63-F	U44 63810	1.500	2.480	9.331	6.142	7.835	SOGX 120408	2	6.25		38196
KUB-P.4D.1562.R.12.ABS63-F	U44 63970	1.562	2.480	9.488	6.299	7.992	SOGX 120408	2	6.25		39796
KUB-P.4D.1625.R.12.ABS63-F	U44 64130	1.625	2.480	9.842	6.614	8.346	SOGX 120408	2	6.25		41396
KUB-P.4D.1656.R.13.ABS63-F	U44 64210	1.656	2.480	10.039	6.772	8.543	SOGX 130508	2	6.25		42196
KUB-P.4D.1687.R.13.ABS63-F	U44 64290	1.687	2.480	10.039	6.772	8.543	SOGX 130508	2	6.25		42896
KUB-P.4D.1750.R.13.ABS63	U44 64450	1.752	2.480	10.394	7.087	8.898	SOGX 130508	2	6.25	44596	



Key



Screwdriver



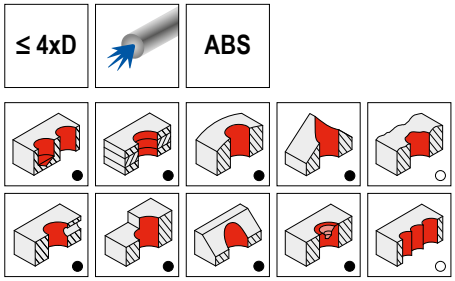
Clamping screw

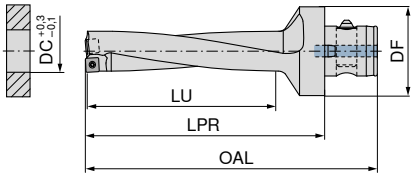
Spare parts DC	80 950 ...		80 950 ...		10 950 ...	
0.562 - 0.625	T05 - IP	057			M1.8x3.8 - 05IP	10100
0.656 - 0.703			T06 - IP	123	M2.0x4.3 - 06IP	10000
0.750 - 0.906			T06 - IP	123	M2.2x5.5 - 06IP	10700
0.937 - 1.000			T08 - IP	125	M2.5x6.3 - 08IP	10800
1.031 - 1.156			T08 - IP	125	M3.0x7.6 - 08IP	10200
1.187 - 1.437			T15 - IP	128	M3.5x7.5 - 15IP	10300
1.469 - 1.752			T20 - IP	129	M4.5x10 - 20IP	10400

Matching holders can be found in → **Chapter 16 Adapters and accessories**

KUB Pentron – Indexable insert drill

Scope of supply:
Indexable Insert Drill incl. clamping screws







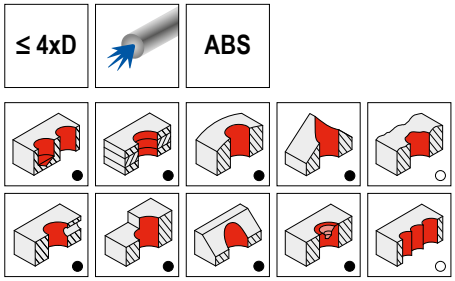
10 874 ...

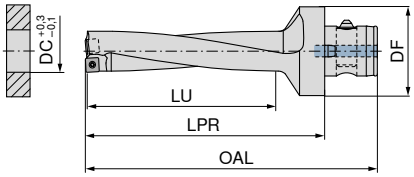
Designation	KOMET no.	DC mm	DF mm	OAL mm	LU mm	LPR mm	Insert	ZEFF	torque moment Nm	
KUB-P.4D.140.R.04-ABS50	U44 51400	14	50	114	56	83	SOGX 040204	2	0.38	14095
KUB-P.4D.145.R.04-ABS50	U44 51450	14.5	50	119	60	88	SOGX 040204	2	0.38	14595
KUB-P.4D.150.R.04-ABS50	U44 51500	15	50	119	60	88	SOGX 040204	2	0.38	15095
KUB-P.4D.155.R.04-ABS50	U44 51550	15.5	50	125	64	94	SOGX 040204	2	0.38	15595
KUB-P.4D.160.R.04-ABS50	U44 51600	16	50	125	64	94	SOGX 040204	2	0.38	16095
KUB-P.4D.165.R.05-ABS50	U44 51650	16.5	50	130	68	99	SOGX 050204	2	0.62	16595
KUB-P.4D.170.R.05-ABS50	U44 51700	17	50	130	68	99	SOGX 050204	2	0.62	17095
KUB-P.4D.175.R.05-ABS50	U44 51750	17.5	50	134	72	103	SOGX 050204	2	0.62	17595
KUB-P.4D.180.R.05-ABS50	U44 51800	18	50	134	72	103	SOGX 050204	2	0.62	18095
KUB-P.4D.185.R.06-ABS50	U44 51850	18.5	50	139	76	108	SOGX 060206	2	1.01	18595
KUB-P.4D.190.R.06-ABS50	U44 51900	19	50	139	76	108	SOGX 060206	2	1.01	19095
KUB-P.4D.195.R.06-ABS50	U44 51950	19.5	50	143	80	112	SOGX 060206	2	1.01	19595
KUB-P.4D.200.R.06-ABS50	U44 52000	20	50	143	80	112	SOGX 060206	2	1.01	20095
KUB-P.4D.205.R.07-ABS50	U44 52050	20.5	50	147	84	116	SOGX 07T208	2	1.01	20595
KUB-P.4D.210.R.07-ABS50	U44 52100	21	50	147	84	116	SOGX 07T208	2	1.01	21095
KUB-P.4D.215.R.07-ABS50	U44 52150	21.5	50	151	88	120	SOGX 07T208	2	1.01	21595
KUB-P.4D.220.R.07-ABS50	U44 52200	22	50	151	88	120	SOGX 07T208	2	1.01	22095
KUB-P.4D.225.R.07-ABS50	U44 52250	22.5	50	155	92	124	SOGX 07T208	2	1.01	22595
KUB-P.4D.230.R.07-ABS50	U44 52300	23	50	155	92	124	SOGX 07T208	2	1.01	23095
KUB-P.4D.235.R.08-ABS50	U44 52350	23.5	50	159	96	128	SOGX 080308	2	1.28	23595
KUB-P.4D.240.R.08-ABS50	U44 52400	24	50	159	96	128	SOGX 080308	2	1.28	24095
KUB-P.4D.245.R.08-ABS50	U44 52450	24.5	50	164	100	133	SOGX 080308	2	1.28	24595
KUB-P.4D.250.R.08-ABS50	U44 52500	25	50	164	100	133	SOGX 080308	2	1.28	25095
KUB-P.4D.255.R.08-ABS50	U44 52550	25.5	50	168	104	137	SOGX 080308	2	1.28	25595
KUB-P.4D.260.R.08-ABS50	U44 52600	26	50	168	104	137	SOGX 080308	2	1.28	26095
KUB-P.4D.265.R.09-ABS50	U44 52650	26.5	50	173	108	142	SOGX 09T308	2	2.25	26595
KUB-P.4D.270.R.09-ABS50	U44 52700	27	50	173	108	142	SOGX 09T308	2	2.25	27095
KUB-P.4D.275.R.09-ABS50	U44 52750	27.5	50	177	112	146	SOGX 09T308	2	2.25	27595
KUB-P.4D.280.R.09-ABS50	U44 52800	28	50	177	112	146	SOGX 09T308	2	2.25	28095
KUB-P.4D.285.R.09-ABS50	U44 52850	28.5	50	182	116	151	SOGX 09T308	2	2.25	28595
KUB-P.4D.290.R.09-ABS50	U44 52900	29	50	182	116	151	SOGX 09T308	2	2.25	29095
KUB-P.4D.295.R.09-ABS50	U44 52950	29.5	50	186	120	155	SOGX 09T308	2	2.25	29595
KUB-P.4D.300.R.09-ABS50	U44 53000	30	50	186	120	155	SOGX 09T308	2	2.25	30095
KUB-P.4D.305.R.10-ABS63	U44 63050	30.5	63	201	124	163	SOGX 100408	2	2.8	30596
KUB-P.4D.310.R.10-ABS63	U44 63100	31	63	201	124	163	SOGX 100408	2	2.8	31096
KUB-P.4D.315.R.10-ABS63	U44 63150	31.5	63	205	128	167	SOGX 100408	2	2.8	31596
KUB-P.4D.320.R.10-ABS63	U44 63200	32	63	205	128	167	SOGX 100408	2	2.8	32096
KUB-P.4D.325.R.10-ABS63	U44 63250	32.5	63	210	132	172	SOGX 100408	2	2.8	32596
KUB-P.4D.330.R.10-ABS63	U44 63300	33	63	210	132	172	SOGX 100408	2	2.8	33096
KUB-P.4D.335.R.11-ABS63	U44 63350	33.5	63	214	136	176	SOGX 110408	2	2.8	33596
KUB-P.4D.340.R.11-ABS63	U44 63400	34	63	214	136	176	SOGX 110408	2	2.8	34096
KUB-P.4D.345.R.11-ABS63	U44 63450	34.5	63	219	140	181	SOGX 110408	2	2.8	34596
KUB-P.4D.350.R.11-ABS63	U44 63500	35	63	219	140	181	SOGX 110408	2	2.8	35096
KUB-P.4D.355.R.11-ABS63	U44 63550	35.5	63	223	144	185	SOGX 110408	2	2.8	35596
KUB-P.4D.360.R.11-ABS63	U44 63600	36	63	223	144	185	SOGX 110408	2	2.8	36096
KUB-P.4D.365.R.11-ABS63	U44 63650	36.5	63	228	148	190	SOGX 110408	2	2.8	36596
KUB-P.4D.370.R.11-ABS63	U44 63700	37	63	228	148	190	SOGX 110408	2	2.8	37096
KUB-P.4D.375.R.12-ABS63	U44 63750	37.5	63	232	152	194	SOGX 120408	2	6.25	37596
KUB-P.4D.380.R.12-ABS63	U44 63800	38	63	232	152	194	SOGX 120408	2	6.25	38096

Continued on next page

KUB Pentron – Indexable insert drill

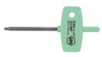
Scope of supply:
Indexable Insert Drill incl. clamping screws







										10 874 ...
Designation	KOMET no.	**DC** mm	DF mm	OAL mm	LU mm	LPR mm	Insert	ZEFF	torque moment Nm	
KUB-P.4D.385.R.12-ABS63	U44 63850	**38.5**	63	237	156	199	SOGX 120408	2	6.25	**38596**
KUB-P.4D.390.R.12-ABS63	U44 63900	**39**	63	237	156	199	SOGX 120408	2	6.25	**39096**
KUB-P.4D.395.R.12-ABS63	U44 63950	**39.5**	63	241	160	203	SOGX 120408	2	6.25	**39596**
KUB-P.4D.400.R.12-ABS63	U44 64000	**40**	63	241	160	203	SOGX 120408	2	6.25	**40096**
KUB-P.4D.405.R.12-ABS63	U44 64050	**40.5**	63	246	164	208	SOGX 120408	2	6.25	**40596**
KUB-P.4D.410.R.12-ABS63	U44 64100	**41**	63	246	164	208	SOGX 120408	2	6.25	**41096**
KUB-P.4D.415.R.12-ABS63	U44 64150	**41.5**	63	250	168	212	SOGX 120408	2	6.25	**41596**
KUB-P.4D.420.R.12-ABS63	U44 64200	**42**	63	250	168	212	SOGX 120408	2	6.25	**42096**
KUB-P.4D.425.R.13-ABS63	U44 64250	**42.5**	63	255	172	217	SOGX 130508	2	6.25	**42596**
KUB-P.4D.430.R.13-ABS63	U44 64300	**43**	63	255	172	217	SOGX 130508	2	6.25	**43096**
KUB-P.4D.435.R.13-ABS63	U44 64350	**43.5**	63	259	176	221	SOGX 130508	2	6.25	**43596**
KUB-P.4D.440.R.13-ABS63	U44 64400	**44**	63	259	176	221	SOGX 130508	2	6.25	**44096**
KUB-P.4D.445.R.13-ABS63	U44 64450	**44.5**	63	264	180	226	SOGX 130508	2	6.25	**44596**
KUB-P.4D.450.R.13-ABS63	U44 64500	**45**	63	264	180	226	SOGX 130508	2	6.25	**45096**
KUB-P.4D.455.R.13-ABS63	U44 64550	**45.5**	63	268	184	230	SOGX 130508	2	6.25	**45596**
KUB-P.4D.460.R.13-ABS63	U44 64600	**46**	63	268	184	230	SOGX 130508	2	6.25	**46096**


Key


Screwdriver


Clamping screw

Spare parts								
DC			**80 950 ...**			**80 950 ...**		**10 950 ...**
14 - 16	T05 - IP	**057**				M1.8x3.8 - 05IP	**10100**
16.5 - 18			T06 - IP	**123**		M2.0x4.3 - 06IP	**10000**
18.5 - 23			T06 - IP	**123**		M2.2x5.5 - 06IP	**10700**
23.5 - 26			T08 - IP	**125**		M2.5x6.3 - 08IP	**10800**
26.5 - 30			T08 - IP	**125**		M3.0x7.6 - 08IP	**10200**
30.5 - 37			T15 - IP	**128**		M3.5x7.5 - 15IP	**10300**
37.5 - 46			T20 - IP	**129**		M4.5x10 - 20IP	**10400**

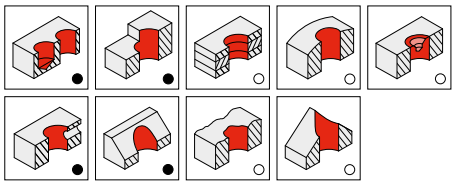
Matching holders can be found in → **Chapter 16 Adapters and accessories**

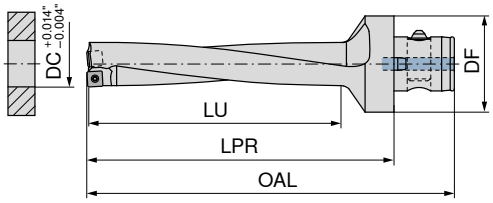
KUB Pentron – Indexable insert drill

Scope of supply:

Indexable Insert Drill incl. clamping screws









Designation	KOMET no.	DC inch	DF inch	OAL inch	LU inch	LPR inch	Insert	ZEFF	torque moment Nm	10 875 ...	15 875 ...
KUB-P.5D.0562.R.04.ABS50-F	U45 51430	0.562	1.969	5.275	2.953	4.055	SOGX 040204	2	0.38		14395
KUB-P.5D.0593.R.04.ABS50-F	U45 51510	0.593	1.969	5.551	3.150	4.331	SOGX 040204	2	0.38		15195
KUB-P.5D.0625.R.04.ABS50-F	U45 51590	0.625	1.969	5.551	3.150	4.331	SOGX 040204	2	0.38		15995
KUB-P.5D.0656.R.05.ABS50-F	U45 51670	0.656	1.969	5.787	3.346	4.567	SOGX 050204	2	0.62		16795
KUB-P.5D.0687.R.05.ABS50	U45 51750	0.689	1.969	5.984	3.543	4.764	SOGX 050204	2	0.62	17595	
KUB-P.5D.0703.R.05.ABS50-F	U45 51790	0.703	1.969	5.984	3.543	4.764	SOGX 050204	2	0.62		17995
KUB-P.5D.0750.R.06.ABS50-F	U45 51910	0.750	1.969	6.417	3.937	5.197	SOGX 060206	2	1.01		19195
KUB-P.5D.0765.R.06.ABS50-F	U45 51940	0.765	1.969	6.417	3.937	5.197	SOGX 060206	2	1.01		19495
KUB-P.5D.0781.R.06.ABS50-F	U45 51980	0.781	1.969	6.417	3.937	5.197	SOGX 060206	2	1.01		19895
KUB-P.5D.0812.R.07.ABS50-F	U45 52060	0.812	1.969	6.614	4.134	5.394	SOGX 07T208	2	1.01		20695
KUB-P.5D.0828.R.07.ABS50	U45 52100	0.827	1.969	6.614	4.134	5.394	SOGX 07T208	2	1.01	21095	
KUB-P.5D.0875.R.07.ABS50-F	U45 52220	0.875	1.969	7.007	4.528	5.787	SOGX 07T208	2	1.01		22295
KUB-P.5D.0906.R.07.ABS50	U45 52300	0.906	1.969	7.008	4.528	5.787	SOGX 07T208	2	1.01	23095	
KUB-P.5D.0937.R.08.ABS50-F	U45 52380	0.937	1.969	7.204	4.724	5.984	SOGX 080308	2	1.28		23895
KUB-P.5D.0985.R.08.ABS50	U45 52500	0.984	1.969	7.441	4.921	6.220	SOGX 080308	2	1.28	25095	
KUB-P.5D.1000.R.08.ABS50-F	U45 52540	1.000	1.969	7.637	5.118	6.417	SOGX 080308	2	1.28		25495
KUB-P.5D.1031.R.09.ABS50-F	U45 52620	1.031	1.969	7.874	5.315	6.654	SOGX 09T308	2	2.25		26295
KUB-P.5D.1062.R.09.ABS50	U45 52700	1.063	1.969	7.874	5.315	6.654	SOGX 09T308	2	2.25	27095	
KUB-P.5D.1109.R.09.ABS50-F	U45 52820	1.109	1.969	8.307	5.709	7.087	SOGX 09T308	2	2.25		28295
KUB-P.5D.1125.R.09.ABS50-F	U45 52860	1.125	1.969	8.307	5.709	7.087	SOGX 09T308	2	2.25		28695
KUB-P.5D.1156.R.09.ABS50-F	U45 52940	1.156	1.969	8.503	5.906	7.283	SOGX 09T308	2	2.25		29495
KUB-P.5D.1187.R.10.ABS63-F	U45 63020	1.187	2.480	9.134	6.102	7.638	SOGX 100408	2	2.8		30196
KUB-P.5D.1218.R.10.ABS63-F	U45 63090	1.218	2.480	9.134	6.102	7.638	SOGX 100408	2	2.8		30996
KUB-P.5D.1250.R.10.ABS63-F	U45 63180	1.250	2.480	9.331	6.299	7.835	SOGX 100408	2	2.8		31896
KUB-P.5D.1281.R.10.ABS63	U45 63250	1.280	2.480	9.567	6.496	8.071	SOGX 100408	2	2.8	32596	
KUB-P.5D.1312.R.11.ABS63-F	U45 63330	1.312	2.480	9.764	6.693	8.268	SOGX 110408	2	2.8		33396
KUB-P.5D.1328.R.11.ABS63-F	U45 63370	1.328	2.480	9.764	6.693	8.268	SOGX 110408	2	2.8		33796
KUB-P.5D.1375.R.11.ABS63-F	U45 63490	1.375	2.480	10.000	6.890	8.504	SOGX 110408	2	2.8		34996
KUB-P.5D.1437.R.11.ABS63	U45 63650	1.437	2.480	10.433	7.283	8.937	SOGX 110408	2	2.8	36596	
KUB-P.5D.1469.R.12.ABS63-F	U45 63730	1.469	2.480	10.630	7.480	9.134	SOGX 120408	2	6.25		37396
KUB-P.5D.1500.R.12.ABS63-F	U45 63810	1.500	2.480	10.866	7.677	9.370	SOGX 120408	2	6.25		38196
KUB-P.5D.1562.R.12.ABS63-F	U45 63970	1.562	2.480	11.063	7.874	9.567	SOGX 120408	2	6.25		39796
KUB-P.5D.1625.R.12.ABS63-F	U45 64130	1.625	2.480	11.496	8.268	10.000	SOGX 120408	2	6.25		41396
KUB-P.5D.1656.R.13.ABS63-F	U45 64210	1.656	2.480	11.732	8.465	10.236	SOGX 130508	2	6.25		42196
KUB-P.5D.1687.R.13.ABS63-F	U45 64290	1.687	2.480	11.732	8.465	10.236	SOGX 130508	2	6.25		42896
KUB-P.5D.1750.R.13.ABS63	U45 64450	1.752	2.480	12.165	8.858	10.669	SOGX 130508	2	6.25	44596	



Key



Screwdriver



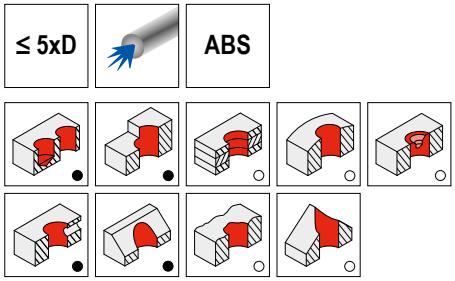
Clamping screw

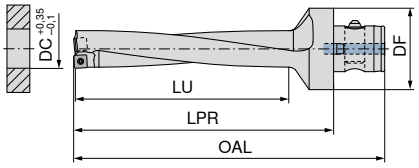
Spare parts DC	80 950 ...		80 950 ...		10 950 ...	
0.562 - 0.625	T05 - IP	057			M1.8x3.8 - 05IP	10100
0.656 - 0.703			T06 - IP	123	M2.0x4.3 - 06IP	10000
0.750 - 0.906			T06 - IP	123	M2.2x5.5 - 06IP	10700
0.984 - 1.000			T08 - IP	125	M2.5x6.3 - 08IP	10800
1.031 - 1.156			T08 - IP	125	M3.0x7.6 - 08IP	10200
1.187 - 1.437			T15 - IP	128	M3.5x7.5 - 15IP	10300
1.469 - 1.752			T20 - IP	129	M4.5x10 - 20IP	10400

Matching holders can be found in → **Chapter 16 Adapters and accessories**

KUB Pentron – Indexable insert drill

Scope of supply:
Indexable Insert Drill incl. clamping screws







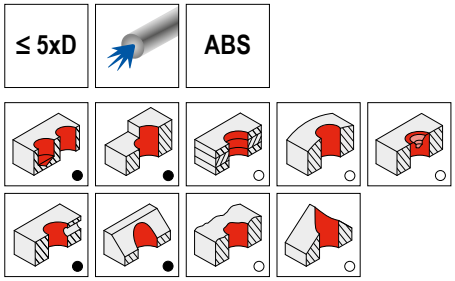
10 875 ...

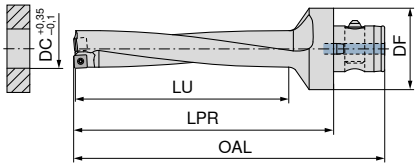
Designation	KOMET no.	DC mm	DF mm	OAL mm	LU mm	LPR mm	Insert	ZEFF	torque moment Nm	
KUB-P.5D.140.R.04-ABS50	U45 51400	14	50	128	70	97	SOGX 040204	2	0.38	14095
KUB-P.5D.145.R.04-ABS50	U45 51450	14.5	50	134	75	103	SOGX 040204	2	0.38	14595
KUB-P.5D.150.R.04-ABS50	U45 51500	15	50	134	75	103	SOGX 040204	2	0.38	15095
KUB-P.5D.155.R.04-ABS50	U45 51550	15.5	50	141	80	110	SOGX 040204	2	0.38	15595
KUB-P.5D.160.R.04-ABS50	U45 51600	16	50	141	80	110	SOGX 040204	2	0.38	16095
KUB-P.5D.165.R.05-ABS50	U45 51650	16.5	50	147	85	116	SOGX 050204	2	0.62	16595
KUB-P.5D.170.R.05-ABS50	U45 51700	17	50	147	85	116	SOGX 050204	2	0.62	17095
KUB-P.5D.175.R.05-ABS50	U45 51750	17.5	50	152	90	121	SOGX 050204	2	0.62	17595
KUB-P.5D.180.R.05-ABS50	U45 51800	18	50	152	90	121	SOGX 050204	2	0.62	18095
KUB-P.5D.185.R.06-ABS50	U45 51850	18.5	50	158	95	127	SOGX 060206	2	1.01	18595
KUB-P.5D.190.R.06-ABS50	U45 51900	19	50	158	95	127	SOGX 060206	2	1.01	19095
KUB-P.5D.195.R.06-ABS50	U45 51950	19.5	50	163	100	132	SOGX 060206	2	1.01	19595
KUB-P.5D.200.R.06-ABS50	U45 52000	20	50	163	100	132	SOGX 060206	2	1.01	20095
KUB-P.5D.205.R.07-ABS50	U45 52050	20.5	50	168	105	137	SOGX 07T208	2	1.01	20595
KUB-P.5D.210.R.07-ABS50	U45 52100	21	50	168	105	137	SOGX 07T208	2	1.01	21095
KUB-P.5D.215.R.07-ABS50	U45 52150	21.5	50	173	110	142	SOGX 07T208	2	1.01	21595
KUB-P.5D.220.R.07-ABS50	U45 52200	22	50	173	110	142	SOGX 07T208	2	1.01	22095
KUB-P.5D.225.R.07-ABS50	U45 52250	22.5	50	178	115	147	SOGX 07T208	2	1.01	22595
KUB-P.5D.230.R.07-ABS50	U45 52300	23	50	178	115	147	SOGX 07T208	2	1.01	23095
KUB-P.5D.235.R.08-ABS50	U45 52350	23.5	50	183	120	152	SOGX 080308	2	1.28	23595
KUB-P.5D.240.R.08-ABS50	U45 52400	24	50	183	120	152	SOGX 080308	2	1.28	24095
KUB-P.5D.245.R.08-ABS50	U45 52450	24.5	50	189	125	158	SOGX 080308	2	1.28	24595
KUB-P.5D.250.R.08-ABS50	U45 52500	25	50	189	125	158	SOGX 080308	2	1.28	25095
KUB-P.5D.255.R.08-ABS50	U45 52550	25.5	50	194	130	163	SOGX 080308	2	1.28	25595
KUB-P.5D.260.R.08-ABS50	U45 52600	26	50	194	130	163	SOGX 080308	2	1.28	26095
KUB-P.5D.265.R.09-ABS50	U45 52650	26.5	50	200	135	169	SOGX 09T308	2	2.25	26595
KUB-P.5D.270.R.09-ABS50	U45 52700	27	50	200	135	169	SOGX 09T308	2	2.25	27095
KUB-P.5D.275.R.09-ABS50	U45 52750	27.5	50	205	140	174	SOGX 09T308	2	2.25	27595
KUB-P.5D.280.R.09-ABS50	U45 52800	28	50	205	140	174	SOGX 09T308	2	2.25	28095
KUB-P.5D.285.R.09-ABS50	U45 52850	28.5	50	211	145	180	SOGX 09T308	2	2.25	28595
KUB-P.5D.290.R.09-ABS50	U45 52900	29	50	211	145	180	SOGX 09T308	2	2.25	29095
KUB-P.5D.295.R.09-ABS50	U45 52950	29.5	50	216	150	185	SOGX 09T308	2	2.25	29595
KUB-P.5D.300.R.09-ABS50	U45 53000	30	50	216	150	185	SOGX 09T308	2	2.25	30095
KUB-P.5D.305.R.10-ABS63	U45 63050	30.5	63	232	155	194	SOGX 100408	2	2.8	30596
KUB-P.5D.310.R.10-ABS63	U45 63100	31	63	232	155	194	SOGX 100408	2	2.8	31096
KUB-P.5D.315.R.10-ABS63	U45 63150	31.5	63	237	160	199	SOGX 100408	2	2.8	31596
KUB-P.5D.320.R.10-ABS63	U45 63200	32	63	237	160	199	SOGX 100408	2	2.8	32096
KUB-P.5D.325.R.10-ABS63	U45 63250	32.5	63	243	165	205	SOGX 100408	2	2.8	32596
KUB-P.5D.330.R.10-ABS63	U45 63300	33	63	243	165	205	SOGX 100408	2	2.8	33096
KUB-P.5D.335.R.11-ABS63	U45 63350	33.5	63	248	170	210	SOGX 110408	2	2.8	33596
KUB-P.5D.340.R.11-ABS63	U45 63400	34	63	248	170	210	SOGX 110408	2	2.8	34096
KUB-P.5D.345.R.11-ABS63	U45 63450	34.5	63	254	175	216	SOGX 110408	2	2.8	34596
KUB-P.5D.350.R.11-ABS63	U45 63500	35	63	254	175	216	SOGX 110408	2	2.8	35096
KUB-P.5D.355.R.11-ABS63	U45 63550	35.5	63	259	180	221	SOGX 110408	2	2.8	35596
KUB-P.5D.360.R.11-ABS63	U45 63600	36	63	259	180	221	SOGX 110408	2	2.8	36096
KUB-P.5D.365.R.11-ABS63	U45 63650	36.5	63	265	185	227	SOGX 110408	2	2.8	36596
KUB-P.5D.370.R.11-ABS63	U45 63700	37	63	265	185	227	SOGX 110408	2	2.8	37096
KUB-P.5D.375.R.12-ABS63	U45 63750	37.5	63	270	190	232	SOGX 120408	2	6.25	37596
KUB-P.5D.380.R.12-ABS63	U45 63800	38	63	270	190	232	SOGX 120408	2	6.25	38096

Continued on next page

KUB Pentron – Indexable insert drill

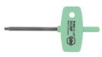
Scope of supply:
Indexable Insert Drill incl. clamping screws







										10 875 ...
Designation	KOMET no.	**DC** mm	DF mm	OAL mm	LU mm	LPR mm	Insert	ZEFF	torque moment Nm	
KUB-P.5D.385.R.12-ABS63	U45 63850	**38.5**	63	276	195	238	SOGX 120408	2	6.25	**38596**
KUB-P.5D.390.R.12-ABS63	U45 63900	**39**	63	276	195	238	SOGX 120408	2	6.25	**39096**
KUB-P.5D.395.R.12-ABS63	U45 63950	**39.5**	63	281	200	243	SOGX 120408	2	6.25	**39596**
KUB-P.5D.400.R.12-ABS63	U45 64000	**40**	63	281	200	243	SOGX 120408	2	6.25	**40096**
KUB-P.5D.405.R.12-ABS63	U45 64050	**40.5**	63	287	205	249	SOGX 120408	2	6.25	**40596**
KUB-P.5D.410.R.12-ABS63	U45 64100	**41**	63	287	205	249	SOGX 120408	2	6.25	**41096**
KUB-P.5D.415.R.12-ABS63	U45 64150	**41.5**	63	292	210	254	SOGX 120408	2	6.25	**41596**
KUB-P.5D.420.R.12-ABS63	U45 64200	**42**	63	292	210	254	SOGX 120408	2	6.25	**42096**
KUB-P.5D.425.R.13-ABS63	U45 64250	**42.5**	63	298	215	260	SOGX 130508	2	6.25	**42596**
KUB-P.5D.430.R.13-ABS63	U45 64300	**43**	63	298	215	260	SOGX 130508	2	6.25	**43096**
KUB-P.5D.435.R.13-ABS63	U45 64350	**43.5**	63	303	220	265	SOGX 130508	2	6.25	**43596**
KUB-P.5D.440.R.13-ABS63	U45 64400	**44**	63	303	220	265	SOGX 130508	2	6.25	**44096**
KUB-P.5D.445.R.13-ABS63	U45 64450	**44.5**	63	309	225	271	SOGX 130508	2	6.25	**44596**
KUB-P.5D.450.R.13-ABS63	U45 64500	**45**	63	309	225	271	SOGX 130508	2	6.25	**45096**
KUB-P.5D.455.R.13-ABS63	U45 64550	**45.5**	63	314	230	276	SOGX 130508	2	6.25	**45596**
KUB-P.5D.460.R.13-ABS63	U45 64600	**46**	63	314	230	276	SOGX 130508	2	6.25	**46096**


Key


Screwdriver

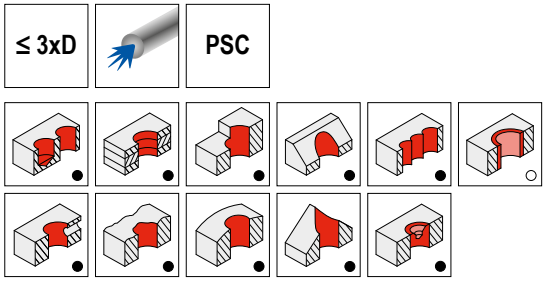

Clamping screw

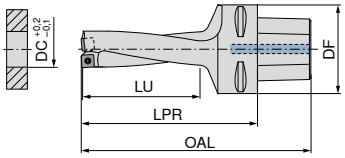
Spare parts							
							80 950 ...
DC							
14 - 16	T05 - IP	**057**			M1.8x3.8 - 05IP	**10100**	
16.5 - 18			T06 - IP	**123**	M2.0x4.3 - 06IP	**10000**	
18.5 - 23			T06 - IP	**123**	M2.2x5.5 - 06IP	**10700**	
23.5 - 26			T08 - IP	**125**	M2.5x6.3 - 08IP	**10800**	
26.5 - 30			T08 - IP	**125**	M3.0x7.6 - 08IP	**10200**	
30.5 - 37			T15 - IP	**128**	M3.5x7.5 - 15IP	**10300**	
37.5 - 46			T20 - IP	**129**	M4.5x10 - 20IP	**10400**	

Matching holders can be found in → **Chapter 16 Adapters and accessories**

KUB Pentron – Indexable insert drill

Scope of supply:
Indexable Insert Drill incl. clamping screws







15 873 ...

Designation	KOMET no.	DC inch	DF inch	OAL inch	LU inch	LPR inch	Insert	ZEFF	torque moment Nm	
KUB-P.3D.0875.R.07-PSC63-F	U40 72220	0.875	2.480	5.709	2.598	4.213	SOGX 07T208	2	1.01	**22256**
KUB-P.3D.0875.R.07-PSC50-F	U40 62220	0.875	1.969	5.394	2.717	4.213	SOGX 07T208	2	1.01	**22255**
KUB-P.3D.0937.R.08-PSC63-F	U40 72380	0.937	2.480	5.984	2.835	4.488	SOGX 080308	2	1.28	**23856**
KUB-P.3D.0937.R.08-PSC50-F	U40 62380	0.937	1.969	5.512	2.835	4.331	SOGX 080308	2	1.28	**23855**
KUB-P.3D.1000.R.08-PSC63-F	U40 72540	1.000	2.480	6.260	3.071	4.764	SOGX 080308	2	1.28	**25456**
KUB-P.3D.1000.R.08-PSC50-F	U40 62540	1.000	1.969	5.787	3.071	4.606	SOGX 080308	2	1.28	**25455**
KUB-P.3D.1250.R.10-PSC50-F	U40 63180	1.250	1.969	6.614	3.780	5.433	SOGX 100408	2	2.8	**31855**
KUB-P.3D.1500.R.10-PSC63-F	U40 73180	1.250	2.480	7.087	3.780	5.591	SOGX 100408	2	2.8	**31856**
KUB-P.3D.1500.R.12-PSC63-F	U40 73810	1.500	2.480	8.071	4.606	6.575	SOGX 120408	2	6.25	**38156**
KUB-P.3D.1500.R.12-PSC50-F	U40 63810	1.500	1.969	7.598	4.606	6.417	SOGX 120408	2	6.25	**38155**
KUB-P.3D.1563.R.12-PSC63-F	U40 73970	1.563	2.480	8.189	4.724	6.693	SOGX 120408	2	6.25	**39756**
KUB-P.3D.1563.R.12-PSC50-F	U40 63970	1.563	1.969	7.717	4.724	6.535	SOGX 120408	2	6.25	**39755**
KUB-P.3D.1687.R.13-PSC63-F	U40 74290	1.687	2.480	8.622	5.079	7.126	SOGX 130508	2	6.25	**42856**



Screwdriver

80 950 ...



Clamping screw

10 950 ...

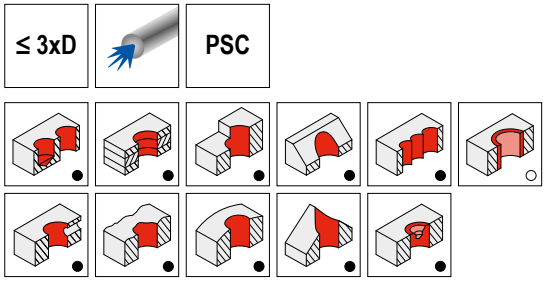
Spare parts DC				
0.875	T06 - IP	**123**	M2.2x5.5 - 06IP	**10700**
0.937 - 1.000	T08 - IP	**125**	M2.5x6.3 - 08IP	**10800**
1.250	T15 - IP	**128**	M3.5x7.5 - 15IP	**10300**
1.500 - 1.687	T20 - IP	**129**	M4.5x10 - 20IP	**10400**

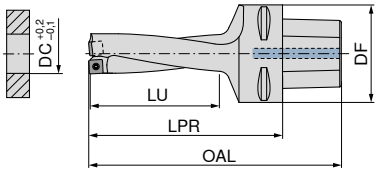
Matching holders can be found in → **Chapter 16 Adapters and accessories**

KUB Pentron – Indexable insert drill

Scope of supply:

Indexable Insert Drill incl. clamping screws







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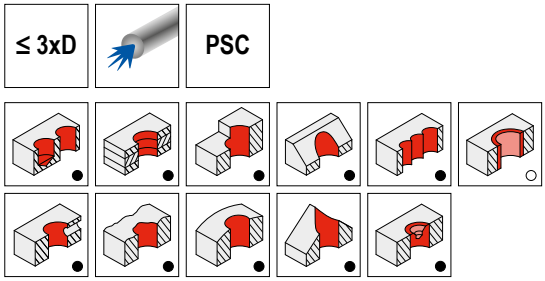
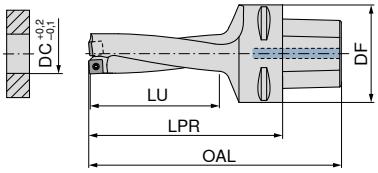
Designation	KOMET no.	DC mm	DF mm	OAL mm	LU mm	LPR mm	Insert	ZEFF	torque moment Nm	
KUB-P.3D.140.R.04-PSC50	U40 61400	14	50	103	42	73	SOGX 040204	2	0.38	14055
KUB-P.3D.145.R.04-PSC50	U40 61450	14.5	50	107	45	77	SOGX 040204	2	0.38	14555
KUB-P.3D.150.R.04-PSC50	U40 61500	15	50	107	45	77	SOGX 040204	2	0.38	15055
KUB-P.3D.155.R.04-PSC50	U40 61550	15.5	50	112	48	82	SOGX 040204	2	0.38	15555
KUB-P.3D.160.R.04-PSC50	U40 61600	16	50	112	48	82	SOGX 040204	2	0.38	16055
KUB-P.3D.160.R.04-PSC63	U40 71600	16	63	124	48	86	SOGX 040204	2	0.38	16056
KUB-P.3D.165.R.05-PSC50	U40 61650	16.5	50	116	51	86	SOGX 050204	2	0.62	16555
KUB-P.3D.170.R.05-PSC50	U40 61700	17	50	116	51	86	SOGX 050204	2	0.62	17055
KUB-P.3D.175.R.05-PSC50	U40 61750	17.5	50	119	54	89	SOGX 050204	2	0.62	17555
KUB-P.3D.180.R.05-PSC50	U40 61800	18	50	119	54	89	SOGX 050204	2	0.62	18055
KUB-P.3D.165.R.05-PSC63	U40 71650	16.5	63	128	51	90	SOGX 050204	2	0.62	16556
KUB-P.3D.170.R.05-PSC63	U40 71700	17	63	128	51	90	SOGX 050204	2	0.62	17056
KUB-P.3D.175.R.05-PSC63	U40 71750	17.5	63	131	54	93	SOGX 050204	2	0.62	17556
KUB-P.3D.180.R.05-PSC63	U40 71800	18	63	131	54	93	SOGX 050204	2	0.62	18056
KUB-P.3D.185.R.06-PSC50	U40 61850	18.5	50	123	57	93	SOGX 060206	2	1.01	18555
KUB-P.3D.190.R.06-PSC50	U40 61900	19	50	123	57	93	SOGX 060206	2	1.01	19055
KUB-P.3D.195.R.06-PSC50	U40 61950	19.5	50	126	60	96	SOGX 060206	2	1.01	19555
KUB-P.3D.200.R.06-PSC50	U40 62000	20	50	126	60	96	SOGX 060206	2	1.01	20055
KUB-P.3D.185.R.06-PSC63	U40 71850	18.5	63	135	57	97	SOGX 060206	2	1.01	18556
KUB-P.3D.190.R.06-PSC63	U40 71900	19	63	135	57	97	SOGX 060206	2	1.01	19056
KUB-P.3D.195.R.06-PSC63	U40 71950	19.5	63	138	60	100	SOGX 060206	2	1.01	19556
KUB-P.3D.200.R.06-PSC63	U40 72000	20	63	138	60	100	SOGX 060206	2	1.01	20056
KUB-P.3D.205.R.07-PSC50	U40 62050	20.5	50	130	63	100	SOGX 07T208	2	1.01	20555
KUB-P.3D.210.R.07-PSC50	U40 62100	21	50	130	63	100	SOGX 07T208	2	1.01	21055
KUB-P.3D.215.R.07-PSC50	U40 62150	21.5	50	133	66	103	SOGX 07T208	2	1.01	21555
KUB-P.3D.220.R.07-PSC50	U40 62200	22	50	133	66	103	SOGX 07T208	2	1.01	22055
KUB-P.3D.225.R.07-PSC50	U40 62250	22.5	50	137	69	107	SOGX 07T208	2	1.01	22555
KUB-P.3D.230.R.07-PSC50	U40 62300	23	50	137	69	107	SOGX 07T208	2	1.01	23055
KUB-P.3D.205.R.07-PSC63	U40 72050	20.5	63	142	63	104	SOGX 07T208	2	1.01	20556
KUB-P.3D.210.R.07-PSC63	U40 72100	21	63	142	63	104	SOGX 07T208	2	1.01	21056
KUB-P.3D.215.R.07-PSC63	U40 72150	21.5	63	145	66	107	SOGX 07T208	2	1.01	21556
KUB-P.3D.220.R.07-PSC63	U40 72200	22	63	145	66	107	SOGX 07T208	2	1.01	22056
KUB-P.3D.225.R.07-PSC63	U40 72250	22.5	63	149	69	111	SOGX 07T208	2	1.01	22556
KUB-P.3D.230.R.07-PSC63	U40 72300	23	63	149	69	111	SOGX 07T208	2	1.01	23056
KUB-P.3D.235.R.08-PSC50	U40 62350	23.5	50	140	72	110	SOGX 080308	2	1.28	23555
KUB-P.3D.240.R.08-PSC50	U40 62400	24	50	140	72	110	SOGX 080308	2	1.28	24055
KUB-P.3D.245.R.08-PSC50	U40 62450	24.5	50	144	75	114	SOGX 080308	2	1.28	24555
KUB-P.3D.250.R.08-PSC50	U40 62500	25	50	144	75	114	SOGX 080308	2	1.28	25055
KUB-P.3D.255.R.08-PSC50	U40 62550	25.5	50	147	78	117	SOGX 080308	2	1.28	25555
KUB-P.3D.260.R.08-PSC50	U40 62600	26	50	147	78	117	SOGX 080308	2	1.28	26055
KUB-P.3D.235.R.08-PSC63	U40 72350	23.5	63	152	72	114	SOGX 080308	2	1.28	23556
KUB-P.3D.240.R.08-PSC63	U40 72400	24	63	152	72	114	SOGX 080308	2	1.28	24056
KUB-P.3D.245.R.08-PSC63	U40 72450	24.5	63	156	75	118	SOGX 080308	2	1.28	24556
KUB-P.3D.250.R.08-PSC63	U40 72500	25	63	156	75	118	SOGX 080308	2	1.28	25056
KUB-P.3D.255.R.08-PSC63	U40 72550	25.5	63	159	78	121	SOGX 080308	2	1.28	25556
KUB-P.3D.260.R.08-PSC63	U40 72600	26	63	159	78	121	SOGX 080308	2	1.28	26056
KUB-P.3D.265.R.09-PSC50	U40 62650	26.5	50	151	81	121	SOGX 09T308	2	2.25	26555
KUB-P.3D.270.R.09-PSC50	U40 62700	27	50	151	81	121	SOGX 09T308	2	2.25	27055
KUB-P.3D.275.R.09-PSC50	U40 62750	27.5	50	154	84	124	SOGX 09T308	2	2.25	27555
KUB-P.3D.280.R.09-PSC50	U40 62800	28	50	154	84	124	SOGX 09T308	2	2.25	28055
KUB-P.3D.285.R.09-PSC50	U40 62850	28.5	50	158	87	128	SOGX 09T308	2	2.25	28555
KUB-P.3D.290.R.09-PSC50	U40 62900	29	50	158	87	128	SOGX 09T308	2	2.25	29055
KUB-P.3D.295.R.09-PSC50	U40 62950	29.5	50	161	90	131	SOGX 09T308	2	2.25	29555
KUB-P.3D.300.R.09-PSC50	U40 63000	30	50	161	90	131	SOGX 09T308	2	2.25	30055
KUB-P.3D.265.R.09-PSC63	U40 72650	26.5	63	163	81	125	SOGX 09T308	2	2.25	26556
KUB-P.3D.270.R.09-PSC63	U40 72700	27	63	163	81	125	SOGX 09T308	2	2.25	27056
KUB-P.3D.275.R.09-PSC63	U40 72750	27.5	63	166	84	128	SOGX 09T308	2	2.25	27556
KUB-P.3D.280.R.09-PSC63	U40 72800	28	63	166	84	128	SOGX 09T308	2	2.25	28056
KUB-P.3D.285.R.09-PSC63	U40 72850	28.5	63	170	87	132	SOGX 09T308	2	2.25	28556

Continued on next page

KUB Pentron – Indexable insert drill

Scope of supply:
Indexable Insert Drill incl. clamping screws







										10 873 ...
Designation	KOMET no.	**DC**	DF	OAL	LU	LPR	Insert	ZEFF	torque moment	
		mm	mm	mm	mm	mm			Nm	
KUB-P.3D.290.R.09-PSC63	U40 72900	**29**	63	170	87	132	SOGX 09T308	2	2.25	**29056**
KUB-P.3D.295.R.09-PSC63	U40 72950	**29.5**	63	173	90	135	SOGX 09T308	2	2.25	**29556**
KUB-P.3D.300.R.09-PSC63	U40 73000	**30**	63	173	90	135	SOGX 09T308	2	2.25	**30056**
KUB-P.3D.305.R.10-PSC50	U40 63050	**30.5**	50	165	98	135	SOGX 100408	2	2.8	**30555**
KUB-P.3D.310.R.10-PSC50	U40 63100	**31**	50	165	98	135	SOGX 100408	2	2.8	**31055**
KUB-P.3D.315.R.10-PSC50	U40 63150	**31.5**	50	168	101	138	SOGX 100408	2	2.8	**31555**
KUB-P.3D.320.R.10-PSC50	U40 63200	**32**	50	168	101	138	SOGX 100408	2	2.8	**32055**
KUB-P.3D.325.R.10-PSC50	U40 63250	**32.5**	50	172	104	142	SOGX 100408	2	2.8	**32555**
KUB-P.3D.330.R.10-PSC50	U40 63300	**33**	50	172	104	142	SOGX 100408	2	2.8	**33055**
KUB-P.3D.305.R.10-PSC63	U40 73050	**30.5**	63	177	98	139	SOGX 100408	2	2.8	**30556**
KUB-P.3D.310.R.10-PSC63	U40 73100	**31**	63	177	98	139	SOGX 100408	2	2.8	**31056**
KUB-P.3D.315.R.10-PSC63	U40 73150	**31.5**	63	180	101	142	SOGX 100408	2	2.8	**31556**
KUB-P.3D.320.R.10-PSC63	U40 73200	**32**	63	180	101	142	SOGX 100408	2	2.8	**32056**
KUB-P.3D.325.R.10-PSC63	U40 73250	**32.5**	63	184	104	146	SOGX 100408	2	2.8	**32556**
KUB-P.3D.330.R.10-PSC63	U40 73300	**33**	63	184	104	146	SOGX 100408	2	2.8	**33056**
KUB-P.3D.335.R.11-PSC50	U40 63350	**33.5**	50	175	107	145	SOGX 110408	2	2.8	**33555**
KUB-P.3D.340.R.11-PSC50	U40 63400	**34**	50	175	107	145	SOGX 110408	2	2.8	**34055**
KUB-P.3D.345.R.11-PSC50	U40 63450	**34.5**	50	179	110	149	SOGX 110408	2	2.8	**34555**
KUB-P.3D.350.R.11-PSC50	U40 63500	**35**	50	179	110	149	SOGX 110408	2	2.8	**35055**
KUB-P.3D.355.R.11-PSC50	U40 63550	**35.5**	50	182	113	152	SOGX 110408	2	2.8	**35555**
KUB-P.3D.360.R.11-PSC50	U40 63600	**36**	50	182	113	152	SOGX 110408	2	2.8	**36055**
KUB-P.3D.365.R.11-PSC50	U40 63650	**36.5**	50	186	116	156	SOGX 110408	2	2.8	**36555**
KUB-P.3D.370.R.11-PSC50	U40 63700	**37**	50	186	116	156	SOGX 110408	2	2.8	**37055**
KUB-P.3D.335.R.11-PSC63	U40 73350	**33.5**	63	187	107	149	SOGX 110408	2	2.8	**33556**
KUB-P.3D.340.R.11-PSC63	U40 73400	**34**	63	187	107	149	SOGX 110408	2	2.8	**34056**
KUB-P.3D.345.R.11-PSC63	U40 73450	**34.5**	63	191	110	153	SOGX 110408	2	2.8	**34556**
KUB-P.3D.350.R.11-PSC63	U40 73500	**35**	63	191	110	153	SOGX 110408	2	2.8	**35056**
KUB-P.3D.355.R.11-PSC63	U40 73550	**35.5**	63	194	113	156	SOGX 110408	2	2.8	**35556**
KUB-P.3D.360.R.11-PSC63	U40 73600	**36**	63	194	113	156	SOGX 110408	2	2.8	**36056**
KUB-P.3D.365.R.11-PSC63	U40 73650	**36.5**	63	198	116	160	SOGX 110408	2	2.8	**36556**
KUB-P.3D.370.R.11-PSC63	U40 73700	**37**	63	198	116	160	SOGX 110408	2	2.8	**37056**


Key


Screwdriver


Clamping screw

Spare parts							
			80 950 ...			**10 950 ...**	
DC							
14 - 16	T05 - IP	**057**		T06 - IP	**123**	M1.8x3.8 - 05IP	**10100**
16.5 - 18				T06 - IP	**123**	M2.0x4.3 - 06IP	**10000**
18.5 - 23				T06 - IP	**123**	M2.2x5.5 - 06IP	**10700**
23.5 - 26				T08 - IP	**125**	M2.5x6.3 - 08IP	**10800**
26.5 - 30				T08 - IP	**125**	M3.0x7.6 - 08IP	**10200**
30.5 - 37				T15 - IP	**128**	M3.5x7.5 - 15IP	**10300**

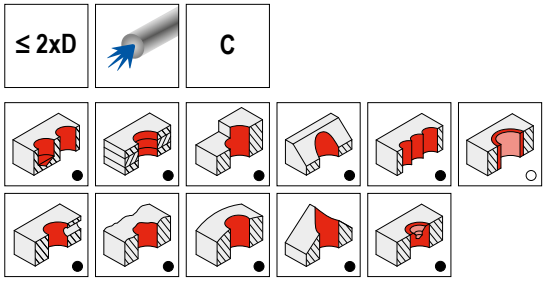
Matching holders can be found in → **Chapter 16 Adapters and accessories**

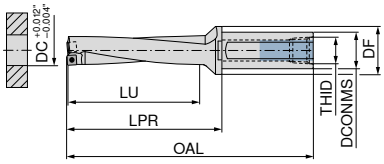
KUB Pentron – Size PSC 40 available on request.

KUB Pentron – Indexable insert drill

Scope of supply:

Indexable Insert Drill incl. clamping screws







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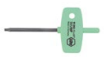
Designation	KOMET no.	DC inch	DCONMS inch	DF inch	OAL inch	LU inch	LPR inch	THID	Insert	torque moment Nm	
KUB-P.2D.0562.R.04-C20-F	U42 81430	0.562	0.750	1.180	3.982	1.181	1.732	1/4" NPT	SOGX 040204	0.38	14309
KUB-P.2D.0593.R.04-C20-F	U42 81510	0.593	0.750	1.180	4.140	1.260	1.890	1/4" NPT	SOGX 040204	0.38	15109
KUB-P.2D.0625.R.04-C20-F	U42 81590	0.625	0.750	1.180	4.140	1.260	1.890	1/4" NPT	SOGX 040204	0.38	15909
KUB-P.2D.0656.R.05-C20-F	U42 81670	0.656	0.750	1.180	4.258	1.339	2.008	1/4" NPT	SOGX 050204	0.62	16709
KUB-P.2D.0687.R.05-C25-EF	U42 81740	0.687	1.000	1.180	5.337	1.417	2.087	3/8" NPT	SOGX 050204	0.62	17500
KUB-P.2D.0703.R.05-C25-EF	U42 81790	0.703	1.000	1.180	5.337	1.417	2.087	3/8" NPT	SOGX 050204	0.62	17900
KUB-P.2D.0718.R.06-C1000-EF	U42 81820	0.718	1.000	1.180	5.455	1.496	2.205	3/8" NPT	SOGX 060206	1.01	18200
KUB-P.2D.0750.R.06-C1000-EF	U42 81910	0.750	1.000	1.180	5.533	1.575	2.283	3/8" NPT	SOGX 060206	1.01	19100
KUB-P.2D.0765.R.06-C1000-EF	U42 81940	0.765	1.000	1.180	5.533	1.575	2.283	3/8" NPT	SOGX 060206	1.01	19400
KUB-P.2D.0781.R.06-C1000-EF	U42 81980	0.781	1.000	1.180	5.533	1.575	2.283	3/8" NPT	SOGX 060206	1.01	19800
KUB-P.2D.0812.R.07-C1000-EF	U42 82060	0.812	1.000	1.180	5.652	1.654	2.402	3/8" NPT	SOGX 07T208	1.01	20600
KUB-P.2D.0828.R.07-C1000-EF	U42 82100	0.828	1.000	1.180	5.652	1.654	2.402	3/8" NPT	SOGX 07T208	1.01	21000
KUB-P.2D.0843.R.07-C1000-EF	U42 82140	0.843	1.000	1.180	5.730	1.732	2.480	3/8" NPT	SOGX 07T208	1.01	21400
KUB-P.2D.0872.R.07-C1000-EF	U42 82220	0.875	1.000	1.180	5.848	1.811	2.598	3/8" NPT	SOGX 07T208	1.01	22200
KUB-P.2D.0906R.07-C1000-EF	U42 82300	0.906	1.000	1.180	5.848	1.811	2.598	3/8" NPT	SOGX 07T208	1.01	23000
KUB-P.2D.0937.R.08-C1250-EF	U42 82380	0.937	1.250	1.540	5.927	1.890	2.677	1/2" NPT	SOGX 080308	1.28	23801
KUB-P.2D.0969.R.08-C1250-EF	U42 82460	0.968	1.250	1.540	6.045	1.969	2.795	1/2" NPT	SOGX 080308	1.28	24601
KUB-P.2D.0985.R.08-C1250-EF	U42 82500	0.985	1.250	1.540	6.045	1.969	2.795	1/2" NPT	SOGX 080308	1.28	25001
KUB-P.2D.1000.R.08-C1250-EF	U42 82540	1.000	1.250	1.540	6.124	2.047	2.874	1/2" NPT	SOGX 080308	1.28	25401
KUB-P.2D.1031.R.09-C1250-EF	U42 82620	1.031	1.250	1.540	6.242	2.126	2.992	1/2" NPT	SOGX 09T308	2.25	26201
KUB-P.2D.1062.R.09-C1250-EF	U42 82700	1.062	1.250	1.540	6.242	2.126	2.992	1/2" NPT	SOGX 09T308	2.25	27001
KUB-P.2D.1109.R.09-C1250-EF	U42 82820	1.109	1.250	1.540	6.439	2.283	3.189	1/2" NPT	SOGX 09T308	2.25	28201
KUB-P.2D.1125.R.09-C1250-EF	U42 82860	1.125	1.250	1.540	6.439	2.283	3.189	1/2" NPT	SOGX 09T308	2.25	28601
KUB-P.2D.1125.R.09-C1250-EF	U42 82940	1.156	1.250	1.540	6.518	2.362	3.268	1/2" NPT	SOGX 09T308	2.25	29401
KUB-P.2D.1187.R.10-C1500-EF	U42 83010	1.187	1.500	1.970	7.136	2.441	3.386	3/4" NPT	SOGX 100408	2.8	30102
KUB-P.2D.1218.R.10-C1500-EF	U42 83090	1.218	1.500	1.970	7.136	2.441	3.386	3/4" NPT	SOGX 100408	2.8	30902
KUB-P.2D.1250.R.10-C1500-EF	U42 83180	1.250	1.500	1.970	7.215	2.520	3.465	3/4" NPT	SOGX 100408	2.8	31802
KUB-P.2D.1281.R.10-C1500-EF	U42 83250	1.281	1.500	1.970	7.333	2.598	3.583	3/4" NPT	SOGX 100408	2.8	32502
KUB-P.2D.1312.R.11-C1500-EF	U42 83330	1.312	1.500	1.970	7.411	2.677	3.661	3/4" NPT	SOGX 110408	2.8	33302
KUB-P.2D.1328.R.11-C1500-EF	U42 83370	1.328	1.500	1.970	7.411	2.677	3.661	3/4" NPT	SOGX 110408	2.8	33702
KUB-P.2D.1375.R.11-C1500-EF	U42 83490	1.375	1.500	1.970	7.530	2.756	3.780	3/4" NPT	SOGX 110408	2.8	34902
KUB-P.2D.1406.R.11-C1500-EF	U42 83570	1.406	1.500	1.970	7.608	2.835	3.858	3/4" NPT	SOGX 110408	2.8	35702
KUB-P.2D.1437.R.11-C1500-EF	U42 83650	1.437	1.500	1.970	7.726	2.913	3.976	3/4" NPT	SOGX 110408	2.8	36502
KUB-P.2D.1469.R.12-C1500-EF	U42 83730	1.469	1.500	1.970	7.805	2.992	4.055	3/4" NPT	SOGX 120408	6.25	37302
KUB-P.2D.1500.R.12-C1500-EF	U42 83810	1.500	1.500	1.970	7.923	3.071	4.173	3/4" NPT	SOGX 120408	6.25	38102
KUB-P.2D.1531.R.12-C1500-EF	U42 83890	1.531	1.500	1.970	7.923	3.071	4.173	3/4" NPT	SOGX 120408	6.25	38902
KUB-P.2D.1562.R.12-C1500-EF	U42 83970	1.562	1.500	1.970	8.002	3.150	4.252	3/4" NPT	SOGX 120408	6.25	39702
KUB-P.2D.1625.R.12-C1500-EF	U42 84130	1.625	1.500	1.970	8.199	3.307	4.449	3/4" NPT	SOGX 120408	6.25	41302
KUB-P.2D.1656.R.13-C1500-EF	U42 84210	1.656	1.500	1.970	8.317	3.386	4.567	3/4" NPT	SOGX 130508	6.25	42102
KUB-P.2D.1687.R.13-C1500-EF	U42 84280	1.687	1.500	1.970	8.317	3.386	4.567	3/4" NPT	SOGX 130508	6.25	42802
KUB-P.2D.1750.R.13-C1500-EF	U42 84450	1.750	1.500	1.970	8.514	3.543	4.764	3/4" NPT	SOGX 130508	6.25	44502



Key



Screwdriver



Clamping screw

80 950 ... **80 950 ...** **10 950 ...**

Spare parts

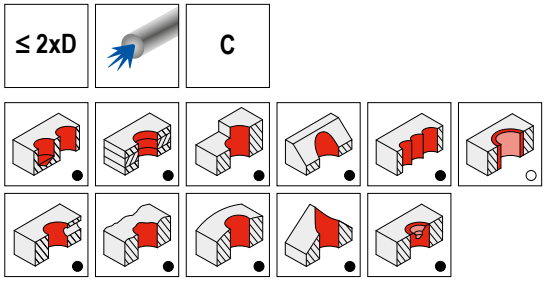
DC					
0.562 - 0.625	T05 - IP	057			M1.8x3.8 - 05IP	10100
0.656 - 0.703			T06 - IP	123	M2.0x4.3 - 06IP	10000
0.718 - 0.906			T06 - IP	123	M2.2x5.5 - 06IP	10700
0.937 - 1.000			T08 - IP	125	M2.5x6.3 - 08IP	10800
1.031 - 1.156			T08 - IP	125	M3.0x7.6 - 08IP	10200
1.187 - 1.437			T15 - IP	128	M3.5x7.5 - 15IP	10300
1.469 - 1.750			T20 - IP	129	M4.5x10 - 20IP	10400

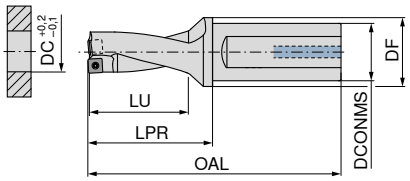
Matching holders can be found in → **Chapter 16 Adapters and accessories**

KUB Pentron – Indexable insert drill

Scope of supply:

Indexable Insert Drill incl. clamping screws







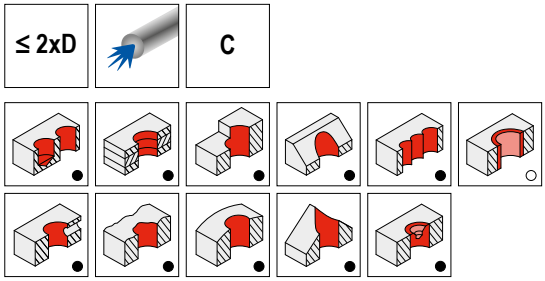
10 872 ...

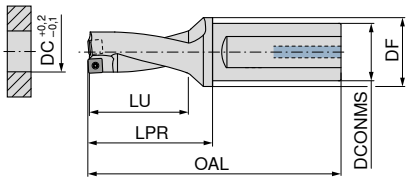
Designation	KOMET no.	DC mm	DCONMS mm	DF mm	OAL mm	LU mm	LPR mm	Insert	torque moment Nm	
KUB-P.2D.140.R.04-C20	U42 01400	**14**	20	30	91	28	41	SOGX 040204	0.38	**14001**
KUB-P.2D.145.R.04-C20	U42 01450	**14.5**	20	30	94	30	44	SOGX 040204	0.38	**14501**
KUB-P.2D.150.R.04-C20	U42 01500	**15**	20	30	94	30	44	SOGX 040204	0.38	**15001**
KUB-P.2D.155.R.04-C20	U42 01550	**15.5**	20	30	98	32	48	SOGX 040204	0.38	**15501**
KUB-P.2D.160.R.04-C20	U42 01600	**16**	20	30	98	32	48	SOGX 040204	0.38	**16001**
KUB-P.2D.165.R.05-C20	U42 01650	**16.5**	20	30	101	34	51	SOGX 050204	0.62	**16501**
KUB-P.2D.170.R.05-C20	U42 01700	**17**	20	30	101	34	51	SOGX 050204	0.62	**17001**
KUB-P.2D.175.R.05-C25	U42 11750	**17.5**	25	30	109	36	53	SOGX 050204	0.62	**17502**
KUB-P.2D.180.R.05-C25	U42 11800	**18**	25	30	109	36	53	SOGX 050204	0.62	**18002**
KUB-P.2D.185.R.06-C25	U42 11850	**18.5**	25	30	112	38	56	SOGX 060206	1.01	**18502**
KUB-P.2D.190.R.06-C25	U42 11900	**19**	25	30	112	38	56	SOGX 060206	1.01	**19002**
KUB-P.2D.195.R.06-C25	U42 11950	**19.5**	25	30	114	40	58	SOGX 060206	1.01	**19502**
KUB-P.2D.200.R.06-C25	U42 12000	**20**	25	30	114	40	58	SOGX 060206	1.01	**20002**
KUB-P.2D.205.R.07-C25	U42 12050	**20.5**	25	30	117	42	61	SOGX 07T208	1.01	**20502**
KUB-P.2D.210.R.07-C25	U42 12100	**21**	25	30	117	42	61	SOGX 07T208	1.01	**21002**
KUB-P.2D.215.R.07-C25	U42 12150	**21.5**	25	30	119	44	63	SOGX 07T208	1.01	**21502**
KUB-P.2D.220.R.07-C25	U42 12200	**22**	25	30	119	44	63	SOGX 07T208	1.01	**22002**
KUB-P.2D.225.R.07-C25	U42 12250	**22.5**	25	30	122	46	66	SOGX 07T208	1.01	**22502**
KUB-P.2D.230.R.07-C25	U42 12300	**23**	25	30	122	46	66	SOGX 07T208	1.01	**23002**
KUB-P.2D.235.R.08-C32	U42 22350	**23.5**	32	39	128	48	68	SOGX 080308	1.28	**23503**
KUB-P.2D.240.R.08-C32	U42 22400	**24**	32	39	128	48	68	SOGX 080308	1.28	**24003**
KUB-P.2D.245.R.08-C32	U42 22450	**24.5**	32	39	131	50	71	SOGX 080308	1.28	**24503**
KUB-P.2D.250.R.08-C32	U42 22500	**25**	32	39	131	50	71	SOGX 080308	1.28	**25003**
KUB-P.2D.255.R.08-C32	U42 22550	**25.5**	32	39	133	52	73	SOGX 080308	1.28	**25503**
KUB-P.2D.260.R.08-C32	U42 22600	**26**	32	39	133	52	73	SOGX 080308	1.28	**26003**
KUB-P.2D.265.R.09-C32	U42 22650	**26.5**	32	39	136	54	76	SOGX 09T308	2.25	**26503**
KUB-P.2D.270.R.09-C32	U42 22700	**27**	32	39	136	54	76	SOGX 09T308	2.25	**27003**
KUB-P.2D.275.R.09-C32	U42 22750	**27.5**	32	39	138	56	78	SOGX 09T308	2.25	**27503**
KUB-P.2D.280.R.09-C32	U42 22800	**28**	32	39	138	56	78	SOGX 09T308	2.25	**28003**
KUB-P.2D.285.R.09-C32	U42 22850	**28.5**	32	39	141	58	81	SOGX 09T308	2.25	**28503**
KUB-P.2D.290.R.09-C32	U42 22900	**29**	32	39	141	58	81	SOGX 09T308	2.25	**29003**
KUB-P.2D.295.R.09-C32	U42 22950	**29.5**	32	39	143	60	83	SOGX 09T308	2.25	**29503**
KUB-P.2D.300.R.09-C32	U42 23000	**30**	32	39	143	60	83	SOGX 09T308	2.25	**30003**
KUB-P.2D.305.R.10-C40	U42 33050	**30.5**	40	50	154	62	86	SOGX 100408	2.8	**30504**
KUB-P.2D.310.R.10-C40	U42 33100	**31**	40	50	154	62	86	SOGX 100408	2.8	**31004**
KUB-P.2D.315.R.10-C40	U42 33150	**31.5**	40	50	156	64	88	SOGX 100408	2.8	**31504**
KUB-P.2D.320.R.10-C40	U42 33200	**32**	40	50	156	64	88	SOGX 100408	2.8	**32004**
KUB-P.2D.325.R.10-C40	U42 33250	**32.5**	40	50	159	66	91	SOGX 100408	2.8	**32504**
KUB-P.2D.330.R.10-C40	U42 33300	**33**	40	50	159	66	91	SOGX 100408	2.8	**33004**
KUB-P.2D.335.R.11-C40	U42 33350	**33.5**	40	50	161	68	93	SOGX 110408	2.8	**33504**
KUB-P.2D.340.R.11-C40	U42 33400	**34**	40	50	161	68	93	SOGX 110408	2.8	**34004**
KUB-P.2D.345.R.11-C40	U42 33450	**34.5**	40	50	164	70	96	SOGX 110408	2.8	**34504**
KUB-P.2D.350.R.11-C40	U42 33500	**35**	40	50	164	70	96	SOGX 110408	2.8	**35004**
KUB-P.2D.355.R.11-C40	U42 33550	**35.5**	40	50	166	72	98	SOGX 110408	2.8	**35504**
KUB-P.2D.360.R.11-C40	U42 33600	**36**	40	50	166	72	98	SOGX 110408	2.8	**36004**
KUB-P.2D.365.R.11-C40	U42 33650	**36.5**	40	50	169	74	101	SOGX 110408	2.8	**36504**
KUB-P.2D.370.R.11-C40	U42 33700	**37**	40	50	169	74	101	SOGX 110408	2.8	**37004**
KUB-P.2D.375.R.12-C40	U42 33750	**37.5**	40	50	171	76	103	SOGX 120408	6.25	**37504**
KUB-P.2D.380.R.12-C40	U42 33800	**38**	40	50	171	76	103	SOGX 120408	6.25	**38004**
KUB-P.2D.385.R.12-C40	U42 33850	**38.5**	40	50	174	78	106	SOGX 120408	6.25	**38504**

Continued on next page

KUB Pentron – Indexable insert drill

Scope of supply:
Indexable Insert Drill incl. clamping screws







Designation	KOMET no.	DC mm	DCONMS mm	DF mm	OAL mm	LU mm	LPR mm	Insert	torque moment Nm	10 872 ...
KUB-P.2D.390.R.12-C40	U42 33900	39	40	50	174	78	106	SOGX 120408	6.25	39004
KUB-P.2D.395.R.12-C40	U42 33950	39.5	40	50	176	80	108	SOGX 120408	6.25	39504
KUB-P.2D.400.R.12-C40	U42 34000	40	40	50	176	80	108	SOGX 120408	6.25	40004
KUB-P.2D.405.R.12-C40	U42 34050	40.5	40	50	179	82	111	SOGX 120408	6.25	40504
KUB-P.2D.410.R.12-C40	U42 34100	41	40	50	179	82	111	SOGX 120408	6.25	41004
KUB-P.2D.415.R.12-C40	U42 34150	41.5	40	50	181	84	113	SOGX 120408	6.25	41504
KUB-P.2D.420.R.12-C40	U42 34200	42	40	50	181	84	113	SOGX 120408	6.25	42004
KUB-P.2D.425.R.13-C40	U42 34250	42.5	40	50	184	86	116	SOGX 130508	6.25	42504
KUB-P.2D.430.R.13-C40	U42 34300	43	40	50	184	86	116	SOGX 130508	6.25	43004
KUB-P.2D.435.R.13-C40	U42 34350	43.5	40	50	186	88	118	SOGX 130508	6.25	43504
KUB-P.2D.440.R.13-C40	U42 34400	44	40	50	186	88	118	SOGX 130508	6.25	44004
KUB-P.2D.445.R.13-C40	U42 34450	44.5	40	50	189	90	121	SOGX 130508	6.25	44504
KUB-P.2D.450.R.13-C40	U42 34500	45	40	50	189	90	121	SOGX 130508	6.25	45004
KUB-P.2D.455.R.13-C40	U42 34550	45.5	40	50	191	92	123	SOGX 130508	6.25	45504
KUB-P.2D.460.R.13-C40	U42 34600	46	40	50	191	92	123	SOGX 130508	6.25	46004


Key


Screwdriver


Clamping screw

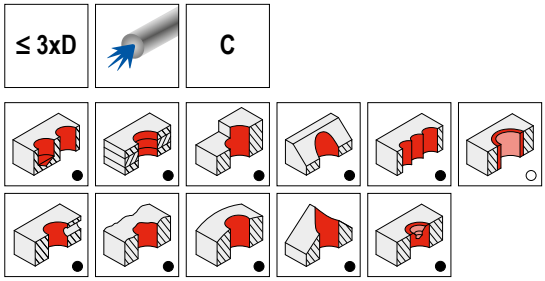
Spare parts DC	80 950 ...		80 950 ...		10 950 ...	
14 - 16	T05 - IP	057			M1.8x3.8 - 05IP	10100
16.5 - 18			T06 - IP	123	M2.0x4.3 - 06IP	10000
18.5 - 23			T06 - IP	123	M2.2x5.5 - 06IP	10700
23.5 - 26			T08 - IP	125	M2.5x6.3 - 08IP	10800
26.5 - 30			T08 - IP	125	M3.0x7.6 - 08IP	10200
30.5 - 37			T15 - IP	128	M3.5x7.5 - 15IP	10300
37.5 - 46			T20 - IP	129	M4.5x10 - 20IP	10400

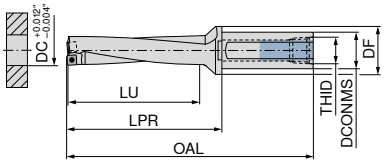
Matching holders can be found in → **Chapter 16 Adapters and accessories**

KUB Pentron – Indexable insert drill

Scope of supply:

Indexable Insert Drill incl. clamping screws







15 873 ...

Designation	KOMET no.	DC inch	DCONMS inch	DF inch	OAL inch	LU inch	LPR inch	THID	Insert	torque moment Nm	
KUB-P.3D.0562.R.04-C750-EF	U43 81430	0.562	0.750	1.180	4.573	1.772	2.323	1/4" NPT	SOGX 040204	0.38	14309
KUB-P.3D.0562.R.04-C750-EF	U43 81510	0.593	0.750	1.180	4.770	1.890	2.520	1/4" NPT	SOGX 040204	0.38	15109
KUB-P.3D.0562.R.04-C750-EF	U43 81590	0.625	0.750	1.180	4.770	1.890	2.520	1/4" NPT	SOGX 040204	0.38	15909
KUB-P.3D.0656.R.05-C750-EF	U43 81670	0.656	0.750	1.180	4.927	2.008	2.677	1/4" NPT	SOGX 050204	0.62	16709
KUB-P.3D.0687.R.05-C1000-EF	U43 81740	0.687	1.000	1.180	6.045	2.126	2.795	3/8" NPT	SOGX 050204	0.62	17500
KUB-P.3D.0687.R.05-C1000-EF	U43 81790	0.703	1.000	1.180	6.045	2.126	2.795	3/8" NPT	SOGX 050204	0.62	17900
KUB-P.3D.0718.R.06-C1000-EF	U43 81820	0.718	1.000	1.180	6.203	2.244	2.953	3/8" NPT	SOGX 060206	1.01	18200
KUB-P.3D.0750.R.06-C1000-EF	U43 81910	0.750	1.000	1.180	6.321	2.362	3.071	3/8" NPT	SOGX 060206	1.01	19100
KUB-P.3D.0765.R.06-C1000-EF	U43 81940	0.765	1.000	1.180	6.321	2.362	3.071	3/8" NPT	SOGX 060206	1.01	19400
KUB-P.3D.0781.R.06-C1000-EF	U43 81980	0.781	1.000	1.180	6.321	2.362	3.071	3/8" NPT	SOGX 060206	1.01	19800
KUB-P.3D.0812.R.07-C1000-EF	U43 82060	0.812	1.000	1.180	6.478	2.480	3.228	3/8" NPT	SOGX 07T208	1.01	20600
KUB-P.3D.0828.R.07-C1000-EF	U43 82100	0.828	1.000	1.180	6.478	2.480	3.228	3/8" NPT	SOGX 07T208	1.01	21000
KUB-P.3D.0843.R.07-C1000-EF	U43 82140	0.843	1.000	1.180	6.596	2.598	3.346	3/8" NPT	SOGX 07T208	1.01	21400
KUB-P.3D.0875.R.07-C1000-EF	U43 82220	0.875	1.000	1.180	6.754	2.717	3.504	3/8" NPT	SOGX 07T208	1.01	22200
KUB-P.3D.0906.R.07-C1000-EF	U43 82300	0.906	1.000	1.180	6.754	2.717	3.504	3/8" NPT	SOGX 07T208	1.01	23000
KUB-P.3D.0937.R.08-C1250-EF	U43 82380	0.937	1.250	1.540	6.872	2.835	3.622	1/2" NPT	SOGX 080308	1.28	23801
KUB-P.3D.0968.R.08-C1250-EF	U43 82460	0.968	1.250	1.540	7.030	2.953	3.780	1/2" NPT	SOGX 080308	1.28	24601
KUB-P.3D.0985.R.08-C1250-EF	U43 82500	0.985	1.250	1.540	7.030	2.953	3.780	1/2" NPT	SOGX 080308	1.28	25001
KUB-P.3D.1000.R.08-C1250-EF	U43 82540	1.000	1.250	1.540	7.148	3.071	3.898	1/2" NPT	SOGX 080308	1.28	25401
KUB-P.3D.1031.R.09-C1250-EF	U43 82620	1.031	1.250	1.540	7.305	3.189	4.055	1/2" NPT	SOGX 09T308	2.25	26201
KUB-P.3D.1062.R.09-C1250-EF	U43 82700	1.062	1.250	1.540	7.305	3.189	4.055	1/2" NPT	SOGX 09T308	2.25	27001
KUB-P.3D.1109.R.09-C1250-EF	U43 82820	1.109	1.250	1.540	7.581	3.425	4.331	1/2" NPT	SOGX 09T308	2.25	28201
KUB-P.3D.1125.R.09-C1250-EF	U43 82860	1.125	1.250	1.540	7.581	3.425	4.331	1/2" NPT	SOGX 09T308	2.25	28601
KUB-P.3D.1156.R.09-C1250-EF	U43 82940	1.156	1.250	1.540	7.699	3.543	4.449	1/2" NPT	SOGX 09T308	2.25	29401
KUB-P.3D.1187.R.10-C1500-EF	U43 83010	1.187	1.500	1.970	8.356	3.661	4.606	3/4" NPT	SOGX 100408	2.8	30102
KUB-P.3D.1218.R.10-C1500-EF	U43 83090	1.218	1.500	1.970	8.356	3.661	4.606	3/4" NPT	SOGX 100408	2.8	30902
KUB-P.3D.1250.R.10-C1500-EF	U43 83180	1.250	1.500	1.970	8.474	3.780	4.724	3/4" NPT	SOGX 100408	2.8	31802
KUB-P.3D.1281.R.10-C1500-EF	U43 83250	1.281	1.500	1.970	8.632	3.898	4.882	3/4" NPT	SOGX 100408	2.8	32502
KUB-P.3D.1312.R.11-C1500-EF	U43 83330	1.312	1.500	1.970	8.750	4.016	5.000	3/4" NPT	SOGX 110408	2.8	33302
KUB-P.3D.1328.R.11-C1500-EF	U43 83370	1.328	1.500	1.970	8.750	4.016	5.000	3/4" NPT	SOGX 110408	2.8	33702
KUB-P.3D.1375.R.11-C1500-EF	U43 83490	1.375	1.500	1.970	8.907	4.134	5.157	3/4" NPT	SOGX 110408	2.8	34902
KUB-P.3D.1406.R.11-C1500-EF	U43 83570	1.406	1.500	1.970	9.026	4.252	5.276	3/4" NPT	SOGX 110408	2.8	35702
KUB-P.3D.1437.R.11-C1500-EF	U43 83650	1.437	1.500	1.970	9.183	4.370	5.433	3/4" NPT	SOGX 110408	2.8	36502
KUB-P.3D.1469.R.12-C1500-EF	U43 83730	1.469	1.500	1.970	9.301	4.488	5.551	3/4" NPT	SOGX 120408	6.25	37302
KUB-P.3D.1500.R.12-C1500-EF	U43 83810	1.500	1.500	1.970	9.459	4.606	5.709	3/4" NPT	SOGX 120408	6.25	38102
KUB-P.3D.1531.R.12-C1500-EF	U43 83890	1.531	1.500	1.970	9.459	4.606	5.709	3/4" NPT	SOGX 120408	6.25	38902
KUB-P.3D.1562.R.12-C1500-EF	U43 83970	1.562	1.500	1.970	9.577	4.724	5.827	3/4" NPT	SOGX 120408	6.25	39702
KUB-P.3D.1562.R.12-C1500-EF	U43 84130	1.625	1.500	1.970	9.852	4.961	6.102	3/4" NPT	SOGX 120408	6.25	41302
KUB-P.3D.1656.R.13-C1500-EF	U43 84210	1.656	1.500	1.970	8.346	5.079	6.260	3/4" NPT	SOGX 130508	6.25	42102
KUB-P.3D.1687.R.13-C1500-EF	U43 84280	1.687	1.500	1.970	8.346	5.079	6.260	3/4" NPT	SOGX 130508	6.25	42802
KUB-P.3D.1687.R.13-C1500-EF	U43 84450	1.750	1.500	1.970	8.622	5.315	6.535	3/4" NPT	SOGX 130508	6.25	44502



Key

80 950 ...



Screwdriver

80 950 ...



Clamping screw

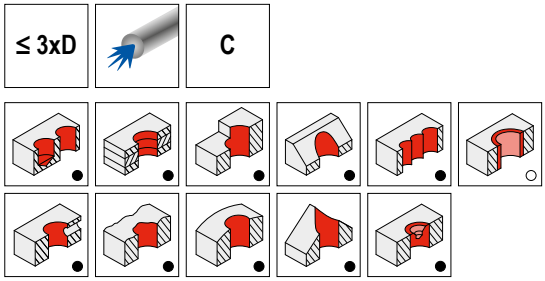
10 950 ...

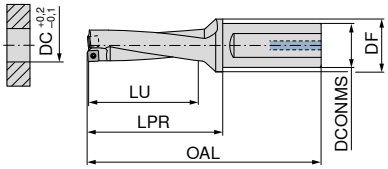
DC						
0.562 - 0.625	T05 - IP	057			M1.8x3.8 - 05IP	10100
0.656 - 0.703			T06 - IP	123	M2.0x4.3 - 06IP	10000
0.718 - 0.906			T06 - IP	123	M2.2x5.5 - 06IP	10700
0.937 - 1.000			T08 - IP	125	M2.5x6.3 - 08IP	10800
1.031 - 1.156			T08 - IP	125	M3.0x7.6 - 08IP	10200
1.187 - 1.437			T15 - IP	128	M3.5x7.5 - 15IP	10300
1.469 - 1.750			T20 - IP	129	M4.5x10 - 20IP	10400

Matching holders can be found in → **Chapter 16 Adapters and accessories**

KUB Pentron – Indexable insert drill

Scope of supply:
Indexable Insert Drill incl. clamping screws







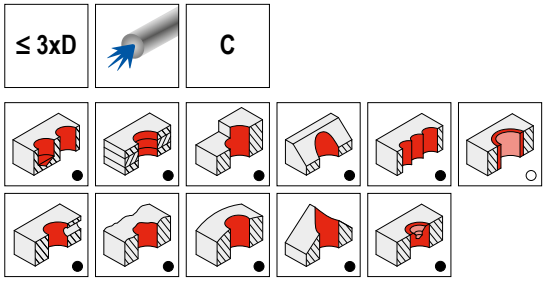
10 873 ...

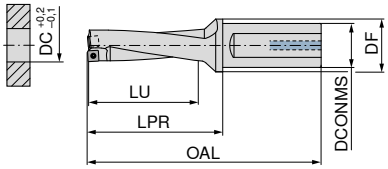
Designation	KOMET no.	DC mm	DCONMS mm	DF mm	OAL mm	LU mm	LPR mm	Insert	torque moment Nm	
KUB-P.3D.140.R.04-C20	U43 01400	14	20	30	105	42	55	SOGX 040204	0.38	14001
KUB-P.3D.145.R.04-C20	U43 01450	14.5	20	30	109	45	59	SOGX 040204	0.38	14501
KUB-P.3D.150.R.04-C20	U43 01500	15	20	30	109	45	59	SOGX 040204	0.38	15001
KUB-P.3D.155.R.04-C20	U43 01550	15.5	20	30	114	48	64	SOGX 040204	0.38	15501
KUB-P.3D.160.R.04-C20	U43 01600	16	20	30	114	48	64	SOGX 040204	0.38	16001
KUB-P.3D.165.R.05-C20	U43 01650	16.5	20	30	118	51	68	SOGX 050204	0.62	16501
KUB-P.3D.170.R.05-C20	U43 01700	17	20	30	118	51	68	SOGX 050204	0.62	17001
KUB-P.3D.175.R.05-C25	U43 11750	17.5	25	30	127	54	71	SOGX 050204	0.62	17501
KUB-P.3D.180.R.05-C25	U43 11800	18	25	30	127	54	71	SOGX 050204	0.62	18001
KUB-P.3D.185.R.06-C25	U43 11850	18.5	25	30	131	57	75	SOGX 060206	1.01	18501
KUB-P.3D.190.R.06-C25	U43 11900	19	25	30	131	57	75	SOGX 060206	1.01	19001
KUB-P.3D.195.R.06-C25	U43 11950	19.5	25	30	134	60	78	SOGX 060206	1.01	19501
KUB-P.3D.200.R.06-C25	U43 12000	20	25	30	134	60	78	SOGX 060206	1.01	20001
KUB-P.3D.205.R.07-C25	U43 12050	20.5	25	30	138	63	82	SOGX 07T208	1.01	20501
KUB-P.3D.210.R.07-C25	U43 12100	21	25	30	138	63	82	SOGX 07T208	1.01	21001
KUB-P.3D.215.R.07-C25	U43 12150	21.5	25	30	141	66	85	SOGX 07T208	1.01	21501
KUB-P.3D.220.R.07-C25	U43 12200	22	25	30	141	66	85	SOGX 07T208	1.01	22002
KUB-P.3D.225.R.07-C25	U43 12250	22.5	25	30	145	69	89	SOGX 07T208	1.01	22502
KUB-P.3D.230.R.07-C25	U43 12300	23	25	30	145	69	89	SOGX 07T208	1.01	23002
KUB-P.3D.235.R.08-C32	U43 22350	23.5	32	39	152	72	92	SOGX 080308	1.28	23503
KUB-P.3D.240.R.08-C32	U43 22400	24	32	39	152	72	92	SOGX 080308	1.28	24003
KUB-P.3D.245.R.08-C32	U43 22450	24.5	32	39	156	75	96	SOGX 080308	1.28	24503
KUB-P.3D.250.R.08-C32	U43 22500	25	32	39	156	75	96	SOGX 080308	1.28	25003
KUB-P.3D.255.R.08-C32	U43 22550	25.5	32	39	159	78	99	SOGX 080308	1.28	25503
KUB-P.3D.260.R.08-C32	U43 22600	26	32	39	159	78	99	SOGX 080308	1.28	26003
KUB-P.3D.265.R.09-C32	U43 22650	26.5	32	39	163	81	103	SOGX 09T308	2.25	26503
KUB-P.3D.270.R.09-C32	U43 22700	27	32	39	163	81	103	SOGX 09T308	2.25	27003
KUB-P.3D.275.R.09-C32	U43 22750	27.5	32	39	166	84	106	SOGX 09T308	2.25	27503
KUB-P.3D.280.R.09-C32	U43 22800	28	32	39	166	84	106	SOGX 09T308	2.25	28003
KUB-P.3D.285.R.09-C32	U43 22850	28.5	32	39	170	87	110	SOGX 09T308	2.25	28503
KUB-P.3D.290.R.09-C32	U43 22900	29	32	39	170	87	110	SOGX 09T308	2.25	29003
KUB-P.3D.295.R.09-C32	U43 22950	29.5	32	39	173	90	113	SOGX 09T308	2.25	29503
KUB-P.3D.300.R.09-C32	U43 23000	30	32	39	173	90	113	SOGX 09T308	2.25	30003
KUB-P.3D.305.R.10-C40	U43 33050	30.5	40	50	185	93	117	SOGX 100408	2.8	30504
KUB-P.3D.310.R.10-C40	U43 33100	31	40	50	185	93	117	SOGX 100408	2.8	31004
KUB-P.3D.315.R.10-C40	U43 33150	31.5	40	50	188	96	120	SOGX 100408	2.8	31504
KUB-P.3D.320.R.10-C40	U43 33200	32	40	50	188	96	120	SOGX 100408	2.8	32004
KUB-P.3D.325.R.10-C40	U43 33250	32.5	40	50	192	99	124	SOGX 100408	2.8	32504
KUB-P.3D.330.R.10-C40	U43 33300	33	40	50	192	99	124	SOGX 100408	2.8	33004
KUB-P.3D.335.R.11-C40	U43 33350	33.5	40	50	195	102	127	SOGX 110408	2.8	33504
KUB-P.3D.340.R.11-C40	U43 33400	34	40	50	195	102	127	SOGX 110408	2.8	34004
KUB-P.3D.345.R.11-C40	U43 33450	34.5	40	50	199	105	131	SOGX 110408	2.8	34504
KUB-P.3D.350.R.11-C40	U43 33500	35	40	50	199	105	131	SOGX 110408	2.8	35004
KUB-P.3D.355.R.11-C40	U43 33550	35.5	40	50	202	108	134	SOGX 110408	2.8	35504
KUB-P.3D.360.R.11-C40	U43 33600	36	40	50	202	108	134	SOGX 110408	2.8	36004
KUB-P.3D.365.R.11-C40	U43 33650	36.5	40	50	206	111	138	SOGX 110408	2.8	36504
KUB-P.3D.370.R.11-C40	U43 33700	37	40	50	206	111	138	SOGX 110408	2.8	37004
KUB-P.3D.375.R.12-C40	U43 33750	37.5	40	50	209	114	141	SOGX 120408	6.25	37504
KUB-P.3D.380.R.12-C40	U43 33800	38	40	50	209	114	141	SOGX 120408	6.25	38004
KUB-P.3D.385.R.12-C40	U43 33850	38.5	40	50	213	117	145	SOGX 120408	6.25	38504

Continued on next page

KUB Pentron – Indexable insert drill

Scope of supply:
Indexable Insert Drill incl. clamping screws







										10 873 ...
Designation	KOMET no.	**DC** mm	DCONMS mm	DF mm	OAL mm	LU mm	LPR mm	Insert	torque moment Nm	
KUB-P.3D.390.R.12-C40	U43 33900	**39**	40	50	213	117	145	SOGX 120408	6.25	**39004**
KUB-P.3D.395.R.12-C40	U43 33950	**39.5**	40	50	216	120	148	SOGX 120408	6.25	**39504**
KUB-P.3D.400.R.12-C40	U43 34000	**40**	40	50	216	120	148	SOGX 120408	6.25	**40004**
KUB-P.3D.405.R.12-C40	U43 34050	**40.5**	40	50	220	123	152	SOGX 120408	6.25	**40504**
KUB-P.3D.410.R.12-C40	U43 34100	**41**	40	50	220	123	152	SOGX 120408	6.25	**41004**
KUB-P.3D.415.R.12-C40	U43 34150	**41.5**	40	50	223	126	155	SOGX 120408	6.25	**41504**
KUB-P.3D.420.R.12-C40	U43 34200	**42**	40	50	223	126	155	SOGX 120408	6.25	**42004**
KUB-P.3D.425.R.13-C40	U43 34250	**42.5**	40	50	227	129	159	SOGX 130508	6.25	**42504**
KUB-P.3D.430.R.13-C40	U43 34300	**43**	40	50	227	129	159	SOGX 130508	6.25	**43004**
KUB-P.3D.435.R.13-C40	U43 34350	**43.5**	40	50	230	132	162	SOGX 130508	6.25	**43504**
KUB-P.3D.440.R.13-C40	U43 34400	**44**	40	50	230	132	162	SOGX 130508	6.25	**44004**
KUB-P.3D.445.R.13-C40	U43 34450	**44.5**	40	50	234	135	166	SOGX 130508	6.25	**44504**
KUB-P.3D.450.R.13-C40	U43 34500	**45**	40	50	234	135	166	SOGX 130508	6.25	**45004**
KUB-P.3D.455.R.13-C40	U43 34550	**45.5**	40	50	237	138	169	SOGX 130508	6.25	**45504**
KUB-P.3D.460.R.13-C40	U43 34600	**46**	40	50	237	138	169	SOGX 130508	6.25	**46004**


Key


Screwdriver


Clamping screw

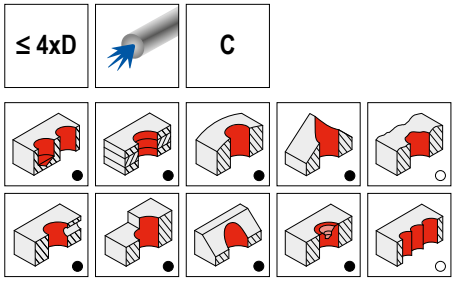
		80 950 ...			**80 950 ...**		**10 950 ...**
Spare parts DC							
14 - 16	T05 - IP	**057**				M1.8x3.8 - 05IP	**10100**
16.5 - 18				T06 - IP	**123**	M2.0x4.3 - 06IP	**10000**
18.5 - 23				T06 - IP	**123**	M2.2x5.5 - 06IP	**10700**
23.5 - 26				T08 - IP	**125**	M2.5x6.3 - 08IP	**10800**
26.5 - 30				T08 - IP	**125**	M3.0x7.6 - 08IP	**10200**
30.5 - 37				T15 - IP	**128**	M3.5x7.5 - 15IP	**10300**
37.5 - 46				T20 - IP	**129**	M4.5x10 - 20IP	**10400**

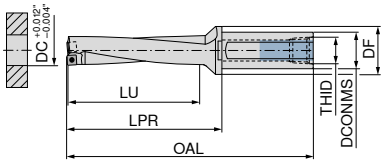
Matching holders can be found in → **Chapter 16 Adapters and accessories**

KUB Pentron – Indexable insert drill

Scope of supply:

Indexable Insert Drill incl. clamping screws







15 874 ...

Designation	KOMET no.	DC inch	DCONMS inch	DF inch	OAL inch	LU inch	LPR inch	THID	Insert	torque moment Nm	
KUB-P.4D.0562.R.04.C0750-EF	U44 81430	0.562	0.750	1.180	5.163	2.362	2.913	1/4" NPT	SOGX 040204	0.38	**14309**
KUB-P.4D.0593.R.04.C0750-EF	U44 81510	0.593	0.750	1.180	5.400	2.520	3.150	1/4" NPT	SOGX 040204	0.38	**15109**
KUB-P.4D.0625.R.04.C0750-EF	U44 81590	0.625	0.750	1.180	5.400	2.520	3.150	1/4" NPT	SOGX 040204	0.38	**15909**
KUB-P.4D.0656.R.05.C0750-EF	U44 81670	0.656	0.750	1.180	5.596	2.677	3.346	1/4" NPT	SOGX 050204	0.62	**16709**
KUB-P.4D.0687.R.05.C1000-E	U44 81750	0.687	1.000	1.180	6.754	2.835	3.504	3/8" NPT	SOGX 050204	0.62	**17500**
KUB-P.4D.0703.R.05.C1000-EF	U44 81790	0.703	1.000	1.180	6.754	2.835	3.504	3/8" NPT	SOGX 050204	0.62	**17900**
KUB-P.4D.0750.R.06.C1000-EF	U44 81910	0.750	1.000	1.180	7.108	3.150	3.858	3/8" NPT	SOGX 060206	1.01	**19100**
KUB-P.4D.0765.R.06.C1000-EF	U44 81940	0.765	1.000	1.180	7.108	3.150	3.858	3/8" NPT	SOGX 060206	1.01	**19400**
KUB-P.4D.0781.R.06.C1000-EF	U44 81980	0.781	1.000	1.180	7.108	3.150	3.858	3/8" NPT	SOGX 060206	1.01	**19800**
KUB-P.4D.0812.R.07.C1000-EF	U44 82060	0.812	1.000	1.180	7.305	3.307	4.055	3/8" NPT	SOGX 07T208	1.01	**20600**
KUB-P.4D.0828.R.07.C1000-E	U44 82100	0.828	1.000	1.180	7.305	3.307	4.055	3/8" NPT	SOGX 07T208	1.01	**21000**
KUB-P.4D.0843.R.07.C1000-EF	U44 82140	0.843	1.000	1.180	7.974	3.465	4.724	3/8" NPT	SOGX 07T208	1.01	**21400**
KUB-P.4D.0875.R.07.C1000-EF	U44 82220	0.875	1.000	1.180	7.659	3.622	4.409	3/8" NPT	SOGX 07T208	1.01	**22200**
KUB-P.4D.0906.R.07.C1000-E	U44 82300	0.906	1.000	1.180	7.659	3.622	4.409	3/8" NPT	SOGX 07T208	1.01	**23000**
KUB-P.4D.0937.R.08.C1250-EF	U44 82380	0.937	1.250	1.540	7.817	3.780	4.567	1/2" NPT	SOGX 080308	1.28	**23801**
KUB-P.4D.0985.R.08.C1250-E	U44 82500	0.985	1.250	1.540	8.014	3.937	4.764	1/2" NPT	SOGX 080308	1.28	**25001**
KUB-P.4D.1000.R.08.C1250-EF	U44 82540	1.000	1.250	1.540	8.171	4.094	4.921	1/2" NPT	SOGX 080308	1.28	**25401**
KUB-P.4D.1031.R.09.C1250-EF	U44 82620	1.031	1.250	1.540	8.368	4.252	5.118	1/2" NPT	SOGX 09T308	2.25	**26201**
KUB-P.4D.1062.R.09.C1250-E	U44 82700	1.062	1.250	1.540	8.368	4.252	5.118	1/2" NPT	SOGX 09T308	2.25	**27001**
KUB-P.4D.1109.R.09.C1250-EF	U44 82820	1.109	1.250	1.540	8.722	4.567	5.472	1/2" NPT	SOGX 09T308	2.25	**28201**
KUB-P.4D.1125.R.09.C1250-EF	U44 82860	1.125	1.250	1.540	8.722	4.567	5.472	1/2" NPT	SOGX 09T308	2.25	**28601**
KUB-P.4D.1156.R.09.C1250-EF	U44 82940	1.156	1.250	1.540	8.880	4.724	5.630	1/2" NPT	SOGX 09T308	2.25	**29401**
KUB-P.4D.1187.R.10.C1500-EF	U44 83020	1.187	1.500	1.970	9.577	4.882	5.827	3/4" NPT	SOGX 100408	2.8	**30102**
KUB-P.4D.1218.R.10.C1500-EF	U44 83090	1.218	1.500	1.970	9.577	4.882	5.827	3/4" NPT	SOGX 100408	2.8	**30902**
KUB-P.4D.1250.R.10.C1500-EF	U44 83180	1.250	1.500	1.970	9.734	5.039	5.984	3/4" NPT	SOGX 100408	2.8	**31802**
KUB-P.4D.1281.R.10.C1500-E	U44 83250	1.281	1.500	1.970	9.931	5.197	6.181	3/4" NPT	SOGX 100408	2.8	**32502**
KUB-P.4D.1312.R.11.C1500-EF	U44 83330	1.312	1.500	1.970	10.089	5.354	6.339	3/4" NPT	SOGX 110408	2.8	**33302**
KUB-P.4D.1328.R.11.C1500-EF	U44 83370	1.328	1.500	1.970	10.089	5.354	6.339	3/4" NPT	SOGX 110408	2.8	**33702**
KUB-P.4D.1375.R.11.C1500-EF	U44 83490	1.375	1.500	1.970	10.285	5.512	6.535	3/4" NPT	SOGX 110408	2.8	**34902**
KUB-P.4D.1437.R.11.C1500-E	U44 83650	1.437	1.500	1.970	10.640	5.827	6.890	3/4" NPT	SOGX 110408	2.8	**36502**
KUB-P.4D.1469.R.12.C1500-EF	U44 83730	1.469	1.500	1.970	10.797	5.984	7.047	3/4" NPT	SOGX 120408	6.25	**37302**
KUB-P.4D.1500.R.12.C1500-EF	U44 83810	1.500	1.500	1.970	10.994	6.142	7.244	3/4" NPT	SOGX 120408	6.25	**38102**
KUB-P.4D.1531.R.12.C1500-EF	U44 83890	1.531	1.500	1.970	10.994	6.142	7.244	3/4" NPT	SOGX 120408	6.25	**38902**
KUB-P.4D.1562.R.12.C1500-EF	U44 83970	1.562	1.500	1.970	11.152	6.299	7.402	3/4" NPT	SOGX 120408	6.25	**39702**
KUB-P.4D.1625.R.12.C1500-EF	U44 84130	1.625	1.500	1.970	11.506	6.614	7.756	3/4" NPT	SOGX 120408	6.25	**41302**
KUB-P.4D.1656.R.13.C1500-EF	U44 84210	1.656	1.500	1.970	11.703	6.772	7.953	3/4" NPT	SOGX 130508	6.25	**42102**
KUB-P.4D.1687.R.13.C1500-EF	U44 84290	1.687	1.500	1.970	11.703	6.772	7.953	3/4" NPT	SOGX 130508	6.25	**42802**
KUB-P.4D.1750.R.13.C1500-EF	U44 84450	1.750	1.500	1.970	12.057	7.087	8.307	3/4" NPT	SOGX 130508	6.25	**44502**



Key

80 950 ...



Screwdriver

80 950 ...



Clamping screw

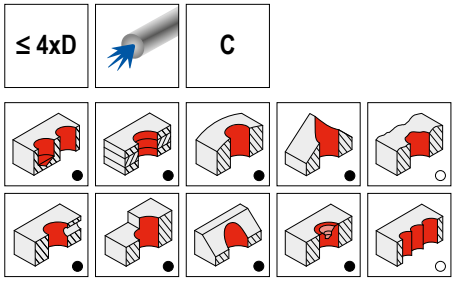
10 950 ...

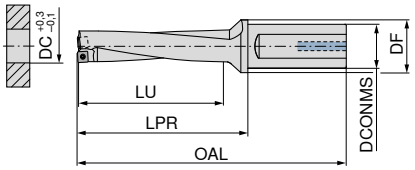
Spare parts DC					
0.562 - 0.625	T05 - IP	**057**			M1.8x3.8 - 05IP **10100**
0.656 - 0.703			T06 - IP	**123**	M2.0x4.3 - 06IP **10000**
0.750 - 0.906			T06 - IP	**123**	M2.2x5.5 - 06IP **10700**
0.937 - 1.000			T08 - IP	**125**	M2.5x6.3 - 08IP **10800**
1.031 - 1.156			T08 - IP	**125**	M3.0x7.6 - 08IP **10200**
1.187 - 1.437			T15 - IP	**128**	M3.5x7.5 - 15IP **10300**
1.469 - 1.750			T20 - IP	**129**	M4.5x10 - 20IP **10400**

Matching holders can be found in → **Chapter 16 Adapters and accessories**

KUB Pentron – Indexable insert drill

Scope of supply:
Indexable Insert Drill incl. clamping screws







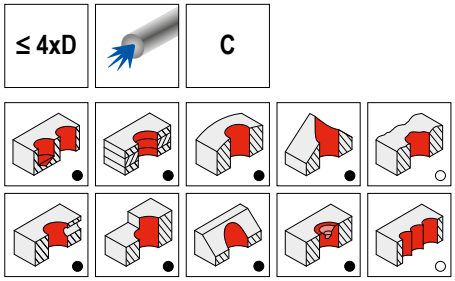
10 874 ...

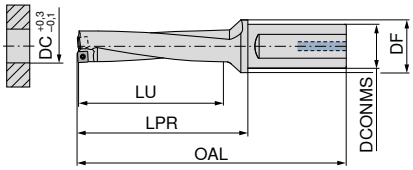
Designation	KOMET no.	DC mm	DCONMS mm	DF mm	OAL mm	LU mm	LPR mm	Insert	torque moment Nm	
KUB-P.4D.140.R.04-C20	U44 01400	14	20	30	119	56	69	SOGX 040204	0.38	14001
KUB-P.4D.145.R.04-C20	U44 01450	14.5	20	30	124	60	74	SOGX 040204	0.38	14501
KUB-P.4D.150.R.04-C20	U44 01500	15	20	30	124	60	74	SOGX 040204	0.38	15001
KUB-P.4D.155.R.04-C20	U44 01550	15.5	20	30	130	64	80	SOGX 040204	0.38	15501
KUB-P.4D.160.R.04-C20	U44 01600	16	20	30	130	64	80	SOGX 040204	0.38	16001
KUB-P.4D.165.R.05-C20	U44 01650	16.5	20	30	135	68	85	SOGX 050204	0.62	16501
KUB-P.4D.170.R.05-C20	U44 01700	17	20	30	135	68	85	SOGX 050204	0.62	17001
KUB-P.4D.175.R.05-C25	U44 11750	17.5	25	30	145	72	89	SOGX 050204	0.62	17502
KUB-P.4D.180.R.05-C25	U44 11800	18	25	30	145	72	89	SOGX 050204	0.62	18002
KUB-P.4D.185.R.06-C25	U44 11850	18.5	25	30	150	76	94	SOGX 060206	1.01	18502
KUB-P.4D.190.R.06-C25	U44 11900	19	25	30	150	76	94	SOGX 060206	1.01	19002
KUB-P.4D.195.R.06-C25	U44 11950	19.5	25	30	154	80	98	SOGX 060206	1.01	19502
KUB-P.4D.200.R.06-C25	U44 12000	20	25	30	154	80	98	SOGX 060206	1.01	20002
KUB-P.4D.205.R.07-C25	U44 12050	20.5	25	30	159	84	103	SOGX 07T208	1.01	20502
KUB-P.4D.210.R.07-C25	U44 12100	21	25	30	159	84	103	SOGX 07T208	1.01	21002
KUB-P.4D.215.R.07-C25	U44 12150	21.5	25	30	163	88	107	SOGX 07T208	1.01	21502
KUB-P.4D.220.R.07-C25	U44 12200	22	25	30	163	88	107	SOGX 07T208	1.01	22002
KUB-P.4D.225.R.07-C25	U44 12250	22.5	25	30	168	92	112	SOGX 07T208	1.01	22502
KUB-P.4D.230.R.07-C25	U44 12300	23	25	30	168	92	112	SOGX 07T208	1.01	23002
KUB-P.4D.235.R.08-C32	U44 22350	23.5	32	39	176	96	116	SOGX 080308	1.28	23503
KUB-P.4D.240.R.08-C32	U44 22400	24	32	39	176	96	116	SOGX 080308	1.28	24003
KUB-P.4D.245.R.08-C32	U44 22450	24.5	32	39	181	100	121	SOGX 080308	1.28	24503
KUB-P.4D.250.R.08-C32	U44 22500	25	32	39	181	100	121	SOGX 080308	1.28	25003
KUB-P.4D.255.R.08-C32	U44 22550	25.5	32	39	185	104	125	SOGX 080308	1.28	25503
KUB-P.4D.260.R.08-C32	U44 22600	26	32	39	185	104	125	SOGX 080308	1.28	26003
KUB-P.4D.265.R.09-C32	U44 22650	26.5	32	39	190	108	130	SOGX 09T308	2.25	26503
KUB-P.4D.270.R.09-C32	U44 22700	27	32	39	190	108	130	SOGX 09T308	2.25	27003
KUB-P.4D.275.R.09-C32	U44 22750	27.5	32	39	194	112	134	SOGX 09T308	2.25	27503
KUB-P.4D.280.R.09-C32	U44 22800	28	32	39	194	112	134	SOGX 09T308	2.25	28003
KUB-P.4D.285.R.09-C32	U44 22850	28.5	32	39	199	116	139	SOGX 09T308	2.25	28503
KUB-P.4D.290.R.09-C32	U44 22900	29	32	39	199	116	139	SOGX 09T308	2.25	29003
KUB-P.4D.295.R.09-C32	U44 22950	29.5	32	39	203	120	143	SOGX 09T308	2.25	29503
KUB-P.4D.300.R.09-C32	U44 23000	30	32	39	203	120	143	SOGX 09T308	2.25	30003
KUB-P.4D.305.R.10-C40	U44 33050	30.5	40	50	216	124	148	SOGX 100408	2.8	30504
KUB-P.4D.310.R.10-C40	U44 33100	31	40	50	216	124	148	SOGX 100408	2.8	31004
KUB-P.4D.315.R.10-C40	U44 33150	31.5	40	50	220	128	152	SOGX 100408	2.8	31504
KUB-P.4D.320.R.10-C40	U44 33200	32	40	50	220	128	152	SOGX 100408	2.8	32004
KUB-P.4D.325.R.10-C40	U44 33250	32.5	40	50	225	132	157	SOGX 100408	2.8	32504
KUB-P.4D.330.R.10-C40	U44 33300	33	40	50	225	132	157	SOGX 100408	2.8	33004
KUB-P.4D.335.R.11-C40	U44 33350	33.5	40	50	229	136	161	SOGX 110408	2.8	33504
KUB-P.4D.340.R.11-C40	U44 33400	34	40	50	229	136	161	SOGX 110408	2.8	34004
KUB-P.4D.345.R.11-C40	U44 33450	34.5	40	50	234	140	166	SOGX 110408	2.8	34504
KUB-P.4D.350.R.11-C40	U44 33500	35	40	50	234	140	166	SOGX 110408	2.8	35004
KUB-P.4D.355.R.11-C40	U44 33550	35.5	40	50	238	144	170	SOGX 110408	2.8	35504
KUB-P.4D.360.R.11-C40	U44 33600	36	40	50	238	144	170	SOGX 110408	2.8	36004
KUB-P.4D.365.R.11-C40	U44 33650	36.5	40	50	243	148	175	SOGX 110408	2.8	36504
KUB-P.4D.370.R.11-C40	U44 33700	37	40	50	243	148	175	SOGX 110408	2.8	37004
KUB-P.4D.375.R.12-C40	U44 33750	37.5	40	50	247	152	179	SOGX 120408	6.25	37504
KUB-P.4D.380.R.12-C40	U44 33800	38	40	50	247	152	179	SOGX 120408	6.25	38004
KUB-P.4D.385.R.12-C40	U44 33850	38.5	40	50	252	156	184	SOGX 120408	6.25	38504

Continued on next page

KUB Pentron – Indexable insert drill

Scope of supply:
Indexable Insert Drill incl. clamping screws







10 874 ...

Designation	KOMET no.	DC mm	DCONMS mm	DF mm	OAL mm	LU mm	LPR mm	Insert	torque moment Nm	
KUB-P.4D.390.R.12-C40	U44 33900	**39**	40	50	252	156	184	SOGX 120408	6.25	**39004**
KUB-P.4D.395.R.12-C40	U44 33950	**39.5**	40	50	256	160	188	SOGX 120408	6.25	**39504**
KUB-P.4D.400.R.12-C40	U44 34000	**40**	40	50	256	160	188	SOGX 120408	6.25	**40004**
KUB-P.4D.405.R.12-C40	U44 34050	**40.5**	40	50	261	164	193	SOGX 120408	6.25	**40504**
KUB-P.4D.410.R.12-C40	U44 34100	**41**	40	50	261	164	193	SOGX 120408	6.25	**41004**
KUB-P.4D.415.R.12-C40	U44 34150	**41.5**	40	50	265	166	197	SOGX 120408	6.25	**41504**
KUB-P.4D.420.R.12-C40	U44 34200	**42**	40	50	265	168	197	SOGX 120408	6.25	**42004**
KUB-P.4D.425.R.13-C40	U44 34250	**42.5**	40	50	270	172	202	SOGX 130508	6.25	**42504**
KUB-P.4D.430.R.13-C40	U44 34300	**43**	40	50	270	172	202	SOGX 130508	6.25	**43004**
KUB-P.4D.435.R.13-C40	U44 34350	**43.5**	40	50	274	176	206	SOGX 130508	6.25	**43504**
KUB-P.4D.440.R.13-C40	U44 34400	**44**	40	50	274	176	206	SOGX 130508	6.25	**44004**
KUB-P.4D.445.R.13-C40	U44 34450	**44.5**	40	50	279	180	211	SOGX 130508	6.25	**44504**
KUB-P.4D.450.R.13-C40	U44 34500	**45**	40	50	279	180	211	SOGX 130508	6.25	**45004**
KUB-P.4D.455.R.13-C40	U44 34550	**45.5**	40	50	283	184	215	SOGX 130508	6.25	**45504**
KUB-P.4D.460.R.13-C40	U44 34600	**46**	40	50	283	184	215	SOGX 130508	6.25	**46004**


Key


Screwdriver


Clamping screw

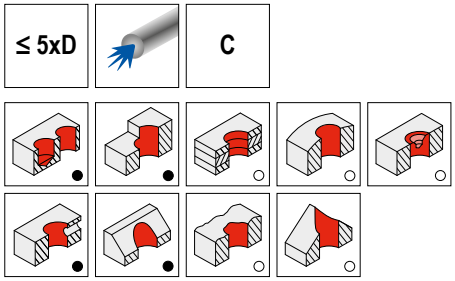
Spare parts DC							
		80 950 ...			**80 950 ...**		**10 950 ...**
14 - 16	T05 - IP	**057**				M1.8x3.8 - 05IP	**10100**
16.5 - 18			T06 - IP	**123**		M2.0x4.3 - 06IP	**10000**
18.5 - 23			T06 - IP	**123**		M2.2x5.5 - 06IP	**10700**
23.5 - 26			T08 - IP	**125**		M2.5x6.3 - 08IP	**10800**
26.5 - 30			T08 - IP	**125**		M3.0x7.6 - 08IP	**10200**
30.5 - 37			T15 - IP	**128**		M3.5x7.5 - 15IP	**10300**
37.5 - 46			T20 - IP	**129**		M4.5x10 - 20IP	**10400**

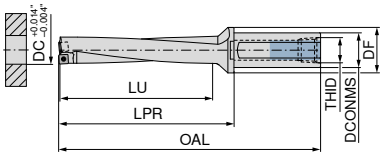
Matching holders can be found in → **Chapter 16 Adapters and accessories**

KUB Pentron – Indexable insert drill

Scope of supply:

Indexable Insert Drill incl. clamping screws







15 875 ...

Designation	KOMET no.	DC inch	DCONMS inch	DF inch	OAL inch	LU inch	LPR inch	THID	Insert	torque moment Nm	
KUB-P.5D.0562.R.04.C0750-EF	U45 81430	0.562	0.750	1.180	5.754	2.953	3.504	1/4" NPT	SOGX 040204	0.38	**14309**
KUB-P.5D.0593.R.04.C0750-EF	U45 81510	0.593	0.750	1.180	6.030	3.150	3.780	1/4" NPT	SOGX 040204	0.38	**15109**
KUB-P.5D.0625.R.04.C0750-EF	U45 81590	0.625	0.750	1.180	6.030	3.150	3.780	1/4" NPT	SOGX 040204	0.38	**15909**
KUB-P.5D.0656.R.05.C0750-EF	U45 81670	0.656	0.750	1.180	6.266	3.346	4.016	1/4" NPT	SOGX 050204	0.62	**16709**
KUB-P.5D.0687.R.05.C1000-E	U45 81750	0.687	1.000	1.180	7.463	3.543	4.213	3/8" NPT	SOGX 050204	0.62	**17500**
KUB-P.5D.0703.R.05.C1000-EF	U45 81790	0.703	1.000	1.180	7.463	3.543	4.213	3/8" NPT	SOGX 050204	0.62	**17900**
KUB-P.5D.0750.R.06.C1000-EF	U45 81910	0.750	1.000	1.180	7.896	3.937	4.646	3/8" NPT	SOGX 060206	1.01	**19100**
KUB-P.5D.0765.R.06.C1000-EF	U45 81940	0.765	1.000	1.180	7.896	3.937	4.646	3/8" NPT	SOGX 060206	1.01	**19400**
KUB-P.5D.0781.R.06.C1000-EF	U45 81980	0.781	1.000	1.180	7.896	3.937	4.646	3/8" NPT	SOGX 060206	1.01	**19800**
KUB-P.5D.0812.R.07.C1000-EF	U45 82060	0.812	1.000	1.180	8.132	4.134	4.882	3/8" NPT	SOGX 07T208	1.01	**20600**
KUB-P.5D.0828.R.07.C1000-E	U45 82100	0.828	1.000	1.180	8.132	4.134	4.882	3/8" NPT	SOGX 07T208	1.01	**21000**
KUB-P.5D.0843.R.07.C1000-EF	U45 82140	0.843	1.000	1.180	8.329	4.331	5.079	3/8" NPT	SOGX 07T208	1.01	**21400**
KUB-P.5D.0875.R.07.C1000-EF	U45 82220	0.875	1.000	1.180	8.565	4.528	5.315	3/8" NPT	SOGX 07T208	1.01	**22200**
KUB-P.5D.0906.R.07.C1000-E	U45 82300	0.906	1.000	1.180	8.565	4.528	5.315	3/8" NPT	SOGX 07T208	1.01	**23000**
KUB-P.5D.0937.R.08.C1250-EF	U45 82380	0.937	1.250	1.540	8.762	4.724	5.512	1/2" NPT	SOGX 080308	1.28	**23801**
KUB-P.5D.0985.R.08.C1250-E	U45 82500	0.985	1.250	1.540	8.998	4.921	5.748	1/2" NPT	SOGX 080308	1.28	**25001**
KUB-P.5D.1000.R.08.C1250-EF	U45 82540	1.000	1.250	1.540	9.195	5.118	5.945	1/2" NPT	SOGX 080308	1.28	**25401**
KUB-P.5D.1031.R.09.C1250-EF	U45 82620	1.031	1.250	1.540	9.431	5.315	6.181	1/2" NPT	SOGX 09T308	2.25	**26201**
KUB-P.5D.1062.R.09.C1250-E	U45 82700	1.062	1.250	1.540	9.431	5.315	6.181	1/2" NPT	SOGX 09T308	2.25	**27001**
KUB-P.5D.1109.R.09.C1250-EF	U45 82820	1.109	1.250	1.540	9.864	5.709	6.614	1/2" NPT	SOGX 09T308	2.25	**28201**
KUB-P.5D.1125.R.09.C1250-EF	U45 82860	1.125	1.250	1.540	9.864	5.709	6.614	1/2" NPT	SOGX 09T308	2.25	**28601**
KUB-P.5D.1156.R.09.C1250-EF	U45 82940	1.156	1.250	1.540	10.061	5.906	6.811	1/2" NPT	SOGX 09T308	2.25	**29401**
KUB-P.5D.1187.R.10.C1500-EF	U45 83020	1.187	1.500	1.970	10.797	6.102	7.047	3/4" NPT	SOGX 100408	2.8	**30102**
KUB-P.5D.1218.R.10.C1500-EF	U45 83090	1.218	1.500	1.970	10.797	6.102	7.047	3/4" NPT	SOGX 100408	2.8	**30902**
KUB-P.5D.1250.R.10.C1500-EF	U45 83180	1.250	1.500	1.970	10.994	6.299	7.244	3/4" NPT	SOGX 100408	2.8	**31802**
KUB-P.5D.1281.R.10.C1500-E	U45 83250	1.281	1.500	1.970	11.230	6.496	7.480	3/4" NPT	SOGX 100408	2.8	**32502**
KUB-P.5D.1312.R.11.C1500-EF	U45 83330	1.312	1.500	1.970	11.427	6.693	7.677	3/4" NPT	SOGX 110408	2.8	**33302**
KUB-P.5D.1328.R.11.C1500-EF	U45 83370	1.328	1.500	1.970	11.427	6.693	7.677	3/4" NPT	SOGX 110408	2.8	**33702**
KUB-P.5D.1375.R.11.C1500-EF	U45 83490	1.375	1.500	1.970	11.663	6.890	7.913	3/4" NPT	SOGX 110408	2.8	**34902**
KUB-P.5D.1437.R.11.C1500-E	U45 83650	1.437	1.500	1.970	12.096	7.283	8.346	3/4" NPT	SOGX 110408	6.25	**36502**
KUB-P.5D.1469.R.12.C1500-EF	U45 83730	1.469	1.500	1.970	12.293	7.480	8.543	3/4" NPT	SOGX 120408	6.25	**37302**
KUB-P.5D.1500.R.12.C1500-EF	U45 83810	1.500	1.500	1.970	12.530	7.677	8.780	3/4" NPT	SOGX 120408	6.25	**38102**
KUB-P.5D.1531.R.12.C1500-EF	U45 83890	1.531	1.500	1.970	12.530	7.677	8.780	3/4" NPT	SOGX 120408	6.25	**38902**
KUB-P.5D.1562.R.12.C1500-EF	U45 83970	1.562	1.500	1.970	12.726	7.874	8.976	3/4" NPT	SOGX 120408	6.25	**39702**
KUB-P.5D.1625.R.12.C1500-EF	U45 84130	1.625	1.500	1.970	13.159	8.268	9.409	3/4" NPT	SOGX 120408	6.25	**41302**
KUB-P.5D.1656.R.13.C1500-EF	U45 84210	1.656	1.500	1.970	13.396	8.465	9.646	3/4" NPT	SOGX 130508	6.25	**42102**
KUB-P.5D.1687.R.13.C1500-EF	U45 84290	1.687	1.500	1.970	13.396	8.465	9.646	3/4" NPT	SOGX 130508	6.25	**42802**
KUB-P.5D.1750.R.13.C1500-EF	U45 84450	1.750	1.500	1.970	13.829	8.858	10.079	3/4" NPT	SOGX 130508	6.25	**44502**



Key

80 950 ...



Screwdriver

80 950 ...



Clamping screw

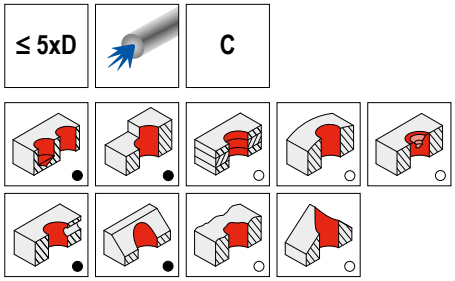
10 950 ...

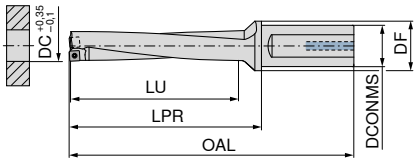
Spare parts DC					
0.562 - 0.625	T05 - IP	**057**			M1.8x3.8 - 05IP **10100**
0.656 - 0.703			T06 - IP	**123**	M2.0x4.3 - 06IP **10000**
0.750 - 0.906			T06 - IP	**123**	M2.2x5.5 - 06IP **10700**
0.937 - 1.000			T08 - IP	**125**	M2.5x6.3 - 08IP **10800**
1.031 - 1.156			T08 - IP	**125**	M3.0x7.6 - 08IP **10200**
1.187 - 1.437			T15 - IP	**128**	M3.5x7.5 - 15IP **10300**
1.469 - 1.750			T20 - IP	**129**	M4.5x10 - 20IP **10400**

Matching holders can be found in → **Chapter 16 Adapters and accessories**

KUB Pentron – Indexable insert drill

Scope of supply:
Indexable Insert Drill incl. clamping screws







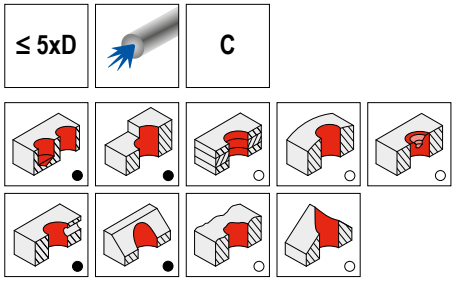
10 875 ...

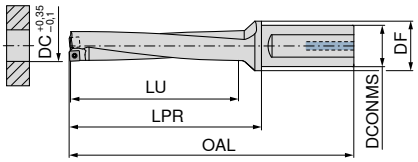
Designation	KOMET no.	DC mm	DCONMS mm	DF mm	OAL mm	LU mm	LPR mm	Insert	torque moment Nm	
KUB-P.5D.140.R.04-C20	U45 01400	14	20	30	133	70	83	SOGX 040204	0.38	14001
KUB-P.5D.145.R.04-C20	U45 01450	14.5	20	30	139	75	89	SOGX 040204	0.38	14501
KUB-P.5D.150.R.04-C20	U45 01500	15	20	30	139	75	89	SOGX 040204	0.38	15001
KUB-P.5D.155.R.04-C20	U45 01550	15.5	20	30	146	80	96	SOGX 040204	0.38	15501
KUB-P.5D.160.R.04-C20	U45 01600	16	20	30	146	80	96	SOGX 040204	0.38	16001
KUB-P.5D.165.R.05-C20	U45 01650	16.5	20	30	152	85	102	SOGX 050204	0.62	16501
KUB-P.5D.170.R.05-C20	U45 01700	17	20	30	152	85	102	SOGX 050204	0.62	17001
KUB-P.5D.175.R.05-C25	U45 11750	17.5	25	30	163	90	107	SOGX 050204	0.62	17502
KUB-P.5D.180.R.05-C25	U45 11800	18	25	30	163	90	107	SOGX 050204	0.62	18002
KUB-P.5D.185.R.06-C25	U45 11850	18.5	25	30	169	95	113	SOGX 060206	1.01	18502
KUB-P.5D.190.R.06-C25	U45 11900	19	25	30	169	95	113	SOGX 060206	1.01	19002
KUB-P.5D.195.R.06-C25	U45 11950	19.5	25	30	174	100	118	SOGX 060206	1.01	19502
KUB-P.5D.200.R.06-C25	U45 12000	20	25	30	174	100	118	SOGX 060206	1.01	20002
KUB-P.5D.205.R.07-C25	U45 12050	20.5	25	30	180	105	124	SOGX 07T208	1.01	20502
KUB-P.5D.210.R.07-C25	U45 12100	21	25	30	180	105	124	SOGX 07T208	1.01	21002
KUB-P.5D.215.R.07-C25	U45 12150	21.5	25	30	185	110	129	SOGX 07T208	1.01	21502
KUB-P.5D.220.R.07-C25	U45 12200	22	25	30	185	110	129	SOGX 07T208	1.01	22002
KUB-P.5D.225.R.07-C25	U45 12250	22.5	25	30	191	115	135	SOGX 07T208	1.01	22502
KUB-P.5D.230.R.07-C25	U45 12300	23	25	30	191	115	135	SOGX 07T208	1.01	23002
KUB-P.5D.235.R.08-C32	U45 22350	23.5	32	39	200	120	140	SOGX 080308	1.28	23503
KUB-P.5D.240.R.08-C32	U45 22400	24	32	39	200	120	140	SOGX 080308	1.28	24003
KUB-P.5D.245.R.08-C32	U45 22450	24.5	32	39	206	125	146	SOGX 080308	1.28	24503
KUB-P.5D.250.R.08-C32	U45 22500	25	32	39	206	125	146	SOGX 080308	1.28	25003
KUB-P.5D.255.R.08-C32	U45 22550	25.5	32	39	211	130	151	SOGX 080308	1.28	25503
KUB-P.5D.260.R.08-C32	U45 22600	26	32	39	211	130	151	SOGX 080308	1.28	26003
KUB-P.5D.265.R.09-C32	U45 22650	26.5	32	39	217	135	157	SOGX 09T308	2.25	26503
KUB-P.5D.270.R.09-C32	U45 22700	27	32	39	217	135	157	SOGX 09T308	2.25	27003
KUB-P.5D.275.R.09-C32	U45 22750	27.5	32	39	222	140	162	SOGX 09T308	2.25	27503
KUB-P.5D.280.R.09-C32	U45 22800	28	32	39	222	140	162	SOGX 09T308	2.25	28003
KUB-P.5D.285.R.09-C32	U45 22850	28.5	32	39	228	145	168	SOGX 09T308	2.25	28503
KUB-P.5D.290.R.09-C32	U45 22900	29	32	39	228	145	168	SOGX 09T308	2.25	29003
KUB-P.5D.295.R.09-C32	U45 22950	29.5	32	39	233	150	173	SOGX 09T308	2.25	29503
KUB-P.5D.300.R.09-C32	U45 23000	30	32	39	233	150	173	SOGX 09T308	2.25	30003
KUB-P.5D.305.R.10-C40	U45 33050	30.5	40	50	247	155	179	SOGX 100408	2.8	30504
KUB-P.5D.310.R.10-C40	U45 33100	31	40	50	247	155	179	SOGX 100408	2.8	31004
KUB-P.5D.315.R.10-C40	U45 33150	31.5	40	50	252	160	184	SOGX 100408	2.8	31504
KUB-P.5D.320.R.10-C40	U45 33200	32	40	50	252	160	184	SOGX 100408	2.8	32004
KUB-P.5D.325.R.10-C40	U45 33250	32.5	40	50	258	165	190	SOGX 100408	2.8	32504
KUB-P.5D.330.R.10-C40	U45 33300	33	40	50	258	165	190	SOGX 100408	2.8	33004
KUB-P.5D.335.R.11-C40	U45 33350	33.5	40	50	263	170	195	SOGX 110408	2.8	33504
KUB-P.5D.340.R.11-C40	U45 33400	34	40	50	263	170	195	SOGX 110408	2.8	34004
KUB-P.5D.345.R.11-C40	U45 33450	34.5	40	50	269	175	201	SOGX 110408	2.8	34504
KUB-P.5D.350.R.11-C40	U45 33500	35	40	50	269	175	201	SOGX 110408	2.8	35004
KUB-P.5D.355.R.11-C40	U45 33550	35.5	40	50	274	180	206	SOGX 110408	2.8	35504
KUB-P.5D.360.R.11-C40	U45 33600	36	40	50	274	180	206	SOGX 110408	2.8	36004
KUB-P.5D.365.R.11-C40	U45 33650	36.5	40	50	280	185	212	SOGX 110408	2.8	36504
KUB-P.5D.370.R.11-C40	U45 33700	37	40	50	280	185	212	SOGX 110408	2.8	37004
KUB-P.5D.375.R.12-C40	U45 33750	37.5	40	50	285	190	217	SOGX 120408	6.25	37504
KUB-P.5D.380.R.12-C40	U45 33800	38	40	50	285	190	217	SOGX 120408	6.25	38004
KUB-P.5D.385.R.12-C40	U45 33850	38.5	40	50	291	195	223	SOGX 120408	6.25	38504

Continued on next page

KUB Pentron – Indexable insert drill

Scope of supply:
Indexable Insert Drill incl. clamping screws







10 875 ...

Designation	KOMET no.	DC mm	DCONMS mm	DF mm	OAL mm	LU mm	LPR mm	Insert	torque moment Nm	
KUB-P.5D.390.R.12-C40	U45 33900	**39**	40	50	291	195	223	SOGX 120408	6.25	**39004**
KUB-P.5D.395.R.12-C40	U45 33950	**39.5**	40	50	296	200	228	SOGX 120408	6.25	**39504**
KUB-P.5D.400.R.12-C40	U45 34000	**40**	40	50	296	200	228	SOGX 120408	6.25	**40004**
KUB-P.5D.405.R.12-C40	U45 34050	**40.5**	40	50	302	205	234	SOGX 120408	6.25	**40504**
KUB-P.5D.410.R.12-C40	U45 34100	**41**	40	50	302	205	234	SOGX 120408	6.25	**41004**
KUB-P.5D.415.R.12-C40	U45 34150	**41.5**	40	50	307	210	239	SOGX 120408	6.25	**41504**
KUB-P.5D.420.R.12-C40	U45 34200	**42**	40	50	307	210	239	SOGX 120408	6.25	**42004**
KUB-P.5D.425.R.13-C40	U45 34250	**42.5**	40	50	313	215	245	SOGX 130508	6.25	**42504**
KUB-P.5D.430.R.13-C40	U45 34300	**43**	40	50	313	215	245	SOGX 130508	6.25	**43004**
KUB-P.5D.435.R.13-C40	U45 34350	**43.5**	40	50	318	220	250	SOGX 130508	6.25	**43504**
KUB-P.5D.440.R.13-C40	U45 34400	**44**	40	50	318	220	250	SOGX 130508	6.25	**44004**
KUB-P.5D.445.R.13-C40	U45 34450	**44.5**	40	50	324	225	256	SOGX 130508	6.25	**44504**
KUB-P.5D.450.R.13-C40	U45 34500	**45**	40	50	324	225	256	SOGX 130508	6.25	**45004**
KUB-P.5D.455.R.13-C40	U45 34550	**45.5**	40	50	329	230	261	SOGX 130508	6.25	**45504**
KUB-P.5D.460.R.13-C40	U45 34600	**46**	40	50	329	230	261	SOGX 130508	6.25	**46004**


Key


Screwdriver


Clamping screw

Spare parts DC		**80 950 ...**		**80 950 ...**		**10 950 ...**
14 - 16	T05 - IP	**057**			M1.8x3.8 - 05IP	**10100**
16.5 - 18			T06 - IP	**123**	M2.0x4.3 - 06IP	**10000**
18.5 - 23			T06 - IP	**123**	M2.2x5.5 - 06IP	**10700**
23.5 - 26			T08 - IP	**125**	M2.5x6.3 - 08IP	**10800**
26.5 - 30			T08 - IP	**125**	M3.0x7.6 - 08IP	**10200**
30.5 - 37			T15 - IP	**128**	M3.5x7.5 - 15IP	**10300**
37.5 - 46			T20 - IP	**129**	M4.5x10 - 20IP	**10400**

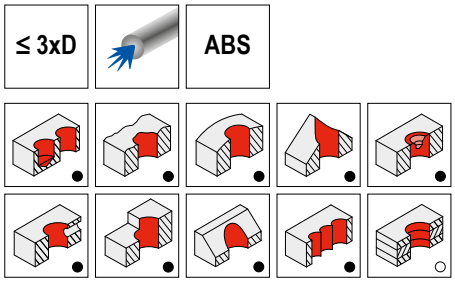
Matching holders can be found in → **Chapter 16 Adapters and accessories**

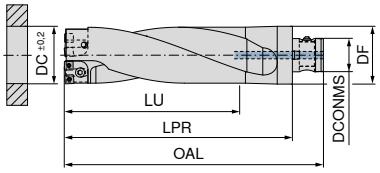
KUB Pentron CS – basic element

▲ SZID = nominal size
▲ Tightening torque refers to the fixing screws of the cartridge

Scope of supply:

Cartridge drill incl. fixing screws
Please order cartridges and indexable inserts separately







Designation	KOMET no.	DC mm	DF mm	OAL mm	DCONMS mm	LU mm	LPR mm	SZID	torque moment Nm	10 876 ...
KUB-P.GH-CS.1.3D.64-66.ABS80	U60 46400	64 - 66	80	314	46	198	271	1	17.3	64092
KUB-P.GH-CS.1.3D.67-69.ABS80	U60 46700	67 - 69	80	323	46	207	280	1	17.3	67092
KUB-P.GH-CS.2.3D.70-72.ABS80	U60 47000	70 - 72	80	332	46	216	289	2	17.3	70092
KUB-P.GH-CS.2.3D.73-75.ABS80	U60 47300	73 - 75	80	341	46	225	298	2	17.3	73092
KUB-P.GH-CS.3.3D.76-78.ABS80	U60 47600	76 - 78	80	350	46	234	307	3	42	76092
KUB-P.GH-CS.3.3D.79-81.ABS80	U60 47900	79 - 81	80	359	46	243	316	3	42	79092
KUB-P.GH-CS.3.3D.82-84.ABS80	U60 48200	82 - 84	80	368	46	252	325	3	42	82092
KUB-P.GH-CS.4.3D.85-87.ABS100	U60 58500	85 - 87	100	397	56	261	342	4	42	85091
KUB-P.GH-CS.4.3D.88-90.ABS100	U60 58800	88 - 90	100	406	56	270	351	4	42	88091
KUB-P.GH-CS.4.3D.91-93.ABS100	U60 59100	91 - 93	100	415	56	279	360	4	42	91091
KUB-P.GH-CS.5.3D.94-96.ABS100	U60 59400	94 - 96	100	424	56	288	369	5	42	94091



Clamping key – T



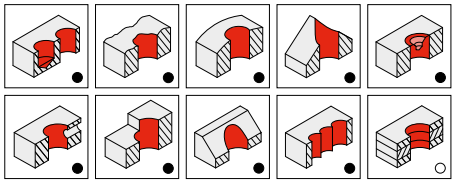
Fixing screw

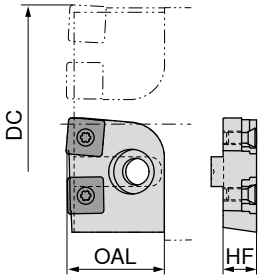
Spare parts DC	80 397 ...		10 950 ...	
64 - 66	SW5	050	M6x16 - SW5	16700
67 - 69	SW5	050	M6x16 - SW5	16700
70 - 72	SW5	050	M6x16 - SW5	16700
73 - 75	SW5	050	M6x16 - SW5	16700
76 - 78	SW6	060	M8x18 - SW6	16800
79 - 81	SW6	060	M8x18 - SW6	16800
82 - 84	SW6	060	M8x18 - SW6	16800
85 - 87	SW6	060	M8x20 - SW6	16900
88 - 90	SW6	060	M8x20 - SW6	16900
91 - 93	SW6	060	M8x20 - SW6	16900
94 - 96	SW6	060	M8x20 - SW6	16900

KUB Pentron CS – internal cartridge

▲ SZID = nominal size
▲ Tightening torque refers to the clamping screws of the indexable inserts

Scope of supply:
Internal cartridge incl. clamping screws of indexable inserts







DC mm	KOMET no.	OAL mm	SZID	HF mm	Insert	torque moment Nm	10 877 ...
64 - 69	D60 06400	28.00	**1**	9	SOGX 100408	2.8	**16400**
70 - 75	D60 07000	30.00	**2**	10	SOGX 110408	2.8	**27000**
76 - 84	D60 07600	33.00	**3**	11	SOGX 120408	6.25	**37600**
85 - 93	D60 08501	35.34	**4**	12	SOGX 130508	6.25	**48501**
94 - 96	D60 09400	35.34	**5**	12	SOGX 130508	6.25	**59400**

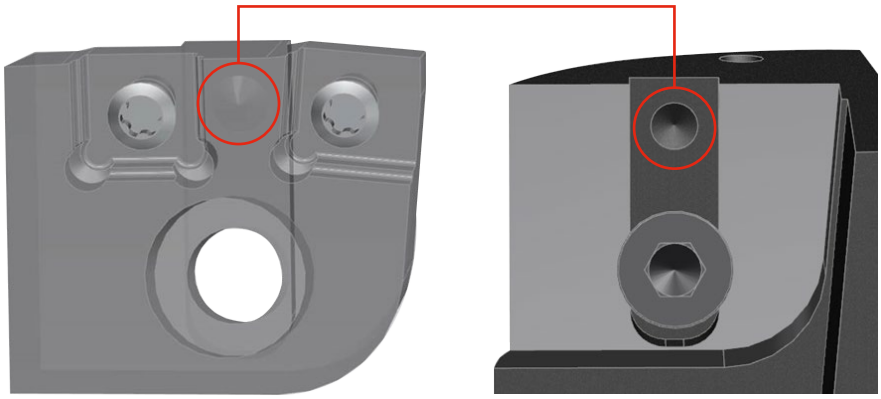

Screwdriver


Clamping screw

Spare parts DC		80 950 ...		10 950 ...
64 - 69	T15 - IP	**128**	M3.5x7.5 - 15IP	**10300**
70 - 75	T15 - IP	**128**	M3.5x7.5 - 15IP	**10300**
76 - 84	T20 - IP	**129**	M4.5x10 - 20IP	**10400**
85 - 93	T20 - IP	**129**	M4.5x10 - 20IP	**10400**
94 - 96	T20 - IP	**129**	M4.5x10 - 20IP	**10400**

The internal cartridge and the place where the internal cartridge sits on the base body are designed to prevent the internal and external cartridges from being incorrectly installed.

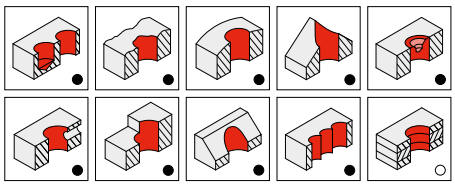
Installation aid

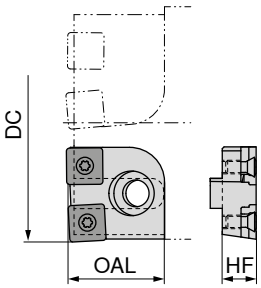


KUB Pentron CS – external cartridge

▲ SZID = nominal size
▲ Tightening torque refers to the clamping screws of the indexable inserts

Scope of supply:
External cartridge incl. clamping screws for indexable inserts







DC mm	KOMET no.	OAL mm	SZID	HF mm	Insert	torque moment Nm	10 878 ...
64	D60 16400	27.8	1	9	SOGX 100408	2.8	16400
65	D60 16500	27.8	1	9	SOGX 100408	2.8	16500
66	D60 16600	27.8	1	9	SOGX 100408	2.8	16600
67	D60 16700	27.8	1	9	SOGX 100408	2.8	16700
68	D60 16800	27.8	1	9	SOGX 100408	2.8	16800
69	D60 16900	27.8	1	9	SOGX 100408	2.8	16900
70	D60 17000	29.8	2	10	SOGX 110408	2.8	27000
71	D60 17100	29.8	2	10	SOGX 110408	2.8	27100
72	D60 17200	29.8	2	10	SOGX 110408	2.8	27200
73	D60 17300	29.8	2	10	SOGX 110408	2.8	27300
74	D60 17400	29.8	2	10	SOGX 110408	2.8	27400
75	D60 17500	29.8	2	10	SOGX 110408	2.8	27500
76	D60 17600	32.8	3	11	SOGX 120408	6.25	37600
77	D60 17700	32.8	3	11	SOGX 120408	6.25	37700
78	D60 17800	32.8	3	11	SOGX 120408	6.25	37800
79	D60 17900	32.8	3	11	SOGX 120408	6.25	37900
80	D60 18000	32.8	3	11	SOGX 120408	6.25	38000
81	D60 18100	32.8	3	11	SOGX 120408	6.25	38100
82	D60 18200	32.8	3	11	SOGX 120408	6.25	38200
83	D60 18300	32.8	3	11	SOGX 120408	6.25	38300
84	D60 18400	32.8	3	11	SOGX 120408	6.25	38400
85	D60 18500	35.8	4	12	SOGX 130508	6.25	48500
86	D60 18600	35.8	4	12	SOGX 130508	6.25	48600
87	D60 18700	35.8	4	12	SOGX 130508	6.25	48700
88	D60 18800	35.8	4	12	SOGX 130508	6.25	48800
89	D60 18900	35.8	4	12	SOGX 130508	6.25	48900
90	D60 19000	35.8	4	12	SOGX 130508	6.25	49000
91	D60 19100	35.8	4	12	SOGX 130508	6.25	49100
92	D60 19200	35.8	4	12	SOGX 130508	6.25	49200
93	D60 19300	35.8	4	12	SOGX 130508	6.25	49300
94	D60 19401	35.8	5	12	SOGX 130508	6.25	59400
95	D60 19501	35.8	5	12	SOGX 130508	6.25	59500
96	D60 19601	35.8	5	12	SOGX 130508	6.25	59600


Screwdriver


Clamping screw

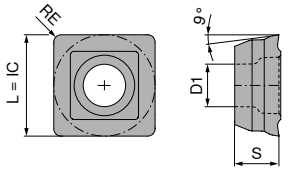
Spare parts

DC		80 950 ...		10 950 ...
64 - 75	T15 - IP	128	M3.5x7.5 - 15IP	10300
76 - 96	T20 - IP	129	M4.5x10 - 20IP	10400

Intermediate dimensions available on request.

SOGX

Designation	L	IC	D1	S
	mm	mm	mm	mm
SOGX 0402..	4.8	4.8	2.05	2.20
SOGX 0502..	5.5	5.5	2.30	2.40
SOGX 0602..	6.2	6.2	2.60	2.75
SOGX 07T2..	7.1	7.1	2.60	2.97
SOGX 0803..	8.0	8.0	2.85	3.40
SOGX 09T3..	8.9	8.9	3.40	3.90
SOGX 1004..	9.8	9.8	4.10	4.20
SOGX 1104..	10.9	10.9	4.10	4.50
SOGX 1204..	12.0	12.0	5.20	4.80
SOGX 1305..	13.2	13.2	5.20	5.20



SOGX

ISO	KOMET no.	RE	-01 BK8425	-01 BK7935	-01 BK6115	-01 BK7710
		mm	SOGX	SOGX	SOGX	SOGX
			10 820 ...	10 820 ...	10 820 ...	10 820 ...
040204	W80 10010.046115	0.4			40401	
040204	W80 10010.047710	0.4				90401
040204	W80 10010.047935	0.4		50401		
040204	W80 10010.048425	0.4	30401			
050204	W80 12010.046115	0.4			40501	
050204	W80 12010.047710	0.4				90501
050204	W80 12010.047935	0.4		50501		
050204	W80 12010.048425	0.4	30501			
060206	W80 18010.066115	0.6			40601	
060206	W80 18010.067710	0.6				90601
060206	W80 18010.067935	0.6		50601		
060206	W80 18010.068425	0.6	30601			
07T208	W80 20010.086115	0.8			40701	
07T208	W80 20010.087710	0.8				90701
07T208	W80 20010.087935	0.8		50701		
07T208	W80 20010.088425	0.8	30701			
080308	W80 24010.086115	0.8			40801	
080308	W80 24010.087710	0.8				90801
080308	W80 24010.087935	0.8		50801		
080308	W80 24010.088425	0.8	30801			
09T308	W80 28010.086115	0.8			40901	
09T308	W80 28010.087710	0.8				90901
09T308	W80 28010.087935	0.8		50901		
09T308	W80 28010.088425	0.8	30901			
100408	W80 32010.086115	0.8			41001	
100408	W80 32010.087710	0.8				91001
100408	W80 32010.087935	0.8		51001		
100408	W80 32010.088425	0.8	31001			
110408	W80 38010.086115	0.8			41101	
110408	W80 38010.087710	0.8				91101
110408	W80 38010.087935	0.8		51101		
110408	W80 38010.088425	0.8	31101			
120408	W80 42010.086115	0.8			41201	
120408	W80 42010.087710	0.8				91201
120408	W80 42010.087935	0.8		51201		
120408	W80 42010.088425	0.8	31201			
130508	W80 46010.086115	0.8			41301	
130508	W80 46010.087710	0.8				91301
130508	W80 46010.087935	0.8		51301		
130508	W80 46010.088425	0.8	31301			
P			●	●	●	
M			●	●	●	
K			●	●	●	
N			○	○		●
S			●	●		○
H			○		○	
O				○		○

→ v_c Page 78+92

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

SOGX

	-03 BK8430	-13 BK8425	-32 BK8425	-34 BK8425
				
	SOGX	SOGX	SOGX	SOGX
	10 820 ...	10 820 ...	10 820 ...	10 820 ...

ISO	KOMET no.	RE mm							
040204	W80 10030.048430	0.4	00403						
040204	W80 10130.048425	0.4		30413					
040204	W80 10320.048425	0.4				30432			
040204	W80 10340.048425	0.4							30434
050204	W80 12030.048430	0.4	00503						
050204	W80 12130.048425	0.4		30513					
050204	W80 12320.048425	0.4				30532			
050204	W80 12340.048425	0.4							30534
060206	W80 18030.068430	0.6	00603						
060206	W80 18130.068425	0.6		30613					
060206	W80 18320.068425	0.6				30632			
060206	W80 18340.068425	0.6							30634
07T208	W80 20030.088430	0.8	00703						
07T208	W80 20130.088425	0.8		30713					
07T208	W80 20320.088425	0.8				30732			
07T208	W80 20340.088425	0.8							30734
080308	W80 24030.088430	0.8	00803						
080308	W80 24130.088425	0.8		30813					
080308	W80 24320.088425	0.8				30832			
080308	W80 24340.088425	0.8							30834
09T308	W80 28030.088430	0.8	00903						
09T308	W80 28130.088425	0.8		30913					
09T308	W80 28320.088425	0.8				30932			
09T308	W80 28340.088425	0.8							30934
100408	W80 32030.088430	0.8	01003						
100408	W80 32130.088425	0.8		31013					
100408	W80 32320.088425	0.8				31032			
100408	W80 32340.088425	0.8							31034
110408	W80 38030.088430	0.8	01103						
110408	W80 38130.088425	0.8		31113					
110408	W80 38320.088425	0.8				31132			
110408	W80 38340.088425	0.8							31134
120408	W80 42030.088430	0.8	01203						
120408	W80 42130.088425	0.8		31213					
120408	W80 42320.088425	0.8				31232			
120408	W80 42340.088425	0.8							31234
130508	W80 46030.088430	0.8	01303						
130508	W80 46130.088425	0.8		31313					
130508	W80 46320.088425	0.8				31332			
130508	W80 46340.088425	0.8							31334
P			●	●	●		●		
M			●	●	●				
K			●	●	●		●		
N			○	○	○				
S			●	●	●				
H			○	○	○				
O									

→ v_c Page 78+92

BK7935 -21 is exclusively recommended for use on the peripheral cutting edge!

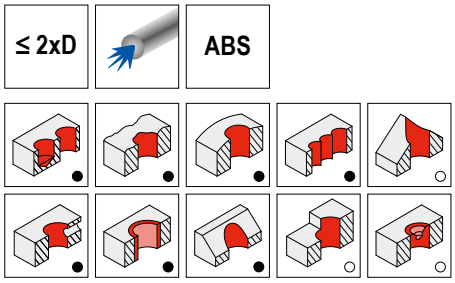
BK8425 -34 is recommended only for KUB Pentron 2xD and 3xD (10 872 ... / 10 873 ... / 15 872 ... / 15 873 ...)

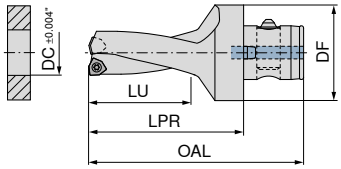
Further information on grades and chip breakers can be found on → **page 113+114**

Further indexable inserts can be found in our online shop
cuttingtools.ceratizit.com

KUB Trigon – Indexable insert drill

Scope of supply:
Indexable Insert Drill incl. clamping screws







15 892 ...

Designation	KOMET no.	DC inch	DF inch	OAL inch	LU inch	LPR inch	Insert	torque moment Nm	
KUB-T-U.2D.0562.R.03.ABS50-F	V40 11430	0.562	1.969	3.780	1.181	2.560	WOEX 030204	0.62	**14395**
KUB-T-U.2D.0593.R.03.ABS50-F	V40 11510	0.593	1.969	3.858	1.260	2.638	WOEX 030204	0.62	**15195**
KUB-T-U.2D.0625.R.03.ABS50-F	V40 11590	0.625	1.969	3.858	1.260	2.638	WOEX 030204	0.62	**15995**
KUB-T-U.2D.0703.R.03.ABS50-F	V40 11790	0.703	1.969	4.016	1.417	2.796	WOEX 030204	0.62	**17995**
KUB-T-U.2D.0750.R.03.ABS50-F	V40 11910	0.750	1.969	4.173	1.575	2.953	WOEX 030204	0.62	**19195**
KUB-T-U.2D.0781.R.03.ABS50-F	V40 11980	0.781	1.969	4.173	1.575	2.953	WOEX 030204	0.62	**19895**
KUB-T-U.2D.0812.R.04.ABS50-F	V40 12060	0.812	1.969	4.252	1.654	3.032	WOEX 040304	1.01	**20695**
KUB-T-U.2D.0875.R.04.ABS50-F	V40 12220	0.875	1.969	4.409	1.811	3.189	WOEX 040304	1.01	**22295**
KUB-T-U.2D.0937.R.04.ABS50-F	V40 12380	0.937	1.969	4.488	1.890	3.268	WOEX 040304	1.01	**23895**
KUB-T-U.2D.1000.R.05.ABS50-F	V40 12540	1.000	1.969	4.646	2.047	3.425	WOEX 05T304	1.28	**25495**
KUB-T-U.2D.1031.R.05.ABS50-F	V40 12620	1.031	1.969	4.724	2.126	3.504	WOEX 05T304	1.28	**26295**
KUB-T-U.2D.1109.R.05.ABS50-F	V40 12820	1.109	1.969	4.882	2.283	3.662	WOEX 05T304	1.28	**28295**
KUB-T-U.2D.1125.R.05.ABS50-F	V40 12860	1.125	1.969	4.882	2.283	3.662	WOEX 05T304	1.28	**28695**
KUB-T-U.2D.1156.R.05.ABS50-F	V40 12940	1.156	1.969	4.961	2.362	3.741	WOEX 05T304	1.28	**29495**
KUB-T-U.2D.1187.R.05.ABS50-F	V40 13010	1.187	1.969	5.236	2.441	4.016	WOEX 05T304	1.28	**30195**
KUB-T-U.2D.1218.R.05.ABS50-F	V40 13090	1.218	1.969	5.236	2.441	4.016	WOEX 05T304	1.28	**30995**
KUB-T-U.2D.1250.R.05.ABS50-F	V40 13180	1.250	1.969	5.315	2.520	4.095	WOEX 05T304	1.28	**31895**
KUB-T-U.2D.1281.R.05.ABS50-F	V40 13250	1.281	1.969	5.394	2.598	4.174	WOEX 05T304	1.28	**32595**
KUB-T-U.2D.1312.R.05.ABS50-F	V40 13330	1.312	1.969	5.472	2.677	4.252	WOEX 05T304	1.28	**33395**
KUB-T-U.2D.1328.R.05.ABS50-F	V40 13370	1.328	1.969	5.472	2.677	4.252	WOEX 05T304	1.28	**33795**
KUB-T-U.2D.1375.R.05.ABS50-F	V40 13490	1.375	1.969	5.551	2.756	4.331	WOEX 05T304	1.28	**34995**
KUB-T-U.2D.1406.R.05.ABS50-F	V40 13570	1.406	1.969	5.630	2.835	4.410	WOEX 05T304	1.28	**35795**
KUB-T-U.2D.1437.R.05.ABS50-F	V40 13650	1.437	1.969	6.102	2.913	4.882	WOEX 05T304	1.28	**36595**
KUB-T-U.2D.1469.R.06.ABS50-F	V40 13730	1.469	1.969	6.181	2.992	4.961	WOEX 06T304	2.8	**37395**
KUB-T-U.2D.1500.R.06.ABS50-F	V40 13810	1.500	1.969	6.260	3.071	5.040	WOEX 06T304	2.8	**38195**
KUB-T-U.2D.1531.R.06.ABS50-F	V40 13890	1.531	1.969	6.260	3.071	5.040	WOEX 06T304	2.8	**38995**
KUB-T-U.2D.1562.R.06.ABS50-F	V40 13970	1.562	1.969	6.339	3.150	5.119	WOEX 06T304	2.8	**39795**
KUB-T-U.2D.1625.R.06.ABS50-F	V40 14130	1.625	1.969	6.496	3.307	5.276	WOEX 06T304	2.8	**41395**
KUB-T-U.2D.1656.R.06.ABS50-F	V40 14210	1.656	1.969	6.575	3.386	5.355	WOEX 06T304	2.8	**42195**
KUB-T-U.2D.1687.R.06.ABS50-F	V40 14280	1.687	1.969	6.575	3.386	5.355	WOEX 06T304	2.8	**42895**
KUB-T-U.2D.1750.R.06.ABS50-F	V40 14450	1.750	1.969	6.689	3.500	5.469	WOEX 06T304	2.8	**44595**


Screwdriver

80 950 ...


Clamping screw

10 950 ...

Spare parts

DC		
0.562 - 0.781	**123**	**10000**
0.812 - 0.937	**123**	**10700**
1.000 - 1.437	**125**	**10500**
1.469 - 1.750	**127**	**10600**

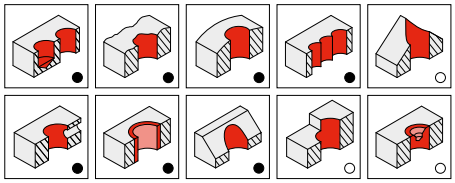
Matching holders can be found in → **Chapter 16 Adapters and accessories**

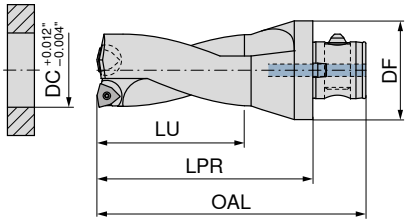
KUB Trigon – Indexable insert drill

Scope of supply:

with insert seat (10 897 ...) incl. fixing screw, cylindrical pin and clamping screw
with insert seat (10 898 ...) incl. fixing screw, cylindrical pin and clamping screw









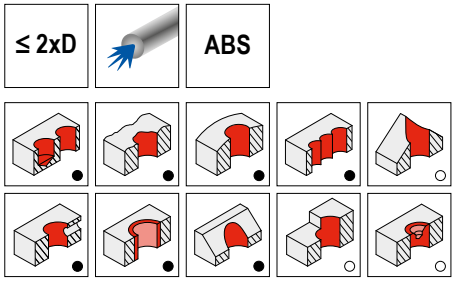
Designation	KOMET no.	DC inch	DF inch	OAL inch	LU inch	LPR inch	Insert	torque moment Nm	10 892 ...	15 892 ...
KUB-T.2D.1781.R.08.ABS63-F	V13 34520	1.781	2.480	7.224	3.562	5.728	WOEX 080404	4.3		**45296**
KUB-T.2D.1812.R.08.ABS63	V13 34600	1.811	2.480	7.283	3.622	5.787	WOEX 080404	4.3	**46096**	
KUB-T.2D.1875.R.08.ABS63-F	V13 34760	1.875	2.480	7.412	3.750	5.916	WOEX 080404	4.3		**47696**
KUB-T.2D.1937.R.08.ABS63-F	V13 34920	1.937	2.480	7.536	3.874	6.040	WOEX 080404	4.3		**49296**
KUB-T.2D.1975.R.08.ABS63-F	V13 35020	1.975	2.480	7.612	3.950	6.116	WOEX 080404	4.3		**50296**
KUB-T.2D.2000.R.08.ABS63-F	V13 35080	2.000	2.480	7.662	4.000	6.166	WOEX 080404	4.3		**50896**
KUB-T.2D.2062.R.08.ABS63-F	V13 35240	2.062	2.480	7.786	4.124	6.290	WOEX 080404	4.3		**52496**
KUB-T.2D.2125.R.08.ABS63	V13 35400	2.126	2.480	7.913	4.252	6.417	WOEX 080404	4.3	**54096**	
KUB-T.2D.2165.R.10.ABS80	V14 35500	2.165	3.150	8.189	4.331	6.496	WOEX 100504	4.3	**55098**	
KUB-T.2D.2203.R.10.ABS80	V14 35600	2.205	3.150	8.268	4.409	6.575	WOEX 100504	4.3	**56098**	
KUB-T.2D.2250.R.10.ABS80-F	V14 35720	2.250	3.150	8.359	4.500	6.666	WOEX 100504	4.3		**57298**
KUB-T.2D.2281.R.10.ABS80-F	V14 35790	2.281	3.150	8.421	4.562	6.728	WOEX 100504	4.3		**57998**
KUB-T.2D.2375.R.10.ABS80-F	V14 36030	2.375	3.150	8.609	4.750	6.916	WOEX 100504	4.3		**60398**
KUB-T.2D.2437.R.10.ABS80-F	V14 36190	2.437	3.150	8.733	4.874	7.040	WOEX 100504	4.3		**61998**
KUB-T.2D.2500.R.10.ABS80-F	V14 36350	2.500	3.150	8.859	5.000	7.166	WOEX 100504	4.3		**63598**
KUB-T.2D.2593.R.10.ABS80-F	V14 36590	2.593	3.150	9.045	5.186	7.352	WOEX 100504	4.3		**65998**
KUB-T.2D.2625.R.10.ABS80-F	V14 36670	2.625	3.150	9.109	5.250	7.416	WOEX 100504	4.3		**66798**
KUB-T.2D.2656.R.10.ABS80-F	V14 36750	2.656	3.150	9.171	5.312	7.478	WOEX 100504	4.3		**67598**
KUB-T.2D.2750.R.12.ABS80-F	V14 36990	2.750	3.150	9.753	5.500	8.060	WOEX 120608	6.25		**69998**
KUB-T.2D.2875.R.12.ABS80	V14 37300	2.874	3.150	10.000	5.748	8.307	WOEX 120608	6.25	**73098**	
KUB-T.2D.3000.R.12.ABS80-F	V14 37620	3.000	3.150	10.253	6.000	8.560	WOEX 120608	6.25		**76298**
KUB-T.2D.3250.R.12.ABS80-F	V14 38260	3.250	3.150	10.753	6.500	9.060	WOEX 120608	6.25		**82698**

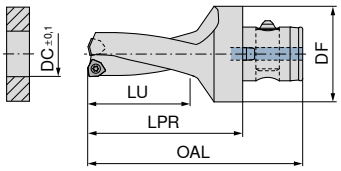
Spare parts DC	 Cylindrical pin **10 950 ...**	 Insert seat, internal **10 897 ...**	 Insert seat, external **10 898 ...**	 Screwdriver **80 950 ...**	 Clamping screw **10 950 ...**	 Fixing screw **10 950 ...**
1.781 - 2.126	**17200**	**14800**	**14800**	**120**	**12700**	**17000**
2.165 - 2.656	**17200**	**25300**	**25300**	**120**	**12700**	**17000**
2.750 - 3.250	**17300**	**36000**	**36000**	**121**	**17400**	**17100**

Matching holders can be found in → **Chapter 16 Adapters and accessories**

KUB Trigon – Indexable insert drill

Scope of supply:
Indexable Insert Drill incl. clamping screws







10 892 ...

Designation	KOMET no.	DC mm	DF mm	OAL mm	LU mm	LPR mm	Insert	torque moment Nm	
KUB-T.2D.140.R.03-ABS50	V30 31403	**14**	50	94	28	63	WOEX 030204	0.62	**14095**
KUB-T.2D.150.R.03-ABS50	V30 31503	**15**	50	96	30	65	WOEX 030204	0.62	**15095**
KUB-T.2D.160.R.03-ABS50	V30 31601	**16**	50	98	32	67	WOEX 030204	0.62	**16095**
KUB-T.2D.170.R.03-ABS50	V30 31701	**17**	50	100	34	69	WOEX 030204	0.62	**17095**
KUB-T.2D.175.R.03-ABS50	V30 31751	**17.5**	50	102	36	71	WOEX 030204	0.62	**17595**
KUB-T.2D.180.R.03-ABS50	V30 31801	**18**	50	102	36	71	WOEX 030204	0.62	**18095**
KUB-T.2D.190.R.03-ABS50	V30 31901	**19**	50	104	38	73	WOEX 030204	0.62	**19095**
KUB-T.2D.200.R.04-ABS50	V30 32001	**20**	50	106	40	75	WOEX 040304	1.01	**20095**
KUB-T.2D.210.R.04-ABS50	V30 32101	**21**	50	108	42	77	WOEX 040304	1.01	**21095**
KUB-T.2D.220.R.04-ABS50	V30 32201	**22**	50	110	44	79	WOEX 040304	1.01	**22095**
KUB-T.2D.230.R.04-ABS50	V30 32301	**23**	50	112	46	81	WOEX 040304	1.01	**23095**
KUB-T.2D.240.R.04-ABS50	V30 32401	**24**	50	114	48	83	WOEX 040304	1.01	**24095**
KUB-T.2D.250.R.05-ABS50	V30 32501	**25**	50	116	50	85	WOEX 05T304	1.28	**25095**
KUB-T.2D.260.R.05-ABS50	V30 32601	**26**	50	118	52	87	WOEX 05T304	1.28	**26095**
KUB-T.2D.270.R.05-ABS50	V30 32701	**27**	50	120	54	89	WOEX 05T304	1.28	**27095**
KUB-T.2D.280.R.05-ABS50	V30 32801	**28**	50	122	56	91	WOEX 05T304	1.28	**28095**
KUB-T.2D.290.R.05-ABS50	V30 32901	**29**	50	124	58	93	WOEX 05T304	1.28	**29095**
KUB-T.2D.300.R.05-ABS50	V30 33001	**30**	50	131	60	100	WOEX 05T304	1.28	**30095**
KUB-T.2D.310.R.05-ABS50	V30 33101	**31**	50	133	62	102	WOEX 05T304	1.28	**31095**
KUB-T.2D.320.R.05-ABS50	V30 33201	**32**	50	135	64	104	WOEX 05T304	1.28	**32095**
KUB-T.2D.330.R.05-ABS50	V30 33301	**33**	50	137	66	106	WOEX 05T304	1.28	**33095**
KUB-T.2D.340.R.05-ABS50	V30 33401	**34**	50	139	68	108	WOEX 05T304	1.28	**34095**
KUB-T.2D.350.R.05-ABS50	V30 33501	**35**	50	141	70	110	WOEX 05T304	1.28	**35095**
KUB-T.2D.360.R.05-ABS50	V30 33601	**36**	50	143	72	112	WOEX 05T304	1.28	**36095**
KUB-T.2D.370.R.06-ABS50	V30 33701	**37**	50	155	74	124	WOEX 06T304	2.8	**37095**
KUB-T.2D.380.R.06-ABS50	V30 33801	**38**	50	157	76	126	WOEX 06T304	2.8	**38095**
KUB-T.2D.390.R.06-ABS50	V30 33901	**39**	50	159	78	128	WOEX 06T304	2.8	**39095**
KUB-T.2D.400.R.06-ABS50	V30 34001	**40**	50	161	80	130	WOEX 06T304	2.8	**40095**
KUB-T.2D.410.R.06-ABS50	V30 34101	**41**	50	163	82	132	WOEX 06T304	2.8	**41095**
KUB-T.2D.420.R.06-ABS50	V30 34201	**42**	50	165	84	134	WOEX 06T304	2.8	**42095**
KUB-T.2D.430.R.06-ABS50	V30 34301	**43**	50	167	86	136	WOEX 06T304	2.8	**43095**
KUB-T.2D.440.R.06-ABS50	V30 34401	**44**	50	169	88	138	WOEX 06T304	2.8	**44095**



Screwdriver

80 950 ...



Clamping screw

10 950 ...

Spare parts DC				
14 - 19	T06 - IP	**123**	M2.0x4.3 - 06IP	**10000**
20 - 24	T06 - IP	**123**	M2.2x5.5 - 06IP	**10700**
25 - 36	T08 - IP	**125**	M2.5x7.2 - 08IP	**10500**
37 - 44	T10 - IP	**127**	M3.5x7.3 - 10IP	**10600**

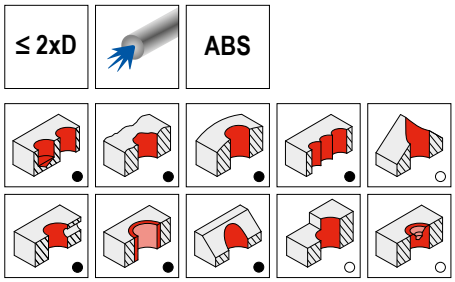
Matching holders can be found in → **Chapter 16 Adapters and accessories**

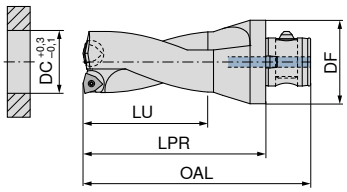
KUB Trigon – Indexable insert drill

▲ Tightening torque refers to the clamping screws of the indexable inserts

Scope of supply:

with insert seat (10 897 ...) incl. fixing screw, cylindrical pin and clamping screw
with insert seat (10 898 ...) incl. fixing screw, cylindrical pin and clamping screw







10 892 ...

Designation	KOMET no.	DC mm	DF mm	OAL mm	LU mm	LPR mm	Insert	torque moment Nm	
KUB-T.2D.450.R.08-ABS63	V13 34500	45	63	183	90	145	WOEX 080404	4.3	45096
KUB-T.2D.460.R.08-ABS63	V13 34600	46	63	185	92	147	WOEX 080404	4.3	46096
KUB-T.2D.470.R.08-ABS63	V13 34700	47	63	187	94	149	WOEX 080404	4.3	47096
KUB-T.2D.480.R.08-ABS63	V13 34800	48	63	189	96	151	WOEX 080404	4.3	48096
KUB-T.2D.490.R.08-ABS63	V13 34900	49	63	191	98	153	WOEX 080404	4.3	49096
KUB-T.2D.500.R.08-ABS63	V13 35000	50	63	193	100	155	WOEX 080404	4.3	50096
KUB-T.2D.510.R.08-ABS63	V13 35100	51	63	195	102	157	WOEX 080404	4.3	51096
KUB-T.2D.520.R.08-ABS63	V13 35200	52	63	197	104	159	WOEX 080404	4.3	52096
KUB-T.2D.530.R.08-ABS63	V13 35300	53	63	199	106	161	WOEX 080404	4.3	53096
KUB-T.2D.540.R.08-ABS63	V13 35400	54	63	201	108	163	WOEX 080404	4.3	54096
KUB-T.2D.550.R.10-ABS80	V14 35500	55	80	208	110	165	WOEX 100504	4.3	55098
KUB-T.2D.560.R.10-ABS80	V14 35600	56	80	210	112	167	WOEX 100504	4.3	56098
KUB-T.2D.570.R.10-ABS80	V14 35700	57	80	212	114	169	WOEX 100504	4.3	57098
KUB-T.2D.580.R.10-ABS80	V14 35800	58	80	214	116	171	WOEX 100504	4.3	58098
KUB-T.2D.590.R.10-ABS80	V14 35900	59	80	216	118	173	WOEX 100504	4.3	59098
KUB-T.2D.600.R.10-ABS80	V14 36000	60	80	218	120	175	WOEX 100504	4.3	60098
KUB-T.2D.610.R.10-ABS80	V14 36100	61	80	220	122	177	WOEX 100504	4.3	61098
KUB-T.2D.620.R.10-ABS80	V14 36200	62	80	222	124	179	WOEX 100504	4.3	62098
KUB-T.2D.630.R.10-ABS80	V14 36300	63	80	224	126	181	WOEX 100504	4.3	63098
KUB-T.2D.640.R.10-ABS80	V14 36400	64	80	226	128	183	WOEX 100504	4.3	64098
KUB-T.2D.650.R.10-ABS80	V14 36500	65	80	228	130	185	WOEX 100504	4.3	65098
KUB-T.2D.660.R.10-ABS80	V14 36600	66	80	230	132	187	WOEX 100504	4.3	66098
KUB-T.2D.670.R.10-ABS80	V14 36700	67	80	232	134	189	WOEX 100504	4.3	67098
KUB-T.2D.680.R.10-ABS80	V14 36800	68	80	234	136	191	WOEX 100504	4.3	68098
KUB-T.2D.690.R.12-ABS80	V14 36900	69	80	246	138	203	WOEX 120608	6.25	69098
KUB-T.2D.700.R.12-ABS80	V14 37000	70	80	248	140	205	WOEX 120608	6.25	70098
KUB-T.2D.710.R.12-ABS80	V14 37100	71	80	250	142	207	WOEX 120608	6.25	71098
KUB-T.2D.720.R.12-ABS80	V14 37200	72	80	252	144	209	WOEX 120608	6.25	72098
KUB-T.2D.730.R.12-ABS80	V14 37300	73	80	254	146	211	WOEX 120608	6.25	73098
KUB-T.2D.740.R.12-ABS80	V14 37400	74	80	256	148	213	WOEX 120608	6.25	74098
KUB-T.2D.750.R.12-ABS80	V14 37500	75	80	258	150	215	WOEX 120608	6.25	75098
KUB-T.2D.760.R.12-ABS80	V14 37600	76	80	260	152	217	WOEX 120608	6.25	76098
KUB-T.2D.770.R.12-ABS80	V14 37700	77	80	262	154	219	WOEX 120608	6.25	77098
KUB-T.2D.780.R.12-ABS80	V14 37800	78	80	264	156	221	WOEX 120608	6.25	78098
KUB-T.2D.790.R.12-ABS80	V14 37900	79	80	266	158	223	WOEX 120608	6.25	79098
KUB-T.2D.800.R.12-ABS80	V14 38000	80	80	268	160	225	WOEX 120608	6.25	80098
KUB-T.2D.810.R.12-ABS80	V14 38100	81	80	270	162	227	WOEX 120608	6.25	81098
KUB-T.2D.820.R.12-ABS80	V14 38200	82	80	272	164	229	WOEX 120608	6.25	82098

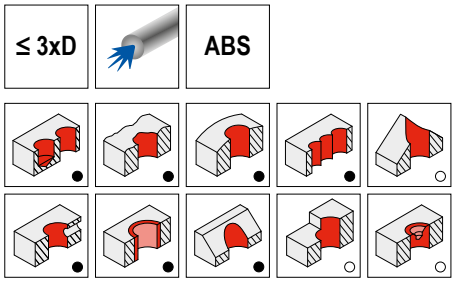
		 Screwdriver		 Clamping screw		 Fixing screw	
		80 950 ...		**10 950 ...**		**10 950 ...**	
Spare parts							
DC							
45 - 54	T15 - IP	**120**	M4.5x9 - 15IP	**12700**	M4.5x9 - 10IP	**17000**
55 - 68	T15 - IP	**120**	M4.5x9 - 15IP	**12700**	M4.5x9 - 10IP	**17000**
69 - 82	T20 - IP	**121**	M5.5x11 - 20IP	**17400**	M5.5x13.5 - 20IP	**17100**

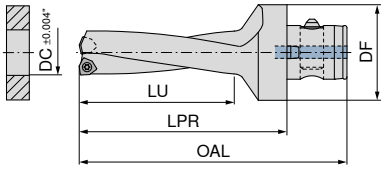
				 Cylindrical pin	 Insert seat, internal	 Insert seat, external	
				10 950 ...	**10 897 ...**	**10 898 ...**	
Spare parts							
DC							
45 - 54			Ø3	**17200**	**14800**	**14800**
55 - 68			Ø3	**17200**	**25300**	**25300**
69 - 82			Ø4	**17300**	**36000**	**36000**

Matching holders can be found in → **Chapter 16 Adapters and accessories**

KUB Trigon – Indexable insert drill

Scope of supply:
Indexable Insert Drill incl. clamping screws







15 893 ...

Designation	KOMET no.	DC inch	DF inch	OAL inch	LU inch	LPR inch	Insert	torque moment Nm	
KUB-T-U.3D.0562.R.03.ABS50-F	V40 21430	0.562	1.969	4.370	1.772	3.150	WOEX 030204	0.62	**14395**
KUB-T-U.3D.0593.R.03.ABS50-F	V40 21510	0.593	1.969	4.488	1.890	3.268	WOEX 030204	0.62	**15195**
KUB-T-U.3D.0625.R.03.ABS50-F	V40 21590	0.625	1.969	4.488	1.890	3.268	WOEX 030204	0.62	**15995**
KUB-T-U.3D.0656.R.03.ABS50-F	V40 21670	0.656	1.969	4.606	2.008	3.386	WOEX 030204	0.62	**16795**
KUB-T-U.3D.0703.R.03.ABS50-F	V40 21790	0.703	1.969	4.724	2.126	3.504	WOEX 030204	0.62	**17995**
KUB-T-U.3D.0750.R.03.ABS50-F	V40 21910	0.750	1.969	4.961	2.362	3.741	WOEX 030204	0.62	**19195**
KUB-T-U.3D.0765.R.03.ABS50-F	V40 21940	0.765	1.969	4.961	2.362	3.741	WOEX 030204	0.62	**19495**
KUB-T-U.3D.0781.R.03.ABS50-F	V40 21980	0.781	1.969	4.961	2.362	3.741	WOEX 030204	0.62	**19895**
KUB-T-U.3D.0812.R.04.ABS50-F	V40 22060	0.812	1.969	5.079	2.480	3.859	WOEX 040304	1.01	**20695**
KUB-T-U.3D.0875.R.04.ABS50-F	V40 22220	0.875	1.969	5.315	2.717	4.095	WOEX 040304	1.01	**22295**
KUB-T-U.3D.0937.R.04.ABS50-F	V40 22380	0.937	1.969	5.433	2.835	4.213	WOEX 040304	1.01	**23895**
KUB-T-U.3D.1000.R.05.ABS50-F	V40 22540	1.000	1.969	5.669	3.071	4.449	WOEX 05T304	1.28	**25495**
KUB-T-U.3D.1031.R.05.ABS50-F	V40 22620	1.031	1.969	5.787	3.189	4.567	WOEX 05T304	1.28	**26295**
KUB-T-U.3D.1109.R.05.ABS50-F	V40 22820	1.109	1.969	6.024	3.425	4.804	WOEX 05T304	1.28	**28295**
KUB-T-U.3D.1125.R.05.ABS50-F	V40 22860	1.125	1.969	6.024	3.425	4.804	WOEX 05T304	1.28	**28695**
KUB-T-U.3D.1156.R.05.ABS50-F	V40 22940	1.156	1.969	6.142	3.543	4.922	WOEX 05T304	1.28	**29495**
KUB-T-U.3D.1187.R.05.ABS50-F	V40 23010	1.187	1.969	6.457	3.661	5.237	WOEX 05T304	1.28	**30195**
KUB-T-U.3D.1218.R.05.ABS50-F	V40 23090	1.218	1.969	6.457	3.661	5.237	WOEX 05T304	1.28	**30995**
KUB-T-U.3D.1250.R.05.ABS50-F	V40 23180	1.250	1.969	6.575	3.780	5.355	WOEX 05T304	1.28	**31895**
KUB-T-U.3D.1281.R.05.ABS50-F	V40 23250	1.281	1.969	6.693	3.898	5.473	WOEX 05T304	1.28	**32595**
KUB-T-U.3D.1312.R.05.ABS50-F	V40 23330	1.312	1.969	6.811	4.016	5.591	WOEX 05T304	1.28	**33395**
KUB-T-U.3D.1328.R.05.ABS50-F	V40 23370	1.328	1.969	6.811	4.016	5.591	WOEX 05T304	1.28	**33795**
KUB-T-U.3D.1375.R.05.ABS50-F	V40 23490	1.375	1.969	6.929	4.134	5.709	WOEX 05T304	1.28	**34995**
KUB-T-U.3D.1406.R.05.ABS50-F	V40 23570	1.406	1.969	7.047	4.252	5.827	WOEX 05T304	1.28	**35795**
KUB-T-U.3D.1437.R.05.ABS50-F	V40 23650	1.437	1.969	7.559	4.370	6.339	WOEX 05T304	1.28	**36595**
KUB-T-U.3D.1469.R.06.ABS50-F	V40 23730	1.469	1.969	7.677	4.488	6.457	WOEX 06T304	2.8	**37395**
KUB-T-U.3D.1500.R.06.ABS50-F	V40 23810	1.500	1.969	7.795	4.606	6.575	WOEX 06T304	2.8	**38195**
KUB-T-U.3D.1531.R.06.ABS50-F	V40 23890	1.531	1.969	7.795	4.606	6.575	WOEX 06T304	2.8	**38995**
KUB-T-U.3D.1562.R.06.ABS50-F	V40 23970	1.562	1.969	7.913	4.724	6.693	WOEX 06T304	2.8	**39795**
KUB-T-U.3D.1625.R.06.ABS50-F	V40 24130	1.625	1.969	8.150	4.961	6.930	WOEX 06T304	2.8	**41395**
KUB-T-U.3D.1656.R.06.ABS50-F	V40 24210	1.656	1.969	8.268	5.079	7.048	WOEX 06T304	2.8	**42195**
KUB-T-U.3D.1687.R.06.ABS50-F	V40 24280	1.687	1.969	8.268	5.079	7.048	WOEX 06T304	2.8	**42895**
KUB-T-U.3D.1750.R.06.ABS50-F	V40 24450	1.750	1.969	8.439	5.250	7.219	WOEX 06T304	2.8	**44595**



Screwdriver

80 950 ...



Clamping screw

10 950 ...

Spare parts **DC**		
0.562 - 0.781	**123**	**10000**
0.812 - 0.937	**123**	**10700**
1.000 - 1.437	**125**	**10500**
1.469 - 1.750	**127**	**10600**

Matching holders can be found in → **Chapter 16 Adapters and accessories**

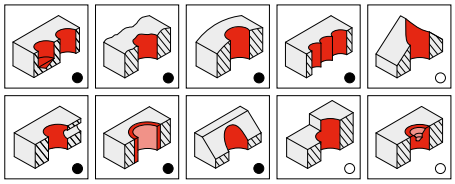
KUB Trigon – Indexable insert drill

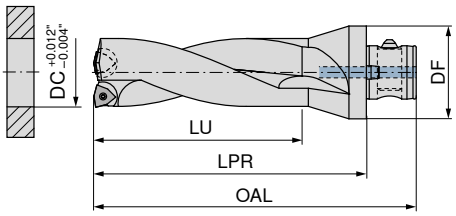
▲ Tightening torque refers to clamping screw

Scope of supply:

with insert seat (10 897 ...) incl. fixing screw, cylindrical pin and clamping screw
with insert seat (10 898 ...) incl. fixing screw, cylindrical pin and clamping screw









Designation	KOMET no.	DC inch	DF inch	OAL inch	LU inch	LPR inch	Insert	torque moment Nm	10 893 ...	15 893 ...
KUB-T.3D.1781.R.08.ABS63-F	V13 74520	1.781	2.480	9.005	5.343	7.509	WOEX 080404	4.3		**45296**
KUB-T.3D.1812.R.08.ABS63	V13 74600	1.811	2.480	9.094	5.433	7.598	WOEX 080404	4.3	**46096**	
KUB-T.3D.1875.R.08.ABS63-F	V13 74760	1.875	2.480	9.287	5.625	7.791	WOEX 080404	4.3		**47696**
KUB-T.3D.1937.R.08.ABS63-F	V13 74920	1.937	2.480	9.473	5.811	7.977	WOEX 080404	4.3		**49296**
KUB-T.3D.1975.R.08.ABS63-F	V13 75020	1.975	2.480	9.587	5.925	8.091	WOEX 080404	4.3		**50296**
KUB-T.3D.2000.R.08.ABS63-F	V13 75080	2.000	2.480	9.662	6.000	8.166	WOEX 080404	4.3		**50896**
KUB-T.3D.2062.R.08.ABS63-F	V13 75240	2.062	2.480	10.028	6.186	8.532	WOEX 080404	4.3		**52496**
KUB-T.3D.2125.R.08.ABS63	V13 75400	2.126	2.480	10.039	6.378	8.543	WOEX 080404	4.3	**54096**	
KUB-T.3D.2165.R.10.ABS80	V14 75500	2.165	3.150	10.354	6.496	8.661	WOEX 100504	4.3	**55098**	
KUB-T.3D.2203.R.10.ABS80	V14 75600	2.205	3.150	10.472	6.614	8.780	WOEX 100504	4.3	**56098**	
KUB-T.3D.2250.R.10.ABS80-F	V14 75720	2.250	3.150	10.609	6.750	8.916	WOEX 100504	4.3		**57298**
KUB-T.3D.2281.R.10.ABS80-F	V14 75790	2.281	3.150	10.702	6.843	9.009	WOEX 100504	4.3		**57998**
KUB-T.3D.2375.R.10.ABS80-F	V14 76030	2.375	3.150	10.984	7.125	9.291	WOEX 100504	4.3		**60398**
KUB-T.3D.2437.R.10.ABS80-F	V14 76190	2.437	3.150	11.170	7.311	9.477	WOEX 100504	4.3		**61998**
KUB-T.3D.2500.R.10.ABS80-F	V14 76350	2.500	3.150	11.359	7.500	9.666	WOEX 100504	4.3		**63598**
KUB-T.3D.2593.R.10.ABS80-F	V14 76590	2.593	3.150	11.638	7.779	9.945	WOEX 100504	4.3		**65998**
KUB-T.3D.2625.R.10.ABS80-F	V14 76670	2.625	3.150	11.734	7.875	10.041	WOEX 100504	4.3		**66798**
KUB-T.3D.2656.R.10.ABS80-F	V14 76750	2.656	3.150	11.827	7.968	10.134	WOEX 100504	4.3		**67598**
KUB-T.3D.2750.R.12.ABS80-F	V14 76990	2.750	3.150	12.503	8.250	10.810	WOEX 120608	6.25		**69998**
KUB-T.3D.2875.R.12.ABS80	V14 77300	2.874	3.150	12.874	8.622	11.181	WOEX 120608	6.25	**73098**	
KUB-T.3D.3000.R.12.ABS80-F	V14 77620	3.000	3.150	13.253	9.000	11.560	WOEX 120608	6.25		**76298**
KUB-T.3D.3250.R.12.ABS80-F	V14 78260	3.250	3.150	14.003	9.750	12.310	WOEX 120608	6.25		**82698**


Cylindrical pin


Insert seat, internal


Insert seat, external


Screwdriver


Clamping screw

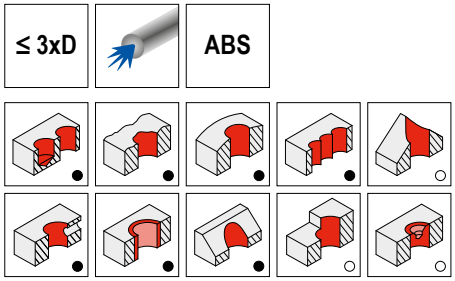

Fixing screw

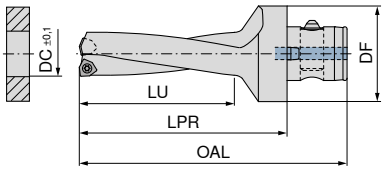
Spare parts DC	10 950 ...	10 897 ...	10 898 ...	80 950 ...	10 950 ...	10 950 ...
1.781 - 2.126	**17200**	**14800**	**14800**	**120**	**12700**	**17000**
2.165 - 2.656	**17200**	**25300**	**25300**	**120**	**12700**	**17000**
2.750 - 3.250	**17300**	**36000**	**36000**	**121**	**17400**	**17100**

Matching holders can be found in → **Chapter 16 Adapters and accessories**

KUB Trigon – Indexable insert drill

Scope of supply:
Indexable Insert Drill incl. clamping screws







10 893 ...

Designation	KOMET no.	DC mm	DF mm	OAL mm	LU mm	LPR mm	Insert	torque moment Nm	
KUB-T.3D.140.R.03-ABS50	V30 71403	**14**	50	108	42	77	WOEX 030204	0.62	**14095**
KUB-T.3D.150.R.03-ABS50	V30 71503	**15**	50	111	45	80	WOEX 030204	0.62	**15095**
KUB-T.3D.160.R.03-ABS50	V30 71601	**16**	50	114	48	83	WOEX 030204	0.62	**16095**
KUB-T.3D.170.R.03-ABS50	V30 71701	**17**	50	117	51	86	WOEX 030204	0.62	**17095**
KUB-T.3D.175.R.03-ABS50	V30 71751	**17.5**	50	120	54	89	WOEX 030204	0.62	**17595**
KUB-T.3D.180.R.03-ABS50	V30 71801	**18**	50	120	54	89	WOEX 030204	0.62	**18095**
KUB-T.3D.190.R.03-ABS50	V30 71901	**19**	50	123	57	92	WOEX 030204	0.62	**19095**
KUB-T.3D.200.R.04-ABS50	V30 72001	**20**	50	126	60	95	WOEX 040304	1.01	**20095**
KUB-T.3D.210.R.04-ABS50	V30 72101	**21**	50	129	63	98	WOEX 040304	1.01	**21095**
KUB-T.3D.220.R.04-ABS50	V30 72201	**22**	50	132	66	101	WOEX 040304	1.01	**22095**
KUB-T.3D.230.R.04-ABS50	V30 72301	**23**	50	135	69	104	WOEX 040304	1.01	**23095**
KUB-T.3D.240.R.04-ABS50	V30 72401	**24**	50	138	72	107	WOEX 040304	1.01	**24095**
KUB-T.3D.250.R.05-ABS50	V30 72501	**25**	50	141	75	110	WOEX 05T304	1.28	**25095**
KUB-T.3D.260.R.05-ABS50	V30 72601	**26**	50	144	78	113	WOEX 05T304	1.28	**26095**
KUB-T.3D.270.R.05-ABS50	V30 72701	**27**	50	147	81	116	WOEX 05T304	1.28	**27095**
KUB-T.3D.280.R.05-ABS50	V30 72801	**28**	50	150	84	119	WOEX 05T304	1.28	**28095**
KUB-T.3D.290.R.05-ABS50	V30 72901	**29**	50	153	87	122	WOEX 05T304	1.28	**29095**
KUB-T.3D.300.R.05-ABS50	V30 73001	**30**	50	161	90	130	WOEX 05T304	1.28	**30095**
KUB-T.3D.310.R.05-ABS50	V30 73101	**31**	50	164	93	133	WOEX 05T304	1.28	**31095**
KUB-T.3D.320.R.05-ABS50	V30 73201	**32**	50	167	96	136	WOEX 05T304	1.28	**32095**
KUB-T.3D.330.R.05-ABS50	V30 73301	**33**	50	170	99	139	WOEX 05T304	1.28	**33095**
KUB-T.3D.340.R.05-ABS50	V30 73401	**34**	50	173	102	142	WOEX 05T304	1.28	**34095**
KUB-T.3D.350.R.05-ABS50	V30 73501	**35**	50	176	105	145	WOEX 05T304	1.28	**35095**
KUB-T.3D.360.R.05-ABS50	V30 73601	**36**	50	179	108	148	WOEX 05T304	1.28	**36095**
KUB-T.3D.370.R.06-ABS50	V30 73701	**37**	50	192	111	161	WOEX 06T304	2.8	**37095**
KUB-T.3D.380.R.06-ABS50	V30 73801	**38**	50	195	114	164	WOEX 06T304	2.8	**38095**
KUB-T.3D.390.R.06-ABS50	V30 73901	**39**	50	198	117	167	WOEX 06T304	2.8	**39095**
KUB-T.3D.400.R.06-ABS50	V30 74001	**40**	50	201	120	170	WOEX 06T304	2.8	**40095**
KUB-T.3D.410.R.06-ABS50	V30 74101	**41**	50	204	123	173	WOEX 06T304	2.8	**41095**
KUB-T.3D.420.R.06-ABS50	V30 74201	**42**	50	207	126	176	WOEX 06T304	2.8	**42095**
KUB-T.3D.430.R.06-ABS50	V30 74301	**43**	50	210	129	179	WOEX 06T304	2.8	**43095**
KUB-T.3D.440.R.06-ABS50	V30 74401	**44**	50	213	132	182	WOEX 06T304	2.8	**44095**



Screwdriver

80 950 ...



Clamping screw

10 950 ...

Spare parts

DC				
14 - 19	T06 - IP	**123**	M2.0x4.3 - 06IP	**10000**
20 - 24	T06 - IP	**123**	M2.2x5.5 - 06IP	**10700**
25 - 36	T08 - IP	**125**	M2.5x7.2 - 08IP	**10500**
37 - 44	T10 - IP	**127**	M3.5x7.3 - 10IP	**10600**

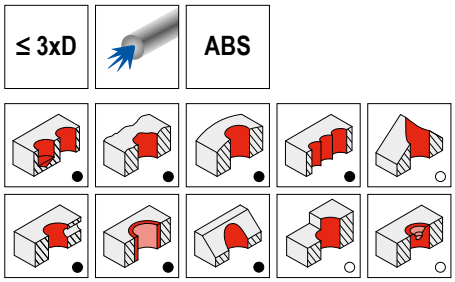
Matching holders can be found in → **Chapter 16 Adapters and accessories**

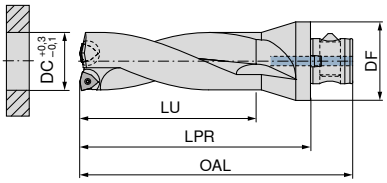
KUB Trigon – Indexable insert drill

▲ Tightening torque refers to the clamping screws of the indexable inserts

Scope of supply:

with insert seat (10 897 ...) incl. fixing screw, cylindrical pin and clamping screw
with insert seat (10 898 ...) incl. fixing screw, cylindrical pin and clamping screw







10 893 ...

Designation	KOMET no.	DC	DF	OAL	LU	LPR	Insert	torque moment	
		mm	mm	mm	mm	mm		Nm	
KUB-T.3D.450.R.08-ABS63	V13 74500	**45**	63	228	135	190	WOEX 080404	4.3	**45096**
KUB-T.3D.460.R.08-ABS63	V13 74600	**46**	63	231	138	193	WOEX 080404	4.3	**46096**
KUB-T.3D.470.R.08-ABS63	V13 74700	**47**	63	234	141	196	WOEX 080404	4.3	**47096**
KUB-T.3D.480.R.08-ABS63	V13 74800	**48**	63	237	144	199	WOEX 080404	4.3	**48096**
KUB-T.3D.490.R.08-ABS63	V13 74900	**49**	63	240	147	202	WOEX 080404	4.3	**49096**
KUB-T.3D.500.R.08-ABS63	V13 75000	**50**	63	243	150	205	WOEX 080404	4.3	**50096**
KUB-T.3D.510.R.08-ABS63	V13 75100	**51**	63	246	153	208	WOEX 080404	4.3	**51096**
KUB-T.3D.520.R.08-ABS63	V13 75200	**52**	63	249	156	211	WOEX 080404	4.3	**52096**
KUB-T.3D.530.R.08-ABS63	V13 75300	**53**	63	252	159	214	WOEX 080404	4.3	**53096**
KUB-T.3D.540.R.08-ABS63	V13 75400	**54**	63	255	162	217	WOEX 080404	4.3	**54096**
KUB-T.3D.550.R.10-ABS80	V14 75500	**55**	80	263	165	220	WOEX 100504	4.3	**55098**
KUB-T.3D.560.R.10-ABS80	V14 75600	**56**	80	266	168	223	WOEX 100504	4.3	**56098**
KUB-T.3D.570.R.10-ABS80	V14 75700	**57**	80	269	171	226	WOEX 100504	4.3	**57098**
KUB-T.3D.580.R.10-ABS80	V14 75800	**58**	80	272	174	229	WOEX 100504	4.3	**58098**
KUB-T.3D.590.R.10-ABS80	V14 75900	**59**	80	275	177	232	WOEX 100504	4.3	**59098**
KUB-T.3D.600.R.10-ABS80	V14 76000	**60**	80	278	180	235	WOEX 100504	4.3	**60098**
KUB-T.3D.610.R.10-ABS80	V14 76100	**61**	80	281	183	238	WOEX 100504	4.3	**61098**
KUB-T.3D.620.R.10-ABS80	V14 76200	**62**	80	284	186	241	WOEX 100504	4.3	**62098**
KUB-T.3D.630.R.10-ABS80	V14 76300	**63**	80	287	189	244	WOEX 100504	4.3	**63098**
KUB-T.3D.640.R.10-ABS80	V14 76400	**64**	80	290	192	247	WOEX 100504	4.3	**64098**
KUB-T.3D.650.R.10-ABS80	V14 76500	**65**	80	293	195	250	WOEX 100504	4.3	**65098**
KUB-T.3D.660.R.10-ABS80	V14 76600	**66**	80	296	198	253	WOEX 100504	4.3	**66098**
KUB-T.3D.670.R.10-ABS80	V14 76700	**67**	80	299	201	256	WOEX 100504	4.3	**67098**
KUB-T.3D.680.R.10-ABS80	V14 76800	**68**	80	302	204	259	WOEX 100504	4.3	**68098**
KUB-T.3D.690.R.12-ABS80	V14 76900	**69**	80	315	207	272	WOEX 120608	6.25	**69098**
KUB-T.3D.700.R.12-ABS80	V14 77000	**70**	80	318	210	275	WOEX 120608	6.25	**70098**
KUB-T.3D.710.R.12-ABS80	V14 77100	**71**	80	321	213	278	WOEX 120608	6.25	**71098**
KUB-T.3D.720.R.12-ABS80	V14 77200	**72**	80	324	216	281	WOEX 120608	6.25	**72098**
KUB-T.3D.730.R.12-ABS80	V14 77300	**73**	80	327	219	284	WOEX 120608	6.25	**73098**
KUB-T.3D.740.R.12-ABS80	V14 77400	**74**	80	330	222	287	WOEX 120608	6.25	**74098**
KUB-T.3D.750.R.12-ABS80	V14 77500	**75**	80	333	225	290	WOEX 120608	6.25	**75098**
KUB-T.3D.760.R.12-ABS80	V14 77600	**76**	80	336	228	293	WOEX 120608	6.25	**76098**
KUB-T.3D.770.R.12-ABS80	V14 77700	**77**	80	339	231	296	WOEX 120608	6.25	**77098**
KUB-T.3D.780.R.12-ABS80	V14 77800	**78**	80	342	234	299	WOEX 120608	6.25	**78098**
KUB-T.3D.790.R.12-ABS80	V14 77900	**79**	80	345	237	302	WOEX 120608	6.25	**79098**
KUB-T.3D.800.R.12-ABS80	V14 78000	**80**	80	348	240	305	WOEX 120608	6.25	**80098**
KUB-T.3D.810.R.12-ABS80	V14 78100	**81**	80	351	243	308	WOEX 120608	6.25	**81098**
KUB-T.3D.820.R.12-ABS80	V14 78200	**82**	80	354	246	311	WOEX 120608	6.25	**82098**

		 Screwdriver		 Clamping screw		 Fixing screw		
		80 950 ...		**10 950 ...**		**10 950 ...**		
Spare parts								
DC								
45 - 54	T15 - IP	**120**		M4.5x9 - 15IP	**12700**	M4.5x9 - 10IP	**17000**
55 - 68	T15 - IP	**120**		M4.5x9 - 15IP	**12700**	M4.5x9 - 10IP	**17000**
69 - 82	T20 - IP	**121**		M5.5x11 - 20IP	**17400**	M5.5x13.5 - 20IP	**17100**

				 Cylindrical pin		 Insert seat, internal		 Insert seat, external
				10 950 ...		**10 897 ...**		**10 898 ...**
Spare parts								
DC								
45 - 54			Ø3		**17200**		**14800**	**14800**
55 - 68			Ø3		**17200**		**25300**	**25300**
69 - 82			Ø4		**17300**		**36000**	**36000**

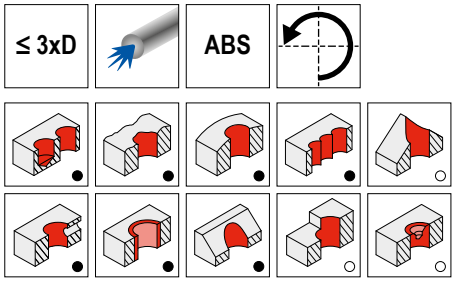
Matching holders can be found in → **Chapter 16 Adapters and accessories**

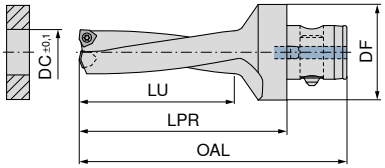
KUB Trigon – Indexable insert drill

▲ left-hand cutting

Scope of supply:

Indexable Insert Drill incl. clamping screws







11 893 ...

Designation	KOMET no.	DC mm	DF mm	OAL mm	LU mm	LPR mm	Insert	torque moment Nm	
KUB-T.3D.140.L.03-ABS50	V30 61402	**14**	50	108	42	77	WOEX 030204	0.62	**14095**
KUB-T.3D.150.L.03-ABS50	V30 61502	**15**	50	111	45	80	WOEX 030204	0.62	**15095**
KUB-T.3D.160.L.03-ABS50	V30 61600	**16**	50	114	48	83	WOEX 030204	0.62	**16095**
KUB-T.3D.170.L.03-ABS50	V30 61700	**17**	50	117	51	86	WOEX 030204	0.62	**17095**
KUB-T.3D.180.L.03-ABS50	V30 61800	**18**	50	120	54	89	WOEX 030204	0.62	**18095**
KUB-T.3D.190.L.03-ABS50	V30 61900	**19**	50	123	57	92	WOEX 030204	0.62	**19095**
KUB-T.3D.200.L.04-ABS50	V30 62000	**20**	50	126	60	95	WOEX 040304	1.01	**20095**
KUB-T.3D.210.L.04-ABS50	V30 62100	**21**	50	129	63	98	WOEX 040304	1.01	**21095**
KUB-T.3D.220.L.04-ABS50	V30 62200	**22**	50	132	66	101	WOEX 040304	1.01	**22095**
KUB-T.3D.230.L.04-ABS50	V30 62300	**23**	50	135	69	104	WOEX 040304	1.01	**23095**
KUB-T.3D.240.L.04-ABS50	V30 62400	**24**	50	138	72	107	WOEX 040304	1.01	**24095**
KUB-T.3D.250.L.05-ABS50	V30 62500	**25**	50	141	75	110	WOEX 05T304	1.28	**25095**
KUB-T.3D.260.L.05-ABS50	V30 62600	**26**	50	144	78	113	WOEX 05T304	1.28	**26095**
KUB-T.3D.270.L.05-ABS50	V30 62700	**27**	50	147	81	116	WOEX 05T304	1.28	**27095**
KUB-T.3D.280.L.05-ABS50	V30 62800	**28**	50	150	84	119	WOEX 05T304	1.28	**28095**
KUB-T.3D.290.L.05-ABS50	V30 62900	**29**	50	153	87	122	WOEX 05T304	1.28	**29095**
KUB-T.3D.300.L.05-ABS50	V30 63000	**30**	50	161	90	130	WOEX 05T304	1.28	**30095**
KUB-T.3D.310.L.05-ABS50	V30 63100	**31**	50	164	93	133	WOEX 05T304	1.28	**31095**
KUB-T.3D.320.L.05-ABS50	V30 63200	**32**	50	167	96	136	WOEX 05T304	1.28	**32095**
KUB-T.3D.330.L.05-ABS50	V30 63300	**33**	50	170	99	139	WOEX 05T304	1.28	**33095**
KUB-T.3D.340.L.05-ABS50	V30 63400	**34**	50	173	102	142	WOEX 05T304	1.28	**34095**
KUB-T.3D.350.L.05-ABS50	V30 63500	**35**	50	176	105	145	WOEX 05T304	1.28	**35095**
KUB-T.3D.360.L.05-ABS50	V30 63600	**36**	50	179	108	148	WOEX 05T304	1.28	**36095**
KUB-T.3D.370.L.06-ABS50	V30 63700	**37**	50	192	111	161	WOEX 06T304	2.8	**37095**
KUB-T.3D.380.L.06-ABS50	V30 63800	**38**	50	195	114	164	WOEX 06T304	2.8	**38095**
KUB-T.3D.390.L.06-ABS50	V30 63900	**39**	50	198	117	167	WOEX 06T304	2.8	**39095**
KUB-T.3D.400.L.06-ABS50	V30 64000	**40**	50	201	120	170	WOEX 06T304	2.8	**40095**
KUB-T.3D.410.L.06-ABS50	V30 64100	**41**	50	204	123	173	WOEX 06T304	2.8	**41095**
KUB-T.3D.420.L.06-ABS50	V30 64200	**42**	50	207	126	176	WOEX 06T304	2.8	**42095**
KUB-T.3D.430.L.06-ABS50	V30 64300	**43**	50	210	129	179	WOEX 06T304	2.8	**43095**
KUB-T.3D.440.L.06-ABS50	V30 64400	**44**	50	213	132	182	WOEX 06T304	2.8	**44095**



Screwdriver

80 950 ...



Clamping screw

10 950 ...

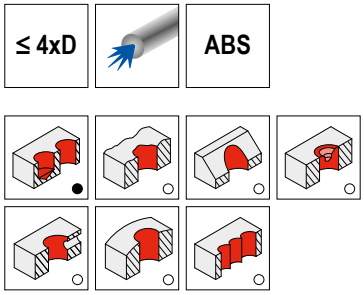
Spare parts

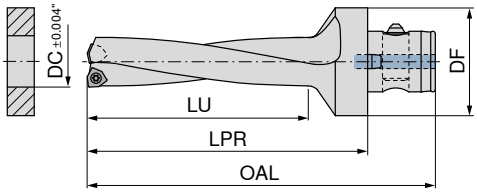
DC				
14 - 19	T06 - IP	**123**	M2.0x4.3 - 06IP	**10000**
20 - 24	T06 - IP	**123**	M2.2x5.5 - 06IP	**10700**
25 - 36	T08 - IP	**125**	M2.5x7.2 - 08IP	**10500**
37 - 44	T10 - IP	**127**	M3.5x7.3 - 10IP	**10600**

Matching holders can be found in → **Chapter 16 Adapters and accessories**

KUB Trigon – Indexable insert drill

Scope of supply:
Indexable Insert Drill incl. clamping screws







Designation	KOMET no.	DC inch	DF inch	OAL inch	LU inch	LPR inch	Insert	torque moment Nm	10 894 ...	15 894 ...
KUB-T.4D.0562.R.03.ABS50-F	V30 91431	0.562	1.969	4.955	2.358	3.735	WOEX 030204	0.62		**14395**
KUB-T.4D.0593.R.03.ABS50-F	V30 91511	0.593	1.969	5.112	2.514	3.892	WOEX 030204	0.62		**15195**
KUB-T.4D.0625.R.03.ABS50-F	V30 91591	0.625	1.969	5.114	2.516	3.894	WOEX 030204	0.62		**15995**
KUB-T.4D.0656.R.03.ABS50-F	V30 91671	0.656	1.969	5.269	2.671	4.049	WOEX 030204	0.62		**16795**
KUB-T.4D.0687.R.03.ABS50-F	V30 91751	0.687	1.969	5.425	2.827	4.205	WOEX 030204	0.62		**17595**
KUB-T.4D.0703.R.03.ABS50-F	V30 91791	0.703	1.969	5.425	2.828	4.205	WOEX 030204	0.62		**17995**
KUB-T.4D.0750.R.03.ABS50-F	V30 91911	0.750	1.969	5.740	3.142	4.520	WOEX 030204	0.62		**19195**
KUB-T.4D.0765.R.03.ABS50-F	V30 91941	0.765	1.969	5.752	3.154	4.532	WOEX 030204	0.62		**19495**
KUB-T.4D.0781.R.03.ABS50-F	V30 91981	0.781	1.969	5.753	3.155	4.533	WOEX 030204	0.62		**19895**
KUB-T.4D.0812.R.04.ABS50-F	V30 92061	0.812	1.969	5.909	3.311	4.689	WOEX 040304	1.01		**20695**
KUB-T.4D.0828.R.04.ABS50	V30 92101	0.827	1.969	5.906	3.307	4.685	WOEX 040304	1.01	**21095**	
KUB-T.4D.0875.R.04.ABS50-F	V30 92221	0.875	1.969	6.224	3.626	5.004	WOEX 040304	1.01		**22295**
KUB-T.4D.0937.R.04.ABS50-F	V30 92381	0.937	1.969	6.377	3.779	5.157	WOEX 040304	1.01		**23895**
KUB-T.4D.0985.R.05.ABS50	V30 92501	0.984	1.969	6.535	3.937	5.315	WOEX 05T304	1.28	**25095**	
KUB-T.4D.1000.R.05.ABS50-F	V30 92541	1.000	1.969	6.692	4.094	5.472	WOEX 05T304	1.28		**25495**
KUB-T.4D.1031.R.05.ABS50-F	V30 92621	1.031	1.969	6.848	4.250	5.628	WOEX 05T304	1.28		**26295**
KUB-T.4D.1062.R.05.ABS50	V30 92701	1.063	1.969	6.850	4.252	5.630	WOEX 05T304	1.28	**27095**	
KUB-T.4D.1109.R.05.ABS50-F	V30 92821	1.109	1.969	7.160	4.562	5.940	WOEX 05T304	1.28		**28295**
KUB-T.4D.1125.R.05.ABS50-F	V30 92861	1.125	1.969	7.161	4.563	5.941	WOEX 05T304	1.28		**28695**
KUB-T.4D.1156.R.05.ABS50-F	V30 92941	1.156	1.969	7.316	4.718	6.096	WOEX 05T304	1.28		**29495**
KUB-T.4D.1187.R.05.ABS50-F	V30 93021	1.187	1.969	7.685	4.874	6.465	WOEX 05T304	1.28		**30195**
KUB-T.4D.1218.R.05.ABS50-F	V30 93091	1.218	1.969	7.699	4.888	6.479	WOEX 05T304	1.28		**30995**
KUB-T.4D.1250.R.05.ABS50-F	V30 93181	1.250	1.969	7.842	5.031	6.622	WOEX 05T304	1.28		**31895**
KUB-T.4D.1281.R.05.ABS50-F	V30 93251	1.281	1.969	8.014	5.203	6.794	WOEX 05T304	1.28		**32595**
KUB-T.4D.1312.R.05.ABS50-F	V30 93331	1.312	1.969	8.161	5.350	6.941	WOEX 05T304	1.28		**33395**
KUB-T.4D.1328.R.05.ABS50-F	V30 93371	1.328	1.969	8.170	5.359	6.950	WOEX 05T304	1.28		**33795**
KUB-T.4D.1375.R.05.ABS50-F	V30 93491	1.375	1.969	8.327	5.516	7.107	WOEX 05T304	1.28		**34995**
KUB-T.4D.1406.R.05.ABS50-F	V30 93571	1.406	1.969	8.482	5.671	7.262	WOEX 05T304	1.28		**35795**
KUB-T.4D.1437.R.05.ABS50-F	V30 93651	1.437	1.969	8.638	5.827	7.418	WOEX 05T304	1.28		**36595**
KUB-T.4D.1469.R.06.ABS50-F	V30 93731	1.469	1.969	9.175	5.986	7.955	WOEX 06T304	2.8		**37395**
KUB-T.4D.1500.R.06.ABS50-F	V30 93811	1.500	1.969	9.331	6.142	8.111	WOEX 06T304	2.8		**38195**
KUB-T.4D.1531.R.06.ABS50-F	V30 93891	1.531	1.969	9.329	6.140	8.109	WOEX 06T304	2.8		**38995**
KUB-T.4D.1562.R.06.ABS50-F	V30 93971	1.562	1.969	9.484	6.295	8.264	WOEX 06T304	2.8		**39795**
KUB-T.4D.1625.R.06.ABS50-F	V30 94131	1.625	1.969	9.799	6.610	8.579	WOEX 06T304	2.8		**41395**
KUB-T.4D.1656.R.06.ABS50-F	V30 94211	1.656	1.969	9.955	6.766	8.735	WOEX 06T304	2.8		**42195**
KUB-T.4D.1687.R.06.ABS50-F	V30 94291	1.687	1.969	9.953	6.764	8.733	WOEX 06T304	2.8		**42895**
KUB-T.4D.1750.R.06.ABS50-F	V30 94451	1.750	1.969	10.268	7.079	9.048	WOEX 06T304	2.8		**44595**


Screwdriver

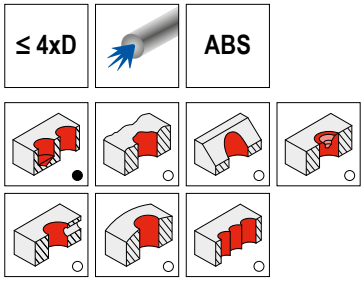

Clamping screw

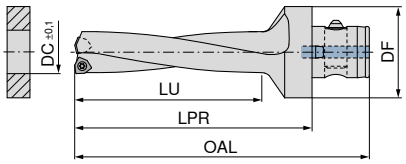
Spare parts DC	80 950 ...	10 950 ...
0.562 - 0.781	**123**	**10000**
0.812 - 0.937	**123**	**10700**
0.984 - 1.437	**125**	**10500**
1.469 - 1.750	**127**	**10600**

Matching holders can be found in → **Chapter 16 Adapters and accessories**

KUB Trigon – Indexable insert drill

Scope of supply:
Indexable Insert Drill incl. clamping screws







10 894 ...

Designation	KOMET no.	DC mm	DF mm	OAL mm	LU mm	LPR mm	Insert	torque moment Nm	
KUB-T.4D.140.R.03-ABS50	V30 91403	**14**	50	122	56	91	WOEX 030204	0.62	**14095**
KUB-T.4D.150.R.03-ABS50	V30 91503	**15**	50	126	60	95	WOEX 030204	0.62	**15095**
KUB-T.4D.160.R.03-ABS50	V30 91601	**16**	50	130	64	99	WOEX 030204	0.62	**16095**
KUB-T.4D.170.R.03-ABS50	V30 91701	**17**	50	134	68	103	WOEX 030204	0.62	**17095**
KUB-T.4D.180.R.03-ABS50	V30 91801	**18**	50	138	72	107	WOEX 030204	0.62	**18095**
KUB-T.4D.190.R.03-ABS50	V30 91901	**19**	50	142	76	111	WOEX 030204	0.62	**19095**
KUB-T.4D.200.R.04-ABS50	V30 92001	**20**	50	146	80	115	WOEX 040304	1.01	**20095**
KUB-T.4D.210.R.04-ABS50	V30 92101	**21**	50	150	84	119	WOEX 040304	1.01	**21095**
KUB-T.4D.220.R.04-ABS50	V30 92201	**22**	50	154	88	123	WOEX 040304	1.01	**22095**
KUB-T.4D.230.R.04-ABS50	V30 92301	**23**	50	158	92	127	WOEX 040304	1.01	**23095**
KUB-T.4D.240.R.04-ABS50	V30 92401	**24**	50	162	96	131	WOEX 040304	1.01	**24095**
KUB-T.4D.250.R.05-ABS50	V30 92501	**25**	50	166	100	135	WOEX 05T304	1.28	**25095**
KUB-T.4D.260.R.05-ABS50	V30 92601	**26**	50	170	104	139	WOEX 05T304	1.28	**26095**
KUB-T.4D.270.R.05-ABS50	V30 92701	**27**	50	174	108	143	WOEX 05T304	1.28	**27095**
KUB-T.4D.280.R.05-ABS50	V30 92801	**28**	50	178	112	147	WOEX 05T304	1.28	**28095**
KUB-T.4D.290.R.05-ABS50	V30 92901	**29**	50	182	116	151	WOEX 05T304	1.28	**29095**
KUB-T.4D.300.R.05-ABS50	V30 93001	**30**	50	191	120	160	WOEX 05T304	1.28	**30095**
KUB-T.4D.310.R.05-ABS50	V30 93101	**31**	50	195	124	164	WOEX 05T304	1.28	**31095**
KUB-T.4D.320.R.05-ABS50	V30 93201	**32**	50	199	128	168	WOEX 05T304	1.28	**32095**
KUB-T.4D.330.R.05-ABS50	V30 93301	**33**	50	203	132	172	WOEX 05T304	1.28	**33095**
KUB-T.4D.340.R.05-ABS50	V30 93401	**34**	50	207	136	176	WOEX 05T304	1.28	**34095**
KUB-T.4D.350.R.05-ABS50	V30 93501	**35**	50	211	140	180	WOEX 05T304	1.28	**35095**
KUB-T.4D.360.R.05-ABS50	V30 93601	**36**	50	215	144	184	WOEX 05T304	1.28	**36095**
KUB-T.4D.370.R.06-ABS50	V30 93701	**37**	50	229	148	198	WOEX 06T304	2.8	**37095**
KUB-T.4D.380.R.06-ABS50	V30 93801	**38**	50	233	152	202	WOEX 06T304	2.8	**38095**
KUB-T.4D.390.R.06-ABS50	V30 93901	**39**	50	237	156	206	WOEX 06T304	2.8	**39095**
KUB-T.4D.400.R.06-ABS50	V30 94001	**40**	50	241	160	210	WOEX 06T304	2.8	**40095**
KUB-T.4D.410.R.06-ABS50	V30 94101	**41**	50	245	164	214	WOEX 06T304	2.8	**41095**
KUB-T.4D.420.R.06-ABS50	V30 94201	**42**	50	249	168	218	WOEX 06T304	2.8	**42095**
KUB-T.4D.430.R.06-ABS50	V30 94301	**43**	50	253	172	222	WOEX 06T304	2.8	**43095**
KUB-T.4D.440.R.06-ABS50	V30 94401	**44**	50	257	176	226	WOEX 06T304	2.8	**44095**


Screwdriver

80 950 ...


Clamping screw

10 950 ...

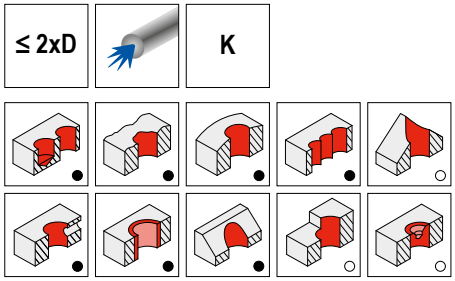
Spare parts

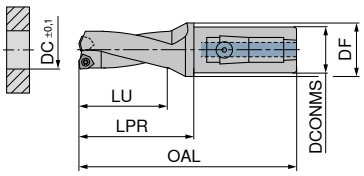
DC				
14 - 19	T06 - IP	**123**	M2.0x4.3 - 06IP	**10000**
20 - 24	T06 - IP	**123**	M2.2x5.5 - 06IP	**10700**
25 - 36	T08 - IP	**125**	M2.5x7.2 - 08IP	**10500**
37 - 44	T10 - IP	**127**	M3.5x7.3 - 10IP	**10600**

Matching holders can be found in → **Chapter 16 Adapters and accessories**

KUB Trigon – Indexable insert drill

Scope of supply:
Indexable Insert Drill incl. clamping screws







10 892 ...

Designation	KOMET no.	DC mm	DCONMS mm	DF mm	OAL mm	LU mm	LPR mm	Insert	torque moment Nm	
KUB-T.2D.140.R.03-K20	V43 31404	**14**	20	30	102	28	52	WOEX 030204	0.62	**14011**
KUB-T.2D.150.R.03-K20	V43 31504	**15**	20	30	104	30	54	WOEX 030204	0.62	**15011**
KUB-T.2D.160.R.03-K20	V43 31602	**16**	20	30	106	32	56	WOEX 030204	0.62	**16011**
KUB-T.2D.170.R.03-K20	V43 31702	**17**	20	30	108	34	58	WOEX 030204	0.62	**17011**
KUB-T.2D.180.R.03-K20	V43 31802	**18**	20	30	110	36	60	WOEX 030204	0.62	**18011**
KUB-T.2D.190.R.03-K20	V43 31902	**19**	20	30	112	38	62	WOEX 030204	0.62	**19011**
KUB-T.2D.200.R.04-K25	V44 32002	**20**	25	30	120	40	64	WOEX 040304	1.01	**20012**
KUB-T.2D.210.R.04-K25	V44 32102	**21**	25	30	122	42	66	WOEX 040304	1.01	**21012**
KUB-T.2D.220.R.04-K25	V44 32202	**22**	25	30	124	44	68	WOEX 040304	1.01	**22012**
KUB-T.2D.230.R.04-K25	V44 32302	**23**	25	30	126	46	70	WOEX 040304	1.01	**23012**
KUB-T.2D.240.R.04-K25	V44 32402	**24**	25	30	128	48	72	WOEX 040304	1.01	**24012**
KUB-T.2D.250.R.05-K32	V45 32502	**25**	32	39	134	50	74	WOEX 05T304	1.28	**25013**
KUB-T.2D.260.R.05-K32	V45 32602	**26**	32	39	136	52	76	WOEX 05T304	1.28	**26013**
KUB-T.2D.270.R.05-K32	V45 32702	**27**	32	39	138	54	78	WOEX 05T304	1.28	**27013**
KUB-T.2D.280.R.05-K32	V45 32802	**28**	32	39	140	56	80	WOEX 05T304	1.28	**28013**
KUB-T.2D.290.R.05-K32	V45 32902	**29**	32	39	142	58	82	WOEX 05T304	1.28	**29013**
KUB-T.2D.300.R.05-K32	V45 33002	**30**	32	39	149	60	89	WOEX 05T304	1.28	**30013**
KUB-T.2D.310.R.05-K32	V45 33102	**31**	32	39	151	62	91	WOEX 05T304	1.28	**31013**
KUB-T.2D.320.R.05-K32	V45 33202	**32**	32	39	153	64	93	WOEX 05T304	1.28	**32013**
KUB-T.2D.330.R.05-K32	V45 33302	**33**	32	39	155	66	95	WOEX 05T304	1.28	**33013**
KUB-T.2D.340.R.05-K32	V45 33402	**34**	32	39	157	68	97	WOEX 05T304	1.28	**34013**
KUB-T.2D.350.R.05-K32	V45 33502	**35**	32	39	159	70	99	WOEX 05T304	1.28	**35013**
KUB-T.2D.360.R.05-K32	V45 33602	**36**	32	39	161	72	101	WOEX 05T304	1.28	**36013**
KUB-T.2D.370.R.06-K32	V45 33702	**37**	32	39	173	74	113	WOEX 06T304	2.8	**37013**
KUB-T.2D.380.R.06-K32	V45 33802	**38**	32	39	175	76	115	WOEX 06T304	2.8	**38013**
KUB-T.2D.390.R.06-K32	V45 33902	**39**	32	39	177	78	117	WOEX 06T304	2.8	**39013**
KUB-T.2D.400.R.06-K32	V45 34002	**40**	32	39	179	80	119	WOEX 06T304	2.8	**40013**
KUB-T.2D.410.R.06-K32	V45 34102	**41**	32	39	181	82	121	WOEX 06T304	2.8	**41013**
KUB-T.2D.420.R.06-K32	V45 34202	**42**	32	39	183	84	123	WOEX 06T304	2.8	**42013**
KUB-T.2D.430.R.06-K32	V45 34302	**43**	32	39	185	86	125	WOEX 06T304	2.8	**43013**
KUB-T.2D.440.R.06-K32	V45 34402	**44**	32	39	187	88	127	WOEX 06T304	2.8	**44013**



Screwdriver

80 950 ...



Clamping screw

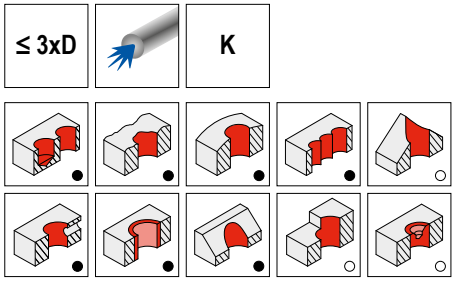
10 950 ...

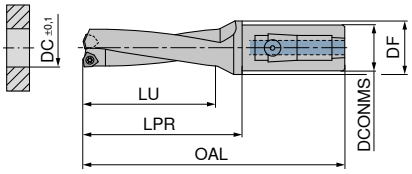
Spare parts DC				
14 - 19	T06 - IP	**123**	M2.0x4.3 - 06IP	**10000**
20 - 24	T06 - IP	**123**	M2.2x5.5 - 06IP	**10700**
25 - 36	T08 - IP	**125**	M2.5x7.2 - 08IP	**10500**
37 - 44	T10 - IP	**127**	M3.5x7.3 - 10IP	**10600**

Matching holders can be found in → **Chapter 16 Adapters and accessories**

KUB Trigon – Indexable insert drill

Scope of supply:
Indexable Insert Drill incl. clamping screws







10 893 ...

Designation	KOMET no.	DC mm	DCONMS mm	DF mm	OAL mm	LU mm	LPR mm	Insert	torque moment Nm	
KUB-T.3D.140.R.03-K20	V43 71404	**14**	20	30	116	42	66	WOEX 030204	0.62	**14011**
KUB-T.3D.150.R.03-K20	V43 71504	**15**	20	30	119	45	69	WOEX 030204	0.62	**15011**
KUB-T.3D.160.R.03-K20	V43 71602	**16**	20	30	122	48	72	WOEX 030204	0.62	**16011**
KUB-T.3D.170.R.03-K20	V43 71702	**17**	20	30	125	51	75	WOEX 030204	0.62	**17011**
KUB-T.3D.180.R.03-K20	V43 71802	**18**	20	30	128	54	78	WOEX 030204	0.62	**18011**
KUB-T.3D.190.R.03-K20	V43 71902	**19**	20	30	131	57	81	WOEX 030204	0.62	**19011**
KUB-T.3D.200.R.04-K25	V44 72002	**20**	25	30	140	60	84	WOEX 040304	1.01	**20012**
KUB-T.3D.210.R.04-K25	V44 72102	**21**	25	30	143	63	87	WOEX 040304	1.01	**21012**
KUB-T.3D.220.R.04-K25	V44 72202	**22**	25	30	146	66	90	WOEX 040304	1.01	**22012**
KUB-T.3D.230.R.04-K25	V44 72302	**23**	25	30	149	69	93	WOEX 040304	1.01	**23012**
KUB-T.3D.240.R.04-K25	V44 72402	**24**	25	30	152	72	96	WOEX 040304	1.01	**24012**
KUB-T.3D.250.R.05-K32	V45 72502	**25**	32	39	159	75	99	WOEX 05T304	1.28	**25013**
KUB-T.3D.260.R.05-K32	V45 72602	**26**	32	39	162	78	102	WOEX 05T304	1.28	**26013**
KUB-T.3D.270.R.05-K32	V45 72702	**27**	32	39	165	81	105	WOEX 05T304	1.28	**27013**
KUB-T.3D.280.R.05-K32	V45 72802	**28**	32	39	168	84	108	WOEX 05T304	1.28	**28013**
KUB-T.3D.290.R.05-K32	V45 72902	**29**	32	39	171	87	111	WOEX 05T304	1.28	**29013**
KUB-T.3D.300.R.05-K32	V45 73002	**30**	32	39	179	90	119	WOEX 05T304	1.28	**30013**
KUB-T.3D.310.R.05-K32	V45 73102	**31**	32	39	182	93	122	WOEX 05T304	1.28	**31013**
KUB-T.3D.320.R.05-K32	V45 73202	**32**	32	39	185	96	125	WOEX 05T304	1.28	**32013**
KUB-T.3D.330.R.05-K32	V45 73302	**33**	32	39	188	99	128	WOEX 05T304	1.28	**33013**
KUB-T.3D.340.R.05-K32	V45 73402	**34**	32	39	191	102	131	WOEX 05T304	1.28	**34013**
KUB-T.3D.350.R.05-K32	V45 73502	**35**	32	39	194	105	134	WOEX 05T304	1.28	**35013**
KUB-T.3D.360.R.05-K32	V45 73602	**36**	32	39	197	108	137	WOEX 05T304	1.28	**36013**
KUB-T.3D.370.R.06-K32	V45 73702	**37**	32	39	210	111	150	WOEX 06T304	2.8	**37013**
KUB-T.3D.380.R.06-K32	V45 73802	**38**	32	39	213	114	153	WOEX 06T304	2.8	**38013**
KUB-T.3D.390.R.06-K32	V45 73902	**39**	32	39	216	117	156	WOEX 06T304	2.8	**39013**
KUB-T.3D.400.R.06-K32	V45 74002	**40**	32	39	219	120	159	WOEX 06T304	2.8	**40013**
KUB-T.3D.410.R.06-K32	V45 74102	**41**	32	39	222	123	162	WOEX 06T304	2.8	**41013**
KUB-T.3D.420.R.06-K32	V45 74202	**42**	32	39	225	126	165	WOEX 06T304	2.8	**42013**
KUB-T.3D.430.R.06-K32	V45 74302	**43**	32	39	228	129	168	WOEX 06T304	2.8	**43013**
KUB-T.3D.440.R.06-K32	V45 74402	**44**	32	39	231	132	171	WOEX 06T304	2.8	**44013**



Screwdriver

80 950 ...



Clamping screw

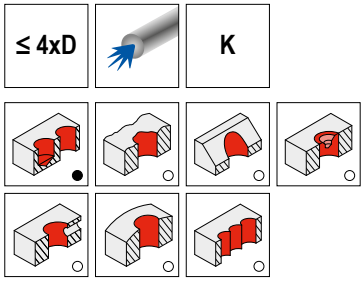
10 950 ...

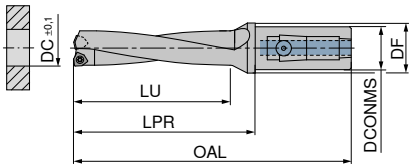
Spare parts DC				
14 - 19	T06 - IP	**123**	M2.0x4.3 - 06IP	**10000**
20 - 24	T06 - IP	**123**	M2.2x5.5 - 06IP	**10700**
25 - 36	T08 - IP	**125**	M2.5x7.2 - 08IP	**10500**
37 - 44	T10 - IP	**127**	M3.5x7.3 - 10IP	**10600**

Matching holders can be found in → **Chapter 16 Adapters and accessories**

KUB Trigon – Indexable insert drill

Scope of supply:
Indexable Insert Drill incl. clamping screws







10 894 ...

Designation	KOMET no.	DC mm	DCONMS mm	DF mm	OAL mm	LU mm	LPR mm	Insert	torque moment Nm	
KUB-T.4D.140.R.03-K20	V43 91404	**14**	20	30	130	56	80	WOEX 030204	0.62	**14011**
KUB-T.4D.150.R.03-K20	V43 91504	**15**	20	30	134	60	84	WOEX 030204	0.62	**15011**
KUB-T.4D.160.R.03-K20	V43 91602	**16**	20	30	138	64	88	WOEX 030204	0.62	**16011**
KUB-T.4D.170.R.03-K20	V43 91702	**17**	20	30	142	68	92	WOEX 030204	0.62	**17011**
KUB-T.4D.180.R.03-K20	V43 91802	**18**	20	30	146	72	96	WOEX 030204	0.62	**18011**
KUB-T.4D.190.R.03-K20	V43 91902	**19**	20	30	150	76	100	WOEX 030204	0.62	**19011**
KUB-T.4D.200.R.04-K25	V44 92002	**20**	25	30	160	80	104	WOEX 040304	1.01	**20012**
KUB-T.4D.210.R.04-K25	V44 92102	**21**	25	30	164	84	108	WOEX 040304	1.01	**21012**
KUB-T.4D.220.R.04-K25	V44 92202	**22**	25	30	168	88	112	WOEX 040304	1.01	**22012**
KUB-T.4D.230.R.04-K25	V44 92302	**23**	25	30	172	92	116	WOEX 040304	1.01	**23012**
KUB-T.4D.240.R.04-K25	V44 92402	**24**	25	30	176	96	120	WOEX 040304	1.01	**24012**
KUB-T.4D.250.R.05-K32	V45 92502	**25**	32	39	184	100	124	WOEX 05T304	1.28	**25013**
KUB-T.4D.260.R.05-K32	V45 92602	**26**	32	39	188	104	128	WOEX 05T304	1.28	**26013**
KUB-T.4D.270.R.05-K32	V45 92702	**27**	32	39	192	108	132	WOEX 05T304	1.28	**27013**
KUB-T.4D.280.R.05-K32	V45 92802	**28**	32	39	196	112	136	WOEX 05T304	1.28	**28013**
KUB-T.4D.290.R.05-K32	V45 92902	**29**	32	39	200	116	140	WOEX 05T304	1.28	**29013**
KUB-T.4D.300.R.05-K32	V45 93002	**30**	32	39	209	120	149	WOEX 05T304	1.28	**30013**
KUB-T.4D.310.R.05-K32	V45 93102	**31**	32	39	213	124	153	WOEX 05T304	1.28	**31013**
KUB-T.4D.320.R.05-K32	V45 93202	**32**	32	39	217	128	157	WOEX 05T304	1.28	**32013**
KUB-T.4D.330.R.05-K32	V45 93302	**33**	32	39	221	132	161	WOEX 05T304	1.28	**33013**
KUB-T.4D.340.R.05-K32	V45 93402	**34**	32	39	225	136	165	WOEX 05T304	1.28	**34013**
KUB-T.4D.350.R.05-K32	V45 93502	**35**	32	39	229	140	169	WOEX 05T304	1.28	**35013**



Screwdriver

80 950 ...



Clamping screw

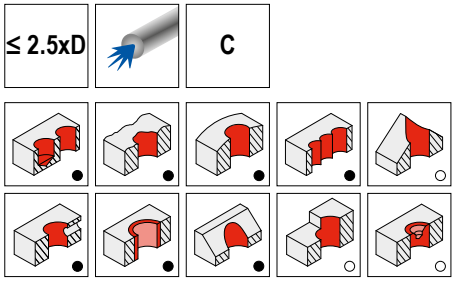
10 950 ...

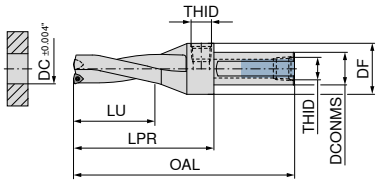
Spare parts DC				
14 - 19	T06 - IP	**123**	M2.0x4.3 - 06IP	**10000**
20 - 24	T06 - IP	**123**	M2.2x5.5 - 06IP	**10700**
25 - 35	T08 - IP	**125**	M2.5x7.2 - 08IP	**10500**

Matching holders can be found in → **Chapter 16 Adapters and accessories**

KUB Trigon – Indexable insert drill

Scope of supply:
Indexable Insert Drill incl. clamping screws







15 896 ...

Designation	KOMET no.	DC inch	DCONMS inch	DF inch	OAL inch	LU inch	LPR inch	THID	Insert	torque moment Nm	
KUB-T.2,5D.0562.R.03.C0750-EF	V57 41432	0.562	0.750	1.130	5.125	1.405	2.875	1/8" NPT	WOEX 030204	0.62	**14309**
KUB-T.2,5D.0593.R.03.C0750-EF	V57 41510	0.593	0.750	1.130	5.125	1.483	2.875	1/8" NPT	WOEX 030204	0.62	**15109**
KUB-T.2,5D.0625.R.03.C0750-EF	V57 41590	0.625	0.750	1.130	5.125	1.563	2.875	1/8" NPT	WOEX 030204	0.62	**15909**
KUB-T.2,5D.0687.R.03.C0750-E	V57 41750	0.687	0.750	1.130	5.375	1.718	3.125	1/8" NPT	WOEX 030204	0.62	**17509**
KUB-T.2,5D.0703.R.03.C0750-EF	V57 41790	0.703	0.750	1.130	5.375	1.758	3.125	1/8" NPT	WOEX 030204	0.62	**17909**
KUB-T.2,5D.0750.R.03.C0750-EF	V57 41910	0.750	0.750	1.130	5.375	1.875	3.125	1/8" NPT	WOEX 030204	0.62	**19109**



Screwdriver

80 950 ...



Clamping screw

10 950 ...

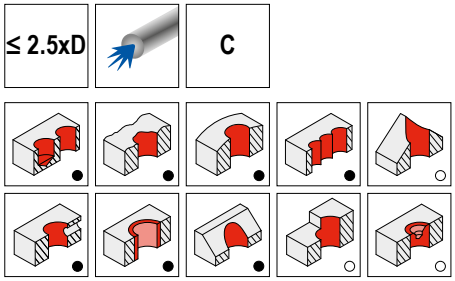
Spare parts

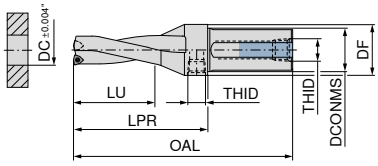
DC		
0.562 - 0.750	**123**	**10000**

Matching holders can be found in → **Chapter 16 Adapters and accessories**

KUB Trigon – Indexable insert drill

Scope of supply:
Indexable Insert Drill incl. clamping screws







15 896 ...

Designation	KOMET no.	DC inch	DCONMS inch	DF inch	OAL inch	LU inch	LPR inch	THID	Insert	torque moment Nm	
KUB-T.2,5D.0562.R.03.C1250-EF	V57 51434	0.562	1.250	1.575	6.125	1.405	2.875	1/8" NPT	WOEX 030204	0.62	14301
KUB-T.2,5D.0593.R.03.C1250-EF	V57 51512	0.593	1.250	1.575	6.125	1.483	2.875	1/8" NPT	WOEX 030204	0.62	15101
KUB-T.2,5D.0625.R.03.C1250-EF	V57 51592	0.625	1.250	1.575	6.125	1.563	2.875	1/8" NPT	WOEX 030204	0.62	15901
KUB-T.2,5D.0656.R.03.C1250-EF	V57 51672	0.656	1.250	1.575	6.375	1.718	3.125	1/8" NPT	WOEX 030204	0.62	16701
KUB-T.2,5D.0687.R.03.C1250-E	V57 51752	0.687	1.250	1.575	6.375	1.718	3.125	1/8" NPT	WOEX 030204	0.62	17501
KUB-T.2,5D.0703.R.03.C1250-EF	V57 51792	0.703	1.250	1.575	6.375	1.758	3.125	1/8" NPT	WOEX 030204	0.62	17901
KUB-T.2,5D.0750.R.03.C1250-EF	V57 51912	0.750	1.250	1.575	6.375	1.625	3.125	1/8" NPT	WOEX 030204	0.62	19101
KUB-T.2,5D.0765.R.03.C1250-EF	V57 51942	0.765	1.250	1.575	6.375	1.625	3.125	1/8" NPT	WOEX 030204	0.62	19401
KUB-T.2,5D.0781.R.03.C1250-EF	V57 51982	0.781	1.250	1.575	6.375	1.625	3.125	1/8" NPT	WOEX 030204	0.62	19801
KUB-T.2,5D.0812.R.04.C1250-EF	V57 52062	0.812	1.250	1.575	6.375	1.625	3.125	1/8" NPT	WOEX 040304	1.01	20601
KUB-T.2,5D.0828.R.04.C1250-E	V57 52102	0.828	1.250	1.575	6.875	2.000	3.625	1/8" NPT	WOEX 040304	1.01	21001
KUB-T.2,5D.0843.R.04.C1250-EF	V57 52142	0.843	1.250	1.575	6.875	2.000	3.625	1/8" NPT	WOEX 040304	1.01	21401
KUB-T.2,5D.0875.R.04.C1250-EF	V57 52222	0.875	1.250	1.575	6.875	2.000	3.625	1/8" NPT	WOEX 040304	1.01	22201
KUB-T.2,5D.0906.R.04.C1250-E	V57 52302	0.906	1.250	1.575	6.875	2.000	3.625	1/8" NPT	WOEX 040304	1.01	23001
KUB-T.2,5D.0937.R.04.C1250-EF	V57 52382	0.937	1.250	1.575	6.875	2.000	3.625	1/8" NPT	WOEX 040304	1.01	23801
KUB-T.2,5D.0985.R.05.C1250-E	V57 52502	0.985	1.250	1.575	6.875	2.000	3.625	1/8" NPT	WOEX 05T304	1.28	25001
KUB-T.2,5D.1000.R.05.C1250-EF	V57 52542	1.000	1.250	1.575	6.875	2.000	3.625	1/8" NPT	WOEX 05T304	1.28	25401
KUB-T.2,5D.1031.R.05.C1250-EF	V57 52622	1.031	1.250	1.575	7.562	2.750	4.312	1/8" NPT	WOEX 05T304	1.28	26201
KUB-T.2,5D.1062.R.05.C1250-E	V57 52702	1.062	1.250	1.575	7.562	2.750	4.312	1/8" NPT	WOEX 05T304	1.28	27001
KUB-T.2,5D.1109.R.05.C1250-EF	V57 52822	1.109	1.250	1.575	7.562	2.750	4.312	1/8" NPT	WOEX 05T304	1.28	28201
KUB-T.2,5D.1125.R.05.C1250-EF	V57 52862	1.125	1.250	1.575	7.562	2.750	4.312	1/8" NPT	WOEX 05T304	1.28	28601
KUB-T.2,5D.1156.R.05.C1250-EF	V57 52942	1.156	1.250	1.575	8.250	3.250	5.000	1/8" NPT	WOEX 05T304	1.28	29401
KUB-T.2,5D.1187.R.05.C1250-EF	V57 53022	1.187	1.250	1.575	8.250	3.250	5.000	1/8" NPT	WOEX 05T304	1.28	30101
KUB-T.2,5D.1218.R.05.C1250-EF	V57 53092	1.218	1.250	1.575	8.250	3.250	5.000	1/8" NPT	WOEX 05T304	1.28	30901
KUB-T.2,5D.1250.R.05.C1250-EF	V57 53182	1.250	1.250	1.575	8.250	3.250	5.000	1/8" NPT	WOEX 05T304	1.28	31801
KUB-T.2,5D.1281.R.05.C1250-E	V57 53252	1.281	1.250	1.575	8.250	3.250	5.000	1/8" NPT	WOEX 05T304	1.28	32501
KUB-T.2,5D.1312.R.05.C1250-EF	V57 53332	1.312	1.250	1.575	8.250	3.250	5.000	1/8" NPT	WOEX 05T304	1.28	33301
KUB-T.2,5D.1328.R.05.C1250-EF	V57 53372	1.328	1.250	1.575	8.250	3.250	5.000	1/8" NPT	WOEX 05T304	1.28	33701
KUB-T.2,5D.1375.R.05.C1250-EF	V57 53492	1.375	1.250	1.575	8.250	3.250	5.000	1/8" NPT	WOEX 05T304	1.28	34901
KUB-T.2,5D.1406.R.05.C1250-EF	V57 53572	1.406	1.250	1.575	8.250	3.250	5.000	1/8" NPT	WOEX 05T304	1.28	35701
KUB-T.2,5D.1437.R.05.C1250-E	V57 53652	1.437	1.250	1.575	8.250	3.250	5.000	1/8" NPT	WOEX 05T304	1.28	36501
KUB-T.2,5D.1469.R.06.C1250-EF	V57 53732	1.469	1.250	1.575	8.368	3.500	5.118	1/8" NPT	WOEX 06T304	2.8	37301
KUB-T.2,5D.1500.R.06.C1250-EF	V57 53812	1.500	1.250	1.575	8.368	3.500	5.118	1/8" NPT	WOEX 06T304	2.8	38101
KUB-T.2,5D.1531.R.06.C1250-EF	V57 53892	1.531	1.250	1.575	8.368	3.500	5.118	1/8" NPT	WOEX 06T304	2.8	38911
KUB-T.2,5D.1562.R.06.C1250-EF	V57 53972	1.562	1.250	1.575	8.368	3.500	5.118	1/8" NPT	WOEX 06T304	2.8	39701
KUB-T.2,5D.1625.R.06.C1250-EF	V57 54132	1.625	1.250	1.575	8.368	3.500	5.118	1/8" NPT	WOEX 06T304	2.8	41301
KUB-T.2,5D.1656.R.06.C1500-EF	V57 54212	1.656	1.500	1.970	10.709	4.000	5.709	1/4" NPT	WOEX 06T304	2.8	42102
KUB-T.2,5D.1687.R.06.C1500-EF	V57 54262	1.687	1.500	1.970	10.709	4.000	5.709	1/4" NPT	WOEX 06T304	2.8	42802
KUB-T.2,5D.1750.R.06.C1500-EF	V57 54452	1.750	1.500	1.970	10.709	4.000	5.709	1/4" NPT	WOEX 06T304	2.8	44502



Screwdriver

80 950 ...



Clamping screw

10 950 ...

Spare parts DC		
0.562 - 0.781	123	10000
0.812 - 0.937	123	10700
0.985 - 1.437	125	10500
1.469 - 1.750	127	10600

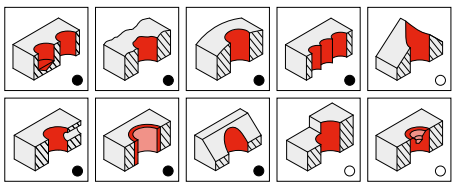
Matching holders can be found in → **Chapter 16 Adapters and accessories**

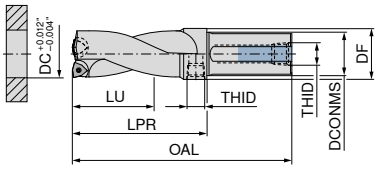
KUB Trigon – Indexable insert drill

Scope of supply:

with insert seat (10 897 ...) incl. fixing screw, cylindrical pin and clamping screw
with insert seat (10 898 ...) incl. fixing screw, cylindrical pin and clamping screw









15 896 ...

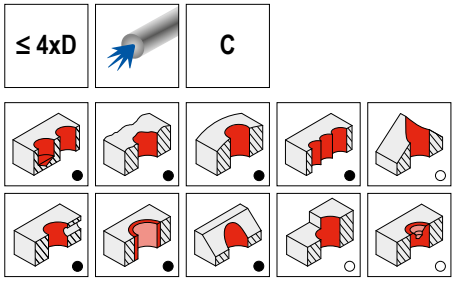
Designation	KOMET no.	DC inch	DCONMS inch	DF inch	OAL inch	LU inch	LPR inch	THID	Insert	torque moment Nm	
KUB-T.2,5D.1812.R.08.C1500-E	V57 34602	1.812	1.500	1.969	10.709	4.000	5.709	1/4" NPT	WOEX 080404	4.3	**46002**
KUB-T.2,5D.1875.R.08.C1500-EF	V57 34762	1.875	1.500	1.969	10.709	4.000	5.709	1/4" NPT	WOEX 080404	4.3	**47602**
KUB-T.2,5D.1937.R.08.C1500-EF	V57 34922	1.937	1.500	1.969	11.890	5.000	6.890	1/4" NPT	WOEX 080404	4.3	**49202**
KUB-T.2,5D.2000.R.08.C1500-EF	V57 35082	2.000	1.500	1.969	11.890	5.000	6.890	1/4" NPT	WOEX 080404	4.3	**50802**
KUB-T.2,5D.2125.R.08.C1500-E	V57 35402	2.125	1.500	2.067	11.890	5.000	6.890	1/4" NPT	WOEX 080404	4.3	**54002**
KUB-T.2,5D.2250.R.10.C2000-EF	V57 35722	2.250	2.000	2.362	11.890	5.000	6.890	1/4" NPT	WOEX 100504	4.3	**57204**
KUB-T.2,5D.2375.R.10.C2000-EF	V57 36032	2.375	2.000	2.362	11.890	5.000	6.890	1/4" NPT	WOEX 100504	4.3	**60304**
KUB-T.2,5D.2500.R.10.C2000-EF	V57 36352	2.500	2.000	2.492	11.890	5.000	6.890	1/4" NPT	WOEX 100504	4.3	**63504**
KUB-T.2,5D.2750.R.12.C2000-EF	V57 36992	2.750	2.000	2.657	13.268	6.000	8.267	1/4" NPT	WOEX 120608	6.25	**69904**
KUB-T.2,5D.3000.R.12.C2000-EF	V57 37622	3.000	2.000	2.933	13.268	6.000	8.267	1/4" NPT	WOEX 120608	6.25	**76204**
KUB-T.2,5D.3250.R.12.C2000-EF	V57 38262	3.250	2.000	3.130	13.268	6.000	8.267	1/4" NPT	WOEX 120608	6.25	**82604**

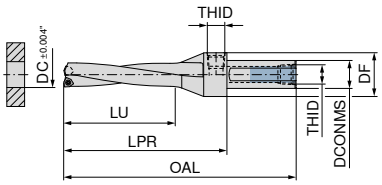
	 Cylindrical pin	 Insert seat, internal	 Insert seat, external	Screwdriver	 Clamping screw	 Fixing screw
	10 950 ...	**10 897 ...**	**10 898 ...**	**80 950 ...**	**10 950 ...**	**10 950 ...**
Spare parts DC						
1.812 - 2.125	**17200**	**14800**	**14800**	**120**	**12700**	**17000**
2.250 - 2.500	**17200**	**25300**	**25300**	**120**	**12700**	**17000**
2.750 - 3.250	**17300**	**36000**	**36000**	**121**	**17400**	**17100**

Matching holders can be found in → **Chapter 16 Adapters and accessories**

KUB Trigon – Indexable insert drill

Scope of supply:
Indexable Insert Drill incl. clamping screws







15 894 ...

Designation	KOMET no.	DC inch	DCONMS inch	DF inch	OAL inch	LU inch	LPR inch	THID	Insert	torque moment Nm	
KUB-T.4D.0562.R.03.C0750-EF	V57 61432	0.562	0.750	1.130	5.875	2.248	3.625	1/8" NPT	WOEX 030204	0.62	**14309**
KUB-T.4D.0593.R.03.C0750-EF	V57 61510	0.593	0.750	1.130	6.000	2.372	3.750	1/8" NPT	WOEX 030204	0.62	**15109**
KUB-T.4D.0625.R.03.C0750-EF	V57 61590	0.625	0.750	1.130	6.128	2.500	3.878	1/8" NPT	WOEX 030204	0.62	**15909**
KUB-T.4D.0687.R.03.C0750-E	V57 61750	0.687	0.750	1.130	6.376	2.748	4.126	1/8" NPT	WOEX 030204	0.62	**17509**
KUB-T.4D.0703.R.03.C0750-EF	V57 61790	0.703	0.750	1.130	6.439	2.812	4.189	1/8" NPT	WOEX 030204	0.62	**17909**
KUB-T.4D.0750.R.03.C0750-EF	V57 61910	0.750	0.750	1.130	6.628	3.000	4.378	1/8" NPT	WOEX 030204	0.62	**19109**



Screwdriver

80 950 ...



Clamping screw

10 950 ...

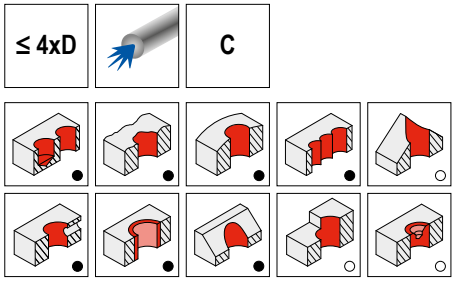
Spare parts DC		
0.562 - 0.750	**123**	**10000**

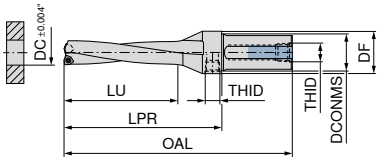
Matching holders can be found in → **Chapter 16 Adapters and accessories**

KUB Trigon – Indexable insert drill

Scope of supply:

Indexable Insert Drill incl. clamping screws







15 894 ...

Designation	KOMET no.	DC inch	DCONMS inch	DF inch	OAL inch	LU inch	LPR inch	THID	Insert	torque moment Nm	
KUB-T.4D.0562.R.03.C1250-EF	V57 71434	0.562	1.250	1.575	6.875	2.248	3.625	1/8" NPT	WOEX 030204	0.62	**14301**
KUB-T.4D.0593.R.03.C1250-EF	V57 71512	0.593	1.250	1.575	7.000	2.372	3.750	1/8" NPT	WOEX 030204	0.62	**15101**
KUB-T.4D.0625.R.03.C1250-EF	V57 71592	0.625	1.250	1.575	7.128	2.500	3.878	1/8" NPT	WOEX 030204	0.62	**15901**
KUB-T.4D.0656.R.03.C1250-EF	V57 71672	0.656	1.250	1.575	7.252	2.624	4.002	1/8" NPT	WOEX 030204	0.62	**16701**
KUB-T.4D.0687.R.03.C1250-E	V57 71752	0.687	1.250	1.575	7.376	2.748	4.126	1/8" NPT	WOEX 030204	0.62	**17501**
KUB-T.4D.0703.R.03.C1250-EF	V57 71792	0.703	1.250	1.575	7.439	2.812	4.189	1/8" NPT	WOEX 030204	0.62	**17901**
KUB-T.4D.0750.R.03.C1250-EF	V57 71912	0.750	1.250	1.575	7.628	3.000	4.378	1/8" NPT	WOEX 030204	0.62	**19101**
KUB-T.4D.0765.R.03.C1250-EF	V57 71942	0.765	1.250	1.575	7.688	3.060	4.438	1/8" NPT	WOEX 030204	0.62	**19401**
KUB-T.4D.0781.R.03.C1250-EF	V57 71982	0.781	1.250	1.575	7.752	3.124	4.502	1/8" NPT	WOEX 030204	0.62	**19801**
KUB-T.4D.0812.R.04.C1250-EF	V57 72062	0.812	1.250	1.575	7.876	3.248	4.626	1/8" NPT	WOEX 040304	1.01	**20601**
KUB-T.4D.0828.R.04.C1250-E	V57 72102	0.828	1.250	1.575	7.940	3.312	4.690	1/8" NPT	WOEX 040304	1.01	**21001**
KUB-T.4D.0843.R.04.C1250-EF	V57 72142	0.843	1.250	1.575	8.000	3.372	4.750	1/8" NPT	WOEX 040304	1.01	**21401**
KUB-T.4D.0875.R.04.C1250-EF	V57 72222	0.875	1.250	1.575	8.128	3.500	4.878	1/8" NPT	WOEX 040304	1.01	**22201**
KUB-T.4D.0906.R.04.C1250-E	V57 72302	0.906	1.250	1.575	8.252	3.624	5.002	1/8" NPT	WOEX 040304	1.01	**23001**
KUB-T.4D.0937.R.04.C1250-EF	V57 72382	0.937	1.250	1.575	8.376	3.748	5.126	1/8" NPT	WOEX 040304	1.01	**23801**
KUB-T.4D.0985.R.05.C1250-E	V57 72502	0.985	1.250	1.575	8.568	3.940	5.318	1/8" NPT	WOEX 05T304	1.28	**25001**
KUB-T.4D.1000.R.05.C1250-EF	V57 72542	1.000	1.250	1.575	8.628	4.000	5.378	1/8" NPT	WOEX 05T304	1.28	**25401**
KUB-T.4D.1031.R.05.C1250-EF	V57 72622	1.031	1.250	1.575	8.752	4.124	5.502	1/8" NPT	WOEX 05T304	1.28	**26201**
KUB-T.4D.1062.R.05.C1250-E	V57 72702	1.062	1.250	1.575	8.876	4.248	5.626	1/8" NPT	WOEX 05T304	1.28	**27001**
KUB-T.4D.1109.R.05.C1250-EF	V57 72822	1.109	1.250	1.575	9.064	4.436	5.814	1/8" NPT	WOEX 05T304	1.28	**28201**
KUB-T.4D.1125.R.05.C1250-EF	V57 72862	1.125	1.250	1.575	9.128	4.500	5.878	1/8" NPT	WOEX 05T304	1.28	**28601**
KUB-T.4D.1156.R.05.C1250-EF	V57 72942	1.156	1.250	1.575	9.252	4.624	6.002	1/8" NPT	WOEX 05T304	1.28	**29401**
KUB-T.4D.1187.R.05.C1250-EF	V57 73022	1.187	1.250	1.575	9.589	4.748	6.339	1/8" NPT	WOEX 05T304	1.28	**30101**
KUB-T.4D.1218.R.05.C1250-EF	V57 73092	1.218	1.250	1.575	9.713	4.872	6.463	1/8" NPT	WOEX 05T304	1.28	**30901**
KUB-T.4D.1250.R.05.C1250-EF	V57 73182	1.250	1.250	1.575	9.841	5.000	6.591	1/8" NPT	WOEX 05T304	1.28	**31801**
KUB-T.4D.1281.R.05.C1250-E	V57 73252	1.281	1.250	1.575	9.965	5.124	6.715	1/8" NPT	WOEX 05T304	1.28	**32501**
KUB-T.4D.1312.R.05.C1250-EF	V57 73332	1.312	1.250	1.575	10.089	5.248	6.839	1/8" NPT	WOEX 05T304	1.28	**33301**
KUB-T.4D.1328.R.05.C1250-EF	V57 73372	1.328	1.250	1.575	10.137	5.312	6.887	1/8" NPT	WOEX 05T304	1.28	**33701**
KUB-T.4D.1375.R.05.C1250-EF	V57 73492	1.375	1.250	1.575	10.341	5.500	7.091	1/8" NPT	WOEX 05T304	1.28	**34901**
KUB-T.4D.1406.R.05.C1250-EF	V57 73572	1.406	1.250	1.575	10.449	5.624	7.199	1/8" NPT	WOEX 05T304	1.28	**35701**
KUB-T.4D.1437.R.05.C1250-E	V57 73652	1.437	1.250	1.575	10.589	5.748	7.339	1/8" NPT	WOEX 05T304	1.28	**36501**
KUB-T.4D.1469.R.06.C1250-EF	V57 73732	1.469	1.250	1.575	11.095	5.876	7.845	1/8" NPT	WOEX 06T304	2.8	**37301**
KUB-T.4D.1500.R.06.C1250-EF	V57 73812	1.500	1.250	1.575	11.219	6.000	7.969	1/8" NPT	WOEX 06T304	2.8	**38101**
KUB-T.4D.1531.R.06.C1250-EF	V57 73892	1.531	1.250	1.575	11.343	6.124	8.093	1/8" NPT	WOEX 06T304	2.8	**38901**
KUB-T.4D.1562.R.06.C1250-EF	V57 73972	1.562	1.250	1.575	11.467	6.248	8.217	1/8" NPT	WOEX 06T304	2.8	**39701**
KUB-T.4D.1625.R.06.C1250-EF	V57 74132	1.625	1.250	1.575	11.719	6.500	8.469	1/8" NPT	WOEX 06T304	2.8	**41301**
KUB-T.4D.1656.R.06.C1500-EF	V57 74212	1.656	1.500	1.970	13.593	6.624	8.593	1/4" NPT	WOEX 06T304	2.8	**42102**
KUB-T.4D.1687.R.06.C1500-EF	V57 74292	1.687	1.500	1.970	13.717	6.748	8.717	1/4" NPT	WOEX 06T304	2.8	**42802**
KUB-T.4D.1750.R.06.C1500-EF	V57 74452	1.750	1.500	1.970	13.969	7.000	8.969	1/4" NPT	WOEX 06T304	2.8	**44502**



Screwdriver

80 950 ...



Clamping screw

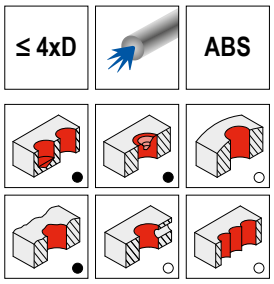
10 950 ...

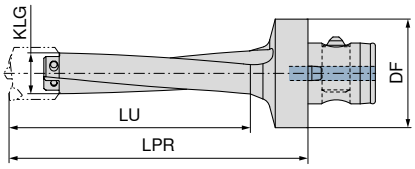
Spare parts DC		
0.562 - 0.781	**123**	**10000**
0.812 - 0.937	**123**	**10700**
0.985 - 1.437	**125**	**10500**
1.469 - 1.750	**127**	**10600**

Matching holders can be found in → **Chapter 16 Adapters and accessories**

KUB Centron – basic element

▲ KLG = Coupling Size

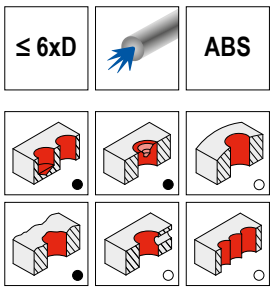


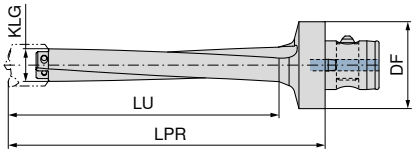




10 864 ...

Designation	KOMET no.	DF inch	LU inch	LPR inch	KLG	
KUB-C.GH.4D.190-ABS50	V47 20201	1.969	4.449	5.709	19	19095
KUB-C.GH.4D.250-ABS50	V47 20261	1.969	5.118	6.299	25	25095
KUB-C.GH.4D.320-ABS50	V47 20331	1.969	6.299	7.677	32	32095
KUB-C.GH.4D.385-ABS63	V47 20401	2.480	7.283	9.252	38.5	38596
KUB-C.GH.4D.445-ABS80	V47 20461	3.150	8.465	11.024	44.5	44598
KUB-C.GH.4D.535-ABS80	V47 20551	3.150	10.236	12.795	53.5	53598
KUB-C.GH.4D.635-ABS80	V47 20651	3.150	11.614	14.764	63.5	63598
KUB-C.GH.4D.705-ABS100	V47 20721	3.937	12.795	15.945	70.5	70591

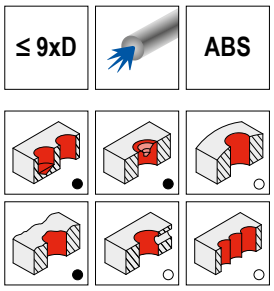


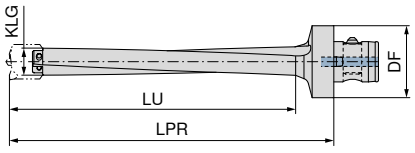




10 866 ...

Designation	KOMET no.	DF inch	LU inch	LPR inch	KLG	
KUB-C.GH.6D.190-ABS50	V47 40201	1.969	5.906	7.283	19	19095
KUB-C.GH.6D.250-ABS50	V47 40261	1.969	6.890	8.268	25	25095
KUB-C.GH.6D.320-ABS50	V47 40331	1.969	8.465	10.039	32	32095
KUB-C.GH.6D.385-ABS63	V47 40401	2.480	10.236	12.205	38.5	38596
KUB-C.GH.6D.445-ABS80	V47 40461	3.150	12.205	14.764	44.5	44598
KUB-C.GH.6D.535-ABS80	V47 40551	3.150	14.567	17.126	53.5	53598
KUB-C.GH.6D.635-ABS80	V47 40651	3.150	16.535	19.685	63.5	63598
KUB-C.GH.6D.705-ABS100	V47 40721	3.937	18.110	21.260	70.5	70591







10 869 ...

Designation	KOMET no.	DF inch	LU inch	LPR inch	KLG	
KUB-C.GH.9D.190-ABS50	V47 60201	1.969	7.874	9.252	19	19095
KUB-C.GH.9D.250-ABS50	V47 60261	1.969	9.055	10.236	25	25095
KUB-C.GH.9D.320-ABS50	V47 60331	1.969	11.417	12.992	32	32095
KUB-C.GH.9D.385-ABS63	V47 60401	2.480	13.386	15.354	38.5	38596
KUB-C.GH.9D.445-ABS80	V47 60461	3.150	16.339	18.898	44.5	44598
KUB-C.GH.9D.535-ABS80	V47 60551	3.150	19.488	22.047	53.5	53598
KUB-C.GH.9D.635-ABS80	V47 60651	3.150	22.047	25.197	63.5	63598
KUB-C.GH.9D.705-ABS100	V47 60721	3.937	24.016	27.165	70.5	70591

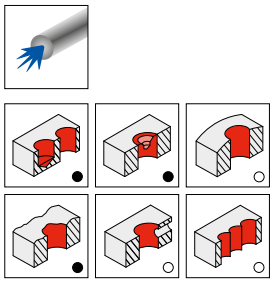
▲ For correct assembly, please observe the operating instructions provided.
▲ Matching holders can be found in → **Chapter 16 Adapters and accessories**.

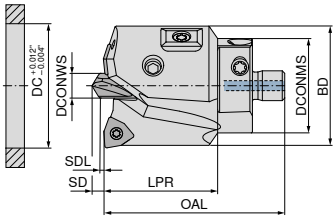
KUB Centron – drill head Ø 0.812–2.500 Inch

▲ The pre-assembled drill head is ready to use
▲ The center drill height must be set to the SD dimension
▲ Tightening torque refers to the clamping screw of the indexable inserts
▲ KLG = Coupling size

Scope of supply:

▲ Drill head incl. screws, guide pads and shim set
▲ Order center drill and indexable inserts separately







15 860 ...

Designation	KOMET no.	DC inch	OAL inch	LPR inch	SD inch	BD inch	SDL inch	DCONMS inch	DCONWS inch	KLG	torque moment Nm	Insert	
KUB-C.BK.0812.R.03.19-F	V46 52060	0.812	1.440	0.910	0.089	0.768	0.039	0.748	0.197	19	0.62	WOEX 030204	**20600**
KUB-C.BK.0875.R.03.19-F	V46 52220	0.875	1.440	0.910	0.089	0.835	0.039	0.748	0.197	19	0.62	WOEX 030204	**22200**
KUB-C.BK.1000.R.03.19-F	V46 52540	1.000	1.440	0.910	0.089	0.961	0.039	0.748	0.197	19	0.62	WOEX 030204	**25400**
KUB-C.BK.1125.R.04.25-F	V46 52860	1.125	1.500	0.910	0.104	1.083	0.043	0.984	0.236	25	1.01	WOEX 040304	**28600**
KUB-C.BK.1250.R.04.25-F	V46 53180	1.250	1.500	0.910	0.104	1.211	0.043	0.984	0.236	25	1.01	WOEX 040304	**31800**
KUB-C.BK.1375.R.05.32-F	V46 53490	1.375	1.540	0.910	0.104	1.335	0.043	1.260	0.236	32	1.28	WOEX 05T304	**34900**
KUB-C.BK.1500.R.05.32-F	V46 53810	1.500	1.540	0.910	0.104	1.461	0.043	1.260	0.236	32	1.28	WOEX 05T304	**38100**
KUB-C.BK.1625.R.05.38,5-F	V46 54130	1.625	1.700	0.980	0.133	1.567	0.049	1.516	0.315	38.5	1.28	WOEX 05T304	**41300**
KUB-C.BK.1750.R.05.38,5-F	V46 54450	1.750	1.700	0.980	0.133	1.689	0.049	1.516	0.315	38.5	1.28	WOEX 05T304	**44500**
KUB-C.BK.1875.R.06.44,5-F	V46 54760	1.875	1.850	0.980	0.152	1.815	0.049	1.752	0.394	44.5	2.8	WOEX 06T304	**47600**
KUB-C.BK.2000.R.06.44,5-F	V46 55080	2.000	1.850	0.980	0.152	1.941	0.049	1.752	0.394	44.5	2.8	WOEX 06T304	**50800**
KUB-C.BK.2250.R.08.53,5-F	V46 55720	2.250	2.050	1.180	0.152	2.193	0.049	2.106	0.394	53.5	6.25	WOEX 080404	**57200**
KUB-C.BK.2375.R.08.53,5-F	V46 56030	2.375	2.050	1.180	0.152	2.315	0.049	2.106	0.394	53.5	6.25	WOEX 080404	**60300**
KUB-C.BK.2500.R.08.53,5-F	V46 56350	2.500	2.050	1.180	0.150	2.441	0.049	2.106	0.394	53.5	6.25	WOEX 080404	**63500**


Guide pad clamping screw


Indexable insert clamping screw


Guide pad


Shim set

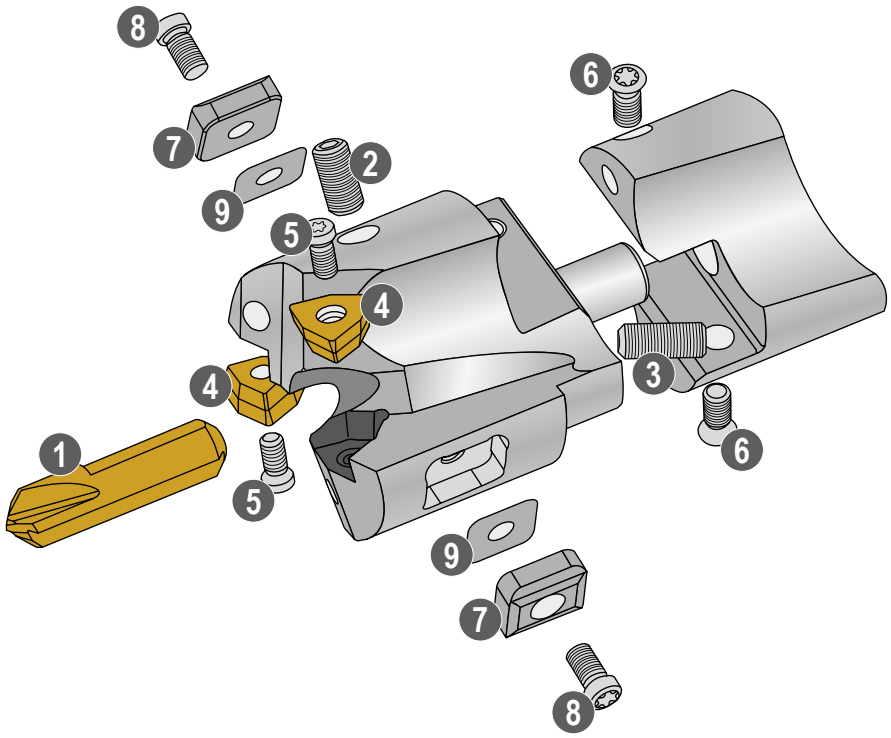
		10 950 ...			**10 950 ...**	**10 950 ...**	**10 950 ...**
Spare parts DC							
0.812 - 1.000	M2.5x4.2 - 8IP - 1.28Nm	**11900**	M2.0x4.3 - 06IP	**10000**	**14600**	**15200**
1.125 - 1.250	M2.5x4.5 - 8IP - 1.28Nm	**11700**	M2.2x5.5 - 06IP	**10700**	**14700**	**15200**
1.375 - 1.750	M2.5x4.5 - 8IP - 1.28Nm	**11700**	M2.5x7.2 - 08IP	**10500**	**14800**	**15200**
1.875 - 2.000	M3.5x5.0 - 8IP - 2.25Nm	**11800**	M3.5x7.3 - 10IP	**10600**	**15000**	**15300**
2.250 - 2.500	M3.5x5.0 - 8IP - 2.25Nm	**11800**	M4.5x9 - 15IP	**12700**	**15100**	**15300**


Basic element clamping screw


Center drill clamping screw

		10 950 ...			**10 950 ...**
Spare parts DC					
0.812 - 1.000	M2.5x6.4 - 08IP - 1.28Nm	**12400**	M4x6 - SW2 - 1.5Nm		**12800**
1.125 - 1.250	M3x7.4 - 08IP - 2.25Nm	**12500**	M5x10 - SW2.5 - 2.5Nm		**13000**
1.375 - 1.750	M4x8.9 - 15IP - 4.3Nm	**12000**	M5x12 - SW2.5 - 2.5Nm		**13100**
1.875 - 2.000	M5x11.5 - 20IP - 6.25Nm	**12100**	M8x16 - SW4 - 8Nm		**13300**
2.250 - 2.500	M5.5x14 - 20IP - 6.25Nm	**12200**	M8x16 - SW4 - 8Nm		**13300**

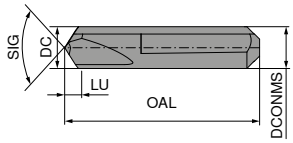
Exploded drawing of the drill head Ø 0.812–2.500 inch



1 Center drill
2 Clamping screw for center drill
3 Adjusting screw for center drill
4 Indexable Insert
5 Clamping screw for indexable insert
6 Clamping screw for basic element
7 Guide pad
8 Clamping screw for guide pad
9 Shim set for aligning the guide pads

For correct assembly, please observe the operating instructions provided.

KUB Centron – center drill



					ZP	ZP	ZP
					TiAlN/TiN	TiN	TiAlN
							
					SIG 120° Solid carbide	SIG 120° HSS	SIG 120° HSS
					10 863 ...	**10 862 ...**	**10 862 ...**
DC inch	KOMET no.	OAL inch	LU inch	DCONMS inch			
0.197	V95 10012.0089	0.906	0.089	0.197		**00500**	
0.197	V95 10012.0090	0.906	0.089	0.197			**10500**
0.197	V95 10310.8450	0.906	0.089	0.197	**20500**		
0.236	V95 10022.0089	0.906	0.104	0.236		**00600**	
0.236	V95 10022.0090	0.906	0.104	0.236			**10600**
0.236	V95 10320.8450	0.906	0.104	0.236	**20600**		
0.315	V95 10032.0089	1.063	0.133	0.315		**00800**	
0.315	V95 10032.0090	1.063	0.133	0.315			**10800**
0.315	V95 10330.8450	1.063	0.133	0.315	**20800**		
0.394	V95 10042.0089	1.102	0.152	0.394		**01000**	
0.394	V95 10042.0090	1.102	0.152	0.394			**11000**
0.394	V95 10340.8450	1.102	0.152	0.394	**21000**		
0.472	V95 10050.0089	1.213	0.184	0.472		**01200**	
0.472	V95 10050.0090	1.213	0.184	0.472			**11200**
P					●	●	
M					●		●
K					●		●
N					●	●	
S					○		●
H							
O					○	○	

→ v_c Page 90+91

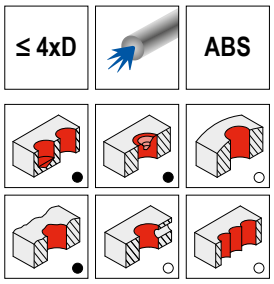
The cutting data of the KUB Centron depends on the center drill and not on the indexable inserts. Please select the cutting data of the center drill.

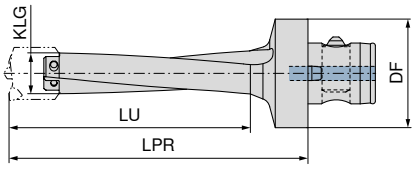
For correct assembly, please observe the operating instructions provided.

Article No. 10 863 ... is only suitable up to drilling depth 6xD.

KUB Centron – basic element

▲ KLG = Coupling Size

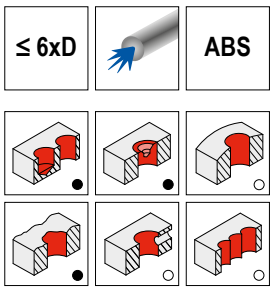


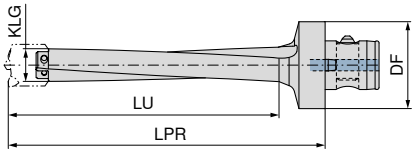




10 864 ...

Designation	KOMET no.	DF mm	LU mm	LPR mm	KLG	
KUB-C.GH.4D.190-ABS50	V47 20201	50	113	145	19	19095
KUB-C.GH.4D.250-ABS50	V47 20261	50	130	160	25	25095
KUB-C.GH.4D.320-ABS50	V47 20331	50	160	195	32	32095
KUB-C.GH.4D.385-ABS63	V47 20401	63	185	235	38.5	38596
KUB-C.GH.4D.445-ABS80	V47 20461	80	215	280	44.5	44598
KUB-C.GH.4D.535-ABS80	V47 20551	80	260	325	53.5	53598
KUB-C.GH.4D.635-ABS80	V47 20651	80	295	375	63.5	63598
KUB-C.GH.4D.705-ABS100	V47 20721	100	325	405	70.5	70591

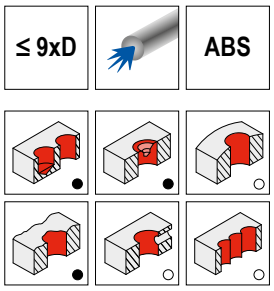


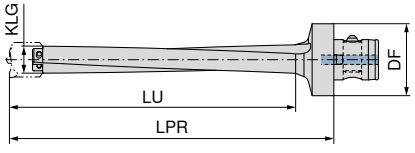




10 866 ...

Designation	KOMET no.	DF mm	LU mm	LPR mm	KLG	
KUB-C.GH.6D.190-ABS50	V47 40201	50	150	185	19	19095
KUB-C.GH.6D.250-ABS50	V47 40261	50	175	210	25	25095
KUB-C.GH.6D.320-ABS50	V47 40331	50	215	255	32	32095
KUB-C.GH.6D.385-ABS63	V47 40401	63	260	310	38.5	38596
KUB-C.GH.6D.445-ABS80	V47 40461	80	310	375	44.5	44598
KUB-C.GH.6D.535-ABS80	V47 40551	80	370	435	53.5	53598
KUB-C.GH.6D.635-ABS80	V47 40651	80	420	500	63.5	63598
KUB-C.GH.6D.705-ABS100	V47 40721	100	460	540	70.5	70591







10 869 ...

Designation	KOMET no.	DF mm	LU mm	LPR mm	KLG	
KUB-C.GH.9D.190-ABS50	V47 60201	50	200	235	19	19095
KUB-C.GH.9D.250-ABS50	V47 60261	50	230	260	25	25095
KUB-C.GH.9D.320-ABS50	V47 60331	50	290	330	32	32095
KUB-C.GH.9D.385-ABS63	V47 60401	63	340	390	38.5	38596
KUB-C.GH.9D.445-ABS80	V47 60461	80	415	480	44.5	44598
KUB-C.GH.9D.535-ABS80	V47 60551	80	495	560	53.5	53598
KUB-C.GH.9D.635-ABS80	V47 60651	80	560	640	63.5	63598
KUB-C.GH.9D.705-ABS100	V47 60721	100	610	690	70.5	70591

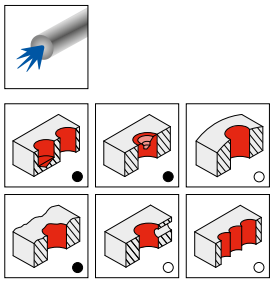
▲ For correct assembly, please observe the operating instructions provided.
▲ Matching holders can be found in → **Chapter 16 Adapters and accessories**.

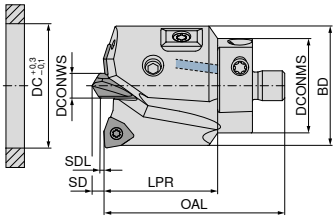
KUB Centron – drill head Ø 20–64 mm

- ▲ The pre-assembled drill head is ready to use
- ▲ The center drill height must be set to the SD dimension
- ▲ Tightening torque refers to the clamping screws of the indexable inserts
- ▲ KLG = Coupling size

Scope of supply:

- ▲ Drill head incl. screws, guide pads and shim set
- ▲ Order center drill and indexable inserts separately







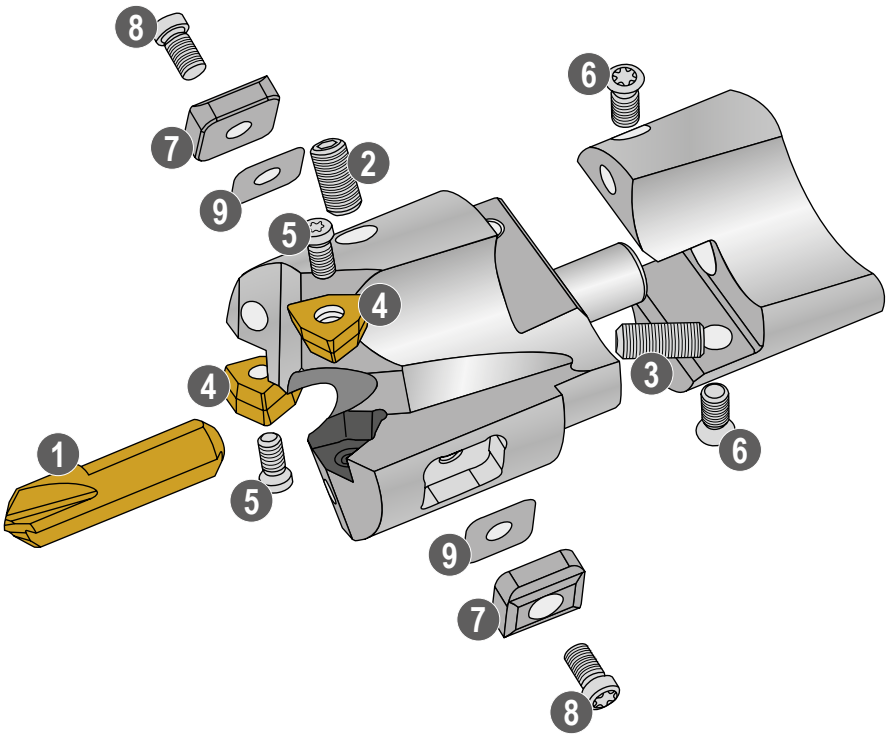
10 860 ...

Designation	KOMET no.	DC mm	OAL mm	LPR mm	SD mm	BD mm	SDL mm	DCONMS mm	DCONWS mm	KLG	Insert	torque moment Nm	
KUB-C.BK.200.R.03-19	V46 50201	**20**	36.5	23	2.25	19.0	1.00	19.0	5	**19**	WOEX 030204	0.62	**20000**
KUB-C.BK.210.R.03-19	V46 50211	**21**	36.5	23	2.25	20.0	1.00	19.0	5	**19**	WOEX 030204	0.62	**21000**
KUB-C.BK.220.R.03-19	V46 50221	**22**	36.5	23	2.25	21.0	1.00	19.0	5	**19**	WOEX 030204	0.62	**22000**
KUB-C.BK.230.R.03-19	V46 50231	**23**	36.5	23	2.25	22.0	1.00	19.0	5	**19**	WOEX 030204	0.62	**23000**
KUB-C.BK.240.R.03-19	V46 50241	**24**	36.5	23	2.25	23.0	1.00	19.0	5	**19**	WOEX 030204	0.62	**24000**
KUB-C.BK.250.R.03-19	V46 50251	**25**	36.5	23	2.25	24.0	1.00	19.0	5	**19**	WOEX 030204	0.62	**25000**
KUB-C.BK.260.R.04-25	V46 50260	**26**	38.0	23	2.65	25.0	1.10	25.0	6	**25**	WOEX 040304	1.01	**26000**
KUB-C.BK.270.R.04-25	V46 50270	**27**	38.0	23	2.65	26.0	1.10	25.0	6	**25**	WOEX 040304	1.01	**27000**
KUB-C.BK.280.R.04-25	V46 50280	**28**	38.0	23	2.65	27.0	1.10	25.0	6	**25**	WOEX 040304	1.01	**28000**
KUB-C.BK.290.R.04-25	V46 50290	**29**	38.0	23	2.65	28.0	1.10	25.0	6	**25**	WOEX 040304	1.01	**29000**
KUB-C.BK.300.R.04-25	V46 50300	**30**	38.0	23	2.65	29.0	1.10	25.0	6	**25**	WOEX 040304	1.01	**30000**
KUB-C.BK.310.R.04-25	V46 50310	**31**	38.0	23	2.65	30.0	1.10	25.0	6	**25**	WOEX 040304	1.01	**31000**
KUB-C.BK.320.R.04-25	V46 50320	**32**	38.0	23	2.65	31.0	1.10	25.0	6	**25**	WOEX 040304	1.01	**32000**
KUB-C.BK.330.R.05-32	V46 50330	**33**	39.2	23	2.65	32.0	1.10	32.0	6	**32**	WOEX 05T304	1.28	**33000**
KUB-C.BK.340.R.05-32	V46 50340	**34**	39.2	23	2.65	33.0	1.10	32.0	6	**32**	WOEX 05T304	1.28	**34000**
KUB-C.BK.350.R.05-32	V46 50350	**35**	39.2	23	2.65	34.0	1.10	32.0	6	**32**	WOEX 05T304	1.28	**35000**
KUB-C.BK.360.R.05-32	V46 50360	**36**	39.2	23	2.65	35.0	1.10	32.0	6	**32**	WOEX 05T304	1.28	**36000**
KUB-C.BK.370.R.05-32	V46 50370	**37**	39.2	23	2.65	36.0	1.10	32.0	6	**32**	WOEX 05T304	1.28	**37000**
KUB-C.BK.380.R.05-32	V46 50380	**38**	39.2	23	2.65	37.0	1.10	32.0	6	**32**	WOEX 05T304	1.28	**38000**
KUB-C.BK.390.R.05-32	V46 50390	**39**	39.2	23	2.65	38.0	1.10	32.0	6	**32**	WOEX 05T304	1.28	**39000**
KUB-C.BK.400.R.05-38,5	V46 50400	**40**	43.1	25	3.38	38.5	1.25	38.5	8	**38,5**	WOEX 05T304	1.28	**40000**
KUB-C.BK.410.R.05-38,5	V46 50410	**41**	43.1	25	3.38	39.5	1.25	38.5	8	**38,5**	WOEX 05T304	1.28	**41000**
KUB-C.BK.420.R.05-38,5	V46 50420	**42**	43.1	25	3.38	40.5	1.09	38.5	8	**38,5**	WOEX 05T304	1.28	**42000**
KUB-C.BK.430.R.05-38,5	V46 50430	**43**	43.1	25	3.38	41.5	1.09	38.5	8	**38,5**	WOEX 05T304	1.28	**43000**
KUB-C.BK.440.R.05-38,5	V46 50440	**44**	43.1	25	3.38	42.5	1.25	38.5	8	**38,5**	WOEX 05T304	1.28	**44000**
KUB-C.BK.450.R.05-38,5	V46 50450	**45**	43.1	25	3.38	43.5	1.25	38.5	8	**38,5**	WOEX 05T304	1.28	**45000**
KUB-C.BK.460.R.06-44,5	V46 50460	**46**	47.0	25	3.86	44.5	1.25	44.5	10	**44,5**	WOEX 06T304	2.8	**46000**
KUB-C.BK.470.R.06-44,5	V46 50470	**47**	47.0	25	3.86	45.5	1.25	44.5	10	**44,5**	WOEX 06T304	2.8	**47000**
KUB-C.BK.480.R.06-44,5	V46 50480	**48**	47.0	25	3.86	46.5	1.25	44.5	10	**44,5**	WOEX 06T304	2.8	**48000**
KUB-C.BK.490.R.06-44,5	V46 50490	**49**	47.0	25	3.86	47.5	1.25	44.5	10	**44,5**	WOEX 06T304	2.8	**49000**
KUB-C.BK.500.R.06-44,5	V46 50500	**50**	47.0	25	3.86	48.5	1.25	44.5	10	**44,5**	WOEX 06T304	2.8	**50000**
KUB-C.BK.510.R.06-44,5	V46 50510	**51**	47.0	25	3.86	49.5	1.25	44.5	10	**44,5**	WOEX 06T304	2.8	**51000**
KUB-C.BK.520.R.06-44,5	V46 50520	**52**	47.0	25	3.86	50.5	1.25	44.5	10	**44,5**	WOEX 06T304	2.8	**52000**
KUB-C.BK.530.R.06-44,5	V46 50530	**53**	47.0	25	3.86	51.5	1.25	44.5	10	**44,5**	WOEX 06T304	2.8	**53000**
KUB-C.BK.540.R.06-44,5	V46 50540	**54**	47.0	25	3.86	52.5	1.25	44.5	10	**44,5**	WOEX 06T304	2.8	**54000**
KUB-C.BK.550.R.08-53,5	V46 50550	**55**	52.0	30	3.86	53.5	1.25	53.5	10	**53,5**	WOEX 080404	6.25	**55000**
KUB-C.BK.560.R.08-53,5	V46 50560	**56**	52.0	30	3.86	54.5	1.25	53.5	10	**53,5**	WOEX 080404	6.25	**56000**
KUB-C.BK.570.R.08-53,5	V46 50570	**57**	52.0	30	3.86	55.5	1.25	53.5	10	**53,5**	WOEX 080404	6.25	**57000**
KUB-C.BK.580.R.08-53,5	V46 50580	**58**	52.0	30	3.86	56.5	1.25	53.5	10	**53,5**	WOEX 080404	6.25	**58000**
KUB-C.BK.590.R.08-53,5	V46 50590	**59**	52.0	30	3.86	57.5	1.25	53.5	10	**53,5**	WOEX 080404	6.25	**59000**
KUB-C.BK.600.R.08-53,5	V46 50600	**60**	52.0	30	3.86	58.5	1.25	53.5	10	**53,5**	WOEX 080404	6.25	**60000**
KUB-C.BK.610.R.08-53,5	V46 50610	**61**	52.0	30	3.86	59.5	1.25	53.5	10	**53,5**	WOEX 080404	6.25	**61000**
KUB-C.BK.620.R.08-53,5	V46 50620	**62**	52.0	30	3.86	60.5	1.25	53.5	10	**53,5**	WOEX 080404	6.25	**62000**
KUB-C.BK.630.R.08-53,5	V46 50630	**63**	52.0	30	3.86	61.5	1.25	53.5	10	**53,5**	WOEX 080404	6.25	**63000**
KUB-C.BK.640.R.08-53,5	V46 50640	**64**	52.0	30	3.86	62.5	1.25	53.5	10	**53,5**	WOEX 080404	6.25	**64000**

		Guide pad clamping screw		Indexable insert clamping screw		Guide pad		Shim set	
		10 950 ...		10 950 ...		10 950 ...		10 950 ...	
Spare parts DC									
20	M2.5x4.2 - 8IP - 1.28Nm	**11900**		M2.0x4.3 - 06IP	**10000**		**14600**		**15200**
21 - 22	M2.5x4.2 - 8IP - 1.28Nm	**11900**		M2.0x4.3 - 06IP	**10000**		**14600**		**15200**
23 - 25	M2.5x4.5 - 8IP - 1.28Nm	**11700**		M2.0x4.3 - 06IP	**10000**		**14700**		**15200**
26 - 29	M2.5x4.5 - 8IP - 1.28Nm	**11700**		M2.2x5.5 - 06IP	**10700**		**14700**		**15200**
30 - 32	M2.5x4.5 - 8IP - 1.28Nm	**11700**		M2.2x5.5 - 06IP	**10700**		**14800**		**15200**
33 - 36	M2.5x4.5 - 8IP - 1.28Nm	**11700**		M2.5x7.2 - 08IP	**10500**		**14800**		**15200**
37 - 39	M2.5x4.5 - 8IP - 1.28Nm	**11700**		M2.5x7.2 - 08IP	**10500**		**14900**		**15200**
40 - 45	M2.5x4.5 - 8IP - 1.28Nm	**11700**		M2.5x7.2 - 08IP	**10500**		**14900**		**15200**
46 - 54	M3.5x5.0 - 8IP - 2.25Nm	**11800**		M3.5x7.3 - 10IP	**10600**		**15000**		**15300**
55 - 64	M3.5x5.0 - 8IP - 2.25Nm	**11800**		M4.5x9 - 15IP	**12700**		**15100**		**15300**

		Basic element clamping screw			Center drill clamping screw	
		10 950 ...			10 950 ...	
Spare parts DC						
20	M2.5x6.4 - 08IP - 1.28Nm	**12400**		M4x6 - SW2 - 1.5Nm		**12800**
21 - 22	M2.5x6.4 - 08IP - 1.28Nm	**12400**		M4x8 - SW2 - 1.5Nm		**12900**
23 - 25	M2.5x6.4 - 08IP - 1.28Nm	**12400**		M4x8 - SW2 - 1.5Nm		**12900**
26 - 29	M3x7.4 - 08IP - 2.25Nm	**12500**		M5x10 - SW2.5 - 2.5Nm		**13000**
30 - 32	M3x7.4 - 08IP - 2.25Nm	**12500**		M5x10 - SW2.5 - 2.5Nm		**13000**
33 - 36	M4x8.9 - 15IP - 4.3Nm	**12000**		M5x12 - SW2.5 - 2.5Nm		**13100**
37 - 39	M4x8.9 - 15IP - 4.3Nm	**12000**		M5x12 - SW2.5 - 2.5Nm		**13100**
40 - 45	M4.5x10.5 - 20IP - 6.25Nm	**12600**		M6x12 - SW3 - 5Nm		**13200**
46 - 54	M5x11.5 - 20IP - 6.25Nm	**12100**		M8x16 - SW4 - 8Nm		**13300**
55 - 64	M5.5x14 - 20IP - 6.25Nm	**12200**		M8x16 - SW4 - 8Nm		**13300**

Exploded drawing of the drill head Ø 20–64 mm



1. Center drill
2. Clamping screw for center drill
3. Adjusting screw for center drill
4. Indexable Insert
5. Clamping screw for indexable insert
6. Clamping screw for basic element
7. Guide pad
8. Clamping screw for guide pad
9. Shim set for aligning the guide pads

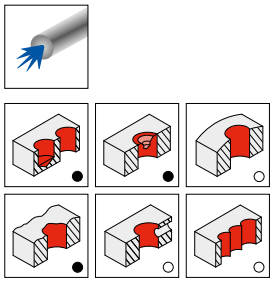
For correct assembly, please observe the operating instructions provided.

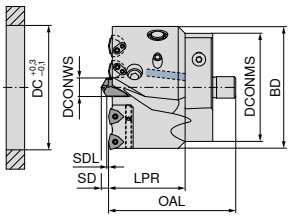
KUB Centron – drill head Ø 65–81 mm

▲ The pre-assembled drill head is ready to use
▲ The center drill height must be set to the SD dimension
▲ Tightening torque refers to the clamping screws of the indexable inserts
▲ Adjustable diameter of outer indexable insert seat
▲ KLG = Coupling size

Scope of supply:

Drill head incl. screws, indexable insert seats, carbide bolt, key, grub screw and copper disc
Order center drill and indexable inserts separately







10 860 ...

Designation	KOMET no.	DC	OAL	LPR	SD	BD	SDL	DCONMS	DCONWS	KLG	Insert	torque moment	
		mm	mm	mm	mm	mm	mm	mm	mm			Nm	
KUB-C.BK.650.R.05-63,5	V46 50650	**65**	63.0	35	4.67	63.5	1.45	63.5	12	**63,5**	WOEX 05T304	1.28	**65000**
KUB-C.BK.660.R.05-63,5	V46 50660	**66**	63.0	35	4.67	64.5	1.45	63.5	12	**63,5**	WOEX 05T304	1.28	**66000**
KUB-C.BK.670.R.05-63,5	V46 50670	**67**	63.0	35	4.67	65.5	1.45	63.5	12	**63,5**	WOEX 05T304	1.28	**67000**
KUB-C.BK.680.R.05-63,5	V46 50680	**68**	63.0	35	4.67	66.5	1.45	63.5	12	**63,5**	WOEX 05T304	1.28	**68000**
KUB-C.BK.690.R.05-63,5	V46 50690	**69**	63.0	35	4.67	67.5	1.45	63.5	12	**63,5**	WOEX 05T304	1.28	**69000**
KUB-C.BK.700.R.05-63,5	V46 50700	**70**	63.0	35	4.67	68.5	1.45	63.5	12	**63,5**	WOEX 05T304	1.28	**70000**
KUB-C.BK.710.R.05-63,5	V46 50710	**71**	63.0	35	4.67	69.5	1.45	63.5	12	**63,5**	WOEX 05T304	1.28	**71000**
KUB-C.BK.720.R.05-70,5	V46 50720	**72**	80.5	50	4.67	70.5	1.45	70.5	12	**70,5**	WOEX 05T304	1.28	**72000**
KUB-C.BK.730.R.05-70,5	V46 50730	**73**	80.5	50	4.67	71.5	1.45	70.5	12	**70,5**	WOEX 05T304	1.28	**73000**
KUB-C.BK.740.R.05-70,5	V46 50740	**74**	80.5	50	4.67	72.5	1.45	70.5	12	**70,5**	WOEX 05T304	1.28	**74000**
KUB-C.BK.750.R.05-70,5	V46 50750	**75**	80.5	50	4.67	73.5	1.45	70.5	12	**70,5**	WOEX 05T304	1.28	**75000**
KUB-C.BK.760.R.05-70,5	V46 50760	**76**	80.5	50	4.67	74.5	1.45	70.5	12	**70,5**	WOEX 05T304	1.28	**76000**
KUB-C.BK.770.R.05-70,5	V46 50770	**77**	80.5	50	4.67	75.5	1.45	70.5	12	**70,5**	WOEX 05T304	1.28	**77000**
KUB-C.BK.780.R.05-70,5	V46 50780	**78**	80.5	50	4.67	76.5	1.45	70.5	12	**70,5**	WOEX 05T304	1.28	**78000**
KUB-C.BK.790.R.05-70,5	V46 50790	**79**	80.5	50	4.67	77.5	1.45	70.5	12	**70,5**	WOEX 05T304	1.28	**79000**
KUB-C.BK.800.R.05-70,5	V46 50800	**80**	80.5	50	4.67	78.5	1.45	70.5	12	**70,5**	WOEX 05T304	1.28	**80000**
KUB-C.BK.810.R.05-70,5	V46 50810	**81**	80.5	50	4.67	79.5	1.45	70.5	12	**70,5**	WOEX 05T304	1.28	**81000**


Grub screw

10 950 ...


Copper disc

10 950 ...


Indexable insert fixing screw

10 950 ...


Indexable insert fixing screw

10 950 ...

Spare parts DC									
65 - 71	M6x8 - SW3	**11300**	Ø4.5x1.5	**11400**	M4.5x11.5 - T15	**13500**			
72 - 75	M6x8 - SW3	**11300**	Ø4.5x1.5	**11400**	M5x12 - SW2.5	**11000**	M2.5x6 - 08IP - 1.28Nm	**11600**	
76 - 78	M6x8 - SW3	**11300**	Ø4.5x1.5	**11400**	M5x12 - SW2.5	**11000**	M2.5x6 - 08IP - 1.28Nm	**11600**	
79 - 81	M6x8 - SW3	**11300**	Ø4.5x1.5	**11400**	M5x12 - SW2.5	**11000**	M2.5x6 - 08IP - 1.28Nm	**11600**	


Indexable insert seat

10 950 ...


Indexable insert seat

10 950 ...


Indexable insert seat

10 950 ...


Cylindrical pin

10 950 ...


Indexable insert adjusting screw

10 950 ...


Basic element clamping screw

10 950 ...

Spare parts DC									
65 - 71	**13800**					M4x8 - SW2	**11100**	M6x16 - 20IP - 6.25Nm	**12300**
72 - 75	**13900**	**13700**	**13600**	**11500**	M4x10 - SW2	**11200**	M6x16 - 20IP - 6.25Nm	**12300**	
76 - 78	**14000**	**13700**	**13600**	**11500**	M4x10 - SW2	**11200**	M6x16 - 20IP - 6.25Nm	**12300**	
79 - 81	**14100**	**13700**	**13600**	**11500**	M4x10 - SW2	**11200**	M6x16 - 20IP - 6.25Nm	**12300**	


Carbide bolt key

10 950 ...


Carbide bolt

10 950 ...


Indexable insert clamping screw

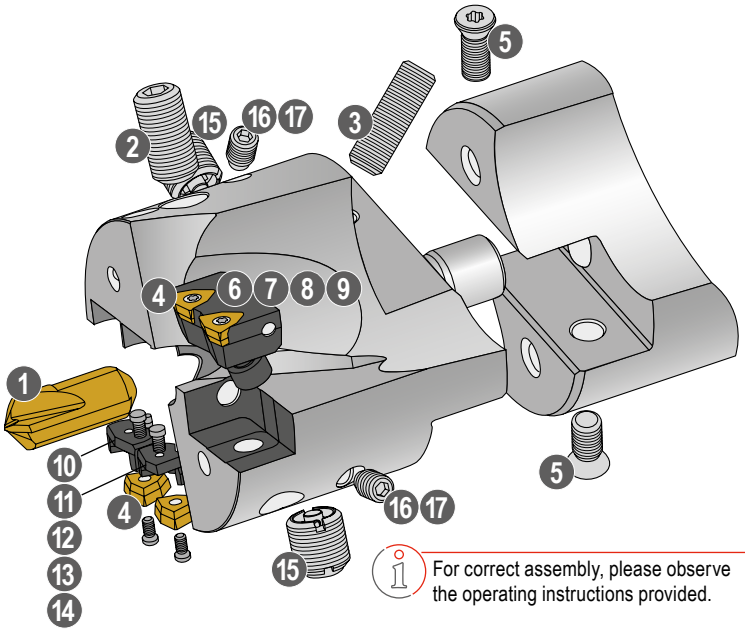
10 950 ...


Center drill clamping screw

10 950 ...

Spare parts DC									
65 - 71		**15500**	M12x1	**15400**	M2.5x7.2 - 08IP	**10500**	M10x20 - SW5 - 16Nm	**13400**	
72 - 75		**15500**	M12x1	**15400**	M2.5x7.2 - 08IP	**10500**	M10x20 - SW5 - 16Nm	**13400**	
76 - 78		**15500**	M12x1	**15400**	M2.5x7.2 - 08IP	**10500**	M10x20 - SW5 - 16Nm	**13400**	
79 - 81		**15500**	M12x1	**15400**	M2.5x7.2 - 08IP	**10500**	M10x20 - SW5 - 16Nm	**13400**	

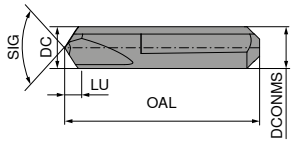
Drill head Ø 65–81 mm exploded view

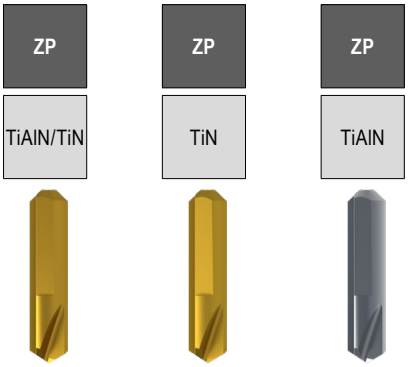


For correct assembly, please observe the operating instructions provided.

1. Center drill
2. Clamping screw for center drill
3. Adjusting screw for center drill
4. Indexable Insert
5. Clamping screw for basic element
6. Indexable insert seat
7. Fixing screw for indexable insert
8. Adjusting screw for indexable insert
9. Clamping screw for indexable insert
10. Indexable insert seat
11. Indexable insert seat
12. Fixing screw for indexable insert
13. Cylindrical pin for indexable insert
14. Clamping screw for indexable insert
15. Carbide bolt
16. Grub screw
17. Copper disc

KUB Centron – center drill





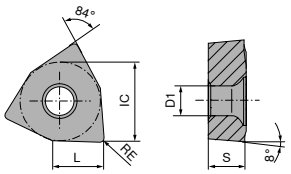
DC mm	KOMET no.	OAL mm	LU mm	DCONMS mm	SIG 120° Solid carbide 10 863 ...		SIG 120° HSS 10 862 ...		SIG 120° HSS 10 862 ...	
5	V95 10012.0089	23.0	2.25	5				00500		
5	V95 10012.0090	23.0	2.25	5						10500
5	V95 10310.8450	23.0	2.25	5		20500				
6	V95 10022.0089	23.0	2.65	6				00600		
6	V95 10022.0090	23.0	2.65	6						10600
6	V95 10320.8450	23.0	2.65	6		20600				
8	V95 10032.0089	27.0	3.38	8				00800		
8	V95 10032.0090	27.0	3.38	8						10800
8	V95 10330.8450	27.0	3.38	8		20800				
10	V95 10042.0089	28.0	3.86	10				01000		
10	V95 10042.0090	28.0	3.86	10						11000
10	V95 10340.8450	28.0	3.86	10		21000				
12	V95 10050.0089	30.8	4.67	12				01200		
12	V95 10050.0090	30.8	4.67	12						11200
P						●		●		
M						●				●
K						●				●
N						●		●		
S						○				●
H										
O						○		○		

→ v_c Page 102+103

▲ The cutting data of the KUB Centron depends on the center drill and not on the indexable inserts. Please select the cutting data of the center drill.
▲ Article No. 10 863 ... is only suitable up to drilling depth 6xD.

WOEX

Designation	L	IC	S	D1
	mm	mm	mm	mm
WOEX 0302..	3.2	5.00	2.30	2.30
WOEX 0403..	4.1	6.35	3.18	2.55
WOEX 05T3..	5.3	8.00	3.80	2.85
WOEX 06T3..	6.6	10.00	3.80	4.05
WOEX 0804..	7.9	12.00	4.80	4.90
WOEX 1005..	9.9	15.00	5.30	4.90
WOEX 1206..	11.6	17.60	6.00	5.95



WOEX

ISO	KOMET no.	RE	-01 BK8425	-01 BK7935	-01 BK6115	-01 BK7615	-01 BK62
		mm	WOEX	WOEX	WOEX	WOEX	WOEX
			10 821 ...	10 821 ...	10 821 ...	10 821 ...	10 821 ...
020102	W29 04010.027935	0.2		50201			
030204	W29 10010.046115	0.4			40301		
030204	W29 10010.0462	0.4					20301
030204	W29 10010.047615	0.4				05301	
030204	W29 10010.047935	0.4		50301			
030204	W29 10010.048425	0.4	30301				
040304	W29 18010.046115	0.4			40401		
040304	W29 18010.0462	0.4					20401
040304	W29 18010.047615	0.4				05401	
040304	W29 18010.047935	0.4		50401			
040304	W29 18010.048425	0.4	30401				
05T304	W29 24010.046115	0.4			40501		
05T304	W29 24010.0462	0.4					20501
05T304	W29 24010.047615	0.4				05501	
05T304	W29 24010.047935	0.4		50501			
05T304	W29 24010.048425	0.4	30501				
06T304	W29 34010.046115	0.4			40601		
06T304	W29 34010.0462	0.4					20601
06T304	W29 34010.047615	0.4				05601	
06T304	W29 34010.047935	0.4		50601			
06T304	W29 34010.048425	0.4	30601				
080404	W29 42010.046115	0.4			40801		
080404	W29 42010.0462	0.4					20801
080404	W29 42010.047615	0.4				05801	
080404	W29 42010.047935	0.4		50801			
080404	W29 42010.048425	0.4	30801				
100504	W29 50010.046115	0.4			41001		
100504	W29 50010.0462	0.4					21001
100504	W29 50010.047615	0.4				06001	
100504	W29 50010.047935	0.4		51001			
100504	W29 50010.048425	0.4	31001				
100508	W29 50010.088425	0.8	39001				
100508	W29 50010.087615	0.8				08001	
120608	W29 58010.086115	0.8			41201		
120608	W29 58010.0862	0.8					28201
120608	W29 58010.087615	0.8				08201	
120608	W29 58010.087935	0.8		53201			
120608	W29 58010.088425	0.8	31201				
P			●	●	●		
M			●	●	●		
K			●	●	●	●	●
N			○	○			
S			●	●			
H			○		○		○
O							

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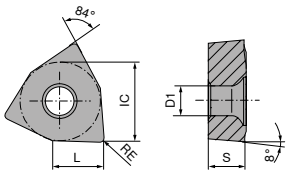
BK6115 -01 / BK8425 -03 are exclusively recommended for use on the peripheral cutting edge!

Further indexable inserts can be found in our online shop
cuttingtools.ceratizit.com

WOEX

Designation	L	IC	S	D1
	mm	mm	mm	mm
WOEX 0302..	3.2	5.00	2.30	2.30
WOEX 0403..	4.1	6.35	3.18	2.55
WOEX 05T3..	5.3	8.00	3.80	2.85
WOEX 06T3..	6.6	10.00	3.80	4.05
WOEX 0804..	7.9	12.00	4.80	4.90
WOEX 1005..	9.9	15.00	5.30	4.90
WOEX 1206..	11.6	17.60	6.00	5.95



WOEX

			-03 BK8425	-11 BK77	-11 BK7710	-13 BK8425	-13 BK79
							
			WOEX	WOEX	WOEX	WOEX	WOEX
			10 821 ...	10 821 ...	10 821 ...	10 821 ...	10 821 ...
ISO	KOMET no.	RE mm					
030204	W29 10110.047710	0.4					
030204	W29 10130.0479	0.4					
030204	W29 10130.048425	0.4					
030204	W29 10110.0477	0.4					
030204	W29 10030.048425	0.4					
040304	W29 18110.047710	0.4					
040304	W29 18130.0479	0.4					
040304	W29 18130.048425	0.4					
040304	W29 18110.0477	0.4					
040304	W29 18030.048425	0.4					
05T304	W29 24110.047710	0.4					
05T304	W29 24130.0479	0.4					
05T304	W29 24130.048425	0.4					
05T304	W29 24110.0477	0.4					
05T304	W29 24030.048425	0.4					
06T304	W29 34110.047710	0.4					
06T304	W29 34130.0479	0.4					
06T304	W29 34130.048425	0.4					
06T304	W29 34110.0477	0.4					
06T304	W29 34030.048425	0.4					
080404	W29 42110.047710	0.4					
080404	W29 42130.0479	0.4					
080404	W29 42130.048425	0.4					
080404	W29 42110.0477	0.4					
080404	W29 42030.048425	0.4					
100504	W29 50110.047710	0.4					
100504	W29 50130.0479	0.4					
100504	W29 50130.048425	0.4					
100504	W29 50110.0477	0.4					
100504	W29 50030.048425	0.4					
120608	W29 58130.088425	0.8					
120608	W29 58130.0879	0.8					
120608	W29 58030.088425	0.8					
			30303	80311	90311	30313	15313
			30403	80411	90411	30413	15413
			30503	80511	90511	30513	15513
			30603	80611	90611	30613	15613
			30803	80811	90811	30813	15813
			31003	81011	91011	31013	16013
			33203			38213	16213
P			●			●	●
M			●			●	●
K			●			●	●
N			○		●	○	○
S			●	●	○	●	
H			○	○	○	○	
O				○	○		

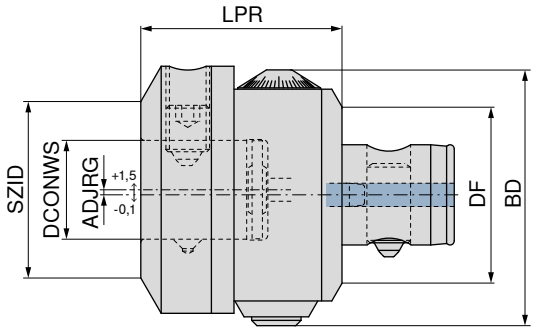
→ v_c Page 84+98

BK6115 -01 / BK8425 -03 are exclusively recommended for use on the peripheral cutting edge!

Further information on grades and chip breakers can be found on → **page 113+114**

Adjuster with ABS connection

- ▲ Precise adjustment using micrometric adjusting spindle
- ▲ Max. adjustment range 3 mm on diameter
- ▲ Graduation of scale 1 line 0.02 mm on diameter
- ▲ Stable clamping of the top section after adjustment using four clamping screws arranged on the face
- ▲ SZID = nominal size







AD

84 210 ...

Adapter	KOMET no.	BD mm	LPR mm	DF mm	DCONWS mm	ADJRG mm	SZID	
ABS 50	M01 00001	70	57	50	28	1.5	**ABS 50**	**05097**
ABS 63	M01 00011	88	70	63	28	1.5	**ABS 50**	**06397**
ABS 63	M01 00021	88	70	63	34	1.5	**ABS 63**	**06396**

Material examples for cutting data tables

	Material sub-group	Index	Composition / Structure / Heat treatment		Tensile strength lbf/in²* / HB / HRC	Material number	Material designation	Material number	Material designation
P	Unalloyed steel	P.1.1	< 0.15 % C	Annealed	60900 lbf/in² / 125 HB	1.0401	1015	1.0301	1010
		P.1.2	< 0.45 % C	Annealed	92800 lbf/in² / 190 HB	1.1191	1045	1.0737	12L14
		P.1.3		Tempered	121800 lbf/in² / 250 HB	1.1191	1045	1.0503	1043
		P.1.4	< 0.75 % C	Annealed	132000 lbf/in² / 270 HB	1.1223	1060	1.0535	1055
		P.1.5		Tempered	146500 lbf/in² / 300 HB	1.1223	1060	1.1274	1095
	Low-alloy steel	P.2.1		Annealed	88500 lbf/in² / 180 HB	1.7131	5115	1.6523	8620
		P.2.2		Tempered	134900 lbf/in² / 275 HB	1.7131	5115	1.6582	4340
		P.2.3		Tempered	146500 lbf/in² / 300 HB	1.7225	4142	1.7131	5115
		P.2.4		Tempered	174000 lbf/in² / 375 HB	1.7225	4142	17223	4140
	High-alloy steel and high-alloy tool steel	P.3.1		Annealed	98600 lbf/in² / 200 HB	1.4021	420	1.2379	D2
		P.3.2		Hardened and tempered	159500 lbf/in² / 300 HB	1.2343	H11	1.3343	M2
		P.3.3		Hardened and tempered	188500 lbf/in² / 400 HB	1.2343	H11	1.2363	A2
	Stainless steel	P.4.1	Ferritic / martensitic	Annealed	98600 lbf/in² / 200 HB	1.4016	430	1.4125	440C
		P.4.2	Martensitic	Tempered	117500 lbf/in² / 250 HB	1.4112	S44003	1.4021	420
M	Stainless steel	M.1.1	Austenitic / austenitic-ferritic	Quenched	88500 lbf/in² / 200 HB	1.4301	304	1.4401	316
		M.2.1	Austenitic	Tempered	300 HB	1.4841	314	1.4568	17-7 PH
		M.3.1	Austenitic / ferritic (Duplex)		113100 lbf/in² / 230 HB	1.4462	S32205	1.4410	S32750
K	Grey cast iron	K.1.1	Pearlitic / ferritic		88500 lbf/in² / 180 HB	0.6010	A48-20B	0.6025	A48-40 B
		K.1.2	Pearlitic (martensitic)		127600 lbf/in² / 260 HB	0.6030	A48-45B	0.6040	A48-60 B
	Spherulitic graphite cast iron	K.2.1	Ferritic		78300 lbf/in² / 160 HB	0.7040	60-40-18	0.7050	65-45-12
		K.2.2	Pearlitic		122600 lbf/in² / 250 HB	0.7070	100-70-03	0.7660	A439 Type D2
	Malleable iron	K.3.1	Ferritic		63800 lbf/in² / 130 HB	0.8035	GTW-35-04		
		K.3.2	Pearlitic		113100 lbf/in² / 230 HB	0.8170	70003		
N	Aluminium wrought alloy	N.1.1	Non-hardenable		60 HB	3.0255	A91060	3.0255	A91060
		N.1.2	Hardenable		49300 lbf/in² / 100 HB	3.1355	2024	3.1355	2024
	Cast aluminium alloy	N.2.1	≤ 12 % Si, non-hardenable		36300 lbf/in² / 75 HB	3.2581	A04130 / A413-0	3.2581	A04130 / A413-0
		N.2.2	≤ 12 % Si, hardenable		43500 lbf/in² / 90 HB	3.2134	G-AlSi5Cu1Mg		
		N.2.3	> 12 % Si, non-hardenable		63800 lbf/in² / 130 HB		G-AlSi17Cu4Mg		
	Copper and copper alloys (bronze/brass)	N.3.1	Free-machining alloys, PB > 1 %		54400 lbf/in² / 110 HB	2.0380	CuZn39Pb2 (Ms58)	2.0380	C37700
		N.3.2	CuZn, CuSnZn		43500 lbf/in² / 90 HB	2.0331	CuZn15	2.0331	C34000
		N.3.3	CuSn, lead-free copper and electrolytic copper		49300 lbf/in² / 100 HB	2.0060	E-Cu57		
	Magnesium alloys	N.4.1	Magnesium and magnesium alloys		70 HB	3.5612	MgAl6Zn		
S	Heat-resistant alloys	S.1.1	Fe - basis	Annealed	98600 lbf/in² / 200 HB	1.4864	X12NiCrSi 36-16	1.4864	330
		S.1.2			137800 lbf/in² / 280 HB	1.4980	X6NiCrTiMoVB25-15-2	1.4980	S66286
		S.2.1	Ni or Co basis	Annealed	121800 lbf/in² / 250 HB	2.4856	Inconel 625	2.4812	Hastelloy C
		S.2.2			171100 lbf/in² / 350 HB	2.4952	Nimonic 80A	2.4668	Inconel 718
		S.2.3		Cast	156600 lbf/in² / 320 HB	2.4674	Nimocast PK24	2.4670	Nimocast 713
	Titanium alloys	S.3.1	Pure titanium		5800 lbf/in²	3.7025	Ti99,8		
		S.3.2	Alpha + beta alloys		152300 lbf/in²	3.7165	TiAl6V4		
		S.3.3	Beta alloys		203100 lbf/in² / 410 HB	Ti555.3	Ti-5Al-5V-5Mo-3Cr		
H	Hardened steel	H.1.1		Hardened and tempered	46-55 HRC				
		H.1.2		Hardened and tempered	56-60 HRC				
		H.1.3		Hardened and tempered	61-65 HRC				
		H.1.4		Hardened and tempered	66-70 HRC				
	Chilled iron	H.2.1		Cast	400 HB				
	Hardened cast iron	H.3.1		Hardened and tempered	55 HRC				
O	Non-metal materials	O.1.1	Plastics, duroplastic		≤ 21800 lbf/in²				
		O.1.2	Plastics, thermoplastic		≤ 14500 lbf/in²				
		O.2.1	Aramid fibre-reinforced		≤ 145000 lbf/in²				
		O.2.2	Glass/carbon-fibre reinforced		≤ 145000 lbf/in²				
		O.3.1	Graphite						

*** Tensile Strength at Rupture (Rm)**

Cutting data standard values for SOGX indexable inserts

Index	10 820 ...					
	-01 / -13 / -32 BK8425	-03 / -21 BK8430	-01 / -21 BK7935	-01 BK6115	-01 BK7710	-34 BK8425
	v_c (ft/min)					
P.1.1	850	850	820	980		
P.1.2	850	850	720	980		850
P.1.3	890	890	890	890		
P.1.4	820	820	820	820		
P.1.5	890	890	660	980		890
P.2.1	890	890	890	890		
P.2.2	850	850	850	850		
P.2.3	590	590	520	790		590
P.2.4	490	490	430	660		490
P.3.1	520	520	460	660		520
P.3.2	430	430	390	520		430
P.3.3	390	390	360	460		390
P.4.1	590	590	490	720		
P.4.2	430	430	390	520		
M.1.1	490	490	520	720		
M.2.1	490	490	520	720		
M.3.1	460	460	490	660		
K.1.1	520	520	490	790		520
K.1.2	390	390	390	590		390
K.2.1	520	520	490	520		520
K.2.2	330	330	300	330		330
K.3.1	390	390	360	390		390
K.3.2	330	330	300	330		330
N.1.1	1310	1310	1310		1640	
N.1.2	1310	1310	1310		1640	
N.2.1	820	820	820		920	
N.2.2	820	820	820		920	
N.2.3	750	750	750		820	
N.3.1	660	660	660		820	
N.3.2	720	720	720		920	
N.3.3	1080	1080	1080		1280	
N.4.1	660	660	660		820	
S.1.1	200	200	200			
S.1.2	160	160	160			
S.2.1	200	200	200			
S.2.2	160	160	160			
S.2.3	100	100	100			
S.3.1	330	330	330		330	
S.3.2	260	260	260		260	
S.3.3	160	160	160		160	
H.1.1	330	330		330		
H.1.2	260	260		260		
H.1.3	160	160		160		
H.1.4						
H.2.1	330	330		330		
H.3.1	260	260		260		
O.1.1			330		330	
O.1.2			330		330	
O.2.1						
O.2.2			330		330	
O.3.1			330		330	

Feed rate values of -34 topography, see → **page 81.**

In order to ensure efficient chip evacuation, coolant pressure must be at least 73 psi. Optimum pressure is > 218 psi.

During the drilling operation on through holes a sharp disk will be produced. Safety precautions must be observed. A safety guard has to be provided as protection.

Cutting data standard values for KUB Pentron – 2xD, 3xD / KUB Pentron CS

Index	10 872 ..., 10 873 ..., 15 872 ..., 15 873 ...								
	ABS / PSC / C								
	Ø 0.562-0.625 inch	Ø 0.656-0.703 inch	Ø 0.750-0.781 inch	Ø 0.812-0.828 inch	Ø 0.875-0.937 inch	Ø 0.985-1.000 inch	Ø 1.031-1.062 inch	Ø 1.109-1.218 inch	Ø 1.250-1.328 inch
	f (inch/rev)								
P.1.1	0.003	0.003	0.004	0.004	0.004	0.004	0.004	0.004	0.004
P.1.2	0.004	0.005	0.005	0.006	0.006	0.006	0.007	0.007	0.007
P.1.3	0.003	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
P.1.4	0.003	0.004	0.004	0.005	0.005	0.005	0.005	0.005	0.005
P.1.5	0.004	0.005	0.005	0.006	0.006	0.006	0.006	0.006	0.006
P.2.1	0.003	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
P.2.2	0.003	0.004	0.004	0.005	0.005	0.005	0.005	0.005	0.005
P.2.3	0.005	0.006	0.006	0.006	0.006	0.007	0.007	0.007	0.007
P.2.4	0.004	0.004	0.005	0.005	0.005	0.006	0.006	0.006	0.006
P.3.1	0.003	0.005	0.005	0.006	0.006	0.007	0.007	0.007	0.007
P.3.2	0.003	0.004	0.004	0.005	0.005	0.006	0.006	0.006	0.006
P.3.3	0.002	0.003	0.003	0.004	0.004	0.005	0.005	0.005	0.005
P.4.1	0.004	0.005	0.005	0.007	0.007	0.008	0.008	0.008	0.008
P.4.2	0.003	0.004	0.004	0.005	0.005	0.006	0.006	0.006	0.006
M.1.1	0.004	0.004	0.005	0.006	0.006	0.006	0.006	0.006	0.006
M.2.1	0.004	0.003	0.003	0.004	0.004	0.006	0.006	0.006	0.006
M.3.1	0.004	0.003	0.003	0.004	0.004	0.005	0.005	0.005	0.005
K.1.1	0.005	0.006	0.006	0.007	0.007	0.009	0.010	0.010	0.010
K.1.2	0.004	0.004	0.004	0.006	0.006	0.007	0.007	0.007	0.007
K.2.1	0.005	0.006	0.006	0.007	0.007	0.009	0.010	0.010	0.010
K.2.2	0.004	0.005	0.005	0.006	0.006	0.007	0.008	0.008	0.008
K.3.1	0.005	0.006	0.006	0.007	0.007	0.009	0.010	0.010	0.010
K.3.2	0.004	0.005	0.005	0.006	0.006	0.007	0.008	0.008	0.008
N.1.1	0.004	0.004	0.004	0.004	0.005	0.005	0.005	0.005	0.005
N.1.2	0.004	0.004	0.004	0.004	0.005	0.005	0.005	0.005	0.005
N.2.1	0.004	0.005	0.005	0.005	0.006	0.006	0.006	0.006	0.006
N.2.2	0.004	0.005	0.005	0.005	0.006	0.006	0.006	0.006	0.006
N.2.3	0.004	0.005	0.005	0.005	0.006	0.006	0.006	0.006	0.006
N.3.1	0.004	0.005	0.005	0.005	0.006	0.006	0.006	0.006	0.006
N.3.2	0.004	0.005	0.006	0.006	0.007	0.007	0.007	0.007	0.007
N.3.3	0.004	0.005	0.005	0.006	0.006	0.006	0.006	0.006	0.006
N.4.1	0.004	0.005	0.005	0.005	0.006	0.006	0.006	0.006	0.006
S.1.1	0.001	0.001	0.001	0.001	0.002	0.002	0.002	0.002	0.002
S.1.2	0.001	0.001	0.001	0.001	0.002	0.002	0.002	0.002	0.002
S.2.1	0.001	0.001	0.001	0.001	0.002	0.002	0.002	0.002	0.002
S.2.2	0.001	0.001	0.001	0.001	0.002	0.002	0.002	0.002	0.002
S.2.3	0.001	0.001	0.001	0.001	0.001	0.001	0.002	0.002	0.002
S.3.1	0.002	0.002	0.002	0.002	0.002	0.003	0.004	0.004	0.004
S.3.2	0.002	0.002	0.002	0.002	0.002	0.003	0.004	0.004	0.004
S.3.3	0.001	0.001	0.001	0.001	0.002	0.002	0.002	0.002	0.002
H.1.1	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
H.1.2	0.001	0.001	0.001	0.001	0.002	0.002	0.002	0.002	0.002
H.1.3	0.001	0.001	0.001	0.001	0.002	0.002	0.002	0.002	0.002
H.1.4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
H.2.1	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
H.3.1	0.001	0.001	0.001	0.001	0.002	0.002	0.002	0.002	0.002
O.1.1	0.003	0.003	0.003	0.004	0.004	0.004	0.004	0.004	0.004
O.1.2	0.003	0.003	0.003	0.004	0.004	0.004	0.004	0.004	0.004
O.2.1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
O.2.2	0.002	0.002	0.002	0.002	0.003	0.003	0.003	0.003	0.003
O.3.1	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004

In order to ensure efficient chip evacuation, coolant pressure must be at least 73 psi. Optimum pressure is > 218 psi.

Cutting data standard values for KUB Pentron – 2xD, 3xD / KUB Pentron CS

Index	10 872 ..., 10 873 ..., 15 872 ..., 15 873 ...				
	ABS / PSC / C				
	Ø 1.375-1.469 inch	Ø 1.500-1.687 inch	Ø 1.750–1.781 inch	Ø 1.875–2.000 inch	Ø 2.062–2.500 inch
	f (inch/rev)				
P.1.1	0.004	0.004	0.004	0.004	0.004
P.1.2	0.007	0.007	0.007	0.007	0.007
P.1.3	0.005	0.005	0.005	0.006	0.006
P.1.4	0.005	0.005	0.005	0.006	0.006
P.1.5	0.006	0.006	0.006	0.006	0.006
P.2.1	0.005	0.005	0.005	0.006	0.006
P.2.2	0.005	0.005	0.005	0.006	0.006
P.2.3	0.007	0.007	0.007	0.007	0.007
P.2.4	0.006	0.006	0.006	0.006	0.006
P.3.1	0.007	0.007	0.007	0.007	0.007
P.3.2	0.006	0.006	0.006	0.006	0.006
P.3.3	0.005	0.005	0.005	0.005	0.005
P.4.1	0.008	0.008	0.008	0.008	0.008
P.4.2	0.006	0.006	0.006	0.006	0.006
M.1.1	0.006	0.006	0.006	0.006	0.006
M.2.1	0.006	0.006	0.006	0.006	0.006
M.3.1	0.005	0.005	0.005	0.005	0.005
K.1.1	0.010	0.010	0.010	0.010	0.010
K.1.2	0.007	0.007	0.007	0.007	0.007
K.2.1	0.010	0.010	0.010	0.010	0.010
K.2.2	0.008	0.008	0.008	0.008	0.008
K.3.1	0.010	0.010	0.010	0.010	0.010
K.3.2	0.008	0.008	0.008	0.008	0.008
N.1.1	0.005	0.005	0.005	0.006	0.006
N.1.2	0.005	0.005	0.005	0.006	0.006
N.2.1	0.006	0.006	0.006	0.007	0.007
N.2.2	0.006	0.006	0.006	0.007	0.007
N.2.3	0.006	0.006	0.006	0.006	0.006
N.3.1	0.006	0.006	0.006	0.006	0.006
N.3.2	0.007	0.007	0.007	0.007	0.007
N.3.3	0.006	0.006	0.006	0.007	0.007
N.4.1	0.006	0.006	0.006	0.006	0.006
S.1.1	0.002	0.002	0.002	0.002	0.002
S.1.2	0.002	0.002	0.002	0.002	0.002
S.2.1	0.002	0.002	0.002	0.002	0.002
S.2.2	0.002	0.002	0.002	0.002	0.002
S.2.3	0.002	0.002	0.002	0.002	0.002
S.3.1	0.004	0.004	0.004	0.004	0.004
S.3.2	0.004	0.004	0.004	0.004	0.004
S.3.3	0.002	0.002	0.002	0.002	0.002
H.1.1	0.002	0.002	0.002	0.002	0.002
H.1.2	0.002	0.002	0.002	0.002	0.002
H.1.3	0.002	0.002	0.002	0.002	0.002
H.1.4					
H.2.1	0.002	0.002	0.002	0.002	0.002
H.3.1	0.002	0.002	0.002	0.002	0.002
O.1.1	0.004	0.004	0.004	0.004	0.004
O.1.2	0.004	0.004	0.004	0.004	0.004
O.2.1					
O.2.2	0.003	0.003	0.003	0.003	0.003
O.3.1	0.004	0.004	0.004	0.004	0.004

During the drilling operation on through holes a sharp disk will be produced. Safety precautions must be observed.
A safety guard has to be provided as protection.

Cutting data standard values for KUB Pentron – 2xD, 3xD / -34 indexable inserts topography

Index		10 872 ..., 10 873 ..., 15 872 ..., 15 873 ...													
		ABS / PSC / C													
	-34 BK8425	Ø 0.562-0.625	Ø 0.656-0.703	Ø 0.750-0.781	Ø 0.812-0.828	Ø 0.875-0.937	Ø 0.985-1.000	Ø 1.031-1.062	Ø 1.109-1.218	Ø 1.250-1.328	Ø 1.375-1.469	Ø 1.500-1.687	Ø 1.750–1.781	Ø 1.875–2.000	Ø 2.062–2.500
	v_c (ft/min)	f (inch/rev)													
P.1.1															
P.1.2	850	0.007	0.008	0.008	0.009	0.009	0.009	0.011	0.011	0.011	0.011	0.011	0.011	0.009	0.011
P.1.3															
P.1.4															
P.1.5	890	0.007	0.008	0.008	0.009	0.009	0.009	0.011	0.011	0.011	0.011	0.011	0.011	0.009	0.011
P.2.1															
P.2.2															
P.2.3	590	0.007	0.008	0.009	0.009	0.009	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011
P.2.4	490	0.007	0.008	0.009	0.009	0.009	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010
P.3.1	520	0.005	0.007	0.007	0.009	0.009	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011
P.3.2	430	0.004	0.007	0.007	0.009	0.009	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010
P.3.3	390	0.004	0.007	0.007	0.009	0.009	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010
P.4.1															
P.4.2															
M.1.1															
M.2.1															
M.3.1															
K.1.1	520	0.007	0.009	0.009	0.011	0.011	0.013	0.015	0.015	0.015	0.015	0.015	0.015	0.013	0.015
K.1.2	390	0.006	0.007	0.007	0.009	0.009	0.010	0.012	0.012	0.012	0.012	0.012	0.012	0.010	0.012
K.2.1	520	0.007	0.009	0.009	0.011	0.011	0.013	0.015	0.015	0.015	0.015	0.015	0.015	0.013	0.015
K.2.2	330	0.006	0.007	0.007	0.009	0.009	0.010	0.012	0.012	0.012	0.012	0.012	0.012	0.010	0.012
K.3.1	390	0.007	0.009	0.009	0.011	0.011	0.013	0.015	0.015	0.015	0.015	0.015	0.015	0.013	0.015
K.3.2	330	0.006	0.007	0.007	0.009	0.009	0.010	0.012	0.012	0.012	0.012	0.012	0.012	0.010	0.012
N.1.1															
N.1.2															
N.2.1															
N.2.2															
N.2.3															
N.3.1															
N.3.2															
N.3.3															
N.4.1															
S.1.1															
S.1.2															
S.2.1															
S.2.2															
S.2.3															
S.3.1															
S.3.2															
S.3.3															
H.1.1															
H.1.2															
H.1.3															
H.1.4															
H.2.1															
H.3.1															
O.1.1															
O.1.2															
O.2.1															
O.2.2															
O.3.1															

In order to ensure efficient chip evacuation, coolant pressure must be at least 73 psi. Optimum pressure is > 218 psi.

Usage of -34 topography is recommended only for KUB Pentron 2xD and 3xD. Not recommended for KUB Pentron 4xD and 5xD as well as KUB Pentron CS. Higher drive power and stable setup needed!

Cutting data standard values for KUB Pentron – 4xD

Index	10 874 ..., 15 874 ...											
	ABS / C											
	Ø 0.562–0.625 inch	Ø 0.656–0.703 inch	Ø 0.750–0.781 inch	Ø 0.812–0.828 inch	Ø 0.875–0.937 inch	Ø 0.985–1.000 inch	Ø 1.031–1.062 inch	Ø 1.109–1.218 inch	Ø 1.250–1.328 inch	Ø 1.375–1.469 inch	Ø 1.500–1.687 inch	Ø 1.750 inch
	f in inch/rev.											
P.1.1	0.002	0.003	0.003	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004
P.1.2	0.002	0.003	0.004	0.005	0.006	0.006	0.007	0.007	0.007	0.007	0.007	0.007
P.1.3	0.002	0.002	0.004	0.005	0.005	0.005	0.006	0.006	0.006	0.006	0.006	0.006
P.1.4	0.002	0.002	0.004	0.004	0.004	0.004	0.005	0.005	0.005	0.005	0.005	0.005
P.1.5	0.002	0.003	0.004	0.004	0.005	0.005	0.006	0.006	0.006	0.006	0.006	0.006
P.2.1	0.002	0.002	0.004	0.005	0.005	0.005	0.006	0.006	0.006	0.006	0.006	0.006
P.2.2	0.002	0.002	0.004	0.004	0.004	0.004	0.005	0.005	0.005	0.005	0.005	0.005
P.2.3	0.002	0.002	0.003	0.005	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006
P.2.4	0.001	0.002	0.002	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004
P.3.1	0.002	0.002	0.003	0.004	0.004	0.004	0.005	0.005	0.005	0.005	0.005	0.005
P.3.2	0.001	0.002	0.002	0.003	0.003	0.003	0.004	0.004	0.004	0.004	0.004	0.004
P.3.3	0.001	0.002	0.002	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003
P.4.1	0.002	0.003	0.004	0.004	0.004	0.004	0.005	0.005	0.005	0.005	0.005	0.005
P.4.2	0.001	0.002	0.002	0.003	0.003	0.003	0.004	0.004	0.004	0.004	0.004	0.004
M.1.1	0.002	0.002	0.002	0.004	0.004	0.004	0.005	0.005	0.005	0.005	0.005	0.005
M.2.1	0.002	0.002	0.002	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004
M.3.1	0.002	0.002	0.002	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004
K.1.1	0.003	0.004	0.005	0.007	0.007	0.007	0.009	0.009	0.009	0.009	0.009	0.009
K.1.2	0.002	0.002	0.003	0.005	0.005	0.006	0.006	0.006	0.006	0.006	0.006	0.006
K.2.1	0.002	0.003	0.005	0.007	0.007	0.007	0.009	0.009	0.009	0.009	0.009	0.009
K.2.2	0.002	0.003	0.004	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007
K.3.1	0.003	0.004	0.006	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009
K.3.2	0.002	0.003	0.004	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007
N.1.1	0.001	0.002	0.002	0.003	0.003	0.004	0.004	0.004	0.004	0.004	0.004	0.004
N.1.2	0.001	0.002	0.002	0.003	0.003	0.004	0.004	0.004	0.004	0.004	0.004	0.004
N.2.1	0.003	0.004	0.005	0.006	0.006	0.007	0.007	0.007	0.007	0.007	0.007	0.007
N.2.2	0.003	0.004	0.005	0.006	0.006	0.007	0.007	0.007	0.007	0.007	0.007	0.007
N.2.3	0.003	0.004	0.004	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006
N.3.1	0.001	0.002	0.004	0.006	0.006	0.006	0.007	0.007	0.007	0.007	0.007	0.007
N.3.2	0.001	0.003	0.004	0.006	0.006	0.007	0.008	0.008	0.008	0.008	0.008	0.008
N.3.3	0.001	0.002	0.002	0.003	0.003	0.003	0.004	0.004	0.004	0.004	0.004	0.004
N.4.1	0.001	0.002	0.004	0.006	0.006	0.006	0.007	0.007	0.007	0.007	0.007	0.007
S.1.1	0.001	0.002	0.002	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003
S.1.2	0.001	0.001	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
S.2.1	0.001	0.002	0.002	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003
S.2.2	0.001	0.001	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
S.2.3	0.000	0.001	0.001	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
S.3.1	0.002	0.003	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004
S.3.2	0.002	0.002	0.003	0.004	0.003	0.004	0.004	0.004	0.004	0.004	0.004	0.004
S.3.3	0.001	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
H.1.1	0.001	0.002	0.002	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003
H.1.2	0.001	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
H.1.3	0.001	0.001	0.001	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
H.1.4												
H.2.1	0.001	0.002	0.002	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003
H.3.1	0.001	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
O.1.1	0.003	0.003	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004
O.1.2	0.003	0.003	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004
O.2.1												
O.2.2	0.002	0.002	0.002	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003
O.3.1	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004

During the drilling operation on through holes a sharp disk will be produced. Safety precautions must be observed.
A safety guard has to be provided as protection.

Cutting data standard values for KUB Pentron – 5xD

Index	10 875 ..., 15 875 ...											
	ABS / C											
	Ø 0.562–0.625 inch	Ø 0.656–0.703 inch	Ø 0.750–0.781 inch	Ø 0.812–0.828 inch	Ø 0.875–0.937 inch	Ø 0.985–1.000 inch	Ø 1.031–1.062 inch	Ø 1.109–1.218 inch	Ø 1.250–1.328 inch	Ø 1.375–1.469 inch	Ø 1.500–1.687 inch	Ø 1.750 inch
	f in inch/rev.											
P.1.1	0.002	0.003	0.003	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004
P.1.2	0.003	0.004	0.004	0.005	0.005	0.005	0.006	0.006	0.006	0.006	0.006	0.006
P.1.3	0.002	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004
P.1.4	0.002	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004
P.1.5	0.003	0.004	0.004	0.005	0.005	0.005	0.006	0.006	0.006	0.006	0.006	0.006
P.2.1	0.002	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004
P.2.2	0.002	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004
P.2.3	0.003	0.004	0.004	0.006	0.007	0.007	0.006	0.006	0.006	0.006	0.006	0.006
P.2.4	0.002	0.003	0.003	0.005	0.006	0.006	0.005	0.005	0.005	0.005	0.005	0.005
P.3.1	0.003	0.005	0.005	0.006	0.006	0.007	0.007	0.007	0.007	0.007	0.007	0.007
P.3.2	0.002	0.004	0.004	0.005	0.005	0.006	0.006	0.006	0.006	0.006	0.006	0.006
P.3.3	0.002	0.003	0.003	0.004	0.004	0.005	0.005	0.005	0.005	0.005	0.005	0.005
P.4.1	0.004	0.005	0.005	0.007	0.007	0.008	0.008	0.008	0.008	0.008	0.008	0.008
P.4.2	0.002	0.004	0.004	0.005	0.005	0.006	0.006	0.006	0.006	0.006	0.006	0.006
M.1.1	0.003	0.003	0.003	0.004	0.004	0.006	0.004	0.004	0.004	0.004	0.004	0.004
M.2.1	0.003	0.003	0.003	0.004	0.004	0.005	0.005	0.005	0.005	0.005	0.005	0.005
M.3.1	0.003	0.003	0.003	0.003	0.003	0.004	0.004	0.004	0.004	0.004	0.004	0.004
K.1.1	0.004	0.005	0.005	0.006	0.006	0.008	0.009	0.009	0.009	0.009	0.009	0.009
K.1.2	0.003	0.004	0.004	0.005	0.005	0.006	0.007	0.007	0.007	0.007	0.007	0.007
K.2.1	0.004	0.005	0.005	0.006	0.006	0.008	0.009	0.009	0.009	0.009	0.009	0.009
K.2.2	0.003	0.004	0.004	0.005	0.005	0.006	0.007	0.007	0.007	0.007	0.007	0.007
K.3.1	0.004	0.005	0.005	0.006	0.006	0.008	0.009	0.009	0.009	0.009	0.009	0.009
K.3.2	0.003	0.004	0.004	0.005	0.005	0.006	0.007	0.007	0.007	0.007	0.007	0.007
N.1.1	0.004	0.004	0.004	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
N.1.2	0.004	0.004	0.004	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
N.2.1	0.004	0.005	0.005	0.005	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006
N.2.2	0.004	0.005	0.005	0.005	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006
N.2.3	0.004	0.005	0.005	0.005	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006
N.3.1	0.004	0.005	0.005	0.005	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006
N.3.2	0.004	0.006	0.006	0.006	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007
N.3.3	0.004	0.005	0.005	0.005	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006
N.4.1	0.004	0.005	0.005	0.005	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006
S.1.1	0.001	0.001	0.001	0.001	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
S.1.2	0.001	0.001	0.001	0.001	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
S.2.1	0.001	0.001	0.001	0.001	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
S.2.2	0.001	0.001	0.001	0.001	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
S.2.3	0.001	0.001	0.001	0.001	0.001	0.001	0.002	0.002	0.002	0.002	0.002	0.002
S.3.1	0.002	0.002	0.002	0.002	0.002	0.003	0.004	0.004	0.004	0.004	0.004	0.004
S.3.2	0.002	0.002	0.002	0.002	0.002	0.003	0.004	0.004	0.004	0.004	0.004	0.004
S.3.3	0.001	0.001	0.001	0.001	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
H.1.1	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
H.1.2	0.001	0.001	0.001	0.001	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
H.1.3	0.001	0.001	0.001	0.001	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
H.1.4												
H.2.1	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
H.3.1	0.001	0.001	0.001	0.001	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
O.1.1	0.003	0.003	0.003	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004
O.1.2	0.003	0.003	0.003	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004
O.2.1												
O.2.2	0.002	0.002	0.002	0.002	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003
O.3.1	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004

In order to ensure efficient chip evacuation, coolant pressure must be at least 73 psi. Optimum pressure is > 218 psi.

Cutting data standard values for WOEX indexable inserts

Index	10 821 ...							
	BK8425	BK7935	BK6115	BK7615	BK62	BK77	BK79	BK7710
	v_c in ft/min							
P.1.1	850	820	980				850	
P.1.2	850	720	980				850	
P.1.3	890	890	890				890	
P.1.4	790	790	820				790	
P.1.5	750	660	890				750	
P.2.1	890	890	890				890	
P.2.2	850	850	850				850	
P.2.3	590	520	790				590	
P.2.4	490	430	620				490	
P.3.1	520	460	660				520	
P.3.2	430	360	520				430	
P.3.3	390	330	460				390	
P.4.1	590	520	720				590	
P.4.2	430	360	520				430	
M.1.1	490	520	720				490	
M.2.1	490	520	720				490	
M.3.1	430	490	660				430	
K.1.1	520	490	790	850	790		520	
K.1.2	390	360	460	520	460		390	
K.2.1	520	490	520	590	520		520	
K.2.2	330	300	330	390	330		330	
K.3.1	390	360	390	460	390		390	
K.3.2	330	300	330	390	330		330	
N.1.1	1310	1310					1310	1970
N.1.2	1310	1310					1310	1640
N.2.1	820	820					820	1310
N.2.2	820	820					820	980
N.2.3	750	750					750	820
N.3.1	660	660					660	1310
N.3.2	720	720					720	980
N.3.3	1080	1080					1080	980
N.4.1	660	660					660	980
S.1.1	200	160				160		200
S.1.2	160	130				130		200
S.2.1	200	160				160		200
S.2.2	160	130				130		200
S.2.3	100	100				100		200
S.3.1	330	230				230		260
S.3.2	260	200				200		260
S.3.3	160	130				130		260
H.1.1	330		330		330	130		260
H.1.2	260		260		260	100		130
H.1.3	160		160		160	70		130
H.1.4								130
H.2.1	330		330		330	130		260
H.3.1	260		260		260	100		260
O.1.1						330		330
O.1.2						330		330
O.2.1								
O.2.2						330		330
O.3.1						330		330

In order to ensure efficient chip evacuation, coolant pressure must be at least 73 psi. Optimum pressure is > 218 psi.

Cutting data standard values for KUB Trigon – 2xD

Index	10 892 ..., 15 892 ... ABS / K												
	Ø 0.562–0.625 inch	Ø 0.687–0.781 inch	Ø 0.812–0.937 inch	Ø 0.985–1.156 inch	Ø 1.187–1.437 inch	Ø 1.469–1.562 inch	Ø 1.625–1.750 inch	Ø 1.781–1.812 inch	Ø 1.875–2.062 inch	Ø 2.125–2.500 inch	Ø 2.593-2.656 inch	Ø 2.750–2.875 inch	Ø 3.000–3.250 inch
	f in inch/rev.												
P.1.1	0.003	0.004	0.004	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
P.1.2	0.003	0.004	0.005	0.006	0.006	0.006	0.007	0.008	0.008	0.010	0.010	0.010	0.010
P.1.3	0.002	0.003	0.005	0.006	0.006	0.006	0.006	0.006	0.007	0.008	0.010	0.010	0.010
P.1.4	0.002	0.003	0.004	0.005	0.005	0.005	0.006	0.005	0.006	0.007	0.009	0.009	0.009
P.1.5	0.003	0.004	0.004	0.005	0.006	0.006	0.006	0.007	0.008	0.009	0.009	0.009	0.009
P.2.1	0.002	0.003	0.005	0.006	0.006	0.006	0.006	0.006	0.007	0.008	0.010	0.010	0.010
P.2.2	0.002	0.003	0.004	0.005	0.005	0.005	0.006	0.005	0.006	0.007	0.009	0.009	0.009
P.2.3	0.002	0.003	0.004	0.006	0.006	0.006	0.006	0.006	0.006	0.007	0.008	0.008	0.008
P.2.4	0.002	0.002	0.003	0.004	0.005	0.005	0.005	0.006	0.006	0.006	0.007	0.007	0.007
P.3.1	0.002	0.003	0.004	0.005	0.005	0.005	0.006	0.006	0.006	0.006	0.006	0.006	0.006
P.3.2	0.002	0.002	0.003	0.004	0.004	0.004	0.004	0.005	0.006	0.006	0.006	0.006	0.006
P.3.3	0.002	0.002	0.003	0.003	0.003	0.003	0.004	0.004	0.005	0.005	0.005	0.005	0.005
P.4.1	0.003	0.004	0.004	0.005	0.005	0.005	0.006	0.006	0.007	0.007	0.007	0.007	0.007
P.4.2	0.002	0.002	0.003	0.004	0.004	0.004	0.004	0.005	0.006	0.006	0.006	0.006	0.006
M.1.1	0.002	0.002	0.003	0.005	0.005	0.005	0.006	0.006	0.006	0.006	0.006	0.006	0.006
M.2.1	0.002	0.002	0.003	0.005	0.005	0.005	0.005	0.005	0.005	0.006	0.006	0.006	0.006
M.3.1	0.002	0.002	0.003	0.004	0.004	0.004	0.004	0.004	0.004	0.006	0.006	0.006	0.006
K.1.1	0.004	0.005	0.006	0.008	0.008	0.008	0.010	0.010	0.010	0.012	0.012	0.012	0.012
K.1.2	0.003	0.003	0.004	0.006	0.006	0.006	0.007	0.007	0.007	0.008	0.010	0.010	0.010
K.2.1	0.003	0.004	0.006	0.008	0.008	0.008	0.010	0.010	0.010	0.012	0.012	0.012	0.012
K.2.2	0.003	0.004	0.005	0.008	0.005	0.005	0.006	0.009	0.009	0.010	0.010	0.010	0.010
K.3.1	0.004	0.005	0.006	0.010	0.006	0.006	0.007	0.010	0.010	0.012	0.012	0.012	0.012
K.3.2	0.003	0.004	0.005	0.008	0.005	0.005	0.006	0.009	0.009	0.010	0.010	0.010	0.010
N.1.1	0.002	0.003	0.003	0.004	0.004	0.005	0.005	0.005	0.005	0.006	0.006	0.006	0.006
N.1.2	0.002	0.003	0.003	0.004	0.004	0.005	0.005	0.005	0.005	0.006	0.006	0.006	0.006
N.2.1	0.004	0.005	0.006	0.007	0.007	0.008	0.008	0.007	0.008	0.008	0.008	0.008	0.008
N.2.2	0.004	0.005	0.006	0.007	0.007	0.008	0.008	0.007	0.008	0.008	0.008	0.008	0.008
N.2.3	0.004	0.004	0.005	0.006	0.006	0.007	0.007	0.006	0.007	0.007	0.007	0.007	0.007
N.3.1	0.002	0.003	0.005	0.006	0.006	0.007	0.008	0.008	0.008	0.010	0.010	0.010	0.010
N.3.2	0.002	0.004	0.005	0.007	0.007	0.008	0.009	0.009	0.009	0.010	0.010	0.010	0.010
N.3.3	0.002	0.003	0.003	0.004	0.004	0.004	0.005	0.005	0.005	0.006	0.006	0.006	0.006
N.4.1	0.002	0.003	0.005	0.006	0.006	0.007	0.008	0.008	0.008	0.010	0.010	0.010	0.010
S.1.1	0.002	0.002	0.003	0.004	0.004	0.004	0.004	0.004	0.004	0.005	0.005	0.005	0.005
S.1.2	0.001	0.002	0.002	0.003	0.003	0.003	0.003	0.003	0.003	0.004	0.004	0.004	0.004
S.2.1	0.002	0.002	0.003	0.004	0.004	0.004	0.004	0.004	0.004	0.005	0.005	0.005	0.005
S.2.2	0.001	0.002	0.002	0.003	0.003	0.003	0.003	0.003	0.003	0.004	0.004	0.004	0.004
S.2.3	0.001	0.001	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
S.3.1	0.003	0.004	0.004	0.005	0.004	0.005	0.005	0.004	0.004	0.005	0.005	0.006	0.006
S.3.2	0.002	0.003	0.004	0.005	0.004	0.005	0.005	0.004	0.004	0.005	0.005	0.006	0.006
S.3.3	0.002	0.002	0.002	0.003	0.002	0.003	0.003	0.002	0.002	0.003	0.003	0.003	0.003
H.1.1	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.003	0.003	0.003	0.003	0.003	0.003
H.1.2	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.003	0.003
H.1.3	0.002	0.002	0.002	0.002	0.002	0.002	0.002						
H.1.4													
H.2.1	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
H.3.1	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
O.1.1	0.003	0.003	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004
O.1.2	0.003	0.003	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004
O.2.1													
O.2.2	0.002	0.002	0.002	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003
O.3.1	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004

During the drilling operation on through holes a sharp disk will be produced. Safety precautions must be observed.
A safety guard has to be provided as protection.

Cutting data standard values for KUB Trigon – 2.5xD

Index	15 896 ...									
	C									
	Ø 0.562–0.625 inch	Ø 0.687–0.781 inch	Ø 0.812–0.937 inch	Ø 0.985–1.156 inch	Ø 1.187–1.437 inch	Ø 1.469–1.562 inch	Ø 1.625–1.750 inch	Ø 1.812–2.000 inch	Ø 2.125–2.500 inch	Ø 2.750–3.250 inch
	f in inch/rev.									
P.1.1	0.003	0.004	0.004	0.005	0.005	0.005	0.005	0.005	0.005	0.005
P.1.2	0.003	0.004	0.005	0.006	0.006	0.006	0.007	0.008	0.010	0.010
P.1.3	0.002	0.003	0.005	0.006	0.006	0.006	0.006	0.007	0.008	0.010
P.1.4	0.002	0.003	0.004	0.005	0.005	0.005	0.006	0.006	0.007	0.009
P.1.5	0.003	0.004	0.004	0.005	0.006	0.006	0.006	0.008	0.009	0.009
P.2.1	0.002	0.003	0.005	0.006	0.006	0.006	0.006	0.007	0.008	0.010
P.2.2	0.002	0.003	0.004	0.005	0.005	0.005	0.006	0.006	0.007	0.009
P.2.3	0.002	0.003	0.004	0.006	0.006	0.006	0.006	0.006	0.007	0.008
P.2.4	0.002	0.002	0.003	0.004	0.005	0.005	0.005	0.006	0.006	0.007
P.3.1	0.002	0.003	0.004	0.005	0.005	0.005	0.006	0.006	0.006	0.006
P.3.2	0.002	0.002	0.003	0.004	0.004	0.004	0.004	0.006	0.006	0.006
P.3.3	0.002	0.002	0.003	0.003	0.003	0.003	0.004	0.005	0.005	0.005
P.4.1	0.003	0.004	0.004	0.005	0.005	0.005	0.006	0.007	0.007	0.007
P.4.2	0.002	0.002	0.003	0.004	0.004	0.004	0.004	0.006	0.006	0.006
M.1.1	0.002	0.002	0.003	0.005	0.005	0.005	0.006	0.006	0.006	0.006
M.2.1	0.002	0.002	0.003	0.005	0.005	0.005	0.005	0.005	0.006	0.006
M.3.1	0.002	0.002	0.003	0.004	0.004	0.004	0.004	0.004	0.006	0.006
K.1.1	0.004	0.005	0.006	0.008	0.008	0.008	0.010	0.010	0.012	0.012
K.1.2	0.003	0.003	0.004	0.006	0.006	0.006	0.007	0.007	0.008	0.010
K.2.1	0.003	0.004	0.006	0.008	0.008	0.008	0.010	0.010	0.012	0.012
K.2.2	0.003	0.004	0.005	0.008	0.005	0.005	0.006	0.009	0.010	0.010
K.3.1	0.004	0.005	0.006	0.010	0.006	0.006	0.007	0.010	0.012	0.012
K.3.2	0.003	0.004	0.005	0.008	0.005	0.005	0.006	0.009	0.010	0.010
N.1.1	0.002	0.003	0.003	0.004	0.004	0.005	0.005	0.005	0.006	0.006
N.1.2	0.002	0.003	0.003	0.004	0.004	0.005	0.005	0.005	0.006	0.006
N.2.1	0.004	0.005	0.006	0.007	0.007	0.008	0.008	0.008	0.008	0.008
N.2.2	0.004	0.005	0.006	0.007	0.007	0.008	0.008	0.008	0.008	0.008
N.2.3	0.004	0.004	0.005	0.006	0.006	0.007	0.007	0.007	0.007	0.007
N.3.1	0.002	0.003	0.005	0.006	0.006	0.007	0.008	0.008	0.010	0.010
N.3.2	0.002	0.004	0.005	0.007	0.007	0.008	0.009	0.009	0.010	0.010
N.3.3	0.002	0.003	0.003	0.004	0.004	0.004	0.005	0.005	0.006	0.006
N.4.1	0.002	0.003	0.005	0.006	0.006	0.007	0.008	0.008	0.010	0.010
S.1.1	0.002	0.002	0.003	0.004	0.004	0.004	0.004	0.004	0.005	0.005
S.1.2	0.001	0.002	0.002	0.003	0.003	0.003	0.003	0.003	0.004	0.004
S.2.1	0.002	0.002	0.003	0.004	0.004	0.004	0.004	0.004	0.005	0.005
S.2.2	0.001	0.002	0.002	0.003	0.003	0.003	0.003	0.003	0.004	0.004
S.2.3	0.001	0.001	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
S.3.1	0.003	0.004	0.004	0.005	0.004	0.005	0.005	0.004	0.005	0.006
S.3.2	0.002	0.003	0.004	0.005	0.004	0.005	0.005	0.004	0.005	0.006
S.3.3	0.002	0.002	0.002	0.003	0.002	0.003	0.003	0.002	0.003	0.003
H.1.1	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.003	0.003	0.003
H.1.2	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.003
H.1.3	0.002	0.002	0.002	0.002	0.002	0.002	0.002			
H.1.4										
H.2.1	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
H.3.1	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
O.1.1	0.003	0.003	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004
O.1.2	0.003	0.003	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004
O.2.1										
O.2.2	0.002	0.002	0.002	0.003	0.003	0.003	0.003	0.003	0.003	0.003
O.3.1	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004

In order to ensure efficient chip evacuation, coolant pressure must be at least 73 psi. Optimum pressure is > 218 psi.

Cutting data standard values for KUB Trigon – 3xD

Index	10 893 ... / 15 893 ...												
	ABS												
	Ø 0.562–0.656 inch	Ø 0.687–0.781 inch	Ø 0.812–0.937 inch	Ø 0.985–1.156 inch	Ø1.187–1.437 inch	Ø1.469–1.562 inch	Ø1.625–1.750 inch	Ø1.781–1.812 inch	Ø1.875–2.062 inch	Ø2.125–2.500 inch	Ø2.593–2.656 inch	Ø2.750–2.875 inch	Ø3.000–3.250 inch
	f in inch/rev.												
P.1.1	0.003	0.004	0.004	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
P.1.2	0.003	0.004	0.005	0.006	0.006	0.006	0.008	0.008	0.008	0.010	0.010	0.010	0.010
P.1.3	0.002	0.003	0.005	0.006	0.006	0.006	0.006	0.006	0.007	0.008	0.010	0.010	0.010
P.1.4	0.002	0.003	0.004	0.005	0.005	0.005	0.006	0.005	0.006	0.007	0.009	0.009	0.009
P.1.5	0.003	0.004	0.004	0.005	0.006	0.006	0.007	0.007	0.008	0.009	0.009	0.009	0.009
P.2.1	0.002	0.003	0.005	0.006	0.006	0.006	0.006	0.006	0.007	0.008	0.010	0.010	0.010
P.2.2	0.002	0.003	0.004	0.005	0.005	0.005	0.006	0.005	0.006	0.007	0.009	0.009	0.009
P.2.3	0.002	0.003	0.004	0.006	0.006	0.006	0.006	0.006	0.006	0.007	0.008	0.008	0.008
P.2.4	0.002	0.002	0.003	0.004	0.005	0.005	0.005	0.006	0.006	0.006	0.007	0.007	0.007
P.3.1	0.002	0.003	0.004	0.005	0.005	0.005	0.006	0.006	0.006	0.006	0.006	0.006	0.006
P.3.2	0.002	0.002	0.003	0.004	0.004	0.004	0.004	0.005	0.006	0.006	0.006	0.006	0.006
P.3.3	0.002	0.002	0.003	0.003	0.003	0.003	0.004	0.004	0.005	0.005	0.005	0.005	0.005
P.4.1	0.003	0.004	0.004	0.005	0.005	0.005	0.006	0.006	0.007	0.007	0.007	0.007	0.007
P.4.2	0.002	0.002	0.003	0.004	0.004	0.004	0.004	0.005	0.006	0.006	0.006	0.006	0.006
M.1.1	0.002	0.002	0.003	0.005	0.005	0.005	0.006	0.006	0.006	0.006	0.006	0.006	0.006
M.2.1	0.002	0.002	0.003	0.005	0.005	0.005	0.005	0.005	0.005	0.006	0.006	0.006	0.006
M.3.1	0.002	0.002	0.003	0.004	0.004	0.004	0.004	0.004	0.004	0.006	0.006	0.006	0.006
K.1.1	0.004	0.005	0.006	0.008	0.008	0.008	0.010	0.010	0.010	0.012	0.012	0.012	0.012
K.1.2	0.003	0.003	0.004	0.006	0.006	0.006	0.007	0.007	0.007	0.008	0.010	0.010	0.010
K.2.1	0.003	0.004	0.006	0.008	0.008	0.008	0.010	0.010	0.010	0.012	0.012	0.012	0.012
K.2.2	0.003	0.004	0.005	0.008	0.008	0.008	0.008	0.009	0.009	0.010	0.010	0.010	0.010
K.3.1	0.004	0.005	0.006	0.010	0.010	0.010	0.010	0.010	0.010	0.012	0.012	0.012	0.012
K.3.2	0.003	0.004	0.005	0.008	0.008	0.008	0.008	0.009	0.009	0.010	0.010	0.010	0.010
N.1.1	0.002	0.003	0.003	0.004	0.004	0.005	0.005	0.005	0.005	0.006	0.006	0.006	0.006
N.1.2	0.002	0.003	0.003	0.004	0.004	0.005	0.005	0.005	0.005	0.006	0.006	0.006	0.006
N.2.1	0.004	0.005	0.006	0.007	0.007	0.008	0.008	0.007	0.008	0.008	0.008	0.008	0.008
N.2.2	0.004	0.005	0.006	0.007	0.007	0.008	0.008	0.007	0.008	0.008	0.008	0.008	0.008
N.2.3	0.004	0.004	0.005	0.006	0.006	0.007	0.007	0.006	0.007	0.007	0.007	0.007	0.007
N.3.1	0.002	0.003	0.005	0.006	0.006	0.007	0.008	0.008	0.008	0.010	0.010	0.010	0.010
N.3.2	0.002	0.004	0.005	0.007	0.007	0.008	0.009	0.009	0.009	0.010	0.010	0.010	0.010
N.3.3	0.002	0.004	0.004	0.004	0.004	0.004	0.005	0.005	0.005	0.006	0.006	0.006	0.006
N.4.1	0.002	0.003	0.005	0.006	0.006	0.007	0.008	0.008	0.008	0.010	0.010	0.010	0.010
S.1.1	0.002	0.002	0.003	0.004	0.004	0.004	0.004	0.004	0.004	0.005	0.005	0.005	0.005
S.1.2	0.001	0.002	0.002	0.003	0.003	0.003	0.003	0.003	0.003	0.004	0.004	0.004	0.004
S.2.1	0.002	0.002	0.003	0.004	0.004	0.004	0.004	0.004	0.004	0.005	0.005	0.005	0.005
S.2.2	0.001	0.002	0.002	0.003	0.003	0.003	0.003	0.003	0.003	0.004	0.004	0.004	0.004
S.2.3	0.001	0.001	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002
S.3.1	0.003	0.004	0.004	0.005	0.004	0.005	0.005	0.004	0.004	0.005	0.005	0.006	0.006
S.3.2	0.002	0.003	0.004	0.005	0.004	0.005	0.005	0.004	0.004	0.005	0.005	0.006	0.006
S.3.3	0.002	0.002	0.002	0.003	0.002	0.003	0.003	0.002	0.002	0.003	0.003	0.003	0.003
H.1.1	0.002	0.003	0.003	0.004	0.004	0.004	0.004	0.003	0.003	0.003	0.003	0.003	0.003
H.1.2	0.002	0.002	0.002	0.003	0.003	0.003	0.003	0.002	0.002	0.002	0.002	0.003	0.003
H.1.3	0.001	0.002	0.002	0.002	0.002	0.002	0.002						
H.1.4													
H.2.1	0.002	0.003	0.003	0.004	0.004	0.004	0.004	0.002	0.002	0.002	0.002	0.002	0.002
H.3.1	0.002	0.002	0.002	0.003	0.003	0.003	0.003	0.002	0.002	0.002	0.002	0.002	0.002
O.1.1	0.003	0.003	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004
O.1.2	0.003	0.003	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004
O.2.1													
O.2.2	0.002	0.002	0.002	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003
O.3.1	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004

During the drilling operation on through holes a sharp disk will be produced. Safety precautions must be observed.
A safety guard has to be provided as protection.

Cutting data standard values for KUB Trigon – 4xD

Index	10 894 ... / 15 894 ...						
	ABS						
	Ø 0.562–0.656 inch	Ø 0.687–0.781 inch	Ø 0.812–0.937 inch	Ø 0.985–1.156 inch	Ø1.187–1.437 inch	Ø1.469–1.562 inch	Ø1.625–1.750 inch
	f in inch/rev.						
P.1.1	0.002	0.003	0.003	0.004	0.004	0.004	0.004
P.1.2	0.002	0.003	0.004	0.005	0.006	0.006	0.007
P.1.3	0.002	0.002	0.004	0.005	0.005	0.005	0.006
P.1.4	0.002	0.002	0.004	0.004	0.004	0.004	0.005
P.1.5	0.002	0.003	0.004	0.004	0.005	0.005	0.006
P.2.1	0.002	0.002	0.004	0.005	0.005	0.005	0.006
P.2.2	0.002	0.002	0.004	0.004	0.004	0.004	0.005
P.2.3	0.002	0.002	0.003	0.005	0.006	0.006	0.006
P.2.4	0.001	0.002	0.002	0.004	0.004	0.004	0.004
P.3.1	0.002	0.002	0.003	0.004	0.004	0.004	0.005
P.3.2	0.001	0.002	0.002	0.003	0.003	0.003	0.004
P.3.3	0.001	0.002	0.002	0.003	0.003	0.003	0.003
P.4.1	0.002	0.003	0.004	0.004	0.004	0.004	0.005
P.4.2	0.001	0.002	0.002	0.003	0.003	0.003	0.004
M.1.1	0.002	0.002	0.002	0.004	0.004	0.004	0.005
M.2.1	0.002	0.002	0.002	0.004	0.004	0.004	0.004
M.3.1	0.002	0.002	0.002	0.004	0.004	0.004	0.004
K.1.1	0.003	0.004	0.005	0.007	0.007	0.007	0.009
K.1.2	0.002	0.002	0.003	0.005	0.005	0.006	0.006
K.2.1	0.002	0.003	0.005	0.007	0.007	0.007	0.009
K.2.2	0.002	0.003	0.004	0.007	0.007	0.007	0.007
K.3.1	0.003	0.004	0.006	0.009	0.009	0.009	0.009
K.3.2	0.002	0.003	0.004	0.007	0.007	0.007	0.007
N.1.1	0.001	0.002	0.002	0.003	0.003	0.004	0.004
N.1.2	0.001	0.002	0.002	0.003	0.003	0.004	0.004
N.2.1	0.003	0.004	0.005	0.006	0.006	0.007	0.007
N.2.2	0.003	0.004	0.005	0.006	0.006	0.007	0.007
N.2.3	0.003	0.004	0.004	0.006	0.006	0.006	0.006
N.3.1	0.001	0.002	0.004	0.006	0.006	0.006	0.007
N.3.2	0.001	0.003	0.004	0.006	0.006	0.007	0.008
N.3.3	0.001	0.002	0.002	0.003	0.003	0.003	0.004
N.4.1	0.001	0.002	0.004	0.006	0.006	0.006	0.007
S.1.1	0.001	0.002	0.002	0.003	0.003	0.003	0.003
S.1.2	0.001	0.001	0.002	0.002	0.002	0.002	0.002
S.2.1	0.001	0.002	0.002	0.003	0.003	0.003	0.003
S.2.2	0.001	0.001	0.002	0.002	0.002	0.002	0.002
S.2.3	0.000	0.001	0.001	0.002	0.002	0.002	0.002
S.3.1	0.002	0.003	0.004	0.004	0.004	0.004	0.004
S.3.2	0.002	0.002	0.003	0.004	0.003	0.004	0.004
S.3.3	0.001	0.002	0.002	0.002	0.002	0.002	0.002
H.1.1	0.001	0.002	0.002	0.003	0.003	0.003	0.003
H.1.2	0.001	0.002	0.002	0.002	0.002	0.002	0.002
H.1.3	0.001	0.001	0.001	0.002	0.002	0.002	0.002
H.1.4							
H.2.1	0.001	0.002	0.002	0.003	0.003	0.003	0.003
H.3.1	0.001	0.002	0.002	0.002	0.002	0.002	0.002
O.1.1	0.003	0.003	0.004	0.004	0.004	0.004	0.004
O.1.2	0.003	0.003	0.004	0.004	0.004	0.004	0.004
O.2.1							
O.2.2	0.002	0.002	0.002	0.003	0.003	0.003	0.003
O.3.1	0.004	0.004	0.004	0.004	0.004	0.004	0.004

In order to ensure efficient chip evacuation, coolant pressure must be at least 73 psi. Optimum pressure is > 218 psi.

Cutting data standard values for KUB Trigon – 4xD

Index	15 894 ...						
	C						
	Ø 0.562–0.656 inch	Ø 0.687–0.781 inch	Ø 0.812–0.937 inch	Ø 0.985–1.156 inch	Ø1.187–1.437 inch	Ø1.469–1.562 inch	Ø1.625–1.750 inch
	f in inch/rev.						
P.1.1	0.002	0.003	0.003	0.004	0.004	0.004	0.004
P.1.2	0.002	0.003	0.004	0.005	0.006	0.006	0.007
P.1.3	0.002	0.002	0.004	0.005	0.005	0.005	0.006
P.1.4	0.002	0.002	0.004	0.004	0.004	0.004	0.005
P.1.5	0.002	0.003	0.004	0.004	0.005	0.005	0.006
P.2.1	0.002	0.002	0.004	0.005	0.005	0.005	0.006
P.2.2	0.002	0.002	0.004	0.004	0.004	0.004	0.005
P.2.3	0.002	0.002	0.003	0.005	0.006	0.006	0.006
P.2.4	0.001	0.002	0.002	0.004	0.004	0.004	0.004
P.3.1	0.002	0.002	0.003	0.004	0.004	0.004	0.005
P.3.2	0.001	0.002	0.002	0.003	0.004	0.003	0.004
P.3.3	0.001	0.002	0.002	0.003	0.003	0.003	0.003
P.4.1	0.002	0.003	0.004	0.004	0.005	0.004	0.005
P.4.2	0.001	0.002	0.002	0.003	0.004	0.003	0.004
M.1.1	0.002	0.002	0.002	0.004	0.004	0.004	0.005
M.2.1	0.002	0.002	0.002	0.004	0.004	0.004	0.004
M.3.1	0.002	0.002	0.002	0.004	0.004	0.004	0.004
K.1.1	0.003	0.004	0.005	0.007	0.007	0.007	0.009
K.1.2	0.002	0.002	0.003	0.005	0.005	0.006	0.006
K.2.1	0.002	0.003	0.005	0.007	0.007	0.007	0.009
K.2.2	0.002	0.003	0.004	0.007	0.007	0.007	0.007
K.3.1	0.003	0.004	0.006	0.009	0.009	0.009	0.009
K.3.2	0.002	0.003	0.004	0.007	0.007	0.007	0.007
N.1.1	0.001	0.002	0.002	0.003	0.004	0.004	0.004
N.1.2	0.001	0.002	0.002	0.003	0.004	0.004	0.004
N.2.1	0.003	0.004	0.005	0.006	0.007	0.007	0.007
N.2.2	0.003	0.004	0.005	0.006	0.007	0.007	0.007
N.2.3	0.003	0.004	0.004	0.006	0.006	0.006	0.006
N.3.1	0.002	0.002	0.004	0.006	0.006	0.006	0.007
N.3.2	0.002	0.003	0.004	0.006	0.007	0.007	0.008
N.3.3	0.001	0.003	0.003	0.004	0.004	0.003	0.004
N.4.1	0.002	0.002	0.004	0.006	0.006	0.006	0.007
S.1.1	0.001	0.002	0.003	0.003	0.004	0.003	0.003
S.1.2	0.001	0.002	0.002	0.002	0.003	0.002	0.002
S.2.1	0.001	0.002	0.003	0.003	0.004	0.003	0.003
S.2.2	0.001	0.002	0.002	0.002	0.003	0.002	0.002
S.2.3	0.001	0.001	0.002	0.002	0.002	0.002	0.002
S.3.1	0.002	0.003	0.004	0.004	0.004	0.004	0.004
S.3.2	0.002	0.002	0.003	0.004	0.004	0.004	0.004
S.3.3	0.001	0.002	0.002	0.002	0.002	0.002	0.002
H.1.1	0.001	0.002	0.002	0.003	0.003	0.003	0.003
H.1.2	0.001	0.002	0.002	0.002	0.002	0.002	0.002
H.1.3	0.001	0.001	0.001	0.002	0.002	0.002	0.002
H.1.4							
H.2.1	0.001	0.002	0.002	0.003	0.003	0.003	0.003
H.3.1	0.001	0.002	0.002	0.002	0.002	0.002	0.002
O.1.1	0.003	0.003	0.004	0.004	0.004	0.004	0.004
O.1.2	0.003	0.003	0.004	0.004	0.004	0.004	0.004
O.2.1							
O.2.2	0.002	0.002	0.002	0.003	0.003	0.003	0.003
O.3.1	0.004	0.004	0.004	0.004	0.004	0.004	0.004

During the drilling operation on through holes a sharp disk will be produced. Safety precautions must be observed.
A safety guard has to be provided as protection.

Cutting data standard values for KUB Centron

Index	Ø 0.812–1.000 inch				Ø 1.125–1.250 inch				Ø 1.375–1.750 inch			
		Center drill				Center drill				Center drill		
		10 863 ... (TiN/TiAlN)	10 862 ... (TiN)	10 862 ... (TiAlN)		10 863 ... (TiN/TiAlN)	10 862 ... (TiN)	10 862 ... (TiAlN)		10 863 ... (TiN/TiAlN)	10 862 ... (TiN)	10 862 ... (TiAlN)
	f (inch/rev)	v_c (ft/min)			f (inch/rev)	v_c (ft/min)			f (inch/rev)	v_c (ft/min)		
P.1.1	0.003	820	520		0.003	820	520		0.004	820	520	
P.1.2	0.005	820	520		0.006	820	520		0.006	820	520	
P.1.3	0.004	660	520		0.005	660	520		0.005	660	520	
P.1.4	0.004	590	520		0.004	590	520		0.004	590	520	
P.1.5	0.004	750	520		0.005	750	520		0.005	750	520	
P.2.1	0.004	660	520		0.005	660	520		0.005	660	520	
P.2.2	0.004	620	490		0.004	620	490		0.004	620	490	
P.2.3	0.005	590	460		0.006	590	460		0.006	590	460	
P.2.4	0.004	490	390		0.005	490	390		0.005	490	390	
P.3.1	0.003	520	390		0.004	520	390		0.004	520	390	
P.3.2	0.002	460	330		0.003	460	330		0.003	460	330	
P.3.3	0.003	430	300		0.003	430	300		0.003	430	300	
P.4.1	0.004	590	430		0.004	590	430		0.004	590	430	
P.4.2	0.002	460	330		0.003	460	330		0.003	460	330	
M.1.1	0.004	520		230	0.005	520		230	0.005	520		230
M.2.1	0.003	390		230	0.004	390		230	0.004	390		230
M.3.1	0.003	360		200	0.003	360		200	0.003	360		200
K.1.1	0.006	660		330	0.006	660		330	0.006	660		330
K.1.2	0.005	520		330	0.006	520		330	0.006	520		330
K.2.1	0.005	520		330	0.006	520		330	0.006	520		330
K.2.2	0.004	330		260	0.005	330		260	0.005	330		260
K.3.1	0.005	390		330	0.006	390		330	0.006	390		330
K.3.2	0.004	330		260	0.005	330		260	0.005	330		260
N.1.1	0.003	1150	1150		0.003	1150	1150		0.004	1150	1150	
N.1.2	0.003	1150	1150		0.003	1150	1150		0.004	1150	1150	
N.2.1	0.004	820	820		0.005	820	820		0.006	820	820	
N.2.2	0.004	820	820		0.005	820	820		0.006	820	820	
N.2.3	0.004	750	750		0.004	750	750		0.006	750	750	
N.3.1	0.006	660	660		0.006	660	660		0.007	660	660	
N.3.2	0.006	720	720		0.007	720	720		0.008	720	720	
N.3.3	0.004	820	820		0.004	820	820		0.006	820	820	
N.4.1	0.006	660	660		0.006	660	660		0.007	660	660	
S.1.1	0.002	160		80	0.002	160		80	0.002	160		80
S.1.2	0.001	130		70	0.002	130		70	0.002	130		70
S.2.1	0.002	160		80	0.002	160		80	0.002	160		80
S.2.2	0.001	130		70	0.002	130		70	0.002	130		70
S.2.3	0.001	100		70	0.002	100		70	0.002	100		70
S.3.1	0.002	260		160	0.003	260		160	0.003	260		160
S.3.2	0.002	260		130	0.002	260		130	0.002	260		130
S.3.3	0.001	160		100	0.002	160		100	0.002	160		100
H.1.1												
H.1.2												
H.1.3												
H.1.4												
H.2.1												
H.3.1												
O.1.1	0.003	330	330		0.004	330	330		0.004	330	330	
O.1.2	0.003	330	330		0.004	330	330		0.004	330	330	
O.2.1												
O.2.2	0.003	160	100		0.004	160	100		0.004	160	100	
O.3.1	0.003	330	330		0.004	330	330		0.004	330	330	

In order to ensure efficient chip evacuation, coolant pressure must be at least 73 psi. Optimum pressure is > 218 psi.

Cutting data standard values for KUB Centron

Index	Ø 1.875–2.000 inch				Ø 2.250–2.500 inch			
		Center drill				Center drill		
		10 863 ... (TiN/TiAlN)	10 862 ... (TiN)	10 862 ... (TiAlN)		10 863 ... (TiN/TiAlN)	10 862 ... (TiN)	10 862 ... (TiAlN)
	f (inch/rev)	v_c (ft/min)			f (inch/rev)	v_c (ft/min)		
P.1.1	0.004	820	520		0.004	820	520	
P.1.2	0.006	820	520		0.006	820	520	
P.1.3	0.005	660	520		0.006	660	520	
P.1.4	0.004	590	520		0.005	590	520	
P.1.5	0.005	750	520		0.006	750	520	
P.2.1	0.005	660	520		0.006	660	520	
P.2.2	0.004	620	490		0.005	620	490	
P.2.3	0.006	590	460		0.006	590	460	
P.2.4	0.005	490	390		0.005	490	390	
P.3.1	0.004	520	390		0.005	520	390	
P.3.2	0.003	460	330		0.004	460	330	
P.3.3	0.003	430	300		0.004	430	300	
P.4.1	0.004	590	430		0.006	590	430	
P.4.2	0.003	460	330		0.004	460	330	
M.1.1	0.005	520		230	0.005	520		230
M.2.1	0.004	390		230	0.004	390		230
M.3.1	0.003	360		200	0.003	360		200
K.1.1	0.006	660		330	0.006	660		330
K.1.2	0.006	520		330	0.006	520		330
K.2.1	0.006	520		330	0.006	520		330
K.2.2	0.005	330		260	0.005	330		260
K.3.1	0.006	390		330	0.006	390		330
K.3.2	0.005	330		260	0.005	330		260
N.1.1	0.004	1150	1150		0.004	1150	1150	
N.1.2	0.004	1150	1150		0.004	1150	1150	
N.2.1	0.006	820	820		0.006	820	820	
N.2.2	0.006	820	820		0.006	820	820	
N.2.3	0.006	750	750		0.006	750	750	
N.3.1	0.007	660	660		0.007	660	660	
N.3.2	0.008	720	720		0.008	720	720	
N.3.3	0.006	820	820		0.006	820	820	
N.4.1	0.007	660	660		0.007	660	660	
S.1.1	0.002	160		80	0.002	160		80
S.1.2	0.002	130		70	0.002	130		70
S.2.1	0.002	160		80	0.002	160		80
S.2.2	0.002	130		70	0.002	130		70
S.2.3	0.002	100		70	0.002	100		70
S.3.1	0.003	260		160	0.003	260		160
S.3.2	0.002	260		130	0.002	260		130
S.3.3	0.002	160		100	0.002	160		100
H.1.1								
H.1.2								
H.1.3								
H.1.4								
H.2.1								
H.3.1								
O.1.1	0.004	330	330		0.004	330	330	
O.1.2	0.004	330	330		0.004	330	330	
O.2.1								
O.2.2	0.004	160	100		0.004	160	100	
O.3.1	0.004	330	330		0.004	330	330	

The cutting data of the KUB Centron depends on the center drill and not on the indexable inserts.
Please select the cutting data of the center drill. 10 863 ... is only suitable up to drilling depth 6xD.

Cutting data standard values for SOGX indexable inserts

Index	10 820 ...					
	-01 / -13 / -32 BK8425	-03 / -21 BK8430	-01 / -21 BK7935	-01 BK6115	-01 BK7710	-34 BK8425
	v_c (m/min)					
P.1.1	260	260	250	300		
P.1.2	260	260	220	300		260
P.1.3	270	270	270	270		
P.1.4	250	250	250	250		
P.1.5	270	270	200	300		270
P.2.1	270	270	270	270		
P.2.2	260	260	260	260		
P.2.3	180	180	160	240		180
P.2.4	150	150	130	200		150
P.3.1	160	160	140	200		160
P.3.2	130	130	120	160		130
P.3.3	120	120	110	140		120
P.4.1	180	180	150	220		
P.4.2	130	130	120	160		
M.1.1	150	150	160	220		
M.2.1	150	150	160	220		
M.3.1	140	140	150	200		
K.1.1	160	160	150	240		160
K.1.2	120	120	120	180		120
K.2.1	160	160	150	160		160
K.2.2	100	100	90	100		100
K.3.1	120	120	110	120		120
K.3.2	100	100	90	100		100
N.1.1	400	400	400		500	
N.1.2	400	400	400		500	
N.2.1	250	250	250		280	
N.2.2	250	250	250		280	
N.2.3	230	230	230		250	
N.3.1	200	200	200		250	
N.3.2	220	220	220		280	
N.3.3	330	330	330		390	
N.4.1	200	200	200		250	
S.1.1	60	60	60			
S.1.2	50	50	50			
S.2.1	60	60	60			
S.2.2	50	50	50			
S.2.3	30	30	30			
S.3.1	100	100	100		100	
S.3.2	80	80	80		80	
S.3.3	50	50	50		50	
H.1.1	100	100		100		
H.1.2	80	80		80		
H.1.3	50	50		50		
H.1.4						
H.2.1	100	100		100		
H.3.1	80	80		80		
O.1.1			100		100	
O.1.2			100		100	
O.2.1						
O.2.2			100		100	
O.3.1			100		100	

Feed rate values of -34 topography, see → **page 95.**

BK6115 -01 / BK7935 -21 are exclusively recommended for use on the peripheral cutting edge!

During the drilling operation on through holes a sharp disk will be produced. Safety precautions must be observed. A safety guard has to be provided as protection.

Cutting data standard values for KUB Pentron – 2xD, 3xD / KUB Pentron CS

Index	10 872 ..., 10 873 ...								
	ABS / PSC / C								
	Ø 14–15.5	Ø 16–17.5	Ø 18–19.5	Ø 20–21.5	Ø 22–23.5	Ø 24–25.5	Ø 26–27.5	Ø 28–30	Ø 31–33
	f (mm/rev)								
P.1.1	0.08	0.08	0.09	0.10	0.10	0.10	0.10	0.10	0.10
P.1.2	0.10	0.13	0.13	0.15	0.16	0.15	0.18	0.18	0.18
P.1.3	0.08	0.12	0.12	0.13	0.13	0.13	0.13	0.13	0.13
P.1.4	0.08	0.11	0.11	0.12	0.12	0.12	0.12	0.12	0.12
P.1.5	0.09	0.12	0.12	0.14	0.14	0.14	0.16	0.16	0.16
P.2.1	0.08	0.12	0.12	0.13	0.13	0.13	0.13	0.13	0.13
P.2.2	0.08	0.11	0.11	0.12	0.12	0.12	0.12	0.12	0.12
P.2.3	0.12	0.14	0.16	0.16	0.16	0.18	0.18	0.18	0.18
P.2.4	0.10	0.11	0.13	0.13	0.13	0.14	0.14	0.14	0.14
P.3.1	0.08	0.12	0.12	0.16	0.16	0.18	0.18	0.18	0.18
P.3.2	0.07	0.10	0.10	0.13	0.13	0.14	0.14	0.14	0.14
P.3.3	0.06	0.08	0.08	0.11	0.11	0.13	0.13	0.13	0.13
P.4.1	0.09	0.13	0.13	0.18	0.18	0.20	0.20	0.20	0.20
P.4.2	0.07	0.10	0.10	0.13	0.13	0.14	0.14	0.14	0.14
M.1.1	0.10	0.10	0.12	0.14	0.15	0.15	0.15	0.15	0.15
M.2.1	0.10	0.08	0.08	0.11	0.11	0.14	0.14	0.14	0.14
M.3.1	0.09	0.07	0.07	0.10	0.10	0.13	0.13	0.13	0.13
K.1.1	0.12	0.15	0.15	0.18	0.18	0.22	0.25	0.25	0.25
K.1.2	0.09	0.11	0.11	0.14	0.14	0.17	0.19	0.19	0.19
K.2.1	0.12	0.15	0.15	0.18	0.18	0.22	0.25	0.25	0.25
K.2.2	0.10	0.12	0.12	0.14	0.14	0.18	0.20	0.20	0.20
K.3.1	0.12	0.15	0.15	0.18	0.18	0.22	0.25	0.25	0.25
K.3.2	0.10	0.12	0.12	0.14	0.14	0.18	0.20	0.20	0.20
N.1.1	0.10	0.11	0.11	0.11	0.13	0.13	0.13	0.13	0.13
N.1.2	0.10	0.11	0.11	0.11	0.13	0.13	0.13	0.13	0.13
N.2.1	0.10	0.13	0.13	0.13	0.15	0.15	0.15	0.15	0.15
N.2.2	0.10	0.13	0.13	0.13	0.15	0.15	0.15	0.15	0.15
N.2.3	0.09	0.12	0.12	0.12	0.14	0.14	0.14	0.14	0.14
N.3.1	0.10	0.12	0.13	0.13	0.15	0.15	0.15	0.15	0.15
N.3.2	0.11	0.13	0.14	0.14	0.17	0.17	0.17	0.17	0.17
N.3.3	0.11	0.12	0.12	0.14	0.14	0.14	0.14	0.14	0.14
N.4.1	0.10	0.12	0.13	0.13	0.15	0.15	0.15	0.15	0.15
S.1.1	0.03	0.03	0.03	0.03	0.04	0.06	0.06	0.06	0.06
S.1.2	0.03	0.03	0.03	0.03	0.04	0.04	0.06	0.06	0.06
S.2.1	0.03	0.03	0.03	0.03	0.04	0.06	0.06	0.06	0.06
S.2.2	0.03	0.03	0.03	0.03	0.04	0.04	0.06	0.06	0.06
S.2.3	0.02	0.02	0.02	0.02	0.03	0.03	0.04	0.04	0.04
S.3.1	0.05	0.05	0.05	0.05	0.06	0.08	0.10	0.10	0.10
S.3.2	0.04	0.04	0.04	0.04	0.05	0.07	0.09	0.09	0.09
S.3.3	0.03	0.03	0.03	0.03	0.04	0.04	0.06	0.06	0.06
H.1.1	0.05	0.05	0.05	0.05	0.06	0.06	0.06	0.06	0.06
H.1.2	0.03	0.03	0.03	0.03	0.04	0.04	0.04	0.04	0.04
H.1.3	0.03	0.03	0.03	0.03	0.04	0.04	0.04	0.04	0.04
H.1.4									
H.2.1	0.04	0.04	0.04	0.04	0.05	0.05	0.05	0.05	0.05
H.3.1	0.03	0.03	0.03	0.03	0.04	0.04	0.04	0.04	0.04
O.1.1	0.08	0.08	0.08	0.10	0.10	0.10	0.10	0.10	0.10
O.1.2	0.08	0.08	0.08	0.10	0.10	0.10	0.10	0.10	0.10
O.2.1									
O.2.2	0.06	0.06	0.06	0.06	0.07	0.07	0.07	0.07	0.07
O.3.1	0.10	0.10	0.10	0.10	0.11	0.11	0.11	0.11	0.11

In order to ensure efficient chip evacuation, coolant pressure must be at least 73 psi. Optimum pressure is > 218 psi.

Cutting data standard values for KUB Pentron – 2xD, 3xD / KUB Pentron CS

Index	10 872 ..., 10 873 ... ABS / PSC / C					10 876 ... KUB Pentron CS – 3xD			
	Ø 34–37	Ø 38–42	Ø 43–46	Ø 46–52	Ø 53–65	Ø 64–69	Ø 70–75	Ø 76–84	Ø 85–96
	f (mm/rev)					f (mm/rev)			
P.1.1	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
P.1.2	0.18	0.18	0.18	0.18	0.18	0.15	0.15	0.15	0.15
P.1.3	0.13	0.13	0.13	0.16	0.16	0.15	0.15	0.15	0.15
P.1.4	0.12	0.12	0.12	0.14	0.14	0.14	0.14	0.14	0.14
P.1.5	0.16	0.16	0.16	0.16	0.16	0.14	0.14	0.14	0.14
P.2.1	0.13	0.13	0.13	0.16	0.16	0.15	0.15	0.15	0.15
P.2.2	0.12	0.12	0.12	0.14	0.14	0.14	0.14	0.14	0.14
P.2.3	0.18	0.18	0.18	0.18	0.18	0.20	0.20	0.20	0.20
P.2.4	0.14	0.14	0.14	0.14	0.14	0.16	0.16	0.16	0.16
P.3.1	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18
P.3.2	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14
P.3.3	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13
P.4.1	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
P.4.2	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14
M.1.1	0.15	0.15	0.15	0.16	0.16	0.16	0.16	0.16	0.16
M.2.1	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14
M.3.1	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13
K.1.1	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
K.1.2	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19
K.2.1	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
K.2.2	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
K.3.1	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
K.3.2	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
N.1.1	0.13	0.13	0.13	0.14	0.14	0.14	0.14	0.14	0.14
N.1.2	0.13	0.13	0.13	0.14	0.14	0.14	0.14	0.14	0.14
N.2.1	0.15	0.15	0.15	0.18	0.18	0.18	0.18	0.18	0.18
N.2.2	0.15	0.15	0.15	0.18	0.18	0.18	0.18	0.18	0.18
N.2.3	0.14	0.14	0.14	0.16	0.16	0.16	0.16	0.16	0.16
N.3.1	0.15	0.15	0.15	0.16	0.16	0.16	0.16	0.16	0.16
N.3.2	0.17	0.17	0.17	0.18	0.18	0.18	0.18	0.18	0.18
N.3.3	0.14	0.14	0.14	0.18	0.18	0.16	0.16	0.16	0.16
N.4.1	0.15	0.15	0.15	0.16	0.16	0.16	0.16	0.16	0.16
S.1.1	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
S.1.2	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
S.2.1	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
S.2.2	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
S.2.3	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
S.3.1	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
S.3.2	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09
S.3.3	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
H.1.1	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
H.1.2	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
H.1.3	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
H.1.4									
H.2.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
H.3.1	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
O.1.1	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
O.1.2	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
O.2.1									
O.2.2	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
O.3.1	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11

During the drilling operation on through holes a sharp disk will be produced. Safety precautions must be observed.
A safety guard has to be provided as protection.

Cutting data standard values for KUB Pentron – 2xD, 3xD / -34 indexable inserts topography

Index		10 872 ..., 10 873 ...													
		ABS / PSC / C													
	-34 BK8425	Ø 14–15.5	Ø 16–17.5	Ø 18–19.5	Ø 20–21.5	Ø 22–23.5	Ø 24–25.5	Ø 26–27.5	Ø 28–30	Ø 31–33	Ø 34–37	Ø 38–42	Ø 43–46	Ø 46–52	Ø 53–65
	v_c (m/min)	f (mm/rev)													
P.1.1															
P.1.2	260	0.17	0.20	0.20	0.23	0.23	0.23	0.27	0.27	0.27	0.27	0.27	0.27	0.23	0.27
P.1.3															
P.1.4															
P.1.5	270	0.17	0.20	0.20	0.23	0.23	0.23	0.27	0.27	0.27	0.27	0.27	0.27	0.23	0.27
P.2.1															
P.2.2															
P.2.3	180	0.18	0.21	0.24	0.24	0.24	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27
P.2.4	150	0.17	0.2	0.23	0.23	0.23	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26
P.3.1	160	0.12	0.18	0.18	0.24	0.24	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27
P.3.2	130	0.11	0.17	0.17	0.23	0.23	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26
P.3.3	120	0.11	0.17	0.17	0.23	0.23	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26
P.4.1															
P.4.2															
M.1.1															
M.2.1															
M.3.1															
K.1.1	160	0.18	0.23	0.23	0.27	0.27	0.33	0.38	0.38	0.38	0.38	0.38	0.38	0.33	0.38
K.1.2	120	0.14	0.18	0.18	0.22	0.22	0.26	0.30	0.30	0.30	0.30	0.30	0.30	0.26	0.30
K.2.1	160	0.18	0.23	0.23	0.27	0.27	0.33	0.38	0.38	0.38	0.38	0.38	0.38	0.33	0.38
K.2.2	100	0.14	0.18	0.18	0.22	0.22	0.26	0.30	0.30	0.30	0.30	0.30	0.30	0.26	0.30
K.3.1	120	0.18	0.23	0.23	0.27	0.27	0.33	0.38	0.38	0.38	0.38	0.38	0.38	0.33	0.38
K.3.2	100	0.14	0.18	0.18	0.22	0.22	0.26	0.30	0.30	0.30	0.30	0.30	0.30	0.26	0.30
N.1.1															
N.1.2															
N.2.1															
N.2.2															
N.2.3															
N.3.1															
N.3.2															
N.3.3															
N.4.1															
S.1.1															
S.1.2															
S.2.1															
S.2.2															
S.2.3															
S.3.1															
S.3.2															
S.3.3															
H.1.1															
H.1.2															
H.1.3															
H.1.4															
H.2.1															
H.3.1															
O.1.1															
O.1.2															
O.2.1															
O.2.2															
O.3.1															

In order to ensure efficient chip evacuation, coolant pressure must be at least 73 psi. Optimum pressure is > 218 psi.

Usage of -34 topography is recommended only for KUB Pentron 2xD and 3xD. Not recommended for KUB Pentron 4xD and 5xD as well as KUB Pentron CS. Higher drive power and stable setup needed!

Cutting data standard values for KUB Pentron – 4xD

Index	10 874 ...											
	ABS / C											
	Ø 14–15.5	Ø 16–17.5	Ø 18–19.5	Ø 20–21.5	Ø 22–23.5	Ø 24–25.5	Ø 26–27.5	Ø 28–30	Ø 31–33	Ø 34–37	Ø 38–42	Ø 43–46
	f (mm/rev)											
P.1.1	0.06	0.07	0.07	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09
P.1.2	0.08	0.13	0.13	0.15	0.15	0.15	0.18	0.18	0.18	0.18	0.18	0.18
P.1.3	0.06	0.12	0.12	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13
P.1.4	0.05	0.11	0.11	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12
P.1.5	0.07	0.12	0.12	0.14	0.14	0.14	0.16	0.16	0.16	0.16	0.16	0.16
P.2.1	0.06	0.12	0.12	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13
P.2.2	0.05	0.11	0.11	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12
P.2.3	0.08	0.14	0.14	0.15	0.16	0.18	0.18	0.18	0.18	0.18	0.18	0.18
P.2.4	0.06	0.11	0.11	0.12	0.13	0.14	0.14	0.14	0.14	0.14	0.14	0.14
P.3.1	0.08	0.12	0.12	0.16	0.15	0.18	0.18	0.18	0.18	0.18	0.18	0.18
P.3.2	0.06	0.10	0.10	0.13	0.12	0.14	0.14	0.14	0.14	0.14	0.14	0.14
P.3.3	0.06	0.08	0.08	0.11	0.11	0.13	0.13	0.13	0.13	0.13	0.13	0.13
P.4.1	0.09	0.13	0.13	0.18	0.17	0.20	0.20	0.20	0.20	0.20	0.20	0.20
P.4.2	0.06	0.10	0.10	0.13	0.12	0.14	0.14	0.14	0.14	0.14	0.14	0.14
M.1.1	0.08	0.10	0.10	0.13	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
M.2.1	0.08	0.08	0.08	0.11	0.11	0.14	0.14	0.14	0.14	0.14	0.14	0.14
M.3.1	0.07	0.07	0.07	0.10	0.10	0.13	0.13	0.13	0.13	0.13	0.13	0.13
K.1.1	0.12	0.15	0.15	0.18	0.18	0.22	0.25	0.25	0.25	0.25	0.25	0.25
K.1.2	0.10	0.10	0.10	0.10	0.10	0.20	0.20	0.20	0.20	0.20	0.20	0.20
K.2.1	0.12	0.15	0.15	0.18	0.18	0.22	0.25	0.25	0.25	0.25	0.25	0.25
K.2.2	0.10	0.12	0.12	0.14	0.14	0.18	0.20	0.20	0.20	0.20	0.20	0.20
K.3.1	0.12	0.15	0.15	0.18	0.18	0.22	0.25	0.25	0.25	0.25	0.25	0.25
K.3.2	0.10	0.12	0.12	0.14	0.14	0.18	0.20	0.20	0.20	0.20	0.20	0.20
N.1.1	0.10	0.11	0.11	0.11	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13
N.1.2	0.10	0.11	0.11	0.11	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13
N.2.1	0.10	0.13	0.13	0.13	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
N.2.2	0.10	0.13	0.13	0.13	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
N.2.3	0.09	0.12	0.12	0.12	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14
N.3.1	0.10	0.12	0.13	0.13	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
N.3.2	0.11	0.13	0.14	0.14	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
N.3.3	0.11	0.12	0.12	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14
N.4.1	0.10	0.12	0.13	0.13	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
S.1.1	0.03	0.03	0.03	0.03	0.04	0.06	0.06	0.06	0.06	0.06	0.06	0.06
S.1.2	0.03	0.03	0.03	0.03	0.04	0.04	0.06	0.06	0.06	0.06	0.06	0.06
S.2.1	0.03	0.03	0.03	0.03	0.04	0.06	0.06	0.06	0.06	0.06	0.06	0.06
S.2.2	0.03	0.03	0.03	0.03	0.04	0.04	0.06	0.06	0.06	0.06	0.06	0.06
S.2.3	0.02	0.02	0.02	0.02	0.03	0.03	0.04	0.04	0.04	0.04	0.04	0.04
S.3.1	0.05	0.05	0.05	0.05	0.06	0.08	0.10	0.10	0.10	0.10	0.10	0.10
S.3.2	0.04	0.04	0.04	0.04	0.05	0.07	0.09	0.09	0.09	0.09	0.09	0.09
S.3.3	0.03	0.03	0.03	0.03	0.04	0.04	0.06	0.06	0.06	0.06	0.06	0.06
H.1.1	0.05	0.05	0.05	0.05	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
H.1.2	0.03	0.03	0.03	0.03	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
H.1.3	0.03	0.03	0.03	0.03	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
H.1.4												
H.2.1	0.04	0.04	0.04	0.04	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
H.3.1	0.03	0.03	0.03	0.03	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
O.1.1	0.08	0.08	0.08	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
O.1.2	0.08	0.08	0.08	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
O.2.1												
O.2.2	0.06	0.06	0.06	0.06	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
O.3.1	0.10	0.10	0.10	0.10	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11

During the drilling operation on through holes a sharp disk will be produced. Safety precautions must be observed.
A safety guard has to be provided as protection.

Cutting data standard values for KUB Pentron – 5xD

Index	10 875 ...											
	ABS / C											
	Ø 14–15.5	Ø 16–17.5	Ø 18–19.5	Ø 20–21.5	Ø 22–23.5	Ø 24–25.5	Ø 26–27.5	Ø 28–30	Ø 31–33	Ø 34–37	Ø 38–42	Ø 43–46
	f (mm/rev)											
P.1.1	0.06	0.08	0.07	0.09	0.09	0.09	0.10	0.10	0.10	0.10	0.10	0.10
P.1.2	0.08	0.11	0.11	0.13	0.13	0.13	0.15	0.15	0.15	0.15	0.15	0.15
P.1.3	0.06	0.10	0.10	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
P.1.4	0.05	0.09	0.09	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
P.1.5	0.07	0.10	0.10	0.12	0.12	0.12	0.14	0.14	0.14	0.14	0.14	0.14
P.2.1	0.06	0.10	0.10	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
P.2.2	0.05	0.09	0.09	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
P.2.3	0.08	0.09	0.10	0.15	0.18	0.18	0.15	0.15	0.15	0.15	0.15	0.15
P.2.4	0.06	0.07	0.08	0.12	0.14	0.14	0.12	0.12	0.12	0.12	0.12	0.12
P.3.1	0.08	0.12	0.12	0.16	0.15	0.18	0.18	0.18	0.18	0.18	0.18	0.18
P.3.2	0.06	0.10	0.10	0.13	0.12	0.14	0.14	0.14	0.14	0.14	0.14	0.14
P.3.3	0.06	0.08	0.08	0.11	0.11	0.13	0.13	0.13	0.13	0.13	0.13	0.13
P.4.1	0.09	0.13	0.13	0.18	0.17	0.20	0.20	0.20	0.20	0.20	0.20	0.20
P.4.2	0.06	0.10	0.10	0.13	0.12	0.14	0.14	0.14	0.14	0.14	0.14	0.14
M.1.1	0.08	0.08	0.08	0.11	0.11	0.14	0.11	0.11	0.11	0.11	0.11	0.11
M.2.1	0.08	0.08	0.08	0.09	0.09	0.12	0.12	0.12	0.12	0.12	0.12	0.12
M.3.1	0.07	0.07	0.07	0.08	0.08	0.11	0.11	0.11	0.11	0.11	0.11	0.11
K.1.1	0.10	0.13	0.13	0.16	0.16	0.20	0.23	0.23	0.23	0.23	0.23	0.23
K.1.2	0.08	0.10	0.10	0.12	0.12	0.15	0.17	0.17	0.17	0.17	0.17	0.17
K.2.1	0.10	0.13	0.13	0.16	0.16	0.20	0.23	0.23	0.23	0.23	0.23	0.23
K.2.2	0.08	0.10	0.10	0.13	0.13	0.16	0.18	0.18	0.18	0.18	0.18	0.18
K.3.1	0.10	0.13	0.13	0.16	0.16	0.20	0.23	0.23	0.23	0.23	0.23	0.23
K.3.2	0.08	0.10	0.10	0.13	0.13	0.16	0.18	0.18	0.18	0.18	0.18	0.18
N.1.1	0.10	0.11	0.11	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13
N.1.2	0.10	0.11	0.11	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13
N.2.1	0.10	0.13	0.13	0.13	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
N.2.2	0.10	0.13	0.13	0.13	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
N.2.3	0.09	0.12	0.12	0.12	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14
N.3.1	0.10	0.13	0.13	0.13	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
N.3.2	0.11	0.14	0.14	0.14	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
N.3.3	0.11	0.12	0.12	0.12	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14
N.4.1	0.10	0.13	0.13	0.13	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
S.1.1	0.03	0.03	0.03	0.03	0.04	0.06	0.06	0.06	0.06	0.06	0.06	0.06
S.1.2	0.03	0.03	0.03	0.03	0.04	0.04	0.06	0.06	0.06	0.06	0.06	0.06
S.2.1	0.03	0.03	0.03	0.03	0.04	0.06	0.06	0.06	0.06	0.06	0.06	0.06
S.2.2	0.03	0.03	0.03	0.03	0.04	0.04	0.06	0.06	0.06	0.06	0.06	0.06
S.2.3	0.02	0.02	0.02	0.02	0.03	0.03	0.04	0.04	0.04	0.04	0.04	0.04
S.3.1	0.05	0.05	0.05	0.05	0.06	0.08	0.10	0.10	0.10	0.10	0.10	0.10
S.3.2	0.04	0.04	0.04	0.04	0.05	0.07	0.09	0.09	0.09	0.09	0.09	0.09
S.3.3	0.03	0.03	0.03	0.03	0.04	0.04	0.06	0.06	0.06	0.06	0.06	0.06
H.1.1	0.05	0.05	0.05	0.05	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
H.1.2	0.03	0.03	0.03	0.03	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
H.1.3	0.03	0.03	0.03	0.03	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
H.1.4												
H.2.1	0.04	0.04	0.04	0.04	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
H.3.1	0.03	0.03	0.03	0.03	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
O.1.1	0.08	0.08	0.08	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
O.1.2	0.08	0.08	0.08	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
O.2.1												
O.2.2	0.06	0.06	0.06	0.06	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
O.3.1	0.10	0.10	0.10	0.10	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11

In order to ensure efficient chip evacuation, coolant pressure must be at least 73 psi. Optimum pressure is > 218 psi.

Cutting data standard values for WOEX indexable inserts

Index	10 821 ...							
	BK8425	BK7935	BK6115	BK7615	BK62	BK77	BK79	BK7710
	v_c (m/min)							
P.1.1	260	250	300				260	
P.1.2	260	220	300				260	
P.1.3	270	270	270				270	
P.1.4	240	240	250				240	
P.1.5	230	200	270				230	
P.2.1	270	270	270				270	
P.2.2	260	260	260				260	
P.2.3	180	160	240				180	
P.2.4	150	130	190				150	
P.3.1	160	140	200				160	
P.3.2	130	110	160				130	
P.3.3	120	100	140				120	
P.4.1	180	160	220				180	
P.4.2	130	110	160				130	
M.1.1	150	160	220				150	
M.2.1	150	160	220				150	
M.3.1	130	150	200				130	
K.1.1	160	150	240	260	240		160	
K.1.2	120	110	140	160	140		120	
K.2.1	160	150	160	180	160		160	
K.2.2	100	90	100	120	100		100	
K.3.1	120	110	120	140	120		120	
K.3.2	100	90	100	120	100		100	
N.1.1	400	400					400	600
N.1.2	400	400					400	500
N.2.1	250	250					250	400
N.2.2	250	250					250	300
N.2.3	230	230					230	250
N.3.1	200	200					200	400
N.3.2	220	220					220	300
N.3.3	330	330					330	300
N.4.1	200	200					200	300
S.1.1	60	50				50		60
S.1.2	50	40				40		60
S.2.1	60	50				50		60
S.2.2	50	40				40		60
S.2.3	30	30				30		60
S.3.1	100	70				70		80
S.3.2	80	60				60		80
S.3.3	50	40				40		80
H.1.1	100		100		100	40		80
H.1.2	80		80		80	30		40
H.1.3	50		50		50	20		40
H.1.4								40
H.2.1	100		100		100	40		80
H.3.1	80		80		80	30		80
O.1.1						100		100
O.1.2						100		100
O.2.1								
O.2.2						100		100
O.3.1						100		100

BK6115 -01 / BK8425 -03 are exclusively recommended for use on the peripheral cutting edge!

During the drilling operation on through holes a sharp disk will be produced. Safety precautions must be observed.
A safety guard has to be provided as protection.

Cutting data standard values for KUB Trigon – 2xD

Index	10 892 ...												
	ABS / K												
	Ø 14–16	Ø 17–19	Ø 20–24	Ø 25–29	Ø 30–36	Ø 37–40	Ø 41–44	Ø 45–46	Ø 46–52	Ø 53–65	Ø 64–69	Ø 70–75	Ø 76–82
	f (mm/rev)												
P.1.1	0.08	0.10	0.10	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12
P.1.2	0.08	0.10	0.12	0.14	0.16	0.16	0.18	0.20	0.20	0.25	0.25	0.25	0.25
P.1.3	0.06	0.08	0.12	0.14	0.14	0.14	0.16	0.14	0.18	0.20	0.25	0.25	0.25
P.1.4	0.05	0.07	0.11	0.13	0.13	0.13	0.14	0.12	0.16	0.18	0.22	0.22	0.22
P.1.5	0.07	0.09	0.11	0.13	0.14	0.14	0.16	0.18	0.20	0.22	0.22	0.22	0.22
P.2.1	0.06	0.08	0.12	0.14	0.14	0.14	0.16	0.14	0.18	0.20	0.25	0.25	0.25
P.2.2	0.06	0.08	0.11	0.13	0.13	0.13	0.15	0.12	0.16	0.18	0.22	0.22	0.22
P.2.3	0.06	0.08	0.10	0.14	0.16	0.16	0.16	0.16	0.16	0.18	0.20	0.20	0.20
P.2.4	0.05	0.06	0.08	0.11	0.13	0.13	0.13	0.14	0.14	0.16	0.18	0.18	0.18
P.3.1	0.06	0.08	0.10	0.12	0.12	0.12	0.14	0.14	0.16	0.16	0.16	0.16	0.16
P.3.2	0.05	0.06	0.08	0.10	0.10	0.10	0.11	0.12	0.14	0.14	0.14	0.14	0.14
P.3.3	0.04	0.06	0.07	0.08	0.08	0.08	0.10	0.11	0.13	0.13	0.13	0.13	0.13
P.4.1	0.07	0.09	0.11	0.13	0.13	0.13	0.15	0.15	0.17	0.17	0.17	0.17	0.17
P.4.2	0.05	0.06	0.08	0.10	0.10	0.10	0.11	0.12	0.14	0.14	0.14	0.14	0.14
M.1.1	0.06	0.06	0.08	0.12	0.12	0.12	0.14	0.14	0.14	0.16	0.16	0.16	0.16
M.2.1	0.06	0.06	0.08	0.12	0.12	0.12	0.12	0.12	0.12	0.16	0.16	0.16	0.16
M.3.1	0.05	0.05	0.07	0.11	0.11	0.11	0.11	0.11	0.11	0.15	0.15	0.15	0.15
K.1.1	0.10	0.12	0.14	0.20	0.20	0.20	0.25	0.25	0.25	0.30	0.30	0.30	0.30
K.1.2	0.08	0.08	0.10	0.14	0.14	0.16	0.18	0.18	0.18	0.20	0.25	0.25	0.25
K.2.1	0.08	0.10	0.14	0.20	0.20	0.20	0.25	0.25	0.25	0.30	0.30	0.30	0.30
K.2.2	0.08	0.10	0.13	0.20	0.13	0.13	0.14	0.22	0.22	0.25	0.25	0.25	0.25
K.3.1	0.10	0.12	0.16	0.25	0.16	0.16	0.18	0.25	0.25	0.30	0.30	0.30	0.30
K.3.2	0.08	0.10	0.13	0.20	0.13	0.13	0.14	0.22	0.22	0.25	0.25	0.25	0.25
N.1.1	0.05	0.08	0.08	0.10	0.10	0.12	0.12	0.12	0.12	0.14	0.14	0.14	0.14
N.1.2	0.05	0.08	0.08	0.10	0.10	0.12	0.12	0.12	0.12	0.14	0.14	0.14	0.14
N.2.1	0.10	0.12	0.14	0.18	0.18	0.20	0.20	0.18	0.20	0.20	0.20	0.20	0.20
N.2.2	0.10	0.12	0.14	0.18	0.18	0.20	0.20	0.18	0.20	0.20	0.20	0.20	0.20
N.2.3	0.09	0.11	0.13	0.16	0.16	0.18	0.18	0.16	0.18	0.18	0.18	0.18	0.18
N.3.1	0.05	0.08	0.12	0.16	0.16	0.18	0.20	0.20	0.20	0.25	0.25	0.25	0.25
N.3.2	0.06	0.09	0.13	0.18	0.18	0.20	0.22	0.22	0.22	0.26	0.26	0.26	0.26
N.3.3	0.05	0.08	0.08	0.10	0.10	0.10	0.12	0.122	0.12	0.16	0.16	0.16	0.16
N.4.1	0.05	0.08	0.12	0.16	0.16	0.18	0.20	0.20	0.20	0.25	0.25	0.25	0.25
S.1.1	0.04	0.06	0.08	0.10	0.10	0.10	0.10	0.10	0.10	0.12	0.12	0.12	0.12
S.1.2	0.03	0.05	0.06	0.08	0.08	0.08	0.08	0.08	0.08	0.10	0.10	0.10	0.10
S.2.1	0.04	0.06	0.08	0.10	0.10	0.10	0.10	0.10	0.10	0.12	0.12	0.12	0.12
S.2.2	0.03	0.05	0.06	0.08	0.08	0.08	0.08	0.08	0.08	0.10	0.10	0.10	0.10
S.2.3	0.02	0.03	0.04	0.05	0.05	0.05	0.05	0.06	0.06	0.06	0.06	0.06	0.06
S.3.1	0.07	0.09	0.11	0.13	0.11	0.13	0.13	0.10	0.10	0.12	0.12	0.14	0.14
S.3.2	0.06	0.08	0.10	0.12	0.10	0.12	0.12	0.10	0.10	0.12	0.12	0.14	0.14
S.3.3	0.04	0.05	0.06	0.07	0.06	0.07	0.07	0.06	0.06	0.08	0.08	0.08	0.08
H.1.1	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.08	0.08	0.08	0.08	0.08	0.08
H.1.2	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.06	0.06	0.06	0.06	0.08	0.08
H.1.3	0.04	0.04	0.04	0.04	0.04	0.04	0.04						
H.1.4													
H.2.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
H.3.1	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
O.1.1	0.08	0.08	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
O.1.2	0.08	0.08	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
O.2.1													
O.2.2	0.06	0.06	0.06	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
O.3.1	0.10	0.10	0.10	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11

In order to ensure efficient chip evacuation, coolant pressure must be at least 73 psi. Optimum pressure is > 218 psi.

Cutting data standard values for KUB Trigon – 3xD

Index	10 893 ...												
	ABS / K												
	Ø 14–16	Ø 17–19	Ø 20–24	Ø 25–29	Ø 30–36	Ø 37–40	Ø 41–44	Ø 45–46	Ø 46–52	Ø 53–65	Ø 64–69	Ø 70–75	Ø 76–82
	f (mm/rev)												
P.1.1	0.08	0.10	0.10	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12
P.1.2	0.08	0.10	0.12	0.14	0.16	0.16	0.20	0.20	0.20	0.25	0.25	0.25	0.25
P.1.3	0.06	0.08	0.12	0.14	0.14	0.14	0.16	0.14	0.18	0.20	0.25	0.25	0.25
P.1.4	0.05	0.07	0.11	0.13	0.13	0.13	0.14	0.12	0.16	0.18	0.22	0.22	0.22
P.1.5	0.07	0.09	0.11	0.13	0.14	0.14	0.18	0.18	0.20	0.22	0.22	0.22	0.22
P.2.1	0.06	0.08	0.12	0.14	0.14	0.14	0.16	0.14	0.18	0.20	0.25	0.25	0.25
P.2.2	0.06	0.08	0.11	0.13	0.13	0.13	0.15	0.12	0.16	0.18	0.22	0.22	0.22
P.2.3	0.06	0.08	0.10	0.14	0.16	0.16	0.16	0.16	0.16	0.18	0.20	0.20	0.20
P.2.4	0.05	0.06	0.08	0.11	0.13	0.13	0.13	0.14	0.14	0.16	0.18	0.18	0.18
P.3.1	0.06	0.08	0.10	0.12	0.12	0.12	0.14	0.14	0.16	0.16	0.16	0.16	0.16
P.3.2	0.05	0.06	0.08	0.10	0.10	0.10	0.11	0.12	0.14	0.14	0.14	0.14	0.14
P.3.3	0.04	0.06	0.07	0.08	0.08	0.08	0.10	0.11	0.13	0.13	0.13	0.13	0.13
P.4.1	0.07	0.09	0.11	0.13	0.13	0.13	0.15	0.15	0.17	0.17	0.17	0.17	0.17
P.4.2	0.05	0.06	0.08	0.10	0.10	0.10	0.11	0.12	0.14	0.14	0.14	0.14	0.14
M.1.1	0.06	0.06	0.08	0.12	0.12	0.12	0.14	0.14	0.14	0.16	0.16	0.16	0.16
M.2.1	0.06	0.06	0.08	0.12	0.12	0.12	0.12	0.12	0.12	0.16	0.16	0.16	0.16
M.3.1	0.05	0.05	0.07	0.11	0.11	0.11	0.11	0.11	0.11	0.15	0.15	0.15	0.15
K.1.1	0.10	0.12	0.14	0.20	0.20	0.20	0.25	0.25	0.25	0.30	0.30	0.30	0.30
K.1.2	0.08	0.08	0.10	0.14	0.14	0.16	0.18	0.18	0.18	0.20	0.25	0.25	0.25
K.2.1	0.08	0.10	0.14	0.20	0.20	0.20	0.25	0.25	0.25	0.30	0.30	0.30	0.30
K.2.2	0.08	0.10	0.13	0.20	0.20	0.20	0.20	0.22	0.22	0.25	0.25	0.25	0.25
K.3.1	0.10	0.12	0.16	0.25	0.25	0.25	0.25	0.25	0.25	0.30	0.30	0.30	0.30
K.3.2	0.08	0.10	0.13	0.20	0.20	0.20	0.20	0.22	0.22	0.25	0.25	0.25	0.25
N.1.1	0.05	0.08	0.08	0.10	0.10	0.12	0.12	0.12	0.12	0.14	0.14	0.14	0.14
N.1.2	0.05	0.08	0.08	0.10	0.10	0.12	0.12	0.12	0.12	0.14	0.14	0.14	0.14
N.2.1	0.10	0.12	0.14	0.18	0.18	0.20	0.20	0.18	0.20	0.20	0.20	0.20	0.20
N.2.2	0.10	0.12	0.14	0.18	0.18	0.20	0.20	0.18	0.20	0.20	0.20	0.20	0.20
N.2.3	0.09	0.11	0.13	0.16	0.16	0.18	0.18	0.16	0.18	0.18	0.18	0.18	0.18
N.3.1	0.05	0.08	0.12	0.16	0.16	0.18	0.20	0.20	0.20	0.25	0.25	0.25	0.25
N.3.2	0.06	0.09	0.13	0.18	0.18	0.20	0.22	0.22	0.22	0.26	0.26	0.26	0.26
N.3.3	0.06	0.09	0.09	0.11	0.11	0.11	0.13	0.122	0.12	0.16	0.16	0.16	0.16
N.4.1	0.05	0.08	0.12	0.16	0.16	0.18	0.20	0.20	0.20	0.25	0.25	0.25	0.25
S.1.1	0.04	0.06	0.08	0.10	0.10	0.10	0.10	0.10	0.10	0.12	0.12	0.12	0.12
S.1.2	0.03	0.05	0.06	0.08	0.08	0.08	0.08	0.08	0.08	0.10	0.10	0.10	0.10
S.2.1	0.04	0.06	0.08	0.10	0.10	0.10	0.10	0.10	0.10	0.12	0.12	0.12	0.12
S.2.2	0.03	0.05	0.06	0.08	0.08	0.08	0.08	0.08	0.08	0.10	0.10	0.10	0.10
S.2.3	0.02	0.03	0.04	0.05	0.05	0.05	0.05	0.06	0.06	0.06	0.06	0.06	0.06
S.3.1	0.07	0.09	0.11	0.13	0.11	0.13	0.13	0.10	0.10	0.12	0.12	0.14	0.14
S.3.2	0.06	0.08	0.10	0.12	0.10	0.12	0.12	0.10	0.10	0.12	0.12	0.14	0.14
S.3.3	0.04	0.05	0.06	0.07	0.06	0.07	0.07	0.06	0.06	0.08	0.08	0.08	0.08
H.1.1	0.05	0.08	0.08	0.10	0.10	0.10	0.10	0.08	0.08	0.08	0.08	0.08	0.08
H.1.2	0.04	0.06	0.06	0.08	0.08	0.08	0.08	0.06	0.06	0.06	0.06	0.08	0.08
H.1.3	0.03	0.04	0.04	0.05	0.05	0.05	0.05						
H.1.4													
H.2.1	0.05	0.08	0.08	0.10	0.10	0.10	0.10	0.05	0.05	0.05	0.05	0.05	0.05
H.3.1	0.04	0.06	0.06	0.08	0.08	0.08	0.08	0.04	0.04	0.04	0.04	0.04	0.04
O.1.1	0.08	0.08	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
O.1.2	0.08	0.08	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
O.2.1													
O.2.2	0.06	0.06	0.06	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
O.3.1	0.10	0.10	0.10	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11

During the drilling operation on through holes a sharp disk will be produced. Safety precautions must be observed.
A safety guard has to be provided as protection.

Cutting data standard values for KUB Trigon – 4xD

Index	10 894 ... K					10 894 ... ABS						
	Ø 14–16	Ø 17–19	Ø 20–24	Ø 25–29	Ø 30–35	Ø 14–16	Ø 17–19	Ø 20–24	Ø 25–29	Ø 30–36	Ø 37–40	Ø 41–44
	f (mm/rev)					f (mm/rev)						
P.1.1	0.06	0.08	0.08	0.10	0.11	0.06	0.08	0.08	0.10	0.10	0.10	0.10
P.1.2	0.06	0.08	0.10	0.12	0.14	0.06	0.08	0.10	0.12	0.14	0.14	0.18
P.1.3	0.04	0.06	0.10	0.12	0.12	0.04	0.06	0.10	0.12	0.12	0.12	0.14
P.1.4	0.04	0.05	0.09	0.11	0.11	0.04	0.05	0.09	0.11	0.11	0.11	0.13
P.1.5	0.05	0.07	0.09	0.11	0.13	0.05	0.07	0.09	0.11	0.13	0.13	0.16
P.2.1	0.04	0.06	0.10	0.12	0.12	0.04	0.06	0.10	0.12	0.12	0.12	0.14
P.2.2	0.04	0.06	0.10	0.11	0.11	0.04	0.06	0.10	0.11	0.11	0.11	0.13
P.2.3	0.04	0.06	0.08	0.12	0.14	0.04	0.06	0.08	0.12	0.14	0.14	0.14
P.2.4	0.03	0.05	0.06	0.10	0.11	0.03	0.05	0.06	0.10	0.11	0.11	0.11
P.3.1	0.04	0.06	0.08	0.10	0.11	0.04	0.06	0.08	0.10	0.10	0.10	0.12
P.3.2	0.03	0.05	0.06	0.08	0.09	0.03	0.05	0.06	0.08	0.08	0.08	0.10
P.3.3	0.03	0.04	0.06	0.07	0.08	0.03	0.04	0.06	0.07	0.07	0.07	0.08
P.4.1	0.04	0.07	0.09	0.11	0.12	0.04	0.07	0.09	0.11	0.11	0.11	0.13
P.4.2	0.03	0.05	0.06	0.08	0.09	0.03	0.05	0.06	0.08	0.08	0.08	0.10
M.1.1	0.04	0.04	0.06	0.10	0.11	0.04	0.04	0.06	0.10	0.10	0.10	0.12
M.2.1	0.04	0.04	0.06	0.10	0.11	0.04	0.04	0.06	0.10	0.10	0.10	0.10
M.3.1	0.04	0.04	0.05	0.09	0.10	0.04	0.04	0.05	0.09	0.09	0.09	0.09
K.1.1	0.08	0.10	0.12	0.18	0.19	0.08	0.10	0.12	0.18	0.18	0.18	0.23
K.1.2	0.06	0.06	0.08	0.12	0.12	0.06	0.06	0.08	0.12	0.12	0.14	0.16
K.2.1	0.06	0.08	0.12	0.18	0.19	0.06	0.08	0.12	0.18	0.18	0.18	0.23
K.2.2	0.06	0.08	0.11	0.18	0.19	0.06	0.08	0.11	0.18	0.18	0.18	0.18
K.3.1	0.08	0.10	0.14	0.23	0.24	0.08	0.10	0.14	0.23	0.23	0.23	0.23
K.3.2	0.06	0.08	0.11	0.18	0.19	0.06	0.08	0.11	0.18	0.18	0.18	0.18
N.1.1	0.03	0.06	0.06	0.08	0.09	0.03	0.06	0.06	0.08	0.08	0.10	0.10
N.1.2	0.03	0.06	0.06	0.08	0.09	0.03	0.06	0.06	0.08	0.08	0.10	0.10
N.2.1	0.08	0.10	0.12	0.16	0.17	0.08	0.10	0.12	0.16	0.16	0.18	0.18
N.2.2	0.08	0.10	0.12	0.16	0.17	0.08	0.10	0.12	0.16	0.16	0.18	0.18
N.2.3	0.07	0.09	0.11	0.14	0.15	0.07	0.09	0.11	0.14	0.14	0.16	0.16
N.3.1	0.04	0.06	0.10	0.14	0.15	0.03	0.06	0.10	0.14	0.14	0.16	0.18
N.3.2	0.04	0.07	0.11	0.15	0.17	0.03	0.07	0.11	0.15	0.15	0.18	0.20
N.3.3	0.03	0.07	0.07	0.09	0.10	0.03	0.06	0.06	0.08	0.08	0.08	0.10
N.4.1	0.04	0.06	0.10	0.14	0.15	0.03	0.06	0.10	0.14	0.14	0.16	0.18
S.1.1	0.03	0.05	0.07	0.08	0.09	0.02	0.04	0.06	0.08	0.08	0.08	0.08
S.1.2	0.02	0.04	0.06	0.06	0.07	0.02	0.03	0.05	0.06	0.06	0.06	0.06
S.2.1	0.03	0.05	0.07	0.08	0.09	0.02	0.04	0.06	0.08	0.08	0.08	0.08
S.2.2	0.02	0.04	0.06	0.06	0.07	0.02	0.03	0.05	0.06	0.06	0.06	0.06
S.2.3	0.02	0.03	0.04	0.04	0.05	0.01	0.02	0.03	0.04	0.04	0.04	0.04
S.3.1	0.04	0.07	0.09	0.11	0.11	0.04	0.07	0.09	0.11	0.09	0.11	0.11
S.3.2	0.04	0.06	0.08	0.10	0.10	0.04	0.06	0.08	0.10	0.08	0.10	0.10
S.3.3	0.02	0.04	0.05	0.06	0.06	0.02	0.04	0.05	0.06	0.05	0.06	0.06
H.1.1	0.03	0.06	0.06	0.08	0.08	0.03	0.06	0.06	0.08	0.08	0.08	0.08
H.1.2	0.02	0.05	0.05	0.06	0.06	0.02	0.05	0.05	0.06	0.06	0.06	0.06
H.1.3	0.02	0.03	0.03	0.04	0.04	0.02	0.03	0.03	0.04	0.04	0.04	0.04
H.1.4												
H.2.1	0.03	0.06	0.06	0.08	0.08	0.03	0.06	0.06	0.08	0.08	0.08	0.08
H.3.1	0.02	0.05	0.05	0.06	0.06	0.02	0.05	0.05	0.06	0.06	0.06	0.06
O.1.1	0.08	0.08	0.10	0.10	0.10	0.08	0.08	0.10	0.10	0.10	0.10	0.10
O.1.2	0.08	0.08	0.10	0.10	0.10	0.08	0.08	0.10	0.10	0.10	0.10	0.10
O.2.1												
O.2.2	0.06	0.06	0.06	0.07	0.07	0.06	0.06	0.06	0.07	0.07	0.07	0.07
O.3.1	0.10	0.10	0.10	0.11	0.11	0.10	0.10	0.10	0.11	0.11	0.11	0.11

In order to ensure efficient chip evacuation, coolant pressure must be at least 73 psi. Optimum pressure is > 218 psi.

Cutting data standard values for KUB Centron

Index	Ø 20–25 mm				Ø 26–32 mm				Ø 33–45 mm			
		Center drill				Center drill				Center drill		
		10 863 ... (TiN/TiAlN)	10 862 ... (TiN)	10 862 ... (TiAlN)		10 863 ... (TiN/TiAlN)	10 862 ... (TiN)	10 862 ... (TiAlN)		10 863 ... (TiN/TiAlN)	10 862 ... (TiN)	10 862 ... (TiAlN)
	f (mm/rev)	v_c (m/min)			f (mm/rev)	v_c (m/min)			f (mm/rev)	v_c (m/min)		
P.1.1	0.08	250	160		0.08	250	160		0.10	250	160	
P.1.2	0.12	250	160		0.14	250	160		0.14	250	160	
P.1.3	0.10	200	160		0.12	200	160		0.12	200	160	
P.1.4	0.09	180	160		0.11	180	160		0.11	180	160	
P.1.5	0.11	230	160		0.12	230	160		0.12	230	160	
P.2.1	0.10	200	160		0.12	200	160		0.12	200	160	
P.2.2	0.10	190	150		0.11	190	150		0.11	190	150	
P.2.3	0.12	180	140		0.14	180	140		0.14	180	140	
P.2.4	0.10	150	120		0.12	150	120		0.12	150	120	
P.3.1	0.08	160	120		0.10	160	120		0.10	160	120	
P.3.2	0.06	140	100		0.08	140	100		0.08	140	100	
P.3.3	0.07	130	90		0.07	130	90		0.07	130	90	
P.4.1	0.09	180	130		0.11	180	130		0.11	180	130	
P.4.2	0.06	140	100		0.08	140	100		0.08	140	100	
M.1.1	0.10	160		70	0.12	160		70	0.12	160		70
M.2.1	0.08	120		70	0.10	120		70	0.10	120		70
M.3.1	0.07	110		60	0.08	110		60	0.08	110		60
K.1.1	0.14	200		100	0.16	200		100	0.16	200		100
K.1.2	0.12	160		100	0.14	160		100	0.14	160		100
K.2.1	0.12	160		100	0.14	160		100	0.14	160		100
K.2.2	0.10	100		80	0.12	100		80	0.12	100		80
K.3.1	0.12	120		100	0.14	120		100	0.14	120		100
K.3.2	0.10	100		80	0.12	100		80	0.12	100		80
N.1.1	0.07	350	350		0.07	350	350		0.10	350	350	
N.1.2	0.07	350	350		0.07	350	350		0.10	350	350	
N.2.1	0.10	250	250		0.12	250	250		0.16	250	250	
N.2.2	0.10	250	250		0.12	250	250		0.16	250	250	
N.2.3	0.09	230	230		0.11	230	230		0.15	230	230	
N.3.1	0.14	200	200		0.16	200	200		0.18	200	200	
N.3.2	0.15	220	220		0.18	220	220		0.20	220	220	
N.3.3	0.09	250	250		0.10	250	250		0.14	250	250	
N.4.1	0.14	200	200		0.16	200	200		0.18	200	200	
S.1.1	0.04	50		25	0.05	50		25	0.05	50		25
S.1.2	0.03	40		20	0.04	40		20	0.04	40		20
S.2.1	0.04	50		25	0.05	50		25	0.05	50		25
S.2.2	0.03	40		20	0.04	40		20	0.04	40		20
S.2.3	0.03	30		20	0.04	30		20	0.04	30		20
S.3.1	0.06	80		50	0.07	80		50	0.07	80		50
S.3.2	0.05	80		40	0.06	80		40	0.06	80		40
S.3.3	0.03	50		30	0.04	50		30	0.04	50		30
H.1.1												
H.1.2												
H.1.3												
H.1.4												
H.2.1												
H.3.1												
O.1.1	0.08	100	100		0.10	100	100		0.10	100	100	
O.1.2	0.08	100	100		0.10	100	100		0.10	100	100	
O.2.1												
O.2.2	0.08	50	30		0.10	50	30		0.10	50	30	
O.3.1	0.08	100	100		0.10	100	100		0.10	100	100	

During the drilling operation on through holes a sharp disk will be produced. Safety precautions must be observed. A safety guard has to be provided as protection.

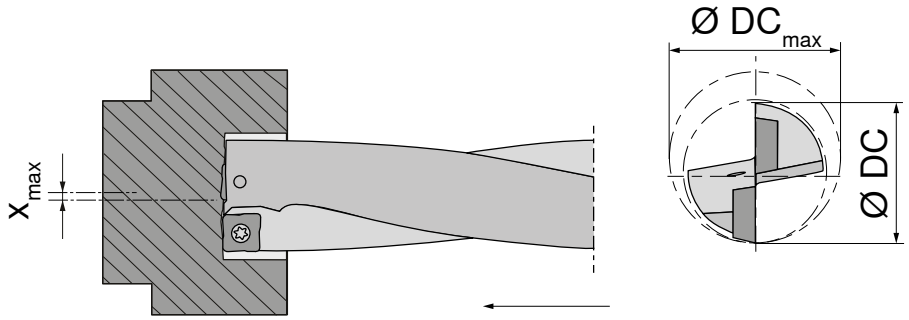
In order to ensure efficient chip evacuation, coolant pressure must be at least 73 psi. Optimum pressure is > 218 psi.

Cutting data standard values for KUB Centron

Index	Ø 46–54 mm				Ø 55–64 mm				Ø 65–71 mm			Ø 72–81 mm		
		Center drill				Center drill				Center drill			Center drill	
		10 863 ... (TiN/TiAlN)	10 862 ... (TiN)	10 862 ... (TiAlN)		10 863 ... (TiN/TiAlN)	10 862 ... (TiN)	10 862 ... (TiAlN)		10 862 ... (TiN)	10 862 ... (TiAlN)		10 862 ... (TiN)	10 862 ... (TiAlN)
	f (mm/rev)	v_c (m/min)			f (mm/rev)	v_c (m/min)			f (mm/rev)	v_c (m/min)		f (mm/rev)	v_c (m/min)	
P.1.1	0.10	250	160		0.10	250	160		0.10	160		0.10	160	
P.1.2	0.14	250	160		0.16	250	160		0.16	160		0.16	160	
P.1.3	0.12	200	160		0.14	200	160		0.14	160		0.14	160	
P.1.4	0.11	180	160		0.12	180	160		0.12	160		0.12	160	
P.1.5	0.12	230	160		0.14	230	160		0.14	160		0.14	160	
P.2.1	0.12	200	160		0.14	200	160		0.14	160		0.14	160	
P.2.2	0.11	190	150		0.12	190	150		0.12	150		0.12	150	
P.2.3	0.14	180	140		0.16	180	140		0.16	140		0.16	140	
P.2.4	0.12	150	120		0.13	150	120		0.13	120		0.13	120	
P.3.1	0.10	160	120		0.12	160	120		0.12	120		0.12	120	
P.3.2	0.08	140	100		0.10	140	100		0.10	100		0.10	100	
P.3.3	0.07	130	90		0.09	130	90		0.09	90		0.09	90	
P.4.1	0.11	180	130		0.14	180	130		0.14	130		0.14	130	
P.4.2	0.08	140	100		0.10	140	100		0.10	100		0.10	100	
M.1.1	0.12	160		70	0.12	160		70	0.12		70	0.12		70
M.2.1	0.10	120		70	0.10	120		70	0.10		70	0.10		70
M.3.1	0.08	110		60	0.08	110		60	0.08		60	0.08		60
K.1.1	0.16	200		100	0.16	200		100	0.16		100	0.16		100
K.1.2	0.14	160		100	0.14	160		100	0.14		100	0.14		100
K.2.1	0.14	160		100	0.14	160		100	0.14		100	0.14		100
K.2.2	0.12	100		80	0.12	100		80	0.12		80	0.12		80
K.3.1	0.14	120		100	0.14	120		100	0.14		100	0.14		100
K.3.2	0.12	100		80	0.12	100		80	0.12		80	0.12		80
N.1.1	0.10	350	350		0.10	350	350		0.10	350		0.10	350	
N.1.2	0.10	350	350		0.10	350	350		0.10	350		0.10	350	
N.2.1	0.16	250	250		0.16	250	250		0.16	250		0.16	250	
N.2.2	0.16	250	250		0.16	250	250		0.16	250		0.16	250	
N.2.3	0.15	230	230		0.15	230	230		0.15	230		0.15	230	
N.3.1	0.18	200	200		0.18	200	200		0.18	200		0.18	200	
N.3.2	0.20	220	220		0.20	220	220		0.20	220		0.20	220	
N.3.3	0.14	250	250		0.14	250	250		0.14	250		0.14	250	
N.4.1	0.18	200	200		0.18	200	200		0.18	200		0.18	200	
S.1.1	0.05	50		25	0.05	50		25	0.05		25	0.05		25
S.1.2	0.04	40		20	0.04	40		20	0.04		20	0.04		20
S.2.1	0.05	50		25	0.05	50		25	0.05		25	0.05		25
S.2.2	0.04	40		20	0.04	40		20	0.04		20	0.04		20
S.2.3	0.04	30		20	0.04	30		20	0.04		20	0.04		20
S.3.1	0.07	80		50	0.07	80		50	0.07		50	0.07		50
S.3.2	0.06	80		40	0.06	80		40	0.06		40	0.06		40
S.3.3	0.04	50		30	0.04	50		30	0.04		30	0.04		30
H.1.1														
H.1.2														
H.1.3														
H.1.4														
H.2.1														
H.3.1														
O.1.1	0.10	100	100		0.10	100	100		0.10	100		0.10	100	
O.1.2	0.10	100	100		0.10	100	100		0.10	100		0.10	100	
O.2.1														
O.2.2	0.10	50	30		0.10	50	30		0.10	30		0.10	30	
O.3.1	0.10	100	100		0.10	100	100		0.10	100		0.10	100	

The cutting data of the KUB Centron depends on the center drill and not on the indexable inserts.
Please select the cutting data of the center drill.
10 863 ... is only suitable up to drilling depth 6xD.

Maximum adjustment range (X) during solid drilling / from the center for stationary applications – KUB Pentron

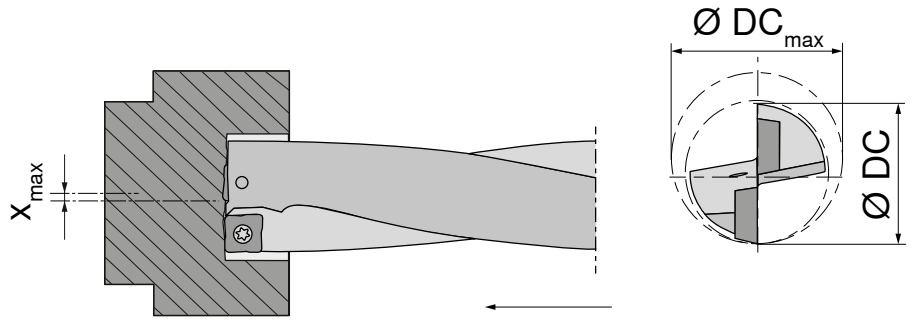


At max. offset X_{max} the hole will be:
$DC_{max} = DC + 2X_{max}$
e.g. for DC = 0.750", X_{max} = 0.010":
DC_{max} = DC + 0.020" = 0.770"

Ø DC inch	Insert size	X_{max} inch	Ø DC_{max} inch
0.562	SOGX 04....	0.010	0.582
0.593		0.010	0.613
0.625		0.010	0.645
0.656	SOGX 05....	0.010	0.676
0.687		0.010	0.707
0.703		0.010	0.723
0.750	SOGX 06....	0.010	0.770
0.765		0.010	0.785
0.781		0.010	0.801
0.812	SOGX 07....	0.010	0.832
0.828		0.010	0.848
0.843		0.010	0.863
0.875		0.010	0.895
0.906		0.010	0.926
0.937	SOGX 08....	0.010	0.957
0.985		0.010	1.005
1.000		0.010	1.020
1.031	SOGX 09....	0.010	1.051
1.062		0.010	1.082
1.109		0.010	1.129
1.125		0.010	1.145
1.156		0.010	1.176
1.187	SOGX 10....	0.010	1.207
1.218		0.010	1.238
1.250		0.010	1.270
1.281		0.010	1.301
1.312	SOGX 11....	0.010	1.332
1.328		0.010	1.348
1.375		0.010	1.395
1.437		0.010	1.457
1.469	SOGX 12....	0.010	1.489
1.500		0.010	1.520
1.531		0.010	1.551
1.562		0.010	1.582
1.625		0.010	1.645
1.656	SOGX 13....	0.010	1.676
1.687		0.010	1.707
1.750		0.010	1.770

The maximum radial X-offset affects the cutting force balance of the drill, therefore, the use of lower feed rates is recommended!

Maximum adjustment range (X) during solid drilling / from the center for stationary applications – KUB Pentron



At max. offset X_{max} the hole will be:
$DC_{max} = DC + 2X_{max}$
e.g. for DC = 20 mm, X_{max} = 0.25 mm:
$DC_{max} = DC + 0.5 = 20.5$ mm

Ø DC mm	Insert size	X_{max} mm	Ø DC_{max} mm
14.0	SOGX 04....	0.25	14.5
14.5		0.25	15.0
15.0		0.25	15.5
15.5		0.25	16.0
16.0		0.25	16.5
16.5	SOGX 05....	0.25	17.0
17.0		0.25	17.5
17.5		0.25	18.0
18.0		0.25	18.5
18.5	SOGX 06....	0.25	19.0
19.0		0.25	19.5
19.5		0.25	20.0
20.0		0.25	20.5
20.5	SOGX 07....	0.25	21.0
21.0		0.25	21.5
21.5		0.25	22.0
22.0		0.25	22.5
22.5		0.25	23.0
23.0		0.25	23.5
23.5	SOGX 08....	0.25	24.0
24.0		0.25	24.5
24.5		0.25	25.0
25.0		0.25	25.5
25.5		0.25	26.0
26.0		0.25	26.5
26.5	SOGX 09....	0.25	27.0
27.0		0.25	27.5
27.5		0.25	28.0
28.0		0.25	28.5
28.5		0.25	29.0
29.0		0.25	29.5
29.5		0.25	30.0
30.0		0.25	30.5
31.0	SOGX 10....	0.25	31.5
32.0		0.25	32.5
33.0		0.25	33.5
34.0	SOGX 11....	0.25	34.5
35.0		0.25	35.5
36.0		0.25	36.5
37.0		0.25	37.5
38.0	SOGX 12....	0.25	38.5
39.0		0.25	39.5
40.0		0.25	40.5
41.0		0.25	41.5
42.0		0.25	42.5
43.0	SOGX 13....	0.25	43.5
44.0		0.25	44.5
45.0		0.25	45.5
46.0		0.25	46.5
47.0	SOGX 08....	0.25	47.5
48.0		0.25	48.5
49.0		0.25	49.5
50.0		0.25	50.5
51.0		0.25	51.5
52.0		0.25	52.5

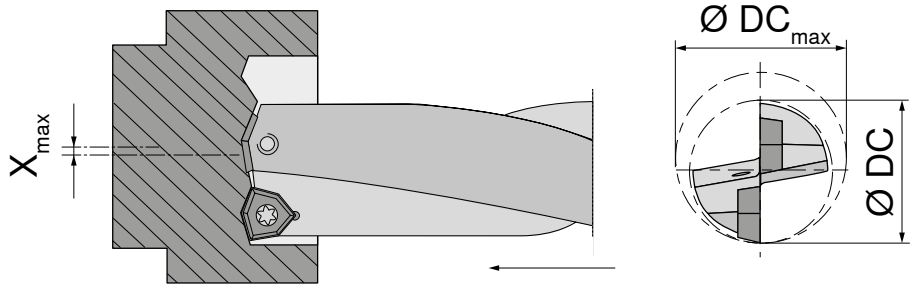
Ø DC mm	Insert size	X_{max} mm	Ø DC_{max} mm
53.0	SOGX 10....	0.25	53.5
54.0		0.25	54.5
55.0		0.25	55.5
56.0		0.25	56.5
57.0		0.25	57.5
58.0		0.25	58.5
59.0		0.25	59.5
60.0		0.25	60.5
61.0		0.25	61.5
62.0		0.25	62.5
63.0		0.25	63.5
64.0		0.25	64.5
65.0		0.25	65.5

KUB Pentron CS

Ø DC mm	Insert size	X_{max} mm	Ø DC_{max} mm
64.0	SOGX 10....	0.25	64.5
65.0		0.25	65.5
66.0		0.25	66.5
67.0		0.25	67.5
68.0		0.25	68.5
69.0		0.25	69.5
70.0	SOGX 11....	0.25	70.5
71.0		0.25	71.5
72.0		0.25	72.5
73.0		0.25	73.5
74.0		0.25	74.5
75.0		0.25	75.5
76.0	SOGX 12....	0.25	76.5
77.0		0.25	77.5
78.0		0.25	78.5
79.0		0.25	79.5
80.0		0.25	80.5
81.0		0.25	81.5
82.0		0.25	82.5
83.0		0.25	83.5
84.0		0.25	84.5
85.0	SOGX 13....	0.25	85.5
86.0		0.25	86.5
87.0		0.25	87.5
88.0		0.25	88.5
89.0		0.25	89.5
90.0		0.25	90.5
91.0		0.25	91.5
92.0		0.25	92.5
93.0		0.25	93.5
94.0		0.25	94.5
95.0		0.25	95.5
96.0		0.25	96.5

The maximum radial X-offset affects the cutting force balance of the drill, therefore, the use of lower feed rates is recommended!

Maximum adjustment range (X) during solid drilling / from the center for stationary applications – KUB Trigon



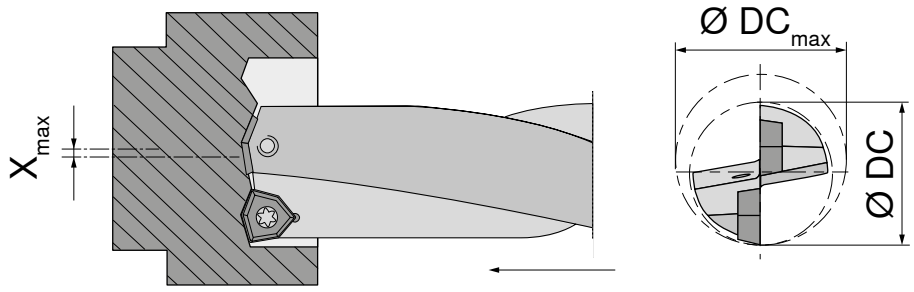
At max. offset X_{max} the hole will be:
$DC_{max} = DC + 2X_{max}$
e.g. for DC = 0.750", X_{max} = 0.020":
DC_{max} = DC + 0.040" = 0.790"

Ø DC inch	Insert size	X_{max} inch	Ø DC_{max} inch
0.562	WOEX 03....	0.020	0.602
0.593		0.020	0.633
0.625		0.020	0.665
0.656		0.020	0.696
0.687		0.020	0.727
0.703		0.020	0.743
0.750		0.020	0.790
0.765		0.020	0.805
0.781		0.020	0.821
0.812	WOEX 04....	0.020	0.852
0.828		0.020	0.868
0.843		0.020	0.883
0.875		0.020	0.915
0.906		0.020	0.946
0.937		0.020	0.977
0.985	WOEX 05....	0.020	1.025
1.000		0.020	1.040
1.031		0.040	1.111
1.062		0.040	1.142
1.109		0.060	1.229
1.125		0.065	1.254
1.156		0.060	1.276
1.187		0.050	1.287
1.218		0.050	1.318
1.250		0.041	1.331
1.281		0.040	1.361
1.312		0.040	1.392
1.328		0.040	1.408
1.375		0.020	1.415
1.406		0.020	1.446
1.437		0.020	1.477

Ø DC inch	Insert size	X_{max} inch	Ø DC_{max} inch
1.469	WOEX 06....	0.060	1.589
1.500		0.060	1.620
1.531		0.060	1.651
1.562		0.060	1.682
1.625		0.060	1.745
1.656		0.060	1.776
1.687		0.043	1.773
1.750		0.011	1.772
1.781	WOEX 08....	0.058	1.897
1.812		0.059	1.929
1.875		0.059	1.992
1.937		0.059	2.055
1.975		0.059	2.093
2.000		0.059	2.118
2.062		0.049	2.160
2.125		0.023	2.171
2.165	WOEX 10....	0.059	2.283
2.203		0.059	2.321
2.250		0.058	2.366
2.281		0.058	2.397
2.375		0.027	2.429
2.437		0.059	2.555
2.500		0.065	2.630
2.593		0.059	2.711
2.625		0.058	2.740
2.656		0.059	2.774
2.750	WOEX 12....	0.058	2.866
2.875		0.059	2.992
3.000		0.059	3.118
3.250		0.018	3.285

The maximum radial X-offset affects the cutting force balance of the drill, therefore, the use of lower feed rates is recommended!

Maximum adjustment range (X) during solid drilling / from the center for stationary applications – KUB Trigon



At max. offset X_{max} the hole will be:
$DC_{max} = DC + 2X_{max}$
e.g. for DC = 20 mm, X_{max} = 0.5 mm:
$DC_{max} = DC + 1.0 = 21.0$ mm

KUB Trigon

Ø DC mm	Insert size	X_{max} mm	Ø DC_{max} mm
14.0	WOEX 03....	0.5	15.0
15.0		0.5	16.0
16.0		0.5	17.0
17.0		0.5	18.0
18.0		0.5	19.0
19.0		0.5	20.0
20.0	WOEX 04....	0.5	21.0
21.0		0.5	22.0
22.0		0.5	23.0
23.0		0.5	24.0
24.0		0.5	25.0
25.0	WOEX 05....	0.5	26.0
26.0		1.0	28.0
27.0		1.5	30.0
28.0		1.5	31.0
29.0		1.5	32.0
30.0		1.25	32.5
31.0		1.25	33.5
32.0		1.0	34.0
33.0		0.5	34.0
34.0		0.5	35.0
35.0		0.5	36.0
36.0		0.5	37.0
37.0	WOEX 06....	1.5	40.0
38.0		1.5	41.0
39.0		1.5	42.0
40.0		1.5	43.0
41.0		1.5	44.0
42.0		1.5	45.0
43.0		1.0	45.0
44.0		0.5	45.0

Ø DC mm	Insert size	X_{max} mm	Ø DC_{max} mm
45.0	WOEX 08....	1.5	48.0
46.0		1.5	49.0
47.0		1.5	50.0
48.0		1.5	51.0
49.0		1.5	52.0
50.0		1.5	53.0
51.0		1.5	54.0
52.0		1.5	55.0
53.0		1.0	55.0
54.0		0.5	55.0
55.0	WOEX 10....	1.5	58.0
56.0		1.5	59.0
57.0		1.5	60.0
58.0		1.5	61.0
59.0		1.5	62.0
60.0		1.5	63.0
61.0		1.5	64.0
62.0		1.5	65.0
63.0		1.5	66.0
64.0		1.5	67.0
65.0		1.5	68.0
66.0		1.5	69.0
67.0		1.25	69.5
68.0		1.0	70.0
69.0	WOEX 12....	1.5	72.0
70.0		1.5	73.0
71.0		1.5	74.0
72.0		1.5	75.0
73.0		1.5	76.0
74.0		1.5	77.0
75.0		1.5	78.0
76.0		1.5	79.0
77.0		1.5	80.0
78.0		1.5	81.0
79.0		1.5	82.0
80.0		1.0	82.0
81.0		0.75	82.5
82.0		0.5	83.0

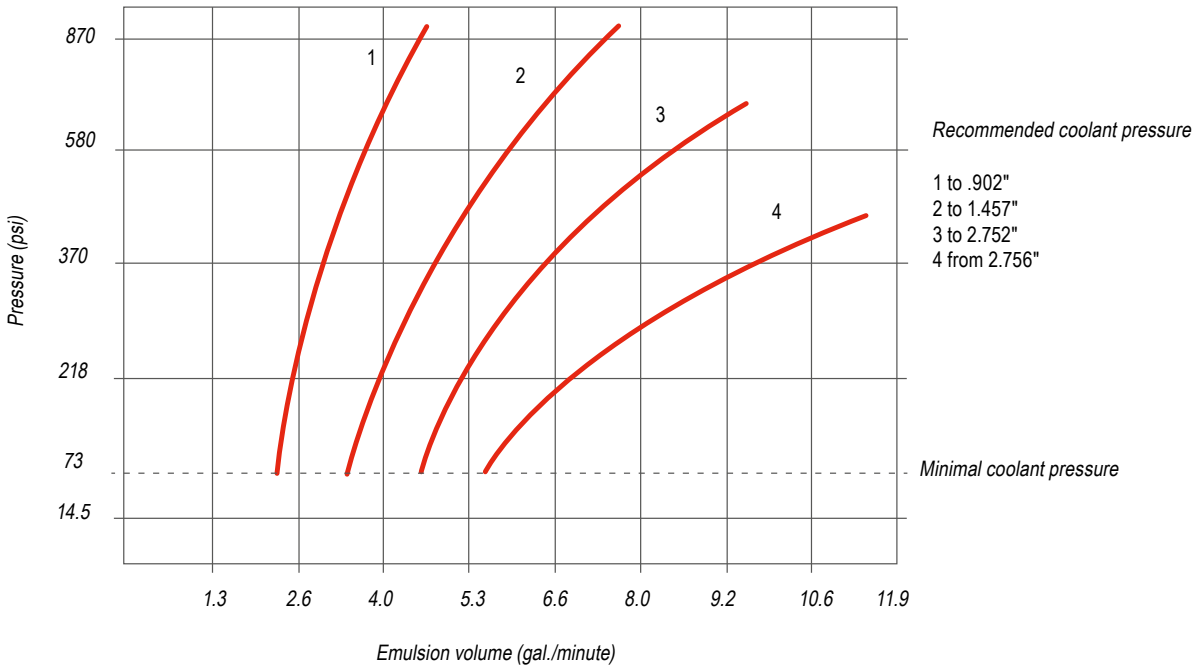
The maximum radial X-offset affects the cutting force balance of the drill, therefore, the use of lower feed rates is recommended!

Coding example indexable insert drilling

System		Length		Bore diameter		Direction of rotation		Insert size		Machine connection and size		Combination metric-inch
KUB-P	.	3D	.	0750	.	R	.	06	–	ABS 50	–	F
KUB-P	.	3D	.	1500	.	R	.	10	–	PSC 63	–	F
KUB-P	.	3D	.	1125	.	R	.	06	–	C 1250	–	EF
KUB-T	.	2D	.	1125	.	R	.	05	–	ABS 50	–	F
KUB-T	.	2.5D	.	1125	.	R	.	05	–	C 1250	–	E
KUB-C.GH	.	4D	.	320	.	R			–	ABS 50	–	F

KUB-P = KUB Pentron	0750 = 0.750“	R = right	ABS50 = ABS adapter size 50	F = inch front + metric shank
		R = right	PSC63 = Polygon shank taper size 63	F = inch front + metric shank
		R = right	C1250 = Cylindrical shank with clamping flat Ø1.250"	EF = inch front + inch shank
KUB-T = KUB Trigon	1125 = 1.125“	R = right	ABS50 = ABS adapter size 50	F = inch front + metric shank
		R = right	C1250 = Cylindrical shank with clamping flat Ø1.250"	E = metric front + inch shank
KUB-C.GH = KUB Centron Basic Element	320 = KLG 32	R = right	ABS50 = ABS adapter size 50	F = inch front + metric shank

Recommended coolant pressure and coolant flow

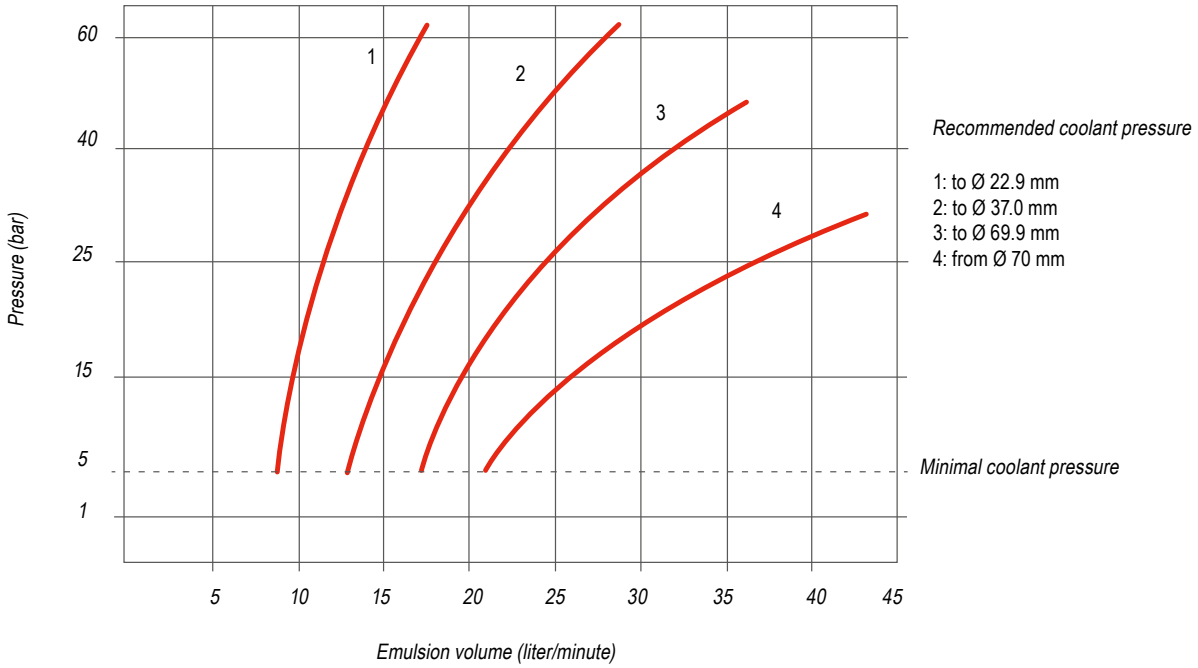


Coding example indexable insert drilling

System		Length		Bore diameter		Direction of rotation		Insert size		Machine connection and size
KUB-P	.	3D	.	215	.	R	.	07	–	ABS 50
KUB-P	.	3D	.	290	.	R	.	04	–	PSC 63
KUB-P	.	3D	.	300	.	R	.	09	–	C 32
KUB-P.GH-CS	.	3D	.	76-78	.	R			–	ABS 80
KUB-T	.	2D	.	350	.	R	.	05	–	K 32
KUB-T	.	2D	.	350	.	L	.	05	–	ABS 50
KUB-C.GH	.	4D	.	320	.	R			–	ABS 50

KUB-P = KUB Pentron	215 = 21.5 mm	R = right	ABS50 = ABS adapter size 50
	290 = 29.0 mm	R = right	PSC63 = Polygon shank taper size 63
	300 = 30.0 mm	R = right	C32 = Cylindrical shank Ø 32.0 mm
KUB-P.GH-CS = KUB Pentron CS	76-78 = 76-78 mm	R = right	ABS80 = ABS adapter size 80
KUB-T = KUB Trigon	350 = 35.0 mm	R = right	K32 = Cylindrical shank with combi clamping flat Ø 32.0 mm
		L = Left-hand	ABS50 = ABS adapter size 50
KUB-C.GH = KUB Centron	320 = KLG 32	R = right	ABS50 = ABS adapter size 50

Recommended coolant pressure and coolant flow



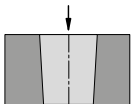
Indexable insert drilling – problems / possible causes / solutions

Rotating and stationary application



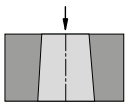
Short service life / types of wear of indexable inserts

- ▲ Cutting speed too high → select the correct cutting speed
- ▲ Insert grade selection has too little wear resistance → select a wear resistant grade
- ▲ Tool overhang too large → if possible, use a shorter tool
- ▲ Damaged insert seat → check tool, replace if necessary
- ▲ Clamping device stability too low → increase stability



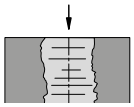
Hole tapers in

- ▲ Chip jam on the outer cutting edge → use a different chip breakage geometry, increase the feed if necessary
- ▲ Material very soft → increase the cutting speed, reduce the feed.
  Use a positive cutting edge geometry



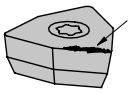
Hole tapers out

- ▲ Chip jam on the inner cutting edge → use a different chip breakage geometry, increase the feed if necessary



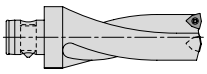
Poor surface quality

- ▲ Poor chip evacuation → optimize the cutting parameters: Increase the cutting speed, reduce the feed



Built-up edge

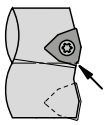
- ▲ Cutting speed too low → increase cutting speed
- ▲ Indexable insert too negative → use positive geometry
- ▲ Unsuitable coating → select the correct coating



Friction marks on the tool body

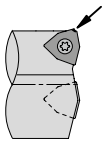
- ▲ Bore diameter too small → check the setting
- ▲ Chip evacuation problems → optimize the cutting parameters, check the geometry of the indexable insert
- ▲ Cutting radius too high → use the correct cutting radius

Stationary application



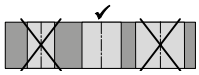
Edge breakage on the inner cutting edge

- ▲ Center height of the tool too high/too low → adjust tool turret/adapter if necessary → Recalibrate the machine
- ▲ Indexable insert grades interchanged → use correct indexable insert
- ▲ Feed too high → reduce feed
- ▲ Indexable insert grade too brittle → use a tougher indexable insert grade
- ▲ Incorrect indexable insert geometry → if necessary use a geometry with a chamfered cutting edge



Edge breakage on the outer cutting edge

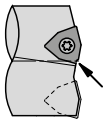
- ▲ Feed too high → reduce feed
- ▲ Interrupted cut → switch to a tougher grade of indexable insert
- ▲ Cutting radius too small → use an indexable insert with a larger cutting radius



Hole too small / too large with adjustable tools

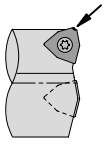
- ▲ Machine is not in the X-0 position → move axis to correct position
- ▲ Machine axis has been moved → recalibrate the machine

Rotating application



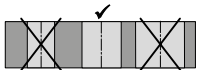
Edge breakage on the inner cutting edge

- ▲ Indexable insert grades interchanged → use correct indexable insert
- ▲ Feed too high → reduce feed
- ▲ Indexable insert grade too brittle → use a tougher indexable insert grade
- ▲ Incorrect indexable insert geometry → if necessary use a geometry with a chamfered cutting edge



Edge breakage on the outer cutting edge

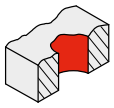
- ▲ Feed too high → reduce feed
- ▲ Interrupted cut → switch to a tougher grade of indexable insert
- ▲ Cutting radius too small → use an indexable insert with a larger cutting radius



Hole too small / too large when using adjustable tools

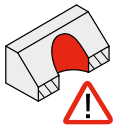
- ▲ Incorrect cutting radius used → use the correct cutting radius
- ▲ Incorrect setting → use the correct tool setting
- ▲ Increase cutting fluid supply

KUB Centron – notes on drilling technology

1. 

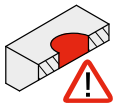
Center drill entering on uneven surfaces (casting surfaces)

- ▲ Generally possible
- ▲ Reduce feed when spot drilling

2. 

Center drill entering on angled surfaces

- ▲ The spot drilling location must be spot faced in advance
- ▲ Avoid chips jamming on the drill shank

3. 

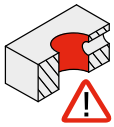
Angled drill exit

- ▲ Possible under certain conditions
- ▲ If necessary, reduce feed
- ▲ Drilling angle max. 3°

4. 

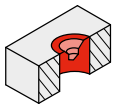
Center drill entering on convex surfaces

- ▲ Center drilling possible with reduced feed
- ▲ If the spot drilling location is outside the center of the radius, spot facing is required

5. 

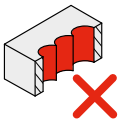
Drilling through a cross hole

- ▲ Halve the feed for interrupted cut
- ▲ Transverse hole max. 1/3 of the bore diameter
- ▲ Eccentric transverse hole not possible

6. 

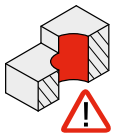
Center drill entering on pre-op or large center drilled hole

- ▲ Possible under certain conditions
- ▲ If necessary, reduce feed
- ▲ In the case of a large center, spot facing is required in advance
- ▲ If necessary, optimize the basic setting of the center drill

7. 

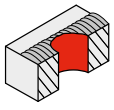
Drilling a cavity

- ▲ Not possible

8. 

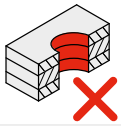
Center drill entering on an edge

- ▲ Not possible with 4xD tools
- ▲ Preparation required due to undefined spot drilling location (spot facing, face milling)
- ▲ Then continue as described under Point 1

9. 

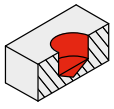
Center drill entering on a forging/welding/casting seam

- ▲ Reduce feed when spot drilling
- ▲ If necessary, carry out facing in advance

10. 

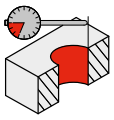
Drilling through stacks

- ▲ Not possible

11. 

Blind hole

- ▲ Possible
- ▲ Set guide rails 0.5 mm below actual Ø

12. 

Adjustable

- ▲ Adjustable from a diameter of 65 mm

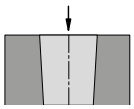
KUB Centron – problems / possible causes / solutions

Rotating and stationary application



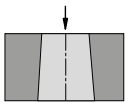
Short service life / types of wear of indexable inserts

- ▲ Cutting speed too high → select the correct cutting speed
- ▲ Grade has too little wear resistance → select a wear-resistant grade
- ▲ Tool overhang too large → if possible, use a shorter tool
- ▲ Damaged insert seat → check tool, replace if necessary
- ▲ Clamping device stability too low → increase stability



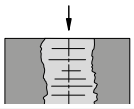
Hole tapers in

- ▲ Chip jam on the outer cutting edge → use a different chip breakage geometry, increase the feed if necessary
- ▲ Material very soft → increase the cutting speed, reduce the feed
- ▲ Use positive cutting edge geometry
- ▲ Axial adjustment of the center drill not optimal → adjust according to the setting sheet in the operating instructions



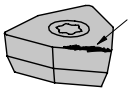
Hole tapers out

- ▲ Chip jam on the inner cutting edge → use a different chip breakage geometry, increase the feed if necessary



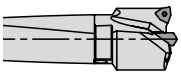
Poor surface quality

- ▲ Poor chip evacuation → optimize the cutting parameters: Increase the cutting speed, reduce the feed



Built-up edge

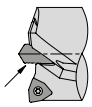
- ▲ Cutting speed too low → increase cutting speed
- ▲ Indexable insert too negative → use positive geometry
- ▲ Unsuitable coating → select the correct coating



Friction marks on the tool body

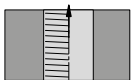
- ▲ Bore diameter too small → check the setting
- ▲ Chip evacuation problems → optimize the cutting parameters, check the geometry of the indexable insert
- ▲ Cutting radius too large → use the correct cutting radius
- ▲ Chips stuck on the guide pads, broken guide pads, the guide pads do not have to be used for base elements of < 6xD

Stationary application



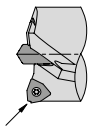
Significant wear on one side of the center drill

- ▲ Tool not centered → tool turret/adapter may have moved → recalibrate the machine



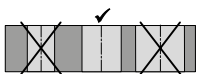
Single-sided retract marks

- ▲ Tool not centered → tool turret/adapter may have moved → recalibrate the machine



Edge breakage on the outer cutting edge

- ▲ Feed too high → reduce feed
- ▲ Interrupted cut → switch to a tougher grade of indexable insert
- ▲ Cutting radius too small → use an indexable insert with a larger cutting radius



Hole too small / too large with adjustable tools

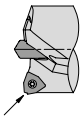
- ▲ Machine is not in the X-0 position → move axis to correct position
- ▲ Machine axis has been moved → recalibrate the machine

Rotating application



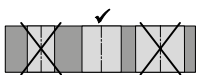
Significant wear on one side of the center drill

- ▲ Guidance insufficient → check length adjustment of the center drill



Edge breakage on the outer cutting edge

- ▲ Feed too high → reduce feed
- ▲ Interrupted cut → switch to a tougher grade of indexable insert
- ▲ Cutting radius too small → use an indexable insert with a larger cutting radius



Hole too small / too large with adjustable tools

- ▲ Incorrect cutting radius used → use the correct cutting radius
- ▲ Incorrect setting → use the correct tool setting

Chip breakers

		KOMET \ Performance WOEX	KOMET \ Performance SOGX
-01	▲ Universal geometry with stable cutting edge, suitable for a wide range of materials ▲ Can be used for center and periphery (BK6115 -01: Recommended for periphery only)		
-03	▲ Geometry for chip breakage problems with excellent chip control even at low feeds ▲ WOEX BK8425 -03: Can be used for periphery only ▲ SOGX BK8430 -03: Suitable for center and periphery ▲ Main application in long-chipping materials as well as low alloy and stainless steels		
-11	▲ Highly positive, minimally rounded chip breaker ▲ For soft-cutting usage ▲ Main application in aluminium or heat-resistant materials		
-13	▲ Positive geometry, the dome-shaped chip breaker results in more controlled breaking of the chips ▲ Can be used for center and periphery ▲ Also suitable for unstable machining conditions due to low cutting forces and power consumption ▲ Can be used with a wide range of materials		
-21	▲ Highly positive, soft-cutting geometry ▲ Can be used for center and periphery ▲ BK7935: Can be used for periphery only ▲ Lower cutting forces and reduced power consumption ▲ Main application (depending on grade) in non-ferrous metals, steels and stainless steels, extended application range also for titanium alloys		
-32	▲ Minimised burr formation on entry and exit of hole ▲ Reliable separation of disc-shaped residual material when the drill exits the hole ▲ Suitable for a wide range of materials		
-34	▲ High-feed geometry ▲ Extremely sturdy indexable insert ▲ Requires higher drive power and stable setup ▲ Designed specially for steel and cast iron materials		

Further indexable inserts can be found in our online shop
cuttingtools.ceratizit.com

Grades Overview

BK7710

- Carbide, TiB_2-coated
- ISO | **N10** | S10 | O10
- The wear-resistant grade with optimum cutting characteristics to prevent built-up edge formation for machining aluminium and titanium alloys.

BK7615

- Carbide, TiCN-Al_2O_3-coated
- ISO | **K15**
- Highly productive grade with extreme edge stability for wet and dry machining of all cast iron materials

BK62

- Carbide, TiN-TiCN-Al_2O_3-coated
- ISO | **K15** | H15
- Special carbide grade for machining cast iron materials at high cutting speeds. Not suitable for machining aluminium materials.

BK79

- Carbide, TiAlN-coated
- ISO | **P40** | **M35** | **K25** | N30
- Universally applicable grade with high wear-resistance
- low to medium cutting speed for roughing and finishing as well as interrupted cut

BK77

- Carbide, TiN-coated
- ISO | **S10** | H10 | O10
- The wear-resistant carbide grade for machining aluminum alloys, superalloys and plastics at medium cutting speeds.

BK8425

- Carbide, TiAlN/TiN-coated
- ISO | **P25** | **M25** | **K25** | N25 | **S25** | H25
- Universally applicable grade with increased wear resistance thanks to the innovative PVD coating in a multilayer design.

BK8430

- Carbide, TiAlN/TiN-coated
- ISO | **P25** | **M25** | **K25** | N25 | **S25** | H25
- Fine-grain grade with high wear resistance
- Extreme edge stability and maximum wear resistance in the middle and top speed range

BK6115

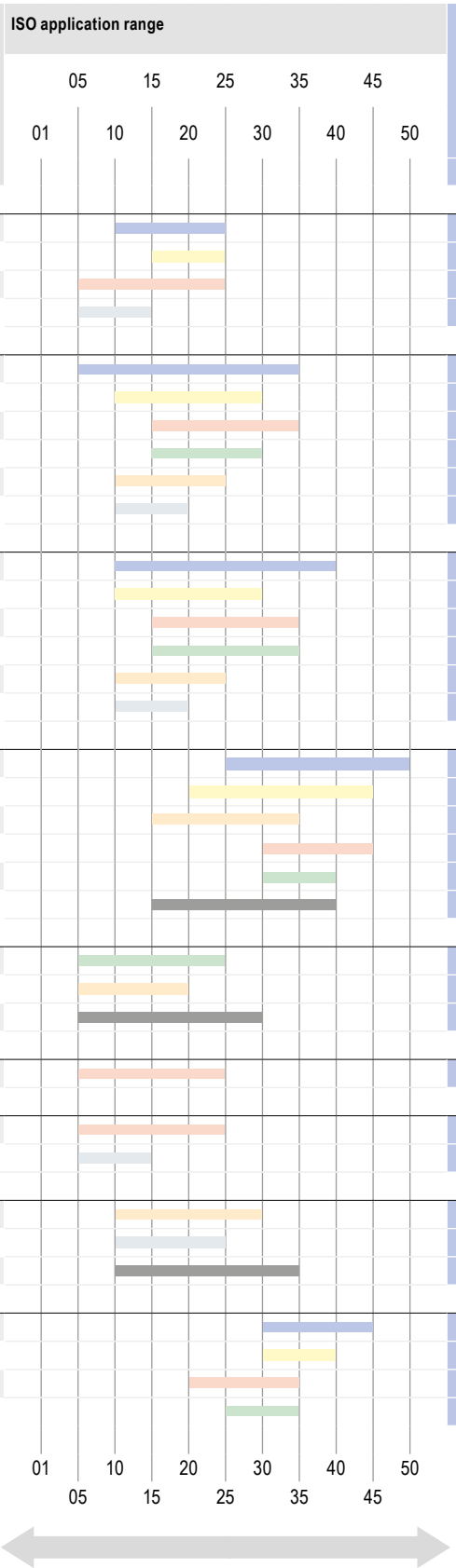
- Carbide, TiCN-TiN-Al_2O_3-coated
- ISO | **P20** | **M20** | **K20** | H20
- High-quality, surface-treated coating for machining cast iron materials under normal to stable conditions and high cutting speeds.

BK7935

- Carbide, AlTiN-coated
- ISO | **P35** | **M30** | **K30** | N30 | **S30** | O30
- The tough carbide grade for machining stainless steel and acid-resistant steels as well as special alloys.

Application

Grade designation	Standard designation	Steel P	Stainless steel M	Cast iron K	Non-ferrous metals N	Heat-resistant S	Tempered steel H	Non-metal materials O
BK6115	HC-P20	●						
	HC-M20		●					
	HC-K20			●				
	HC-H20						○	
BK8425	HC-P25	●						
	HC-M25		●					
	HC-K25			●				
	HC-N25				○			
	HC-S25					●		
	HC-H25						○	
BK8430	HC-P30	●						
	HC-M25		●					
	HC-K25			●				
	HC-N25				○			
	HC-S25					●		
	HC-H25						○	
BK7935	HC-P35	●						
	HC-M30		●					
	HC-S30					●		
	HC-K30			●				
	HC-N30				○			
	HC-O30							○
BK7710	HC-N10				●			
	HC-S10					○		
	HC-O10							○
BK7615	HC-K15			●				
BK62	HC-K15			●				
	HC-H15						○	
BK77	HC-S10					●		
	HC-H10						○	
	HC-O10							○
BK79	HC-P40	●						
	HC-M35		●					
	HC-K25			●				
	HC-N30				○			



New products for machining technicians

NEW Indexable insert countersink for counterbores



- Universal application and maximum service life thanks to use of tried-and-tested WOEX indexable inserts (grade: BK8425 / K10; chip breaker -01)
- For creating countersinks according to DIN 974
- With through coolant supply

→ Page 58+59



Solid drilling and bore machining	Metric Catalog	HSS drilling	1
	Metric Catalog	Solid carbide drilling	2
		Indexable drilling	3
		Reaming and Countersinking	4
		Indexable Boring	5
Threading	Metric Catalog	Taps and thread formers	6
	Metric Catalog	Circular and Thread Milling	7
	Metric Catalog	Thread turning	8
Turning		Indexable Turning	9
		Multifunction	10
		Parting and Grooving	11
	Metric Catalog	Miniature turning tools	12
Milling	Metric Catalog	HSS Milling Cutters	13
		Solid Milling	14
		Indexable Milling	15
Clamping technology		Adaptors and Accessories	16
	Metric Catalog	Workpiece clamping	17
		Material examples and article no. Index	18

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Reamers Toolfinder	6+7
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Product range – Countersinks	58–62
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Cutting Data	63–91
Assembly Instructions	92–96
Problems / possible causes / solutions	97
Types of wear	98
Cutting edge geometries and surface quality	99
Tolerance class	100
Coatings and Grades	101

KOMET \ Performance

Premium quality tools for high performance.

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

Symbol explanation

Coolant supply version


central internal coolant


lateral internal coolant

Shank


Plain cylindrical shank


Cylindrical shank with lateral driving face „Weldon“

Applications


Through hole


Blind hole


Through hole with transverse hole/ interrupted cut

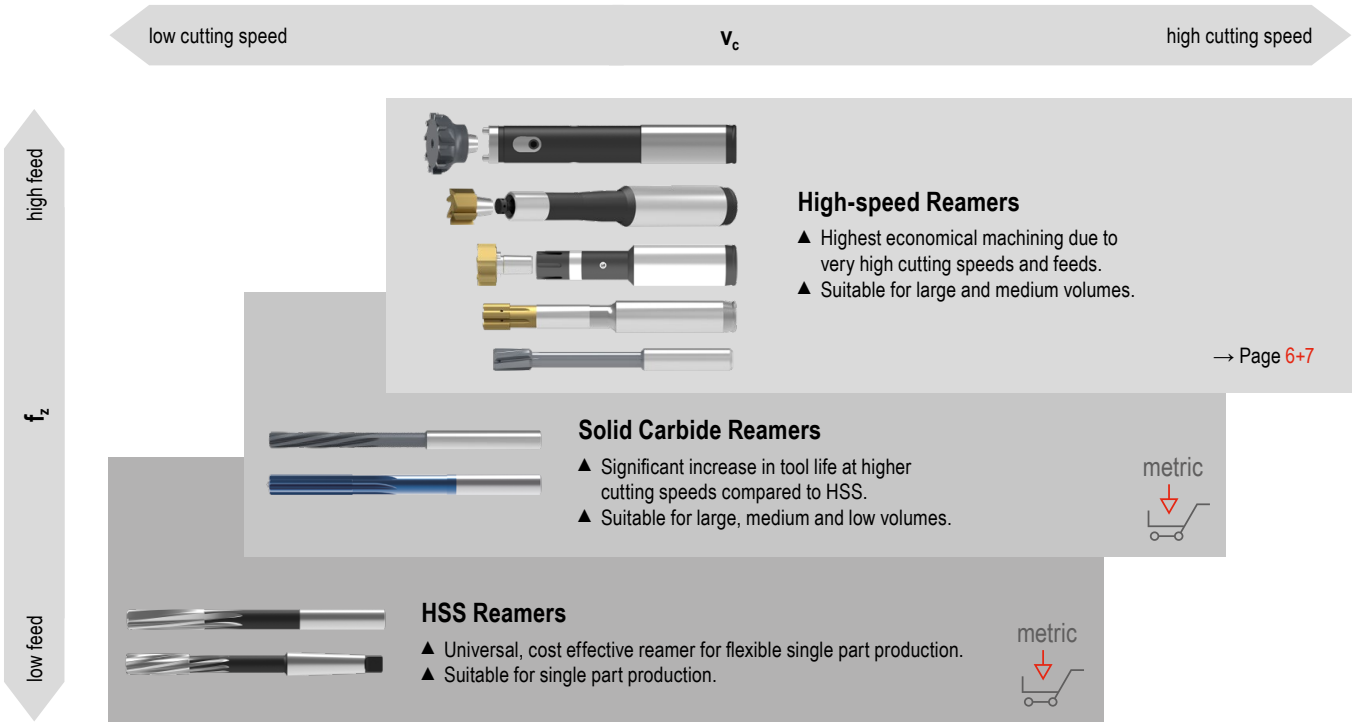

Blind hole with transverse hole/ interrupted cut

ZEFP = Number of flutes
● = Main Application
○ = Extended application

metric
Additional metric items are available in our Online-Shop at cuttingtools.ceratizit.com and in the metric main catalog.

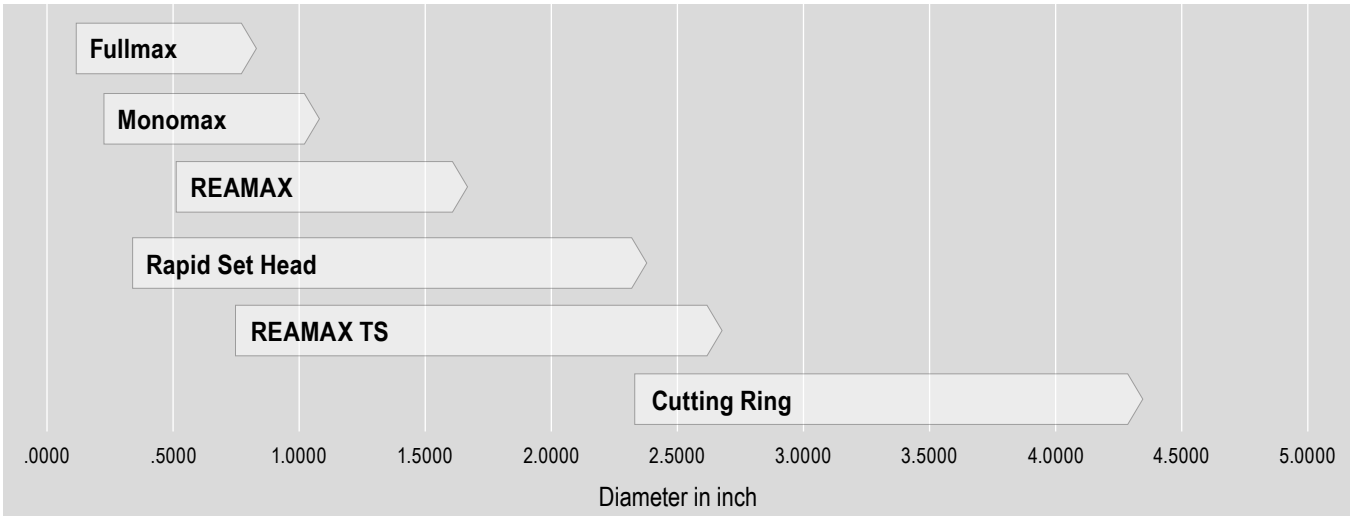


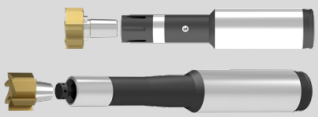
Toolfinder – Reamers



4

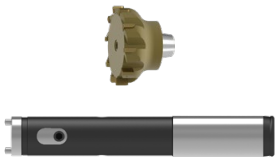
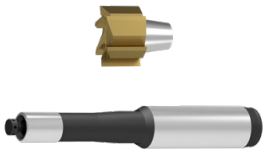
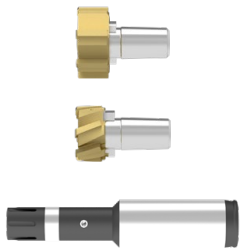
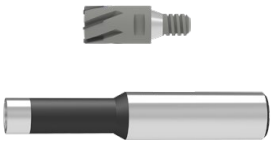
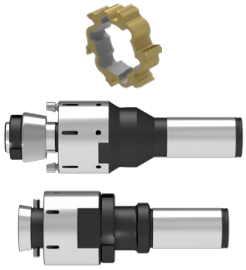
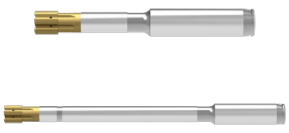
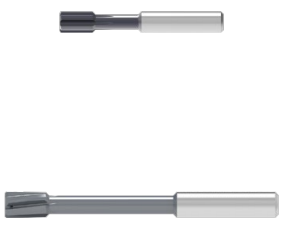
Overview of high-speed reamers



	mono	modular
fixed	Fullmax 	 Rapid Set Head REAMAX
expandable	Monomax 	 REAMAX TS Cutting Ring

Toolfinder – Reamers

Solid carbide – high speed reamers

REAMAX TS		▲ Highly flexible and economical replaceable head system ▲ All common materials ▲ Can be adjusted in µm range
		▲ Holder available in 3xD and 5xD ▲ DAH zero holder available in 3xD and 5xD
REAMAX		▲ Exchangeable head system, optimized for use with air mist coolant (MMS) ▲ Face and taper contact giving run out accuracy ≤ 2 µm
		▲ Holder available in 3xD and 5xD
Rapid Set Head		▲ Exchangeable head system ▲ Left hand spiral fluted cutting blades, available for highest productivity ▲ Re-tipping and regrinding available
MultiChange		▲ Flexible quick change system for reaming, countersinking and chamfering ▲ Face and taper contact giving run out accuracy ≤ 5 µm
		▲ Stable holder in solid carbide and steel, from short to long
Cutting Ring		▲ For large diameter holes ▲ Compensation for wear through simple readjustment ▲ Re-tipping and regrinding available
Monomax		▲ Expandable monoblock reamer in 3xD and 5xD ▲ Re-tipping and regrinding available ▲ All common materials
Fullmax		▲ High-speed reamer in shorter and longer version ▲ Reamers for machining steel, stainless and acid-resistant steels, cast materials, aluminium and hardened materials up to 63 HRC ▲ Extremely irregular pitch ▲ Standard shank ~ DIN 6535 HA

Solid Carbide Reamers and HSS Reamers can be found in the metric catalog.

	Hole diameter in inch Ø DC	Through hole	Blind hole	Internal coolant supply	Steel P	Stainless steel M	Cast iron K	Non-ferrous metals N	Heat-resistant S	Tempered steel H	Non-metal materials O	KOMET \ Performance
	.7087 – 2.5590 (18.00 – 65.00 mm)			✓	●	●	●	●	●		○	9–14
				✓								15+16
	.4921 – 1.5748 (12.50 – 40.00 mm)			✓	●	●	●	●		●	○	17+18
				✓								19
	.3780 – 2.3622 (9.60 – 60.00 mm)			✓	●	●	●	●	●			20–22
	.3780 – 2.3622 (9.60 – 60.00 mm)				●							23
				✓								24+25
	.3150 – 1.2677 (8.00 – 30.20 mm)			✓	●	●	●	●				metric
				✓								
	2.3858 – 4.3539 (60.60 – 110.60 mm)				●	●	●	●	●			26–29
				✓								30
				✓								31
short	.2205 – 1.0197 (5.60 – 25.90 mm)			✓	●	●	●	●	●		○	32–37
long	.2205 – 1.0197 (5.60 – 25.90 mm)			✓	●	●	●	●	●		○	38–41
short	.1575 – .6300 (4.00 – 16.00 mm) .1165 – .7894 (2.96 – 20.05 mm)			✓	●	●	●	○	○	○		42–47
long	.1575 – .6300 (4.00 – 16.00 mm) .1165 – .7894 (2.96 – 20.05 mm)			✓	●	●	●	●	○	●	○	48–57

Countersinks Overview

	Tool type	Coating	Hole diameter in mm Ø DC	Countersinking angle SIG	Steel P	Stainless steel M	Cast iron K	Non-ferrous metals N	Heat-resistant S	Tempered steel H	Non-metal materials O	KOMET \ Performance
Indexable Insert Counterbore Tool												
	WPS		10–48	180°	●	●	●	●	●	○	●	58+59
Insert countersink 60°/90°												
	WPS		16.5–25.5 19.0–37.0	60° 90°	●	●	●	●	●	○	●	60–62
HSS – Counterbores												
			6.0–20.0	180°	●	●	●	●	○		●	metric
Solid Carbide Countersinks												
	N	HPC-TiN	6.3–31.0	90°	●	○	●	●	○	○	○	
	N		12.5–25.0	60°	●	○	●	●	○	○		metric
	N		10.4–31.0	90°	●	○	●	●	○	○		
HSS Countersinks												
	N	TiN	4.3–31.0	90°	●	○	●	●	○	○	○	
	N		4.3–31.0	90°	●	○	●	●	○		●	
	N	TiN	5.0–31.0	90°	●	○	●	●	○	○	●	
	N	TiAlN	5.0–31.0	90°	●	○	●	●	○	○	●	
	VA	TiAlN	6.3–31.0	90°	○	●	○	○	○	○	●	metric
	AL		6.3–31.0	90°	○	○	○	●	○		●	
			6.3–25.0	60°	●	○	●	●	○		●	
	N		30.0–80.0	90°	●	○	●	●	○		●	
			6.3–25.0	120°	●	○	●	●	○		●	
Deburring Countersink												
			6.3–28.0	90°	●	○	●	●	○		●	metric
		TiN	6.3–28.0	90°	●	○	●	●	○	○	●	

REAMAX TS – Selection guide – Through hole

Ø .7087 – 2.5590 inch										
Article no.			49 597 …	49 544 …	49 531 …	49 586 …	49 521 …	49 526 …	49 534 …	49 596 …	49 520 …
KOMET no.			75J.93	75J.93	75J.21	75J.65	75J.65	75J.17	75J.71	75J.71	75J.71
Grind geometry			ASG4000	ASG3000	ASG03	ASG3000	ASG0106	ASG0706	ASG3000	ASG4000	ASG0106
Lead angle			25°	45°	30°/2°	45°	45°	45°/8°	45°	25°	45°
Grade / coating			DST	DST	K10	DBG-P	DBG-P	DBC	TiN	TiN	TiN
Application			Through hole								
Material sub-group		Index									
P	Non alloyed steel	P.1.1	●	●		●			○	●	
		P.1.2	●	●		●			○	●	
		P.1.3	●	●		●			○	●	
		P.1.4	●	●		●			○	●	
		P.1.5	●	●		●			○	●	
	Low alloyed steel	P.2.1	●	●		●			○		
		P.2.2	●	●		●			○		
		P.2.3	●	●		●			○		
		P.2.4	●	●		●			○		
	High-alloy steel and high-alloy tool steel	P.3.1					●				○
		P.3.2					●				○
		P.3.3					●				○
	Stainless steel	P.4.1					●				○
		P.4.2					●				○
M	Stainless steel	M.1.1					●				○
		M.2.1					●				○
		M.3.1					●				○
K	Grey cast iron	K.1.1				●			○		
		K.1.2				●			○		
	Spherulitic graphite cast iron	K.2.1	●	●		●					
		K.2.2	●	●		●					
	Malleable iron	K.3.1		●		●					
		K.3.2	●	●		●					
N	Aluminum alloys	N.1.1						●			
		N.1.2						●			
	Cast Aluminium Alloys	N.2.1						●			
		N.2.2						●			
		N.2.3						●			
	Copper and copper alloys (Bronze, Brass)	N.3.1		○					●		
		N.3.2		○					●		
		N.3.3							●		
	Magnesium alloys	N.4.1						●			
S	Heat resistant alloys	S.1.1									
		S.1.2									
		S.2.1									
		S.2.2									
		S.2.3									
	Titanium alloys	S.3.1			●						
		S.3.2			●						
		S.3.3			●						
O	Non-metal materials	O.1.1									
		O.1.2									
		O.2.1									
		O.2.2									
		O.3.1						○			

● = Main application
○ = Additional range of application

REAMAX TS – Selection guide – Blind hole

Ø .7087 – 2.5590 inch									
Article no.			49 539 …	49 530 …	49 585 …	49 571 …	49 527 …	49 535 …	49 580 …
KOMET no.			75H.93	75H.21	75H.65	75H.65	75H.71	75H.71	75H.17
Grind geometry			ASG3000	ASG03	ASG3000	ASG0106	ASG0106	ASG3000	ASG0706
Lead angle			45°	30°/2°	45°	45°	45°	45°	45°/8°
Grade / coating			DST	K10	DBG-P	DBG-P	TiN	TiN	DBC
Application			Blind hole						
Material sub-group		Index							
P	Non alloyed steel	P.1.1	●		●			○	
		P.1.2	●		●			○	
		P.1.3	●		●			○	
		P.1.4	●		●			○	
		P.1.5	●		●			○	
	Low alloyed steel	P.2.1	●		●			○	
		P.2.2	●		●			○	
		P.2.3	●		●			○	
		P.2.4	●		●			○	
	High-alloy steel and high-alloy tool steel	P.3.1				●	○		
		P.3.2				●	○		
		P.3.3				●	○		
	Stainless steel	P.4.1				●	○		
		P.4.2				●	○		
M	Stainless steel	M.1.1				●	○		
		M.2.1				●	○		
		M.3.1				●	○		
K	Grey cast iron	K.1.1			●			●	
		K.1.2			●			●	
	Spherulitic graphite cast iron	K.2.1	●		●				
		K.2.2	●		●				
	Malleable iron	K.3.1	●		●				
		K.3.2	●		●				
N	Aluminum alloys	N.1.1							●
		N.1.2							●
	Cast Aluminium Alloys	N.2.1							●
		N.2.2							●
		N.2.3							●
	Copper and copper alloys (Bronze, Brass)	N.3.1	○					●	
		N.3.2	○					●	
		N.3.3						●	
	Magnesium alloys	N.4.1							●
S	Heat resistant alloys	S.1.1							
		S.1.2							
		S.2.1							
		S.2.2							
		S.2.3							
	Titanium alloys	S.3.1		●					
		S.3.2		●					
		S.3.3		●					
O	Non-metal materials	O.1.1							
		O.1.2							
		O.2.1							
		O.2.2							
		O.3.1							○

● = Main application
○ = Additional range of application

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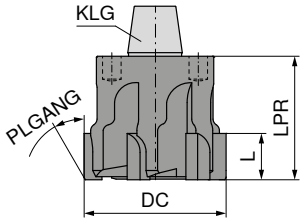
- ▲ KLG = coupling size
- ▲ ZEFP = number of cutting edges





	DST	DBG-P	DBC	DST
				
	75J.93 PLGANG 25° ASG4000 CERMET Through hole	75J.65 PLGANG 45° ASG0106 HM Through hole	75J.17 PLGANG 45/8° ASG0706 HM Through hole	75J.93 PLGANG 45° ASG3000 CERMET Through hole
	49 597 ...	**49 521 ...**	**49 526 ...**	**49 544 ...**

DC inch	L inch	LPR inch	ZEFP	KLG							
0.7087 - 0.7874	0.236	0.787	6	1	**xxxx** [1]		**xxxx** [1]		**xxxx** [1]		**xxxx** [1]
0.7874 - 0.8661	0.236	0.787	6	2	**xxxx** [1]		**xxxx** [1]		**xxxx** [1]		**xxxx** [1]
0.8661 - 1.0630	0.236	0.787	6	3	**xxxx** [1]		**xxxx** [1]		**xxxx** [1]		**xxxx** [1]
1.0630 - 1.2519	0.236	0.984	6	4	**xxxx** [1]		**xxxx** [1]		**xxxx** [1]		**xxxx** [1]
1.2520 - 1.3779	0.236	0.984	8	4	**xxxx** [1]		**xxxx** [1]		**xxxx** [1]		**xxxx** [1]
1.3780 - 1.6535	0.236	0.984	8	5	**xxxx** [1]		**xxxx** [1]		**xxxx** [1]		**xxxx** [1]
1.6535 - 2.0472	0.236	1.181	8	6	**xxxx** [1]		**xxxx** [1]		**xxxx** [1]		**xxxx** [1]
2.0472 - 2.5590	0.315	1.378	10	7	**xxxx** [1]		**xxxx** [1]		**xxxx** [1]		**xxxx** [1]
P					●		●				●
M							●				
K					●						●
N									●		○
S											
H											
O									○		

1) Not available from stock, articles are non-returnable and cannot be exchanged / Delivery time on request / Minimum order 2 pieces

→ v_c Page 64–67

For xxxx please indicate piece part bore diameter and tolerance. (e.g. Ø 1.5000" ±.0005")

→ **Page 92+93**
Here you will find a detailed operating instruction.

→ **Page 99**
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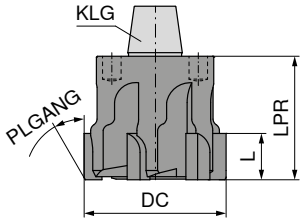

	TiN	DBG-P	K10	TiN	TiN
					
	75J.71 PLGANG 25° ASG4000 HM Through hole	75J.65 PLGANG 45° ASG3000 HM Through hole	75J.21 PLGANG 30/2° ASG03 HM Through hole	75J.71 PLGANG 45° ASG0106 HM Through hole	75J.71 PLGANG 45° ASG3000 HM Through hole
	49 596 ...	**49 586 ...**	**49 531 ...**	**49 520 ...**	**49 534 ...**

DC inch	L inch	LPR inch	ZEFP	KLG									
0.7087 - 0.7874	0.236	0.787	6	1	**xxxx** [1]		**xxxx** [1]		**xxxx** [1]		**xxxx** [1]		**xxxx** [1]
0.7874 - 0.8661	0.236	0.787	6	2	**xxxx** [1]		**xxxx** [1]		**xxxx** [1]		**xxxx** [1]		**xxxx** [1]
0.8661 - 1.0630	0.236	0.787	6	3	**xxxx** [1]		**xxxx** [1]		**xxxx** [1]		**xxxx** [1]		**xxxx** [1]
1.0630 - 1.2519	0.236	0.984	6	4	**xxxx** [1]		**xxxx** [1]		**xxxx** [1]		**xxxx** [1]		**xxxx** [1]
1.2520 - 1.3779	0.236	0.984	8	4	**xxxx** [1]		**xxxx** [1]		**xxxx** [1]		**xxxx** [1]		**xxxx** [1]
1.3780 - 1.6535	0.236	0.984	8	5	**xxxx** [1]		**xxxx** [1]		**xxxx** [1]		**xxxx** [1]		**xxxx** [1]
1.6535 - 2.0472	0.236	1.181	8	6	**xxxx** [1]		**xxxx** [1]		**xxxx** [1]		**xxxx** [1]		**xxxx** [1]
2.0472 - 2.5590	0.315	1.378	10	7	**xxxx** [1]		**xxxx** [1]		**xxxx** [1]		**xxxx** [1]		**xxxx** [1]
P					●		●				○		○
M											○		
K							●						○
N													●
S									●				
H													
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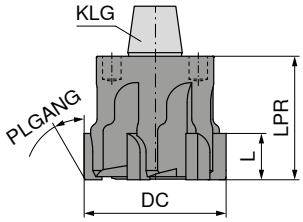

	DST	DBG-P	DBC	DBG-P	TiN
					
	75H.93 PLGANG 45° ASG3000 CERMET Blind hole	75H.65 PLGANG 45° ASG0106 HM Blind hole	75H.17 PLGANG 45/8° ASG0706 HM Blind hole	75H.65 PLGANG 45° ASG3000 HM Blind hole	75H.71 PLGANG 45° ASG3000 HM Blind hole
	49 539 ...	**49 571 ...**	**49 580 ...**	**49 585 ...**	**49 535 ...**

DC inch	L inch	LPR inch	ZEFP	KLG									
0.7087 - 0.7874	0.236	0.787	6	1	**xxxx** [1]		**xxxx** [1]		**xxxx** [1]		**xxxx** [1]		**xxxx** [1]
0.7874 - 0.8661	0.236	0.787	6	2	**xxxx** [1]		**xxxx** [1]		**xxxx** [1]		**xxxx** [1]		**xxxx** [1]
0.8661 - 1.0630	0.236	0.787	6	3	**xxxx** [1]		**xxxx** [1]		**xxxx** [1]		**xxxx** [1]		**xxxx** [1]
1.0630 - 1.2519	0.236	0.984	6	4	**xxxx** [1]		**xxxx** [1]		**xxxx** [1]		**xxxx** [1]		**xxxx** [1]
1.2520 - 1.3779	0.236	0.984	8	4	**xxxx** [1]		**xxxx** [1]		**xxxx** [1]		**xxxx** [1]		**xxxx** [1]
1.3780 - 1.6535	0.236	0.984	8	5	**xxxx** [1]		**xxxx** [1]		**xxxx** [1]		**xxxx** [1]		**xxxx** [1]
1.6535 - 2.0472	0.236	1.181	8	6	**xxxx** [1]		**xxxx** [1]		**xxxx** [1]		**xxxx** [1]		**xxxx** [1]
2.0472 - 2.5590	0.315	1.378	10	7	**xxxx** [1]		**xxxx** [1]		**xxxx** [1]		**xxxx** [1]		**xxxx** [1]
P					●		●				●		○
M							●						
K					●						●		●
N					○				●				●
S													
H													
O									○				

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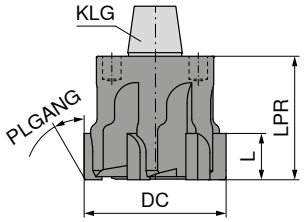


	K10	TiN
		
	75H.21 PLGANG 30/2° ASG03 HM Blind hole	75H.71 PLGANG 45° ASG0106 HM Blind hole
	49 530 ...	**49 527 ...**

DC inch	L inch	LPR inch	ZEFP	KLG		
0.7087 - 0.7874	0.236	0.787	6	1	**xxxx** [1]	**xxxx** [1]
0.7874 - 0.8661	0.236	0.787	6	2	**xxxx** [1]	**xxxx** [1]
0.8661 - 1.0630	0.236	0.787	6	3	**xxxx** [1]	**xxxx** [1]
1.0630 - 1.2519	0.236	0.984	6	4	**xxxx** [1]	**xxxx** [1]
1.2520 - 1.3779	0.236	0.984	8	4	**xxxx** [1]	**xxxx** [1]
1.3780 - 1.6535	0.236	0.984	8	5	**xxxx** [1]	**xxxx** [1]
1.6535 - 2.0472	0.236	1.181	8	6	**xxxx** [1]	**xxxx** [1]
2.0472 - 2.5590	0.315	1.378	10	7	**xxxx** [1]	**xxxx** [1]
P						○
M						○
K						
N						
S					●	
H						
O						

1) Not available from stock, articles are non-returnable and cannot be exchanged / Delivery time on request / Minimum order 2 pieces

→ v_c Page 64–67

For xxxx please indicate piece part bore diameter and tolerance. (e.g. Ø 1.5000" ±.0005")

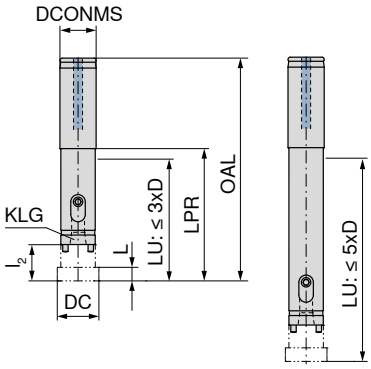
→ **Page 92+93**
Here you will find a detailed operating instruction.

→ **Page 99**
Here you will find more information on chamfer geometries (ASG).

REAMAX TS – Holder

▲ KLG = Coupling Size

Scope of supply:
Complete holder with pull stud. Reamer head not included

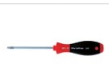




DC inch	KOMET no.	OAL inch	l_2 inch	LPR inch	L inch	DCONMS inch	DCONMS mm	torque moment Nm	KLG	40 501 ...	40 503 ...
0.7087 - 0.7870	75A.40.13010	5.118	0.787	3.150	0.236	0.787	20	1.5	1	**02099**	
0.7087 - 0.7870	75A.40.15010	7.480	0.787	5.512	0.236	0.787	20	1.5	1		**02099**
0.7874 - 0.8657	75A.40.13020	5.118	0.787	3.150	0.236	0.787	20	2.5	2	**02299**	
0.7874 - 0.8657	75A.40.15020	7.480	0.787	5.512	0.236	0.787	20	2.5	2		**02299**
0.8661 - 1.0626	75A.40.13030	5.118	0.787	3.150	0.236	0.787	20	4	3	**02799**	
0.8661 - 1.0626	75A.40.15030	8.268	0.787	6.299	0.236	0.787	20	4	3		**02799**
1.0630 - 1.3776	75A.40.13040	6.929	0.984	4.724	0.236	0.984	25	5	4	**03599**	
1.0630 - 1.3776	75A.40.15040	9.291	0.984	7.087	0.236	0.984	25	5	4		**03599**
1.3780 - 1.6535	75A.40.13050	6.929	0.984	4.724	0.236	0.984	25	6	5	**04299**	
1.3780 - 1.6535	75A.40.15050	10.079	0.984	7.874	0.236	0.984	25	6	5		**04299**
1.6535 - 2.0472	75A.40.13060	7.087	1.181	4.724	0.236	1.260	32	10	6	**05299**	
1.6535 - 2.0472	75A.40.15060	11.024	1.181	8.661	0.236	1.260	32	10	6		**05299**
2.0472 - 2.5590	75A.40.13070	7.087	1.181	4.724	0.315	1.260	32	13	7	**06599**	
2.0472 - 2.5590	75A.40.15070	11.024	1.181	8.661	0.315	1.260	32	13	7		**06599**

Do not heat shrink tools !


Clamping key – T


Screwdriver


Reamax TS pull stud

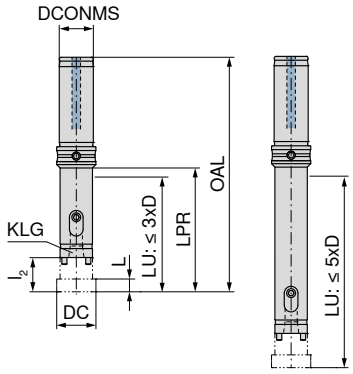
Spare parts DC		80 397 ...		80 950 ...		40 900 ...
0.7087 - 0.7870			T08 - IP	**039**		**00100**
0.7874 - 0.8657	SW2.5	**025**				**00200**
0.8661 - 1.0626	SW3	**030**				**00300**
1.0630 - 1.3776	SW3	**030**				**00400**
1.3780 - 1.6535	SW3	**030**				**00500**
1.6535 - 2.0472	SW4	**040**				**00500**
2.0472 - 2.5590	SW5	**050**				**00700**

→ **Page 92+93**
Here you will find a detailed operating instruction.

REAMAX TS – Holder

▲ KLG = Coupling size
▲ Adjustment inside the machine
▲ Alignable DAH Zero holder for correction of concentricity error
▲ DAH Zero holder is pre-loaded and set to a runout of < 0.0002"

Scope of supply:
Complete holder with pull stud. Reamer head not included





DC inch	KOMET no.	OAL inch	l_2 inch	LPR inch	L inch	DCONMS inch	DCONMS mm	torque moment Nm	KLG	40 504 ...	40 506 ...
0.7087 - 0.7870	75A.41.13010	5.709	0.787	3.150	0.236	0.787	20	1.5	1	**02099**	
0.7087 - 0.7870	75A.41.15010	8.071	0.787	5.512	0.236	0.787	20	1.5	1		**02099**
0.7874 - 0.8657	75A.41.13020	5.709	0.787	3.150	0.236	0.787	20	2.5	2	**02299**	
0.7874 - 0.8657	75A.41.15020	8.071	0.787	5.512	0.236	0.787	20	2.5	2		**02299**
0.8661 - 1.0626	75A.41.13030	5.709	0.787	3.150	0.236	0.787	20	4	3	**02799**	
0.8661 - 1.0626	75A.41.15030	8.858	0.787	6.299	0.236	0.787	20	4	3		**02799**
1.0630 - 1.3776	75A.41.13040	6.929	0.984	4.724	0.236	0.984	25	5	4	**03599**	
1.0630 - 1.3776	75A.41.15040	9.291	0.984	7.087	0.236	0.984	25	5	4		**03599**
1.3780 - 1.6535	75A.41.13050	6.929	0.984	4.724	0.236	0.984	25	6	5	**04299**	
1.3780 - 1.6535	75A.41.15050	10.079	0.984	7.874	0.236	0.984	25	6	5		**04299**

Do not heat shrink tools !


Clamping key – T

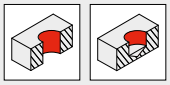
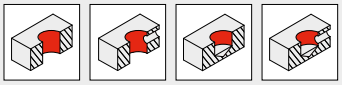

Screwdriver


Reamax TS pull stud

Spare parts DC		80 397 ...		80 950 ...	40 900 ...
0.7087 - 0.7870			T08 - IP	**039**	**00100**
0.7874 - 0.8657	SW2.5	**025**			**00200**
0.8661 - 1.0626	SW3	**030**			**00300**
1.0630 - 1.3776	SW3	**030**			**00400**
1.3780 - 1.6535	SW3	**030**			**00500**

→ **Page 92+93**
Here you will find a detailed operating instruction.

REAMAX – Selection guide

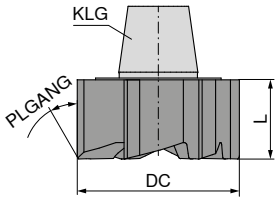
Ø .4921 – 1.5748 inch								
Article no.			40 536 …	40 525 …	40 560 …	40 551 …	40 570 …	40 505 …
KOMET no.			640.93	640.93	640.65	640.65	640.27	640.71
Cutting edge geometry			ASG4000	ASG3000	ASG3000	ASG0106	ASG0706	ASG3000
Lead angle			25°	45°	45°	45°	45°/8°	45°
Grade / coating			DST	DST	DBG-P	DBG-P	DBC	TiN
Application			Through hole	Through hole + blind hole				
Material sub-group		Index						
P	Non alloyed steel	P.1.1	●	●	●			○
		P.1.2	●	●	●			○
		P.1.3	●	●	●			○
		P.1.4	●	●	●			○
		P.1.5	●	●	●			○
	Low alloyed steel	P.2.1	●	●	●			○
		P.2.2	●	●	●			○
		P.2.3	●	●	●			○
		P.2.4			●	●		○
	High-alloy steel and high-alloy tool steel	P.3.1				●		
		P.3.2				●		
		P.3.3				●		
	Stainless steel	P.4.1				●		
		P.4.2				●		
M	Stainless steel	M.1.1				●		
		M.2.1				●		
		M.3.1				●		
K	Grey cast iron	K.1.1			●			○
		K.1.2			●			○
	Spherulitic graphite cast iron	K.2.1	○	●	●			
		K.2.2	○	●	●			
	Malleable iron	K.3.1		●	●			
		K.3.2	○	●	●			
N	Aluminum alloys	N.1.1					●	
		N.1.2					●	
	Cast aluminium alloys	N.2.1					●	
		N.2.2					●	
		N.2.3						
	Copper and copper alloys (Bronze, Brass)	N.3.1		○				●
		N.3.2		○				●
		N.3.3						●
	Magnesium alloys	N.4.1						
H	Hardened steel	H.1.1				●		
		H.1.2				●		
		H.1.3				●		
		H.1.4						
	Chilled iron	H.2.1				●		
	Hardened cast iron	H.3.1				●		
O	Non-metal materials	O.1.1						
		O.1.2						
		O.2.1						
		O.2.2						
		O.3.1					○	

● = Main application
○ = Additional range of application

REAMAX – Replaceable reaming heads

- ▲ Up to tolerance class IT 7 with absolute process security, from the first hole
- ▲ Maximum changeover precision guaranteed
- ▲ Maximum radial run-out accuracy thanks to precision-ground face and taper contact
- ▲ No Ø adjustment necessary
- ▲ Optimised for use with minimum quantity lubrication (MQL)
- ▲ Retraction from the hole at 3-4x feed rate
- ▲ KLG = Coupling size
- ▲ ZEFP = Number of cutting edges





	DST	DBG-P	DBC	DST	DBG-P	TiN
						
	640.93 PLGANG 25° ASG4000 CERMET Through hole	640.65 PLGANG 45° ASG0106 HM Through hole + blind hole	640.27 PLGANG 45/8° ASG0706 HM Through hole + blind hole	640.93 PLGANG 45° ASG3000 CERMET Through hole + blind hole	640.65 PLGANG 45° ASG3000 HM Through hole + blind hole	640.71 PLGANG 45° ASG3000 HM Through hole + blind hole
	40 536 ...	40 551 ...	40 570 ...	40 525 ...	40 560 ...	40 505 ...

DC H7 inch	L inch	ZEFP	KLG										
0.4921 - 0.5902	0.354	6	1	xxxx [1]		xxxx [1]		xxxx [1]		xxxx [1]		xxxx [1]	
0.5906	0.354	6	1	15000[1]		15000		15000[1]		15000[1]		15000	
0.5909 - 0.6295	0.354	6	1	xxxx [1]		xxxx [1]		xxxx [1]		xxxx [1]		xxxx [1]	
0.6299	0.354	6	2	160		16000		16000[1]		160		16000	
0.6303 - 0.7083	0.354	6	2	xxxx [1]		xxxx [1]		xxxx [1]		xxxx [1]		xxxx [1]	
0.7087	0.354	6	2	180		18000		18000[1]		180		18000	
0.7091 - 0.7870	0.354	6	2	xxxx [1]		xxxx [1]		xxxx [1]		xxxx [1]		xxxx [1]	
0.7874	0.354	6	2	200		20000		20000[1]		200		20000	
0.7878 - 0.8657	0.354	6	2	xxxx [1]		xxxx [1]		xxxx [1]		xxxx [1]		xxxx [1]	
0.8661	0.354	8	3	220		22000		22000[1]		220		22000	
0.8665 - 0.9445	0.354	8	3	xxxx [1]		xxxx [1]		xxxx [1]		xxxx [1]		xxxx [1]	
0.9449	0.354	8	3	24000[1]		24000		24000[1]		24000[1]		24000	
0.9453 - 0.9839	0.354	8	3	xxxx [1]		xxxx [1]		xxxx [1]		xxxx [1]		xxxx [1]	
0.9843	0.354	8	3	250		25000		25000[1]		250		25000	
0.9846 - 1.0232	0.354	8	3	xxxx [1]		xxxx [1]		xxxx [1]		xxxx [1]		xxxx [1]	
1.0236 - 1.1020	0.354	8	4	xxxx [1]		xxxx [1]		xxxx [1]		xxxx [1]		xxxx [1]	
1.1024	0.354	8	4	280		28000		28000[1]		280		28000	
1.1028 - 1.1807	0.354	8	4	xxxx [1]		xxxx [1]		xxxx [1]		xxxx [1]		xxxx [1]	
1.1811	0.354	8	4	300		30000		30000[1]		300		30000	
1.1815 - 1.2598	0.354	8	4	xxxx [1]		xxxx [1]		xxxx [1]		xxxx [1]		xxxx [1]	
1.2602 - 1.5744	0.354	8	5	xxxx [1]		xxxx [1]		xxxx [1]		xxxx [1]		xxxx [1]	
1.5748	0.354	8	5	400		40000		40000[1]		400		40000	

P	●	●		●	●	○
M		●				
K	○			●	●	○
N			●	○		●
S						
H		●				
O			○			

1) Not available from stock, articles are non-returnable and cannot be exchanged / Delivery time on request / Minimum order 2 pieces

→ v_c Page 69–71

For xxxx please indicate piece part bore diameter and tolerance. (e.g. Ø 1.5000" ±.0005")

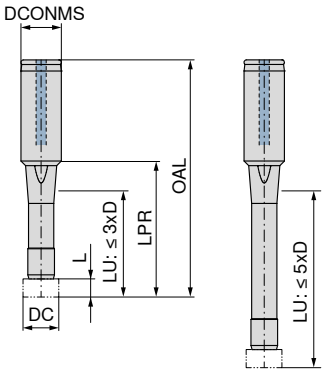
A detailed operating manual is available for download in the online shop next to the product.

→ **Page 99**
Here you will find more information on chamfer geometries (ASG).

REAMAX – Holder

▲ KLG = Coupling Size

Scope of supply:
Complete holder, but without exchangeable head



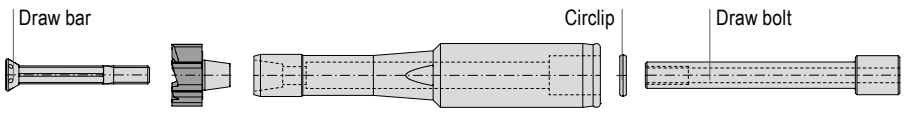


DC inch	KOMET no.	KLG	OAL inch	LPR inch	L inch	DCONMS inch	DCONMS mm	torque moment Nm	40 590 ...	40 591 ...
0.4921 - 0.6295	640.01.001	1	4.213	2.323	0.354	0.630	16	4 - 5	**016** [1]	
0.4921 - 0.6295	640.81.001	1	5.394	3.504	0.354	0.630	16	4 - 5		**016** [1]
0.6299 - 0.8657	640.01.002	2	4.685	2.717	0.354	0.787	20	6 - 7	**022**	
0.6299 - 0.8657	640.81.002	2	6.654	4.685	0.354	0.787	20	6 - 7		**022**
0.8661 - 1.0232	640.01.003	3	5.512	3.307	0.354	0.984	25	10 - 12	**026**	
0.8661 - 1.0232	640.81.003	3	7.717	5.512	0.354	0.984	25	10 - 12		**026**
1.0236 - 1.2598	640.01.005	4	6.299	4.094	0.354	0.984	25	18 - 20	**032**	
1.0236 - 1.2598	640.81.005	4	8.898	6.693	0.354	0.984	25	18 - 20		**032**
1.2602 - 1.5748	640.01.006	5	7.835	5.472	0.354	1.260	32	26 - 28	**040**	
1.2602 - 1.5748	640.81.006	5	10.630	8.268	0.354	1.260	32	26 - 28		**040**

1) This holder can also be used for reaming heads for through holes from Ø 12 mm (.4724 inch), which are available on request

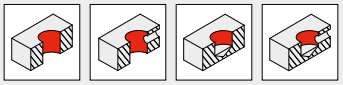
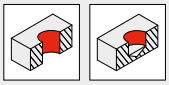
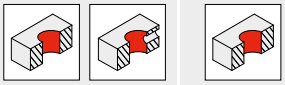
Do not heat shrink tools !

Spare parts DC	Draw bolt 5xD 40 950 ...	Draw bolt 3xD 40 950 ...	Draw bar 40 950 ...	Circlip 40 950 ...
0.4921 - 0.6295		**101**	**001**	**301**
0.4921 - 0.6295	**107**		**001**	**301**
0.6299 - 0.8657		**102**	**002**	**302**
0.6299 - 0.8657	**108**		**002**	**302**
0.8661 - 1.0232		**103**	**003**	**303**
0.8661 - 1.0232	**109**		**003**	**303**
1.0236 - 1.2598		**104**	**004**	**303**
1.0236 - 1.2598	**110**		**004**	**303**
1.2602 - 1.5748		**106**	**005**	**304**
1.2602 - 1.5748	**112**		**005**	**304**



A detailed operating manual is available for download in the online shop next to the product.

Rapid Set Head – Selection guide

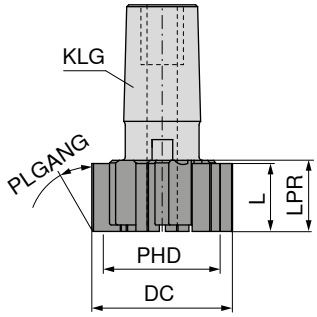
Ø .3780 – 2.3622 inch											
Article no.			49 817 …	49 816 …	49 800 …	49 808 …	49 809 …	49 813 …	49 804 …	49 801 …	49 805 …	49 812 …
KOMET no.			340.65	340.65	340.21	340.71	340.71	340.93	340.21	340.21	340.70	340.92
Grind geometry			ASG3000	ASG0106	ASG03	ASG3000	ASG0106	ASG3000	ASG02	ASG3000	ASG05	ASG05
Lead angle			45°	45°	30°/2°	45°	45°	45°	45°/8°	45°	25°	25°
Grade / coating			DBG-P	DBG-P	K10	TiN	TiN	DST	K10	K10	TiN	DST
Application			Through hole + blind hole								Through hole	
Material sub-group		Index										
P	Non alloyed steel	P.1.1	●			○		●		○	○	●
		P.1.2	●			○		●		○	○	●
		P.1.3	●			○		●		○	○	●
		P.1.4	●			○		●		○	○	●
		P.1.5	●			○		●		○	○	●
	Low alloyed steel	P.2.1	●			○		●		○	○	●
		P.2.2	●			○		●		○	○	●
		P.2.3	●			○		●		○	○	●
		P.2.4	●			●					●	
	High-alloy steel and high-alloy tool steel	P.3.1		●			●					
		P.3.2		●			●					
		P.3.3		●			●					
	Stainless steel	P.4.1		●			●					
		P.4.2		●			●					
M	Stainless steel	M.1.1		●			●					
		M.2.1		●			●					
		M.3.1		●			●					
K	Grey cast iron	K.1.1	●			●				○		
		K.1.2	●			●				○		
	Spherulitic graphite cast iron	K.2.1	●					●		○		
		K.2.2	●					●		○		
	Malleable iron	K.3.1	●					●		○		
		K.3.2	●					●		○		
N	Aluminum alloys	N.1.1							●	○		
		N.1.2							●	○		
	Cast Aluminium Alloys	N.2.1							●	○		
		N.2.2							●	○		
		N.2.3							●	○		
	Copper and copper alloys (Bronze, Brass)	N.3.1				○		●	●	○		
		N.3.2				○			●	○		
		N.3.3				○			●	○		
	Magnesium alloys	N.4.1							●	○		
S	Heat resistant alloys	S.1.1										
		S.1.2										
		S.2.1										
		S.2.2										
		S.2.3										
	Titanium alloys	S.3.1			●							
		S.3.2			●							
		S.3.3			●							
O	Non-metal materials	O.1.1										
		O.1.2										
		O.2.1										
		O.2.2										
		O.3.1										

● = Main application
○ = Additional range of application

Rapid Set Head

▲ PHD = Approximate diameter for face machining geometries (ASG)
▲ KLG = Coupling Size
▲ ZEFP = Number of cutting edges





	TiN	TiN	K10	K10	K10
					
	340.71 straight flute PLGANG 45° ASG3000 HM Through hole + blind hole	340.71 straight flute PLGANG 45° ASG0106 HM Through hole + blind hole	340.21 straight flute PLGANG 45° ASG3000 HM Through hole + blind hole	340.21 straight flute PLGANG 30/2° ASG03 HM Through hole + blind hole	340.21 straight flute PLGANG 45/8° ASG02 HM Through hole + blind hole
	49 808 ...	**49 809 ...**	**49 801 ...**	**49 800 ...**	**49 804 ...**

DC inch	L inch	LPR inch	PHD inch	ZEFP	KLG									
0.3780 - 0.4957	0.374	0.433	DC-0.1220	4	1	**xxxx** [1]		**xxxx** [1]		**xxxx** [1]		**xxxx** [1]		**xxxx** [1]
0.4961 - 0.6138	0.413	0.433	DC-0.1417	4	2	**xxxx** [1]		**xxxx** [1]		**xxxx** [1]		**xxxx** [1]		**xxxx** [1]
0.6142 - 0.7319	0.413	0.433	DC-0.1417	6	3	**xxxx** [1]		**xxxx** [1]		**xxxx** [1]		**xxxx** [1]		**xxxx** [1]
0.7323 - 0.9449	0.413	0.433	DC-0.2008	6	4	**xxxx** [1]		**xxxx** [1]		**xxxx** [1]		**xxxx** [1]		**xxxx** [1]
0.9453 - 1.1850	0.413	0.433	DC-0.2362	6	5	**xxxx** [1]		**xxxx** [1]		**xxxx** [1]		**xxxx** [1]		**xxxx** [1]
1.1854 - 1.2165	0.630	0.669	DC-0.2953	6	6	**xxxx** [1]		**xxxx** [1]		**xxxx** [1]		**xxxx** [1]		**xxxx** [1]
1.2169 - 1.5748	0.630	0.669	DC-0.2953	6	6	**xxxx** [1]		**xxxx** [1]		**xxxx** [1]		**xxxx** [1]		**xxxx** [1]
1.5752 - 1.9957	0.630	0.669	DC-0.3150	6	7	**xxxx** [1]		**xxxx** [1]		**xxxx** [1]		**xxxx** [1]		**xxxx** [1]
1.9961 - 2.3622	0.630	0.669	DC-0.3150	6	8	**xxxx** [1]		**xxxx** [1]		**xxxx** [1]		**xxxx** [1]		**xxxx** [1]

P	●	●	○		
M		●			
K	●		○		
N	○		○		●
S				●	
H					
O					

1) Not available from stock, articles are non-returnable and cannot be exchanged / Delivery time on request / Minimum order 2 pieces

→ v_c Page 86–90

For xxxx please indicate piece part bore diameter and tolerance. (e.g. Ø 1.5000" ±.0005")

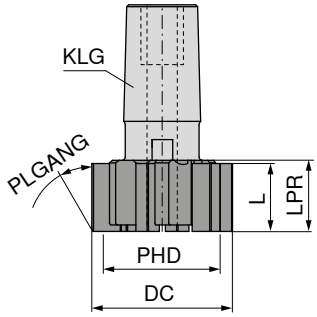
→ **Page 96**
Here you will find a detailed operating instruction.

→ **Page 99**
Here you will find more information on chamfer geometries (ASG).

Rapid Set Head

▲ PHD = Approximate diameter for face machining geometries (ASG)
▲ KLG = Coupling Size
▲ ZEFP = Number of cutting edges





	DST	DBG-P	DBG-P
			
	340.93 straight flute PLGANG 45° ASG3000 CERMET Through hole + blind hole	340.65 straight flute PLGANG 45° ASG3000 HM Through hole + blind hole	340.65 straight flute PLGANG 45° ASG0106 HM Through hole + blind hole
	49 813 ...	**49 817 ...**	**49 816 ...**

DC inch	L inch	LPR inch	PHD inch	ZEFP	KLG				
0.3780 - 0.4957	0.374	0.433	DC-0.1220	4	1	**xxxx** [1]		**xxxx** [1]		**xxxx** [1]
0.4961 - 0.6138	0.413	0.433	DC-0.1417	4	2	**xxxx** [1]		**xxxx** [1]		**xxxx** [1]
0.6142 - 0.7319	0.413	0.433	DC-0.1417	6	3	**xxxx** [1]				
0.6142 - 0.7319	0.413	0.433	DC-0.1417	6	4			**xxxx** [1]		**xxxx** [1]
0.7323 - 0.9449	0.413	0.433	DC-0.2008	6	4	**xxxx** [1]		**xxxx** [1]		**xxxx** [1]
0.9453 - 1.1850	0.413	0.433	DC-0.2362	6	5	**xxxx** [1]		**xxxx** [1]		**xxxx** [1]
1.1854 - 1.2165	0.630	0.669	DC-0.2953	6	6	**xxxx** [1]		**xxxx** [1]		**xxxx** [1]
1.2169 - 1.5748	0.630	0.669	DC-0.2953	6	6	**xxxx** [1]		**xxxx** [1]		**xxxx** [1]
1.5752 - 1.9957	0.630	0.669	DC-0.3150	6	7	**xxxx** [1]		**xxxx** [1]		**xxxx** [1]
1.9961 - 2.3622	0.630	0.669	DC-0.3150	6	8	**xxxx** [1]		**xxxx** [1]		**xxxx** [1]
P						●		●		●
M										●
K						●		●		
N						●				
S										
H										
O										

1) Not available from stock, articles are non-returnable and cannot be exchanged / Delivery time on request / Minimum order 2 pieces

→ v_c Page 86–90

For xxxx please indicate piece part bore diameter and tolerance. (e.g. Ø 1.5000" ±.0005")

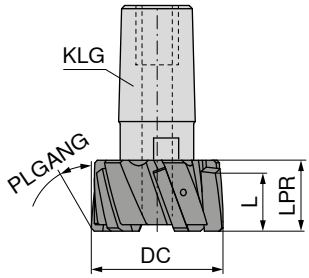
→ **Page 96**
Here you will find a detailed operating instruction.

→ **Page 99**
Here you will find more information on chamfer geometries (ASG).

Rapid Set Head

▲ KLG = Coupling Size
▲ ZEFP = Number of cutting edges





TiN



340.70
Left Hand Helix
PLGANG 25°
ASG05
HM
Through hole

49 805 ...

DST



340.92
Left Hand Helix
PLGANG 25°
ASG05
CERMET
Through hole

49 812 ...

DC inch	L inch	LPR inch	ZEFP	KLG		
0.3780 - 0.4957	0.374	0.433	4	1	**xxxx** [1]	**xxxx** [1]
0.4961 - 0.6138	0.413	0.433	4	2	**xxxx** [1]	**xxxx** [1]
0.6142 - 0.7319	0.413	0.433	4	3	**xxxx** [1]	**xxxx** [1]
0.7323 - 0.9449	0.413	0.433	6	4	**xxxx** [1]	**xxxx** [1]
0.9453 - 1.1850	0.413	0.433	6	5	**xxxx** [1]	**xxxx** [1]
1.1854 - 1.2165	0.630	0.669	6	6	**xxxx** [1]	**xxxx** [1]
1.2169 - 1.5748	0.630	0.669	6	6	**xxxx** [1]	**xxxx** [1]
1.5752 - 1.9957	0.630	0.669	6	7	**xxxx** [1]	**xxxx** [1]
1.9961 - 2.3622	0.630	0.669	6	8	**xxxx** [1]	**xxxx** [1]
P					●	●
M						
K						
N						
S						
H						
O						

1) Not available from stock, articles are non-returnable and cannot be exchanged / Delivery time on request / Minimum order 2 pieces

→ v_c Page 86–90

For xxxx please indicate piece part bore diameter and tolerance. (e.g. Ø 1.5000" ±.0005")

→ **Page 96**
Here you will find a detailed operating instruction.

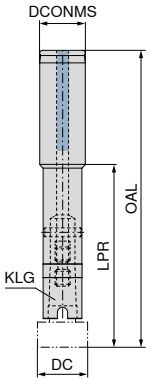
→ **Page 99**
Here you will find more information on chamfer geometries (ASG).

Holder for Rapid Head Set

▲ KLG = Coupling Size

Scope of supply:

Holder includes radial coolant screw (through hole) for diameters 0.4961" – 2.3622".
Solid screw included for diameters 0.3780" – 0.4957".
Axial coolant screw (blind hole) must be ordered separately.





DC inch	KOMET no.	OAL inch	LPR inch	DCONMS inch	DCONMS mm	KLG	49 890 ...	49 891 ...
0.3780 - 0.4957	540.56.001	3.740	1.969	0.500	12.700	1	**01399**	
0.3780 - 0.4957	540.13.001	6.220	4.449	0.500	12.700	1		**01399**
0.4961 - 0.6138	540.56.002	4.252	2.362	0.625	15.875	2	**01699**	
0.4961 - 0.6138	540.13.002	6.260	4.370	0.625	15.875	2		**01699**
0.6142 - 0.7319	540.56.003	4.331	2.362	0.625	15.875	3	**01999**	
0.6142 - 0.7319	540.13.003	6.732	4.764	0.625	15.875	3		**01999**
0.7323 - 0.9449	540.56.004	5.118	3.150	0.750	19.050	4	**02499**	
0.7323 - 0.9449	540.13.004	7.520	5.551	0.750	19.050	4		**02499**
0.9453 - 1.1850	540.56.005	6.220	3.858	1.000	25.400	5	**03099**	
0.9453 - 1.1850	540.13.005	8.622	6.260	1.000	25.400	5		**03099**
1.1854 - 1.5748	540.56.006	6.457	4.094	1.000	25.400	6	**04099**	
1.1854 - 1.5748	540.13.006	8.858	6.496	1.000	25.400	6		**04099**
1.5752 - 1.9961	540.56.007	7.244	4.094	1.500	38.100	7	**05199**	
1.5752 - 1.9961	540.13.007	11.142	7.992	1.500	38.100	7		**05199**
1.9961 - 2.3622	540.56.008	7.421	4.272	1.500	38.100	8	**06099**	
1.9961 - 2.3622	540.13.008	11.358	8.209	1.500	38.100	8		**06099**

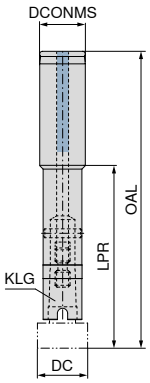
Spare parts DC	 Adjustment screw 10 950 ...	 Screw long version 40 950 ...	 Screw short version 40 950 ...	 Threaded pin 40 950 ...	Differential Axial Coolant 40 950 ...	Differential Radial Coolant 40 950 ...	 Bushing 40 950 ...
0.3780 - 0.4957			**41600**				
0.3780 - 0.4957		**41700**					
0.4961 - 0.6138				**41800**	**40600**	**40100**	**41100**
0.6142 - 0.7319	**09500**				**40700**	**40200**	**41200**
0.7323 - 0.9449				**42000**	**40800**	**40300**	**41300**
0.9453 - 1.1850				**42100**	**40900**	**40400**	**41400**
1.1854 - 1.5748				**42100**	**40900**	**40400**	**41400**
1.5752 - 1.9961				**42200**	**41000**	**40500**	**41500**
1.9961 - 2.3622				**42200**	**41000**	**40500**	**41500**

→ **Page 96**
Here you will find a detailed operating instruction.

Holder for Rapid Head Set

Scope of supply:

▲ **Ø 9.60 - 12.59**: Holder with screw 4095041600 or 4095041700 (short or long depending on holder version), however without solid carbide high-speed reamer
▲ **Ø 12.60 - 60.00**: Holder with clamping key, differential screw for radial cooling, bushing and grub screw, however without solid carbide high-speed reamer
▲ Order differential screw for axial cooling separately if required





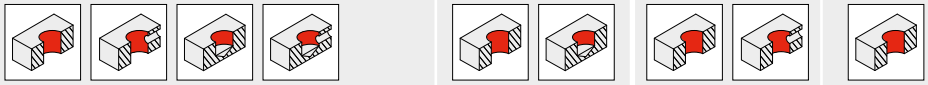
DC mm	KOMET no.	OAL mm	LPR mm	DCONMS mm	KLG	40 890 ...	40 891 ...
9.60 - 12.59	540.66.000	95.0	50.0	12	1	**01399** [1]	
9.60 - 12.59	540.36.000	158.0	113.0	12	1		**01399** [1]
12.60 - 15.59	540.66.001	108.0	60.0	16	2	**01699** [1]	
12.60 - 15.59	540.36.001	159.0	111.0	16	2		**01699** [1]
15.60 - 18.59	540.66.002	110.0	60.0	20	3	**01999** [1]	
15.60 - 18.59	540.36.002	171.0	121.0	20	3		**01999** [1]
18.60 - 24.00	540.66.003	130.0	80.0	20	4	**02499** [1]	
18.60 - 24.00	540.36.003	191.0	141.0	20	4		**02499** [1]
24.01 - 30.10	540.66.004	158.0	98.0	25	5	**03099** [1]	
24.01 - 30.10	540.36.004	219.0	159.0	25	5		**03099** [1]
30.11 - 40.00	540.66.005	164.0	104.0	25	6	**04099** [1]	
30.11 - 40.00	540.36.005	225.0	165.0	25	6		**04099** [1]
40.01 - 50.70	540.66.006	184.0	104.0	32	7	**05199** [1]	
40.01 - 50.70	540.36.006	283.0	203.0	32	7		**05199** [1]
50.71 - 60.00	540.66.007	188.5	108.5	32	8	**06099** [1]	
50.71 - 60.00	540.36.007	288.5	208.5	32	8		**06099** [1]

1) Not in stock

Spare parts DC	 Adjustment screw **10 950 ...**	 Clamping key – T **80 397 ...**	 Screw long version **40 950 ...**	 Screw short version **40 950 ...**	 Threaded pin **40 950 ...**	 Differential Axial Coolant **40 950 ...**	 Differential Radial Coolant **40 950 ...**	 Bushing **40 950 ...**
9.60 - 12.59		**025**	**41700**					
9.60 - 12.59		**025**		**41600**				
12.60 - 15.59		**020**			**41800**	**40600**	**40100**	**41100**
15.60 - 18.59	**09500**	**025**				**40700**	**40200**	**41200**
18.60 - 24.00		**030**			**42000**	**40800**	**40300**	**41300**
24.01 - 30.10		**040**			**42100**	**40900**	**40400**	**41400**
30.11 - 40.00		**040**			**42100**	**40900**	**40400**	**41400**
40.01 - 50.70		**060**			**42200**	**41000**	**40500**	**41500**
50.71 - 60.00		**060**			**42200**	**41000**	**40500**	**41500**

→ **Page 96**
Here you will find a detailed operating instruction.

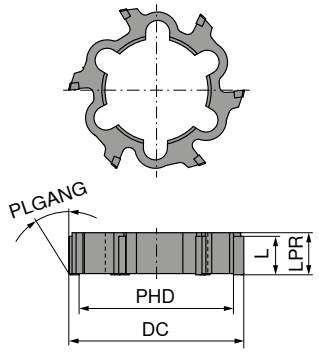
Cutting Ring – Selection guide

Ø 2.3858 – 4.3539 inch											
Article no.			49 836 ...	49 835 ...	49 839 ...	49 823 ...	49 824 ...	49 827 ...	49 832 ...	49 831 ...	49 828 ...
KOMET no.			300.65	300.65	300.17	300.05	300.05	300.45	300.25	300.05	300.45
Grind geometry			ASG3000	ASG0106	ASG0706	ASG3000	ASG0106	ASG3000	ASG03	ASG4000	ASG4000
Lead angle			45°	45°	45°/8°	45°	45°	45°	30°/2°	25°	45°
Grade / coating			DBG-P	DBG-P	DBC	TiN	TiN	DST	K10	TiN	DST
Application			Through hole + blind hole							Through hole	
Material sub-group		Index									
P	Non alloyed steel	P.1.1	●			○		●		●	●
		P.1.2	●			○		●		●	●
		P.1.3	●			○		●		●	●
		P.1.4	●			○		●		●	●
		P.1.5	●			○		●		●	●
	Low alloyed steel	P.2.1	●			○		●			●
		P.2.2	●			○		●			●
		P.2.3	●			○		●			●
		P.2.4	●			○					
	High-alloy steel and high-alloy tool steel	P.3.1		●			●				
		P.3.2		●			●				
		P.3.3		●							
	Stainless steel	P.4.1		●			○				
		P.4.2		●			○				
M	Stainless steel	M.1.1		●			○				
		M.2.1		●			○				
		M.3.1		●			○				
K	Grey cast iron	K.1.1	●			○					
		K.1.2	●			○					
	Spherulitic graphite cast iron	K.2.1	●					●			
		K.2.2	●					●			
	Malleable iron	K.3.1	●					●			
		K.3.2	●					●			
N	Aluminum alloys	N.1.1			●						
		N.1.2			●						
	Cast Aluminium Alloys	N.2.1			●						
		N.2.2			●						
		N.2.3			●						
	Copper and copper alloys (Bronze, Brass)	N.3.1				○		●		○	
		N.3.2				○				○	
		N.3.3				○				○	
	Magnesium alloys	N.4.1			●						
S	Heat resistant alloys	S.1.1									
		S.1.2									
		S.2.1									
		S.2.2									
		S.2.3									
	Titanium alloys	S.3.1							●		
		S.3.2							●		
		S.3.3							●		
O	Non-metal materials	O.1.1									
		O.1.2									
		O.2.1									
		O.2.2									
		O.3.1									

● = Main application
○ = Additional range of application

Cutting ring

▲ PHD = Approximate diameter for face machining geometries (ASG)
▲ ZEFP = Number of cutting edges



	DBG-P	DBG-P	K10	TiN	TiN
					
	300.65 PLGANG 45° ASG3000 HM Through hole + blind hole	300.65 PLGANG 45° ASG0106 HM Through hole + blind hole	300.25 PLGANG 30/2° ASG03 HM Through hole + blind hole	300.05 PLGANG 45° ASG3000 HM Through hole + blind hole	300.05 PLGANG 45° ASG0106 HM Through hole + blind hole
	49 836 ...	49 835 ...	49 832 ...	49 823 ...	49 824 ...

DC inch	L inch	LPR inch	PHD inch	ZEFP									
2.3858 - 2.5823	0.630	0.728	DC-0.3307	6	**xxxx** [1]		**xxxx** [1]		**xxxx** [1]		**xxxx** [1]		**xxxx** [1]
2.5827 - 2.7791	0.630	0.728	DC-0.3307	6	**xxxx** [1]		**xxxx** [1]		**xxxx** [1]		**xxxx** [1]		**xxxx** [1]
2.7795 - 2.9760	0.630	0.728	DC-0.3307	6	**xxxx** [1]		**xxxx** [1]		**xxxx** [1]		**xxxx** [1]		**xxxx** [1]
2.9764 - 3.1335	0.630	0.728	DC-0.3307	6	**xxxx** [1]		**xxxx** [1]		**xxxx** [1]		**xxxx** [1]		**xxxx** [1]
3.1339 - 3.3697	0.630	0.728	DC-0.3307	8	**xxxx** [1]		**xxxx** [1]		**xxxx** [1]		**xxxx** [1]		**xxxx** [1]
3.3701 - 3.5665	0.630	0.728	DC-0.3307	8	**xxxx** [1]		**xxxx** [1]		**xxxx** [1]		**xxxx** [1]		**xxxx** [1]
3.5669 - 3.7634	0.630	0.728	DC-0.3307	8	**xxxx** [1]		**xxxx** [1]		**xxxx** [1]		**xxxx** [1]		**xxxx** [1]
3.7638 - 3.9602	0.630	0.728	DC-0.3307	8	**xxxx** [1]		**xxxx** [1]		**xxxx** [1]		**xxxx** [1]		**xxxx** [1]
3.9606 - 4.3539	0.630	0.728	DC-0.3307	10	**xxxx** [1]		**xxxx** [1]		**xxxx** [1]		**xxxx** [1]		**xxxx** [1]

P	●		●				○		●
M			●						●
K	●						○		
N							○		
S					●				
H									
O									

1) Not available from stock, articles are non-returnable and cannot be exchanged / Delivery time on request / Minimum order 2 pieces

→ v_c Page 81–85

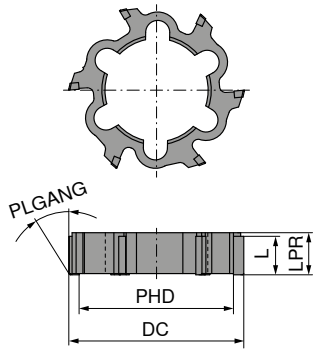
For xxxx please indicate piece part bore diameter and tolerance. (e.g. Ø 2.5000" ±.0005")

→ **Page 94+95**
Here you will find a detailed operating instruction.

→ **Page 99**
Here you will find more information on chamfer geometries (ASG).

Cutting ring

▲ PHD = Approximate diameter for face machining geometries (ASG)
▲ ZEFP = Number of cutting edges



	DST	DBC
		
	300.45 PLGANG 45° ASG3000 CERMET Through hole + blind hole	300.17 PLGANG 45° ASG0706 HM Through hole + blind hole
	49 827 ...	**49 839 ...**

DC inch	L inch	LPR inch	PHD inch	ZEFP		
2.3858 - 2.5823	0.630	0.689	DC-0.3307	6	**xxxx** [1]	
2.3858 - 2.5823	0.630	0.728	DC-0.3307	6		**xxxx** [1]
2.5827 - 2.7791	0.630	0.689	DC-0.3307	6	**xxxx** [1]	
2.5827 - 2.7791	0.630	0.728	DC-0.3307	6		**xxxx** [1]
2.7795 - 2.9760	0.630	0.689	DC-0.3307	6	**xxxx** [1]	
2.7795 - 2.9760	0.630	0.728	DC-0.3307	6		**xxxx** [1]
2.9764 - 3.1335	0.630	0.689	DC-0.3307	6	**xxxx** [1]	
2.9764 - 3.1335	0.630	0.728	DC-0.3307	6		**xxxx** [1]
3.1339 - 3.3697	0.630	0.689	DC-0.3307	8	**xxxx** [1]	
3.1339 - 3.3697	0.630	0.728	DC-0.3307	8		**xxxx** [1]
3.3701 - 3.5665	0.630	0.689	DC-0.3307	8	**xxxx** [1]	
3.3701 - 3.5665	0.630	0.728	DC-0.3307	8		**xxxx** [1]
3.5669 - 3.7634	0.630	0.689	DC-0.3307	8	**xxxx** [1]	
3.5669 - 3.7634	0.630	0.728	DC-0.3307	8		**xxxx** [1]
3.7638 - 3.9602	0.630	0.689	DC-0.3307	8	**xxxx** [1]	
3.7638 - 3.9602	0.630	0.728	DC-0.3307	8		**xxxx** [1]
3.9606 - 4.3539	0.630	0.689	DC-0.3307	10	**xxxx** [1]	
3.9606 - 4.3539	0.630	0.728	DC-0.3307	10		**xxxx** [1]
P					●	
M						
K					●	
N					●	●
S						
H						
O						

1) Not available from stock, articles are non-returnable and cannot be exchanged / Delivery time on request / Minimum order 2 pieces

→ v_c Page 81–85

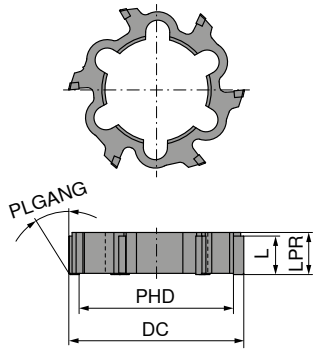
For xxxx please indicate piece part bore diameter and tolerance. (e.g. Ø 2.5000" ±.0005")

→ **Page 94+95**
Here you will find a detailed operating instruction.

→ **Page 99**
Here you will find more information on chamfer geometries (ASG).

Cutting ring

▲ PHD = Approximate diameter for face machining geometries (ASG)
▲ ZEFP = Number of cutting edges



TiN



300.05
PLGANG 25°
ASG4000
HM
Through hole

49 831 ...

DST



300.45
PLGANG 25°
ASG4000
CERMET
Through hole

49 828 ...

DC inch	L inch	LPR inch	PHD inch	ZEFP		
2.3858 - 2.5823	0.630	0.728	DC-0.3307	6	**xxxx** [1]	
2.3858 - 2.5823	0.630	0.689	DC-0.3307	6		**xxxx** [1]
2.5827 - 2.7791	0.630	0.728	DC-0.3307	6	**xxxx** [1]	
2.5827 - 2.7791	0.630	0.689	DC-0.3307	6		**xxxx** [1]
2.7795 - 2.9760	0.630	0.728	DC-0.3307	6	**xxxx** [1]	
2.7795 - 2.9760	0.630	0.689	DC-0.3307	6		**xxxx** [1]
2.9764 - 3.1335	0.630	0.728	DC-0.3307	6	**xxxx** [1]	
2.9764 - 3.1335	0.630	0.689	DC-0.3307	6		**xxxx** [1]
3.1339 - 3.3697	0.630	0.728	DC-0.3307	8	**xxxx** [1]	
3.1339 - 3.3697	0.630	0.689	DC-0.3307	8		**xxxx** [1]
3.3701 - 3.5665	0.630	0.728	DC-0.3307	8	**xxxx** [1]	
3.3701 - 3.5665	0.630	0.689	DC-0.3307	8		**xxxx** [1]
3.5669 - 3.7634	0.630	0.728	DC-0.3307	8	**xxxx** [1]	
3.5669 - 3.7634	0.630	0.689	DC-0.3307	8		**xxxx** [1]
3.7638 - 3.9602	0.630	0.728	DC-0.3307	8	**xxxx** [1]	
3.7638 - 3.9602	0.630	0.689	DC-0.3307	8		**xxxx** [1]
3.9606 - 4.3539	0.630	0.728	DC-0.3307	10	**xxxx** [1]	
3.9606 - 4.3539	0.630	0.689	DC-0.3307	10		**xxxx** [1]
P					●	●
M						
K						
N					○	
S						
H						
O						

1) Not available from stock, articles are non-returnable and cannot be exchanged / Delivery time on request / Minimum order 2 pieces

→ v_c Page 81–85

For xxxx please indicate piece part bore diameter and tolerance. (e.g. Ø 2.5000" ±.0005")

→ **Page 94+95**
Here you will find a detailed operating instruction.

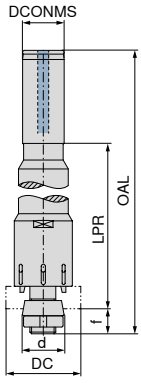
→ **Page 99**
Here you will find more information on chamfer geometries (ASG).

Cutting ring holder for through hole machining

Scope of supply:

Holder includes positioning pin, taper ring and adjusting nut. Does not include cutting ring.







≤ 3xD



≤ 5xD

DC inch	KOMET no.	OAL inch	LPR inch	DCONMS inch	DCONMS mm	d inch	f inch	40 892 ...	40 893 ...
2.3858 - 2.7795	503.76.008	7.461	4.134	1.260	32	1.575	0.965	**07199** [1]	
2.3858 - 2.7795	504.76.009	12.658	9.331	1.260	32	1.575	0.965		**07199** [1]
2.7795 - 3.1338	503.76.009	7.461	4.134	1.260	32	1.575	0.965	**08099** [1]	
2.7795 - 3.1338	504.76.010	12.658	9.331	1.260	32	1.575	0.965		**08099** [1]
3.1339 - 3.5669	503.76.010	8.012	4.134	1.575	40	2.213	1.122	**09199** [1]	
3.1339 - 3.5669	504.76.011	13.327	9.449	1.575	40	2.213	1.122		**09199** [1]
3.5669 - 3.9606	503.76.011	8.012	4.134	1.575	40	2.213	1.122	**10199** [1]	
3.5669 - 3.9606	504.76.012	13.327	9.449	1.575	40	2.213	1.122		**10199** [1]

1) Not in stock



Position Pin



Adjustic Nut



Taper Ring

Spare parts DC	40 950 ...	40 950 ...	40 950 ...
2.3858 - 2.7795	**50700**	**50100**	**50500**
2.7795 - 3.1338	**50700**	**50100**	**50500**
3.1339 - 3.5669	**50800**	**50200**	**50600**
3.5669 - 3.9606	**50800**	**50200**	**50600**

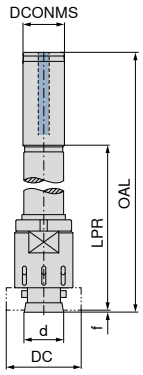
→ **Page 94**
Here you will find a detailed operating instruction.

Cutting ring holder for blind hole machining

Scope of supply:

Holder includes bushing, taper screw and adjusting nut. Does not include cutting ring.







≤ 3xD



≤ 5xD

DC inch	KOMET no.	OAL inch	LPR inch	DCONMS inch	DCONMS mm	d inch	f inch	40 894 ...	40 896 ...
2.3858 - 2.7795	513.76.008	6.555	4.134	1.260	32	1.457	0.059	**07199** [1]	
2.3858 - 2.7795	514.76.008	11.752	9.331	1.260	32	1.457	0.059		**07199** [1]
2.7795 - 3.1338	513.76.009	6.555	4.134	1.260	32	1.457	0.059	**08099** [1]	
2.7795 - 3.1338	514.76.009	11.752	9.331	1.260	32	1.457	0.059		**08099** [1]
3.1339 - 3.5669	513.76.010	6.949	4.134	1.575	40	2.094	0.059	**09199** [1]	
3.1339 - 3.5669	514.76.010	12.264	9.449	1.575	40	2.094	0.059		**09199** [1]
3.5669 - 3.9606	513.76.011	6.949	4.134	1.575	40	2.094	0.059	**10199** [1]	
3.5669 - 3.9606	514.76.011	12.264	9.449	1.575	40	2.094	0.059		**10199** [1]

1) Not in stock



Adjustic Nut



Taper Screw



Bushing

Spare parts DC	40 950 ...	40 950 ...	40 950 ...
2.3858 - 2.7795	**50300**	**51100**	**51500**
2.7795 - 3.1338	**50300**	**51100**	**51600**
3.1339 - 3.5669	**50400**	**51200**	**51700**
3.5669 - 3.9606	**50400**	**51200**	**51800**

→ **Page 95**
Here you will find a detailed operating instruction.

Monomax – Selection guide – Through hole

Ø .2205 – 1.0197 inch											
Article no. (3xD)			49 652 ...	49 676 ...	49 648 ...	49 688 ...	49 605 ...	49 656 ...	49 635 ...	49 625 ...	49 672 ...
Article no. (5xD)			49 653 ...	49 677 ...	49 649 ...	49 689 ...	49 606 ...	49 661 ...	49 636 ...	49 626 ...	49 673 ...
KOMET no. (3xD)			56J.65	56.J65	56J.17	56J.71	56J.71	56J.71	56J.93	56J.93	56J.21
KOMET no. (5xD)			56R.65	56.R65	56R.17	56R.71	56R.71	56R.71	56R.93	56R.93	56R.21
Grind geometry			ASG0106	ASG3000	ASG0706	ASG4000	ASG3000	ASG0106	ASG4000	ASG3000	ASG03
Lead angle			45°	45°	45°/8°	45°	45°	45°	25°	45°	30°/2°
Grade / coating			DBG-P	DBG-P	DBC	TiN	TIN	TiN	DST	DST	K10
Application			Through hole								
Material sub-group		Index									
P	Non alloyed steel	P.1.1				●	○		●	●	
		P.1.2				●	○		●	●	
		P.1.3				●	○		●	●	
		P.1.4				●	○		●	●	
		P.1.5				●	○		●	●	
	Low alloyed steel	P.2.1					○		●	●	
		P.2.2					○		●	●	
		P.2.3					○		●	●	
		P.2.4	●								
	High-alloy steel and high-alloy tool steel	P.3.1	●					○			
		P.3.2	●					○			
		P.3.3	●					○			
	Stainless steel	P.4.1	●					○			
		P.4.2	●					○			
M	Stainless steel	M.1.1	●					○			
		M.2.1	●					○			
		M.3.1	●					○			
K	Grey cast iron	K.1.1		●			○				
		K.1.2		●			○				
	Spherulitic graphite cast iron	K.2.1		●					○	●	
		K.2.2		●					○	●	
	Malleable iron	K.3.1		●					○	●	
		K.3.2		●					○	●	
N	Aluminum alloys	N.1.1			●						
		N.1.2			●						
	Cast aluminium alloys	N.2.1			●						
		N.2.2			●						
		N.2.3			●						
	Copper and copper alloys (Bronze, Brass)	N.3.1					●			○	
		N.3.2					●			○	
		N.3.3					●				
	Magnesium alloys	N.4.1									
S	Heat resistant alloys	S.1.1									
		S.1.2									
		S.2.1									
		S.2.2									
		S.2.3									
	Titanium alloys	S.3.1									●
		S.3.2									●
		S.3.3									●
O	Non-metal materials	O.1.1									
		O.1.2									
		O.2.1									
		O.2.2									
		O.3.1			○						

● = Main application
○ = Additional range of application

Monomax – Selection guide – Blind hole

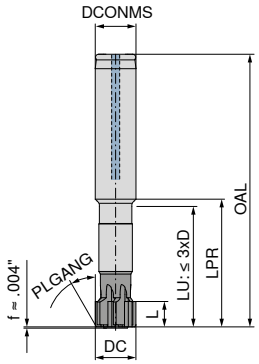
Ø .2205 – 1.0197 inch								
Article no. (3xD)			49 657 ...	49 644 ...	49 684 ...	49 660 ...	49 640 ...	49 680 ...	49 668 ...
Article no. (5xD)			49 665 ...	49 645 ...	49 685 ...	49 664 ...	49 641 ...	49 681 ...	49 669 ...
KOMET no. (3xD)			56H.65	56H.65	56H.71	56H.71	56H.17	56H.93	56H.21
KOMET no. (5xD)			56Q.65	56Q.65	56Q.71	56Q.71	56Q.17	56Q.93	56Q.21
Grind geometry			ASG3000	ASG0106	ASG3000	ASG0106	ASG0706	ASG3000	ASG03
Lead angle			45°	45°	45°	45°	45°/8°	45°	30°/2°
Grade / coating			DBG-P	DBG-P	TiN	TiN	DBC	DST	K10
Application			Blind hole						
Material sub-group		Index							
P	Non alloyed steel	P.1.1	●		○			●	
		P.1.2	●		○			●	
		P.1.3	●		○			●	
		P.1.4	●		○			●	
		P.1.5	●		○			●	
	Low alloyed steel	P.2.1	●		○			●	
		P.2.2	●		○			●	
		P.2.3	●		○			●	
		P.2.4	●						
	High-alloy steel and high-alloy tool steel	P.3.1		●		○			
		P.3.2		●		○			
		P.3.3		●		○			
	Stainless steel	P.4.1		●		○			
		P.4.2		●		○			
M	Stainless steel	M.1.1		●		○			
		M.2.1		●		○			
		M.3.1		●		○			
K	Grey cast iron	K.1.1	●		○				
		K.1.2	●		○				
	Spherulitic graphite cast iron	K.2.1	●					●	
		K.2.2	●					●	
	Malleable iron	K.3.1	●					●	
		K.3.2	●					●	
N	Aluminum alloys	N.1.1					●		
		N.1.2					●		
	Cast aluminium alloys	N.2.1					●		
		N.2.2					●		
		N.2.3					●		
	Copper and copper alloys (Bronze, Brass)	N.3.1			●			○	
		N.3.2			●			○	
		N.3.3			●				
	Magnesium alloys	N.4.1							
S	Heat resistant alloys	S.1.1							
		S.1.2							
		S.2.1							
		S.2.2							
		S.2.3							
	Titanium alloys	S.3.1							●
		S.3.2							●
		S.3.3							●
O	Non-metal materials	O.1.1							
		O.1.2							
		O.2.1							
		O.2.2							
		O.3.1					○		

● = Main application
○ = Additional range of application

Monomax – High-speed reamers, short

- ▲ expandable to hold tight tolerances and extend tool life
- ▲ wear compensation within the tolerance zone
- ▲ retraction from the hole at 3–4 times the cutting feed rate
- ▲ up to tolerance class IT 5
- ▲ ZEFP = number of cutting edges





	DST	DBC	DBG-P	DST	TiN
					
	56J.93	56J.17	56J.65	56J.93	56J.71
	≤ 3xD	≤ 3xD	≤ 3xD	≤ 3xD	≤ 3xD
	PLGANG 45°	PLGANG 45/8°	PLGANG 45°	PLGANG 25°	PLGANG 45°
	ASG3000	ASG0706	ASG0106	ASG4000	ASG3000
	CERMET	HM	HM	CERMET	HM
	Through hole	Through hole	Through hole	Through hole	Through hole
	49 625 ...	**49 648 ...**	**49 652 ...**	**49 635 ...**	**49 605 ...**

DC inch	L inch	LU inch	LPR inch	OAL inch	DCONMS $_{h6}$ inch	DCONMS mm	ZEFP									
0.2205 - 0.3504	0.394	1.575	1.654	3.346	0.472	12	4	**xxxx** [1]		**xxxx** [1]		**xxxx** [1]		**xxxx** [1]		**xxxx** [1]
0.3504 - 0.6259	0.394	1.969	2.047	3.740	0.472	12	6	**xxxx** [1]		**xxxx** [1]		**xxxx** [1]		**xxxx** [1]		**xxxx** [1]
0.6260 - 0.7441	0.394	1.969	2.047	3.937	0.630	16	6	**xxxx** [1]		**xxxx** [1]		**xxxx** [1]		**xxxx** [1]		**xxxx** [1]
0.7441 - 1.0197	0.394	2.362	2.441	4.724	0.787	20	6	**xxxx** [1]		**xxxx** [1]		**xxxx** [1]		**xxxx** [1]		**xxxx** [1]
P								●				●		●		○
M												●				
K								●						○		○
N								○		●						●
S																
H																
O										○						

1) Not available from stock, articles are non-returnable and cannot be exchanged / Delivery time on request / Minimum order 2 pieces

→ v_c Page 72–77

Do not heat shrink tools !

For xxxx please indicate piece part bore diameter and tolerance. (e.g. Ø .5000" ±.0005")

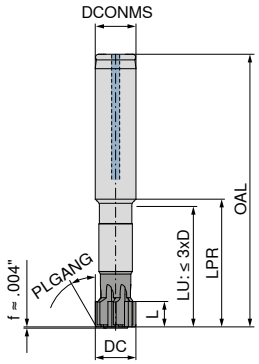
Detailed adjustment instructions are available to download in the online shop for the item.

→ **Page 99**
Here you will find more information on chamfer geometries (ASG).

Monomax – High-speed reamers, short

- ▲ expandable to hold tight tolerances and extend tool life
- ▲ wear compensation within the tolerance zone
- ▲ retraction from the hole at 3–4 times the cutting feed rate
- ▲ up to tolerance class IT 5
- ▲ ZEFP = number of cutting edges





	K10	DBG-P	TiN	TiN
				
	56J.21	56J.65	56J.17	56J.71
				
	≤ 3xD	≤ 3xD	≤ 3xD	≤ 3xD
	PLGANG 30/2°	PLGANG 45°	PLGANG 25°	PLGANG 45°
	ASG03	ASG3000	ASG4000	ASG0106
	HM	HM	HM	HM
	Through hole	Through hole	Through hole	Through hole
	49 672 ...	**49 676 ...**	**49 688 ...**	**49 656 ...**

DC inch	L inch	LU inch	LPR inch	OAL inch	DCONMS $_{h6}$ inch	DCONMS mm	ZEFP							
0.2205 - 0.3504	0.394	1.575	1.654	3.346	0.472	12	4	**xxxx** [1]		**xxxx** [1]		**xxxx** [1]		**xxxx** [1]	
0.3504 - 0.6259	0.394	1.969	2.047	3.740	0.472	12	6	**xxxx** [1]		**xxxx** [1]		**xxxx** [1]		**xxxx** [1]	
0.6260 - 0.7441	0.394	1.969	2.047	3.937	0.630	16	6	**xxxx** [1]		**xxxx** [1]		**xxxx** [1]		**xxxx** [1]	
0.7441 - 1.0197	0.394	2.362	2.441	4.724	0.787	20	6	**xxxx** [1]		**xxxx** [1]		**xxxx** [1]		**xxxx** [1]	

P												●		○
M														○
K										●				
N														
S								●						
H														
O														

1) Not available from stock, articles are non-returnable and cannot be exchanged / Delivery time on request / Minimum order 2 pieces

→ v_c Page 72–77

Do not heat shrink tools !

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Monomax – High-speed reamers, short

- ▲ expandable to hold tight tolerances and extend tool life
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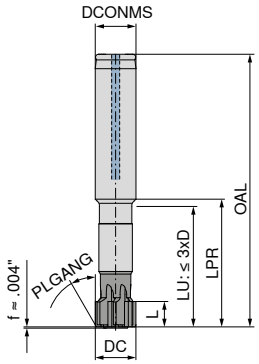
- ▲ up to tolerance class IT 5
- ▲ ZEFP = number of cutting edges





	DBG-P	DBC	DBG-P
			
	56H.65	56H.17	56H.65
	≤ 3xD	≤ 3xD	≤ 3xD
	PLGANG 45°	PLGANG 45/8°	PLGANG 45°
	ASG0106	ASG0706	ASG3000
	HM	HM	HM
	Blind hole	Blind hole	Blind hole
	49 644 ...	**49 640 ...**	**49 657 ...**

DC inch	L inch	LU inch	LPR inch	OAL inch	DCONMS $_{h6}$ inch	DCONMS mm	ZEFP					
0.2205 - 0.3504	0.394	1.575	1.654	3.346	0.472	12	4	**xxxx** [1]		**xxxx** [1]		**xxxx** [1]
0.3504 - 0.6259	0.394	1.969	2.047	3.740	0.472	12	6	**xxxx** [1]		**xxxx** [1]		**xxxx** [1]
0.6260 - 0.7441	0.394	1.969	2.047	3.937	0.630	16	6	**xxxx** [1]		**xxxx** [1]		**xxxx** [1]
0.7441 - 1.0197	0.394	2.362	2.441	4.724	0.787	20	6	**xxxx** [1]		**xxxx** [1]		**xxxx** [1]

P								●				●
M								●				
K												●
N										●		
S												
H												
O										○		

1) Not available from stock, articles are non-returnable and cannot be exchanged / Delivery time on request / Minimum order 2 pieces

→ v_c Page 72–77

Do not heat shrink tools !

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Monomax – High-speed reamers, short

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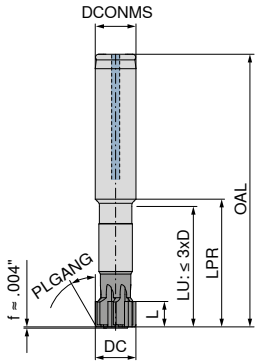
- ▲ up to tolerance class IT 5
- ▲ ZEFP = number of cutting edges





	TiN	K10	DST	TiN
				
	56H.71	56H.21	56H.93	56H.71
				
	≤ 3xD	≤ 3xD	≤ 3xD	≤ 3xD
	PLGANG 45°	PLGANG 30/2°	PLGANG 45°	PLGANG 45°
	ASG0106	ASG03	ASG3000	ASG3000
	HM	HM	CERMET	HM
	Blind hole	Blind hole	Blind hole	Blind hole
	49 660 ...	**49 668 ...**	**49 680 ...**	**49 684 ...**

DC inch	L inch	LU inch	LPR inch	OAL inch	DCONMS $_{h6}$ inch	DCONMS mm	ZEFP							
0.2205 - 0.3504	0.394	1.575	1.654	3.346	0.472	12	4	**xxxx** [1]		**xxxx** [1]		**xxxx** [1]		**xxxx** [1]	
0.3504 - 0.6259	0.394	1.969	2.047	3.740	0.472	12	6	**xxxx** [1]		**xxxx** [1]		**xxxx** [1]		**xxxx** [1]	
0.6260 - 0.7441	0.394	1.969	2.047	3.937	0.630	16	6	**xxxx** [1]		**xxxx** [1]		**xxxx** [1]		**xxxx** [1]	
0.7441 - 1.0197	0.394	2.362	2.441	4.724	0.787	20	6	**xxxx** [1]		**xxxx** [1]		**xxxx** [1]		**xxxx** [1]	
P								○				●		○	
M								○							
K												●		○	
N												○		●	
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H															
O															

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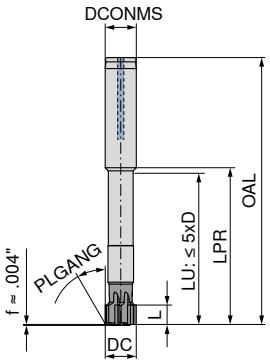

	DST	DBC	DBG-P	DST	TiN
					
	56R.93	56R.17	56R.65	56R.93	56R.71
	≤ 5xD	≤ 5xD	≤ 5xD	≤ 5xD	≤ 5xD
	PLGANG 45°	PLGANG 45/8°	PLGANG 45°	PLGANG 25°	PLGANG 45°
	ASG3000	ASG0706	ASG0106	ASG4000	ASG3000
	CERMET	HM	HM	CERMET	HM
	Through hole	Through hole	Through hole	Through hole	Through hole
	49 626 ...	**49 649 ...**	**49 653 ...**	**49 636 ...**	**49 606 ...**

DC inch	L inch	LU inch	LPR inch	OAL inch	DCONMS $_{h6}$ inch	DCONMS mm	ZEFP									
0.2205 - 0.3504	0.394	3.346	3.425	5.118	0.472	12	4	**xxxx** [1]		**xxxx** [1]		**xxxx** [1]		**xxxx** [1]		**xxxx** [1]
0.3504 - 0.3897	0.394	3.346	3.425	5.118	0.472	12	6	**xxxx** [1]		**xxxx** [1]		**xxxx** [1]		**xxxx** [1]		**xxxx** [1]
0.3898 - 0.6259	0.394	4.528	4.606	6.299	0.472	12	6	**xxxx** [1]		**xxxx** [1]		**xxxx** [1]		**xxxx** [1]		**xxxx** [1]
0.6260 - 0.7441	0.394	5.118	5.197	7.087	0.630	16	6	**xxxx** [1]		**xxxx** [1]		**xxxx** [1]		**xxxx** [1]		**xxxx** [1]
0.7441 - 1.0197	0.394	5.512	5.591	7.874	0.787	20	6	**xxxx** [1]		**xxxx** [1]		**xxxx** [1]		**xxxx** [1]		**xxxx** [1]
P								●		●		●		○		
M										●						
K								●				○		○		
N								○		●				●		
S																
H																
O										○						

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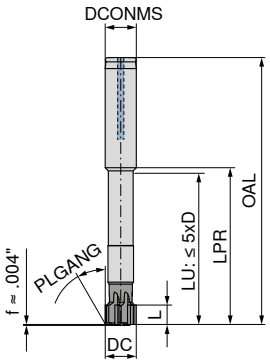

	TiN	DBG-P	K10	TiN
				
	56R.71	56R.65	56R.21	56R.71
	≤ 5xD	≤ 5xD	≤ 5xD	≤ 5xD
	PLGANG 45°	PLGANG 45°	PLGANG 30/2°	PLGANG 45°
	ASG4000	ASG3000	ASG03	ASG0106
	HM	HM	HM	HM
	Through hole	Through hole	Through hole	Through hole
	49 689 ...	**49 677 ...**	**49 673 ...**	**49 661 ...**

DC inch	L inch	LU inch	LPR inch	OAL inch	DCONMS h6 inch	DCONMS mm	ZEFP							
0.2205 - 0.3504	0.394	3.346	3.425	5.118	0.472	12	4	**xxxx** [1]		**xxxx** [1]		**xxxx** [1]		**xxxx** [1]
0.3504 - 0.3897	0.394	3.346	3.425	5.118	0.472	12	6	**xxxx** [1]		**xxxx** [1]		**xxxx** [1]		**xxxx** [1]
0.3898 - 0.6259	0.394	4.528	4.606	6.299	0.472	12	6	**xxxx** [1]		**xxxx** [1]		**xxxx** [1]		**xxxx** [1]
0.6260 - 0.7441	0.394	5.118	5.197	7.087	0.630	16	6	**xxxx** [1]		**xxxx** [1]		**xxxx** [1]		**xxxx** [1]
0.7441 - 1.0197	0.394	5.512	5.591	7.874	0.787	20	6	**xxxx** [1]		**xxxx** [1]		**xxxx** [1]		**xxxx** [1]

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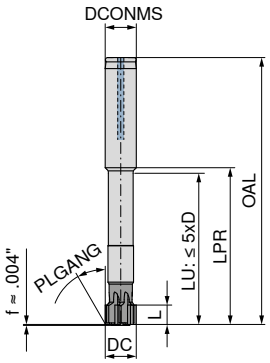

	DBG-P	DBC	DBG-P
			
	56Q.65  ≤ 5xD	56Q.17  ≤ 5xD	56Q.65  ≤ 5xD
	PLGANG 45°	PLGANG 45/8°	PLGANG 45°
	ASG0106	ASG0706	ASG3000
	HM	HM	HM
	Blind hole	Blind hole	Blind hole
	49 645 ...	**49 641 ...**	**49 665 ...**

DC inch	L inch	LU inch	LPR inch	OAL inch	DCONMS h6 inch	DCONMS mm	ZEFP					
0.2205 - 0.3504	0.394	3.346	3.425	5.118	0.472	12	4	**xxxx** [1]		**xxxx** [1]		**xxxx** [1]
0.3504 - 0.3897	0.394	3.346	3.425	5.118	0.472	12	6	**xxxx** [1]		**xxxx** [1]		**xxxx** [1]
0.3898 - 0.6259	0.394	4.528	4.606	6.299	0.472	12	6	**xxxx** [1]		**xxxx** [1]		**xxxx** [1]
0.6260 - 0.7441	0.394	5.118	5.197	7.087	0.630	16	6	**xxxx** [1]		**xxxx** [1]		**xxxx** [1]
0.7441 - 1.0197	0.394	5.512	5.591	7.874	0.787	20	6	**xxxx** [1]		**xxxx** [1]		**xxxx** [1]
P								●				●
M								●				
K												●
N										●		
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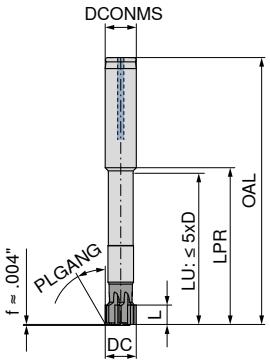

	DST	TiN	K10	TiN
				
	56Q.93	56Q.71	56Q.21	56Q.71
				
	≤ 5xD	≤ 5xD	≤ 5xD	≤ 5xD
	PLGANG 45°	PLGANG 45°	PLGANG 30/2°	PLGANG 45°
	ASG3000	ASG3000	ASG03	ASG0106
	CERMET	HM	HM	HM
	Blind hole	Blind hole	Blind hole	Blind hole
	49 681 ...	**49 685 ...**	**49 669 ...**	**49 664 ...**

DC inch	L inch	LU inch	LPR inch	OAL inch	DCONMS h6 inch	DCONMS mm	ZEFP							
0.2205 - 0.3504	0.394	3.346	3.425	5.118	0.472	12	4	**xxxx** [1]		**xxxx** [1]		**xxxx** [1]		**xxxx** [1]	
0.3504 - 0.3897	0.394	3.346	3.425	5.118	0.472	12	6	**xxxx** [1]		**xxxx** [1]		**xxxx** [1]		**xxxx** [1]	
0.3898 - 0.6259	0.394	4.528	4.606	6.299	0.472	12	6	**xxxx** [1]		**xxxx** [1]		**xxxx** [1]		**xxxx** [1]	
0.6260 - 0.7441	0.394	5.118	5.197	7.087	0.630	16	6	**xxxx** [1]		**xxxx** [1]		**xxxx** [1]		**xxxx** [1]	
0.7441 - 1.0197	0.394	5.512	5.591	7.874	0.787	20	6	**xxxx** [1]		**xxxx** [1]		**xxxx** [1]		**xxxx** [1]	

P	●	○		○
M				○
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N	○	●		
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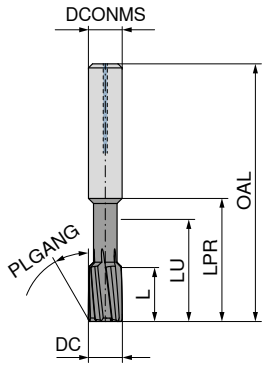
▲ extremely irregular pitch
▲ designed for high-speed machining
▲ specialized geometry and coating for universal use

UNI





DBG-U



51P.57



Left Hand Helix
PLGANG 30°
ASG2210
Solid carbide
Through hole

40 483 ...

DC $_{H7}$ mm	L mm	LU mm	LPR mm	OAL mm	DCONMS $_{h6}$ mm	ZEFP	
4	12	17	22	50	4	4	**04000**
5	12	23	28	64	6	4	**05000**
6	12	23	28	64	6	4	**06000**
7	16	29	39	75	8	6	**07000**
8	16	29	39	75	8	6	**08000**
9	16	35	40	80	10	6	**09000**
10	16	35	40	80	10	6	**10000**
11	20	40	45	90	12	6	**11000**
12	20	40	45	90	12	6	**12000**
16	20	40	45	93	16	8	**16000**

P	●
M	●
K	●
N	○
S	○
H	○
O	

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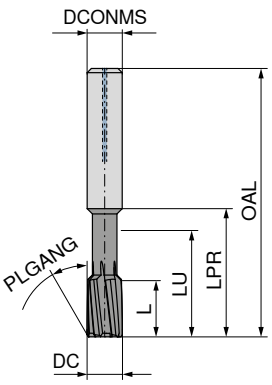

DBG-U



51P.57



Left Hand Helix
PLGANG 30°
ASG2210
Solid carbide
Through hole

40 489 ...

DC +0.0002 inch	L inch	LU inch	LPR inch	OAL inch	DCONMS h6 inch	DCONMS mm	ZEFP	
0.1165 - 0.1559	0.472	0.669	0.866	1.969	0.157	4	4	**xxxxx**[1]
0.1563	0.472	0.669	0.866	1.969	0.157	4	4	**03970**
0.1567	0.472	0.669	0.866	1.969	0.157	4	4	**03980**
0.1571	0.472	0.669	0.866	1.969	0.157	4	4	**03990**
0.1575	0.472	0.669	0.866	1.969	0.157	4	4	**04000**
0.1579	0.472	0.669	0.866	1.969	0.157	4	4	**04010**
0.1583	0.472	0.669	0.866	1.969	0.157	4	4	**04020**
0.1587	0.472	0.669	0.866	1.969	0.157	4	4	**04030**
0.1591 - 0.1594	0.472	0.669	0.866	1.969	0.157	4	4	**xxxxx**[1]
0.1598 - 0.1953	0.472	0.906	1.102	2.520	0.236	6	4	**xxxxx**[1]
0.1957	0.472	0.906	1.102	2.520	0.236	6	4	**04970**
0.1961	0.472	0.906	1.102	2.520	0.236	6	4	**04980**
0.1965	0.472	0.906	1.102	2.520	0.236	6	4	**04990**
0.1969	0.472	0.906	1.102	2.520	0.236	6	4	**05000**
0.1972	0.472	0.906	1.102	2.520	0.236	6	4	**05010**
0.1976	0.472	0.906	1.102	2.520	0.236	6	4	**05020**
0.1980	0.472	0.906	1.102	2.520	0.236	6	4	**05030**
0.1984 - 0.2346	0.472	0.906	1.102	2.520	0.236	6	4	**xxxxx**[1]
0.2350	0.472	0.906	1.102	2.520	0.236	6	4	**05970**
0.2354	0.472	0.906	1.102	2.520	0.236	6	4	**05980**
0.2358	0.472	0.906	1.102	2.520	0.236	6	4	**05990**
0.2362	0.472	0.906	1.102	2.520	0.236	6	4	**06000**
0.2366	0.472	0.906	1.102	2.520	0.236	6	4	**06010**
0.2370	0.472	0.906	1.102	2.520	0.236	6	4	**06020**
0.2374	0.472	0.906	1.102	2.520	0.236	6	4	**06030**
0.2378 - 0.2382	0.472	0.906	1.102	2.520	0.236	6	4	**xxxxx**[1]
0.2386 - 0.3134	0.630	1.142	1.535	2.953	0.315	8	6	**xxxxx**[1]
0.3138	0.630	1.142	1.535	2.953	0.315	8	6	**07970**
0.3142	0.630	1.142	1.535	2.953	0.315	8	6	**07980**
0.3146	0.630	1.142	1.535	2.953	0.315	8	6	**07990**
0.3150	0.630	1.142	1.535	2.953	0.315	8	6	**08000**
0.3154	0.630	1.142	1.535	2.953	0.315	8	6	**08010**
0.3157	0.630	1.142	1.535	2.953	0.315	8	6	**08020**
0.3161	0.630	1.142	1.535	2.953	0.315	8	6	**08030**
0.3165 - 0.3169	0.630	1.142	1.535	2.953	0.315	8	6	**xxxxx**[1]

P	●
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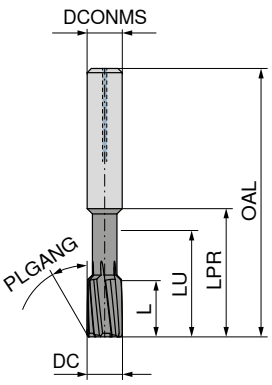

DBG-U



51P.57



Left Hand Helix
PLGANG 30°
ASG2210
Solid carbide
Through hole

40 489 ...

DC +0.0002 inch	L inch	LU inch	LPR inch	OAL inch	DCONMS h6 inch	DCONMS mm	ZEFP	
0.3173 - 0.3921	0.630	1.378	1.575	3.150	0.394	10	6	**xxxxx**[1]
0.3925	0.630	1.378	1.575	3.150	0.394	10	6	**09970**
0.3929	0.630	1.378	1.575	3.150	0.394	10	6	**09980**
0.3933	0.630	1.378	1.575	3.150	0.394	10	6	**09990**
0.3937	0.630	1.378	1.575	3.150	0.394	10	6	**10000**
0.3941	0.630	1.378	1.575	3.150	0.394	10	6	**10010**
0.3945	0.630	1.378	1.575	3.150	0.394	10	6	**10020**
0.3949	0.630	1.378	1.575	3.150	0.394	10	6	**10030**
0.3953 - 0.3957	0.630	1.378	1.575	3.150	0.394	10	6	**xxxxx**[1]
0.3961 - 0.4709	0.787	1.575	1.772	3.543	0.472	12	6	**xxxxx**[1]
0.4713	0.787	1.575	1.772	3.543	0.472	12	6	**11970**
0.4717	0.787	1.575	1.772	3.543	0.472	12	6	**11980**
0.4720	0.787	1.575	1.772	3.543	0.472	12	6	**11990**
0.4724	0.787	1.575	1.772	3.543	0.472	12	6	**12000**
0.4728	0.787	1.575	1.772	3.543	0.472	12	6	**12010**
0.4732	0.787	1.575	1.772	3.543	0.472	12	6	**12020**
0.4736	0.787	1.575	1.772	3.543	0.472	12	6	**12030**
0.4740 - 0.4744	0.787	1.575	1.772	3.543	0.472	12	6	**xxxxx**[1]
0.4748 - 0.5532	0.787	1.575	1.772	3.543	0.551	14	6	**xxxxx**[1]
0.5535 - 0.6283	0.787	1.575	1.772	3.661	0.630	16	6	**xxxxx**[1]
0.6287 - 0.6319	0.787	1.575	1.772	3.661	0.630	16	8	**xxxxx**[1]
0.6323 - 0.7106	0.787	1.850	2.047	3.937	0.709	18	8	**xxxxx**[1]
0.7110 - 0.7894	0.787	1.850	2.047	4.016	0.787	20	8	**xxxxx**[1]

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M	●
K	●
N	○
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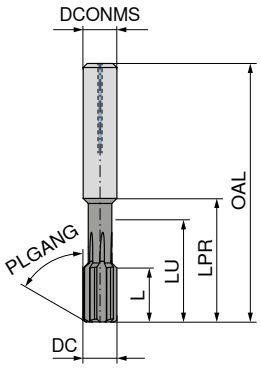
UNI



DBG-U





51M.57



straight flute
PLGANG 60°
ASG2110
Solid carbide
Blind hole

40 481 ...

DC $_{H7}$ mm	L mm	LU mm	LPR mm	OAL mm	DCONMS $_{h6}$ mm	ZEFP	
4	12	17	22	50	4	4	**04000**
5	12	23	28	64	6	4	**05000**
6	12	23	28	64	6	4	**06000**
7	16	29	39	75	8	6	**07000**
8	16	29	39	75	8	6	**08000**
9	16	35	40	80	10	6	**09000**
10	16	35	40	80	10	6	**10000**
11	20	40	45	90	12	6	**11000**
12	20	40	45	90	12	6	**12000**
16	20	40	45	93	16	8	**16000**

P	●
M	●
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S	○
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O	

→ v_c Page 80

→ **Page 99**
Here you will find more information on chamfer geometries (ASG).

Fullmax – High-performance machine reamers, short

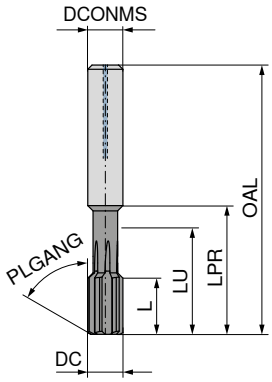
▲ extremely irregular pitch
▲ designed for high-speed machining
▲ specialized geometry and coating for universal use

UNI



DBG-U





51M.57



straight flute
PLGANG 60°
ASG2110
Solid carbide
Blind hole

40 488 ...

DC +0.0002 inch	L inch	LU inch	LPR inch	OAL inch	DCONMS h6 inch	DCONMS mm	ZEFP	
0.1165 - 0.1559	0.472	0.669	0.866	1.969	0.157	4	4	**xxxxx**[1]
0.1563	0.472	0.669	0.866	1.969	0.157	4	4	**03970**
0.1567	0.472	0.669	0.866	1.969	0.157	4	4	**03980**
0.1571	0.472	0.669	0.866	1.969	0.157	4	4	**03990**
0.1575	0.472	0.669	0.866	1.969	0.157	4	4	**04000**
0.1579	0.472	0.669	0.866	1.969	0.157	4	4	**04010**
0.1583	0.472	0.669	0.866	1.969	0.157	4	4	**04020**
0.1587	0.472	0.669	0.866	1.969	0.157	4	4	**04030**
0.1591 - 0.1594	0.472	0.669	0.866	1.969	0.157	4	4	**xxxxx**[1]
0.1598 - 0.1953	0.472	0.906	1.102	2.520	0.236	6	4	**xxxxx**[1]
0.1957	0.472	0.906	1.102	2.520	0.236	6	4	**04970**
0.1961	0.472	0.906	1.102	2.520	0.236	6	4	**04980**
0.1965	0.472	0.906	1.102	2.520	0.236	6	4	**04990**
0.1969	0.472	0.906	1.102	2.520	0.236	6	4	**05000**
0.1972	0.472	0.906	1.102	2.520	0.236	6	4	**05010**
0.1976	0.472	0.906	1.102	2.520	0.236	6	4	**05020**
0.1980	0.472	0.906	1.102	2.520	0.236	6	4	**05030**
0.1984 - 0.2346	0.472	0.906	1.102	2.520	0.236	6	4	**xxxxx**[1]
0.2350	0.472	0.906	1.102	2.520	0.236	6	4	**05970**
0.2354	0.472	0.906	1.102	2.520	0.236	6	4	**05980**
0.2358	0.472	0.906	1.102	2.520	0.236	6	4	**05990**
0.2362	0.472	0.906	1.102	2.520	0.236	6	4	**06000**
0.2366	0.472	0.906	1.102	2.520	0.236	6	4	**06010**
0.2370	0.472	0.906	1.102	2.520	0.236	6	4	**06020**
0.2374	0.472	0.906	1.102	2.520	0.236	6	4	**06030**
0.2378 - 0.2382	0.472	0.906	1.102	2.520	0.236	6	4	**xxxxx**[1]
0.2386 - 0.3134	0.630	1.142	1.535	2.953	0.315	8	6	**xxxxx**[1]
0.3138	0.630	1.142	1.535	2.953	0.315	8	6	**07970**
0.3142	0.630	1.142	1.535	2.953	0.315	8	6	**07980**
0.3146	0.630	1.142	1.535	2.953	0.315	8	6	**07990**
0.3150	0.630	1.142	1.535	2.953	0.315	8	6	**08000**
0.3154	0.630	1.142	1.535	2.953	0.315	8	6	**08010**
0.3157	0.630	1.142	1.535	2.953	0.315	8	6	**08020**
0.3161	0.630	1.142	1.535	2.953	0.315	8	6	**08030**
0.3165 - 0.3169	0.630	1.142	1.535	2.953	0.315	8	6	**xxxxx**[1]

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1) Not available from stock, articles are non-returnable and cannot be exchanged / Delivery time on request

→ v_c Page 80

For xxxx please indicate piece part bore diameter and tolerance. (e.g. Ø .5000" ±.0005")

→ **Page 99**
Here you will find more information on chamfer geometries (ASG).

Continued on next page

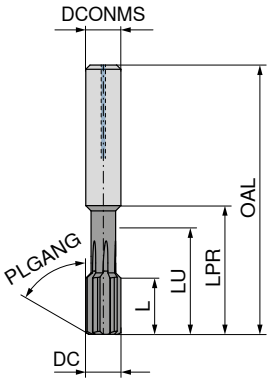
Fullmax – High-performance machine reamers, short

▲ extremely irregular pitch
▲ designed for high-speed machining
▲ specialized geometry and coating for universal use

UNI



DBG-U





51M.57



straight flute
PLGANG 60°
ASG2110
Solid carbide
Blind hole

40 488 ...

DC +0.0002 inch	L inch	LU inch	LPR inch	OAL inch	DCONMS h6 inch	DCONMS mm	ZEFP	
0.3173 - 0.3921	0.630	1.378	1.575	3.150	0.394	10	6	**xxxxx**[1]
0.3925	0.630	1.378	1.575	3.150	0.394	10	6	**09970**
0.3929	0.630	1.378	1.575	3.150	0.394	10	6	**09980**
0.3933	0.630	1.378	1.575	3.150	0.394	10	6	**09990**
0.3937	0.630	1.378	1.575	3.150	0.394	10	6	**10000**
0.3941	0.630	1.378	1.575	3.150	0.394	10	6	**10010**
0.3945	0.630	1.378	1.575	3.150	0.394	10	6	**10020**
0.3949	0.630	1.378	1.575	3.150	0.394	10	6	**10030**
0.3953 - 0.3957	0.630	1.378	1.575	3.150	0.394	10	6	**xxxxx**[1]
0.3961 - 0.4709	0.787	1.575	1.772	3.543	0.472	12	6	**xxxxx**[1]
0.4713	0.787	1.575	1.772	3.543	0.472	12	6	**11970**
0.4717	0.787	1.575	1.772	3.543	0.472	12	6	**11980**
0.4720	0.787	1.575	1.772	3.543	0.472	12	6	**11990**
0.4724	0.787	1.575	1.772	3.543	0.472	12	6	**12000**
0.4728	0.787	1.575	1.772	3.543	0.472	12	6	**12010**
0.4732	0.787	1.575	1.772	3.543	0.472	12	6	**12020**
0.4736	0.787	1.575	1.772	3.543	0.472	12	6	**12030**
0.4740 - 0.4744	0.787	1.575	1.772	3.543	0.472	12	6	**xxxxx**[1]
0.4748 - 0.5532	0.787	1.575	1.772	3.543	0.551	14	6	**xxxxx**[1]
0.5535 - 0.6283	0.787	1.575	1.772	3.661	0.630	16	6	**xxxxx**[1]
0.6287 - 0.6319	0.787	1.575	1.772	3.661	0.630	16	8	**xxxxx**[1]
0.6323 - 0.7106	0.787	1.850	2.047	3.937	0.709	18	8	**xxxxx**[1]
0.7110 - 0.7894	0.787	1.850	2.047	4.016	0.787	20	8	**xxxxx**[1]

P	●
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O	

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→ v_c Page 80

For xxxx please indicate piece part bore diameter and tolerance. (e.g. Ø .5000" ±.0005")

→ **Page 99**
Here you will find more information on chamfer geometries (ASG).

Fullmax – High-performance machine reamers, long

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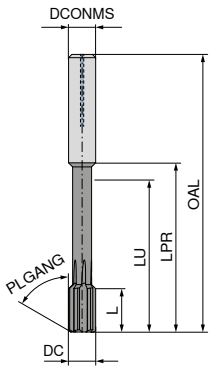

UNI	VA	ALU
DBG-U	DBQ	DBC-N
		
52P.57	52S.44	52N.17
		
Left Hand Helix	Left Hand Helix	straight flute
PLGANG 30°	PLGANG 30°	PLGANG 30°
ASG2210	ASG2231	ASG2270
Solid carbide	Solid carbide	Solid carbide
Through hole	Through hole	Through hole
40 484 ...	**40 401 ...**	**40 471 ...**

DC $_{H7}$ mm	L mm	LU mm	LPR mm	OAL mm	DCONMS $_{h6}$ mm	ZEFP			
4	12	28	32	60	4	4	**04000**	**04000**	**04000**[1)]
5	12	35	40	76	6	4	**05000**	**05000**	**05000**[1)]
6	12	35	40	76	6	4	**06000**	**06000**	**06000**[1)]
7	16	60	65	101	8	6	**07000**	**07000**	**07000**[1)]
8	16	60	65	101	8	6	**08000**	**08000**	**08000**[1)]
9	16	63	68	108	10	6	**09000**	**09000**	**09000**[1)]
10	16	63	68	108	10	6	**10000**	**10000**	**10000**[1)]
11	20	80	85	130	12	6	**11000**	**11000**	**11000**[1)]
12	20	80	85	130	12	6	**12000**	**12000**	**12000**[1)]
16	20	97	102	150	16	6	**16000**	**16000**	**16000**[1)]
P							●	●	
M							●	●	
K							●		
N							○		●
S							○		
H							○		
O									○

1) Not available from stock, articles are non-returnable and cannot be exchanged / Delivery time on request / Minimum order 2 pieces

→ v_c Page 78+79

→ **Page 99**
Here you will find more information on chamfer geometries (ASG).

Fullmax – High-performance machine reamers, long

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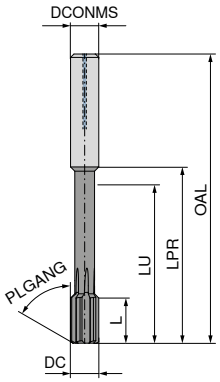
▲ specialized geometries and coatings





UNI	VA	K	ALU	H
DBG-U	DBQ	DBG-P	DBC-N	DBF-A
				
52P.57	52S.44	52J.65	52N.17	52G.55
				
Left Hand Helix	Left Hand Helix	straight flute	straight flute	straight flute
PLGANG 30°	PLGANG 30°	PLGANG 30°	PLGANG 30°	PLGANG 30°
ASG2210	ASG2231	ASG2350	ASG2270	ASG2360
Solid carbide	Solid carbide	Solid carbide	Solid carbide	Solid carbide
Through hole	Through hole	Through hole	Through hole	Through hole
40 486 ...	**40 403 ...**	**40 477 ...**	**40 473 ...**	**40 475 ...**

DC +0.0002 inch	L inch	LU inch	LPR inch	OAL inch	DCONMS h6 inch	DCONMS mm	ZEFP									
0.1165 - 0.1559	0.472	1.102	1.260	2.362	0.157	4	4	xxxxx[2]		xxxxx[1]				xxxxx[1]		xxxxx[1]	
0.1165 - 0.1559	0.472	1.102	1.260	2.362	0.157	4	6					xxxxx[1]					
0.1563	0.472	1.102	1.260	2.362	0.157	4	4	03970		03970[1]				03970[1]		03970[1]	
0.1563	0.472	1.102	1.260	2.362	0.157	4	6					03970[1]					
0.1567	0.472	1.102	1.260	2.362	0.157	4	4	03980		03980[1]				03980[1]		03980[1]	
0.1567	0.472	1.102	1.260	2.362	0.157	4	6					03980[1]					
0.1571	0.472	1.102	1.260	2.362	0.157	4	4	03990		03990[1]				03990[1]		03990[1]	
0.1571	0.472	1.102	1.260	2.362	0.157	4	6					03990[1]					
0.1575	0.472	1.102	1.260	2.362	0.157	4	4	04000		04000[1]				04000[1]		04000[1]	
0.1575	0.472	1.102	1.260	2.362	0.157	4	6					04000[1]					
0.1579	0.472	1.102	1.260	2.362	0.157	4	4	04010		04010[1]				04010[1]		04010[1]	
0.1579	0.472	1.102	1.260	2.362	0.157	4	6					04010[1]					
0.1583	0.472	1.102	1.260	2.362	0.157	4	4	04020		04020[1]				04020[1]		04020[1]	
0.1583	0.472	1.102	1.260	2.362	0.157	4	6					04020[1]					
0.1587	0.472	1.102	1.260	2.362	0.157	4	4	04030		04030[1]				04030[1]		04040[1]	
0.1587	0.472	1.102	1.260	2.362	0.157	4	6					04030[1]					
0.1591 - 0.1594	0.472	1.102	1.260	2.362	0.157	4	4	xxxxx[2]		xxxxx[1]				xxxxx[1]		xxxxx[1]	
0.1591 - 0.1594	0.472	1.102	1.260	2.362	0.157	4	6					xxxxx[1]					
0.1598 - 0.1953	0.472	1.378	1.575	2.992	0.236	6	4	xxxxx[2]		xxxxx[1]				xxxxx[1]		xxxxx[1]	
0.1598 - 0.1953	0.472	1.378	1.575	2.992	0.236	6	6					xxxxx[1]					
0.1957	0.472	1.378	1.575	2.992	0.236	6	4	04970		04970[1]				04970[1]		04970[1]	
0.1957	0.472	1.378	1.575	2.992	0.236	6	6					04970[1]					
0.1961	0.472	1.378	1.575	2.992	0.236	6	4	04980		04980[1]				04980[1]		04980[1]	
0.1961	0.472	1.378	1.575	2.992	0.236	6	6					04980[1]					
0.1965	0.472	1.378	1.575	2.992	0.236	6	4	04990		04990[1]				04990[1]		04990[1]	
0.1965	0.472	1.378	1.575	2.992	0.236	6	6					04990[1]					
0.1969	0.472	1.378	1.575	2.992	0.236	6	4	05000		05000[1]				05000[1]		05000[1]	
0.1969	0.472	1.378	1.575	2.992	0.236	6	6					05000[1]					
0.1972	0.472	1.378	1.575	2.992	0.236	6	4	05010		05010[1]				05010[1]		05010[1]	
0.1972	0.472	1.378	1.575	2.992	0.236	6	6					05010[1]					
0.1976	0.472	1.378	1.575	2.992	0.236	6	4	05020		05020[1]				05020[1]		05020[1]	
0.1976	0.472	1.378	1.575	2.992	0.236	6	6					05020[1]					

P	●	●			
M	●	●			
K	●		●		
N	○			●	
S	○				
H	○				●
O				○	

1) Not available from stock, articles are non-returnable and cannot be exchanged / Delivery time on request / Minimum order 2 pieces
2) Not available from stock, articles are non-returnable and cannot be exchanged / Delivery time on request

→ v_c Page 78+79

For xxxx please indicate piece part bore diameter and tolerance. (e.g. Ø .5000" ±.0005")

→ **Page 99**
Here you will find more information on chamfer geometries (ASG).

Continued on next page

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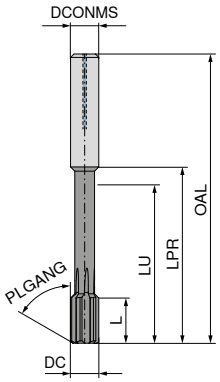

UNI	VA	K	ALU	H
DBG-U	DBQ	DBG-P	DBC-N	DBF-A
				
52P.57	52S.44	52J.65	52N.17	52G.55
				
Left Hand Helix	Left Hand Helix	straight flute	straight flute	straight flute
PLGANG 30°	PLGANG 30°	PLGANG 30°	PLGANG 30°	PLGANG 30°
ASG2210	ASG2231	ASG2350	ASG2270	ASG2360
Solid carbide	Solid carbide	Solid carbide	Solid carbide	Solid carbide
Through hole	Through hole	Through hole	Through hole	Through hole
40 486 ...	**40 403 ...**	**40 477 ...**	**40 473 ...**	**40 475 ...**

DC +0.0002 inch	L inch	LU inch	LPR inch	OAL inch	DCONMS h6 inch	DCONMS mm	ZEFP									
0.1980	0.472	1.378	1.575	2.992	0.236	6	4	**05030**		**05030**[1]				**05030**[1]		**05030**[1]
0.1980	0.472	1.378	1.575	2.992	0.236	6	6					**05030**[1]				
0.1984 - 0.2346	0.472	1.378	1.575	2.992	0.236	6	4	**xxxxx**[2]		**xxxxx**[1]				**xxxxx**[1]		**xxxxx**[1]
0.1984 - 0.2346	0.472	1.378	1.575	2.992	0.236	6	6					**xxxxx**[1]				
0.2350	0.472	1.378	1.575	2.992	0.236	6	4	**05970**		**05970**[1]				**05970**[1]		**05970**[1]
0.2350	0.472	1.378	1.575	2.992	0.236	6	6					**05970**[1]				
0.2354	0.472	1.378	1.575	2.992	0.236	6	4	**05980**		**05980**[1]				**05980**[1]		**05980**[1]
0.2354	0.472	1.378	1.575	2.992	0.236	6	6					**05980**[1]				
0.2358	0.472	1.378	1.575	2.992	0.236	6	4	**05990**		**05990**[1]				**05990**[1]		**05990**[1]
0.2358	0.472	1.378	1.575	2.992	0.236	6	6					**05990**[1]				
0.2362	0.472	1.378	1.575	2.992	0.236	6	4	**06000**		**06000**[1]				**06000**[1]		**06000**[1]
0.2362	0.472	1.378	1.575	2.992	0.236	6	6					**06000**[1]				
0.2366	0.472	1.378	1.575	2.992	0.236	6	4	**06010**		**06010**[1]				**06010**[1]		**06010**[1]
0.2366	0.472	1.378	1.575	2.992	0.236	6	6					**06010**[1]				
0.2370	0.472	1.378	1.575	2.992	0.236	6	4	**06020**		**06020**[1]				**06020**[1]		**06020**[1]
0.2370	0.472	1.378	1.575	2.992	0.236	6	6					**06020**[1]				
0.2374	0.472	1.378	1.575	2.992	0.236	6	4	**06030**		**06030**[1]				**06030**[1]		**06030**[1]
0.2374	0.472	1.378	1.575	2.992	0.236	6	6					**06030**[1]				
0.2378 - 0.2382	0.472	1.378	1.575	2.992	0.236	6	4	**xxxxx**[2]		**xxxxx**[1]				**xxxxx**[1]		**xxxxx**[1]
0.2378 - 0.2382	0.472	1.378	1.575	2.992	0.236	6	6					**xxxxx**[1]				
0.2386 - 0.3134	0.630	2.362	2.559	3.976	0.315	8	6	**xxxxx**[2]		**xxxxx**[1]				**xxxxx**[1]		**xxxxx**[1]
0.2386 - 0.3134	0.630	2.362	2.559	3.976	0.315	8	8					**xxxxx**[1]				
0.3138	0.630	2.362	2.559	3.976	0.315	8	6	**07970**		**07970**[1]				**07970**[1]		**07970**[1]
0.3138	0.630	2.362	2.559	3.976	0.315	8	8					**07970**[1]				
0.3142	0.630	2.362	2.559	3.976	0.315	8	6	**07980**		**07980**[1]				**07980**[1]		**07980**[1]
0.3142	0.630	2.362	2.559	3.976	0.315	8	8					**07980**[1]				
0.3146	0.630	2.362	2.559	3.976	0.315	8	6	**07990**		**07990**[1]				**07990**[1]		**07990**[1]
0.3146	0.630	2.362	2.559	3.976	0.315	8	8					**07990**[1]				
0.3150	0.630	2.362	2.559	3.976	0.315	8	6	**08000**		**08000**[1]				**08000**[1]		**08000**[1]
0.3150	0.630	2.362	2.559	3.976	0.315	8	8					**08000**[1]				
0.3154	0.630	2.362	2.559	3.976	0.315	8	6	**08010**		**08010**[1]				**08010**[1]		**08010**[1]
0.3154	0.630	2.362	2.559	3.976	0.315	8	8					**08010**[1]				

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→ v_c Page 78+79

For xxxx please indicate piece part bore diameter and tolerance. (e.g. Ø .5000" ±.0005")

→ **Page 99**
Here you will find more information on chamfer geometries (ASG).

Continued on next page

Fullmax – High-performance machine reamers, long

▲ extremely irregular pitch
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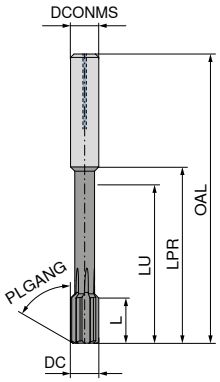

UNI	VA	K	ALU	H
DBG-U	DBQ	DBG-P	DBC-N	DBF-A
				
52P.57	52S.44	52J.65	52N.17	52G.55
				
Left Hand Helix	Left Hand Helix	straight flute	straight flute	straight flute
PLGANG 30°	PLGANG 30°	PLGANG 30°	PLGANG 30°	PLGANG 30°
ASG2210	ASG2231	ASG2350	ASG2270	ASG2360
Solid carbide	Solid carbide	Solid carbide	Solid carbide	Solid carbide
Through hole	Through hole	Through hole	Through hole	Through hole
40 486 ...	**40 403 ...**	**40 477 ...**	**40 473 ...**	**40 475 ...**

DC +0.0002 inch	L inch	LU inch	LPR inch	OAL inch	DCONMS h6 inch	DCONMS mm	ZEFP									
0.3157	0.630	2.362	2.559	3.976	0.315	8	6	**08020**		**08020**[1]				**08020**[1]		**08020**[1]
0.3157	0.630	2.362	2.559	3.976	0.315	8	8					**08020**[1]				
0.3161	0.630	2.362	2.559	3.976	0.315	8	6	**08030**		**08030**[1]				**08030**[1]		**08030**[1]
0.3161	0.630	2.362	2.559	3.976	0.315	8	8					**08030**[1]				
0.3165 - 0.3169	0.630	2.362	2.559	3.976	0.315	8	6	**xxxxx**[2]		**xxxxx**[1]				**xxxxx**[1]		**xxxxx**[1]
0.3165 - 0.3169	0.630	2.362	2.559	3.976	0.315	8	8					**xxxxx**[1]				
0.3173 - 0.3921	0.630	2.480	2.677	4.252	0.394	10	6	**xxxxx**[2]		**xxxxx**[1]				**xxxxx**[1]		**xxxxx**[1]
0.3173 - 0.3921	0.630	2.480	2.677	4.252	0.394	10	8					**xxxxx**[1]				
0.3925	0.630	2.480	2.677	4.252	0.394	10	6	**09970**		**09970**[1]				**09970**[1]		**09970**[1]
0.3925	0.630	2.480	2.677	4.252	0.394	10	8					**09970**[1]				
0.3929	0.630	2.480	2.677	4.252	0.394	10	6	**09980**		**09980**[1]				**09980**[1]		**09980**[1]
0.3929	0.630	2.480	2.677	4.252	0.394	10	8					**09980**[1]				
0.3933	0.630	2.480	2.677	4.252	0.394	10	6	**09990**		**09990**[1]				**09990**[1]		**09990**[1]
0.3933	0.630	2.480	2.677	4.252	0.394	10	8					**09990**[1]				
0.3937	0.630	2.480	2.677	4.252	0.394	10	6	**10000**		**10000**[1]				**10000**[1]		**10000**[1]
0.3937	0.630	2.480	2.677	4.252	0.394	10	8					**10000**[1]				
0.3941	0.630	2.480	2.677	4.252	0.394	10	6	**10010**		**10010**[1]				**10010**[1]		**10010**[1]
0.3941	0.630	2.480	2.677	4.252	0.394	10	8					**10010**[1]				
0.3945	0.630	2.480	2.677	4.252	0.394	10	6	**10020**		**10020**[1]				**10020**[1]		**10020**[1]
0.3945	0.630	2.480	2.677	4.252	0.394	10	8					**10020**[1]				
0.3949	0.630	2.480	2.677	4.252	0.394	10	6	**10030**		**10030**[1]				**10030**[1]		**10030**[1]
0.3949	0.630	2.480	2.677	4.252	0.394	10	8					**10030**[1]				
0.3953 - 0.3957	0.630	2.480	2.677	4.252	0.394	10	6	**xxxxx**[2]		**xxxxx**[1]				**xxxxx**[1]		**xxxxx**[1]
0.3953 - 0.3957	0.630	2.480	2.677	4.252	0.394	10	8					**xxxxx**[1]				
0.3961 - 0.4709	0.787	3.150	3.346	5.118	0.472	12	6	**xxxxx**[2]		**xxxxx**[1]				**xxxxx**[1]		**xxxxx**[1]
0.3961 - 0.4709	0.787	3.150	3.346	5.118	0.472	12	8					**xxxxx**[1]				
0.4713	0.787	3.150	3.346	5.118	0.472	12	6	**11970**		**11970**[1]				**11970**[1]		**11970**[1]
0.4713	0.787	3.150	3.346	5.118	0.472	12	8					**11970**[1]				
0.4717	0.787	3.150	3.346	5.118	0.472	12	6	**11980**		**11980**[1]				**11980**[1]		**11980**[1]
0.4717	0.787	3.150	3.346	5.118	0.472	12	8					**11980**[1]				
0.4720	0.787	3.150	3.346	5.118	0.472	12	6	**11990**		**11990**[1]				**11990**[1]		**11990**[1]
0.4720	0.787	3.150	3.346	5.118	0.472	12	8					**11990**[1]				

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→ **Page 99**
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Continued on next page

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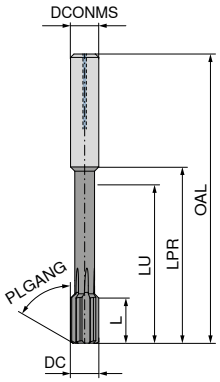

UNI	VA	K	ALU	H
DBG-U	DBQ	DBG-P	DBC-N	DBF-A
				
52P.57	52S.44	52J.65	52N.17	52G.55
				
Left Hand Helix	Left Hand Helix	straight flute	straight flute	straight flute
PLGANG 30°	PLGANG 30°	PLGANG 30°	PLGANG 30°	PLGANG 30°
ASG2210	ASG2231	ASG2350	ASG2270	ASG2360
Solid carbide	Solid carbide	Solid carbide	Solid carbide	Solid carbide
Through hole	Through hole	Through hole	Through hole	Through hole

DC +0.0002 inch	L inch	LU inch	LPR inch	OAL inch	DCONMS h6 inch	DCONMS mm	ZEFP	40 486 ...	40 403 ...	40 477 ...	40 473 ...	40 475 ...
0.4724	0.787	3.150	3.346	5.118	0.472	12	6	**12000**	**12000**[1]		**12000**[1]	**12000**[1]
0.4724	0.787	3.150	3.346	5.118	0.472	12	8			**12000**[1]		
0.4728	0.787	3.150	3.346	5.118	0.472	12	6	**12010**	**12010**[1]		**12010**[1]	**12010**[1]
0.4728	0.787	3.150	3.346	5.118	0.472	12	8			**12010**[1]		
0.4732	0.787	3.150	3.346	5.118	0.472	12	6	**12020**	**12020**[1]		**12020**[1]	**12020**[1]
0.4732	0.787	3.150	3.346	5.118	0.472	12	8			**12020**[1]		
0.4736	0.787	3.150	3.346	5.118	0.472	12	6	**12030**	**12030**[1]		**12030**[1]	**12030**[1]
0.4736	0.787	3.150	3.346	5.118	0.472	12	8			**12030**[1]		
0.4740 - 0.4744	0.787	3.150	3.346	5.118	0.472	12	6	**xxxxx**[2]	**xxxxx**[1]		**xxxxx**[1]	**xxxxx**[1]
0.4740 - 0.4744	0.787	3.150	3.346	5.118	0.472	12	8			**xxxxx**[1]		
0.4748 - 0.5532	0.787	3.150	3.346	5.118	0.551	14	6	**xxxxx**[2]	**xxxxx**[1]		**xxxxx**[1]	**xxxxx**[1]
0.4748 - 0.5532	0.787	3.150	3.346	5.118	0.551	14	8			**xxxxx**[1]		
0.5535 - 0.6319	0.787	3.819	4.016	5.906	0.630	16	6	**xxxxx**[2]	**xxxxx**[1]		**xxxxx**[1]	**xxxxx**[1]
0.5535 - 0.6319	0.787	3.819	4.016	5.906	0.630	16	8			**xxxxx**[1]		
0.6323 - 0.7106	0.787	3.819	4.016	5.906	0.709	18	6	**xxxxx**[2]	**xxxxx**[1]		**xxxxx**[1]	**xxxxx**[1]
0.6323 - 0.7106	0.787	3.819	4.016	5.906	0.709	18	8			**xxxxx**[1]		
0.7110 - 0.7894	0.787	4.134	4.331	6.299	0.787	20	6	**xxxxx**[2]	**xxxxx**[1]		**xxxxx**[1]	**xxxxx**[1]
0.7110 - 0.7894	0.787	4.134	4.331	6.299	0.787	20	8			**xxxxx**[1]		

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→ **Page 99**
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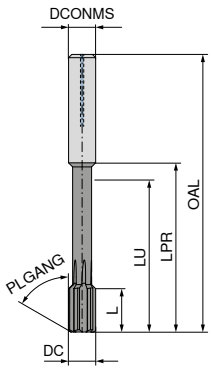

UNI	VA	ALU
DBG-U	DBQ	DBC-N
		
52M.57	52T.45	52Q.17
		
straight flute	straight flute	straight flute
PLGANG 60°	PLGANG 45°	PLGANG 60°
ASG2110	ASG2131	ASG2170
Solid carbide	Solid carbide	Solid carbide
Blind hole	Blind hole	Blind hole
40 485 ...	**40 402 ...**	**40 472 ...**

DC $_{H7}$ mm	L mm	LU mm	LPR mm	OAL mm	DCONMS $_{h6}$ mm	ZEFP			
4	12	28	32	60	4	4	**04000**	**04000**	**04000**[1]
5	12	35	40	76	6	4	**05000**	**05000**	**05000**[1]
6	12	35	40	76	6	4	**06000**	**06000**	**06000**[1]
7	16	60	65	101	8	6	**07000**	**07000**	**07000**[1]
8	16	60	65	101	8	6	**08000**	**08000**	**08000**[2]
9	16	63	68	108	10	6	**09000**	**09000**	**09000**[1]
10	16	63	68	108	10	6	**10000**	**10000**	**10000**[1]
11	20	80	85	130	12	6	**11000**	**11000**	**11000**[1]
12	20	80	85	130	12	6	**12000**	**12000**	**12000**[1]
16	20	97	102	150	16	6	**16000**	**16000**	**16000**[1]

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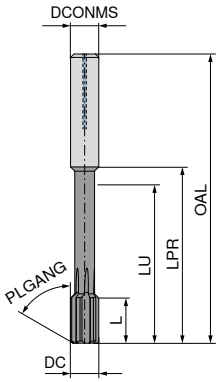

UNI	VA	K	ALU	H
DBG-U	DBQ	DBG-P	DBC-N	DBF-A
52M.57	52T.45	52K.65	52Q.17	52H.55
straight flute	straight flute	straight flute	straight flute	straight flute
PLGANG 60°	PLGANG 45°	PLGANG 30°	PLGANG 60°	PLGANG 30°
ASG2110	ASG2131	ASG2350	ASG2170	ASG2360
Solid carbide	Solid carbide	Solid carbide	Solid carbide	Solid carbide
Blind hole	Blind hole	Blind hole	Blind hole	Blind hole
40 487 ...	**40 404 ...**	**40 478 ...**	**40 474 ...**	**40 476 ...**

DC +0.0002 inch	L inch	LU inch	LPR inch	OAL inch	DCONMS h6 inch	DCONMS mm	ZEFP									
0.1165 - 0.1559	0.472	1.102	1.260	2.362	0.157	4	4	**xxxxx**[2]		**xxxxx**[1]				**xxxxx**[1]		**xxxxx**[1]
0.1165 - 0.1559	0.472	1.102	1.260	2.362	0.157	4	6					**xxxxx**[1]				
0.1563	0.472	1.102	1.260	2.362	0.157	4	4	**03970**		**03970**[1]				**03970**[1]		**03970**[1]
0.1563	0.472	1.102	1.260	2.362	0.157	4	6					**03970**[1]				
0.1567	0.472	1.102	1.260	2.362	0.157	4	4	**03980**		**03980**[1]				**03980**[1]		**03980**[1]
0.1567	0.472	1.102	1.260	2.362	0.157	4	6					**03980**[1]				
0.1571	0.472	1.102	1.260	2.362	0.157	4	4	**03990**		**03990**[1]				**03990**[1]		**03990**[1]
0.1571	0.472	1.102	1.260	2.362	0.157	4	6					**03990**[1]				
0.1575	0.472	1.102	1.260	2.362	0.157	4	4	**04000**		**04000**[1]				**04000**[1]		**04000**[1]
0.1575	0.472	1.102	1.260	2.362	0.157	4	6					**04000**[1]				
0.1579	0.472	1.102	1.260	2.362	0.157	4	4	**04010**		**04010**[1]				**04010**[1]		**04010**[1]
0.1579	0.472	1.102	1.260	2.362	0.157	4	6					**04010**[1]				
0.1583	0.472	1.102	1.260	2.362	0.157	4	4	**04020**		**04020**[1]				**04020**[1]		**04020**[1]
0.1583	0.472	1.102	1.260	2.362	0.157	4	6					**04020**[1]				
0.1587	0.472	1.102	1.260	2.362	0.157	4	4	**04030**		**04030**[1]				**04030**[1]		**04030**[1]
0.1587	0.472	1.102	1.260	2.362	0.157	4	6					**04030**[1]				
0.1591 - 0.1594	0.472	1.102	1.260	2.362	0.157	4	4	**xxxxx**[2]		**xxxxx**[1]				**xxxxx**[1]		**xxxxx**[1]
0.1591 - 0.1594	0.472	1.102	1.260	2.362	0.157	4	6					**xxxxx**[1]				
0.1598 - 0.1953	0.472	1.378	1.575	2.992	0.236	6	4	**xxxxx**[2]		**xxxxx**[1]				**xxxxx**[1]		**xxxxx**[1]
0.1598 - 0.1953	0.472	1.378	1.575	2.992	0.236	6	6					**xxxxx**[1]				
0.1957	0.472	1.378	1.575	2.992	0.236	6	4	**04970**		**04970**[1]				**04970**[1]		**04970**[1]
0.1957	0.472	1.378	1.575	2.992	0.236	6	6					**04970**[1]				
0.1961	0.472	1.378	1.575	2.992	0.236	6	4	**04980**		**04980**[1]				**04980**[1]		**04980**[1]
0.1961	0.472	1.378	1.575	2.992	0.236	6	6					**04980**[1]				
0.1965	0.472	1.378	1.575	2.992	0.236	6	4	**04990**		**04990**[1]				**04990**[1]		**04990**[1]
0.1965	0.472	1.378	1.575	2.992	0.236	6	6					**04990**[1]				
0.1969	0.472	1.378	1.575	2.992	0.236	6	4	**05000**		**05000**[1]				**05000**[1]		**05000**[1]
0.1969	0.472	1.378	1.575	2.992	0.236	6	6					**05000**[1]				
0.1972	0.472	1.378	1.575	2.992	0.236	6	4	**05010**		**05010**[1]				**05010**[1]		**05010**[1]
0.1972	0.472	1.378	1.575	2.992	0.236	6	6					**05010**[1]				
0.1976	0.472	1.378	1.575	2.992	0.236	6	4	**05020**		**05020**[1]				**05020**[1]		**05020**[1]
0.1976	0.472	1.378	1.575	2.992	0.236	6	6					**05020**[1]				

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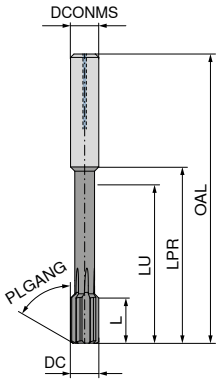

UNI	VA	K	ALU	H
DBG-U	DBQ	DBG-P	DBC-N	DBF-A
				
52M.57	52T.45	52K.65	52Q.17	52H.55
				
straight flute	straight flute	straight flute	straight flute	straight flute
PLGANG 60°	PLGANG 45°	PLGANG 30°	PLGANG 60°	PLGANG 30°
ASG2110	ASG2131	ASG2350	ASG2170	ASG2360
Solid carbide	Solid carbide	Solid carbide	Solid carbide	Solid carbide
Blind hole	Blind hole	Blind hole	Blind hole	Blind hole

DC +0.0002 inch	L inch	LU inch	LPR inch	OAL inch	DCONMS h6 inch	DCONMS mm	ZEFP	40 487 ...	40 404 ...	40 478 ...	40 474 ...	40 476 ...
0.1980	0.472	1.378	1.575	2.992	0.236	6	4	**05030**	**05030**[1]		**05030**[1]	**05030**[1]
0.1980	0.472	1.378	1.575	2.992	0.236	6	6			**05030**[1]		
0.1984 - 0.2346	0.472	1.378	1.575	2.992	0.236	6	4	**xxxxx**[2]	**xxxxx**[1]		**xxxxx**[1]	**xxxxx**[1]
0.1984 - 0.2346	0.472	1.378	1.575	2.992	0.236	6	6			**xxxxx**[1]		
0.2350	0.472	1.378	1.575	2.992	0.236	6	4	**05970**	**05970**[1]		**05970**[1]	**05970**[1]
0.2350	0.472	1.378	1.575	2.992	0.236	6	6			**05970**[1]		
0.2354	0.472	1.378	1.575	2.992	0.236	6	4	**05980**	**05980**[1]		**05980**[1]	**05980**[1]
0.2354	0.472	1.378	1.575	2.992	0.236	6	6			**05980**[1]		
0.2358	0.472	1.378	1.575	2.992	0.236	6	4	**05990**	**05990**[1]		**05990**[1]	**05990**[1]
0.2358	0.472	1.378	1.575	2.992	0.236	6	6			**05990**[1]		
0.2362	0.472	1.378	1.575	2.992	0.236	6	4	**06000**	**06000**[1]		**06000**[1]	**06000**[1]
0.2362	0.472	1.378	1.575	2.992	0.236	6	6			**06000**[1]		
0.2366	0.472	1.378	1.575	2.992	0.236	6	4	**06010**	**06010**[1]		**06010**[1]	**06010**[1]
0.2366	0.472	1.378	1.575	2.992	0.236	6	6			**06010**[1]		
0.2370	0.472	1.378	1.575	2.992	0.236	6	4	**06020**	**06020**[1]		**06020**[1]	**06020**[1]
0.2370	0.472	1.378	1.575	2.992	0.236	6	6			**06020**[1]		
0.2374	0.472	1.378	1.575	2.992	0.236	6	4	**06030**	**06030**[1]		**06030**[1]	**06030**[1]
0.2374	0.472	1.378	1.575	2.992	0.236	6	6			**06030**[1]		
0.2378 - 0.2382	0.472	1.378	1.575	2.992	0.236	6	4	**xxxxx**[2]	**xxxxx**[1]		**xxxxx**[1]	**xxxxx**[1]
0.2378 - 0.2382	0.472	1.378	1.575	2.992	0.236	6	6			**xxxxx**[1]		
0.2386 - 0.3134	0.630	2.362	2.559	3.976	0.315	8	6	**xxxxx**[2]	**xxxxx**[1]		**xxxxx**[1]	**xxxxx**[1]
0.2386 - 0.3134	0.630	2.362	2.559	3.976	0.315	8	8			**xxxxx**[1]		
0.3138	0.630	2.362	2.559	3.976	0.315	8	6	**07970**	**07970**[1]		**07970**[1]	**07970**[1]
0.3138	0.630	2.362	2.559	3.976	0.315	8	8			**07970**[1]		
0.3142	0.630	2.362	2.559	3.976	0.315	8	6	**07980**	**07980**[1]		**07980**[1]	**07980**[1]
0.3142	0.630	2.362	2.559	3.976	0.315	8	8			**07980**[1]		
0.3146	0.630	2.362	2.559	3.976	0.315	8	6	**07990**	**07990**[1]		**07990**[1]	**07990**[1]
0.3146	0.630	2.362	2.559	3.976	0.315	8	8			**07990**[1]		
0.3150	0.630	2.362	2.559	3.976	0.315	8	6	**08000**	**08000**[1]		**08000**[1]	**08000**[1]
0.3150	0.630	2.362	2.559	3.976	0.315	8	8			**08000**[1]		
0.3154	0.630	2.362	2.559	3.976	0.315	8	6	**08010**	**08010**[1]		**08010**[1]	**08010**[1]
0.3154	0.630	2.362	2.559	3.976	0.315	8	8			**08010**[1]		

P	●	●			
M	●	●			
K	●		●		
N	○			●	
S	○				
H	○				●
O				○	

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→ v_c Page 78+79

For xxxx please indicate piece part bore diameter and tolerance. (e.g. Ø .5000" ±.0005")

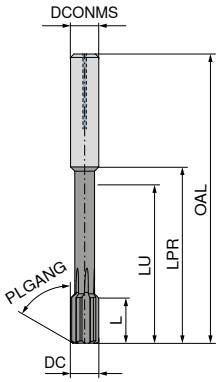
→ **Page 99**
Here you will find more information on chamfer geometries (ASG).

Continued on next page

Fullmax – High-performance machine reamers, long

▲ extremely irregular pitch
▲ designed for high-speed machining
▲ specialized geometries and coatings





UNI	VA	K	ALU	H
DBG-U	DBQ	DBG-P	DBC-N	DBF-A
				
52M.57	52T.45	52K.65	52Q.17	52H.55
				
straight flute	straight flute	straight flute	straight flute	straight flute
PLGANG 60°	PLGANG 45°	PLGANG 30°	PLGANG 60°	PLGANG 30°
ASG2110	ASG2131	ASG2350	ASG2170	ASG2360
Solid carbide	Solid carbide	Solid carbide	Solid carbide	Solid carbide
Blind hole	Blind hole	Blind hole	Blind hole	Blind hole
40 487 ...	**40 404 ...**	**40 478 ...**	**40 474 ...**	**40 476 ...**

DC +0.0002 inch	L inch	LU inch	LPR inch	OAL inch	DCONMS h6 inch	DCONMS mm	ZEFP	40 487 ...	40 404 ...	40 478 ...	40 474 ...	40 476 ...
0.3157	0.630	2.362	2.559	3.976	0.315	8	6	08020	08020[1]		08020[1]	08020[1]
0.3157	0.630	2.362	2.559	3.976	0.315	8	8			08020[1]		
0.3161	0.630	2.362	2.559	3.976	0.315	8	6	08030	08030[1]		08030[1]	08030[1]
0.3161	0.630	2.362	2.559	3.976	0.315	8	8			08030[1]		
0.3165 - 0.3169	0.630	2.362	2.559	3.976	0.315	8	6	xxxxx[2]	xxxxx[1]		xxxxx[1]	xxxxx[1]
0.3165 - 0.3169	0.630	2.362	2.559	3.976	0.315	8	8			xxxxx[1]		
0.3173 - 0.3921	0.630	2.480	2.677	4.252	0.394	10	6	xxxxx[2]	xxxxx[1]		xxxxx[1]	xxxxx[1]
0.3173 - 0.3921	0.630	2.480	2.677	4.252	0.394	10	8			xxxxx[1]		
0.3925	0.630	2.480	2.677	4.252	0.394	10	6	09970	09970[1]		09970[1]	09970[1]
0.3925	0.630	2.480	2.677	4.252	0.394	10	8			09970[1]		
0.3929	0.630	2.480	2.677	4.252	0.394	10	6	09980	09980[1]		09980[1]	09980[1]
0.3929	0.630	2.480	2.677	4.252	0.394	10	8			09980[1]		
0.3933	0.630	2.480	2.677	4.252	0.394	10	6	09990	09990[1]		09990[1]	09990[1]
0.3933	0.630	2.480	2.677	4.252	0.394	10	8			09990[1]		
0.3937	0.630	2.480	2.677	4.252	0.394	10	6	10000	10000[1]		10000[1]	10000[1]
0.3937	0.630	2.480	2.677	4.252	0.394	10	8			10000[1]		
0.3941	0.630	2.480	2.677	4.252	0.394	10	6	10010	10010[1]		10010[1]	10010[1]
0.3941	0.630	2.480	2.677	4.252	0.394	10	8			10010[1]		
0.3945	0.630	2.480	2.677	4.252	0.394	10	6	10020	10020[1]		10020[1]	10020[1]
0.3945	0.630	2.480	2.677	4.252	0.394	10	8			10020[1]		
0.3949	0.630	2.480	2.677	4.252	0.394	10	6	10030	10030[1]		10030[1]	10030[1]
0.3949	0.630	2.480	2.677	4.252	0.394	10	8			10030[1]		
0.3953 - 0.3957	0.630	2.480	2.677	4.252	0.394	10	6	xxxxx[2]	xxxxx[1]		xxxxx[1]	xxxxx[1]
0.3953 - 0.3957	0.630	2.480	2.677	4.252	0.394	10	8			xxxxx[1]		
0.3961 - 0.4709	0.787	3.150	3.346	5.118	0.472	12	6	xxxxx[2]	xxxxx[1]		xxxxx[1]	xxxxx[1]
0.3961 - 0.4709	0.787	3.150	3.346	5.118	0.472	12	8			xxxxx[1]		
0.4713	0.787	3.150	3.346	5.118	0.472	12	6	11970	11970[1]		11970[1]	11970[1]
0.4713	0.787	3.150	3.346	5.118	0.472	12	8			11970[1]		
0.4717	0.787	3.150	3.346	5.118	0.472	12	6	11980	11980[1]		11980[1]	11980[1]
0.4717	0.787	3.150	3.346	5.118	0.472	12	8			11980[1]		
0.4720	0.787	3.150	3.346	5.118	0.472	12	6	11990	11990[1]		11990[1]	11990[1]
0.4720	0.787	3.150	3.346	5.118	0.472	12	8			11990[1]		

P	●	●			
M	●	●			
K	●		●		
N	○			●	
S	○				
H	○				●
O				○	

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→ v_c Page 78+79

For xxxx please indicate piece part bore diameter and tolerance. (e.g. Ø .5000" ±.0005")

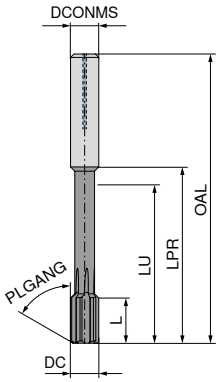
→ **Page 99**
Here you will find more information on chamfer geometries (ASG).

Continued on next page

Fullmax – High-performance machine reamers, long

▲ extremely irregular pitch
▲ designed for high-speed machining
▲ specialized geometries and coatings





UNI	VA	K	ALU	H
DBG-U	DBQ	DBG-P	DBC-N	DBF-A
				
52M.57	52T.45	52K.65	52Q.17	52H.55
				
straight flute	straight flute	straight flute	straight flute	straight flute
PLGANG 60°	PLGANG 45°	PLGANG 30°	PLGANG 60°	PLGANG 30°
ASG2110	ASG2131	ASG2350	ASG2170	ASG2360
Solid carbide	Solid carbide	Solid carbide	Solid carbide	Solid carbide
Blind hole	Blind hole	Blind hole	Blind hole	Blind hole

DC +0.0002 inch	L inch	LU inch	LPR inch	OAL inch	DCONMS h6 inch	DCONMS mm	ZEFP	40 487 ...	40 404 ...	40 478 ...	40 474 ...	40 476 ...
0.4724	0.787	3.150	3.346	5.118	0.472	12	6	**12000**	**12000**[1]		**12000**[1]	**12000**[1]
0.4724	0.787	3.150	3.346	5.118	0.472	12	8			**12000**[1]		
0.4728	0.787	3.150	3.346	5.118	0.472	12	6	**12010**	**12010**[1]		**12010**[1]	**12010**[1]
0.4728	0.787	3.150	3.346	5.118	0.472	12	8			**12010**[1]		
0.4732	0.787	3.150	3.346	5.118	0.472	12	6	**12020**	**12020**[1]		**12020**[1]	**12020**[1]
0.4732	0.787	3.150	3.346	5.118	0.472	12	8			**12020**[1]		
0.4736	0.787	3.150	3.346	5.118	0.472	12	6	**12030**	**12030**[1]		**12030**[1]	**12030**[1]
0.4736	0.787	3.150	3.346	5.118	0.472	12	8			**12030**[1]		
0.4740 - 0.4744	0.787	3.150	3.346	5.118	0.472	12	6	**xxxxx**[2]	**xxxxx**[1]		**xxxxx**[1]	**xxxxx**[1]
0.4740 - 0.4744	0.787	3.150	3.346	5.118	0.472	12	8			**xxxxx**[1]		
0.4748 - 0.5532	0.787	3.150	3.346	5.118	0.551	14	6	**xxxxx**[2]	**xxxxx**[1]		**xxxxx**[1]	**xxxxx**[1]
0.4748 - 0.5532	0.787	3.150	3.346	5.118	0.551	14	8			**xxxxx**[1]		
0.5535 - 0.6319	0.787	3.819	4.016	5.906	0.630	16	6	**xxxxx**[2]	**xxxxx**[1]		**xxxxx**[1]	**xxxxx**[1]
0.5535 - 0.6319	0.787	3.819	4.016	5.906	0.630	16	8			**xxxxx**[1]		
0.6323 - 0.7106	0.787	3.819	4.016	5.906	0.709	18	6	**xxxxx**[2]	**xxxxx**[1]		**xxxxx**[1]	**xxxxx**[1]
0.6323 - 0.7106	0.787	3.819	4.016	5.906	0.709	18	8			**xxxxx**[1]		
0.7110 - 0.7894	0.787	4.134	4.331	6.299	0.787	20	6	**xxxxx**[2]	**xxxxx**[1]		**xxxxx**[1]	**xxxxx**[1]
0.7110 - 0.7894	0.787	4.134	4.331	6.299	0.787	20	8			**xxxxx**[1]		
P								●	●			
M								●	●			
K								●		●		
N								○			●	
S								○				
H								○				●
O											○	

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→ v_c Page 78+79

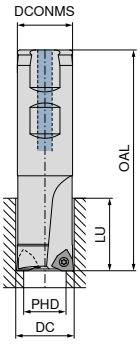
For xxxx please indicate piece part bore diameter and tolerance. (e.g. Ø .5000" ±.0005")

→ **Page 99**
Here you will find more information on chamfer geometries (ASG).

Insert countersink 180°

Scope of supply:
Indexable insert countersink including clamping screws

WPS



NEW




SIG 180°

30 198 ...

DC mm	PHD mm	ZEFP	ZNF	DCONMS mm	LU mm	OAL mm	Insert	
10	5.3	1	1	16	10	80	WOEX 030204	**01000** [1]
11	6.4	1	1	16	11	80	WOEX 030204	**01100** [1]
15	8.4	1	1	16	15	80	WOEX 05T304	**01500**
18	10.4	1	1	16	18	80	WOEX 05T304	**01800**
20	13.0	1	1	25	20	100	WOEX 05T304	**02000**
24	15.0	2	2	25	24	100	WOEX 05T304	**02400**
26	17.0	2	2	25	26	100	WOEX 05T304	**02600**
30	19.0	2	2	25	30	100	WOEX 06T304	**03000**
33	21.0	2	2	25	33	100	WOEX 080404	**03300**
36	21.0	2	2	25	36	100	WOEX 080404	**03600**
40	25.0	2	2	25	40	100	WOEX 080404	**04000**
48	28.0	2	2	32	48	120	WOEX 100504	**04800**

1) Without Through Coolant


Screwdriver

80 950 ...

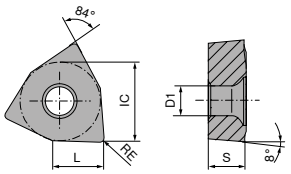

Clamping screw

10 950 ...

Spare parts DC				
10 - 11	T06 - IP	**123**	M2.0x4.3 - 06IP	**10000**
15 - 26	T08 - IP	**125**	M2.5x7.2 - 08IP	**10500**
30	T10 - IP	**127**	M3.5x7.3 - 10IP	**10600**
33 - 48	T15 - IP	**128**	M4.5x9 - 15IP	**12700**

WOEX

Designation	L	IC	S	D1
	mm	mm	mm	mm
WOEX 0302..	3.2	5	2.30	2.30
WOEX 05T3..	5.3	8	3.80	2.85
WOEX 06T3..	6.6	10	3.80	4.05
WOEX 0804..	7.9	12	4.80	4.90
WOEX 1005..	9.9	15	5.30	4.90



4

WOEX

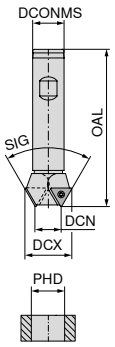
	-01 K10	-01 BK8425
		
	WOEX	WOEX
	10 821 ...	10 821 ...
ISO / RE mm		
030204 / 0.4	35301	30301
05T304 / 0.4	35501	30501
06T304 / 0.4	35601	30601
080404 / 0.4	35801	30801
100504 / 0.4	36001	31001
P		●
M		●
K		●
N	●	○
S	●	●
H		○
O	●	

→ v_c Page 91

Indexable chamfer milling 90°

Scope of supply:
Indexable insert countersink including clamping screws

WPS






SIG 90°

30 196 ...

DCX mm	DCN mm	PHD mm	ZEFP	ZNF	DCONMS mm	OAL mm	Insert	
19	7	9.5	2	2	16	100	TOHX 090204	**19000**
23	11	12.0	2	2	16	100	TOHX 090204	**23000**
26	11	12.0	1	2	16	100	TOHX 090204	**26000**
30	12	13.0	2	2	20	100	TOHX 140305	**30000**
34	16	17.0	2	2	20	100	TOHX 140305	**34000**
37	19	20.0	2	2	20	100	TOHX 140305	**37000**


TORX® Screws

62 950 ...


Screwdriver

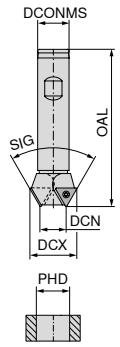
80 950 ...

Spare parts DCX				
19 - 26	M2.6x6.2 - 08IP	**09900**	T08 - IP	**125**
30 - 37	M3.5x7.3 - 10IP	**12600**	T10 - IP	**127**

Indexable chamfer milling 60°

Scope of supply:
Indexable insert countersink including clamping screws

WPS






SIG 60°

30 197 ...

DCX mm	DCN mm	PHD mm	ZEFP	ZNF	DCONMS mm	OAL mm	Insert	
16.5	8.1	8.5	1	1	16	100	TOHX 090204	**16500**
20.0	11.6	12.0	2	2	16	100	TOHX 090204	**20000**
22.0	13.6	14.0	2	2	16	100	TOHX 090204	**22000**
23.5	15.1	15.5	2	2	16	100	TOHX 090204	**23500**
25.5	17.1	17.5	2	2	16	100	TOHX 090204	**25500**


TORX® Screws

62 950 ...

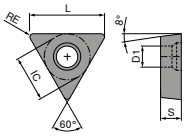

Screwdriver

80 950 ...

Spare parts DCX				
16.5 - 22	M2.6x5.2 - 08IP	**12000**	T08 - IP	**125**
23.5 - 25.5	M2.6x6.2 - 08IP	**09900**	T08 - IP	**125**

TOHX

Designation	L mm	IC mm	S mm	D1 mm
TOHX 0902..	9.12	5.6	2.50	2.8
TOHX 1403..	13.62	8.2	3.00	3.8



TOHX

	-G06 BK8425	-U877 BK8425	-G12 BK8425
			
	F TOHX	F TOHX	F TOHX
	62 602 ...	62 604 ...	62 603 ...
ISO / RE mm			
090204EN 0.4		31400	31400
140305EN 0.5	33000		
P	●	●	●
M	●	●	●
K	●	●	●
N	○	○	○
S	●	●	●
H	○	○	○
O			

→ v_c Page 91

TOHX

	-U877 K10	-G12 K10
		
	F TOHX	F TOHX
	62 604 ...	62 603 ...
ISO / RE mm		
090204EN 0.4	51400	
090204FN 0.4		51600
140305FN 0.5		52800
P		
M		
K		
N	●	●
S	●	●
H		
O	●	●

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Material examples for cutting data tables

	Material sub-group	Index	Composition / Structure / Heat treatment		Tensile strength lbf/in²* / HB / HRC	Material number	Material designation	Material number	Material designation
P	Unalloyed steel	P.1.1	< 0.15 % C	Annealed	60900 lbf/in² / 125 HB	1.0401	1015	1.0301	1010
		P.1.2	< 0.45 % C	Annealed	92800 lbf/in² / 190 HB	1.1191	1045	1.0737	12L14
		P.1.3		Tempered	121800 lbf/in² / 250 HB	1.1191	1045	1.0503	1043
		P.1.4	< 0.75 % C	Annealed	132000 lbf/in² / 270 HB	1.1223	1060	1.0535	1055
		P.1.5		Tempered	146500 lbf/in² / 300 HB	1.1223	1060	1.1274	1095
	Low-alloy steel	P.2.1		Annealed	88500 lbf/in² / 180 HB	1.7131	5115	1.6523	8620
		P.2.2		Tempered	134900 lbf/in² / 275 HB	1.7131	5115	1.6582	4340
		P.2.3		Tempered	146500 lbf/in² / 300 HB	1.7225	4142	1.7131	5115
		P.2.4		Tempered	174000 lbf/in² / 375 HB	1.7225	4142	17223	4140
	High-alloy steel and high-alloy tool steel	P.3.1		Annealed	98600 lbf/in² / 200 HB	1.4021	420	1.2379	D2
		P.3.2		Hardened and tempered	159500 lbf/in² / 300 HB	1.2343	H11	1.3343	M2
		P.3.3		Hardened and tempered	188500 lbf/in² / 400 HB	1.2343	H11	1.2363	A2
	Stainless steel	P.4.1	Ferritic / martensitic	Annealed	98600 lbf/in² / 200 HB	1.4016	430	1.4125	440C
		P.4.2	Martensitic	Tempered	117500 lbf/in² / 250 HB	1.4112	S44003	1.4021	420
M	Stainless steel	M.1.1	Austenitic / austenitic-ferritic	Quenched	88500 lbf/in² / 200 HB	1.4301	304	1.4401	316
		M.2.1	Austenitic	Tempered	300 HB	1.4841	314	1.4568	17-7 PH
		M.3.1	Austenitic / ferritic (Duplex)		113100 lbf/in² / 230 HB	1.4462	S32205	1.4410	S32750
K	Grey cast iron	K.1.1	Pearlitic / ferritic		88500 lbf/in² / 180 HB	0.6010	A48-20B	0.6025	A48-40 B
		K.1.2	Pearlitic (martensitic)		127600 lbf/in² / 260 HB	0.6030	A48-45B	0.6040	A48-60 B
	Spherulitic graphite cast iron	K.2.1	Ferritic		78300 lbf/in² / 160 HB	0.7040	60-40-18	0.7050	65-45-12
		K.2.2	Pearlitic		122600 lbf/in² / 250 HB	0.7070	100-70-03	0.7660	A439 Type D2
	Malleable iron	K.3.1	Ferritic		63800 lbf/in² / 130 HB	0.8035	GTW-35-04		
		K.3.2	Pearlitic		113100 lbf/in² / 230 HB	0.8170	70003		
N	Aluminium wrought alloy	N.1.1	Non-hardenable		60 HB	3.0255	A91060	3.0255	A91060
		N.1.2	Hardenable		49300 lbf/in² / 100 HB	3.1355	2024	3.1355	2024
	Cast aluminium alloy	N.2.1	≤ 12 % Si, non-hardenable		36300 lbf/in² / 75 HB	3.2581	A04130 / A413-0	3.2581	A04130 / A413-0
		N.2.2	≤ 12 % Si, hardenable		43500 lbf/in² / 90 HB	3.2134	G-AlSi5Cu1Mg		
		N.2.3	> 12 % Si, non-hardenable		63800 lbf/in² / 130 HB		G-AlSi17Cu4Mg		
	Copper and copper alloys (bronze/brass)	N.3.1	Free-machining alloys, PB > 1 %		54400 lbf/in² / 110 HB	2.0380	CuZn39Pb2 (Ms58)	2.0380	C37700
		N.3.2	CuZn, CuSnZn		43500 lbf/in² / 90 HB	2.0331	CuZn15	2.0331	C34000
		N.3.3	CuSn, lead-free copper and electrolytic copper		49300 lbf/in² / 100 HB	2.0060	E-Cu57		
	Magnesium alloys	N.4.1	Magnesium and magnesium alloys		70 HB	3.5612	MgAl6Zn		
S	Heat-resistant alloys	S.1.1	Fe - basis	Annealed	98600 lbf/in² / 200 HB	1.4864	X12NiCrSi 36-16	1.4864	330
		S.1.2			137800 lbf/in² / 280 HB	1.4980	X6NiCrTiMoVB25-15-2	1.4980	S66286
		S.2.1	Ni or Co basis	Annealed	121800 lbf/in² / 250 HB	2.4856	Inconel 625	2.4812	Hastelloy C
		S.2.2			171100 lbf/in² / 350 HB	2.4952	Nimonic 80A	2.4668	Inconel 718
		S.2.3		Cast	156600 lbf/in² / 320 HB	2.4674	Nimocast PK24	2.4670	Nimocast 713
	Titanium alloys	S.3.1	Pure titanium		5800 lbf/in²	3.7025	Ti99,8		
		S.3.2	Alpha + beta alloys		152300 lbf/in²	3.7165	TiAl6V4		
		S.3.3	Beta alloys		203100 lbf/in² / 410 HB	Ti555.3	Ti-5Al-5V-5Mo-3Cr		
H	Hardened steel	H.1.1		Hardened and tempered	46-55 HRC				
		H.1.2		Hardened and tempered	56-60 HRC				
		H.1.3		Hardened and tempered	61-65 HRC				
		H.1.4		Hardened and tempered	66-70 HRC				
	Chilled iron	H.2.1		Cast	400 HB				
	Hardened cast iron	H.3.1		Hardened and tempered	55 HRC				
O	Non-metal materials	O.1.1	Plastics, duroplastic		≤ 21800 lbf/in²				
		O.1.2	Plastics, thermoplastic		≤ 14500 lbf/in²				
		O.2.1	Aramid fibre-reinforced		≤ 145000 lbf/in²				
		O.2.2	Glass/carbon-fibre reinforced		≤ 145000 lbf/in²				
		O.3.1	Graphite						

*** Tensile Strength at Rupture (Rm)**

Cutting data standard values for REAMAX TS

Index	49 586 ..., 49 585 ... 75J.65, 75H.65 – ASG3000 / HM-DBG-P						49 521 ..., 49 571 ... 75J.65, 75H.65 – ASG0106 / HM-DBG-P					
	Nominal Ø in inches ▸		.7086–.8660	.8661–1.2519	1.2520–2.0471	2.0472–2.5590	Nominal Ø in inches ▸		.7086–.8660	.8661–1.2519	1.2520–2.0471	2.0472–2.5590
	Reaming allowance Ø ▸		.008 – .012	.008 – .012	.012 – .016	.012 – .016	Reaming allowance Ø ▸		.008 – .012	.008 – .012	.012 – .016	.012 – .016
	Number of flutes ▸		6	6	8	10	Number of flutes ▸		6	6	8	10
	3xD	5xD					3xD	5xD				
	v_c (ft/min)		f (inch/rev)				v_c (ft/min)		f (inch/rev)			
P.1.1	**490** (430–660)	**390** (330–520)	.031–.043	.039–.055	.051–.075	.075–.110						
P.1.2	**490** (430–660)	**390** (330–520)	.031–.043	.039–.055	.051–.075	.075–.110						
P.1.3	**490** (430–660)	**390** (330–520)	.031–.043	.039–.055	.051–.075	.075–.110						
P.1.4	**490** (430–660)	**390** (330–520)	.031–.043	.039–.055	.051–.075	.075–.110						
P.1.5	**490** (430–660)	**390** (330–520)	.031–.043	.039–.055	.051–.075	.075–.110						
P.2.1	**490** (430–660)	**390** (330–520)	.031–.043	.039–.055	.051–.075	.075–.110						
P.2.2	**490** (430–660)	**390** (330–520)	.031–.043	.039–.055	.051–.075	.075–.110						
P.2.3	**490** (430–660)	**390** (330–520)	.031–.043	.039–.055	.051–.075	.075–.110						
P.2.4	**490** (430–660)	**390** (330–520)	.031–.043	.039–.055	.051–.075	.075–.110						
P.3.1							**100** (80–160)	**100** (80–130)	.024–.035	.031–.043	.043–.059	.059–.091
P.3.2							**100** (80–160)	**100** (80–130)	.024–.035	.031–.043	.043–.059	.059–.091
P.3.3							**100** (80–160)	**100** (80–130)	.024–.035	.031–.043	.043–.059	.059–.091
P.4.1							**150** (110–200)	**130** (110–160)	.024–.035	.031–.043	.043–.059	.059–.091
P.4.2							**150** (110–200)	**130** (110–160)	.024–.035	.031–.043	.043–.059	.059–.091
M.1.1							**150** (110–200)	**130** (110–160)	.024–.035	.031–.043	.043–.059	.059–.091
M.2.1							**150** (110–200)	**130** (110–160)	.024–.035	.031–.043	.043–.059	.059–.091
M.3.1							**100** (80–160)	**100** (80–130)	.024–.035	.031–.043	.043–.059	.059–.091
K.1.1	**490** (430–720)	**390** (330–490)	.035–.051	.047–.067	.063–.091	.091–.134						
K.1.2	**490** (430–720)	**390** (330–490)	.035–.051	.047–.067	.063–.091	.091–.134						
K.2.1	**570** (490–980)	**490** (430–590)	.035–.051	.047–.067	.063–.091	.091–.134						
K.2.2	**390** (330–590)	**390** (330–490)	.031–.043	.039–.055	.051–.075	.075–.110						
K.3.1	**390** (330–590)	**390** (330–490)	.031–.043	.039–.055	.051–.075	.075–.110						
K.3.2	**390** (330–590)	**390** (330–490)	.031–.043	.039–.055	.051–.075	.075–.110						
N.1.1												
N.1.2												
N.2.1												
N.2.2												
N.2.3												
N.3.1												
N.3.2												
N.3.3												
N.4.1												
S.1.1												
S.1.2												
S.2.1												
S.2.2												
S.2.3												
S.3.1												
S.3.2												
S.3.3												
H.1.1												
H.1.2												
H.1.3												
H.1.4												
H.2.1												
H.3.1												
O.1.1												
O.1.2												
O.2.1												
O.2.2												
O.3.1												

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

Cutting data standard values for REAMAX TS

Index	49 534 ..., 49 535 ... 75J.71, 75H.71 – ASG3000 / TiN						49 596 ... 75J.71 – ASG4000 / TiN					
Nominal Ø in inches ▸			.7086–.8660	.8661–1.2519	1.2520–2.0471	2.0472–2.5590			.7086–.8660	.8661–1.2519	1.2520–2.0471	2.0472–2.5590
Reaming allowance Ø ▸			.008 – .012	.008 – .012	.012 – .016	.012 – .016			.008 – .012	.008 – .012	.012 – .016	.012 – .016
Number of flutes ▸			6	6	8	10			6	6	8	10
	3xD	5xD					3xD	5xD				
	v_c (ft/min)		f (inch/rev)				v_c (ft/min)		f (inch/rev)			
P.1.1	330 (260–460)	260 (200–390)	.031–.004	.039–.055	.051–.075	.075–.110	**330** (260–460)	**260** (200–390)	.039–.051	.047–.067	.067–.091	.094–.134
P.1.2	330 (260–460)	260 (200–390)	.031–.004	.039–.055	.051–.075	.075–.110	**330** (260–460)	**260** (200–390)	.039–.051	.047–.067	.067–.091	.094–.134
P.1.3	330 (260–460)	260 (200–390)	.031–.004	.039–.055	.051–.075	.075–.110	**330** (260–460)	**260** (200–390)	.039–.051	.047–.067	.067–.091	.094–.134
P.1.4	330 (260–460)	260 (200–390)	.031–.004	.039–.055	.051–.075	.075–.110	**330** (260–460)	**260** (200–390)	.039–.051	.047–.067	.067–.091	.094–.134
P.1.5	330 (260–460)	260 (200–390)	.031–.004	.039–.055	.051–.075	.075–.110	**330** (260–460)	**260** (200–390)	.039–.051	.047–.067	.067–.091	.094–.134
P.2.1	330 (260–460)	260 (200–390)	.031–.004	.039–.055	.051–.075	.075–.110						
P.2.2	330 (260–460)	260 (200–390)	.031–.004	.039–.055	.051–.075	.075–.110						
P.2.3	330 (260–460)	260 (200–390)	.031–.004	.039–.055	.051–.075	.075–.110						
P.2.4	330 (260–460)	260 (200–390)	.031–.004	.039–.055	.051–.075	.075–.110						
P.3.1												
P.3.2												
P.3.3												
P.4.1												
P.4.2												
M.1.1												
M.2.1												
M.3.1												
K.1.1	260 (200–430)	260 (200–390)	.035–.051	.047–.067	.063–.091	.091–.134						
K.1.2	260 (200–430)	260 (200–390)	.035–.051	.047–.067	.063–.091	.091–.134						
K.2.1												
K.2.2												
K.3.1												
K.3.2												
N.1.1												
N.1.2												
N.2.1												
N.2.2												
N.2.3												
N.3.1	**390** (330–660)	**390** (330–660)	.035–.051	.043–.067	.059–.091	.091–.134						
N.3.2	**260** (200–490)	**260** (200–390)	.028–.043	.035–.055	.047–.075	.067–.102						
N.3.3	**390** (330–660)	**390** (330–490)	.028–.043	.035–.055	.047–.075	.067–.102						
N.4.1												
S.1.1												
S.1.2												
S.2.1												
S.2.2												
S.2.3												
S.3.1												
S.3.2												
S.3.3												
H.1.1												
H.1.2												
H.1.3												
H.1.4												
H.2.1												
H.3.1												
O.1.1												
O.1.2												
O.2.1												
O.2.2												
O.3.1												

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

Cutting data standard values for REAMAX TS

Index	49 520 ..., 49 527 ... 75J.71, 75H.71 – ASG0106 / TiN						49 526 ..., 49 580 ... 75J.17, 75H.17 – ASG0706 / DBC					
	Nominal Ø in inches ▸		.7086–.8660	.8661–1.2519	1.2520–2.0471	2.0472–2.5590	Nominal Ø in inches ▸		.7086–.8660	.8661–1.2519	1.2520–2.0471	2.0472–2.5590
	Reaming allowance Ø ▸		.008 – .012	.008 – .012	.012 – .016	.012 – .016	Reaming allowance Ø ▸		.008 – .012	.008 – .012	.012 – .016	.012 – .016
	Number of flutes ▸		6	6	8	10	Number of flutes ▸		6	6	8	10
	3xD	5xD					3xD	5xD				
	v_c (ft/min)		f (inch/rev)				v_c (ft/min)		f (inch/rev)			
P.1.1												
P.1.2												
P.1.3												
P.1.4												
P.1.5												
P.2.1												
P.2.2												
P.2.3												
P.2.4												
P.3.1	70 (50–110)	70 (50–90)	.024–.035	.031–.043	.043–.059	.059–.091						
P.3.2	70 (50–110)	70 (50–90)	.024–.035	.031–.043	.043–.059	.059–.091						
P.3.3	70 (50–110)	70 (50–90)	.024–.035	.031–.043	.043–.059	.059–.091						
P.4.1	100 (70–130)	90 (70–110)	.024–.035	.031–.043	.043–.059	.059–.091						
P.4.2	100 (70–130)	90 (70–110)	.024–.035	.031–.043	.043–.059	.059–.091						
M.1.1	100 (70–130)	90 (70–110)	.024–.035	.031–.043	.043–.059	.059–.091						
M.2.1	100 (70–130)	90 (70–110)	.024–.035	.031–.043	.043–.059	.059–.091						
M.3.1	70 (50–110)	70 (50–90)	.024–.035	.031–.043	.043–.059	.059–.091						
K.1.1												
K.1.2												
K.2.1												
K.2.2												
K.3.1												
K.3.2												
N.1.1							**490** (430–980)	**490** (430–660)	.035–.051	.043–.067	.059–.091	.087–.134
N.1.2							**490** (430–980)	**490** (430–660)	.035–.051	.043–.067	.059–.091	.087–.134
N.2.1							**660** (590–980)	**490** (430–660)	.035–.051	.043–.067	.059–.091	.087–.134
N.2.2							**660** (590–980)	**490** (430–660)	.035–.051	.043–.067	.059–.091	.087–.134
N.2.3							**660** (590–980)	**490** (430–660)	.035–.051	.043–.067	.059–.091	.087–.134
N.3.1												
N.3.2												
N.3.3												
N.4.1							**490** (430–980)	**490** (430–660)	.035–.051	.043–.067	.059–.091	.087–.134
S.1.1												
S.1.2												
S.2.1												
S.2.2												
S.2.3												
S.3.1												
S.3.2												
S.3.3												
H.1.1												
H.1.2												
H.1.3												
H.1.4												
H.2.1												
H.3.1												
O.1.1												
O.1.2												
O.2.1												
O.2.2												
O.3.1							820 (720–890)	820 (720–890)	.035–.051	.043–.067	.059–.091	.087–.134

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

Cutting data standard values for REAMAX TS

Index	49 544 ..., 49 539 ... 75J.93, 75H.93 – ASG3000 / DST						49 597 ... 75J.93 – ASG4000 / DST					
	Nominal Ø in inches ▸		.7086–.8660	.8661–1.2519	1.2520–2.0471	2.0472–2.5590	Nominal Ø in inches ▸		.7086–.8660	.8661–1.2519	1.2520–2.0471	2.0472–2.5590
	Reaming allowance Ø ▸		.008 – .012	.008 – .012	.012 – .016	.012 – .016	Reaming allowance Ø ▸		.008 – .012	.008 – .012	.012 – .016	.012 – .016
	Number of flutes ▸		6	6	8	10	Number of flutes ▸		6	6	8	10
	3xD	5xD					3xD	5xD				
	v_c (ft/min)		f (inch/rev)				v_c (ft/min)		f (inch/rev)			
P.1.1	**490** (430–660)	**390** (330–520)	.031–.043	.039–.055	.051–.075	.075–.110	**490** (430–660)	**390** (330–520)	.039–.051	.047–.067	.067–.091	.094–.134
P.1.2	**490** (430–660)	**390** (330–520)	.031–.043	.039–.055	.051–.075	.075–.110	**490** (430–660)	**390** (330–520)	.039–.051	.047–.067	.067–.091	.094–.134
P.1.3	**490** (430–660)	**390** (330–520)	.031–.043	.039–.055	.051–.075	.075–.110	**490** (430–660)	**390** (330–520)	.039–.051	.047–.067	.067–.091	.094–.134
P.1.4	**490** (430–660)	**390** (330–520)	.031–.043	.039–.055	.051–.075	.075–.110	**490** (430–660)	**390** (330–520)	.039–.051	.047–.067	.067–.091	.094–.134
P.1.5	**490** (430–660)	**390** (330–520)	.031–.043	.039–.055	.051–.075	.075–.110	**490** (430–660)	**390** (330–520)	.039–.051	.047–.067	.067–.091	.094–.134
P.2.1	**490** (430–660)	**390** (330–520)	.031–.043	.039–.055	.051–.075	.075–.110	**490** (430–660)	**390** (330–520)	.039–.051	.047–.067	.067–.091	.094–.134
P.2.2	**490** (430–660)	**390** (330–520)	.031–.043	.039–.055	.051–.075	.075–.110	**490** (430–660)	**390** (330–520)	.039–.051	.047–.067	.067–.091	.094–.134
P.2.3	**490** (430–660)	**390** (330–520)	.031–.043	.039–.055	.051–.075	.075–.110	**490** (430–660)	**390** (330–520)	.039–.051	.047–.067	.067–.091	.094–.134
P.2.4	**490** (430–660)	**390** (330–520)	.031–.043	.039–.055	.051–.075	.075–.110	**490** (430–660)	**390** (330–520)	.039–.051	.047–.067	.067–.091	.094–.134
P.3.1												
P.3.2												
P.3.3												
P.4.1												
P.4.2												
M.1.1												
M.2.1												
M.3.1												
K.1.1												
K.1.2												
K.2.1	**570** (490–980)	**490** (430–590)	.035–.051	.047–.067	.063–.091	.091–.134	**740** (660–980)	**590** (520–790)	.047–.063	.059–.079	.079–.106	.114–.161
K.2.2	**380** (330–490)	**330** (260–390)	.031–.043	.039–.055	.051–.075	.075–.110	**390** (330–490)	**330** (260–390)	.047–.063	.059–.079	.079–.106	.114–.161
K.3.1	**390** (330–590)	**390** (330–490)	.031–.043	.039–.055	.051–.075	.075–.110						
K.3.2	**390** (330–590)	**390** (330–490)	.031–.043	.039–.055	.051–.075	.075–.110	**390** (330–590)	**390** (330–490)	.039–.051	.047–.067	.067–.091	.094–.134
N.1.1												
N.1.2												
N.2.1												
N.2.2												
N.2.3												
N.3.1	490 (430–1050)	490 (430–660)	.035–.051	.043–.067	.059–.091	.083–.122						
N.3.2	490 (430–1050)	490 (430–660)	.035–.051	.043–.067	.059–.091	.083–.122						
N.3.3												
N.4.1												
S.1.1												
S.1.2												
S.2.1												
S.2.2												
S.2.3												
S.3.1												
S.3.2												
S.3.3												
H.1.1												
H.1.2												
H.1.3												
H.1.4												
H.2.1												
H.3.1												
O.1.1												
O.1.2												
O.2.1												
O.2.2												
O.3.1												

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

Cutting data standard values for REAMAX TS

Index	49 531 ..., 49 530 ...					
	75J.21, 75H.21 – ASG03 / K10					
	Nominal Ø in inches ▸		.7086–.8660	.8661–1.2519	1.2520–2.0471	2.0472–2.5590
	Reaming allowance Ø ▸		.008 – .012	.008 – .012	.012 – .016	.012 – .016
	Number of flutes ▸		6	6	8	10
	3xD	5xD				
	v_c (ft/min)		f (inch/rev)			
P.1.1						
P.1.2						
P.1.3						
P.1.4						
P.1.5						
P.2.1						
P.2.2						
P.2.3						
P.2.4						
P.3.1						
P.3.2						
P.3.3						
P.4.1						
P.4.2						
M.1.1						
M.2.1						
M.3.1						
K.1.1						
K.1.2						
K.2.1						
K.2.2						
K.3.1						
K.3.2						
N.1.1						
N.1.2						
N.2.1						
N.2.2						
N.2.3						
N.3.1						
N.3.2						
N.3.3						
N.4.1						
S.1.1						
S.1.2						
S.2.1						
S.2.2						
S.2.3						
S.3.1	**30** (20–40)	**30** (20–40)	.024–.035	.031–.047	.043–.063	.063–.094
S.3.2	**30** (20–40)	**30** (20–40)	.024–.035	.031–.047	.043–.063	.063–.094
S.3.3	**30** (20–40)	**30** (20–40)	.024–.035	.031–.047	.043–.063	.063–.094
H.1.1						
H.1.2						
H.1.3						
H.1.4						
H.2.1						
H.3.1						
O.1.1						
O.1.2						
O.2.1						
O.2.2						
O.3.1						

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

Cutting data standard values for REAMAX

Index	40 560 … 640.65 – ASG3000 / HM-DBG-P					40 551 … 640.65 – ASG0106 / HM-DBG-P				
Nominal Ø in inches ▸			.4724 – .8661	.8661 – 1.2598	1.2599 – 1.5748			.4724 – .8661	.8661 – 1.2598	1.2599 – 1.5748
Reaming allowance Ø ▸			.004 – .012	.008 – .016	.008 – .016			.004 – .012	.008 – .016	.008 – .016
Number of flutes ▸			6	8	8			6	8	8
	3xD	5xD				3xD	5xD			
	v_c (ft/min)		f (inch/rev)			v_c (ft/min)		f (inch/rev)		
P.1.1	**490** (430–660)	**390** (330–520)	.035–.047	.059–.079	.059–.079					
P.1.2	**490** (430–660)	**390** (330–520)	.035–.047	.059–.079	.059–.079					
P.1.3	**490** (430–660)	**390** (330–520)	.035–.047	.059–.079	.059–.079					
P.1.4	**490** (430–660)	**390** (330–520)	.035–.047	.059–.079	.059–.079					
P.1.5	**490** (430–660)	**390** (330–520)	.035–.047	.059–.079	.059–.079					
P.2.1	**490** (430–660)	**390** (330–520)	.035–.047	.059–.079	.059–.079					
P.2.2	**490** (430–660)	**390** (330–520)	.035–.047	.059–.079	.059–.079					
P.2.3	**490** (430–660)	**390** (330–520)	.035–.047	.059–.079	.059–.079					
P.2.4	**490** (430–660)	**390** (330–520)	.035–.047	.059–.079	.059–.079	**490** (430–660)	**390** (330–520)	.035–.047	.059–.079	.059–.079
P.3.1						**100** (80–60)	**30** (25–40)	.028–.035	.047–.063	.047–.063
P.3.2						**100** (80–60)	**30** (25–40)	.028–.035	.047–.063	.047–.063
P.3.3						**100** (80–60)	**30** (25–40)	.028–.035	.047–.063	.047–.063
P.4.1						**45** (35–60)	**40** (35–50)	.028–.035	.047–.063	.047–.063
P.4.2						**150** (110–200)	**40** (35–50)	.028–.035	.047–.063	.047–.063
M.1.1						**100** (80–160)	**130** (110–160)	.028–.035	.047–.063	.047–.063
M.2.1						**100** (80–160)	**100** (80–160)	.028–.035	.047–.063	.047–.063
M.3.1						**100** (80–160)	**100** (80–160)	.028–.035	.047–.063	.047–.063
K.1.1	**660** (590–820)	**520** (460–660)	.039–.055	.051–.075	.051–.075					
K.1.2	**660** (590–820)	**520** (460–660)	.039–.055	.051–.075	.051–.075					
K.2.1	**740** (660–980)	**590** (520–790)	.039–.055	.051–.075	.051–.075					
K.2.2	**380** (330–490)	**330** (260–390)	.035–.047	.047–.063	.047–.063					
K.3.1	**490** (430–820)	**390** (330–660)	.035–.047	.047–.063	.047–.063					
K.3.2	**390** (330–490)	**330** (260–390)	.035–.047	.047–.063	.047–.063					
N.1.1										
N.1.2										
N.2.1										
N.2.2										
N.2.3										
N.3.1										
N.3.2										
N.3.3										
N.4.1										
S.1.1										
S.1.2										
S.2.1										
S.2.2										
S.2.3										
S.3.1										
S.3.2										
S.3.3										
H.1.1						**130** (110–200)	**130** (110–200)	.016–.031	.024–.039	.024–.039
H.1.2						**130** (110–200)	**130** (110–200)	.016–.031	.024–.039	.024–.039
H.1.3						**100** (80–160)	**100** (80–160)	.016–.031	.024–.039	.024–.039
H.1.4										
H.2.1						**130** (110–200)	**130** (110–200)	.016–.031	.024–.039	.024–.039
H.3.1						**130** (110–200)	**130** (110–200)	.016–.031	.024–.039	.024–.039
O.1.1										
O.1.2										
O.2.1										
O.2.2										
O.3.1										

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

Cutting data standard values for REAMAX

Index	40 505 … 640.71 – ASG3000 / HM-TiN					40 570 … 640.27 – ASG0706 / HM-DBC				
Nominal Ø in inches ▸			.4724 – .8661	.8661 – 1.2598	1.2599 – 1.5748			.4724 – .8661	.8661 – 1.2598	1.2599 – 1.5748
Reaming allowance Ø ▸			.004 – .012	.008 – .016	.008 – .016			.004 – .012	.008 – .016	.008 – .016
Number of flutes ▸			6	8	8			6	8	8
	3xD	5xD				3xD	5xD			
	v_c (ft/min)		f (inch/rev)			v_c (ft/min)		f (inch/rev)		
P.1.1	330 (260–460)	260 (200–750)	.035–.047	.059–.079	.059–.079					
P.1.2	330 (260–460)	260 (200–750)	.035–.047	.059–.079	.059–.079					
P.1.3	330 (260–460)	260 (200–750)	.035–.047	.059–.079	.059–.079					
P.1.4	330 (260–460)	260 (200–750)	.035–.047	.059–.079	.059–.079					
P.1.5	330 (260–460)	260 (200–750)	.035–.047	.059–.079	.059–.079					
P.2.1	330 (260–460)	260 (200–750)	.035–.047	.059–.079	.059–.079					
P.2.2	330 (260–460)	260 (200–750)	.035–.047	.059–.079	.059–.079					
P.2.3	330 (260–460)	260 (200–750)	.035–.047	.059–.079	.059–.079					
P.2.4	330 (260–460)	260 (200–750)	.035–.047	.059–.079	.059–.079					
P.3.1										
P.3.2										
P.3.3										
P.4.1										
P.4.2										
M.1.1										
M.2.1										
M.3.1										
K.1.1	260 (200–430)	260 (200–750)	.039–.055	.071–.094	.071–.094					
K.1.2	260 (200–430)	260 (200–750)	.039–.055	.071–.094	.071–.094					
K.2.1										
K.2.2										
K.3.1										
K.3.2										
N.1.1						**490** (430–980)	**490** (430–660)	.039–.055	.067–.094	.067–.094
N.1.2						**660** (590–980)	**490** (430–660)	.039–.055	.067–.094	.067–.094
N.2.1						**660** (590–980)	**490** (430–660)	.039–.055	.067–.094	.067–.094
N.2.2						**660** (590–980)	**490** (430–660)	.039–.055	.067–.094	.067–.094
N.2.3										
N.3.1	**390** (330–660)	**390** (330–490)	.039–.055	.067–.094	.067–.094					
N.3.2	**390** (330–660)	**390** (330–490)	.039–.055	.067–.094	.067–.094					
N.3.3	**260** (200–490)	**260** (200–390)	.031–.047	.055–.079	.055–.079					
N.4.1										
S.1.1										
S.1.2										
S.2.1										
S.2.2										
S.2.3										
S.3.1										
S.3.2										
S.3.3										
H.1.1										
H.1.2										
H.1.3										
H.1.4										
H.2.1										
H.3.1										
O.1.1										
O.1.2										
O.2.1										
O.2.2										
O.3.1						820 (720–890)	250 (220–270)	.039–.055	.067–.094	.067–.094

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

Cutting data standard values for REAMAX

Index	40 525 … 640.93 – ASG3000 / DST					40 536 … 640.93 – ASG4000 / DST				
Nominal Ø in inches ▸			.4724 – .8661	.8661 – 1.2598	1.2599 – 1.5748			.4724 – .8661	.8661 – 1.2598	1.2599 – 1.5748
Reaming allowance Ø ▸			.004 – .012	.008 – .016	.008 – .016			.004 – .012	.008 – .016	.008 – .016
Number of flutes ▸			6	8	8			6	8	8
	3xD	5xD				3xD	5xD			
	v_c (ft/min)		f (inch/rev)			v_c (ft/min)		f (inch/rev)		
P.1.1	**490** (460–660)	**390** (330–520)	.035–.047	.059–.079	.059–.079	**490** (430–660)	**390** (330–520)	.043–.055	.071–.094	.071–.094
P.1.2	**490** (460–660)	**390** (330–520)	.035–.047	.059–.079	.059–.079	**490** (430–660)	**390** (330–520)	.043–.055	.071–.094	.071–.094
P.1.3	**490** (460–660)	**390** (330–520)	.035–.047	.059–.079	.059–.079	**490** (430–660)	**390** (330–520)	.043–.055	.071–.094	.071–.094
P.1.4	**490** (460–660)	**390** (330–520)	.035–.047	.059–.079	.059–.079	**490** (430–660)	**390** (330–520)	.043–.055	.071–.094	.071–.094
P.1.5	**490** (460–660)	**390** (330–520)	.035–.047	.059–.079	.059–.079	**490** (430–660)	**390** (330–520)	.043–.055	.071–.094	.071–.094
P.2.1	**490** (460–660)	**390** (330–520)	.035–.047	.059–.079	.059–.079	**490** (430–660)	**390** (330–520)	.043–.055	.071–.094	.071–.094
P.2.2	**490** (460–660)	**390** (330–520)	.035–.047	.059–.079	.059–.079	**490** (430–660)	**390** (330–520)	.043–.055	.071–.094	.071–.094
P.2.3	**490** (460–660)	**390** (330–520)	.035–.047	.059–.079	.059–.079	**490** (430–660)	**390** (330–520)	.043–.055	.071–.094	.071–.094
P.2.4										
P.3.1										
P.3.2										
P.3.3										
P.4.1										
P.4.2										
M.1.1										
M.2.1										
M.3.1										
K.1.1										
K.1.2										
K.2.1	**570** (490–980)	**490** (430–590)	.039–.055	.071–.094	.071–.094	570 (490–980)	490 (430–590)	.047–.063	.059–.079	.079–.106
K.2.2	**490** (430–820)	**390** (330–520)	.039–.055	.071–.094	.071–.094	390 (330–590)	390 (330–490)	.047–.063	.059–.079	.079–.106
K.3.1	**490** (430–820)	**390** (330–520)	.039–.055	.071–.094	.071–.094					
K.3.2	**390** (330–590)	**390** (330–520)	.035–.047	.059–.079	.059–.079	390 (330–590)	390 (330–490)	.039–.051	.047–.067	.067–.091
N.1.1										
N.1.2										
N.2.1										
N.2.2										
N.2.3										
N.3.1	490 (430–980)	490 (430–660)	.039–.055	.067–.094	.067–.094					
N.3.2	490 (430–980)	490 (430–660)	.039–.055	.067–.094	.067–.094					
N.3.3										
N.4.1										
S.1.1										
S.1.2										
S.2.1										
S.2.2										
S.2.3										
S.3.1										
S.3.2										
S.3.3										
H.1.1										
H.1.2										
H.1.3										
H.1.4										
H.2.1										
H.3.1										
O.1.1										
O.1.2										
O.2.1										
O.2.2										
O.3.1										

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

Cutting data standard values for Monomax

Index	49 657 ..., 49 665 ... 56H.65, 56Q.65 – ASG3000 / DBG-P						49 597 ... 75J.93 – ASG4000 / DST					
	Nominal Ø in inches ▸		.2205–.3503	.3504–.4727	.4728–.8664	.8665–1.0196	Nominal Ø in inches ▸		.2205–.3503	.3504–.4727	.4728–.8664	.8665–1.0196
	Reaming allowance Ø ▸		.004 – .008	.004 – .012	.008 – .012	.008 –. 016	Reaming allowance Ø ▸		.004 – .008	.004 – .012	.008 – .012	.008 –. 016
	Number of flutes ▸		4	6	6	6	Number of flutes ▸		4	6	6	6
	3xD	5xD					3xD	5xD				
	v_c (ft/min)		f (inch/rev)				v_c (ft/min)		f (inch/rev)			
P.1.1	**490** (430–660)	**390** (330–520)	.012–.020	.020–.028	.028–.039	0.90–1.30						
P.1.2	**490** (430–660)	**390** (330–520)	.012–.020	.020–.028	.028–.039	0.90–1.30						
P.1.3	**490** (430–660)	**390** (330–520)	.012–.020	.020–.028	.028–.039	0.90–1.30						
P.1.4	**490** (430–660)	**390** (330–520)	.012–.020	.020–.028	.028–.039	0.90–1.30						
P.1.5	**490** (430–660)	**390** (330–520)	.012–.020	.020–.028	.028–.039	0.90–1.30						
P.2.1	**490** (430–660)	**390** (330–520)	.012–.020	.020–.028	.028–.039	0.90–1.30						
P.2.2	**490** (430–660)	**390** (330–520)	.012–.020	.020–.028	.028–.039	0.90–1.30						
P.2.3	**490** (430–660)	**390** (330–520)	.012–.020	.020–.028	.028–.039	0.90–1.30						
P.2.4	**200** (160–330)	**390** (330–520)	.008–.012	.016–.020	.020–.028	0.60–0.90						
P.3.1												
P.3.2												
P.3.3												
P.4.1												
P.4.2												
M.1.1												
M.2.1												
M.3.1												
K.1.1	**490** (430–720)	**390** (330–490)	.016–.024	.028–.035	.035–.047	.043–.059	**490** (430–720)	**390** (330–490)	.016–.024	.028–.035	.035–.047	.043–.059
K.1.2	**490** (430–720)	**390** (330–490)	.016–.024	.028–.035	.035–.047	.043–.059	**490** (430–720)	**390** (330–490)	.016–.024	.028–.035	.035–.047	.043–.059
K.2.1	**570** (490–980)	**490** (430–590)	.016–.024	.028–.035	.035–.047	.043–.059	**570** (490–980)	**490** (430–590)	.016–.024	.028–.035	.035–.047	.043–.059
K.2.2	**390** (330–590)	**390** (330–490)	.012–.020	.020–.028	.028–.039	.035–.051	**390** (330–590)	**390** (330–490)	.012–.020	.020–.028	.028–.039	.035–.051
K.3.1	**490** (430–820)	**390** (330–520)	.016–.024	.028–.035	.035–.047	.043–.059	**490** (430–820)	**390** (330–520)	.016–.024	.028–.035	.035–.047	.043–.059
K.3.2	**390** (330–590)	**390** (330–490)	.012–.020	.020–.028	.028–.039	.035–.051	**390** (330–590)	**390** (330–490)	.012–.020	.020–.028	.028–.039	.035–.051
N.1.1												
N.1.2												
N.2.1												
N.2.2												
N.2.3												
N.3.1												
N.3.2												
N.3.3												
N.4.1												
S.1.1												
S.1.2												
S.2.1												
S.2.2												
S.2.3												
S.3.1												
S.3.2												
S.3.3												
H.1.1												
H.1.2												
H.1.3												
H.1.4												
H.2.1												
H.3.1												
O.1.1												
O.1.2												
O.2.1												
O.2.2												
O.3.1												

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

Cutting data standard values for Monomax

Index	49 652 ..., 49 653... 56J.65, 56R.65 – ASG0106 / DBG-P						49 656 ..., 49 661 ..., 49 660 ..., 49 664 ... 56J.71, 56R.71, 56H.71, 56Q.71 – ASG0106 / TiN					
	Nominal Ø in inches ▸		.2205–.3503	.3504–.4727	.4728–.8664	.8665–1.0196	Nominal Ø in inches ▸		.2205–.3503	.3504–.4727	.4728–.8664	.8665–1.0196
	Reaming allowance Ø ▸		.004 – .008	.004 – .012	.008 – .012	.008 –. 016	Reaming allowance Ø ▸		.004 – .008	.004 – .012	.008 – .012	.008 –. 016
	Number of flutes ▸		4	6	6	6	Number of flutes ▸		4	6	6	6
	3xD	5xD					3xD	5xD				
	v_c (ft/min)		f (inch/rev)				v_c (ft/min)		f (inch/rev)			
P.1.1												
P.1.2												
P.1.3												
P.1.4												
P.1.5												
P.2.1												
P.2.2												
P.2.3												
P.2.4	**200** (160–330)	**200** (160–330)	.008–.012	.016–.020	.020–.028	.024–.035						
P.3.1	**130** (110–200)	**130** (110–200)	.008–.012	.016–.020	.020–.028	.024–.035	100 (80–160)	100 (80–130)	.012–.016	.016–.024	.024–.031	.028–.039
P.3.2	**130** (110–200)	**130** (110–200)	.008–.012	.016–.020	.020–.028	.024–.035	100 (80–160)	100 (80–130)	.012–.016	.016–.024	.024–.031	.028–.039
P.3.3	**100** (80–160)	**100** (80–130)	.012–.016	.016–.024	.024–.031	.028–.039	100 (80–160)	100 (80–130)	.012–.016	.016–.024	.024–.031	.028–.039
P.4.1	**150** (110–200)	**130** (110–160)	.012–.016	.016–.024	.024–.031	.028–.039	150 (110–200)	130 (110–160)	.012–.016	.016–.024	.024–.031	.028–.039
P.4.2	**150** (110–200)	**130** (110–160)	.012–.016	.016–.024	.024–.031	.028–.039	150 (110–200)	130 (110–160)	.012–.016	.016–.024	.024–.031	.028–.039
M.1.1	**330** (260–520)	**100** (80–130)	.012–.016	.016–.024	.024–.031	.028–.039	150 (110–200)	130 (110–160)	.012–.016	.016–.024	.024–.031	.028–.039
M.2.1	**330** (260–520)	**100** (80–130)	.012–.016	.016–.024	.024–.031	.028–.039	150 (110–200)	130 (110–160)	.012–.016	.016–.024	.024–.031	.028–.039
M.3.1	**330** (260–520)	**100** (80–130)	.012–.016	.016–.024	.024–.031	.028–.039	100 (80–160)	100 (80–130)	.012–.016	.016–.024	.024–.031	.028–.039
K.1.1												
K.1.2												
K.2.1												
K.2.2												
K.3.1												
K.3.2												
N.1.1												
N.1.2												
N.2.1												
N.2.2												
N.2.3												
N.3.1												
N.3.2												
N.3.3												
N.4.1												
S.1.1												
S.1.2												
S.2.1												
S.2.2												
S.2.3												
S.3.1												
S.3.2												
S.3.3												
H.1.1												
H.1.2												
H.1.3												
H.1.4												
H.2.1												
H.3.1												
O.1.1												
O.1.2												
O.2.1												
O.2.2												
O.3.1												

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

Cutting data standard values for Monomax

Index	49 605 ..., 49 606 ..., 49 684 ..., 49 685 ... 56J.71, 56R.71, 56H.71, 56Q.71 – ASG3000 / TiN						49 688 ..., 49 689 ... 56J.71, 56R.71 – ASG4000 / TiN					
	Nominal Ø in inch ▸		.2205–.3503	.3504–.4727	.4728–.8664	.8665–1.0196	Nominal Ø in inch ▸		.2205–.3503	.3504–.4727	.4728–.8664	.8665–1.0196
	Reaming allowance Ø ▸		.004 – .008	.004 – .012	.008 – .012	.008 – .016	Reaming allowance Ø ▸		.004 – .008	.004 – .012	.008 – .012	.008 – .016
	Number of flutes ▸		4	6	6	6	Number of flutes ▸		4	6	6	6
	3xD	5xD					3xD	5xD				
	v_c (ft/min)		f (inch/rev)				v_c (ft/min)		f (inch/rev)			
P.1.1	330 (260–460)	260 (200–390)	.012–.020	.020–.028	.028–.039	.035–.051	**330** (260–460)	**260** (200–390)	.016–.024	.028–.035	.035–.047	.047–.059
P.1.2	330 (260–460)	260 (200–390)	.012–.020	.020–.028	.028–.039	.035–.051	**330** (260–460)	**260** (200–390)	.016–.024	.028–.035	.035–.047	.047–.059
P.1.3	330 (260–460)	260 (200–390)	.012–.020	.020–.028	.028–.039	.035–.051	**330** (260–460)	**260** (200–390)	.016–.024	.028–.035	.035–.047	.047–.059
P.1.4	330 (260–460)	260 (200–390)	.012–.020	.020–.028	.028–.039	.035–.051	**330** (260–460)	**260** (200–390)	.016–.024	.028–.035	.035–.047	.047–.059
P.1.5	330 (260–460)	260 (200–390)	.012–.020	.020–.028	.028–.039	.035–.051	**330** (260–460)	**260** (200–390)	.016–.024	.028–.035	.035–.047	.047–.059
P.2.1	330 (260–460)	260 (200–390)	.012–.020	.020–.028	.028–.039	.035–.051						
P.2.2	330 (260–460)	260 (200–390)	.012–.020	.020–.028	.028–.039	.035–.051						
P.2.3	330 (260–460)	260 (200–390)	.012–.020	.020–.028	.028–.039	.035–.051						
P.2.4												
P.3.1												
P.3.2												
P.3.3												
P.4.1												
P.4.2												
M.1.1												
M.2.1												
M.3.1												
K.1.1	260 (200–430)	260 (200–390)	.016–.024	.028–.035	.035–.047	.043–.059						
K.1.2	260 (200–430)	260 (200–390)	.016–.024	.028–.035	.035–.047	.043–.059						
K.2.1												
K.2.2												
K.3.1												
K.3.2												
N.1.1												
N.1.2												
N.2.1												
N.2.2												
N.2.3												
N.3.1	**390** (330–660)	**390** (330–490)	.016–.024	.024–.035	.031–.047	.043–.059						
N.3.2	**390** (330–660)	**390** (330–490)	.016–.024	.024–.035	.031–.047	.043–.059						
N.3.3	**260** (200–490)	**260** (200–390)	.016–.024	.024–.035	.031–.047	.043–.059						
N.4.1												
S.1.1												
S.1.2												
S.2.1												
S.2.2												
S.2.3												
S.3.1												
S.3.2												
S.3.3												
H.1.1												
H.1.2												
H.1.3												
H.1.4												
H.2.1												
H.3.1												
O.1.1												
O.1.2												
O.2.1												
O.2.2												
O.3.1												

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

Cutting data standard values for Monomax

Index	49 656 ..., 49 661 ..., 49 660 ..., 49 664 ... 56J.71, 56R.71, 56H.71, 56Q.71 – ASG0106 / TiN						49 648 ..., 49 649 ..., 49 640 ..., 49 641 ... 56J.17, 56R.17, 56H.17, 56Q.17 – ASG0706 / DBC					
	Nominal Ø in inches ▸		.2205–.3503	.3504–.4727	.4728–.8664	.8665–1.0196	Nominal Ø in inches ▸		.2205–.3503	.3504–.4727	.4728–.8664	.8665–1.0196
	Reaming allowance Ø ▸		.004 – .008	.004 – .012	.008 – .012	.008 –. 016	Reaming allowance Ø ▸		.004 – .008	.004 – .012	.008 – .012	.008 –. 016
	Number of flutes ▸		4	6	6	6	Number of flutes ▸		4	6	6	6
	3xD	5xD					3xD	5xD				
	v_c (ft/min)		f (inch/rev)				v_c (ft/min)		f (inch/rev)			
P.1.1												
P.1.2												
P.1.3												
P.1.4												
P.1.5												
P.2.1												
P.2.2												
P.2.3												
P.2.4												
P.3.1	100 (80–160)	100 (80–130)	.012–.016	.016–.024	.024–.031	.028–.039						
P.3.2	100 (80–160)	100 (80–130)	.012–.016	.016–.024	.024–.031	.028–.039						
P.3.3	100 (80–160)	100 (80–130)	.012–.016	.016–.024	.024–.031	.028–.039						
P.4.1	150 (110–200)	130 (110–160)	.012–.016	.016–.024	.024–.031	.028–.039						
P.4.2	150 (110–200)	130 (110–160)	.012–.016	.016–.024	.024–.031	.028–.039						
M.1.1	150 (110–200)	130 (110–160)	.012–.016	.016–.024	.024–.031	.028–.039						
M.2.1	150 (110–200)	130 (110–160)	.012–.016	.016–.024	.024–.031	.028–.039						
M.3.1	100 (80–160)	100 (80–130)	.012–.016	.016–.024	.024–.031	.028–.039						
K.1.1												
K.1.2												
K.2.1												
K.2.2												
K.3.1												
K.3.2												
N.1.1							**490** (430–980)	**490** (430–660)	.016–.024	.016–.024	.031–.047	.031–.059
N.1.2							**490** (430–980)	**490** (430–660)	.016–.024	.016–.024	.031–.047	.031–.059
N.2.1							**660** (590–980)	**490** (430–660)	.016–.024	.016–.024	.031–.047	.031–.059
N.2.2							**660** (590–980)	**490** (430–660)	.016–.024	.016–.024	.031–.047	.031–.059
N.2.3							**660** (590–980)	**490** (430–660)	.016–.024	.016–.024	.031–.047	.031–.059
N.3.1												
N.3.2												
N.3.3												
N.4.1												
S.1.1												
S.1.2												
S.2.1												
S.2.2												
S.2.3												
S.3.1												
S.3.2												
S.3.3												
H.1.1												
H.1.2												
H.1.3												
H.1.4												
H.2.1												
H.3.1												
O.1.1												
O.1.2												
O.2.1												
O.2.2												
O.3.1							820 (720–890)	820 (720–890)	.016–.024	.016–.024	.031–.047	.031–.059

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

Cutting data standard values for Monomax

Index	49 625 ..., 49 626 ..., 49 680 ..., 49 681 ... 56J.93, 56R.93, 56H.93, 56Q.93 – ASG3000 / DST						49 648 ..., 49 649 ..., 49 640 ..., 49 641 ... 56J.93, 56R.93 – ASG4000 / DST					
	Nominal Ø in inches ▸		.2205–.3503	.3504–.4727	.4728–.8664	.8665–1.0196	Nominal Ø in inches ▸		.2205–.3503	.3504–.4727	.4728–.8664	.8665–1.0196
	Reaming allowance Ø ▸		.004 – .008	.004 – .012	.008 – .012	.008 – .016	Reaming allowance Ø ▸		.004 – .008	.004 – .012	.008 – .012	.008 – .016
	Number of flutes ▸		4	6	6	6	Number of flutes ▸		4	6	6	6
	3xD	5xD					3xD	5xD				
	v_c (ft/min)		f (inch/rev)				v_c (ft/min)		f (inch/rev)			
P.1.1	**490** (430–660)	**390** (330–520)	.012–.020	.020–.028	.028–.039	.035–.051	**490** (430–660)	**390** (330–520)	.016–.024	.028–.035	.035–.047	.047–.059
P.1.2	**490** (430–660)	**390** (330–520)	.012–.020	.020–.028	.028–.039	.035–.051	**490** (430–660)	**390** (330–520)	.016–.024	.028–.035	.035–.047	.047–.059
P.1.3	**490** (430–660)	**390** (330–520)	.012–.020	.020–.028	.028–.039	.035–.051	**490** (430–660)	**390** (330–520)	.016–.024	.028–.035	.035–.047	.047–.059
P.1.4	**490** (430–660)	**390** (330–520)	.012–.020	.020–.028	.028–.039	.035–.051	**490** (430–660)	**390** (330–520)	.016–.024	.028–.035	.035–.047	.047–.059
P.1.5	**490** (430–660)	**390** (330–520)	.012–.020	.020–.028	.028–.039	.035–.051	**490** (430–660)	**390** (330–520)	.016–.024	.028–.035	.035–.047	.047–.059
P.2.1	**490** (430–660)	**390** (330–520)	.012–.020	.020–.028	.028–.039	.035–.051	**490** (430–660)	**390** (330–520)	.016–.024	.028–.035	.035–.047	.047–.059
P.2.2	**490** (430–660)	**390** (330–520)	.012–.020	.020–.028	.028–.039	.035–.051	**490** (430–660)	**390** (330–520)	.016–.024	.028–.035	.035–.047	.047–.059
P.2.3	**490** (430–660)	**390** (330–520)	.012–.020	.020–.028	.028–.039	.035–.051	**490** (430–660)	**390** (330–520)	.016–.024	.028–.035	.035–.047	.047–.059
P.2.4												
P.3.1												
P.3.2												
P.3.3												
P.4.1												
P.4.2												
M.1.1												
M.2.1												
M.3.1												
K.1.1												
K.1.2												
K.2.1	**570** (490–980)	**490** (430–590)	.016–.024	.028–.035	.035–.047	.043–.059	570 (490–980)	490 (430–590)	.016–.024	.028–.035	.035–.047	.043–.059
K.2.2	**390** (330–490)	**330** (260–390)	.012–.020	.020–.028	.028–.039	.035–.051	390 (330–590)	390 (330–490)	.012–.020	.020–.028	.028–.039	.035–.051
K.3.1	**490** (430–820	**390** (330–660)	.016–.024	.028–.035	.035–.047	.043–.059	390 (330–590)	390 (330–490)	.012–.020	.020–.028	.028–.039	.035–.051
K.3.2	**390** (330–590)	**390** (330–490)	.012–.020	.020–.028	.028–.039	.035–.051	390 (330–590)	390 (330–490)	.012–.020	.020–.028	.028–.039	.035–.051
N.1.1												
N.1.2												
N.2.1												
N.2.2												
N.2.3												
N.3.1	490 (430–980)	490 (430–660)	.016–.024	.024–.035	.031–.047	.043–.059						
N.3.2	490 (430–980)	490 (430–660)	.016–.024	.024–.035	.031–.047	.043–.059						
N.3.3												
N.4.1												
S.1.1												
S.1.2												
S.2.1												
S.2.2												
S.2.3												
S.3.1												
S.3.2												
S.3.3												
H.1.1												
H.1.2												
H.1.3												
H.1.4												
H.2.1												
H.3.1												
O.1.1												
O.1.2												
O.2.1												
O.2.2												
O.3.1												

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

Cutting data standard values for Monomax

Index	49 672 ..., 49 673 ..., 49 668 ..., 49 669 ...					
	56J.21, 56Q.21, 56H.21, 56R.21 – ASG03 / K10					
	Nominal Ø in inches ▸		.2205–.3503	.3504–.4727	.4728–.8664	.8665–1.0196
	Reaming allowance Ø ▸		.004 – .008	.004 – .012	.008 – .012	.008 –. 016
	Number of flutes ▸		4	6	6	6
	3xD	5xD				
	v_c (ft/min)		f (inch/rev)			
P.1.1						
P.1.2						
P.1.3						
P.1.4						
P.1.5						
P.2.1						
P.2.2						
P.2.3						
P.2.4						
P.3.1						
P.3.2						
P.3.3						
P.4.1						
P.4.2						
M.1.1						
M.2.1						
M.3.1						
K.1.1						
K.1.2						
K.2.1						
K.2.2						
K.3.1						
K.3.2						
N.1.1						
N.1.2						
N.2.1						
N.2.2						
N.2.3						
N.3.1						
N.3.2						
N.3.3						
N.4.1						
S.1.1						
S.1.2						
S.2.1						
S.2.2						
S.2.3						
S.3.1	**30** (20–40)	**30** (20–40)	.012–.016	.016–.024	.024–.031	.031–.043
S.3.2	**30** (20–40)	**30** (20–40)	.012–.016	.016–.024	.024–.031	.031–.043
S.3.3	**30** (20–40)	**30** (20–40)	.012–.016	.016–.024	.024–.031	.031–.043
H.1.1						
H.1.2						
H.1.3						
H.1.4						
H.2.1						
H.3.1						
O.1.1						
O.1.2						
O.2.1						
O.2.2						
O.3.1						

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

Cutting data standard values for Fullmax, long

Index	UNI	40 484 …, 40 485 …, 40 486 …, 40 487 … Type UNI											
	Ø range (inch) ▸	Ø .1169 – .1595		Ø .1596 – .2380		Ø .2381 – .2970		Ø .2971 – .4745		Ø .4746 – .6320		Ø .6321 – .7895	
	Number of flutes ▸	4		4		6		6		6		6	
	v_c (ft/min)	f (inch/rev)	Reaming allowance Ø	f (inch/rev)	Reaming allowance Ø	f (inch/rev)	Reaming allowance Ø	f (inch/rev)	Reaming allowance Ø	f (inch/rev)	Reaming allowance Ø	f (inch/rev)	Reaming allowance Ø
P.1.1	**590** (520–820)	.024–.031	.004–.008	.028–.035	.004–.008	.051–.063	.008	.055–.071	.008	.059–.075	.008–.012	.071–.087	.012
P.1.2	**590** (520–820)	.024–.031	.004–.008	.028–.035	.004–.008	.051–.063	.008	.055–.071	.008	.059–.075	.008–.012	.071–.087	.012
P.1.3	**590** (520–820)	.024–.031	.004–.008	.028–.035	.004–.008	.051–.063	.008	.055–.071	.008	.059–.075	.008–.012	.071–.087	.012
P.1.4	**590** (520–820)	.024–.031	.004–.008	.028–.035	.004–.008	.051–.063	.008	.055–.071	.008	.059–.075	.008–.012	.071–.087	.012
P.1.5	**590** (520–820)	.024–.031	.004–.008	.028–.035	.004–.008	.051–.063	.008	.055–.071	.008	.059–.075	.008–.012	.071–.087	.012
P.2.1	**590** (520–820)	.024–.031	.004–.008	.028–.035	.004–.008	.051–.063	.008	.055–.071	.008	.059–.075	.008–.012	.071–.087	.012
P.2.2	**590** (520–820)	.024–.031	.004–.008	.028–.035	.004–.008	.051–.063	.008	.055–.071	.008	.059–.075	.008–.012	.071–.087	.012
P.2.3	**590** (520–820)	.024–.031	.004–.008	.028–.035	.004–.008	.051–.063	.008	.055–.071	.008	.059–.075	.008–.012	.071–.087	.012
P.2.4	**260** (230–390)	.016–.020	.004–.008	.016–.024	.004–.008	.035–.043	.008	.039–.047	.008	.039–.051	.008–.012	.051–.059	.012
P.3.1	**70** (50–130)	.013–.020	.004–.008	.013–.020	.004–.008	.019–.024	.008	.019–.024	.008	.024–.028	.008–.012	.024–.028	.012
P.3.2	**70** (50–130)	.013–.020	.004–.008	.013–.020	.004–.008	.019–.024	.008	.019–.024	.008	.024–.028	.008–.012	.024–.028	.012
P.3.3	**70** (50–130)	.013–.020	.004–.008	.013–.020	.004–.008	.019–.024	.008	.019–.024	.008	.024–.028	.008–.012	.024–.028	.012
P.4.1	**70** (50–130)	.013–.020	.004–.008	.013–.020	.004–.008	.019–.024	.008	.019–.024	.008	.024–.028	.008–.012	.024–.028	.012
P.4.2	**70** (50–130)	.013–.020	.004–.008	.013–.020	.004–.008	.019–.024	.008	.019–.024	.008	.024–.028	.008–.012	.024–.028	.012
M.1.1	**70** (50–130)	.013–.020	.004–.008	.013–.020	.004–.008	.019–.024	.008	.019–.024	.008	.024–.028	.008–.012	.024–.028	.012
M.2.1	**70** (50–130)	.013–.020	.004–.008	.013–.020	.004–.008	.019–.024	.008	.019–.024	.008	.024–.028	.008–.012	.024–.028	.012
M.3.1	**50** (30–10)	.013–.020	.004–.008	.013–.020	.004–.008	.019–.024	.008	.019–.024	.008	.024–.028	.008–.012	.024–.028	.012
K.1.1	**390** (330–590)	.024–.031	.004–.008	.028–.035	.004–.008	.051–.063	.008	.051–.063	.008	.063–.079	.008–.012	.075–.087	.012
K.1.2	**390** (330–590)	.024–.031	.004–.008	.028–.035	.004–.008	.051–.063	.008	.051–.063	.008	.063–.079	.008–.012	.075–.087	.012
K.2.1	**660** (590–820)	.024–.031	.004–.008	.028–.035	.004–.008	.051–.063	.008	.051–.063	.008	.063–.079	.008–.012	.075–.087	.012
K.2.2	**390** (330–490)	.020–.024	.004–.008	.020–.028	.004–.008	.039–.051	.008	.039–.051	.008	.051–.063	.008–.012	.059–.071	.012
K.3.1	**660** (590–820)	.024–.031	.004–.008	.028–.035	.004–.008	.051–.063	.008	.051–.063	.008	.063–.079	.008–.012	.075–.087	.012
K.3.2	**390** (330–490)	.020–.024	.004–.008	.020–.028	.004–.008	.039–.051	.008	.039–.051	.008	.051–.063	.008–.012	.059–.071	.012
N.1.1													
N.1.2													
N.2.1													
N.2.2													
N.2.3													
N.3.1	490 (430–820)	.020–.031	.004–.008	.028–.035	.004–.008	.051–.055	.008	.055–.067	.008	.063–.075	.008–.012	.075–.087	.012
N.3.2	330 (260–490)	.016–.024	.004–.008	.024–.031	.004–.008	.039–.051	.008	.047–.055	.008	.051–.063	.008–.012	.063–.071	.012
N.3.3													
N.4.1													
S.1.1													
S.1.2													
S.2.1	130 (100–200)	.012–.016	.004–.008	.016–.020	.004–.008	.028–.035	.008	.031–.043	.008	.035–.043	.008–.012	.043–.051	.012
S.2.2	130 (100–200)	.012–.016	.004–.008	.016–.020	.004–.008	.028–.035	.008	.031–.043	.008	.035–.043	.008–.012	.043–.051	.012
S.2.3													
S.3.1	100 (80–200)	.012–.016	.004–.008	.016–.020	.004–.008	.028–.035	.008	.031–.043	.008	.035–.043	.008–.012	.043–.051	.012
S.3.2	100 (80–200)	.012–.016	.004–.008	.016–.020	.004–.008	.028–.035	.008	.031–.043	.008	.035–.043	.008–.012	.043–.051	.012
S.3.3													
H.1.1	130 (110–200)	.020–.024	.004–.008	.024–.035	.004–.008	.043–.063	.008	.047–.063	.008	.047–.071	.008	.047–.071	.008
H.1.2	130 (110–200)	.020–.024	.004–.008	.024–.035	.004–.008	.043–.063	.008	.047–.063	.008	.047–.071	.008	.047–.071	.008
H.1.3	100 (80–160)	.020–.028	.004–.008	.028–.039	.004–.008	.047–.067	.008	.051–.067	.008	.051–.079	.008	.051–.079	.008
H.1.4													
H.2.1	130 (110–200)	.020–.024	.004–.008	.024–.035	.004–.008	.043–.063	.008	.047–.063	.008	.047–.071	.008–.012	.047–.071	.012
H.3.1	130 (110–200)	.020–.024	.004–.008	.024–.035	.004–.008	.043–.063	.008	.047–.063	.008	.047–.071	.008–.012	.047–.071	.012
O.1.1													
O.1.2													
O.2.1													
O.2.2													
O.3.1													

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

Cutting data standard values for Fullmax, long

Index	K	40 477 …, 40 478 …					
		Type K					
	Ø range (inch) ▸	Ø .1169 – .1595	Ø .1596 – .2385	Ø .2386 – .2975	Ø .2976 – .4745	Ø .4746 – .6320	Ø .6321 – .7895
	Reaming allowance Ø ▸	.004–.008	.004–.008	.008	.008	.008–.012	.012
	Number of flutes ▸	6	6	8	8	8	8
	v_c (ft/min)	f (inch/rev)					
K.1.1	**660** (590–820)	.031–.039	.035–.047	.059–.075	.059–.075	.071–.091	.087–.102
K.1.2	**660** (590–820)	.031–.039	.035–.047	.059–.075	.059–.075	.071–.091	.087–.102
K.2.1	**740** (660–980)	.031–.039	.035–.047	.059–.075	.059–.075	.071–.091	.087–.102
K.2.2	**390** (330–490)	.024–.035	.028–.039	.047–.063	.047–.063	.059–.075	.071–.087
K.3.1	**740** (660–980)	.031–.039	.035–.047	.059–.075	.059–.075	.071–.091	.087–.102
K.3.2	**390** (330–490)	.024–.035	.028–.039	.047–.063	.047–.063	.059–.075	.071–.087

Index	VA	40 401 …, 40 402 …, 40 403 …, 40 404 …					
		Type VA					
	Ø range (inch) ▸	Ø .1169 – .1595	Ø .1596 – .2385	Ø .2386 – .2975	Ø .2976 – .4745	Ø .4746 – .6320	Ø .6321 – .7895
	Reaming allowance Ø ▸	.004–.008	.004–.008	.008	.008	.008–.012	.012
	Number of flutes ▸	4	4	6	6	6	6
	v_c (ft/min)	f (inch/rev)					
P.3.1	70 (50–130)	.013–.020	.013–.020	.019–.024	.019–.024	.024–.028	.024–.028
P.3.2	70 (50–130)	.013–.020	.013–.020	.019–.024	.019–.024	.024–.028	.024–.028
P.3.3	70 (50–130)	.013–.020	.013–.020	.019–.024	.019–.024	.024–.028	.024–.028
P.4.1	**70** (50–130)	.013–.020	.013–.020	.019–.024	.019–.024	.024–.028	.024–.028
P.4.2	**70** (50–130)	.013–.020	.013–.020	.019–.024	.019–.024	.024–.028	.024–.028
M.1.1	**70** (50–130)	.013–.020	.013–.020	.019–.024	.019–.024	.024–.028	.024–.028
M.2.1	**50** (30–100)	.013–.020	.013–.020	.019–.024	.019–.024	.024–.028	.024–.028
M.3.1	**50** (30–100)	.013–.020	.013–.020	.019–.024	.019–.024	.024–.028	.024–.028

Index	ALU	40 471 …, 40 472 …, 40 473 …, 40 474 …					
		Type ALU					
	Ø range (inch) ▸	Ø .1169 – .1595	Ø .1596 – .2385	Ø .2386 – .2975	Ø .2976 – .4745	Ø .4746 – .6320	Ø .6321 – .7895
	Reaming allowance Ø ▸	.004–.008	.004–.008	.008	.008	.008–.012	.012
	Number of flutes ▸	4	4	6	6	6	6
	v_c (ft/min)	f (inch/rev)					
N.1.1	**660** (590–980)	.020–.024	.024–.035	.043–.063	.047–.063	.047–.071	.047–.071
N.1.2	**660** (590–980)	.020–.024	.024–.035	.043–.063	.047–.063	.047–.071	.047–.071
N.2.1	**660** (590–820)	.020–.028	.028–.039	.047–.067	.051–.067	.051–.079	.051–.079
N.2.2	**660** (590–980)	.020–.028	.028–.039	.047–.067	.051–.067	.051–.079	.051–.079
N.2.3	**660** (590–820)	.020–.028	.028–.039	.047–.067	.051–.067	.051–.079	.051–.079
O.3.1	**820** (720–890)	.020–.028	.028–.039	.047–.067	.051–.067	.051–.079	.051–.079

Index	H *	40 475 …, 40 476 …					
		Type H					
	Ø range (inch) ▸	Ø .1169 – .1595	Ø .1596 – .2385	Ø .2386 – .2975	Ø .2976 – .4745	Ø .4746 – .6320	Ø .6321 – .7895
	Reaming allowance Ø ▸	.004–.008	.004–.008	.008	.008	.008	.008
	Number of flutes ▸	4	4	6	6	6	6
	v_c (ft/min)	f (inch/rev)					
H.1.1	**130** (110–200)	.008–.012	.008–.012	.016–.024	.020–.024	.020–.028	.024–.031
H.1.2	**100** (80–160)	.008–.012	.008–.012	.016–.024	.020–.024	.020–.028	.024–.031
H.1.3	**100** (80–160)	.008–.012	.008–.012	.016–.024	.020–.024	.020–.028	.024–.031
H.1.4	**100** (80–160)	.008–.012	.008–.012	.016–.024	.020–.024	.020–.028	.024–.031
H.2.1	**130** (110–200)	.008–.012	.008–.012	.016–.024	.020–.024	.020–.028	.024–.031
H.3.1	**130** (110–200)	.008–.012	.008–.012	.016–.024	.020–.024	.020–.028	.024–.031

* Wet machining recommended

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

Cutting data standard values for Fullmax, short

Index	UNI	40 481 …, 40 483 …, 40 488 …, 40 489 … Type UNI											
	Ø range (inch) ▸	Ø .1169 – .1595		Ø .1596 – .2385		Ø .2386 – .2975		Ø .2976 – .4745		Ø .4746 – .6290		Ø .6291 – .7895	
	Number of flutes ▸	4		4		6		6		6		6	
	v_c (ft/min)	f (inch/rev)	Reaming allowance Ø	f (inch/rev)	Reaming allowance Ø	f (inch/rev)	Reaming allowance Ø	f (inch/rev)	Reaming allowance Ø	f (inch/rev)	Reaming allowance Ø	f (inch/rev)	Reaming allowance Ø
P.1.1	**660** (590–820)	.026–.031	.004–.008	.030–.035	.004–.008	.055–.063	.008	.065–.071	.008	.065–.075	.008–.012	.101–.118	.012
P.1.2	**660** (590–820)	.026–.031	.004–.008	.028–.035	.004–.008	.055–.063	.008	.065–.071	.008	.065–.075	.008–.012	.101–.118	.012
P.1.3	**660** (590–820)	.026–.031	.004–.008	.030–.035	.004–.008	.055–.063	.008	.065–.071	.008	.065–.075	.008–.012	.101–.118	.012
P.1.4	**660** (590–820)	.026–.031	.004–.008	.030–.035	.004–.008	.055–.063	.008	.065–.071	.008	.065–.075	.008–.012	.101–.118	.012
P.1.5	**660** (590–820)	.026–.031	.004–.008	.030–.035	.004–.008	.055–.063	.008	.065–.071	.008	.065–.075	.008–.012	.101–.118	.012
P.2.1	**660** (590–820)	.026–.031	.004–.008	.030–.035	.004–.008	.055–.063	.008	.065–.071	.008	.065–.075	.008–.012	.101–.118	.012
P.2.2	**660** (590–820)	.026–.031	.004–.008	.030–.035	.004–.008	.055–.063	.008	.065–.071	.008	.065–.075	.008–.012	.101–.118	.012
P.2.3	**660** (590–820)	.026–.031	.004–.008	.030–.035	.004–.008	.055–.063	.008	.065–.071	.008	.065–.075	.008–.012	.101–.118	.012
P.2.4	**210** (180–360)	.018–.020	.004–.008	.018–.024	.004–.008	.039–.043	.008	.047–.051	.008	.047–.055	.008–.012	.075–.083	.012
P.3.1	**130** (100–260)	.016–.024	.004–.008	.020–.028	.004–.008	.039–.051	.008	.043–.055	.008	.047–.059	.008–.012	.075–.089	.012
P.3.2	**130** (100–260)	.016–.024	.004–.008	.020–.028	.004–.008	.039–.051	.008	.043–.055	.008	.047–.059	.008–.012	.075–.089	.012
P.3.3	**130** (100–260)	.016–.024	.004–.008	.020–.028	.004–.008	.039–.051	.008	.043–.055	.008	.047–.059	.008–.012	.075–.089	.012
P.4.1	**150** (130–210)	.018–.020	.004–.008	.018–.024	.004–.008	.039–.043	.008	.047–.051	.008	.047–.055	.008–.012	.075–.083	.012
P.4.2	**150** (130–210)	.018–.020	.004–.008	.018–.024	.004–.008	.039–.043	.008	.047–.051	.008	.047–.055	.008–.012	.075–.083	.012
M.1.1	**130** (110–200)	.016–.024	.004–.008	.020–.028	.004–.008	.039–.051	.008	.043–.055	.008	.047–.059	.008–.012	.075–.089	.012
M.2.1	**130** (110–200)	.016–.024	.004–.008	.020–.028	.004–.008	.039–.051	.008	.043–.055	.008	.047–.059	.008–.012	.075–.089	.012
M.3.1	**130** (110–200)	.016–.024	.004–.008	.020–.028	.004–.008	.039–.051	.008	.043–.055	.008	.047–.059	.008–.012	.075–.089	.012
K.1.1	**660** (590–820)	.031–.039	.004–.008	.035–.047	.004–.008	.059–.075	.008	.059–.075	.008	.071–.091	.008–.012	.098–.114	.012
K.1.2	**660** (590–820)	.031–.039	.004–.008	.035–.047	.004–.008	.059–.075	.008	.059–.075	.008	.071–.091	.008–.012	.098–.114	.012
K.2.1	**740** (660–980)	.031–.039	.004–.008	.035–.047	.004–.008	.059–.075	.008	.059–.075	.008	.071–.091	.008–.012	.098–.114	.012
K.2.2	**390** (330–490)	.024–.035	.004–.008	.028–.039	.004–.008	.047–.063	.008	.047–.063	.008	.059–.075	.008–.012	.079–.094	.012
K.3.1	**740** (660–980)	.031–.039	.004–.008	.035–.047	.004–.008	.059–.075	.008	.059–.075	.008	.071–.091	.008–.012	.098–.114	.012
K.3.2	**390** (330–490)	.024–.035	.004–.008	.028–.039	.004–.008	.047–.063	.008	.047–.063	.008	.059–.075	.008–.012	.079–.094	.012
N.1.1													
N.1.2													
N.2.1													
N.2.2													
N.2.3													
N.3.1	490 (430–820)	.020–.031	.004–.008	.028–.035	.004–.008	.051–.055	.008	.055–.067	.008	.063–.075	.008–.012	.098–.114	.012
N.3.2	330 (260–490)	.016–.024	.004–.008	.024–.031	.004–.008	.039–.051	.008	.047–.055	.008	.051–.063	.008–.012	.083–.094	.012
N.3.3													
N.4.1													
S.1.1													
S.1.2													
S.2.1	130 (100–200)	.012–.016	.004–.008	.016–.020	.004–.008	.028–.035	.008	.031–.043	.008	.035–.043	.008–.012	.043–.051	.012
S.2.2	130 (100–200)	.012–.016	.004–.008	.016–.020	.004–.008	.028–.035	.008	.031–.043	.008	.035–.043	.008–.012	.043–.051	.012
S.2.3													
S.3.1	100 (80–200)	.012–.016	.004–.008	.016–.020	.004–.008	.028–.035	.008	.031–.043	.008	.035–.043	.008–.012	.043–.051	.012
S.3.2	100 (80–200)	.012–.016	.004–.008	.016–.020	.004–.008	.028–.035	.008	.031–.043	.008	.035–.043	.008–.012	.043–.051	.012
S.3.3													
H.1.1	130 (110–200)	.008–.012	.004–.008	.008–.012	.004–.008	.016–.024	.008	.020–.024	.008	.020–.028	.008	.031–.039	.008
H.1.2	100 (80–160)	.008–.012	.004–.008	.008–.012	.004–.008	.016–.024	.008	.020–.024	.008	.020–.028	.008	.031–.039	.008
H.1.3	100 (80–160)	.008–.012	.004–.008	.008–.012	.004–.008	.016–.024	.008	.020–.024	.008	.020–.028	.008	.031–.039	.008
H.1.4													
H.2.1	130 (110–200)	.020–.024	.004–.008	.024–.035	.004–.008	.043–.063	.008	.047–.063	.008	.047–.071	.008–.012	.047–.071	.012
H.3.1	130 (110–200)	.020–.024	.004–.008	.024–.035	.004–.008	.043–.063	.008	.047–.063	.008	.047–.071	.008–.012	.047–.071	.012
O.1.1													
O.1.2													
O.2.1													
O.2.2													
O.3.1													

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

Cutting Data Standard Values for Cutting Ring

Index	49 836 … 300.65 – ASG3000 / DBG-P					49 835 … 300.65 – ASG0106 / DBG-P				
Nominal Ø in inches ▸			2.3858–3.1338	3.1339–3.9605	3.9606–4.3543			2.3858–3.1338	3.1339–3.9605	3.9606–4.3543
Reaming allowance Ø ▸			.012 – .020	.012 – .020	.012 – .020			.012 – .020	.012 – .020	.012 – .020
Number of flutes ▸			6	8	10			6	8	10
	3xD	5xD				3xD	5xD			
	v_c (ft/min)		f (inch/rev)			v_c (ft/min)		f (inch/rev)		
P.1.1	**490** (430–660)	**390** (330–520)	.043–.067	.059–.091	.075–.110					
P.1.2	**490** (430–660)	**390** (330–520)	.043–.067	.059–.091	.075–.110					
P.1.3	**490** (430–660)	**390** (330–520)	.043–.067	.059–.091	.075–.110					
P.1.4	**490** (430–660)	**390** (330–520)	.043–.067	.059–.091	.075–.110					
P.1.5	**490** (430–660)	**390** (330–520)	.043–.067	.059–.091	.075–.110					
P.2.1	**490** (430–660)	**390** (330–520)	.043–.067	.059–.091	.075–.110					
P.2.2	**490** (430–660)	**390** (330–520)	.043–.067	.059–.091	.075–.110					
P.2.3	**490** (430–660)	**390** (330–520)	.043–.067	.059–.091	.075–.110					
P.2.4	**490** (430–660)	**390** (330–520)	.043–.067	.059–.091	.075–.110					
P.3.1						**100** (80–160)	**100** (80–130)	.035–.051	.047–.071	.059–.091
P.3.2						**100** (80–160)	**100** (80–130)	.035–.051	.047–.071	.059–.091
P.3.3						**100** (80–160)	**100** (80–130)	.035–.051	.047–.071	.059–.091
P.4.1						**150** (110–200)	**130** (110–160)	.035–.051	.047–.071	.059–.091
P.4.2						**150** (110–200)	**130** (110–160)	.035–.051	.047–.071	.059–.091
M.1.1						**150** (110–200)	**130** (110–160)	.035–.051	.047–.071	.059–.091
M.2.1						**150** (110–200)	**130** (110–160)	.035–.051	.047–.071	.059–.091
M.3.1						**100** (80–160)	**100** (80–130)	.035–.051	.047–.071	.059–.091
K.1.1	**490** (430–720)	**390** (330–490)	.085–.080	.073–.107	.091–.134					
K.1.2	**490** (430–720)	**390** (330–490)	.085–.080	.073–.107	.091–.134					
K.2.1	**570** (490–980)	**490** (430–590)	.085–.080	.073–.107	.091–.134					
K.2.2	**390** (330–590)	**390** (330–490)	.045–.066	.060–.088	.075–.110					
K.3.1	**390** (330–590)	**390** (330–490)	.045–.066	.060–.088	.075–.110					
K.3.2	**390** (330–590)	**390** (330–490)	.045–.066	.060–.088	.075–.110					
N.1.1										
N.1.2										
N.2.1										
N.2.2										
N.2.3										
N.3.1										
N.3.2										
N.3.3										
N.4.1										
S.1.1										
S.1.2										
S.2.1										
S.2.2										
S.2.3										
S.3.1										
S.3.2										
S.3.3										
H.1.1										
H.1.2										
H.1.3										
H.1.4										
H.2.1										
H.3.1										
O.1.1										
O.1.2										
O.2.1										
O.2.2										
O.3.1										

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

Cutting Data Standard Values for Cutting Ring

Index	49 823 … 300.05 – ASG3000 / TiN					49 824 … 300.05 – ASG0106 / TiN				
Nominal Ø in inches ▸			2.3858–3.1338	3.1339–3.9605	3.9606–4.3543			2.3858–3.1338	3.1339–3.9605	3.9606–4.3543
Reaming allowance Ø ▸			.012 – .020	.012 – .020	.012 – .020			.012 – .020	.012 – .020	.012 – .020
Number of flutes ▸			6	8	10			6	8	10
	3xD	5xD				3xD	5xD			
	v_c (ft/min)		f (inch/rev)			v_c (ft/min)		f (inch/rev)		
P.1.1	330 (260–460)	260 (200–390)	.043–.067	.059–.091	.075–.110					
P.1.2	330 (260–460)	260 (200–390)	.043–.067	.059–.091	.075–.110					
P.1.3	330 (260–460)	260 (200–390)	.043–.067	.059–.091	.075–.110					
P.1.4	330 (260–460)	260 (200–390)	.043–.067	.059–.091	.075–.110					
P.1.5	330 (260–460)	260 (200–390)	.043–.067	.059–.091	.075–.110					
P.2.1	330 (260–460)	260 (200–390)	.043–.067	.059–.091	.075–.110					
P.2.2	330 (260–460)	260 (200–390)	.043–.067	.059–.091	.075–.110					
P.2.3	330 (260–460)	260 (200–390)	.043–.067	.059–.091	.075–.110					
P.2.4	330 (260–460)	260 (200–390)	.043–.067	.059–.091	.075–.110					
P.3.1						**100** (80–150)	**100** (80–150)	.031–.047	.043–.063	.051–.079
P.3.2						**100** (80–150)	**100** (80–150)	.031–.047	.043–.063	.051–.079
P.3.3										
P.4.1						**100** (80–150)	**100** (80–150)	.031–.047	.043–.063	.051–.079
P.4.2						**100** (80–150)	**100** (80–150)	.031–.047	.043–.063	.051–.079
M.1.1						**100** (80–150)	**100** (80–130)	.035–.051	.047–.071	.059–.091
M.2.1						**70** (50–110)	**70** (50–110)	.035–.051	.047–.071	.059–.091
M.3.1						**70** (50–110)	**70** (50–110)	.035–.051	.047–.071	.059–.091
K.1.1	260 (200–430)	260 (200–390)	.055–.079	.075–.079	.091–.134					
K.1.2	260 (200–430)	260 (200–390)	.055–.079	.075–.079	.091–.134					
K.2.1										
K.2.2										
K.3.1										
K.3.2										
N.1.1										
N.1.2										
N.2.1										
N.2.2										
N.2.3										
N.3.1	390 (330–660)	390 (330–660)	.047–.075	.067–.098	.083–.122					
N.3.2	390 (330–660)	390 (330–660)	.039–.059	.055–.083	.067–.102					
N.3.3	260 (200–490)	260 (200–390)	.039–.059	.055–.083	.067–.102					
N.4.1										
S.1.1										
S.1.2										
S.2.1										
S.2.2										
S.2.3										
S.3.1										
S.3.2										
S.3.3										
H.1.1										
H.1.2										
H.1.3										
H.1.4										
H.2.1										
H.3.1										
O.1.1										
O.1.2										
O.2.1										
O.2.2										
O.3.1										

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

Cutting Data Standard Values for Cutting Ring

Index	49 831 … 300.05 – ASG4000 / TiN					49 839 … 300.17 – ASG0706 / DBC				
Nominal Ø in inches ▸			2.3858–3.1338	3.1339–3.9605	3.9606–4.3543			2.3858–3.1338	3.1339–3.9605	3.9606–4.3543
Reaming allowance Ø ▸			.012 – .020	.012 – .020	.012 – .020			.012 – .020	.012 – .020	.012 – .020
Number of flutes ▸			6	8	10			6	8	10
	3xD	5xD				3xD	5xD			
	v_c (ft/min)		f (inch/rev)			v_c (ft/min)		f (inch/rev)		
P.1.1	**330** (260–460)	**260** (200–390)	.055–.079	.012–.020	.012–.020					
P.1.2	**330** (260–460)	**260** (200–390)	.055–.079	.012–.020	.012–.020					
P.1.3	**330** (260–460)	**260** (200–390)	.055–.079	.012–.020	.012–.020					
P.1.4	**330** (260–460)	**260** (200–390)	.055–.079	.012–.020	.012–.020					
P.1.5	**330** (260–460)	**260** (200–390)	.055–.079	.012–.020	.012–.020					
P.2.1										
P.2.2										
P.2.3										
P.2.4										
P.3.1										
P.3.2										
P.3.3										
P.4.1										
P.4.2										
M.1.1										
M.2.1										
M.3.1										
K.1.1										
K.1.2										
K.2.1										
K.2.2										
K.3.1										
K.3.2										
N.1.1						**490** (430–980)	**490** (430–660)	.052–.080	.070–.107	.087–.134
N.1.2						**490** (430–980)	**490** (430–660)	.052–.080	.070–.107	.087–.134
N.2.1						**660** (590–980)	**490** (430–660)	.052–.080	.070–.107	.087–.134
N.2.2						**660** (590–980)	**490** (430–660)	.052–.080	.070–.107	.087–.134
N.2.3						**660** (590–980)	**490** (430–660)	.052–.080	.070–.107	.087–.134
N.3.1	390 (330–660)	390 (330–660)	.047–.075	.067–.098	.083–.122					
N.3.2	390 (330–660)	390 (330–660)	.039–.059	.055–.083	.067–.102					
N.3.3	260 (200–490)	260 (200–390)	.039–.059	.055–.083	.067–.102					
N.4.1						**490** (430–980)	**490** (430–660)	.052–.080	.070–.107	.087–.134
S.1.1										
S.1.2										
S.2.1										
S.2.2										
S.2.3										
S.3.1										
S.3.2										
S.3.3										
H.1.1										
H.1.2										
H.1.3										
H.1.4										
H.2.1										
H.3.1										
O.1.1										
O.1.2										
O.2.1										
O.2.2										
O.3.1										

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

Cutting Data Standard Values for Cutting Ring

Index	49 827 … 300.45 – ASG3000 / DST					49 828 … 300.45 – ASG4000 / DST				
Nominal Ø in inches ▸			2.3858–3.1338	3.1339–3.9605	3.9606–4.3543			2.3858–3.1338	3.1339–3.9605	3.9606–4.3543
Reaming allowance Ø ▸			.012 – .020	.012 – .020	.012 – .020			.012 – .020	.012 – .020	.012 – .020
Number of flutes ▸			6	8	10			6	8	10
	3xD	5xD				3xD	5xD			
	v_c (ft/min)		f (inch/rev)			v_c (ft/min)		f (inch/rev)		
P.1.1	**490** (390–660)	**390** (330–520)	.043–.067	.059–.091	.075–.110	**490** (390–660)	**390** (330–520)	.055–.079	.075–.106	.094–.134
P.1.2	**490** (390–660)	**390** (330–520)	.043–.067	.059–.091	.075–.110	**490** (390–660)	**390** (330–520)	.055–.079	.075–.106	.094–.134
P.1.3	**490** (390–660)	**390** (330–520)	.043–.067	.059–.091	.075–.110	**490** (390–660)	**390** (330–520)	.055–.079	.075–.106	.094–.134
P.1.4	**490** (390–660)	**390** (330–520)	.043–.067	.059–.091	.075–.110	**490** (390–660)	**390** (330–520)	.055–.079	.075–.106	.094–.134
P.1.5	**490** (390–660)	**390** (330–520)	.043–.067	.059–.091	.075–.110	**490** (390–660)	**390** (330–520)	.055–.079	.075–.106	.094–.134
P.2.1	**490** (390–660)	**390** (330–520)	.043–.067	.059–.091	.075–.110	**490** (390–660)	**390** (330–520)	.055–.079	.075–.106	.094–.134
P.2.2	**490** (390–660)	**390** (330–520)	.043–.067	.059–.091	.075–.110	**490** (390–660)	**390** (330–520)	.055–.079	.075–.106	.094–.134
P.2.3	**490** (390–660)	**390** (330–520)	.043–.067	.059–.091	.075–.110	**490** (390–660)	**390** (330–520)	.055–.079	.075–.106	.094–.134
P.2.4										
P.3.1										
P.3.2										
P.3.3										
P.4.1										
P.4.2										
M.1.1										
M.2.1										
M.3.1										
K.1.1										
K.1.2										
K.2.1	**570** (390–980)	**490** (390–590)	.055–.079	.075–.106	.091–.134					
K.2.2	**490** (390–820)	**390** (260–490)	.043–.067	.059–.091	.075–.110					
K.3.1	**390** (330–590)	**390** (260–490)	.055–.079	.075–.106	.091–.134					
K.3.2	**390** (330–590)	**390** (260–490)	.043–.067	.059–.091	.075–.110					
N.1.1										
N.1.2										
N.2.1										
N.2.2										
N.2.3										
N.3.1	**490** (390–1050)	**490** (390–660)	.047–.075	.067–.098	.083–.122					
N.3.2										
N.3.3										
N.4.1										
S.1.1										
S.1.2										
S.2.1										
S.2.2										
S.2.3										
S.3.1										
S.3.2										
S.3.3										
H.1.1										
H.1.2										
H.1.3										
H.1.4										
H.2.1										
H.3.1										
O.1.1										
O.1.2										
O.2.1										
O.2.2										
O.3.1										

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

Cutting Data Standard Values for Cutting Ring

Index	49 832 …				
	300.25 – ASG03 / K10				
	Nominal Ø in inches ▸		2.3858–3.1338	3.1339–3.9605	3.9606–4.3543
	Reaming allowance Ø ▸		.012 – .020	.012 – .020	.012 – .020
	Number of flutes ▸		6	8	10
	3xD	5xD			
	v_c (ft/min)		f (inch/rev)		
P.1.1					
P.1.2					
P.1.3					
P.1.4					
P.1.5					
P.2.1					
P.2.2					
P.2.3					
P.2.4					
P.3.1					
P.3.2					
P.3.3					
P.4.1					
P.4.2					
M.1.1					
M.2.1					
M.3.1					
K.1.1					
K.1.2					
K.2.1					
K.2.2					
K.3.1					
K.3.2					
N.1.1					
N.1.2					
N.2.1					
N.2.2					
N.2.3					
N.3.1					
N.3.2					
N.3.3					
N.4.1					
S.1.1					
S.1.2					
S.2.1					
S.2.2					
S.2.3					
S.3.1	**30** (20–40)	**30** (20–40)	.031–.043	.041–.057	.052–.072
S.3.2	**30** (20–40)	**30** (20–40)	.031–.043	.041–.057	.052–.072
S.3.3	**30** (20–40)	**30** (20–40)	.031–.043	.041–.057	.052–.072
H.1.1					
H.1.2					
H.1.3					
H.1.4					
H.2.1					
H.3.1					
O.1.1					
O.1.2					
O.2.1					
O.2.2					
O.3.1					

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

Cutting Data Standard Values for Rapid Set Head

Index	49 817 … 340.65 – ASG3000 / DBG-P					49 816 … 340.65 – ASG0106 / DBG-P				
Nominal Ø in inches ▸			.3779 – .6138	.6139 – 1.1850	1.1851 – 2.3622			.3779 – .6138	.6139 – 1.1850	1.1851 – 2.3622
Reaming allowance Ø ▸			.004 – .012	.008 – .016	.008 – .016			.004 – .012	.008 – .016	.008 – .016
Number of flutes ▸			4	6	6			4	6	6
	3xD	5xD				3xD	5xD			
	v_c (ft/min)		f (inch/rev)			v_c (ft/min)		f (inch/rev)		
P.1.1	**490** (430–660)	**390** (330–520)	.012–.020	.035–.051	.043–.059					
P.1.2	**490** (430–660)	**390** (330–520)	.012–.020	.035–.051	.043–.059					
P.1.3	**490** (430–660)	**390** (330–520)	.012–.020	.035–.051	.043–.059					
P.1.4	**490** (430–660)	**390** (330–520)	.012–.020	.035–.051	.043–.059					
P.1.5	**490** (430–660)	**390** (330–520)	.012–.020	.035–.051	.043–.059					
P.2.1	**490** (430–660)	**390** (330–520)	.012–.020	.035–.051	.043–.059					
P.2.2	**490** (430–660)	**390** (330–520)	.012–.020	.035–.051	.043–.059					
P.2.3	**490** (430–660)	**390** (330–520)	.012–.020	.035–.051	.043–.059					
P.2.4	**490** (430–660)	**390** (330–520)	.012–.020	.035–.051	.043–.059					
P.3.1						**100** (80–160)	**100** (80–130)	.012–.016	.028–.039	.035–.047
P.3.2						**100** (80–160)	**100** (80–130)	.012–.016	.028–.039	.035–.047
P.3.3						**100** (80–160)	**100** (80–130)	.012–.016	.028–.039	.035–.047
P.4.1						**150** (110–200)	**130** (110–160)	.012–.016	.028–.039	.035–.047
P.4.2						**150** (110–200)	**130** (110–160)	.012–.016	.028–.039	.035–.047
M.1.1						**150** (110–200)	**130** (110–160)	.012–.016	.028–.039	.035–.047
M.2.1						**150** (110–200)	**130** (110–160)	.012–.016	.028–.039	.035–.047
M.3.1						**100** (80–160)	**100** (80–130)	.012–.016	.028–.039	.035–.047
K.1.1	**490** (430–720)	**390** (330–490)	.016–.024	.043–.059	.051–.075					
K.1.2	**490** (430–720)	**390** (330–490)	.016–.024	.043–.059	.051–.075					
K.2.1	**570** (490–980)	**490** (430–590)	.016–.024	.043–.059	.051–.075					
K.2.2	**390** (330–590)	**390** (330–490)	.012–.020	.035–.051	.043–.059					
K.3.1	**390** (330–590)	**390** (330–490)	.012–.020	.035–.051	.043–.059					
K.3.2	**390** (330–590)	**390** (330–490)	.012–.020	.035–.051	.043–.059					
N.1.1										
N.1.2										
N.2.1										
N.2.2										
N.2.3										
N.3.1										
N.3.2										
N.3.3										
N.4.1										
S.1.1										
S.1.2										
S.2.1										
S.2.2										
S.2.3										
S.3.1										
S.3.2										
S.3.3										
H.1.1										
H.1.2										
H.1.3										
H.1.4										
H.2.1										
H.3.1										
O.1.1										
O.1.2										
O.2.1										
O.2.2										
O.3.1										

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

Cutting Data Standard Values for Rapid Set Head

Index	49 813 … 340.93 – ASG3000 / DST					49 812 … 340.92 – ASG05 / DST				
Nominal Ø in inches ▸			.3779 – .6138	.6139 – 1.1850	1.1851 – 2.3622			.3779 – .6138	.6139 – 1.1850	1.1851 – 2.3622
Reaming allowance Ø ▸			.004 – .012	.008 – .016	.008 – .016			.004 – .012	.008 – .016	.008 – .016
Number of flutes ▸			4	6	6			4	6	6
	3xD	5xD				3xD	5xD			
	v_c (ft/min)		f (inch/rev)			v_c (ft/min)		f (inch/rev)		
P.1.1	**490** (390–660)	**490** (390–520)	.012–.020	.035–.051	.043–.059	**490** (390–660)	**490** (390–520)	.024–.031	.047–.059	.055–.075
P.1.2	**490** (390–660)	**490** (390–520)	.012–.020	.035–.051	.043–.059	**490** (390–660)	**490** (390–520)	.024–.031	.047–.059	.055–.075
P.1.3	**490** (390–660)	**490** (390–520)	.012–.020	.035–.051	.043–.059	**490** (390–660)	**490** (390–520)	.024–.031	.047–.059	.055–.075
P.1.4	**490** (390–660)	**490** (390–520)	.012–.020	.035–.051	.043–.059	**490** (390–660)	**490** (390–520)	.024–.031	.047–.059	.055–.075
P.1.5	**490** (390–660)	**490** (390–520)	.012–.020	.035–.051	.043–.059	**490** (390–660)	**490** (390–520)	.024–.031	.047–.059	.055–.075
P.2.1	**490** (390–660)	**490** (390–520)	.012–.020	.035–.051	.043–.059	**490** (390–660)	**490** (390–520)	.024–.031	.047–.059	.055–.075
P.2.2	**490** (390–660)	**490** (390–520)	.012–.020	.035–.051	.043–.059	**490** (390–660)	**490** (390–520)	.024–.031	.047–.059	.055–.075
P.2.3	**490** (390–660)	**490** (390–520)	.012–.020	.035–.051	.043–.059	**490** (390–660)	**490** (390–520)	.024–.031	.047–.059	.055–.075
P.2.4										
P.3.1										
P.3.2										
P.3.3										
P.4.1										
P.4.2										
M.1.1										
M.2.1										
M.3.1										
K.1.1										
K.1.2										
K.2.1	**570** (490–980)	**570** (490–980)	.016–.024	.043–.024	.051–.075					
K.2.2	**490** (390–820)	**490** (390–820)	.016–.024	.043–.024	.051–.075					
K.3.1	**390** (330–590)	**390** (330–590)	.016–.024	.043–.024	.051–.075					
K.3.2	**390** (330–590)	**390** (330–590)	.016–.024	.043–.024	.051–.075					
N.1.1										
N.1.2										
N.2.1										
N.2.2										
N.2.3										
N.3.1	**490** (390–1050)	**490** (390–1050)	.016–.024	.043–.059	.047–.067					
N.3.2										
N.3.3										
N.4.1										
S.1.1										
S.1.2										
S.2.1										
S.2.2										
S.2.3										
S.3.1										
S.3.2										
S.3.3										
H.1.1										
H.1.2										
H.1.3										
H.1.4										
H.2.1										
H.3.1										
O.1.1										
O.1.2										
O.2.1										
O.2.2										
O.3.1										

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

Cutting Data Standard Values for Rapid Set Head

Index	49 808 … 340.71 – ASG3000 / TiN					49 805 … 340.70 – ASG05 / TiN				
Nominal Ø in inches ▸			.3779 – .6138	.6139 – 1.1850	1.1851 – 2.3622			.3779 – .6138	.6139 – 1.1850	1.1851 – 2.3622
Reaming allowance Ø ▸			.004 – .012	.008 – .016	.008 – .016			.004 – .012	.008 – .016	.008 – .016
Number of flutes ▸			4	6	6			4	6	6
	3xD	5xD				3xD	5xD			
	v_c (ft/min)		f (inch/rev)			v_c (ft/min)		f (inch/rev)		
P.1.1	330 (260–460)	260 (200–390)	.012–.020	.035–.051	.043–.059	330 (260–460)	260 (200–390)	.024–.031	.047–.059	.055–.075
P.1.2	330 (260–460)	260 (200–390)	.012–.020	.035–.051	.043–.059	330 (260–460)	260 (200–390)	.024–.031	.047–.059	.055–.075
P.1.3	330 (260–460)	260 (200–390)	.012–.020	.035–.051	.043–.059	330 (260–460)	260 (200–390)	.024–.031	.047–.059	.055–.075
P.1.4	330 (260–460)	260 (200–390)	.012–.020	.035–.051	.043–.059	330 (260–460)	260 (200–390)	.024–.031	.047–.059	.055–.075
P.1.5	330 (260–460)	260 (200–390)	.012–.020	.035–.051	.043–.059	330 (260–460)	260 (200–390)	.024–.031	.047–.059	.055–.075
P.2.1	330 (260–460)	260 (200–390)	.012–.020	.035–.051	.043–.059	330 (260–460)	260 (200–390)	.024–.031	.047–.059	.055–.075
P.2.2	330 (260–460)	260 (200–390)	.012–.020	.035–.051	.043–.059	330 (260–460)	260 (200–390)	.024–.031	.047–.059	.055–.075
P.2.3	330 (260–460)	260 (200–390)	.012–.020	.035–.051	.043–.059	330 (260–460)	260 (200–390)	.024–.031	.047–.059	.055–.075
P.2.4	**330** (260–460)	**260** (200–390)	.012–.020	.035–.051	.043–.059	**330** (260–460)	**260** (200–390)	.024–.031	.047–.059	.055–.075
P.3.1										
P.3.2										
P.3.3										
P.4.1										
P.4.2										
M.1.1										
M.2.1										
M.3.1										
K.1.1	**260** (200–430)	**260** (200–390)	.016–.024	.043–.059	.051–.075					
K.1.2	**260** (200–430)	**260** (200–390)	.016–.024	.043–.059	.051–.075					
K.2.1										
K.2.2										
K.3.1										
K.3.2										
N.1.1										
N.1.2										
N.2.1										
N.2.2										
N.2.3										
N.3.1	390 (330–660)	390 (330–660)	.016–.024	.043–.059	.047–.067					
N.3.2	260 (200–490)	260 (200–490)	.012–.020	.035–.051	.039–.055					
N.3.3	260 (200–490)	260 (200–490)	.012–.020	.035–.051	.039–.055					
N.4.1										
S.1.1										
S.1.2										
S.2.1										
S.2.2										
S.2.3										
S.3.1										
S.3.2										
S.3.3										
H.1.1										
H.1.2										
H.1.3										
H.1.4										
H.2.1										
H.3.1										
O.1.1										
O.1.2										
O.2.1										
O.2.2										
O.3.1										

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

Cutting Data Standard Values for Rapid Set Head

Index	49 809 … 340.71 – ASG0106 / TiN					49 800 … 340.21 – ASG03 / K10				
Nominal Ø in inches ▸			.3779 – .6138	.6139 – 1.1850	1.1851 – 2.3622			.3779 – .6138	.6139 – 1.1850	1.1851 – 2.3622
Reaming allowance Ø ▸			.004 – .012	.008 – .016	.008 – .016			.004 – .012	.008 – .016	.008 – .016
Number of flutes ▸			4	6	6			4	6	6
	3xD	5xD				3xD	5xD			
	v_c (ft/min)		f (inch/rev)			v_c (ft/min)		f (inch/rev)		
P.1.1										
P.1.2										
P.1.3										
P.1.4										
P.1.5										
P.2.1										
P.2.2										
P.2.3										
P.2.4										
P.3.1	**100** (70–130)	**100** (70–130)	.012–.016	.028–.039	.035–.047					
P.3.2	**100** (70–130)	**100** (70–130)	.012–.016	.028–.039	.035–.047					
P.3.3	**100** (70–130)	**100** (70–130)	.012–.016	.028–.039	.035–.047					
P.4.1	**100** (70–130)	**100** (70–130)	.012–.016	.028–.039	.035–.047					
P.4.2	**100** (70–130)	**100** (70–130)	.012–.016	.028–.039	.035–.047					
M.1.1	**100** (70–130)	**100** (70–130)	.012–.016	.028–.039	.035–.047					
M.2.1	**70** (50–110)	**70** (50–110)	.012–.016	.028–.039	.035–.047					
M.3.1	**100** (70–130)	**100** (70–130)	.012–.016	.028–.039	.035–.047					
K.1.1										
K.1.2										
K.2.1										
K.2.2										
K.3.1										
K.3.2										
N.1.1										
N.1.2										
N.2.1										
N.2.2										
N.2.3										
N.3.1										
N.3.2										
N.3.3										
N.4.1										
S.1.1										
S.1.2										
S.2.1										
S.2.2										
S.2.3										
S.3.1						**30** (20–40)	**30** (20–40)	.012–.016	.031–.043	.035–.051
S.3.2						**30** (20–40)	**30** (20–40)	.012–.016	.031–.043	.035–.051
S.3.3						**30** (20–40)	**30** (20–40)	.012–.016	.031–.043	.035–.051
H.1.1										
H.1.2										
H.1.3										
H.1.4										
H.2.1										
H.3.1										
O.1.1										
O.1.2										
O.2.1										
O.2.2										
O.3.1										

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

Cutting Data Standard Values for Rapid Set Head

Index	49 804 … 340.21 – ASG02 / K10					49 801 … 340.21 – ASG3000 / K10				
Nominal Ø in inches ▸			.3779 – .6138	.6139 – 1.1850	1.1851 – 2.3622			.3779 – .6138	.6139 – 1.1850	1.1851 – 2.3622
Reaming allowance Ø ▸			.004 – .012	.008 – .016	.008 – .016			.004 – .012	.008 – .016	.008 – .016
Number of flutes ▸			4	6	6			4	6	6
	3xD	5xD				3xD	5xD			
	v_c (ft/min)		f (inch/rev)			v_c (ft/min)		f (inch/rev)		
P.1.1						30 (20–30)	30 (20–30)	.012–.020	.035–.051	.043–.059
P.1.2						100 (50–150)	100 (50–150)	.012–.020	.035–.051	.043–.059
P.1.3						30 (20–30)	30 (20–30)	.012–.020	.035–.051	.043–.059
P.1.4						30 (20–30)	30 (20–30)	.012–.020	.035–.051	.043–.059
P.1.5						30 (20–30)	30 (20–30)	.012–.020	.035–.051	.043–.059
P.2.1						30 (20–30)	30 (20–30)	.012–.020	.035–.051	.043–.059
P.2.2						30 (20–30)	30 (20–30)	.012–.020	.035–.051	.043–.059
P.2.3						30 (20–30)	30 (20–30)	.012–.020	.035–.051	.043–.059
P.2.4										
P.3.1										
P.3.2										
P.3.3										
P.4.1										
P.4.2										
M.1.1										
M.2.1										
M.3.1										
K.1.1						50 (40–80)	50 (40–80)	.016–.024	.043–.059	.051–.075
K.1.2						50 (40–80)	50 (40–80)	.016–.024	.043–.059	.051–.075
K.2.1						40 (30–60)	40 (30–60)	.016–.024	.043–.059	.051–.075
K.2.2						40 (30–50)	40 (30–50)	.012–.020	.035–.051	.043–.059
K.3.1						40 (30–60)	40 (30–60)	.012–.020	.035–.051	.043–.059
K.3.2						40 (30–60)	40 (30–60)	.012–.020	.035–.051	.043–.059
N.1.1	**50** (30–100)	**50** (30–100)	.012–.020	.035–.051	.043–.059	50 (40–100)	50 (40–100)	.012–.020	.035–.051	.043–.059
N.1.2	**50** (30–100)	**50** (30–100)	.012–.020	.035–.051	.043–.059	50 (40–100)	50 (40–100)	.012–.020	.035–.051	.043–.059
N.2.1	**40** (30–70)	**12** (10–20)	.016–.024	.043–.059	.047–.075	50 (40–100)	50 (40–100)	.016–.024	.043–.059	.047–.075
N.2.2	**40** (30–70)	**40** (30–70)	.016–.024	.043–.059	.047–.075	50 (40–100)	50 (40–100)	.016–.024	.043–.059	.047–.075
N.2.3	**40** (30–70)	**40** (30–70)	.016–.024	.043–.059	.047–.075	40 (30–70)	40 (30–70)	.016–.024	.043–.059	.047–.075
N.3.1	**50** (30–100)	**50** (30–100)	.016–.024	.043–.059	.047–.075	50 (40–100)	50 (40–100)	.016–.024	.043–.059	.047–.067
N.3.2	**50** (30–100)	**50** (30–100)	.016–.024	.043–.059	.047–.075	40 (30–70)	40 (30–70)	.012–.020	.035–.051	.039–.055
N.3.3	**40** (30–70)	**40** (30–70)	.012–.020	.035–.051	.039–.055	40 (30–70)	40 (30–70)	.012–.020	.035–.051	.039–.055
N.4.1	**50** (30–100)	**50** (30–100)	.016–.024	.043–.059	.047–.075	50 (40–100)	50 (40–100)	.016–.024	.043–.059	.047–.075
S.1.1										
S.1.2										
S.2.1										
S.2.2										
S.2.3										
S.3.1										
S.3.2										
S.3.3										
H.1.1										
H.1.2										
H.1.3										
H.1.4										
H.2.1										
H.3.1										
O.1.1										
O.1.2										
O.2.1										
O.2.2										
O.3.1										

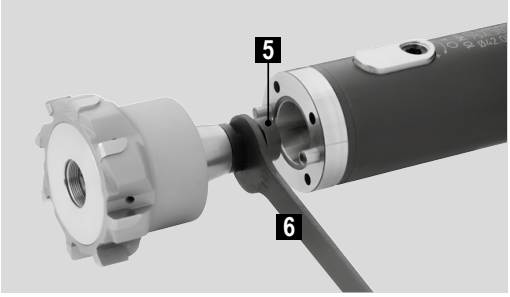
The cutting data depend extremely on the external conditions, the material and machine type. The indicated values are possible values which have to be increased or reduced, inside the bracket, according to the application conditions.

Cutting data standard values indexable insert countersink

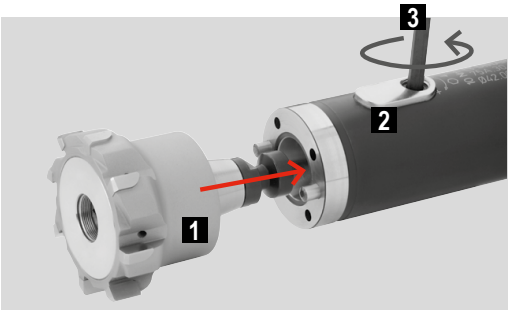
Index	30 196 ..., 30 197 ...			30 198 ...					
	Insert		Tool diameter	Insert		Tool diameter			
	BK8425	K10	Ø 16.5–37	BK8425	K10	Ø 10–15	Ø 15–20	Ø 20–30	Ø 30–48
	v_c (m/min)		f (mm/rev)	v_c (m/min)		f (mm/rev)			
P.1.1	200		0.12–0.16	260		0.06–0.12	0.12–0.20	0.15–0.25	0.20–0.30
P.1.2	200		0.20–0.30	260		0.06–0.12	0.12–0.20	0.15–0.25	0.20–0.30
P.1.3	200		0.20–0.30	270		0.06–0.12	0.12–0.20	0.25–0.40	0.25–0.40
P.1.4	180		0.20–0.30	240		0.06–0.12	0.12–0.20	0.25–0.40	0.25–0.40
P.1.5	180		0.17–0.27	230		0.04–0.08	0.15	0.20–0.30	0.20–0.35
P.2.1	160		0.20–0.30	270		0.06–0.12	0.12–0.20	0.25–0.40	0.25–0.40
P.2.2	160		0.20–0.30	260		0.04–0.08	0.15	0.20–0.30	0.20–0.35
P.2.3	160		0.15–0.20	180		0.04–0.08	0.15	0.20–0.30	0.20–0.35
P.2.4	160		0.10–0.16	150		0.04–0.08	0.15	0.20–0.30	0.20–0.35
P.3.1	140		0.10–0.15	160		0.04–0.08	0.15	0.20–0.30	0.20–0.35
P.3.2	140		0.08–0.13	130		0.04–0.08	0.15	0.20–0.30	0.20–0.35
P.3.3	140		0.06–0.12	120		0.04–0.08	0.15	0.20–0.30	0.20–0.35
P.4.1	120		0.10–0.16	180		0.08	0.15	0.16	0.18
P.4.2	120		0.06–0.12	130		0.08	0.15	0.16	0.18
M.1.1	160		0.10–0.15	150		0.08	0.15	0.16	0.18
M.2.1	140		0.10–0.15	150		0.08	0.15	0.16	0.18
M.3.1	100		0.07–0.13	130		0.08	0.15	0.16	0.18
K.1.1	180		0.40	160		0.15	0.30	0.40	0.60
K.1.2	160		0.32	120		0.15	0.30	0.40	0.60
K.2.1	140		0.30	160		0.15	0.25	0.30	0.35
K.2.2	140		0.18	100		0.12	0.20	0.25	0.35
K.3.1	120		0.20	120		0.10	0.18	0.25	0.30
K.3.2	120		0.18	100		0.10	0.18	0.25	0.30
N.1.1		250	0.20	400	250	0.05	0.12	0.15	0.20
N.1.2		250	0.20	400	250	0.05	0.12	0.15	0.20
N.2.1		250	0.30	250	250	0.06	0.16	0.20	0.25
N.2.2		250	0.30	250	250	0.06	0.16	0.20	0.25
N.2.3		250	0.25	230	250	0.10	0.20	0.25	0.30
N.3.1		230	0.30	200	230	0.05	0.10	0.12	0.15
N.3.2		230	0.32	220	230	0.05	0.10	0.12	0.15
N.3.3		230	0.22	330	230	0.05	0.10	0.12	0.15
N.4.1		230	0.30	200	230	0.05	0.10	0.12	0.15
S.1.1	60	20	0.12		20	0.05	0.10	0.12	0.15
S.1.2	50	20	0.10		20	0.05	0.10	0.12	0.15
S.2.1	60	20	0.12		20	0.05	0.10	0.12	0.15
S.2.2	50	20	0.10		20	0.05	0.10	0.12	0.15
S.2.3	30	20	0.06		20	0.05	0.10	0.12	0.15
S.3.1	100	60	0.22		60	0.05	0.10	0.12	0.15
S.3.2	80	30	0.20		30	0.05	0.10	0.12	0.15
S.3.3	50	30	0.12		30	0.05	0.10	0.12	0.15
H.1.1	100		0.10	100		0.05	0.10	0.15	0.20
H.1.2	80		0.08	80		0.05	0.10	0.15	0.20
H.1.3	50		0.05	50		0.05	0.10	0.15	0.20
H.1.4									
H.2.1	100		0.10	100		0.05	0.10	0.15	0.20
H.3.1	80		0.08	80		0.05	0.10	0.15	0.20
O.1.1		100	0.10		100	0.05	0.12	0.15	0.20
O.1.2		100	0.10		100	0.05	0.12	0.15	0.20
O.2.1									
O.2.2		100	0.03		100	0.05	0.12	0.15	0.20
O.3.1		100	0.08		100	0.05	0.12	0.15	0.20

The cutting data is strongly influenced by external conditions, such as the stability of the tool and workpiece clamping, material and type of machine. The specified values represent guideline cutting data that can be adjusted by approx. **±20%** according to the usage conditions.

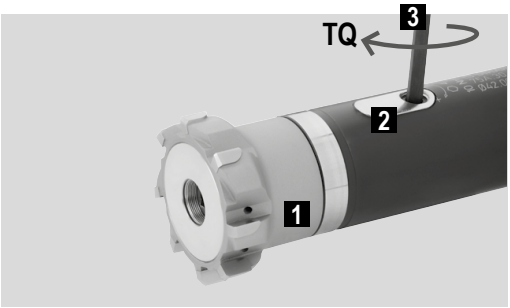
REAMAX TS – Assembly instructions



Clean the Morse taper adapter/face contact → grease-free.
Screw the pull stud (5) into the reaming head and tighten using the open-ended spanner (6).

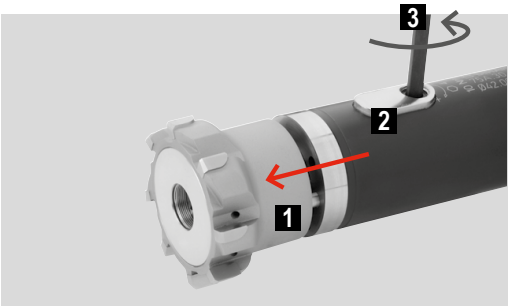


Use key (3) to open jaws (2), but do not fully release, and insert reaming head (1).

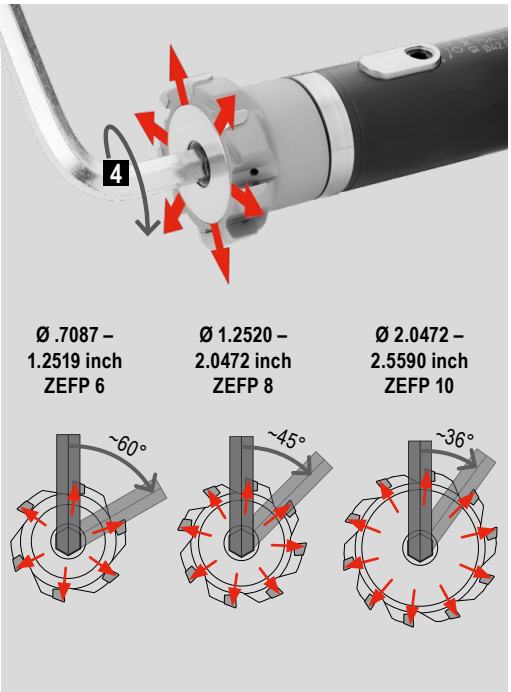


Use the key (3) to close the jaws (2), observe the recommended tightening torque.
When inserting the reaming head (1), this is pulled into its final position when the jaws (2) are closed.

Ø Range	Tightening torque (TQ)
.7087 – .7873	13 in-lbs
.7874 – .8661	22 in-lbs
.8662 – 1.0629	35 in-lbs
1.0630 – 1.3779	44 in-lbs
1.3780 – 1.6535	53 in-lbs
1.6536 – 2.0472	89 in-lbs
2.0473 – 2.7560	115 in-lbs



When removing the reamer head (1), it is pressed out of its position by the jaws (2) and can thus be easily removed from the holder:
Use key (3) to open the jaws (2) but do not fully release, and remove reamer head (1).



Expansion for wear compensation:
The smallest reaming tolerances up to IT4 can be achieved through adjustment with the hex key (4).

ZEFP = Number of effective cutting edges, around the periphery	ZEFP 6		ZEFP 8		ZEFP 10	
Pitch	~ 60°		~ 45°		~ 36°	
Turning the hex key by ~ ...°, results in an adjustment of ~ ... inch in diameter	~ 15°	~ .0002" in Ø	~ 15°	~ .0001" in Ø	~ 18°	~ .0002" in Ø
	~ 30°	~ .0005" in Ø	~ 30°	~ .0002" in Ø	~ 36°	~ .0004" in Ø
	~ 45°	~ .0007" in Ø	~ 45°	~ .0004" in Ø		
	~ 60°	~ .0009" in Ø				

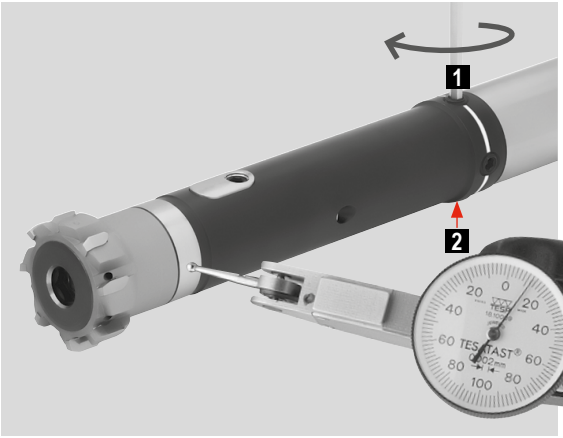
Caution: For technical reasons, all REAMAX TS reaming heads and Monomax reamers have an irregular cutting edge pitch. For this reason, the angles specified above are approximate values, to make handling easier.If the required diameter is over turned, turning back the adjustment screw is not enough! If this occurs, the reaming head/reamer must be fully released and re-set again. This adjustment facility is only intended to compensate for wear. Therefore, an adjustment of .0059 inch in diameter should not normally be exceeded! **The adjustment values given above are recommended values based on empirical values and test results. However, these may vary slightly from case to case.**

REAMAX TS – Operating instructions

Aligning the DAH Zero holder

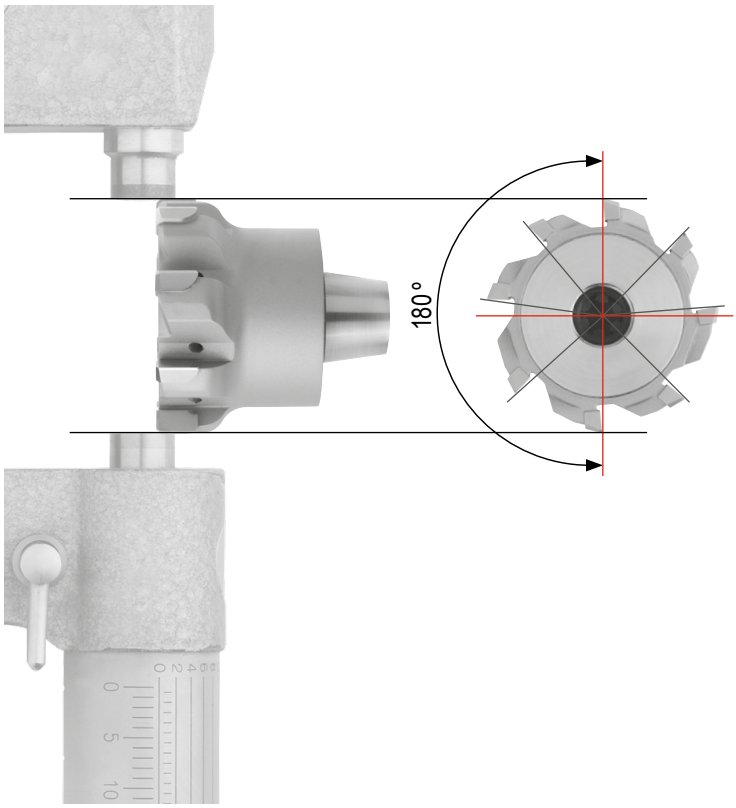
The tool is recommended for radial alignment of max. .0008".

1. Loosen all adjustment screws and pre-load with 9 in-lbs. (new tools are already supplied like this).
2. Place dial gauge with .0001" display on the ground indicating band diameter.
3. Turn the tool to determine the point with the largest runout error using the dial gauge.
4. Adjust the corresponding adjustment screw with the hex key clockwise (1) until half the runout error has been corrected. In doing so, over-tighten by approx. .0002".
5. Release the opposite adjustment screw (2) by the over-tightened amount.
6. Adjust all 4 adjustment screws until the runout is < .0001".

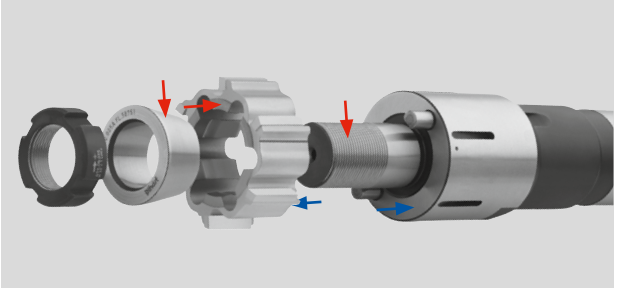


Please note:
- ▲ The run-out must be checked and if necessary, re-aligned after an adapter changeover, change of application, and after any adjustment for wear compensation, using adjustment steps 1 to 6.
- ▲ Adjustment screws must always be tightened during usage with at least 9 in-lbs.
- ▲ The max. re-adjustment torque is 40 in-lbs.

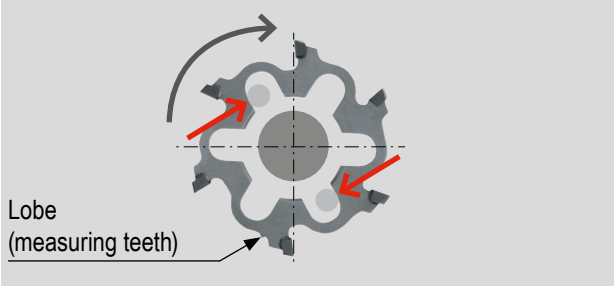
Caution!
- ▲ Unequal angle distribution!
- ▲ There are 2 cutting edges 180° opposite each other = measuring teeth
- ▲ Measure the diameter at the front on the cutting edge (due to back taper, see diagram)
- ▲ Avoid damage to the cutting edge



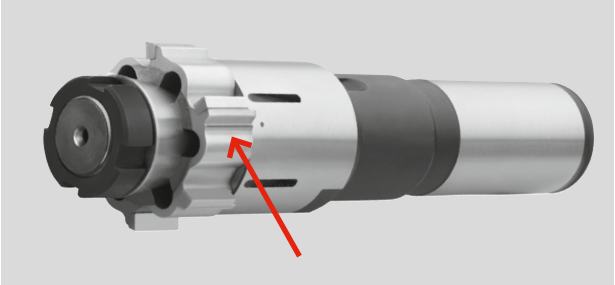
Cutting Ring – Assembly Instructions on Holder for Through Hole Machining



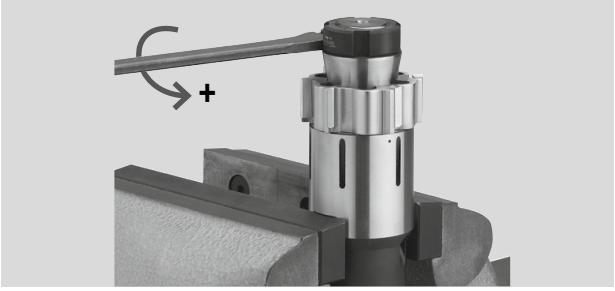
Arrow markings:
→ light grease
→ face surfaces on holder and cutting ring are grease-free



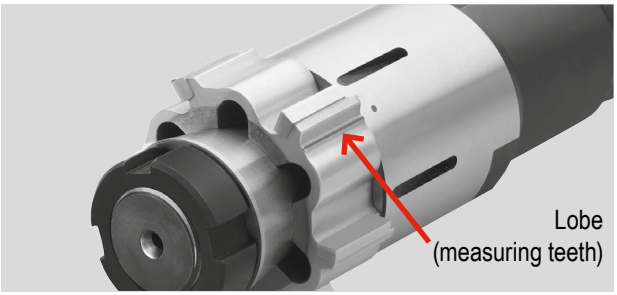
The position for the drive pins is marked with a lobe or in red. Before tightening and adjusting turn the cutting ring against the direction of machining until hitting the drive pins.



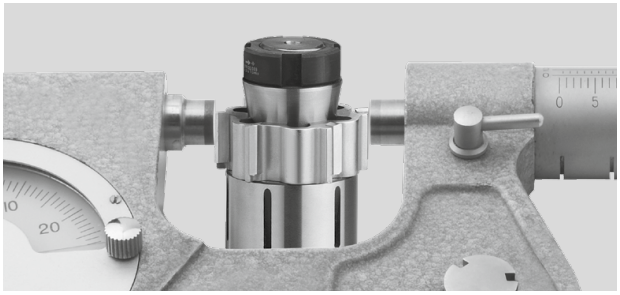
Please observe the marking on holder and cutting ring, check alignment of the coolant bores.



Adjust the diameter to the middle of the tolerance (counter-clockwise thread).

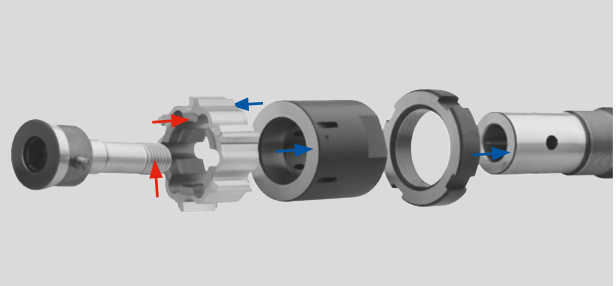


The diameter can only be measured at the marked cutting edges due to unequal angular position!

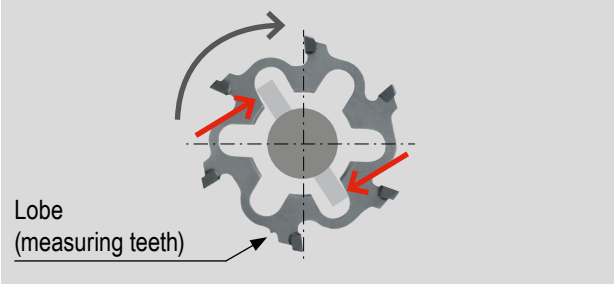


Measure the diameter. If the diameter was set too large, the conical ring must be loosened and the cutting ring readjusted.

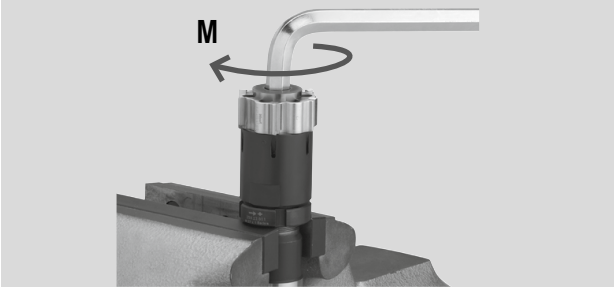
Cutting Ring – Assembly Instructions on Holder for Blind Hole Machining



Arrow markings:
→ light grease
→ face surfaces on holder and cutting ring are grease-free

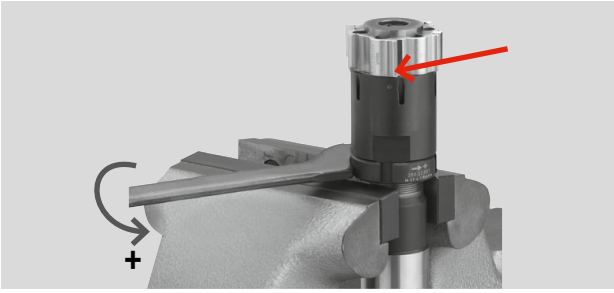


The position for the drive pins is marked with a lobe or in red. Before tightening and adjusting turn the cutting ring against the direction of machining until hitting the drive pin.

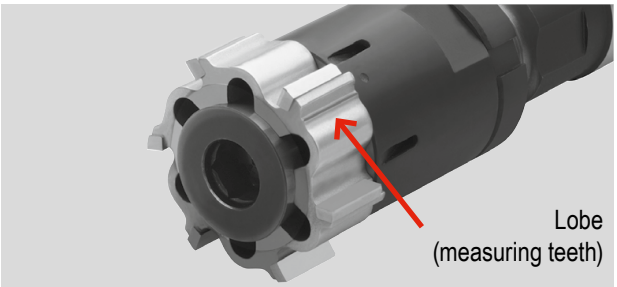


Screw the nut onto the holder with the smooth face against the bushing. Mount the cutting ring with the conical screw.
After fastening the conical screw check that there is space between bushing and ring.
Fasten conical screw according to index table.

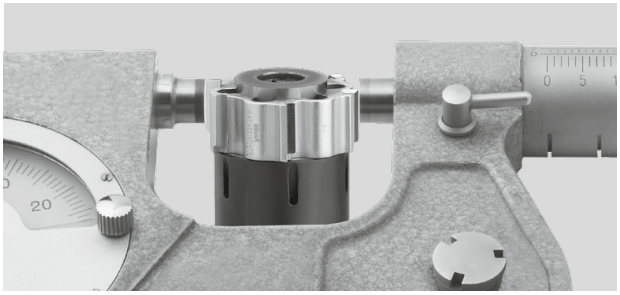
Ø range	Tightening torque (TQ)
2.3622	796 – 974 in-lbs.
2.4016 – 3.1102	1062 – 1239 in-lbs.
3.1496 – 3.9370	1593 – 1947 in-lbs.



Please observe the marking on holder and cutting ring, check alignment of the coolant bores. Adjust the diameter to the middle of the tolerance.

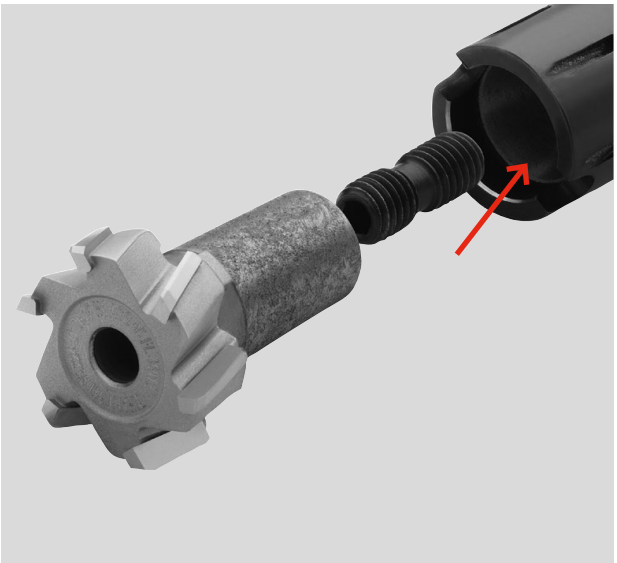


The diameter can only be measured at the marked cutting edges due to unequal angular position!

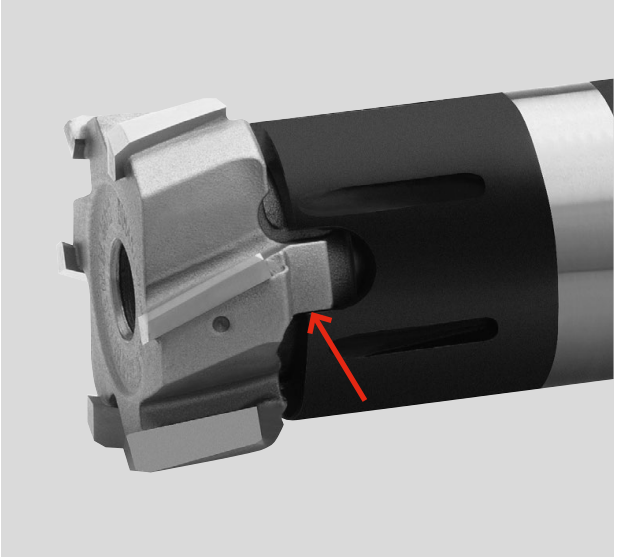


Measure the diameter. If the diameter was set too large, the nut must be loosened and the cutting ring readjusted.

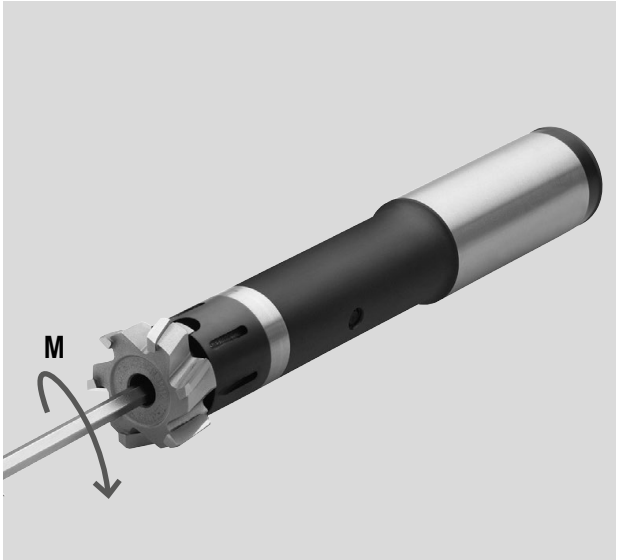
Rapid Set Head – Assembly instructions



Each rapid set head is delivered with slightly greased taper.
Do not wipe off!
Taper must be slightly greased with copper grease!
Clean taper in holder thoroughly → free of grease.
Turn the differential screw one rotation into the head (counter-clockwise thread).



Before tightening turn the drive keys of the rapid set head against the direction of machining until it hits the holder.

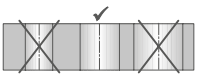


Tightening the left-/right screw.
Observe the specified tightening torque M in the index table.

Ø range	Tightening torque (TQ)
0.496 – 0.614	6 – 8 in-lbs
0.615 – 0.732	10 – 12 in-lbs
0.733 – 0.945	16 – 20 in-lbs
0.946 – 1.575	27 – 34 in-lbs
1.576 – 2.362	46 – 58 in-lbs

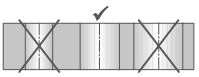
Rapid set heads up to diameter 0.496" are assembled with a clamping screw at the back of the holder. The screw has a counter-clockwise thread.

Problems / possible causes / solutions



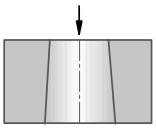
Hole too large

- ▲ Runout error for reamer in the spindle (rotating tool) → use DAH compensation system and correct runout
- ▲ Inaccurate alignment, reamer cuts at the back end (stationary tool) → correct alignment and use DPS floating holder
- ▲ Built-up edge → reduce cutting speed v_c for uncoated carbide cutting material, increase it for DST and coated cutting material or increase the oil content of the coolant
- ▲ Reamer too large → have reamer repaired



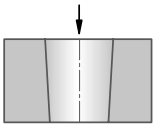
Hole too small

- ▲ Worn reamer → have reamer adjusted, replaced or repaired
- ▲ Reaming allowance too small → increase reaming allowance
- ▲ Cutting force too high → reduce feed or select other lead geometry (ASG)
- ▲ Reamer too small → have reamer adjusted, replaced or repaired



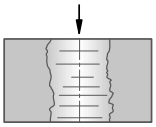
Conical hole, tapered backwards

- ▲ Inaccurate alignment → correct alignment and use DPS floating holder
- ▲ Misalignment between headstock and turret → correct turret and use DPS floating holder



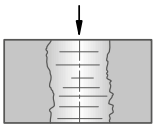
Conical hole, tapered forwards

- ▲ Poor alignment, cutting edges push at start → correct alignment and use DPS floating holder



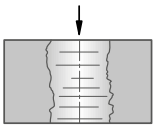
Hole is not round

- ▲ Reamer runout error too large → correct the runout with DAH compensation system
- ▲ Alignment error → correct alignment error and use DPS floating holder
- ▲ Asymmetric initial cutting through angled entry surface → countersink hole
- ▲ Workpiece deforming due to clamping → correct clamping of the workpiece
- ▲ Poor pre-machining → optimize pre-machining
- ▲ Feed too high → reduce feed



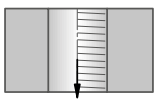
Hole exhibits chatter marks

- ▲ Cutting speed v_c too high → reduce cutting speed
- ▲ L to D ratio too high→ reduce the speed of entry, pilot the bore or select other lead geometry (ASG)



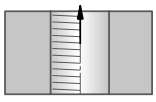
Poor surface quality

- ▲ Built-up edge → reduce cutting speed v_c for uncoated carbide cutting material, increase it for DST and coated cutting material or increase the oil content of the coolant
- ▲ Cutting edge worn→ have cutting edge repaired or replace the tool
- ▲ Reamer runout error → correct the runout with DAH compensation system
- ▲ No or insufficient cooling, chips are getting trapped → use thru coolant supply and increase coolant pressure
- ▲ Unsuitable coolant → increase the oil content of the coolant
- ▲ Incorrect cutting data→ use data according to catalog recommendation



Grooves in the hole "Feed marks"

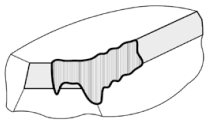
- ▲ Faulty cutting edge (edge breakage) → have reamer replaced or repaired
- ▲ Built-up edges → reduce cutting speed v_c for uncoated carbide cutting material, increase it for DST and coated cutting material or increase the oil content of the coolant



Grooves in the hole "Retraction marks"

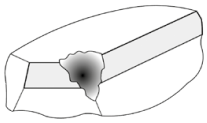
- ▲ Cutting edges moved too far out of the hole → move no more than lead length + .079" out of the hole
- ▲ Material springs back → do not retract at high speed but with increased (2-3 times) feed rate

Types of wear



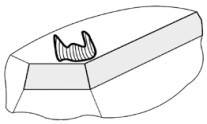
Wear on clearance face

Reduce the cutting speed and select a more wear resistant cutting material or coating.



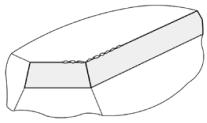
Cutting edge breakage

Reduce feed and reaming allowance. In the case of interrupted holes, use coated carbide instead of DST.



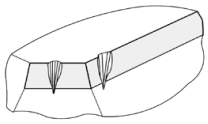
Cratering

Reduce the cutting speed and use a positive cutting edge geometry.



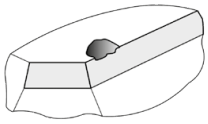
Edge breakages

Increase the cutting speed and use larger rake angle.



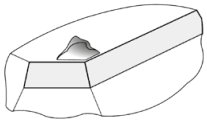
Notch wear

Reduce the cutting speed and select a more wear resistant cutting material or coating.



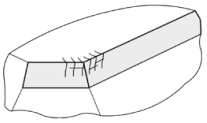
Fatigue fracture

Reduce feed, increase reamer stability.



Built-up edge

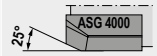
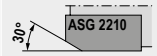
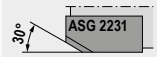
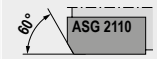
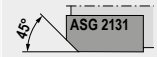
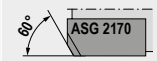
Use positive cutting edge geometry, increase the oil content of the coolant, reduce the cutting speed v_c for uncoated carbide cutting material, increase it for DST and coated cutting material.

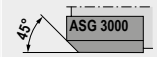
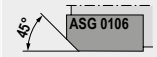
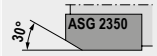
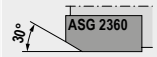


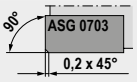
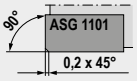
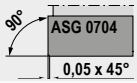
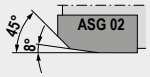
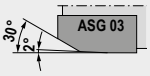
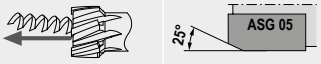
Cracks at right angles to the cutting edge

Use sufficient coolant and thru coolant, reduce the cutting speed.

Common cutting edge geometries in the performance area

Standard geometries				
Geometry	**Flute type**	**Chip flow**	**Lead angle**	
ASG4000	straight	←		Through hole
ASG2210	left-hand helix	←		
ASG2231	left-hand helix	←		
ASG2270	straight	←		
ASG2110	straight	→		Blind hole
ASG2131	straight	→		
ASG2170	straight	→		

Standard geometries				
Geometry	**Flute type**	**Chip flow**	**Lead angle**	
ASG3000	straight	↔		Through hole-Blind hole
ASG0706	straight	↔		
ASG0106	straight	↔		
ASG2350	straight	↔		
ASG2360	straight	↔		

Special geometries			
Geometry	**Flute type**	**Chip flow Comments**	**Lead angle**
ASG0703	straight	Face cutting	
ASG1101	straight	Face cutting	
ASG0704	straight	Face cutting with increased positional accuracy	
ASG09B	straight	Chip control < Ø 1.26 inch	
ASG1402	straight	Chip control > Ø 1.26 inch	
ASG02	straight	↔	
ASG03	straight	↔	
ASG05	left-handed		

Achievable surface quality

	Material group	Roughness	N11	N10	N9	N8		N7	N6		N5	N4	N3	N2	N1
		Average roughness R_a	25	12.5	6.3	3.2		1.6	0.8		0.4	0.2	0.1	0.05	0.025
		Surface roughness R_z	100	63	40	25	16	10	6.3	4	2.5	1.6	1	0.63	0.25
P	1.0 – 4.2														
M	1.1 – 3.1														
K	1.1 + 2.1 + 3.1														
	1.2 + 2.2 + 3.2														
N	1.1 – 2.3														
	3.1 – 3.3														
S	1.1 – 3.3														
H	1.1 – 1.3														

reachable ▬ conditionally reachable

This information is based on experience and may vary from case to case, depending on the prevailing conditions.
(all other surface values on request)

Tolerances

IT tolerance class DIN 7151

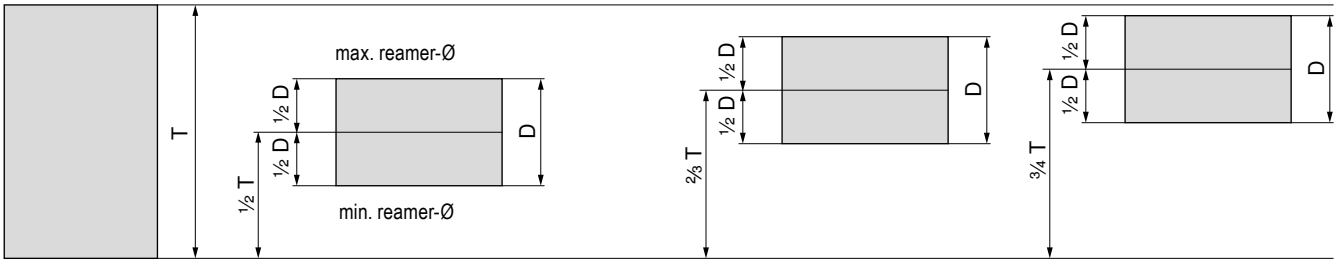
Nominal dimension range (inch)	IT tolerance class (inch)											
	IT 1	IT 2	IT 3	IT 4	IT 5	IT 6	IT 7	IT 8	IT 9	IT 10	IT 11	IT 12
.039 – .118	.00003	.00005	.00008	.00012	.00016	.00024	.00039	.00055	.00098	.00158	.00236	.00394
> .118 – .236	.00004	.00006	.00010	.00016	.00020	.00032	.00047	.00071	.00118	.00189	.00295	.00472
> .236 – .394	.00004	.00006	.00010	.00016	.00024	.00035	.00059	.00087	.00142	.00228	.00354	.00591
> .394 – .709	.00005	.00008	.00012	.00020	.00032	.00043	.00071	.00106	.00169	.00276	.00433	.00709
> .709 – 1.181	.00006	.00010	.00016	.00024	.00035	.00051	.00083	.00130	.00205	.00331	.00512	.00827
> 1.181 – 1.969	.00006	.00010	.00016	.00028	.00043	.00063	.00098	.00154	.00244	.00394	.00630	.00984
> 1.969 – 3.150	.00008	.00012	.00020	.00032	.00051	.00075	.00118	.00181	.00291	.00472	.00748	.01181
> 3.150 – 4.724	.00010	.00016	.00024	.00039	.00059	.00087	.00138	.00213	.00343	.00551	.00866	.01378
> 4.724 – 7.087	.00014	.00020	.00032	.00047	.00071	.00098	.00158	.00248	.00394	.00630	.00984	.01575
> 7.087 – 9.843	.00018	.00028	.00039	.00055	.00079	.00114	.00181	.00284	.00453	.00728	.01142	.01811
> 9.843 – 12.402	.00024	.00032	.00047	.00063	.00091	.00126	.00205	.00319	.00512	.00827	.01260	.02047

Nominal dimension range (mm)	IT tolerance class (metric) (in 0.001 mm)											
	IT 1	IT 2	IT 3	IT 4	IT 5	IT 6	IT 7	IT 8	IT 9	IT 10	IT 11	IT 12
1 – 3	0.8	1.2	2	3	4	6	10	14	25	40	60	100
> 3 – 6	1	1.5	2.5	4	5	8	12	18	30	48	75	120
> 6 – 10	1	1.5	2.5	4	6	9	15	22	36	58	90	150
> 10 – 18	1.2	2	3	5	8	11	18	27	43	70	110	180
> 18 – 30	1.5	2.5	4	6	9	13	21	33	52	84	130	210
> 30 – 50	1.5	2.5	4	7	11	16	25	39	62	100	160	250
> 50 – 80	2	3	5	8	13	19	30	46	74	120	190	300
> 80 – 120	2.5	4	6	10	15	22	35	54	87	140	220	350
> 120 – 180	3.5	5	8	12	18	25	40	63	100	160	250	400
> 180 – 250	4.5	7	10	14	20	29	46	72	115	185	290	460
> 250 – 315	6	8	12	16	23	32	52	81	130	210	320	520

Manufacturer's tolerance of the reamer

T = Hole tolerance range
D = Manufacturer's tolerance of the reamer

max. hole-Ø



min. hole-Ø

Manufacturer's tolerance of expandable reamers

The diameter of an expandable reamer is ground to the middle of hole tolerance T (REAMAX TS / Monomax).
The adjustment capability of the reamer facilitates wear compensation.

Manufacturer's tolerance of fixed reamers

The manufacturer tolerance D of fixed reamers is two thirds (REAMAX) or three quarters (Fullmax) of the hole tolerance T.

Coatings – Reaming

DBC

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

DBG-P

- AlTiN Multilayer coating
- Especially for universal use in a variety of materials at high cutting speeds
- Suitable for MMS application
- Maximum application temperature: 1000 °C

TiN

- TiN coating
- Maximum application temperature: 450 °C

Grade description – Reamers

DST

- Cermet, uncoated
- ISO | **P15** | **M10** | K10
- The uncoated cermet grade for finish machining stainless and hardened steel
- Particularly wear resistant thanks to high heat resistance

PCD-U

- Polycrystalline diamond cutting material, uncoated
- Particularly wear-resistant PCD grade for process reliable machining of aluminium

K10

- Carbide, uncoated
- ISO | **K10**
- Uncoated carbide grade for machining grey cast iron or non-ferrous metals, depending on the cutting edge geometry

New products for machining technicians

NEW Precision adjustment head hi.flex micro



▲ The continuation of the hi.flex system success story: the ultimate milestone in terms of precision, flexibility and user-friendliness is now getting a well-deserved "little brother". With a boring range of Ø 0.5 mm – 60 mm, it covers a very wide range of all upcoming bore machining operations.

→ Page 21–23

NEW UltraMini/EcoCut boring bar adapter



▲ The new boring bar adapter can be used in all heads with a clamping diameter of 12 mm or 16 mm such as both sizes of the hi.flex micro precision adjustment head (and BluFlex 2). Using the UltraMini and EcoCut boring bars makes particular sense here since the adapter is also suitable for boring bars with a through coolant supply.

DCONMS 12 → Page 22
DCONMS 16 → Page 15

NEW **MicroKom** – Precision boring set



▲ New: the MicroKom precision adjustment heads BluFlex 2, hi.flex and hi.flex micro are also available as a set

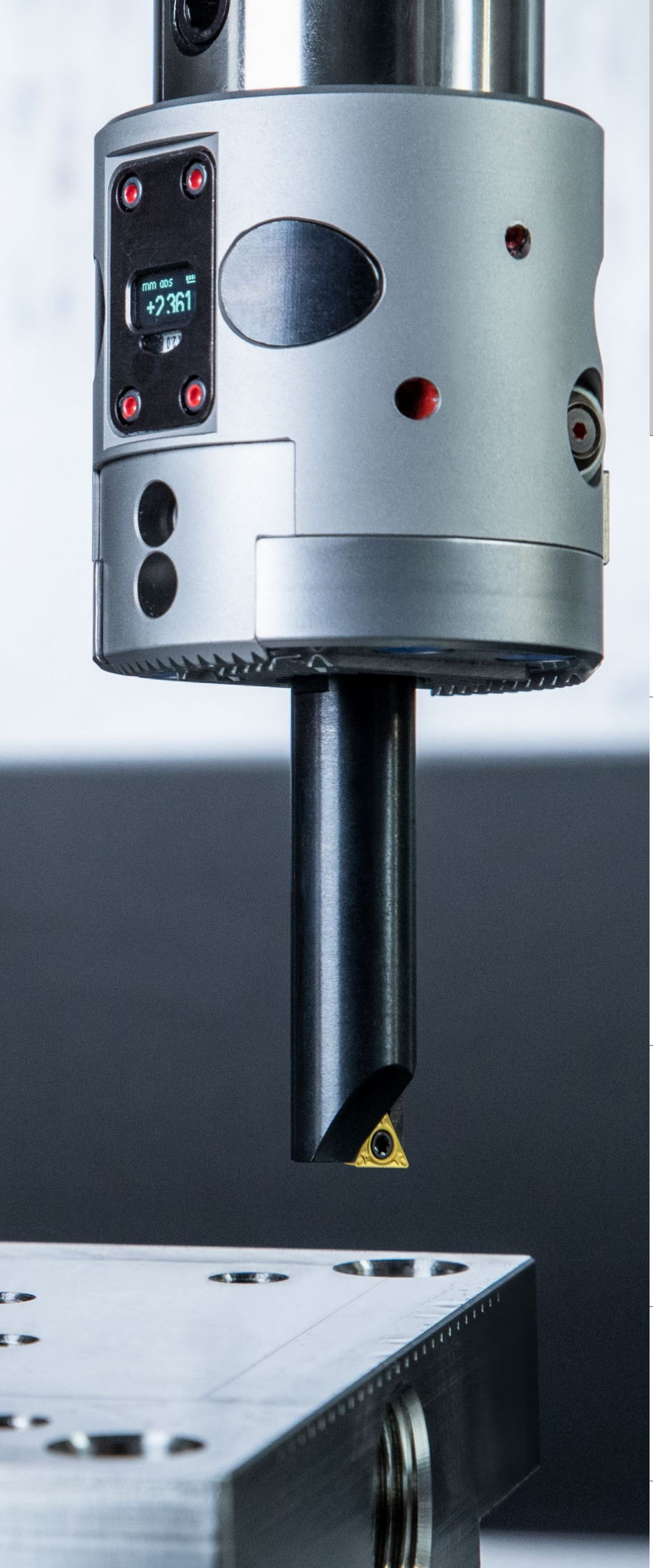
BluFlex 2 → Page 12
hi.flex → Page 14
hi.flex micro → Page 21

NEW Interface adapter



▲ Total freedom in tool selection: thanks to the new interface adapters, ABS tools in STM base holders and STM tools in ABS base holders can be accommodated reliably and precisely.

→ Page 59



Solid drilling and bore machining	Metric Catalog	HSS drilling	1
	Metric Catalog	Solid carbide drilling	2
		Indexable drilling	3
		Reaming and Countersinking	4
		Indexable Boring	5
Threading	Metric Catalog	Taps and thread formers	6
	Metric Catalog	Circular and Thread Milling	7
	Metric Catalog	Thread turning	8
Turning		Indexable Turning	9
		Multifunction	10
		Parting and Grooving	11
	Metric Catalog	Miniature turning tools	12
Milling	Metric Catalog	HSS Milling Cutters	13
		Solid Milling	14
		Indexable Milling	15
Clamping technology		Adaptors and Accessories	16
	Metric Catalog	Workpiece clamping	17
		Material examples and article no. Index	18

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Fine boring tools	80+81
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Notes on boring technology	84
Problems / possible causes / solutions	85
Types of wear	86
Chip breakers	87
Grades / coatings	88+89

KOMET \ Performance

Premium quality tools for high performance.

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

KOMET \ Standard

Quality tools for standard applications.

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

Symbol explanation

F Fine Machining

M Medium Machining

R Rough Machining

Smooth cut

Irregular cutting depth

Interrupted cut

ABS **KOMET ABS** – modular coupling system for rotating and stationary tools

STM Modular SpinTools interface

ER 32 System-independent ER 32 interface

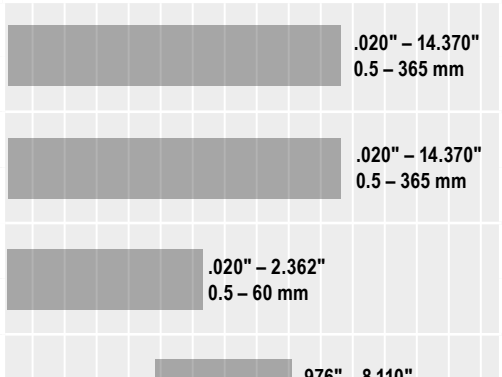
Coolant supply central
Steep taper Form AD



hi.flex / hi.flex micro

- ▲ The precision adjustment heads are characterised by their high precision, absolute reliability and enormous flexibility
- ▲ Available as analog and digital variants (hi.flex: analog + digital, hi.flex micro: analog)
- ▲ Comprehensive accessories offer maximum flexibility (hi.flex: diameter range 0.5 – 365 mm / .020" – 14.370" hi.flex micro: diameter range 0.5 – 60 mm)
- ▲ Higher RPMs can be reached thanks to the symmetrically balanced design (hi.flex: 17,500 rpm, hi.flex micro: 30,000 rpm)
- ▲ The sensitive adjustment for µ-precise width of cut
- ▲ With through coolant supply
- ▲ Universal ABS interface

Toolfinder



Machining	System + quantity of rough boring or fine boring heads to cover the diameter range	Digital	Analog	ABS Modular	STM Modular	ER 32 Modular	Monoblock	Through spindle	Tolerance zone	Case set	Page No.
Finishing	.020" – 14.370" 0.5 – 365 mm **BluFlex 2** 1 Precision adjustment heads	✓		✓				✓ > Ø 2.559" 65 mm	≥ IT 7	✓	12
	.020" – 14.370" 0.5 – 365 mm **hi.flex** 1 Precision adjustment heads	✓	✓	✓				✓ > Ø 2.362" 60 mm	≥ IT 7	✓	13+14
	.020" – 2.362" 0.5 – 60 mm **hi.flex micro** 1 Precision adjustment heads		✓	✓				✓ > Ø 1.417" 36 mm	≥ IT 7	✓	21
	.976" – 8.110" 24.8 – 206 mm **M03 Speed** 9 Precision adjustment heads		✓	✓				✓	≤ IT 7		24
	1.020" – 7.835" 29.5 – 199 mm 15 FF precision adjustment heads		✓	✓				✓	≥ IT 7		26
	.120" – .752" 0.3 – 19.1 mm 2 Micro boring heads	✓	✓						≥ IT 7		28
	.579" – .949" 14.7 – 24.1 mm 3 Fine boring heads		✓					✓	≥ IT 7		30
	.118" – 12.598" 3 – 320 mm 1 Multi-Head – Fine boring head		✓		✓		✓	✓ > Ø 2.480" 63 mm	≥ IT 7	✓	32
	.118" – 3.469" 3 – 88.1 mm 1 Single point boring head	✓	✓		✓	✓	✓	✓ > Ø 2.615" 55 mm	≥ IT 7	✓	34+35
	.941" – 6.067" 23.9 – 154.1 mm 6 Single point finish boring heads	✓	✓		✓			✓	≥ IT 7		40
	13.386" – 15.827" 86 – 402 mm 1 Single point finish boring head		✓		✓			✓	≥ IT 7	✓	44
Roughing and Finishing	5.906" – 25.787" 150 – 655 mm 1 Console tool with baseplate	✓	✓					✓			62 402 ...
	25.591" – 86.811" 650 – 2205 mm 1 Console tool with slide	✓	✓					✓			62 405 ...
Roughing	1.181" – 8.031" **TwinKom G04** 7 Twin cutters		✓	✓				✓			46
	.945" – 8.465" 24 – 215 mm **TwinKom G01** 8 Twin cutters		✓	✓				✓			48
	.925" – 3.445" 23.5 – 87.5 mm 5 Boring heads for roughing with 2 cutting edges		✓		✓			✓			51

This article can be found in our online shop at cuttingtools.ceratizit.com

Overview – Fine boring systems

MicroKom

BluFlex 2 / hi.flex

Ø 0.5 – 365 mm / .020" – 14.370"

ABS

BluFlex 2



Digital
12

hi.flex



Analog / digital
13+14

Ø 0.5 – 26 mm / .020" – 1.024"

Ø 0.5 – 8 mm .020" – .031"		UltraMini + EcoCut → Main catalog chapters 10 + 12	 Adapter 15
Ø 5.6 – 24 mm .220" – .945"		Boring Bar 19	Adapter 18 
Ø 5.6 – 11 mm .220" – .433"		Boring bar, vibration-optimized 18	
Ø 13 – 26 mm .512" – 1.024"		Boring bar 18	
Ø 6 – 22 mm * .236" – .866"		Steel boring bar 15	
Ø 7.9 – 23.9 mm .311" – .941"		ABS32 boring bar 19	

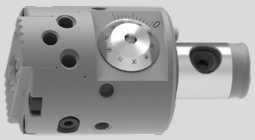
Ø 25 – 365 mm / .984" – 14.370"

Ø 25 – 44 mm .984" – 1.732"		Insert holder 16	Serrated body 16 
Ø 44 – 63 mm 1.732" – 2.480"			
Ø 63 – 93 mm 2.480" – 3.661"		Insert holder 16	Coolant diverting plug 17 
Ø 90 – 365 mm 3.543" – 14.370"		Insert holder 16	Coolant diverting plug 17 
		Bridge 17	
Ø 5 – 70 mm .197" – 2.756"		Boring tool for external machining 17	

hi.flex micro

Ø 0.5 – 60 mm

ABS



Analog
21

Ø 0.5 – 25 mm

Ø 0.5 – 8 mm		UltraMini + EcoCut → Main catalog chapters 10 + 12	 Adapter 22
Ø 8 – 13.8 mm		Boring Bar 22	
Ø 13.8 – 19.8 mm		Boring Bar 22	
Ø 19.8 – 25 mm		Boring Bar 22	

Ø 25 – 60 mm

Ø 25 – 44.8 mm		Insert holder 23	Serrated body 23 
Ø 44.8 – 60 mm		Insert holder 23	Coolant diverting plug 23 



TO.X
61+62



WOHX *
60

* Used for steel boring bars
Ø 6 – 8 mm (.236" – .315")

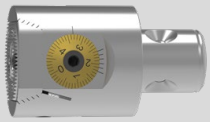
necessary
optional

SpinTools

Multi-Head boring and fine boring head

Ø 3 – 320 mm

HSK-A | MAS BT | STM



Analog
32

Ø 3 – 53.1 mm

Ø 3 – 12 mm



Boring steel
37

Ø 5.8 – 13.2 mm



Boring bar
38

Reduction sleeve
38



Ø 8.75 – 40.1 mm



High-speed boring head + boring shank
39

Ø 9.75 – 53.1 mm



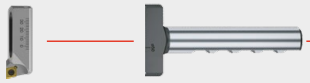


Steel boring bar
37

Boring tool extension
38

Ø 29.75 – 320 mm

Ø 29.75 – 88.1 mm



Insert holder
37

Adjustable boring bar
37

Ø 86 – 320 mm



Counterweight
33

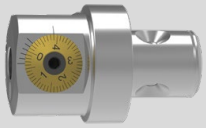
Bridge
33

Insert holder
33

Single point finish boring head

Ø 3 – 88.1 mm

HSK-A | MAS BT | STM | ER 32



Analog / digital
34+35

Ø 3 – 53.1 mm

Ø 3 – 12 mm



Boring steel
37

Ø 5.8 – 13.2 mm



Boring bar
38

Reduction sleeve
38



Ø 8.75 – 40.1 mm



High-speed boring head + boring shank
39

Ø 9.75 – 53.1 mm



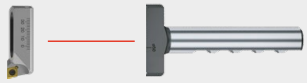


Steel boring bar
37

Boring tool extension
38

Ø 29.75 – 88.1 mm

Ø 29.75 – 88.1 mm

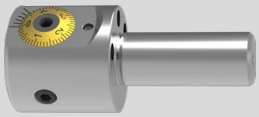


Insert holder
37

Adjustable boring bar
37

Micro Boring Head

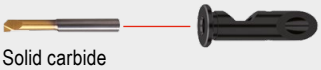
Ø 0.3 – 19.1 mm



Analog / digital
28

Ø 0.3 – 19.1 mm

Ø 0.3 – 7.1 mm



Solid carbide cutting insert
29

Adapter
29

Ø 5.2 – 8.1 mm



Solid carbide cutting insert
29

Ø 6.9 – 19.1 mm



Solid carbide insert
29

Tool holder
29



CC..
67

Overview – Fine boring tools

MicroKom

M03 Speed
Analog

Ø 24.8 – 206 mm

ABS

Ø 24.8 – 39 mm

Precision adjustment heads
24



Insert holder
25



Ø 38 – 103 mm

Precision adjustment heads
24

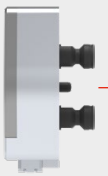


Insert holder
25

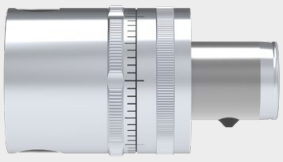


Ø 38 – 206 mm

Interchangeable bridge
25



Precision adjustment heads
24



Insert holder
25

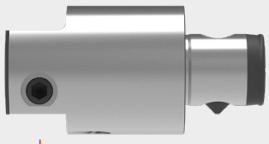


FF precision adjustment head
Analog

Ø 29.5 –199 mm

ABS

Precision adjustment heads
26



Precision turning insert
27





TO.X
61+62

necessary
optional

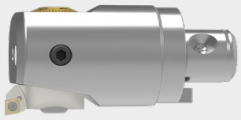
SpinTools

Single point finish boring head
Analog / digital

Ø 23.9 – 154.1 mm

STM

Single point finish boring head Analog / digital
40



High-speed boring shank
41





Insert holder, 90°, extended
41



Insert holder, 90°
41



Insert holder, 95°
41



Reverse adapters for back boring
42

Ø 86 – 402 mm

STM

Insert holder
45



Single point finish boring head Analog
44



Fine boring head
Analog

Ø 14.7 – 24.1 mm

Fine boring head
30



High-speed boring shank
31





Insert holder, 90°
30



Shank extension
31

5



CC..
67



WC..
66

Overview – Rough boring and console tools

necessary
optional

TwinKom

G01
Analog

Ø 24 – 215 mm

Tool holder 90° radially adjustable
49

Tool holder 80° radially adjustable
49

Basic tool holder, radially + axially adjustable
50

Indexable insert 90°
50

Indexable insert 80°
50

ABS

Base body short/long
48

WO..
63+64

G04
Analog

Ø 1.181" – 8.031"

Tool holder 90° radially adjustable
47

Tool holder 80° radially adjustable
47

Tool holder 80° radially adjustable
47

ABS

Base body short/long
46

WO..
63+64

SOEX
65

SpinTools

Twin rough boring head
Analog

Ø 23.5 – 87.5 mm

Pair of insert holders, Standard 90°
52

Pair of insert holders, Standard 70°
52

Pair of insert holders, Synchro 90°
53

STM

Boring Head
51

CC.. / CN..
67

SpinTools

Console tool
Analog / digital

Ø 150 – 2205 mm

Rough boring block 90° (CC..)
62 412 ...

Rough boring block 90° (CN..)
62 413 ...

Rough boring block 70° (CN..)
62 414 ...

Finish boring block analog / digital
62 410 ... / 62 409 ...

Insert holder 90° / 95°
62 318 ... / 62 320 ...

Ø 150 – 655 mm
Base plates
62 402 ...

Ø 650 – 2205 mm
Elongation console

Counterweight
62 427 ...

Slide
62 406 ...

Basis
62 405 ...

Base adapter
62 392 ...

Ø 60 mm DIN 6357

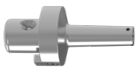
HSK-A
SK
MAS BT
SK
MAS BT

Overview of base adapters and accessories

System			CAT		ISO 7388-2		ISO 12164	ISO 26623-1
			CV	CV-FC	MAS-BT	MAS-BT-FC	HSK-A	PSC
Base adapter		ABS	→ Chapter 16, Adapters and accessories 16|15–19	16|20	16|52–54	16|72	16|105+106	16|134+135
		STM			54		55	

5

Accessories

Extension		ABS	→ Chapter 16, Adapters and accessories 16|152
		STM	58
Reduction		ABS	→ Chapter 16, Adapters and accessories 16|156
		STM	56
Interface adapter ABS → STM		ABS	59
Interface adapter STM → ABS		STM	59

Additional accessories available on request, such as balancing rings, axial grooving holders (UltraMini) and rough boring insert holders (0.4 mm offset) for SpinTools systems.

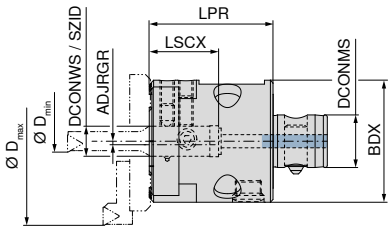
MicroKom – BluFlex 2 – precision adjustment head

- ▲ Via the free app (Android/iOS), an extended display can be transferred to a standard smartphone (62 840 16097)
- ▲ For MicroKom boring bars with Ø 16 mm or with ABS 32, MicroKom bridges, and serrated body
- ▲ With through coolant supply
- ▲ LSCX = Recess depth of boring bar
- ▲ Inch and Metric Display

Scope of supply:

incl. Battery

ABS





D_{min} - D_{max} mm	D_{min} - D_{max} inch	KOMET no.	Adapter	DCONWS mm	SZID	DCONMS mm	BDX mm	LPR mm	LSCX mm	ADJRGR mm	WT kg	without Bluetooth 62 820 ...	with Bluetooth 62 840 ...
0.5 - 365	0.019 -14.370	M04 30100	ABS 50	16	ABS 32	28	65	71	38	-0.2 - 2,3	1.45	**16097**	
0.5 - 365	0.019 -14.370	M04 30000	ABS 50	16	ABS 32	28	65	71	38	-0.2 - 2,3	1.45		**16097**


Clamping screw


Clamping screw


Clamping screw


Clamping sleeve


Battery cover

Spare parts for Article no.		62 950 ...		62 950 ...		62 950 ...	62 950 ...	62 950 ...
62 820 16097	M8x1x12/SW4	**13989**	M8x1x20/SW4	**13700**	M5x14/SW4	**18600**	**18500**	**18400**
62 840 16097	M8x1x12/SW4	**13989**	M8x1x20/SW4	**13700**	M5x14/SW4	**18600**	**18500**	**18400**

A detailed operating manual is available for download in the online shop next to the product.

Suitable ABS adapters can be found in → **Chapter 16, Adaptors and Accessories.**

→ **Page 6**
Here you will find a detailed system overview.

MicroKom – Precision boring set BluFlex 2

NEW

Scope of supply:

- ▲ **1 plastic case**
- ▲ **1 precision adjustment head**
- ▲ **5 boring bars**
  - – 62 850 00600 Ø 6 mm
  - – 62 850 01000 Ø 10 mm
  - – 62 850 01400 Ø 14 mm
  - – 62 850 01800 Ø 18 mm
  - – 62 850 02200 Ø 22 mm
- ▲ **2 insert holders**
  - – 62 863 04400 Ø 25 – Ø 44 mm
  - – 62 863 12500 Ø 44 – Ø 63 mm (– Ø 125 mm)
- ▲ **1 bridge**
  - – 62 860 12500 Ø 90 – Ø 125 mm
- ▲ **1 serrated body**
  - – 62 861 06300 Ø 25 – Ø 63 mm
- ▲ **1 filling piece**
  - – 62 862 09300 Ø 16x35 mm
- ▲ **10 indexable inserts**
  - – 2 pieces 62 600 00102 – WOHX02T001EL-G12 BK8440
  - – 4 pieces 62 601 90206 – TOGX06T102EN-14 BK60
  - – 4 pieces 62 601 70409 – TOGX090204EN-14 BK60
- ▲ **5 cylindrical screws**
  - – 62 950 00000 M5x16 mm
- ▲ **5 screwdrivers**
  - – 5IP, 6IP, 8IP, SW3, SW4

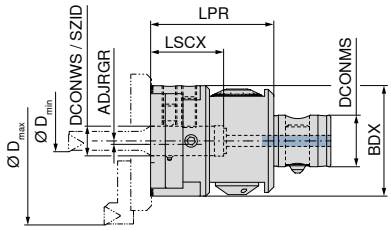


D_{min} - D_{max} mm	without Bluetooth 62 820 ...	with Bluetooth 62 840 ...
6 - 125	**99997**	**99997**

MicroKom – hi.flex – precision adjustment head with inch adjustment markings

▲ for MicroKom boring bars with Ø 16 mm or ABS 32, MicroKom bridges, and serrated body
▲ with through coolant supply
▲ LSCX = Recess depth of boring bar

ABS





Analog
67 800 ...

D_{min} - D_{max} inch	KOMET no.	Adapter	DCONWS inch	DCONWS mm	SZID	DCONMS inch	BDX inch	LPR inch	LSCX inch	
0.221 - 14.370	M05 01600	ABS 50	0.630	16	ABS 32	1.102	2.362	2.638	1.563	**12597**


Clamping screw
62 950 ...


Clamping screw
62 950 ...


Clamping screw
62 950 ...

Spare parts for Article no.					
67 800 12597	M8x8 - SW4	**14700**	M8x1x12/SW4	**13989**	M8x1x20/SW4	**13700**

Suitable ABS adapters can be found in → **Chapter 16, Adaptors and Accessories.**

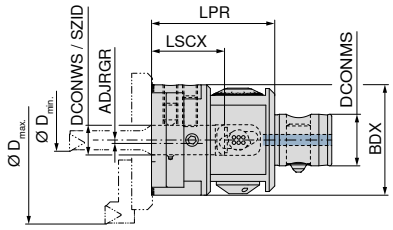
→ **Page 6**
Here you will find a detailed system overview.

5

MicroKom – hi.flex – precision adjustment head

▲ For MicroKom boring bars with Ø 16 mm or ABS 32, MicroKom bridges and serrated bodies
▲ With through coolant supply
▲ LSCX = Recess depth of boring bar
▲ Digital variant: please order the digital stick separately

ABS





												Analog	Digital
												62 800 ...	62 800 ...
D_{min} - D_{max} mm	D_{min} - D_{max} inch	KOMET no.	Adapter	DCONWS mm	SZID	DCONMS mm	BDX mm	LPR mm	LSCX mm	ADJRGR mm	WT kg		
0.5 - 365	0.019 -14.370	M05 01000	ABS 50	16	ABS 32	28	60	67	39.7	-0.25 - 5	1.23	**16097**	
0.5 - 365	0.019 -14.370	M04 10040	ABS 50	16	ABS 32	28	60	67	39.7	-0.25 - 5	1.23		**16197**


Clamping screw


Clamping screw


Clamping screw

		62 950 ...		62 950 ...		62 950 ...
Spare parts for Article no.						
62 800 16097	M8x8 - SW4	**14700**	M8x1x12/SW4	**13989**	M8x1x20/SW4	**13700**
62 800 16197	M8x8 - SW4	**14700**	M8x1x12/SW4	**13989**	M8x1x20/SW4	**13700**

A detailed operating manual is available for download in the online shop next to the product.

Suitable ABS adapters can be found in → **Chapter 16, Adaptors and Accessories.**

→ **Page 6**
Here you will find a detailed system overview.

→ **Page 28**
Here you will find the SpinTools – Digital Stick.

MicroKom – Precision boring set hi.flex

Scope of supply:

NEW

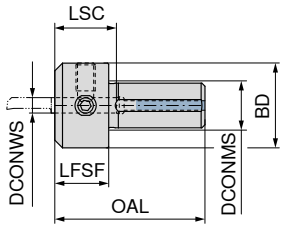
▲ **1 plastic case**
▲ **1 precision adjustment head**
▲ **5 boring bars**
– 62 850 00600 Ø 6 mm
– 62 850 01000 Ø 10 mm
– 62 850 01400 Ø 14 mm
– 62 850 01800 Ø 18 mm
– 62 850 02200 Ø 22 mm
▲ **2 insert holders**
– 62 863 04400 Ø 25 – Ø 44 mm
– 62 863 12500 Ø 44 – Ø 63 mm (– Ø 125 mm)
▲ **1 bridge**
– 62 860 12500 Ø 90 – Ø 125 mm
▲ **1 serrated body**
– 62 861 06300 Ø 25 – Ø 63 mm
▲ **1 filling piece**
– 62 862 09300 Ø 16x35 mm
▲ **10 indexable inserts**
– 2 pieces 62 600 00102 – WOHX02T001EL-G12 BK8440
– 4 pieces 62 601 90206 – TOGX06T102EN-14 BK60
– 4 pieces 62 601 70409 – TOGX090204EN-14 BK60
▲ **5 cylindrical screws**
– 62 950 00000 M5x16 mm
▲ **5 screwdrivers**
– 5IP, 6IP, 8IP, SW3, SW4



	Analog	Digital
	62 800 ...	62 800 ...
D_{min} - D_{max} mm		
6 - 125	**99997**	**99897**

MicroKom – UltraMini / EcoCut boring bar adapter

▲ for **hi.flex** and **BluFlex 2**
▲ 4 clamping flats (offset by 90°) on Ø DCONMS
▲ with through coolant supply





NEW

62 851 ...

DCONWS mm	KOMET no.	OAL mm	BD mm	LFSF mm	LSC mm	DCONMS mm	
4	M05 90950	39	22	14	18	16	16499
5	M05 90960	39	22	14	18	16	16599
6	M05 90970	39	22	14	18	16	16699
7	M05 90980	39	25	14	18	16	16799
8	M05 90990	39	25	14	18	16	16899



Clamping screw

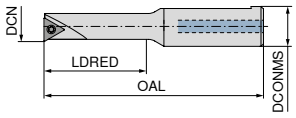
70 950 ...

Spare parts DCONWS	
0.157 - 0.197	867
0.236 - 0.315	123

Suitable UltraMini / EcoCut tools can be found in
→ **Main catalog, Chapters 10 and 12.**

MicroKom – Steel boring bar for hi.flex

▲ with through coolant





62 850 ...

DCN mm	KOMET no.	OAL mm	LDRED mm	DCONMS mm	Insert	
6	B05 20100	71.7	21.0	16	WO.. 02T0	00600
8	B05 20120	77.4	28.0	16	TO.. 06T1	00800
10	B05 20140	81.8	34.0	16	TO.. 0902	01000
12	B05 20160	88.2	42.0	16	TO.. 0902	01200
14	B05 20180	94.4	50.0	16	TO.. 0902	01400
18	B05 20220	100.0	60.0	16	TO.. 0902	01800
22	B05 20260	108.0	68.5	16	TO.. 1403	02200



TORX® Screws

62 950 ...

Spare parts Insert	
WO.. 02T0	11800
TO.. 06T1	12800
TO.. 0902	12000
TO.. 1403	12600

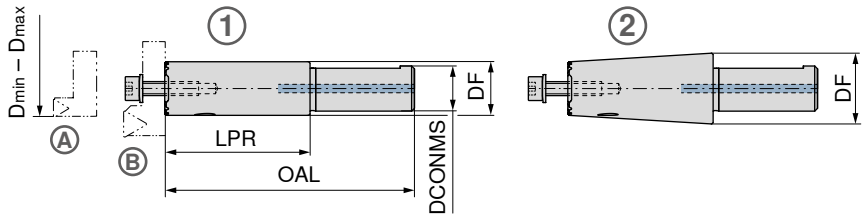
→ **Page 60–62**
Find suitable indexable inserts here.

5

MicroKom – Serrated body for hi.flex

▲ with through coolant

Scope of supply:
without insert holder





62 861 ...

D_{min} - D_{max} mm	KOMET no.	DCONMS mm	OAL mm	LPR mm	DF mm	Fig.	
25 - 63	M05 90100	16	89.12	52.12	19	1	**06300**
25 - 63	M05 90110	16	128.39	91.93	24	2	**16300**



Cylindrical screw

62 950 ...



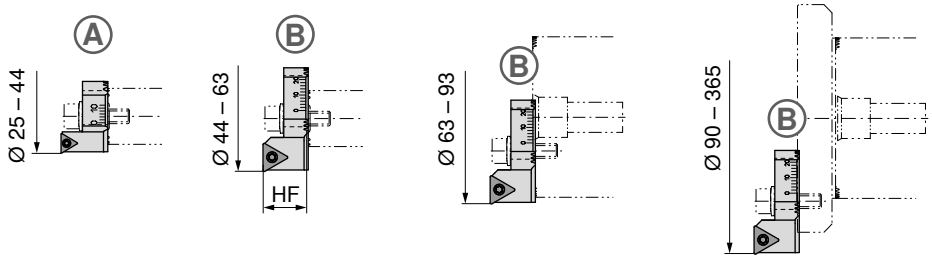
Disk spring

62 950 ...

Spare parts

DCONMS				
16	M5x16	**00000**	10x5.2x0.3	**19100**

MicroKom – Insert holder for hi.flex





62 863 ...

DCN mm	DCX mm	KOMET no.	HF mm	Insert	Fig.	
25	44	M05 20101	13.5	TO.. 06T1	A	**04400**
44	365	M05 20151	13.5	TO.. 0902	B	**12500**



TORX® Screws

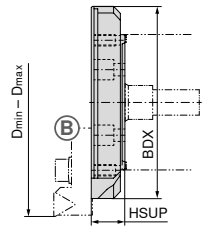
62 950 ...

Spare parts

Insert		
TO.. 06T1	M2x4.9/IP6	**09700**
TO.. 0902	M2.6x6.2 - 08IP	**09900**

→ **Page 61+62**
Find suitable indexable inserts here.

MicroKom –
Bridge for hi.flex





62 860 ...

D_{min} - D_{max} mm	KOMET no.	BDX mm	HSUP mm	WT kg	
90 - 125	M05 80101	85	14.89	0.147	**12500**
120 - 155	M05 80200	115	16.89	0.107	**15500**
150 - 185	M05 80300	145	18.89	0.152	**18500**
180 - 215	M05 80400	175	21.89	0.229	**21500**
210 - 245	M05 80500	205	25.00	0.309	**24500**
240 - 275	M05 80510	235	25.00	0.349	**27500**
270 - 305	M05 80520	265	25.00	0.394	**30500**
300 - 335	M05 80530	295	25.00	0.435	**33500**
330 - 365	M05 80540	325	25.00	0.478	**36500**


Cylindrical screw

62 950 ...


Disk spring

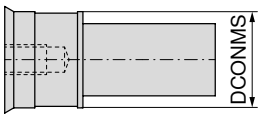
62 950 ...

Spare parts

BDX		
85 - 325	**00000**	**19100**

MicroKom –
Coolant diverting plug for hi.flex

▲ For targeted redirecting of the through coolant to the cutting edge when using bridges or insert holders with diameters from 63 mm



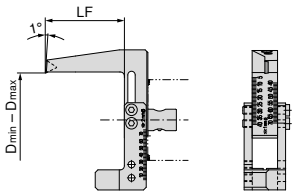


62 862 ...

DCONMS mm	KOMET no.	
16	M05 90501	**09300**

MicroKom –
Boring tool for external machining

▲ for **hi.flex** and **BluFlex 2**





62 866 ...

D_{min} - D_{max} mm	KOMET no.	LF mm	Adapter	WT kg	Insert	
5 - 70	M05 90300	58	ABS 32	0.377	TO.X 0902..	**07000**


Cylindrical screw

62 950 ...


TORX® Screws

62 950 ...

Spare parts

Insert		
TO.X 0902..	**26800**	**12000**

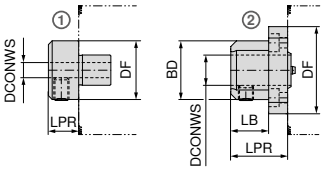
→ **Page 61+62**
Find suitable indexable inserts here.

A detailed operating manual is available for download in the online shop next to the product.

5

MicroKom – Adapter

▲ for 62 852 ..., 62 853 ..., 62 856 ... (essential for using the boring bar)





DCONWS mm	KOMET no.	DF mm	BD mm	LPR mm	LB mm	Fig.	62 851 ...
6	M05 90200	31		16		1	00600
8	M05 90210	31		16		1	00800
10	M05 90220	46	31	25	15	2	01000
12	M05 90230	46	31	25	15	2	01200
16	M05 90240	46	31	30	20	2	01600


Cylindrical screw

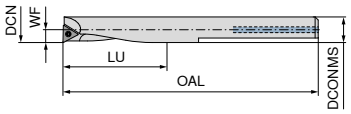

Clamping screw

Spare parts DCONWS	62 950 ...	62 950 ...
6 - 8		44800
10 - 12	00000	44800
16	00000	14700

A detailed operating manual is available for download in the online shop next to the product.

MicroKom – Boring bar, vibration-optimized

▲ can only be used with adapter 62 851 ...
▲ with internal coolant supply





DCN mm	KOMET no.	WF mm	LU mm	OAL mm	DCONMS mm	Insert	62 852 ...
5.6	B00 30280	2.80	22	65	6	WOHX 02T0..	10600
6.9	B00 30290	3.45	36	80	6	WOHX 02T0..	00600[1]
9.0	B00 00680	4.45	48	90	8	TO.X 06T1..	00800[1]
11.0	B00 00690	5.45	60	95	10	TO.X 06T1..	01000[1]

1) Carbide version

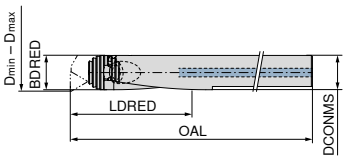

TORX® Screws

Spare parts Insert	62 950 ...
WOHX 02T0..	11800
TO.X 06T1..	09700

→ Page 60–62
Find suitable indexable inserts here.

MicroKom – Carbide boring shank

▲ for boring head 62 854 ...
▲ can only be used with adapter 62 851 ...
▲ with internal coolant supply





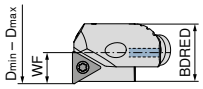
Dmin - Dmax mm	KOMET no.	OAL mm	BDRED mm	LDRED mm	DCONMS mm	62 853 ...
13 - 17	G10 12060	120	12	75	12	01300
17 - 22	G10 12070	140	16	100	16	01700
22 - 26	G10 12080	140	16	100	16	02200


Fixing screw

Spare parts DCONMS	62 950 ...
12	19700
16	19800

MicroKom – Boring head

▲ for boring shank 62 853 ...





Dmin - Dmax mm	KOMET no.	WF mm	BDRED mm	Insert	62 854 ...
13 - 15	G10 12621	6.45	12	TO.X 0902..	01300
15 - 17	G10 12841	7.45	12	TO.X 0902..	01500
17 - 19	G10 12711	8.45	16	TO.X 0902..	01700
19 - 22	G10 12861	9.45	16	TO.X 0902..	01900
22 - 26	G10 12731	10.95	16	TO.X 0902..	02200

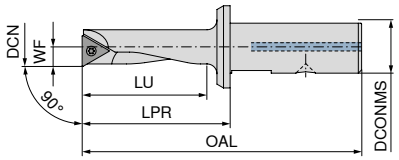

TORX® Screws

Spare parts Insert	62 950 ...
TO.X 0902..	12000

→ Page 61+62
Find suitable indexable inserts here.

MicroKom – Boring bar

▲ can only be used with adapter 62 851 ...
▲ with internal coolant supply





62 856 ...

DCN mm	KOMET no.	OAL mm	LPR mm	LU mm	DCONMS mm	WF mm	Insert	
5.6	B00 37010	48	26	20	8	2.75	WOHX 02T0..	**05600**
6.5	B00 37020	52	30	24	8	3.20	WOHX 02T0..	**06500**
8.0	B00 15510	57	35	28	8	3.95	TO.X 06T1..	**08000**
8.0	B00 15610	75	35	28	16	3.95	TO.X 06T1..	**00800**
10.0	B00 15620	80	40	33	16	4.95	TO.X 06T1..	**01000**
11.0	B00 15710	85	45	38	16	5.45	TO.X 0902..	**01100**
12.0	B00 15530	67	45	39	8	5.95	TO.X 0902..	**11200**
12.0	B00 15630	85	45	38	16	5.95	TO.X 0902..	**01200**
14.0	B00 15640	90	50	43	16	6.95	TO.X 0902..	**01400**
16.0	B00 15650	95	55	49	16	7.95	TO.X 0902..	**01600**
18.0	B00 15661	100	60	54	16	8.95	TO.X 0902..	**01800**
19.0	B00 15751	105	65	59	16	9.45	TO.X 0902..	**01900**
20.0	B00 15671	105	65	59	16	9.95	TO.X 0902..	**02000**
22.0	B00 15681	105	65	59	16	10.95	TO.X 0902..	**02200**
24.0	B00 15691	105	65	60	16	11.95	TO.X 0902..	**02400**



TORX® Screws

62 950 ...

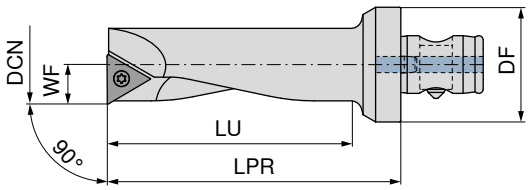
Spare parts	
Insert	
TO.X 06T1..	**12800**
TO.X 0902..	**12000**
WOHX 02T0..	**11800**

→ **Page 60–62**
Find suitable indexable inserts here.

MicroKom – Boring bar

▲ with through coolant

ABS





62 857 ...

DCN mm	KOMET no.	WF mm	DF mm	LU mm	LPR mm	Insert	
8	B00 25610	3.95	32	26	42	TO.X 06T1..	**07989**
9	B00 25700	4.45	32	32	48	TO.X 06T1..	**21989**
10	B00 25620	4.95	32	32	48	TO.X 06T1..	**08989**
11	B00 25710	5.45	32	41	57	TO.X 0902..	**23989**
12	B00 25630	5.95	32	41	57	TO.X 0902..	**09989**
14	B00 25640	6.95	32	49	64	TO.X 0902..	**10989**
16	B00 25650	7.95	32	57	72	TO.X 0902..	**11989**
18	B00 25661	8.95	32	57	72	TO.X 0902..	**13989**
20	B00 25671	9.95	32	67	82	TO.X 0902..	**15989**
22	B00 25681	10.95	32	68	82	TO.X 0902..	**17989**
24	B00 25691	11.95	32	68	82	TO.X 0902..	**19989**



TORX® Screws

62 950 ...

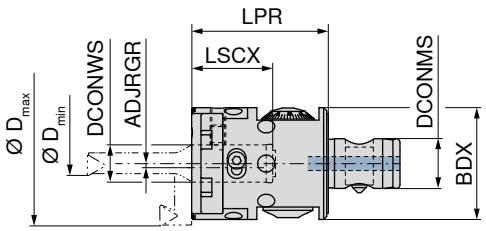
Spare parts	
Insert	
TO.X 06T1..	**12800**
TO.X 0902..	**12000**

→ **Page 61+62**
Find suitable indexable inserts here.

MicroKom – hi.flex micro – precision adjustment head

- ▲ for MicroKom boring bars and serrated bodies with DCONMS = 12 mm
- ▲ with through coolant supply
- ▲ LSCX = Recess depth of boring bar
- ▲ max. speed 30,000 rpm with slide in center position
- ▲ UltraMini / EcoCut boring bar adapter for diameters from 0.5 mm

ABS





NEW

Analog

D_{min} - D_{max} mm	KOMET no.	Adapter	DCONWS mm	DCONMS mm	BDX mm	LPR mm	LSCX mm	ADJRGR mm	WT kg	62 800 ...
0.5 - 60	M05 03000	ABS 32	12	16	36	44	26	-0.25 - 2.5	0.3	**06089**



Disk spring



Grubscrew

Spare parts for Article no.		62 950 ...		62 950 ...
62 800 06089	Ø5.5x1.0	**53700**	M5x8 DIN913	**53500**

A detailed operating manual is available for download in the online shop next to the product.

Suitable ABS adapters can be found in → **Chapter 16, Adaptors and Accessories.**

→ **Page 6**
Here you will find a detailed system overview.

MicroKom – Precision boring set hi.flex micro

NEW

Scope of supply:

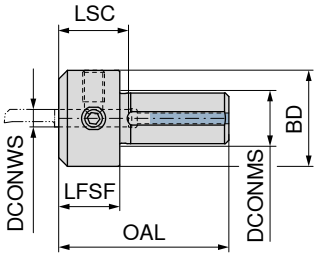
- ▲ **1 plastic case**
- ▲ **1 precision adjustment head**
- ▲ **1 insert holder**
  - – 62 863 14400 Ø 25 – Ø 44 mm
- ▲ **3 boring bars**
  - – 62 845 00800 Ø 8 mm
  - – 62 845 01400 Ø 14 mm
  - – 62 845 02000 Ø 20 mm
- ▲ **2 adapters**
  - – 62 851 12499 Ø 4 mm
  - – 62 851 12699 Ø 6 mm
- ▲ **1 serrated body**
  - – 62 861 04400 Ø 25 – Ø 44 mm
- ▲ **1 filling piece**
  - – 62 862 01200 Ø 12x24 mm
- ▲ **10 indexable inserts**
  - – 5 pieces 62 601 90206 – TOGX06T102EN-14 BK60
  - – 5 pieces 62 601 70409 – TOGX090204EN-14 BK60
- ▲ **1 cylindrical screw**
  - – 62 950 53600 M5x16 mm
- ▲ **1 screwdriver**
  - – SW2.5



D_{min} - D_{max} mm	62 800 ...
8 - 60	**99989**

MicroKom – UltraMini / EcoCut boring bar adapter

▲ for **hi.flex micro**
▲ 4 clamping flats (offset by 90°) on Ø DCONMS
▲ with through coolant supply





NEW

62 851 ...

DCONWS mm	KOMET no.	OAL mm	BD mm	LFSF mm	LSC mm	DCONMS mm	
4	M05 90900	39	22	14	18	12	**12499**
5	M05 90910	39	22	14	18	12	**12599**
6	M05 90920	39	22	14	18	12	**12699**
7	M05 90930	39	25	14	18	12	**12799**
8	M05 90940	39	25	14	18	12	**12899**



Clamping screw

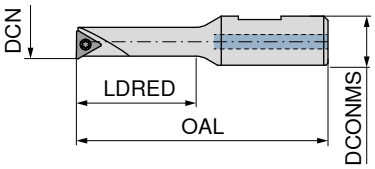
70 950 ...

Spare parts DCONWS		
4 - 5	M5x10 ISO 4026	**867**
6 - 8	M8x1x8 - SW4	**123**

Suitable UltraMini / EcoCut tools can be found in → **Main catalog, chapters 10 and 12.**

MicroKom – Boring bar for hi.flex micro

▲ with through coolant





NEW

62 845 ...

DCN mm	KOMET no.	OAL mm	LDRED mm	DCONMS mm	Insert	
8	B05 80080	58.88	28.0	12	TO.X 06T1..	**00800**
14	B05 80140	70.00	39.5	12	TO.X 0902..	**01400**
20	B05 80200	85.00	54.4	12	TO.X 0902..	**02000**



TORX® Screws

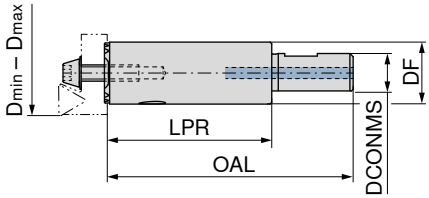
62 950 ...

Spare parts Insert		
TO.X 06T1..	M2x3.8/IP6	**12800**
TO.X 0902..	M2.6x5.2 - 08IP	**12000**

MicroKom – Serrated body for hi.flex micro

▲ with through coolant

Scope of supply:
without insert holder





NEW

62 861 ...

D_{min} - D_{max} mm	KOMET no.	DCONMS mm	OAL mm	LPR mm	DF mm	
25 - 44	M05 90120	12	76.39	51.39	19	**04400**

Spare parts



Cylindrical screw

62 950 ...

DCONMS		
12	M5x16	**53600**

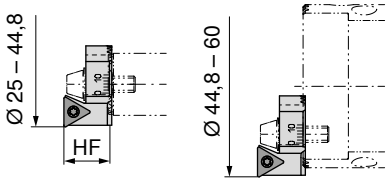


Disk spring

62 950 ...

10x5.2x0.3	**19100**

MicroKom – Insert holder for hi.flex micro





NEW

62 863 ...

DCN mm	DCX mm	KOMET no.	HF mm	Insert	
25	60	M05 20110	14.48	TO.. 0902	**14400**



TORX® Screws

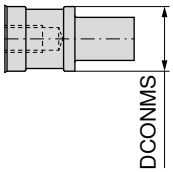
62 950 ...

Spare parts

Insert	
TO.. 0902	**09900**

MicroKom – Filling piece for hi.flex micro

▲ For targeted redirecting of the through coolant to the cutting edge when using insert holders with diameters from 45 mm





NEW

62 862 ...

DCONMS mm	KOMET no.	
12	M05 90700	**01200**

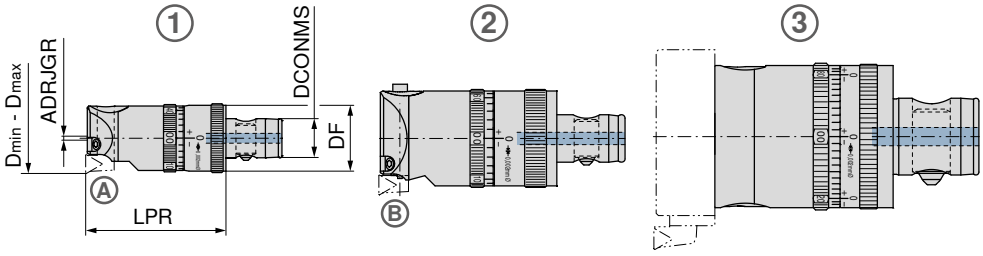
→ **Page 61+62**
Find suitable indexable inserts here.

MicroKom – M03Speed – precision adjustment head

Scope of supply:

Precision adjustment head with clamping screw
Please order insert holder and indexable insert separately

ABS





62 815 ...

D_{min} - D_{max} mm	KOMET no.	Adapter	DCONMS mm	DF mm	LPR mm	Fig.	Suitable insert holders	ADJRGR mm	WT kg	
24.8 - 33.0	M03 00115	ABS 25	13	25	50	1	62 864 03300	0.25 Ø	0.15	**03390**
29 - 39	M03 00515	ABS 25	13	25	50	1	62 864 03900	0.4 Ø	0.17	**03990**
38 - 50	M03 01025	ABS 32	16	32	60	2	62 864 05000	0.4 Ø	0.35	**05089**[1)]
49 - 63	M03 01535	ABS 40	20	40	70	2	62 864 08000	0.4 Ø	0.63	**06388**[1)]
62 - 80	M03 02045	ABS 50	28	50	75	2	62 864 08000	0.6 Ø	1.12	**08097**[1)]
79 - 103	M03 02555	ABS 63	34	63	80	2	62 864 10300	0.6 Ø	1.91	**10396**[1)]
38 - 63	M03 20170	ABS 32	16	32	81	3		0.4 Ø	0.35	**06389**[2)]
62 - 103	M03 20140	ABS 50	28	50	103	3		0.6 Ø	1.30	**10397**[2)]
100 - 206	M03 20090	ABS 63	34	63	106	3		0.6 Ø	1.91	**20696**[2)]

1) With dynamic balancing compensation
2) With dynamic balancing compensation / can only be used with interchangeable bridge (Art. No. 62 865 ...)


TORX® Screws


Clamping screw


Grub screw

Spare parts for Article no.		**62 950 ...**		**62 950 ...**		**10 950 ...**
62 815 03390					M4x0.5	**15600**
62 815 03990					M4x0.5	**15600**
62 815 05089	M3.5x7.3 - 10IP	**12600**			M4x0.5	**15600**
62 815 06388	M3.5x7.3 - 10IP	**12600**			M5x0.5	**15700**
62 815 08097	M3.5x7.3 - 10IP	**12600**			M5x0.5	**15700**
62 815 10396	M5x9.4/IP6	**45400**			M6x8 - SW3	**11300**
62 815 06389			M8x10	**37400**		
62 815 10397			M8x10	**37400**		
62 815 20696	M5x9.4/IP6	**45400**	M8x10	**37400**		

The TORX® screws 62 950 12600 / 62 950 45400 are designed for mounting the insert holder on the precision adjustment head.

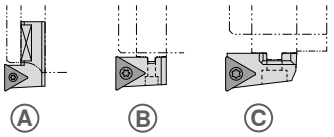
A detailed operating manual is available for download in the online shop next to the product.

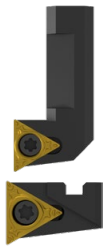
Suitable ABS adapters can be found in → **Chapter 16, Adaptors and Accessories.**

→ **Page 8**
Here you will find a detailed system overview.

MicroKom – M03Speed – Insert holder

Scope of supply:
without inserts
incl. mounting screws





62 864 ...

For precision adjustment head	For precision adjustment head (with interchangeable bridge)	KOMET no.	Insert	Fig.	
62 815 03390		M03 10011	TO.. 06T1	A	**03300**
62 815 03990		M03 10021	TO.. 06T1	A	**03900**
62 815 05089	62 815 06389 (62 865 05100 / 62 865 06300)	M03 10033	TO.. 06T1	B	**05000**
62 815 06388 / 62 815 08097	62 815 10397 (62 865 08300 / 62 865 10300)	M03 10043	TO.. 0902	B	**08000**
62 815 10396		M03 10063	TO.. 0902	B	**10300**
	62 815 20696 (62 865 13000 / 62 865 16800 / 62 865 20600)	M03 10070	TO.. 0902	C	**20600**



TORX® Screws

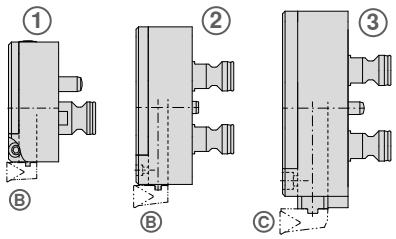
62 950 ...

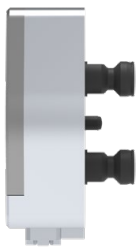
Spare parts		
Insert		
TO.. 06T1	M2x4.9/IP6	**09700**
TO.. 0902	M2.6x5.2 - 08IP	**12000**

→ **Page 61+62**
Find suitable indexable inserts here.

MicroKom – M03Speed – Interchangeable bridge

Scope of supply:
without insert holder





62 865 ...

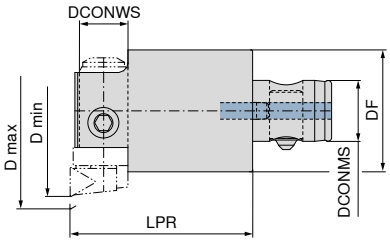
D_{min} - D_{max} mm	KOMET no.	Fig.	WT kg	For precision adjustment head	Suitable insert holders	
38 - 51	M03 20180	1	0.06	62 815 06389	62 864 05000	**05100**
50 - 63	M03 20190	1	0.08	62 815 06389	62 864 05000	**06300**
62 - 83	M03 20150	2	0.20	62 815 10397	62 864 08000	**08300**
82 - 103	M03 20160	2	0.24	62 815 10397	62 864 08000	**10300**
100 - 130	M03 20100	3	0.39	62 815 20696	62 864 20600	**13000**
128 - 168	M03 20110	3	0.49	62 815 20696	62 864 20600	**16800**
166 - 206	M03 20120	3	0.59	62 815 20696	62 864 20600	**20600**

MicroKom – FF precision adjustment head

Scope of supply:

Head with clamping screw
Without precision turning insert

ABS





62 810 ...

D_{min} - D_{max} mm	KOMET no.	Adapter	DCONWS mm	DCONMS mm	DF mm	LPR mm	WT kg	
29.5 - 36	B30 11010	ABS 25	10	13	25	50	0.17	**03690**
35.5 - 42	B30 11020	ABS 25	10	13	25	50	0.18	**04290**
39 - 45	B30 12010	ABS 32	12	16	32	60	0.35	**04589**
44 - 50	B30 12020	ABS 32	12	16	32	60	0.35	**05089**
47 - 57	B30 13010	ABS 40	16	20	40	60	0.52	**05788**
56 - 66	B30 13020	ABS 40	16	20	40	60	0.52	**06688**
58 - 71	B30 14010	ABS 50	20	28	50	70	0.97	**07197**
70 - 83	B30 14020	ABS 50	20	28	50	70	1.05	**08397**
79 - 94	B30 15010	ABS 63	25	34	63	70	1.58	**09496**
93 - 108	B30 15020	ABS 63	25	34	63	70	1.61	**10896**
100 - 121	B30 16010	ABS 80	32	46	80	90	3.33	**12192**
120 - 141	B30 16020	ABS 80	32	46	80	90	3.37	**14192**
138 - 159	B30 17010	ABS 100	32	56	100	90	6.56	**15991**
158 - 179	B30 17020	ABS 100	32	56	100	90	6.80	**17991**
178 - 199	B30 17030	ABS 100	32	56	100	90	6.61	**19991**



Clamping screw

62 950 ...

Spare parts for Article no.		
62 810 03690	M6x6/SW3	**44700**
62 810 04290	M6x6/SW3	**44700**
62 810 04589	M8x8 - SW4	**14700**
62 810 05089	M8x10 - SW4	**44800**
62 810 05788	M10x10/SW5	**44900**
62 810 06688	M10x10/SW5	**44900**
62 810 07197	M12x12/SW6	**45000**
62 810 08397	M12x12/SW6	**45000**
62 810 09496	M16x16/SW8	**45100**
62 810 10896	M16x16/SW8	**45100**
62 810 12192	M20x20 - SW10	**45200**
62 810 14192	M20x20 - SW10	**45200**
62 810 15991	M20x30/SW10	**45300**
62 810 17991	M20x20 - SW10	**45200**
62 810 19991	M20x20 - SW10	**45200**

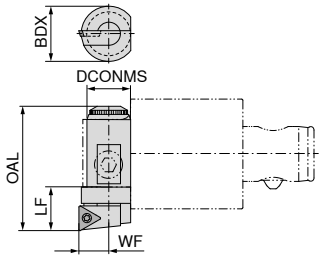
Suitable ABS adapters can be found in → **Chapter 16, Adaptors and Accessories.**

→ **Page 8**
Here you will find a detailed system overview.

MicroKom – FF precision turning insert

Scope of supply:

Precision turning insert with fixing screw
Please order indexable insert separately

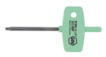




for	DCONMS mm	KOMET no.	LF mm	WF mm	BDX mm	OAL mm	Insert	62 855 ...
62 810 03690 / 62 810 04290	10	M30 20011	11.0	7.5	14	28.5	TO.. 06T1	**03000**
62 810 04589 / 62 810 05089	12	M30 20021	12.5	9.0	16	37.5	TO.. 06T1	**03900**
62 810 05788 / 62 810 06688	16	M30 20031	16.0	11.0	20	45.0	TO.. 0902	**04700**
62 810 07197 / 62 810 08397	20	M30 20041	18.0	14.5	25	56.0	TO.. 0902	**05800**
62 810 09496 / 62 810 10896	25	M30 20051	21.6	16.0	32	77.5	TO.. 1403	**07900**
62 810 12192 / 62 810 14192	32	M30 20061	25.5	19.0	40	97.0	TO.. 1403	**10000**
62 810 15991 / 62 810 17991 / 62 810 19991	32	M30 20071	25.5	19.0	40	131.0	TO.. 1403	**13800**



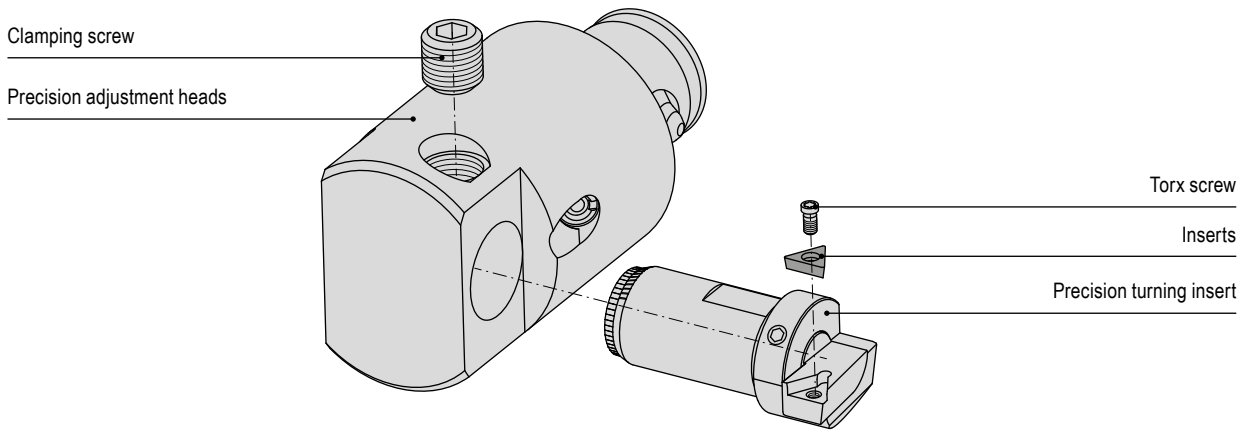
TORX® Screws



Key

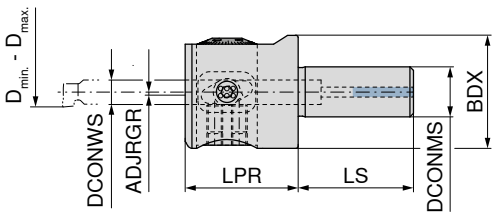
Spare parts DCONMS		62 950 ...		80 950 ...
10	M2x3.8/IP6	**12800**	T06 - IP	**058**
12	M2x3.8/IP6	**12800**	T06 - IP	**058**
16	M2.6x5.2 - 08IP	**12000**	T08 - IP	**060**
20	M2.6x6.2 - 08IP	**09900**	T08 - IP	**060**
25	M3.5x7.3 - 10IP	**12600**	T10 - IP	**062**
32	M3.5x7.3 - 10IP	**12600**	T10 - IP	**062**

→ **Page 61+62**
Find suitable indexable inserts here.



SpinTools – Micro-Boring Head

▲ max. speed 30,000 rev/min
▲ Digital variant: please order the digital stick separately





								Analog	Digital
								62 382 ...	62 386 ...
D_{min} - D_{max} mm	BDX mm	DCONWS mm	DCONMS mm	LPR mm	LS mm	ADJRGR mm	WT kg		
0.3 - 7.1	25	4	10	25	25	0 - 1.7	0.10	025	025
0.3 - 19.1	32	7	16	32	40	0 - 2.75	0.25	032	032


Clamping screw ST


Locking screw

Spare parts for Article no.		62 950 ...		62 950 ...
62 382 025 / 62 386 025	M5x4	214	M4x8	228
62 382 032 / 62 386 032	M6x5	215	M6x10	229

A detailed operating manual is available for download in the online shop next to the product.

→ **Page 7**
Here you will find a detailed system overview.

SpinTools – Digital Stick

▲ suitable for all SpinTools digital heads as well as for hi.flex Digital
▲ revised software for even more precise adjustment
▲ Inch and Metric Display

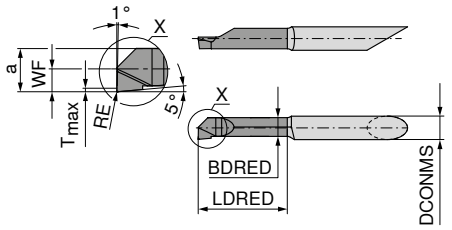
Scope of supply:
incl. AAA Battery



62 309 ...
00100

A detailed operating manual is available for download in the online shop next to the product.

SpinTools – Solid carbide boring bar





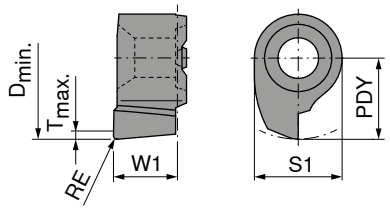
62 383 ...

D_{min} - D_{max} mm	DCONMS mm	LDRED mm	RE mm	a mm	BDRED mm	WF mm	$T_{max.}$ mm	
0.3 - 0.7	4	1.2		0.25	0.15	0.15	0.03	003
0.6 - 1.1	4	2.5		0.55	0.46	0.30	0.05	006
1.0 - 2.3	4	4.0	0.05	0.95	0.65	0.50	0.10	010
2.2 - 3.3	4	6.0	0.05	2.00	1.55	1.10	0.20	022
3.2 - 4.3	4	10.2	0.05	3.00	2.55	1.60	0.20	032
3.9 - 7.1	4	15.2	0.05	3.70	3.45	1.95	0.30	039
5.2 - 6.3	7	20.3	0.05	5.00	4.25	2.60	0.50	052
6.2 - 7.3	7	20.3	0.05	6.00	5.25	3.10	0.50	062
6.9 - 8.1	7	25.4	0.20	6.70	6.25	3.45	0.50	069

P	●
M	●
K	●
N	●
S	●
H	○
O	●

→ v_c Page 71

SpinTools – Carbide inserts





62 384 ...

D_{min} - D_{max} mm	RE mm	PDY mm	S1 mm	W1 mm	$T_{max.}$ mm	
6.9 - 8.1	0.2	3.45	4.8	3.5	1	069
7.9 - 9.1	0.2	3.95	4.8	3.5	1	079
8.9 - 10.1	0.2	4.45	4.8	3.5	1	089
9.9 - 12.1	0.2	4.95	7.0	3.9	1	099
11.9 - 14.1	0.2	5.95	7.0	3.9	1	119
13.9 - 19.1	0.2	6.95	7.0	3.9	1	139

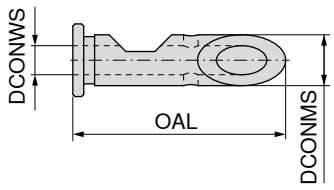
P	●
M	●
K	●
N	●
S	●
H	○
O	●

→ v_c Page 71

SpinTools – Toolholder for carbide inserts

▲ with through coolant
▲ appropriate inserts for article no. 62 384 ... can be found in the table above

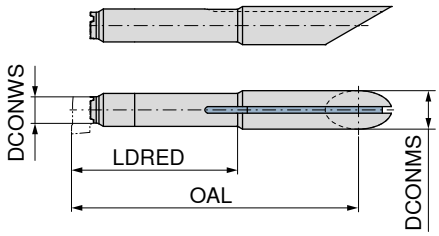
SpinTools – Adapter





62 335 ...

DCONMS mm	DCONWS mm	OAL mm	
7	4	30	407





62 385 ...

DCONMS mm	LDRED mm	DCONWS mm	OAL mm	
7	30	4.8	56	330
7	35	7.0	61	350



TORX® Screws

62 950 ...



Screwdriver

80 950 ...

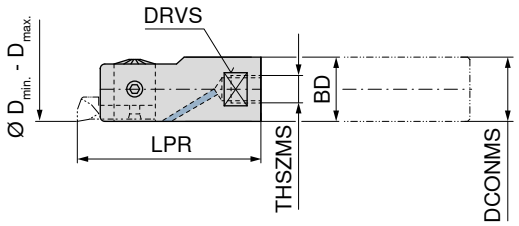
Spare parts for Article no.			
62 385 330	007		124
62 385 350	094		126

SpinTools – Precision boring head

▲ with through coolant

Scope of supply:

Fine boring head without shank, without insert holder





BD	D_{min} - D_{max}	THSZMS	DCONMS	LPR	DRVS	WT	62 304 ...
mm	mm		mm	mm	mm	kg	
14	14.7 - 17.1	M6	14	39.8	12	0.05	**017**
16	16.7 - 20.1	M10	16	39.8	14	0.07	**020**
19	19.7 - 24.1	M10	18	39.8	16	0.09	**024**


TORX® Screws


Screwdriver


Clamping screw ST

Spare parts for Article no.		62 950 ...		80 950 ...		62 950 ...
62 304 017	M2.5x6 - T07	**022**	T07	**109**	M3x2	**017**
62 304 020	M2.5x6 - T07	**022**	T07	**109**	M3x2.5	**018**
62 304 024	M2.5x6 - T07	**022**	T07	**109**	M3x4	**019**

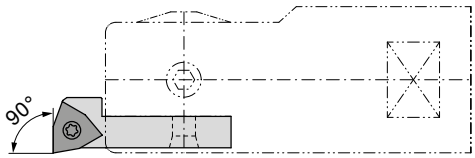
→ **Page 81**
Here you will find information about the working length.

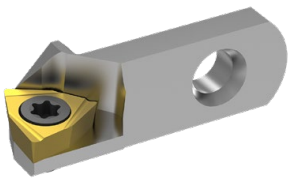
→ **Page 9**
Here you will find a detailed system overview.

SpinTools – Insert holder, 90°

Scope of supply:

without insert





Insert	62 317 ...
WC.. 0201..	**024**


TORX® Screws


Screwdriver

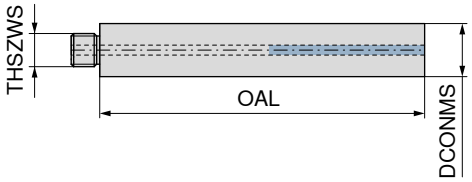
Spare parts Insert		62 950 ...		80 950 ...
WC.. 0201..	M2x3.7 - T06	**021**	T06	**108**

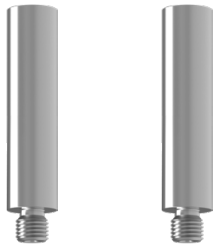
→ **Page 66**
Find suitable indexable inserts here.

SpinTools – High-speed carbide boring bars

▲ with threaded mounting stud made of high quality steel
▲ with through coolant
▲ Shank clamping length 35 mm
▲ Boring shanks with DCONMS Ø 18 mm are for use in collet chuck or hydraulic chuck

Scope of supply:
boring shank, without boring head



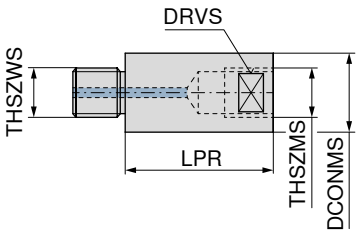


DCONMS mm	OAL mm	THSZWS	62 353 ...	62 353 ...
14	110	M6	**014**	
16	120	M10	**016**	
18	100	M10		**018**
18	140	M10		**118**
18	180	M10		**218**

→ **Page 81**
Here you will find information about the working length.

SpinTools – Shank extensions (tempered steel)

▲ with through coolant



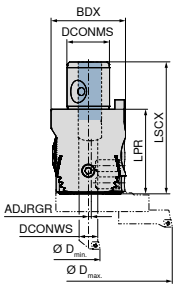


DCONMS mm	LPR mm	THSZWS	THSZMS	DRVS mm	62 349 ...
16	32	M10	M10	14	**732**
16	64	M10	M10	14	**764**

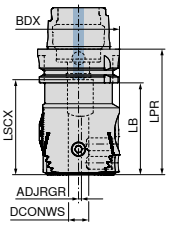
SpinTools – Multi-Head – boring and fine boring head

▲ **For boring bars Ø 16 mm and bridges**
▲ With internal coolant supply
▲ LSCX = Boring depth

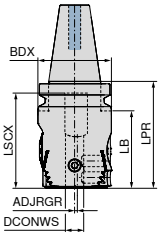
Scope of supply:
without boring bar, bridge and insert holder



STM Modular



HSK-A 63



MAS-BT 40


STM Modular


HSK-A


MAS-BT

D_{min} - D_{max} mm	Adapter	DCONMS mm	BDX mm	LPR mm	LB mm	LSCX mm	ADJRGR mm	WT kg	STM Modular 62 372 ...	HSK-A 62 373 ...	MAS-BT 62 373 ...
3 - 320	STM 36	36	63	71.6		111.6	0 - 2.7	1.69	**653**		
3 - 320	BT 40		63	91.6	69.0	81.6	0 - 2.7	2.20			**453**
3 - 320	HSK-A 63		63	96.6	70.6	73.0	0 - 2.7	1.90		**653**	


Clamping screw


Screw for drivers


Driver


Clamping screw MH


Flange screw

Spare parts D_{min} - D_{max}	Clamping screw 62 950 ...	Screw for drivers 62 950 ...	Driver 62 950 ...	Clamping screw MH 62 950 ...	Flange screw 62 950 ...
3 - 320	**227**	**167**	**040**	**226**	**225**

A detailed operating manual is available for download in the online shop next to the product.

→ **Page 54–59**
Here you will find the suitable base adaptors.

→ **Page 7**
Here you will find a detailed system overview.

SpinTools – Multi-Head – Boring and Fine Boring Head Set

▲ suitable for Ø 3 – Ø 320 mm

Scope of supply:

▲ **1 Tool Kit**
▲ **1 Multi-Head-Boring- and Fine Boring Head (depending on selection)**
▲ **4 Boring bars**
– 62 345 015 Ø 9.75 – Ø 15.1 mm
– 62 345 020 Ø 14.75 – Ø 20.1 mm
– 62 345 024 Ø 19.75 – Ø 25.1 mm
– 62 345 029 Ø 24.75 – Ø 30.1 mm
▲ **2 Boring tools, adjustable**
– 62 375 048 Ø 29.75 – Ø 48.1 mm
– 62 375 088 Ø 47.75 – Ø 88.1 mm
▲ **incl. insert holder**
– 62 377 048 CC.. 0602
– 62 377 088 CC.. 0602
▲ **1 Bridge**
– 62 376 164 Ø 86 – Ø 164 mm
▲ **1 Torx-Key – T7**
▲ **1 6-adjustment key – SW5**

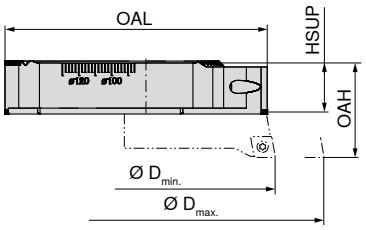


D_{min} - D_{max} mm	Adapter	STM Modular 62 374 ...	HSK-A 62 379 ...	MAS-BT 62 379 ...
9.75 - 164	HSK-A 63		**996**	
9.75 - 164	BT 40			**993**
9.75 - 164	STM 36	**999**		

SpinTools – Bridge for Multi-Head

▲ Ø adjustable
▲ With internal coolant supply

Scope of supply:
without tool holder
including fixation screws

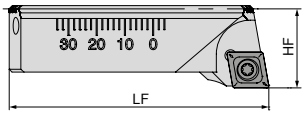


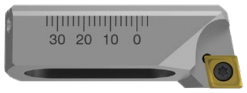


D_{min} - D_{max}	OAL	HSUP	OAH	62 376 ...
mm	mm	mm	mm	
86 - 164	80	15	29	**164**
162 - 320	158	15	29	**320**

SpinTools – Tool holder for boring bar and bridge Multi-Head

Scope of supply:
without inserts
incl. mounting screws

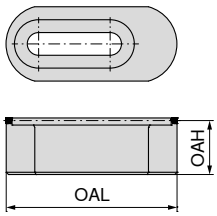




for	LF	HF	Insert	62 377 ...
	mm	mm		
62 375 048	28.2	12	CC.. 0602	**048**
62 375 088 / 62 376 ...	46.0	14	CC.. 0602	**088**
62 375 088 / 62 376 ...	46.0	14	CC.. 09T3	**089**

SpinTools – Counterweight

Scope of supply:
Including fixation screw





for	OAL	OAH	62 378 ...
	mm	mm	
62 376 ...	38	12	**320**

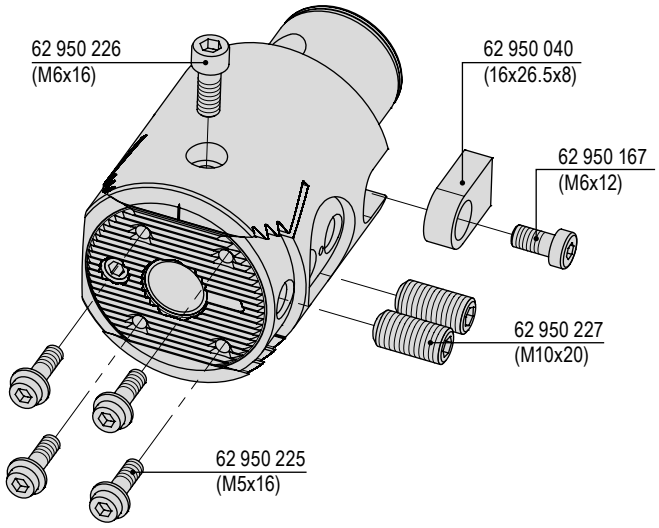

TORX® Screws


Screwdriver


Flange screw

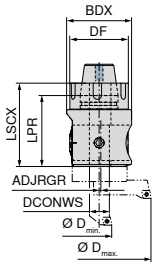
Spare parts	62 950 ...	80 950 ...	62 950 ...
62 377 048 / 62 377 088	**022**	**109**	**225**
62 377 089	**023**	**113**	**225**

→ **Page 67**
Find suitable indexable inserts here.

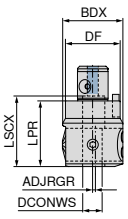


SpinTools – Single point boring heads – Modular system

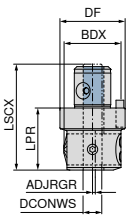
▲ LSCX = Recess depth of boring bar
▲ With through coolant supply
▲ Digital variant: please order the digital stick separately



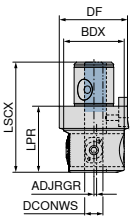
ER 32



without flange



with flange



Digital with collar



ER 32



without flange STM Modular



with flange STM Modular



Digital with collar STM Modular

									62 332 ...		62 332 ...		62 332 ...		62 326 ...	
D_{min} - D_{max} mm	Adapter	BDX mm	DF mm	DCONWS mm	LPR mm	LSCX mm	ADJRGR mm	WT kg								
3.0 - 88.1	ER 32	55	49.5	16	60	86.5	0 - 2.7	0.43		732						
3.0 - 88.1	STM 28	55	50.0	16	60	62.0	0 - 2.7	0.98				553				
3.0 - 88.1	STM 36	55	63.0	16	60	101.0	0 - 2.7	1.26						653		
3.0 - 88.1	STM 36	55	63.0	16	60	106.0	0 - 2.7	0.43								036



Clamping screw



Screw for drivers



Driver



Clamping screw ST

											62 950 ...		62 950 ...		62 950 ...		62 950 ...	
Spare parts for Article no.																		
62 332 732	M10x16	047															M10x8	046
62 332 553	M10x16	047	M5x10	166									12x20x6	039	M10x8	046		
62 332 653	M10x16	047	M6x12	167									16x26.5x8	040	M10x8	046		
62 326 036	M10x16	047	M6x12	167									16x26.5x8	040	M10x8	046		

A detailed operating manual is available for download in the online shop next to the product.

→ **Page 54–59**
Here you will find the suitable base adaptors.

→ **Page 7**
Here you will find a detailed system overview.

SpinTools – Digital Stick

▲ suitable for all SpinTools digital heads as well as for hi.flex Digital
▲ revised software for even more precise adjustment
▲ Inch and Metric Display

Scope of supply:
incl. AAA Battery



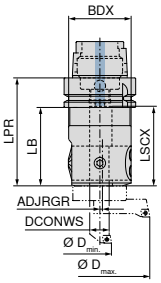
62 309 ...

00100

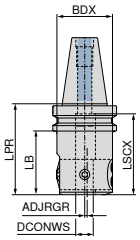
A detailed operating manual is available for download in the online shop next to the product.

SpinTools – Single point boring head – Monoblock analog

▲ LSCX = Boring depth
▲ With internal coolant supply



HSK-A 63



MAS-BT 40



HSK-A



MAS-BT

									HSK-A	MAS-BT
D_{min} - D_{max}	Adapter	BDX	DCONWS	LPR	LB	LSCX	ADJRGR	WT	62 333 ...	62 333 ...
mm		mm	mm	mm	mm	mm	mm	kg		
3.0 - 88.1	HSK-A 63	55	16	95	69	70	0 - 2.7	1.66	**653**	
3.0 - 88.1	BT 40	55	16	90	63	80	0 - 2.7	1.90		**453**



Clamping screw

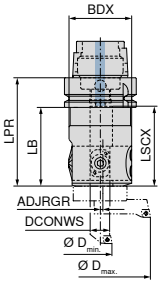


Clamping screw ST

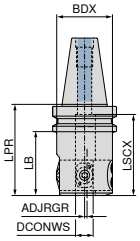
		62 950 ...		62 950 ...
Spare parts				
D_{min} - D_{max}				
3.0 - 88.1	M10x16	**047**	M10x8	**046**

SpinTools – Single point boring head – Monoblock digital

▲ LSCX = Recess depth of boring bar
▲ With through coolant supply
▲ Digital variant: please order the digital stick separately



HSK-A 63



MAS-BT 40



Digital HSK-A



Digital MAS-BT

									Digital HSK-A	Digital MAS-BT
D_{min} - D_{max}	Adapter	BDX	DCONWS	LPR	LB	LSCX	ADJRGR	WT	62 363 ...	62 363 ...
mm		mm	mm	mm	mm	mm	mm	kg		
3.0 - 88.1	HSK-A 63	55	16	95	70	70	0 - 2.7	1.66	**688**	
3.0 - 88.1	BT 40	55	16	90	59	80	0 - 2.7	1.90		**488**



Clamping screw



Clamping screw ST

		62 950 ...		62 950 ...
Spare parts				
D_{min} - D_{max}				
3.0 - 88.1	M10x16	**047**	M10x8	**046**

A detailed operating manual is available for download in the online shop next to the product.

SpinTools – Single point boring heads Set 1

▲ suitable for Ø 3 – Ø 88.1 mm
▲ supplied with Ø 9.75 – Ø 30.1 or Ø 9.75 – Ø 40.1 mm
▲ with through coolant

Scope of supply:

▲ 1 Tool Kit
▲ 1 single point boring head (depending on selection)
▲ 4 Boring bars (MAS-BT-Set)
– 62 345 015 Ø 9.75 – Ø 15.1 mm
– 62 345 020 Ø 14.75 – Ø 20.1 mm
– 62 345 024 Ø 19.75 – Ø 25.1 mm
– 62 345 029 Ø 24.75 – Ø 30.1 mm
▲ 8 Boring bars (Modular-Set)
– 62 345 015 Ø 9.75 – Ø 15.1 mm
– 62 345 019 Ø 13.75 – Ø 19.1 mm
– 62 345 023 Ø 17.75 – Ø 23.1 mm
– 62 345 027 Ø 21.75 – Ø 27.1 mm
– 62 345 030 Ø 24.75 – Ø 30.1 mm
– 62 345 033 Ø 27.75 – Ø 33.1 mm
– 62 345 037 Ø 31.75 – Ø 37.1 mm
– 62 345 040 Ø 34.75 – Ø 40.1 mm
▲ 1 6-adjustment key – SW5
▲ 1 Torx-Key – T7



D_{min} - D_{max} mm	Adapter	STM Modular 62 334 ...	MAS-BT 62 345 ...
9.75 - 30.1	BT 40		993
9.75 - 40.1	STM 36	999	

SpinTools – Single point boring heads Set 2

▲ suitable for Ø 3 – Ø 88.1 mm
▲ Supplied with Ø 9.75 – Ø 88.1 mm
▲ with through coolant

Scope of supply:

▲ 1 Tool Kit
▲ 1 Fine boring head (depending on selection)
▲ 4 Boring bars
– 62 345 015 Ø 9.75 – Ø 15.1 mm
– 62 345 020 Ø 14.75 – Ø 20.1 mm
– 62 345 024 Ø 19.75 – Ø 25.1 mm
– 62 345 029 Ø 24.75 – Ø 30.1 mm
▲ 2 Boring tools, adjustable
– 62 375 048 Ø 29.75 – Ø 48.1 mm
– 62 375 088 Ø 47.75 – Ø 88.1 mm
▲ incl. insert holder
– 62 377 048 CC.. 0602
– 62 377 088 CC.. 0602
▲ 1 Torx key – T7
▲ 1 6-adjustment key – SW5



D_{min} - D_{max} mm	Adapter	STM Modular 62 334 ...	HSK-A 62 345 ...	MAS-BT 62 345 ...
9.75 - 88.1	HSK-A 63		997	
9.75 - 88.1	BT 40			999
9.75 - 88.1	STM 36	997		

SpinTools – Single point boring heads ER32 Set

▲ Suitable for Ø 3.0 – Ø 88.1 mm
▲ Scope of supply Ø 9.75 – Ø 30.1 mm
▲ with through coolant supply

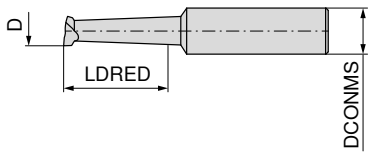
Scope of supply:

▲ 1 tool kit
▲ 1 single point boring head (62332732)
▲ 4 boring bars
– 62 345 015 Ø 9.75 – Ø 15.1 mm
– 62 345 020 Ø 14.75 – Ø 20.1 mm
– 62 345 024 Ø 19.75 – Ø 25.1 mm
– 62 345 029 Ø 24.75 – Ø 30.1 mm
▲ 1 Torx Key – T7
▲ 1 Allen Key – SW5



D_{min} - D_{max} mm	Adapter	62 332 ...
9.75 - 30.1	ER 32	999

SpinTools – Boring tools with carbide cutting edge





62 346 ...

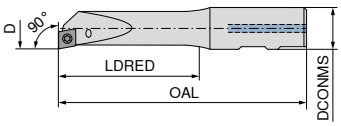
D_{min} - D_{max} mm	LDRED mm	DCONMS h6 mm	
3.0 - 8.0	20	10	008
4.0 - 9.0	23	10	009
5.0 - 10.0	25	10	010
6.0 - 11.0	25	10	011
7.0 - 12.0	31	10	012

P	●
M	○
K	○
N	●
S	
H	
O	

→ v_c Page 71

SpinTools – Steel boring bars

▲ with through coolant





62 345 ...

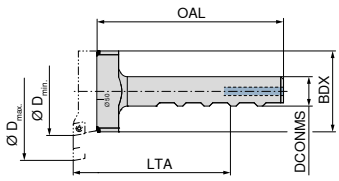
D_{min} - D_{max} mm	OAL mm	LDRED mm	DCONMS h6 mm	Insert	
9.75 - 15.1	75	30	16	CC.. 0602	015
11.75 - 17.1	80	37	16	CC.. 0602	017
13.75 - 19.1	85	43	16	CC.. 0602	019
14.75 - 20.1	90	51	16	CC.. 0602	020
15.75 - 21.1	95	57	16	CC.. 0602	021
17.75 - 23.1	100	67	16	CC.. 0602	023
19.75 - 25.1	105	72	16	CC.. 0602	024
19.75 - 25.1	105	72	16	CC.. 09T3	025
21.75 - 27.1	110	77	16	CC.. 09T3	027
24.75 - 30.1	115	82	16	CC.. 0602	029
24.75 - 30.1	115	82	16	CC.. 09T3	030
27.75 - 33.1	115	82	16	CC.. 09T3	033
31.75 - 37.1	115	82	16	CC.. 09T3	037
34.75 - 40.1	115	82	16	CC.. 09T3	040
38.75 - 44.1	115	82	16	CC.. 09T3	044
42.75 - 48.1	115	82	16	CC.. 09T3	048
47.75 - 53.1	115	82	16	CC.. 09T3	053

→ **Page 67**
Find suitable indexable inserts here.

SpinTools – Adjustable boring bar bridge

▲ with through coolant

Scope of supply:
without insert holder



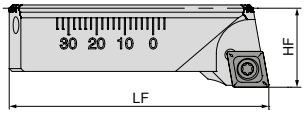


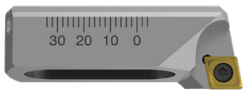
62 375 ...

D_{min} - D_{max} mm	OAL mm	BDX mm	LTA mm	DCONMS mm	
29.75 - 48.1	103	25	85	16	048
47.75 - 88.1	101	44	85	16	088

SpinTools – Tool holder for boring bar and bridge Multi-Head

Scope of supply:
without inserts
incl. mounting screws





62 377 ...

for	LF mm	HF mm	Insert	
62 375 048	28.2	12	CC.. 0602	048
62 375 088 / 62 376 ...	46.0	14	CC.. 0602	088
62 375 088 / 62 376 ...	46.0	14	CC.. 09T3	089


TORX® Screws


Screwdriver


Flange screw

62 950 ... | 80 950 ... | 62 950 ...

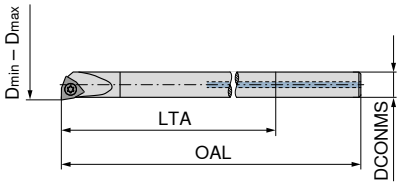
Spare parts for Article no.					
62 377 048	022		109		225
62 377 088	022		109		225
62 377 089	023		113		225

→ **Page 67**
Find suitable indexable inserts here.

5

SpinTools –
Boring bars with carbide shank

▲ With internal coolant supply
▲ LTA = max. overhang





62 341 ...

D_{min} - D_{max} mm	DCONMS h6 mm	OAL mm	LTA mm	Insert	
5.8 - 11.2	5	80	45	WC.. 0201..	**011**
7.8 - 13.2	6	100	60	WC.. 0201..	**013**



TORX® Screws

62 950 ...



Screwdriver

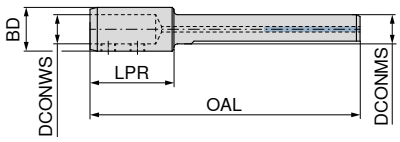
80 950 ...

Spare parts Insert		
WC.. 0201..	**021**	**108**

→ **Page 66**
Find suitable indexable inserts here.

SpinTools –
Boring tool extensions

▲ with through coolant





62 337 ...

DCONWS mm	DCONMS mm	BD mm	OAL mm	LPR mm	
10	16	16	128		**128**
16	16	24	148	44	**148**



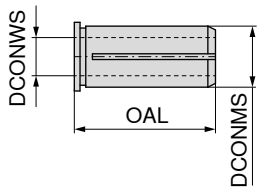
Clamping screw

62 950 ...

Spare parts for Article no.	
62 337 128	**048**
62 337 148	**049**

SpinTools – Reduction sleeves

▲ for boring bars and boring tools





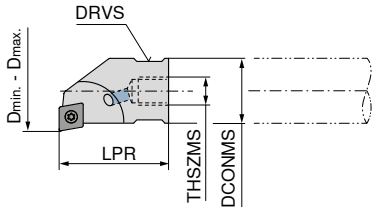
62 335 ...

DCONMS mm	DCONWS mm	OAL mm	
16	4	37	**104**
16	5	37	**105**
16	6	37	**106**
16	8	37	**108**
16	9	37	**109**
16	10	37	**110**
16	11	37	**111**
16	12	37	**112**
16	13	37	**113**
16	14	37	**114**

SpinTools –
High-speed boring head

▲ for overturning holder and high speed carbide shank
▲ With internal coolant supply
▲ $D_{max.}$ = using a head with fine adjustment 0 – 2.7 mm

Scope of supply:
Boring head without boring shank, without inserts





62 361 ...

D_{min} - D_{max} mm	LPR mm	THSZMS	DCONMS $_{h6}$ mm	Insert	
8.75 - 14.1	18	M5	8	CC.. 0602	**014**
9.75 - 15.1	18	M5	9	CC.. 0602	**015**
10.75 - 16.1	23	M6	10	CC.. 0602	**016**
11.75 - 17.1	23	M6	11	CC.. 0602	**017**
12.75 - 18.1	23	M6	12	CC.. 0602	**018**
13.75 - 19.1	23	M6	13	CC.. 0602	**019**
14.75 - 20.1	23	M6	14	CC.. 0602	**020**
15.75 - 21.1	23	M6	14	CC.. 0602	**021**
16.75 - 22.1	27	M10	16	CC.. 0602	**022**
17.75 - 23.1	27	M10	16	CC.. 0602	**023**
19.75 - 25.1	27	M10	16	CC.. 0602	**025**
21.75 - 27.1	27	M10	16	CC.. 0602	**027**
24.75 - 30.1	27	M10	16	CC.. 0602	**030**
27.75 - 33.1	27	M10	16	CC.. 0602	**033**
31.75 - 37.1	27	M10	16	CC.. 0602	**037**
34.75 - 40.1	27	M10	16	CC.. 0602	**040**


TORX® Screws


Screwdriver

62 950 ... | **80 950 ...**

Spare parts		
Insert		
CC.. 0602	**022**	**109**

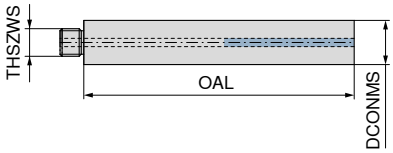
→ **Page 67**
Find suitable indexable inserts here.

A detailed operating manual is available for download in the online shop next to the product.

SpinTools –
High-speed carbide boring bars

▲ with threaded mounting stud made of high quality steel
▲ with through coolant
▲ Shank clamping length 35 mm

Scope of supply:
boring shank, without boring head





62 353 ...

DCONMS mm	OAL mm	THSZWS	
8	73	M5	**008**
9	80	M5	**009**
10	82	M6	**010**
11	89	M6	**011**
12	96	M6	**012**
13	103	M6	**013**
14	110	M6	**014**
16	120	M10	**016**

→ **Page 81**
Here you will find information about the working length.

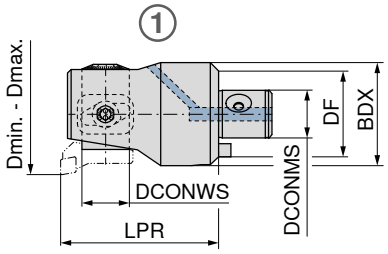
5

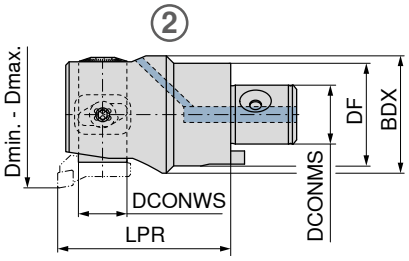
SpinTools – Single point finish boring heads

▲ With through coolant supply
▲ Digital variant: please order the digital stick separately

Scope of supply:
without insert holder and inserts

STM









										Analog	Digital
										62 303 ...	62 308 ...
D_{min} - D_{max} mm	D_{min} - D_{max} extended mm	Adapter	DCONMS mm	BDX mm	DF mm	LPR mm	DCONWS mm	WT kg	Fig.		
23.9 - 31.1	29.9 - 37.1	STM 11	11	22.5	20	40	11	0.08	1	**031**	**031**
30.9 - 40.1	37.9 - 47.1	STM 14	14	29.0	25	45	13	0.15	1	**040**	**040**
39.9 - 51.1	47.9 - 59.1	STM 18	18	37.0	32	65	17	0.38	1	**051**	**051**
50.9 - 67.1	64.9 - 81.1	STM 22	22	47.0	40	72	22	0.70	1	**067**	**067**
66.9 - 87.1	84.9 - 105.1	STM 28	28	59.0	50	82	30	1.32	2	**087**	**087**
86.9 - 116.1	104.9 - 134.1 (124.9 - 154.1)	STM 36	36	72.0	63	105	30	3.15	2	**116**	**116**

For optimal stability when fine boring the main insert holder ranges are preferred over the extended range.


Screw for drivers


Driver


Fillister-head screw


Clamping screw ST

Spare parts for Article no.		Screw for drivers 62 950 ...		Driver 62 950 ...		Fillister-head screw 62 950 ...		Clamping screw ST 62 950 ...	
62 303 031 / 62 308 031	M2x2.5	**162**	5x8.5x3	**035**	M4x6	**287**	M4x3	**213**
62 303 040 / 62 308 040	M2.5x6	**163**	6x10.3x4	**036**	M5x8	**288**	M5x4	**214**
62 303 051 / 62 308 051	M3x8	**164**	8x15x5	**037**	M6x10	**289**	M6x5	**215**
62 303 067 / 62 308 067	M4x10	**165**	10x18.1x6	**038**	M8x12	**290**	M8x6	**216**
62 303 087 / 62 308 087	M5x10	**166**	12x20x6	**039**	M10x16	**291**	M10x10	**217**
62 303 116 / 62 308 116	M6x12	**167**	16x26.5x8	**040**	M10x16	**291**	M10x18	**218**

→ **Page 54–59**
Here you will find the suitable base adaptors.

→ **Page 9**
Here you will find a detailed system overview.

SpinTools – Digital Stick

▲ suitable for all SpinTools digital heads as well as for hi.flex Digital
▲ revised software for even more precise adjustment
▲ Inch and Metric Display

Scope of supply:
incl. AAA Battery



62 309 ...
00100

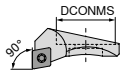
A detailed operating manual is available for download in the online shop next to the product.

SpinTools – Insert holder

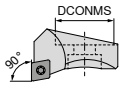
▲ for single point finish boring heads Art. 62 303 ..., 62 308 ...

Scope of supply:

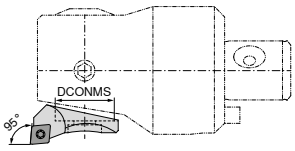
incl. Torx clamping screw for inserts, without fixing bolt for holder



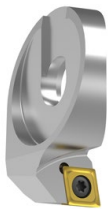
90°



Extended 90°



95°



90°



90° extended



95°

D_{min} - D_{max} mm	D_{min} - D_{max} extended mm	DCONMS mm	Insert	62 318 ...		62 318 ...		62 320 ...	
23.9 -31.1	29.9 - 37.1	11	CC.. 0602		**031**		**037**		**031**
30.9 - 40.1	37.9 - 47.1	13	CC.. 0602		**040**		**047**		**040**
39.9 - 51.1	47.9 - 59.1	17	CC.. 0602		**051**		**059**		**051**
50.9 - 67.1	64.9 - 81.1	22	CC.. 0602		**067**		**081**		**067**
66.9 - 87.1	84.9 - 105.1	30	CC.. 0602		**087**		**105**		
66.9 - 87.1		30	CC.. 09T3						**087**
86.9 - 116.1	104.9 - 134.1	30	CC.. 09T3		**116**		**134**		
	124.9 - 154.1	30	CC.. 09T3				**154**		



TORX® Screws



Screwdriver

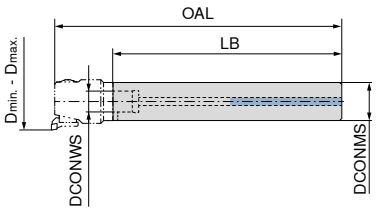
Spare parts		62 950 ...		80 950 ...	
Insert					
CC.. 0602	M2.5x6 - T07	**022**	T07		**109**
CC.. 09T3	M4x9 - T15	**023**	T15		**113**

→ **Page 67**
Find suitable indexable inserts here.

A detailed operating manual is available for download in the online shop next to the product.

SpinTools – High-speed carbide boring tools

▲ Shaft extension for single point finish boring heads Art. No. 62 303 ..., 62 308 ...
▲ with through coolant supply





62 354 ...

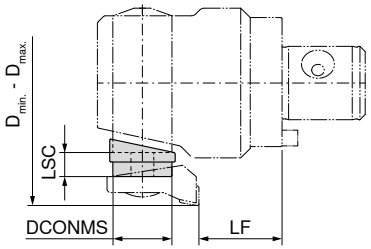
D_{min} - D_{max} mm	DCONWS mm	DCONMS mm	OAL mm	LB mm	WT kg	
23.9 - 31.1	11	20	250	210	0.81	**020**
30.9 - 40.1	14	25	306	261	1.54	**025**
39.9 - 51.1	18	32	380	315	3.03	**032**

SpinTools – Reverse adapter for back boring

▲ For insert holder article nos. 62 318 ... / 62 320 ...

Scope of supply:

Adapter including fixing bolt





LSC mm	DCONMS mm	LF mm	D_{min} - D_{max} mm	62 321 ...
6.5	11	13.0	37 - 44	**044**
8.0	11	13.0	40 - 47	**051**
6.5	13	12.6	44 - 53	**053**
10.0	13	12.6	51 - 60	**060**
6.5	17	31.3	53 - 64	**064**
10.0	17	31.3	60 - 71	**071**
6.5	22	31.2	68 - 80	**080**
12.0	22	31.2	75 - 91	**091**
10.0	30	29.0	87 - 107	**107**

Note left hand direction of spindle rotation when in use

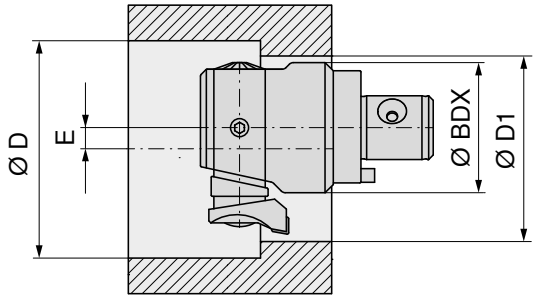
A detailed operating manual is available for download in the online shop next to the product.



Fillister-head screw

Spare parts for Article no.		62 950 ...
62 321 044	M4x12	**278**
62 321 051	M4x13	**279**
62 321 053	M5x14	**280**
62 321 060	M5x16	**281**
62 321 064	M6x15	**282**
62 321 071	M6x20	**283**
62 321 080	M8x20	**284**
62 321 091	M8x25	**285**
62 321 107	M10x30	**286**

Minimum diameter (Ø D1) during retraction for back boring



Minimum diameter (Ø D1) of the entry bore

$$Ø\,D1 = \frac{Ø\,BDX + Ø\,D}{2} + 1^{*}$$

Minimum offset (E) for starting

$$E = \frac{Ø\,D - Ø\,D1}{2} + 0.5^{*}$$

*Safety margin

Example

Single point finish boring head 62 303 031 (Ø BDX = 22.5 mm)	
Reverse adapter 62 321 044 (Ø D_{min} – Ø D_{max} = 37 – 44 mm)	**Selected** **Ø D = 37 mm**
Insert holder 62 318 031	

$$Ø\,D1 = \frac{Ø\,22.5\ mm + Ø\,37\ mm}{2} + 1\ mm = 30.75\ mm$$

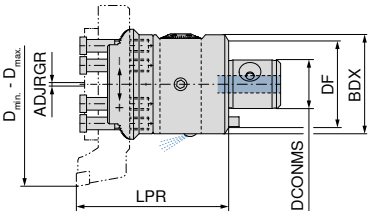
$$E = \frac{Ø\,37\ mm - Ø\,30.75\ mm}{2} + 0.5\ mm = 3.625\ mm$$

SpinTools – Single point finish boring heads

▲ With internal coolant supply
▲ extremely stable connection between insert holder and boring head

Scope of supply:
Boring head, without insert holder, pressure plate and support

STM





D_{min} - D_{max} mm	Adapter	DCONMS mm	BDX mm	DF mm	LPR mm	ADJRGR mm	WT kg	62 305 ...
86 - 402	STM 36	36	72	63	120	± 1.25	2.94	**302**



Cylindrical screw

Spare parts for Article no.		62 950 ...
62 305 302	M8x45	**292**



Screw for drivers

		62 950 ...
	M6x12	**167**



Driver

		62 950 ...
	16x26.5x8	**040**



Clamping screw ST

		62 950 ...
	M8x60	**011**

→ **Page 54–59**
Here you will find the suitable base adaptors.

A detailed operating manual is available for download in the online shop next to the product.

→ **Page 9**
Here you will find a detailed system overview.

SpinTools – Boring set

▲ suitable for Ø 86 – Ø 402 mm
▲ supplied with Ø 86 – Ø 302 mm
▲ with through coolant

Scope of supply:

▲ 1 Case
▲ 1 single point finish boring head
– 62 305 302
▲ 3 insert holders
– 62 438 138 Ø 86 – Ø 138 mm
– 62 438 220 Ø 136 – Ø 220 mm
– 62 438 302 Ø 188 – Ø 302 mm
▲ 2 pressure plates and 2 supports
– 62 950 149
– 62 950 150
– 62 950 152
– 62 950 153
▲ 1 Allen Key – SW5
▲ 1 Torx Key – T15



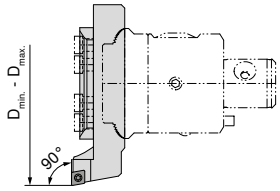
STM Modular

D_{min} - D_{max} mm	Adapter	62 439 ...
86 - 302	STM 36	**999**

SpinTools – Tool holder

▲ for single point finish boring heads
▲ Approach angle 90°

Scope of supply:
incl. cover plate and support





D_{min} - D_{max} mm	Insert	62 438 ...
86 - 138	CC.. 09T3	**138**
136 - 220	CC.. 09T3	**220**
188 - 302	CC.. 09T3	**302**
242 - 402	CC.. 09T3	**402**


TORX® Screws

Screwdriver


Pressure plate


Support

Spare parts for Article no.		62 950 ...		80 950 ...		62 950 ...		62 950 ...
62 438 138	M4x9 - T15	**023**	T15	**113**		**152**		**149**
62 438 220	M4x9 - T15	**023**	T15	**113**		**153**		**150**
62 438 302	M4x9 - T15	**023**	T15	**113**		**153**		**150**
62 438 402	M4x9 - T15	**023**	T15	**113**		**153**		**150**

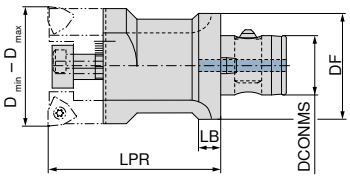
→ **Page 67**
Find suitable indexable inserts here.

TwinKom – Base body

Scope of supply:

Clamping plate incl. adjustment and fixing screws
Order tool holder and indexable inserts separately

ABS





							short	long
							62 881 ...	62 881 ...
D_{min} - D_{max} inch	KOMET no.	DCONMS inch	DF inch	Adapter	LPR inch	LB inch		
1.181 - 1.575	G04 00500	0.512	0.984	ABS 25	1.969		**04190**	
1.181 - 1.575	G04 01000	0.630	1.260	ABS 32	3.346	0.295		**44189**
1.575 - 2.008	G04 01010	0.630	1.260	ABS 32	2.362		**05189**	
1.575 - 2.008	G04 01500	0.787	1.575	ABS 40	4.724	0.335		**45188**
2.008 - 2.677	G04 01510	0.787	1.575	ABS 40	2.362		**07188**	
2.008 - 2.677	G04 02000	1.102	1.969	ABS 50	5.315	0.413		**47197**
2.677 - 3.425	G04 02010	1.102	1.969	ABS 50	2.756		**09197**	
2.677 - 3.425	G04 02020	1.102	1.969	ABS 50	5.315			**49197**
3.425 - 4.567	G04 02500	1.339	2.480	ABS 63	2.756		**12196**	
3.425 - 4.567	G04 02510	1.339	2.480	ABS 63	6.102			**52196**
4.567 - 6.024	G04 03000	1.811	3.150	ABS 80	3.543		**15792**	
4.567 - 6.024	G04 03010	1.811	3.150	ABS 80	6.890			**55792**
6.024 - 8.031	G04 03500	2.205	3.937	ABS 100	4.921		**20491**	

 Cylindrical screw TwinKom	 Cylindrical screw TwinKom	 Adjustment screw	 Adjustment screw	 TwinKom clamping plate	
62 950 ...	**84 950 ...**	**10 950 ...**	**62 950 ...**	**62 950 ...**	
Spare parts D_{min} - D_{max}					
1.181 - 1.575	**45500**		**53800**	**55000**	
1.575 - 2.008	**45600**	**11200**		**55100**	
2.008 - 2.677	**54400**		**53900**	**55200**	
2.677 - 3.425	**42600**		**54000**	**55300**	
3.425 - 4.567	**54500**		**54100**	**55400**	
4.567 - 6.024	**54600**		**54200**	**55500**	
6.024 - 8.031	**54700**		**54300**	**55600**	

A detailed operating manual is available for download in the online shop next to the product.

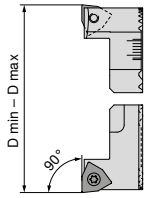
→ **Page 10**
Here you will find a detailed system overview.

TwinKom – Tool holder 90°

▲ radially adjustable

Scope of supply:

including pair of holders and clamping screws
Order indexable inserts separately





67 871 ...

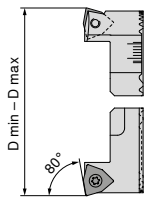
D_{min} - D_{max} inch	KOMET no.	Insert	
1.181 - 1.614	G03 60410	WO.X 05T3..	04100
1.535 - 2.008	G03 60420	WO.X 06T3..	05100
1.929 - 2.795	G03 60430	WO.X 06T3..	07100
2.520 - 3.853	G03 60440	WO.X 0804..	09800
3.268 - 4.764	G03 60450	WO.X 1005..	12100
4.291 - 6.181	G03 60460	WO.X 1005..	15700
5.472 - 8.031	G03 60470	WO.X 1206..	20400

TwinKom – Tool holder 80°

▲ radially adjustable

Scope of supply:

including pair of holders and clamping screws
Order indexable inserts separately





67 875 ...

D_{min} - D_{max} inch	KOMET no.	Insert	
1.181 - 1.614	G03 50410	WO.X 05T3..	04100
1.535 - 2.008	G03 50420	WO.X 06T3..	05100
1.929 - 2.795	G03 50430	WO.X 06T3..	07100
2.520 - 3.853	G03 50440	WO.X 0804..	09800
3.268 - 4.764	G03 50450	WO.X 1005..	12100
4.291 - 6.181	G03 50460	WO.X 1005..	15700
5.472 - 8.031	G03 50470	WO.X 1206..	20400


Screwdriver


Clamping screw

80 950 ... **10 950 ...**

Spare parts Insert		
WO.X 05T3..	125	10500
WO.X 06T3..	127	10600
WO.X 0804..	128	12700
WO.X 1005..	128	12700
WO.X 1206..	129	17400

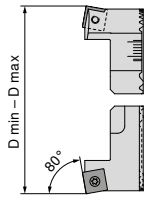
→ **Page 63+64**
Find suitable indexable inserts here.

TwinKom – Tool holder 80°

▲ radially adjustable

Scope of supply:

including pair of holders and clamping screws
Order indexable inserts separately





67 872 ...

D_{min} - D_{max} inch	KOMET no.	Insert	
1.181 - 1.614	G03 80200	SOEX 07T308	04100
1.535 - 2.008	G03 80211	SOEX 090408	05100[1)]
1.929 - 2.795	G03 80220	SOEX 090408	07100
2.520 - 3.853	G03 80230	SOEX 120508	09800
3.268 - 4.764	G03 80240	SOEX 120508	12100
4.291 - 6.181	G03 80250	SOEX 120508	15700
5.472 - 8.031	G03 80260	SOEX 120508	20400

1) Not in stock


Screwdriver


Clamping screw

80 950 ... **10 950 ...**

Spare parts Insert		
SOEX 07T308	125	10800
SOEX 090408	128	10300
SOEX 120508	129	10400

→ **Page 65**
Find suitable indexable inserts here.

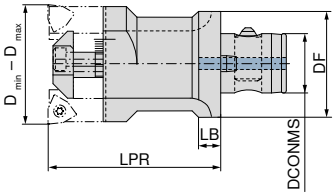
5

TwinKom – Base body

Scope of supply:

Clamping plate incl. adjustment and fixing screws
Order tool holder (+indexable insert) and indexable inserts separately

ABS





								long	short
								62 870 ...	62 870 ...
D_{min} - D_{max} mm	KOMET no.	DCONMS mm	DF mm	Adapter	LPR mm	LB mm	WT kg		
24 - 32	G01 70552	13	25	ABS 25	45	6.0	0.11		03290
24 - 32	G01 71072	16	32	ABS 32	70	7.0	0.21	13289	
30 - 41	G01 70562	13	25	ABS 25	50		0.12		04190
30 - 41	G01 71132	16	32	ABS 32	85	7.5	0.30	14189	
39 - 53	G01 71022	16	32	ABS 32	60		0.29		05389
39 - 53	G01 71622	20	40	ABS 40	120	8.0	0.68	15388	
51 - 71	G01 71522	20	40	ABS 40	60		0.44		07188
51 - 71	G01 72122	28	50	ABS 50	135	10.0	1.24	17197	
64 - 91	G01 72022	28	50	ABS 50	70		0.82		09197
64 - 91	G01 72622	34	63	ABS 63	155	13.0	2.25	19196	
83 - 124	G01 72522	34	63	ABS 63	70		1.35		12496
83 - 124	G01 73122	46	80	ABS 80	155	16.5	3.80	12592	
109 - 167	G01 73032	46	80	ABS 80	90		3.10		16792[1)]
109 - 167	G01 73042	46	80	ABS 80	175		6.20	16892[1)]	
139 - 215	G01 73562	56	100	ABS 100	125		6.47		21591[1)]
139 - 215	G01 73572	56	100	ABS 100	240		13.25	21691[1)]	

1) Diameter range can only be achieved with TwinKom basic tool holder (radially + axially adjustable) and corresponding indexable insert!


Adjustment screw


TwinKom clamping plate


Fixing screw

								10 950 ...		62 950 ...	
Spare parts D_{min} - D_{max}											
24 - 32	M2.5X5.SW1.3	16500						46900	M2x4.5 - T06	15800	
30 - 41	M2.5X5.SW1.3	16500						47000	M2.5x5.3 - T08	15900	
39 - 53	M4x8 - SW2	11100						47100	M2.5x7 - T08	16000	
51 - 71	M4x10 - SW2	11200						47200	M3.5x9.4 - T10	16300	
64 - 91	M6X12 SW3	16100						47300	M4.5x11.5 - T15	13500	
83 - 124	M6X20 SW3	16200						47400	M5x12 - SW2.5	11000	
109 - 167	M8X20.SW4	16600						47500			
139 - 215	M10X20 DIN 913	17500						47700	M6x20 Sw5	17600	


Cylindrical screw TwinKom


Cylindrical screw


Adjustment pin

								62 950 ...		62 950 ...	
Spare parts D_{min} - D_{max}											
24 - 32	M3X16	46000								46200	
30 - 41	M4X20	45500								46300	
39 - 53	M5X25	45600								46400	
51 - 71	M6X30	45700								46500	
64 - 91	M8X35	45800								46600	
83 - 124	M8X45	45900								46700	
109 - 167	M10X50	46100	M5x16					00000		46800	
139 - 215	M12x60	47600								47800	

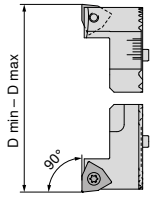
A detailed operating manual is available for download in the online shop next to the product.

→ **Page 10**
Here you will find a detailed system overview.

TwinKom – Tool holder 90°

▲ radially adjustable

Scope of supply:
including clamping screw
Order indexable inserts separately





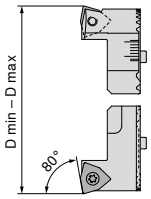
62 871 ...

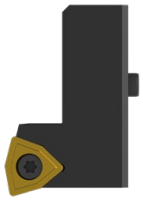
D_{min} - D_{max} mm	KOMET no.	Insert	
24 - 32	G03 70330	WO.X 0403..	**03200**
30 - 41	G03 70141	WO.X 05T3..	**04100**
39 - 53	G03 70230	WO.X 05T3..	**05300**
51 - 71	G03 70240	WO.X 06T3..	**07100**
64 - 91	G03 70250	WO.X 0804..	**09100**
83 - 124	G03 70260	WO.X 1005..	**12400**

TwinKom – Tool holder 80°

▲ radially adjustable

Scope of supply:
including clamping screw
Order indexable inserts separately





62 875 ...

D_{min} - D_{max} mm	KOMET no.	Insert	
24 - 32	G03 80310	WO.X 0403..	**03200**
30 - 41	G03 80021	WO.X 05T3..	**04100**
39 - 53	G03 80090	WO.X 05T3..	**05300**
51 - 71	G03 80100	WO.X 06T3..	**07100**
64 - 91	G03 80110	WO.X 0804..	**09100**
83 - 124	G03 80120	WO.X 1005..	**12400**



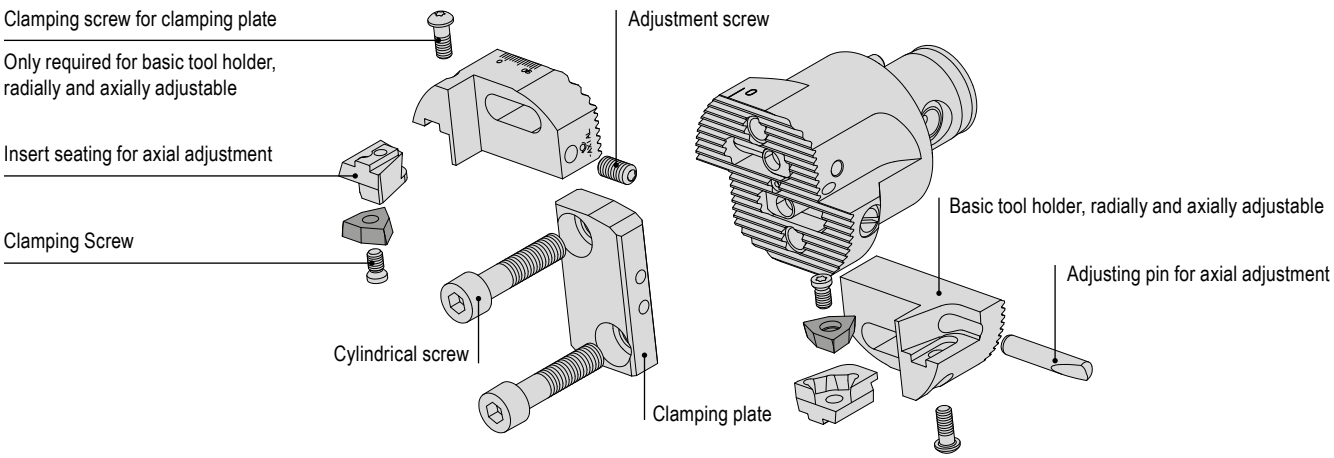
Clamping screw

10 950 ...

Spare parts D_{min} - D_{max}		
24 - 32	M2.2x5.5 - 06IP	**10700**
30 - 41	M2.5x7.2 - 08IP	**10500**
39 - 53	M2.5x7.2 - 08IP	**10500**
51 - 71	M3.5x7.3 - 10IP	**10600**
64 - 91	M4.5x9 - 15IP	**12700**
83 - 124	M4.5x9 - 15IP	**12700**

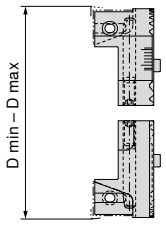
→ **Page 63+64**
Find suitable indexable inserts here.

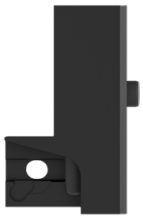
Suitable ABS adapters can be found in → **Chapter 16, Adaptors and Accessories.**



TwinKom – Basic tool holder, radially and axially adjustable

Scope of supply:
Order indexable insert seats and indexable inserts separately



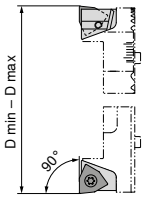


D_{min} - D_{max} mm	KOMET no.	62 872 ...
24 - 32	G03 70011	**03200**
30 - 41	G03 70021	**04100**
39 - 53	G03 70031	**05300**
51 - 71	G03 70041	**07100**
64 - 91	G03 70061	**09100**
83 - 124	G03 70071	**12400**
109 - 167	G03 70081	**16700**
139 - 215	G03 70091	**21500**

TwinKom – Indexable insert, 90°

▲ axially adjustable

Scope of supply:
including clamping screw
Order indexable inserts separately



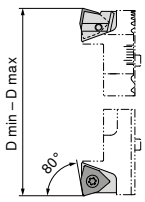


D_{min} - D_{max} mm	KOMET no.	Insert	62 873 ...
24 - 32	D54 60510	WO.X 0302..	**03200**
30 - 41	D54 60520	WO.X 0403..	**04100**
39 - 53	D54 60030	WO.X 05T3..	**05300**
51 - 71	D54 60040	WO.X 06T3..	**07100**
64 - 91	D54 60050	WO.X 0804..	**09100**
83 - 167	D54 60060	WO.X 1005..	**12400**
139 - 215	D54 60070	WO.X 1206..	**21500**

TwinKom – Indexable insert, 80°

▲ axially adjustable

Scope of supply:
including clamping screw
Order indexable inserts separately





D_{min} - D_{max} mm	KOMET no.	Insert	62 874 ...
24 - 32	D54 60610	WO.X 0302..	**03200**
30 - 41	D54 60620	WO.X 0403..	**04100**
39 - 53	D54 60130	WO.X 05T3..	**05300**
51 - 71	D54 60140	WO.X 06T3..	**07100**
64 - 91	D54 60150	WO.X 0804..	**09100**
83 - 167	D54 60160	WO.X 1005..	**16700**
139 - 215	D54 60170	WO.X 1206..	**21500**



Clamping screw

Spare parts D_{min} - D_{max}		10 950 ...
24 - 32	M2.0x4.3 - 06IP	**10000**
30 - 41	M2.2x5.5 - 06IP	**10700**
39 - 53	M2.5x6.3 - 08IP	**10800**
51 - 71	M3.5x6.6 - 10IP	**16400**
64 - 91	M4.5x9 - 15IP	**12700**
83 - 167	M4.5x9 - 15IP	**12700**
139 - 215	M5.5x11 - 20IP	**17400**

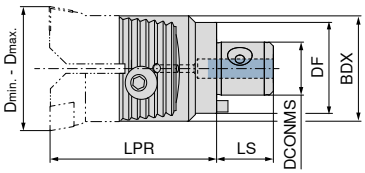
SpinTools – Boring heads for roughing with 2 cutting edges

▲ with through coolant

Scope of supply:

Boring head incl. drive dog, fixing screws, spring rings, drive dog screw and stop pin

STM





D_{min} - D_{max} mm	Adapter	DCONMS mm	BDX mm	DF mm	LPR mm	LS mm	WT kg	62 295 ...
23.5 - 30.5	STM 11	11	20	20	40	13	0.05	**030**
29.5 - 40.1	STM 14	14	25	25	45	16	0.09	**040**
39.5 - 50.5	STM 18	18	32	32	65	20	0.25	**050**
49.5 - 66.5	STM 22	22	42	40	72	24	0.38	**066**
65.5 - 87.5	STM 28	28	55	50	82	30	0.59	**087**



Fillister-head screw



Spring ring



Location Pin

Spare parts for Article no.		62 950 ...		62 950 ...		62 950 ...
62 295 030	M4x8	**298**	Ø 4.3/7.3	**311**		**231**
62 295 040	M5x12	**293**	Ø 5.3/9.3	**312**		**231**
62 295 050	M6x16	**294**	Ø 6.4/10.2	**313**		**231**
62 295 066	M8x20	**295**	Ø 8.4/14.0	**314**		**234**
62 295 087	M10x25	**296**	Ø 10.5/17.0	**315**		**234**



Screw for drivers



Driver

Spare parts for Article no.		62 950 ...		62 950 ...
62 295 030	M2x2.5	**162**	5x8.5x3	**035**
62 295 040	M2.5x6	**163**	6x10.3x4	**036**
62 295 050	M3x8	**164**	8x15x5	**037**
62 295 066	M4x10	**165**	10x18.1x6	**038**
62 295 087	M5x10	**166**	12x20x6	**039**

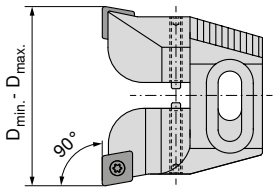
→ **Page 54–59**
Here you will find the suitable base adaptors.

A detailed operating manual is available for download in the online shop next to the product.

→ **Page 10**
Here you will find a detailed system overview.

SpinTools – Pair of tool holders, standard, 90°

Scope of supply:
Adjustment screws, positioning pin, insert clamping screws

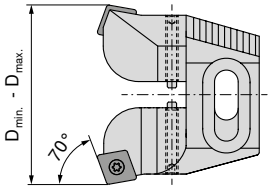




D_{min} - D_{max} mm	Insert	62 296 ...
23.5 - 30.5	CC.. 0602	**030**
29.5 - 40.1	CC.. 0602	**040**
39.5 - 50.5	CC.. 09T3	**050**
49.5 - 66.5	CC.. 09T3	**066**
65.5 - 87.5	CN.. 1204	**088**
65.5 - 87.5	CC.. 1204	**087**

SpinTools – Pair of tool holders, standard, 70°

Scope of supply:
Adjustment screws, positioning pin, insert clamping screws





D_{min} - D_{max} mm	Insert	62 299 ...
23.5 - 30.5	CC.. 0602	**030**
29.5 - 40.1	CC.. 0602	**040**
39.5 - 50.5	CC.. 09T3	**050**
49.5 - 66.5	CC.. 09T3	**066**
65.5 - 87.5	CN.. 1204	**088**
65.5 - 87.5	CC.. 1204	**087**


TORX® Screws


Screwdriver


Adjustment screw

Spare parts D_{min} - D_{max}	Insert	62 950 ...		80 950 ...		62 950 ...	
23.5 - 30.5	CC.. 0602	M2.5x6 - T07	**022**	T07	**109**	M4x0.5x7	**238**
29.5 - 40.1	CC.. 0602	M2.5x6 - T07	**022**	T07	**109**	M4x0.5x9.5	**239**
39.5 - 50.5	CC.. 09T3	M4x9 - T15	**023**	T15	**113**	M4x0.5x13	**240**
49.5 - 66.5	CC.. 09T3	M4x9 - T15	**023**	T15	**113**	M6x14	**241**
65.5 - 87.5	CC.. 1204	M5x10 - T20	**232**	T20	**114**	M6x20	**242**


Shim


Elbow lever screw


Lever

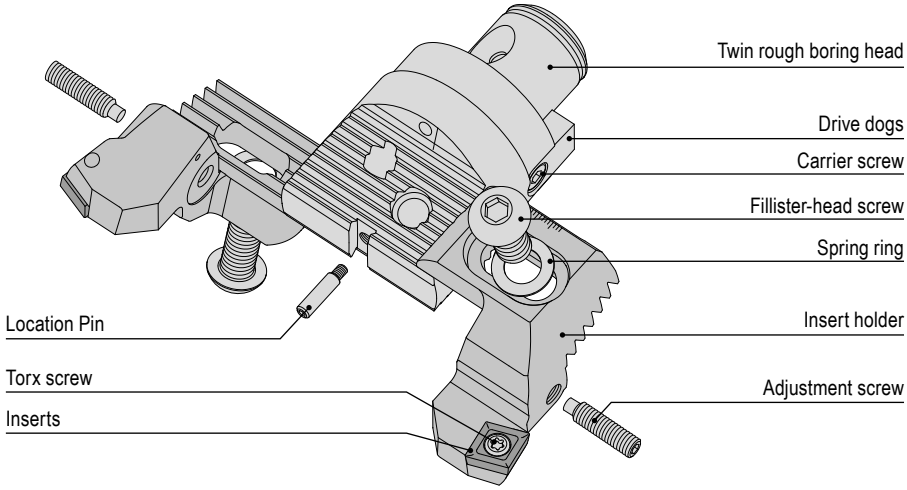

Carbide type C


Adjustment screw

Spare parts D_{min} - D_{max}	Insert	62 950 ...	62 950 ...	62 950 ...	62 950 ...	62 950 ...	
65.5 - 87.5	CN.. 1204	**096**	**136**	**125**	**117**	M6x20	**242**

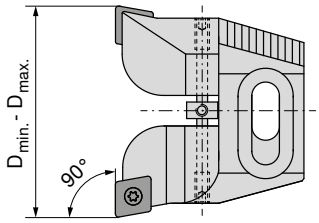
→ **Page 67**
Find suitable indexable inserts here.

A detailed operating manual is available for download in the online shop next to the product.



SpinTools – Pair of tool holders, ‘Synchro’, 90°

Scope of supply:
Insert clamping screws, synchronization screw





D_{min} - D_{max} mm	Insert	62 297 ...
23.5 - 30.5	CC.. 0602	**030**
29.5 - 40.1	CC.. 0602	**040**
39.5 - 50.5	CC.. 09T3	**050**
49.5 - 66.5	CC.. 09T3	**066**
65.5 - 87.5	CC.. 1204	**087**


TORX® Screws

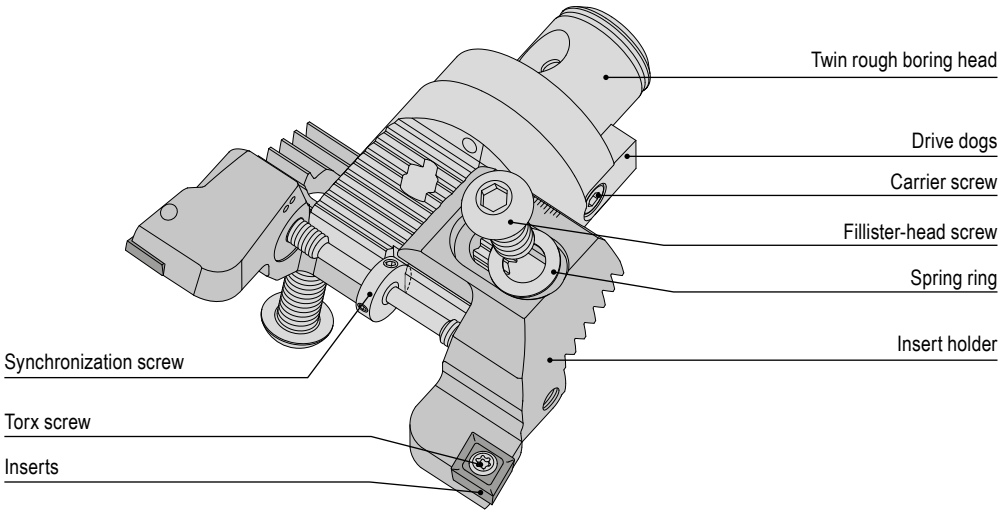

Synchronization screw


Screwdriver

Spare parts for Article no.	62 950 ...		62 950 ...		80 950 ...	
62 297 030	M2.5x6 - T07	**022**	M4x0.5x18	**207**	T07	**109**
62 297 040	M2.5x6 - T07	**022**	M4x0.5x23	**208**	T07	**109**
62 297 050	M4x9 - T15	**023**	M4x0.5x30	**209**	T15	**113**
62 297 066	M4x9 - T15	**023**	M6x40	**210**	T15	**113**
62 297 087	M5x10 - T20	**232**	M6x52	**211**	T20	**114**

→ **Page 67**
Find suitable indexable inserts here.

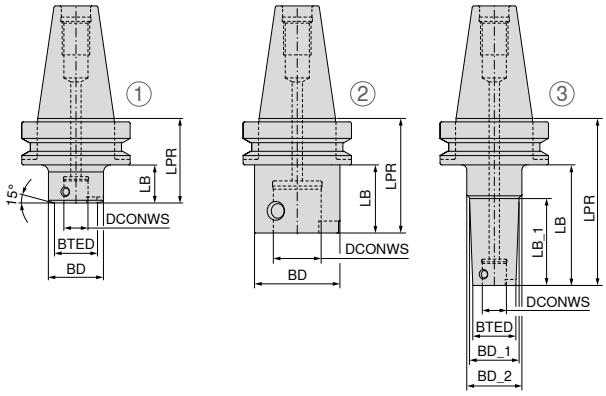
A detailed operating manual is available for download in the online shop next to the product.



SpinTools – Base adapters ISO 7388-2 (JIS B 6339 / MAS-BT)

▲ form B available upon request

STM







MAS-BT

62 112 ...

	Adapter	Fig.	SZID	DCONWS mm	BTED mm	BD mm	BD_1 mm	BD_2 mm	LPR mm	LB mm	LB_1 mm	WT kg	
short	BT 30	2	STM 28	28		50			55			0.64	**328**
	BT 40	1	STM 11	11	20	32			50	23		1.09	**111** 1)
	BT 40	1	STM 14	14	25	32			50	23		1.08	**114** 1)
	BT 40	2	STM 18	18		32			50	23		1.06	**118**
	BT 40	2	STM 22	22		40			50	23		1.10	**122**
	BT 40	2	STM 28	28		50			50	23		1.14	**128**
	BT 40	2	STM 36	36		63			60	33		1.38	**136**
	BT 50	2	STM 28	28		50			63	25		3.75	**428**
	BT 50	2	STM 36	36		63			63	25		3.78	**436**
long	BT 40	3	STM 11	11	20		23	32	90	63	43	1.20	**211** 1)
	BT 40	3	STM 14	14	25		28	32	90	63	43	1.24	**214** 1)
	BT 40	2	STM 18	18		32			90	63		1.30	**218**
	BT 40	2	STM 22	22		40			100	73		1.57	**222**
	BT 40	2	STM 28	28		50			100	73		1.87	**228**
	BT 40	2	STM 36	36		63			120	93		2.78	**236**
	BT 50	2	STM 36	36		63			120	82		5.18	**536**

1) Note! BD/BD_1 is larger than BTED, which may lead to a limited bore depth!



O-Ring

62 950 ...



Clamping screw ST

62 950 ...

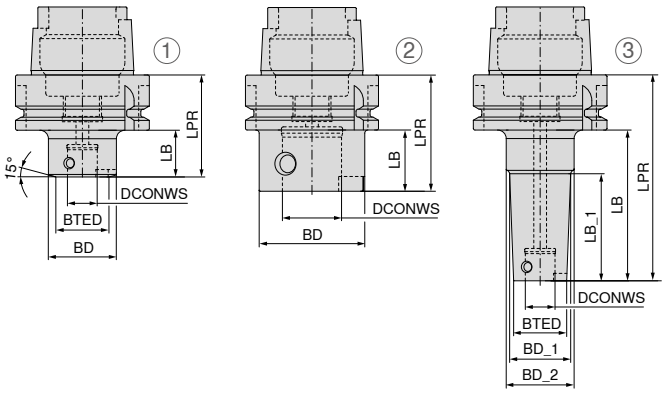
Spare parts DCONWS				
11	9x1.5	**254**	M4x0.5x6	**026**
14	12x1.5	**255**	M5x0.5x7.5	**027**
18	16x1.5	**256**	M6x0.75x9.5	**028**
22	19x2	**257**	M8x0.75x12	**029**
28	25x2	**258**	M10x1x14.2	**030**
36	33x2	**259**	M12x1x18	**031**

Suitable pull studs can be found in → **Chapter 16, Adapters and accessories.**

ABS base adapters can be found in → **Chapter 16, Adapters and accessories.**

SpinTools – Base adapters HSK-A ISO 12164-1 (DIN 69893-1)

STM







HSK-A

62 122 ...

	Adapter	Fig.	SZID	DCONWS mm	BTED mm	BD mm	BD_1 mm	BD_2 mm	LPR mm	LB mm	LB_1 mm	WT kg	
short	HSK-A 63	1	STM 11	11	20	32			50	24		0.77	**111** [1]
	HSK-A 63	1	STM 14	14	25	32			50	24		0.76	**114** [1]
	HSK-A 63	2	STM 18	18		32			50	24		0.74	**118**
	HSK-A 63	2	STM 22	22		40			50	24		0.79	**122**
	HSK-A 63	2	STM 28	28		50			55	24		0.91	**128**
	HSK-A 63	2	STM 36	36		63			65	34		1.10	**136**
	HSK-A 100	2	STM 28	28		50			63	34		2.32	**428**
	HSK-A 100	2	STM 36	36		63			70	34		2.61	**436**
long	HSK-A 63	3	STM 11	11	20		23	32	90	64	44	0.87	**211** [1]
	HSK-A 63	3	STM 14	14	25		28	32	90	64	44	0.93	**214** [1]
	HSK-A 63	2	STM 18	18		32			90	64		0.98	**218**
	HSK-A 63	2	STM 22	22		40			100	74		1.26	**222**
	HSK-A 63	2	STM 28	28		50			100	74		1.58	**228**
	HSK-A 63	2	STM 36	36		63			120	94		2.41	**236**

1) Note! BD/BD_1 is larger than BTED, which may lead to a limited bore depth!



O-Ring



Clamping screw ST

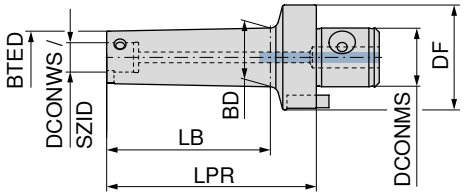
Spare parts DCONWS		**62 950 ...**		**62 950 ...**
11	9x1.5	**254**	M4x0.5x6	**026**
14	12x1.5	**255**	M5x0.5x7.5	**027**
18	16x1.5	**256**	M6x0.75x9.5	**028**
22	19x2	**257**	M8x0.75x12	**029**
28	25x2	**258**	M10x1x14.2	**030**
36	33x2	**259**	M12x1x18	**031**

ABS base adapters can be found in → **Chapter 16, Adapters and accessories.**

SpinTools – Reductions

▲ with through coolant

STM





62 357 ...

Adapter	LPR mm	SZID	DCONMS mm	DCONWS mm	DF mm	BTED mm	BD mm	LB mm	WT kg	
STM 14	30	STM 11	14	11	25	20	23	15	0.04	**111**
STM 18	30	STM 11	18	11	32	20	23	17	0.14	**211**
STM 18	30	STM 14	18	14	32	25	28	17	0.16	**214**
STM 22	30	STM 11	22	11	40	20	23	15	0.21	**311**
STM 22	30	STM 14	22	14	40	25	28	15	0.22	**314**
STM 22	30	STM 18	22	18	40	32	37	15	0.25	**318**
STM 28	40	STM 11	28	11	50	20	23	20	0.44	**411**
STM 28	40	STM 14	28	14	50	25	28	20	0.49	**414**
STM 28	40	STM 18	28	18	50	32	37	20	0.45	**418**
STM 28	40	STM 22	28	22	50	40	46	20	0.55	**422**
STM 36	40	STM 11	36	11	63	20	22	16	0.82	**511**
STM 36	70	STM 11	36	11	63	20	23	42	0.90	**811**
STM 36	95	STM 11	36	11	63	20	23	71	0.98	**611**
STM 36	115	STM 11	36	11	63	20	23	87	1.02	**911**
STM 36	135	STM 11	36	11	63	20	23	111	1.08	**711**
STM 36	40	STM 14	36	14	63	25	27	16	0.84	**514**
STM 36	80	STM 14	36	14	63	25	28	52	1.00	**814**
STM 36	120	STM 14	36	14	63	25	28	96	1.16	**614**
STM 36	145	STM 14	36	14	63	25	28	117	1.27	**914**
STM 36	170	STM 14	36	14	63	25	28	146	1.38	**714**
STM 36	40	STM 18	36	18	63	32	37	16	0.85	**518**
STM 36	100	STM 18	36	18	63	32	38	74	1.24	**818**
STM 36	150	STM 18	36	18	63	32	38	126	1.66	**918**
STM 36	207	STM 18	36	18	63	32	38	183	2.07	**618**
STM 36	40	STM 22	36	22	63	40	46	16	0.89	**522**
STM 36	120	STM 22	36	22	63	40	48	95	1.76	**822**
STM 36	183	STM 22	36	22	63	40	48	159	2.52	**622**
STM 36	263	STM 22	36	22	63	40	48	239	3.44	**722**
STM 36	40	STM 28	36	28	63	50	58	21	1.03	**528**
STM 36	140	STM 28	36	28	63	50	60	117	2.70	**828**
STM 36	233	STM 28	36	28	63	50	60	209	4.41	**628**
STM 36	333	STM 28	36	28	63	50	60	309	6.25	**728**

ABS reductions can be found in → **Chapter 16, Adapters and accessories.**

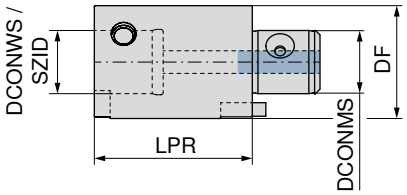
Reductions – Spare Parts

	 O-Ring		 Screw for drivers		 Driver		 Clamping screw ST	
	62 950 ...		62 950 ...		62 950 ...		62 950 ...	
Spare parts for Article no.								
62 357 111	9x1.5	**254**	M2.5x6	**163**	6x10.3x4	**036**	M4x0.5x6	**026**
62 357 211	9x1.5	**254**	M3x8	**164**	8x15x5	**037**	M4x0.5x6	**026**
62 357 214	12x1.5	**255**	M3x8	**164**	8x15x5	**037**	M5x0.5x7.5	**027**
62 357 311	9x1.5	**254**	M4x10	**165**	10x18.1x6	**038**	M4x0.5x6	**026**
62 357 314	12x1.5	**255**	M4x10	**165**	10x18.1x6	**038**	M5x0.5x7.5	**027**
62 357 318	16x1.5	**256**	M4x10	**165**	10x18.1x6	**038**	M6x0.75x9.5	**028**
62 357 411	9x1.5	**254**	M5x10	**166**	12x20x6	**039**	M4x0.5x6	**026**
62 357 414	12x1.5	**255**	M5x10	**166**	12x20x6	**039**	M5x0.5x7.5	**027**
62 357 418	16x1.5	**256**	M5x10	**166**	12x20x6	**039**	M6x0.75x9.5	**028**
62 357 422	19x2	**257**	M5x10	**166**	12x20x6	**039**	M8x0.75x12	**029**
62 357 511	9x1.5	**254**	M6x12	**167**	16x26.5x8	**040**	M4x0.5x6	**026**
62 357 811	9x1.5	**254**	M6x12	**167**	16x26.5x8	**040**	M4x0.5x6	**026**
62 357 611	9x1.5	**254**	M6x12	**167**	16x26.5x8	**040**	M4x0.5x6	**026**
62 357 911	9x1.5	**254**	M6x12	**167**	16x26.5x8	**040**	M4x0.5x6	**026**
62 357 711	9x1.5	**254**	M6x12	**167**	16x26.5x8	**040**	M4x0.5x6	**026**
62 357 514	12x1.5	**255**	M6x12	**167**	16x26.5x8	**040**	M5x0.5x7.5	**027**
62 357 814	12x1.5	**255**	M6x12	**167**	16x26.5x8	**040**	M5x0.5x7.5	**027**
62 357 614	12x1.5	**255**	M6x12	**167**	16x26.5x8	**040**	M5x0.5x7.5	**027**
62 357 914	12x1.5	**255**	M6x12	**167**	16x26.5x8	**040**	M5x0.5x7.5	**027**
62 357 714	12x1.5	**255**	M6x12	**167**	16x26.5x8	**040**	M5x0.5x7.5	**027**
62 357 518	16x1.5	**256**	M6x12	**167**	16x26.5x8	**040**	M6x0.75x9.5	**028**
62 357 818	16x1.5	**256**	M6x12	**167**	16x26.5x8	**040**	M6x0.75x9.5	**028**
62 357 918	16x1.5	**256**	M6x12	**167**	16x26.5x8	**040**	M6x0.75x9.5	**028**
62 357 618	16x1.5	**256**	M6x12	**167**	16x26.5x8	**040**	M6x0.75x9.5	**028**
62 357 522	19x2	**257**	M6x12	**167**	16x26.5x8	**040**	M8x0.75x12	**029**
62 357 822	19x2	**257**	M6x12	**167**	16x26.5x8	**040**	M8x0.75x12	**029**
62 357 622	19x2	**257**	M6x12	**167**	16x26.5x8	**040**	M8x0.75x12	**029**
62 357 722	19x2	**257**	M6x12	**167**	16x26.5x8	**040**	M8x0.75x12	**029**
62 357 528	25x2	**258**	M6x12	**167**	16x26.5x8	**040**	M10x1x14.2	**030**
62 357 828	25x2	**258**	M6x12	**167**	16x26.5x8	**040**	M10x1x14.2	**030**
62 357 628	25x2	**258**	M6x12	**167**	16x26.5x8	**040**	M10x1x14.2	**030**
62 357 728	25x2	**258**	M6x12	**167**	16x26.5x8	**040**	M10x1x14.2	**030**

SpinTools – Extensions

▲ with through coolant

STM





Adapter	LPR mm	SZID	DCONWS mm	DF mm	DCONMS mm	WT kg	62 351 ...
STM 11	25	STM 11	11	20	11	0.06	**111**
STM 11	35	STM 11	11	20	11	0.09	**211**
STM 14	30	STM 14	14	25	14	0.11	**114**
STM 14	45	STM 14	14	25	14	0.17	**214**
STM 18	40	STM 18	18	32	18	0.23	**118**
STM 18	60	STM 18	18	32	18	0.35	**218**
STM 22	50	STM 22	22	40	22	0.45	**122**
STM 22	80	STM 22	22	40	22	0.73	**222**
STM 28	50	STM 28	28	50	28	0.71	**128**
STM 28	75	STM 28	28	50	28	1.07	**228**
STM 28	100	STM 28	28	50	28	1.44	**328**
STM 36	60	STM 36	36	63	36	1.33	**136**
STM 36	90	STM 36	36	63	36	2.02	**236**
STM 36	120	STM 36	36	63	36	2.72	**336**



O-Ring



Screw for drivers



Driver



Clamping screw ST

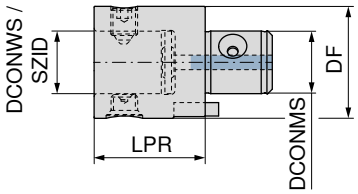
Spare parts DCONWS		62 950 ...		62 950 ...		62 950 ...		62 950 ...
11	9x1.5	**254**	M2x2.5	**162**	5x8.5x3	**035**	M4x0.5x6	**026**
14	12x1.5	**255**	M2.5x6	**163**	6x10.3x4	**036**	M5x0.5x7.5	**027**
18	16x1.5	**256**	M3x8	**164**	8x15x5	**037**	M6x0.75x9.5	**028**
22	19x2	**257**	M4x10	**165**	10x18.1x6	**038**	M8x0.75x12	**029**
28	25x2	**258**	M5x10	**166**	12x20x6	**039**	M10x1x14.2	**030**
36	33x2	**259**	M6x12	**167**	16x26.5x8	**040**	M12x1x18	**031**

ABS extensions can be found in → **Chapter 16, Adapters and accessories.**

SpinTools – ABS/STM adapters

▲ using this adapter, ABS core drilling and precision boring systems can be accommodated reliably and precisely in STM base adapters
▲ with through coolant supply

STM





NEW

62 359 ...

Adapter	LPR mm	SZID	DCONWS mm	DF mm	DCONMS mm	
STM 14	35	ABS 25	13	25	14	**02519**
STM 18	40	ABS 32	16	32	18	**03218**
STM 22	45	ABS 40	20	40	22	**04017**
STM 28	50	ABS 50	28	50	28	**05016**
STM 36	60	ABS 63	34	63	36	**06315**


Clamping screw


Clamping screw


Driver


Taper screw

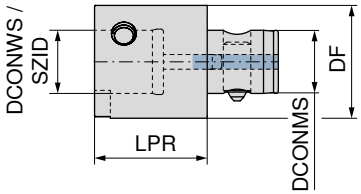
62 950 ... | 84 950 ... | 62 950 ... | 84 950 ...

DCONWS							
13			**26800**		**036**		**27000**
16		**13989**			**037**		**27100**
20			**26900**		**038**		**27200**
28			**20300**		**039**		**20400**
34			**25500**		**040**		**27300**

MicroKom – STM/ABS adapters

▲ using this adapter, STM core drilling and precision boring systems can be accommodated reliably and precisely in ABS base adapters
▲ with through coolant supply

ABS





NEW

62 359 ...

Adapter	LPR mm	SZID	DCONWS mm	DF mm	DCONMS mm	
ABS 25	30	STM 14	14	25	13	**02590**
ABS 32	40	STM 18	18	32	16	**03289**
ABS 40	40	STM 22	22	40	20	**04088**
ABS 50	50	STM 28	28	50	28	**05097**
ABS 63	60	STM 36	36	63	34	**06396**


Clamping screw ST

62 950 ...

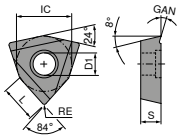
Spare parts

DCONWS	
14	**027**
18	**028**
22	**029**
28	**030**
36	**031**

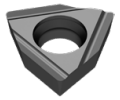
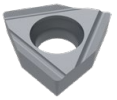
5

WOHX

Designation	L mm	S mm	D1 mm	IC mm
WOHX 02T0..	2.6	1.20	2	4



WOHX

ISO	KOMET no.	RE mm	-G12 BK2710	-G12 BK8440	-G12 K10
					
			F WOHX 62 600 ...	F WOHX 62 600 ...	F WOHX 62 600 ...
02T001EL	W00 04120.018440	0.1		**00102**	
02T001EL	W00 04120.012710	0.1	**10102**		
02T001FL	W00 04120.0121	0.1			**20102**
P			●	●	
M			●	●	
K			●	●	
N					●
S			●		●
H				●	
O					●

→ v_c Page 70

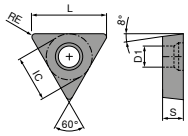
Material group	Guideline recommendation Grade	Chip groove
P	BK8440	-G12
M	BK8440	-G12
K	BK2710	-G12
N	K10	-G12
S	K10	-G12
H1.1	BK8440	-G12
O	K10	-G12

The guideline recommendation shown here is based on experience and serves only to make it easy to find the correct indexable insert for your application.

Additional indexable inserts can be found in our online shop at cuttingtools.ceratizit.com

TOGX

Designation	L mm	S mm	D1 mm	IC mm
TOGX 06T1..	6.64	1.80	2.2	4.0
TOGX 0902..	9.12	2.50	2.8	5.6
TOGX 1403..	13.62	3.00	3.8	8.2



TOGX

ISO	KOMET no.	RE mm	-18 CK32	-14 CK3230	-14 BK60	-14 BK8430	-12 BK7710	-12 K10
			F	F	F	F	F	F
			CERMET TOGX	CERMET TOGX	TOGX	TOGX	TOGX	TOGX
			62 607 ...	62 606 ...	62 601 ...	62 601 ...	62 601 ...	62 601 ...
06T102EN	W57 04140.0260	0.2			90206			
06T102EN	W57 04140.028430	0.2				30201		
06T102EN	W57 04140.023230	0.2		10201				
06T102EN	W57 04180.0432	0.4	20401					
06T102FN	W57 04120.027710	0.2					70201	
06T102FN	W57 04120.0223	0.2						50206
090202EN	W57 14140.028430	0.2				33801		
090204EN	W57 14140.048430	0.4				30401		
090204EN	W57 14140.0460	0.4			70409			
090204EN	W57 14140.043230	0.4		11401				
090204EN	W57 14180.0432	0.4	21401					
090204FN	W57 14120.047710	0.4					70401	
090204FN	W57 14120.0423	0.4						50409
140302EN	W57 26140.028430	0.2				34401		
140304EN	W57 26140.0460	0.4			70414			
140304EN	W57 26140.043230	0.4		12601				
140304EN	W57 26180.0432	0.4	22601					
140304FN	W57 26120.047710	0.4					71401	
140304FN	W57 26120.0423	0.4						50414
P			●	●	●	○		
M			●	●	●	○		
K					●	○		
N							●	●
S						●	○	●
H						●	○	
O							○	●

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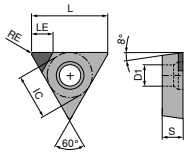
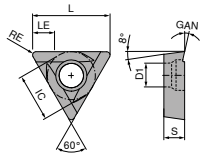
TOGX / TOEX / TOHX

Designation	L	S	D1	IC	LE
	mm	mm	mm	mm	mm
TO.X 06T1..	6.64	1.80	2.2	4.0	1.8
TO.X 0902..	9.12	2.50	2.8	5.6	2.7
TO.X 1403..	13.62	3.00	3.8	8.2	2.7
TOHX 06T1..	6.50	1.80	2.2	4.0	1.0
TOHX 0902..	9.12	2.50	2.8	5.6	2.5
TOHX 1403..	13.62	3.00	3.8	8.2	4.5





TOGX / TOEX / TOHX

	CBN40	CTDPU20	-G12 BK8425	-G06 BK2710	-G06 BK6110	-G06 BK7615
	F	F	F	F	F	F
		DIAMOND				
	TOGX	TOEX	TOHX	TOHX	TOHX	TOHX
	62 601 ...	62 605 ...	62 603 ...	62 602 ...	62 602 ...	62 602 ...

ISO	KOMET no.	RE mm											
06T102FN	W30 04990.025510	0.2				00201							
06T102TN	W30 04990.0240	0.2	60206										
06T103EL	W30 04120.038425	0.3						30200					
06T103EL	W30 04060.037615	0.3											80606
06T103EL	W30 04060.036110	0.3									40606		
06T103EL	W30 04060.032710	0.3							10606				
090204EL	W30 14120.048425	0.4						31800					
090204EL	W30 14060.047615	0.4											80409
090204EL	W30 14060.046110	0.4									40409		
090204EL	W30 14060.042710	0.4							10409				
090204FN	W30 14990.045510	0.4				01401							
090204TN	W30 14990.0440	0.4	60409										
140304EL	W30 26120.048425	0.4						32600					
140304EL	W30 26060.047615	0.4											82600
140304EL	W30 26060.046110	0.4									40414		
140304EL	W30 26060.042710	0.4							12600				
140304FN	W30 26990.045510	0.4				02601							
140304TN	W30 26990.0440	0.4	62600										

P							●		●		●		
M							●		●		●		
K							●		●		●		●
N					●		○						
S							●		●				
H		●					○				●		
O					●								

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Material group	Guideline recommendation	
	Grade	Chip groove
P	BK60	-14
M	BK2710	-G06
K	BK7615	-G06
N	BK7710	-12
S1.1 – S2.3	BK2710	-G06
S3.1 – S3.3	BK7710	-12
H	CBN40	
O	BK7710	-12

The guideline recommendation shown here is based on experience and serves only to make it easy to find the correct indexable insert for your application.

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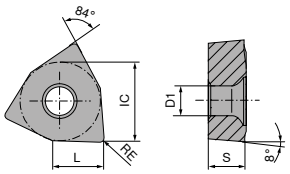
WOEX / WOGX

Designation	L	S	D1	IC
	mm	mm	mm	mm
WO.X 0302..	3.2	2.30	2.30	5.00
WO.X 0403..	4.1	3.18	2.55	6.35
WO.X 05T3..	5.3	3.80	2.85	8.00
WO.X 06T3..	6.6	3.80	4.05	10.00
WO.X 0804..	7.9	4.80	4.90	12.00
WOEX 1005..	9.9	5.30	4.90	15.00
WOEX 1206..	11.6	6.00	5.95	17.60



WOEX

	-01 BK8425	-01 BK7935	-01 BK7615	-11 BK77
	WOEX	WOEX	WOEX	WOEX
	10 821 ...	10 821 ...	10 821 ...	10 821 ...
ISO	KOMET no.	RE mm						
020102	W29 04010.027935	0.2		50201				
030204	W29 10010.047935	0.4		50301				
030204	W29 10110.0477	0.4						80311
030204	W29 10010.047615	0.4				05301		
030204	W29 10010.048425	0.4	30301					
040304	W29 18010.047935	0.4		50401				
040304	W29 18110.0477	0.4						80411
040304	W29 18010.047615	0.4				05401		
040304	W29 18010.048425	0.4	30401					
05T304	W29 24010.047935	0.4		50501				
05T304	W29 24110.0477	0.4						80511
05T304	W29 24010.047615	0.4				05501		
05T304	W29 24010.048425	0.4	30501					
06T304	W29 34010.047935	0.4		50601				
06T304	W29 34110.0477	0.4						80611
06T304	W29 34010.047615	0.4				05601		
06T304	W29 34010.048425	0.4	30601					
080404	W29 42010.047935	0.4		50801				
080404	W29 42110.0477	0.4						80811
080404	W29 42010.047615	0.4				05801		
080404	W29 42010.048425	0.4	30801					
100504	W29 50010.047935	0.4		51001				
100504	W29 50110.0477	0.4						81011
100504	W29 50010.047615	0.4				06001		
100504	W29 50010.048425	0.4	31001					
100508	W29 50010.088425	0.8	39001					
100508	W29 50010.087615	0.8				08001		
120608	W29 58010.087935	0.8		53201				
120608	W29 58010.087615	0.8				08201		
120608	W29 58010.088425	0.8	31201					
P			●	●				
M			●	●				
K			●	●		●		
N			○	○				
S			●	●				●
H			○					○
O								○

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WOEX / WOGX

			-01 BK6115	-02 BK6440	-15 BK8430	-11 BK7710
						
			WOEX	WOEX	WOGX	WOEX
			10 821 ...	10 821 ...	10 821 ...	10 821 ...
ISO	KOMET no.	RE mm				
030204	W29 10150.048430	0.4			00315	
030204	W29 10110.047710	0.4				90311
030204	W29 10010.046115	0.4	40301			
040304	W29 18150.048430	0.4			00415	
040304	W29 18110.047710	0.4				90411
040304	W29 18010.046115	0.4	40401			
05T304	W29 24020.046440	0.4		25502		
05T304	W29 24110.047710	0.4				90511
05T304	W29 24150.048430	0.4			00515	
05T304	W29 24010.046115	0.4	40501			
06T304	W29 34020.046440	0.4		25602		
06T304	W29 34110.047710	0.4				90611
06T304	W29 34150.048430	0.4			00615	
06T304	W29 34010.046115	0.4	40601			
080404	W29 42020.046440	0.4		25802		
080404	W29 42110.047710	0.4				90811
080404	W29 42150.048430	0.4			00815	
080404	W29 42010.046115	0.4	40801			
100504	W29 50020.046440	0.4		26002		
100504	W29 50110.047710	0.4				91011
100504	W29 50010.046115	0.4	41001			
120608	W29 58020.086440	0.8		21202		
120608	W29 58010.086115	0.8	41201			
P			●	●	○	
M			●	●	○	
K			●		○	
N						●
S					●	○
H			○		●	○
O						○

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Material group	Guideline recommendation Grade / chip breaker
P	BK8425 / -01
M	BK7935 / -01
K	BK7615 / -01
N	BK7710 / -11
S1.1 – S2.3	BK7935 / -01
S3.1 – S3.3	BK7710 / -11
O	BK7710 / -11

Material group	Maximum feed values						
	WO.X 0302	WO.X 0403	WO.X 05T3	WO.X 06T3	WO.X 0804	WO.X 1005	WO.X 1206
	a_p max. (mm)						
P	1.5	2.5	4.5	6.0	7.5	9.0	9.0
M	1.0	1.5	3.5	4.0	6.0	9.0	9.0
K	1.5	3.0	5.0	6.0	7.5	9.0	9.0
N	2.0	3.0	5.0	6.0	7.5	9.0	9.0
S	1.0	1.5	3.5	4.0	6.0	9.0	9.0
O	1.0	1.5	3.5	4.0	7.5	9.0	9.0

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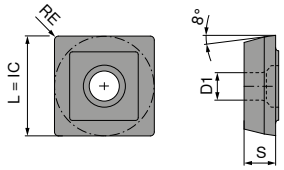
SOEX

Designation	L	IC	D1	S
	mm	mm	mm	mm
SOEX 0502..	5.56	5.56	2.30	2.38
SOEX 0603..	6.35	6.35	2.65	3.18
SOEX 07T3..	7.94	7.94	2.85	3.58
SOEX 0904..	9.52	9.52	4.10	4.37
SOEX 1205..	12.70	12.70	5.20	5.16



SOEX

			-01 BK8425	-01 BK7615	-01 BK7935
					
			SOEX	SOEX	SOEX
			10 822 ...	**10 822 ...**	**10 822 ...**
ISO	KOMET no.	RE mm			
050204	W83 13010.047615	0.4		**05501**	
050204	W83 13010.047935	0.4			**50501**
050204	W83 13010.048425	0.4	**30501**		
060306	W83 18010.067615	0.6		**05601**	
060306	W83 18010.067935	0.6			**50601**
060306	W83 18010.068425	0.6	**30601**		
07T308	W83 23010.087615	0.8		**05701**	
07T308	W83 23010.087935	0.8			**50701**
07T308	W83 23010.088425	0.8	**30701**		
090408	W83 32010.087615	0.8		**05901**	
090408	W83 32010.087935	0.8			**50901**
090408	W83 32010.088425	0.8	**30901**		
120508	W83 44010.087615	0.8		**06201**	
120508	W83 44010.087935	0.8			**51201**
120508	W83 44010.088425	0.8	**31201**		
P			●		●
M			●		●
K			●	●	●
N			○		○
S			●		●
H			○		
O					○

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Material group	Maximum feed values						
	SOEX 0502	SOEX 0603	SOEX 07T3	SOEX 0904		SOEX 1205	
				Ø 39 – 53 mm	Ø 51 – 71 mm	Ø 64 – 91 mm	Ø 83 – 124 mm
	a_p max. (mm)						
P	2.5	2.5	4.5	4.5	6.0	7.5	9.0
M	1.5	1.5	3.5	3.5	4.0	6.0	9.0
K	3.0	3.0	5.0	5.0	6.0	7.5	9.0
N	3.0	3.0	5.0	5.0	6.0	7.5	9.0
S	1.5	1.5	3.5	3.5	4.0	6.0	9.0
O	1.5	1.5	3.5	3.5	4.0	7.5	9.0

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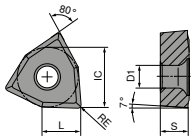
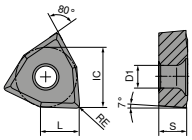
WCMT / WCGT

Designation	L	S	D1	IC
	mm	mm	mm	mm
WC.T 0201..	2.71	1.59	2.1	3.97

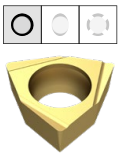


WCMT



WCGT

WCMT / WCGT

	-SF30	-SF20	-SF16
	CWC06	CWN10	CWP25
			
	F	F	F
	CERMET		
	WCMT	WCGT	WCGT
	70 294 ...	70 295 ...	70 295 ...
ISO / RE mm			
020102 / 0.2	850	850	500
020104 / 0.4		852	
P	●	●	●
M	○	●	●
K	●	●	○
N	●	●	●
S		●	
H		●	
O			

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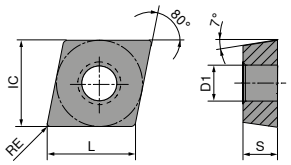
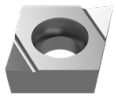
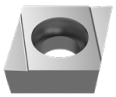
Additional indexable inserts can be found in → **Chapter 9, Indexable insert turning tools**
or in our online shop at cuttingtools.ceratizit.com

CCGT

Designation	L	S	D1	IC
	mm	mm	mm	mm
CCGT 06..	6.4	2.38	2.8	6.35
CCGT 09..	9.7	3.97	4.4	9.52



CCGT

	-SF20 CWN10	-SF15 CWC06	-SF14 CWC10
			
	F	F	F
		CERMET	CERMET
	CCGT	CCGT	CCGT
	70 296 ...	70 296 ...	70 300 ...

ISO	RE					
	mm					
060202L	0.2	300		850		903
060204L	0.4	302		852		905
09T302L	0.2	304		854		911
09T304L	0.4	306		856		913
P		●		●		●
M		●		○		●
K		●		●		●
N		●		●		
S		●				
H		●				
O						

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Additional indexable inserts can be found in → **Chapter 9, Indexable insert turning tools**
or in our online shop at cuttingtools.ceratizit.com

Material examples for cutting data tables

	Material sub-group	Index	Composition / Structure / Heat treatment		Tensile strength lbf/in²* / HB / HRC	Material number	Material designation	Material number	Material designation
P	Unalloyed steel	P.1.1	< 0.15 % C	Annealed	60900 lbf/in² / 125 HB	1.0401	1015	1.0301	1010
		P.1.2	< 0.45 % C	Annealed	92800 lbf/in² / 190 HB	1.1191	1045	1.0737	12L14
		P.1.3		Tempered	121800 lbf/in² / 250 HB	1.1191	1045	1.0503	1043
		P.1.4	< 0.75 % C	Annealed	132000 lbf/in² / 270 HB	1.1223	1060	1.0535	1055
		P.1.5		Tempered	146500 lbf/in² / 300 HB	1.1223	1060	1.1274	1095
	Low-alloy steel	P.2.1		Annealed	88500 lbf/in² / 180 HB	1.7131	5115	1.6523	8620
		P.2.2		Tempered	134900 lbf/in² / 275 HB	1.7131	5115	1.6582	4340
		P.2.3		Tempered	146500 lbf/in² / 300 HB	1.7225	4142	1.7131	5115
		P.2.4		Tempered	174000 lbf/in² / 375 HB	1.7225	4142	17223	4140
	High-alloy steel and high-alloy tool steel	P.3.1		Annealed	98600 lbf/in² / 200 HB	1.4021	420	1.2379	D2
		P.3.2		Hardened and tempered	159500 lbf/in² / 300 HB	1.2343	H11	1.3343	M2
		P.3.3		Hardened and tempered	188500 lbf/in² / 400 HB	1.2343	H11	1.2363	A2
	Stainless steel	P.4.1	Ferritic / martensitic	Annealed	98600 lbf/in² / 200 HB	1.4016	430	1.4125	440C
		P.4.2	Martensitic	Tempered	117500 lbf/in² / 250 HB	1.4112	S44003	1.4021	420
M	Stainless steel	M.1.1	Austenitic / austenitic-ferritic	Quenched	88500 lbf/in² / 200 HB	1.4301	304	1.4401	316
		M.2.1	Austenitic	Tempered	300 HB	1.4841	314	1.4568	17-7 PH
		M.3.1	Austenitic / ferritic (Duplex)		113100 lbf/in² / 230 HB	1.4462	S32205	1.4410	S32750
K	Grey cast iron	K.1.1	Pearlitic / ferritic		88500 lbf/in² / 180 HB	0.6010	A48-20B	0.6025	A48-40 B
		K.1.2	Pearlitic (martensitic)		127600 lbf/in² / 260 HB	0.6030	A48-45B	0.6040	A48-60 B
	Spherulitic graphite cast iron	K.2.1	Ferritic		78300 lbf/in² / 160 HB	0.7040	60-40-18	0.7050	65-45-12
		K.2.2	Pearlitic		122600 lbf/in² / 250 HB	0.7070	100-70-03	0.7660	A439 Type D2
	Malleable iron	K.3.1	Ferritic		63800 lbf/in² / 130 HB	0.8035	GTW-35-04		
		K.3.2	Pearlitic		113100 lbf/in² / 230 HB	0.8170	70003		
N	Aluminium wrought alloy	N.1.1	Non-hardenable		60 HB	3.0255	A91060	3.0255	A91060
		N.1.2	Hardenable		49300 lbf/in² / 100 HB	3.1355	2024	3.1355	2024
	Cast aluminium alloy	N.2.1	≤ 12 % Si, non-hardenable		36300 lbf/in² / 75 HB	3.2581	A04130 / A413-0	3.2581	A04130 / A413-0
		N.2.2	≤ 12 % Si, hardenable		43500 lbf/in² / 90 HB	3.2134	G-AlSi5Cu1Mg		
		N.2.3	> 12 % Si, non-hardenable		63800 lbf/in² / 130 HB		G-AlSi17Cu4Mg		
	Copper and copper alloys (bronze/brass)	N.3.1	Free-machining alloys, PB > 1 %		54400 lbf/in² / 110 HB	2.0380	CuZn39Pb2 (Ms58)	2.0380	C37700
		N.3.2	CuZn, CuSnZn		43500 lbf/in² / 90 HB	2.0331	CuZn15	2.0331	C34000
		N.3.3	CuSn, lead-free copper and electrolytic copper		49300 lbf/in² / 100 HB	2.0060	E-Cu57		
	Magnesium alloys	N.4.1	Magnesium and magnesium alloys		70 HB	3.5612	MgAl6Zn		
S	Heat-resistant alloys	S.1.1	Fe - basis	Annealed	98600 lbf/in² / 200 HB	1.4864	X12NiCrSi 36-16	1.4864	330
		S.1.2			137800 lbf/in² / 280 HB	1.4980	X6NiCrTiMoVB25-15-2	1.4980	S66286
		S.2.1	Ni or Co basis	Annealed	121800 lbf/in² / 250 HB	2.4856	Inconel 625	2.4812	Hastelloy C
		S.2.2			171100 lbf/in² / 350 HB	2.4952	Nimonic 80A	2.4668	Inconel 718
		S.2.3		Cast	156600 lbf/in² / 320 HB	2.4674	Nimocast PK24	2.4670	Nimocast 713
	Titanium alloys	S.3.1	Pure titanium		5800 lbf/in²	3.7025	Ti99,8		
		S.3.2	Alpha + beta alloys		152300 lbf/in²	3.7165	TiAl6V4		
		S.3.3	Beta alloys		203100 lbf/in² / 410 HB	Ti555.3	Ti-5Al-5V-5Mo-3Cr		
H	Hardened steel	H.1.1		Hardened and tempered	46-55 HRC				
		H.1.2		Hardened and tempered	56-60 HRC				
		H.1.3		Hardened and tempered	61-65 HRC				
		H.1.4		Hardened and tempered	66-70 HRC				
	Chilled iron	H.2.1		Cast	400 HB				
	Hardened cast iron	H.3.1		Hardened and tempered	55 HRC				
O	Non-metal materials	O.1.1	Plastics, duroplastic		≤ 21800 lbf/in²				
		O.1.2	Plastics, thermoplastic		≤ 14500 lbf/in²				
		O.2.1	Aramid fibre-reinforced		≤ 145000 lbf/in²				
		O.2.2	Glass/carbon-fibre reinforced		≤ 145000 lbf/in²				
		O.3.1	Graphite						

*** Tensile Strength at Rupture (Rm)**

Cutting data standard values for indexable inserts – MicroKom tools

Index	Indexable inserts for ...												
	MicroKom												
	62 800 ..., 62 810 ..., 62 815 ..., 62 820 ..., 62 840 ..., 67 800 ...												
	K10	BK 2710	BK 60	BK 6110	BK 7615	BK 7710	BK 8425	BK 8430	BK 8440	CBN 40	CTDPU 20	CK 3230	CK 32
	v_c (ft/min)												
P.1.1		750	890	980			850	660	560			1150	1150
P.1.2		750	890	980			850	660	560			1150	1150
P.1.3		750	890	980			890	660	560			1150	1150
P.1.4		690	820	980			790	590	490			1050	1050
P.1.5		690	820	980			750	590	490			1050	1050
P.2.1		590	690	890			890	520	460			920	920
P.2.2		590	690	890			850	520	460			920	920
P.2.3		590	690	890			590	520	460			920	920
P.2.4		590	690	890			490	520	460			920	920
P.3.1		520	620	820			520	460	390			820	820
P.3.2		520	620	820			430	460	390			820	820
P.3.3		520	620	820			390	460	390			820	820
P.4.1		460	520	720			590	390	330			690	690
P.4.2		460	520	720			430	390	330			690	690
M.1.1		590	920	720			490	520	460			920	920
M.2.1		520	820	720			490	460	390			820	820
M.3.1		390	590	660			430	330	300			590	590
K.1.1		690	690	950	950		520	590	490				
K.1.2		590	590	950	950		390	520	460				
K.2.1		520	520	890	890		520	460	390				
K.2.2		520	520	820	820		330	460	390				
K.3.1		460	460	720	720		390	390	330				
K.3.2		460	460	720	720		330	390	330				
N.1.1	820					1970	1310				1640		
N.1.2	820					1640	1310				1640		
N.2.1	820					1310	820				1640		
N.2.2	820					980	820				1640		
N.2.3	820					820	750				1640		
N.3.1	750					1310	660				1480		
N.3.2	750					980	720				1480		
N.3.3	750					980	1080				1480		
N.4.1	750					980	660				1480		
S.1.1	70	200				200	200	200					
S.1.2	70	160				200	160	160					
S.2.1	70	200				200	200	200					
S.2.2	70	160				200	160	160					
S.2.3	70	100				200	100	100					
S.3.1	200	330				260	330	330					
S.3.2	100	260				260	260	260					
S.3.3	100	160				260	160	160					
H.1.1				330		260	330	330	300	520			
H.1.2				260		130	260	260	230	610			
H.1.3				160		130	160	160	130	710			
H.1.4						130				790			
H.2.1				330		260	330	330	300				
H.3.1				260		260	260	260	230				
O.1.1	330					330					1640		
O.1.2	330					330					1640		
O.2.1											1640		
O.2.2	330					330					980		
O.3.1	330					330					980		

Index	TwinKom							
	62 881 ...							
	BK 6115	BK 6440	BK 7615	BK 77	BK 7710	BK 7935	BK 8425	BK 8430
	v_c (ft/min)							
P.1.1	980	790				820	850	660
P.1.2	980	790				720	850	660
P.1.3	890	720				890	890	660
P.1.4	820	720				790	790	590
P.1.5	890	720				660	750	590
P.2.1	890	660				890	890	520
P.2.2	850	660				850	850	520
P.2.3	790	660				520	590	520
P.2.4	620	660				430	490	520
P.3.1	660	590				460	520	460
P.3.2	520	520				360	430	460
P.3.3	460	520				330	390	460
P.4.1	720	460				520	590	390
P.4.2	520	460				360	430	390
M.1.1	720	660				520	490	520
M.2.1	720	590				520	490	460
M.3.1	660	520				490	430	330
K.1.1	790		950			490	520	590
K.1.2	460		950			360	390	520
K.2.1	520		890			490	520	460
K.2.2	330		820			300	330	460
K.3.1	390		720			360	390	390
K.3.2	330		720			300	330	390
N.1.1					1970	1310	1310	
N.1.2					1640	1310	1310	
N.2.1					1310	820	820	
N.2.2					980	820	820	
N.2.3					820	750	750	
N.3.1					1310	660	660	
N.3.2					980	720	720	
N.3.3					980	1080	1080	
N.4.1					980	660	660	
S.1.1				160	200	160	200	200
S.1.2				130	200	130	160	160
S.2.1				160	200	160	200	200
S.2.2				130	200	130	160	160
S.2.3				100	200	100	100	100
S.3.1				230	260	230	330	330
S.3.2				200	260	200	260	260
S.3.3				130	260	130	160	160
H.1.1	330			130	260		330	330
H.1.2	260			100	130		260	260
H.1.3	160			70	130		160	160
H.1.4					130			
H.2.1	330			130	260		330	330
H.3.1	260			100	260		260	260
O.1.1				330	330			
O.1.2				330	330			
O.2.1								
O.2.2				330	330			
O.3.1				330	330			

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The cutting data is significantly dependent on the external conditions, e.g. stability of the tool and workpiece clamping, material and machine type! The stated values are possible cutting data which have to be increased or reduced according to the application conditions! The specified values represent guideline cutting data that can be adjusted by approx. **± 20 %** according to the usage conditions. It is essential to observe the v_c values of the type used, the maximum speeds of the system and the reduction of these maximum speeds depending on the type used overhang length (LTA).

Cutting data standard values for indexable inserts – MicroKom tools

Index	Indexable inserts for ...												
	MicroKom												
	62 800 ..., 62 810 ..., 62 815 ..., 62 820 ..., 62 840 ...												
	K10	BK 2710	BK 60	BK 6110	BK 7615	BK 7710	BK 8425	BK 8430	BK 8440	CBN 40	CTDPU 20	CK 3230	CK 32
	v_c (m/min)												
P.1.1		230	270	300			260	200	170			350	350
P.1.2		230	270	300			260	200	170			350	350
P.1.3		230	270	300			270	200	170			350	350
P.1.4		210	250	300			240	180	150			320	320
P.1.5		210	250	300			230	180	150			320	320
P.2.1		180	210	270			270	160	140			280	280
P.2.2		180	210	270			260	160	140			280	280
P.2.3		180	210	270			180	160	140			280	280
P.2.4		180	210	270			150	160	140			280	280
P.3.1		160	190	250			160	140	120			250	250
P.3.2		160	190	250			130	140	120			250	250
P.3.3		160	190	250			120	140	120			250	250
P.4.1		140	160	220			180	120	100			210	210
P.4.2		140	160	220			130	120	100			210	210
M.1.1		180	280	220			150	160	140			280	280
M.2.1		160	250	220			150	140	120			250	250
M.3.1		120	180	200			130	100	90			180	180
K.1.1		210	210	290	290		160	180	150				
K.1.2		180	180	290	290		120	160	140				
K.2.1		160	160	270	270		160	140	120				
K.2.2		160	160	250	250		100	140	120				
K.3.1		140	140	220	220		120	120	100				
K.3.2		140	140	220	220		100	120	100				
N.1.1	250					600	400				500		
N.1.2	250					500	400				500		
N.2.1	250					400	250				500		
N.2.2	250					300	250				500		
N.2.3	250					250	230				500		
N.3.1	230					400	200				450		
N.3.2	230					300	220				450		
N.3.3	230					300	330				450		
N.4.1	230					300	200				450		
S.1.1	20	60				60	60	60					
S.1.2	20	50				60	50	50					
S.2.1	20	60				60	60	60					
S.2.2	20	50				60	50	50					
S.2.3	20	30				60	30	30					
S.3.1	60	100				80	100	100					
S.3.2	30	80				80	80	80					
S.3.3	30	50				80	50	50					
H.1.1				100		80	100	100	90	160			
H.1.2				80		40	80	80	70	185			
H.1.3				50		40	50	50	40	215			
H.1.4						40				240			
H.2.1				100		80	100	100	90				
H.3.1				80		80	80	80	70				
O.1.1	100					100					500		
O.1.2	100					100					500		
O.2.1											500		
O.2.2	100					100					300		
O.3.1	100					100					300		

Index	TwinKom							
	62 870 ...							
	BK 6115	BK 6440	BK 7615	BK 77	BK 7710	BK 7935	BK 8425	BK 8430
	v_c (m/min)							
P.1.1	300	240				250	260	200
P.1.2	300	240				220	260	200
P.1.3	270	220				270	270	200
P.1.4	250	220				240	240	180
P.1.5	270	220				200	230	180
P.2.1	270	200				270	270	160
P.2.2	260	200				260	260	160
P.2.3	240	200				160	180	160
P.2.4	190	200				130	150	160
P.3.1	200	180				140	160	140
P.3.2	160	160				110	130	140
P.3.3	140	160				100	120	140
P.4.1	220	140				160	180	120
P.4.2	160	140				110	130	120
M.1.1	220	200				160	150	160
M.2.1	220	180				160	150	140
M.3.1	200	160				150	130	100
K.1.1	240		290			150	160	180
K.1.2	140		290			110	120	160
K.2.1	160		270			150	160	140
K.2.2	100		250			90	100	140
K.3.1	120		220			110	120	120
K.3.2	100		220			90	100	120
N.1.1					600	400	400	
N.1.2					500	400	400	
N.2.1					400	250	250	
N.2.2					300	250	250	
N.2.3					250	230	230	
N.3.1					400	200	200	
N.3.2					300	220	220	
N.3.3					300	330	330	
N.4.1					300	200	200	
S.1.1				50	60	50	60	60
S.1.2				40	60	40	50	50
S.2.1				50	60	50	60	60
S.2.2				40	60	40	50	50
S.2.3				30	60	30	30	30
S.3.1				70	80	70	100	100
S.3.2				60	80	60	80	80
S.3.3				40	80	40	50	50
H.1.1	100			40	80		100	100
H.1.2	80			30	40		80	80
H.1.3	50			20	40		50	50
H.1.4					40			
H.2.1	100			40	80		100	100
H.3.1	80			30	80		80	80
O.1.1				100	100			
O.1.2				100	100			
O.2.1								
O.2.2				100	100			
O.3.1				100	100			

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The cutting data is significantly dependent on the external conditions, e.g. stability of the tool and workpiece clamping, material and machine type! The stated values are possible cutting data which have to be increased or reduced according to the application conditions! The specified values represent guideline cutting data that can be adjusted by approx. **± 20 %** according to the usage conditions. It is essential to observe the v_c values of the type used, the maximum speeds of the system and the reduction of these maximum speeds depending on the type used overhang length (LTA).

Cutting data standard values for indexable inserts – SpinTools tools

Index	Indexable inserts for ...									Boring steel	Inserts Cutting insert
	62 295 ...					62 303 ..., 62 304 ..., 62 305 ..., 62 308 ..., 62 326 ..., 62 332 ..., 62 333 ..., 62 363 ..., 62 372 ..., 62 373 ...				62 346 ...	62 383 ..., 62 384 ...
	CTCP125 (HCX1125)	CTCP115 (HCX1115)	CTCP135 (HCR1135)	CTC2135 (CWN2135)	H10T (CWK15)	CWN10	CWP25	CWC06	CWC10	HM uncoated	Solid carbide TiN
	v_c (m/min)					v_c (m/min)				v_c (m/min)	v_c (m/min)
P.1.1	295	370	210	360		185	185	250	175	175	190
P.1.2	250	315	175	360		185	185	250	140	175	200
P.1.3	210	270	145	360		185	185	250	140	175	170
P.1.4	200	250	135	375		185	185	250	140	175	170
P.1.5	180	230	120	375		185	185	250	140	175	160
P.2.1	260	325	180	385		185	185	250	140	175	180
P.2.2	195	250	130	385		185	185	250	175	175	150
P.2.3	180	230	120	385		185	185	250	140	175	160
P.2.4	130	170	85	385		185	185	250	140	175	160
P.3.1	170	200	150	310		185	185	250	175	175	120
P.3.2	105	140	95	310		135	135	165	140	65	100
P.3.3	40	85	35	310		135	135	165	140	65	100
P.4.1	170	200	155	320		125	125	120	120	100	80
P.4.2	135	170	125	320		125	125	120	120	100	80
M.1.1			155	300		120	120	120	120	100	80
M.2.1			95	310		100	100	100	110	70	80
M.3.1			135	325		120	120	120	120	100	80
K.1.1	170	255			140	160	160	160	225	135	200
K.1.2	160	235			115	160	160	160	225	135	150
K.2.1	180	270			150	160	160	160	125	135	120
K.2.2	160	205			110	140	140	140	125	115	110
K.3.1	200	250			170	140	140	140	125	115	180
K.3.2	160	210			140	140	140	140	125	115	150
N.1.1					1400	400	400	400		250	300
N.1.2					1100	400	400	400		250	240
N.2.1					950	400	400	400		250	240
N.2.2					950	400	400	400		250	240
N.2.3					500	400	400	400		250	240
N.3.1					425	400	400	400		250	290
N.3.2					400	400	400	400		250	290
N.3.3					275	400	400	400		250	290
N.4.1					225						220
S.1.1				30		55					60
S.1.2				25		55					40
S.2.1				15		55					30
S.2.2				10		55					30
S.2.3				10		55					30
S.3.1				105		55					30
S.3.2				25		55					25
S.3.3						55					25
H.1.1						125					110
H.1.2						100					80
H.1.3						80					70
H.1.4											
H.2.1						170					70
H.3.1						125					70
O.1.1					130						240
O.1.2											240
O.2.1					105						180
O.2.2											180
O.3.1											180

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The cutting data is significantly dependent on the external conditions, e.g. stability of the tool and workpiece clamping, material and machine type! The stated values are possible cutting data which have to be increased or reduced according to the application conditions! The specified values represent guideline cutting data that can be adjusted by approx. **± 20 %** according to the usage conditions. It is essential to observe the v_c values of the type used, the maximum speeds of the system and the reduction of these maximum speeds depending on the type used overhang length (LTA).

Cutting data standard values for precision adjustment heads – MicroKom

Index	62 820 ..., 62 840 ..., 62 800 ..., 67 800 ... BluFlex 2, hi.flex – Fine machining with depth of cut a_p = .004 – .008 inch				62 800 06089 hi.flex micro – Fine machining with depth of cut a_p = .004 – .008 inch			● 1st choice ○ suitable		
	Ø .020" – .220"	Ø .220" – .315"	Ø .315" – .472"	Ø .472" – 14.37"	Ø .020" – .315"	Ø .315" – .472"	Ø .472" – 2.362"	Emulsion	Compressed air	MQL
	f (inch/rev)				f (inch/rev)					
P.1.1	.001 – .002	.001 – .002	.002 – .003	.003 – .004	.001 – .002	.002 – .003	.003 – .004	●	○	
P.1.2	.001 – .002	.001 – .002	.002 – .003	.003 – .005	.001 – .002	.002 – .003	.003 – .005	●	○	
P.1.3	.001 – .002	.001 – .002	.002 – .002	.003 – .005	.001 – .002	.002 – .002	.003 – .005	●	○	
P.1.4	.001 – .002	.001 – .002	.002 – .002	.003 – .004	.001 – .002	.002 – .002	.003 – .004	●	○	
P.1.5	.001 – .002	.001 – .002	.002 – .003	.003 – .005	.001 – .002	.002 – .003	.003 – .005	●	○	
P.2.1	.001 – .002	.001 – .002	.002 – .002	.003 – .005	.001 – .002	.002 – .002	.003 – .005	●	○	
P.2.2	.001 – .002	.001 – .002	.002 – .002	.003 – .004	.001 – .002	.002 – .002	.003 – .004	●	○	
P.2.3	.001 – .002	.001 – .001	.002 – .002	.003 – .004	.001 – .002	.002 – .002	.003 – .004	●	○	
P.2.4	.001 – .002	.001 – .001	.001 – .002	.002 – .003	.001 – .002	.001 – .002	.002 – .003	●	○	
P.3.1	.001 – .002	.001 – .001	.002 – .002	.002 – .003	.001 – .002	.002 – .002	.002 – .003	●	○	
P.3.2	.001 – .002	.001 – .001	.001 – .002	.002 – .003	.001 – .002	.001 – .002	.002 – .003	●	○	
P.3.3	.001 – .002	.001 – .001	.001 – .002	.002 – .003	.001 – .002	.001 – .002	.002 – .003	●	○	
P.4.1	.001 – .002	.001 – .001	.002 – .002	.003 – .004	.001 – .002	.002 – .002	.003 – .004	●	○	
P.4.2	.001 – .002	.001 – .001	.001 – .002	.002 – .003	.001 – .002	.001 – .002	.002 – .003	●	○	
M.1.1	.001 – .002	.000 – .001	.002 – .002	.003 – .004	.001 – .002	.002 – .002	.003 – .004	●	○	
M.2.1	.001 – .002	.000 – .001	.001 – .002	.002 – .003	.001 – .002	.001 – .002	.002 – .003	●	○	
M.3.1	.001 – .002	.000 – .001	.001 – .002	.002 – .003	.001 – .002	.001 – .002	.002 – .003	●	○	
K.1.1	.001 – .002	.002 – .002	.002 – .003	.004 – .006	.001 – .002	.002 – .003	.004 – .006	○	●	
K.1.2	.001 – .002	.002 – .002	.002 – .003	.004 – .006	.001 – .002	.002 – .003	.004 – .006	○	●	
K.2.1	.001 – .002	.001 – .002	.002 – .003	.004 – .006	.001 – .002	.002 – .003	.004 – .006	○	●	
K.2.2	.001 – .002	.001 – .001	.002 – .003	.003 – .005	.001 – .002	.002 – .003	.003 – .005	○	●	
K.3.1	.001 – .002	.001 – .002	.002 – .003	.004 – .006	.001 – .002	.002 – .003	.004 – .006	○	●	
K.3.2	.001 – .002	.001 – .001	.002 – .003	.003 – .005	.001 – .002	.002 – .003	.003 – .005	○	●	
N.1.1	.001 – .002	.000 – .001	.002 – .002	.003 – .004	.001 – .002	.002 – .002	.003 – .004	●	○	
N.1.2	.001 – .002	.000 – .001	.002 – .002	.003 – .004	.001 – .002	.002 – .002	.003 – .004	●	○	
N.2.1	.001 – .002	.002 – .002	.002 – .003	.003 – .005	.001 – .002	.002 – .003	.003 – .005	●	○	
N.2.2	.001 – .002	.002 – .002	.002 – .003	.003 – .005	.001 – .002	.002 – .003	.003 – .005	●	○	
N.2.3	.001 – .002	.002 – .002	.002 – .003	.003 – .005	.001 – .002	.002 – .003	.003 – .005	●	○	
N.3.1	.001 – .002	.000 – .001	.001 – .002	.002 – .003	.001 – .002	.001 – .002	.002 – .003	●	○	
N.3.2	.001 – .002	.000 – .001	.001 – .002	.002 – .003	.001 – .002	.001 – .002	.002 – .003	●	○	
N.3.3	.001 – .002	.002 – .002	.002 – .003	.004 – .006	.001 – .002	.002 – .003	.004 – .006	●	○	
N.4.1	.001 – .002	.000 – .001	.001 – .002	.002 – .003	.001 – .002	.001 – .002	.002 – .003	●	○	
S.1.1	.001 – .003	.000 – .001	.001 – .002	.002 – .003	.001 – .003	.001 – .002	.002 – .003	●	○	
S.1.2	.001 – .003	.000 – .001	.001 – .001	.002 – .002	.001 – .003	.001 – .001	.002 – .002	●	○	
S.2.1	.001 – .003	.000 – .001	.001 – .002	.002 – .003	.001 – .003	.001 – .002	.002 – .003	●	○	
S.2.2	.001 – .003	.000 – .001	.001 – .001	.002 – .002	.001 – .003	.001 – .001	.002 – .002	●	○	
S.2.3	.001 – .003	.000 – .001	.002 – .003	.002 – .002	.001 – .003	.002 – .003	.002 – .002	●	○	
S.3.1	.001 – .003	.000 – .001	.001 – .002	.002 – .003	.001 – .003	.001 – .002	.002 – .003	●	○	
S.3.2	.001 – .003	.000 – .001	.001 – .002	.002 – .003	.001 – .003	.001 – .002	.002 – .003	●	○	
S.3.3	.001 – .003	.000 – .001	.000 – .001	.001 – .002	.001 – .003	.000 – .001	.001 – .002	●	○	
H.1.1	.001 – .002		.002 – .002	.002 – .003	.001 – .002	.002 – .002	.002 – .003		●	
H.1.2	.001 – .002		.002 – .002	.002 – .003	.001 – .002	.002 – .002	.002 – .003		●	
H.1.3	.001 – .002		.001 – .001	.001 – .002	.001 – .002	.001 – .001	.001 – .002		●	
H.1.4										
H.2.1	.001 – .002		.002 – .002	.002 – .003	.001 – .002	.002 – .002	.002 – .003		●	
H.3.1	.001 – .002		.002 – .002	.002 – .003	.001 – .002	.002 – .002	.002 – .003		●	
O.1.1	.001 – .002		.002 – .003	.002 – .003	.001 – .002	.002 – .003	.002 – .003	○	●	
O.1.2	.001 – .002		.002 – .003	.002 – .003	.001 – .002	.002 – .003	.002 – .003	○	●	
O.2.1										
O.2.2	.001 – .002		.002 – .003	.003 – .004	.001 – .002	.002 – .003	.003 – .004		●	
O.3.1	.001 – .002		.002 – .003	.003 – .004	.001 – .002	.002 – .003	.003 – .004		●	

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The cutting data is significantly dependent on the external conditions, e.g. stability of the tool and workpiece clamping, material and machine type! The specified values represent guideline cutting data that can be adjusted within the range according to the usage conditions! It is essential to observe the v_c values of the type used, the maximum speeds of the system and the reduction of these maximum speeds depending on the type used overhang length (LTA).

Cutting data standard values for precision adjustment heads – MicroKom

Index	62 820 …. 62 840 …. 62 800 … BluFlex 2. hi.flex Fine machining with depth of cut a_p = 0.1 – 0.2 mm				62 800 06089 hi.flex micro Fine machining with depth of cut a_p = 0.1 – 0.2 mm			● 1st choice ○ suitable		
	Ø 0.5 – 5.6 mm	Ø 5.6 – 8 mm	Ø 8 – 12 mm	Ø 12 – 365 mm	Ø 0.5 – 8 mm	Ø 8 – 12 mm	Ø 12 – 60 mm	Emulsion	Compressed air	MQL
	f (mm/rev)				f (mm/rev)					
P.1.1	0.02–0.05	0.03–0.04	0.05–0.07	0.07–0.10	0.02–0.05	0.05–0.07	0.07–0.10	●	○	
P.1.2	0.02–0.05	0.03–0.04	0.05–0.07	0.08–0.12	0.02–0.05	0.05–0.07	0.08–0.12	●	○	
P.1.3	0.02–0.05	0.03–0.04	0.04–0.06	0.08–0.12	0.02–0.05	0.04–0.06	0.08–0.12	●	○	
P.1.4	0.02–0.05	0.03–0.04	0.04–0.06	0.07–0.10	0.02–0.05	0.04–0.06	0.07–0.10	●	○	
P.1.5	0.02–0.05	0.03–0.04	0.05–0.07	0.08–0.12	0.02–0.05	0.05–0.07	0.08–0.12	●	○	
P.2.1	0.02–0.05	0.03–0.04	0.04–0.06	0.08–0.12	0.02–0.05	0.04–0.06	0.08–0.12	●	○	
P.2.2	0.02–0.05	0.03–0.04	0.04–0.06	0.07–0.10	0.02–0.05	0.04–0.06	0.07–0.10	●	○	
P.2.3	0.02–0.05	0.02–0.03	0.04–0.06	0.07–0.10	0.02–0.05	0.04–0.06	0.07–0.10	●	○	
P.2.4	0.02–0.05	0.02–0.03	0.03–0.04	0.06–0.08	0.02–0.05	0.03–0.04	0.06–0.08	●	○	
P.3.1	0.02–0.05	0.02–0.03	0.04–0.06	0.06–0.08	0.02–0.05	0.04–0.06	0.06–0.08	●	○	
P.3.2	0.02–0.05	0.02–0.03	0.03–0.04	0.06–0.08	0.02–0.05	0.03–0.04	0.06–0.08	●	○	
P.3.3	0.02–0.05	0.02–0.03	0.03–0.04	0.06–0.08	0.02–0.05	0.03–0.04	0.06–0.08	●	○	
P.4.1	0.02–0.05	0.02–0.03	0.04–0.05	0.07–0.10	0.02–0.05	0.04–0.05	0.07–0.10	●	○	
P.4.2	0.02–0.05	0.02–0.03	0.03–0.04	0.06–0.08	0.02–0.05	0.03–0.04	0.06–0.08	●	○	
M.1.1	0.02–0.05	0.01–0.015	0.04–0.05	0.07–0.10	0.02–0.05	0.04–0.05	0.07–0.10	●	○	
M.2.1	0.02–0.05	0.01–0.015	0.03–0.04	0.06–0.08	0.02–0.05	0.03–0.04	0.06–0.08	●	○	
M.3.1	0.02–0.05	0.01–0.015	0.03–0.04	0.06–0.08	0.02–0.05	0.03–0.04	0.06–0.08	●	○	
K.1.1	0.02–0.05	0.04–0.05	0.06–0.08	0.11–0.15	0.02–0.05	0.06–0.08	0.11–0.15	○	●	
K.1.2	0.02–0.05	0.04–0.05	0.06–0.08	0.11–0.15	0.02–0.05	0.06–0.08	0.11–0.15	○	●	
K.2.1	0.02–0.05	0.03–0.04	0.06–0.08	0.11–0.15	0.02–0.05	0.06–0.08	0.11–0.15	○	●	
K.2.2	0.02–0.05	0.02–0.03	0.05–0.07	0.08–0.12	0.02–0.05	0.05–0.07	0.08–0.12	○	●	
K.3.1	0.02–0.05	0.03–0.04	0.06–0.08	0.11–0.15	0.02–0.05	0.06–0.08	0.11–0.15	○	●	
K.3.2	0.02–0.05	0.02–0.03	0.05–0.07	0.08–0.12	0.02–0.05	0.05–0.07	0.08–0.12	○	●	
N.1.1	0.02–0.05	0.01–0.02	0.04–0.06	0.07–0.10	0.02–0.05	0.04–0.06	0.07–0.10	●	○	
N.1.2	0.02–0.05	0.01–0.02	0.04–0.06	0.07–0.10	0.02–0.05	0.04–0.06	0.07–0.10	●	○	
N.2.1	0.02–0.05	0.04–0.05	0.06–0.08	0.08–0.12	0.02–0.05	0.06–0.08	0.08–0.12	●	○	
N.2.2	0.02–0.05	0.04–0.05	0.06–0.08	0.08–0.12	0.02–0.05	0.06–0.08	0.08–0.12	●	○	
N.2.3	0.02–0.05	0.04–0.05	0.06–0.08	0.08–0.12	0.02–0.05	0.06–0.08	0.08–0.12	●	○	
N.3.1	0.02–0.05	0.01–0.02	0.03–0.04	0.06–0.08	0.02–0.05	0.03–0.04	0.06–0.08	●	○	
N.3.2	0.02–0.05	0.01–0.02	0.03–0.04	0.06–0.08	0.02–0.05	0.03–0.04	0.06–0.08	●	○	
N.3.3	0.02–0.05	0.04–0.05	0.06–0.08	0.11–0.15	0.02–0.05	0.06–0.08	0.11–0.15	●	○	
N.4.1	0.02–0.05	0.01–0.02	0.03–0.04	0.06–0.08	0.02–0.05	0.03–0.04	0.06–0.08	●	○	
S.1.1	0.02–0.08	0.01–0.015	0.03–0.04	0.06–0.08	0.02–0.08	0.03–0.04	0.06–0.08	●	○	
S.1.2	0.02–0.08	0.01–0.015	0.02–0.03	0.04–0.06	0.02–0.08	0.02–0.03	0.04–0.06	●	○	
S.2.1	0.02–0.08	0.01–0.015	0.03–0.04	0.06–0.08	0.02–0.08	0.03–0.04	0.06–0.08	●	○	
S.2.2	0.02–0.08	0.01–0.015	0.02–0.03	0.04–0.06	0.02–0.08	0.02–0.03	0.04–0.06	●	○	
S.2.3	0.02–0.08	0.01–0.015	0.06–0.08	0.04–0.06	0.02–0.08	0.06–0.08	0.04–0.06	●	○	
S.3.1	0.02–0.08	0.01–0.015	0.03–0.04	0.06–0.08	0.02–0.08	0.03–0.04	0.06–0.08	●	○	
S.3.2	0.02–0.08	0.01–0.015	0.03–0.04	0.06–0.08	0.02–0.08	0.03–0.04	0.06–0.08	●	○	
S.3.3	0.02–0.08	0.01–0.015	0.01–0.02	0.03–0.04	0.02–0.08	0.01–0.02	0.03–0.04	●	○	
H.1.1	0.02–0.05		0.04–0.05	0.06–0.08	0.02–0.05	0.04–0.05	0.06–0.08		●	
H.1.2	0.02–0.05		0.04–0.05	0.06–0.08	0.02–0.05	0.04–0.05	0.06–0.08		●	
H.1.3	0.02–0.05		0.02–0.03	0.03–0.04	0.02–0.05	0.02–0.03	0.03–0.04		●	
H.1.4										
H.2.1	0.02–0.05		0.04–0.05	0.06–0.08	0.02–0.05	0.04–0.05	0.06–0.08		●	
H.3.1	0.02–0.05		0.04–0.05	0.06–0.08	0.02–0.05	0.04–0.05	0.06–0.08		●	
O.1.1	0.02–0.05		0.06–0.08	0.06–0.08	0.02–0.05	0.06–0.08	0.06–0.08	○	●	
O.1.2	0.02–0.05		0.06–0.08	0.06–0.08	0.02–0.05	0.06–0.08	0.06–0.08	○	●	
O.2.1										
O.2.2	0.02–0.05		0.06–0.08	0.07–0.10	0.02–0.05	0.06–0.08	0.07–0.10		●	
O.3.1	0.02–0.05		0.06–0.08	0.07–0.10	0.02–0.05	0.06–0.08	0.07–0.10		●	

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The cutting data is significantly dependent on the external conditions, e.g. stability of the tool and workpiece clamping, material and machine type! The specified values represent guideline cutting data that can be adjusted within the range according to the usage conditions! It is essential to observe the v_c values of the type used, the maximum speeds of the system and the reduction of these maximum speeds depending on the type used overhang length (LTA).

Cutting data standard values for precision adjustment heads – MicroKom

Index	62 815 … M03 Speed, Fine machining with depth of cut a_p = 0.1 – 0.2 mm		62 810 … FF precision adjustment head, Fine machining with depth of cut a_p = 0.1 – 0.2 mm			● 1st choice ○ suitable		
	Ø 24.8 – 63 mm	Ø 63 – 206 mm	Ø 29.5 – 50 mm	Ø 47 – 83 mm	Ø 79 – 199 mm	Emulsion	Compressed air	MQL
	f (mm/rev)		f (mm/rev)					
P.1.1	0.06–0.08	0.07–0.10	0.06–0.08	0.07–0.10	0.11–0.15	●	○	○
P.1.2	0.07–0.10	0.11–0.15	0.07–0.10	0.11–0.15	0.14–0.20	●	○	○
P.1.3	0.06–0.08	0.08–0.12	0.06–0.08	0.08–0.12	0.14–0.20	●	○	○
P.1.4	0.05–0.07	0.07–0.10	0.05–0.07	0.07–0.10	0.13–0.18	●	○	○
P.1.5	0.06–0.09	0.09–0.13	0.06–0.09	0.09–0.13	0.13–0.18	●	○	○
P.2.1	0.06–0.08	0.08–0.12	0.06–0.08	0.08–0.12	0.14–0.20	●	○	○
P.2.2	0.05–0.07	0.07–0.10	0.05–0.07	0.07–0.10	0.13–0.18	●	○	○
P.2.3	0.06–0.08	0.07–0.10	0.06–0.08	0.07–0.10	0.14–0.20	●	○	○
P.2.4	0.04–0.06	0.06–0.08	0.04–0.06	0.06–0.08	0.07–0.10	●	○	○
P.3.1	0.04–0.06	0.07–0.10	0.04–0.06	0.07–0.10	0.11–0.15	●	○	○
P.3.2	0.03–0.04	0.06–0.08	0.03–0.04	0.06–0.08	0.08–0.12	●	○	○
P.3.3	0.03–0.04	0.05–0.07	0.03–0.04	0.05–0.07	0.07–0.10	●	○	○
P.4.1	0.04–0.06	0.07–0.10	0.04–0.06	0.07–0.10	0.11–0.15	●	○	○
P.4.2	0.03–0.04	0.06–0.08	0.03–0.04	0.06–0.08	0.08–0.12	●	○	○
M.1.1	0.04–0.06	0.07–0.10	0.04–0.06	0.07–0.10	0.11–0.15	●	○	○
M.2.1	0.04–0.06	0.07–0.10	0.04–0.06	0.07–0.10	0.11–0.15	●	○	○
M.3.1	0.04–0.05	0.06–0.09	0.04–0.05	0.06–0.09	0.08–0.12	●	○	○
K.1.1	0.11–0.15	0.14–0.20	0.11–0.15	0.14–0.20	0.21–0.30	○	●	○
K.1.2	0.11–0.15	0.14–0.20	0.11–0.15	0.14–0.20	0.21–0.30	○	●	○
K.2.1	0.07–0.10	0.11–0.15	0.07–0.10	0.11–0.15	0.18–0.25	○	●	○
K.2.2	0.06–0.08	0.08–0.12	0.06–0.08	0.08–0.12	0.14–0.20	○	●	○
K.3.1	0.07–0.10	0.11–0.15	0.07–0.10	0.11–0.15	0.18–0.25	○	●	○
K.3.2	0.06–0.08	0.08–0.12	0.06–0.08	0.08–0.12	0.14–0.20	○	●	○
N.1.1	0.06–0.08	0.08–0.12	0.06–0.08	0.08–0.12	0.11–0.15	●	○	○
N.1.2	0.06–0.08	0.08–0.12	0.06–0.08	0.08–0.12	0.11–0.15	●	○	○
N.2.1	0.07–0.10	0.11–0.15	0.07–0.10	0.11–0.15	0.14–0.20	●	○	○
N.2.2	0.07–0.10	0.11–0.15	0.07–0.10	0.11–0.15	0.14–0.20	●	○	○
N.2.3	0.06–0.09	0.08–0.12	0.06–0.09	0.08–0.12	0.13–0.18	●	○	○
N.3.1	0.07–0.10	0.11–0.15	0.07–0.10	0.11–0.15	0.14–0.20	●	○	○
N.3.2	0.07–0.10	0.11–0.15	0.07–0.10	0.11–0.15	0.15–0.22	●	○	○
N.3.3	0.07–0.10	0.11–0.15	0.07–0.10	0.11–0.15	0.14–0.20	●	○	○
N.4.1	0.07–0.10	0.11–0.15	0.07–0.10	0.11–0.15	0.14–0.20	●	○	○
S.1.1	0.04–0.06	0.06–0.08	0.04–0.06	0.06–0.08	0.07–0.10	●	○	○
S.1.2	0.03–0.04	0.04–0.06	0.03–0.04	0.04–0.06	0.06–0.08	●	○	○
S.2.1	0.04–0.06	0.06–0.08	0.04–0.06	0.06–0.08	0.07–0.10	●	○	○
S.2.2	0.03–0.04	0.04–0.06	0.03–0.04	0.04–0.06	0.06–0.08	●	○	○
S.2.3	0.03–0.04	0.04–0.06	0.03–0.04	0.04–0.06	0.04–0.06	●	○	○
S.3.1	0.04–0.06	0.06–0.08	0.04–0.06	0.06–0.08	0.08–0.11	●	○	○
S.3.2	0.04–0.06	0.06–0.08	0.04–0.06	0.06–0.08	0.07–0.10	●	○	○
S.3.3	0.03–0.04	0.04–0.06	0.03–0.04	0.04–0.06	0.07–0.10	●	○	○
H.1.1	0.06–0.08	0.06–0.08	0.06–0.08	0.06–0.08	0.07–0.10		●	○
H.1.2	0.04–0.06	0.04–0.06	0.04–0.06	0.04–0.06	0.06–0.08		●	○
H.1.3	0.03–0.04	0.03–0.04	0.03–0.04	0.03–0.04	0.03–0.04		●	○
H.1.4								
H.2.1	0.04–0.05	0.04–0.06	0.04–0.05	0.04–0.06	0.07–0.10		●	○
H.3.1	0.04–0.05	0.04–0.06	0.04–0.05	0.04–0.06	0.06–0.08		●	○
O.1.1	0.06–0.08	0.06–0.08	0.06–0.08	0.06–0.08	0.06–0.08	○	●	○
O.1.2	0.06–0.08	0.06–0.08	0.06–0.08	0.06–0.08	0.06–0.08	○	●	○
O.2.1								
O.2.2	0.06–0.08	0.06–0.08	0.06–0.08	0.06–0.08	0.06–0.08		●	
O.3.1	0.06–0.08	0.06–0.08	0.06–0.08	0.06–0.08	0.06–0.08		●	

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The cutting data is significantly dependent on the external conditions. e.g. stability of the tool and workpiece clamping. material and machine type! The specified values represent guideline cutting data that can be adjusted within the range according to the usage conditions! It is essential to observe the v_c values of the type used. the maximum speeds of the system and the reduction of these maximum speeds depending on the type used overhang length (LTA).

Cutting data standard values for boring heads for roughing – TwinKom

Index	62 881 … TwinKom G04 with WOEX / WOGX Cutting depth a_p = .039 – .354 inch f (inch/rev.)							● 1st choice ○ suitable Emulsion	Compressed air	MQL
	Ø 1.181" – 1.614"	Ø 1.535" – 2.008"	Ø 1.929" – 2.795"	Ø 2.520" – 3.853"	Ø 3.268" – 4.764"	Ø 4.291" – 6.181"	Ø 5.472" – 8.031"			
P.1.1	.009 – .012	.011 – .016	.011 – .016	.013 – .018	.014 – .020	.014 – .020	.014 – .020	●	○	○
P.1.2	.009 – .012	.011 – .016	.011 – .016	.013 – .018	.014 – .020	.014 – .020	.014 – .020	●	○	○
P.1.3	.009 – .012	.011 – .016	.011 – .016	.013 – .018	.014 – .020	.014 – .020	.014 – .020	●	○	○
P.1.4	.009 – .012	.011 – .016	.011 – .016	.013 – .018	.014 – .020	.014 – .020	.014 – .020	●	○	○
P.1.5	.009 – .012	.011 – .016	.011 – .016	.013 – .018	.014 – .020	.014 – .020	.014 – .020	●	○	○
P.2.1	.009 – .012	.011 – .016	.011 – .016	.013 – .018	.014 – .020	.014 – .020	.014 – .020	●	○	○
P.2.2	.009 – .012	.011 – .016	.011 – .016	.013 – .018	.014 – .020	.014 – .020	.014 – .020	●	○	○
P.2.3	.009 – .012	.011 – .016	.011 – .016	.013 – .018	.014 – .020	.014 – .020	.014 – .020	●	○	○
P.2.4	.009 – .012	.011 – .016	.011 – .016	.013 – .018	.014 – .020	.014 – .020	.014 – .020	●	○	○
P.3.1	.007 – .010	.009 – .013	.009 – .013	.011 – .015	.011 – .017	.011 – .017	.011 – .017	●	○	○
P.3.2	.007 – .010	.009 – .013	.009 – .013	.011 – .015	.011 – .017	.011 – .017	.011 – .017	●	○	○
P.3.3	.007 – .010	.009 – .013	.009 – .013	.011 – .015	.011 – .017	.011 – .017	.011 – .017	●	○	○
P.4.1	.006 – .008	.007 – .010	.007 – .010	.008 – .011	.010 – .014	.010 – .014	.010 – .014	●	○	○
P.4.2	.006 – .008	.007 – .010	.007 – .010	.008 – .011	.010 – .014	.010 – .014	.010 – .014	●	○	○
M.1.1	.007 – .009	.007 – .009	.007 – .009	.008 – .012	.011 – .016	.011 – .016	.013 – .018	●	○	○
M.2.1	.007 – .009	.011 – .016	.011 – .016	.008 – .012	.011 – .016	.011 – .016	.013 – .018	●	○	○
M.3.1	.006 – .008	.006 – .008	.006 – .008	.007 – .010	.008 – .012	.008 – .012	.010 – .014	●	○	○
K.1.1	.011 – .016	.014 – .020	.014 – .020	.015 – .022	.017 – .024	.017 – .024	.017 – .024	○	●	○
K.1.2	.011 – .016	.014 – .020	.014 – .020	.015 – .022	.017 – .024	.017 – .024	.017 – .024	○	●	○
K.2.1	.011 – .016	.014 – .020	.014 – .020	.015 – .022	.017 – .024	.017 – .024	.017 – .024	○	●	○
K.2.2	.008 – .012	.013 – .018	.013 – .018	.013 – .018	.014 – .020	.014 – .020	.014 – .020	○	●	○
K.3.1	.008 – .011	.010 – .014	.010 – .014	.011 – .016	.013 – .018	.013 – .018	.013 – .018	○	●	○
K.3.2	.008 – .011	.010 – .014	.010 – .014	.011 – .016	.013 – .018	.013 – .018	.013 – .018	○	●	○
N.1.1	.014 – .020	.014 – .020	.014 – .020	.017 – .024	.019 – .028	.019 – .028	.019 – .028	●	○	○
N.1.2	.014 – .020	.014 – .020	.014 – .020	.017 – .024	.019 – .028	.019 – .028	.019 – .028	●	○	○
N.2.1	.014 – .020	.014 – .020	.014 – .020	.017 – .024	.019 – .028	.019 – .028	.019 – .028	●	○	○
N.2.2	.014 – .020	.014 – .020	.014 – .020	.017 – .024	.019 – .028	.019 – .028	.019 – .028	●	○	○
N.2.3	.014 – .020	.014 – .020	.014 – .020	.017 – .024	.019 – .028	.019 – .028	.019 – .028	●	○	○
N.3.1	.014 – .020	.014 – .020	.014 – .020	.017 – .024	.019 – .028	.019 – .028	.019 – .028	●	○	○
N.3.2	.014 – .020	.014 – .020	.014 – .020	.017 – .024	.019 – .028	.019 – .028	.019 – .028	●	○	○
N.3.3	.014 – .020	.014 – .020	.014 – .020	.017 – .024	.019 – .028	.019 – .028	.019 – .028	●	○	○
N.4.1	.014 – .020	.014 – .020	.014 – .020	.017 – .024	.019 – .028	.019 – .028	.019 – .028	●	○	○
S.1.1	.003 – .005	.004 – .006	.004 – .006	.005 – .007	.006 – .008	.006 – .008	.006 – .008	●	○	○
S.1.2	.003 – .004	.003 – .004	.003 – .004	.004 – .006	.004 – .006	.004 – .006	.004 – .006	●	○	○
S.2.1	.003 – .005	.004 – .006	.004 – .006	.005 – .007	.006 – .008	.006 – .008	.006 – .008	●	○	○
S.2.2	.003 – .004	.003 – .004	.003 – .004	.005 – .007	.004 – .006	.004 – .006	.004 – .006	●	○	○
S.2.3	.003 – .004	.003 – .004	.003 – .004	.004 – .006	.004 – .006	.004 – .006	.004 – .006	●	○	○
S.3.1	.003 – .005	.004 – .006	.004 – .006	.005 – .007	.006 – .008	.006 – .008	.006 – .008	●	○	○
S.3.2	.003 – .005	.004 – .006	.004 – .006	.005 – .007	.006 – .008	.006 – .008	.006 – .008	●	○	○
S.3.3	.003 – .004	.003 – .004	.003 – .004	.005 – .007	.004 – .006	.004 – .006	.004 – .006	●	○	○
H.1.1										
H.1.2										
H.1.3										
H.1.4										
H.2.1										
H.3.1										
O.1.1	.004 – .006	.006 – .008	.006 – .008	.006 – .008	.006 – .008	.006 – .008	.006 – .008	○	●	○
O.1.2	.004 – .006	.006 – .008	.006 – .008	.006 – .008	.006 – .008	.006 – .008	.006 – .008	○	●	○
O.2.1										
O.2.2	.003 – .004	.003 – .004	.003 – .004	.003 – .005	.003 – .005	.003 – .005	.004 – .006		●	
O.3.1	.003 – .004	.003 – .004	.003 – .004	.004 – .005	.003 – .005	.003 – .005	.004 – .006		●	

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The cutting data is significantly dependent on the external conditions, e.g. stability of the tool and workpiece clamping, material and machine type! The specified values represent guideline cutting data that can be adjusted within the range according to the usage conditions! It is essential to observe the v_c values of the type used, the maximum speeds of the system and the reduction of these maximum speeds depending on the type used overhang length (LTA).

Cutting data standard values for boring heads for roughing – TwinKom

Index	62 881 … TwinKom G04 with SOEX										● 1st choice ○ suitable		
				Cutting depth a_p = 0.138 – 0.354 inch									
	BK8425	BK7935	BK7615	Ø 1.181" – 1.614"	Ø 1.535" – 2.008"	Ø 1.929" – 2.795"	Ø 2.520" – 3.853"	Ø 3.268" – 4.764"	Ø 4.291" – 6.181"	Ø 5.472" – 8.031"	Emulsion	Compressed air	MQL
	v_c (ft/min)			f (inch/rev.)									
P.1.1	850	820		.007–.011	.009–.016	.012–.020	.014–.024	.017–.028	.019–.031	.019–.031	●	○	○
P.1.2	850	720		.007–.011	.009–.016	.012–.020	.014–.024	.017–.028	.019–.031	.019–.031	●	○	○
P.1.3	890	890		.007–.011	.009–.016	.012–.020	.014–.024	.017–.028	.019–.031	.019–.031	●	○	○
P.1.4	820	820		.007–.011	.009–.016	.012–.020	.014–.024	.017–.028	.019–.031	.019–.031	●	○	○
P.1.5	890	660		.007–.011	.009–.016	.012–.020	.014–.024	.017–.028	.019–.031	.019–.031	●	○	○
P.2.1	890	890		.007–.011	.009–.016	.012–.020	.014–.024	.017–.028	.019–.031	.019–.031	●	○	○
P.2.2	850	850		.007–.011	.009–.016	.012–.020	.014–.024	.017–.028	.019–.031	.019–.031	●	○	○
P.2.3	590	520		.007–.011	.009–.016	.012–.020	.014–.024	.017–.028	.019–.031	.019–.031	●	○	○
P.2.4	490	430		.007–.011	.009–.016	.012–.020	.014–.024	.017–.028	.019–.031	.019–.031	●	○	○
P.3.1	520	460		.006–.009	.007–.012	.009–.016	.012–.020	.012–.020	.014–.024	.014–.024	●	○	○
P.3.2	430	390		.006–.009	.007–.012	.009–.016	.012–.020	.012–.020	.014–.024	.014–.024	●	○	○
P.3.3	390	360		.006–.009	.007–.012	.009–.016	.012–.020	.012–.020	.014–.024	.014–.024	●	○	○
P.4.1	590	490		.006–.009	.007–.012	.009–.016	.012–.020	.012–.020	.014–.024	.014–.024	●	○	○
P.4.2	430	390		.006–.009	.007–.012	.009–.016	.012–.020	.012–.020	.014–.024	.014–.024	●	○	○
M.1.1	490	520		.006–.009	.007–.012	.009–.016	.012–.020	.012–.020	.014–.024	.014–.024	●	○	○
M.2.1	490	520		.006–.009	.007–.012	.009–.016	.012–.020	.012–.020	.014–.024	.014–.024	●	○	○
M.3.1	460	490		.006–.009	.007–.012	.009–.016	.012–.020	.012–.020	.014–.024	.014–.024	●	○	○
K.1.1	520	490	850	.009–.016	.012–.020	.014–.024	.017–.028	.019–.031	.024–.039	.024–.039	○	●	○
K.1.2	390	390	520	.009–.016	.012–.020	.014–.024	.017–.028	.019–.031	.024–.039	.024–.039	○	●	○
K.2.1	520	490	590	.009–.016	.012–.020	.014–.024	.017–.028	.019–.031	.024–.039	.024–.039	○	●	○
K.2.2	330	300	390	.009–.016	.012–.020	.014–.024	.017–.028	.019–.031	.024–.039	.024–.039	○	●	○
K.3.1	390	360	460	.009–.016	.012–.020	.014–.024	.017–.028	.019–.031	.024–.039	.024–.039	○	●	○
K.3.2	330	300	390	.009–.016	.012–.020	.014–.024	.017–.028	.019–.031	.024–.039	.024–.039	○	●	○
N.1.1	1310	1310		.009–.016	.012–.020	.014–.024	.017–.028	.019–.031	.024–.039	.024–.039	●	○	○
N.1.2	1310	1310		.009–.016	.012–.020	.014–.024	.017–.028	.019–.031	.024–.039	.024–.039	●	○	○
N.2.1	820	820		.009–.016	.012–.020	.014–.024	.017–.028	.019–.031	.024–.039	.024–.039	●	○	○
N.2.2	820	820		.009–.016	.012–.020	.014–.024	.017–.028	.019–.031	.024–.039	.024–.039	●	○	○
N.2.3	750	750		.009–.016	.012–.020	.014–.024	.017–.028	.019–.031	.024–.039	.024–.039	●	○	○
N.3.1	660	660		.009–.016	.012–.020	.014–.024	.017–.028	.019–.031	.024–.039	.024–.039	●	○	○
N.3.2	720	720		.009–.016	.012–.020	.014–.024	.017–.028	.019–.031	.024–.039	.024–.039	●	○	○
N.3.3	1080	1080		.009–.016	.012–.020	.014–.024	.017–.028	.019–.031	.024–.039	.024–.039	●	○	○
N.4.1	660	660		.009–.016	.012–.020	.014–.024	.017–.028	.019–.031	.024–.039	.024–.039	●	○	○
S.1.1													
S.1.2													
S.2.1													
S.2.2													
S.2.3													
S.3.1													
S.3.2													
S.3.3													
H.1.1													
H.1.2													
H.1.3													
H.1.4													
H.2.1													
H.3.1													
O.1.1													
O.1.2													
O.2.1													
O.2.2													
O.3.1													

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The cutting data is significantly dependent on the external conditions, e.g. stability of the tool and workpiece clamping, material and machine type! The stated values are possible cutting data which have to be increased or reduced according to the application conditions! The specified values represent guideline cutting data that can be adjusted by approx. **± 20 %** according to the usage conditions. It is essential to observe the v_c values of the type used, the maximum speeds of the system and the reduction of these maximum speeds depending on the type used overhang length (LTA).

Cutting data standard values for boring heads for roughing – TwinKom

Index	62 870 … Twin cutters Cutting depth a_p = 1 – 9 mm							● 1st choice ○ suitable		
	Ø 24–32 mm	Ø 30– 41 mm	Ø 39– 53 mm	Ø 51–71 mm	Ø 64–91 mm	Ø 83–124 mm	Ø 109–215 mm	Emulsion	Compressed air	MQL
	f (mm/rev)									
P.1.1	0.14–0.20	0.17–0.24	0.22–0.30	0.28–0.40	0.32–0.45	0.35–0.50	0.35–0.50	●	○	○
P.1.2	0.14–0.20	0.17–0.24	0.22–0.30	0.28–0.40	0.32–0.45	0.35–0.50	0.35–0.50	●	○	○
P.1.3	0.14–0.20	0.17–0.24	0.22–0.30	0.28–0.40	0.32–0.45	0.35–0.50	0.35–0.50	●	○	○
P.1.4	0.14–0.20	0.17–0.24	0.22–0.30	0.28–0.40	0.32–0.45	0.35–0.50	0.35–0.50	●	○	○
P.1.5	0.14–0.20	0.17–0.24	0.22–0.30	0.28–0.40	0.32–0.45	0.35–0.50	0.35–0.50	●	○	○
P.2.1	0.14–0.20	0.17–0.24	0.22–0.30	0.28–0.40	0.32–0.45	0.35–0.50	0.35–0.50	●	○	○
P.2.2	0.14–0.20	0.17–0.24	0.22–0.30	0.28–0.40	0.32–0.45	0.35–0.50	0.35–0.50	●	○	○
P.2.3	0.14–0.20	0.17–0.24	0.22–0.30	0.28–0.40	0.32–0.45	0.35–0.50	0.35–0.50	●	○	○
P.2.4	0.14–0.20	0.17–0.24	0.22–0.30	0.28–0.40	0.32–0.45	0.35–0.50	0.35–0.50	●	○	○
P.3.1	0.11–0.15	0.14–0.20	0.18–0.25	0.22–0.32	0.27–0.38	0.29–0.42	0.29–0.42	●	○	○
P.3.2	0.11–0.15	0.14–0.20	0.18–0.25	0.22–0.32	0.27–0.38	0.29–0.42	0.29–0.42	●	○	○
P.3.3	0.11–0.15	0.14–0.20	0.18–0.25	0.22–0.32	0.27–0.38	0.29–0.42	0.29–0.42	●	○	○
P.4.1	0.08–0.12	0.11–0.15	0.14–0.20	0.18–0.25	0.20–0.28	0.25–0.35	0.25–0.35	●	○	○
P.4.2	0.08–0.12	0.11–0.15	0.14–0.20	0.18–0.25	0.20–0.28	0.25–0.35	0.25–0.35	●	○	○
M.1.1	0.10–0.14	0.13–0.18	0.17–0.24	0.17–0.24	0.21–0.30	0.28–0.40	0.32–0.45	●	○	○
M.2.1	0.10–0.14	0.13–0.18	0.17–0.24	0.28–0.40	0.21–0.30	0.28–0.40	0.32–0.45	●	○	○
M.3.1	0.08–0.12	0.10–0.14	0.14–0.20	0.14–0.20	0.18–0.25	0.21–0.30	0.25–0.35	●	○	○
K.1.1	0.18–0.25	0.21–0.30	0.28–0.40	0.35–0.50	0.39–0.55	0.42–0.60	0.42–0.60	○	●	○
K.1.2	0.18–0.25	0.21–0.30	0.28–0.40	0.35–0.50	0.39–0.55	0.42–0.60	0.42–0.60	○	●	○
K.2.1	0.18–0.25	0.21–0.30	0.28–0.40	0.35–0.50	0.39–0.55	0.42–0.60	0.42–0.60	○	●	○
K.2.2	0.15–0.22	0.20–0.28	0.21–0.30	0.32–0.45	0.32–0.45	0.35–0.50	0.35–0.50	○	●	○
K.3.1	0.14–0.20	0.17–0.24	0.20–0.28	0.25–0.35	0.28–0.40	0.32–0.45	0.32–0.45	○	●	○
K.3.2	0.14–0.20	0.17–0.24	0.20–0.28	0.25–0.35	0.28–0.40	0.32–0.45	0.32–0.45	○	●	○
N.1.1	0.18–0.25	0.21–0.30	0.35–0.50	0.35–0.50	0.42–0.60	0.49–0.70	0.49–0.70	●	○	○
N.1.2	0.18–0.25	0.21–0.30	0.35–0.50	0.35–0.50	0.42–0.60	0.49–0.70	0.49–0.70	●	○	○
N.2.1	0.18–0.25	0.21–0.30	0.35–0.50	0.35–0.50	0.42–0.60	0.49–0.70	0.49–0.70	●	○	○
N.2.2	0.18–0.25	0.21–0.30	0.35–0.50	0.35–0.50	0.42–0.60	0.49–0.70	0.49–0.70	●	○	○
N.2.3	0.18–0.25	0.21–0.30	0.35–0.50	0.35–0.50	0.42–0.60	0.49–0.70	0.49–0.70	●	○	○
N.3.1	0.18–0.25	0.21–0.30	0.35–0.50	0.35–0.50	0.42–0.60	0.49–0.70	0.49–0.70	●	○	○
N.3.2	0.18–0.25	0.21–0.30	0.35–0.50	0.35–0.50	0.42–0.60	0.49–0.70	0.49–0.70	●	○	○
N.3.3	0.18–0.25	0.21–0.30	0.35–0.50	0.35–0.50	0.42–0.60	0.49–0.70	0.49–0.70	●	○	○
N.4.1	0.18–0.25	0.21–0.30	0.35–0.50	0.35–0.50	0.42–0.60	0.49–0.70	0.49–0.70	●	○	○
S.1.1	0.08–0.12	0.08–0.12	0.08–0.12	0.10–0.14	0.13–0.18	0.14–0.20	0.14–0.20	●	○	○
S.1.2	0.07–0.10	0.07–0.10	0.07–0.10	0.08–0.11	0.10–0.14	0.11–0.16	0.11–0.16	●	○	○
S.2.1	0.08–0.12	0.08–0.12	0.08–0.12	0.10–0.14	0.13–0.18	0.14–0.20	0.14–0.20	●	○	○
S.2.2	0.07–0.10	0.07–0.10	0.07–0.10	0.08–0.11	0.13–0.18	0.11–0.16	0.11–0.16	●	○	○
S.2.3	0.07–0.10	0.07–0.10	0.07–0.10	0.08–0.11	0.10–0.14	0.11–0.16	0.11–0.16	●	○	○
S.3.1	0.08–0.12	0.08–0.12	0.08–0.12	0.10–0.14	0.13–0.18	0.14–0.20	0.14–0.20	●	○	○
S.3.2	0.08–0.12	0.08–0.12	0.08–0.12	0.10–0.14	0.13–0.18	0.14–0.20	0.14–0.20	●	○	○
S.3.3	0.07–0.10	0.07–0.10	0.07–0.10	0.08–0.11	0.13–0.18	0.11–0.16	0.11–0.16	●	○	○
H.1.1										
H.1.2										
H.1.3										
H.1.4										
H.2.1										
H.3.1										
O.1.1	0.11–0.16	0.11–0.16	0.11–0.16	0.14–0.20	0.14–0.20	0.14–0.20	0.14–0.20	○	●	○
O.1.2	0.11–0.16	0.11–0.16	0.11–0.16	0.14–0.20	0.14–0.20	0.14–0.20	0.14–0.20	○	●	○
O.2.1										
O.2.2	0.06–0.08	0.06–0.08	0.07–0.10	0.07–0.10	0.08–0.12	0.08–0.12	0.10–0.14		●	
O.3.1	0.06–0.08	0.06–0.08	0.07–0.10	0.07–0.10	0.09–0.12	0.08–0.12	0.10–0.14		●	

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The cutting data is significantly dependent on the external conditions. e.g. stability of the tool and workpiece clamping. material and machine type! The specified values represent guideline cutting data that can be adjusted within the range according to the usage conditions! It is essential to observe the v_c values of the type used. the maximum speeds of the system and the reduction of these maximum speeds depending on the type used overhang length (LTA).

Cutting data standard values for finish boring heads – SpinTools

Index	62 303 .... 62 308 ...	62 305 ...	● 1st choice ○ suitable			62 382 .... 62 386 ...	62 372 .... 62 373 ...	62 326 .... 62 332 .... 62 333 .... 62 363 ...	62 304 ...	● 1st choice ○ suitable		
	Single point finish boring head		Emulsion	Compressed air	MQL	Micro Boring Head	Multi-Head boring and fine boring head	Single point boring head	Fine boring head	Emulsion	Compressed air	MQL
	a_p = 0.1 – 0.4 mm					a_p = 0.1 – 0.2 mm	a_p = 0.1 – 0.4 mm	a_p = 0.1 – 0.4 mm	a_p = 0.1 – 0.4 mm			
	Ø 23.9–116.1 mm	Ø 86–402 mm				Ø 0.3–19.1 mm	Ø 2–320 mm	Ø 3–88 mm	Ø 14.7–24.1 mm			
	f (mm/rev)					f (mm/rev)						
P.1.1	0.03–0.12	0.03–0.12	●	○		0.02	0.03–0.12	0.03–0.12	0.03–0.10	●	○	○
P.1.2	0.03–0.12	0.03–0.12	●	○		0.02	0.03–0.12	0.03–0.12	0.03–0.10	●	○	○
P.1.3	0.03–0.12	0.03–0.12	●	○		0.02	0.03–0.12	0.03–0.12	0.03–0.10	●	○	○
P.1.4	0.03–0.12	0.03–0.12	●	○		0.02	0.03–0.12	0.03–0.12	0.03–0.10	●	○	○
P.1.5	0.03–0.12	0.03–0.12	●	○		0.02	0.03–0.12	0.03–0.12	0.03–0.10	●	○	○
P.2.1	0.03–0.12	0.03–0.12	●	○		0.02	0.03–0.12	0.03–0.12	0.03–0.10	●	○	○
P.2.2	0.03–0.12	0.03–0.12	●	○		0.02	0.03–0.12	0.03–0.12	0.03–0.10	●	○	○
P.2.3	0.03–0.12	0.03–0.12	●	○		0.02	0.03–0.12	0.03–0.12	0.03–0.10	●	○	○
P.2.4	0.03–0.12	0.03–0.12	●	○		0.02	0.03–0.12	0.03–0.12	0.03–0.10	●	○	○
P.3.1	0.03–0.12	0.03–0.12	●	○		0.02	0.03–0.12	0.03–0.12	0.03–0.10	●	○	○
P.3.2	0.03–0.12	0.03–0.12	●	○		0.02	0.03–0.12	0.03–0.12	0.03–0.10	●	○	○
P.3.3	0.03–0.12	0.03–0.12	●	○		0.02	0.03–0.12	0.03–0.12	0.03–0.10	●	○	○
P.4.1	0.03–0.12	0.03–0.12	●	○		0.02	0.03–0.12	0.03–0.12	0.03–0.10	●	○	○
P.4.2	0.03–0.12	0.03–0.12	●	○		0.02	0.03–0.12	0.03–0.12	0.03–0.10	●	○	○
M.1.1	0.03–0.12	0.03–0.12	●	○		0.02	0.03–0.12	0.03–0.12	0.03–0.10	●	○	○
M.2.1	0.03–0.12	0.03–0.12	●	○		0.02	0.03–0.12	0.03–0.12	0.03–0.10	●	○	○
M.3.1	0.03–0.12	0.03–0.12	●	○		0.02	0.03–0.12	0.03–0.12	0.03–0.10	●	○	○
K.1.1	0.03–0.12	0.03–0.12	○	●		0.02	0.03–0.12	0.03–0.12	0.03–0.10	○	●	○
K.1.2	0.03–0.12	0.03–0.12	○	●		0.02	0.03–0.12	0.03–0.12	0.03–0.10	○	●	○
K.2.1	0.03–0.12	0.03–0.12	○	●		0.02	0.03–0.12	0.03–0.12	0.03–0.10	○	●	○
K.2.2	0.03–0.12	0.03–0.12	○	●		0.02	0.03–0.12	0.03–0.12	0.03–0.10	○	●	○
K.3.1	0.03–0.12	0.03–0.12	○	●		0.02	0.03–0.12	0.03–0.12	0.03–0.10	○	●	○
K.3.2	0.03–0.12	0.03–0.12	○	●		0.02	0.03–0.12	0.03–0.12	0.03–0.10	○	●	○
N.1.1	0.03–0.12	0.03–0.12	●	○		0.02	0.03–0.12	0.03–0.12	0.03–0.10	●	○	○
N.1.2	0.03–0.12	0.03–0.12	●	○		0.02	0.03–0.12	0.03–0.12	0.03–0.10	●	○	○
N.2.1	0.03–0.12	0.03–0.12	●	○		0.02	0.03–0.12	0.03–0.12	0.03–0.10	●	○	○
N.2.2	0.03–0.12	0.03–0.12	●	○		0.02	0.03–0.12	0.03–0.12	0.03–0.10	●	○	○
N.2.3	0.03–0.12	0.03–0.12	●	○		0.02	0.03–0.12	0.03–0.12	0.03–0.10	●	○	○
N.3.1	0.03–0.12	0.03–0.12	●	○		0.02	0.03–0.12	0.03–0.12	0.03–0.10	●	○	○
N.3.2	0.03–0.12	0.03–0.12	●	○		0.02	0.03–0.12	0.03–0.12	0.03–0.10	●	○	○
N.3.3	0.03–0.12	0.03–0.12	●	○		0.02	0.03–0.12	0.03–0.12	0.03–0.10	●	○	○
N.4.1	0.03–0.12	0.03–0.12	●	○		0.02	0.03–0.12	0.03–0.12	0.03–0.10	●	○	○
S.1.1	0.03–0.12	0.03–0.12	●	○		0.02	0.03–0.12	0.03–0.12	0.03–0.10	●	○	○
S.1.2	0.03–0.12	0.03–0.12	●	○		0.02	0.03–0.12	0.03–0.12	0.03–0.10	●	○	○
S.2.1	0.03–0.12	0.03–0.12	●	○		0.02	0.03–0.12	0.03–0.12	0.03–0.10	●	○	○
S.2.2	0.03–0.12	0.03–0.12	●	○		0.02	0.03–0.12	0.03–0.12	0.03–0.10	●	○	○
S.2.3	0.03–0.12	0.03–0.12	●	○		0.02	0.03–0.12	0.03–0.12	0.03–0.10	●	○	○
S.3.1	0.03–0.12	0.03–0.12	●	○		0.02	0.03–0.12	0.03–0.12	0.03–0.10	●	○	○
S.3.2	0.03–0.12	0.03–0.12	●	○		0.02	0.03–0.12	0.03–0.12	0.03–0.10	●	○	○
S.3.3	0.03–0.12	0.03–0.12	●	○		0.02	0.03–0.12	0.03–0.12	0.03–0.10	●	○	○
H.1.1	0.03–0.12	0.03–0.12	○	●		0.02	0.03–0.12	0.03–0.12	0.03–0.10	○	●	○
H.1.2	0.03–0.12	0.03–0.12	○	●		0.02	0.03–0.12	0.03–0.12	0.03–0.10	○	●	○
H.1.3	0.03–0.12	0.03–0.12	○	●		0.02	0.03–0.12	0.03–0.12	0.03–0.10	○	●	○
H.1.4												
H.2.1	0.03–0.12	0.03–0.12	○	●		0.02	0.03–0.12	0.03–0.12	0.03–0.10	○	●	○
H.3.1	0.03–0.12	0.03–0.12	○	●		0.02	0.03–0.12	0.03–0.12	0.03–0.10	○	●	○
O.1.1	0.03–0.12	0.03–0.12	○	●		0.02	0.03–0.12	0.03–0.12	0.03–0.10	○	●	○
O.1.2	0.03–0.12	0.03–0.12	○	●		0.02	0.03–0.12	0.03–0.12	0.03–0.10	○	●	○
O.2.1	0.03–0.12	0.03–0.12	○	●		0.02	0.03–0.12	0.03–0.12	0.03–0.10	○	●	
O.2.2	0.03–0.12	0.03–0.12		●		0.02	0.03–0.12	0.03–0.12	0.03–0.10		●	
O.3.1	0.03–0.12	0.03–0.12		●		0.02	0.03–0.12	0.03–0.12	0.03–0.10		●	

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The cutting data is significantly dependent on the external conditions. e.g. stability of the tool and workpiece clamping. material and machine type! The specified values represent guideline cutting data that can be adjusted within the range (i.e. by ± 20%) according to the usage conditions! It is essential to observe the v_c values of the type used. the maximum speeds of the system and the reduction of these maximum speeds depending on the type used overhang length (LTA).

Cutting data standard values for boring heads for roughing – SpinTools

Index	62 295 … Twin rough boring head Cutting depth a_p = 2.5 – 7 mm			● 1st choice ○ suitable		
	Ø 23.5–40.5 mm	Ø 40.5–66.5 mm	Ø 66.5–87.5 mm	Emulsion	Compressed air	MQL
	f (mm/rev)					
P.1.1	0.3–0.4	0.4–0.5	0.5–0.7	●	○	
P.1.2	0.3–0.4	0.4–0.5	0.5–0.7	●	○	
P.1.3	0.3–0.4	0.4–0.5	0.5–0.7	●	○	
P.1.4	0.3–0.4	0.4–0.5	0.5–0.7	●	○	
P.1.5	0.3–0.4	0.4–0.5	0.5–0.7	●	○	
P.2.1	0.3–0.4	0.4–0.5	0.5–0.7	●	○	
P.2.2	0.3–0.4	0.4–0.5	0.5–0.7	●	○	
P.2.3	0.3–0.4	0.4–0.5	0.5–0.7	●	○	
P.2.4	0.3–0.4	0.4–0.5	0.5–0.7	●	○	
P.3.1	0.3–0.4	0.4–0.5	0.5–0.7	●	○	
P.3.2	0.3–0.4	0.4–0.5	0.5–0.7	●	○	
P.3.3	0.3–0.4	0.4–0.5	0.5–0.7	●	○	
P.4.1	0.3–0.4	0.4–0.5	0.5–0.7	●	○	
P.4.2	0.3–0.4	0.4–0.5	0.5–0.7	●	○	
M.1.1	0.3–0.4	0.4–0.5	0.5–0.7	●	○	
M.2.1	0.3–0.4	0.4–0.5	0.5–0.7	●	○	
M.3.1	0.3–0.4	0.4–0.5	0.5–0.7	●	○	
K.1.1	0.3–0.4	0.4–0.5	0.5–0.7	○	●	
K.1.2	0.3–0.4	0.4–0.5	0.5–0.7	○	●	
K.2.1	0.3–0.4	0.4–0.5	0.5–0.7	○	●	
K.2.2	0.3–0.4	0.4–0.5	0.5–0.7	○	●	
K.3.1	0.3–0.4	0.4–0.5	0.5–0.7	○	●	
K.3.2	0.3–0.4	0.4–0.5	0.5–0.7	○	●	
N.1.1	0.3–0.4	0.4–0.5	0.5–0.7	●	○	
N.1.2	0.3–0.4	0.4–0.5	0.5–0.7	●	○	
N.2.1	0.3–0.4	0.4–0.5	0.5–0.7	●	○	
N.2.2	0.3–0.4	0.4–0.5	0.5–0.7	●	○	
N.2.3	0.3–0.4	0.4–0.5	0.5–0.7	●	○	
N.3.1	0.3–0.4	0.4–0.5	0.5–0.7	●	○	
N.3.2	0.3–0.4	0.4–0.5	0.5–0.7	●	○	
N.3.3	0.3–0.4	0.4–0.5	0.5–0.7	●	○	
N.4.1	0.3–0.4	0.4–0.5	0.5–0.7	●	○	
S.1.1	0.3–0.4	0.4–0.5	0.5–0.7	●	○	
S.1.2	0.3–0.4	0.4–0.5	0.5–0.7	●	○	
S.2.1	0.3–0.4	0.4–0.5	0.5–0.7	●	○	
S.2.2	0.3–0.4	0.4–0.5	0.5–0.7	●	○	
S.2.3	0.3–0.4	0.4–0.5	0.5–0.7	●	○	
S.3.1	0.3–0.4	0.4–0.5	0.5–0.7	●	○	
S.3.2	0.3–0.4	0.4–0.5	0.5–0.7	●	○	
S.3.3	0.3–0.4	0.4–0.5	0.5–0.7	●	○	
H.1.1	0.3–0.4	0.4–0.5	0.5–0.7	○	●	
H.1.2	0.3–0.4	0.4–0.5	0.5–0.7	○	●	
H.1.3	0.3–0.4	0.4–0.5	0.5–0.7	○	●	
H.1.4						
H.2.1	0.3–0.4	0.4–0.5	0.5–0.7	○	●	
H.3.1	0.3–0.4	0.4–0.5	0.5–0.7	○	●	
O.1.1	0.3–0.4	0.4–0.5	0.5–0.7	○	●	
O.1.2	0.3–0.4	0.4–0.5	0.5–0.7	○	●	
O.2.1	0.3–0.4	0.4–0.5	0.5–0.7	○		
O.2.2	0.3–0.4	0.4–0.5	0.5–0.7		●	
O.3.1	0.3–0.4	0.4–0.5	0.5–0.7		●	

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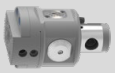
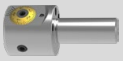
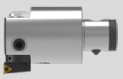
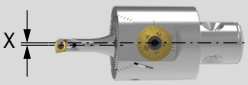
The cutting data is significantly dependent on the external conditions. e.g. stability of the tool and workpiece clamping. material and machine type! The specified values represent guideline cutting data that can be adjusted within the range according to the usage conditions! It is essential to observe the v_c values of the type used. the maximum speeds of the system and the reduction of these maximum speeds depending on the type used overhang length (LTA).

Fine boring tools

Maximum speed

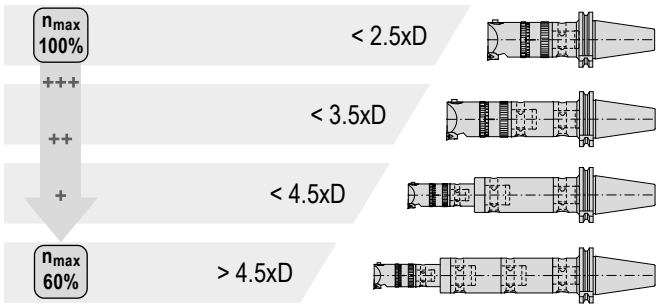
System / tool		Boring range Ø (mm)	Maximum speed in slide center position n_{max} in RPM
	**62 820 ..., 62 840 ...** BluFlex 2	0.5–365	20,000
	**62 800 ...** hi.flex	0.5–365	17,500
	**62 800 06089** hi.flex micro	0.5–60	30,000
	**62 386 ..., 62 382 ...** Micro Boring Head	0.3–19.1	30,000
	**62 815 ...** M03 Speed	24–39	40,000
		38–50	31,000
		49–63	24,000
		62–80	18,500
		79– 103	15,000
		100–130	11,500
		128–168	10,000
		166–206	8,000
	**62 810 ...** FF precision adjustment head	29.5–42	25,000
		39–50	18,000
		47–66	12,000
		58–83	9,000
		79– 108	6,000
		100–141	4,000
		138–179	3,500
		178–199	3,000
	**62 372 ..., 62 373 ...** Multi-Head boring and fine boring head with bridge	88–164	900
		164–320	250
	**62 305 ...** Single point finish boring head with insert holder	86–138	1,150
		136–220	720
		188–302	520
		242–402	400

System / tool 	Boring range Ø (mm)	Offset X ≤ 0.5 mm	Offset X > 0.5 mm
		Maximum speed n_{max} in RPM	
62 372 ..., 62 373 ... Multi-Head boring and fine boring head with boring bar	3–20	16,000	6,000
62 326 ..., 62 332 ..., 62 333 ..., 62 363 ... Single point boring head with boring bar	20–48	12,000	4,000
	48–88	8,000	2,000

System / tool 	Boring range Ø (mm)	Unbalanced	Balanced
		Maximum speed n_{max} in RPM	
62 308 ..., 62 303 ... Single point finish boring head with insert holder	24–31	9,000	12,000
	31–40	7,500	10,000
	40–51	5,250	8,000
	51–67	4,000	6,500
	67– 87	3,000	5,000
	87–116	2,500	4,000
	116–153	1,750	3,000

Selection of the maximum speed

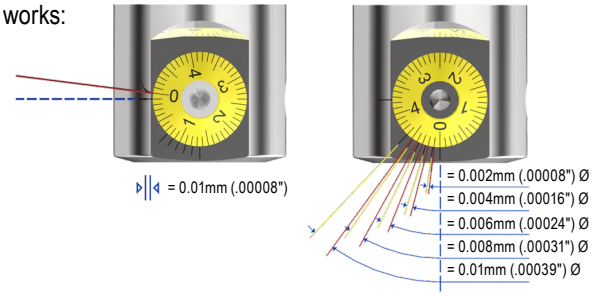
depending on the overhang length (LTA)



Scale accuracy

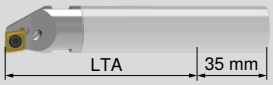
Large scale with 0.002 mm (.00008") adjustment

How it works:



Fine boring tools

Maximum overhang length LTA at 35 mm shank clamping depth



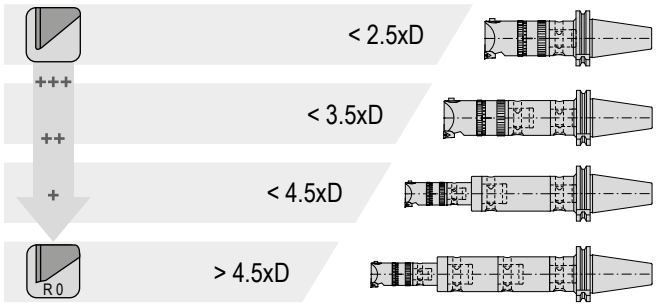




LTA (mm)	High-speed boring head 62 361 ...																Fine boring head 62 304 ...			Boring bar 62 353 ...
	014	015	016	017	018	019	020	021	022	023	025	027	030	033	037	040	017	020	024	
	56																			008
		63																		009
			70																	010
				77																011
					84															012
						91														013
							98	98									115			014
									112	112	112	112	112	112	112	112		125		016
																			105	018
																			145	118
																			185	218

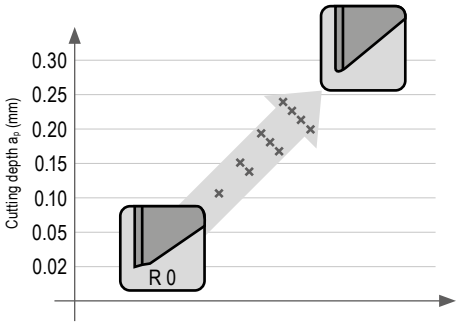
Selection of the cutting radius

depending on the overhang length (LTA)



Selection of the cutting radius

depending on the cutting depth a_p



Influence of the cutting forces of the cutting edge radius on internal machining

Resulting force

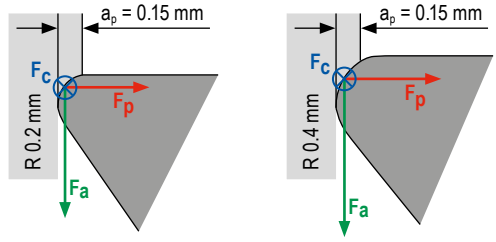
$$F_{res} = \sqrt{F_a^2 + F_p^2} = \sqrt{F_c^2 + F_f^2 + F_p^2}$$

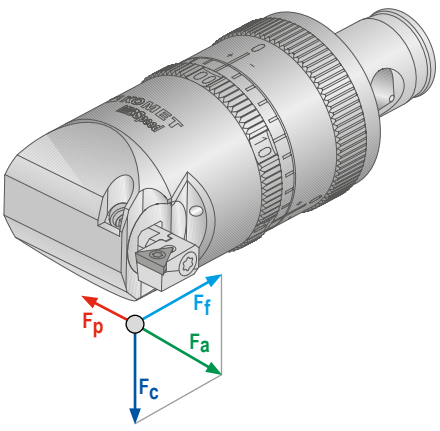
Tangential cutting force (Fc)
- ▲ pushes the tool down from the vertical central axis
- ▲ is influenced by the cutting depth and the chip thickness
- ▲ reduces the clearance angle

Passive cutting force (Fp)
- ▲ pushes the tool away from the horizontal central axis
- ▲ increases the risk of vibrations and causes dimensional inaccuracies

Feed force (Ff)
- ▲ acts in the machining direction of the tool

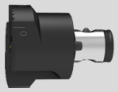
Active cutting force (Fa)
- ▲ determined by F_c and F_f





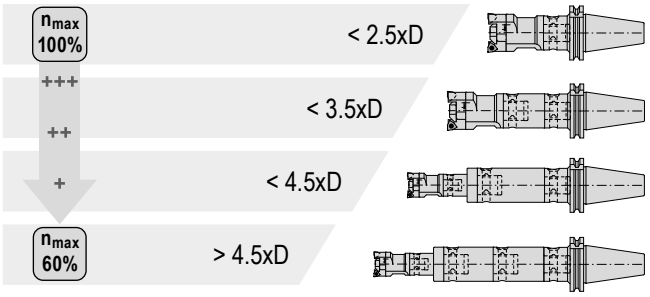
Rough boring tools

Maximum speed

System / tool		Boring range Ø (mm)	Boring range Ø (inch)	Maximum speed n_{max} in RPM
	**62 870 ..., 62 881 ...** TwinKom	24–31		12,000
		31–40	1.181–1.614	10,000
		40–51	1.535–2.008	8,000
		51–68	1.929–2.795	6,500
	**62 295 ...** Twin rough boring head	67–87	2.520–3.853	5,000
		87–116	3.268–4.764	4,000
		116–153	4.291–6.181	3,000
		153–215	5.472–8.031	2,200

Selection of the maximum speed

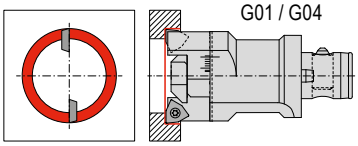
depending on the overhang length (LTA)



TwinKom applications

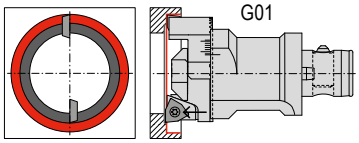
in pre-cast / premachined holes

Roughing as a "true" two-edged cutter

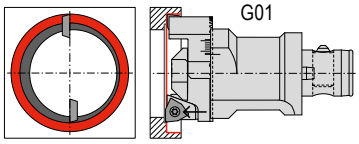


Axial adjustment required

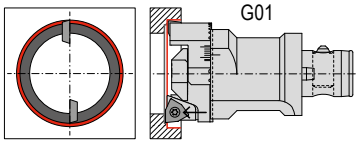
Roughing with large allowance



Roughing with large offset



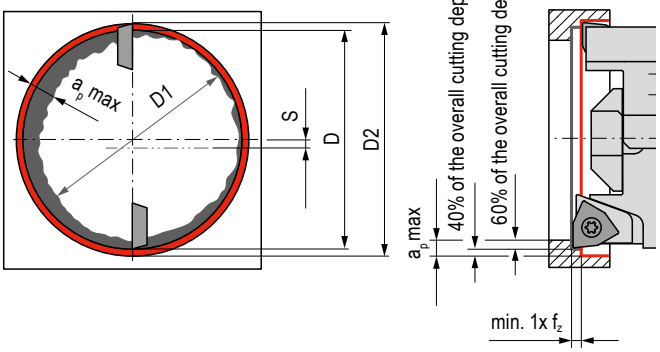
Roughing / Semi-Finishing



Cut distribution calculation

G01

Example:
D2 (finished Ø) = 100 mm,
D1 (raw Ø) = 80 mm,
S (offset) = 3 mm



Calculation formula

$$D = D2 - [(\frac{D2 - D1}{2}) + S] \times 0.8$$

$$D = 100 - [(\frac{100 - 80}{2}) + 3] \times 0.8 = 89.6 \text{ mm}$$

Feed rate guide values for surface finish quality

Roughness range R_Z in µm	R_{th}	Corresponds to R_a	Roughness index	ISO 1302	Corner radius RE in mm and feed f in mm/rev						
					RE = 0.1	RE = 0.2	RE = 0.4	RE = 0.8	RE = 1.2	RE = 1.6	RE = 2.4
63–100	$R_{th}63$	12.5–25	N11	25	0.22*	0.32*	0.45*	0.63	0.78	0.9	1.1
40–63	$R_{th}40$	6.3–12.5	N10	12.5	0.18*	0.25*	0.36	0.51	0.62	0.72	0.88
31.5–40	$R_{th}31.5$	4.9–6.3	N9	6.3	0.16*	0.22*	0.32	0.45	0.55	0.63	0.78
25–31.5	$R_{th}25$	4.0–4.9			0.14*	0.2*	0.28	0.4	0.49	0.57	0.69
16–25	$R_{th}16$	2.5–4.0	N8	3.2	0.11*	0.16	0.23	0.32	0.39	0.45	0.55
10–16	$R_{th}10$	1.6–2.5			0.09	0.13	0.18	0.25	0.31	0.36	0.44
6.3–10	$R_{th}6.3$	1.0–1.6	N7	1.6	0.07	0.1	0.14	0.2	0.25	0.28	0.35
4–6.3	$R_{th}4$	0.8–1.0	N6	0.8	0.06	0.08	0.11	0.16	0.2	0.23	0.28
2.5–4	$R_{th}2.5$	0.4–0.8	N5	0.4	0.04	0.06	0.09	0.13	0.15	0.18	0.22
1.6–2.5	$R_{th}1.6$	0.2–0.4	N4	0.2	0.04	0.05	0.07	0.1	0.12	0.14	0.18
1–1.6	$R_{th}1$	0.1–0.2	N3	0.1	0.03	0.04	0.06	0.08	0.1	0.11	0.14

*Please ensure that the feed rate values used do not exceed the corner radius (RE).

The feed rate values shown are recommended values and are based on purely theoretical calculations using the above-mentioned formula. These may however deviate in practice.

Insert

Selection of the rake angle

Recommendations for the usage of indexable inserts with ground chip breakers

	rounded E	Sharp F	chamfered T
0°	P	P	P
	M	M	M
	K	K	**K**
	N	**N**	N
	S	S	S
	H	H	**H**
≤ 6°	**P**	P	P
	M	M	M
	K	K	K
	N	N	N
	S	S	S
	H	H	H
≤ 12°	**P**	P	P
	M	M	M
	K	K	K
	N	**N**	N
	S	**S**	S
	H	H	H
≤ 20°	P	P	P
	M	M	M
	K	K	K
	N	**N**	N
	S	**S**	S
	H	H	H

→ **Page 87**
Here you will find a detailed chip groove description.

Number key

for MicroKom indexable inserts

W	2	9	2	4	0	1	0	.	0	4	8	4	2	5
	2	*3*	*4*	*5*	*6*	*7*	*8*		*9*	*10*	*11*	*12*	*13*	*14*

2 – 3 Type / shape

00	W...	84°	Regular version, periphery ground
29	W...	84°	Reinforced version
30	T...	60°	Periphery ground, clearance angle 8°
57	T...	60°	Periphery ground, clearance angle 11°
80	S...	90°	Periphery sintered

4 – 5 Size / IC

04	4.0 mm	**18**	6.2 mm 6.35 mm	**28**	8.9 mm	**42**	12.0 mm
10	4.8 mm 5.0 mm	**20**	7.0 mm 7.1 mm	**32**	9.52 mm 9.8 mm	**46**	13.2 mm
12	5.5 mm	**24**	8.0 mm	**34**	10.0 mm	**50**	15.0 mm
14	5.6 mm	**26**	8.2 mm	**38**	10.9 mm 11.1 mm	**58**	17.6 mm

6 – 7 Topography

Ground code

06	Left-hand cutting, 6°
12	Left-hand cutting, 12°
34	High-feed geometry, chamfered and rounded

Sintered code

01	Double grooves, cutting edge chamfered and rounded
02	Stepped geometry, cutting edge chamfered and rounded
03	Calotte geometry, cutting edge rounded
11	20° chip former, cutting edge rounded
12	Alu / finishing geometry
13	Shaft geometry, cutting edge rounded
14	Finishing topography
15	Semi-finishing topography
18	Finishing topography with wiper corner
32	Burr-minimised, periphery ground
33	Burr-minimised, periphery sintered

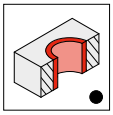
9 – 10 Corner radius

01	R 0.1	**04**	R 0.4
02	R 0.2	**06**	R 0.6
03	R 0.3	**08**	R 0.8

11 – 14 Grade

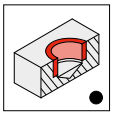
→ **Page 89**
Here you will find the detailed grade description.

Notes on boring technology – TwinKom

1. 

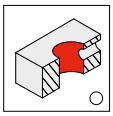
Boring a through hole

▲ Possible without any problems

2. 

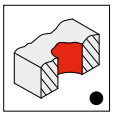
Boring a blind hole

▲ Possible without any problems

3. 

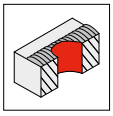
Boring through a cross hole

▲ Reduce feed by up to 50%, if necessary
▲ Check for chip jamming on the periphery of the tool
▲ Use tough indexable inserts
▲ Use stable corner radius

4. 

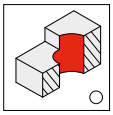
Boring uneven surfaces (casting surfaces)

▲ Feed must reduce by up to 40% when starting the bore
▲ Use tough indexable inserts
▲ Use stable corner radius

5. 

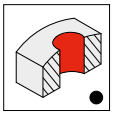
Boring a seam (forging/welding/casting seam)

▲ Reduce feed
▲ Use max. 3xD tools

6. 

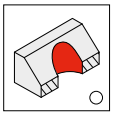
Entering on an edge

▲ Reduce feed to 50%
▲ Use tough indexable inserts
▲ Use stable corner radius

7. 

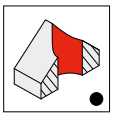
Entering on convex surfaces

▲ Possible without any problems
▲ If necessary, reduce feed

8. 

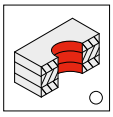
Boring angled surfaces

▲ From the interrupted cut, reduce the feed by up to 50%
▲ Use tough indexable inserts
▲ Use stable corner radius

9. 

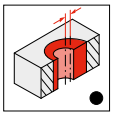
Boring a pointed contour

▲ Reduce the feed by up to 40% in the area where cutting is interrupted

10. 

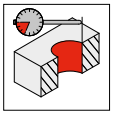
Stack plate boring

▲ Use holder with 80° positioning
▲ Good workpiece clamping required
▲ Max. gap size = 1 mm

11. 

Large hole offset

▲ Possible without any problems
▲ Axial-radial cut distribution, see graphic: Cut distribution

12. 

Adjustable in diameter

▲ Possible without any problems

Problems / possible causes / solutions – rough boring and fine boring

1. No chip breakage

▲ Cutting depth a_p too low for cutting edge topography used	→ If necessary, increase the cutting depth a_p → Use cutting edge topography for small to medium cutting depths
▲ Cutting depth a_p too big for cutting edge topography used	→ Reduce cutting depth a_p → Axial-radial cut distribution → Use cutting edge topography for larger cutting depths
▲ Feed/tooth too low	→ Increase feed/tooth
▲ RPM too high	→ Reduce RPM
▲ Cutting edges not same length axially	→ Correct axial offset: Use holder with axial length compensation

2. Chip jamming

▲ Unfavorable chip shape	→ Increase feed → Use cutting edge topography with chip breaker → Axial-radial cut distribution → See measures: 1. No chip breakage
▲ Workpiece clamping	→ In the case of through holes, check there is sufficient space for pecking behind the component
▲ Cooling lubricant pressure/quantity too low	→ Improve cooling lubricant pressure/quantity

3. Conical hole

→ See measures: 1. No chip breakage

4. Poor surface quality

▲ Feed too high	→ Reduce feed
▲ Cutting speed too low	→ Increase cutting speed
▲ Cutting radius too small	→ Use indexable insert with a larger cutting radius → Use indexable insert with wiper geometry
▲ Rake angle of the indexable insert too small	→ Use indexable insert with positive cutting edge geometry
▲ Built-up edge	→ Use indexable insert with positive cutting edge geometry → Use indexable insert with wider chip breaker groove
▲ Unfavorable chip shape	→ See measures: 1. No chip breakage → See measures: 2. Chip jam

5. Vibration

▲ Tool design – high L/D ratio	→ If necessary, check tool design → If possible, consistently avoid the same boring bar Ø → If possible, stepped tool design; design tool to be as stable as possible → Check axial-radial cutting settings → Use vibration-optimized boring bar, if necessary → Use HMD damping element, if necessary
▲ Feed too high	→ Reduce feed
▲ Cutting speed too high	→ Reduce cutting speed, see graphic: Selection of the cutting speed depending on the overhang length
▲ Depth of cut too big	→ Reduce depth of cut → Axial-radial cut distribution
▲ Cutting edge geometry too blunt	→ Use indexable insert with positive cutting edge geometry → Use indexable insert with wider chip breaker groove
▲ Cutting radius too big	→ Use indexable insert with a smaller cutting radius, see graphic: Selection of the cutting radius depending on the overhang length and the depth of cut

Types of wear

Wear on clearance face

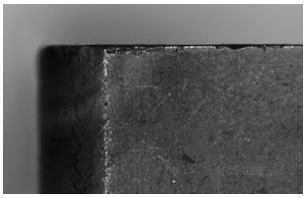


Abrasion on the flank: normal wear after a certain period of operation.

Cause
- Cutting speed too high
- Carbide grade does not have enough wear resistance
- Feed not adapted to application

Remedy
- Reduce cutting speed
- Select a carbide grade with high wear resistance
- Bring feed into the right relationship with cutting speed and cutting depth

Edge chipping

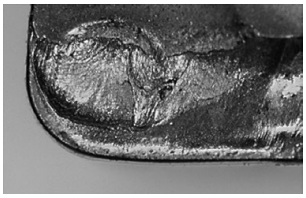


Increased mechanical stress on the cutting edge may result in carbide particles breaking off.

Cause
- Grade with too high a wear resistance
- Vibrations on tool or workpiece
- Feed rate or cutting depth is too high
- Built-up edge
- Interrupted cut
- Chip stroke

Remedy
- Use tougher grade
- Improve stability (tool, workpiece)
- Avoid built-up edges

Cratering

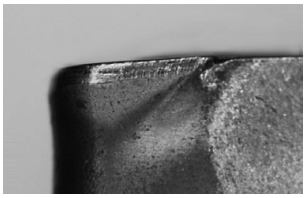


The outgoing hot chip is causing cratering of the cutting insert on the clamping surface.

Cause
- Cutting speed too high, feed too high
- Rake angle too low
- Grade does not have enough wear resistance
- Incorrectly supplied coolant

Remedy
- Reduce cutting speed and/or feed rate
- Choose carbide grades with greater wear-resistance
- Increase quantity and/or pressure of coolant, check supply
- Use a more crater-resistant grade

Plastic deformation

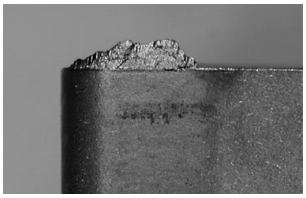


High machining temperature with simultaneous mechanical stress can lead to plastic deformation.

Cause
- Working temperature too high, softening of the base material
- Damage to the coating
- Grade does not have enough wear resistance
- Incorrectly supplied coolant

Remedy
- Reduce cutting speed
- Select more wear-resistant, more thermally stable carbide grade
- Make provisions for cooling / check supply

Built-up edge

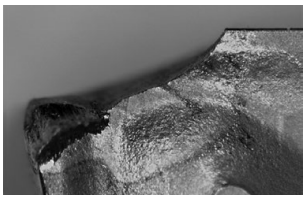


Material builds up on the cutting edge if the chip does not flow correctly due to the cutting temperature being too low.

Cause
- Cutting speed to low
- Rake angle too small
- Incorrect cutting material
- Missing coolant/lubrication

Remedy
- Increase cutting speed
- Increase rake angle
- Use TiN coating
- Make provisions for cooling / increase oil content of emulsion

Insert breakage



If a cutting insert is overloaded, insert breakage may occur.

Cause
- Cutting material overloaded (extreme values)
- Lack of stability
- Wedge angle too small
- Interference contours were not taken into account
- Interrupted cut

Remedy
- Use a tougher cutting material
- Use chamfer for edge protection
- Increase rounding of cutting edge
- Use more stable geometry
- Check cutting data
- Check interference contours

Chip breakers

-SF14

- Rake angle 14°
- Specially developed chip breakers with remarkable chip control for a range of applications, from fine finishing to medium machining

-SF15

- Rake angle 15°
- Balanced geometry: high stability with high cutting edge sharpness
- Excellent chip control with minimum susceptibility to built-up edge formation
- Particularly good chip breakage with small and medium feeds
- Initial recommendation for machining C-steel, alloyed and stainless steels

-SF16

- Rake angle 15°
- Balanced geometry: High stability for high cutting edge sharpness
- Large chip chamber, therefore good chip control at low feeds
- Initial recommendation for machining C-steel, alloyed and stainless steels

-SF20

- Rake angle 20°
- Particularly smooth cutting thanks to the extremely positive rake angle
- Excellent chip control with minimum susceptibility to built-up edge formation
- Perfect cutting performance thanks to the extremely positive rake angle, particularly with low depths of cut and feeds
- Initial recommendation for machining stainless steel, alloy steels, carbon steel and non-ferrous metals

-SF30

- Rake angle 15°
- Balanced geometry: High stability for high cutting edge sharpness
- Chip breaker geometry: Very good chip breakage for small and medium feeds
- Initial recommendation for machining C-steel, alloyed and stainless steels

-01

- Rake angle 12°
- All-round topography chamfered, rounded
- Very smooth-cutting thanks to positive cutting edge geometry
- Also suitable for less-powerful machines and unstable workpieces
- Easily controllable chip formation also in less solid materials

-02

- Rake angle 0°
- Roughing topography, extremely stable (significant wedge angle)
- Excellent chip formation for chips that are difficult to control
- Only suitable for small cutting depths < 1.5 mm under certain circumstances

-11

- Rake angle 20°
- Highly positive, minimally rounded chip breaker
- For soft-cutting usage
- Main application in aluminium

-12

- Rake angle 30°
- Peripheral ground indexable insert with pressed chip breaker
- Highly positive, sharp and all-round cutting edge, therefore extremely smooth-cutting
- Peripheral ground flanks guarantee controlled chip formation and best surface quality at low cutting forces

-14

- Rake angle 14°
- Peripheral ground, sintered topography
- Controlled chip formation in fine and extremely fine machining

-15

- Rake angle 15°
- Semi-finishing chip breaker; peripheral ground, sintered
- Controlled chip formation in fine and extremely fine machining

-18

- Rake angle 14°
- Peripheral ground and sintered topography
- Controlled chip formation in fine and extremely fine machining
- Positive wiper geometry for maximum demands on surface quality

-G06

- Rake angle 6°
- For P / M / K materials
- High stability due to significant wedge angle

-G12

- Rake angle 12°
- For P / N / S materials
- Extremely smooth-cutting thanks to positive cutting edge geometry
- Extremely suitable for less-powerful machines and unstable workpieces
- Easily controllable chip formation also in less solid materials

Grades

K10
- Carbide, uncoated
- ISO | **K10**
- Uncoated carbide grade for machining grey cast iron or non-ferrous metals, depending on the cutting edge geometry

BK2710
- Carbide, TiAlN-coated
- ISO | P10 | M10 | **K10**
- Extremely wear-resistant carbide grade for machining stainless steels, structural steels and tool steels as well as cast iron materials

BK60
- Carbide, TiC-TiCN-TiN-coated
- ISO | P25 | **M10**
- Multi-layer coating for long service life even in the upper cutting speed range

BK6110
- Carbide, TiCN-TiN-Al_2O_3-coated
- ISO | P10 | **K10**
- Wear-resistant carbide grade for machining cast iron and steel materials

BK6115
- Carbide, TiCN-TiN-Al_2O_3-coated
- ISO | **P20** | **K20** | H20
- High-quality, surface-treated coating for machining cast iron materials in normal to stable conditions and at high cutting speeds

BK6440
- Carbide, CVD-TiCN-Al_2O_3-TiN coated
- ISO | **M25** | **K35**
- Extremely tough standard grain grade; good wear resistance in steel and stainless steel materials, even in unfavorable cutting conditions / interrupted cut

BK7615
- Carbide, TiCN-Al_2O_3-coated
- ISO | **K15**
- Highly productive grade with extreme edge stability for wet and dry machining of all cast iron materials

BK77
- Carbide, TiN-coated
- ISO | **S10** | H10 | O10
- The wear-resistant carbide grade for machining aluminum alloys, superalloys and plastics at medium cutting speeds

BK7710
- Carbide, TiB_2-coated
- ISO | **N10** | S10 | O10
- The wear-resistant grade with optimum cutting characteristics to prevent built-up edge formation for machining aluminium and titanium alloys

BK7935
- Carbide, AlTiN-coated
- ISO | **P35** | **M30** | **K30** | N30 | **S30** | O30
- The tough carbide grade for machining stainless steel and acid-resistant steels as well as special alloys

BK8425
- Carbide, TiAlN/TiN-coated
- ISO | **P25** | **M25** | **K25**
- Universal grade with greater wear resistance thanks to innovative PVD multi-layer coating

BK8430
- Carbide, TiAlN/TiN-coated
- ISO | **P25** | **M25**
- Fine-grain grade with high wear resistance
- Extreme edge stability and maximum wear resistance in the middle and top speed range

BK8440
- Carbide, TiCN-TiN-coated
- ISO | **P35** | M10
- Very tough carbide grade for medium cutting speeds and interrupted cut

Grades

CBN40

- Cubic boron nitride, uncoated
- ISO | **H05**
- Uncoated cutting material made of cubic boron nitride for machining hardened steels over 45 HRC, heat-resistant nickel-based or cobalt-based alloys

CK32

- Cermet, uncoated
- ISO | **P10** | **M15** | K05 | N15
- For fine and finish turning
- Less wear and greater cutting speed result in longer tool life and high surface quality
- Cutting material for high productivity in the top cutting speed range

CK3230

- Cermet, uncoated
- ISO | **P20** | **M20** | K10 | N20
- Extremely tough behavior with good wear resistance suitable for use also in interrupted cut

CTDPU20

- Polycrystalline diamond cutting material with mixed grain, uncoated
- ISO | **N15**
- Outstanding wear resistance, even where Si content > 12 % and high proportion of abrasive reinforcements
- Used in plastics and fibre composites (GFK, CFK)

CWC06

- Cermet, TiC/TiN-coated
- ISO | **P10** | M10 | **K10** | N10
- Coated cermet grade for fine boring at high cutting speed and with a uniform cut

CWC10

- Cermet, uncoated
- ISO | **P15** | **M10** | K10
- The uncoated cermet grade for finish machining of stainless and hardened steel
- Particularly wear-resistant due to high heat resistance

CWN10

- Carbide, TiN-coated
- ISO | **K10**
- The carbide grade for machining steels, stainless steels and non-ferrous metals

CWP25

- Carbide, uncoated
- ISO | **P25** | **M25** | K25 | **N25** | S25
- Uncoated carbide grade for fine boring with large hole depths and small machining allowances

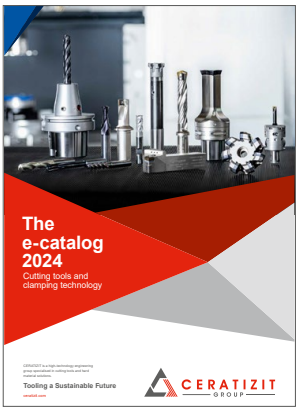
Coatings

TiN

- TiN coating
- Maximum application temperature: 450 °C

Metric Products

The entire content of this chapter can be found
in the Metric Catalog.
Use the QR code or the link shown below.



https://cutting.tools/us/en/digitalcatalogmetric



Solid drilling and bore machining	Metric Catalog	HSS drilling	1
	Metric Catalog	Solid carbide drilling	2
		Indexable drilling	3
		Reaming and Countersinking	4
		Indexable Boring	5
Threading	Metric Catalog	Taps and thread formers	6
	Metric Catalog	Circular and Thread Milling	7
	Metric Catalog	Thread turning	8
Turning		Indexable Turning	9
		Multifunction	10
		Parting and Grooving	11
	Metric Catalog	Miniature turning tools	12
Milling	Metric Catalog	HSS Milling Cutters	13
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Clamping technology		Adaptors and Accessories	16
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WNT \ Performance

Premium quality tools for high performance.

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

WNT \ Standard

Quality tools for standard applications.

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

Symbol explanation

M	Thread type Explanation of the thread types can be found on → **Page 6**
UNI NCW	Application range Special feature An explanation of the areas of application/ special features can be found on → **Page 7**
C 2–3	Chamfer form An explanation of the chamfer forms can be found on → **Page 6**
ISO 2 6H	Tolerance Explanation of the tolerances can be found on → **Page 103**
TiN	Coating An explanation of the coatings can be found on → **Page 106**
	Cooling agent supply



	Coloured ring An explanation of the coloured rings can be found on → **Page 5**
HSS-E	Tool Material An explanation of the cutting materials can be found on → **Page 6**
FHA 42°	Helix angle
≤ 1100 N/mm²	Tensile strength
	Through hole thread
	Blind hole thread
	Through hole thread and blind hole thread

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

Tool types

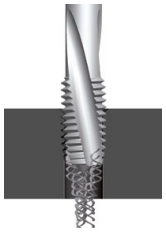
TruTap



Through hole tap type TruTap

- For through holes up to 4xD
- Lead Form B: 3.5–5 cutting leads, with spiral point
- Straight Flutes
- Also suitable for synchronised machining, with Weldon flat and with extra long version
- Due to the special geometry of the flutes, the chips are removed in the direction of cut

TruTap DL



Through hole tap type TruTap DL

- For through holes up to 4xD
- Lead Form C: 3.5–5 cutting leads, without spiral point
- 15° left hand helix
- Suitable for steel, titanium alloys and Inconel 718
- The chips are discharged in the direction of cut

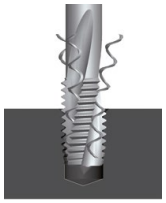
CavTap



Blind hole tap type CavTap

- For blind holes up to 3xD
- Lead Form C: 2–3 cutting leads, without spiral point
- Lead Form E: 1.5–2 cutting leads, without spiral point
- (35°, 42°, 45°, 50°) right hand helix
- Also suitable for syncronised machining, with Weldon flat, with extra long version and through coolant
- The high helix angle ensures chips are discharged effectively against the direction of cut

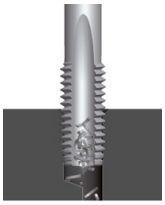
CavTap SL



Blind hole tap type CavTap SL

- For blind holes up to 2xD
- Lead Form C: 2–3 cutting leads, without spiral point
- Lead Form E: 1.5–2 cutting leads, without spiral point
- (15°, 25°, 30°) slow right hand helix
- For steel, titanium alloys and Inconel 718
- Also suitable for synchronised machining, with extra long version and through coolant
- Also suitable for difficult operating conditions such as cross holes

DuoTap



Through and blind hole tap Type DuoTap

- For blind and through holes up to 2xD
- Lead Form C: 2–3 cutting leads, without spiral point
- Lead Form D: 3.5–5 cutting leads, without spiral point
- Lead Form E: 1.5–2 cutting leads, without spiral point
- Straight Flutes
- For steel, short chipping and hardened materials to 55 (62) HRc
- Also with extra long version and through coolant

DuoForm



Thread former type DuoForm

- For blind and through holes up to 3xD
- Lead Form C: 2–3 cutting leads, without spiral point
- For cold formable materials up to 1400 N/mm²
- Suitable for synchronised machining, with lubrication grooves and internal cooling

Coloured rings



for steel up to 750 N/mm²

ST

ST application area:
uncoated taps for steels up to a tensile strength of 750 N/mm²



for corrosion and acid-resistant steels

VA

VA application area:
for stainless steels



for hardened steels

HT

HT application area:
for hard machining



for steel to 1100 N/mm²

ST
VG

ST and VG application area:
coated taps for steels up to a tensile strength of 1100 N/mm²



for heat resistant alloys

Ti
Ni

Ti and Ni application area:
for heat-resistant steels, titanium and Inconel



for aluminium and non-ferrous metal

NW | Ms
Soft | AMPCO

NW, Soft, Ms and AMPCO application area:
for aluminium, short-chipping brass and soft materials



for steel up to 1400 N/mm²

HR

HR application area:
for steels up to a tensile strength of 1400 N/mm²



for cast iron materials

GG

GG application area:
for cast iron materials



for universal application up to 1100 N/mm²

UNI

UNI application area:
for universal application

→ **Page 7**
Here you will find a detailed explanation of the areas of application.

Thread types

M	ISO metric coarse thread DIN 13
MF	ISO Metric fine thread DIN 13
G	Whitworth pipe thread DIN EN ISO 228
UNC	Unified coarse thread ASME B1.15 and ISO 3161
UNF	Unified fine thread ASME B1.1
EG M	ISO Metric coarse thread for wire inserts DIN 8140-2
EG UNC	EG Unified coarse thread for wire inserts ASME B18.29.1
EG UNF	EG Unified fine thread for wire inserts ASME B18.29.1
UNJC	Unified coarse thread ASME B1.15 and ISO 3161
UNJF	Unified extra fine thread ASME B1.15 and ISO 3161
BSW	Whitworth thread BS84
NPT	American taper pipe thread with sealing (1:16) ANSI/ASME B1.20.1
NPTF	American taper pipe thread with sealing (1:16) ANSI/ASME B1.20.3
Rc	Whitworth taper pipe thread (1:16) DIN EN 10226-2 (ISO7-1)
Rp	Cylindrical Whitworth coarse thread DIN EN 10226-1 (ISO7-1)

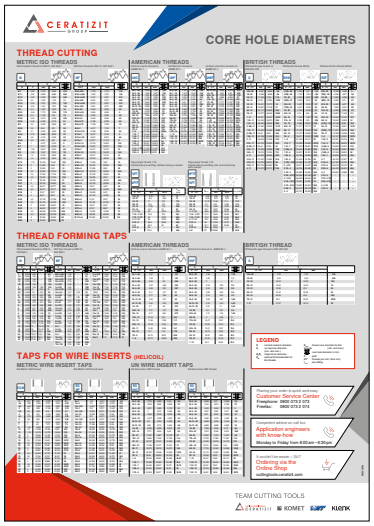
These thread types, as well as hand taps and dies, are available in the online shop.

Chamfer forms

B 4–5	Form B (with spiral point, 4–5 thread lead)
C 2–3	Form C (without spiral point, 2–3 thread lead)
D 4–5	Form D (without spiral point, 4–5 thread lead)
E 1,5–2	Form E (without spiral point, 1.5–2 thread lead)

Cutting materials

HSS	High-speed steel
HSS-E	High-performance high speed steel
HSS-E / HM	HSS-E base support material cutting/forming medium: HM
HSS-PM	High-performance sintered high-speed steel
Solid carbide	Solid carbide



A must-have for your production processes!

Thread core hole diameters at a glance thanks to the CERATIZIT workshop poster!

To receive a copy in your national language, please contact your sales representative.

Application areas

WNT \ Performance

UNI	for universal application up to 1100 N/mm²
ST	for good quality free machining steel
FE	Dies for steel
VG	for tempered and heat-resistant steels < 1100 N/mm²
HR	for high-tensile steels < 1400 N/mm²
VA	for stainless and acid-resistant steels up to 1100 N/mm²
GG	for cast iron
NW	For aluminium
Soft	For soft materials
Ms	for short chipping brass
AMPCO	For Ampco alloys
Ti	For titanium and titanium alloys
Ni	special for Inconel 718
HT	for hardened steel and chilled iron up to 55 HRc

EC	DuoForm thread former for universal use
NEO	DuoForm thread former for heat-resistant alloys
ERGO	Hand Taps for stainless, heat-resistant and heat-treated steels up to 1100 N/mm²
ERGO F.T	Hand tap for steel up to 1400 N/mm², wolfram, chilled iron

Tools for these application areas are available in the online shop.

WNT \ Standard

UNI	for universal application up to 1000 N/mm²
FE	for steel to 850 N/mm²
FE-HF	for high-tensile steel to 1100 N/mm²
VA	for corrosion and acid-resistant steels
GG	for cast iron
AL	for aluminium and aluminium alloys

Special Features

AUT	short version for automatic use
AZ	with intermittent teeth, reduces friction
CNC	for synchronised CNC machining with minimum length compensation chuck
DRY	for dry machining or minimum quantity lubrication (MMS)
EL	extra long, with double overall length
ES	extra short
HML	with soldered-in carbide strips for a higher cutting speed
LH	for left hand threads

MMB	Machine taps
NC	for synchronised CNC machining with minimum length compensation chuck
NCW	with Weldon flat for synchronised CNC machining without length compensation chuck
R_z=1	Lapped Dies
S	with back taper, for deep threads
SN	Thread formers with lubrication grooves
TS	for high-speed machining, up to 100 m/min.

Toolfinder

Thread formers

		Machining	Application range	WNT \ Standard M	MF	G	UNC	UNF
UNI	for cold-formable materials		UNI	54	72			

HSS taps

UNI	for universal use up to 1000 N/mm² **WNT Standard** up to 1100 N/mm² **WNT Performance**		UNI	26+27	59+60	74	81	89
			UNI	42+43	65	77	83	92
P	for steels up to 850 N/mm² **WNT Standard** up to 1100 N/mm² **WNT Performance**		FE	27	60			
			FE	43	66			23 282... 23 283...
P	for high-strength steels up to 1100 N/mm² **WNT Standard** up to 1400 N/mm² **WNT Performance**		FE-HF	27			81	
			FE-HF	43			83	
M	for corrosion and acid-resistant steels		VA	28	60		81	
			VA	43+44	67		83	92
K	for cast iron materials		GG	50				
N	for aluminium and non-ferrous metal		AL	28				
			AL	44				
S	for heat-resistant materials							
H	Hard materials							

→ **Page 10–15**
Here you will find the taps overview with tools for other applications.

This article can be found in our online shop at cuttingtools.ceratizit.com

Tool type	Application range	WNT \ Performance														
		M	EG M	MF	G	UNC	EG UNC	UNJC	UNF	EG UNF	UNJF	BSW	NPT	NPTF	Rp	Rc
DuoForm	EC	51+52		71	79	84			93							
TruTap	UNI	16–18	55	57+58	73	80	85		88	94		22 626... 22 627...				
CavTap	UNI	29–31	56	61+62	75+76	82	86		90	95		22 628... 22 629...				
TruTap	ST	19+20		58												
CavTap	ST	32+33			76											
DuoTap	ST	45+46											98	22 367... 22 382...	22 381...	22 389...
TruTap	HR	20														
CavTap	HR	34														
DuoTap	HR	45+46		68+69	78											
TruTap	VA	21			73	80										
CavTap	VA	35			76	82			90				96			
DuoTap	GG	47		22 173...												
TruTap	NW															
CavTap	NW	36														
DuoTap	AMPCO	22 030...														
TruTap	Ti	22				80					22 167...					
CavTap SL	Ti	37				22 262...		87	91		22 168...					
DuoTap	HT	48														

→ Page 99
Here you will find shank extensions for taps.

Thread-cutting oils can be found in our online shop at cuttingtools.ceratizit.com

Taps Overview

Application Area / Special Features	Tool type	Chamfer form	Tolerance	Tool Material	coated ■ uncoated □	Coolant	WNT \ Performance	WNT \ Standard
M	**Metric ISO standard thread**							
	UNI – Through hole thread							
UNI	TruTap	B 4–5	ISO 2 6H ISO 3 6G 7G	HSS-E	■		16+17	
UNI CNC	TruTap	B 4–5	ISO 2X 6HX ISO 3X 6GX 7GX	HSS-E	■		18	
UNI NCW	TruTap	B 4–5	ISO 2 6H	HSS-PM	■		18	
UNI EL	TruTap	B 4–5	ISO 2 6H	HSS-E	■		24	
UNI		B 4–5	ISO 2 6H	HSS-E HSS-PM	■			26
UNI NC		B 4–5	ISO 2 6H	HSS-E	■			27
UNI NCW		B 4–5	ISO 2 6H	HSS-PM	■			27
	UNI – Blind hole thread							
UNI	CavTap	C 2–3	ISO 2 6H 7G	HSS-E	■		29	
UNI	CavTap	E 1,5–2	ISO 2 6H	HSS-E	■	●	30	
UNI		C 2–3	ISO 2 6H	HSS-E HSS-PM	■			42
UNI NC		C 2–3	ISO 2 6H	HSS-E	■			42
UNI NCW	CavTap	C 2–3	ISO 2 6H	HSS-PM	■		30	
UNI NCW		C 2–3	ISO 2 6H	HSS-PM	■			43
UNI CNC	CavTap	C 2–3	ISO 2X 6HX ISO 2 6H 7G	HSS-E	■		31	
UNI CNC	CavTap	E 1,5–2	ISO 2 6H	HSS-E	■	●	31	
UNI CNC	CavTap	C 2–3	ISO 3 6G	HSS-E	■		22 588..., 22 589...	
UNI	CavTap	C 2–3	ISO 1 4H	HSS-E	■		22 528...	
UNI	CavTap	E 1,5–2	ISO 3 6G	HSS-E	■		22 530...	
UNI S	CavTap	C 2–3	ISO 2 6H	HSS-E	■		22 536..., 22 537...	
UNI ES	CavTap	E 1,5–2	ISO 2 6H	HSS-E	■		38	
UNI EL	CavTap	C 2–3	ISO 2 6H	HSS-E	■		40	
UNI	CavTap SL	C 2–3	ISO 2 6H	HSS-E	□		22 516...	

Application Area / Special Features	Tool type	Chamfer form	Tolerance	Tool Material	coated ■ uncoated □	Coolant	WNT \ Performance	WNT \ Standard
M	**Metric ISO standard thread**							
	P – Through hole thread							
ST	TruTap	B 4–5	ISO 2 6H	HSS-E	□		19	
ST LH	TruTap	B 4–5	ISO 2 6H	HSS-E	□		19	
ST	TruTap	B 4–5	ISO 1 4H	HSS-E	□		22 002..., 22 003...	
ST	TruTap	B 4–5	ISO 3 6G	HSS-E	□		22 004...	
ST TS	TruTap	B 4–5	ISO 2X 6HX	HSS-E	■		20	
HR	TruTap	B 4–5	ISO 2X 6HX	HSS-PM	■		20	
VG	TruTap	B 4–5	ISO 2X 6HX	HSS-E	■		20	
ST EL	TruTap	B 4–5	ISO 2 6H	HSS-E	□		24	
ST MMB		≈ 20	ISO 2 6H	HSS-E	□		25	
FE		B 4–5	ISO 2 6H	HSS-E	□			27
FE-HF		B 4–5	ISO 2 6H	HSS-E	■			27
	P – Blind hole thread							
ST	CavTap	C 2–3	ISO 2 6H	HSS-E	■□		33	
ST	CavTap	C 2–3	ISO 3 6G	HSS-E	□		22 134..., 22 135...	
ST CNC	CavTap SL	C 2–3	ISO 2X 6HX	HSS-E	■	●	32	
ST ES	CavTap SL	C 2–3	ISO 2 6H	HSS-E	□		39	
ST EL	CavTap	C 2–3	ISO 2 6H	HSS-E	□		40	
ST EL	CavTap SL	E 1,5–2	ISO 2 6H	HSS-E	□		41	
HR	CavTap SL	C 2–3	ISO 2 6H	HSS-PM	■		32	
HR	CavTap	C 2–3	ISO 2 6H	HSS-PM	■□		34	

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Taps Overview

Application Area / Special Features	Tool type	Chamfer form	Tolerance	Tool Material	coated ■ uncoated □	Coolant	WNT \ Performance	WNT \ Standard
M	**Metric ISO standard thread**							
FE		C 2–3	ISO 2 6H	HSS-E	□			43
FE-HF		C 2–3	ISO 2 6H	HSS-E	■			43
	P – Through hole thread and blind hole thread							
ST	DuoTap	C 2–3	ISO 2X 6HX	HSS-E	□		45+46	
ST AZ	DuoTap	C 2–3	ISO 2X 6HX	HSS-E	□		22 111..., 22 113...	
HR	DuoTap	C 2–3	ISO 2X 6HX	HSS-E	■		45+46	
HR EL	DuoTap	C 2–3	ISO 2X 6HX	HSS-E	■		49	
	M – Through hole thread							
VA	TruTap	B 4–5	ISO 2 6H	HSS-E	■		21	
VA		B 4–5	ISO 2 6H	HSS-PM HSS-E	■			28
	M – Blind hole thread							
VA	CavTap	C 2–3	ISO 2 6H	HSS-E	■		35	
VA	CavTap	E 1,5–2	ISO 2 6H	HSS-E	■	●	35	
VA		C 2–3	ISO 2 6H	HSS-E HSS-PM	■□			43+44
	K – Through hole thread and blind hole thread							
GG	DuoTap	C 2–3	ISO 2X 6HX	HSS-E	■	●	47	
GG		C 2–3	ISO 2X 6HX	HSS-E	■			50
	N – Through hole thread							
Soft	TruTap	B 4–5	ISO 2 6H	HSS-E	■		22 305...	
AL		B 4–5	ISO 2 6H	HSS-E	■□			28
	N – Blind hole thread							
Soft	CavTap	C 2–3	ISO 2 6H	HSS-E	□		36	
NW	CavTap	C 2–3	ISO 2 6H	HSS-E	■		36	
AL		C 2–3	ISO 2 6H	HSS-E	■□			44

Application Area / Special Features	Tool type	Chamfer form	Tolerance	Tool Material	coated ■ uncoated □	Coolant	WNT \ Performance	WNT \ Standard
M	**Metric ISO standard thread**							
	N – Through hole thread and blind hole thread							
AMPCO	DuoTap	C 2–3	ISO 2X 6HX	HSS-PM	□		22 030...	
Ms	DuoTap	C 2–3	ISO 2X 6HX	HSS-E	□		22 119...	
	S – Through hole thread							
Ti	TruTap	B 4–5	ISO 1X 4HX ISO 2X 6HX	HSS-PM	■		22	
Ti	TruTap DL	D 4–5	ISO 2X 6HX	HSS-E	■		23	
Ni	TruTap DL	D 4–5	ISO 2X 6HX	HSS-E	■		23	
	S – Blind hole thread							
Ti	CavTap SL	C 2–3	ISO 2X 6HX	HSS-PM	■		37	
Ni	CavTap SL	C 2–3	ISO 2X 6HX	HSS-PM	■		37	
	H – Through hole thread and blind hole thread							
HT	DuoTap	D 4–5	ISO 2X 6HX	VHM	■		48	
HT	DuoTap	C 2–3	ISO 2X 6HX	HSS-PM	■		48	
	Machine thread formers							
EC	DuoForm	C 2–3	ISO 2X 6HX	HSS-E	■		51	
EC SN	DuoForm	C 2–3	ISO 2X 6HX ISO 3X 6GX	HSS-E	■		52	
NW HML	DuoForm	C 2–3	ISO 2X 6HX	HSS-E	□	●	51	
NEO SN	DuoForm	C 2–3	ISO 2X 6HX	HSS-PM	■	●	53	
UNI		C 2–3	ISO 2X 6HX	HSS-E	■			54
UNI SN		C 2–3	ISO 2X 6HX	HSS-E	■			54
	Hand taps							
ST		C 2–3	ISO 2X 6HX	VHM	□		22 800...	
ST		C 2–3	ISO 2X 6HX	HSS-E	□		22 010...	
ERGO		C 2–3	ISO 2X 6HX	HSS-E	□		22 012...	
ERGO F.T.		C 2–3	ISO 2X 6HX	HSS-E	■		22 013...	

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Taps Overview

Application Area / Special Features	Tool type	Chamfer form	Tolerance	Tool Material	coated ■ uncoated □	Coolant	WNT \ Performance	WNT \ Standard
M	**Metric ISO standard thread**							
	Dies							
FE		1,5–2	ISO 6g ISO 6e	HSS	□		22 700..., 22 701...	
FE		1,5–2	ISO 6g	HSS	□		23 910...	
FE LH		1,5–2	ISO 6g	HSS	□		22 702...	
VA		2	ISO 6g	HSS-E	□		22 704...	
VA R_z=1		2	ISO 6g	HSS-E	□		22 705...	
EG M	**ISO metric coarse thread for wire inserts**							
	UNI – Through hole thread							
UNI	TruTap	B 4–5	6H mod	HSS-E	■		55	
	UNI – Blind hole thread							
UNI	CavTap	C 2–3	6H mod	HSS-E	■		56	
MF	**Metric ISO fine thread**							
	UNI – Through hole thread							
UNI	TruTap	B 4–5	ISO 2 6H	HSS-E	■		57+58	
UNI	TruTap	B 4–5	ISO 3 6G	HSS-E	■		22 599...	
UNI		B 4–5	ISO 2 6H	HSS-PM HSS-E	■			59+60
	UNI – Blind hole thread							
UNI	CavTap	E 1,5–2	ISO 2 6H ISO 3 6G	HSS-E	■		61	
UNI	CavTap	C 2–3	ISO 2 6H	HSS-E	■		62	
UNI		C 2–3	ISO 2 6H	HSS-PM HSS-E	■			65+66

Application Area / Special Features	Tool type	Chamfer form	Tolerance	Tool Material	coated ■ uncoated □	Coolant	WNT \ Performance	WNT \ Standard
MF	**Metric ISO fine thread**							
UNI CNC	CavTap	E 1,5–2	ISO 3 6G	HSS-E	■		22 561...	
UNI CNC	CavTap	E 1,5–2	ISO 2 6H 7G	HSS-E	■		62	
UNI NC		E 1,5–2	ISO 2 6H	HSS-E	■			66
	P – Through hole thread							
ST TS	TruTap	B 4–5	ISO 2X 6HX	HSS-E	■		58	
FE		B 4–5	ISO 2 6H	HSS-E	□			60
	P – Blind hole thread							
ST TS	CavTap	C 2–3	ISO 2 6H	HSS-E	■		22 216...	
ST	CavTap SL	C 2–3	ISO 2 6H	HSS-E	□		63	
FE		C 2–3	ISO 2 6H	HSS-E	□			66
	P – Through hole thread and blind hole thread							
ST	DuoTap	C 2–3	ISO 2X 6HX	HSS-E	□		22 171...	
ST ES	DuoTap	C 2–3	ISO 2X 6HX	HSS-E	□		70	
ST LH/ES	DuoTap	C 2–3	ISO 2X 6HX	HSS-E	□		70	
HR	DuoTap	C 2–3	ISO 2X 6HX	HSS-E	■		68+69	
	M – Through hole thread							
VA		B 4–5	ISO 2 6H	HSS-E	■			60
	M – Blind hole thread							
VA	CavTap	E 1,5–2	ISO 2 6H	HSS-E	■		64	
VA		E 1,5–2	ISO 2 6H	HSS-E	■			67

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Taps Overview

Application Area / Special Features	Tool type	Chamfer form	Tolerance	Tool Material	coated ■ uncoated □	Coolant	WNT \ Performance	WNT \ Standard
MF	**Metric ISO fine thread**							
	Machine thread formers							
EC SN	DuoForm	C 2–3	ISO 2X 6HX	HSS-E	■		71	
EC HML	DuoForm	C 2–3	ISO 2X 6HX	HSS-E	■	💧	71	
UNI SN		C 2–3	ISO 2X 6HX	HSS-E	■			72
	Dies							
FE		1,5–2	ISO 6g	HSS	□		22 711...	
VA		2	ISO 6g	HSS-E	□		22 714...	
G	**Whitworth pipe thread**							
	UNI – Through hole thread							
UNI	TruTap	B 4–5	ISO 228	HSS-E	■		73	
UNI		B 4–5	ISO 228	HSS-E	■			74
	UNI – Blind hole thread							
UNI	CavTap	C 2–3	ISO 228	HSS-E	■		75	
UNI	CavTap	E 1,5–2	ISO 228, ISO 228 +0,05	HSS-E	■		75	
UNI CNC	CavTap	E 1,5–2	ISO 228	HSS-E	■		76	
UNI		C 2–3	ISO 228	HSS-E	■			77

Application Area / Special Features	Tool type	Chamfer form	Tolerance	Tool Material	coated ■ uncoated □	Coolant	WNT \ Performance	WNT \ Standard
G	**Whitworth pipe thread**							
	P – Through hole thread							
FE		B 4–5	ISO 228	HSS-E	□			23 260...
	P – Blind hole thread							
ST	CavTap	C 2–3	ISO 228	HSS-E	□		76	
ST	CavTap SL	C 2–3	ISO 228	HSS-E	□		22 353...	
FE		C 2–3	ISO 228	HSS-E	□			23 261...
	P – Through hole thread and blind hole thread							
HR	DuoTap	C 2–3	ISO 228X	HSS-E	■		78	
	M – Through hole thread							
VA	TruTap	B 4–5	ISO 228	HSS-E	■		73	
	M – Blind hole thread							
VA	CavTap	E 1,5–2	ISO 228	HSS-E	■		76	
	K – Through hole thread and blind hole thread							
GG	DuoTap	C 2–3	ISO 228X	HSS-E	■		22 348...	
	Machine thread formers							
EC SN	DuoForm	C 2–3	ISO 228	HSS-E	■		79	
	Dies							
FE		1,5–2	ISO 228A	HSS	□		22 741...	

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Taps Overview

Application Area / Special Features	Tool type	Chamfer form	Tolerance	Tool Material	coated ■ uncoated □	Coolant	WNT \ Performance	WNT \ Standard
UNC	**Unified coarse thread**							
	UNI – Through hole thread							
UNI	TruTap	B 4–5	2B	HSS-E	■		80	
UNI		B 4–5	2B	HSS-E	■			81
	UNI – Blind hole thread							
UNI	CavTap	C 2–3	2B	HSS-E	■		82	
UNI		C 2–3	2B	HSS-E	■			83
	P – Through hole thread							
FE-HF		B 4–5	2B	HSS-E	■			81
	P – Blind hole thread							
ST	CavTap	C 2–3	2B	HSS-E	□		22 264...	
FE-HF		C 2–3	2B	HSS-E	■			83
	M – Through hole thread							
VA	TruTap	B 4–5	2B	HSS-E	■		80	
VA		B 4–5	2B	HSS-E	■			81
	M – Blind hole thread							
VA	CavTap	C 2–3	2B	HSS-E	■		82	
VA		C 2–3	2B	HSS-E	□			83
	S – Through hole thread							
Ti	TruTap	B 4–5	2BX	HSS-PM	■		80	
	S – Blind hole thread							
TI	CavTap SL	C 2–3	2BX	HSS-PM	■		22 262...	
	Machine thread formers							
EC	DuoForm	C 2–3	2BX	HSS-E	■		22 270...	
EC SN	DuoForm	C 2–3	2BX	HSS-E	■		84	

Application Area / Special Features	Tool type	Chamfer form	Tolerance	Tool Material	coated ■ uncoated □	Coolant	WNT \ Performance	WNT \ Standard
UNC	**Unified coarse thread**							
	Dies							
FE		1,5–2	2A	HSS	□		22 721...	
EG UNC	**Unified coarse thread for wire inserts**							
	UNI – Through hole thread							
UNI	TruTap	B 4–5	2B mod	HSS-E	■		85	
	UNI – Blind hole thread							
UNI	CavTap	E 1,5–2	2B mod	HSS-E	■		86	
UNJC	**Unified coarse thread**							
	S – Blind hole thread							
Ti	CavTap SL	C 2–3	3BX	HSS-E	■		87	
UNF	**Unified fine thread**							
	UNI – Through hole thread							
UNI	TruTap	B 4–5	2B	HSS-E	■		88	
UNI		B 4–5	2B	HSS-E	■			89
	UNI – Blind hole thread							
UNI	CavTap	C 2–3	2B	HSS-E	■		90	
UNI	CavTap	E 1,5–2	2B +0,05	HSS-E	■		90	
UNI		C 2–3	2B	HSS-E	■			92
	M – Blind hole thread							
VA	CavTap	E 1,5–2	2B	HSS-E	■		90	
VA		C 2–3	2B	HSS-E	□			92

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Taps Overview

Application Area / Special Features	Tool type	Chamfer form	Tolerance	Tool Material	coated ■ uncoated □	Coolant	WNT \ Performance	WNT \ Standard
UNF	**Unified fine thread**							
	**S – Blind hole thread**							
Ti	CavTap SL	C 2–3	2BX 3BX	HSS-PM	■		91	
	**Thread formers**							
EC SN	DuoForm	C 2–3	2BX	HSS-E	■		93	
EG UNF	**Unified Fine Thread for wire inserts**							
	**UNI – Through hole thread**							
UNI	TruTap	B 4–5	2B	HSS-E	■		94	
	**UNI – Blind hole thread**							
UNI	CavTap	E 1,5–2	2B	HSS-E	■		95	
UNJF	**Unified extra-fine thread**							
	**S – Through hole thread**							
Ti	TruTap DL	D 4–5	3BX	HSS-E	■		22 167...	
	**S – Blind hole thread**							
Ti	CavTap SL	C 2–3	3BX	HSS-E	■		22 168...	
BSW	**Whitworth thread**							
	**UNI – Through hole thread**							
UNI	TruTap	B 4–5	med.	HSS-E	■		22 626..., 22 627...	
	**UNI – Blind hole thread**							
UNI	CavTap	C 2–3	med.	HSS-E	■		22 628..., 22 629...	

Application Area / Special Features	Tool type	Chamfer form	Tolerance	Tool Material	coated ■ uncoated □	Coolant	WNT \ Performance	WNT \ Standard
NPT	**American taper pipe thread**							
	**P – Through hole thread and blind hole thread**							
ST ES	DuoTap	C 2–3		HSS-E	□		98	
VG	DuoTap	C 2–3		HSS-E	□		97	
VG AZ	DuoTap	C 2–3		HSS-E	□		22 377..., 22 378...	
	**M – Blind hole thread**							
VA	CavTap	C 2–3		HSS-E	■		96	
VA	CavTap	E 1,5–2		HSS-E	■		96	
NPTF	**American taper pipe thread**							
	**P – Through hole thread and blind hole thread**							
ST	DuoTap	C 2–3		HSS-E	□		22 382...	
VG	DuoTap	C 2–3		HSS-E	□		22 380...	
ST ES	DuoTap	C 2–3		HSS-E	□		22 367...	
Rp	**Cylindrical Whitworth thread**							
	**P – Through hole thread and blind hole thread**							
ST	DuoTap	C 2–3	X	HSS-E	□		22 381...	
Rc	**Tapered Whitworth thread**							
	**P – Through hole thread and blind hole thread**							
ST	DuoTap	C 2–3		HSS-E	□		22 389...	

Accessories

Shank extensions for taps	99
Thread cutting oil, chlorine free	22 950...
Thread cutting paste, chlorine free	

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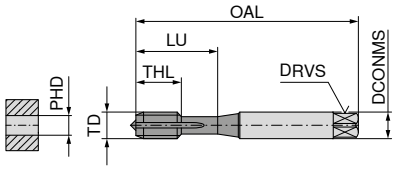
Through hole – Machine taps, right hand

TruTap | M



DIN 371 with reinforced shank

UNI	UNI	UNI	UNI
B 4–5	B 4–5	B 4–5	B 4–5
ISO 2 6H	ISO 2 6H	ISO 3 6G	7G
nitr. + vap.	TiN	nitr. + vap.	nitr. + vap.
			
HSS-E FHA 0° ≤ 1100 N/mm² ≤ 4xD	HSS-E FHA 0° ≤ 1100 N/mm² ≤ 4xD	HSS-E FHA 0° ≤ 1100 N/mm² ≤ 4xD	HSS-E FHA 0° ≤ 1100 N/mm² ≤ 4xD
22 501 ...	**22 503 ...**	**22 508 ...**	**22 510 ...**

TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	LU mm	Flutes	22 501 ...	22 503 ...	22 508 ...	22 510 ...
M1	0,25	40	2,5	2,1	0,75	5	5	2	**010** 1)			
M1,2	0,25	40	2,5	2,1	0,95	5	5	2	**012** 1)			
M1,4	0,30	40	2,5	2,1	1,10	7	7	3	**014** 1)			
M1,6	0,35	40	2,5	2,1	1,25	8	11	3	**016**			
M1,7	0,35	40	2,5	2,1	1,35	6	11	2	**017**			
M1,8	0,35	40	2,5	2,1	1,45	6	11	2	**018**			
M2	0,40	45	2,8	2,1	1,60	7	12	2		**020**		**020**
M2	0,40	45	2,8	2,1	1,60	7	12	3	**020**			
M2,2	0,45	45	2,8	2,1	1,75	7	12	2	**022**			
M2,5	0,45	50	2,8	2,1	2,05	9	14	2	**025**		**025**	**025**
M3	0,50	56	3,5	2,7	2,50	11	18	3	**030**	**030**	**030**	**030**
M3,5	0,60	56	4,0	3,0	2,90	12	20	3	**035**			
M4	0,70	63	4,5	3,4	3,30	13	21	3	**040**	**040**	**040**	**040**
M5	0,80	70	6,0	4,9	4,20	15	25	3	**050**	**050**	**050**	**050**
M6	1,00	80	6,0	4,9	5,00	17	30	3	**060**	**060**	**060**	**060**
M7	1,00	80	7,0	5,5	6,00	17	30	3	**070**			
M8	1,25	90	8,0	6,2	6,80	20	35	3	**080**	**080**	**080**	**080**
M10	1,50	100	10,0	8,0	8,50	22	39	3	**100**	**100**	**100**	**100**
M12	1,75	110	12,0	9,0	10,20	24	44	3	**120**			

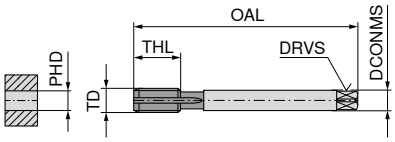
Cutting speed v_c (m/min.)				
P			**12**	**15**	**12**	**12**
M			**7**	**9**	**7**	**7**
K			**12**	**18**	**12**	**12**
N				**12**		
S						
H						
O						

1) Tol. ISO 1 4H ≤ M1.4

DIN 376 can be found on the next page

Through hole – Machine taps, right hand

TruTap | M



DIN 376 with reduced shank

	UNI	UNI	UNI	UNI
	B 4–5	B 4–5	B 4–5	B 4–5
	ISO 2 6H	ISO 2 6H	ISO 3 6G	7G
	nitr. + vap.	TiN	nitr. + vap.	nitr. + vap.
				
	HSS-E FHA 0° ≤ 1100 N/mm² ≤ 4xD	HSS-E FHA 0° ≤ 1100 N/mm² ≤ 4xD	HSS-E FHA 0° ≤ 1100 N/mm² ≤ 4xD	HSS-E FHA 0° ≤ 1100 N/mm² ≤ 4xD
	22 502 ...	**22 504 ...**	**22 509 ...**	**22 511 ...**

TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	Flutes							
M3	0,50	56	2,2		2,5	11	3	**030**						
M4	0,70	63	2,8	2,1	3,3	13	3	**040**						
M5	0,80	70	3,5	2,7	4,2	15	3	**050**						
M6	1,00	80	4,5	3,4	5,0	17	3	**060**						
M8	1,25	90	6,0	4,9	6,8	20	3	**080**						
M10	1,50	100	7,0	5,5	8,5	22	3	**100**						
M12	1,75	110	9,0	7,0	10,2	24	3	**120**		**120**		**120**		**120**
M14	2,00	110	11,0	9,0	12,0	26	3	**140**		**140**				
M16	2,00	110	12,0	9,0	14,0	27	3	**160**		**160**		**160**		**160**
M18	2,50	125	14,0	11,0	15,5	30	3	**180**		**180**				
M20	2,50	140	16,0	12,0	17,5	32	3	**200**		**200**		**200**		
M22	2,50	140	18,0	14,5	19,5	32	3	**220**		**220**				
M24	3,00	160	18,0	14,5	21,0	34	3	**240**		**240**				
M27	3,00	160	20,0	16,0	24,0	36	3	**270**						
M30	3,50	180	22,0	18,0	26,5	40	4	**300**						

P	**12**	**15**	**12**	**12**
M	**7**	**9**	**7**	**7**
K	**12**	**18**	**12**	**12**
N		**12**		
S				
H				
O				

Cutting speed v_c (m/min.)

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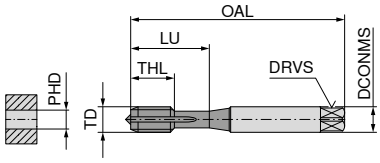
Through hole – Machine taps, right hand

▲ CNC = for synchronised CNC machining with minimum length compensation chuck

▲ NCW = with Weldon flat for synchronised CNC machining without length compensation chuck

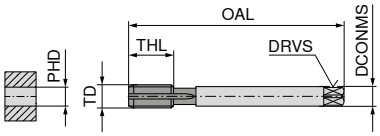
TruTap | M



DIN 371 with reinforced shank

UNI NCW	UNI CNC	UNI CNC	UNI CNC
B 4–5	B 4–5	B 4–5	B 4–5
ISO 2 6H	ISO 2X 6HX	ISO 3X 6GX	7GX
TiN	TiN GS	TiN GS	TiN GS
			
HSS-PM FHA 0° ≤ 1100 N/mm² ≤ 4xD	HSS-E FHA 0° ≤ 1100 N/mm² ≤ 4xD	HSS-E FHA 0° ≤ 1100 N/mm² ≤ 4xD	HSS-E FHA 0° ≤ 1100 N/mm² ≤ 4xD
22 148 ...	**22 542 ...**	**22 596 ...**	**22 592 ...**

TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	LU mm	Flutes				
M3	0,50	56	3,5	2,7	2,5	6	18	3		030		
M3	0,50	70	6,0	4,9	2,5	6	18	3	030			
M4	0,70	63	4,5	3,4	3,3	7	21	3		040	040	040
M4	0,70	70	6,0	4,9	3,3	7	21	3	040			
M5	0,80	70	6,0	4,9	4,2	8	25	3	050	050	050	050
M6	1,00	80	6,0	4,9	5,0	10	30	3	060	060	060	060
M8	1,25	90	8,0	6,2	6,8	14	35	3	080			
M8	1,25	90	8,0	6,2	6,8	14	35	4		080	080	080
M10	1,50	100	10,0	8,0	8,5	16	39	3	100			
M10	1,50	100	10,0	8,0	8,5	16	39	4		100	100	100
M12	1,75	110	10,0	8,0	10,2	18	41	3	120			
M16	2,00	110	12,0	9,0	14,0	22	44	3	160			



DIN 376 with reduced shank

										22 543 ...		**22 593 ...**
TD mm	**TP mm**	**OAL mm**	**DCONMS mm**	**DRVS mm**	**PHD mm**	**THL mm**	**Flutes**					
M12	1,75	110	9	7	10,2	18	4			120		120
M14	2,00	110	11	9	12,0	20	4			140		
M16	2,00	110	12	9	14,0	22	4			160		
M20	2,50	140	16	12	17,5	25	4			200		

P	**15**	**15**	**15**	**15**
M	**8**	**9**	**9**	**9**
K	**15**	**18**	**18**	**18**
N	**22**	**12**	**12**	**12**
S				
H				
O				

Cutting speed v_c (m/min.)

Through hole – Machine taps

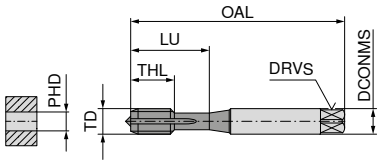
▲ LH = for left hand threads

TruTap | M

ST | ST LH

B 4–5

ISO 2 6H | ISO 2 6H



DIN 371 with reinforced shank

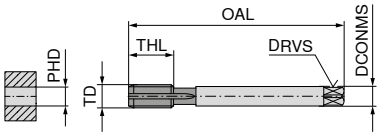




HSS-E
FHA 0°
≤ 750 N/mm²
≤ 4xD

HSS-E
FHA 0°
≤ 750 N/mm²
≤ 4xD

TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	LU mm	Flutes	22 020 ...		22 127 ...	
M2	0,40	45	2,8	2,1	1,60	7	12	2	**020**			
M2,3	0,40	45	2,8	2,1	1,90	7	12	2	**023**			
M2,5	0,45	50	2,8	2,1	2,05	9	14	2	**025**			
M2,6	0,45	50	2,8	2,1	2,15	9	14	2	**026**			
M3	0,50	56	3,5	2,7	2,50	11	18	3	**030**			**030**
M3,5	0,60	56	4,0	3,0	2,90	12	20	3	**035**			
M4	0,70	63	4,5	3,4	3,30	13	21	3	**040**			**040**
M5	0,80	70	6,0	4,9	4,20	15	25	3	**050**			**050**
M6	1,00	80	6,0	4,9	5,00	17	30	3	**060**			**060**
M8	1,25	90	8,0	6,2	6,80	20	35	3	**080**			**080**
M10	1,50	100	10,0	8,0	8,50	22	39	3	**100**			**100**



DIN 376 with reduced shank

TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	Flutes	22 021 ...		22 147 ...	
M5	0,80	70	3,5	2,7	4,2	15	3	**050**			
M6	1,00	80	4,5	3,4	5,0	17	3	**060**			
M8	1,25	90	6,0	4,9	6,8	20	3	**080**			
M10	1,50	100	7,0	5,5	8,5	22	3	**100**			
M12	1,75	110	9,0	7,0	10,2	24	3	**120**			**120**
M14	2,00	110	11,0	9,0	12,0	26	3	**140**			
M16	2,00	110	12,0	9,0	14,0	27	3	**160**			**160**
M18	2,50	125	14,0	11,0	15,5	30	3	**180**			
M20	2,50	140	16,0	12,0	17,5	32	3	**200**			**200**

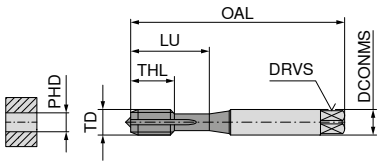
P	**12**	**12**
M		
K	**12**	**12**
N	**12**	**22**
S		
H		
O		

Cutting speed v_c (m/min.)

Through hole – Machine taps, right hand

▲ TS = for high-speed machining, up to 100 m/min.

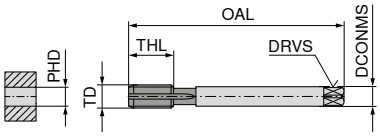
TruTap | M



DIN 371 with reinforced shank

	ST TS	HR	VG
	B 4–5	B 4–5	B 4–5
	ISO 2X 6HX	ISO 2X 6HX	ISO 2X 6HX
	TiN	AlTiNHD	TiN
			
	HSS-E FHA 0° ≤ 1100 N/mm² ≤ 4xD	HSS-PM FHA 0° ≤ 1400 N/mm² ≤ 4xD	HSS-E FHA 0° ≤ 1100 N/mm² ≤ 4xD
	22 092 ...	**22 468 ...**	**22 120 ...**

TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	LU mm	Flutes			
M2	0,40	45	2,8	2,1	1,60	7	12	2		**02000**	
M2	0,40	45	2,8	2,1	1,60	4	12	2	**020**		**020**
M2,5	0,45	50	2,8	2,1	2,05	9	14	2		**02500**	
M2,5	0,45	50	2,8	2,1	2,05	5	15	2	**025**		**025**
M3	0,50	56	3,5	2,7	2,50	11	18	2		**03000**	
M3	0,50	56	3,5	2,7	2,50	6	18	3	**030**		**030**
M4	0,70	63	4,5	3,4	3,30	13	21	2		**04000**	
M4	0,70	63	4,5	3,4	3,30	7	21	3	**040**		**040**
M5	0,80	70	6,0	4,9	4,20	15	25	2		**05000**	
M5	0,80	70	6,0	4,9	4,20	8	25	3	**050**		**050**
M6	1,00	80	6,0	4,9	5,00	17	30	3		**06000**	
M6	1,00	80	6,0	4,9	5,00	10	30	3	**060**		**060**
M8	1,25	90	8,0	6,2	6,80	20	35	3		**08000**	
M8	1,25	90	8,0	6,2	6,80	14	35	4	**080**		**080**
M10	1,50	100	10,0	8,0	8,50	22	39	3		**10000**	
M10	1,50	100	10,0	8,0	8,50	16	39	4	**100**		**100**



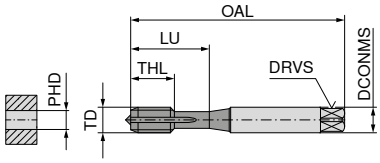
DIN 376 with reduced shank

								22 093 ...		**22 121 ...**
TD mm	**TP mm**	**OAL mm**	**DCONMS mm**	**DRVS mm**	**PHD mm**	**THL mm**	**Flutes**			
M12	1,75	110	9	7	10,2	18	4	**120**		**120**
M16	2,00	110	12	9	14,0	22	4	**160**		**160**
M20	2,50	140	16	12	17,5	25	4	**200**		**200**
P								**65**	**8**	**10**
M									**8**	**8**
K								**65**		
N								**75**	**10**	**22**
S									**4**	
H										
O										

Cutting speed v_c (m/min.)

Through hole – Machine taps, right hand

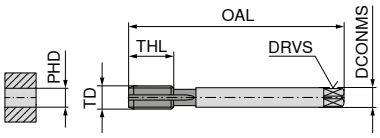
TruTap | M



DIN 371 with reinforced shank

VA	VA
B 4–5	B 4–5
ISO 2 6H	ISO 2 6H
nitr.	TiN GS
	
HSS-E FHA 0° ≤ 900 N/mm² ≤ 4xD	HSS-E FHA 0° ≤ 900 N/mm² ≤ 4xD
22 056 ...	**22 038 ...**

TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	LU mm	Flutes		
M1,6	0,35	40	2,5	2,1	1,25	6	11	2		**016**
M2	0,40	45	2,8	2,1	1,60	7	12	2	**020**	**020**
M2,5	0,45	50	2,8	2,1	2,05	9	14	2	**025**	**025**
M3	0,50	56	3,5	2,7	2,50	11	18	3	**030**	**030**
M3,5	0,60	56	4,0	3,0	2,90	12	20	3	**035**	
M4	0,70	63	4,5	3,4	3,30	13	21	3	**040**	**040**
M5	0,80	70	6,0	4,9	4,20	15	25	3	**050**	**050**
M6	1,00	80	6,0	4,9	5,00	17	30	3	**060**	**060**
M8	1,25	90	8,0	6,2	6,80	20	35	3	**080**	**080**
M10	1,50	100	10,0	8,0	8,50	22	39	3	**100**	**100**



DIN 376 with reduced shank

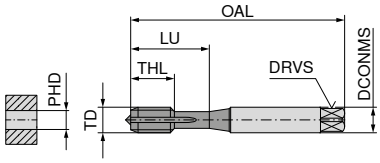
								22 057 ...	**22 039 ...**
TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	Flutes		
M12	1,75	110	9	7	10,2	24	3	**120**	**120**
M14	2,00	110	11	9	12,0	26	3	**140**	**140**
M16	2,00	110	12	9	14,0	27	3	**160**	**160**
M18	2,50	125	14	11	15,5	30	3	**180**	
M20	2,50	140	16	12	17,5	32	3	**200**	**200**
P								**8**	**10**
M								**6**	**8**
K									
N									
S									
H									
O									

Cutting speed v_c (m/min.)

6

Through hole – Machine taps, right hand

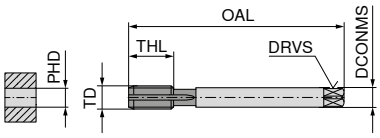
TruTap | M



DIN 371 with reinforced shank

	Ti	Ti	Ti
	B 4–5	B 4–5	B 4–5
	ISO 1X 4HX	ISO 2X 6HX	ISO 2X 6HX
	TiN	vap.	TiN
			
	HSS-PM FHA 0° ≤ 44 HRC ≤ 4xD	HSS-PM FHA 0° ≤ 1400 N/mm² ≤ 4xD	HSS-PM FHA 0° ≤ 44 HRC ≤ 4xD
	22 081 ...	22 075 ...	22 077 ...

TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	LU mm	Flutes					
M1,6	0,35	40	2,5	2,1	1,25	8	9,5	3			016		
M2	0,40	45	2,8	2,1	1,60	8	9,5	3	020		020		
M2,5	0,45	50	2,8	2,1	2,05	9	14,0	3			025		
M3	0,50	56	3,5	2,7	2,50	11	18,0	3	030		030		030
M3,5	0,60	56	4,0	3,0	2,90	12	20,0	3			035		
M4	0,70	63	4,5	3,4	3,30	13	21,0	3	040		040		040
M5	0,80	70	6,0	4,9	4,20	15	25,0	3	050		050		050
M6	1,00	80	6,0	4,9	5,00	17	30,0	3	060		060		060
M8	1,25	90	8,0	6,2	6,80	20	35,0	3	080		080		080
M10	1,50	100	10,0	8,0	8,50	22	39,0	3			100		100



DIN 376 with reduced shank

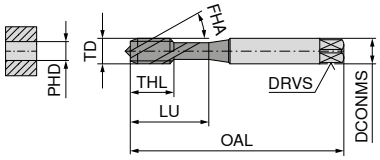
								22 142 ...
M12	1,75	110	9	7	10,2	24	3	**120**

P	7	5	7
M	7	5	7
K			
N			
S	5	3	5
H			
O			

Cutting speed v_c (m/min.)

Through hole – Machine taps, right hand

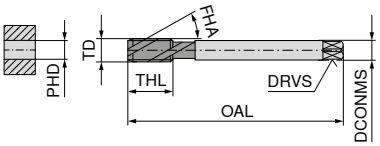
TruTap DL | M



DIN 371 with reinforced shank

	Ti	Ni
	D 4–5	D 4–5
	ISO 2X 6HX	ISO 2X 6HX
	TiCN	TiCN
		
	HSS-E FHA 15° ≤ 1200 N/mm² ≤ 4xD	HSS-E FHA 15° ≤ 1600 N/mm² ≤ 4xD
	22 159 ...	**22 297 ...**

TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	LU mm	Flutes		
M3	0,50	56	3,5	2,7	2,5	11	18	2	**030**	**030**
M4	0,70	63	4,5	3,4	3,3	13	21	3	**040**	**040**
M5	0,80	70	6,0	4,9	4,2	15	25	3	**050**	**050**
M6	1,00	80	6,0	4,9	5,0	17	30	3	**060**	**060**
M8	1,25	90	8,0	6,2	6,8	20	35	3	**080**	**080**
M10	1,50	100	10,0	8,0	8,5	22	39	3	**100**	**100**



DIN 376 with reduced shank

									22 160 ...	22 298 ...
TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	Flutes			
M12	1,75	110	9	7	10,2	24	3		**120**	**120**
M16	2,00	110	12	9	14,0	27	3		**160**	**160**

P	**7**	
M	**7**	
K		
N	**22**	**22**
S	**5**	**2**
H		
O		

Cutting speed v_c (m/min.)

6

Through hole – Machine taps, right hand

▲ EL = extra long, with double overall length

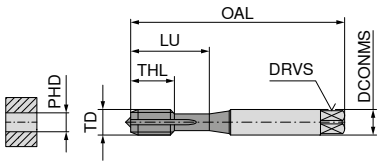
TruTap | M

UNI EL | ST EL

B 4–5 | B 4–5

ISO 2 6H | ISO 2 6H

nitr. + vap.



DIN 371 with reinforced shank

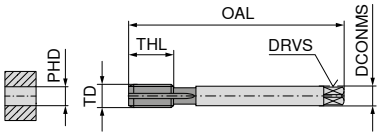




HSS-E
FHA 0°
≤ 1100 N/mm²
≤ 4xD

HSS-E
FHA 0°
≤ 950 N/mm²
≤ 4xD

TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	LU mm	Flutes	22 514 ...	22 233 ...
M3	0,50	100	3,5	2,7	2,5	11	18	3	**030**	**030**
M4	0,70	125	4,5	3,4	3,3	13	21	3	**040**	**040**
M5	0,80	140	6,0	4,9	4,2	15	25	3	**050**	**050**
M6	1,00	160	6,0	4,9	5,0	17	30	3	**060**	**060**
M8	1,25	180	8,0	6,2	6,8	20	35	3	**080**	**080**



DIN 376 with reduced shank

TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	Flutes	22 515 ...	22 234 ...
M6	1,00	160	4,5	3,4	5,0	17	3	**060**	**060**
M8	1,25	180	6,0	4,9	6,8	20	3	**080**	**080**
M10	1,50	200	7,0	5,5	8,5	22	3	**100**	**100**
M12	1,75	224	9,0	7,0	10,2	24	3	**120**	**120**
M14	2,00	224	11,0	9,0	12,0	26	3	**140**	**140**
M16	2,00	224	12,0	9,0	14,0	27	3	**160**	**160**
M18	2,50	250	14,0	11,0	15,5	30	3	**180**	**180**
M20	2,50	280	16,0	12,0	17,5	32	3	**200**	**200**

P	**12**	**12**
M	**7**	
K	**12**	**12**
N		**22**
S		
H		
O		

Cutting speed v_c (m/min.)

Through hole – Machine taps, right hand

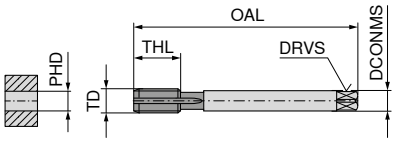
▲ MMB = Nut taps

M

ST
MMB

≈ 20

ISO 2
6H



DIN 357 with reduced shank



HSS-E
FHA 0°
≤ 850 N/mm²
≤ 1xD

22 098 ...

TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	Flutes	
M3	0,50	70	2,2		2,5	16	3	**030**
M4	0,70	90	2,8	2,1	3,3	22	3	**040**
M5	0,80	100	3,5	2,7	4,2	24	3	**050**
M6	1,00	110	4,5	3,4	5,0	30	3	**060**
M8	1,25	125	6,0	4,9	6,8	38	3	**080**
M10	1,50	140	7,0	5,5	8,5	45	3	**100**
M12	1,75	180	9,0	7,0	10,2	50	3	**120**
M16	2,00	200	12,0	9,0	14,0	63	3	**160**

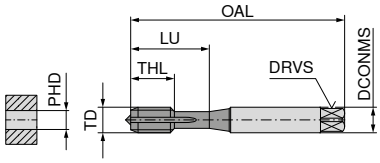
P	**15**
M	
K	
N	
S	
H	
O	

Cutting speed v_c (m/min.)

6

Through hole – Machine taps, right hand

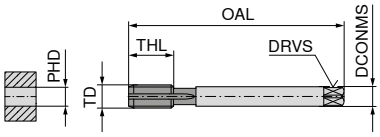
M



DIN 371 with reinforced shank

	UNI	UNI	UNI
	B 4–5	B 4–5	B 4–5
	ISO 2 6H	ISO 2 6H	ISO 2 6H
	nitr. + vap.	TiN	TiN
			
	HSS-E FHA 0° ≤ 1000 N/mm² ≤ 3xD	HSS-E FHA 0° ≤ 1000 N/mm² ≤ 3xD	HSS-PM FHA 0° ≤ 1000 N/mm² ≤ 3xD
	23 110 ...	**23 112 ...**	**23 010 ...**

TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	LU mm	Flutes			
M2	0,40	45	2,8	2,1	1,60	4	13,5	2			**020**
M2	0,40	45	2,8	2,1	1,60	7	12,0	2	**020**	**020**	
M2,5	0,45	50	2,8	2,1	2,05	9	14,0	2	**025**	**025**	
M3	0,50	56	3,5	2,7	2,50	11	18,0	3	**030**	**030**	**030**
M4	0,70	63	4,5	3,4	3,30	13	21,0	3	**040**	**040**	**040**
M5	0,80	70	6,0	4,9	4,20	15	25,0	3	**050**	**050**	**050**
M6	1,00	80	6,0	4,9	5,00	17	30,0	3	**060**	**060**	**060**
M8	1,25	90	8,0	6,2	6,80	20	35,0	3	**080**	**080**	**080**
M10	1,50	100	10,0	8,0	8,50	22	39,0	3	**100**	**100**	**100**



DIN 376 with reduced shank

			23 111 ...	**23 113 ...**	**23 021 ...**

TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	Flutes			
M3	0,50	56	2,2		2,5	11	3	**030**		
M4	0,70	63	2,8	2,1	3,3	13	3	**040**		
M5	0,80	70	3,5	2,7	4,2	15	3	**050**		
M6	1,00	80	4,5	3,4	5,0	17	3	**060**		
M8	1,25	90	6,0	4,9	6,8	20	3	**080**		
M10	1,50	100	7,0	5,5	8,5	22	3	**100**		
M12	1,75	110	9,0	7,0	10,2	24	3	**120**	**120**	**120**
M14	2,00	110	11,0	9,0	12,0	20	4			**140**
M14	2,00	110	11,0	9,0	12,0	26	3	**140**	**14000**	
M16	2,00	110	12,0	9,0	14,0	27	3	**160**	**160**	**160**
M18	2,50	125	14,0	11,0	15,5	25	4			**180**
M18	2,50	125	14,0	11,0	15,5	30	3		**18000**	
M20	2,50	140	16,0	12,0	17,5	32	3	**200**	**200**	**200**
M22	2,50	140	18,0	14,5	19,5	32	3		**22000**	
M24	3,00	160	18,0	14,5	21,0	34	3		**240**	
M27	3,00	160	20,0	16,0	24,0	36	3		**27000**	
M30	3,50	180	22,0	18,0	26,5	40	4		**30000**	
M33	3,50	180	25,0	20,0	29,5	40	4		**33000**	
M36	4,00	200	28,0	22,0	32,0	50	4		**36000**	

P	**12**	**15**	**15**
M	**7**	**9**	**9**
K	**12**	**18**	**18**
N		**12**	**12**
S			
H			
O			

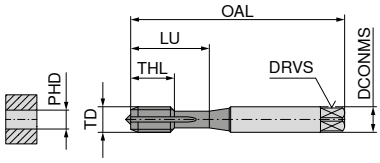
Cutting speed v_c (m/min.)

Through hole – Machine taps, right hand

▲ NCW = with Weldon flat for synchronised CNC machining without length compensation chuck

▲ NC = for synchronised CNC machining with minimum length compensation chuck

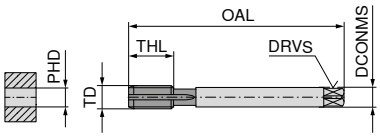
M



DIN 371 with reinforced shank

	UNI NC	UNI NCW	FE	FE-HF
	B 4–5	B 4–5	B 4–5	B 4–5
	ISO 2 6H	ISO 2 6H	ISO 2 6H	ISO 2 6H
	TiN GS	TiCN		TiCN
				
	HSS-E FHA 0° ≤ 1000 N/mm² ≤ 3xD	HSS-PM FHA 0° ≤ 1000 N/mm² ≤ 3xD	HSS-E FHA 0° ≤ 850 N/mm² ≤ 3xD	HSS-E FHA 0° ≤ 1100 N/mm² ≤ 3xD
	23 114 ...	23 116 ...	23 212 ...	23 310 ...

TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	LU mm	Flutes							
M1,6	0,35	40	2,5	2,1	1,25	6	11	2						016	
M2	0,40	45	2,8	2,1	1,60	7	12	2						020	
M2,5	0,45	50	2,8	2,1	2,05	9	14	2						025	
M3	0,50	56	3,5	2,7	2,50	11	18	3	030					030	030
M3	0,50	70	6,0	4,9	2,50	6	18	3		030					
M3,5	0,60	56	4,0	3,0	2,90	12	20	3						035	
M4	0,70	63	4,5	3,4	3,30	13	21	3	040					040	040
M4	0,70	70	6,0	4,9	3,30	7	21	3		040					
M5	0,80	70	6,0	4,9	4,20	8	25	3		050					
M5	0,80	70	6,0	4,9	4,20	15	25	3	050					050	050
M6	1,00	80	6,0	4,9	5,00	10	30	3		060					
M6	1,00	80	6,0	4,9	5,00	17	30	3	060					060	060
M8	1,25	90	8,0	6,2	6,80	14	35	3		080					
M8	1,25	90	8,0	6,2	6,80	20	35	3	080					080	080
M10	1,50	100	10,0	8,0	8,50	16	39	3		100					
M10	1,50	100	10,0	8,0	8,50	22	39	3	100					100	100



DIN 376 with reduced shank

	23 115 ...	23 117 ...	23 213 ...	23 311 ...

TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	Flutes				
M12	1,75	110	9	7	10,2	24	3	120		120	120
M12	1,75	110	10	8	10,2	18	3		120		
M14	2,00	110	11	9	12,0	26	3			140	
M16	2,00	110	12	9	14,0	22	3		160		
M16	2,00	110	12	9	14,0	27	3	160		160	160
M20	2,50	140	16	12	17,5	32	3	200		200	200

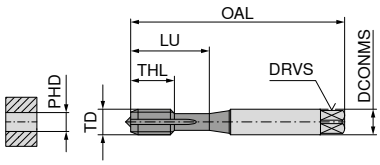
P	15	15	12	15
M	9	8		
K	18	15	12	15
N	12	22	12	15
S				
H				
O				

Cutting speed v_c (m/min.)

6

Through hole – Machine taps, right hand

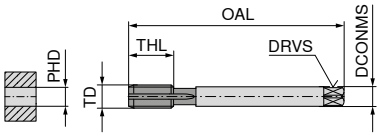
M



DIN 371 with reinforced shank

	VA	VA	VA	AL	AL
	B 4–5	B 4–5	B 4–5	B 4–5	B 4–5
	ISO 2 6H	ISO 2 6H	ISO 2 6H	ISO 2 6H	ISO 2 6H
	TiN	nitr.	nitr.		CrN
					
	HSS-E FHA 0° ≤ 1200 N/mm² ≤ 3xD	HSS-PM FHA 0° ≤ 1200 N/mm² ≤ 3xD	HSS-E FHA 0° ≤ 1200 N/mm² ≤ 3xD	HSS-E FHA 0° ≤ 500 N/mm² ≤ 3xD	HSS-E FHA 0° ≤ 500 N/mm² ≤ 3xD
	23 412 ...	23 450 ...	23 410 ...	23 610 ...	23 612 ...

TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	LU mm	Flutes									
M2	0,40	45	2,8	2,1	1,60	7	12	2	**020**				**020**				
M2,5	0,45	50	2,8	2,1	2,05	9	14	2	**025**				**025**				
M3	0,50	56	3,5	2,7	2,50	11	18	3	**030**		**030**		**030**		**030**		**030**
M4	0,70	63	4,5	3,4	3,30	13	21	3	**040**		**040**		**040**		**040**		**040**
M5	0,80	70	6,0	4,9	4,20	15	25	3	**050**		**050**		**050**		**050**		**050**
M6	1,00	80	6,0	4,9	5,00	17	30	3	**060**		**060**		**060**		**060**		**060**
M8	1,25	90	8,0	6,2	6,80	20	35	3	**080**		**080**		**080**		**080**		**080**
M10	1,50	100	10,0	8,0	8,50	22	39	3	**100**		**100**		**100**		**100**		**100**



DIN 376 with reduced shank

	23 413 ...	23 451 ...	23 411 ...

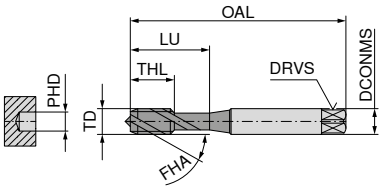
TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	Flutes									
M12	1,75	110	9	7,0	10,2	24	3	**120**		**120**		**120**				
M14	2,00	110	11	9,0	12,0	26	3			**140**						
M16	2,00	110	12	9,0	14,0	27	3	**160**		**160**		**160**				
M20	2,50	140	16	12,0	17,5	32	3	**200**		**200**		**200**				
M24	3,00	160	18	14,5	21,0	34	3					**240**				

P	**10**	**8**	**8**		
M	**8**	**6**	**6**		
K					
N	**24**	**22**	**22**	**15**	**20**
S					
H					
O					

Cutting speed v_c (m/min.)

Blind hole – Machine taps, right hand

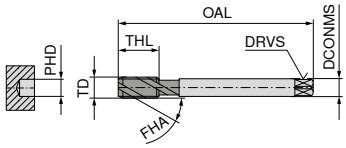
CavTap | M



DIN 371 with reinforced shank

UNI	UNI	UNI
C 2–3	C 2–3	C 2–3
ISO 2 6H	ISO 2 6H	ISO 2 6H
vap.	TiN	TiCN
		
HSS-E FHA 42° ≤ 1100 N/mm² ≤ 3xD	HSS-E FHA 42° ≤ 1100 N/mm² ≤ 3xD	HSS-E FHA 42° ≤ 1100 N/mm² ≤ 3xD
22 518 ...	**22 520 ...**	**22 522 ...**

TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	LU mm	Flutes			
M2	0,40	45	2,8	2,1	1,60	4	12	2	**020**	**020**	
M2,5	0,45	50	2,8	2,1	2,05	5	15	2	**025**		
M3	0,50	56	3,5	2,7	2,50	6	18	3	**030**	**030**	**030**
M4	0,70	63	4,5	3,4	3,30	7	21	3	**040**	**040**	**040**
M5	0,80	70	6,0	4,9	4,20	8	25	3	**050**	**050**	**050**
M6	1,00	80	6,0	4,9	5,00	10	30	3	**060**	**060**	**060**
M8	1,25	90	8,0	6,2	6,80	14	35	3	**080**	**080**	**080**
M10	1,50	100	10,0	8,0	8,50	16	39	3	**100**	**100**	**100**



DIN 376 with reduced shank

									22 519 ...	**22 521 ...**	
TD mm	**TP mm**	**OAL mm**	**DCONMS mm**	**DRVS mm**	**PHD mm**	**THL mm**	**Flutes**				
M12	1,75	110	9	7,0	10,2	18	3		**120**	**120**	
M14	2,00	110	11	9,0	12,0	20	3		**140**	**140**	
M16	2,00	110	12	9,0	14,0	22	3		**160**	**160**	
M18	2,50	125	14	11,0	15,5	25	3		**180**	**180**	
M20	2,50	140	16	12,0	17,5	25	3		**200**	**200**	
M22	2,50	140	18	14,5	19,5	27	4		**220**	**220**	
M24	3,00	160	18	14,5	21,0	30	4		**240**	**240**	
M30	3,50	180	22	18,0	26,5	35	4		**300**		
M33	3,50	180	25	20,0	29,5	35	4		**330**		
M36	4,00	200	28	22,0	32,0	40	4		**360**		
P									**12**	**15**	**15**
M									**7**	**9**	**9**
K									**12**	**18**	**18**
N										**12**	**12**
S											
H											
O											

Cutting speed v_c (m/min.)

6

Blind hole – Machine taps, right hand

▲ NCW = with Weldon flat for synchronised CNC machining without length compensation chuck

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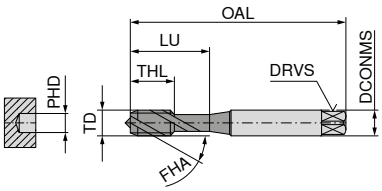
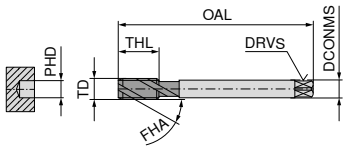


DIN 371 with reinforced shank

	UNI NCW	UNI	UNI	UNI
	C 2–3	E 1,5–2	E 1,5–2	E 1,5–2
	ISO 2 6H	ISO 2 6H	ISO 2 6H	ISO 2 6H
	TiN	vap.	vap.	TiN
				
	HSS-PM FHA 42° ≤ 1100 N/mm² ≤ 3xD	HSS-E FHA 42° ≤ 1100 N/mm² ≤ 3xD	HSS-E FHA 42° ≤ 1100 N/mm² ≤ 3xD	HSS-E FHA 42° ≤ 1100 N/mm² ≤ 3xD
	22 149 ...	22 524 ...	22 534 ...	22 526 ...

TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	LU mm	Flutes				
M3	0,50	56	3,5	2,7	2,5	6	18	3		030		030
M3	0,50	70	6,0	4,9	2,5	6	18	3	030			
M4	0,70	63	4,5	3,4	3,3	7	21	3		040		040
M4	0,70	70	6,0	4,9	3,3	7	21	3	040			
M5	0,80	70	6,0	4,9	4,2	8	25	3	050	050	050	050
M6	1,00	80	6,0	4,9	5,0	10	30	3	060	060	060	060
M8	1,25	90	8,0	6,2	6,8	14	35	3	080	080	080	080
M10	1,50	100	10,0	8,0	8,5	16	39	3	100	100	100	100



DIN 376 with reduced shank

								22 149 ...	22 525 ...	22 535 ...	22 527 ...
M12	1,75	110	9	7,0	10,2	18	4		120	120	120
M12	1,75	110	10	8,0	10,2	18	3	120			
M14	2,00	110	11	9,0	12,0	20	4		140	140	
M16	2,00	110	12	9,0	14,0	22	3	160			
M16	2,00	110	12	9,0	14,0	22	4		160	160	160
M18	2,50	125	14	11,0	15,5	25	4		180		
M20	2,50	140	16	12,0	17,5	25	4		200	200	200
M22	2,50	140	18	14,5	19,5	27	5		220		
M24	3,00	160	18	14,5	21,0	30	5		240		

P	15	12	12	15
M	8	7	7	9
K	15	12	12	18
N	22			12
S				
H				
O				

Cutting speed v_c (m/min.)

Blind hole – Machine taps, right hand

▲ CNC = for synchronised CNC machining with minimum length compensation chuck

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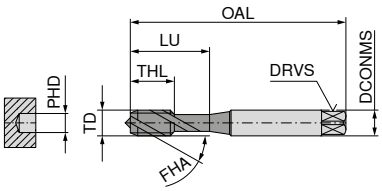
UNI CNC	UNI CNC	UNI CNC	UNI CNC
C 2–3	C 2–3	E 1,5–2	C 2–3
ISO 2X 6HX	ISO 2 6H	ISO 2 6H	7G
TiN	TiN GS	TiN GS	TiN GS



DIN 371 with reinforced shank



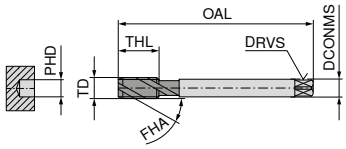
HSS-E
FHA 50°
≤ 1100 N/mm²
≤ 3xD

HSS-E
FHA 45°
≤ 1100 N/mm²
≤ 3xD

HSS-E
FHA 45°
≤ 1100 N/mm²
≤ 3xD

HSS-E
FHA 45°
≤ 1100 N/mm²
≤ 3xD

TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes	22 416 ...	22 544 ...	22 546 ...	22 594 ...
mm	mm	mm	mm	mm	mm	mm	mm					
M3	0,50	56	3,5	2,7	2,5	6	18	3	030	030		030
M4	0,70	63	4,5	3,4	3,3	7	21	3	040	040		040
M5	0,80	70	6,0	4,9	4,2	8	25	3	050	050	050	050
M6	1,00	80	6,0	4,9	5,0	10	30	3	060	060	060	060
M8	1,25	90	8,0	6,2	6,8	14	35	3	080	080	080	080
M10	1,50	100	10,0	8,0	8,5	16	39	3	100	100	100	100



DIN 376 with reduced shank

TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	22 417 ...	22 545 ...		22 595 ...
mm	mm	mm	mm	mm	mm	mm					
M12	1,75	110	9	7	10,2	18	3	120			
M12	1,75	110	9	7	10,2	18	4		120		120
M14	2,00	110	11	9	12,0	20	3	140			
M14	2,00	110	11	9	12,0	20	4		140		140
M16	2,00	110	12	9	14,0	22	3	160			
M16	2,00	110	12	9	14,0	22	4		160		160
M20	2,50	140	16	12	17,5	25	3	200			
M20	2,50	140	16	12	17,5	25	4		200		200
P								15	15	15	15
M								9	9	9	9
K								18	18	18	18
N								22	12	12	12
S											
H											
O											

Cutting speed v_c (m/min.)

6

Blind hole – Machine taps, right hand

▲ CNC = for synchronised CNC machining with minimum length compensation chuck

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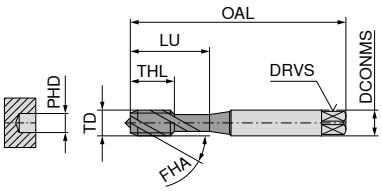
ST CNC	HR	ST CNC
C 2–3	C 2–3	C 2–3
ISO 2X 6HX	ISO 2 6H	ISO 2X 6HX
TiN	AlTiNHD	TiN

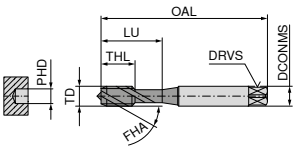


DIN 371 with reinforced shank



HSS-E FHA 15° ≤ 1100 N/mm² ≤ 2xD	HSS-PM FHA 25° ≤ 1400 N/mm² ≤ 2xD	HSS-E FHA 15° ≤ 1100 N/mm² ≤ 2xD
22 328 ...	**22 469 ...**	**22 443 ...**

TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	LU mm	Flutes			
M3	0,50	56	3,5	2,7	2,5	6	18	2	**030**		
M3	0,50	56	3,5	2,7	2,5	11	18	3		**03000**	
M4	0,70	63	4,5	3,4	3,3	7	21	3	**040**		
M4	0,70	63	4,5	3,4	3,3	13	21	3		**04000**	
M5	0,80	70	6,0	4,9	4,2	8	25	3	**050**		**050**
M5	0,80	70	6,0	4,9	4,2	15	25	3		**05000**	
M6	1,00	80	6,0	4,9	5,0	10	30	3	**060**		**060**
M6	1,00	80	6,0	4,9	5,0	17	30	3		**06000**	
M8	1,25	90	8,0	6,2	6,8	14	35	3	**080**		**080**
M8	1,25	90	8,0	6,2	6,8	20	35	3		**08000**	
M10	1,50	100	10,0	8,0	8,5	16	39	3	**100**		**100**
M10	1,50	100	10,0	8,0	8,5	22	39	3		**10000**	
M12	1,75	110	12,0	9,0	10,2	24	44	3		**12000**	



DIN 376 with reduced shank

	22 329 ...

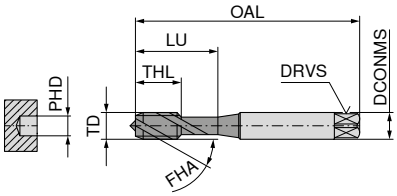
TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	Flutes	
M12	1,75	110	9	7	10,2	18	3	**120**
M16	2,00	110	12	9	14,0	22	3	**160**
M20	2,50	140	16	12	17,5	25	3	**200**

P	**12**	**8**	**12**
M	**8**	**8**	**8**
K	**20**		**20**
N	**22**	**10**	**22**
S		**4**	
H			
O			

Cutting speed v_c (m/min.)

Blind hole – Machine taps

CavTap | M



DIN 371 with reinforced shank

ST | C 2–3 | ISO 2 6H



HSS-E
FHA 42°
≤ 750 N/mm²
≤ 3xD

22 082 ...

ST | C 2–3 | ISO 2 6H | TiN



HSS-E
FHA 42°
≤ 750 N/mm²
≤ 3xD

22 084 ...

TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	LU mm	Flutes		
M2	0,40	45	2,8	2,1	1,60	4	12	2	**020**	**020**
M2,5	0,45	50	2,8	2,1	2,05	5	15	2	**025**	
M3	0,50	56	3,5	2,7	2,50	6	18	3	**030**	**030**
M4	0,70	63	4,5	3,4	3,30	7	21	3	**040**	**040**
M5	0,80	70	6,0	4,9	4,20	8	25	3	**050**	**050**
M6	1,00	80	6,0	4,9	5,00	10	30	3	**060**	**060**
M8	1,25	90	8,0	6,2	6,80	14	35	3	**080**	**080**
M10	1,50	100	10,0	8,0	8,50	16	39	3	**100**	**100**

P	**12**	**15**
M		
K	**12**	**15**
N	**12**	**15**
S		
H		
O		

Cutting speed v_c (m/min.)

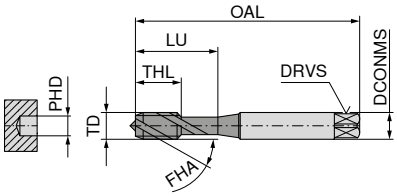
6

Blind hole – Machine taps, right hand

CavTap | M

HR | C 2–3 | ISO 2 6H

HR | C 2–3 | ISO 2 6H | OSM



DIN 371 with reinforced shank





HSS-PM
FHA 42°
≤ 1400 N/mm²
≤ 3xD

HSS-PM
FHA 42°
≤ 1400 N/mm²
≤ 3xD

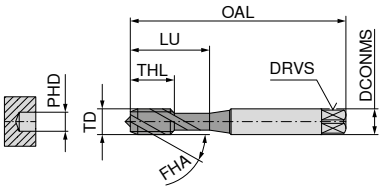
TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	LU mm	Flutes	22 498 ...	22 499 ...
M3	0,50	56	3,5	2,7	2,5	6	18	3	**030**	**030**
M4	0,70	63	4,5	3,4	3,3	7	21	3	**040**	**040**
M5	0,80	70	6,0	4,9	4,2	8	25	3	**050**	**050**
M6	1,00	80	6,0	4,9	5,0	10	30	3	**060**	**060**
M8	1,25	90	8,0	6,2	6,8	14	35	3	**080**	**080**
M10	1,50	100	10,0	8,0	8,5	16	39	3	**100**	**100**

P	**6**	**8**
M	**6**	**8**
K		
N	**8**	**12**
S		
H		
O		

Cutting speed v_c (m/min.)

Blind hole – Machine taps, right hand

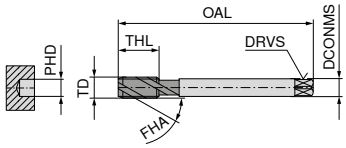
CavTap | M



DIN 371 with reinforced shank

VA	VA	VA	
C 2–3	E 1,5–2	C 2–3	
ISO 2 6H	ISO 2 6H	ISO 2 6H	
vap.	TiN GS	TiN GS	
HSS-E FHA 42° ≤ 900 N/mm² ≤ 3xD	HSS-E FHA 45° ≤ 900 N/mm² ≤ 3xD	HSS-E FHA 45° ≤ 900 N/mm² ≤ 3xD	
22 090 ...	**22 042 ...**	**22 040 ...**	

TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	LU mm	Flutes			
M1,6	0,35	40	2,5	2,1	1,25	4	11	2			**016**
M2	0,40	45	2,8	2,1	1,60	4	12	2	**020**		**020**
M2,5	0,45	50	2,8	2,1	2,05	5	15	2	**025**		
M2,5	0,45	50	2,8	2,1	2,05	5	15	3			**025**
M3	0,50	56	3,5	2,7	2,50	6	18	3	**030**		**030**
M4	0,70	63	4,5	3,4	3,30	7	21	3	**040**		**040**
M5	0,80	70	6,0	4,9	4,20	8	25	3	**050**	**050**	**050**
M6	1,00	80	6,0	4,9	5,00	10	30	3	**060**	**060**	**060**
M8	1,25	90	8,0	6,2	6,80	14	35	3	**080**	**080**	**080**
M10	1,50	100	10,0	8,0	8,50	16	39	3	**100**	**100**	**100**



DIN 376 with reduced shank

22 091 ...		**22 041 ...**	

TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	Flutes			
M12	1,75	110	9	7,0	10,2	18	4	**120**		**120**
M14	2,00	110	11	9,0	12,0	20	4	**140**		**140**
M16	2,00	110	12	9,0	14,0	22	4	**160**		**160**
M20	2,50	140	16	12,0	17,5	25	4	**200**		**200**
M22	2,50	140	18	14,5	19,5	27	5	**220**		
M24	3,00	160	18	14,5	21,0	30	5	**240**		
M30	3,50	180	22	18,0	26,5	35	5	**300**		

P	**8**	**10**	**10**
M	**6**	**8**	**8**
K			
N			
S			
H			
O			

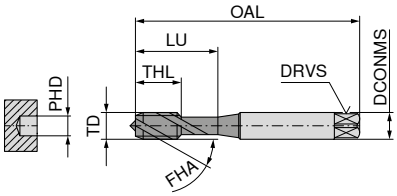
Cutting speed v_c (m/min.)

Blind hole – Machine taps, right hand

CavTap | M

Soft | C | 2–3 | ISO 2 6H

NW | C | 2–3 | ISO 2 6H | vap.



DIN 371 with reinforced shank



HSS-E
FHA 42°
≤ 500 N/mm²
≤ 3xD



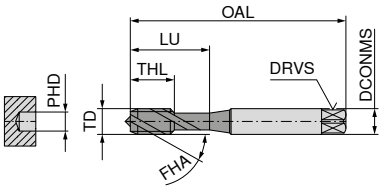
HSS-E
FHA 38°
≤ 500 N/mm²
≤ 3xD

TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	LU mm	Flutes	22 326 ...	22 086 ...
M2	0,40	45	2,8	2,1	1,60	4	12	2	**020**	**020**
M2,5	0,45	50	2,8	2,1	2,05	5	15	2	**025**	**025**
M3	0,50	56	3,5	2,7	2,50	6	18	2	**030**	
M3	0,50	56	3,5	2,7	2,50	6	18	3		**030**
M4	0,70	63	4,5	3,4	3,30	7	21	2	**040**	
M4	0,70	63	4,5	3,4	3,30	7	21	3		**040**
M5	0,80	70	6,0	4,9	4,20	8	25	2	**050**	
M5	0,80	70	6,0	4,9	4,20	8	25	3		**050**
M6	1,00	80	6,0	4,9	5,00	10	30	2	**060**	
M6	1,00	80	6,0	4,9	5,00	10	30	3		**060**
M8	1,25	90	8,0	6,2	6,80	14	35	2	**080**	
M8	1,25	90	8,0	6,2	6,80	14	35	3		**080**
M10	1,50	100	10,0	8,0	8,50	16	39	2	**100**	
M10	1,50	100	10,0	8,0	8,50	16	39	3		**100**
P									**15**	**15**
M										
K										
N									**22**	
S										
H										
O										

Cutting speed v_c (m/min.)

Blind hole – Machine taps, right hand

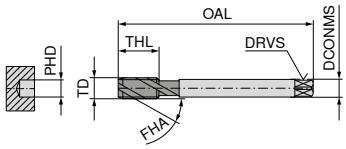
CavTap SL | M



DIN 371 with reinforced shank

	Ti	Ti	Ni
	C 2–3	C 2–3	C 2–3
	ISO 2X 6HX	ISO 2X 6HX	ISO 2X 6HX
	TiN	TiCN	TiCN
			
	HSS-PM FHA 30° ≤ 1400 N/mm² ≤ 1,5xD	HSS-PM FHA 15° ≤ 1200 N/mm² ≤ 2xD	HSS-PM FHA 15° ≤ 1600 N/mm² ≤ 2xD
	22 076 ...	22 163 ...	22 424 ...

TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	LU mm	Flutes			
M3	0,50	56	3,5	2,7	2,5	11	18	2			
M3	0,50	56	3,5	2,7	2,5	6	18	3	**030**	**030**	**030**
M3,5	0,60	56	4,0	3,0	2,9	12	20	3		**035**	
M4	0,70	63	4,5	3,4	3,3	7	21	3	**040**		
M4	0,70	63	4,5	3,4	3,3	13	21	3		**040**	**040**
M5	0,80	70	6,0	4,9	4,2	8	25	3	**050**		
M5	0,80	70	6,0	4,9	4,2	15	25	3		**050**	**050**
M6	1,00	80	6,0	4,9	5,0	10	30	3	**060**		
M6	1,00	80	6,0	4,9	5,0	17	30	3		**060**	**060**
M8	1,25	90	8,0	6,2	6,8	14	35	3	**080**		
M8	1,25	90	8,0	6,2	6,8	20	35	3		**080**	**080**
M10	1,50	100	10,0	8,0	8,5	16	39	3	**100**		
M10	1,50	100	10,0	8,0	8,5	22	39	3		**100**	**100**
M12	1,75	110	12,0	9,0	10,2	18	44	3	**120**		



DIN 376 with reduced shank

								22 164 ...	22 425 ...	
M12	1,75	110	9	7,0	10,2	24	3	**120**		**120**
M14	2,00	110	11	9,0	12,0	26	3			**140**
M16	2,00	110	12	9,0	14,0	27	3	**160**		**160**
M20	2,50	140	16	12,0	17,5	32	3	**200**		**200**
M24	3,00	160	18	14,5	21,0	34	3	**240**		

P	**7**	**7**	
M	**7**	**7**	
K			
N		**22**	**22**
S	**5**	**5**	**2**
H			
O			

Cutting speed v_c (m/min.)

6

Blind hole – Machine taps, right hand

▲ ES = extra short

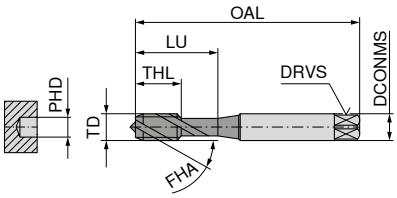
CavTap | M

UNI ES

E 1,5–2

ISO 2 6H

vap.



DIN 352 with reinforced shank



HSS-E
FHA 42°
≤ 1100 N/mm²
≤ 3xD

22 500 ...

TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	LU mm	Flutes	
M3	0,50	40	3,5	2,7	2,5	6	18	3	**030**
M4	0,70	45	4,5	3,4	3,3	7	22	3	**040**
M5	0,80	50	6,0	4,9	4,2	9	25	3	**050**
M6	1,00	56	6,0	4,9	5,0	10	28	3	**060**
M8	1,25	63	6,0	4,9	6,8	14		3	**080**
M10	1,50	70	7,0	5,5	8,5	16		3	**100**
M12	1,75	75	9,0	7,0	10,2	18		4	**120**
M16	2,00	80	12,0	9,0	14,0	22		4	**160**

P	**12**
M	**7**
K	**12**
N	
S	
H	
O	

Cutting speed v_c (m/min.)

Blind hole – Machine taps, right hand

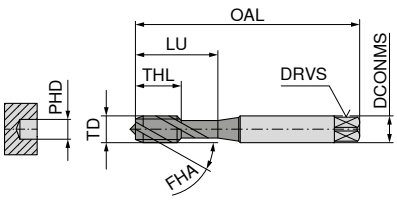
▲ ES = extra short

CavTap SL | M

ST
ES

C
2–3

ISO 2
6H



DIN 352 with reinforced shank



HSS-E
FHA 15°
≤ 750 N/mm²
≤ 2xD

22 016 ...

TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	LU mm	Flutes	
M3	0,50	40	3,5	2,7	2,5	10	18	2	**030**
M4	0,70	45	4,5	3,4	3,3	12	22	3	**040**
M5	0,80	50	6,0	4,9	4,2	14	25	3	**050**
M6	1,00	56	6,0	4,9	5,0	16	28	3	**060**
M8	1,25	63	6,0	4,9	6,8	20		3	**080**
M10	1,50	70	7,0	5,5	8,5	22		3	**100**
M12	1,75	75	9,0	7,0	10,2	24		3	**120**

P	**12**
M	
K	**12**
N	**12**
S	
H	
O	

Cutting speed v_c (m/min.)

6

Blind hole – Machine taps, right hand

▲ EL = extra long, with double overall length

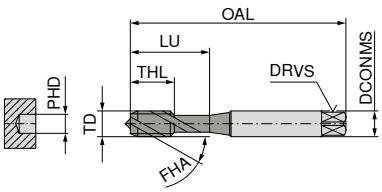
CavTap | M

ST EL | UNI EL

C 2–3 | C 2–3

ISO 2 6H | ISO 2 6H

vap.



DIN 371 with reinforced shank

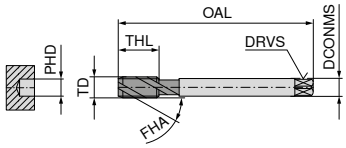




HSS-E
FHA 42°
≤ 750 N/mm²
≤ 3xD

HSS-E
FHA 42°
≤ 1100 N/mm²
≤ 3xD

TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes	22 422 ...	22 538 ...
mm	mm	mm	mm	mm	mm	mm	mm			
M3	0,50	100	3,5	2,7	2,5	6	18	3	**030**	**030**
M4	0,70	125	4,5	3,4	3,3	7	21	3	**040**	**040**
M5	0,80	140	6,0	4,9	4,2	8	25	3	**050**	**050**
M6	1,00	160	6,0	4,9	5,0	10	30	3	**060**	**060**
M8	1,25	180	8,0	6,2	6,8	14	35	3	**080**	**080**



DIN 376 with reduced shank

TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	22 539 ...
mm	mm	mm	mm	mm	mm	mm		
M6	1,00	160	4,5	3,4	5,0	10	3	**060**
M8	1,25	180	6,0	4,9	6,8	14	3	**080**
M10	1,50	200	7,0	5,5	8,5	16	3	**100**
M12	1,75	224	9,0	7,0	10,2	18	3	**120**
M14	2,00	224	11,0	9,0	12,0	20	3	**140**
M16	2,00	224	12,0	9,0	14,0	22	3	**160**
M18	2,50	250	14,0	11,0	15,5	25	3	**180**
M20	2,50	280	16,0	12,0	17,5	25	3	**200**

P	**12**	**12**
M		**7**
K	**12**	**12**
N	**22**	
S		
H		
O		

Cutting speed v_c (m/min.)

Blind hole – Machine taps, right hand

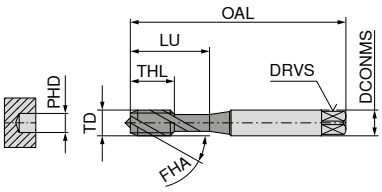
▲ EL = extra long, with double overall length

CavTap SL | M

ST
EL

E
1,5–2

ISO 2
6H



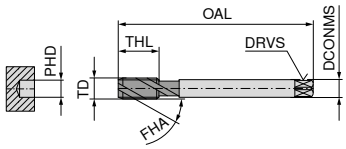
DIN 371 with reinforced shank



HSS-E
FHA 15°
≤ 750 N/mm²
≤ 2xD

22 078 ...

TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	LU mm	Flutes	
M3	0,50	100	3,5	2,7	2,5	11	18	2	**030**
M4	0,70	125	4,5	3,4	3,3	13	21	3	**040**
M5	0,80	140	6,0	4,9	4,2	15	25	3	**050**
M6	1,00	160	6,0	4,9	5,0	17	30	3	**060**
M8	1,25	180	8,0	6,2	6,8	20	35	3	**080**



DIN 376 with reduced shank

22 080 ...

TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	Flutes	
M6	1,00	160	4,5	3,4	5,0	17	3	**060**
M8	1,25	180	6,0	4,9	6,8	20	3	**080**
M10	1,50	200	7,0	5,5	8,5	22	3	**100**
M12	1,75	224	9,0	7,0	10,2	24	3	**120**
M14	2,00	224	11,0	9,0	12,0	26	3	**140**
M16	2,00	224	12,0	9,0	14,0	27	3	**160**
M20	2,50	280	16,0	12,0	17,5	32	3	**200**

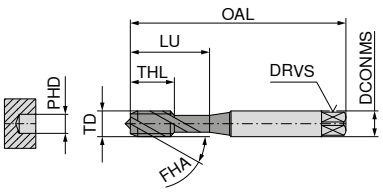
P	**12**
M	
K	**12**
N	**12**
S	
H	
O	

Cutting speed v_c (m/min.)

Blind hole – Machine taps, right hand

▲ NC = for synchronised CNC machining with minimum length compensation chuck

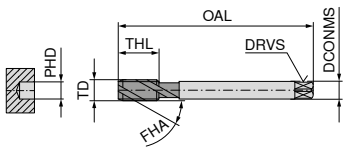
M



DIN 371 with reinforced shank

	UNI	UNI	UNI	UNI	UNI NC
	C 2–3	C 2–3	C 2–3	C 2–3	C 2–3
	ISO 2 6H	ISO 2 6H	ISO 2 6H	ISO 2 6H	ISO 2 6H
	vap.	TiN	TiN	TiCN	TiN GS
					
	HSS-E FHA 35° ≤ 1000 N/mm² ≤ 2,5xD	HSS-E FHA 35° ≤ 1000 N/mm² ≤ 2,5xD	HSS-PM FHA 50° ≤ 1000 N/mm² ≤ 2,5xD	HSS-E FHA 45° ≤ 1000 N/mm² ≤ 3xD	HSS-E FHA 45° ≤ 1000 N/mm² ≤ 3xD
	23 118 ...	23 120 ...	23 026 ...	23 122 ...	23 124 ...

TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes					
mm	mm	mm	mm	mm	mm	mm	mm						
M2	0,40	45	2,8	2,1	1,60	4	12	2	**020**	**020**			
M2,5	0,45	50	2,8	2,1	2,05	5	14	2	**025**	**025**			
M3	0,50	56	3,5	2,7	2,50	6	18	3	**030**	**030**	**030**	**030**	**030**
M4	0,70	63	4,5	3,4	3,30	7	21	3	**040**	**040**	**040**	**040**	**040**
M5	0,80	70	6,0	4,9	4,20	8	25	3	**050**	**050**	**050**	**050**	**050**
M6	1,00	80	6,0	4,9	5,00	10	30	3	**060**	**060**	**060**	**060**	**060**
M8	1,25	90	8,0	6,2	6,80	14	35	3	**080**	**080**	**080**	**080**	**080**
M10	1,50	100	10,0	8,0	8,50	16	39	3	**100**	**100**	**100**	**100**	**100**



DIN 376 with reduced shank

								23 119 ...	23 121 ...	23 027 ...	23 123 ...	23 125 ...
TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes					
mm	mm	mm	mm	mm	mm	mm						
M3	0,50	56	2,2		2,5	6	3	**030**				
M4	0,70	63	2,8	2,1	3,3	7	3	**040**				
M5	0,80	70	3,5	2,7	4,2	8	3	**050**				
M6	1,00	80	4,5	3,4	5,0	10	3	**060**				
M8	1,25	90	6,0	4,9	6,8	14	3	**080**				
M10	1,50	100	7,0	5,5	8,5	16	3	**100**				
M12	1,75	110	9,0	7,0	10,2	18	3	**120**	**120**			
M12	1,75	110	9,0	7,0	10,2	18	4			**120**	**120**	**120**
M14	2,00	110	11,0	9,0	12,0	20	3		**14000**			
M14	2,00	110	11,0	9,0	12,0	20	4			**140**		
M16	2,00	110	12,0	9,0	14,0	22	3	**160**	**160**			
M16	2,00	110	12,0	9,0	14,0	22	4			**160**	**160**	**160**
M18	2,50	125	14,0	11,0	15,5	25	3		**18000**			
M20	2,50	140	16,0	12,0	17,5	25	3	**200**	**200**	**200**		
M20	2,50	140	16,0	12,0	17,5	25	4				**200**	**200**
M22	2,50	140	18,0	14,5	19,5	27	4		**22000**			
M24	3,00	160	18,0	14,5	21,0	34	4		**240**			
M27	3,00	160	20,0	16,0	24,0	30	4		**27000**			
M30	3,50	180	22,0	18,0	26,5	35	4		**30000**			
M33	3,50	180	25,0	20,0	29,5	35	4		**33000**			
M36	4,00	200	28,0	22,0	32,0	40	4		**36000**			

P	**12**	**15**	**15**	**15**	**15**
M	**7**	**9**	**9**	**9**	**9**
K	**12**	**18**	**18**	**18**	**18**
N		**12**	**12**	**12**	**12**
S					
H					
O					

Cutting speed v_c (m/min.)

Blind hole – Machine taps, right hand

▲ NCW = with Weldon flat for synchronised CNC machining without length compensation chuck

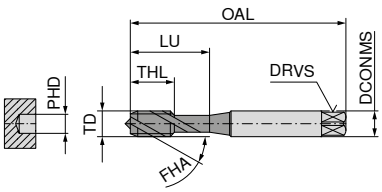
M

UNI NCW | FE | FE-HF | VA

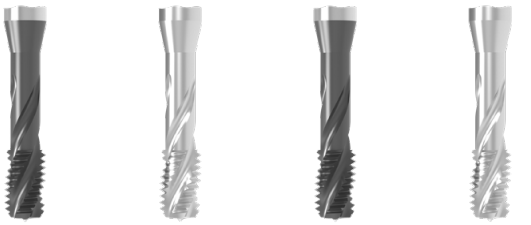
C 2–3

ISO 2 6H

TiCN (UNI NCW, FE-HF)

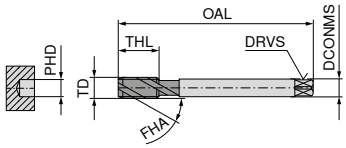


DIN 371 with reinforced shank



HSS-PM FHA 35° ≤ 1000 N/mm² ≤ 2,5xD | HSS-E FHA 35° ≤ 850 N/mm² ≤ 2,5xD | HSS-E FHA 35° ≤ 1100 N/mm² ≤ 2,5xD | HSS-E FHA 35° ≤ 1200 N/mm² ≤ 2,5xD

TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes	23 126 ...	23 216 ...	23 312 ...	23 414 ...
mm	mm	mm	mm	mm	mm	mm	mm					
M2	0,40	45	2,8	2,1	1,60	4	12	2		020		020
M2,5	0,45	50	2,8	2,1	2,05	5	14	2		025		025
M3	0,50	56	3,5	2,7	2,50	6	18	3		030	030	030
M3	0,50	70	6,0	4,9	2,50	6	18	3	030			
M4	0,70	63	4,5	3,4	3,30	7	21	3		040	040	040
M4	0,70	70	6,0	4,9	3,30	7	21	3	040			
M5	0,80	70	6,0	4,9	4,20	8	25	3	050	050	050	050
M6	1,00	80	6,0	4,9	5,00	10	30	3	060	060	060	060
M8	1,25	90	8,0	6,2	6,80	14	35	3	080	080	080	080
M10	1,50	100	10,0	8,0	8,50	16	39	3	100	100	100	100



DIN 376 with reduced shank

TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	23 127 ...	23 217 ...	23 313 ...	23 415 ...
mm	mm	mm	mm	mm	mm	mm					
M12	1,75	110	10	8,0	10,2	18	3	120			
M12	1,75	110	9	7,0	10,2	18	3		120	120	120
M14	2,00	110	11	9,0	12,0	20	3		140		
M16	2,00	110	12	9,0	14,0	22	3	160	160	160	160
M20	2,50	140	16	12,0	17,5	25	3		200	200	200
M24	3,00	160	18	14,5	21,0	30	4				240

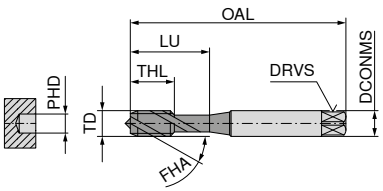
P	15	12	15	8
M	8			6
K	15	12	15	
N	22	22	24	22
S				
H				
O				

Cutting speed v_c (m/min.)

6

Blind hole – Machine taps, right hand

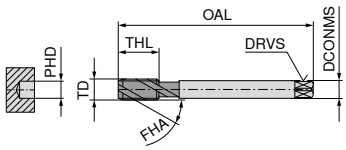
M



DIN 371 with reinforced shank

	VA	VA	VA	AL	AL
	C 2–3	C 2–3	C 2–3	C 2–3	C 2–3
	ISO 2 6H	ISO 2 6H	ISO 2 6H	ISO 2 6H	ISO 2 6H
	TiN		TiN		CrN
					
	HSS-E FHA 45° ≤ 1200 N/mm² ≤ 3xD	HSS-PM FHA 40° ≤ 1200 N/mm² ≤ 2,5xD	HSS-PM FHA 40° ≤ 1200 N/mm² ≤ 2,5xD	HSS-E FHA 35° ≤ 500 N/mm² ≤ 2,5xD	HSS-E FHA 35° ≤ 500 N/mm² ≤ 2,5xD
	23 416 ...	23 426 ...	23 456 ...	23 616 ...	23 614 ...

TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	LU mm	Flutes									
M2	0,40	45	2,8	2,1	1,60	4	12	2	**020**								
M2,5	0,45	50	2,8	2,1	2,05	5	14	2	**025**								
M3	0,50	56	3,5	2,7	2,50	6	18	3	**030**		**030**		**030**		**030**		**030**
M4	0,70	63	4,5	3,4	3,30	7	21	3	**040**		**040**		**040**		**040**		**040**
M5	0,80	70	6,0	4,9	4,20	8	25	3	**050**		**050**		**050**		**050**		**050**
M6	1,00	80	6,0	4,9	5,00	10	30	3	**060**		**060**		**060**		**060**		**060**
M8	1,25	90	8,0	6,2	6,80	14	35	3	**080**		**080**		**080**		**080**		**080**
M10	1,50	100	10,0	8,0	8,50	16	39	3	**100**		**100**		**100**		**100**		**100**



DIN 376 with reduced shank

									23 417 ...		23 427 ...		23 457 ...			23 615 ...	

TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	Flutes									
M12	1,75	110	9	7,0	10,2	18	3			**120**		**120**				**120**
M12	1,75	110	9	7,0	10,2	18	4	**120**								
M14	2,00	110	11	9,0	12,0	20	4			**140**						
M16	2,00	110	12	9,0	14,0	22	3			**160**		**160**				
M16	2,00	110	12	9,0	14,0	22	4	**160**								
M20	2,50	140	16	12,0	17,5	25	3			**200**		**200**				
M20	2,50	140	16	12,0	17,5	25	4	**200**								
M24	3,00	160	18	14,5	21,0	30	4			**240**						

P	**10**	**8**	**10**			
M	**8**	**6**	**8**			
K						
N	**24**	**22**	**24**	**15**	**20**	
S						
H						
O						

Cutting speed v_c (m/min.)

Through hole / Blind hole – Machine taps, right hand

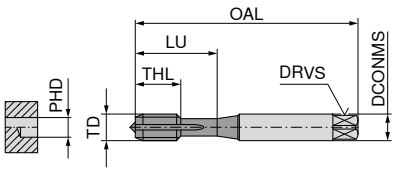
DuoTap | M

ST | HR

C 2–3 | C 2–3

ISO 2X 6HX | ISO 2X 6HX

nitr.



DIN 371 with reinforced shank





HSS-E
FHA 0°
≤ 750 N/mm²
≤ 2xD

HSS-E
FHA 0°
≤ 1400 N/mm²
≤ 2xD

TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	LU mm	Flutes	22 028 ...	22 006 ...
M1,2	0,25	40	2,5	2,1	0,95	5	5	2	**012** 1)	
M1,4	0,30	40	2,5	2,1	1,10	6	6	2	**014** 1)	
M1,6	0,35	40	2,5	2,1	1,25	6	11	2	**016**	
M1,7	0,35	40	2,5	2,1	1,35	6	11	2	**017**	
M1,8	0,35	40	2,5	2,1	1,45	6	11	2	**018**	
M2	0,40	45	2,8	2,1	1,60	7	12	3	**020**	
M2,2	0,45	45	2,8	2,1	1,75	7	12	3	**022**	
M2,3	0,40	45	2,8	2,1	1,90	7	12	3	**023**	
M2,5	0,45	50	2,8	2,1	2,05	9	14	3	**025**	
M2,6	0,45	50	2,8	2,1	2,15	9	14	3	**026**	
M3	0,50	56	3,5	2,7	2,50	11	18	3	**030**	**030**
M3,5	0,60	56	4,0	3,0	2,90	12	20	3	**035**	
M4	0,70	63	4,5	3,4	3,30	13	21	3	**040**	**040**
M5	0,80	70	6,0	4,9	4,20	15	25	3	**050**	**050**
M6	1,00	80	6,0	4,9	5,00	17	30	3	**060**	**060**
M7	1,00	80	7,0	5,5	6,00	17	30	3	**070**	
M8	1,25	90	8,0	6,2	6,80	20	35	3	**080**	**080**
M10	1,50	100	10,0	8,0	8,50	22	39	3	**100**	**100**

P	**12**	**6**
M		
K	**12**	**16**
N		**12**
S		
H		
O		

1) Tol. 4H/5H ≤ M1.4

Cutting speed v_c (m/min.)

DIN 376 can be found on the next page

Through hole / Blind hole – Machine taps, right hand

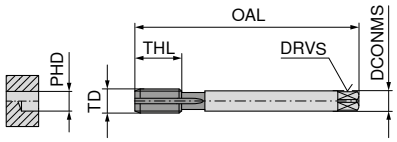
DuoTap | M

ST | HR

C 2–3 | C 2–3

ISO 2X 6HX | ISO 2X 6HX

nitr.



DIN 376 with reduced shank





HSS-E
FHA 0°
≤ 750 N/mm²
≤ 2xD

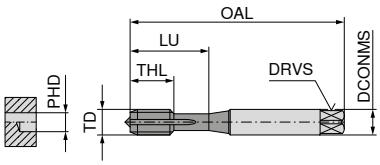
HSS-E
FHA 0°
≤ 1400 N/mm²
≤ 2xD

TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	Flutes	22 029 ...	22 007 ...
M4	0,70	63	2,8	2,1	3,3	13	3	**040**	
M5	0,80	70	3,5	2,7	4,2	15	3	**050**	
M6	1,00	80	4,5	3,4	5,0	17	3	**060**	
M8	1,25	90	6,0	4,9	6,8	20	3	**080**	
M10	1,50	100	7,0	5,5	8,5	22	3	**100**	
M12	1,75	110	9,0	7,0	10,2	24	3	**120**	**120**
M14	2,00	110	11,0	9,0	12,0	26	3	**140**	
M16	2,00	110	12,0	9,0	14,0	27	3	**160**	**160**
P								**12**	**6**
M									
K								**12**	**16**
N									**12**
S									
H									
O									

Cutting speed v_c (m/min.)

Through hole / Blind hole – Machine taps, right hand

DuoTap | M



DIN 371 with reinforced shank

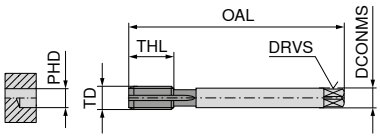




HSS-E
FHA 0°
≤ 1050 N/mm²
≤ 2xD

HSS-E
FHA 0°
≤ 1050 N/mm²
≤ 2xD

TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	LU mm	Flutes	22 036 ...	22 032 ...
M2	0,40	45	2,8	2,1	1,60	7	12	3		**020**
M2,5	0,45	50	2,8	2,1	2,05	9	14	3		**025**
M3	0,50	56	3,5	2,7	2,50	11	18	3		**030**
M3,5	0,60	56	4,0	3,0	2,90	12	20	3		**035**
M4	0,70	63	4,5	3,4	3,30	13	21	3		**040**
M5	0,80	70	6,0	4,9	4,20	15	25	3	**050**	**050**
M6	1,00	80	6,0	4,9	5,00	17	30	3	**060**	**060**
M8	1,25	90	8,0	6,2	6,80	20	35	3	**080**	**080**
M10	1,50	100	10,0	8,0	8,50	22	39	3	**100**	**100**



DIN 376 with reduced shank

TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	Flutes	22 033 ...
M6	1,00	80	4,5	3,4	5,0	17	3	**060**
M8	1,25	90	6,0	4,9	6,8	20	3	**080**
M10	1,50	100	7,0	5,5	8,5	22	3	**100**
M12	1,75	110	9,0	7,0	10,2	24	3	**120**
M14	2,00	110	11,0	9,0	12,0	26	3	**140**
M16	2,00	110	12,0	9,0	14,0	27	3	**160**

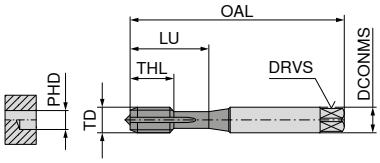
P		
M		
K	**16**	**16**
N	**12**	**12**
S		
H		
O		

Cutting speed v_c (m/min.)

6

Through hole / Blind hole – Machine taps, right hand

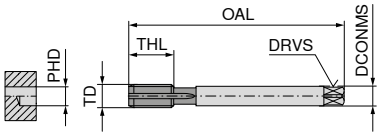
DuoTap | M



DIN 371 with reinforced shank

	HT	HT
	D 4–5	C 2–3
	ISO 2X 6HX	ISO 2X 6HX
	OSM	TiCN
		
	Solid carbide FHA 0° ≤ 63 HRC ≤ 1,5xD	HSS-PM FHA 0° 44 - 52 HRC ≤ 1,5xD
	22 806 ...	**22 227 ...**

TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	LU mm	Flutes		
M3	0,50	63	4,5	3,4	2,55	6	18	4	**030**	
M4	0,70	63	4,5	3,4	3,40	8	20	4	**040**	
M5	0,80	70	6,0	4,9	4,30	10	26	4	**050**	
M6	1,00	80	6,0	4,9	5,00	10	30	4		**060**
M6	1,00	80	6,0	4,9	5,10	12	28	4	**060**	
M8	1,25	90	8,0	6,2	6,80	14	35	5		**080**
M8	1,25	90	8,0	6,2	6,90	15	35	5	**080**	
M10	1,50	100	10,0	8,0	8,50	18	38	5	**100**	
M10	1,50	100	10,0	8,0	8,50	16	39	5		**100**
M12	1,75	110	12,0	9,0	10,40	21	41	5	**120**	
M16	2,00	110	16,0	12,0	14,20	24	44	6	**160**	



DIN 376 with reduced shank

	22 228 ...

TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	Flutes	
M12	1,75	110	9	7	10,4	18	5	**120**
M16	2,00	110	12	9	14,2	22	6	**160**

P		
M		
K		
N		**22**
S		
H	**2**	**2**
O		

Cutting speed v_c (m/min.)

Through hole / Blind hole – Machine taps, right hand

▲ EL = extra long, with double overall length

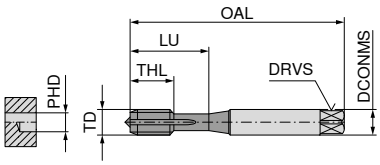
DuoTap | M

HR
EL

C
2–3

ISO 2X
6HX

nitr.



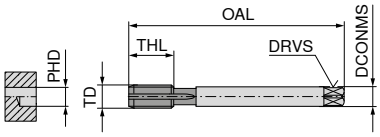
DIN 371 with reinforced shank



HSS-E
FHA 0°
≤ 1400 N/mm²
≤ 2xD

22 122 ...

TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	LU mm	Flutes	
M3	0,50	100	3,5	2,7	2,5	11	18	3	**030**
M4	0,70	125	4,5	3,4	3,3	13	21	3	**040**
M5	0,80	140	6,0	4,9	4,2	15	25	3	**050**
M6	1,00	160	6,0	4,9	5,0	17	30	3	**060**
M8	1,25	180	8,0	6,2	6,8	20	35	3	**080**



DIN 376 with reduced shank

22 123 ...

TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	Flutes	
M10	1,50	200	7	5,5	8,5	22	3	**100**
M12	1,75	224	9	7,0	10,2	24	3	**120**
M16	2,00	224	12	9,0	14,0	27	3	**160**
M20	2,50	280	16	12,0	17,5	32	4	**200**

P	**6**
M	
K	**16**
N	**22**
S	
H	
O	

Cutting speed v_c (m/min.)

Through hole / Blind hole – Machine taps, right hand

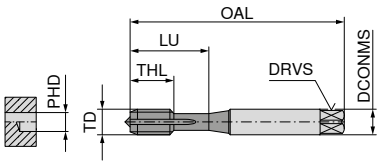
M

GG

C
2–3

ISO 2X
6HX

TiCN



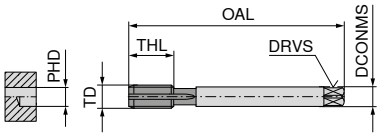
DIN 371 with reinforced shank



HSS-E
FHA 0°
≤ 900 N/mm²
≤ 2xD

23 512 ...

TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	LU mm	Flutes	
M5	0,80	70	6	4,9	4,2	15	25	3	**050**
M6	1,00	80	6	4,9	5,0	17	30	3	**060**
M8	1,25	90	8	6,2	6,8	20	35	3	**080**
M10	1,50	100	10	8,0	8,5	22	39	3	**100**



DIN 376 with reduced shank

23 513 ...

TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	Flutes	
M12	1,75	110	9	7	10,2	24	3	**120**

P	
M	
K	**20**
N	**24**
S	
H	
O	

Cutting speed v_c (m/min.)

Through hole / Blind hole – Machine thread formers, right hand

▲ HML = with soldered-in carbide strips for a higher cutting speed

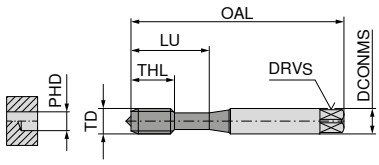
DuoForm | M

NW HML | EC

C 2–3 | C 2–3

ISO 2X 6HX | ISO 2X 6HX

TiN



DIN 2174 with reinforced shank



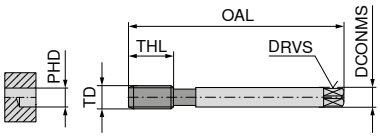
HSS-E / HM
≤ 880 N/mm²
≤ 3xD



HSS-E
≤ 1100 N/mm²
≤ 1,5xD

TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	LU mm	22 473 ...	22 100 ...
M1	0,25	40	2,5	2,1	0,90	5	6,5		010 [1]
M1,2	0,25	40	2,5	2,1	1,10	5	6,5		012 [1]
M1,4	0,30	40	2,5	2,1	1,28	6	9,0		014 [1]
M1,6	0,35	40	2,5	2,1	1,47	6	9,0		016
M1,7	0,35	40	2,5	2,1	1,57	6	9,0		017
M2	0,40	45	2,8	2,1	1,85	7	10,0		020
M2,5	0,45	50	2,8	2,1	2,33	9	14,0		025
M2,6	0,45	50	2,8	2,1	2,43	9	14,0		026
M3	0,50	56	3,5	2,7	2,80	11	18,0		030
M3,5	0,60	56	4,0	3,0	3,25	12	20,0		035
M4	0,70	63	4,5	3,4	3,70	13	21,0		040
M5	0,80	70	6,0	4,9	4,65	15	25,0		050
M6	1,00	80	6,0	5,0	5,60	18	30,0	06000	
M6	1,00	80	6,0	4,9	5,60	17	30,0		060
M8	1,25	90	8,0	6,2	7,40	20	35,0		080
M8	1,25	90	8,0	6,0	7,45	18	35,0	08000	
M10	1,50	100	10,0	8,0	9,35	22	39,0		100

1) Tol. ISO 1X 4HX ≤ M1.4



DIN 2174 with reduced shank

TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	22 101 ...
M12	1,75	110	9	7	11,25	24	120
M16	2,00	110	12	9	15,10	27	160

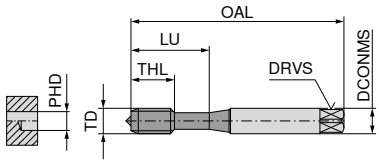
P		18
M		10
K		10
N	30	22
S		
H		
O		

Cutting speed v_c (m/min.)

Through hole / Blind hole – Machine thread formers, right hand

▲ SN = Thread formers with lubrication grooves

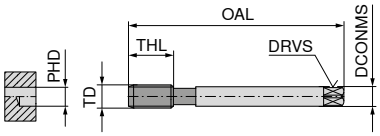
DuoForm | M



DIN 2174 with reinforced shank

	EC SN	EC SN	EC SN	EC SN
	C 2–3	C 2–3	C 2–3	C 2–3
	ISO 2X 6HX	ISO 3X 6GX	ISO 2X 6HX	ISO 2X 6HX
	nitr.	TiN	TiN GS	TiN
				
	HSS-E ≤ 1100 N/mm² ≤ 3xD	HSS-E ≤ 1100 N/mm² ≤ 3xD	HSS-E ≤ 1100 N/mm² ≤ 3xD	HSS-E ≤ 1100 N/mm² ≤ 3xD
	22 104 ...	**22 108 ...**	**22 154 ...**	**22 105 ...**

TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	LU mm	Flutes							
M2	0,40	45	2,8	2,1	1,85	7	10	3							**020**
M2,5	0,45	50	2,8	2,1	2,33	9	14	3							**025**
M3	0,50	56	3,5	2,7	2,80	11	18	3	**030**		**030**		**030**		**030**
M3,5	0,60	56	4,0	3,0	3,25	12	20	3							**035**
M4	0,70	63	4,5	3,4	3,70	13	21	4	**040**		**040**		**040**		**040**
M5	0,80	70	6,0	4,9	4,65	15	25	4	**050**		**050**		**050**		
M5	0,80	70	6,0	4,9	4,65	15	25	4							**050**
M6	1,00	80	6,0	4,9	5,60	17	30	4	**060**		**060**		**060**		**060**
M8	1,25	90	8,0	6,2	7,45	20	35	5	**080**		**080**		**080**		**080**
M10	1,50	100	10,0	8,0	9,35	22	39	6	**100**		**100**		**100**		**100**



DIN 2174 with reduced shank

									22 106 ...
M12	1,75	110	9	7	11,25	24	6		**120**
M14	2,00	110	11	9	13,10	26	5		**140**
M16	2,00	110	12	9	15,10	27	7		**160**

P	**12**	**18**	**18**	**18**
M		**10**	**10**	**10**
K	**8**	**10**	**10**	**10**
N	**12**	**22**	**22**	**22**
S				
H				
O				

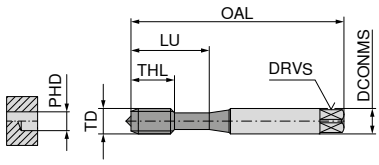
Cutting speed v_c (m/min.)

Through hole / Blind hole – Machine thread formers, right hand

▲ SN = Thread formers with lubrication grooves

DuoForm | M

NEO SN | C 2–3 | ISO 2X 6HX | TiN



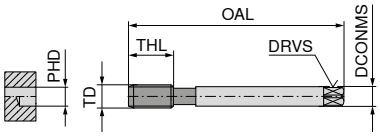
DIN 2174 with reinforced shank





HSS-PM
≤ 1100 N/mm²
≤ 3xD

TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	LU mm	Flutes	22 452 ...	22 453 ...
M3	0,50	56	3,5	2,7	2,80	11	18	4	**030**	
M4	0,70	63	4,5	3,4	3,70	13	21	4	**040**	
M5	0,80	70	6,0	4,9	4,65	15	25	4	**050**	**050**
M6	1,00	80	6,0	4,9	5,60	17	30	5	**060**	**060**
M8	1,25	90	8,0	6,2	7,45	20	35	5	**080**	**080**
M10	1,50	100	10,0	8,0	9,35	22	39	5	**100**	**100**



DIN 2174 with reduced shank

TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	Flutes	22 452 ...	22 454 ...
M12	1,75	110	9	7	11,25	24	6	**120**	**120**
M16	2,00	110	12	9	15,10	27	6	**160**	**160**

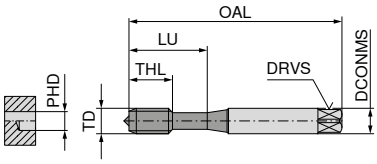
P	**18**	**18**
M	**10**	**10**
K	**10**	**10**
N	**22**	**22**
S		
H		
O		

Cutting speed v_c (m/min.)

Through hole / Blind hole – Machine thread formers, right hand

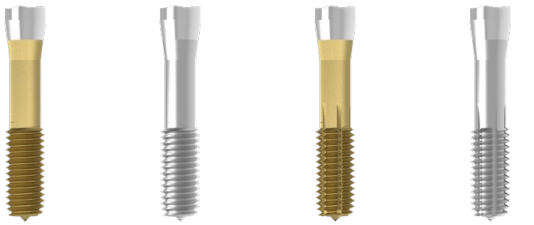
▲ SN = Thread formers with lubrication grooves

M



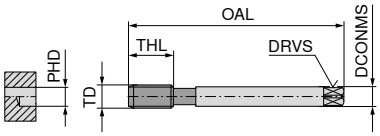
DIN 2174 with reinforced shank

UNI	UNI	UNI SN	UNI SN
C 2–3	C 2–3	C 2–3	C 2–3
ISO 2X 6HX	ISO 2X 6HX	ISO 2X 6HX	ISO 2X 6HX
TiN	CrN	TiN	CrN



HSS-E ≤ 850 N/mm² ≤ 3xD

TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	LU mm	Flutes	23 810 ...	23 812 ...	23 814 ...	23 816 ...
M2	0,40	45	2,8	2,1	1,85	7	12		020	020		
M2	0,40	45	2,8	2,1	1,85	7	12	3			020	020
M2,5	0,45	50	2,8	2,1	2,33	9	14		025	025		
M2,5	0,45	50	2,8	2,1	2,33	9	14	3			025	025
M3	0,50	56	3,5	2,7	2,80	11	18		030	030		
M3	0,50	56	3,5	2,7	2,80	11	18	3			030	030
M4	0,70	63	4,5	3,4	3,70	13	21		040	040		
M4	0,70	63	4,5	3,4	3,70	13	21	4			040	040
M5	0,80	70	6,0	4,9	4,65	15	25		050	050		
M5	0,80	70	6,0	4,9	4,65	15	25	4			050	050
M6	1,00	80	6,0	4,9	5,60	17	30		060	060		
M6	1,00	80	6,0	4,9	5,60	17	30	4			060	060
M8	1,25	90	8,0	6,2	7,45	20	35		080	080		
M8	1,25	90	8,0	6,2	7,45	20	35	5			080	080
M10	1,50	100	10,0	8,0	9,35	22	39		100	100		
M10	1,50	100	10,0	8,0	9,35	22	39	5			100	100



DIN 2174 with reduced shank

TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	Flutes	23 811 ...	23 813 ...	23 815 ...	23 817 ...
M12	1,75	110	9	7,0	11,25	24		120	120		
M12	1,75	110	9	7,0	11,25	24	5			120	120
M16	2,00	110	12	9,0	15,10	27		160	160		
M16	2,00	110	12	9,0	15,10	27	6			160	160
M18	2,50	125	14	11,0	16,80	30	6			18000	
M20	2,50	140	16	12,0	18,80	32	6			20000	
M24	3,00	160	18	14,5	22,60	34	6			24000	

P	18	18	18	18
M	10	10	10	10
K	10		10	
N	22	18	22	18
S				
H				
O				

Cutting speed v_c (m/min.)

Through hole – machine taps for wire thread inserts, right hand

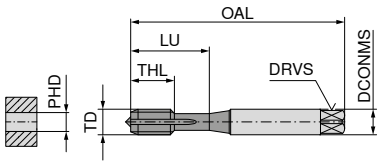
TruTap | EG M

UNI

B
4–5

6H mod

nitr. + vap.



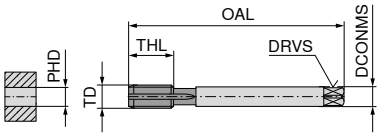
DIN 40435 with reinforced shank



HSS-E
FHA 0°
≤ 1100 N/mm²
≤ 4xD

22 662 ...

TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	LU mm	Flutes	
EG-M2,5	0,45	56	3,5	2,7	2,65	11	18	3	**025**
EG-M3	0,50	63	4,5	3,4	3,15	10	21	3	**030**
EG-M4	0,70	70	6,0	4,9	4,20	12	25	3	**040**
EG-M5	0,80	80	6,0	4,9	5,25	13	30	3	**050**
EG-M6	1,00	90	8,0	6,2	6,30	17	35	3	**060**
EG-M8	1,25	100	10,0	8,0	8,40	18	39	3	**080**



DIN 40435 with reduced shank

22 663 ...

TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	Flutes	
EG-M10	1,50	100	9	7,0	10,50	22	3	**100**
EG-M12	1,75	110	11	9,0	12,50	26	3	**120**
EG-M16	2,00	125	14	11,0	16,50	27	3	**160**
EG-M20	2,50	160	18	14,5	20,75	34	3	**200**

P	**12**
M	**7**
K	**12**
N	
S	
H	
O	

Cutting speed v_c (m/min.)

Blind hole – machine taps for wire thread inserts, right hand

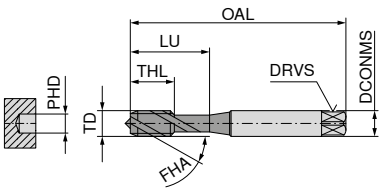
CavTap | EG M

UNI

C
2–3

6H mod

vap.



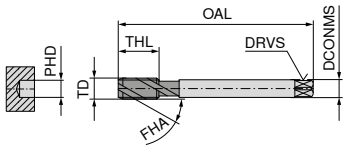


DIN 40435 with reinforced shank

HSS-E
FHA 42°
≤ 1100 N/mm²
≤ 3xD

22 664 ...

TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	LU mm	Flutes	
EG-M2,5	0,45	56	3,5	2,7	2,65	5	18	3	**025**
EG-M3	0,50	63	4,5	3,4	3,15	5	21	3	**030**
EG-M4	0,70	70	6,0	4,9	4,20	8	25	3	**040**
EG-M5	0,80	80	6,0	4,9	5,25	8	30	3	**050**
EG-M6	1,00	90	8,0	6,2	6,30	10	35	3	**060**
EG-M8	1,25	100	10,0	8,0	8,40	16	39	3	**080**



DIN 40435 with reduced shank

22 665 ...

TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	Flutes	
EG-M10	1,50	100	9	7,0	10,50	15	5	**100**
EG-M12	1,75	110	11	9,0	12,50	20	4	**120**
EG-M16	2,00	125	14	11,0	16,50	20	5	**160**
EG-M20	2,50	160	18	14,5	20,75	30	4	**200**

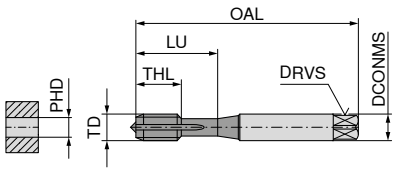
P	**12**
M	**7**
K	**12**
N	
S	
H	
O	

Cutting speed v_c (m/min.)

Through hole – Machine taps, right hand

TruTap | MF

UNI | B 4–5 | ISO 2 6H | TiN



DIN 371 with reinforced shank



HSS-E
FHA 0°
≤ 1100 N/mm²
≤ 4xD

22 550 ...

TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	LU mm	Flutes	
M5x0,5	0,50	70	6	4,9	4,5	11	25	3	**050**
M6x0,5	0,50	80	6	4,9	5,5	13	30	3	**060**
M6x0,75	0,75	80	6	4,9	5,2	13	30	3	**062**
M8x1	1,00	90	8	6,2	7,0	17	35	3	**080**
M10x1	1,00	90	10	8,0	9,0	18	35	4	**100**

P	**15**
M	**9**
K	**18**
N	**12**
S	
H	
O	

Cutting speed v_c (m/min.)

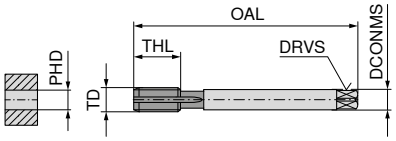
DIN 374 can be found on the next page

6

Through hole – Machine taps, right hand

▲ TS = for high-speed machining, up to 100 m/min.

TruTap | MF



DIN 374 with reduced shank

	ST TS	UNI	UNI
	B 4–5	B 4–5	B 4–5
	ISO 2X 6HX	ISO 2 6H	ISO 2 6H
	TiN	nitr. + vap.	TiN
			
	HSS-E FHA 0° ≤ 1100 N/mm² ≤ 4xD	HSS-E FHA 0° ≤ 1100 N/mm² ≤ 4xD	HSS-E FHA 0° ≤ 1100 N/mm² ≤ 4xD
	22 193 ...	**22 551 ...**	**22 552 ...**

TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	Flutes			
M8x0,75	0,75	80	6	4,9	7,2	14	3		082	
M8x1	1,00	90	6	4,9	7,0	10	4	080		
M8x1	1,00	90	6	4,9	7,0	17	3		084	080
M10x0,75	0,75	90	7	5,5	9,2	18	4		100	
M10x1	1,00	90	7	5,5	9,0	10	4	100		
M10x1	1,00	90	7	5,5	9,0	18	4		102	100
M10x1,25	1,25	100	7	5,5	8,8	22	3		104	
M12x1	1,00	100	9	7,0	11,0	18	4		120	121
M12x1,25	1,25	100	9	7,0	10,8	22	3		122	
M12x1,5	1,50	100	9	7,0	10,5	15	4	120		
M12x1,5	1,50	100	9	7,0	10,5	22	3		124	120
M14x1	1,00	100	11	9,0	13,0	18	4		140	
M14x1,5	1,50	100	11	9,0	12,5	15	4	140		
M14x1,5	1,50	100	11	9,0	12,5	22	3		144	140
M16x1,5	1,50	100	12	9,0	14,5	15	4	160		
M16x1,5	1,50	100	12	9,0	14,5	22	3		162	160
M18x1	1,00	110	14	11,0	17,0	20	5		180	
M18x1,5	1,50	110	14	11,0	16,5	25	4		182	
M18x2	2,00	125	14	11,0	16,0	26	3		184	
M20x1	1,00	125	16	12,0	19,0	20	5		200	
M20x1,5	1,50	125	16	12,0	18,5	25	4		202	200
M22x1,5	1,50	125	18	14,5	20,5	25	4		222	220
M24x1,5	1,50	140	18	14,5	22,5	27	4		242	
M24x2	2,00	140	18	14,5	22,0	27	4		244	
M25x1,5	1,50	140	18	14,5	23,5	28	4		250	
M26x1,5	1,50	140	18	14,5	24,5	28	4		260	
M27x2	2,00	140	20	16,0	25,0	28	4		272	
M28x1,5	1,50	140	20	16,0	26,5	28	5		280	
M30x1,5	1,50	150	22	18,0	28,5	28	5		302	

P	**65**	**12**	**15**
M		**7**	**9**
K	**65**	**12**	**18**
N	**22**		**12**
S			
H			
O			

Cutting speed v_c (m/min.)

Through hole – Machine taps, right hand

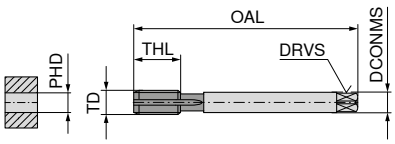
MF

UNI

B
4–5

ISO 2
6H

TiN



DIN 374 with reduced shank



HSS-PM
FHA 0°
≤ 1000 N/mm²
≤ 3xD

23 041 ...

TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	Flutes	
M8x1	1,00	90	6	4,9	7,0	17	3	**081**
M10x1	1,00	90	7	5,5	9,0	18	4	**102**
M10x1,25	1,25	100	7	5,5	8,8	22	3	**104**
M12x1	1,00	100	9	7,0	11,0	18	4	**120**
M12x1,25	1,25	100	9	7,0	10,8	22	3	**122**
M12x1,5	1,50	100	9	7,0	10,5	22	3	**121**
M14x1,25	1,25	100	11	9,0	12,8	22	3	**142**
M14x1,5	1,50	100	11	9,0	12,5	22	3	**144**
M16x1,5	1,50	100	12	9,0	14,5	22	3	**162**
M18x1,5	1,50	110	14	11,0	16,5	17	4	**182**
M20x1,5	1,50	125	16	12,0	18,5	17	4	**202**
M22x1,5	1,50	125	18	14,5	20,5	25	4	**222**
M24x1,5	1,50	140	18	14,5	22,5	27	4	**242**
M24x2	2,00	140	18	14,5	22,0	27	4	**244**

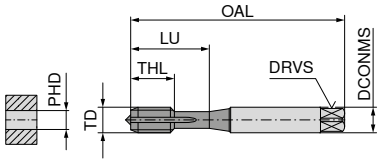
P	**15**
M	**9**
K	**18**
N	**12**
S	
H	
O	

Cutting speed v_c (m/min.)

6

Through hole – Machine taps, right hand

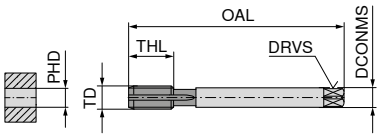
MF



DIN 371 with reinforced shank

	UNI	UNI	FE	VA
	B 4–5	B 4–5	B 4–5	B 4–5
	ISO 2 6H	ISO 2 6H	ISO 2 6H	ISO 2 6H
	nitr. + vap.	TiN		TiN
				
	HSS-E FHA 0° ≤ 1000 N/mm² ≤ 3xD	HSS-E FHA 0° ≤ 1000 N/mm² ≤ 3xD	HSS-E FHA 0° ≤ 850 N/mm² ≤ 3xD	HSS-E FHA 0° ≤ 1200 N/mm² ≤ 4xD
	23 140 ...	**23 142 ...**		**23 440 ...**

TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	LU mm	Flutes				
M4x0,5	0,50	63	4,5	3,4	3,5	10	21	3	**040**		**040**	
M5x0,5	0,50	70	6,0	4,9	4,5	11	25	3	**050**		**050**	**050**
M6x0,75	0,75	80	6,0	4,9	5,2	13	30	3	**062**		**062**	**062**
M6x0,5	0,50	80	6,0	4,9	5,5	13	30	3	**060**		**060**	



DIN 374 with reduced shank

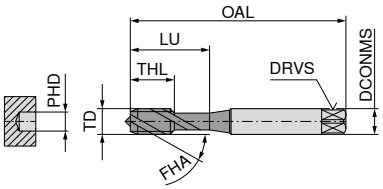
								23 141 ...	**23 143 ...**	**23 241 ...**	**23 441 ...**
TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	Flutes				
M8x0,5	0,50	80	6	4,9	7,5	14	3			**080**	
M8x0,75	0,75	80	6	4,9	7,2	14	3	**082**	**082**	**082**	**082**
M8x1	1,00	90	6	4,9	7,0	17	3	**084**		**084**	**084**
M8x1	1,00	90	6	4,9	7,0	17	4		**084**		
M10x0,75	0,75	90	7	5,5	9,2	18	4	**100**	**100**	**100**	
M10x1	1,00	90	7	5,5	9,0	18	4	**102**	**102**	**102**	**102**
M10x1,25	1,25	100	7	5,5	8,8	22	3	**104**	**104**	**104**	
M12x1	1,00	100	9	7,0	11,0	18	4	**120**	**120**	**120**	**120**
M12x1,25	1,25	100	9	7,0	10,8	22	3	**122**	**122**	**122**	
M12x1,5	1,50	100	9	7,0	10,5	22	3	**124**	**124**	**124**	**124**
M14x1	1,00	100	11	9,0	13,0	18	4	**140**	**140**	**140**	
M14x1,5	1,50	100	11	9,0	12,5	22	3	**144**	**144**	**144**	**144**
M16x1	1,00	100	12	9,0	15,0	18	4	**160**	**160**	**160**	
M16x1,5	1,50	100	12	9,0	14,5	22	3	**162**	**162**	**162**	**162**
M18x1	1,00	110	14	11,0	17,0	20	5			**180**	
M18x1,5	1,50	110	14	11,0	16,5	25	4	**182**	**182**	**182**	
M20x1	1,00	125	16	12,0	19,0	20	5			**200**	
M20x1,5	1,50	125	16	12,0	18,5	25	4	**202**	**202**	**202**	
M22x1,5	1,50	125	18	14,5	20,5	25	4	**222**	**222**	**222**	
M24x1,5	1,50	140	18	14,5	22,5	27	4	**242**	**242**	**242**	
M26x1,5	1,50	140	18	14,5	24,5	28	4			**260**	
M28x1,5	1,50	140	20	16,0	26,5	28	5			**280**	
M30x1,5	1,50	150	22	18,0	28,5	28	5			**300**	

P	**12**	**15**	**12**	**10**
M	**7**	**9**		**8**
K	**12**	**18**	**12**	
N		**12**	**12**	**24**
S				
H				
O				

Cutting speed v_c (m/min.)

Blind hole – Machine taps, right hand

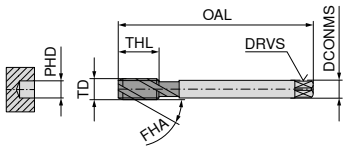
CavTap | MF



DIN 371 with reinforced shank

	UNI	UNI	UNI
	E 1,5–2	E 1,5–2	E 1,5–2
	ISO 2 6H	ISO 2 6H	ISO 3 6G
	vap.	TiN	vap.
			
	HSS-E FHA 42° ≤ 1100 N/mm² ≤ 3xD	HSS-E FHA 42° ≤ 1100 N/mm² ≤ 3xD	HSS-E FHA 42° ≤ 1100 N/mm² ≤ 3xD
			22 441 ...

TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	LU mm	Flutes	
M4x0,5	0,50	63	4,5	3,4	3,50	5	21	3	**040**
M6x0,75	0,75	80	6,0	4,9	5,25	8	30	3	**062**
M5x0,5	0,50	70	6,0	4,9	4,50	5	25	3	**050**



DIN 374 with reduced shank

								22 555 ...	22 556 ...	22 490 ...
TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	Flutes			
M8x1	1,0	90	6	4,9	7,0	10	3	**080**	**080**	**080**
M10x1	1,0	90	7	5,5	9,0	10	4	**100**	**100**	**100**
M12x1,5	1,5	100	9	7,0	10,5	15	5	**120**	**120**	**120**
M14x1,5	1,5	100	11	9,0	12,5	15	5	**140**	**140**	**140**
M16x1,5	1,5	100	12	9,0	14,5	15	5	**160**	**160**	**160**
M18x1,5	1,5	110	14	11,0	16,5	17	5			**180**
M20x1,5	1,5	125	16	12,0	18,5	17	5			**200**
P								**12**	**15**	**12**
M								**7**	**9**	**7**
K								**12**	**18**	**12**
N									**12**	
S										
H										
O										

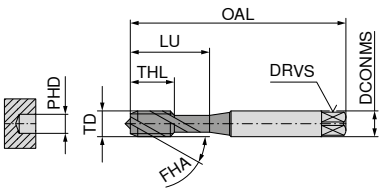
Cutting speed v_c (m/min.)

6

Blind hole – Machine taps, right hand

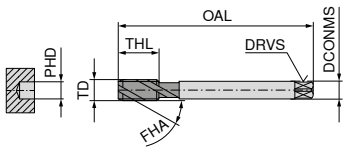
▲ CNC = for synchronised CNC machining with minimum length compensation chuck

CavTap | MF



DIN 371 with reinforced shank

	UNI	UNI	UNI CNC	UNI CNC
	C 2–3	C 2–3	E 1,5–2	E 1,5–2
	ISO 2 6H	ISO 2 6H	7G	ISO 2 6H
	vap.	TiN	TiN GS	TiN GS
	HSS-E FHA 42° ≤ 1100 N/mm² ≤ 3xD	HSS-E FHA 42° ≤ 1100 N/mm² ≤ 3xD	HSS-E FHA 45° ≤ 1100 N/mm² ≤ 3xD	HSS-E FHA 45° ≤ 1100 N/mm² ≤ 3xD
TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	LU mm	Flutes	22 548 ...
M5x0,5	0,50	70	6	4,9	4,5	5	25	3	050
M6x0,5	0,50	80	6	4,9	5,5	5	30	3	060
M6x0,75	0,75	80	6	4,9	5,2	8	30	3	062



DIN 374 with reduced shank

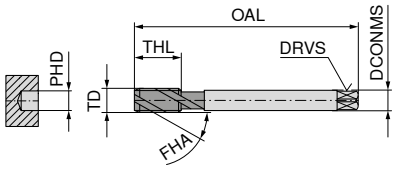
TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	Flutes	22 553 ...	22 554 ...	22 563 ...	22 549 ...
M8x0,75	0,75	80	6	4,9	7,2	8	3				082
M8x1	1,00	90	6	4,9	7,0	10	3	082	080	084	084
M10x1	1,00	90	7	5,5	9,0	10	3	100	100		
M10x1	1,00	90	7	5,5	9,0	10	4			102	102
M12x1	1,00	100	9	7,0	11,0	11	4	120	121		120
M12x1,5	1,50	100	9	7,0	10,5	15	4	124	120		
M12x1,5	1,50	100	9	7,0	10,5	15	5			124	124
M14x1,5	1,50	100	11	9,0	12,5	15	4	140	140		
M14x1,5	1,50	100	11	9,0	12,5	15	5			144	144
M16x1,5	1,50	100	12	9,0	14,5	15	4	160	160		
M16x1,5	1,50	100	12	9,0	14,5	15	5			162	162
M18x1,5	1,50	110	14	11,0	16,5	17	4	180	182		
M18x1,5	1,50	110	14	11,0	16,5	17	5				182
M20x1,5	1,50	125	16	12,0	18,5	17	4	200	202		
M20x1,5	1,50	125	16	12,0	18,5	17	5			202	202
M22x1,5	1,50	125	18	14,5	20,5	17	4	220			
M24x1,5	1,50	140	18	14,5	22,5	20	5	240			
P								12	15	15	15
M								7	9	9	9
K								12	18	18	18
N									12	12	12
S											
H											
O											

Cutting speed v_c (m/min.)

Blind hole – Machine taps, right hand

CavTap SL | MF

ST | C 2–3 | ISO 2 6H



DIN 374 with reduced shank



HSS-E
FHA 15°
≤ 750 N/mm²
≤ 2xD

6

22 182 ...

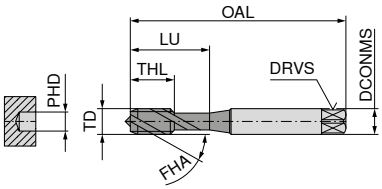
TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	Flutes	
M6x0,75	0,75	80	4,5	3,4	5,2	13	3	**062**
M8x0,75	0,75	80	6,0	4,9	7,2	14	3	**082**
M8x1	1,00	90	6,0	4,9	7,0	17	3	**084**
M9x1	1,00	90	7,0	5,5	8,0	17	3	**090**
M10x1	1,00	90	7,0	5,5	9,0	18	3	**102**
M10x1,25	1,25	100	7,0	5,5	8,8	22	3	**104**
M11x1	1,00	90	8,0	6,2	10,0	18	3	**110**
M12x1	1,00	100	9,0	7,0	11,0	18	3	**120**
M12x1,25	1,25	100	9,0	7,0	10,8	22	3	**122**
M12x1,5	1,50	100	9,0	7,0	10,5	22	3	**124**
M14x1	1,00	100	11,0	9,0	13,0	18	4	**140**
M14x1,5	1,50	100	11,0	9,0	12,5	22	3	**144**
M15x1	1,00	100	12,0	9,0	14,0	18	4	**150**
M16x1	1,00	100	12,0	9,0	15,0	18	4	**160**
M16x1,5	1,50	100	12,0	9,0	14,5	22	3	**162**
M18x1	1,00	110	14,0	11,0	17,0	20	4	**180**

P	**12**
M	
K	**12**
N	**22**
S	
H	
O	

Cutting speed v_c (m/min.)

Blind hole – Machine taps, right hand

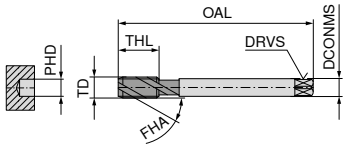
CavTap | MF



DIN 371 with reinforced shank

	VA	VA
	E 1,5–2	E 1,5–2
	ISO 2 6H	ISO 2 6H
	vap.	TiN GS
		
	HSS-E FHA 42° ≤ 750 N/mm² ≤ 3xD	HSS-E FHA 45° ≤ 900 N/mm² ≤ 3xD
		22 176 ...

TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	LU mm	Flutes	
M4x0,5	0,50	63	4,5	3,4	3,5	5	21	3	**040**
M5x0,5	0,50	70	6,0	4,9	4,5	5	25	3	**050**
M6x0,5	0,50	80	6,0	4,9	5,5	5	30	3	**060**
M6x0,75	0,75	80	6,0	4,9	5,2	8	30	3	**062**



DIN 374 with reduced shank

									22 189 ...	22 177 ...
TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	Flutes			
M8x0,75	0,75	80	6	4,9	7,2	8	3			**082**
M8x1	1,00	90	6	4,9	7,0	10	3		**082**	**084**
M10x1	1,00	90	7	5,5	9,0	10	4		**100**	**102**
M12x1	1,00	100	9	7,0	11,0	11	4		**121**	**120**
M12x1,5	1,50	100	9	7,0	10,5	15	5		**120**	**124**
M14x1,5	1,50	100	11	9,0	12,5	15	5		**140**	**144**
M16x1,5	1,50	100	12	9,0	14,5	15	5		**160**	**162**
M20x1,5	1,50	125	16	12,0	18,5	17	5		**200**	
M26x1,5	1,50	140	18	14,5	24,5	20	6		**260**	
M28x1,5	1,50	140	20	16,0	26,5	20	6		**280**	
M30x1,5	1,50	150	22	18,0	28,5	22	6		**300**	

P	**8**	**10**
M	**6**	**8**
K		
N	**22**	**22**
S		
H		
O		

Cutting speed v_c (m/min.)

Blind hole – Machine taps, right hand

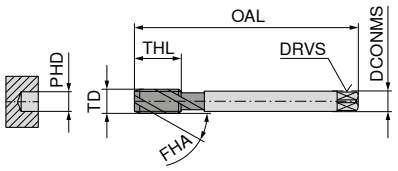
MF

UNI

C
2–3

ISO 2
6H

TiN



DIN 374 with reduced shank



HSS-PM
FHA 40°
≤ 1000 N/mm²
≤ 2,5xD

23 047 ...

TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	LU mm	Flutes	
M8x1	1,00	90	6	4,9	7,0	10	35	3	**081**
M10x1	1,00	90	7	5,5	9,0	10	35	4	**102**
M10x1,25	1,25	100	7	5,5	8,8	16	39	4	**104**
M12x1	1,00	100	9	7,0	11,0	11	40	4	**120**
M12x1,25	1,25	100	9	7,0	10,8	15	40	5	**122**
M12x1,5	1,50	100	9	7,0	10,5	15	40	5	**121**
M14x1	1,00	100	11	9,0	12,8	11	40	4	**140**
M14x1,5	1,50	100	11	9,0	12,5	15	40	5	**144**
M16x1,5	1,50	100	12	9,0	14,5	15	44	5	**162**
M18x1,5	1,50	110	14	11,0	16,5	17	44	5	**182**
M20x1,5	1,50	125	16	12,0	18,5	17	44	5	**202**
M22x1,5	1,50	125	18	14,5	20,5	17	44	5	**222**
M24x1,5	1,50	140	18	14,5	22,5	20	48	5	**242**
M24x2	2,00	140	18	14,5	22,0	20	48	5	**244**

P	**15**
M	**9**
K	**18**
N	**12**
S	
H	
O	

Cutting speed v_c (m/min.)

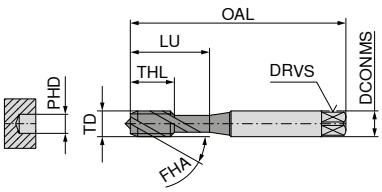
6

Blind hole – Machine taps, right hand

▲ NC = for synchronised CNC machining with minimum length compensation chuck

MF

FE	UNI NC	UNI	UNI
C	E	C	C
2–3	1,5–2	2–3	2–3
ISO 2 6H	ISO 2 6H	ISO 2 6H	ISO 2 6H
	TiN GS	vap.	TiN

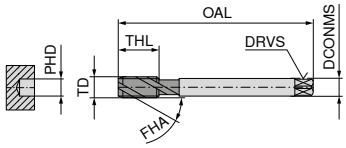


DIN 371 with reinforced shank



HSS-E	HSS-E	HSS-E	HSS-E
FHA 35°	FHA 45°	FHA 35°	FHA 35°
≤ 850 N/mm²	≤ 1000 N/mm²	≤ 1000 N/mm²	≤ 1000 N/mm²
≤ 2,5xD	≤ 3xD	≤ 2,5xD	≤ 2,5xD

TD	TP	OAL	DCONMS	DRVS	PHD	THL	LU	Flutes	23 144 ...	23 146 ...
mm	mm	mm	mm	mm	mm	mm	mm			
M4x0,5	0,50	63	4,5	3,4	3,5	5	21	3	**040**	**040**
M5x0,5	0,50	70	6,0	4,9	4,5	5	25	3	**050**	**050**
M6x0,5	0,50	80	6,0	4,9	5,5	5	30	3	**060**	**060**
M6x0,75	0,75	80	6,0	4,9	5,2	8	30	3	**062**	**062**



DIN 374 with reduced shank

TD	TP	OAL	DCONMS	DRVS	PHD	THL	Flutes	23 243 ...	23 149 ...	23 145 ...	23 147 ...
mm	mm	mm	mm	mm	mm	mm					
M4x0,5	0,50	63	2,8	2,1	3,5	5	3			**040**	
M5x0,5	0,50	70	3,5	2,7	4,5	5	3			**050**	
M6x0,75	0,75	80	4,5	3,4	5,2	8	3			**062**	
M8x0,5	0,50	80	6,0	8,0	7,5	6	3	**080**			
M8x0,75	0,75	80	6,0	4,9	7,2	8	3	**082**	**082**	**082**	**082**
M8x1	1,00	90	6,0	4,9	7,0	10	3	**084**	**084**	**084**	**084**
M10x0,75	0,75	90	7,0	5,5	9,2	10	4	**100**		**100**	**100**
M10x1	1,00	90	7,0	5,5	9,0	10	3	**102**		**102**	**102**
M10x1	1,00	90	7,0	5,5	9,0	10	4		**102**		
M10x1,25	1,25	100	7,0	5,5	8,8	16	3	**104**		**104**	**104**
M12x1	1,00	100	9,0	7,0	11,0	11	4	**120**	**120**	**120**	**120**
M12x1,25	1,25	100	9,0	7,0	10,8	15	4	**122**		**122**	**122**
M12x1,5	1,50	100	9,0	7,0	10,5	15	4	**124**		**124**	**124**
M12x1,5	1,50	100	9,0	7,0	10,5	15	5		**124**		
M14x1	1,00	100	11,0	9,0	13,0	11	4	**140**		**140**	**140**
M14x1,5	1,50	100	11,0	9,0	12,5	15	4	**144**		**144**	**144**
M14x1,5	1,50	100	11,0	9,0	12,5	15	5		**144**		
M16x1	1,00	100	12,0	9,0	15,0	12	4	**160**		**160**	**160**
M16x1,5	1,50	100	12,0	9,0	14,5	15	4	**162**		**162**	**162**
M16x1,5	1,50	100	12,0	9,0	14,5	15	5		**162**		
M18x1,5	1,50	110	14,0	11,0	16,5	17	4	**182**		**182**	**182**
M18x1,5	1,50	110	14,0	11,0	16,5	17	5		**182**		
M20x1,5	1,50	125	16,0	12,0	18,5	17	4	**202**		**202**	**202**
M20x1,5	1,50	125	16,0	12,0	18,5	17	5		**202**		
M22x1,5	1,50	125	18,0	14,5	20,5	17	4	**222**		**222**	**222**
M24x1,5	1,50	140	18,0	14,5	22,5	20	5	**242**		**242**	**242**

P	**12**	**15**	**12**	**15**
M		**9**	**7**	**9**
K	**12**	**18**	**12**	**18**
N	**22**	**12**		**12**
S				
H				
O				

Cutting speed v_c (m/min.)

Blind hole – Machine taps, right hand

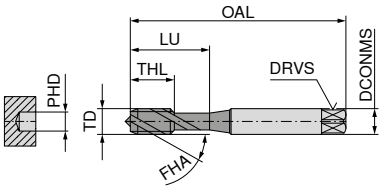
MF

VA

E
1,5–2

ISO 2
6H

TiN



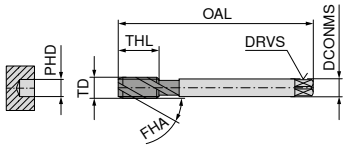
DIN 371 with reinforced shank



HSS-E
FHA 45°
≤ 1200 N/mm²
≤ 3xD

23 442 ...

TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	LU mm	Flutes	
M5x0,5	0,50	70	6	4,9	4,5	5	25	3	**050**
M6x0,75	0,75	80	6	4,9	5,2	8	30	3	**062**



DIN 374 with reduced shank

23 443 ...

TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	Flutes	
M8x0,75	0,75	80	6	4,9	7,2	8	3	**082**
M8x1	1,00	90	6	4,9	7,0	10	3	**084**
M10x1	1,00	90	7	5,5	9,0	10	4	**102**
M12x1	1,00	100	9	7,0	11,0	11	4	**120**
M12x1,5	1,50	100	9	7,0	10,5	15	5	**124**
M14x1,5	1,50	100	11	9,0	12,5	15	5	**144**
M16x1,5	1,50	100	12	9,0	14,5	15	5	**162**

P	**10**
M	**8**
K	
N	**24**
S	
H	
O	

Cutting speed v_c (m/min.)

6

Through hole / Blind hole – Machine taps, right hand

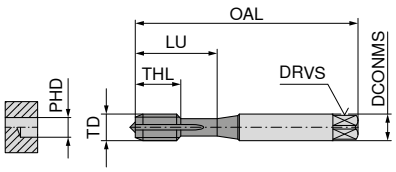
DuoTap | MF

HR

C
2–3

ISO 2X
6HX

nitr.



DIN 371 with reinforced shank



HSS-E
FHA 0°
≤ 1400 N/mm²
≤ 2xD

22 146 ...

TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	LU mm	Flutes	
M4x0,5	0,50	63	4,5	3,4	3,5	10	21	3	**040**
M5x0,5	0,50	70	6,0	4,9	4,5	11	25	3	**050**
M6x0,5	0,50	80	6,0	4,9	5,5	13	30	3	**060**
M6x0,75	0,75	80	6,0	4,9	5,2	13	30	3	**062**

P	**6**
M	
K	**16**
N	**22**
S	
H	
O	

Cutting speed v_c (m/min.)

DIN 374 can be found on the next page

Through hole / Blind hole – Machine taps, right hand

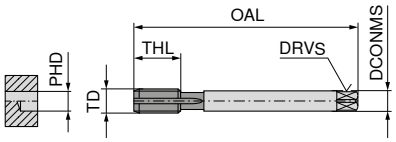
DuoTap | MF

HR

C
2–3

ISO 2X
6HX

nitr.



DIN 374 with reduced shank



HSS-E
FHA 0°
≤ 1400 N/mm²
≤ 2xD

22 209 ...

TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	Flutes	
M8x1	1,0	90	6	4,9	7,0	17	3	**082**
M10x1	1,0	90	7	5,5	9,0	18	4	**100**
M12x1,5	1,5	100	9	7,0	10,5	22	4	**120**
M14x1,5	1,5	100	11	9,0	12,5	22	4	**140**
M16x1,5	1,5	100	12	9,0	14,5	22	4	**160**
M18x1,5	1,5	110	14	11,0	16,5	25	4	**180**
M20x1,5	1,5	125	16	12,0	18,5	25	4	**200**

P	**6**
M	
K	**16**
N	**22**
S	
H	
O	

Cutting speed v_c (m/min.)

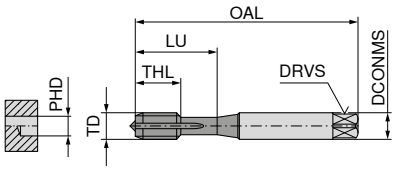
6

Through Hole / Blind Hole – Machine taps

▲ ES = extra short

▲ LH = for left hand threads; ES = extra short

DuoTap | MF



DIN 2181 with reinforced shank

ST ES | C 2–3 | ISO 2X 6HX



HSS-E
FHA 0°
≤ 750 N/mm²
≤ 2xD

22 179 ...

ST LH/ES | C 2–3 | ISO 2X 6HX



HSS-E
FHA 0°
≤ 750 N/mm²
≤ 2xD

22 200 ...

TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	LU mm	Flutes	22 179 ...	22 200 ...
M3x0,35	0,35	40	3,5	2,7	2,65	8	18	3	**030**	
M4x0,35	0,35	45	4,5	3,4	3,65	9	22	3	**040**	
M4x0,5	0,50	45	4,5	3,4	3,50	9	22	3	**042**	
M4,5x0,5	0,50	50	6,0	4,9	4,00	10	24	3	**045**	
M5x0,5	0,50	50	6,0	4,9	4,50	11	25	3	**050**	
M6x0,5	0,50	56	6,0	4,9	5,50	12	27	3	**060**	
M6x0,75	0,75	56	6,0	4,9	5,20	12	27	3	**062**	**062**
M7x0,75	0,75	56	6,0	4,9	6,20	14		3	**070**	
M8x0,5	0,50	56	6,0	4,9	7,50	14		4	**080**	
M8x0,75	0,75	56	6,0	4,9	7,20	14		3	**082**	
M8x1	1,00	63	6,0	4,9	7,00	17		3	**084**	**084**
M9x1	1,00	63	7,0	5,5	8,00	17		4	**090**	
M10x0,75	0,75	63	7,0	5,5	9,20	18		4	**100**	
M10x1	1,00	63	7,0	5,5	9,00	18		4	**102**	**102**
M10x1,25	1,25	70	7,0	5,5	8,80	22		3	**104**	
M11x1	1,00	63	8,0	6,2	10,00	18		4	**110**	
M12x1	1,00	70	9,0	7,0	11,00	18		4	**120**	**120**
M12x1,25	1,25	70	9,0	7,0	10,80	20		4	**122**	
M12x1,5	1,50	70	9,0	7,0	10,50	20		4	**124**	**124**
M13x1	1,00	70	11,0	9,0	12,00	18		4	**130**	
M14x1	1,00	70	11,0	9,0	13,00	18		4	**140**	
M14x1,25	1,25	70	11,0	9,0	12,80	20		4	**142**	
M14x1,5	1,50	70	11,0	9,0	12,50	20		4	**144**	**144**
M15x1	1,00	70	12,0	9,0	14,00	18		5	**150**	
M16x1	1,00	70	12,0	9,0	15,00	18		5	**160**	
M16x1,5	1,50	70	12,0	9,0	14,50	20		4	**162**	**162**
M18x1	1,00	80	14,0	11,0	17,00	18		5	**180**	
M18x1,5	1,50	80	14,0	11,0	16,50	22		4	**182**	**182**
M18x2	2,00	80	14,0	11,0	16,00	22		4	**184**	
M20x1,5	1,50	80	16,0	12,0	18,50	22		4	**202**	**202**
M20x2	2,00	80	16,0	12,0	18,00	22		4	**204**	
P									**12**	**12**
M										
K									**12**	**12**
N									**22**	**22**
S										
H										
O										

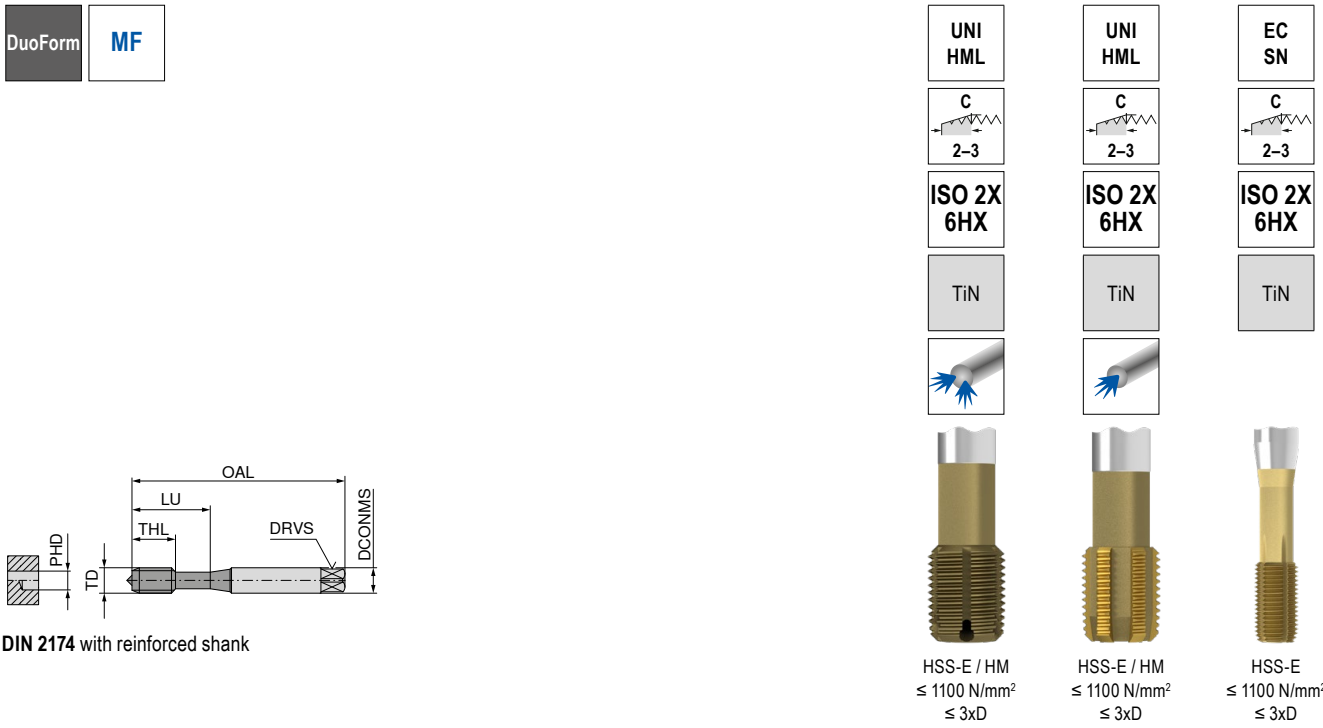
Cutting speed v_c (m/min.)

Through hole / Blind hole – Machine thread formers, right hand

▲ SN = Thread formers with lubrication grooves

▲ HML = with soldered-in carbide strips for a higher cutting speed

DuoForm | MF



HSS-E / HM
≤ 1100 N/mm²
≤ 3xD

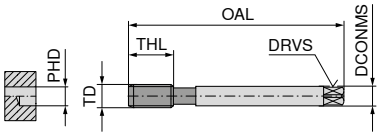
HSS-E / HM
≤ 1100 N/mm²
≤ 3xD

HSS-E
≤ 1100 N/mm²
≤ 3xD

6

DIN 2174 with reinforced shank

TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	LU mm	Flutes	22 205 ...
M4x0,5	0,50	63	4,5	3,4	3,8	10	21	4	**040**
M5x0,5	0,50	70	6,0	4,9	4,8	11	25	4	**050**
M6x0,5	0,50	80	6,0	4,9	5,8	13	30	5	**060**
M6x0,75	0,75	80	6,0	4,9	5,7	13	30	4	**062**
M8x0,75	0,75	80	8,0	6,2	7,7	14	30	5	**080**
M8x1	1,00	90	8,0	6,2	7,6	17	35	5	**082**
M10x1	1,00	90	10,0	8,0	9,6	18	35	5	**100**



DIN 2174 with reduced shank

TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	Flutes	22 474 ...	22 474 ...	22 197 ...
M12x1	1,0	100	9	7	11,60	18	6			**120**
M12x1,5	1,5	100	9	7	11,35	13			**12000**	
M12x1,5	1,5	100	9	7	11,35	22	6			**124**
M14x1,5	1,5	100	11	9	13,35	22	6			**140**
M16x1,5	1,5	100	12	9	15,35	18		**16100**	**16000**	
M16x1,5	1,5	100	12	9	15,35	22	6			**160**
M20x1,5	1,5	125	16	12	19,35	25	6			**200**
P								**30**	**30**	**18**
M								**20**	**20**	**10**
K								**30**	**30**	**10**
N								**40**	**40**	**22**
S										
H										
O										

Cutting speed v_c (m/min.)

Through hole / Blind hole – Machine thread formers, right hand

▲ SN = Thread formers with lubrication grooves

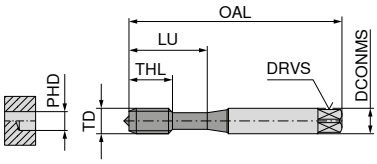
MF

UNI
SN

C
2–3

ISO 2X
6HX

TiN



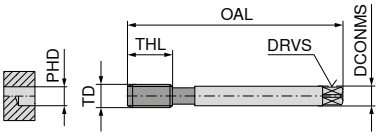
DIN 2174 with reinforced shank



HSS-E
≤ 850 N/mm²
≤ 3xD

23 842 ...

TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	LU mm	Flutes	
M4x0,5	0,50	63	4,5	3,4	3,80	10	21	4	**040**
M5x0,5	0,50	70	6,0	4,9	4,80	11	25	4	**050**
M6x0,5	0,50	80	6,0	4,9	5,80	13	30	5	**060**
M8x1	1,00	90	8,0	6,2	7,60	17	35	5	**084**
M10x1	1,00	90	10,0	8,0	9,60	18	35	5	**102**
M10x1,25	1,25	100	10,0	8,0	9,45	18	39	5	**104**



DIN 2174 with reduced shank

23 843 ...

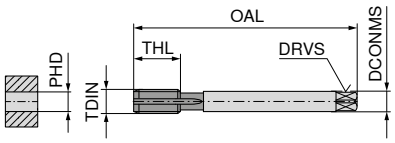
TD mm	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	Flutes	
M12x1,25	1,25	100	9	7	11,45	22	6	**122**
M12x1,5	1,50	100	9	7	11,35	22	6	**124**
M14x1,5	1,50	100	11	9	13,35	22	6	**144**
M16x1,5	1,50	100	12	9	15,35	22	6	**162**

P	**18**
M	**10**
K	**10**
N	**22**
S	
H	
O	

Cutting speed v_c (m/min.)

Through hole – Machine taps, right hand

TruTap | G



DIN 5156 with reduced shank

	UNI	VA
	B 4–5	B 4–5
	ISO 228	ISO 228
	TiN	nitr.
		
	HSS-E FHA 0° ≤ 1100 N/mm² ≤ 4xD	HSS-E FHA 0° ≤ 900 N/mm² ≤ 4xD
	22 630 ...	**22 352 ...**

TDIN	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	Flutes		
1/8-28	0,907	90	7	5,5	8,80	18	3	**012**	**012**
1/4-19	1,337	100	11	9,0	11,80	22	3	**025**	**025**
3/8-19	1,337	100	12	9,0	15,25	22	3	**037**	**037**
1/2-14	1,814	125	16	12,0	19,00	25	4	**050**	**050**
3/4-14	1,814	140	20	16,0	24,50	28	4		**075**
1-11	2,309	160	25	20,0	30,75	30	4		**100**

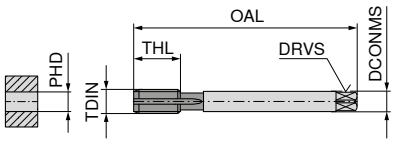
P	**15**	**8**
M	**9**	**6**
K	**18**	
N	**12**	**22**
S		
H		
O		

Cutting speed v_c (m/min.)

6

Through hole – Machine taps, right hand

G



DIN 5156 with reduced shank

UNI	UNI
B 4–5	B 4–5
ISO 228	ISO 228
nitr. + vap.	TiN
	
HSS-E FHA 0° ≤ 1100 N/mm² ≤ 3xD	HSS-E FHA 0° ≤ 1100 N/mm² ≤ 3xD
23 161 ...	**23 160 ...**

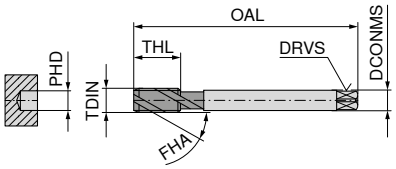
TDIN	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	Flutes		
1/8-28	0,907	90	7	5,5	8,80	18	3	**012**	**012**
1/4-19	1,337	100	11	9,0	11,80	22	3	**025**	**025**
3/8-19	1,337	100	12	9,0	15,25	22	3	**037**	**037**
1/2-14	1,814	125	16	12,0	19,00	25	4	**050**	**050**
3/4-14	1,814	140	20	16,0	24,50	28	4	**075**	**075**
1-11	2,309	160	25	20,0	30,75	30	4	**100**	**100**

P	**12**	**15**
M	**7**	**9**
K	**12**	**18**
N		**12**
S		
H		
O		

Cutting speed v_c (m/min.)

Blind hole – Machine taps, right hand

CavTap | G



DIN 5156 with reduced shank

UNI	UNI	UNI	UNI	UNI
C 2–3	C 2–3	E 1,5–2	E 1,5–2	E 1,5–2
ISO 228	ISO 228	ISO 228	ISO 228	ISO 228 +0,05
vap.	TiN	vap.	TiN	vap.
				
HSS-E FHA 42° ≤ 1100 N/mm² ≤ 3xD	HSS-E FHA 42° ≤ 1100 N/mm² ≤ 3xD	HSS-E FHA 42° ≤ 1100 N/mm² ≤ 3xD	HSS-E FHA 42° ≤ 1100 N/mm² ≤ 3xD	HSS-E FHA 42° ≤ 1100 N/mm² ≤ 3xD
22 633 ...	**22 634 ...**	**22 635 ...**	**22 636 ...**	**22 639 ...**

TDIN	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	Flutes									
1/8-28	0,907	90	7	5,5	8,80	10	3	**012**		**012**						
1/8-28	0,907	90	7	5,5	8,80	10	4					**012**		**012**		**012**
1/4-19	1,337	100	11	9,0	11,80	15	4	**025**		**025**						
1/4-19	1,337	100	11	9,0	11,80	15	5					**025**		**025**		**025**
3/8-19	1,337	100	12	9,0	15,25	15	4	**037**		**037**						
3/8-19	1,337	100	12	9,0	15,25	15	5					**037**		**037**		**037**
1/2-14	1,814	125	16	12,0	19,00	17	4	**050**		**050**						
1/2-14	1,814	125	16	12,0	19,00	17	5					**050**		**050**		**050**
3/4-14	1,814	140	20	16,0	24,50	20	4	**075**								
3/4-14	1,814	140	20	16,0	24,50	20	5									**075**
1-11	2,309	160	25	20,0	30,75	24	6									**100**

P	**12**	**15**	**12**	**15**	**12**
M	**7**	**9**	**7**	**9**	**7**
K	**12**	**18**	**12**	**18**	**12**
N		**12**		**12**	
S					
H					
O					

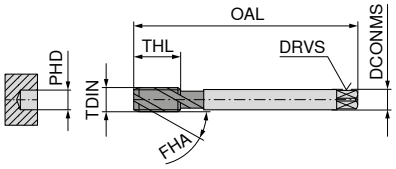
Cutting speed v_c (m/min.)

6

Blind hole – Machine taps, right hand

▲ CNC = for synchronised CNC machining with minimum length compensation chuck

CavTap | G



DIN 5156 with reduced shank

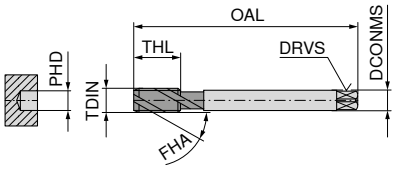
	UNI CNC	ST	VA	VA
	E 1,5–2	C 2–3	E 1,5–2	E 1,5–2
	ISO 228	ISO 228	ISO 228	ISO 228
	TiN GS		vap.	TiN GS
				
	HSS-E FHA 45° ≤ 1100 N/mm² ≤ 3xD	HSS-E FHA 42° ≤ 750 N/mm² ≤ 3xD	HSS-E FHA 42° ≤ 900 N/mm² ≤ 3xD	HSS-E FHA 45° ≤ 900 N/mm² ≤ 3xD
	22 624 ...	**22 354 ...**	**22 355 ...**	**22 358 ...**

TDIN	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	Flutes							
1/8-28	0,907	90	7	5,5	8,80	10	3			012				012
1/8-28	0,907	90	7	5,5	8,80	10	4	012				012		
1/4-19	1,337	100	11	9,0	11,80	15	4			025				
1/4-19	1,337	100	11	9,0	11,80	15	5	025				025		025
3/8-19	1,337	100	12	9,0	15,25	15	4			037				
3/8-19	1,337	100	12	9,0	15,25	15	5	037				037		037
1/2-14	1,814	125	16	12,0	19,00	17	4			050				
1/2-14	1,814	125	16	12,0	19,00	17	5	050				050		050
5/8-14	1,814	125	18	14,5	21,00	17	5					062		
3/4-14	1,814	140	20	16,0	24,50	20	4			075				
3/4-14	1,814	140	20	16,0	24,50	20	5					075		
1-11	2,309	160	25	20,0	30,75	24	5			100				
1-11	2,309	160	25	20,0	30,75	24	6					100		
P								15		12		8		10
M								9				6		8
K								18		12				
N								12		22		22		22
S														
H														
O														

Cutting speed v_c (m/min.)

Blind hole – Machine taps, right hand

G



DIN 5156 with reduced shank

UNI | C 2–3 | ISO 228 | vap.



HSS-E
FHA 35°
≤ 1100 N/mm²
≤ 2,5xD

23 163 ...

UNI | C 2–3 | ISO 228 | TiN



HSS-E
FHA 35°
≤ 1100 N/mm²
≤ 2,5xD

23 162 ...

TDIN	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	Flutes		
1/8-28	0,907	90	7	5,5	8,80	10	3	**012**	**012**
1/4-19	1,337	100	11	9,0	11,80	15	4	**025**	**025**
3/8-19	1,337	100	12	9,0	15,25	15	4	**037**	**037**
1/2-14	1,814	125	16	12,0	19,00	17	4	**050**	**050**
3/4-14	1,814	140	20	16,0	24,50	20	4	**075**	**075**
1-11	2,309	160	25	20,0	30,75	24	5	**100**	**100**

P	**12**	**15**
M	**7**	**9**
K	**12**	**18**
N		**12**
S		
H		
O		

Cutting speed v_c (m/min.)

6

Through hole / Blind hole – Machine taps, right hand

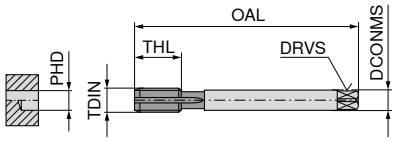
DuoTap | G

HR

C
2–3

ISO 228
X

nitr.





DIN 5156 with reduced shank

HSS-E
FHA 0°
≤ 1400 N/mm²
≤ 2xD

22 339 ...

TDIN	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	Flutes	
1/8-28	0,907	90	7	5,5	8,80	18	4	**012**
1/4-19	1,337	100	11	9,0	11,80	22	4	**025**
3/8-19	1,337	100	12	9,0	15,25	22	4	**037**
1/2-14	1,814	125	16	12,0	19,00	25	4	**050**

P	**6**
M	
K	**16**
N	**22**
S	
H	
O	

Cutting speed v_c (m/min.)

Through hole / Blind hole – Machine thread formers, right hand

▲ SN = Thread formers with lubrication grooves

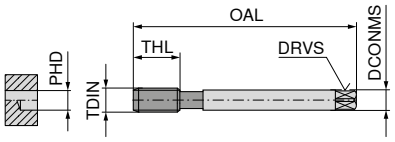
DuoForm | G

EC
SN

C
2–3

ISO 228

TiN



DIN 2189 with reduced shank



HSS-E
≤ 1100 N/mm²
≤ 3xD

22 359 ...

TDIN	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	Flutes	
1/8-28	0,907	90	7	5,5	9,25	18	5	**012**
1/4-19	1,337	100	11	9,0	12,55	22	6	**025**
3/8-19	1,337	100	12	9,0	16,05	22	6	**037**
1/2-14	1,814	125	16	12,0	20,10	25	6	**050**

P	**18**
M	**10**
K	**10**
N	**22**
S	
H	
O	

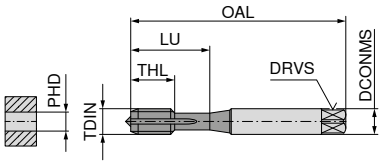
Cutting speed v_c (m/min.)

6

Through hole – Machine taps, right hand

TruTap | UNC

VA	Ti	UNI
B	B	B
4–5	4–5	4–5
2B	2BX	2B
nitr.	TiN	nitr. + vap.

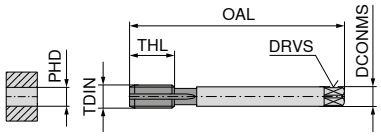


DIN 371 with reinforced shank



HSS-E FHA 0° ≤ 900 N/mm² ≤ 4xD | HSS-PM FHA 0° ≤ 44 HRC ≤ 4xD | HSS-E FHA 0° ≤ 1100 N/mm² ≤ 4xD

TDIN	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	LU mm	Flutes	22 250 ...	22 269 ...	22 572 ...
Nr. 2-56	0,454	45	2,8	2,1	1,85	7	12	2			**002**
Nr. 4-40	0,635	56	3,5	2,7	2,35	11	18	2			**004**
Nr. 4-40	0,635	56	3,5	2,7	2,35	11	18	3		**004**	
Nr. 6-32	0,794	56	4,0	3,0	2,85	12	20	3	**006**	**006**	**006**
Nr. 8-32	0,794	63	4,5	3,4	3,50	13	21	3	**008**	**008**	**008**
Nr. 10-24	1,058	70	6,0	4,9	3,90	15	25	3	**010**	**010**	**010**
Nr. 12-24	1,058	80	6,0	4,9	4,50	16	30	3			**012**
1/4-20	1,270	80	7,0	5,5	5,10	17	30	3	**025**	**025**	**025**
5/16-18	1,411	90	8,0	6,2	6,60	20	35	3	**031**	**031**	**031**
3/8-16	1,588	100	10,0	8,0	8,00	22	39	3	**037**	**037**	**037**



DIN 376 with reduced shank

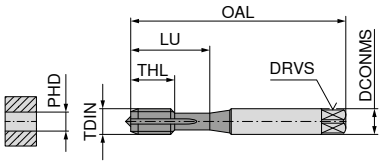
TDIN	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	Flutes	22 573 ...
1/2-13	1,954	110	9	7,0	10,80	25	3	**050**
5/8-11	2,309	110	12	9,0	13,50	27	3	**062**
3/4-10	2,540	125	14	11,0	16,50	30	3	**075**
7/8-9	2,822	140	18	14,5	19,50	32	3	**087**
1-8	3,175	160	18	14,5	22,25	36	3	**100**

P	**8**	**7**	**12**
M	**6**	**7**	**7**
K			**12**
N	**22**		
S		**5**	
H			
O			

Cutting speed v_c (m/min.)

Through hole – Machine taps, right hand

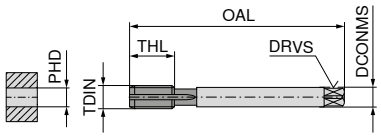
UNC



DIN 371 with reinforced shank

	UNI	FE-HF	VA
	B 4–5	B 4–5	B 4–5
	2B	2B	2B
	TiN	TiCN	nitr.
			
	HSS-E FHA 0° ≤ 1000 N/mm² ≤ 3xD	HSS-E FHA 0° ≤ 1100 N/mm² ≤ 3xD	HSS-E FHA 0° ≤ 1000 N/mm² ≤ 3xD
	23 170 ...	**23 370 ...**	**23 470 ...**

TDIN	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	LU mm	Flutes			
Nr. 4-40	0,635	56	3,5	2,7	2,30	11	18	2	**004**	**004**	**004**
Nr. 6-32	0,794	56	4,0	3,0	2,85	12	20	3	**006**	**006**	**006**
Nr. 8-32	0,794	63	4,5	3,4	3,50	13	21	3	**008**	**008**	**008**
Nr. 10-24	1,058	70	6,0	4,9	3,90	15	25	3	**010**	**010**	**010**
1/4-20	1,270	80	7,0	5,5	5,10	17	30	3	**025**	**025**	**025**
5/16-18	1,411	90	8,0	6,2	6,60	20	35	3	**031**	**031**	**031**
3/8-16	1,588	100	10,0	8,0	8,00	22	39	3	**037**	**037**	**037**



DIN 376 with reduced shank

	23 171 ...

TDIN	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	Flutes	
7/16-14	1,814	100	8	6,2	9,40	22	3	**043**
1/2-13	1,954	110	9	7,0	10,75	25	3	**050**
5/8-11	2,309	110	12	9,0	13,50	27	3	**062**
3/4-10	2,540	125	14	11,0	16,50	30	3	**075**

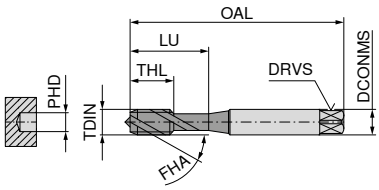
P	**15**	**15**	**8**
M	**9**		**6**
K	**18**	**15**	
N	**12**	**15**	**22**
S			
H			
O			

Cutting speed v_c (m/min.)

6

Blind hole – Machine taps, right hand

CavTap | UNC



DIN 371 with reinforced shank

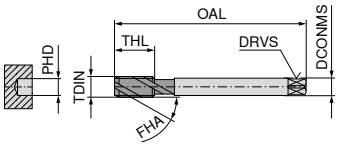
UNI	VA
C 2–3	C 2–3
2B	2B
vap.	vap.



HSS-E
FHA 42°
≤ 1100 N/mm²
≤ 3xD

HSS-E
FHA 42°
≤ 900 N/mm²
≤ 3xD

TDIN	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	LU mm	Flutes	22 582 ...	22 266 ...
Nr. 4-40	0,635	56	3,5	2,7	2,35	6	18	2	**004**	
Nr. 6-32	0,794	56	4,0	3,0	2,85	7	20	3	**006**	**006**
Nr. 8-32	0,794	63	4,5	3,4	3,50	8	21	3	**008**	**008**
Nr. 10-24	1,058	70	6,0	4,9	3,90	10	25	3	**010**	**010**
1/4-20	1,270	80	7,0	5,5	5,10	13	30	3	**025**	**025**
5/16-18	1,411	90	8,0	6,2	6,60	14	35	3	**031**	**031**
3/8-16	1,588	100	10,0	8,0	8,00	16	39	3	**037**	**037**



DIN 376 with reduced shank

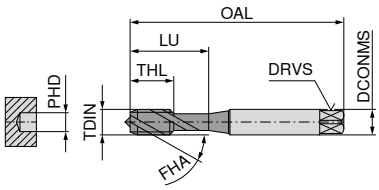
TDIN	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	Flutes	22 583 ...	22 267 ...
7/16-14	1,814	100	8	6,2	9,40	18	3	**043**	
7/16-14	1,814	100	8	6,2	9,40	18	4		**043**
1/2-13	1,954	110	9	7,0	10,80	20	3	**050**	
1/2-13	1,954	110	9	7,0	10,80	20	4		**050**
9/16-12	2,117	110	11	9,0	12,25	20	3	**056**	
5/8-11	2,309	110	12	9,0	13,50	22	3	**062**	
5/8-11	2,309	110	12	9,0	13,50	22	4		**062**
3/4-10	2,540	125	14	11,0	16,50	25	3	**075**	
3/4-10	2,540	125	14	11,0	16,50	25	4		**075**
1-8	3,175	160	18	14,5	22,25	30	4	**100**	
1-8	3,175	160	18	14,5	22,25	30	5		**100**

P	**12**	**8**
M	**7**	**6**
K	**12**	
N		**22**
S		
H		
O		

Cutting speed v_c (m/min.)

Blind hole – Machine taps, right hand

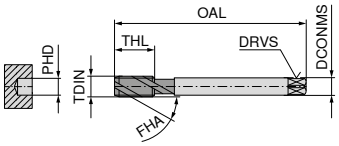
UNC



DIN 371 with reinforced shank

	UNI	FE-HF	VA
	C 2–3	C 2–3	C 2–3
	2B	2B	2B
	TiN	TiCN	
			
	HSS-E FHA 35° ≤ 1000 N/mm² ≤ 2,5xD	HSS-E FHA 35° ≤ 1100 N/mm² ≤ 2,5xD	HSS-E FHA 35° ≤ 1000 N/mm² ≤ 2,5xD
	23 172 ...	23 372 ...	23 472 ...

TDIN	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	LU mm	Flutes			
Nr. 4-40	0,635	56	3,5	2,7	2,30	6	18	2	004		004
Nr. 4-40	0,635	56	3,5	2,7	2,30	11	18	2		004	
Nr. 6-32	0,794	56	4,0	3,0	2,85	7	20	3	006		006
Nr. 6-32	0,794	56	4,0	3,0	2,85	12	20	3		006	
Nr. 8-32	0,794	63	4,5	3,4	3,50	8	21	3	008		008
Nr. 8-32	0,794	63	4,5	3,4	3,50	13	21	3		008	
Nr. 10-24	1,058	70	6,0	4,9	3,90	10	25	3	010		010
Nr. 10-24	1,058	70	6,0	4,9	3,90	15	25	3		010	
1/4-20	1,270	80	7,0	5,5	5,20	13	30	3	025		025
1/4-20	1,270	80	7,0	5,5	5,20	17	30	3		025	
5/16-18	1,411	90	8,0	6,2	6,60	14	35	3	031		031
5/16-18	1,411	90	8,0	6,2	6,60	20	35	3		031	
3/8-16	1,588	100	10,0	8,0	8,00	16	39	3	037		037
3/8-16	1,588	100	10,0	8,0	8,00	22	39	3		037	



DIN 376 with reduced shank

	23 173 ...

TDIN	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	Flutes	
7/16-14	1,814	100	8	6,2	9,40	18	3	043
1/2-13	1,954	110	9	7,0	10,75	20	3	050
5/8-11	2,309	110	12	9,0	13,50	22	3	062
3/4-10	2,540	125	14	11,0	16,50	25	3	075

P	15	15	8
M	9		6
K	18	15	
N	12	24	22
S			
H			
O			

Cutting speed v_c (m/min.)

6

Through hole / Blind hole – Machine thread formers, right hand

▲ SN = Thread formers with lubrication grooves

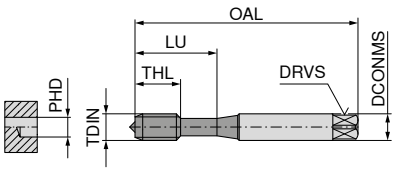
DuoForm | UNC

EC
SN

C
2–3

2BX

TiN



DIN 2174 with reinforced shank



HSS-E
≤ 1100 N/mm²
≤ 3xD

22 271 ...

TDIN	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	LU mm	Flutes	
Nr. 4-40	0,635	56	3,5	2,7	2,55	11	18	3	**004**
Nr. 6-32	0,794	56	4,0	3,0	3,15	12	20	3	**006**
Nr. 8-32	0,794	63	4,5	3,4	3,80	13	21	4	**008**
Nr. 10-24	1,058	70	6,0	4,9	4,35	15	25	4	**010**
1/4-20	1,270	80	7,0	5,5	5,75	17	30	4	**025**
5/16-18	1,411	90	8,0	6,2	7,30	20	35	5	**031**
3/8-16	1,588	100	10,0	8,0	8,80	22	39	5	**037**

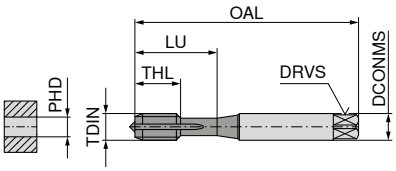
P	**18**
M	**10**
K	**10**
N	**22**
S	
H	
O	

Cutting speed v_c (m/min.)

Through hole – machine taps for wire thread inserts, right hand

TruTap | EG UNC

UNI | B 4–5 | 2B mod | nitr. + vap.



DIN 371 with reinforced shank



HSS-E
FHA 0°
≤ 1100 N/mm²
≤ 4xD

22 668 ...

TDIN	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	LU mm	Flutes	
EG Nr. 4-40	0,635	63	4,5	3,4	3,1	13	21	3	**004**
EG Nr. 6-32	0,794	70	6,0	4,9	3,8	14	25	3	**006**
EG Nr. 8-32	0,794	80	6,0	4,9	4,4	16	30	3	**008**
EG Nr. 10-24	1,058	80	7,0	5,5	5,2	17	30	3	**010**

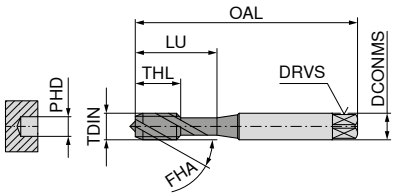
P	**12**
M	**7**
K	**12**
N	
S	
H	
O	

Cutting speed v_c (m/min.)

Blind hole – machine taps for wire thread inserts, right hand

CavTap | EG UNC

UNI | E 1,5–2 | 2B mod | vap.



DIN 371 with reinforced shank



HSS-E
FHA 42°
≤ 1100 N/mm²
≤ 3xD

22 672 ...

TDIN	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	LU mm	Flutes	
EG Nr. 4-40	0,635	63	4,5	3,4	3,1	7	21	3	**004**
EG Nr. 6-32	0,794	70	6,0	4,9	3,8	8	25	3	**006**
EG Nr. 8-32	0,794	80	6,0	4,9	4,4	8	30	3	**008**
EG Nr. 10-24	1,058	80	7,0	5,5	5,2	10	30	3	**010**

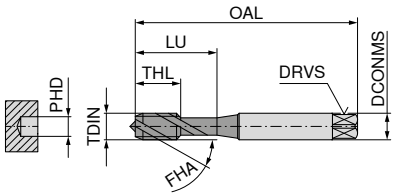
P	**12**
M	**7**
K	**12**
N	
S	
H	
O	

Cutting speed v_c (m/min.)

Blind hole – Machine taps, right hand

CavTap SL | UNJC

Ti | C 2–3 | 3BX | TiCN





DIN 371 with reinforced shank

HSS-E
FHA 15°
≤ 1200 N/mm²
≤ 2xD

22 166 ...

TDIN	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	LU mm	Flutes	
Nr. 4-40	0,635	56	3,5	2,7	2,30	11	18	2	**004**
Nr. 6-32	0,794	56	4,0	3,0	2,85	12	20	3	**006**
Nr. 8-32	0,794	63	4,5	3,4	3,50	13	21	3	**008**
Nr. 10-24	1,058	70	6,0	4,9	3,90	15	25	3	**010**
1/4-20	1,270	80	7,0	5,5	5,25	17	30	3	**025**
3/8-16	1,588	100	10,0	8,0	8,10	22	39	3	**037**

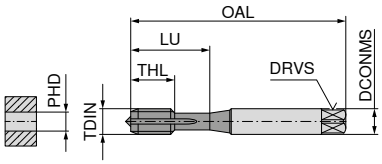
P	**7**
M	**7**
K	
N	**22**
S	**5**
H	
O	

Cutting speed v_c (m/min.)

Through hole – Machine taps, right hand

TruTap | UNF

UNI | B 4–5 | 2B | nitr. + vap.



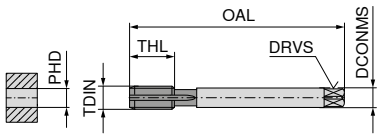
DIN 371 with reinforced shank



HSS-E
FHA 0°
≤ 1100 N/mm²
≤ 4xD

22 602 ...

TDIN	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	LU mm	Flutes	
Nr. 4-48	0,529	56	3,5	2,7	2,40	11	18	2	**004**
Nr. 6-40	0,635	56	4,0	3,0	2,95	12	20	3	**006**
Nr. 8-36	0,706	63	4,5	3,4	3,50	13	21	3	**008**
Nr. 10-32	0,794	70	6,0	4,9	4,10	15	25	3	**010**
1/4-28	0,907	80	7,0	5,5	5,50	17	30	3	**025**
5/16-24	1,058	90	8,0	6,2	6,90	17	35	3	**031**



DIN 374 with reduced shank

22 603 ...

TDIN	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	Flutes	
7/16-20	1,270	100	8	6,2	9,90	22	3	**043**
1/2-20	1,270	100	9	7,0	11,50	22	3	**050**
9/16-18	1,411	100	11	9,0	12,90	22	3	**056**
5/8-18	1,411	100	12	9,0	14,50	22	3	**062**
3/4-16	1,588	110	14	11,0	17,50	25	4	**075**
7/8-14	1,814	125	18	14,5	20,50	25	4	**087**
1-12	2,117	140	18	14,5	23,25	28	4	**100**
1 1/8-12	2,117	150	22	18,0	26,50	28	4	**112**
1 1/4-12	2,117	150	22	18,0	29,75	28	4	**125**
1 3/8-12	2,117	170	28	22,0	33,00	30	5	**137**

P	**12**
M	**7**
K	**12**
N	
S	
H	
O	

Cutting speed v_c (m/min.)

Through hole – Machine taps, right hand

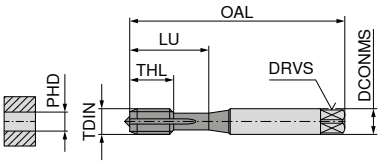
UNF

UNI

B
4–5

2B

TiN



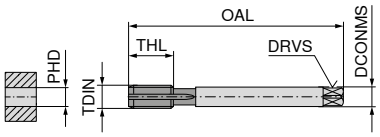
DIN 371 with reinforced shank



HSS-E
FHA 0°
≤ 1100 N/mm²
≤ 3xD

23 180 ...

TDIN	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	LU mm	Flutes	
Nr. 10-32	0,794	70	6	4,9	4,1	15	25	3	**010**
1/4-28	0,907	80	7	5,5	5,5	17	30	3	**025**
5/16-24	1,058	90	8	6,2	6,9	17	35	3	**031**
3/8-24	1,058	90	10	8,0	8,5	18	35	4	**037**



DIN 374 with reduced shank

23 181 ...

TDIN	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	Flutes	
7/16-20	1,270	100	8	6,2	9,9	22	3	**043**
1/2-20	1,270	100	9	7,0	11,5	22	3	**050**
9/16-18	1,411	100	11	9,0	12,9	22	3	**056**
5/8-18	1,411	100	12	9,0	14,5	22	3	**062**
3/4-16	1,588	110	14	11,0	17,5	25	4	**075**

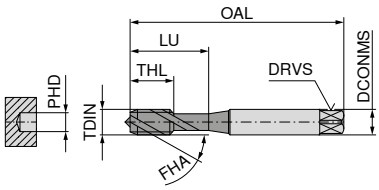
P	**15**
M	**9**
K	**18**
N	**12**
S	
H	
O	

Cutting speed v_c (m/min.)

6

Blind hole – Machine taps, right hand

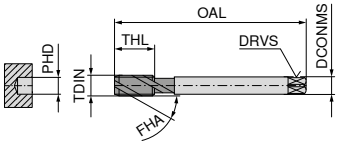
CavTap | UNF



DIN 371 with reinforced shank

	VA	UNI	UNI
	E 1,5–2	C 2–3	E 1,5–2
	2B	2B	2B +0,05
	vap.	vap.	vap.
			
	HSS-E FHA 42° ≤ 900 N/mm² ≤ 3xD	HSS-E FHA 42° ≤ 1100 N/mm² ≤ 3xD	HSS-E FHA 42° ≤ 1100 N/mm² ≤ 3xD
	22 308 ...	**22 606 ...**	**22 307 ...**

TDIN	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	LU mm	Flutes			
Nr. 2-64	0,397	45	2,8	2,1	1,85	4,5	12	2	**002**		
Nr. 4-48	0,529	56	3,5	2,7	2,40	6,0	18	2	**004**		
Nr. 6-40	0,635	56	4,0	3,0	2,95	7,0	20	3	**006**		
Nr. 6-40	0,635	56	4,0	3,0	3,00	7,0	20	3			**006**
Nr. 8-36	0,706	63	4,5	3,4	3,50	8,0	21	3	**008**		
Nr. 10-32	0,794	70	6,0	4,9	4,10	10,0	25	3	**010**	**010**	
Nr. 10-32	0,794	70	6,0	4,9	4,15	10,0	25	3			**010**
1/4-28	0,907	80	7,0	5,5	5,50	10,0	30	3	**025**	**025**	
1/4-28	0,907	80	7,0	5,5	5,55	10,0	30	3			**025**
5/16-24	1,058	90	8,0	6,2	6,90	10,0	35	3	**031**	**031**	
5/16-24	1,058	90	8,0	6,2	6,95	10,0	35	3			**031**
3/8-24	1,058	90	10,0	8,0	8,50	10,0	35	3	**037**		
3/8-24	1,058	90	10,0	8,0	8,55	10,0	35	3			**037**



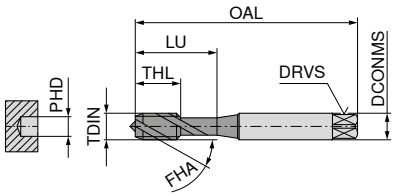
DIN 374 with reduced shank

									22 607 ...		22 409 ...
7/16-20	1,270	100	8	6,2	9,90	13	3			**043**	
7/16-20	1,270	100	8	6,2	9,95	13	4				**043**
1/2-20	1,270	100	9	7,0	11,50	13	4			**050**	
1/2-20	1,270	100	9	7,0	11,55	13	5				**050**
9/16-18	1,411	100	11	9,0	12,90	15	4			**056**	
9/16-18	1,411	100	11	9,0	12,95	15	5				**056**
5/8-18	1,411	100	12	9,0	14,50	15	4			**062**	
5/8-18	1,411	100	12	9,0	14,55	15	5				**062**
3/4-16	1,588	110	14	11,0	17,50	17	4			**075**	
3/4-16	1,588	110	14	11,0	17,55	17	5				**075**
1-12	2,117	140	18	14,5	23,30	20	5				**100**
P									**8**	**12**	**12**
M									**6**	**7**	**7**
K										**12**	**12**
N									**22**		**22**
S											
H											
O											

Cutting speed v_c (m/min.)

Blind hole – Machine taps, right hand

CavTap SL | UNF



DIN 371 with reinforced shank

	Ti	Ti
	C 2–3	C 2–3
	2BX	3BX
	vap.	vap.
		
	HSS-PM FHA 30° ≤ 1400 N/mm² ≤ 1,5xD	HSS-PM FHA 30° ≤ 1400 N/mm² ≤ 1,5xD
	22 302 ...	**22 303 ...**

TDIN	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	LU mm	Flutes			
Nr. 10-32	0,794	70	6	4,9	4,1	10	25	3	**010**		**010**
1/4-28	0,907	80	7	5,5	5,5	10	30	3	**025**		**025**
5/16-24	1,058	90	8	6,2	6,9	10	35	3	**031**		**031**
3/8-24	1,058	90	10	8,0	8,5	10	35	3	**037**		**037**

P	**5**	**5**
M	**5**	**5**
K		
N	**22**	**22**
S	**3**	**3**
H		
O		

Cutting speed v_c (m/min.)

6

Blind hole – Machine taps, right hand

UNF

UNI

C
2–3

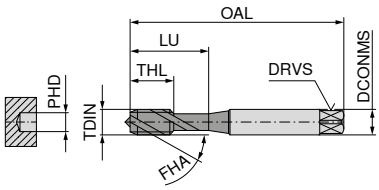
2B

TiN

VA

C
2–3

2B



DIN 371 with reinforced shank

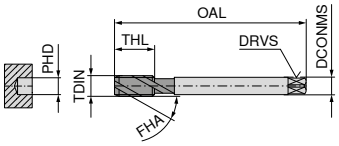




HSS-E
FHA 35°
≤ 1100 N/mm²
≤ 2,5xD

HSS-E
FHA 35°
≤ 1100 N/mm²
≤ 2,5xD

TDIN	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	LU mm	Flutes	23 182 ...		23 482 ...
Nr. 10-32	0,794	70	6	4,9	4,1	10	25	3	**010**		**010**
1/4-28	0,907	80	7	5,5	5,5	10	30	3	**025**		**025**
5/16-24	1,058	90	8	6,2	6,9	10	35	3	**031**		**031**
3/8-24	1,058	90	10	8,0	8,5	10	35	3	**037**		**037**



DIN 374 with reduced shank

TDIN	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	Flutes	23 183 ...		23 483 ...
7/16-20	1,270	100	8	6,2	9,9	13	3	**043**		**043**
1/2-20	1,270	100	9	7,0	11,5	13	4	**050**		**050**
9/16-18	1,411	100	11	9,0	12,9	15	4	**056**		**056**
5/8-18	1,411	100	12	9,0	14,5	15	4	**062**		**062**
3/4-16	1,588	110	14	11,0	17,5	17	4	**075**		**075**

P	**15**	**8**
M	**9**	**6**
K	**18**	
N	**12**	**22**
S		
H		
O		

Cutting speed v_c (m/min.)

Through hole / Blind hole – Machine thread formers, right hand

▲ SN = Thread formers with lubrication grooves

DuoForm | UNF

EC
SN

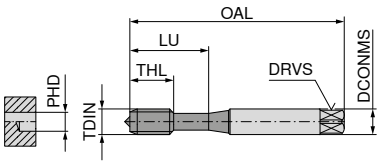
C
2–3

2BX

TiN



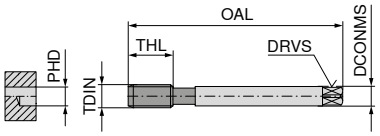
HSS-E
≤ 1100 N/mm²
≤ 3xD



DIN 2174 with reinforced shank

22 312 ...

TDIN	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	LU mm	Flutes	
Nr. 4-48	0,529	56	3,5	2,7	2,62	11	18	3	**004**
Nr. 6-40	0,635	56	4,0	3,0	3,22	12	20	3	**006**
Nr. 8-36	0,706	63	4,5	3,4	3,85	13	21	4	**008**
Nr. 10-32	0,794	70	6,0	4,9	4,45	15	25	4	**010**
1/4-28	0,907	80	7,0	5,5	5,95	17	30	4	**025**



DIN 2174 with reduced shank

22 313 ...

TDIN	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	Flutes	
7/16-20	1,27	100	8	6,2	10,55	22	6	**043**
1/2-20	1,27	100	9	7,0	12,15	22	6	**050**

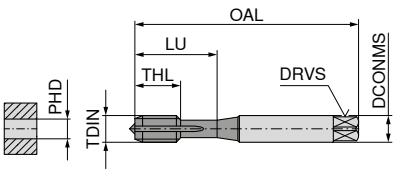
P	**18**
M	**10**
K	**10**
N	**22**
S	
H	
O	

Cutting speed v_c (m/min.)

Through hole – machine taps for wire thread inserts, right hand

TruTap | EG UNF

UNI | B 4–5 | 2B | nitr. + vap.



DIN 371 with reinforced shank



HSS-E
FHA 0°
≤ 1100 N/mm²
≤ 4xD

22 676 ...

TDIN	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	LU mm	Flutes	
EG Nr. 4-48	0,529	56	4	3,0	3,0	9	20	3	**004**
EG Nr. 6-40	0,635	70	6	4,9	3,7	11	25	3	**006**
EG Nr. 8-36	0,706	80	6	4,9	4,4	13	30	3	**008**
EG Nr. 10-32	0,794	80	6	4,9	5,1	13	30	3	**010**
EG 1/4-28	0,907	90	8	6,2	6,6	17	35	3	**025**

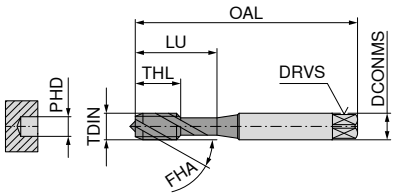
P	**12**
M	**7**
K	**12**
N	
S	
H	
O	

Cutting speed v_c (m/min.)

Blind hole – machine taps for wire thread inserts, right hand

CavTap | EG UNF

UNI | E 1,5–2 | 2B | vap.



DIN 371 with reinforced shank



HSS-E
FHA 42°
≤ 1100 N/mm²
≤ 3xD

22 680 ...

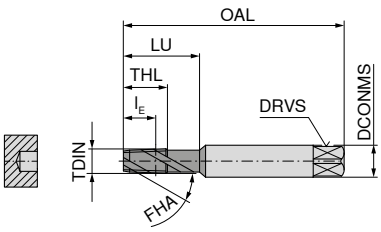
TDIN	TP mm	OAL mm	DCONMS mm	DRVS mm	PHD mm	THL mm	LU mm	Flutes	
EG Nr. 4-48	0,529	56	4	3,0	3,0	7	20	3	**004**
EG Nr. 6-40	0,635	70	6	4,9	3,7	8	25	3	**006**
EG Nr. 8-36	0,706	80	6	4,9	4,4	8	30	3	**008**
EG Nr. 10-32	0,794	80	6	4,9	5,1	8	30	3	**010**
EG 1/4-28	0,907	90	8	6,2	6,6	10	35	3	**025**

P	**12**
M	**7**
K	**12**
N	
S	
H	
O	

Cutting speed v_c (m/min.)

Blind hole – Machine taps, right hand

CavTap | NPT



DIN 371 with reinforced shank

VA | C | 2–3 | vap.



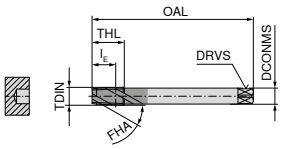
HSS-E
FHA 35°
≤ 900 N/mm²

VA | E | 1,5–2 | TiN



HSS-E
FHA 42°
≤ 1100 N/mm²

TDIN	TP mm	OAL mm	DCONMS mm	DRVS mm	l_E mm	THL mm	LU mm	Flutes	22 364 ...	22 365 ...
1/16-27	0,941	90	8	6,2	9,24	13,0	26,0	3	**006**	
1/8-27	0,941	90	10	8,0	9,28	13,0	26,0	3	**012**	
1/8-27	0,941	90	10	8,0	9,28	12,0	26,0	4		**012**
1/4-18	1,411	100	14	11,0	13,55	19,5	34,5	3	**025**	
1/4-18	1,411	100	14	11,0	13,55	18,0	34,5	4		**025**



DIN 374 with reduced shank

TDIN	TP mm	OAL mm	DCONMS mm	DRVS mm	l_E mm	THL mm	Flutes	22 371 ...	22 372 ...
3/8-18	1,411	110	14	11	13,86	18,0	5		**037**
3/8-18	1,411	110	14	11	13,86	19,5	3	**037**	
1/2-14	1,814	140	16	12	18,11	23,0	5		**050**
1/2-14	1,814	140	16	12	18,11	25,0	5	**050**	
3/4-14	1,814	150	20	16	18,59	26,0	5	**075**	

P	**4**	**5**
M	**3**	**4**
K		
N	**22**	**22**
S		
H		
O		

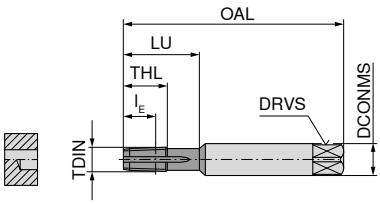
Cutting speed v_c (m/min.)

Through hole / Blind hole – Machine taps, right hand

DuoTap | NPT

VG

C
2–3



DIN 371 with reinforced shank

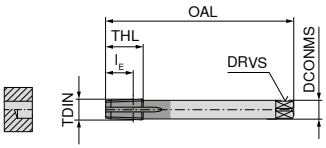


HSS-E
FHA 0°
≤ 1100 N/mm²

6

22 374 ...

TDIN	TP mm	OAL mm	DCONMS mm	DRVS mm	l_E mm	THL mm	LU mm	Flutes	
1/16-27	0,941	90	8	6,2	9,24	13,0	26,0	3	**006**
1/8-27	0,941	90	10	8,0	9,28	13,0	26,0	3	**012**
1/4-18	1,411	100	14	11,0	13,55	19,5	34,5	3	**025**



DIN 374 with reduced shank

22 375 ...

TDIN	TP mm	OAL mm	DCONMS mm	DRVS mm	l_E mm	THL mm	Flutes	
3/8-18	1,411	110	14	11	13,86	19,5	3	**037**
1/2-14	1,814	140	16	12	18,11	25,0	5	**050**
3/4-14	1,814	150	20	16	18,59	26,0	5	**075**
1-11,5	2,209	170	25	20	22,31	30,0	5	**100**

P	**4**
M	
K	**6**
N	**22**
S	
H	
O	

Cutting speed v_c (m/min.)

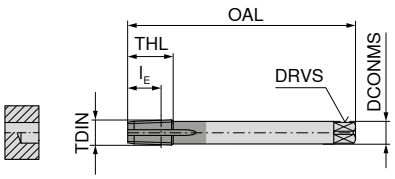
Through hole / Blind hole – Machine taps, right hand

▲ ES = extra short

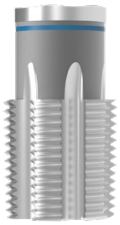
DuoTap | NPT

ST
ES

C
2–3



DIN 2181 with reduced shank



HSS-E
FHA 0°
≤ 750 N/mm²

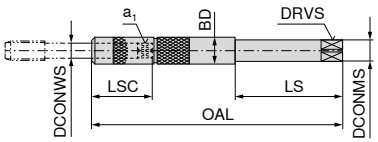
22 361 ...

TDIN	TP mm	OAL mm	DCONMS mm	DRVS mm	l_E mm	THL mm	Flutes	
1/16-27	0,941	63	6	4,9	9,24	13,0	4	**006**
1/8-27	0,941	63	7	5,5	9,28	13,0	5	**012**
1/4-18	1,411	63	11	9,0	13,55	19,5	5	**025**
3/8-18	1,411	70	12	9,0	13,86	19,5	5	**037**
1/2-14	1,814	80	16	12,0	18,11	23,0	5	**050**
3/4-14	1,814	100	20	16,0	18,59	26,0	6	**075**
1-11,5	2,209	110	25	20,0	22,31	32,0	6	**100**

P	**6**
M	
K	**6**
N	**22**
S	
H	
O	

Cutting speed v_c (m/min.)

Shank extensions for taps



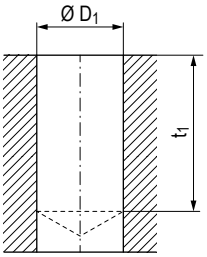


20 450 ...

DIN 371	DIN 374 / 376	DCONWS mm	a_1 mm	LSC mm	BD mm	LS mm	OAL mm	DRVS mm	DCONMS mm	
M3	M4,5 - M5	3,5	2,7	23	7,5	60	130	4,9	6	**020**
M3,5	M5,5	4,0	3,0	23	8,4	60	130	4,9	6	**030**
M4	M6	4,5	3,4	23	8,4	60	130	4,9	6	**040**
M4,5 - M6	M8	6,0	4,9	26	12,1	60	130	5,5	7	**050**
M7	M9 - M10	7,0	5,5	26	12,1	60	130	5,5	7	**060**
M8	M11	8,0	6,2	30	13,0	60	130	6,2	8	**070**
M9	M12	9,0	7,0	31	15,0	60	130	7,0	9	**080**
M10		10,0	8,0	33	15,0	60	130	8,0	10	**090**
	M14	11,0	9,0	36	18,0	90	180	9,0	11	**100**
(M12)	M16	12,0	9,0	36	18,0	90	180	9,0	12	**110**

Core hole diameters for taper threads (taper 1:16)

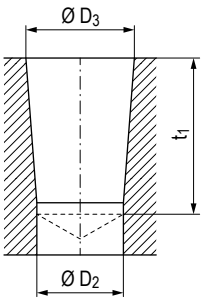
Pre-drilling of cylindrical holes without reamer



		NPT		NPTF				Rc	
Ø D inch	P Gg/1"	Ø D_1 mm	t_1 min. mm	Ø D_1 mm	t_1 min. mm	Ø D inch	P Gg/1"	Ø D_1 mm	t_1 min. mm
1/16	27	6,15	12	6,1	12	1/16	28	6,2	11,9
1/8	27	8,5	12	8,45	12	1/8	28	8,2	11,9
1/4	18	11	17,5	10,9	17,5	1/4	19	10,85	16,3
3/8	18	14,5	17,6	14,3	17,6	3/8	19	14,5	18,1
1/2	14	17,85	22,9	17,6	22,9	1/2	14	18	24
3/4	14	23,2	23	23	23	3/4	14	23,5	25,3
1	11½	29,5	27,4	28,75	27,4	1	11	29,5	30,6
1¼	11½	37,8	28,1	37,5	28,1				
1½	11½	44	28,4	43,75	28,4				
2	11½	56	28,4	55,75	28,4				

P = Pitch

Pre-drilling of cylindrical holes and conical boring with reamer



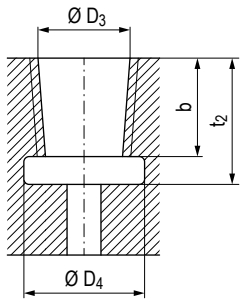
Taper 1:16

		NPT			NPTF		
Ø D inch	P Gg/1"	Ø D_2 mm	Ø D_3 mm	t_1 min. mm	Ø D_2 mm	Ø D_3 mm	t_1 min. mm
1/16	27	5,95	6,39	12	5,95	6,41	12
1/8	27	8,25	8,74	12	8,25	8,76	12
1/4	18	10,75	11,36	17,5	10,75	11,4	17,5
3/8	18	14,1	14,8	17,6	14,1	14,84	17,6
1/2	14	17,5	18,32	22,9	17,5	18,33	22,9
3/4	14	22,7	23,67	23	22,7	23,68	23
1	11½	28,6	29,69	27,4	28,6	29,72	27,4
1¼	11½	37,3	38,45	28,1	37,3	38,48	28,1
1½	11½	43,4	44,52	28,4	43,4	44,5	28,4
2	11½	55,5	56,56	28,4	55,5	56,59	28,4

		Rc		
Ø D inch	P Gg/1"	Ø D_2 mm	Ø D_3 mm	t_1 min. mm
1/16	28	6,1	6,56	11,9
1/8	28	8,1	8,57	11,9
1/4	19	10,75	11,45	17,7
3/8	19	14,25	14,95	18,1
1/2	14	17,75	18,63	24
3/4	14	23	24,12	25,3
1	11	29	30,29	30,6

P = Pitch

Recommendation for the pre-drilling of blind hole threads



Taper 1:16

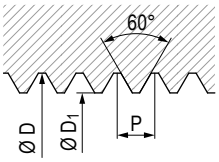
		NPT				NPTF			
Ø D inch	P Gg/1"	Ø D_3 mm	b mm	t_2 min. mm	Ø D_4 min. mm	Ø D_3 mm	b mm	t_2 min. mm	Ø D_4 min. mm
1/16	27	6,39	7	10	7,6	6,41	8	11	7,4
1/8	27	8,74	7	10	10	8,76	8	11	9,8
1/4	18	11,36	10,2	14,5	13,1	11,4	11,6	15,5	12,9
3/8	18	14,8	10,6	15	16,5	14,84	12	16	16,3
1/2	14	18,32	13,8	19	20,5	18,33	15,6	20,5	20,3
3/4	14	23,67	14,2	20	25,8	23,68	16	21,5	25,6
1	11½	29,69	17	24	32,2	29,72	19,2	26	32
1¼	11½	38,45	17,5	24,5	41	38,48	19,7	26,5	40,8
1½	11½	44,52	17,5	24,5	47,2	44,5	19,7	26,5	47
2	11½	56,56	18	25	59,2	56,59	20,2	27	59

		Rc			
Ø D inch	P Gg/1"	Ø D_3 mm	b mm	t_2 min. mm	Ø D_4 min. mm
1/16	28	6,56	5,6	9,5	7,6
1/8	28	8,57	5,6	9,5	9,6
1/4	19	11,45	8,4	14	13
3/8	19	14,95	8,8	14,4	16,5
1/2	14	18,63	11,4	19	20,6
3/4	14	24,12	12,7	20,3	26
1	11	30,29	14,5	24,3	32,8

P = Pitch

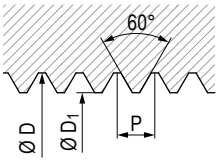
Tapped hole pilot diameter

M ISO metric coarse threads 6H to DIN 13 and DIN ISO 965-1 (M1-M1,4 = 5H)



Thread nominal Ø		Ø D_1		Core hole	Thread nominal Ø		Ø D_1		Core hole
D	P	min.	max.		D	P	min.	max.	
M1	0,25	0,729	0,785	0,75	M12	1,75	10,106	10,441	10,2
M1,1	0,25	0,829	0,885	0,85	M14	2	11,835	12,210	12
M1,2	0,25	0,929	0,985	0,95	M16	2	13,835	14,210	14
M1,4	0,3	1,075	1,142	1,1	M18	2,5	15,294	15,744	15,5
M1,6	0,35	1,221	1,321	1,25	M20	2,5	17,294	17,744	17,5
M1,8	0,35	1,421	1,521	1,45	M22	2,5	19,294	19,744	19,5
M2	0,4	1,567	1,679	1,6	M24	3	20,752	21,252	21
M2,2	0,45	1,713	1,838	1,75	M27	3	23,752	24,252	24
M2,5	0,45	2,013	2,138	2,05	M30	3,5	26,211	26,771	26,5
M3	0,5	2,459	2,599	2,5	M33	3,5	29,211	29,771	29,5
M3,5	0,6	2,850	3,01	2,9	M36	4	31,67	32,270	32
M4	0,7	3,242	3,422	3,3	M39	4	34,67	35,270	35
M4,5	0,75	3,688	3,878	3,7	M42	4,5	37,129	37,799	37,5
M5	0,8	4,134	4,334	4,2	M45	4,5	40,129	40,799	40,5
M6	1	4,917	5,153	5	M48	5	42,587	43,297	43
M7	1	5,917	6,153	6	M52	5	46,587	47,297	47
M8	1,25	6,647	6,912	6,8	M56	5,5	50,046	50,796	50,5
M9	1,25	7,647	7,912	7,8	M60	5,5	54,046	54,796	54,5
M10	1,5	8,376	8,676	8,5	M64	6	57,505	58,305	58
M11	1,5	9,376	9,676	9,5	M68	6	61,505	62,305	62

MF ISO metric fine threads 6H to DIN 13 and DIN ISO 965-1

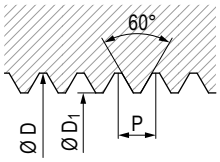


Thread nominal Ø			Ø D_1		Core hole	Thread nominal Ø			Ø D_1		Core hole
D	x	P	min.	max.		D	x	P	min.	max.	
M2	x	0,25	1,729	1,774	1,75	M20	x	1,0	18,917	19,153	19
M2,2	x	0,25	1,929	1,974	1,95	M20	x	1,5	18,376	18,676	18,5
M2,5	x	0,35	2,121	2,221	2,15	M20	x	2,0	17,835	18,210	18
M3	x	0,35	2,621	2,721	2,65	M24	x	1,5	22,376	22,676	22,5
M3,5	x	0,35	3,121	3,221	3,15	M30	x	2,0	27,835	28,210	28
M4	x	0,35	3,621	3,721	3,65	M36	x	1,5	34,376	34,676	34,5
M4	x	0,5	3,459	3,599	3,5	M36	x	3,0	32,752	33,252	33
M4,5	x	0,5	3,959	4,099	4	M42	x	2,0	39,835	40,210	40
M5	x	0,5	4,459	4,599	4,5	M48	x	1,5	46,376	46,676	46,5
M6	x	0,5	5,459	5,599	5,5	M48	x	3,0	44,752	45,252	45
M6	x	0,75	5,188	5,378	5,2	M48	x	4,0	43,67	44,270	44
M8	x	0,75	7,188	7,378	7,2	M56	x	1,5	54,376	54,676	54,5
M8	x	1,0	6,917	7,153	7	M56	x	2,0	53,835	54,210	54
M10	x	0,75	9,188	9,378	9,2	M56	x	3,0	52,752	53,252	53
M10	x	1,0	8,917	9,153	9	M56	x	4,0	51,670	52,270	52
M10	x	1,25	8,647	8,912	8,8	M64	x	3,0	60,752	61,252	61
M12	x	1,0	10,917	11,153	11	M64	x	4,0	59,670	60,270	60
M12	x	1,5	10,376	10,676	10,5	M72	x	4,0	67,670	68,270	68
M14	x	1,25	12,647	12,912	12,8	M80	x	6,0	73,505	74,305	74
M16	x	1,0	14,917	15,153	15	M95	x	6,0	88,505	89,305	89
M16	x	1,5	14,376	14,676	14,5	M110	x	6,0	103,505	104,305	104

Dimensions in mm; P=Pitch

Thread former pilot hole diameter

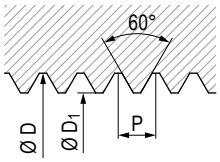
M ISO metric coarse threads 6H to DIN 13 and DIN ISO 965-1 (M1-M1,4 = 5H)



Thread nominal Ø		Ø D_1		Core hole
D	P	min.	max.	
M1	0,25	0,89		0,9
M1,2	0,25	1,09		1,1
M1,4	0,3	1,26		1,28
M1,6	0,35	1,45		1,47
M1,8	0,35	1,65		1,67
M2	0,4	1,83	1,86	1,85
M2,2	0,45	2	2,04	2,03
M2,5	0,45	2,3	2,34	2,33
M3	0,5	2,77	2,82	2,8
M3,5	0,6	3,23	3,28	3,25
M4	0,7	3,68	3,73	3,7
M4,5	0,75	4,15	4,21	4,2
M5	0,8	4,63	4,68	4,65

Thread nominal Ø		Ø D_1		Core hole
D	P	min.	max.	
M6	1	5,51	5,59	5,6
M7	1	6,51	6,59	6,6
M8	1,25	7,39	7,48	7,45
M9	1,25	8,39	8,48	8,45
M10	1,5	9,25	9,35	9,35
M11	1,5	10,25	10,35	10,35
M12	1,75	11,12	11,25	11,25
M14	2	13	13,15	13,1
M16	2	15	15,15	15,1
M18	2,5	16,72	16,9	16,85
M20	2,5	18,72	18,9	18,85
M22	2,5	20,72	20,9	20,85
M24	3	22,46	22,7	22,65

MF ISO metric fine threads 6H to DIN 13 and DIN ISO 965-1

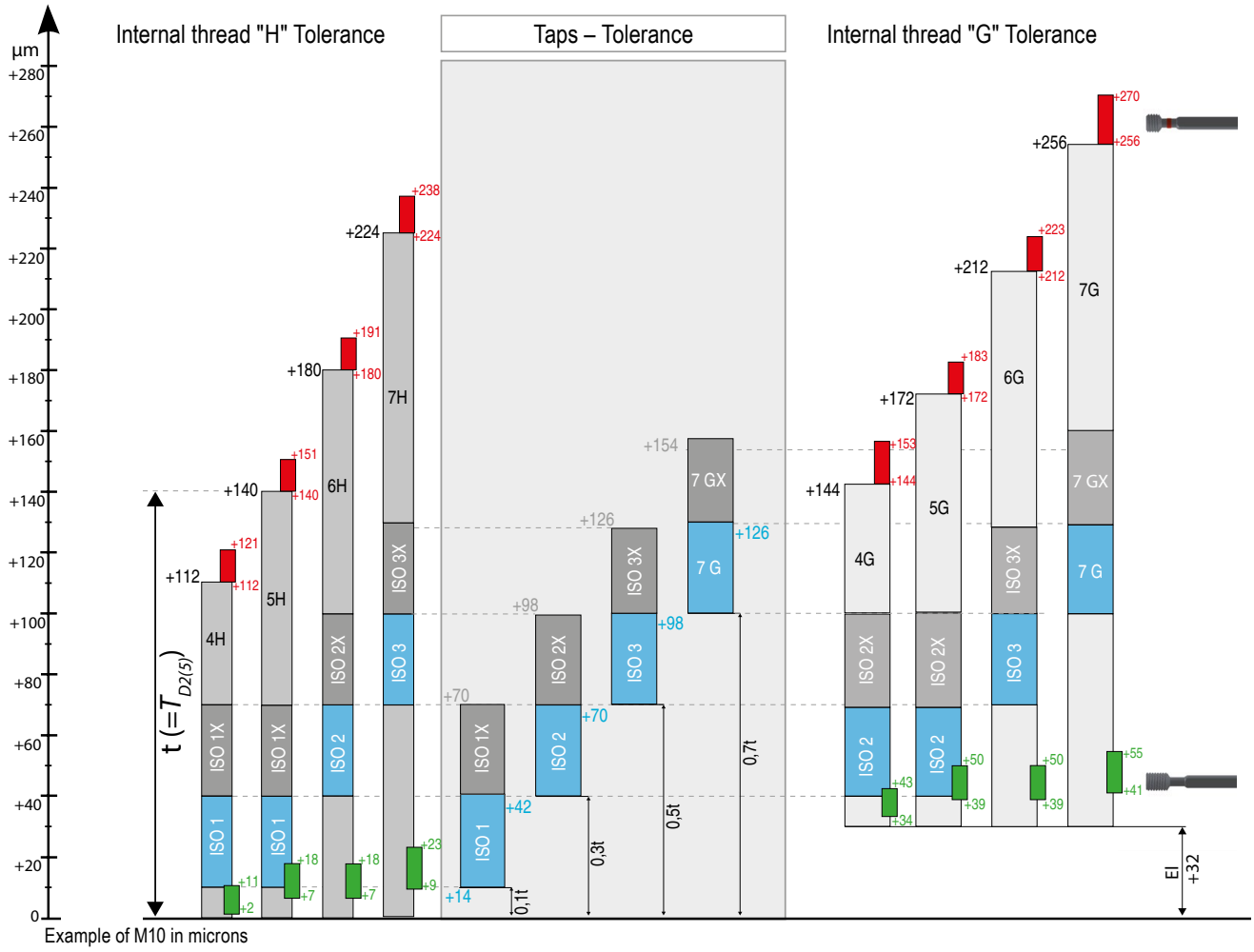


Thread nominal Ø			Ø D_1		Core hole
D	x	P	min.	max.	
M2	x	0,25	1,89		1,9
M2,2	x	0,25	2,09		2,1
M2,5	x	0,25	2,39		2,4
M2,5	x	0,35	2,35		2,37
M3	x	0,25	2,89		2,9
M3	x	0,35	2,85		2,88
M3,5	x	0,35	3,35		3,38
M3,5	x	0,5	3,27	3,32	3,3
M4	x	0,35	3,85		3,88
M4	x	0,5	3,77	3,82	3,8
M4,5	x	0,5	4,27	4,32	4,3
M5	x	0,5	4,77	4,82	4,8
M5	x	0,75	4,65	4,71	4,7
M5,5	x	0,5	5,27	5,32	5,3
M6	x	0,5	5,78	5,83	5,8
M6	x	0,75	5,65	5,71	5,7
M7	x	0,5	6,78	6,83	6,8
M7	x	0,75	6,65	6,71	6,7
M8	x	0,5	7,78	7,83	7,8
M8	x	0,75	7,65	7,71	7,7
M8	x	1,0	7,51	7,59	7,6
M9	x	0,5	8,78	8,83	8,8
M9	x	0,75	8,65	8,71	8,7
M9	x	1,0	8,51	8,59	8,6
M10	x	0,5	9,78	9,83	9,8
M10	x	0,75	9,65	9,71	9,7
M10	x	1,0	9,51	9,59	9,6
M10	x	1,25	9,39	9,48	9,45
M11	x	0,75	10,65	10,71	10,7
M11	x	1,0	10,51	10,59	10,6
M12	x	0,75	11,66	11,72	11,7

Thread nominal Ø			Ø D_1		Core hole
D	x	P	min.	max.	
M12	x	1,0	11,52	11,6	11,6
M12	x	1,25	11,4	11,49	11,45
M12	x	1,5	11,26	11,36	11,35
M13	x	0,75	12,66	12,72	12,7
M13	x	1,0	12,52	12,6	12,6
M13	x	1,5	12,26	12,36	12,35
M14	x	0,75	13,66	13,72	13,7
M14	x	1,0	13,52	13,6	13,6
M14	x	1,25	13,4	13,49	13,45
M14	x	1,5	13,26	13,36	13,35
M15	x	0,75	14,66	14,72	14,7
M15	x	1,0	14,52	14,6	14,6
M15	x	1,5	14,26	14,36	14,35
M16	x	0,75	15,66	15,72	15,7
M16	x	1,0	15,52	15,6	15,6
M16	x	1,5	15,26	15,36	15,35
M18	x	1,0	17,52	17,6	17,6
M18	x	1,5	17,26	17,36	17,35
M18	x	2,0	17	17,15	17,1
M20	x	1,0	19,52	19,6	19,6
M20	x	1,5	19,26	19,36	19,35
M20	x	2,0	19	19,15	19,1
M22	x	1,5	21,26	21,36	21,35
M22	x	2,0	21	21,15	21,1
M24	x	1,5	23,26	23,38	23,35
M24	x	2,0	23,01	23,16	23,1
M25	x	1,5	24,26	24,38	24,35
M26	x	1,5	25,26	25,38	25,35
M27	x	2,0	26,01	26,16	26,1
M28	x	1,5	27,26	27,38	27,35
M30	x	1,5	29,26	29,38	29,35
M30	x	2,0	29,01	29,16	29,1

Dimensions in mm; P=Pitch

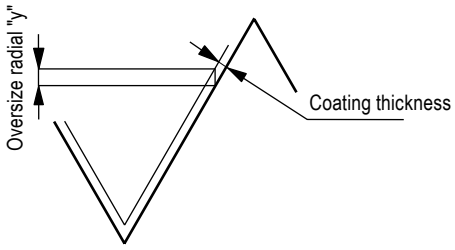
Thread tolerances and recommended manufacturing tolerances



Workpieces to be plated require oversize taps.
The interference depends on the coating thickness and the flank angle.

at

60° Flank angle	Oversize = 4 x coating thickness
55° Flank angle	Oversize = 4.331 x coating thickness
30° Flank angle	Oversize = 7.727 x coating thickness

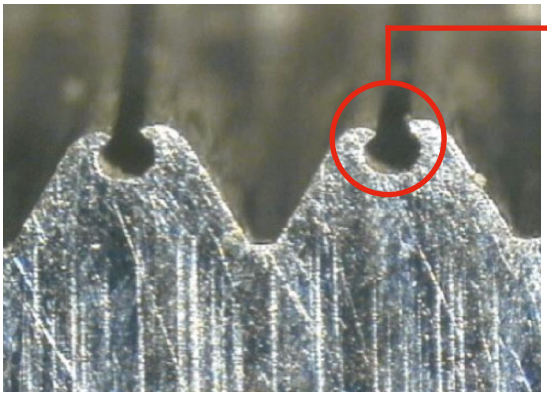


Application class of the tap Designation according to		Tolerance class of the internal thread to be cut				
DIN	ISO					
4H	ISO1	4H	5H	–	–	–
6H	ISO2	4G	5G	6H	–	–
6G	ISO3	–	(4E)	6G	7H	8H
7G	–	–	–	(6E)	7G	8G

For special applications, e.g. abrasive cast iron materials or plastics other dimensions have to be chosen which are determined on previous experience. In such cases an „X“ is added to the short designation of the tolerance, e.g. ISO 2X, however the tolerance zone assignment may be limited (6HX for tolerance zone 6H and 5G). In addition it should be taken into account that the dimensions of the internal thread do not only depend on the dimensions of the tap but on the material to be machined and all production conditions.
For first taps and intermediate taps no thread dimensions are determined.

Thread formers

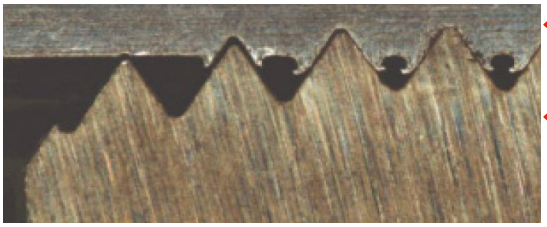
DuoForm thread forming taps for cold-formable materials up to 1400 N/mm² or at least 5 % elongation.
The thread is produced by plastic deformation. The molded thread has very high strength.



Important

Prior to forming a thread, you should ensure that a molded thread is acceptable. In certain sectors, the forming of a thread is **not** permitted. Dirt or bacteria can settle in the formed crown.

Incremental pressure forming



Workpiece

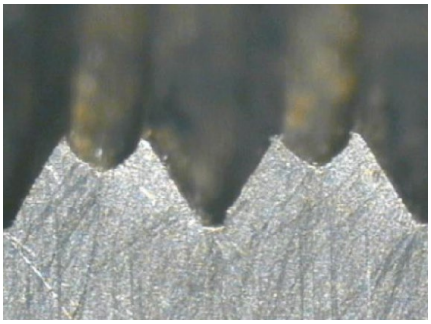
Thread formers



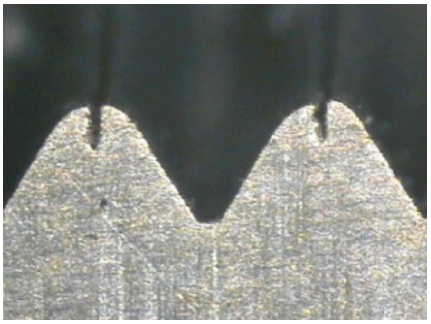
The thread profile is pressed gradually into the material via the start (leading edge) of the tap.

Properties

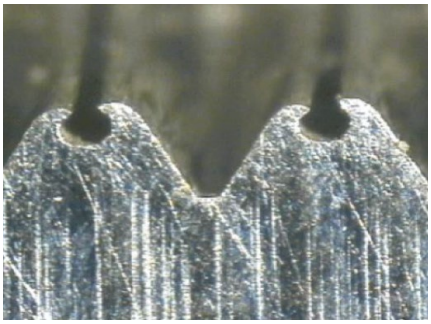
- One type can be used in different materials
- For through and blind holes
- Very good thread surface quality
- High static and dynamic strength thread
- Secure machining of deep and counterbored threads
- Short machining times
- No chip problems
- No swarf
- High process security
- HSS-E and HSS-PM taps for materials up to 33 HRC with a minimum elongation of 5 %



Underformed – core hole too large



Overformed – core hole too small



Perfect form – Core hole correct

Troubleshooting

Poor tool life

Cause

- Overload fractures of the cutting edge on the lead
- Hardness or tool material not suitable for the application
- Core hole too small, or work hardened
- Insufficient lubrication or incorrect application parameters

Remedy

- A longer lead or more flutes for the same lead length, giving a greater number of cutting teeth
- In reground tools the hardness can be reduced, apply correct parameters for regrinding
- Increase frequency of changes or regrinding of the drill
- Use the correct operating parameters for drilling
- Select the correct lubricant and ensure adequate supply

Axial thread error

Cause

- Selected geometry is not suitable
- Spindle speed is wrong compared with feed (synchronisation error)
- Blind hole taps are used with high feed pressure
- Through hole taps are used with low feed pressure

Remedy

- Check programming and pitch control or machine synchronisation
- Use tapping chuck with length compensation
- Increase retraction feed pessure
- Increase feed pessure

Oversize thread

Cause

- Thread tolerances of tool and thread gauge do not match
- Burred tool edges after regrinding
- Cold pressure welding

Remedy

- Check the correct tolerances for tool and thread gauge
- Carefully deburr
- Use appropriate (positive) geometry
- Reduce cutting speed
- Use different surface treatment or coating
- Use tapping chuck with length compensation
- Use appropriate lubricant

Broken tool

Cause

- Tool is worn
- Tool has hit the bottom of the hole
- Weld deposits
- Core hole too small
- Chip trapping
- Incorrect cutting speed
- Chip trapping in the flute
- Insufficient cooling / lubrication

Remedy

- Employ set taps
- Use a tool with lower helix
- Use tools with a shorter / longer lead
- Check the pre-drilling depth and the thread depth
- Drill core hole deeper
- Correct cutting speed
- Use a different coating or surface treatment
- Use tool holder with length compensation
- Use suitable lubricant
- Use correct core hole
- Change geometry and / or flute type
- Note chip shape and chip formation

Coatings

vap.
- Vaporised
- Vaporisation (vapour-deposition) prevents cold welds from forming on the tool and increases the surface hardness and thus the wear resistance

nitr.
- Nitrided
- Nitriding increases wear resistance and offers low friction properties

vap. + nitr.
- Vaporized + Nitrated
- Combination of increased surface hardness and lubricant carrier

TiN
- TiN coating
- Maximum application temperature: 450 °C

TiN GS
- Titanium nitride low friction layer
- High wear resistance with low friction properties
- Maximum application temperature: 450 °C

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

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

Ti200
- TiN coating
- Well suited for high cutting speeds during thread forming
- Maximum application temperature: 450 °C

OSM
- Hard material layer and anti-friction layer
- For use in high-strength steels

CH
- Amorphous carbon layer
- For use in non-ferrous metals or aluminum
- Reduces the material adhesion

HCr
- Hard chromed
- For use in non-ferrous metals or aluminum
- Very low surface roughness

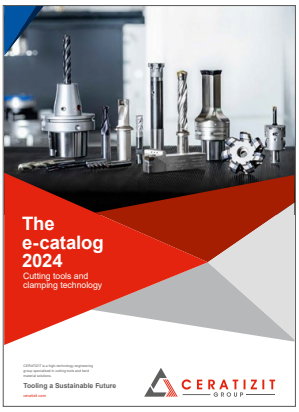
CrN
- Chromium-nitrogen coating
- Very wear-resistant coating
- Especially suitable for use in aluminum, but also for P, M and S materials

AlTiN-HD
- AlTiN-based nanolayer hard material coating
- Maximum application temperature: 500 °C

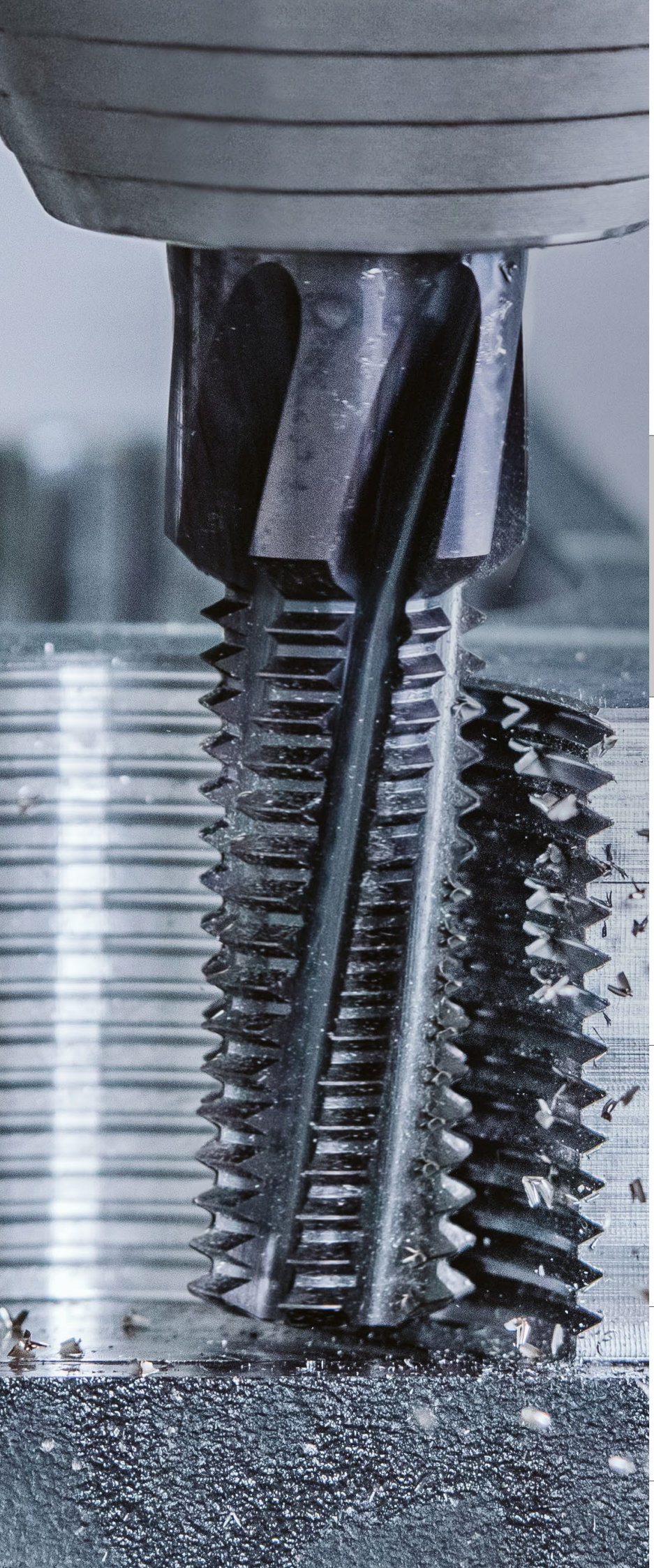


Metric Products

The entire content of this chapter can be found
in the Metric Catalog.
Use the QR code or the link shown below.



https://cutting.tools/us/en/digitalcatalogmetric



Solid drilling and bore machining	Metric Catalog	HSS drilling	1
	Metric Catalog	Solid carbide drilling	2
		Indexable drilling	3
		Reaming and Countersinking	4
		Indexable Boring	5
Threading	Metric Catalog	Taps and thread formers	6
	Metric Catalog	Circular and Thread Milling	7
	Metric Catalog	Thread turning	8
Turning		Indexable Turning	9
		Multifunction	10
		Parting and Grooving	11
	Metric Catalog	Miniature turning tools	12
Milling	Metric Catalog	HSS Milling Cutters	13
		Solid Milling	14
		Indexable Milling	15
Clamping technology		Adaptors and Accessories	16
	Metric Catalog	Workpiece clamping	17
		Material examples and article no. Index	18

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Overview Circular and Thread Milling Cutters	5
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Toolfinder	8+9
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Feed rate calculation	84
Calculation of cutting data for thread milling	85
Coatings	85

WNT \ Performance

Premium quality tools for high performance.

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

WNT \ Standard

Quality tools for standard applications.

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

Symbol explanation

Version


no drilling required


central internal coolant


Radial thro' coolant


Coolant supply either via the flange or centrally


left-hand cutting

Shank


Plain cylindrical shank


Cylindrical shank with lateral driving face „Weldon“

● = **Main Application**

○ = Extended application



Thread / Flank angle



Explanation of the types of thread can be found on → **Page 6.**



Flank angle 60°

Applications


Circlip Grooves


Full radius slot milling


Slot milling


Multipurpose milling


Chamfering and Deburring



Internal R/L



External R/L



Internal/External R/L

Tool types

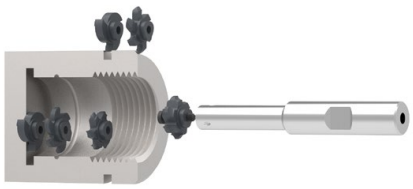
System 300	Circular milling cutter with solid carbide insert
Polygon	Circular shank milling cutter with carbide indexable insert (polygon insert seat)
Mini Mill	Circular milling cutter with solid carbide milling insert (with three-rib insert connection)
MWN	Multi-tooth thread milling cutter with carbide indexable inserts (straight insert seat) and Weldon flat
GZD	Multi-tooth thread milling cutter with carbide indexable inserts (angled insert seat) and Weldon flat
GZG	Multi-tooth thread milling cutter with carbide indexable inserts (straight insert seat) and Weldon flat
EAW	Single-row thread milling cutter with carbide indexable inserts and Weldon flat
EWM	Single-row thread milling cutter with carbide indexable insert and SK adapter
BGF	Solid carbide drill thread milling cutter
Micro Mill	Solid Carbide Circular End Milling Cutter
ZBGF	Solid carbide circular drill thread milling cutter
SGF	Thread milling cutter
SFSE	Thread milling cutter with chamfer facet
SFSE Micro	Thread milling cutter for smallest threads
HR	Single-row shank thread milling cutter

7

Overview Circular and Thread Milling Cutters

Modular Circular Milling Cutters with Carbide Indexable Inserts (ModuSet)

- the perfect tool for every application
- various holders, depending on overhang
- the same threading insert for different pitches and diameters
- highest flexibility and stability
- in addition to circular thread milling, circular and linear milling operations can also be carried out



1st choice for small batch sizes and large threads

Thread Milling Cutters with Indexable Carbide Inserts (ModuThread)

- exchange of the insert for different threads
- same threading insert for different diameters



Solid Carbide Thread Milling Cutters (MonoThread)

- short machining times, ideal for volume production
- one tool for all thread types
- one thread milling cutter for different diameters with the same pitch



MicroMill



SGF



ZBGF



BGF

Thread types

M	Metric ISO standard thread
MF	Metric ISO fine thread
G	Whitworth pipe thread
UN	Unified thread
UNC	Unified Standard Thread
UNF	Unified fine thread
BSW	Whitworth thread
BSF	Whitworth fine thread
NPT	American taper pipe thread
Pg	Steel conduit thread
Tr	Trapezoidal thread

Thread milling process description

Thread milling

- Cutting
- Thread production by circular milling in the pitch (helical interpolation)
- Can be used for a wide range of materials up to 60 HRC
- Lower torque than taps and thread formers (no reversing of the spindle necessary)
- Thread machining to the bottom of the hole possible
- High-speed cutting (HSC) can be performed

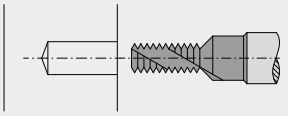
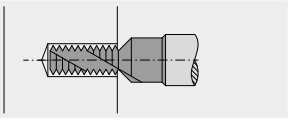
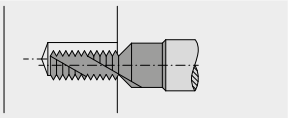
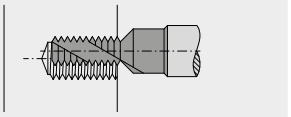
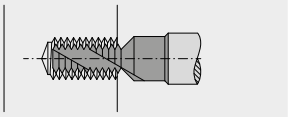
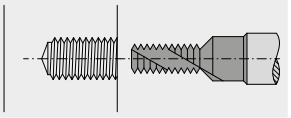
Advantages of thread milling

- Different tolerances can be produced with one tool
- One tool for blind hole and through hole machining
- Outstanding workpiece surfaces and dimensional accuracy guaranteed
- One tool for right and left-hand threads
- Low cutting pressure when machining thin-walled parts
- Precisely repeatable thread depth
- No chip issues and no chip root residues in the finished thread

Added advantages of thread milling cutters with chamfer facet

- Savings in tool change and setup times, resulting in significantly shorter machining times
- Optimisation of magazine assignment in the machine

Process

Positioning above the workpiece	
Entry to start position for thread milling	
Circular approach (milling) in inward circular grinding (90°/180°) at 1/4 pitch	
1x pitch in "Z+" direction	
Outward circular grinding in the centre of the hole (90°/180°)	
Exit to start position	

Climb milling is shown here.
Further information on the milling processes (climb and conventional milling) can be found on → **page 84**

Description of procedure, thread milling cutters

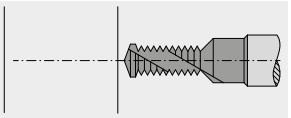
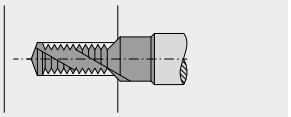
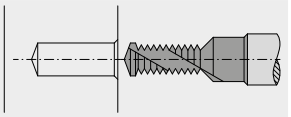
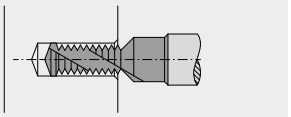
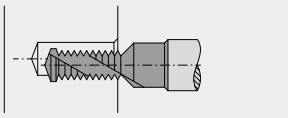
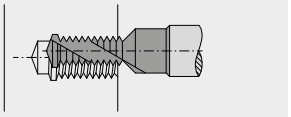
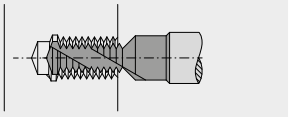
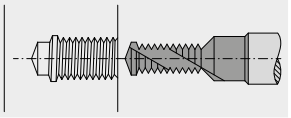
Thread milling

- Cutting
- Production of a complete thread – drilling, countersinking and thread milling with just one tool
- Can be used in different materials (K/N)
- Prerequisite: CNC-controlled milling machine or machining centre with the helical interpolation function

Advantages

- Shortest machining times thanks to high cutting speeds and feeds
- Savings in tool change and setup times, resulting in significantly shorter machining times
- Optimisation of magazine assignment in the machine
- Different tolerances can be produced with one tool
- Outstanding workpiece surfaces and dimensional accuracy guaranteed
- One tool for blind hole and through hole machining
- Precisely repeatable thread depth
- No chip issues and no chip root residues in the finished thread
- High-speed cutting (HSC) can be performed

Process

Positioning above the workpiece	
Tapping, drilling, countersinking	
Chip removal	
Entry to start position for thread milling	
Circular approach (milling) in inward circular grinding (90°/180°) at 1/4 pitch	
1x pitch in "Z+" direction	
Outward circular grinding in the centre of the hole (90°/180°)	
Exit to start position	

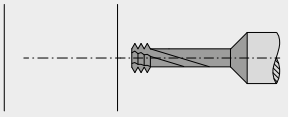
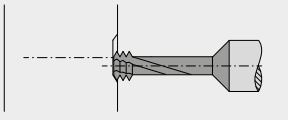
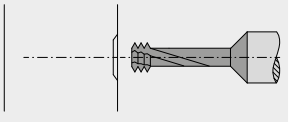
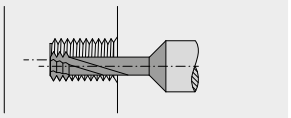
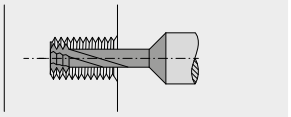
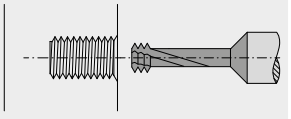
Circular drill thread milling

- Cutting
- Production of a complete thread – drilling, countersinking and thread milling with just one tool
- Can be used in different materials (H/S/O)
- Prerequisite: CNC-controlled milling machine or machining centre with the helical interpolation function

Advantages

- Shortest machining times due to simultaneous creation of the tap hole and thread
- Savings in tool change and setup times, resulting in significantly shorter machining times
- Optimisation of magazine assignment in the machine
- Different tolerances can be produced with one tool
- Outstanding workpiece surfaces and dimensional accuracy guaranteed
- One tool for blind hole and through hole machining
- Precisely repeatable thread depth
- Optimum chip removal and no chip root residues in the finished thread

Process

Positioning above the workpiece	
Chamfering (until countersinking depth is reached)	
Return to the start position above the component	
Circular drill thread milling in helical motion to the required thread depth	
Outward circular grinding in the centre of the hole (90°/180°)	
Exit to start position	

7

Toolfinder

Tool types			Tool properties	from bore diameter in mm
ModuSet – Modular Circular Milling Cutters with Carbide Indexable Inserts	Polygon		▲ high power transmission through polygon connection ▲ 3 and 6 edged inserts ▲ stable holders in solid carbide and steel	9,6
	Mini Mill		▲ three interlocking rib location ▲ compatible with popular manufacturer systems ▲ 3 and 6 edged inserts ▲ stable holders in solid carbide and steel	9,6
	System 300		▲ proven circular milling tool ▲ 3 edged inserts	7,9
ModuThread – Thread Milling Cutters with Indexable Carbide Inserts	MWN		▲ multi tooth thread milling cutter ▲ double sided inserts ▲ exclusively for thread production ▲ holder for tapered threads	9,0
	GZD		▲ multi tooth drilling and thread milling cutter ▲ for thread milling in solid material ▲ core hole and thread with one tool	14,0
	GZG		▲ multi tooth thread milling cutter ▲ exclusively for thread production	18,5
	EAW		▲ single-row thread milling cutter ▲ inserts with 2 or 4 cutting edges ▲ exclusively for production of the thread ▲ insert holder with cylindrical shank DIN 1835	17,5
	EWM		▲ single-row thread milling cutter ▲ inserts with 4 cutting edges ▲ exclusively for production of the thread ▲ monoblock insert holder with steep taper DIN 69871	43,0
MonoThread – Solid Carbide Thread Milling Cutters	Micro Mill		▲ solid carbide circular milling cutter for small diameters	1,25
	BGF		▲ drill thread milling cutter ▲ core hole, countersink, thread and thread undercut with one tool	2,45
	ZBGF		▲ circular drill thread milling cutter ▲ core hole, countersink and thread with one tool	2,3
	SFSE Micro		▲ solid carbide shank thread milling cutter with chamfer facet ▲ just one tool for countersink and thread ▲ specially developed for the smallest threads in hard materials	0,75
	SFSE		▲ solid carbide thread milling cutter with chamfering facet ▲ only one tool for threading and chamfering	2,4
	SGF		▲ solid carbide thread milling cutter without chamfering facet ▲ exclusively for thread production	2,4
	HR		▲ single-row shank thread milling cutter ▲ exclusively for production of the thread ▲ up to 3xD in materials up to 60 HRC	3,14

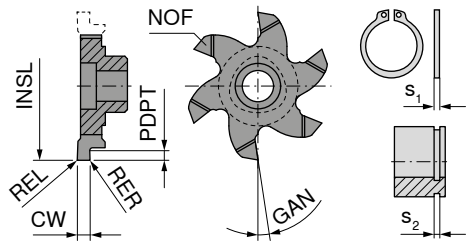
Thread / Flank angle								Applications					Tool holder
60° M MF	55° G	55° BSW BSF	60° UN	60° UNC UNF	80° Pg	60° NPT	30° Tr						
16+17	18	18		20			19	10+11	12+13	14	14	15	21
29+30	30							22	23+24 25	24	26	27+28	31–33
37	38	38						34+35	36		36		39
40	41		41		42	42							43+44
45	45												46
47	48		49		48								50
51	51		51										52
53			53										54
56									55		55		
57+58													
59													
61													
62+63 67	64 68			66 69		65 68							
70+71 73 76	72 74	74		75									
60													

7

ModuSet – Milling inserts for circlip grooves without chamfer

Polygon





Ti500



Solid carbide

50 880 ...

Size	s_2 H13 mm	INSL mm	CW -0,03 mm	PDPT mm	REL mm	RER mm	GAN °	s_1 mm	NOF	
6	0,90	9,6	0,98	1,20	0,05	0,05	6	0,80	3	**292**
	1,10	11,7	1,18	1,00	0,05	0,05	6	1,00	3	**294**
	1,30	11,7	1,38	1,00	0,05	0,05	6	1,20	3	**296**
	1,60	11,7	1,68	1,00	0,10	0,10	6	1,50	3	**298**
7	1,10	16,0	1,18	0,90	0,05	0,05	6	1,00	6	**301**
	1,30	16,0	1,38	1,10	0,05	0,05	6	1,20	6	**302**
	1,60	16,0	1,68	1,25	0,10	0,10	6	1,50	6	**304**
	1,85	16,0	1,93	1,25	0,10	0,10	6	1,75	6	**306**
	1,10	17,7	1,18	0,90	0,05	0,05	6	1,00	6	**308**
	1,30	17,7	1,38	1,10	0,05	0,05	6	1,20	6	**309**
	1,60	17,7	1,68	1,25	0,10	0,10	6	1,50	6	**310**
	1,85	17,7	1,93	1,25	0,10	0,10	6	1,75	6	**311**
9	1,10	20,0	1,18	0,90	0,05	0,05	6	1,00	6	**313**
	1,30	20,0	1,38	1,10	0,05	0,05	6	1,20	6	**314**
	1,60	20,0	1,68	1,25	0,10	0,10	6	1,50	6	**315**
	1,85	20,0	1,93	1,25	0,10	0,10	6	1,75	6	**316**
	1,60	21,7	1,68	1,25	0,10	0,10	6	1,50	6	**318**
	1,85	21,7	1,93	1,25	0,10	0,10	6	1,75	6	**319**
	2,15	21,7	2,23	1,75	0,10	0,10	6	2,00	6	**320**
	2,65	21,7	2,73	1,75	0,20	0,20	6	2,50	6	**321**
10	1,30	26,0	1,38	1,10	0,05	0,05	6	1,20	6	**322**
	1,60	26,0	1,68	1,25	0,10	0,10	6	1,50	6	**324**
	1,85	26,0	1,93	1,25	0,10	0,10	6	1,75	6	**326**
	2,15	26,0	2,23	1,75	0,10	0,10	6	2,00	6	**328**
	2,65	26,0	2,73	1,75	0,20	0,20	6	2,20	6	**330**
	3,15	26,0	3,23	2,20	0,20	0,20	6	3,00	6	**332**

P	●
M	●
K	●
N	●
S	●
H	●
O	●

→ v_c/f_z Page 82

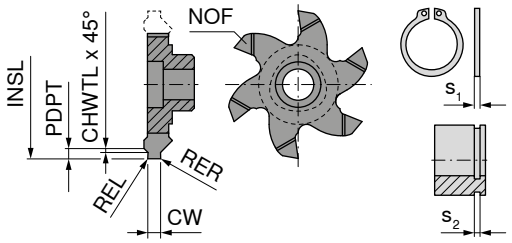
When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 84+85.**

ModuSet – Milling inserts for circlip grooves with chamfer

▲ Both edges chamfered CHWTL x 45°

Polygon





Ti500



Solid carbide

50 879 ...

Size	$s_{2\ H13}$ mm	INSL mm	CW $_{-0,03}$ mm	PDPT mm	REL mm	RER mm	CHWTL mm	s_1 mm	NOF	
7	1,10	16,0	1,18	0,50	0,05	0,05	0,10	1,00	6	**292**
	1,30	16,0	1,38	0,85	0,05	0,05	0,15	1,20	6	**302**
	1,60	16,0	1,68	1,00	0,10	0,10	0,15	1,50	6	**304**
	1,85	16,0	1,93	1,25	0,10	0,10	0,20	1,75	6	**306**
9	1,10	20,0	1,18	0,50	0,05	0,05	0,10	1,00	6	**307**
	1,30	20,0	1,38	0,85	0,05	0,05	0,15	1,20	6	**308**
	1,60	20,0	1,68	1,00	0,10	0,10	0,15	1,50	6	**309**
	1,60	21,7	1,68	1,00	0,10	0,10	0,15	1,50	6	**312**
	1,85	20,0	1,93	1,25	0,10	0,10	0,20	1,75	6	**310**
	1,85	21,7	1,93	1,25	0,10	0,10	0,20	1,75	6	**314**
	2,15	21,7	2,23	1,50	0,10	0,10	0,20	2,00	6	**316**
	2,65	21,7	2,73	1,75	0,20	0,20	0,20	2,50	6	**318**
10	1,30	26,0	1,38	0,85	0,05	0,05	0,15	1,20	6	**322**
	1,60	26,0	1,68	1,00	0,10	0,10	0,15	1,50	6	**324**
	1,85	26,0	1,93	1,25	0,10	0,10	0,20	1,75	6	**326**
	2,15	26,0	2,23	1,50	0,10	0,10	0,20	2,00	6	**328**
	2,65	26,0	2,73	1,75	0,20	0,20	0,20	2,50	6	**330**
	3,15	26,0	3,23	1,75	0,20	0,20	0,20	3,00	6	**332**

P	●
M	●
K	●
N	●
S	●
H	●
O	●

→ v_c/f_z Page 82

When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 84+85.**

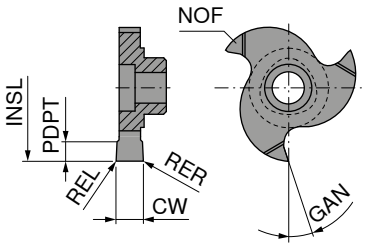
7

ModuSet – Milling insert without profile

▲ Size 7: from 5.0 mm groove width with ground chip breaker
▲ Size 10: from 6.5 mm groove width with ground chip breaker

Polygon





Ti500



Solid carbide

50 875 ...

Size	CW +/-0,02 mm	INSL mm	PDPT mm	REL mm	RER mm	GAN °	NOF	
6	1,5	11,7	2,25	0,10	0,10	6	3	**302**
	2,0	11,7	2,25	0,15	0,15	6	3	**304**
	2,5	11,7	2,25	0,15	0,15	6	3	**306**
	3,0	11,7	2,25	0,15	0,15	6	3	**308**
7	3,5	16,0	3,50	0,15	0,15	0	3	**310**
	3,5	16,0	3,50	0,15	0,15	8	3	**312**
	3,5	16,0	3,50	0,15	0,15	12	3	**314**
	5,0	16,0	3,50	0,15	0,15	0	3	**316**
	5,0	16,0	3,50	0,15	0,15	8	3	**318**
	5,0	16,0	3,50	0,15	0,15	12	3	**320**
10	4,0	25,0	5,70	0,15	0,15	0	3	**330**
	4,0	25,0	5,70	0,15	0,15	8	3	**332**
	4,0	25,0	5,70	0,15	0,15	12	3	**334**
	5,0	25,0	5,70	0,15	0,15	8	3	**337**
	6,5	25,0	5,70	0,15	0,15	0	3	**340**
	6,5	25,0	5,70	0,15	0,15	8	3	**342**
	6,5	25,0	5,70	0,15	0,15	12	3	**344**
	8,0	25,0	5,70	0,15	0,15	0	3	**350**
	8,0	25,0	5,70	0,15	0,15	8	3	**352**
	8,0	25,0	5,70	0,15	0,15	12	3	**354**

P	●
M	●
K	●
N	●
S	●
H	●
O	●

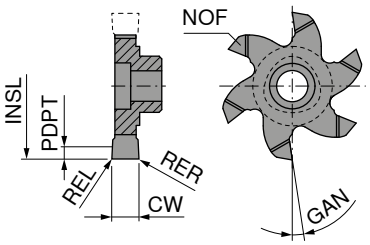
→ v_c/f_z Page 82

When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 84+85.**

ModuSet – Milling insert without profile

Polygon





Ti500



Solid carbide

50 876 ...

Size	CW +/-0,02 mm	INSL mm	PDPT mm	REL mm	RER mm	GAN °	NOF	
7	1,5	17,7	4,0	0,10	0,10	6	6	**307**
	2,0	17,7	4,0	0,10	0,10	6	6	**308**
	2,5	17,7	4,0	0,15	0,15	6	6	**309**
	3,0	16,0	3,5	0,15	0,15	6	6	**302**
	4,0	16,0	3,5	0,15	0,15	6	6	**304**
	5,0	16,0	3,5	0,15	0,15	6	6	**306**
9	1,5	21,7	5,0	0,10	0,10	6	6	**314**
	2,0	21,7	5,0	0,10	0,10	6	6	**315**
	2,5	21,7	5,0	0,15	0,15	6	6	**316**
	3,0	21,7	5,0	0,15	0,15	6	6	**317**
	3,0	20,0	4,2	0,15	0,15	6	6	**311**
	4,0	20,0	4,2	0,15	0,15	6	6	**312**
	5,0	20,0	4,2	0,15	0,15	6	6	**313**
10	1,5	27,7	6,8	0,10	0,10	6	6	**330**
	2,0	27,7	6,8	0,10	0,10	6	6	**332**
	2,5	27,7	6,8	0,15	0,15	6	6	**334**
	3,0	26,0	6,2	0,15	0,15	6	6	**322**
	3,0	27,7	6,8	0,15	0,15	6	6	**336**
	4,0	26,0	6,2	0,15	0,15	6	6	**324**
	5,0	26,0	6,2	0,15	0,15	6	6	**326**
	6,5	26,0	6,2	0,15	0,15	6	6	**328**

P	●
M	●
K	●
N	●
S	●
H	●
O	●

→ v_c/f_z Page 82

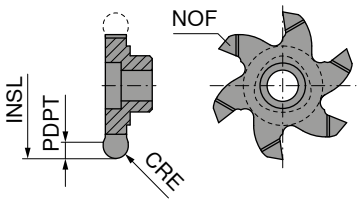
When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 84+85.**

7

ModuSet – Milling inserts for radius milling

Polygon





Ti500



Solid carbide

50 886 ...

Size	CRE mm	INSL mm	PDPT mm	NOF	
6	1,100	9,6	1,20	3	**702**
	0,788	11,7	2,25	3	**704**
	1,100	11,7	2,25	3	**708**
	1,190	11,7	2,25	3	**706**
7	0,788	17,7	4,20	6	**712**
	1,100	17,7	4,20	6	**714**
9	0,785	21,7	5,00	6	**720**
	1,000	21,7	5,00	6	**722**
	1,200	21,7	5,00	6	**724**
	1,400	21,7	5,00	6	**726**
	1,500	21,7	5,00	6	**728**

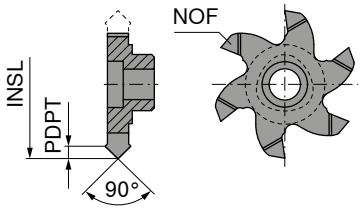
P	●
M	●
K	●
N	●
S	●
H	●
O	●

→ v_c/f_z Page 82

ModuSet – Milling inserts for chamfering and deburring

Polygon





Ti500



Solid carbide

50 884 ...

Size	PDPT mm	INSL mm	NOF	
6	1,20	9,6	3	**292**
	1,50	11,7	3	**294**
7	1,90	16,0	6	**302**
	1,30	17,7	6	**304**
9	1,90	20,0	6	**312**
	1,95	21,7	6	**314**
10	2,10	26,0	6	**322**

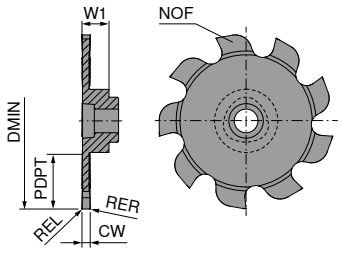
P	●
M	●
K	●
N	●
S	●
H	●
O	●

→ v_c/f_z Page 82

ModuSet – Milling insert for part-off

Polygon





NEW

Ti500



Solid carbide

51 800 ...

Size	DMIN mm	PDPT mm	CW $_{+0,02}$ mm	REL mm	RER mm	W1 mm	NOF	
6	14	3,40	1,5	0,1	0,1	3,50	6	14000
7	22	6,40	1,5	0,1	0,1	3,86	9	22000
9	32	10,25	1,5	0,1	0,1	4,91	9	32000
10	37	11,50	1,5	0,1	0,1	4,86	9	37000

P	●
M	●
K	●
N	●
S	●
H	●
O	●

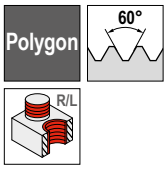
→ v_c/f_z Page 82

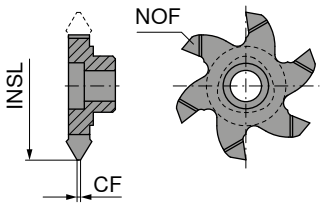
When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 84+85.**

7

ModuSet – Thread milling insert – Partial profile

▲ with holder 50 805 010 / 50 805 011 maximum pitch of 3 mm is possible!





Ti500



Solid carbide

50 882 ...

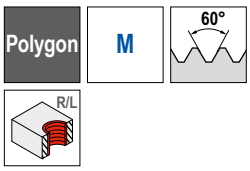
Size	TP mm	INSL mm	CF mm	NOF	TD mm	
6	1 - 3	11,7	0,10	3	≥16	**292**
7	1 - 3	17,7	0,10	6	≥22	**306**
	1 - 4	16,0	0,10	6	≥20	**302**
	2,5 - 4	16,0	0,25	6	≥22	**304**
9	1 - 2	21,7	0,10	6	≥27	**314**
	1 - 3	20,0	0,10	6	≥24	**312**
	2 - 4	21,7	0,15	6	≥30	**316**
10	1 - 3	26,0	0,10	6	≥32	**322**
	2,5 - 5	26,0	0,25	6	≥36	**324**
	3,5 - 6	26,0	0,40	6	≥52	**32600**

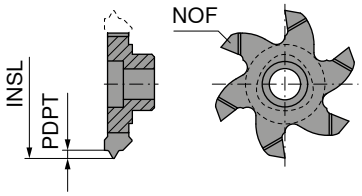
P	●
M	●
K	●
N	●
S	●
H	●
O	●

→ v_c/f_z Page 82

When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 84+85.**

ModuSet – Thread milling insert – Full profile





Ti500



Solid carbide

50 881 ...

Size	TP mm	INSL mm	PDPT mm	NOF	Thread	
6	1	9,6	0,572	3	≥ M12x1	**292**
	1,5	9,6	0,875	3	≥ M14x1,5	**293**
	2	10,5	1,157	3	≥ M18x2	**296**
7	1,5	16,0	0,875	6	≥ M20x1,5	**302**
	2	16,0	1,157	6	≥ M22x2	**304**
	2,5	16,0	1,430	6	≥ M24x2,5	**306**
	2,5	16,0	1,430	6	M20, M22	**308** 1)
	3	16,0	1,702	6	≥ M24	**310**
9	1,5	20,0	0,875	6	≥ M24x1,5	**312**
	2	20,0	1,157	6	≥ M27x2	**314**
	3	20,0	1,702	6	M24, M27	**316** 1)
10	1,5	26,0	0,875	6	≥ M30x1,5	**322**
	2	26,0	1,157	6	≥ M33x2	**324**
	3	26,0	1,702	6	≥M39x3	**330**
	3,5	26,0	1,982	6	≥ M42x3,5	**332**
	3,5	24,0	1,982	6	M30, M33	**331** 1)
	4	26,0	2,263	6	M36-M54x4	**335** 1)
	4	26,0	2,263	6	≥ M48x4	**334**
	4,5	26,0	2,553	6	≥ M42	**336**
	5	26,0	2,836	6	≥ M48	**337**

P	●
M	●
K	●
N	●
S	●
H	●
O	●

1) profile corrected

→ v_c/f_z Page 82

When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 84+85.**

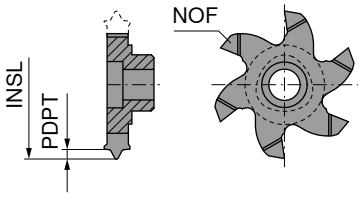
7

ModuSet – Thread milling insert – Full profile

▲ 50 883 322 for threads > 1"

Polygon | G | BSW | BSF | 55°





Ti500



Solid carbide

Size	TPI 1/"	TP mm	INSL mm	PDPT mm	NOF	50 883 ...
6	19	1,337	9,6	0,871	3	292
7	14	1,814	17,7	1,177	6	308
	14	1,814	16,0	1,177	6	304
	11	2,309	16,0	1,494	6	302
	10	2,540	16,0	1,646	6	306
9	14	1,814	20,0	1,177	6	316
	11	2,309	20,0	1,494	6	314
10	11	2,309	26,0	1,494	6	322

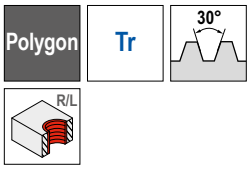
P	●
M	●
K	●
N	●
S	●
H	●
O	●

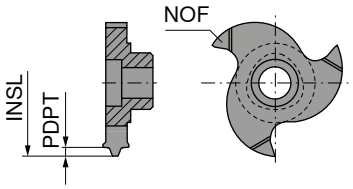
→ v_c/f_z Page 82

When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 84+85.**

ModuSet – Thread milling insert – Full profile

▲ DIN 103





Ti500



Solid carbide

50 872 ...

Size	TP mm	INSL mm	PDPT mm	NOF	Thread	
6	2	11,7	1,25	3	Tr 16x2 - Tr 20x2	**292**
	3	11,0	1,75	3	Tr 18x3 - Tr 20x3	**294**
	4	12,0	2,25	3	Tr 20x4	**296** 1)
7	3	14,0	1,75	3	Tr 24x3 - Tr 32x3	**302** 2)
	5	15,3	2,75	3	Tr 28x5 - Tr 36x5	**306** 3)
	5	15,3	2,75	3	Tr 26x5	**304** 3)
	6	16,2	3,50	3	Tr 34x6 - Tr 42x6	**310** 2)
	6	16,2	3,50	3	Tr 30x6 - Tr 32x6	**308** 2)
10	5	25,0	2,75	3	Tr 44x5 - Tr 48x5	**322** 4)
	7	22,0	3,75	3	Tr 38x7 - Tr 42x7	**324** 4)

P	●
M	●
K	●
N	●
S	●
H	●
O	●

1) profile corrected

2) Not suitable for the 50 805 011 and 50 805 010 holders

3) Not suitable for the 50 805 011 and 50 805 010 holders / profile corrected

4) Not suitable for the 50 805 026, 50 805 025 and 50 805 024 holders

→ v_c/f_z Page 82

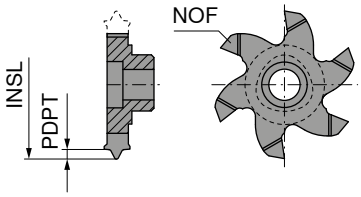
When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 84+85.**

ModuSet – Thread milling insert – Full profile

▲ with holder 50 805 010 / 50 805 011 maximum pitch of 3 mm is possible!

Polygon | UNC | 60°





Ti500



Solid carbide

Size	TPI 1/"	INSL mm	PDPT mm	NOF	50 886 ...
6	12	9,6	1,228	3	202
	11	10,5	1,355	3	204
	10	11,7	1,485	3	206
7	9	16,0	1,577	6	212
9	8	18,0	1,809	6	222
	7	20,0	2,043	6	224

P	●
M	●
K	●
N	●
S	●
H	●
O	●

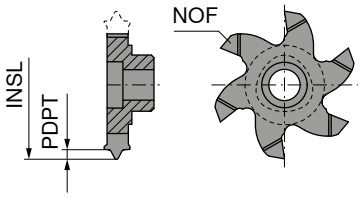
→ v_c/f_z Page 82

ModuSet – Thread milling insert – Full profile

▲ with holder 50 805 010 / 50 805 011 maximum pitch of 3 mm is possible!

Polygon | UNF | 60°





Ti500



Solid carbide

Size	Thread	INSL mm	PDPT mm	NOF	50 886 ...
6	1/2 - 20	9,6	0,733	3	302
	9/16 - 18	10,5	0,827	3	304
	3/4 - 16	11,7	0,945	3	306
7	7/8 - 14	17,7	1,071	6	312
9	1 - 12	20,0	1,228	6	322

P	●
M	●
K	●
N	●
S	●
H	●
O	●

→ v_c/f_z Page 82

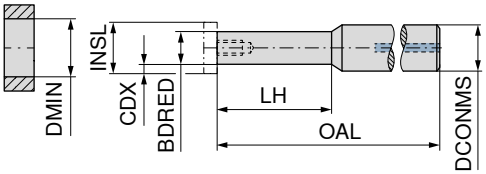
When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 84+85.**

ModuSet – Circular milling cutter

- ▲ For maximum machining depth, note insert width (CW)
- ▲ Size 6 = for INSL 9.6; 10.5; 11.7; 12
- ▲ Size 7 = for INSL 16; 17.7
- ▲ Size 9 = for INSL 18; 20; 21.7
- ▲ Size 10 = for INSL 24; 25; 26; 27.7
- ▲ Holder available as screw-in variant in the online shop

Scope of supply:
including key

Polygon





7

Size	LH mm	CDX mm	DCONMS $_{h6}$ mm	OAL mm	BDRED mm	DMIN mm	torque moment Nm	50 805 ...	50 805 ...
6	20,00	2,25	12	67,5	7,0	12	1,0		050 [1]
	20,00	2,25	12	67,5	7,0	12	1,0		051
	20,00	2,25	12	67,5	7,0	12	1,0	052	
	30,00	2,25	12	80,0	7,0	12	1,0		053
	30,00	2,25	12	80,0	7,0	12	1,0	054	
	40,00	2,25	12	100,0	7,0	12	1,0		055
	40,00	2,25	12	100,0	7,0	12	1,0	056	
7	20,90	4,00	12	67,4	9,0	18	1,1		002 [1]
	21,00	4,00	12	67,4	9,0	18	1,1		004
	21,00	4,00	12	67,4	9,0	18	1,1	005	
	36,00	4,00	12	82,4	9,0	18	1,1		008
	36,00	4,00	12	82,4	9,0	18	1,1	085	
		4,00	12	122,5	12,0	18	1,1	010	
		4,00	12	82,4	12,0	18	1,1	011	
9	29,75	5,00	16	80,0	11,5	22	3,8		070 [1]
	30,00	5,00	16	80,0	11,5	22	3,8		071
	30,00	5,00	16	80,0	11,5	22	3,8	072	
	50,00	5,00	16	100,0	11,5	22	3,8		073
	50,00	5,00	16	100,0	11,5	22	3,8	074	
10	20,50	5,70	16	105,0	15,5	28	5,5	025	
	20,50	6,80	16	149,7	15,5	28	5,5	024	
	20,50	6,80	20	175,4	15,5	28	5,5	026	
	30,40	6,80	16	79,6	13,6	28	5,5		012 [1]
	30,50	6,80	16	79,6	13,6	28	5,5	015	
	30,50	6,80	16	79,6	13,6	28	5,5		014
	45,50	6,80	16	94,6	13,6	28	5,5	021	
	45,50	6,80	16	94,6	13,6	28	5,5		020
	60,50	6,80	16	109,6	13,6	28	5,5		022
	60,50	6,80	16	109,6	13,6	28	5,5	023	

1) Steel version


Key D


Clamping screw

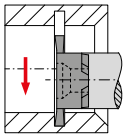
Spare parts Size	80 950 ...		70 960 ...	
6	T08 - IP	125	M2,5x7	246
7	T08 - IP	125	M3x13	231
9	T15 - IP	128	M4x13	236
10	T20 - IP	129	M5x13,5	243

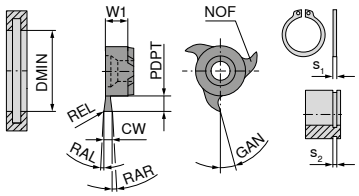
ModuSet – Milling insert for circlip grooves

Mini Mill

≥ Ø 10 mm







CWX500



Solid carbide

53 006 ...

Size	DMIN mm	$s_{2\ H13}$ mm	CW $_{-0.02}$ mm	PDPT mm	W1 mm	REL mm	RAL °	RAR °	GAN °	s_1 mm	NOF	
10	10	0,70	0,74	1,5	3,50		1	1	15	0,60	3	070
	10	0,80	0,84	1,5	3,50		1	1	15	0,70	3	080
	10	0,90	0,94	1,5	3,50		1	1	15	0,80	3	090
	10	1,10	1,21	1,5	3,50		3	3	15	1,00	3	110
	10	1,30	1,41	1,5	3,50	0,10	3	3	15	1,20	3	130
	10	1,60	1,71	1,5	3,50	0,10	3	3	15	1,50	3	160
	12	1,10	1,21	2,5	3,50		3	3	15	1,00	3	112
	12	1,30	1,41	2,5	3,50	0,10	3	3	15	1,20	3	132
	12	1,60	1,71	2,5	3,50	0,10	3	3	15	1,50	3	162
18	18	0,70	0,74	1,5	5,75		1	1	15	0,60	3	270
	18	0,80	0,84	1,7	5,75		1	1	15	0,70	3	280
	18	0,90	0,94	1,9	5,75		1	1	15	0,80	3	290
	18	1,10	1,21	3,5	5,75		3	3	15	1,00	3	310
	18	1,30	1,41	3,5	5,75	0,10	3	3	15	1,20	3	330
	18	1,60	1,71	3,5	5,75	0,10	3	3	15	1,50	3	360
22	22	0,70	0,74	1,5	5,70		1	1	15	0,60	3	470
	22	0,80	0,84	1,7	5,70		1	1	15	0,70	3	480
	22	0,90	0,94	1,9	5,70		1	1	15	0,80	3	490
	22	1,00	1,04	2,1	5,70		1	1	15	0,90	3	500
	22	1,10	1,21	2,5	5,70		1	1	15	1,00	3	510
	22	1,30	1,41	4,5	5,70	0,10	3	3	15	1,20	3	530
	22	1,60	1,71	4,5	5,70	0,10	3	3	15	1,50	3	560
	22	1,85	1,96	4,5	5,70	0,15	3	3	15	1,75	3	585
	22	2,15	2,26	4,5	5,70	0,15	3	3	15	2,00	3	615
	22	2,65	2,76	4,5	5,70	0,15	3	3	15	2,50	3	665
	22	3,15	3,26	4,5	5,70	0,20	3	3	15	3,00	3	415
	22	4,15	4,26	4,5	5,70	0,20	3	3	15	4,00	3	515
	22	5,15	5,26	4,5	5,70	0,20	3	3	15	5,00	3	605

P	●
M	●
K	●
N	●
S	○
H	
O	●

→ v_c/f_z Page 83

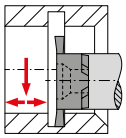
When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 84+85.**

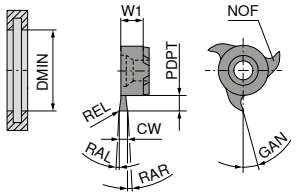
ModuSet – Milling insert for groove milling

Mini Mill

≥ Ø 10 mm







CWX500



Solid carbide

53 007 ...

Size	DMIN mm	CW 0.02 mm	PDPT mm	W1 mm	REL mm	RAL °	RAR °	GAN °	NOF	
10	10	1,0	1,5	3,50	0,1	3	3	15	3	010
	10	1,5	1,5	3,50	0,2	3	3	15	3	015
	10	2,0	1,5	3,50	0,2	3	3	15	3	020
	10	2,5	1,5	3,50	0,2	3	3	15	3	025
	12	1,5	2,0	3,50	0,2	3	3	15	6	114
	12	1,5	2,5	3,50	0,2	3	3	15	3	115
	12	2,0	2,0	3,50	0,2	3	3	15	6	119
	12	2,0	2,5	3,50	0,2	3	3	15	3	120
	12	2,5	2,5	3,50	0,2	3	3	15	3	125
14	14	1,0	2,5	4,50		3	3	15	3	210
	14	1,5	2,5	4,50	0,2	3	3	15	3	215
	14	2,0	2,5	4,50	0,2	3	3	15	3	220
	14	2,5	2,5	4,50	0,2	3	3	15	3	225
	16	1,5	3,5	4,50	0,2	3	3	15	3	315
	16	2,0	3,5	4,50	0,2	3	3	15	3	320
	16	2,5	3,5	4,50	0,2	3	3	15	3	325
18	18	1,5	3,5	5,75	0,1	3	3	15	6	414
	18	1,5	3,5	5,75	0,2	3	3	15	3	415
	18	2,0	3,5	5,75	0,2	3	3	15	3	420
	18	2,0	3,5	5,75	0,2	3	3	15	6	419
	18	2,5	3,5	5,75	0,2	3	3	15	6	424
	18	2,5	3,5	5,75	0,2	3	3	15	3	425
	18	3,0	3,5	5,75	0,2	3	3	15	6	429
	18	3,0	3,5	5,75	0,2	3	3	15	3	430
	18	4,0	3,5	5,75	0,2	3	3	15	3	440
22	22	1,0	4,5	6,20	0,1	3	3	15	6	810
	22	1,5	4,5	5,70	0,2	3	3	15	3	515
	22	1,5	4,5	6,20	0,1	3	3	15	6	815
	22	2,0	4,5	6,20	0,2	3	3	15	6	820
	22	2,0	4,5	5,70	0,2	3	3	15	3	520
	22	2,5	4,5	6,20	0,2	3	3	15	6	825
	22	2,5	4,5	5,70	0,2	3	3	15	3	525
	22	3,0	4,5	5,70	0,2	3	3	15	3	530
	22	3,0	4,5	6,20	0,2	3	3	15	6	830
	22	3,5	4,5	5,70	0,2	3	3	15	3	535
	22	4,0	4,5	5,70	0,2	3	3	15	3	540
	22	4,0	4,5	6,20	0,2	3	3	15	6	840
28	25	2,0	5,0	6,50	0,2	3	3	15	3	620
	25	2,5	5,0	6,50	0,2	3	3	15	3	625
	25	3,0	5,0	6,50	0,2	3	3	15	3	630
	25	3,5	5,0	6,50	0,2	3	3	15	3	635
	25	4,0	5,0	6,50	0,2	3	3	15	3	640
	28	1,0	6,5	6,25	0,1	3	3	15	6	610
	28	1,5	6,5	6,25	0,1	3	3	15	6	615
	28	1,5	6,5	6,50	0,2	3	3	15	3	715
	28	2,0	6,5	6,25	0,2	3	3	15	6	721
	28	2,0	6,5	6,50	0,2	3	3	15	3	720
	28	2,5	6,5	6,25	0,2	3	3	15	6	726
	28	2,5	6,5	6,50	0,2	3	3	15	3	725
	28	3,0	6,5	6,50	0,2	3	3	15	3	730
	28	3,0	6,5	6,25	0,2	3	3	15	6	731
	28	3,5	6,5	6,50	0,2	3	3	15	3	735
	28	4,0	6,5	6,25	0,2	3	3	15	6	741
	28	4,0	6,5	6,50	0,2	3	3	15	3	740
	28	5,0	6,5	6,50	0,2	3	3	15	3	750
	28	6,0	6,5	6,50	0,2	3	3	15	3	760

P	●
M	●
K	●
N	●
S	○
H	
O	●

→ v_c/f_z Page 83

When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 84+85.**

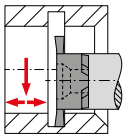
7

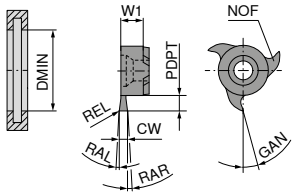
ModuSet – Milling insert for groove milling (Specialist for aluminium)

Mini Mill

≥ Ø 32 mm







CWX500



Solid carbide

53 007 ...

Size	DMIN mm	CW $_{0.02}$ mm	PDPT mm	W1 mm	REL mm	RAL °	RAR °	GAN °	NOF	
28	32	2,0	8,5	6,5	0,2	3	3	20	3	**920**
	32	2,5	8,5	6,5	0,2	3	3	20	3	**925**
	32	3,0	8,5	6,5	0,2	3	3	20	3	**930**

P	
M	
K	
N	●
S	
H	
O	

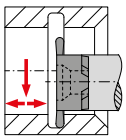
→ v_c/f_z Page 83

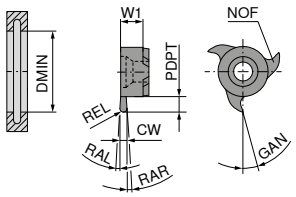
ModuSet – Milling insert for groove milling with full radius

Mini Mill

≥ Ø 12 mm







CWX500



Solid carbide

53 008 ...

Size	DMIN mm	CW $_{+0.03}$ mm	PDPT mm	W1 mm	REL mm	RAL °	RAR °	GAN °	NOF	
10	12	2,2	2,5	3,50	1,1	3	3	15	3	**011**
14	16	2,2	3,5	4,60	1,1	3	3	15	3	**111**
18	18	2,2	3,5	5,75	1,1	3	3	15	3	**211**
22	22	1,0	4,5	5,75	0,5	3	3	15	3	**305**
	22	1,6	4,5	5,75	0,8	3	3	15	3	**308**
	22	2,0	4,5	5,75	1,0	3	3	15	3	**310**
	22	2,4	4,5	5,75	1,2	3	3	15	3	**312**
	22	2,8	4,5	5,75	1,4	3	3	15	3	**314**
	22	3,0	4,5	5,75	1,5	3	3	15	3	**315**
	22	4,0	4,5	5,75	2,0	3	3	15	3	**320**
	22	4,4	4,5	5,75	2,2	3	3	15	3	**322**
	22	5,0	4,5	5,75	2,5	3	3	15	3	**325**

P	●
M	●
K	●
N	●
S	○
H	
O	●

→ v_c/f_z Page 83

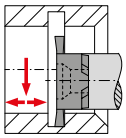
When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 84+85.**

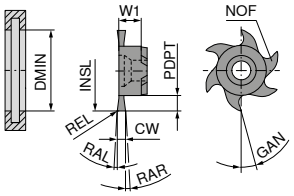
ModuSet – Milling insert for groove milling, cross-pitched

Mini Mill

≥ Ø 12 mm







CWX500



Solid carbide

53 015 ...

Size	DMIN mm	INSL mm	CW +0,02 mm	PDPT mm	W1 mm	REL mm	RAL °	RAR °	GAN °	NOF	
10	12	11,7	1,5	2,0	3,5	0,2	3	3	15	6	114
	12	11,7	2,0	2,0	3,5	0,2	3	3	15	6	119
14	16	15,7	1,5	2,5	4,5	0,2	3	3	15	6	314
	16	15,7	2,0	2,5	4,5	0,2	3	3	15	6	319
	16	15,7	2,5	2,5	4,5	0,2	3	3	15	6	324
18	18	17,7	2,0	4,0	5,8	0,2	3	3	15	6	419
	18	17,7	2,5	4,0	5,8	0,2	3	3	15	6	424
	18	17,7	3,0	4,0	5,8	0,2	3	3	15	6	429
	20	19,7	2,0	5,0	5,8	0,2	3	3	15	6	469
	20	19,7	2,5	5,0	5,8	0,2	3	3	15	6	474
	20	19,7	3,0	5,0	5,8	0,2	3	3	15	6	479
22	22	21,7	2,0	4,5	6,2	0,2	3	3	15	6	820
	22	21,7	2,5	4,5	6,2	0,2	3	3	15	6	825
	22	21,7	3,0	4,5	6,2	0,2	3	3	15	6	830
	22	21,7	4,0	4,5	6,2	0,2	3	3	15	6	840
	37	36,7	1,5	12,0	6,2	0,1	3	3	15	6	865
	37	36,7	2,0	12,0	6,2	0,2	3	3	15	6	870
28	25	24,8	2,5	5,0	6,4	0,2	3	3	15	6	626
	25	24,8	3,0	5,0	6,4	0,2	3	3	15	6	631
	25	24,8	4,0	5,0	6,4	0,2	3	3	15	6	641
	25	24,8	5,0	5,0	6,4	0,2	3	3	15	6	651
	25	24,8	6,0	5,0	6,4	0,2	3	3	15	6	661
	28	27,7	2,5	6,5	6,2	0,2	3	3	15	6	726
	28	27,7	3,0	6,5	6,2	0,2	3	3	15	6	731
	28	27,7	4,0	6,5	6,2	0,2	3	3	15	6	741
	28	27,7	5,0	6,5	6,2	0,2	3	3	15	6	751
	28	27,7	6,0	6,5	6,2	0,2	3	3	15	6	761
	35	34,7	2,0	10,0	6,2	0,2	3	3	15	6	770
	35	34,7	2,5	10,0	6,2	0,2	3	3	15	6	775
	35	34,7	3,0	10,0	6,2	0,2	3	3	15	6	780

P	●
M	●
K	●
N	●
S	○
H	
O	●

→ v_c/f_z Page 83

When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 84+85.**

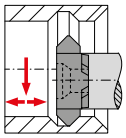
7

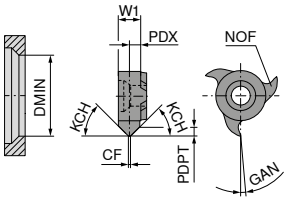
ModuSet – Milling insert for groove milling and chamfering

Mini Mill

≥ Ø 10 mm







CWX500



Solid carbide

53 009 ...

Size	DMIN mm	CF +0,03 mm	PDPT mm	W1 mm	KCH °	PDX mm	GAN °	NOF	
10	10	0,2	0,35	3,60	15	1,80	5	6	**015**
	10	0,2	0,45	3,60	20	1,80	5	6	**020**
	10	0,2	0,70	3,60	30	1,80	5	6	**030**
	10	0,2	1,20	3,60	45	1,80	5	6	**045**
	12	1,2	0,80	3,50	45	1,20	5	3	**035**
14	16	1,4	1,20	4,50	45	1,60	5	3	**145**
18	18	2,5	1,40	5,85	45	1,70	5	3	**258**
	18	0,2	2,20	5,75	45	3,00	5	6	**259**
22	22	2,0	1,70	5,85	45	2,00	5	3	**358**
	22	0,2	2,50	6,40	45	3,90	5	6	**463**
	22	3,0	3,00	9,40	45	3,25	5	3	**394** 1)
28	28	0,2	1,90	6,05	45	3,75	5	6	**560**

P	●
M	●
K	●
N	●
S	○
H	
O	●

1) Use clamping screw 73 082 006

→ v_c/f_z Page 83

When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 84+85.**

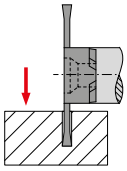
ModuSet – Milling insert for part-off

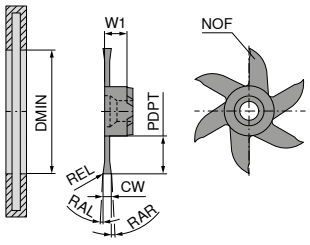
▲ PDPT = 12,0 mm in combination with holder 53 003 624
▲ reduce feed rate by 50 %

Mini Mill

≥ Ø 37 mm







CWX500



Solid carbide

Size	DMIN mm	CW +0,02 mm	PDPT mm	W1 mm	REL mm	RAL °	RAR °	NOF	53 013 ...
22	37	0,5	12	5,6		3	3	6	705 [1]
	37	0,6	12	5,7		3	3	6	706 [1]
	37	0,8	12	6,0		3	3	6	708 [1]
	37	1,0	12	6,2	0,1	3	3	6	710
	37	1,5	12	6,2	0,1	3	3	6	715

P	●
M	●
K	●
N	●
S	○
H	
O	●

1) The end face is not ground free to the center

→ v_c/f_z Page 83

7

ModuSet – Set for cut off

▲ Size 22

Mini Mill



Tool	Designation	Article no.	Bore-Ø mm	Piece	53 014 ...
Inserts	Milling inserts for separating	53 013 715	37	2	990
Tool holder	Endmill short	53 003 624		1	
Screw	M5 x 12	73 082 005		1	
Tightening Key	T20			1	

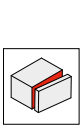
When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 84+85.**

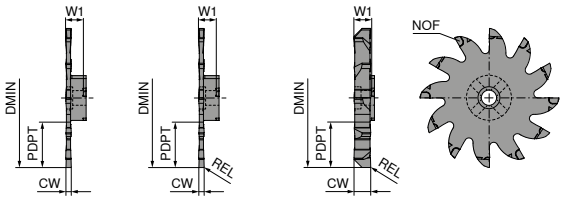
ModuSet – Milling insert for slot and multipurpose milling

▲ Interface with four driving slots
▲ CW 1,5 – 6 mm: cross-pitched

Mini Mill

≥ Ø 50 mm





NEW CWX500 — Solid carbide



NEW CWX500 — Solid carbide



NEW CWX500 — Solid carbide



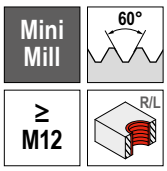
Size	DMIN mm	CW +0,02 mm	PDPT mm	W1 mm	REL mm	NOF	53 017 ...	53 017 ...	53 017 ...
50	50	0,5	16,5	6,35		12	00500		
	50	1,0	16,5	6,35		12	01000		
	50	1,5	16,5	6,35	0,1	12		01500	
	50	2,0	16,5	6,35	0,2	12		02000	
	50	2,5	16,5	6,35	0,2	12		02500	
	50	3,0	16,5	6,35	0,2	12		03000	
	50	4,0	16,5	6,35	0,2	12			04000
	50	5,0	16,5	6,35	0,2	12			05000
	50	6,0	16,5	6,35	0,2	12			06000
P							●	●	●
M							●	●	●
K							●	●	●
N							●	●	●
S							○	○	○
H									
O							●	●	●

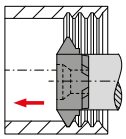
→ v_c/f_z Page 83

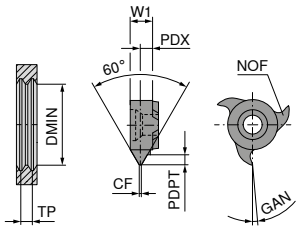
Suitable holders can be found on → **page 33.**

When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 84+85.**

ModuSet – Milling insert for internal thread milling – Partial profile







CWX500



Solid carbide

53 010 ...

Size	Thread$_{min}$	TP mm	DMIN mm	CF mm	PDPT mm	W1 mm	PDX mm	GAN °	NOF	
10	M12	1,0 - 1,75	9,8	0,13	1,02	3,20	2,4	5	6	017
	M14	1,0 - 1,75	11,7	0,13	1,08	3,60	2,8	5	3	010
	M14	1,0 - 2,0	10,1	0,13	1,25	3,20	2,2	5	6	021
	M14	1,0 - 2,0	11,7	0,13	1,25	3,60	2,8	5	3	020
	M16	1,5 - 2,75	11,0	0,19	1,67	3,20	2,0	5	6	027
	M16	1,5 - 2,75	11,7	0,19	1,67	3,60	2,4	5	3	015
	M16	2,0 - 3,0	11,1	0,25	1,78	3,20	1,9	5	6	029
	M16	2,0 - 3,0	11,7	0,25	1,78	3,60	2,2	5	3	030
14	M18	1,0 - 1,75	15,7	0,12	1,08	4,60	3,8	5	3	210
	M18	1,0 - 2,0	15,7	0,12	1,25	4,60	3,5	5	3	220
	M20	1,5 - 2,75	15,7	0,18	1,67	4,60	3,5	5	3	215
	M22	2,5 - 3,0	15,7	0,31	1,78	4,60	3,4	5	3	230
18	M22	1,0 - 1,75	17,7	0,12	1,03	5,85	5,0	5	3	410
	M22	1,0 - 2,0	17,7	0,12	1,19	5,85	4,7	5	3	412
	M22	1,0 - 2,0	17,7	0,12	1,19	5,85	5,0	5	6	416
	M22	1,5 - 2,75	17,7	0,19	1,62	5,85	4,6	5	3	415
	M24	2,0 - 3,0	17,7	0,25	1,73	5,85	4,4	5	3	425
	M24	2,0 - 3,5	17,7	0,25	2,06	5,85	4,2	5	3	455
	M24	2,0 - 3,5	17,7	0,25	2,06	5,85	4,3	5	6	434
	M24	2,0 - 3,75	17,7	0,25	2,22	5,85	4,2	5	3	420
	M24	2,5 - 5,0	17,7	0,31	2,98	5,85	3,8	5	3	430
	M24	3,0 - 5,5	17,7	0,38	3,25	5,85	4,2	5	3	435
22	M27	1,0 - 2,0	21,7	0,12	1,19	5,85	4,6	5	3	610
	M27	1,0 - 2,0	21,7	0,12	1,19	6,20	5,0	5	6	710
	M27	1,5 - 2,75	21,7	0,18	1,62	5,85	4,5	5	3	615
	M27	2,0 - 3,75	21,7	0,25	2,22	5,85	4,2	5	3	620
	M27	2,5 - 4,5	21,7	0,25	2,70	5,85	3,7	5	3	655
	M27	2,0 - 4,5	21,7	0,25	2,70	6,05	4,2	5	6	755
	M30	2,5 - 5,0	21,7	0,31	2,98	5,85	3,8	5	3	630
	M30	3,5 - 6,0	21,7	0,44	3,52	5,85	3,4	5	3	640
	M30	3,5 - 6,5	21,7	0,44	3,84	5,85	3,2	5	3	645
28	M33	1,0 - 2,0	27,7	0,12	1,20	6,60	4,5	5	3	820
	M33	1,5 - 2,5	27,7	0,18	1,49	6,60	4,3	5	3	825
	M33	1,5 - 2,5	27,7	0,19	1,60	6,10	5,0	5	6	826
	M36	2,5 - 5,0	27,7	0,38	2,93	6,10	2,3	5	6	850
	M36	2,5 - 5,0	27,7	0,37	2,93	6,60	4,0	5	3	840
	M39	4,0 - 6,0	27,7	0,62	3,37	6,60	3,6	5	3	860

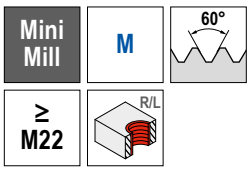
P	●
M	●
K	●
N	●
S	○
H	
O	●

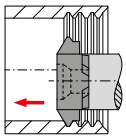
→ v_c/f_z Page 83

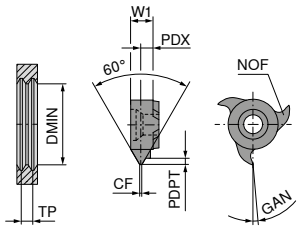
When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 84+85.**

7

ModuSet – Milling insert for internal thread milling – Full profile







CWX500



Solid carbide

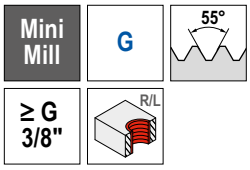
53 011 ...

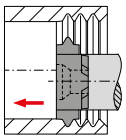
Size	Thread$_{min}$	TP mm	DMIN mm	CF mm	PDPT mm	W1 mm	PDX mm	GAN °	NOF	
18	M22	1,50	17,7	0,18	0,81	5,85	4,8	5	3	**415**
	M22	1,75	17,7	0,20	0,95	5,85	4,7	5	3	**417**
	M22	2,00	17,7	0,25	1,08	5,85	4,6	5	3	**420**
	M24	2,50	17,7	0,31	1,35	5,85	4,4	5	3	**425**
	M27	3,00	17,7	0,37	1,62	5,85	4,3	5	3	**430**
	M27	3,50	17,7	0,43	1,89	5,85	4,0	5	3	**435**
22	M24	1,50	21,7	0,19	0,81	5,85	4,8	5	3	**615**
	M24	1,50	21,7	0,19	0,81	6,20	5,3	5	6	**715**
	M27	1,75	21,7	0,22	0,95	6,20	5,2	5	6	**717**
	M27	1,75	21,7	0,22	0,95	5,85	4,7	5	3	**617**
	M27	2,00	21,7	0,25	1,08	6,20	5,0	5	6	**720**
	M27	2,00	21,7	0,25	1,08	5,85	4,6	5	3	**620**
	M30	3,00	21,7	0,37	1,62	5,85	4,3	5	3	**630**
	M30	3,00	21,7	0,37	1,62	6,20	4,8	5	6	**730**
	M30	3,50	21,7	0,43	1,89	5,85	4,0	5	3	**635**
	M33	4,00	21,7	0,50	2,16	5,85	3,9	5	3	**640**
	M33	4,00	21,7	0,50	2,16	6,20	4,4	5	6	**740**
	M33	4,50	21,7	0,56	2,43	5,85	3,7	5	3	**645**

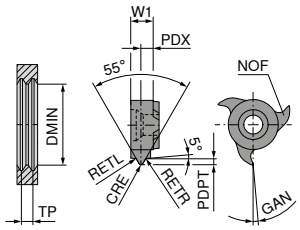
P	●
M	●
K	●
N	●
S	○
H	
O	●

→ v_c/f_z Page 83

ModuSet – Milling insert for internal thread milling – Full profile







CWX500



Solid carbide

53 012 ...

Size	Thread$_{min}$	TP mm	DMIN mm	TPI 1/"	W1 mm	PDX mm	PDPT mm	CRE mm	RETL mm	RETR mm	GAN °	NOF	
10	G 3/8"	1,34	11,7	19	3,60	2,5	0,860	0,18	0,18	0,18	5	3	**113**
	G 1/2"	1,81	11,7	14	3,60	2,3	1,160	0,24	0,24	0,24	5	3	**118**
	G 1"	2,31	11,7	11	3,60	2,0	1,480	0,31	0,31	0,31	5	3	**123**
18		1,34	17,7	19	5,85	4,9	0,856	0,18	0,18	0,18	5	3	**219**
	G 3/4"	1,81	17,7	14	5,85	4,6	1,160	0,24	0,24	0,24	5	3	**214**
	G 1"	2,31	17,7	11	5,85	4,4	1,480	0,31	0,31	0,31	5	3	**211**
22	G 1"	2,31	21,7	11	5,85	4,0	1,480	0,31	0,31	0,31	5	3	**311**
		3,17	21,7	8	5,85	3,5	2,030	0,43	0,43	0,43	5	3	**308**
	BSW 1 1/2"	4,23	21,7	6	5,85	3,1	2,710	0,58	0,58	0,58	5	3	**306**

P	●
M	●
K	●
N	●
S	○
H	
O	●

→ v_c/f_z Page 83

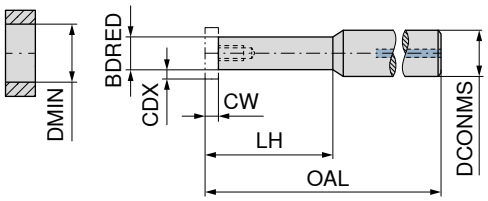
ModuSet – Circular milling cutter, extra short

▲ Steel Version

Scope of supply:
including key

Mini Mill







Steel

53 004 ...

Size	DCONMS h6 mm	BDRED mm	OAL mm	LH mm	DMIN mm	CW mm	CDX mm	torque moment Nm	
10	10	6,0	60	15,2	9,7 / 11,7	≤3,35	1,4 / 2,5	2,0	**015**
14	10	8,0	60	17,7	13,7 / 15,7	≤4,35	2,5 / 3,5	3,5	**217**
	13	8,0	70	25,7	13,7 / 15,7	≤4,35	2,5 / 3,5	3,5	**225**
18	10	9,0	60	17,0	17,7	≤5,6	3,5	4,5	**417**
	13	9,0	70	25,0	17,7	≤5,6	3,5	4,5	**425**
22	10	11,3	60	10,7	21,7	≤9,15	4,5	7,0	**610**
	13	11,3	70	25,7	21,7	≤9,15	4	7,0	**625**
28	13	14,0	70	10,7	27,7	≤10	6,5	7,0	**810**
	20	14,0	100	35,7	27,7	≤10	6,5	7,0	**835**

7

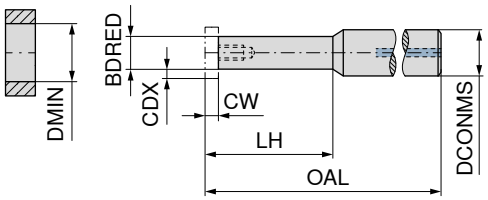
ModuSet – Circular milling cutter, short

▲ Steel Version

Scope of supply:
including key

Mini Mill







Steel



Steel

53 002 ... **53 003 ...**

Size	DCONMS h6 mm	BDRED mm	OAL mm	LH mm	DMIN mm	CW mm	CDX mm	torque moment Nm		
10	16	6	80	12,0	9,7 / 11,7	≤3,35	1,4 / 2,5	2,0	**012**	**012**
14	16	8	80	16,0	13,7 / 15,7	≤4,35	2,5 / 3,5	3,5	**216**	**216**
18	16	9	80	18,0	17,7	≤5,6	3,5	4,5	**418**	**418**
22	16	12	80	24,0	21,7	≤9,15	4,5	7,0	**624**	**624**
28	20	14	100	35,7	27,7	≤10	6,5	7,0		**835**

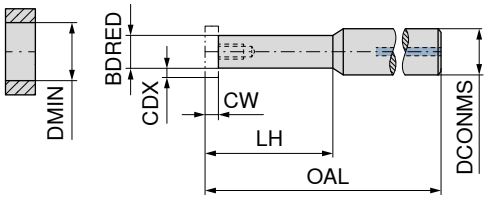
When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 84+85.**

ModuSet – Circular milling cutter, vibration-damped

Scope of supply:
including key

Mini Mill






HM


HM

Size	DCONMS h6	BDRED	OAL	LH	DMIN	CW	CDX	torque moment	53 001 ...		53 000 ...
	mm	mm	mm	mm	mm	mm	mm	Nm			
10	12	6,0	80	21	9,7 / 11,7	≤3,35	1,4 / 2,5	2,0	021		021
	12	6,0	90	30	9,7 / 11,7	≤3,35	1,4 / 2,5	2,0	030		030
	12	6,0	100	42	9,7 / 11,7	≤3,35	1,4 / 2,5	2,0	042		042
	12	7,3	90	30	9,7 / 11,7	≤3,35	0,9 / 1,85	2,0	130		130
	16	7,3	100	25	9,7 / 11,7	≤3,35	0,9 / 1,85	2,0	025		025
14	12	8,0	95	29	13,7 / 15,7	≤4,35	2,5 / 3,5	3,5	229		229
	12	8,0	110	42	13,7 / 15,7	≤4,35	2,5 / 3,5	3,5	242		242
	12	8,0	120	56	13,7 / 15,7	≤4,35	2,5 / 3,5	3,5	256		256
	12	9,5	110	42	13,7 / 15,7	≤4,35	1,65 / 2,7	3,5	342		342
	16	9,5	110	33	13,7 / 15,7	≤4,35	1,65 / 2,7	3,5	233		233
18	12	9,0	100	32	17,7	≤5,6	3,5	4,5	432		432
	12	9,0	100	45	17,7	≤5,6	3,5	4,5	445		445
	12	9,0	120	64	17,7	≤5,6	3,5	4,5	464		464
	16	9,0	93	25	17,7	≤5,6	3,5	4,5	425		425
	16	9,0	100	32	17,7	≤5,6	3,5	4,5	532		532
	16	9,0	110	45	17,7	≤5,6	3,5	4,5	545		545
	16	9,0	130	64	17,7	≤5,6	3,5	4,5	564		564
	16	13,0	110	64	17,7	≤5,6	1,5	4,5	465		465
	16	13,0	130	66	17,7	≤5,6	1,5	4,5	466		466
22	12		100	42	21,7	≤9,15	4,5	7,0	642		642
	12		130	60	21,7	≤9,15	4,5	7,0	660		660
	16	11,5	90	30	21,7	≤9,15	4,5	7,0	630		630
	16	12,0	100	42	21,7	≤9,15	4,5	7,0	742		742
	16	12,0	130	60	21,7	≤9,15	4,5	7,0	760		760
	16	12,0	160	85	21,7	≤9,15	4,5	7,0	685		685
	20	16,0	110	45	21,7	≤9,15	2,5	7,0	645		645
	20	16,0	130	65	21,7	≤9,15	2,5	7,0	665		665
28	16	14,3	100	42	27,7 / 24,8	≤10	6,5 / 5	7,0	842		842
	16	14,3	130	60	27,7 / 24,8	≤10	6,5 / 5	7,0	860		860
	16	14,3	160	85	27,7 / 24,8	≤10	6,5 / 5	7,0	885		885
	20	13,5	104	35	27,7 / 24,8	≤10	6,5 / 5	7,0	835		835
	20	14,3	160	85	27,7 / 24,8	≤10	6,5 / 5	7,0	985		985


Key D


Clamping screw


Clamping screw

Spare parts Size		80 950 ...		73 082 ...		73 082 ...
10	T08	110			M2,6	002
14	T10	112			M3,5	003
18	T15	113			M4	004
22	T20	114	M5	006	M5	005
28	T20	114			M5	005

Clamping screw 73 082 006 only for insert 53 009 394

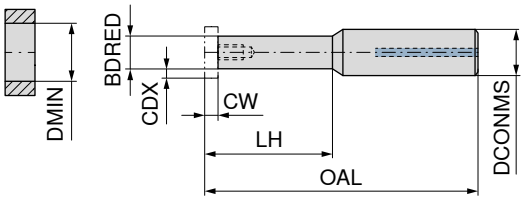
When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 84+85.**

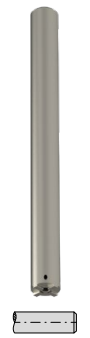
ModuSet – Circular milling cutter

▲ Steel and carbide versions
▲ Specialised cutting point with four driving slots exclusively for cutting operations in the larger diameter range

Scope of supply:
including key

Mini Mill




NEW
HM


NEW
Steel

Size	DCONMS $_{h6}$ mm	BDRED mm	OAL mm	LH mm	DMIN mm	CW mm	CDX mm	torque moment Nm	53 016 ...	53 016 ...
50	16		125	60	50	≤6	16,5	7,0	06000	
	16		155	90	50	≤6	16,5	7,0	09000	
	16		185	120	50	≤6	16,5	7,0	12000	
	20	16	100	32	50	≤6	16,5	7,0		23200


Key D


Clamping screw

Spare parts Size		80 950 ...		73 082 ...
50	T20	114	M5	006

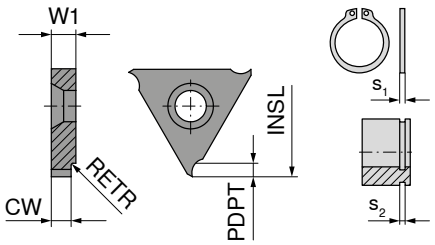
When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 84+85.**

7

ModuSet – Milling inserts for circlip grooves without chamfer

System 300





Ti500



Solid carbide

50 853 ...

Size	$s_{2\ H13}$ mm	INSL mm	W1 mm	CW $_{-0,03}$ mm	PDPT mm	RETR mm	s_1 mm	
03	0,90	10,6	2,34	0,98	0,70	0,3	0,80	**302**
	1,10	10,6	2,34	1,18	0,90	0,3	1,00	**304**
	1,30	10,6	2,34	1,38	1,10	0,3	1,20	**306**
	1,60	10,6	2,34	1,68	1,25	0,3	1,50	**308**
	1,85	10,6	2,34	1,93	1,25	0,3	1,75	**310**
02	0,90	17,5	3,50	0,98	0,70	0,3	0,80	**312**
	1,10	17,5	3,50	1,18	0,90	0,3	1,00	**314**
	1,30	17,5	3,50	1,38	1,10	0,3	1,20	**316**
	1,60	17,5	3,50	1,68	1,25	0,3	1,50	**318**
	1,85	17,5	3,50	1,93	1,25	0,3	1,75	**320**
	2,15	17,5	3,50	2,23	1,75	0,3	2,00	**322**
	2,65	17,5	3,50	2,73	1,75	0,3	2,50	**324**
	3,15	17,5	3,50	3,23	2,20	0,3	3,00	**326**
01	0,90	23,0	4,00	0,98	0,70	0,3	0,80	**328**
	1,10	23,0	4,00	1,18	0,90	0,3	1,00	**330**
	1,30	23,0	4,00	1,38	1,10	0,3	1,20	**332**
	1,60	23,0	4,00	1,68	1,25	0,3	1,50	**334**
	1,85	23,0	4,00	1,93	1,25	0,3	1,75	**336**
	2,15	23,0	4,00	2,23	1,75	0,3	2,00	**338**
	2,65	23,0	4,00	2,73	1,75	0,3	2,50	**340**
	3,15	23,0	4,00	3,23	2,20	0,3	3,00	**342**

P	●
M	●
K	●
N	●
S	●
H	○
O	●

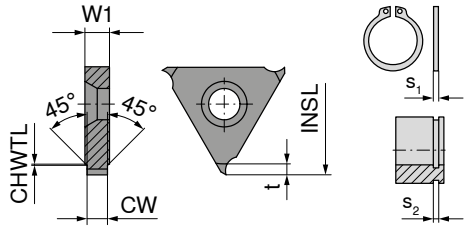
→ v_c/f_z Page 82

When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 84+85.**

ModuSet – Milling inserts for circlip grooves with chamfer

System 300





Ti500



Solid carbide

50 852 ...

Size	$s_{2\ H13}$ mm	INSL mm	W1 mm	$CW_{-0,03}$ mm	t mm	CHWTL mm	s_1 mm	
03	1,10	10,6	2,34	1,18	0,50	0,10	1,00	**302**
02	1,10	17,5	3,50	1,18	0,50	0,10	1,00	**312**
	1,30	17,5	3,50	1,38	0,85	0,15	1,20	**314**
	1,60	17,5	3,50	1,68	1,00	0,15	1,50	**316**
	1,85	17,5	3,50	1,93	1,25	0,20	1,75	**317**
	2,15	17,5	3,50	2,23	1,50	0,20	2,00	**318**
	2,65	17,5	3,50	2,73	1,50	0,20	2,50	**319**
01	1,10	23,0	4,00	1,18	0,50	0,10	1,00	**320**
	1,30	23,0	4,00	1,38	0,70	0,15	1,20	**321**
	1,30	23,0	4,00	1,38	0,85	0,15	1,20	**322**
	1,60	23,0	4,00	1,68	1,00	0,15	1,50	**324**
	1,60	23,0	4,00	1,68	0,85	0,15	1,50	**323**
	1,85	23,0	4,00	1,93	1,25	0,20	1,75	**325**
	2,15	23,0	4,00	2,23	1,50	0,20	2,00	**326**
	2,65	23,0	4,00	2,73	1,75	0,20	2,50	**328**
	2,65	23,0	4,00	2,73	1,50	0,20	2,50	**327**
	3,15	23,0	4,00	3,32	1,75	0,20	3,00	**329**

P	●
M	●
K	●
N	●
S	●
H	○
O	●

→ v_c/f_z Page 82

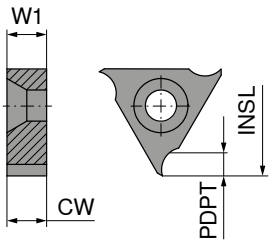
When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 84+85.**

7

ModuSet – Milling inserts without profile, ground ready-for-use

System 300





Ti500



Solid carbide

50 851 ...

Size	CW $_{+0,02}$ mm	PDPT mm	INSL mm	W1 mm	
03	2,34	1,60	10,6	2,34	304
	3,00	1,60	10,6	3,00	306
02	3,50	2,60	17,5	3,50	312
	5,00	2,60	17,5	5,00	314
	6,00	2,60	17,5	6,00	316
01	4,00	3,45	23,0	4,00	322 1)
	6,50	3,45	23,0	6,50	324 1)
P					●
M					●
K					●
N					●
S					●
H					○
O					●

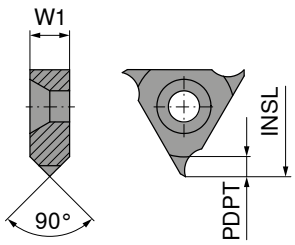
1) with circular milling cutter 50 800 090 PDPT = 3.0 mm

→ v_c/f_z Page 82

ModuSet – Milling inserts for chamfering and deburring

System 300





Ti500



Solid carbide

50 857 ...

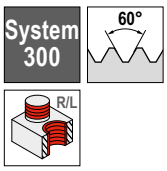
Size	PDPT mm	INSL mm	W1 mm	
03	1,50	10,6	3,0	304
02	2,50	17,5	5,0	314
01	3,25	23,0	6,5	322 1)
P				●
M				●
K				●
N				●
S				●
H				○
O				●

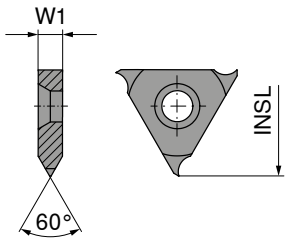
1) with circular milling cutter 50 800 090 PDPT = 3.0 mm

→ v_c/f_z Page 82

When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 84+85.**

ModuSet – Thread milling insert – Partial profile







Solid carbide

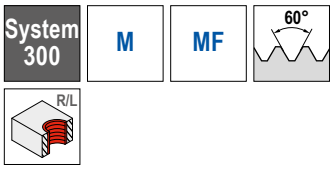
50 855 ...

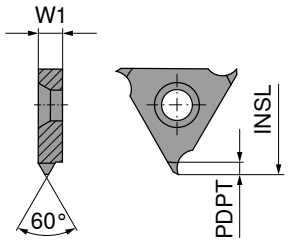
Size	TP mm	INSL mm	W1 mm	
02	1 - 3,5	17,5	3,5	314
01	1 - 4,0	23,0	4,0	324

P	●
M	●
K	●
N	●
S	●
H	○
O	●

→ v_c/f_z Page 82

ModuSet – Thread milling insert – Full profile







Solid carbide

50 859 ...

Size	TP mm	INSL mm	W1 mm	PDPT mm	
03	1,0	10,6	2,34	0,578	304
	1,5	10,6	2,34	0,864	308
	2,0	10,6	2,34	1,159	310
02	1,0	17,5	3,50	0,578	311
	1,5	17,5	3,50	0,864	312
	2,0	17,5	3,50	1,159	314
	2,5	16,0	3,50	1,444	317 1)
	2,5	17,5	3,50	1,444	316
	3,0	17,5	3,50	1,728	318
01	1,0	23,0	4,00	0,578	320
	1,5	23,0	4,00	0,864	322
	2,0	23,0	4,00	1,159	324
	2,5	23,0	4,00	1,444	326
	3,0	23,0	4,00	1,728	328
	3,5	23,0	4,00	2,023	330
	4,0	23,0	4,00	2,308	332
	4,5	23,0	6,50	2,602	334
	5,0	23,0	6,50	2,887	336
	6,0	23,0	6,50	3,467	338 2)

P	●
M	●
K	●
N	●
S	●
H	○
O	●

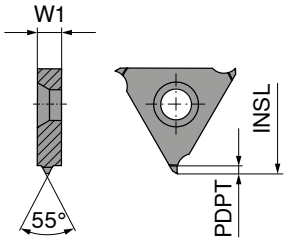
1) M20x2,5 – profile corrected
2) with circular milling cutter 50 800 090 PDPT = 3.0 mm

→ v_c/f_z Page 82

ModuSet – Thread milling insert – Full profile

System 300 | G | BSW | BSF | 55°





Ti500



Solid carbide

50 858 ...

Size	TP mm	TPI 1/"	INSL mm	W1 mm	PDPT mm	
02	1,814	14	17,5	3,5	1,162	**314**
	2,309	11	17,5	3,5	1,494	**312**
01	2,309	11	23,0	4,0	1,494	**322**

P	●
M	●
K	●
N	●
S	●
H	○
O	●

→ v_c/f_z Page 82

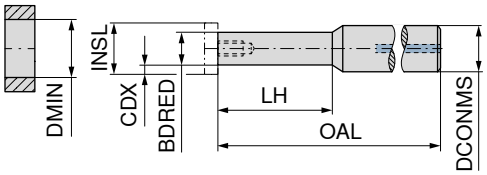
When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 84+85.**

ModuSet – Circular milling cutter

▲ Size refers to milling inserts

Scope of supply:
including key

System 300





50 800 ...

Size	INSL mm	CDX mm	LH mm	DCONMS $_{h6}$ mm	OAL mm	BDRED mm	DMIN mm	torque moment Nm	
03	10,6	1,60	17,2	10	57,20	7,4	11	0,9	**020** 1)
	10,6	1,60	34,2	10	74,20	7,4	11	0,9	**025** 2)
02	17,5	2,60	28,7	12	74,05	12,0	20	3,8	**030**
	17,5	2,60	63,7	12	108,70	12,0	20	3,8	**045** 2)
01	23,0	3,45	38,5	16	87,00	16,1	25	5,5	**050**
	23,0	3,45	67,5	16	116,00	16,1	25	5,5	**070**
	23,0	3,00	88,5	16	137,00	17,0	25	5,5	**090** 2)

1) Without Through Coolant
2) Carbide version



Key D

80 950 ...



Clamping screw

70 960 ...

Spare parts Size				
03	T06 - IP	**123**	M2x9	**232**
02	T15 - IP	**128**	M4x12,3	**233**
01	T20 - IP	**129**	M5x15	**234**

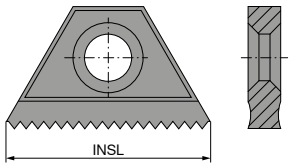
When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 84+85.**

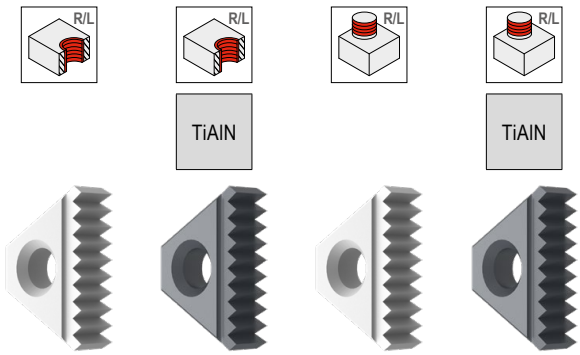
7

ModuThread – Thread milling insert

▲ Can be used on both sides (except for INSL 10.4)

MWN | M | MF | 60°





Solid carbide | Solid carbide | Solid carbide | Solid carbide

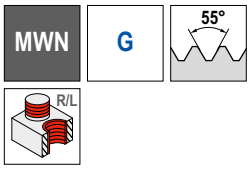
INSL mm	TP mm	50 890 ...		50 890 ...		50 891 ...		50 891 ...	
10,4	0,50		100						
	0,75		101						
	1,00		102		302				
	1,25		103						
	1,50		104		304				
11,0	0,50		120						
	0,75		121						
	1,00		122		322				
	1,25		123						
	1,50		124		324				
16,0	0,50		140						
	0,75		141						
	1,00		142		342		142		342
	1,25		143				143		
	1,50		144		344		144		344
	1,75		145				145		
	2,00		146		346		146		346
27,0	1,00		162		362		162		362
	1,25		163				163		
	1,50		164		364		164		364
	1,75		165						
	2,00		166		366		166		366
	2,50		167				167		
	3,00		168		368		168		368
	3,50		169				169		
	4,00		170				170		
P			●		●		●		●
M			○		●		○		●
K			●		●		●		●
N			●		●		●		●
S									
H									
O			●		○		●		○

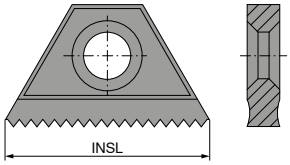
→ v_c/f_z Page 81

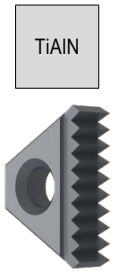
When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 84+85.**

ModuThread – Thread milling insert

▲ Can be used on both sides (except for INSL 10.4)







Solid carbide

50 895 ...

INSL mm	TPI 1/"	TP mm	
10,4	19	1,337	300
16,0	14	1,814	342
	11	2,309	344
27,0	11	2,309	366

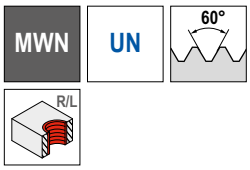
P	●
M	●
K	●
N	●
S	
H	
O	○

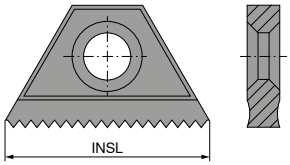
→ v_c/f_z Page 81

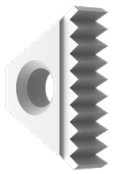
7

ModuThread – Thread milling insert

▲ Can be used on both sides (except for INSL 10.4)







Solid carbide

50 892 ...

INSL mm	TPI 1/"	TP mm	
10,4	20	1,270	100
	18	1,411	102
16,0	16	1,588	144
	12	2,117	146
27,0	12	2,117	166
	8	3,175	168

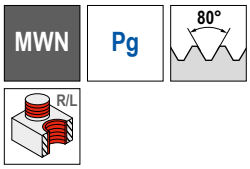
P	●
M	○
K	●
N	●
S	
H	
O	●

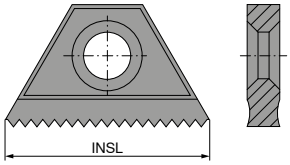
→ v_c/f_z Page 81

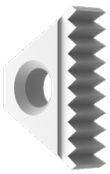
When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 84+85.**

ModuThread – Thread milling insert

▲ double sided







Solid carbide

50 896 ...

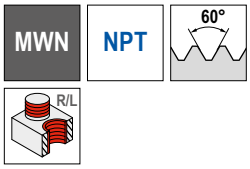
INSL mm	TPI 1/"	TP mm	
16	18	1,411	142
	16	1,588	144

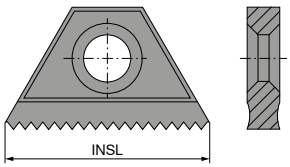
P	●
M	○
K	●
N	●
S	
H	
O	●

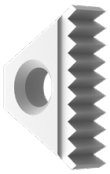
→ v_c/f_z Page 81

ModuThread – Thread milling insert

▲ double sided







Solid carbide

50 897 ...

INSL mm	TPI 1/"	TP mm	
16	14,0	1,814	142
	11,5	2,209	144
27	11,5	2,209	164
	8,0	3,175	166

P	●
M	○
K	●
N	●
S	
H	
O	●

→ v_c/f_z Page 81

Note! Thread milling inserts are marked R (right-hand thread) and L (left-hand thread). The standard tool holder cannot be used to produce a left-hand thread! Tool holder for left-hand thread available on special request.

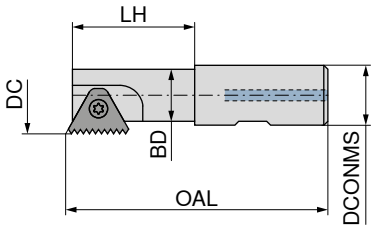
When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 84+85.**

ModuThread – Circular milling cutter

▲ INSL refers to milling inserts

Scope of supply:
includes key

MWN	M	MF	G
	Pg	UN	





50 843 ...

INSL mm	BD mm	LH mm	DCONMS mm	OAL mm	DC mm	torque moment Nm	
10,4	6,8	12	12	69	9,0	0,9	**101**
	6,8	17	20	84	9,0	0,9	**102**
11,0	8,9	12	12	70	11,5	1,2	**111**
	8,9	20	20	85	11,5	1,2	**112**
16,0	13,6	22	16	90	17,0	2,5	**161**
	16,6	43	20	95	20,0	2,5	**162**
	18,6	25	25	125	22,0	2,5	**163**
27,0	24,0	52	25	110	30,0	9,0	**271**
	31,0	58	32	120	37,0	9,0	**273**
	24,0	92	25	150	30,0	9,0	**272**
	31,0	98	32	160	37,0	9,0	**274**

7

Pilot hole diameter for circular end mill 50 843 ...

BD	TP in mm									
	0,5 mm 48 G/"	0,75 mm 32 G/"	1,0 mm 24 G/"	1,25 mm 20 G/"	1,5 mm 16 G/"	2,0 mm 12 G/"	2,5 mm 10 G/"	3,0 mm 8 G/"	3,5 mm 7 G/"	4,0 mm 6 G/"
6,8	9,5	10	10,7	11,4	12					
8,9	12	12,5	13,2	13,9	14,5					
13,6	17,6	18,2	19	19,6	20	21				
16,6	20,7	21,4	22	22,6	23	24				
18,6	22,7	23,4	24	24,6	25	26				
24,0	30,7	31,4	32	32,8	33,5	34,6	36,6	39	42	45
31,0	38	38,6	39,5	40,4	41	42	44	46,5	49	52



Key D

80 950 ...



Clamping screw

70 950 ...

Spare parts INSL				
10,4	T07	**109**	M2,2x5,0	**200**
11	T08	**110**	M2,6x6,5	**201**
16	T10	**112**	UNC5-40 x 8	**202**
27	T25	**115**	M5x15	**203**

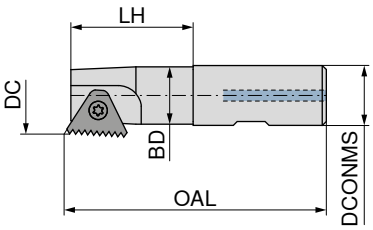
ModuThread – Circular milling cutter

▲ INSL refers to milling inserts

Scope of supply:
includes key

MWN | NPT







50 844 ...

INSL mm	BD mm	Thread	LH mm	DCONMS h6 mm	OAL mm	DC mm	torque moment Nm	
16	12,5	NPT 1/2	22	16	90	15,5	2,5	**161**
	15,0	NPT 3/4 - 1 1/4	23	20	85	19,0	2,5	**162**
27	24,0	NPT 1 1/2 - 2	52	25	110	30,0	9,0	**271**
	31,0	NPT > 2	58	32	120	37,0	9,0	**272**

Key D

80 950 ...



Clamping screw

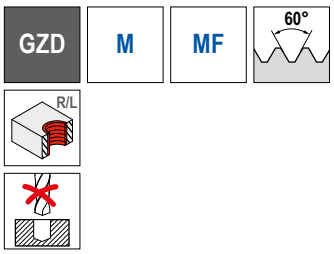
70 950 ...

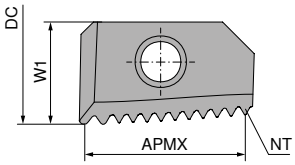
Spare parts

INSL				
16	T10	**112**	UNC5-40 x 8	**202**
27	T25	**115**	M5x15	**203**

When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 84+85.**

ModuThread – Thread milling insert





Ti500



Solid carbide

50 863 ...

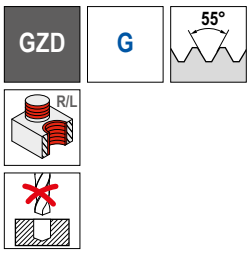
DC mm	TP mm	W1 mm	APMX mm	NT	
12	1,0	7,5	12,0	13	300
	1,5	7,5	10,5	8	302
17	1,0	11,0	16,0	17	310
	1,5	11,0	16,5	12	312
	2,0	11,0	16,0	9	314
20	1,0	7,5	12,0	13	320
	1,5	7,5	10,5	8	322
25	1,0	11,0	16,0	17	330
	1,5	11,0	16,5	12	332
	2,0	11,0	16,0	9	334

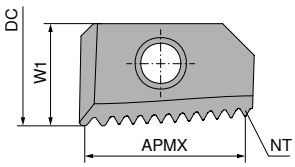
P	●
M	●
K	●
N	●
S	
H	
O	

→ v_c/f_z Page 81

7

ModuThread – Thread milling insert





Ti500



Solid carbide

50 864 ...

DC mm	TPI 1/"	W1 mm	APMX mm	NT	
12	14	7,5	9,07	6	300
17	14	11,0	16,33	10	312 [1]
	14	11,0	16,33	10	314 [2]
	11	11,0	16,16	8	310
25	14	11,0	16,33	10	332
	11	11,0	16,16	8	330

P	●
M	●
K	●
N	●
S	
H	
O	

1) Thread: 5/8 – 3/4 – 7/8
2) 1/2" Profile corrected

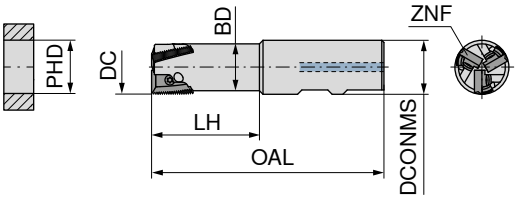
→ v_c/f_z Page 81

ModuThread – Circular milling cutter

Scope of supply:
includes key

GZD







50 842 ...

DC mm	LH mm	DCONMS h6 mm	OAL mm	BD mm	ZNF	PHD mm	torque moment Nm	
12	18	16	74,0	9,4	1	14	1,1	121
17	30	16	79,0	13,7	1	19	3,8	171
20	32	20	83,0	17,5	3	22	1,1	201
25	50	25	107,6	21,7	3	26	3,8	251
	85	25	142,6	21,7	3	26	3,8	252 1)

1) Heavy metal version with mounted head



Key D

80 950 ...



Clamping screw

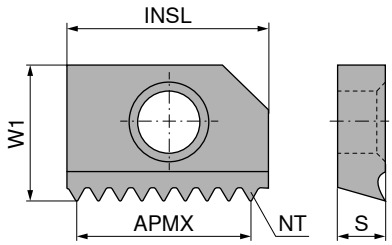
70 960 ...

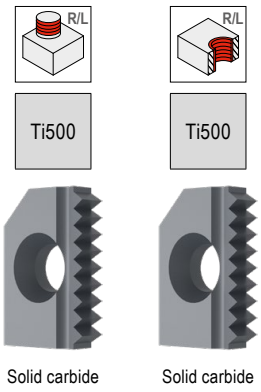
Spare parts DC				
12	T08 - IP	125	M2,5x6,5	244
17	T15 - IP	128	M4x7,5	245
20	T08 - IP	125	M2,5x6,5	244
25	T15 - IP	128	M4x7,5	245

When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 84+85.**

ModuThread – Thread milling insert

GZG | M | MF | 60°





Solid carbide | Solid carbide

INSL mm	TP mm	W1 mm	APMX mm	S mm	NT	50 887 ...	50 885 ...
14,5	0,50	10,0	13,50	3,18	28		350
	0,75	10,0	13,50	3,18	19		352
	1,00	10,0	13,00	3,18	14	304	354
	1,25	10,0	12,50	3,18	11		356
	1,50	10,0	12,00	3,18	9	308	358
	1,75	10,0	12,25	3,18	8		360
	2,00	10,0	12,00	3,18	7	312	362
	2,50	10,0	10,00	3,18	5		364
	2,50	10,0	10,00	3,18	5		366 1)
15,0	3,00	10,5	12,00	3,18	5		370 2)
	3,50	10,5	10,50	3,18	4		372 2)
21,0	1,00	10,0	19,00	3,18	20		380
	1,50	10,0	19,50	3,18	14		382
	1,50	10,0	18,00	3,18	13	320	
	2,00	10,0	18,00	3,18	10		384
26,0	1,50	15,0	24,00	5,00	17		390
	2,00	15,0	24,00	5,00	13		392
	3,00	15,0	21,00	5,00	8		396
	3,50	15,0	20,00	5,00	7		398
	4,00	15,0	20,00	5,00	6		400
P						●	●
M						●	●
K						●	●
N						●	●
S							
H							
O							

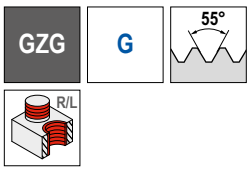
1) M20x2,5 – profile corrected
2) Without chamfer

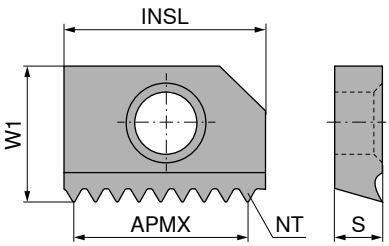
→ v_c/f_z Page 81

When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 84+85.**

7

ModuThread – Thread milling insert





Ti500



Solid carbide

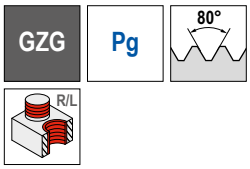
50 888 ...

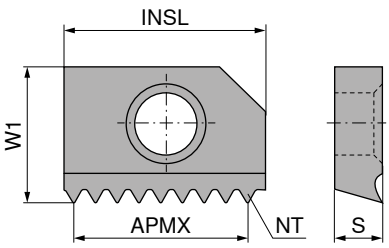
INSL mm	TPI 1/"	TP mm	W1 mm	APMX mm	S mm	NT	
14,5	18	1,411	10	11,28	3,18	9	310
	16	1,587	10	11,11	3,18	8	312
	14	1,814	10	12,69	3,18	8	314
	12	2,116	10	10,58	3,18	6	316
	11	2,309	10	11,54	3,18	6	318
21,0	14	1,814	10	18,14	3,18	11	320
	11	2,309	10	18,47	3,18	9	322
26,0	11	2,309	15	23,09	5,00	11	330

P	●
M	●
K	●
N	●
S	
H	
O	

→ v_c/f_z Page 81

ModuThread – Thread milling insert





Ti500



Solid carbide

50 894 ...

INSL mm	TPI 1/"	TP mm	W1 mm	APMX mm	S mm	NT	
14,5	18	1,411	10	12,69	3,18	10	302
	16	1,587	10	11,11	3,18	8	304

P	●
M	●
K	●
N	●
S	
H	
O	

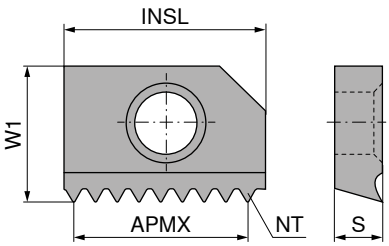
→ v_c/f_z Page 81

When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 84+85.**

ModuThread – Thread milling insert

GZG | UN | 60°





Ti500



Solid carbide

50 889 ...

INSL mm	TPI 1/"	TP mm	W1 mm	APMX mm	S mm	NT	
14,5	18	1,411	10	12,69	3,18	10	**310**
	16	1,587	10	12,70	3,18	9	**312**
21,0	16	1,587	10	19,05	3,18	13	**320**
	14	1,814	10	18,14	3,18	11	**322**
	12	2,116	10	18,04	3,18	10	**324**

P	●
M	●
K	●
N	●
S	
H	
O	

→ v_c/f_z Page 81

When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 84+85.**

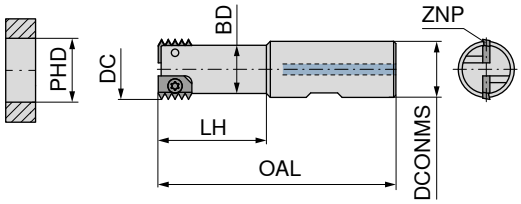
ModuThread – Circular milling cutter

▲ INSL refers to milling inserts

Scope of supply:
includes key

GZG







50 841 ...

INSL mm	DC mm	LH mm	DCONMS $_{h6}$ mm	OAL mm	BD mm	ZNP	PHD mm	torque moment Nm	
14,5	16	30,0	16	78	12,7	1	18,5	3,8	**016**
	16	50,0	16	98	12,7	1	18,5	3,8	**017** 1)
	20	60,0	20	110	16,8	1	23,0	3,8	**020**
	25	48,2	25	106	21,5	2	30,0	3,8	**025**
	25	92,2	25	150	21,5	2	30,0	3,8	**026** 1)
15,0	18	30,0	16	79	12,7	1	20,0	3,8	**218**
	22	60,0	20	110	16,8	1	26,0	3,8	**222**
	27	48,2	25	106	21,5	2	32,0	3,8	**227**
21,0	16	31,3	20	85	12,7	1	18,5	3,8	**316**
	22	32,8	25	92	18,7	1	26,0	3,8	**322**
	22	62,8	25	122	18,7	1	26,0	3,8	**323** 1)
	28	38,3	32	102	24,7	2	35,0	3,8	**328**
	28	78,3	32	142	24,5	2	35,0	3,8	**327** 1)
26,0	25	48,5	25	107	20,0	1	30,0	3,8	**125**

1) Heavy metal version



Key D

80 950 ...



Clamping screw

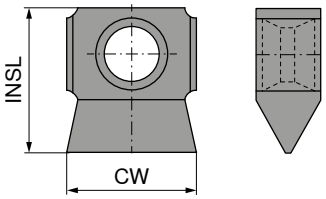
70 960 ...

Spare parts for Article no.				
50 841 016	T15 - IP	**128**	M4x6,9	**237**
50 841 017	T15 - IP	**128**	M4x6,9	**237**
50 841 020	T15 - IP	**128**	M4x7,5	**245**
50 841 025	T15 - IP	**128**	M4x8	**242**
50 841 026	T15 - IP	**128**	M4x8	**242**
50 841 218	T15 - IP	**128**	M4x6,9	**237**
50 841 222	T15 - IP	**128**	M4x6,9	**237**
50 841 227	T15 - IP	**128**	M4x8	**242**
50 841 316	T15 - IP	**128**	M4x6,9	**237**
50 841 322	T15 - IP	**128**	M4x6,9	**237**
50 841 323	T15 - IP	**128**	M4x8	**242**
50 841 328	T15 - IP	**128**	M4x8	**242**
50 841 327	T15 - IP	**128**	M4x8	**242**
50 841 125	T15 - IP	**128**	M4x11,5	**241**

When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 84+85.**

ModuThread – Thread milling insert – partial profile

EAW | M | UN | 60° | R/L



TiN



Solid carbide

50 867 ...

DC mm	TP mm	TPI 1/"	CW mm	INSL mm	
16,5	1,5 - 3,0	16 - 10	5	7,0	**115**
18	2,5 - 3,5	10 - 7	5	7,8	**225**

G | 55°

Solid carbide

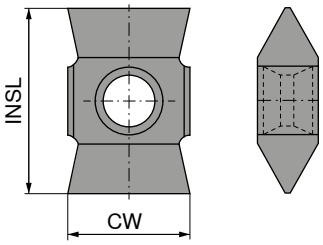
50 868 ...

DC mm	TP mm	TPI 1/"	CW mm	INSL mm	
16,5	1,814	14	5	7	**114**

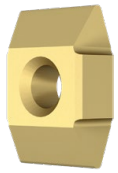
7

ModuThread – Thread milling insert – partial profile

EAW | M | UN | 60° | R/L



TiN



Solid carbide

50 860 ...

DC mm	TP mm	TPI 1/"	CW mm	INSL mm	
23,85	1,5 - 2,5	16 - 10	6,35	9,52	**315**
23,85	2,5 - 4,0	10 - 6	6,35	9,52	**325**
32,85	1,5 - 2,5	16 - 10	8,50	13,50	**415**
32,85	2,5 - 5,5	10 - 4,5	8,50	13,50	**425**

G | 55°

Solid carbide

50 861 ...

DC mm	TP mm	TPI 1/"	CW mm	INSL mm	
23,85	2,309	11	6,35	9,52	**311**
32,85	2,309	11	8,50	13,50	**411**

P	●
M	●
K	●
N	●
S	●
H	○
O	○

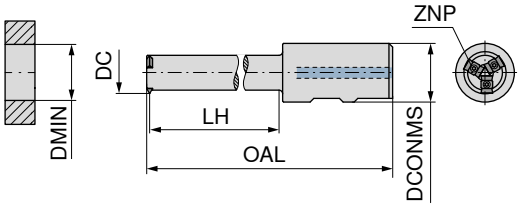
→ v_c/f_z Page 81

ModuThread – Circular milling cutter

Scope of supply:
including key

EAW







50 848 ...

DC mm	DMIN mm	TP mm	TPI 1/"	LH mm	DCONMS $_{h6}$ mm	OAL mm	ZNP	torque moment Nm	
16,5 / 18,0	17,5 / 19,0	1,5 - 3,5	16 - 10	60	20	114	2	0,9	**020**
23,85	25,5	1,5 - 4,0	24 - 6	90	32	154	3	0,9	**030**
32,85	35,0	1,5 - 5,5	16 - 4,5	115	32	179	3	2,5	**040**



Key D

80 950 ...



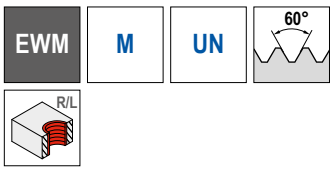
Clamping screw

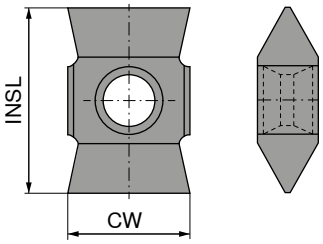
70 950 ...

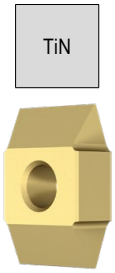
Spare parts for Article no.				
50 848 020	T07 - IP	**124**	M2,5x8,5	**739**
50 848 030	T07 - IP	**124**	M2,5x8,5	**739**
50 848 040	T09 - IP	**126**	M3x11	**740**

When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 84+85.**

ModuThread – Thread milling insert – partial profile







Solid carbide

50 870 ...

DC mm	TP mm	TPI 1/"	CW mm	INSL mm	
40,25	1,5 - 3,0	16 - 9	9,5	15,50	**515**
40,25	3,0 - 6,0	9 - 4	9,5	15,50	**530**
52,55 / 66,55	1,5 - 3,0	16 - 9	12,5	19,00	**615**
52,55 / 66,55	3,0 - 6,0	9 - 4	12,5	19,00	**630**
92	6,0 - 8,0	4	14,3	28,58	**760**

P	●
M	●
K	●
N	●
S	●
H	○
O	○

→ v_c/f_z Page 81

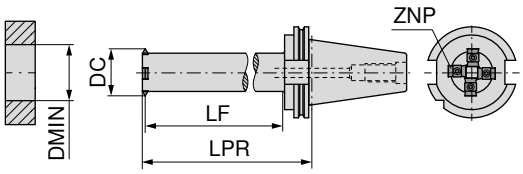
When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 84+85.**

7

ModuThread – Circular milling cutter

Scope of supply:
including key

EWM







DIN 69871

50 849 ...

DC mm	DMIN mm	TP mm	TPI 1/"	LF mm	LPR mm	Adapter	ZNP	torque moment Nm	
40,25	43,0	1,5 - 6,0	16 - 4,0	145	178,7	SK 50	4	5,5	**148**
40,25	43,0	1,5 - 6,0	16 - 4,0	145	178,7	SK 40	4	5,5	**048**
52,55	56,0	1,5 - 6,0	16 - 4,0	195	229,2	SK 50	4	8,0	**164**
66,55	70,5	1,5 - 6,0	16 - 4,0	260	296,2	SK 50	7	8,0	**080**
92,00	100,0	6,0 - 8,0	4,0	360	395,0	SK 50	7	8,0	**115**



Key D

80 950 ...



Clamping screw

70 950 ...

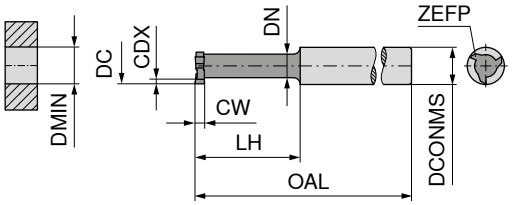
Spare parts DC				
40,25	T15 - IP	**128**	M4x13	**741**
52,55 - 92	T20 - IP	**129**	M5x15	**742**

When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 84+85.**

MonoThread – Solid Carbide Circular End Milling Cutter

Micro Mill





CWX500



Solid carbide

53 050 ...

DC mm	CW ±0,02 mm	CDX mm	LH mm	OAL mm	DN mm	DCONMS h6 mm	ZEFP	DMIN mm	
5,8	0,7	0,8	15,2	58	3,8	6	3	6	070
	0,8	0,8	15,2	58	3,8	6	3	6	080
	0,9	0,8	15,2	58	3,8	6	3	6	090
	1,0	0,8	15,2	58	3,8	6	3	6	100
	1,5	0,8	15,2	58	3,8	6	3	6	150
7,8	0,7	1,2	25,4	68	5,0	8	3	8	170
	0,8	1,2	25,4	68	5,0	8	3	8	180
	0,9	1,2	25,4	68	5,0	8	3	8	190
	1,0	1,2	25,4	68	5,0	8	3	8	200
	1,5	1,2	25,4	68	5,0	8	3	8	250
	2,0	1,2	25,4	68	5,0	8	3	8	300

P	●
M	●
K	●
N	●
S	●
H	●
O	●

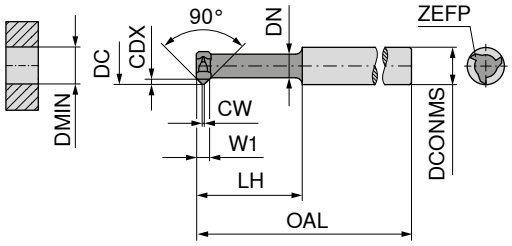
→ v_c/f_z Page 83

7

MonoThread – Solid Carbide Circular End Milling Cutter

Micro Mill





CWX500



Solid carbide

53 051 ...

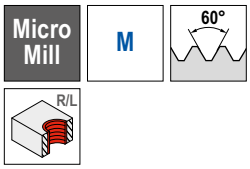
DC mm	W1 mm	CW mm	CDX mm	LH mm	OAL mm	DN mm	DCONMS h6 mm	ZEFP	DMIN mm	
5,8	2	0,2	0,8	15	58	4,2	6	3	6	010
	2	0,2	0,8	25	68	4,2	6	3	6	020
7,8	2	0,2	1,2	25	68	5,0	8	3	8	110
	2	0,2	1,2	35	78	5,0	8	3	8	120

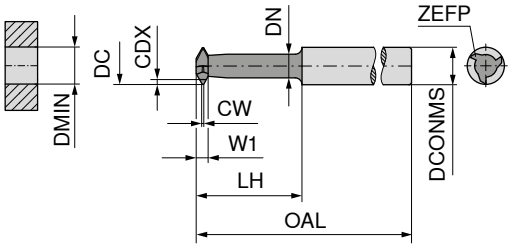
P	●
M	●
K	●
N	●
S	●
H	●
O	●

→ v_c/f_z Page 83

MonoThread – Solid Carbide Circular Thread Milling Cutter – Full profile

▲ Profile corrected





CWX500



Solid carbide

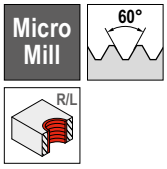
53 052 ...

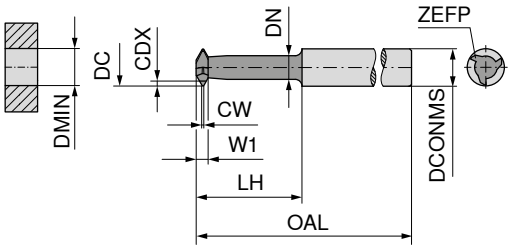
DC mm	Thread	TP mm	W1 mm	CW mm	CDX mm	LH mm	OAL mm	DN mm	DCONMS h6 mm	ZEFP	DMIN mm	
1,18	M1,6	0,35	0,40	0,04	0,19	4,0	32	0,64	3	3	1,38	**160**
1,38	M1,8	0,35	0,50	0,04	0,19	5,0	32	0,70	3	3	1,58	**180**
1,50	M2	0,40	0,56	0,05	0,22	5,0	32	0,90	3	4	1,70	**200**
1,95	M2,5	0,45	0,60	0,06	0,25	6,0	32	1,15	3	4	2,15	**250**
2,40	M3	0,50	0,60	0,06	0,27	7,0	32	1,60	3	4	2,60	**300**
2,80	M3,5	0,60	0,74	0,08	0,33	8,0	32	1,80	3	4	3,00	**350**
3,10	M4	0,70	0,82	0,09	0,38	9,0	44	1,98	5	4	3,30	**400**
3,60	M5	0,80	0,98	0,10	0,43	10,0	44	2,20	5	4	3,80	**500**
4,10	M6	1,00	0,98	0,13	0,54	12,2	44	2,70	5	4	4,30	**600**

P	●
M	●
K	●
N	●
S	●
H	●
O	●

→ v_c/f_z Page 83

MonoThread – Solid Carbide Circular Thread Milling Cutter – Partial profile





CWX500



Solid carbide

53 053 ...

DC mm	TP mm	W1 mm	CW mm	CDX mm	LH mm	OAL mm	DN mm	DCONMS h6 mm	ZEFP	DMIN mm	
5,8	0,5 - 1,5	2	0,06	0,91	15,2	58	3,5	6	3	6	**010**
7,8	0,5 - 1,5	2	0,06	0,91	25,4	68	5,5	8	3	8	**110**
7,8	1,0 - 2,0	2	0,12	1,19	25,4	68	5,0	8	3	8	**120**

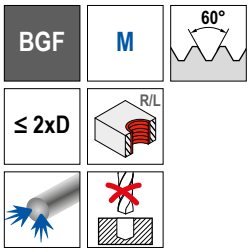
P	●
M	●
K	●
N	●
S	●
H	●
O	●

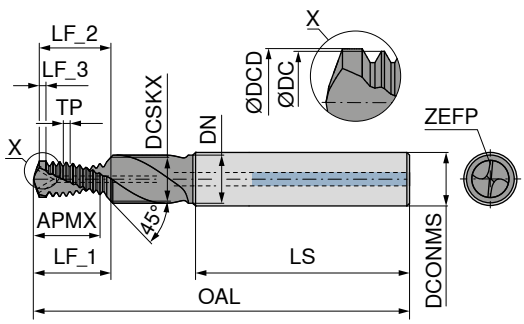
→ v_c/f_z Page 83

When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 84+85.**

MonoThread – Drill thread milling cutter with chamfer facet

▲ Profile corrected





Ti601



Solid carbide | Solid carbide

															50 869 ...		50 854 ...	
DC mm	Thread	KOMET no.	TP mm	OAL mm	APMX mm	LS mm	DCONMS $_{h6}$ mm	DCD mm	DCSKX mm	DN mm	LF_1 mm	LF_2 mm	LF_3 mm	ZEFP				
2,45	M3	88901001000013	0,50	49	5,8	36	6	2,5	3,3	4,5	6,8	6,4	0,5	2		**03000**[1)]		
2,45	M3	88906001000013	0,50	49	5,8	36	6	2,5	3,3	4,5	6,8	6,4	0,5	2				**03000**[1)]
3,24	M4	88941001000015	0,70	49	7,3	36	6	3,3	4,3	4,5	9,4	8,9	0,7	2		**04000**		
3,24	M4	88935001000015	0,70	49	7,3	36	6	3,3	4,3	4,5	9,4	8,9	0,7	2				**04000**
4,10	M5	88941001000017	0,80	55	9,2	36	6	4,2	5,3	5,5	11,7	11,0	0,8	2		**05000**		
4,10	M5	88935001000017	0,80	55	9,2	36	6	4,2	5,3	5,5	11,7	11,0	0,8	2				**05000**
4,85	M6	88941001000018	1,00	62	11,4	36	8	5,0	6,3	6,6	14,5	13,7	1,0	2		**06000**		
4,85	M6	88935001000018	1,00	62	11,4	36	8	5,0	6,3	6,6	14,5	13,7	1,0	2				**06000**
6,45	M8	88941001000020	1,25	74	14,2	40	10	6,8	8,3	9,0	18,2	17,1	1,3	2		**08000**		
6,45	M8	88935001000020	1,25	74	14,2	40	10	6,8	8,3	9,0	18,2	17,1	1,3	2				**08000**
8,08	M10	88941001000022	1,50	79	18,5	45	12	8,5	10,3	11,0	23,4	22,1	1,5	2		**10000**		
8,08	M10	88935001000022	1,50	79	18,5	45	12	8,5	10,3	11,0	23,4	22,1	1,5	2				**10000**
9,74	M12	88941001000024	1,75	89	21,6	45	14	10,3	12,3	13,5	27,1	25,5	1,5	2		**12000**		
9,74	M12	88935001000024	1,75	89	21,6	45	14	10,3	12,3	13,5	27,1	25,5	1,5	2				**12000**
11,35	M14	88941001000025	2,00	102	26,6	48	16	12,0	14,3	15,5	32,8	30,9	1,5	2		**14000**		
11,35	M14	88935001000025	2,00	102	26,6	48	16	12,0	14,3	15,5	32,8	30,9	1,5	2				**14000**
13,28	M16	88941001000026	2,00	102	30,6	48	18	14,0	16,3	17,5	37,1	35,0	1,5	2		**16000**		
13,28	M16	88935001000026	2,00	102	30,6	48	18	14,0	16,3	17,5	37,1	35,0	1,5	2				**16000**

1) Without Through Coolant



															50 869 ...		50 854 ...	
DC mm	Thread	KOMET no.	TP mm	OAL mm	APMX mm	LS mm	DCONMS $_{h6}$ mm	DCD mm	DCSKX mm	DN mm	LF_1 mm	LF_2 mm	LF_3 mm	ZEFP				
6,79	M8x1	88935002000070	1,0	74	15,40	40	10	7,0	8,3	9,0	18,8	17,7	1,0	2				**08100**
6,79	M8x1	88941002000070	1,0	74	15,40	40	10	7,0	8,3	9,0	18,8	17,7	1,0	2		**08100**		
8,75	M10x1	88941002000094	1,0	79	19,40	45	12	9,0	10,3	11,0	23,2	21,8	1,0	2		**10100**		
8,75	M10x1	88935002000094	1,0	79	19,40	45	12	9,0	10,3	11,0	23,2	21,8	1,0	2				**10100**
10,74	M12x1	88935002000111	1,0	89	22,40	45	14	11,0	12,3	13,5	26,4	24,8	1,0	2				**12100**
10,06	M12x1,5	88935002000113	1,5	89	23,01	45	14	10,5	12,3	13,5	28,2	26,6	1,5	2				**12200**
10,06	M12x1,5	88941002000113	1,5	89	23,01	45	14	10,5	12,3	13,5	28,2	26,6	1,5	2		**12200**		

P		
M		
K	○	●
N	●	○
S		
H		
O	●	○

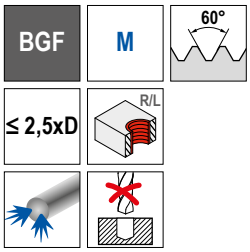
→ v_c/f_z Page 78

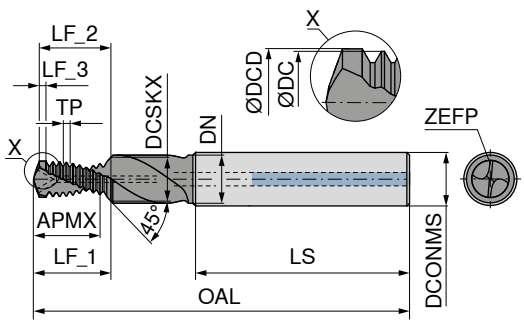
When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 84+85.**

7

MonoThread – Drill thread milling cutter with chamfer facet

▲ Profile corrected





Ti601





Solid carbide | Solid carbide

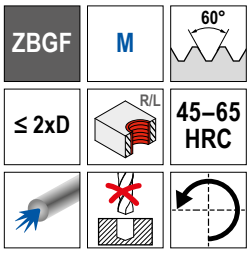
															50 898 ...		50 862 ...	
DC mm	Thread	KOMET no.	TP mm	OAL mm	APMX mm	LS mm	DCONMS $_{h6}$ mm	DCD mm	DCSKX mm	DN mm	LF_1 mm	LF_2 mm	LF_3 mm	ZEFP				
4,10	M5	88961001000017	0,80	55	11,57	36	6	4,2	5,3	5,5	14,1	13,4	0,8	2		**05000**		
4,85	M6	88961001000018	1,00	62	13,40	36	8	5,0	6,3	6,6	16,5	15,7	1,0	2		**06000**		
4,85	M6	88956001000018	1,00	62	13,40	36	8	5,0	6,3	6,6	16,5	15,7	1,0	2				**06000**
6,45	M8	88961001000020	1,25	74	19,20	40	10	6,8	8,3	9,0	23,2	22,1	1,3	2		**08000**		
6,45	M8	88956001000020	1,25	74	19,20	40	10	6,8	8,3	9,0	23,2	22,1	1,3	2				**08000**
8,08	M10	88961001000022	1,50	79	23,00	45	12	8,5	10,3	11,0	27,9	26,6	1,5	2		**10000**		
8,08	M10	88956001000022	1,50	79	23,00	45	12	8,5	10,3	11,0	27,9	26,6	1,5	2				**10000**
9,74	M12	88961001000024	1,75	89	28,60	45	14	10,3	12,3	13,5	34,1	32,5	1,5	2		**12000**		
9,74	M12	88956001000024	1,75	89	28,60	45	14	10,3	12,3	13,5	34,1	32,5	1,5	2				**12000**
P																		
M																		
K																○		●
N																●		○
S																		
H																		
O																●		○

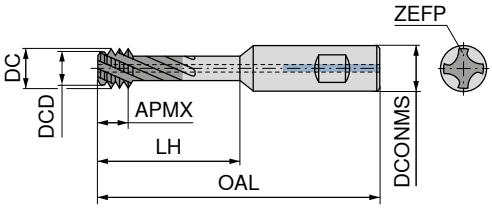
→ v_c/f_z Page 78

When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 84+85.**

MonoThread – Circular Thread Milling Cutter

▲ Note: left-hand cutting (M04)
▲ Profile corrected







Solid carbide

50 840 ...

DC mm	Thread	TP mm	APMX mm	LH mm	DCONMS mm	DCD mm	OAL mm	ZEFP	
2,3	M3x0,5	0,50	2,0	7,0	6	2,10	51	4	**030** 1)
3,0	M4x0,7	0,70	2,8	9,4	6	2,60	51	4	**040** 1)
3,8	M5x0,8	0,80	3,2	11,6	6	3,40	51	4	**050** 1)
4,6	M6x1 - M7x1	1,00	4,0	14,0	8	4,10	60	4	**060** 1)
6,2	M8x1,25 - M10x1,25	1,25	5,0	19,0	10	5,60	71	4	**080**
7,8	M10x1,5 - M12x1,5	1,50	6,0	25,0	10	7,00	76	4	**100**
9,2	M12x1,75	1,75	7,0	31,0	12	8,30	86	4	**120**
11,1	M14x2 - M16x2	2,00	8,0	36,0	16	10,04	98	4	**140**

P	
M	
K	
N	
S	○
H	●
O	○

1) Without Through Coolant

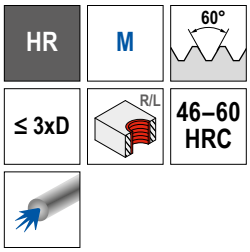
→ v_c/f_z Page 78

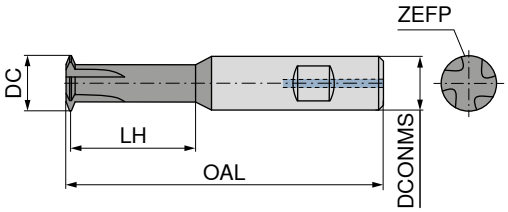
When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 84+85.**

Caution: left-hand cutting (M04) → spindle rotation left!

MonoThread – Thread Milling Cutter

▲ Available on request from M3





NEW NEW

TiCN TiCN



Solid carbide Solid carbide

DC mm	Thread	TP mm	LH mm	DCONMS $_{h6}$ mm	OAL mm	ZEFP	50 546 ...	50 547 ...
3,14	M4	0,70	9	6	55	3	**04000**	**04000**
3,95	M5	0,80	11	6	55	3	**05000**	**05000**
4,68	M6 - M7	1,00	16	8	60	3	**06000**	**06000**
6,22	M8 - M9	1,25	22	10	71	4	**08000**	**08000**
7,79	M10 - M12	1,50	26	10	76	4	**10000**	**10000**
9,38	M12	1,75	27	12	86	4	**12000**	**12000**

P	○	○
M	○	○
K	○	○
N	○	○
S	○	○
H	●	●
O	○	○

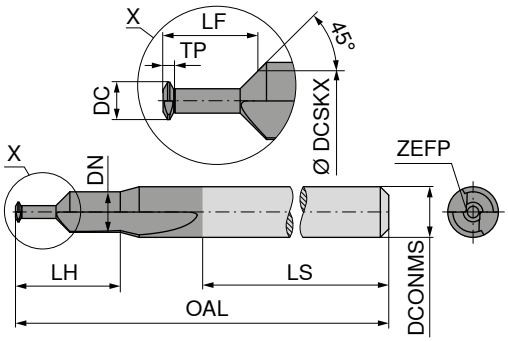
→ v_c/f_z Page 78

Other dimensions are available on request.

MonoThread – Shank thread milling cutter with shank-end countersink

▲ Note: left-hand cutting
▲ Profile corrected

SFSE Micro | M | 60° | ≤ 1,5xD | 46–60 HRC



Ti602



Solid carbide

50 804 ...

DC mm	Thread	KOMET no.	TP mm	OAL mm	DN mm	LS mm	LH mm	DCONMS $_{h6}$ mm	DCSKX mm	LF mm	ZEFP	
0,75	M1	88977001000001	0,25	40	1,8	28	5,2	3	1,5	2,1	2	**01000**
1,10	M1,4	88977001000004	0,30	40	2,0	28	5,7	3	1,7	2,6	2	**01400**
1,25	M1,6	88977001000005	0,35	40	2,4	28	6,0	3	2,1	3,1	2	**01600**
1,60	M2	88977001000008	0,40	40	3,0	28		3	2,6	3,7	2	**02000**
1,75	M2,2	88977001000009	0,45	40	3,0	28		3	2,5	3,9	2	**02200**
2,05	M2,5	88977001000011	0,45	40	3,0	28		3	2,9	4,5	2	**02500**

P	○
M	○
K	
N	○
S	○
H	●
O	

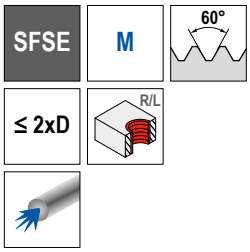
→ v_c/f_z Page 80

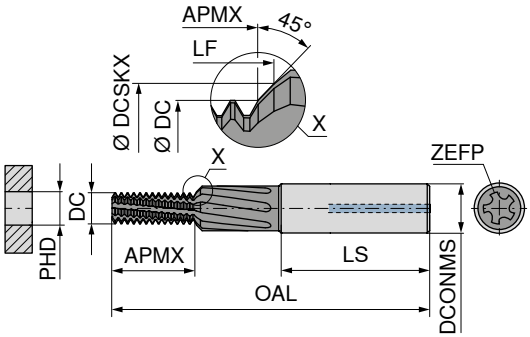
Caution: left-hand cutting (M04) → spindle rotation left!

7

MonoThread – Thread Milling Cutter with Chamfer Facet

▲ Profile corrected







Solid carbide

HPC – High Perfomance Cutting

50 806 ...

DC mm	Thread	KOMET no.	TP mm	OAL mm	APMX mm	LS mm	DCONMS $_{h6}$ mm	DCSKX mm	LF mm	ZEFP	PHD mm	
3,14	M4	88296001000015	0,70	49	8,0	36	6	4,3	8,6	5	3,3	**04000**
3,95	M5	88296001000017	0,80	55	9,9	36	6	5,3	10,6	5	4,2	**05000**
4,68	M6	88296001000018	1,00	62	12,3	36	8	6,3	13,2	6	5,0	**06000**
6,22	M8	88296001000020	1,25	74	16,6	40	10	8,3	17,8	7	6,8	**08000**
7,79	M10	88296001000022	1,50	79	19,9	45	12	10,3	21,3	7	8,5	**10000**
9,38	M12	88296001000024	1,75	89	24,9	45	14	12,3	26,6	7	10,2	**12000**
10,92	M14	88296001000025	2,00	102	28,5	48	16	14,3	30,4	7	12,0	**14000**
12,83	M16	88296001000026	2,00	102	32,4	48	18	16,3	34,4	8	14,0	**16000**



50 807 ...

DC mm	Thread	KOMET no.	TP mm	OAL mm	APMX mm	LS mm	DCONMS $_{h6}$ mm	DCSKX mm	LF mm	ZEFP	PHD mm	
3,95	M5x0,5	88296002000037	0,50	55	10,2	36	6	5,3	10,8	5	4,5	**05100**
4,68	M6x0,75	88296002000048	0,75	62	12,2	36	8	6,3	13,0	5	5,2	**06200**
6,22	M8x1	88296002000070	1,00	74	16,2	40	10	8,3	17,3	6	7,0	**08300**
7,79	M10x1	88296002000094	1,00	79	20,1	45	12	10,3	21,5	7	9,0	**10300**
9,38	M12x1	88296002000111	1,00	89	24,0	45	14	12,3	25,6	7	11,0	**12300**
9,38	M12x1,5	88296002000113	1,50	89	24,3	45	14	12,3	25,9	7	10,5	**12500**
10,92	M14x1,5	88296002000131	1,50	102	28,7	48	16	14,3	30,6	7	12,5	**14500**
12,82	M16X1,5	88296002000147	1,50	102	31,7	48	18	16,3	33,6	8	14,5	**16500**

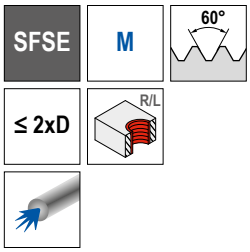
P	●
M	●
K	●
N	
S	●
H	
O	

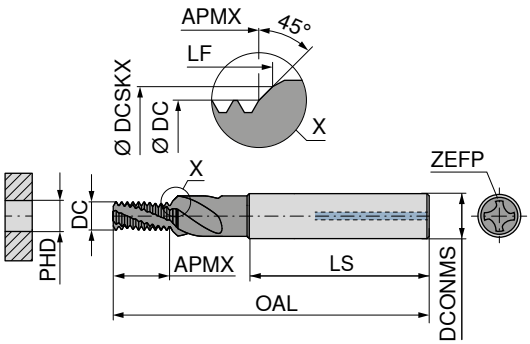
→ v_c/f_z Page 80

When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 84+85.**

MonoThread – Thread Milling Cutter with Chamfer Facet

▲ Profile corrected





NEW

AlTiN



Solid carbide

50 552 ...

DC mm	Thread	TP mm	OAL mm	APMX mm	LS mm	DCONMS $_{h6}$ mm	DCSKX mm	LF mm	ZEFP	PHD mm	
3,95	M5	0,80	55	10,05	36	6	5,3	10,60	3	4,2	**05000**
4,68	M6	1,00	62	12,56	36	8	6,3	13,20	4	5,0	**06000**
6,22	M8	1,25	74	16,99	40	10	8,3	17,76	4	6,8	**08000**
7,79	M10	1,50	79	20,41	45	12	10,3	21,30	4	8,5	**10000**
9,38	M12	1,75	89	25,57	45	14	12,3	26,60	5	10,2	**12000**
12,83	M16	2,00	102	33,27	48	18	16,3	34,42	5	14,0	**16000**



NEW

50 553 ...

DC mm	Thread	TP mm	OAL mm	APMX mm	LS mm	DCONMS $_{h6}$ mm	DCSKX mm	LF mm	ZEFP	PHD mm	
6,22	M8x1	1,00	74	16,69	40	10	8,3	17,34	4	7,0	**08200**
7,79	M10x1	1,00	79	20,81	45	12	10,3	21,46	4	9,0	**10200**
7,79	M10x1,25	1,25	79	20,85	45	12	12,3	21,63	4	8,8	**10300**
9,38	M12x1,25	1,25	89	24,72	45	14	12,3	25,49	5	10,8	**12300**
9,38	M12x1,5	1,50	89	25,02	45	14	12,3	25,92	5	10,5	**12400**
10,92	M14x1	1,00	102	29,06	48	16	14,3	29,71	5	13,0	**14200**
10,92	M14x1,5	1,50	102	29,65	48	16	14,3	30,55	5	12,5	**14400**
12,82	M16x1,5	1,50	102	32,67	48	18	14,3	33,57	5	14,5	**16400**

P	●
M	●
K	●
N	●
S	●
H	
O	●

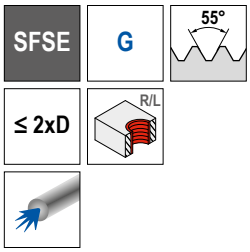
→ v_c/f_z Page 79

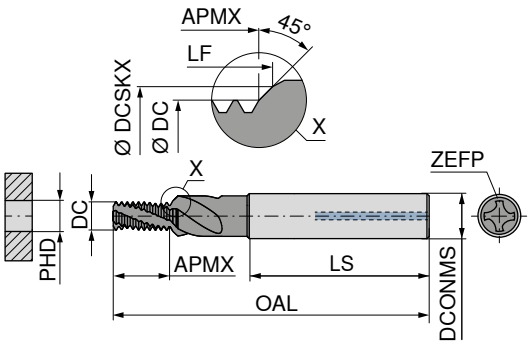
When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 84+85.**

7

MonoThread – Thread Milling Cutter with Chamfer Facet

▲ Profile corrected





NEW

AlTiN





Solid carbide

50 551 ...

DC mm	Thread	TP mm	OAL mm	APMX mm	LS mm	DCONMS $_{h6}$ mm	DCSKX mm	LF mm	ZEFP	PHD mm	
7,79	G 1/8-28	0,907	79	20,59	45	12	10,03	21,25	4	8,80	**01800**
10,92	G 1/4-19	1,337	102	27,53	48	16	13,46	28,43	5	11,80	**01400**
13,92	G 3/8-19	1,337	102	34,34	48	18	16,96	35,24	5	15,25	**03800**
15,98	G1/2-14	1,814	127	43,27	56	25	21,25	44,45	5	19,00	**01200**

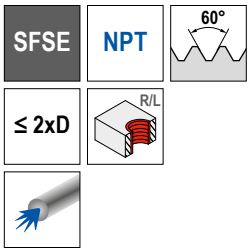
P	●
M	●
K	●
N	●
S	●
H	
O	●

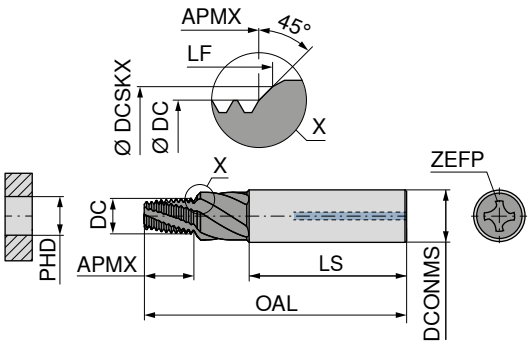
→ v_c/f_z Page 79

When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 84+85.**

MonoThread – Thread Milling Cutter with Chamfer Facet

▲ Profile corrected





NEW

AlTiN



Solid carbide

50 554 ...

DC mm	Thread	TP mm	OAL mm	APMX mm	LS mm	DCONMS $_{h6}$ mm	DCSKX mm	LF mm	ZEFP	PHD mm	
5,45	NPT 1/16-27	0,941	64	9,86	40	10	8,70	11,33	4	6,15	**11600**
7,87	NPT 1/8-27	0,941	74	9,86	45	12	11,10	11,33	4	8,50	**01800**
10,10	NPT 1/4-18	1,411	80	14,78	48	16	14,50	16,76	5	11,10	**01400**
16,42	NPT 1/2-14	1,814	94	18,98	48	18			5	17,90	**01200**[1)]

P	●
M	●
K	●
N	●
S	●
H	
O	●

1) Chamfer section at the front of the tool

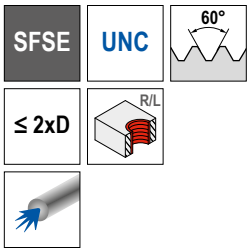
→ v_c/f_z Page 79

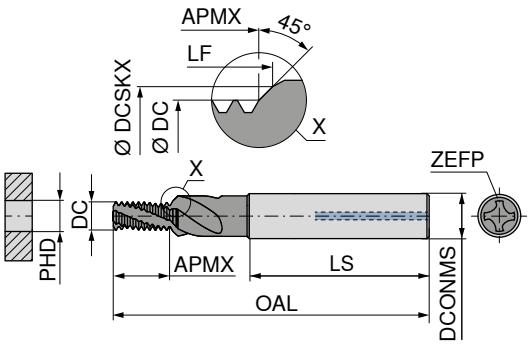
When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 84+85.**

7

MonoThread – Thread Milling Cutter with Chamfer Facet

▲ Profile corrected





NEW

AlTiN





Solid carbide

50 555 ...

DC mm	Thread	TP mm	OAL mm	APMX mm	LS mm	DCONMS h6 mm	DCSKX mm	LF mm	ZEFP	PHD mm	
4,70	UNC 1/4-20	1,270	62	14,68	36	8	6,65	15,46	4	5,1	**01400**
6,22	UNC 5/16-18	1,411	74	16,28	40	10	8,24	17,14	4	6,6	**51600**
7,34	UNC 3/8-16	1,588	79	19,98	45	12	9,83	20,92	4	8,0	**03800**
8,57	UNC 7/16-14	1,814	79	22,83	45	12	11,41	23,89	4	9,4	**71600**
9,38	UNC 1/2-13	1,954	89	26,71	45	14	13,00	27,83	5	10,8	**01200**
10,92	UNC 9/16-12	2,117	102	30,99	48	16	14,60	32,20	5	12,2	**91600**
12,50	UNC 5/8-11	2,309	102	33,72	48	18	16,18	35,03	5	13,5	**05800**
15,21	UNC 3/4-10	2,540	110	39,68	50	20	19,35	41,10	5	16,5	**03400**



NEW

50 556 ...

DC mm	Thread	TP mm	OAL mm	APMX mm	LS mm	DCONMS h6 mm	DCSKX mm	LF mm	ZEFP	PHD mm	
4,70	UNF 1/4-28	0,907	62	14,24	36	8	6,65	14,84	4	5,5	**01400**
6,22	UNF 5/16-24	1,058	74	16,56	40	10	8,24	17,23	4	6,9	**51600**
7,79	UNF 3/8-24	1,058	79	19,73	45	12	9,83	20,41	4	8,5	**03800**
9,32	UNF 7/16-20	1,270	89	22,34	45	14	11,40	23,13	5	9,9	**71600**
9,38	UNF 1/2-20	1,270	89	26,57	45	14	13,00	27,36	5	11,5	**01200**
10,92	UNF 9/16-18	1,411	102	29,43	48	16	14,59	30,29	5	12,9	**91600**
12,82	UNF 5/8-18	1,411	102	33,58	48	18	16,18	34,43	5	14,5	**05800**
15,82	UNF 3/4-16	1,587	110	39,29	50	20	19,35	40,23	5	17,5	**03400**

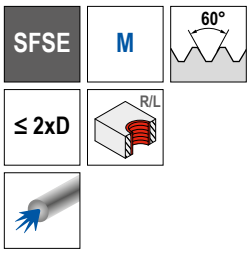
P	●
M	●
K	●
N	●
S	●
H	
O	●

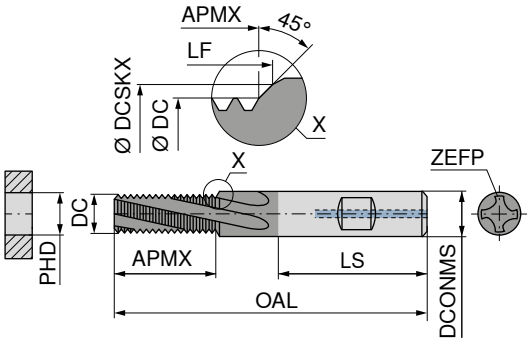
→ v_c/f_z Page 79

When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 84+85.**

MonoThread – Thread milling cutter with chamfer facet

▲ Profile-corrected
▲ Hard machining from Ø DC = 4 mm possible
▲ Chamfer section at end of shank





Ti500





Solid carbide

54 815 ...

DC mm	Thread	TP mm	OAL mm	LS mm	APMX mm	DCONMS $_{h6}$ mm	DCSKX mm	LF mm	ZEFP	PHD mm	
4,00	M5	0,80	62	36	12,3	8	5,3	12,98	3	4,20	**05000**[1]
4,80	M6	1,00	62	36	14,4	8	6,3	15,18	3	5,00	**06000**[1]
6,50	M8	1,25	74	40	19,0	10	8,3	20,19	3	6,80	**08000**
7,95	M10	1,50	80	45	23,0	12	10,3	24,25	3	8,50	**10000**
9,90	M12	1,75	90	45	28,6	14	12,3	29,94	4	10,25	**12000**
11,60	M14	2,00	100	48	32,6	16	14,3	34,20	4	12,00	**14000**
11,95	M16	2,00	90	45	36,6	12			4	14,00	**16000**[2]
13,95	M18	2,50	110	50	38,0	20	18,3	40,50	4	15,50	**18000**
15,95	M20	2,50	100	48	43,3	16			4	17,50	**20000**[2]

1) Without Through Coolant
2) Chamfer section at the front of the tool



54 816 ...

DC mm	Thread	TP mm	OAL mm	APMX mm	LS mm	DCONMS $_{h6}$ mm	DCSKX mm	LF mm	ZEFP	PHD mm	
6,0	M8x1	1,00	74	19,2	40	10	8,3	20,41	3	7,0	**08000**
8,0	M10x1	1,00	80	22,2	45	12	10,3	23,41	3	9,0	**10000**
8,0	M10x1,25	1,25	80	22,8	45	12	10,3	24,09	3	8,8	**10100**
9,9	M12x1	1,00	90	27,2	45	14	12,3	28,42	4	11,0	**12000**
9,9	M12x1,25	1,25	90	27,8	45	14	12,3	29,10	4	10,8	**12100**
9,9	M12x1,5	1,50	90	27,5	45	14	12,3	28,77	4	10,5	**12200**
11,6	M14x1	1,00	100	31,0	48	16	14,3	32,51	4	13,0	**14000**
11,6	M14x1,5	1,50	100	32,0	48	16	14,3	33,35	4	12,5	**14100**
12,0	M16x1,5	1,50	90	35,0	45	12			4	14,5	**16000**[1]
14,0	M18x1,5	1,50	110	39,0	50	20	18,3	41,30	4	16,5	**18000**
16,0	M20x1,5	1,50	100	44,0	48	16			4	18,5	**20000**[1]

P	●
M	●
K	●
N	●
S	●
H	●
O	●

1) Chamfer section at the front of the tool

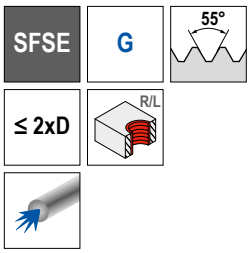
→ v_c/f_z Page 79

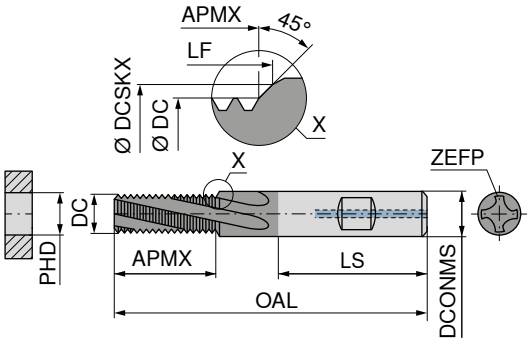
When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 84+85.**

7

MonoThread – Thread milling cutter with chamfer facet

- ▲ Profile-corrected
- ▲ Hard machining from Ø DC = 4 mm possible
- ▲ Chamfer section at end of shank







Solid carbide

54 817 ...

DC mm	Thread	TP mm	OAL mm	APMX mm	LS mm	DCONMS h6 mm	DCSKX mm	LF mm	ZEFP	PHD mm	
6,00	G 1/16-28	0,907	74	16,5	40	10	8,02	17,54	3	6,80	**11600**
7,95	G 1/8-28	0,907	80	22,0	45	12	10,03	23,00	3	8,80	**01800**
9,90	G 1/4-19	1,337	100	28,0	48	16	13,46	29,98	4	11,80	**01400**
13,95	G 3/8-19	1,337	90	36,5	45	14			4	15,25	**03800**[1)]
15,95	G 1/2-14	1,814	100	46,0	48	16			5	19,00	**01200**[1)]
17,95	G 5/8-14	1,814	110	49,5	48	18			5	21,00	**05800**[1)]

1) Chamfer section at the front of the tool



54 820 ...

DC mm	Thread	TP mm	OAL mm	APMX mm	LS mm	DCONMS h6 mm	ZEFP	PHD mm	
10,1	NPT 1/4-18	1,411	90	16,0	45	14	3	11,1	**01400**[1)]
12,8	NPT 3/8-18	1,411	90	16,0	48	16	4	14,5	**03800**[1)]
16,0	NPT 1/2-14	1,814	110	20,5	50	20	5	17,9	**01200**[1)]
18,5	NPT 3/4-14	1,814	110	20,5	50	20	5	23,2	**03400**[1)]

P	●
M	●
K	●
N	●
S	●
H	●
O	●

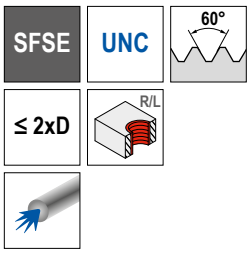
1) Chamfer section at the front of the tool

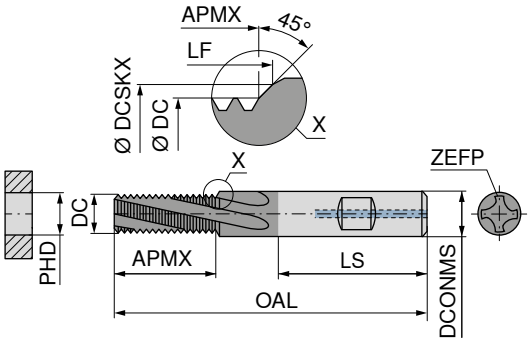
→ v_c/f_z Page 79

When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 84+85.**

MonoThread – Thread milling cutter with chamfer facet

▲ Profile-corrected
▲ Hard machining from Ø DC = 4 mm possible
▲ Chamfer section at end of shank







Solid carbide

54 818 ...

DC mm	Thread	TP mm	OAL mm	APMX mm	LS mm	DCONMS $_{h6}$ mm	DCSKX mm	LF mm	ZEFP	PHD mm	
4,80	UNC 1/4-20	1,270	62	14,4	36	8	6,65	15,43	3	5,1	**01400**[1)]
5,95	UNC 5/16-18	1,411	74	20,2	40	10	8,24	21,44	3	6,6	**51600**
7,60	UNC 3/8-16	1,588	80	24,3	45	12	9,83	25,62	3	8,0	**03800**
7,95	UNC 7/16-14	1,814	90	24,0	45	14	11,41	25,86	3	9,4	**71600**
9,90	UNC 1/2-13	1,954	90	29,8	45	14	13,00	31,59	4	10,8	**01200**
11,80	UNC 9/16-12	2,117	100	34,5	48	16	14,59	36,19	4	12,2	**91600**
12,70	UNC 5/8-11	2,309	90	37,7	45	14			4	13,5	**05800**[2)]
15,20	UNC 3/4-10	2,540	110	41,2	50	20	19,35	43,63	5	16,5	**03400**

1) Without Through Coolant
2) Chamfer section at the front of the tool



54 819 ...

DC mm	Thread	TP mm	OAL mm	APMX mm	LS mm	DCONMS $_{h6}$ mm	DCSKX mm	LF mm	ZEFP	PHD mm	
4,80	UNF 1/4-28	0,907	62	14,7	36	8	6,65	15,72	3	5,5	**01400**[1)]
5,95	UNF 5/16-24	1,058	74	19,3	40	10	8,24	20,48	3	6,9	**51600**
8,00	UNF 3/8-24	1,058	80	22,5	45	12	9,83	23,54	3	8,5	**03800**
7,95	UNF 7/16-20	1,270	90	23,0	45	14	11,41	24,76	3	9,9	**71600**
9,90	UNF 1/2-20	1,270	90	28,0	45	14	13,00	29,75	4	11,5	**01200**
12,00	UNF 9/16-18	1,411	100	31,4	48	16	15,59	32,81	4	12,9	**91600**
13,50	UNF 5/8-18	1,411	90	35,7	45	14			4	14,5	**05800**[2)]
17,00	UNF 3/4-16	1,588	110	40,2	50	20	19,35	41,53	5	17,5	**03400**

P	●
M	●
K	●
N	●
S	●
H	●
O	●

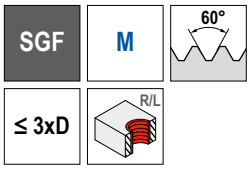
1) Without Through Coolant
2) Chamfer section at the front of the tool

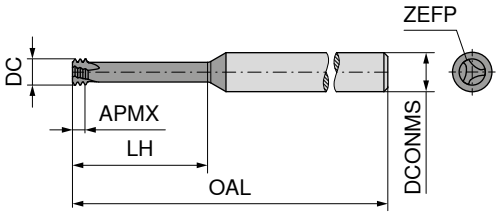
→ v_c/f_z Page 79

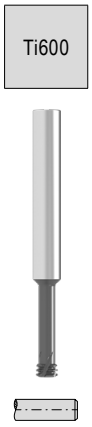
When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 84+85.**

MonoThread – Circular shank thread milling cutter

▲ Available on request from M1
▲ Profile corrected







50 802 ...

DC mm	Thread	TP mm	OAL mm	APMX mm	LH mm	DCONMS $_{h6}$ mm	ZEFP	
1,53	M2	0,40	39	0,80	6,0	3	3	**02000**
2,37	M3	0,50	58	1,35	9,5	6	3	**03000**
3,10	M4	0,70	58	1,95	12,5	6	3	**04000**
3,80	M5	0,80	58	2,30	16,0	6	3	**05000**
4,65	M6	1,00	58	2,70	20,0	6	3	**06000**
6,00	M8	1,25	58	3,20	24,0	6	3	**08000**
7,80	M10	1,50	64	3,80	31,5	8	3	**10000**
9,00	M12	1,75	73	4,55	37,8	10	3	**12000**



50 803 ...

DC mm	Thread	TP mm	OAL mm	APMX mm	LH mm	DCONMS $_{h6}$ mm	ZEFP	
1,53	M2	0,40	39	1,00	10,4	3	3	**02000**
2,40	M3	0,50	39	1,30	12,5	3	3	**03000**
3,10	M4	0,70	58	1,80	16,7	6	3	**04000**
4,00	M5	0,80	58	2,10	20,8	6	3	**05000**
4,80	M6	1,00	58	2,55	25,0	6	3	**06000**
6,40	M8	1,25	64	3,15	33,5	8	3	**08000**
8,00	M10	1,50	76	3,85	41,5	8	3	**10000**

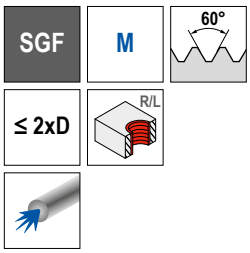
P	●
M	●
K	●
N	●
S	●
H	
O	●

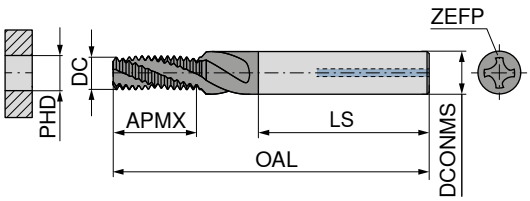
→ v_c/f_z Page 80

When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 84+85.**

MonoThread – Thread Milling Cutter

▲ Profile corrected





NEW

AlTiN





Solid carbide

50 531 ...

DC mm	Thread	TP mm	OAL mm	APMX mm	LS mm	DCONMS $_{h6}$ mm	ZEFP	PHD mm	
2,44	M3	0,50	42	6,24	36	4	3	2,5	**03000**[1)]
3,14	M4	0,70	49	8,00	36	6	3	3,3	**04000**
3,95	M5	0,80	55	10,00	36	6	3	4,2	**05000**
4,68	M6	1,00	55	12,47	36	6	4	5,0	**06000**
6,22	M8	1,25	62	16,83	36	8	4	6,8	**08000**
7,79	M10	1,50	74	20,20	40	10	4	8,5	**10000**
9,38	M12	1,75	79	25,32	45	12	5	10,2	**12000**
10,92	M14	2,00	89	28,93	45	14	5	12,0	**14000**
12,83	M16	2,00	102	32,94	48	16	5	14,0	**16000**
13,93	M18	2,50	102	36,17	48	16	5	15,5	**18000**
15,83	M20	2,50	110	41,17	50	20	5	17,5	**20000**

1) Without Through Coolant



NEW

50 532 ...

DC mm	Thread	TP mm	OAL mm	APMX mm	LS mm	DCONMS $_{h6}$ mm	ZEFP	PHD mm	
3,14	M4x0,5	0,50	49	8,00	36	6	3	3,5	**04000**
3,95	M5x0,5	0,50	55	10,00	36	6	3	4,5	**05000**
4,68	M6x0,75	0,75	55	12,34	36	6	4	5,2	**06100**
6,22	M8x0,75	0,75	62	16,09	36	8	4	7,2	**08100**
6,22	M8x1	1,00	62	16,46	36	8	4	7,0	**08200**
7,79	M10x1	1,00	74	20,46	40	10	4	9,0	**10200**
9,38	M12x1	1,00	79	24,45	45	12	5	11,0	**12200**
9,38	M12x1,5	1,50	79	24,69	45	12	5	10,5	**12400**
10,92	M14x1,5	1,50	89	29,19	45	14	5	12,5	**14400**
12,82	M16x1,5	1,50	102	32,19	48	16	5	14,5	**16400**
13,93	M18x1,5	1,50	102	36,68	48	16	5	16,5	**18400**
15,83	M20x1,5	1,50	110	41,18	50	20	5	18,5	**20400**

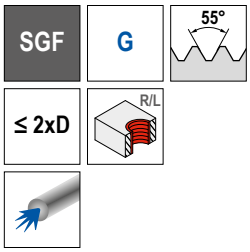
P	●
M	●
K	●
N	●
S	●
H	
O	●

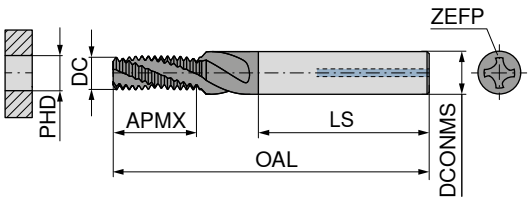
→ v_c/f_z Page 79

When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 84+85.**

MonoThread – Thread Milling Cutter

▲ Profile corrected





NEW

AlTiN



Solid carbide

50 530 ...

DC mm	Thread	TP mm	OAL mm	APMX mm	LS mm	DCONMS $_{h6}$ mm	ZEFP	PHD mm	
7,79	G 1/8-28	0,907	74	20,35	40	10	4	8,80	**01800**
10,92	G 1/4-19	1,337	89	27,34	45	14	5	11,80	**01400**
13,92	G 3/8-19	1,337	102	35,36	48	16	5	15,25	**03800**
15,90	G 1-11	2,309	102	33,29	48	16	5	30,75	**10000**
15,98	G 1/2-14	1,814	110	42,51	50	20	5	19,00	**01200**

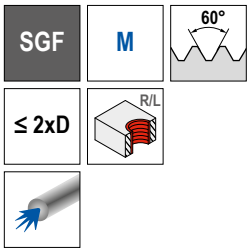
P	●
M	●
K	●
N	●
S	●
H	
O	●

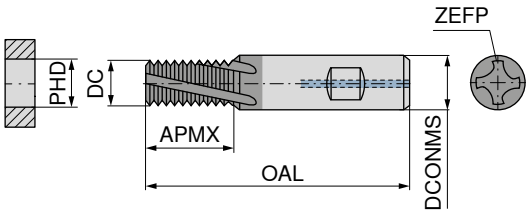
→ v_c/f_z Page 79

When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 84+85.**

MonoThread – Thread milling cutter

▲ Profile corrected
▲ Hard machining from Ø DC = 4 mm possible







Solid carbide

54 821 ...

DC mm	Thread	TP mm	APMX mm	DCONMS $_{h6}$ mm	OAL mm	ZEFP	PHD mm	
2,40	M3	0,50	7,0	4	42	2	2,50	**03000**[1)]
3,15	M4	0,70	10,0	6	55	3	3,30	**04000**[2)]
4,00	M5	0,80	12,2	6	55	3	4,20	**05000**[2)]
4,80	M6	1,00	14,3	6	55	3	5,00	**06000**[2)]
6,00	M8	1,25	19,0	6	60	3	6,75	**08000**
8,00	M10	1,50	23,0	8	70	3	8,50	**10000**
9,90	M12	1,75	28,6	10	75	4	10,25	**12000**
11,60	M14	2,00	32,6	12	85	4	12,00	**14000**
12,00	M16	2,00	36,6	12	85	4	14,00	**16000**
14,00	M18	2,50	43,3	14	90	4	15,50	**18000**
16,00	M20	2,50	43,3	16	90	4	17,50	**20000**

1) DIN 6535 HA Shank / Without Through Coolant
2) Without Through Coolant



54 822 ...

DC mm	Thread	TP mm	APMX mm	DCONMS $_{h6}$ mm	OAL mm	ZEFP	PHD mm	
4,0	M 5x0,5	0,50	11,6	6	55	3	4,50	**05000**[1)]
4,8	M 6x0,75	0,75	14,5	6	55	3	5,25	**06000**[1)]
6,0	M 8x1	1,00	19,3	6	60	3	7,00	**08000**
8,0	M 10x1,25	1,25	21,6	8	70	3	8,75	**10000**
9,9	M 12x1	1,00	27,3	10	75	4	11,00	**12000**
9,9	M 12x1,25	1,25	27,9	10	75	4	10,75	**12100**
9,9	M 12x1,5	1,50	27,5	10	75	4	10,50	**12200**
11,6	M 14x1	1,00	31,3	12	85	4	13,00	**14000**
11,6	M 14x1,5	1,50	32,0	12	85	4	12,50	**14100**
12,0	M 16x1,5	1,50	35,0	12	85	4	14,50	**16000**
14,0	M 18x1,5	1,50	42,5	14	90	4	16,50	**18000**
16,0	M 20x1,5	1,50	42,5	16	90	4	18,50	**20000**

P	●
M	●
K	●
N	●
S	●
H	●
O	●

1) DIN 6535 HA Shank / Without Through Coolant

→ v_c/f_z Page 79

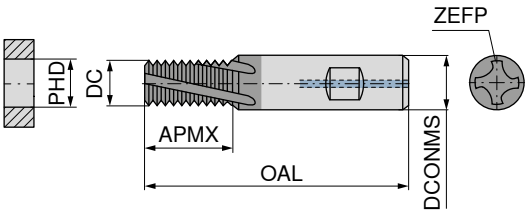
When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 84+85.**

7

MonoThread – Thread milling cutter

▲ Profile corrected
▲ Hard machining from Ø DC = 4 mm possible

SGF | G | 55° | ≤ 2xD | R/L



Ti500



Solid carbide

54 823 ...

DC mm	Thread	TP mm	APMX mm	DCONMS h6 mm	OAL mm	ZEFP	PHD mm	
8,0	G 1/8-28	0,907	22,0	8	70	3	8,80	**01800**
9,9	G 1/4-19	1,337	28,5	10	75	4	11,80	**01400**
14,0	G 3/8-19	1,337	42,0	14	90	4	15,25	**03800**
16,0	G 1/2-14	1,814	44,0	16	90	4	19,00	**01200**

≤ 2xD | BSW | 55°

54 824 ...

DC mm	Thread	TP mm	APMX mm	DCONMS h6 mm	OAL mm	ZEFP	PHD mm	
6,0	BSW 5/16 - 18	1,411	20,0	6	60	3	6,50	**51600**
6,0	BSW 3/8 - 16	1,588	21,0	6	60	3	7,90	**03800**
8,0	BSW 7/16 - 14	1,814	24,0	8	70	3	9,25	**71600**
8,0	BSW 1/2 - 12	2,117	24,0	8	70	3	10,50	**01200**
9,9	BSW 5/8 - 11	2,309	30,5	10	75	4	13,50	**05800**

≤ 2xD | BSF | 55°

54 825 ...

DC mm	Thread	TP mm	APMX mm	DCONMS h6 mm	OAL mm	ZEFP	PHD mm	
6,0	BSF 5/16 - 22	1,155	20,0	6	60	3	6,8	**51600**
6,0	BSF 3/8 - 20	1,270	19,4	6	60	3	8,3	**03800**
8,0	BSF 7/16 - 18	1,411	23,0	8	70	3	9,7	**71600**
8,0	BSF 1/2 - 16	1,588	24,2	8	70	3	11,1	**01200**
9,9	BSF 5/8 - 14	1,814	29,5	10	75	4	14,0	**05800**

P	●
M	●
K	●
N	●
S	●
H	●
O	●

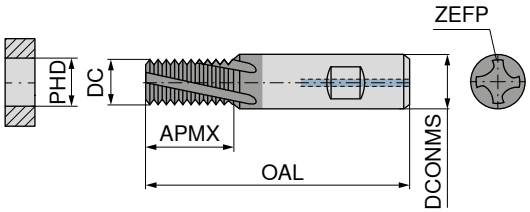
→ v_c/f_z Page 79

When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 84+85.**

MonoThread – Thread milling cutter

▲ Profile corrected

SGF | UNC | 60° | ≤ 2xD | R/L



Ti500



Solid carbide

54 826 ...

DC mm	Thread	TP mm	APMX mm	DCONMS h6 mm	OAL mm	ZEFP	PHD mm	
4,80	UNC 1/4-20	1,270	14,4	6	55	3	5,1	**01400**[1)]
6,00	UNC 5/16-18	1,411	20,2	6	60	3	6,6	**51600**
7,60	UNC 3/8-16	1,588	24,3	8	70	3	8,0	**03800**
7,95	UNC 7/16-14	1,814	24,0	8	70	3	9,4	**71600**
9,90	UNC 1/2-13	1,954	29,0	10	75	4	10,8	**01200**

1) DIN 6535 HA Shank / Without Through Coolant

≤ 2xD | UNF | 60°

54 827 ...

DC mm	Thread	TP mm	APMX mm	DCONMS h6 mm	OAL mm	ZEFP	PHD mm	
4,8	UNF 1/4-28	0,907	14,8	6	55	3	5,5	**01400**[1)]
6,0	UNF 5/16-24	1,058	19,3	6	60	3	6,9	**51600**
8,0	UNF 3/8-24	1,058	22,5	8	70	3	8,5	**03800**
8,0	UNF 7/16-20	1,270	23,2	8	70	3	9,9	**71600**
9,9	UNF 1/2-20	1,270	28,3	10	75	4	11,5	**01200**

P	●
M	●
K	●
N	●
S	●
H	●
O	●

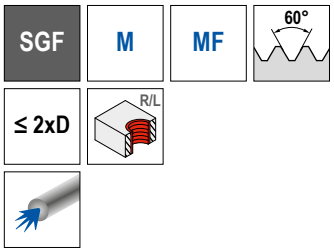
1) Without Through Coolant

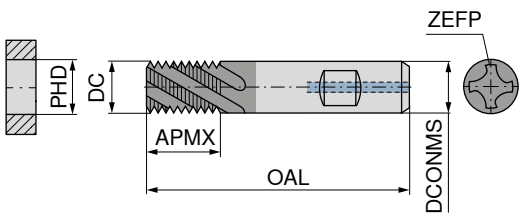
→ v_c/f_z Page 79

When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 84+85.**

MonoThread – Thread milling cutter

▲ Intra-dimensional, pitch-dependent







Solid carbide

54 828 ...

DC mm	TP mm	APMX mm	DCONMS $_{h6}$ mm	OAL mm	ZEFP	PHD mm	
8	0,50	12,0	8	70	3	10	**00800**
8	0,75	12,0	8	70	3	11	**08000**
10	1,00	16,0	10	75	4	14	**10000**
10	1,50	16,5	10	75	4	14	**10100**
12	1,00	20,0	12	85	4	16	**12000**
12	1,50	21,0	12	85	4	16	**12100**
12	2,00	20,0	12	85	4	18	**12200**
16	1,00	25,0	16	90	5	22	**16000**
16	1,50	25,5	16	90	5	22	**16100**
16	2,00	26,0	16	90	5	22	**16200**
16	3,00	27,0	16	90	5	24	**16400**

P	●
M	●
K	●
N	●
S	●
H	●
O	●

→ v_c/f_z Page 79

When calculating the feedrate for circular milling it is important to know whether contour feed v_f or feed on the center path v_{fm} is used. Details on → **Page 84+85.**

Material examples for cutting data tables

	Material sub-group	Index	Composition / Structure / Heat treatment		Tensile strength N/mm²* / HB / HRC	Material number	Material designation	Material number	Material designation
P	Unalloyed steel	P.1.1	< 0,15 % C	Annealed	420 N/mm² / 125 HB	1.0401	C15	1.1141	Ck15
		P.1.2	< 0,45 % C	Annealed	640 N/mm² / 190 HB	1.1191	C45E	1.0718	9SMnPb28
		P.1.3		Tempered	840 N/mm² / 250 HB	1.1191	C45E	1.0535	C55
		P.1.4	< 0,75 % C	Annealed	910 N/mm² / 270 HB	1.1223	C60R	1.0535	C55
		P.1.5		Tempered	1010 N/mm² / 300 HB	1.1223	C60R	1.0727	45S20
	Low-alloy steel	P.2.1		Annealed	610 N/mm² / 180 HB	1.7131	16MnCr5	1.6587	17CrNiMo6
		P.2.2		Tempered	930 N/mm² / 275 HB	1.7131	16MnCr5	1.6587	17CrNiMo6
		P.2.3		Tempered	1010 N/mm² / 300 HB	1.7225	42CrMo4	1.3505	100Cr6
		P.2.4		Tempered	1200 N/mm² / 375 HB	1.7225	42CrMo4	1.3505	100Cr6
	High-alloy steel and high-alloy tool steel	P.3.1		Annealed	680 N/mm² / 200 HB	1.4021	X20Cr13	1.4034	X46Cr13
		P.3.2		Hardened and tempered	1100 N/mm² / 300 HB	1.2343	X38CrMoV5-1	1.4034	X46Cr13
		P.3.3		Hardened and tempered	1300 N/mm² / 400 HB	1.2343	X38CrMoV5-1	1.4034	X46Cr13
	Stainless steel	P.4.1	Ferritic / martensitic	Annealed	680 N/mm² / 200 HB	1.4016	X6Cr17	1.2316	X36CrMo16
		P.4.2	Martensitic	Tempered	1010 N/mm² / 300 HB	1.4112	X90CrMoV18	1.2316	X36CrMo16
M	Stainless steel	M.1.1	Austenitic / austenitic-ferritic	Quenched	610 N/mm² / 180 HB	1.4301	X5CrNi18-10	1.4571	X6CrNiMoTi17-12-2
		M.2.1	Austenitic	Tempered	300 HB	1.4841	X15CrNiSi25-21	1.4539	X1NiCrMoCu25-20-5
		M.3.1	Austenitic / ferritic (Duplex)		780 N/mm² / 230 HB	1.4462	X2CrNiMoN22-5-3	1.4501	X2CrNiMoCuWN25-7-4
K	Grey cast iron	K.1.1	Pearlitic / ferritic		350 N/mm² / 180 HB	0.6010	GG-10	0.6025	GG-25
		K.1.2	Pearlitic (martensitic)		500 N/mm² / 260 HB	0.6030	GG-30	0.6045	GG-45
	Spherulitic graphite cast iron	K.2.1	Ferritic		540 N/mm² / 160 HB	0.7040	GGG-40	0.7060	GGG-60
		K.2.2	Pearlitic		845 N/mm² / 250 HB	0.7070	GGG-70	0.7080	GGG-80
	Malleable iron	K.3.1	Ferritic		440 N/mm² / 130 HB	0.8035	GTW-35-04	0.8045	GTW-45
		K.3.2	Pearlitic		780 N/mm² / 230 HB	0.8165	GTS-65-02	0.8170	GTS-70-02
N	Aluminium wrought alloy	N.1.1	Non-hardenable		60 HB	3.0255	Al99,5	3.3315	AlMg1
		N.1.2	Hardenable	Age-hardened	340 N/mm² / 100 HB	3.1355	AlCuMg2	3.2315	AlMgSi1
	Cast aluminium alloy	N.2.1	≤ 12 % Si, non-hardenable		250 N/mm² / 75 HB	3.2581	G-AlSi12	3.2163	G-AlSi9Cu3
		N.2.2	≤ 12 % Si, hardenable	Age-hardened	300 N/mm² / 90 HB	3.2134	G-AlSi5Cu1Mg	3.2373	G-AlSi9Mg
		N.2.3	> 12 % Si, non-hardenable		440 N/mm² / 130 HB		G-AlSi17Cu4Mg		G-AlSi18CuNiMg
	Copper and copper alloys (bronze/brass)	N.3.1	Free-machining alloys, PB > 1 %		375 N/mm² / 110 HB	2.0380	CuZn39Pb2 (Ms58)	2.0410	CuZn44Pb2
		N.3.2	CuZn, CuSnZn		300 N/mm² / 90 HB	2.0331	CuZn15	2.4070	CuZn28Sn1As
		N.3.3	CuSn, lead-free copper and electrolytic copper		340 N/mm² / 100 HB	2.0060	E-Cu57	2.0590	CuZn40Fe
	Magnesium alloys	N.4.1	Magnesium and magnesium alloys		70 HB	3.5612	MgAl6Zn	3.5312	MgAl3Zn
S	Heat-resistant alloys	S.1.1	Fe - basis	Annealed	680 N/mm² / 200 HB	1.4864	X12NiCrSi 36-16	1.4865	G-X40NiCrSi38-18
		S.1.2		Age-hardened	950 N/mm² / 280 HB	1.4980	X6NiCrTiMoVB25-15-2	1.4876	X10NiCrAlTi32-20
		S.2.1	Ni or Co basis	Annealed	840 N/mm² / 250 HB	2.4631	NiCr20TiAl (Nimonic80A)	3.4856	NiCr22Mo9Nb
		S.2.2		Age-hardened	1180 N/mm² / 350 HB	2.4668	NiCr19Nb5Mo3 (Inconel 718)	2.4955	NiFe25Cr20NbTi
		S.2.3		Cast	1080 N/mm² / 320 HB	2.4765	CoCr20W15Ni	1.3401	G-X120Mn12
	Titanium alloys	S.3.1	Pure titanium		400 N/mm²	3.7025	Ti99,8	3.7034	Ti99,7
		S.3.2	Alpha + beta alloys	Age-hardened	1050 N/mm² / 320 HB	3.7165	TiAl6V4	Ti-6246	Ti-6Al-2Sn-4Zr-6Mo
		S.3.3	Beta alloys		1400 N/mm² / 410 HB	Ti555.3	Ti-5Al-5V-5Mo-3Cr	R56410	Ti-10V-2Fe-3Al
H	Hardened steel	H.1.1		Hardened and tempered	46–55 HRC				
		H.1.2		Hardened and tempered	56–60 HRC				
		H.1.3		Hardened and tempered	61–65 HRC				
		H.1.4		Hardened and tempered	66–70 HRC				
	Chilled iron	H.2.1		Cast	400 HB				
	Hardened cast iron	H.3.1		Hardened and tempered	55 HRC				
O	Non-metal materials	O.1.1	Plastics, duroplastic		≤ 150 N/mm²				
		O.1.2	Plastics, thermoplastic		≤ 100 N/mm²				
		O.2.1	Aramid fibre-reinforced		≤ 1000 N/mm²				
		O.2.2	Glass/carbon-fibre reinforced		≤ 1000 N/mm²				
		O.3.1	Graphite						

* Tensile strength

7

Cutting data standard values

Index	50 854 ..., 50 862 ..., 50 869 ..., 50 898 ...						50 840 ...				50 546 ..., 50 547 ...		
	BGF		Feed rate Drilling		Feed rate Thread milling		ZBGF	TiCN Solid carbide			HR	TiCN Solid carbide	
	Ti601	uncoated	≤ Ø 6	≤ Ø 12	≤ Ø 6	≤ Ø 12		Ø 3–5	Ø 6–10	Ø 12–16		< Ø 10	> Ø 10
	v_c (m/min)		f (mm/rev)		f_z (mm/tooth)		v_c (m/min)	f_z (mm/tooth)			v_c (m/min)	f_z (mm/tooth)	
P.1.1											100	0,025	0,05
P.1.2											100	0,025	0,05
P.1.3											100	0,025	0,05
P.1.4											80	0,015	0,035
P.1.5											80	0,015	0,035
P.2.1											100	0,025	0,05
P.2.2											80	0,015	0,035
P.2.3											80	0,015	0,035
P.2.4											80	0,015	0,035
P.3.1											100	0,025	0,05
P.3.2											80	0,015	0,035
P.3.3											80	0,02	0,04
P.4.1											80	0,02	0,04
P.4.2											80	0,02	0,04
M.1.1											80	0,02	0,04
M.2.1											80	0,02	0,04
M.3.1											80	0,02	0,04
K.1.1	**80–120**	50–80	0,10–0,15	0,15–0,22	0,02–0,05	0,05–0,10					120	0,03	0,09
K.1.2	**80–120**	50–80	0,10–0,15	0,15–0,22	0,02–0,05	0,05–0,10					120	0,03	0,09
K.2.1											100	0,02	0,05
K.2.2											100	0,02	0,05
K.3.1											100	0,02	0,05
K.3.2											100	0,02	0,05
N.1.1	100–400	**100–400**	0,10–0,25	0,25–0,30	0,03–0,06	0,06–0,10					350	0,05	0,1
N.1.2	100–400	**100–400**	0,10–0,25	0,25–0,30	0,03–0,06	0,06–0,10					350	0,05	0,1
N.2.1	100–300		0,10–0,25	0,25–0,30	0,03–0,06	0,06–0,10					350	0,05	0,1
N.2.2	100–400	**100–400**	0,10–0,25	0,25–0,30	0,03–0,06	0,06–0,10					250	0,05	0,1
N.2.3	100–160		0,10–0,25	0,25–0,30	0,03–0,06	0,06–0,10					250	0,05	0,1
N.3.1	100–300	**100–300**	0,10–0,30	0,25–0,30	0,03–0,06	0,06–0,10					350	0,05	0,1
N.3.2											350	0,05	0,1
N.3.3											350	0,05	0,1
N.4.1	100–400	**100–400**	0,10–0,25	0,25–0,30	0,03–0,06	0,06–0,10					350	0,05	0,1
S.1.1											40	0,02	0,05
S.1.2							80	0,01	0,03	0,03	20	0,02	0,05
S.2.1							60	0,01	0,02	0,02	20	0,02	0,05
S.2.2							60	0,01	0,02	0,02			
S.2.3							60	0,01	0,02	0,02			
S.3.1											100	0,02	0,05
S.3.2							80	0,01	0,03	0,03	80	0,02	0,05
S.3.3							60	0,01	0,02	0,02	80	0,02	0,05
H.1.1							**80**	0,01	0,03	0,03	**40**	0,008	0,017
H.1.2							**60**	0,01	0,02	0,02	**25**	0,005	0,012
H.1.3							**40**	0,005	0,01	0,01			
H.1.4													
H.2.1							**100**	0,03	0,04	0,04	**60**	0,02	0,04
H.3.1							**60**	0,01	0,02	0,02	**25**	0,005	0,012
O.1.1	60–100	**60–100**	0,10–0,25	0,25–0,30	0,03–0,06	0,06–0,10					120	0,04	0,1
O.1.2											120	0,04	0,1
O.2.1											80	0,04	0,1
O.2.2											80	0,04	0,1
O.3.1							180	0,04	0,05	0,08	130	0,04	0,1

The cutting data is strongly influenced by external conditions, such as the stability of the tool and workpiece clamping, material and type of machine. The specified values represent guideline cutting data that can be adjusted by approx. **±20%** according to the usage conditions.

Cutting data standard values

Index	54 815 ..., 54 816 ..., 54 817 ..., 54 818 ..., 54 819 ..., 54 820 ... / 54 821 ..., 54 822 ..., 54 823 ..., 54 824 ..., 54 825 ..., 54 826 ..., 54 827 ..., 54 828 ...				50 552 ..., 50 553 ..., 50 551 ..., 50 554 ... , 50 555 ... , 50 556 ... / 50 531 ..., 50 532 ..., 50 530 ...			
	SFSE	SGF	Ti500 – Standard Solid carbide			SFSE	SGF	AlTiN –Performance Solid carbide		
			Ø 2,4 – 6,0	Ø 6,0 – 10,0	Ø 10,0 – 20,0			Ø 2,4 – 5,9	Ø 6,0 – 11,9	Ø 12,0 – 20,0
	v_c (m/min)		f_z (mm/tooth)			v_c (m/min)		f_z (mm/tooth)		
P.1.1	150		0,01–0,04	0,04–0,06	0,08–0,15	80–150		0,015–0,04	0,04–0,08	0,08–0,15
P.1.2	120		0,01–0,04	0,04–0,06	0,08–0,15	80–120		0,015–0,04	0,04–0,08	0,08–0,15
P.1.3	120		0,007–0,03	0,03–0,05	0,05–0,10	80–120		0,015–0,04	0,04–0,08	0,08–0,15
P.1.4	120		0,007–0,03	0,03–0,05	0,05–0,10	80–120		0,015–0,04	0,04–0,08	0,08–0,15
P.1.5	100		0,006–0,02	0,02–0,04	0,04–0,06	60–100		0,01–0,04	0,04–0,06	0,04–0,10
P.2.1	120		0,007–0,04	0,04–0,06	0,08–0,15	80–120		0,015–0,04	0,04–0,08	0,08–0,15
P.2.2	100		0,007–0,03	0,03–0,05	0,05–0,10	80–100		0,015–0,04	0,04–0,08	0,08–0,15
P.2.3	80		0,006–0,02	0,02–0,04	0,04–0,06	80–100		0,010–0,04	0,04–0,08	0,08–0,15
P.2.4	70		0,006–0,02	0,02–0,04	0,04–0,06	80–100		0,010–0,04	0,04–0,08	0,08–0,15
P.3.1	80		0,01–0,03	0,03–0,05	0,06–0,12	70–90		0,01–0,03	0,03–0,05	0,06–0,12
P.3.2	70		0,006–0,02	0,02–0,04	0,04–0,06	60–80		0,006–0,02	0,02–0,04	0,04–0,06
P.3.3	60		0,006–0,02	0,02–0,04	0,04–0,06	50–70		0,006–0,02	0,02–0,04	0,04–0,06
P.4.1	60		0,006–0,02	0,02–0,04	0,04–0,06	70–90		0,006–0,02	0,02–0,04	0,04–0,06
P.4.2	60		0,006–0,02	0,02–0,04	0,04–0,06	60–80		0,006–0,02	0,02–0,04	0,04–0,06
M.1.1	100		0,008–0,03	0,03–0,05	0,05–0,10	60–100		0,01–0,04	0,04–0,08	0,08–0,10
M.2.1	100		0,008–0,03	0,03–0,05	0,05–0,10	60–100		0,01–0,03	0,03–0,06	0,06–0,10
M.3.1	100		0,008–0,03	0,03–0,05	0,05–0,10	60–100		0,01–0,03	0,03–0,06	0,06–0,10
K.1.1	120		0,01–0,04	0,04–0,06	0,08–0,15	80–120		0,02–0,06	0,06–0,12	0,10–0,15
K.1.2	100		0,007–0,03	0,03–0,05	0,05–0,10	80–120		0,02–0,05	0,05–0,10	0,10–0,12
K.2.1	120		0,01–0,04	0,04–0,06	0,08–0,15	80–100		0,02–0,05	0,05–0,10	0,08–0,15
K.2.2	100		0,007–0,03	0,03–0,05	0,05–0,10	80–100		0,02–0,05	0,05–0,10	0,08–0,12
K.3.1	130		0,01–0,04	0,04–0,06	0,08–0,15	80–100		0,015–0,05	0,05–0,08	0,08–0,12
K.3.2	100		0,007–0,03	0,03–0,05	0,05–0,10	80–100		0,015–0,03	0,03–0,08	0,08–0,12
N.1.1	400		0,03–0,06	0,08–0,12	0,14–0,20	100–400		0,04–0,09	0,08–0,15	0,12–0,20
N.1.2	400		0,03–0,06	0,08–0,12	0,14–0,20	100–400		0,04–0,09	0,08–0,15	0,12–0,20
N.2.1	300		0,03–0,06	0,08–0,12	0,14–0,20	100–400		0,04–0,09	0,08–0,15	0,12–0,20
N.2.2	300		0,03–0,06	0,08–0,12	0,14–0,20	100–400		0,04–0,09	0,08–0,15	0,12–0,20
N.2.3	200		0,03–0,06	0,08–0,12	0,14–0,20	100–250		0,04–0,09	0,08–0,15	0,12–0,20
N.3.1	160		0,03–0,06	0,08–0,12	0,14–0,20	100–400		0,04–0,09	0,08–0,15	0,12–0,20
N.3.2	160		0,03–0,06	0,08–0,12	0,14–0,20	100–400		0,04–0,09	0,08–0,15	0,12–0,20
N.3.3	160		0,03–0,06	0,08–0,12	0,14–0,20	100–400		0,04–0,09	0,08–0,15	0,12–0,20
N.4.1	300		0,03–0,06	0,08–0,12	0,14–0,20	100–400		0,04–0,09	0,08–0,15	0,12–0,20
S.1.1	80		0,008–0,03	0,03–0,05	0,05–0,10	40–100		0,01–0,04	0,04–0,07	0,07–0,12
S.1.2	60		0,006–0,02	0,02–0,04	0,04–0,06					
S.2.1	40		0,006–0,02	0,02–0,04	0,04–0,06					
S.2.2	40		0,006–0,02	0,02–0,04	0,04–0,06					
S.2.3	40		0,006–0,02	0,02–0,04	0,04–0,06					
S.3.1	100		0,01–0,03	0,03–0,05	0,06–0,12	40–100		0,01–0,04	0,04–0,07	0,07–0,15
S.3.2	80		0,006–0,02	0,02–0,04	0,04–0,06					
S.3.3	60		0,006–0,02	0,02–0,04	0,04–0,06					
H.1.1	50		0,003–0,006	0,008–0,012	0,014–0,02					
H.1.2	40			0,006–0,01	0,01–0,015					
H.1.3										
H.1.4										
H.2.1	60			0,006–0,01	0,01–0,015					
H.3.1	40			0,006–0,01	0,01–0,015					
O.1.1	100		0,02–0,06	0,06–0,10	0,12–0,20	100–400		0,03–0,08	0,08–0,15	0,15–0,20
O.1.2	100		0,02–0,06	0,06–0,10	0,12–0,20	100–400		0,03–0,08	0,08–0,15	0,15–0,20
O.2.1	80		0,01–0,04	0,04–0,06	0,08–0,15	50–80		0,03–0,08	0,08–0,15	0,15–0,20
O.2.2	80		0,01–0,04	0,04–0,06	0,08–0,15	50–80		0,03–0,08	0,08–0,15	0,15–0,20
O.3.1	200		0,01–0,04	0,04–0,06	0,08–0,15					

The cutting data is strongly influenced by external conditions, such as the stability of the tool and workpiece clamping, material and type of machine. The specified values represent guideline cutting data that can be adjusted by approx. **±20%** according to the usage conditions.

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Cutting data standard values

Index	50 802 ..., 50 803 ...					50 806 ..., 50 807 ...				50 804 ...	
	SGF	Ti600 – Circular shank thread milling cutter Solid carbide				SFSE	AlCrN – Performance HPC Solid carbide			SFSE Micro	Ti602 Solid carbide
		Ø 1–2	Ø 3–5	Ø 6–8	Ø 9–12		Ø 3–5	Ø 6–10	Ø 10–13		Ø 0,7–2,1
	v_c (m/min)	f_z (mm/tooth)				v_c (m/min)	f_z (mm/tooth)			v_c (m/min)	f_z (mm/tooth)
P.1.1	110	0,05	0,09	0,14	0,16	100–140	0,015–0,03	0,04–0,06	0,06–0,10	20–40	0,01–0,02
P.1.2	110	0,05	0,09	0,14	0,16	100–120	0,015–0,03	0,04–0,06	0,06–0,10	20–40	0,01–0,02
P.1.3	110	0,05	0,09	0,14	0,16	80–100	0,015–0,02	0,03–0,05	0,03–0,07	20–40	0,01–0,02
P.1.4	110	0,05	0,09	0,14	0,16	80–100	0,015–0,02	0,02–0,04	0,03–0,05	20–40	0,01–0,02
P.1.5	110	0,05	0,09	0,14	0,16	80–100	0,015–0,02	0,02–0,03	0,03–0,04	20–40	0,01–0,02
P.2.1	80	0,04	0,08	0,12	0,14	100–120	0,015–0,03	0,04–0,06	0,06–0,10	20–40	0,01–0,02
P.2.2	80	0,04	0,08	0,12	0,14	80–100	0,015–0,03	0,02–0,05	0,03–0,07	20–40	0,01–0,02
P.2.3	80	0,04	0,08	0,12	0,14	80–100	0,015–0,02	0,02–0,03	0,03–0,04	20–40	0,01–0,02
P.2.4	80	0,04	0,08	0,12	0,14	80–100	0,015–0,02	0,02–0,03	0,03–0,04	20–40	0,01–0,02
P.3.1	60	0,04	0,08	0,12	0,14	100–120	0,015–0,03	0,04–0,06	0,06–0,10	20–40	0,01–0,02
P.3.2	60	0,04	0,08	0,12	0,14	80–100	0,015–0,02	0,02–0,03	0,03–0,04	20–40	0,01–0,02
P.3.3	60	0,04	0,08	0,12	0,14	80–100	0,015–0,02	0,02–0,03	0,03–0,04	20–40	0,01–0,02
P.4.1	60	0,04	0,08	0,12	0,14	60–80	0,015–0,03	0,04–0,06	0,06–0,10	20–40	0,01–0,02
P.4.2	80	0,04	0,08	0,12	0,14	60–80	0,015–0,03	0,04–0,06	0,06–0,10	20–40	0,01–0,02
M.1.1	80	0,04	0,05	0,07	0,10	60–80	0,015–0,03	0,04–0,06	0,06–0,10	20–30	0,01–0,02
M.2.1	80	0,04	0,05	0,07	0,10	60–80	0,015–0,03	0,04–0,06	0,06–0,10	20–30	0,01–0,02
M.3.1	80	0,04	0,05	0,07	0,10	60–80	0,015–0,03	0,04–0,06	0,06–0,10	20–30	0,01–0,02
K.1.1	50	0,05	0,09	0,14	0,16	100–120	0,02–0,04	0,04–0,08	0,06–0,10		
K.1.2	50	0,05	0,09	0,14	0,16	100–120	0,02–0,04	0,04–0,08	0,06–0,10		
K.2.1	50	0,05	0,09	0,14	0,16	100–120	0,02–0,04	0,04–0,08	0,06–0,10		
K.2.2	50	0,05	0,09	0,14	0,16	80–100	0,02–0,04	0,04–0,08	0,06–0,10		
K.3.1	50	0,05	0,09	0,14	0,16	80–100	0,02–0,04	0,04–0,08	0,06–0,08		
K.3.2	50	0,05	0,09	0,14	0,16	80–100	0,02–0,04	0,04–0,08	0,06–0,08		
N.1.1	130	0,05	0,09	0,14	0,16					30–50	0,02–0,03
N.1.2	130	0,05	0,09	0,14	0,16					30–50	0,02–0,03
N.2.1	120	0,04	0,05	0,07	0,10					30–50	0,02–0,03
N.2.2	100	0,04	0,05	0,07	0,10					30–50	0,02–0,03
N.2.3	100	0,04	0,05	0,07	0,10					30–50	0,02–0,03
N.3.1	130	0,05	0,09	0,14	0,16					30–50	0,02–0,03
N.3.2	130	0,05	0,09	0,14	0,16					30–50	0,02–0,03
N.3.3	130	0,05	0,09	0,14	0,16					30–50	0,02–0,03
N.4.1	110	0,04	0,05	0,07	0,10					30–50	0,02–0,03
S.1.1	30	0,03	0,04	0,06	0,07					20–30	0,01–0,02
S.1.2	30	0,03	0,04	0,06	0,07					20–30	0,01–0,02
S.2.1	30	0,03	0,04	0,06	0,07					20–30	0,01–0,02
S.2.2	30	0,03	0,04	0,06	0,07					20–30	0,01–0,015
S.2.3	30	0,03	0,04	0,06	0,07					20–30	0,01–0,015
S.3.1	30	0,03	0,04	0,06	0,07	60–80	0,015–0,02	0,02–0,03	0,03–0,04	20–30	0,01–0,02
S.3.2	30	0,03	0,04	0,06	0,07	60–80	0,01–0,015	0,015–0,02	0,025–0,035	20–30	0,01–0,015
S.3.3	30	0,03	0,04	0,06	0,07					20–30	0,01–0,015
H.1.1										**20–30**	0,01–0,015
H.1.2										**20–30**	0,01–0,015
H.1.3											
H.1.4											
H.2.1											
H.3.1											
O.1.1	150	0,06	0,12	0,19	0,19						
O.1.2	150	0,06	0,12	0,19	0,19						
O.2.1	150	0,06	0,12	0,19	0,19						
O.2.2	150	0,06	0,12	0,19	0,19						
O.3.1	100	0,05	0,09	0,14	0,14						

The cutting data is strongly influenced by external conditions, such as the stability of the tool and workpiece clamping, material and type of machine. The specified values represent guideline cutting data that can be adjusted by approx. **±20%** according to the usage conditions.

Cutting data standard values

Index	50 890 ..., 50 891 ..., 50 892 ..., 50 896 ..., 50 897 ...		50 890 ..., 50 891 ..., 50 895 ...		50 863 ..., 50 864 ... / 50 885 ..., 50 887 ..., 50 888 ..., 50 889 ..., 50 894 ...			50 860 ..., 50 861 ..., 50 867 ..., 50 868 ... / 50 870 ...		
	MWN	uncoated Solid carbide	MWN	TiAlN Solid carbide	GZD	GZG	Ti500 Solid carbide Ø 12–17 / Ø 20–26		EAW	EWM
	v_c (m/min)	f_z (mm/tooth)	v_c (m/min)	f_z (mm/tooth)	v_c (m/min)		f_z (mm/tooth)	v_c (m/min)	f_z (mm/tooth)	
P.1.1	85	0,10	170	0,10	220		0,10–0,30 / 0,05–0,30	280	0,20	0,20
P.1.2	75	0,10	150	0,10	220		0,10–0,30 / 0,05–0,30	240	0,20	0,20
P.1.3	65	0,10	130	0,10	190		0,10–0,30 / 0,05–0,30	200	0,20	0,20
P.1.4	65	0,07	130	0,07	160		0,10–0,30 / 0,05–0,30	200	0,15	0,15
P.1.5	60	0,07	120	0,07	160		0,10–0,30 / 0,05–0,30	180	0,15	0,15
P.2.1	70	0,10	140	0,10	150		0,10–0,30 / 0,05–0,30	220	0,20	0,20
P.2.2	65	0,07	130	0,07	120		0,10–0,30 / 0,05–0,30	200	0,15	0,15
P.2.3	60	0,07	120	0,07	100		0,10–0,30 / 0,05–0,30	180	0,15	0,15
P.2.4	45	0,06	90	0,06	90		0,10–0,30 / 0,05–0,30	150	0,12	0,12
P.3.1	45	0,10	90	0,10	100		0,10–0,20 / 0,05–0,20	150	0,20	0,20
P.3.2	40	0,07	80	0,07	90		0,10–0,20 / 0,05–0,20	130	0,10	0,10
P.3.3	35	0,06	70	0,06	80		0,10–0,20 / 0,05–0,20	110	0,10	0,10
P.4.1	45	0,10	90	0,10	70		0,10–0,20 / 0,05–0,20	150	0,20	0,20
P.4.2	40	0,10	80	0,10	60		0,10–0,20 / 0,05–0,20	130	0,20	0,20
M.1.1	40	0,06	80	0,06	130		0,10–0,30 / 0,05–0,30	130	0,10	0,10
M.2.1	30	0,05	60	0,05	120		0,10–0,30 / 0,05–0,30	90	0,08	0,08
M.3.1	30	0,05	60	0,05	120		0,10–0,30 / 0,05–0,30	90	0,08	0,08
K.1.1	85	0,12	170	0,12	140		0,10–0,30 / 0,05–0,30	280	0,25	0,25
K.1.2	75	0,12	150	0,12	100		0,10–0,30 / 0,05–0,30	240	0,25	0,25
K.2.1	75	0,07	150	0,07	140		0,10–0,30 / 0,05–0,30	240	0,15	0,15
K.2.2	65	0,07	130	0,07	120		0,10–0,30 / 0,05–0,30	200	0,15	0,15
K.3.1	70	0,10	140	0,10	140		0,10–0,30 / 0,05–0,30	220	0,20	0,20
K.3.2	60	0,10	120	0,10	100		0,10–0,30 / 0,05–0,30	190	0,20	0,20
N.1.1	120	0,15	240	0,15	700		0,10–0,40 / 0,05–0,40	390	0,30	0,30
N.1.2	105	0,12	210	0,12	400		0,10–0,40 / 0,05–0,40	330	0,25	0,25
N.2.1	75	0,12	150	0,12	400		0,10–0,40 / 0,05–0,40	240	0,25	0,25
N.2.2	75	0,12	150	0,12	300		0,10–0,40 / 0,05–0,40	240	0,25	0,25
N.2.3	70	0,12	140	0,12	200		0,10–0,40 / 0,05–0,40	220	0,25	0,25
N.3.1	105	0,15	210	0,15	160		0,10–0,40 / 0,05–0,40	330	0,30	0,30
N.3.2	105	0,15	210	0,15	160		0,10–0,40 / 0,05–0,40	330	0,30	0,30
N.3.3	75	0,15	150	0,15	160		0,10–0,40 / 0,05–0,40	240	0,30	0,30
N.4.1	85	0,15	170	0,15	160		0,10–0,40 / 0,05–0,40	280	0,30	0,30
S.1.1								110	0,10	0,10
S.1.2								90	0,07	0,07
S.2.1								70	0,05	0,05
S.2.2								70	0,05	0,05
S.2.3								70	0,05	0,05
S.3.1								130	0,10	0,10
S.3.2								90	0,07	0,07
S.3.3								70	0,05	0,05
H.1.1								80	0,05	0,05
H.1.2								60	0,04	0,04
H.1.3										
H.1.4										
H.2.1								80	0,05	0,05
H.3.1								60	0,04	0,04
O.1.1	140	0,16								
O.1.2	140	0,16								
O.2.1	75	0,07								
O.2.2	75	0,07								
O.3.1			130	0,07				200	0,14	0,14

The cutting data is strongly influenced by external conditions, such as the stability of the tool and workpiece clamping, material and type of machine. The specified values represent guideline cutting data that can be adjusted by approx. **±20%** according to the usage conditions.

Cutting data standard values

Index	50 872 …, 50 875 …, 50 876 …, 50 879 …, 50 880 …, 50 881 …, 50 882 …, 50 883 …, 50 884 …, 50 886 …		51 800 …	50 851 …, 50 852 …, 50 853 …, 50 855 …, 50 857 …, 50 858 …, 50 859 …	
	Polygon		Multipurpose milling	System 300	
	v_c (m/min)	f_z (mm/tooth)	f_z (mm/tooth)	v_c (m/min)	f_z (mm/tooth)
P.1.1	220	0,05–0,25	0,03–0,10	220	0,05–0,15
P.1.2	220	0,05–0,25	0,03–0,10	220	0,05–0,15
P.1.3	190	0,05–0,25	0,03–0,10	190	0,05–0,15
P.1.4	160	0,05–0,25	0,03–0,09	160	0,05–0,15
P.1.5	160	0,05–0,25	0,03–0,09	160	0,05–0,15
P.2.1	150	0,05–0,25	0,03–0,10	150	0,05–0,15
P.2.2	120	0,05–0,25	0,03–0,09	120	0,05–0,15
P.2.3	100	0,05–0,25	0,03–0,09	100	0,05–0,15
P.2.4	90	0,05–0,25	0,03–0,09	90	0,05–0,15
P.3.1	100	0,05–0,20	0,03–0,10	100	0,05–0,12
P.3.2	90	0,05–0,20	0,03–0,08	90	0,05–0,12
P.3.3	80	0,05–0,20	0,03–0,08	80	0,05–0,12
P.4.1	70	0,05–0,20	0,03–0,08	70	0,05–0,12
P.4.2	60	0,05–0,20	0,03–0,08	60	0,05–0,12
M.1.1	130	0,05–0,25	0,03–0,08	130	0,05–0,15
M.2.1	120	0,05–0,25	0,03–0,08	120	0,05–0,15
M.3.1	120	0,05–0,25	0,03–0,08	120	0,05–0,15
K.1.1	140	0,05–0,25	0,03–0,11	140	0,05–0,15
K.1.2	100	0,05–0,25	0,03–0,10	100	0,05–0,15
K.2.1	140	0,05–0,25	0,03–0,11	140	0,05–0,15
K.2.2	120	0,05–0,25	0,03–0,10	120	0,05–0,15
K.3.1	140	0,05–0,25	0,03–0,11	140	0,05–0,15
K.3.2	100	0,05–0,25	0,03–0,10	100	0,05–0,15
N.1.1	700	0,15–0,40	0,04–0,15	700	0,10–0,25
N.1.2	400	0,15–0,40	0,04–0,15	400	0,10–0,25
N.2.1	400	0,15–0,40	0,04–0,15	400	0,10–0,25
N.2.2	300	0,15–0,40	0,04–0,15	300	0,10–0,25
N.2.3	200	0,15–0,40	0,04–0,15	200	0,10–0,25
N.3.1	160	0,15–0,40	0,04–0,15	160	0,10–0,25
N.3.2	160	0,15–0,40	0,04–0,15	160	0,10–0,25
N.3.3	160	0,15–0,40	0,04–0,15	160	0,10–0,25
N.4.1	160	0,15–0,40	0,04–0,15	160	0,10–0,25
S.1.1	100	0,01–0,15	0,01–0,11	100	0,01–0,12
S.1.2	80	0,01–0,15	0,01–0,11	80	0,01–0,12
S.2.1	60	0,01–0,15	0,01–0,11	60	0,01–0,12
S.2.2	40	0,01–0,15	0,01–0,11	40	0,01–0,12
S.2.3	40	0,01–0,15	0,01–0,11	40	0,01–0,12
S.3.1	100	0,01–0,15	0,01–0,11	100	0,01–0,12
S.3.2	80	0,01–0,15	0,01–0,11	80	0,01–0,12
S.3.3	60	0,01–0,15	0,01–0,11	60	0,01–0,12
H.1.1	60	0,01–0,10	0,01–0,06	60	0,01–0,10
H.1.2	50	0,01–0,10	0,01–0,06	50	0,01–0,10
H.1.3	40	0,01–0,10	0,01–0,06	40	0,01–0,10
H.1.4	30	0,01–0,10	0,01–0,06	30	0,01–0,10
H.2.1	60	0,01–0,10	0,01–0,06	60	0,01–0,10
H.3.1	50	0,01–0,10	0,01–0,06	50	0,01–0,10
O.1.1	180	0,05–0,25	0,04–0,15	180	0,05–0,15
O.1.2	220	0,05–0,25	0,04–0,15	220	0,05–0,15
O.2.1	120	0,05–0,25	0,04–0,15	120	0,05–0,15
O.2.2	120	0,05–0,25	0,04–0,15	120	0,05–0,15
O.3.1	800	0,05–0,25	0,04–0,15	800	0,05–0,15

The cutting data is strongly influenced by external conditions, such as the stability of the tool and workpiece clamping, material and type of machine. The specified values represent guideline cutting data that can be adjusted by approx. **±20%** according to the usage conditions.

Cutting data standard values

Index	53 006 ..., 53 007 ..., 53 008 ..., 53 009 ..., 53 010 ..., 53 011 ..., 53 012 ..., 53 013 ..., 53 015 ..., 53 016 ..., 53 017 ...				53 050 ..., 53 051 ..., 53 052 ..., 53 053 ...	
	Mini Mill	hole (Circular milling)	Thread (Thread milling)	Parting (multipurpose milling)	Micro Mill	
	v_c (m/min)	f_z (mm/tooth)			v_c (m/min)	f_z (mm/tooth)
P.1.1	**120** (80–200)	0,03–0,10	0,05–0,20	0,015–0,05	**70** (40–120)	0,01–0,05
P.1.2	**110** (70–190)	0,03–0,10	0,05–0,20	0,015–0,05	**60** (40–110)	0,01–0,05
P.1.3	**90** (60–150)	0,03–0,10	0,05–0,20	0,015–0,05	**50** (30–80)	0,01–0,05
P.1.4	**90** (60–150)	0,03–0,08	0,05–0,18	0,015–0,04	**50** (30–80)	0,01–0,05
P.1.5	**70** (50–120)	0,03–0,08	0,05–0,18	0,015–0,04	**40** (30–70)	0,01–0,05
P.2.1	**90** (60–150)	0,03–0,10	0,05–0,20	0,015–0,05	**50** (30–80)	0,01–0,05
P.2.2	**70** (50–120)	0,03–0,08	0,05–0,18	0,015–0,04	**40** (30–70)	0,01–0,05
P.2.3	**60** (40–110)	0,02–0,07	0,05–0,16	0,015–0,035	**40** (20–70)	0,01–0,05
P.2.4	**60** (40–100)	0,03–0,07	0,05–0,16	0,015–0,035	**30** (20–60)	0,01–0,04
P.3.1	**60** (40–100)	0,03–0,10	0,05–0,20	0,015–0,05	**30** (20–60)	0,01–0,05
P.3.2	**50** (30–80)	0,02–0,07	0,05–0,16	0,015–0,035	**30** (20–50)	0,01–0,04
P.3.3	**30** (20–60)	0,02–0,07	0,05–0,16	0,015–0,035	**20** (10–40)	0,005–0,03
P.4.1	**80** (50–130)	0,03–0,08	0,05–0,18	0,015–0,04	**40** (30–70)	0,01–0,05
P.4.2	**60** (40–110)	0,02–0,07	0,05–0,16	0,015–0,035	**40** (20–70)	0,01–0,05
M.1.1	**90** (60–150)	0,02–0,07	0,05–0,16	0,015–0,035	**50** (30–80)	0,01–0,03
M.2.1	**60** (40–110)	0,02–0,07	0,05–0,16	0,015–0,035	**40** (20–70)	0,01–0,03
M.3.1	**50** (30–90)	0,02–0,07	0,05–0,16	0,015–0,035	**30** (20–50)	0,01–0,03
K.1.1	**110** (70–190)	0,03–0,10	0,05–0,20	0,015–0,05	**60** (40–110)	0,008–0,06
K.1.2	**80** (50–140)	0,03–0,10	0,05–0,20	0,015–0,05	**50** (30–80)	0,008–0,06
K.2.1	**70** (50–120)	0,03–0,10	0,05–0,20	0,015–0,05	**40** (30–70)	0,008–0,06
K.2.2	**60** (40–100)	0,03–0,10	0,05–0,20	0,015–0,05	**30** (20–60)	0,008–0,06
K.3.1	**110** (70–190)	0,03–0,10	0,05–0,20	0,015–0,05	**60** (40–110)	0,008–0,06
K.3.2	**90** (60–160)	0,03–0,10	0,05–0,20	0,015–0,05	**50** (30–90)	0,008–0,06
N.1.1	**230** (150–390)	0,04–0,15	0,06–0,25	0,02–0,075	**150** (90–260)	0,01–0,06
N.1.2	**220** (140–370)	0,04–0,15	0,06–0,25	0,02–0,075	**140** (90–240)	0,01–0,06
N.2.1	**190** (120–320)	0,04–0,15	0,06–0,25	0,02–0,075	**120** (70–210)	0,01–0,06
N.2.2	**160** (110–270)	0,04–0,15	0,06–0,25	0,02–0,075	**100** (60–180)	0,01–0,06
N.2.3	**90** (60–160)	0,04–0,15	0,06–0,25	0,02–0,075	**60** (40–110)	0,01–0,06
N.3.1	**170** (110–280)	0,04–0,15	0,06–0,25	0,02–0,075	**110** (70–180)	0,01–0,06
N.3.2	**140** (90–240)	0,04–0,15	0,06–0,25	0,02–0,075	**80** (50–150)	0,01–0,06
N.3.3	**120** (80–210)	0,04–0,15	0,06–0,25	0,02–0,075	**80** (50–140)	0,01–0,06
N.4.1	**170** (110–280)	0,04–0,15	0,06–0,25	0,02–0,075	**70** (40–120)	0,01–0,06
S.1.1	60 (40–100)	0,04–0,15	0,06–0,25	0,02–0,075	**30** (20–50)	0,01–0,06
S.1.2	40 (30–70)	0,04–0,15	0,06–0,25	0,02–0,075	**20** (10–30)	0,01–0,06
S.2.1	60 (40–100)	0,04–0,15	0,06–0,25	0,02–0,075	**30** (20–50)	0,01–0,06
S.2.2	50 (30–80)	0,04–0,15	0,06–0,25	0,02–0,075	**20** (10–40)	0,01–0,06
S.2.3	30 (20–60)	0,04–0,15	0,06–0,25	0,02–0,075	**20** (10–30)	0,01–0,06
S.3.1	60 (40–100)	0,04–0,15	0,06–0,25	0,02–0,075	**20** (10–40)	0,01–0,06
S.3.2	30 (20–60)	0,04–0,15	0,06–0,25	0,02–0,075	**20** (10–30)	0,01–0,06
S.3.3	30 (20–50)	0,04–0,15	0,06–0,25	0,02–0,075	**10** (10–20)	0,01–0,06
H.1.1	50 (30–90)	0,02–0,06	0,04–0,14	0,02–0,037	**20** (10–40)	0,005–0,03
H.1.2						
H.1.3						
H.1.4						
H.2.1						
H.3.1	40 (30–70)	0,02–0,10		0,015–0,05	**20** (10–40)	0,005–0,03
O.1.1	**180** (120–310)	0,04–0,15	0,06–0,25	0,02–0,037	**80** (50–130)	0,02–0,09
O.1.2	**170** (110–280)	0,04–0,15	0,06–0,25	0,02–0,037	**70** (40–120)	0,02–0,09
O.2.1	**140** (90–230)	0,04–0,15	0,06–0,25	0,02–0,037	**50** (30–100)	0,02–0,09
O.2.2	**100** (70–170)	0,04–0,15	0,06–0,25	0,02–0,037	**40** (30–70)	0,02–0,09
O.3.1	**140** (90–230)	0,005–0,05	0,06–0,25	0,0025–0,025	**60** (40–110)	0,02–0,09

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

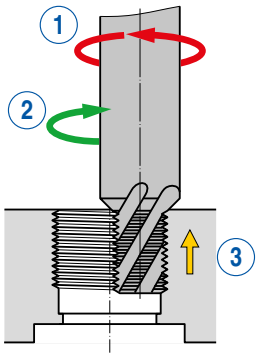
Milling Procedures

Climb milling

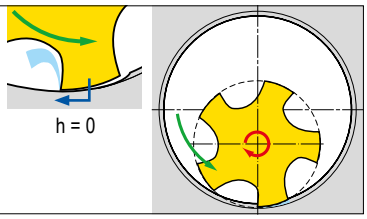
Characteristics:

1. Tool rotation direction „right“
2. Toolpath counter clockwise
3. Feed direction „outwards“

▶ Right hand thread



When climb milling, the chip thickness at the end of cut is always 0 (h=0)

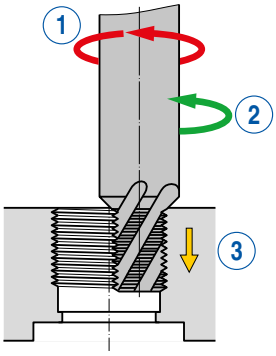


Conventional milling

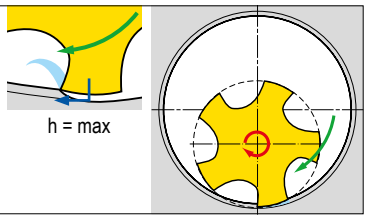
Characteristics:

1. Tool rotation direction „right“
2. Toolpath clockwise
3. Feed direction „inwards“

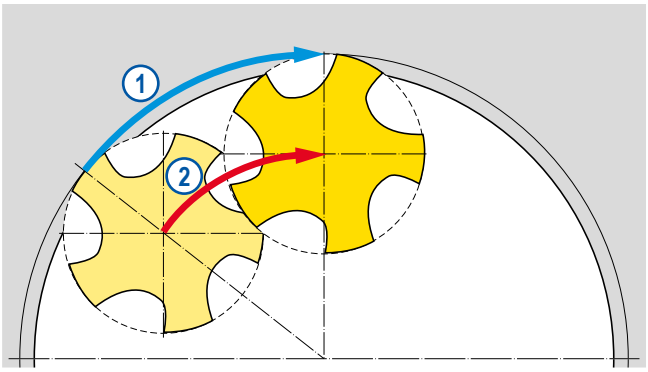
▶ Right hand thread



When conventional milling, the chip thickness at the end of cut is always at maximum (h=max)

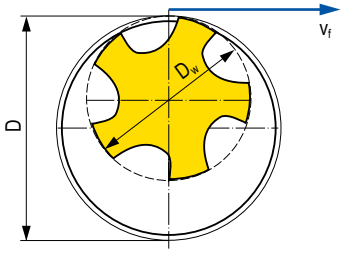


Feed rate calculation



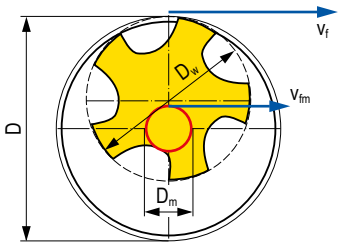
D_w = Effective diameter in mm
n = RPM in min^{-1}
f_z = Feed per tooth in mm
z = Number of cutting edges (radial)
D = Nominal thread diameter = external profile diameter in mm
D_m = Centre path diameter ($D-D_w$) in mm

1 Peripheral feedrate v_f



$$v_f = n \times f_z \times z \quad \text{mm/min.}$$

2 Centerline feedrate v_{fm}



$$v_{fm} = \frac{v_f \times (D - D_w)}{D} \quad \text{mm/min.}$$

Tips for the User

With thread milling there are two different programme possibilities with the feed motion of the tool.

On the one hand the machine controls the feed at the diameter of the tool, on the other hand the feed control is the tool center line.
In order to ascertain which method the machine control uses, the following method should be employed:

- ▲ Enter the thread milling routine into the control.
- ▲ Enter a safety margin into the program, so that the tool runs in air.
- ▲ Run the program through and check the operating time.
- ▲ Compare the actual time with the calculated theoretical time.

If the time is longer than the calculated time the feed is controlling the tool center line.
If the time is shorter than the calculated time the feed is controlling the diameter of the tool.

Numeric calculation of cutting data for thread milling

$$n = \frac{v_c \times 1000}{d \times \pi}$$

$$v_c = \frac{d \times \pi \times n}{1000}$$

$$v_f = f_z \times z \times n$$

$$n = \frac{v_f}{f_z \times z}$$

$$f_z = \frac{v_f}{z \times n}$$

Milling – external contour

$$v_{fm} = \frac{v_f \times (D + d)}{D}$$

$$v_f = \frac{D \times v_{fm}}{(D + d)}$$

Milling – internal contour

$$v_{fm} = \frac{v_f \times (D - d)}{D}$$

$$v_f = \frac{D \times v_{fm}}{(D - d)}$$

Helical plunging

$$U_{arc} = 0{,}25 \times v_{fm}$$

Ramping in the arc

$$U_{arc} = v_{fm}$$

n	rev./min.	=	rpm
v_c	m/min	=	Cutting speed
d	mm	=	Tool diameter
D	mm	=	Nominal thread-Ø
v_f	mm/min.	=	Feed rate at the diameter

v_{fm}	mm/min.	=	Feed rate at the centre
U_{arc}	mm/min.	=	programmed ramping feed rate
f_z	mm	=	Feed per tooth
z	Piece	=	number of cutting edges of the cutter

7

Correction values for the internal thread milling

The milling radius correction which is entered into the machine control, can be calculated as follows:

half the cutter Ø – 0.05 x pitch P

Example:
M30x3
Cutter-Ø:
20 mm

$$\frac{Ø20}{2} - (0{,}05 \times 3) = \underline{9{,}85\ mm}$$

9,85 mm is the milling radius to be entered into the machine control

Coatings

AlCrN
- ▲ High-performance AlCrN multilayer coating
- ▲ max.application temperature: > 1100 °C

CWX 500
- ▲ Carbide, TiAlN-coated
- ▲ The universal carbide grade for almost all materials

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

TiCN
- ▲ TiCN multilayer coating
- ▲ Maximum application temperature: 450 °C

TiN
- ▲ TiN coating
- ▲ Maximum application temperature: 450 °C

Ti 500
- ▲ TiAlN-coating
- ▲ Maximum application temperature: 500 °C

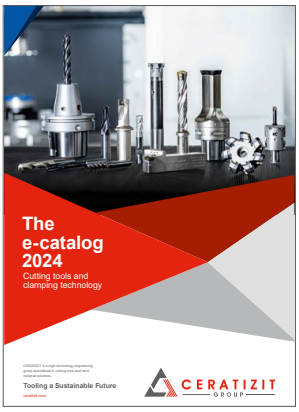
Ti 600
- ▲ TiAlN multilayer coating
- ▲ Maximum application temperature: 650 °C

Ti 601
- ▲ High-performance TiAlN multilayer coating
- ▲ Maximum application temperature: 900 °C

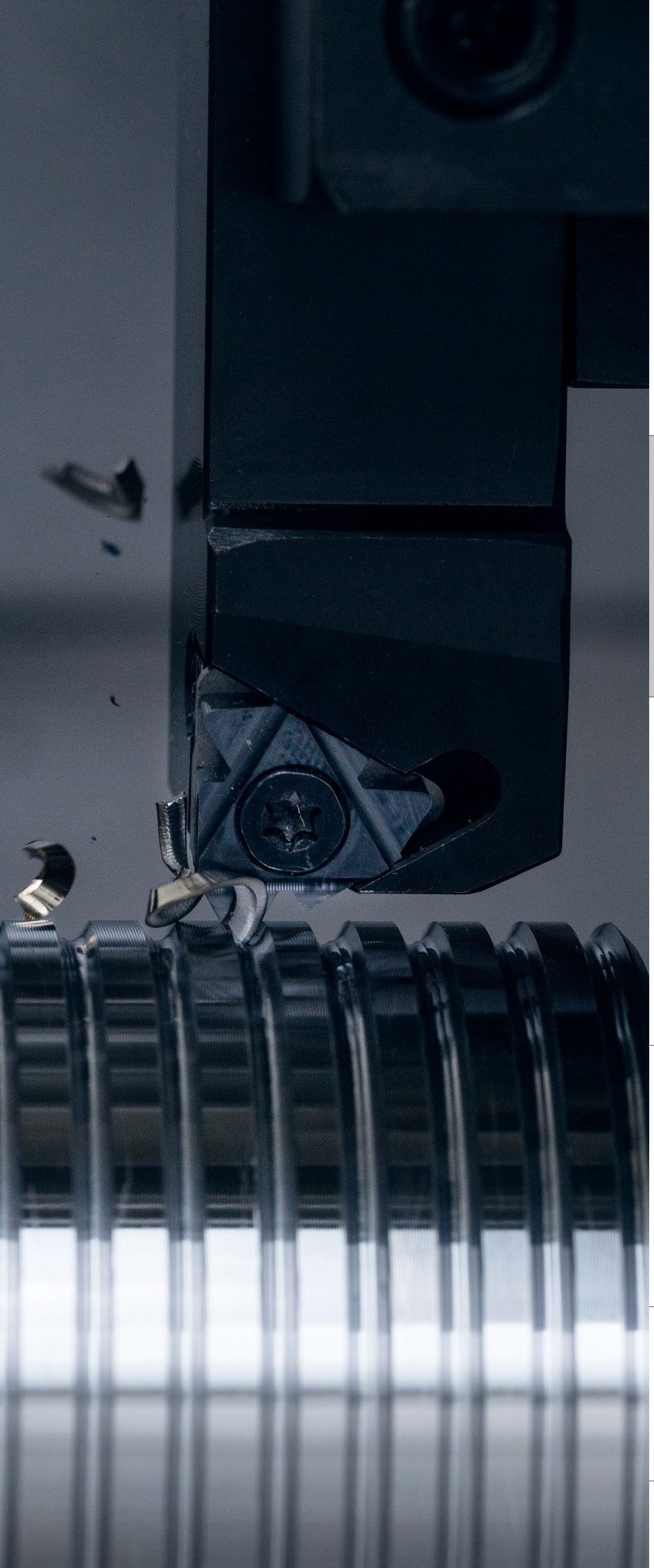
Ti 602
- ▲ TiCN multilayer coating
- ▲ Maximum application temperature: 400 °C

Metric Products

The entire content of this chapter can be found
in the Metric Catalog.
Use the QR code or the link shown below.



https://cutting.tools/us/en/digitalcatalogmetric



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	Metric Catalog	Solid carbide drilling	2
		Indexable drilling	3
		Reaming and Countersinking	4
		Indexable Boring	5
Threading	Metric Catalog	Taps and thread formers	6
	Metric Catalog	Circular and Thread Milling	7
	Metric Catalog	Thread turning	8
Turning		Indexable Turning	9
		Multifunction	10
		Parting and Grooving	11
	Metric Catalog	Miniature turning tools	12
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WNT \ Performance

Premium quality tools for high performance.

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

Toolfinder

MiniCut

M	G	Tr
Full profile Partial profile	Partial profile	Partial profile

→ **Chapter 12 – Miniature turning tools**

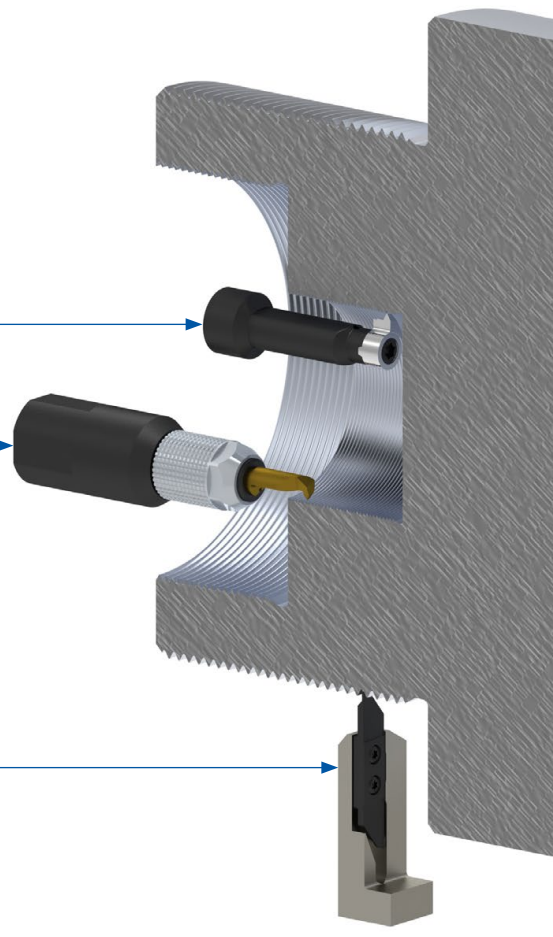
UltraMini

M	MF	G	Tr
Full profile Partial profile	Full profile Partial profile	Partial profile	Partial profile

→ **Chapter 12 – Miniature turning tools**

VertiClamp

→ **Sliding head tooling catalogue**



Symbol explanation

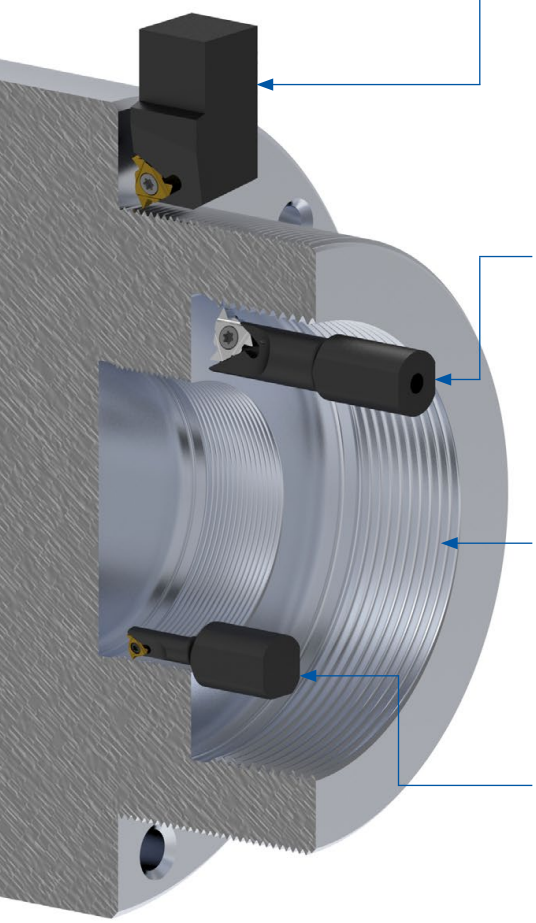
Flank angle

- 30° — Flank angle 30° (Trapezoidal thread)
- 30° — Flank angle 30° (Round thread)
- 55° — Flank angle 55°
- 60° — Flank angle 60°
- 80° — Flank angle 80° (Conduit thread)

TP / TPI = Pitch
NT = Number of flutes
● = **Main Application**
○ = Extended application

Thread

- **M** — ISO metric coarse thread DIN 13
- **MF** — ISO Metric fine thread DIN 13
- **BSW** — British Whitworth thread BS 84
- **UN** — American unified thread BS 1580 (ASME B 1.1)
- **UNC** — American unified thread (coarse) BS 1580 (ASME B 1.1)
- **UNF** — American unified thread (fine) BS 1580 (ASME B 1.1)
- **UNEF** — American unified thread (extra fine) BS 1580 (ASME B 1.1)
- **NPT** — American pipe thread ANSI/ASME B 1.20.3
- **Tr** — Trapezoidal thread DIN 103
- **Rd** — Round Thread DIN 405
- **Pg** — Conduit Threads DIN 40430



Standard external thread turning

Full profile

M	BSW	UN	UNC	UNF	UNEF	NPT	Tr	Rd	Pg
6+7	11+12	15+16	15+16	15+16	15+16	19	21	24	26

Partial profile

60°	55°
28	30

Multi-cutting edge

M
10

Suitable holders can be found on → page 32+33

Standard internal thread turning

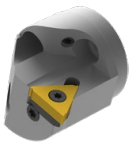
Full profile

M	BSW	UN	UNC	UNF	UNEF	NPT	Tr	Rd	Pg
8+9	13+14	17+18	17+18	17+18	17+18	20	22	25	27

Partial profile

60°	55°
29	31

Suitable holders can be found on → page 34–36



Internal threading with MaxiChange – our exchangeable head system

→ Chapter 9 – Turning Tools

Mini 06

Full profile

M	BSW
37	37

Partial profile

60°	55°
38	38

Mini 08

Full profile

M
39

Partial profile

60°	55°
39+40	40+41

Suitable holders can be found on → page 42

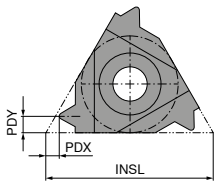
Information on the different thread profiles can be found on → **Page 51.**

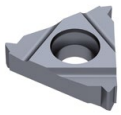
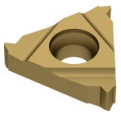
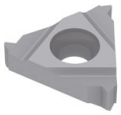
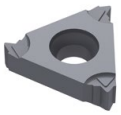
8

Right hand external thread turning insert

▲ Full profile
▲ CCN7525 grade with sintered chip breaker for universal application

M | MF | 60°



CCN20	CWN1525	HCN2525	CWK20	CCN7525
				

Designation	TP	INSL	PDX	PDY	ER 71 220 ...		ER 71 220 ...		ER 71 220 ...		ER 71 220 ...		ER 71 220 ...	
	mm	mm	mm	mm										
11 ER 0,35	0,35	11	0,8	0,4	**204**									
11 ER 0,4	0,40	11	0,7	0,4	**206**									
11 ER 0,45	0,45	11	0,7	0,4	**208**									
11 ER 0,5	0,50	11	0,6	0,6	**209**									
11 ER 0,6	0,60	11	0,6	0,6	**210**									
11 ER 0,7	0,70	11	0,6	0,6	**211**									
11 ER 0,75	0,75	11	0,6	0,6	**212**									
11 ER 0,8	0,80	11	0,6	0,6	**213**									
11 ER 1,0	1,00	11	0,7	0,7	**214**									
11 ER 1,25	1,25	11	0,8	0,9	**216**									
11 ER 1,5	1,50	11	0,8	1,0	**218**									
11 ER 1,75	1,75	11	0,8	1,1	**220**									
16 ER 0,35	0,35	16	0,8	0,4	**234**				**734**		**634**			
16 ER 0,4	0,40	16	0,7	0,4	**236**				**736**		**636**			
16 ER 0,45	0,45	16	0,7	0,4	**238**						**638**			
16 ER 0,5	0,50	16	0,6	0,6	**240**		**140**		**740**		**640**		**940**	
16 ER 0,7	0,70	16	0,6	0,6	**241**		**141**		**741**		**641**			
16 ER 0,75	0,75	16	0,6	0,6	**242**		**142**		**742**		**642**		**942**	
16 ER 0,8	0,80	16	0,6	0,6	**243**		**143**		**743**		**643**		**943**	
16 ER 1,0	1,00	16	0,7	0,7	**244**		**144**		**744**		**644**		**944**	
16 ER 1,25	1,25	16	0,8	0,9	**246**		**146**		**746**		**646**		**946**	
16 ER 1,5	1,50	16	0,8	1,0	**248**		**148**		**748**		**648**		**948**	
16 ER 1,75	1,75	16	0,9	1,2	**250**		**150**		**750**		**650**			
16 ER 2,0	2,00	16	1,0	1,3	**252**		**152**		**752**		**652**		**952**	
16 ER 2,5	2,50	16	1,1	1,5	**254**		**154**		**754**		**654**		**954**	
16 ER 3,0	3,00	16	1,2	1,6	**256**		**156**		**756**		**656**		**956**	
22 ER 3,5	3,50	22	1,6	2,3	**270**		**170**		**770**					
22 ER 4,0	4,00	22	1,6	2,3	**272**		**172**		**772**					
22 ER 4,5	4,50	22	1,7	2,4	**274**		**174**		**774**					
22 ER 5,0	5,00	22	1,7	2,5	**276**		**176**		**776**					
22 ER 5,5	5,50	22	1,7	2,6			**178**							
22 ER 5,5	5,50	22	1,9	2,7	**278**									
22 EN 5,5	5,50	22	2,3	11,0	**282**	1)								
22 ER 6,0	6,00	22	1,9	2,7			**180**		**780**					
22 ER 6,0	6,00	22	2,0	2,9	**280**									
22 EN 6,0	6,00	22	2,6	11,0	**284**	1)								

P					●		●		○				●	
M					●		○		●		○		●	
K					●		●		○		●		●	
N							●		○		●			
S					○				○		○		●	
H					○				○				○	
O							○							

1) Neutral version (N) – for right and left hand thread applications. Neutral Toolholder marked (U) is required.

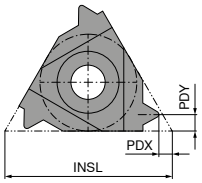
→ v_c Page 45

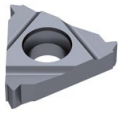
Left hand external thread turning insert

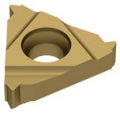
▲ Full profile

M | MF | 60°

CCN20 | CWN1525







Designation	TP mm	INSL mm	PDX mm	PDY mm	EL 71 222 ...	EL 71 222 ...
11 EL 0,35	0,35	11	0,8	0,4	**204**	
11 EL 0,4	0,40	11	0,7	0,4	**206**	
11 EL 0,45	0,45	11	0,7	0,4	**208**	
11 EL 0,5	0,50	11	0,6	0,6	**209**	
11 EL 0,6	0,60	11	0,6	0,6	**210**	
11 EL 0,7	0,70	11	0,6	0,6	**211**	
11 EL 0,75	0,75	11	0,6	0,6	**212**	
11 EL 0,8	0,80	11	0,6	0,6	**213**	
11 EL 1,0	1,00	11	0,7	0,7	**214**	
11 EL 1,25	1,25	11	0,8	0,9	**216**	
11 EL 1,5	1,50	11	0,8	1,0	**218**	
11 EL 1,75	1,75	11	0,8	1,1	**220**	
16 EL 0,35	0,35	16	0,8	0,4	**234**	
16 EL 0,4	0,40	16	0,7	0,4	**236**	
16 EL 0,45	0,45	16	0,7	0,4	**238**	
16 EL 0,5	0,50	16	0,6	0,6	**240**	
16 EL 0,7	0,70	16	0,6	0,6	**241**	
16 EL 0,75	0,75	16	0,6	0,6	**242**	
16 EL 0,8	0,80	16	0,6	0,6	**243**	
16 EL 1,0	1,00	16	0,7	0,7	**244**	**144**
16 EL 1,25	1,25	16	0,8	0,9	**246**	**146**
16 EL 1,5	1,50	16	0,8	1,0	**248**	**148**
16 EL 1,75	1,75	16	0,9	1,2	**250**	
16 EL 2,0	2,00	16	1,0	1,3	**252**	**152**
16 EL 2,5	2,50	16	1,1	1,5	**254**	
16 EL 3,0	3,00	16	1,2	1,6	**256**	**156**
22 EL 3,5	3,50	22	1,6	2,3	**270**	
22 EL 4,0	4,00	22	1,6	2,3	**272**	
22 EL 4,5	4,50	22	1,7	2,4	**274**	
22 EL 5,0	5,00	22	1,7	2,5	**276**	
22 EL 5,5	5,50	22	1,9	2,7	**278**	
22 EL 6,0	6,00	22	2,0	2,9	**280**	

P	●	●
M	●	○
K	●	●
N		●
S	○	
H	○	
O		○

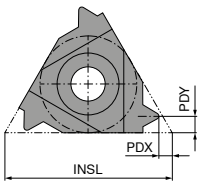
→ v_c Page 45

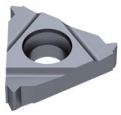
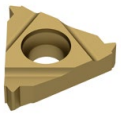
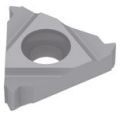
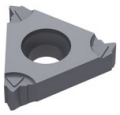
8

Right hand internal thread turning insert

▲ Full profile
▲ CCN7525 grade with sintered chip breaker for universal application

M | MF | 60°



CCN20	CWN1525	HCN2525	CWK20	CCN7525
				

Designation	TP	INSL	PDX	PDY	IR 71 224 ...	IR 71 224 ...	IR 71 224 ...	IR 71 224 ...	IR 71 224 ...
	mm	mm	mm	mm					
11 IR 0,35	0,35	11	0,8	0,3	**204**				
11 IR 0,4	0,40	11	0,8	0,4	**206**				
11 IR 0,45	0,45	11	0,8	0,4	**208**				
11 IR 0,5	0,50	11	0,6	0,6	**210**				
11 IR 0,7	0,70	11	0,6	0,6	**211**				
11 IR 0,75	0,75	11	0,6	0,6	**212**				**912**
11 IR 0,8	0,80	11	0,6	0,6	**213**		**713**		
11 IR 1,0	1,00	11	0,6	0,6					**914**
11 IR 1,0	1,00	11	0,6	0,7	**214**	**114**	**714**		
11 IR 1,25	1,25	11	0,8	0,9	**216**				
11 IR 1,5	1,50	11	0,8	0,9					**918**
11 IR 1,5	1,50	11	0,8	1,0	**218**	**118**	**718**		
11 IR 1,75	1,75	11	0,9	1,1	**220**				
11 IR 2,0	2,00	11	0,8	0,9		**122**	**722**		
11 IR 2,0	2,00	11	0,9	1,1	**222**				
11 IR 2,5	2,50	11	0,8	1,2		**124**	**724**		
11 IR 2,5	2,50	11	0,9	1,1	**224**				
16 IR 0,35	0,35	16	0,8	0,4	**234**			**634**	
16 IR 0,4	0,40	16	0,7	0,4	**236**			**636**	
16 IR 0,45	0,45	16	0,7	0,4	**238**			**638**	
16 IR 0,5	0,50	16	0,6	0,6	**240**			**640**	
16 IR 0,7	0,70	16	0,6	0,6	**241**			**641**	
16 IR 0,75	0,75	16	0,6	0,6	**242**	**142**	**742**	**642**	
16 IR 0,8	0,80	16	0,6	0,6	**243**			**643**	
16 IR 1,0	1,00	16	0,6	0,7		**144**	**744**		**944**
16 IR 1,0	1,00	16	0,7	0,7	**244**			**644**	
16 IR 1,25	1,25	16	0,8	0,9	**246**		**746**	**646**	**946**
16 IR 1,5	1,50	16	0,8	1,0	**248**	**148**	**748**	**648**	**948**
16 IR 1,75	1,75	16	0,9	1,2	**250**		**750**	**650**	
16 IR 2,0	2,00	16	1,0	1,3	**252**	**152**	**752**	**652**	**952**
16 IR 2,5	2,50	16	1,1	1,5	**254**	**154**	**754**	**654**	**954**
16 IR 3,0	3,00	16	1,1	1,5	**256**	**156**	**756**	**656**	**956**
22 IR 3,5	3,50	22	1,6	2,3	**270**	**170**	**770**		
22 IR 4,0	4,00	22	1,6	2,3	**272**	**172**	**772**		
22 IR 4,5	4,50	22	1,6	2,4		**174**	**774**		
22 IR 4,5	4,50	22	1,7	2,4	**274**				
22 IR 5,0	5,00	22	1,6	2,3		**176**			
22 IR 5,0	5,00	22	1,7	2,5	**276**				
22 IR 5,5	5,50	22	1,6	2,3		**178**			
22 IR 5,5	5,50	22	1,9	2,7	**278**				
22 IN 5,5	5,50	22	2,3	11,0	**282** [1]				
22 IR 6,0	6,00	22	1,6	2,4		**180**			
22 IR 6,0	6,00	22	2,0	2,9	**280**				
22 IN 6,0	6,00	22	2,6	11,0	**284** [1]				

P	●	●	○		●
M	●	○	●	○	●
K	●	●	○	●	●
N		●	○	●	
S	○		○	○	●
H	○		○		○
O		○			

1) Neutral version (N) – for right and left hand thread applications. Neutral Toolholder marked (U) is required.

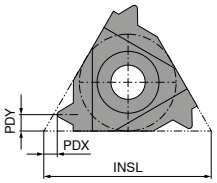
→ v_c Page 45

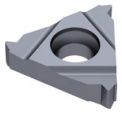
Left hand internal thread turning insert

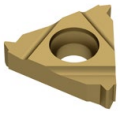
▲ Full profile

M | MF | 60°

CCN20 | CWN1525







Designation	TP mm	INSL mm	PDX mm	PDY mm	IL 71 226 ...	IL 71 226 ...
11 IL 0,35	0,35	11	0,8	0,3	**204**	
11 IL 0,4	0,40	11	0,8	0,4	**206**	
11 IL 0,45	0,45	11	0,8	0,4	**208**	
11 IL 0,5	0,50	11	0,6	0,6	**210**	
11 IL 0,7	0,70	11	0,6	0,6	**211**	
11 IL 0,75	0,75	11	0,6	0,6	**212**	
11 IL 0,8	0,80	11	0,6	0,6	**213**	
11 IL 1,0	1,00	11	0,6	0,7	**214**	
11 IL 1,25	1,25	11	0,8	0,9	**216**	
11 IL 1,5	1,50	11	0,8	1,0	**218**	
11 IL 1,75	1,75	11	0,9	1,1	**220**	
11 IL 2,0	2,00	11	0,9	1,1	**222**	
11 IL 2,5	2,50	11	0,9	1,1	**224**	
16 IL 0,35	0,35	16	0,8	0,4	**234**	
16 IL 0,4	0,40	16	0,7	0,4	**236**	
16 IL 0,45	0,45	16	0,7	0,4	**238**	
16 IL 0,5	0,50	16	0,6	0,6	**240**	
16 IL 0,7	0,70	16	0,6	0,6	**241**	
16 IL 0,75	0,75	16	0,6	0,6	**242**	
16 IL 0,8	0,80	16	0,6	0,6	**243**	
16 IL 1,0	1,00	16	0,6	0,7		**144**
16 IL 1,0	1,00	16	0,7	0,7	**244**	
16 IL 1,25	1,25	16	0,8	0,9	**246**	
16 IL 1,5	1,50	16	0,8	1,0	**248**	**148**
16 IL 1,75	1,75	16	0,9	1,2	**250**	
16 IL 2,0	2,00	16	1,0	1,3	**252**	**152**
16 IL 2,5	2,50	16	1,1	1,5	**254**	
16 IL 3,0	3,00	16	1,2	1,6	**256**	
22 IL 3,5	3,50	22	1,6	2,3	**270**	
22 IL 4,0	4,00	22	1,6	2,3	**272**	
22 IL 4,5	4,50	22	1,7	2,4	**274**	
22 IL 5,0	5,00	22	1,7	2,5	**276**	
22 IL 5,5	5,50	22	1,9	2,7	**278**	
22 IL 6,0	6,00	22	2,0	2,9	**280**	

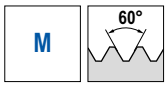
P	●	●
M	●	○
K	●	●
N		●
S	○	
H	○	
O		○

→ v_c Page 45

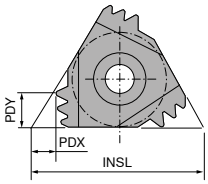
8

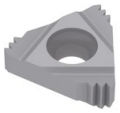
Right hand external thread turning insert

▲ Multi edge insert



HCN2525





Designation	TP mm	INSL mm	PDX mm	PDY mm	NT	ER 71 221 ...
16 ER 1,0 3M	1,0	16	1,7	2,5	3	**700**
16 ER 1,5 2M	1,5	16	1,5	2,3	2	**702**

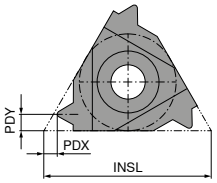
P	○
M	●
K	○
N	○
S	○
H	○
O	

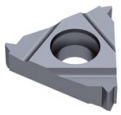
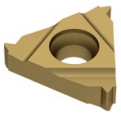
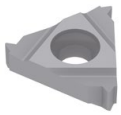
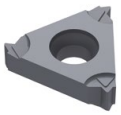
→ v_c Page 45

Right hand external thread turning insert

▲ Full profile
▲ CCN7525 grade with sintered chip breaker for universal application

BSW | 55°



	CCN20	CWN1525	HCN2525	CWK20	CCN7525
					
	ER	ER	ER	ER	ER
	71 228 ...	71 228 ...	71 228 ...	71 228 ...	71 228 ...

Designation	TPI 1/"	INSL mm	PDX mm	PDY mm									
11 ER 72	72,0	11	0,7	0,4	202								
11 ER 60	60,0	11	0,7	0,4	204								
11 ER 56	56,0	11	0,7	0,4	206								
11 ER 48	48,0	11	0,6	0,6	208								
11 ER 40	40,0	11	0,6	0,6	210								
11 ER 36	36,0	11	0,6	0,6	212								
11 ER 32	32,0	11	0,6	0,6	214								
11 ER 28	28,0	11	0,6	0,7	216								
11 ER 26	26,0	11	0,7	0,8	218								
11 ER 24	24,0	11	0,7	0,8	220								
11 ER 22	22,0	11	0,8	0,9	222								
11 ER 20	20,0	11	0,8	0,9	224								
11 ER 19	19,0	11	0,8	1,0	226								
11 ER 18	18,0	11	0,8	1,0	228								
11 ER 16	16,0	11	0,9	1,1	230								
11 ER 14	14,0	11	0,9	1,1	232								
16 ER 40	40,0	16	0,6	0,6	240						640		
16 ER 36	36,0	16	0,6	0,6	242						642		
16 ER 32	32,0	16	0,6	0,6	244						644		
16 ER 28	28,0	16	0,6	0,7	246		146		746		646		
16 ER 26	26,0	16	0,7	0,7					748				
16 ER 26	26,0	16	0,7	0,8	248						648		
16 ER 24	24,0	16	0,7	0,8	250						650		
16 ER 22	22,0	16	0,8	0,9	252						652		
16 ER 20	20,0	16	0,8	0,9	254				754		654		
16 ER 19	19,0	16	0,8	1,0	256		156		756		656		956
16 ER 18	18,0	16	0,8	1,0	258						658		
16 ER 16	16,0	16	0,9	1,1	260		160		760		660		
16 ER 14	14,0	16	1,0	1,2	262		162		762		662		962
16 ER 12	12,0	16	1,1	1,4	264		164		764		664		
16 ER 11	11,0	16	1,1	1,5	266		166		766		666		966
16 ER 10	10,0	16	1,1	1,5	268						668		
16 ER 9	9,0	16	1,2	1,7	270						670		
16 ER 8	8,0	16	1,2	1,5	272						672		
22 ER 7	7,0	22	1,6	2,3	280								
22 ER 6	6,0	22	1,6	2,3	282								
22 ER 5	5,0	22	1,7	2,4	284								
22 EN 4,5	4,5	22	2,3	11,0	290 [1]								
22 EN 4	4,0	22	1,8	11,0	292 [1]								

P	●	●	○		●
M	●	○	●	○	●
K	●	●	○	●	●
N		●	○	●	
S	○		○	○	●
H	○		○		○
O		○			

1) Neutral version (N) – for right and left hand thread applications. Neutral Toolholder marked (U) is required.

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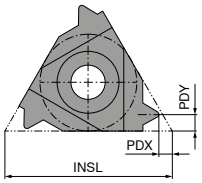
8

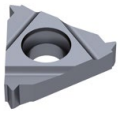
Left hand external thread turning insert

▲ Full profile



CCN20





EL

71 229 ...

Designation	TPI 1/"	INSL mm	PDX mm	PDY mm	
11 EL 72	72	11	0,7	0,4	**202**
11 EL 60	60	11	0,7	0,4	**204**
11 EL 56	56	11	0,7	0,4	**206**
11 EL 48	48	11	0,6	0,6	**208**
11 EL 40	40	11	0,6	0,6	**210**
11 EL 36	36	11	0,6	0,6	**212**
11 EL 32	32	11	0,6	0,6	**214**
11 EL 28	28	11	0,6	0,7	**216**
11 EL 26	26	11	0,7	0,8	**218**
11 EL 24	24	11	0,7	0,8	**220**
11 EL 22	22	11	0,8	0,9	**222**
11 EL 20	20	11	0,8	0,9	**224**
11 EL 19	19	11	0,8	1,0	**226**
11 EL 18	18	11	0,8	1,0	**228**
11 EL 16	16	11	0,9	1,1	**230**
11 EL 14	14	11	0,9	1,1	**232**
16 EL 40	40	16	0,6	0,6	**240**
16 EL 36	36	16	0,6	0,6	**242**
16 EL 32	32	16	0,6	0,6	**244**
16 EL 28	28	16	0,6	0,7	**246**
16 EL 26	26	16	0,7	0,8	**248**
16 EL 24	24	16	0,7	0,8	**250**
16 EL 22	22	16	0,8	0,9	**252**
16 EL 20	20	16	0,8	0,9	**254**
16 EL 19	19	16	0,8	1,0	**256**
16 EL 18	18	16	0,8	1,0	**258**
16 EL 16	16	16	0,9	1,1	**260**
16 EL 14	14	16	1,0	1,2	**262**
16 EL 12	12	16	1,1	1,4	**264**
16 EL 11	11	16	1,1	1,5	**266**
16 EL 10	10	16	1,1	1,5	**268**
16 EL 9	9	16	1,2	1,7	**270**
16 EL 8	8	16	1,2	1,5	**272**
22 EL 7	7	22	1,6	2,3	**280**
22 EL 6	6	22	1,6	2,3	**282**
22 EL 5	5	22	1,7	2,4	**284**

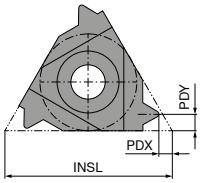
P	●
M	●
K	●
N	
S	○
H	○
O	

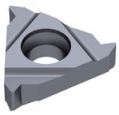
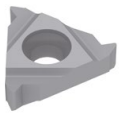
→ v_c Page 45

Right hand internal thread turning insert

▲ Full profile
▲ CCN7525 grade with sintered chip breaker for universal application

BSW | 55°



	CCN20	CWN1525	HCN2525	CCN7525
				
	IR	IR	IR	IR
	71 230 ...	71 230 ...	71 230 ...	71 230 ...

Designation	TPI 1/"	INSL mm	PDX mm	PDY mm							
11 IR 48	48	11	0,6	0,6	206						
11 IR 40	40	11	0,6	0,6	208						
11 IR 36	36	11	0,6	0,6	210						
11 IR 32	32	11	0,6	0,6	212						
11 IR 28	28	11	0,6	0,7	214						
11 IR 26	26	11	0,7	0,8	216						
11 IR 24	24	11	0,7	0,8	218						
11 IR 22	22	11	0,8	0,9	220						
11 IR 20	20	11	0,8	0,9	222						
11 IR 19	19	11	0,8	1,0	224		124		724		
11 IR 19	19	11	0,8	0,9							924
11 IR 18	18	11	0,8	1,0	226						
11 IR 16	16	11	0,9	1,1	228						
11 IR 14	14	11	0,9	1,1	230		130		730		
11 IR 14	14	11	0,8	0,9							930
16 IR 40	40	16	0,6	0,6	240						
16 IR 36	36	16	0,6	0,6	242						
16 IR 32	32	16	0,6	0,6	244						
16 IR 28	28	16	0,6	0,7	246						
16 IR 26	26	16	0,7	0,8	248						
16 IR 24	24	16	0,7	0,8	250						
16 IR 22	22	16	0,8	0,9	252						
16 IR 20	20	16	0,8	0,9	254						
16 IR 19	19	16	0,8	1,0	256						
16 IR 18	18	16	0,8	1,0	258						
16 IR 16	16	16	0,9	1,1	260				760		
16 IR 14	14	16	1,0	1,2	262		162		762		962
16 IR 12	12	16	1,1	1,4	264						
16 IR 11	11	16	1,1	1,5	266		166		766		966
16 IR 10	10	16	1,1	1,5	268						
16 IR 9	9	16	1,2	1,7	270						
16 IR 8	8	16	1,2	1,5	272						
22 IR 7	7	22	1,6	2,3	280						
22 IR 6	6	22	1,6	2,3	282						
22 IR 5	5	22	1,7	2,4	284						

P					●		●		○		●
M					●		○		●		●
K					●		●		○		●
N							●		○		
S					○				○		●
H					○				○		○
O							○				

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8

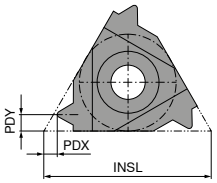
Left hand internal thread turning insert

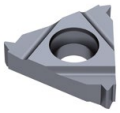
▲ Full profile

BSW



CCN20





Designation	TPI 1/"	INSL mm	PDX mm	PDY mm	IL 71 231 ...
11 IL 48	48	11	0,6	0,6	**206**
11 IL 40	40	11	0,6	0,6	**208**
11 IL 36	36	11	0,6	0,6	**210**
11 IL 32	32	11	0,6	0,6	**212**
11 IL 28	28	11	0,6	0,7	**214**
11 IL 26	26	11	0,7	0,8	**216**
11 IL 24	24	11	0,7	0,8	**218**
11 IL 22	22	11	0,8	0,9	**220**
11 IL 20	20	11	0,8	0,9	**222**
11 IL 19	19	11	0,8	1,0	**224**
11 IL 18	18	11	0,8	1,0	**226**
11 IL 16	16	11	0,9	1,1	**228**
11 IL 14	14	11	0,9	1,1	**230**
16 IL 40	40	16	0,6	0,6	**240**
16 IL 36	36	16	0,6	0,6	**242**
16 IL 32	32	16	0,6	0,6	**244**
16 IL 28	28	16	0,6	0,7	**246**
16 IL 26	26	16	0,7	0,8	**248**
16 IL 24	24	16	0,7	0,8	**250**
16 IL 22	22	16	0,8	0,9	**252**
16 IL 20	20	16	0,8	0,9	**254**
16 IL 19	19	16	0,8	1,0	**256**
16 IL 18	18	16	0,8	1,0	**258**
16 IL 16	16	16	0,9	1,1	**260**
16 IL 14	14	16	1,0	1,2	**262**
16 IL 12	12	16	1,1	1,4	**264**
16 IL 11	11	16	1,1	1,5	**266**
16 IL 10	10	16	1,1	1,5	**268**
16 IL 9	9	16	1,2	1,7	**270**
16 IL 8	8	16	1,2	1,5	**272**
22 IL 7	7	22	1,6	2,3	**280**
22 IL 6	6	22	1,6	2,3	**282**
22 IL 5	5	22	1,7	2,4	**284**

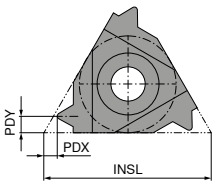
P	●
M	●
K	●
N	
S	○
H	○
O	

→ v_c Page 45

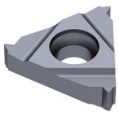
Right hand external thread turning insert

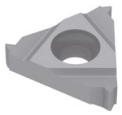
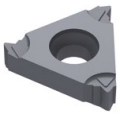
▲ Full profile
▲ CCN7525 grade with sintered chip breaker for universal application

UN | UNC | UNF | UNEF | 60°



CCN20 | CWN1525 | HCN2525 | CCN7525



Designation	TPI	INSL	PDX	PDY	ER 71 264 ...		ER 71 264 ...		ER 71 264 ...		ER 71 264 ...	
	1/"	mm	mm	mm								
11 ER 72	72,0	11	0,8	0,4	**202**							
11 ER 64	64,0	11	0,8	0,4	**204**							
11 ER 56	56,0	11	0,7	0,4	**206**							
11 ER 48	48,0	11	0,6	0,6	**208**							
11 ER 44	44,0	11	0,6	0,6	**210**							
11 ER 40	40,0	11	0,6	0,6	**212**							
11 ER 36	36,0	11	0,6	0,6	**214**							
11 ER 32	32,0	11	0,6	0,6	**216**							
11 ER 28	28,0	11	0,6	0,7	**218**							
11 ER 27	27,0	11	0,7	0,8	**220**							
11 ER 24	24,0	11	0,7	0,8	**222**							
11 ER 20	20,0	11	0,8	0,9	**224**							
11 ER 18	18,0	11	0,8	1,0	**226**							
11 ER 16	16,0	11	0,9	1,1	**228**							
11 ER 14	14,0	11	0,9	1,1	**230**							
16 ER 72	72,0	16	0,8	0,4	**232**							
16 ER 64	64,0	16	0,8	0,4	**234**							
16 ER 56	56,0	16	0,7	0,4	**236**							
16 ER 48	48,0	16	0,6	0,6	**238**							
16 ER 44	44,0	16	0,6	0,6	**240**							
16 ER 40	40,0	16	0,6	0,6	**242**							
16 ER 36	36,0	16	0,6	0,6	**244**							
16 ER 32	32,0	16	0,6	0,6	**246**				**746**			
16 ER 28	28,0	16	0,6	0,7	**248**				**748**			
16 ER 27	27,0	16	0,7	0,8	**250**							
16 ER 24	24,0	16	0,7	0,8	**252**		**152**		**752**			
16 ER 20	20,0	16	0,8	0,9	**254**		**154**		**754**		**954**	
16 ER 18	18,0	16	0,8	1,0	**256**		**156**		**756**			
16 ER 16	16,0	16	0,9	1,1	**258**		**158**		**758**		**958**	
16 ER 14	14,0	16	1,0	1,2	**260**		**160**		**760**			
16 ER 13	13,0	16	1,0	1,3	**262**							
16 ER 12	12,0	16	1,1	1,4	**264**		**164**		**764**			
16 ER 11,5	11,5	16	1,1	1,5	**266**							
16 ER 11	11,0	16	1,1	1,5	**268**		**168**					
16 ER 10	10,0	16	1,1	1,5	**270**							
16 ER 9	9,0	16	1,2	1,7	**272**							
16 ER 8	8,0	16	1,2	1,6	**274**							
16 ER 8	8,0	16	1,1	1,1							**974**	
16 ER 8	8,0	16	1,1	1,5			**174**					
22 ER 7	7,0	22	1,6	2,3	**276**							
22 ER 6	6,0	22	1,6	2,3	**278**							
22 ER 5	5,0	22	1,7	2,5	**280**							
22 EN 4,5	4,5	22	2,0	11,0	**282** [1)]							
22 EN 4	4,0	22	2,0	11,0	**284** [1)]							
P					●		●		○		●	
M					●		○		●		●	
K					●		●		○		●	
N							●		○			
S					○				○		●	
H					○				○		○	
O							○					

1) Neutral version (N) – for right and left hand thread applications. Neutral Toolholder marked (U) is required.

→ v_c Page 45

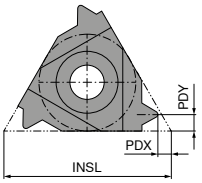
8

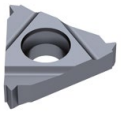
Left hand external thread turning insert

▲ Full profile

UN | UNC | UNF | UNEF | 60°

CCN20





EL

71 266 ...

Designation	TPI 1/"	INSL mm	PDX mm	PDY mm	
11 EL 72	72,0	11	0,8	0,4	**202**
11 EL 64	64,0	11	0,8	0,4	**204**
11 EL 56	56,0	11	0,7	0,4	**206**
11 EL 48	48,0	11	0,6	0,6	**208**
11 EL 44	44,0	11	0,6	0,6	**210**
11 EL 40	40,0	11	0,6	0,6	**212**
11 EL 36	36,0	11	0,6	0,6	**214**
11 EL 32	32,0	11	0,6	0,6	**216**
11 EL 28	28,0	11	0,6	0,7	**218**
11 EL 27	27,0	11	0,7	0,8	**220**
11 EL 24	24,0	11	0,7	0,8	**222**
11 EL 20	20,0	11	0,8	0,9	**224**
11 EL 18	18,0	11	0,8	1,0	**226**
11 EL 16	16,0	11	0,9	1,1	**228**
11 EL 14	14,0	11	0,9	1,1	**230**
16 EL 72	72,0	16	0,8	0,4	**232**
16 EL 64	64,0	16	0,8	0,4	**234**
16 EL 56	56,0	16	0,7	0,4	**236**
16 EL 48	48,0	16	0,6	0,6	**238**
16 EL 44	44,0	16	0,6	0,6	**240**
16 EL 40	40,0	16	0,6	0,6	**242**
16 EL 36	36,0	16	0,6	0,6	**244**
16 EL 32	32,0	16	0,6	0,6	**246**
16 EL 28	28,0	16	0,6	0,7	**248**
16 EL 27	27,0	16	0,7	0,8	**250**
16 EL 24	24,0	16	0,7	0,8	**252**
16 EL 20	20,0	16	0,8	0,9	**254**
16 EL 18	18,0	16	0,8	1,0	**256**
16 EL 16	16,0	16	0,9	1,1	**258**
16 EL 14	14,0	16	1,0	1,2	**260**
16 EL 13	13,0	16	1,0	1,3	**262**
16 EL 12	12,0	16	1,1	1,4	**264**
16 EL 11,5	11,5	16	1,1	1,5	**266**
16 EL 11	11,0	16	1,1	1,5	**268**
16 EL 10	10,0	16	1,1	1,5	**270**
16 EL 9	9,0	16	1,2	1,7	**272**
16 EL 8	8,0	16	1,2	1,6	**274**
22 EL 7	7,0	22	1,6	2,3	**276**
22 EL 6	6,0	22	1,6	2,3	**278**
22 EL 5	5,0	22	1,7	2,5	**280**

P	●
M	●
K	●
N	
S	○
H	○
O	

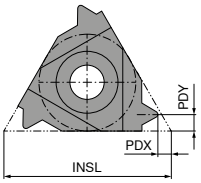
→ v_c Page 45

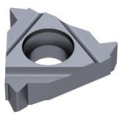
Right hand internal thread turning insert

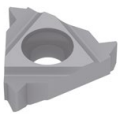
▲ Full profile

UN | UNC | UNF | UNEF | 60°

CCN20 | HCN2525







Designation	TPI 1/"	INSL mm	PDX mm	PDY mm	IR 71 268 ...	IR 71 268 ...
11 IR 72	72,0	11	0,8	0,3	**202**	
11 IR 64	64,0	11	0,8	0,4	**204**	
11 IR 56	56,0	11	0,7	0,4	**206**	
11 IR 48	48,0	11	0,6	0,6	**208**	
11 IR 44	44,0	11	0,6	0,6	**210**	
11 IR 40	40,0	11	0,6	0,6	**212**	
11 IR 36	36,0	11	0,6	0,6	**214**	
11 IR 32	32,0	11	0,6	0,6	**216**	
11 IR 28	28,0	11	0,6	0,7	**218**	
11 IR 27	27,0	11	0,7	0,8	**220**	
11 IR 24	24,0	11	0,7	0,8	**222**	
11 IR 20	20,0	11	0,8	0,9	**224**	
11 IR 18	18,0	11	0,8	1,0	**226**	
11 IR 16	16,0	11	0,9	1,1	**228**	
11 IR 14	14,0	11	1,0	1,1	**230**	
16 IR 72	72,0	16	0,8	0,3	**232**	
16 IR 64	64,0	16	0,8	0,4	**234**	
16 IR 56	56,0	16	0,7	0,4	**236**	
16 IR 48	48,0	16	0,6	0,6	**238**	
16 IR 44	44,0	16	0,6	0,6	**240**	
16 IR 40	40,0	16	0,6	0,6	**242**	
16 IR 36	36,0	16	0,6	0,6	**244**	
16 IR 32	32,0	16	0,6	0,6	**246**	
16 IR 28	28,0	16	0,6	0,7	**248**	
16 IR 27	27,0	16	0,7	0,8	**250**	
16 IR 24	24,0	16	0,7	0,8	**252**	
16 IR 20	20,0	16	0,8	0,9	**254**	
16 IR 18	18,0	16	0,8	1,0	**256**	
16 IR 16	16,0	16	0,9	1,1	**258**	
16 IR 14	14,0	16	1,0	1,2	**260**	**760**
16 IR 13	13,0	16	1,0	1,3	**262**	
16 IR 12	12,0	16	1,1	1,4	**264**	**764**
16 IR 11,5	11,5	16	1,1	1,5	**266**	
16 IR 11	11,0	16	1,1	1,5	**268**	
16 IR 10	10,0	16	1,1	1,5	**270**	
16 IR 9	9,0	16	1,2	1,7	**272**	
16 IR 8	8,0	16	1,2	1,6	**274**	
16 IR 8	8,0	16	1,1	1,5		**774**
22 IR 7	7,0	22	1,6	2,3	**276**	**776**
22 IR 6	6,0	22	1,6	2,3	**278**	
22 IR 5	5,0	22	1,7	2,5	**280**	
22 IN 4,5	4,5	22	2,0	11,0	**282** [1)]	
22 IN 4	4,0	22	2,0	11,0	**284** [1)]	

P	●	○
M	●	●
K	●	○
N		○
S	○	○
H	○	○
O		

1) Neutral version (N) – for right and left hand thread applications. Neutral Toolholder marked (U) is required.

→ v_c Page 45

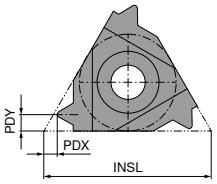
8

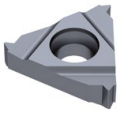
Left hand internal thread turning insert

▲ Full profile

UN | UNC | UNF | UNEF | 60°

CCN20





Designation	TPI 1/"	INSL mm	PDX mm	PDY mm	IL 71 270 ...
11 IL 72	72,0	11	0,8	0,3	202
11 IL 64	64,0	11	0,8	0,4	204
11 IL 56	56,0	11	0,7	0,4	206
11 IL 48	48,0	11	0,6	0,6	208
11 IL 44	44,0	11	0,6	0,6	210
11 IL 40	40,0	11	0,6	0,6	212
11 IL 36	36,0	11	0,6	0,6	214
11 IL 32	32,0	11	0,6	0,6	216
11 IL 28	28,0	11	0,6	0,7	218
11 IL 27	27,0	11	0,7	0,8	220
11 IL 24	24,0	11	0,7	0,8	222
11 IL 20	20,0	11	0,8	0,9	224
11 IL 18	18,0	11	0,8	1,0	226
11 IL 16	16,0	11	0,9	1,1	228
11 IL 14	14,0	11	0,9	1,1	230
16 IL 72	72,0	16	0,8	0,3	232
16 IL 64	64,0	16	0,8	0,4	234
16 IL 56	56,0	16	0,7	0,4	236
16 IL 48	48,0	16	0,6	0,6	238
16 IL 44	44,0	16	0,6	0,6	240
16 IL 40	40,0	16	0,6	0,6	242
16 IL 36	36,0	16	0,6	0,6	244
16 IL 32	32,0	16	0,6	0,6	246
16 IL 28	28,0	16	0,6	0,7	248
16 IL 27	27,0	16	0,7	0,8	250
16 IL 24	24,0	16	0,7	0,8	252
16 IL 20	20,0	16	0,8	0,9	254
16 IL 18	18,0	16	0,8	1,0	256
16 IL 16	16,0	16	0,9	1,1	258
16 IL 14	14,0	16	1,0	1,2	260
16 IL 13	13,0	16	1,0	1,3	262
16 IL 12	12,0	16	1,1	1,4	264
16 IL 11,5	11,5	16	1,1	1,5	266
16 IL 11	11,0	16	1,1	1,5	268
16 IL 10	10,0	16	1,1	1,5	270
16 IL 9	9,0	16	1,2	1,7	272
16 IL 8	8,0	16	1,2	1,6	274
22 IL 7	7,0	22	1,6	2,3	276
22 IL 6	6,0	22	1,6	2,3	278
22 IL 5	5,0	22	1,7	2,5	280

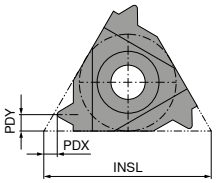
P	●
M	●
K	●
N	
S	○
H	○
O	

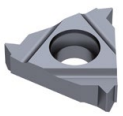
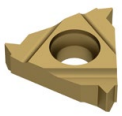
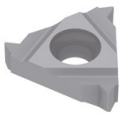
→ v_c Page 45

Right hand external thread turning insert

▲ Full profile

NPT 60°



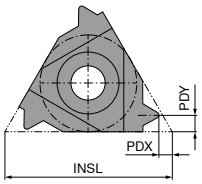
Designation	TPI 1/"	INSL mm	PDX mm	PDY mm	CCN20 ER 71 256 ...	CWN1525 ER 71 256 ...	HCN2525 ER 71 256 ...
16 ER 27	27,0	16	0,7	0,8	**240**		
16 ER 18	18,0	16	0,8	1,0	**242**		**742**
16 ER 14	14,0	16	0,9	1,2	**244**	**144**	**744**
16 ER 11,5	11,5	16	1,1	1,5	**246**	**146**	**746**
16 ER 8	8,0	16	1,3	1,8	**248**		
P					●	●	○
M					●	○	●
K					●	●	○
N						●	○
S					○		○
H					○		○
O						○	

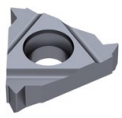
→ v_c Page 45

Left hand external thread turning insert

▲ Full profile

NPT 60°





Designation	TPI 1/"	INSL mm	PDX mm	PDY mm	CCN20 EL 71 258 ...
16 EL 27	27,0	16	0,7	0,8	**240**
16 EL 18	18,0	16	0,8	1,0	**242**
16 EL 14	14,0	16	0,9	1,2	**244**
16 EL 11,5	11,5	16	1,1	1,5	**246**
16 EL 8	8,0	16	1,3	1,8	**248**
P					●
M					●
K					●
N					
S					○
H					○
O					

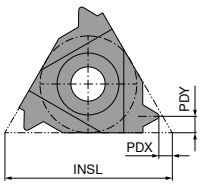
→ v_c Page 45

8

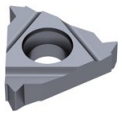
Right hand internal thread turning insert

▲ Full profile
▲ CCN7525 grade with sintered chip breaker for universal application

NPT 60°



CCN20 CCN7525



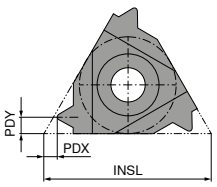

Designation	TPI 1/"	INSL mm	PDX mm	PDY mm	IR 71 260 ...	IR 71 260 ...
11 IR 27	27,0	11	0,7	0,8	210	
11 IR 18	18,0	11	0,8	1,0	212	
11 IR 14	14,0	11	0,9	1,1	214	
16 IR 27	27,0	16	0,7	0,8	240	
16 IR 18	18,0	16	0,8	1,0	242	
16 IR 14	14,0	16	0,9	1,2	244	944
16 IR 11,5	11,5	16	1,1	1,5	246	946
16 IR 8	8,0	16	1,3	1,8	248	
P					●	●
M					●	●
K					●	●
N						
S					○	●
H					○	○
O						

→ v_c Page 45

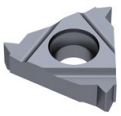
Left hand internal thread turning insert

▲ Full profile

NPT 60°



CCN20

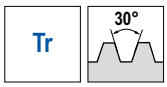


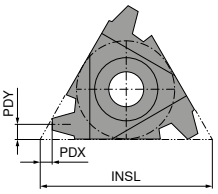
Designation	TPI 1/"	INSL mm	PDX mm	PDY mm	IL 71 262 ...
11 IL 27	27,0	11	0,7	0,8	210
11 IL 18	18,0	11	0,8	1,0	212
11 IL 14	14,0	11	0,9	1,1	214
16 IL 27	27,0	16	0,7	0,8	240
16 IL 18	18,0	16	0,8	1,0	242
16 IL 14	14,0	16	0,9	1,2	244
16 IL 11,5	11,5	16	1,1	1,5	246
16 IL 8	8,0	16	1,3	1,8	248
P					●
M					●
K					●
N					
S					○
H					○
O					

→ v_c Page 45

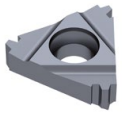
Right hand external thread turning insert

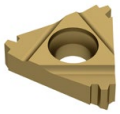
▲ Full profile
▲ Trapezoidal thread DIN 103





CCN20 | CWN1525





Designation	TP mm	INSL mm	PDX mm	PDY mm	ER 71 232 ...	ER 71 232 ...
16 ER 1,5	1,5	16	1,0	1,1	**240**	
16 ER 2,0	2,0	16	1,1	1,3	**242**	
16 ER 2,0	2,0	16	1,0	1,3		**142**
16 ER 3,0	3,0	16	1,3	1,5	**244**	**144**
22 ER 4,0	4,0	22	1,8	1,9		**170**
22 ER 4,0	4,0	22	1,7	1,9	**270**	
22 ER 5,0	5,0	22	2,0	2,4		**172**
22 ER 5,0	5,0	22	2,1	2,5	**272**	
22 ER 6,0	6,0	22	2,3	2,7	**274** 1)	
22 EN 6,0	6,0	22	2,0	11,0	**276** 2)	
22 EN 7,0	7,0	22	2,3	11,0	**278** 2)	
P					●	●
M					●	○
K					●	●
N						●
S					○	
H					○	
O						○

1) Requires special holder or an independently modified standard holder
2) Neutral version (N) – for right and left hand thread applications. Neutral Toolholder marked (U) is required.

→ v_c Page 45

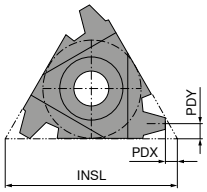
8

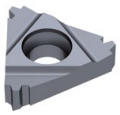
Left hand external thread turning insert

▲ Full profile
▲ Trapezoidal thread DIN 103

Tr | 30°

CCN20





Designation	TP mm	INSL mm	PDX mm	PDY mm	EL 71 234 ...
16 EL 1,5	1,5	16	1,0	1,1	240
16 EL 2,0	2,0	16	1,1	1,3	242
16 EL 3,0	3,0	16	1,3	1,5	244
22 EL 4,0	4,0	22	1,7	1,9	270
22 EL 5,0	5,0	22	2,1	2,5	272
22 EL 6,0	6,0	22	2,3	2,7	274 1)
P					●
M					●
K					●
N					
S					○
H					○
O					

1) Requires special holder or an independently modified standard holder

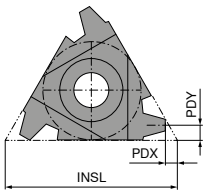
→ v_c Page 45

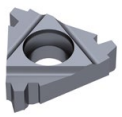
Right hand internal thread turning insert

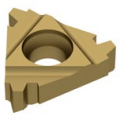
▲ Full profile
▲ Trapezoidal thread DIN 103

Tr | 30°

CCN20 | CWN1525







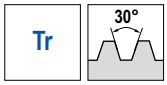
Designation	TP mm	INSL mm	PDX mm	PDY mm	IR 71 236 ...	IR 71 236 ...
11 IR 1,5	1,5	11	0,815	0,9	210	
16 IR 1,5	1,5	16	1,000	1,1	240	
16 IR 2,0	2,0	16	1,100	1,3	242	
16 IR 3,0	3,0	16	1,300	1,5	244	144
22 IR 4,0	4,0	22	1,800	1,9		170
22 IR 4,0	4,0	22	1,700	1,9	270	
22 IR 5,0	5,0	22	2,000	2,4		172
22 IR 5,0	5,0	22	2,100	2,5	272	
22 IR 6,0	6,0	22	2,300	2,7	274 1)	
22 IN 6,0	6,0	22	2,000	11,0	276 2)	
22 IN 7,0	7,0	22	2,300	11,0	278 2)	
P					●	●
M					●	○
K					●	●
N						●
S					○	
H					○	
O						○

1) Requires special holder or an independently modified standard holder
2) Neutral version (N) – for right and left hand thread applications. Neutral Toolholder marked (U) is required.

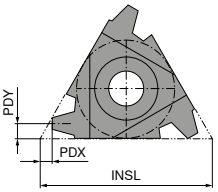
→ v_c Page 45

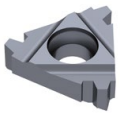
Left hand internal thread turning insert

▲ Full profile
▲ Trapezoidal thread DIN 103



CCN20





Designation	TP mm	INSL mm	PDX mm	PDY mm	IL 71 238 ...
11 IL 1,5	1,5	11	0,8	0,9	**210**
16 IL 1,5	1,5	16	1,0	1,1	**240**
16 IL 2,0	2,0	16	1,1	1,3	**242**
16 IL 3,0	3,0	16	1,3	1,5	**244**
22 IL 4,0	4,0	22	1,7	1,9	**270**
22 IL 5,0	5,0	22	2,1	2,5	**272**
22 IL 6,0	6,0	22	2,3	2,7	**274** 1)
P					●
M					●
K					●
N					
S					○
H					○
O					

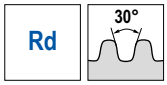
1) Requires special holder or an independently modified standard holder

→ v_c Page 45

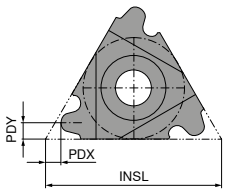
8

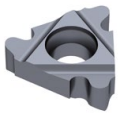
Right hand external thread turning insert

▲ Full profile
▲ Round thread DIN 405



CCN20





ER
71 248 ...

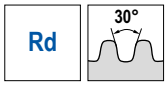
Designation	TPI 1/"	INSL mm	PDX mm	PDY mm	
16 ER 10	10	16	1,1	1,2	**240**
16 ER 8	8	16	1,4	1,3	**242**
16 ER 6	6	16	1,5	1,7	**246**
22 ER 6	6	22	1,5	1,7	**270**
22 ER 4	4	22	2,2	2,3	**272**

P	●
M	●
K	●
N	
S	○
H	○
O	

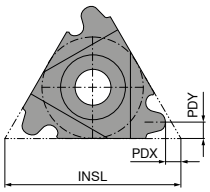
→ v_c Page 45

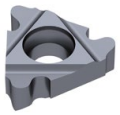
Left hand external thread turning insert

▲ Full profile
▲ Round thread DIN 405



CCN20





EL
71 250 ...

Designation	TPI 1/"	INSL mm	PDX mm	PDY mm	
16 EL 10	10	16	1,1	1,2	**240**
16 EL 8	8	16	1,4	1,3	**242**
16 EL 6	6	16	1,5	1,7	**246**
22 EL 6	6	22	1,5	1,7	**270**
22 EL 4	4	22	2,2	2,3	**272**

P	●
M	●
K	●
N	
S	○
H	○
O	

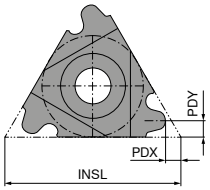
→ v_c Page 45

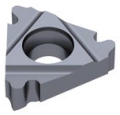
Right hand internal thread turning insert

▲ Full profile
▲ Round thread DIN 405

Rd | 30°

CCN20





IR
71 252 ...

Designation	TPI 1/"	INSL mm	PDX mm	PDY mm	
16 IR 10	10	16	1,1	1,2	**240**
16 IR 8	8	16	1,4	1,4	**242**
16 IR 6	6	16	1,4	1,5	**246**
22 IR 6	6	22	1,5	1,7	**270**
22 IR 4	4	22	2,2	2,3	**272**

P	●
M	●
K	●
N	
S	○
H	○
O	

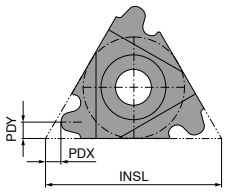
→ v_c Page 45

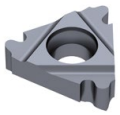
Left hand internal thread turning insert

▲ Full profile
▲ Round thread DIN 405

Rd | 30°

CCN20





IL
71 254 ...

Designation	TPI 1/"	INSL mm	PDX mm	PDY mm	
16 IL 10	10	16	1,1	1,2	**240**
16 IL 8	8	16	1,4	1,4	**242**
16 IL 6	6	16	1,4	1,5	**246**
22 IL 6	6	22	1,5	1,7	**270**
22 IL 4	4	22	2,2	2,3	**272**

P	●
M	●
K	●
N	
S	○
H	○
O	

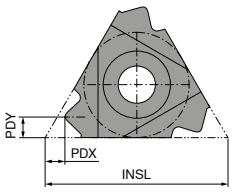
→ v_c Page 45

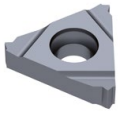
Right hand external thread turning insert

▲ Full profile
▲ Conduit thread DIN 40430

Pg | 80°

CCN20





Designation	TPI 1/"	INSL mm	PDX mm	PDY mm	ER 71 240 ...
16 ER 20	20	16	0,8	0,8	**240**
16 ER 18	18	16	0,8	0,9	**242**
16 ER 16	16	16	0,8	1,0	**244**

P	●
M	●
K	●
N	
S	○
H	○
O	

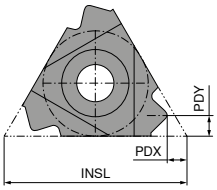
→ v_c Page 45

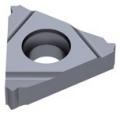
Left hand external thread turning insert

▲ Full profile
▲ Conduit thread DIN 40430

Pg | 80°

CCN20





Designation	TPI 1/"	INSL mm	PDX mm	PDY mm	EL 71 242 ...
16 EL 20	20	16	0,8	0,8	**240**
16 EL 18	18	16	0,8	0,9	**242**
16 EL 16	16	16	0,8	1,0	**244**

P	●
M	●
K	●
N	
S	○
H	○
O	

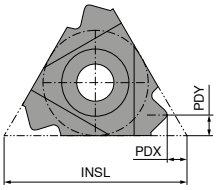
→ v_c Page 45

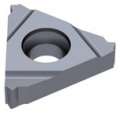
Right hand internal thread turning insert

▲ Full profile
▲ Conduit thread DIN 40430

Pg | 80°

CCN20





IR
71 244 ...

Designation	TPI 1/"	INSL mm	PDX mm	PDY mm	
11 IR 18	18	11	0,8	0,9	**238**
16 IR 18	18	16	0,8	0,9	**242**
16 IR 16	16	16	0,8	1,0	**244**

P	●
M	●
K	●
N	
S	○
H	○
O	

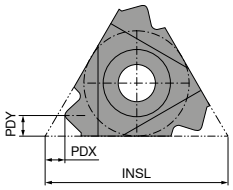
→ v_c Page 45

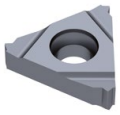
Left hand internal thread turning insert

▲ Full profile
▲ Conduit thread DIN 40430

Pg | 80°

CCN20





IL
71 246 ...

Designation	TPI 1/"	INSL mm	PDX mm	PDY mm	
11 IL 18	18	11	0,8	0,9	**238**
16 IL 18	18	16	0,8	0,9	**242**
16 IL 16	16	16	0,8	1,0	**244**

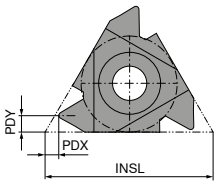
P	●
M	●
K	●
N	
S	○
H	○
O	

→ v_c Page 45

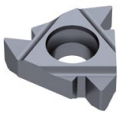
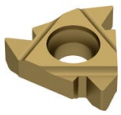
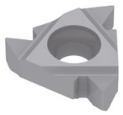
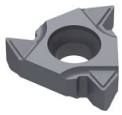
Right hand external thread turning insert

▲ Partial profile
▲ CCN7525 grade with sintered chip breaker for universal application





CCN20 | CWN1525 | HCN2525 | CCN7525

Designation	TP mm	INSL mm	PDX mm	PDY mm	ER 71 206 ...	ER 71 206 ...	ER 71 206 ...	ER 71 206 ...
16 ER A60	0,5 - 1,5	16	0,8	0,9	**240**	**140**	**740**	**940**
16 ER AG60	0,5 - 3	16	1,2	1,7	**244**	**144**	**744**	**944**
16 ER G60	1,75 - 3	16	1,2	1,7	**242**	**142**	**742**	**942**
22 EN U60	5,5 - 8	22	0,9	11,0	**272** [1)]			
22 ER N60	3,5 - 5	22	1,7	2,5	**270**	**170**		
P					●	●	○	●
M					●	○	●	●
K					●	●	○	●
N						●	○	
S					○		○	●
H					○		○	○
O						○		

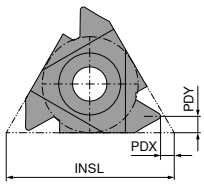
1) Neutral version (N) – for right and left hand thread applications. Neutral Toolholder marked (U) is required.

→ v_c Page 45

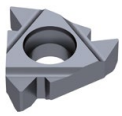
Left hand external thread turning insert

▲ Partial profile





CCN20



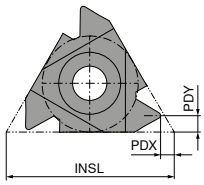
Designation	TP mm	INSL mm	PDX mm	PDY mm	EL 71 208 ...
16 EL A60	0,5 - 1,5	16	0,8	0,9	**240**
16 EL AG60	0,5 - 3	16	1,2	1,7	**244**
16 EL G60	1,75 - 3	16	1,2	1,7	**242**
22 EL N60	3,5 - 5	22	1,7	2,5	**270**
P					●
M					●
K					●
N					
S					○
H					○
O					

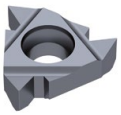
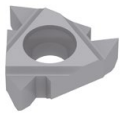
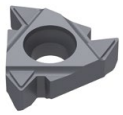
→ v_c Page 45

Right hand internal thread turning insert

▲ Partial profile
▲ CCN7525 grade with sintered chip breaker for universal application





	CCN20	CWN1525	HCN2525	CCN7525
				
	IR	IR	IR	IR
	71 210 ...	71 210 ...	71 210 ...	71 210 ...

Designation	TP mm	INSL mm	PDX mm	PDY mm							
11 IR A60	0,5 - 1,5	11	0,8	0,9	**210**		**110**				
16 IR A60	0,5 - 1,5	16	0,8	0,9	**240**		**140**				
16 IR AG60	0,5 - 3	16	1,2	1,7	**244**		**144**		**744**		**944**
16 IR G60	1,75 - 3	16	1,2	1,7	**242**		**142**				
22 IN U60	5,5 - 8	22	0,9	11,0	**272** [1]						
22 IR N60	3,5 - 5	22	1,7	2,5	**270**		**170**				
P					●		●		○		●
M					●		○		●		●
K					●		●		○		●
N							●		○		
S					○				○		●
H					○				○		○
O							○				

1) Neutral version (N) – for right and left hand thread applications. Neutral Toolholder marked (U) is required.

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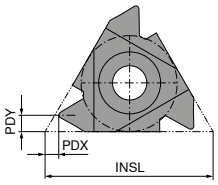
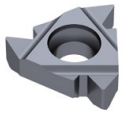
Left hand internal thread turning insert

▲ Partial profile





	CCN20
	
	IL
	71 212 ...

Designation	TP mm	INSL mm	PDX mm	PDY mm	
11 IL A60	0,5 - 1,5	11	0,8	0,9	**210**
16 IL A60	0,5 - 1,5	16	0,8	0,9	**240**
16 IL AG60	0,5 - 3	16	1,2	1,7	**244**
16 IL G60	1,75 - 3	16	1,2	1,7	**242**
22 IL N60	3,5 - 5	22	1,7	2,5	**270**
P					●
M					●
K					●
N					
S					○
H					○
O					

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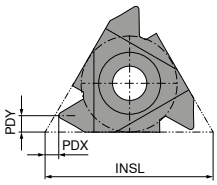
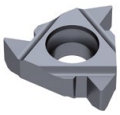
Right hand external thread turning insert

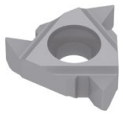
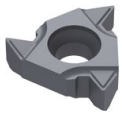
▲ Partial profile
▲ CCN7525 grade with sintered chip breaker for universal application





CCN20 | CWN1525 | HCN2525 | CCN7525



Designation	TPI	INSL	PDX	PDY	ER 71 200 ...	ER 71 200 ...	ER 71 200 ...	ER 71 200 ...
	1/"	mm	mm	mm				
16 ER A55	48 - 16	16	0,8	0,9	**240**	**140**	**740**	**940**
16 ER AG55	48 - 8	16	1,2	1,7	**244**	**144**	**744**	**944**
16 ER G55	14 - 8	16	1,2	1,7	**242**	**142**	**742**	**942**
22 ER N55	7 - 5	22	1,7	2,5	**270**	**170**	**770**	
22 EN U55	4,5 - 3,25	22	0,9	11,0	**272** [1)]			
P					●	●	○	●
M					●	○	●	●
K					●	●	○	●
N						●	○	
S					○		○	●
H					○		○	○
O						○		

1) Neutral version (N) – for right and left hand thread applications. Neutral Toolholder marked (U) is required.

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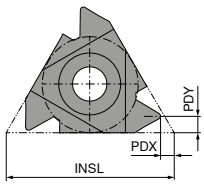
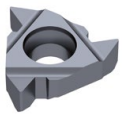
Left hand external thread turning insert

▲ Partial profile





CCN20



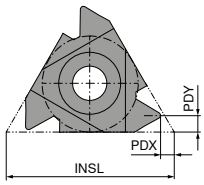
Designation	TPI	INSL	PDX	PDY	EL 71 202 ...
	1/"	mm	mm	mm	
16 EL A55	48 - 16	16	0,8	0,9	**240**
16 EL AG55	48 - 8	16	1,2	1,7	**244**
16 EL G55	14 - 8	16	1,2	1,7	**242**
22 EL N55	7 - 5	22	1,7	2,5	**270**
P					●
M					●
K					●
N					
S					○
H					○
O					

→ v_c Page 45

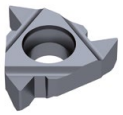
Right hand internal thread turning insert

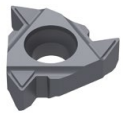
▲ Partial profile
▲ CCN7525 grade with sintered chip breaker for universal application





CCN20 | CWN1525 | CCN7525





Designation	TPI 1/"	INSL mm	PDX mm	PDY mm	IR 71 204 ...	IR 71 204 ...	IR 71 204 ...
11 IR A55	48 - 16	11	0,8	0,9	**210**		
16 IR A55	48 - 16	16	0,8	0,9	**240**		
16 IR AG55	48 - 8	16	1,2	1,7	**244**		
16 IR G55	14 - 8	16	1,2	1,7	**242**	**142**	**942**
22 IN U55	4,5 - 3,25	22	0,9	11,0	**272** [1)]		
22 IR N55	7 - 5	22	1,7	2,5	**270**		
P					●	●	●
M					●	○	●
K					●	●	●
N						●	
S					○		●
H					○		○
O						○	

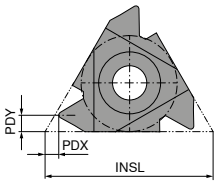
1) Neutral version (N) – for right and left hand thread applications. Neutral Toolholder marked (U) is required.

→ v_c Page 45

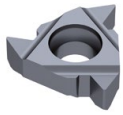
Left hand internal thread turning insert

▲ Partial profile





CCN20



Designation	TPI 1/"	INSL mm	PDX mm	PDY mm	IL 71 203 ...
11 IL A55	48 - 16	11	0,8	0,9	**210**
16 IL A55	48 - 16	16	0,8	0,9	**240**
16 IL AG55	48 - 8	16	1,2	1,7	**244**
16 IL G55	14 - 8	16	1,2	1,7	**242**
22 IL N55	7 - 5	22	1,7	2,5	**270**
P					●
M					●
K					●
N					
S					○
H					○
O					

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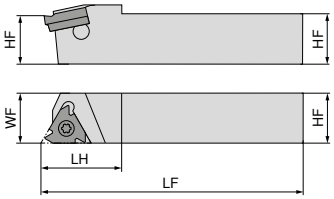
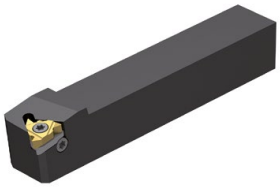
Standard External Thread Turning Holder

▲ Tool Holder with Approach Angle ß = 1,5°





Illustrations show right-hand versions

ISO designation	HF mm	WF mm	LF mm	LH mm	Insert	torque moment Nm	Left-hand 71 281 ...	Right-hand 71 280 ...
SE R/L 08 08 H11	8	11	100	16	11 ..	1,3	**908** [2]	**908** [2]
SE R/L 10 10 H11	10	12	100	18	11 ..	1,3	**910** [2]	**910** [2]
SE R/L 12 12 K11	12	12	125	20	11 ..	1,3	**912** [2]	**912** [2]
SE R/L 12 12 F16	12	16	80	22	16 ..	3,5	**012**	**012**
SE R/L 16 16 H16	16	16	100	25	16 ..	3,5	**016**	**016**
SE R/L 20 20 K16	20	20	125	30	16 ..	3,5	**020**	**020**
SE R/L 25 25 M16	25	25	150	30	16 ..	3,5	**025**	**025**
SE R/L 32 32 P16	32	32	170	30	16 ..	3,5	**032**	**032**
SE R/L 25 25 M22	25	25	150	32	22 ..	10	**125**	**125**
SE R 32 32 P22	32	32	170	34	22 ..	10		**132**
SE R 32 32 P22U	32	21	170	32	22 .N	10		**232** [1]

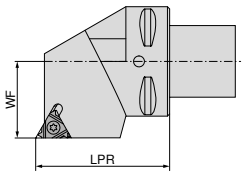
1) Neutral insert indicated by marking (N)
2) without shim

Spare parts for Article no.	Multi tooth shim 71 950 ...		Shim 71 950 ...		Screw-U 71 950 ...		Key D 80 950 ...		Clamping screw 71 950 ...	
71 280 908 / 71 281 908							T08	**110**		**230**
71 280 910 / 71 281 910							T08	**110**		**230**
71 280 912 / 71 281 912							T08	**110**		**230**
71 280 012	ER 16 / IL 16	**101**	ER 16 / IL 16	**121**		**234**	T10	**112**		**231**
71 281 012	EL 16 / IR 16	**108**	EL 16 / IR 16	**129**		**234**	T10	**112**		**231**
71 280 016	ER 16 / IL 16	**101**	ER 16 / IL 16	**121**		**234**	T10	**112**		**231**
71 281 016	EL 16 / IR 16	**108**	EL 16 / IR 16	**129**		**234**	T10	**112**		**231**
71 280 020	ER 16 / IL 16	**101**	ER 16 / IL 16	**121**		**234**	T10	**112**		**231**
71 281 020	EL 16 / IR 16	**108**	EL 16 / IR 16	**129**		**234**	T10	**112**		**231**
71 280 025	ER 16 / IL 16	**101**	ER 16 / IL 16	**121**		**234**	T10	**112**		**231**
71 281 025	EL 16 / IR 16	**108**	EL 16 / IR 16	**129**		**234**	T10	**112**		**231**
71 280 032	ER 16 / IL 16	**101**	ER 16 / IL 16	**121**		**234**	T10	**112**		**231**
71 281 032	EL 16 / IR 16	**108**	EL 16 / IR 16	**129**		**234**	T10	**112**		**231**
71 280 125			ER 22 / IL 22	**137**		**235**	T20	**114**		**232**
71 281 125			EL 22 / IR 22	**145**		**235**	T20	**114**		**232**
71 280 132			ER 22 / IL 22	**137**		**235**	T20	**114**		**232**
71 280 232			ER 22U / IL 22U	**153**		**235**	T20	**114**		**232**

Shims for correction of helix angle see page → **Page 43.**

External threading holder

▲ Tool Holder with Approach Angle ß = 1,5°





Illustrations show right-hand versions

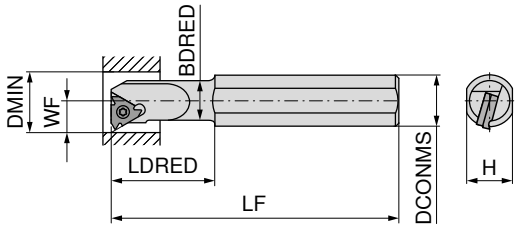
ISO designation	Adapter	LPR mm	WF mm	Insert	torque moment Nm	Left-hand 84 191 ...	Right-hand 84 190 ...
PSC40 SE R/L 27050-16.IK	PSC 40	50	27	16 ..	3,5	**412**	**412**
PSC40 SE R/L 27050-22.IK	PSC 40	50	27	22 ..	10	**422**	**422**
PSC50 SE R/L 35060-16.IK	PSC 50	60	35	16 ..	3,5	**512**	**512**
PSC50 SE R/L 35060-22.IK	PSC 50	60	35	22 ..	10	**522**	**522**
PSC63 SE R/L 45065-16.IK	PSC 63	65	45	16 ..	3,5	**612**	**612**
PSC63 SE R/L 45065-22.IK	PSC 63	65	45	22 ..	10	**622**	**622**
PSC80 SE R/L 55080-22.IK	PSC 80	80	55	22 ..	10	**822**	**822**

Spare parts for Article no.	Multi tooth shim 71 950 ...		Shim 71 950 ...		Screw-U 71 950 ...		Key D 80 950 ...		Clamping screw 71 950 ...	
84 190 412	ER 16 / IL 16	**101**	ER 16 / IL 16	**121**		**234**	T10	**112**		**231**
84 191 412	EL 16 / IR 16	**108**	EL 16 / IR 16	**129**		**234**	T10	**112**		**231**
84 190 422			ER 22 / IL 22	**137**		**235**	T20	**114**		**232**
84 191 422			EL 22 / IR 22	**145**		**235**	T20	**114**		**232**
84 190 512	ER 16 / IL 16	**101**	ER 16 / IL 16	**121**		**234**	T10	**112**		**231**
84 191 512	EL 16 / IR 16	**108**	EL 16 / IR 16	**129**		**234**	T10	**112**		**231**
84 190 522			ER 22 / IL 22	**137**		**235**	T20	**114**		**232**
84 191 522			EL 22 / IR 22	**145**		**235**	T20	**114**		**232**
84 190 612	ER 16 / IL 16	**101**	ER 16 / IL 16	**121**		**234**	T10	**112**		**231**
84 191 612	EL 16 / IR 16	**108**	EL 16 / IR 16	**129**		**234**	T10	**112**		**231**
84 190 622			ER 22 / IL 22	**137**		**235**	T20	**114**		**232**
84 191 622			EL 22 / IR 22	**145**		**235**	T20	**114**		**232**
84 190 822			ER 22 / IL 22	**137**		**235**	T20	**114**		**232**
84 191 822			EL 22 / IR 22	**145**		**235**	T20	**114**		**232**

Shims for correction of helix angle see page → **Page 43.**

Standard Internal Thread Turning Holder

▲ Tool Holder with Approach Angle ß = 1,5°





Illustrations show right-hand versions

ISO designation	H	LF	LDRED	DCONMS	BDRED	WF	DMIN	Insert	torque moment	Left-hand	Right-hand
	mm	mm	mm	mm	mm	mm	mm		Nm	71 283 ...	71 282 ...
SI R 0010 H11	9,0	100	25	10	9,5	7,4	12	11 ..	1,3		**011** [1]
SI R/L 0010 K11	14,0	125	25	16	10,0	7,4	12	11 ..	1,3	**010** [1]	**010** [1]
SI R 0013 L11	14,0	140	32	16	12,0	8,9	15	11 ..	1,3		**013** [1]
SI R/L 0013 M16	14,0	150	32	16	13,0	10,2	16	16 ..	3,5	**015** [1]	**015** [1]
SI R/L 0016 P16	18,0	170	40	20	15,0	11,7	19	16 ..	3,5	**016** [1]	**016** [1]
SI R/L 0020 P16	18,0	170	40	20	19,5	13,7	24	16 ..	3,5	**020**	**020**
SI R 0025 R16	22,6	200	40	25	24,5	16,2	29	16 ..	3,5		**026**
SI R/L 0032 S16	28,8	250	50	32	31,5	19,7	36	16 ..	3,5	**032**	**032**
SI R 0040 T16	36,0	300	50	40	39,5	23,7	44	16 ..	3,5		**040**
SI R 0020 P22	18,0	170	40	20	19,5	15,6	24	22 ..	10		**120** [1]
SI R/L 0025 R22	22,6	200	40	25	24,5	18,1	29	22 ..	10	**126**	**126**
SI R 0032 S22	28,8	250	50	32	31,5	21,6	38	22 ..	10		**132**
SI R 0040 T22	36,0	300	60	40	39,5	25,6	46	22 ..	10		**140**
SI R 0032 S22U	28,8	250	60	32	31,5	24,4	38	22 .N	10		**133** [2]

1) without shim
2) Neutral insert indicated by marking (N)


Multi tooth shim


Shim


Screw-U

Key D


Clamping screw

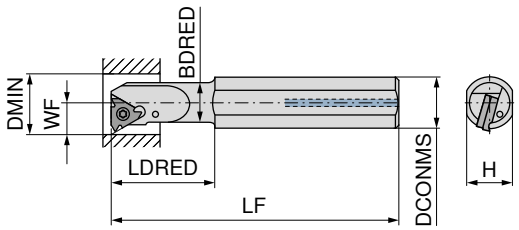
Spare parts for Article no.		71 950 ...		71 950 ...		71 950 ...		80 950 ...		71 950 ...
71 282 011							T08	**110**		**230**
71 282 010 / 71 283 010							T08	**110**		**230**
71 282 013							T08	**110**		**230**
71 282 015 / 71 283 015							T10	**112**		**236**
71 282 016 / 71 283 016							T10	**112**		**236**
71 282 020	EL 16 / IR 16	**108**	EL 16 / IR 16	**129**		**234**	T10	**112**		**231**
71 283 020	ER 16 / IL 16	**101**	ER 16 / IL 16	**121**		**234**	T10	**112**		**231**
71 282 026	EL 16 / IR 16	**108**	EL 16 / IR 16	**129**		**234**	T10	**112**		**231**
71 282 032	EL 16 / IR 16	**108**	EL 16 / IR 16	**129**		**234**	T10	**112**		**231**
71 283 032	ER 16 / IL 16	**101**	ER 16 / IL 16	**121**		**234**	T10	**112**		**231**
71 282 040	EL 16 / IR 16	**108**	EL 16 / IR 16	**129**		**234**	T10	**112**		**231**
71 282 120						**234**	T20	**114**		**237**
71 282 126			EL 22 / IR 22	**145**		**235**	T20	**114**		**232**
71 283 126			ER 22 / IL 22	**137**		**235**	T20	**114**		**232**
71 282 132			EL 22 / IR 22	**145**		**235**	T20	**114**		**232**
71 282 140			EL 22 / IR 22	**145**		**235**	T20	**114**		**232**
71 282 133			AL 22U / IR 22U	**161**		**235**	T20	**114**		**232**

Shims for correction of helix angle see page → **Page 43.**

Standard Internal Thread Turning Holder with thro' coolant

▲ Tool Holder with Approach Angle ß = 1,5°







Illustrations show right-hand versions

									Left-hand	Right-hand
									71 283 ...	71 282 ...
ISO designation	H	LF	LDRED	DCONMS	BDRED	WF	DMIN	Insert	torque moment	
	mm	mm	mm	mm	mm	mm	mm		Nm	
SI R 0010 M11CB	9,0	150	25	10	9,5	7,4	12	11 ..	1,3	510 [2]
SI R 0012 P11CB	11,0	170	30	12	11,5	8,4	15	11 ..	1,3	512 [2]
SI R/L 0010 K11B	14,0	125	25	16	10,0	7,4	12	11 ..	1,3	310
SI R/L 0013 M16B	14,0	150	32	16	13,0	10,2	16	16 ..	3,5	315
SI R 0016 P16B	18,0	170	40	20	16,0	11,7	19	16 ..	3,5	316
SI R 0020 P16B	18,0	170	40	20	19,5	13,7	24	16 ..	3,5	320 [1]
SI R/L 0032 S16B	28,8	250	50	32	31,5	19,7	36	16 ..	3,5	332 [1]

1) with shim seat
2) Carbide version


Multi tooth shim


Shim

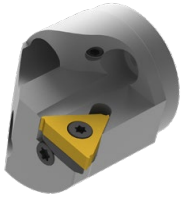

Screw-U

Key D


Clamping screw

			71 950 ...			71 950 ...		71 950 ...		80 950 ...		71 950 ...
Spare parts for Article no.												
71 282 510									T08	110		230
71 282 512									T08	110		230
71 282 310 / 71 283 310									T08	110		230
71 282 315 / 71 283 315									T10	112		236
71 282 316									T10	112		236
71 282 320	EL 16 / IR 16		108	EL 16 / IR 16		129		234	T10	112		231
71 282 332	EL 16 / IR 16		108	EL 16 / IR 16		129		234	T10	112		231
71 283 332	ER 16 / IL 16		101	ER 16 / IL 16		121		234	T10	112		231

Shims for correction of helix angle see page → **Page 43.**



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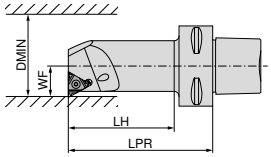
Further information and products can be found in the → Chapter 9 – Turning Tools

Internal threading holder

▲ Tool Holder with Approach Angle ß = 1,5°





Illustrations show right-hand versions

ISO designation	Adapter	WF mm	LPR mm	LH mm	DMIN mm	Insert	torque moment Nm	Left-hand 84 197 ...	Right-hand 84 196 ...
PSC40 SI R/L 12060-16.IK	PSC 40	12	60	37	20	16 ..	3,5	**410**	**410**
PSC40 SI R/L 14060-16.IK	PSC 40	14	60	38	25	16 ..	3,5	**412**	**412**
PSC40 SI R/L 17070-16.IK	PSC 40	17	70	48	32	16 ..	3,5	**414**	**414**
PSC40 SI R/L 22090-16.IK	PSC 40	22	90	69	40	16 ..	3,5	**416**	**416**
PSC40 SI R/L 27080-16.IK	PSC 40	27	80	60	50	16 ..	3,5	**418**	**418**
PSC40 SI R/L 15065-22.IK	PSC 40	15	65	42	25	22 ..	10	**420**	**420**
PSC40 SI R/L 19070-22.IK	PSC 40	19	70	48	32	22 ..	10	**422**	**422**
PSC40 SI R/L 22090-22.IK	PSC 40	22	90	69	40	22 ..	10	**424**	**424**
PSC40 SI R/L 27080-22.IK	PSC 40	27	80	60	50	22 ..	10	**426**	**426**
PSC50 SI R/L 12060-16.IK	PSC 50	12	60	35	20	16 ..	3,5	**510**	**510**
PSC50 SI R/L 14060-16.IK	PSC 50	14	60	36	25	16 ..	3,5	**512**	**512**
PSC50 SI R/L 17070-16.IK	PSC 50	17	70	47	32	16 ..	3,5	**514**	**514**
PSC50 SI R/L 22090-16.IK	PSC 50	22	90	68	40	16 ..	3,5	**516**	**516**
PSC50 SI R/L 27105-16.IK	PSC 50	27	105	84	50	16 ..	3,5	**518**	**518**
PSC50 SI R/L 15065-22.IK	PSC 50	15	65	41	25	22 ..	10	**520**	**520**
PSC50 SI R/L 19070-22.IK	PSC 50	19	70	47	32	22 ..	10	**522**	**522**
PSC50 SI R/L 22090-22.IK	PSC 50	22	90	68	40	22 ..	10	**524**	**524**
PSC50 SI R/L 27105-22.IK	PSC 50	27	105	84	50	22 ..	10	**526**	**526**
PSC63 SI R/L 14070-16.IK	PSC 63	14	70	42	25	16 ..	3,5	**610**	**610**
PSC63 SI R/L 17075-16.IK	PSC 63	17	75	48	32	16 ..	3,5	**612**	**612**
PSC63 SI R/L 22090-16.IK	PSC 63	22	90	64	40	16 ..	3,5	**614**	**614**
PSC63 SI R/L 27105-16.IK	PSC 63	27	105	80	50	16 ..	3,5	**616**	**616**
PSC63 SI R/L 19075-22.IK	PSC 63	19	75	48	32	22 ..	10	**620**	**620**
PSC63 SI R/L 22090-22.IK	PSC 63	22	90	64	40	22 ..	10	**622**	**622**
PSC63 SI R/L 27105-22.IK	PSC 63	27	105	80	50	22 ..	10	**624**	**624**


Multi tooth shim


Shim

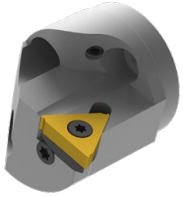

Screw-U


Key D


Clamping screw

Spare parts Insert			71 950 ...		71 950 ...		71 950 ...		80 950 ...		71 950 ...
16 ..	right	EL 16 / IR 16	**108**	EL 16 / IR 16	**129**	**234**	T10	**112**	**231**
16 ..	left	ER 16 / IL 16	**101**	ER 16 / IL 16	**121**	**234**	T10	**112**	**231**
22 ..	left			ER 22 / IL 22	**137**	**235**	T20	**114**	**232**
22 ..	right			EL 22 / IR 22	**145**	**235**	T20	**114**	**232**

Shims for correction of helix angle see page → **Page 43.**



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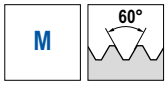
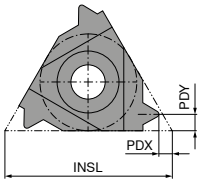
Right hand internal thread turning insert – Mini size 06

▲ Full profile
▲ Thread production from diameter 6 mm





CCN1525 CCN2520





Designation	TP mm	PDX mm	PDY mm	INSL mm	IR 71 271 ...	IR 71 224 ...
06 IR 0,5	0,50	0,9	0,5	6	**110**	**35700**
06 IR 0,75	0,75	0,8	0,5	6	**112**	**36100**
06 IR 1,0	1,00	0,7	0,6	6	**114**	**36500**
06 IR 1,25	1,25	0,6	0,6	6	**116**	**36700**
P					●	○
M					●	●
K					●	○
N					○	
S						●
H						○
O					○	

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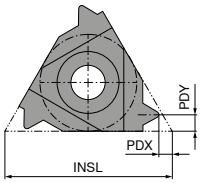
8

Right hand internal thread turning insert – Mini size 06

▲ Full profile
▲ Thread production from diameter 6 mm





CCN1525 CCN2520





Designation	TPI 1/"	PDX mm	PDY mm	INSL mm	IR 71 230 ...	IR 71 230 ...
06 IR 26	26	0,7	0,6	6	**13500**	**33500**
06 IR 22	22	0,6	0,6	6	**13100**	**33100**
06 IR 20	20	0,6	0,7	6	**12900**	**32900**
06 IR 18	18	0,6	0,7	6	**12500**	**32500**
P					●	○
M					●	●
K					●	○
N					○	
S						●
H						○
O					○	

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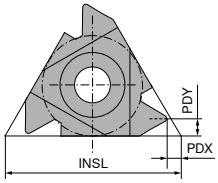
Right hand internal thread turning insert – Mini size 06

▲ Partial profile
▲ Thread production from diameter 6 mm





CCN1525 | CCN2520





Designation	TP mm	INSL mm	PDX mm	PDY mm	IR 71 274 ...	IR 71 272 ...
06 IR A60	0,5 - 1,25	6	0,6	0,6	**210**	**30000**
P					●	○
M					●	●
K					●	○
N					○	
S						●
H						○
O					○	

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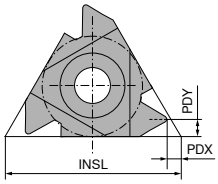
Right hand internal thread turning insert – Mini size 06

▲ Partial profile
▲ Thread production from diameter 6 mm





CCN1525 | CCN2520



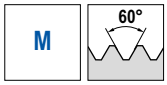


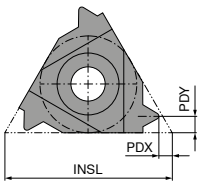
Designation	TPI 1/"	INSL mm	PDX mm	PDY mm	IR 71 272 ...	IR 71 272 ...
06 IR A55	48 - 20	6	0,5	0,6	**10100**	**30100**
P					●	○
M					●	●
K					●	○
N					○	
S						●
H						○
O					○	

→ v_c Page 45

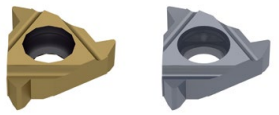
Right hand internal thread turning insert – Mini size 08

▲ Full profile
▲ Thread production from diameter 8 mm





CCN1525 CCN2520



Designation	TP mm	PDX mm	PDY mm	INSL mm	IR 71 224 ...	IR 71 224 ...
08 IR 0,5	0,50	0,6	0,5	8	**14300**	**34300**
08 IR 0,75	0,75	0,6	0,5	8	**13700**	**33700**
08 IR 1,0	1,00	0,6	0,6	8	**13300**	**33300**
08 IR 1,25	1,25	0,6	0,7	8	**13100**	**33100**
08 IR 1,5	1,50	0,6	0,7	8	**12900**	**32900**
08 IR 1,75	1,75	0,6	0,8	8	**12700**	**32700**
08 IN 2,0	2,00	0,9	4,0	8	**12500**[1)]	**32500**[1)]
P					●	○
M					●	●
K					●	○
N					○	
S						●
H						○
O					○	

1) Neutral version (N)

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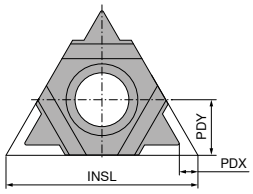
Right hand internal thread turning insert – Mini size 08

▲ Partial profile
▲ Thread production from diameter 8 mm





CCN1525 CCN2520



Designation	TP mm	INSL mm	PDX mm	PDY mm	IN 71 273 ...	IN 71 273 ...
08 IN M60	1,75 - 2,0	8	0,8	4	**10800**	**30800**
P					●	○
M					●	●
K					●	○
N					○	
S						●
H						○
O					○	

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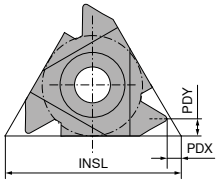
Right hand internal thread turning insert – Mini size 08

▲ Partial profile
▲ Thread production from diameter 8 mm





CCN1525 | CCN2520





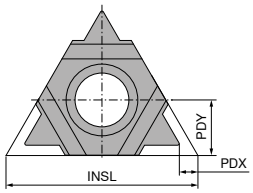
Designation	TP mm	PDX mm	PDY mm	INSL mm	IR 71 272 ...	IR 71 272 ...
08 IR A60	0,5 - 1,25	0,6	0,6	8	**10600**	
08 IR A60	0,5 - 1,5	0,6	0,7	8		**30600**
P					●	○
M					●	●
K					●	○
N					○	
S						●
H						○
O					○	

→ v_c Page 45

Right hand internal thread turning insert – Mini size 08

▲ Partial profile
▲ Thread production from diameter 8 mm





CCN1525 | CCN2520





Designation	TPI 1/"	INSL mm	PDX mm	PDY mm	IN 71 273 ...	IN 71 273 ...
08 IN M55	14 - 11	8	0,9	4	**10900**	
P					●	○
M					●	●
K					●	○
N					○	
S						●
H						○
O					○	

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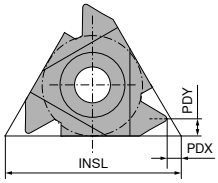
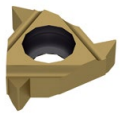
Right hand internal thread turning insert – Mini size 08

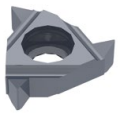
▲ Partial profile
▲ Thread production from diameter 8 mm





CCN1525 | CCN2520





Designation	TPI 1/"	INSL mm	PDX mm	PDY mm	IR 71 272 ...	IR 71 272 ...
08 IR A55	48 - 16	8	0,6	0,7	**10700**	**30700**
P					●	○
M					●	●
K					●	○
N					○	
S						●
H						○
O					○	

→ v_c Page 45

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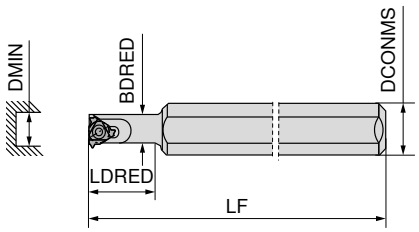
Right Hand Internal Thread Holder – Mini size 06







Right-hand

71 282 ...

ISO designation	LF mm	LDRED mm	DCONMS mm	BDRED mm	DMIN mm	Insert	torque moment Nm	
SI R 0005 H06	100	12	12	5,1	6	06 ..	0,6	**00500**
SI R 0005 H06 C	100	26	6	5,1	6	06 ..	0,6	**10500**[1)]

1) Solid Carbide Shank with Thro' Coolant



Key D



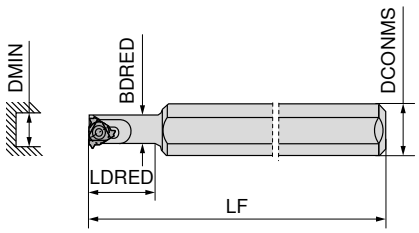
Clamping screw

80 950 ... **71 950 ...**

Spare parts for Article no.			
71 282 00500	T06	**108**	**23800**
71 282 10500	T06	**108**	**23800**

Right Hand Internal Thread Holder – Mini size 08







Right-hand

71 282 ...

ISO designation	LF mm	LDRED mm	DCONMS mm	BDRED mm	DMIN mm	Insert	torque moment Nm	
SI R 0007 K08	125	18	16	6,6	7,8	08 ..	0,6	**00700**
SI R 0008 K08U	125	21	16	7,3	9,0	08 .N	0,6	**00800**[1)]
SI R 0007 K08CB	125	31	8	6,6	7,8	08 ..	0,6	**10700**[2)]

1) Neutral insert indicated by marking (N)
2) Solid Carbide Shank with Thro' Coolant



Key D



Clamping screw

80 950 ... **71 950 ...**

Spare parts for Article no.			
71 282 00700	T06	**108**	**23900**
71 282 00800	T06	**108**	**23900**
71 282 10700	T06	**108**	**23900**

Shims for Standard Threading Inserts

▲ Use the formula on **page 47** to calculate the required correction angle α (±).
▲ Then find the corresponding correction plate below.

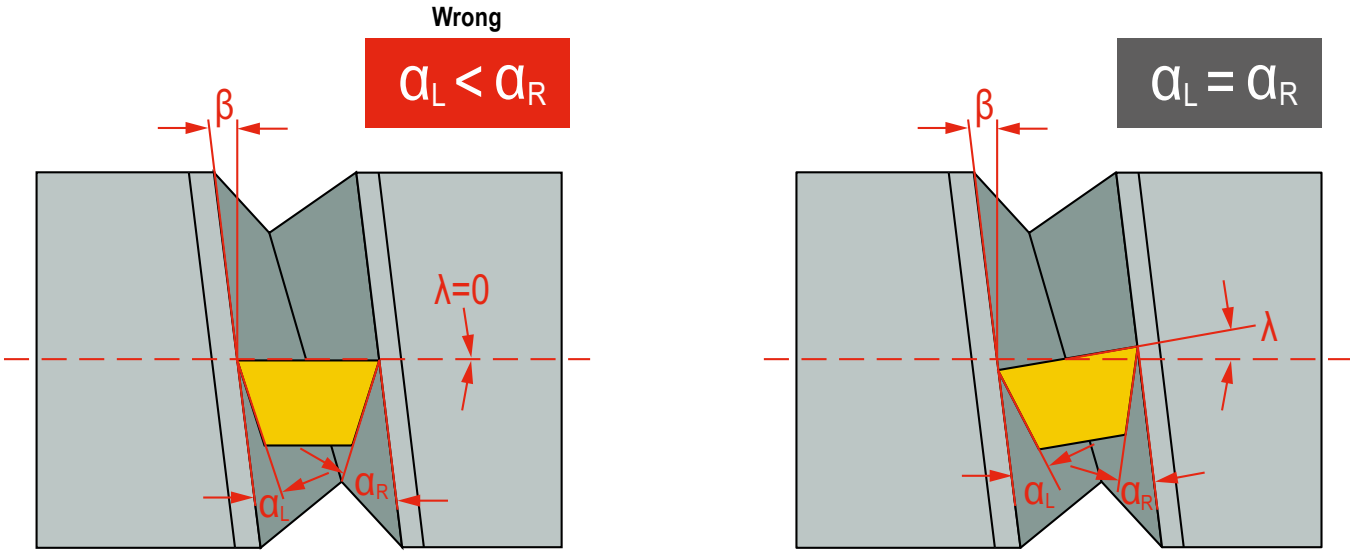


Pitch-angle β	Correction angle α	AE 16 ER 16 / IL 16 71 950 ...	AI 16 EL 16 / IR 16 71 950 ...	AE 22 ER 22 / IL 22 71 950 ...	AI 22 EL 22 / IR 22 71 950 ...	AE 22 U ER 22 / IL 22 71 950 ...	AI 22 U EL 22 / IR 22 71 950 ...	AE 16 M ER 16 / IL 16 71 950 ...	AI 16 M EL 16 / IR 16 71 950 ...
+ 4,5°	+ 3°	118	126	134	142	150 [1]	158 [1]		
+ 3,5°	+ 2°	119	127	135	143	151 [1]	159 [1]		
+ 2,5°	+ 1°	120	128	136	144	152 [1]	160 [1]		
+ 1,5°	0°	121	129	137	145	153 [1]	161 [1]	101	108
+ 0,5°	- 1°	122	130	138	146	154 [1]	162 [1]		
0°	- 1,5°	123	131	139	147				
- 0,5°	- 2°	124	132	140	148	156 [1]	164 [1]		
- 1,5°	- 3°	125	133	141	149	157 [1]	165 [1]		

1) Neutral version for tool holder identified by (U).

Flank clearance angle and effective approach angle

The angle of inclination λ of the cutting edges, in concert with the thread approach angle β ensures an equal rake angle and side clearance angle on both thread flanks.



α = Side clearance angle
λ = Pitch angle
β = An effective angle of inclination is achieved by using a suitable insert seat

Material examples for cutting data tables

	Material sub-group	Index	Composition / Structure / Heat treatment		Tensile strength N/mm²* / HB / HRC	Material number	Material designation	Material number	Material designation
P	Unalloyed steel	P.1.1	< 0,15 % C	Annealed	420 N/mm² / 125 HB	1.0401	C15	1.1141	Ck15
		P.1.2	< 0,45 % C	Annealed	640 N/mm² / 190 HB	1.1191	C45E	1.0718	9SMnPb28
		P.1.3		Tempered	840 N/mm² / 250 HB	1.1191	C45E	1.0535	C55
		P.1.4	< 0,75 % C	Annealed	910 N/mm² / 270 HB	1.1223	C60R	1.0535	C55
		P.1.5		Tempered	1010 N/mm² / 300 HB	1.1223	C60R	1.0727	45S20
	Low-alloy steel	P.2.1		Annealed	610 N/mm² / 180 HB	1.7131	16MnCr5	1.6587	17CrNiMo6
		P.2.2		Tempered	930 N/mm² / 275 HB	1.7131	16MnCr5	1.6587	17CrNiMo6
		P.2.3		Tempered	1010 N/mm² / 300 HB	1.7225	42CrMo4	1.3505	100Cr6
		P.2.4		Tempered	1200 N/mm² / 375 HB	1.7225	42CrMo4	1.3505	100Cr6
	High-alloy steel and high-alloy tool steel	P.3.1		Annealed	680 N/mm² / 200 HB	1.4021	X20Cr13	1.4034	X46Cr13
		P.3.2		Hardened and tempered	1100 N/mm² / 300 HB	1.2343	X38CrMoV5-1	1.4034	X46Cr13
		P.3.3		Hardened and tempered	1300 N/mm² / 400 HB	1.2343	X38CrMoV5-1	1.4034	X46Cr13
	Stainless steel	P.4.1	Ferritic / martensitic	Annealed	680 N/mm² / 200 HB	1.4016	X6Cr17	1.2316	X36CrMo16
		P.4.2	Martensitic	Tempered	1010 N/mm² / 300 HB	1.4112	X90CrMoV18	1.2316	X36CrMo16
M	Stainless steel	M.1.1	Austenitic / austenitic-ferritic	Quenched	610 N/mm² / 180 HB	1.4301	X5CrNi18-10	1.4571	X6CrNiMoTi17-12-2
		M.2.1	Austenitic	Tempered	300 HB	1.4841	X15CrNiSi25-21	1.4539	X1NiCrMoCu25-20-5
		M.3.1	Austenitic / ferritic (Duplex)		780 N/mm² / 230 HB	1.4462	X2CrNiMoN22-5-3	1.4501	X2CrNiMoCuWN25-7-4
K	Grey cast iron	K.1.1	Pearlitic / ferritic		350 N/mm² / 180 HB	0.6010	GG-10	0.6025	GG-25
		K.1.2	Pearlitic (martensitic)		500 N/mm² / 260 HB	0.6030	GG-30	0.6045	GG-45
	Spherulitic graphite cast iron	K.2.1	Ferritic		540 N/mm² / 160 HB	0.7040	GGG-40	0.7060	GGG-60
		K.2.2	Pearlitic		845 N/mm² / 250 HB	0.7070	GGG-70	0.7080	GGG-80
	Malleable iron	K.3.1	Ferritic		440 N/mm² / 130 HB	0.8035	GTW-35-04	0.8045	GTW-45
		K.3.2	Pearlitic		780 N/mm² / 230 HB	0.8165	GTS-65-02	0.8170	GTS-70-02
N	Aluminium wrought alloy	N.1.1	Non-hardenable		60 HB	3.0255	Al99,5	3.3315	AlMg1
		N.1.2	Hardenable	Age-hardened	340 N/mm² / 100 HB	3.1355	AlCuMg2	3.2315	AlMgSi1
	Cast aluminium alloy	N.2.1	≤ 12 % Si, non-hardenable		250 N/mm² / 75 HB	3.2581	G-AlSi12	3.2163	G-AlSi9Cu3
		N.2.2	≤ 12 % Si, hardenable	Age-hardened	300 N/mm² / 90 HB	3.2134	G-AlSi5Cu1Mg	3.2373	G-AlSi9Mg
		N.2.3	> 12 % Si, non-hardenable		440 N/mm² / 130 HB		G-AlSi17Cu4Mg		G-AlSi18CuNiMg
	Copper and copper alloys (bronze/brass)	N.3.1	Free-machining alloys, PB > 1 %		375 N/mm² / 110 HB	2.0380	CuZn39Pb2 (Ms58)	2.0410	CuZn44Pb2
		N.3.2	CuZn, CuSnZn		300 N/mm² / 90 HB	2.0331	CuZn15	2.4070	CuZn28Sn1As
		N.3.3	CuSn, lead-free copper and electrolytic copper		340 N/mm² / 100 HB	2.0060	E-Cu57	2.0590	CuZn40Fe
	Magnesium alloys	N.4.1	Magnesium and magnesium alloys		70 HB	3.5612	MgAl6Zn	3.5312	MgAl3Zn
S	Heat-resistant alloys	S.1.1	Fe - basis	Annealed	680 N/mm² / 200 HB	1.4864	X12NiCrSi 36-16	1.4865	G-X40NiCrSi38-18
		S.1.2		Age-hardened	950 N/mm² / 280 HB	1.4980	X6NiCrTiMoVB25-15-2	1.4876	X10NiCrAlTi32-20
		S.2.1	Ni or Co basis	Annealed	840 N/mm² / 250 HB	2.4631	NiCr20TiAl (Nimonic80A)	3.4856	NiCr22Mo9Nb
		S.2.2		Age-hardened	1180 N/mm² / 350 HB	2.4668	NiCr19Nb5Mo3 (Inconel 718)	2.4955	NiFe25Cr20NbTi
		S.2.3		Cast	1080 N/mm² / 320 HB	2.4765	CoCr20W15Ni	1.3401	G-X120Mn12
	Titanium alloys	S.3.1	Pure titanium		400 N/mm²	3.7025	Ti99,8	3.7034	Ti99,7
		S.3.2	Alpha + beta alloys	Age-hardened	1050 N/mm² / 320 HB	3.7165	TiAl6V4	Ti-6246	Ti-6Al-2Sn-4Zr-6Mo
		S.3.3	Beta alloys		1400 N/mm² / 410 HB	Ti555.3	Ti-5Al-5V-5Mo-3Cr	R56410	Ti-10V-2Fe-3Al
H	Hardened steel	H.1.1		Hardened and tempered	46–55 HRC				
		H.1.2		Hardened and tempered	56–60 HRC				
		H.1.3		Hardened and tempered	61–65 HRC				
		H.1.4		Hardened and tempered	66–70 HRC				
	Chilled iron	H.2.1		Cast	400 HB				
	Hardened cast iron	H.3.1		Hardened and tempered	55 HRC				
O	Non-metal materials	O.1.1	Plastics, duroplastic		≤ 150 N/mm²				
		O.1.2	Plastics, thermoplastic		≤ 100 N/mm²				
		O.2.1	Aramid fibre-reinforced		≤ 1000 N/mm²				
		O.2.2	Glass/carbon-fibre reinforced		≤ 1000 N/mm²				
		O.3.1	Graphite						

*** Tensile strength**

Cutting data standard values

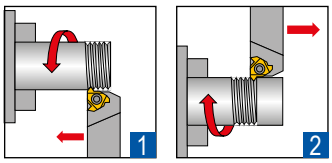
Index	CCN1525 Mini	CCN2520 Mini	CWN1525	HCN2525	CCN7525	CCN20	CWK20
	v_c (m/min)						
P.1.1	**80**	120	**120**	120	**120**	**120**	
P.1.2	**80**	120	**120**	120	**120**	**120**	
P.1.3	**80**	120	**120**	120	**120**	**120**	
P.1.4	**80**	80	**80**	90	**80**	**80**	
P.1.5	**70**	80	**80**	90	**80**	**80**	
P.2.1	**50**	80	**80**	90	**80**	**80**	
P.2.2	**50**	80	**80**	90	**80**	**80**	
P.2.3	**50**	80	**80**	90	**80**	**80**	
P.2.4	**50**	80	**80**	90	**80**	**80**	
P.3.1	**50**	50	**60**	70	**50**	**50**	
P.3.2	**50**	50	**60**	70	**50**	**50**	
P.3.3	**50**	50	**60**	70	**50**	**50**	
P.4.1	**50**	50	**60**	70	**50**	**50**	
P.4.2	**50**	50	**60**	70	**50**	**50**	
M.1.1	**40**	**90**	60	**110**	**90**	**60**	40
M.2.1	**40**	**90**	60	**110**	**90**	**60**	40
M.3.1	**40**	**90**	60	**110**	**90**	**60**	40
K.1.1	**60**	120	**90**	140	**120**	**120**	**80**
K.1.2	**60**	120	**90**	140	**120**	**120**	**80**
K.2.1	**60**	100	**80**	120	**100**	**100**	**70**
K.2.2	**60**	100	**80**	120	**100**	**100**	**70**
K.3.1	**50**	100	**80**	110	**100**	**100**	**70**
K.3.2	**50**	100	**80**	110	**100**	**100**	**70**
N.1.1	500		**600**	700			**150**
N.1.2	300		**600**	700			**150**
N.2.1	120		**250**	280			**120**
N.2.2	120		**250**	280			**120**
N.2.3	120		**250**	280			**120**
N.3.1	110		**150**	190			**100**
N.3.2	150		**150**	190			**100**
N.3.3	150		**150**	190			**100**
N.4.1	300		**300**	220			**150**
S.1.1		**25**		20	**25**	20	20
S.1.2		**25**		20	**25**	20	20
S.2.1		**25**		20	**25**	20	20
S.2.2		**25**		20	**25**	20	20
S.2.3		**25**		20	**25**	20	20
S.3.1		**35**		30	**35**	30	30
S.3.2		**35**		30	**35**	30	30
S.3.3		**35**		30	**35**	30	30
H.1.1		35		30	35	30	
H.1.2		35		30	35	30	
H.1.3		35		30	35	30	
H.1.4		35		30	35	30	
H.2.1		25		20	25	20	
H.3.1		25		20	25	20	
O.1.1	150		200				
O.1.2	150		200				
O.2.1	150		200				
O.2.2	150		200				
O.3.1	150		200				

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

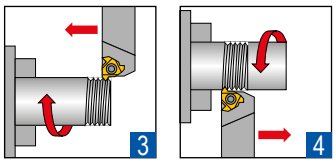
8

Thread turning methods

External right-hand thread

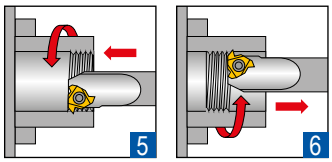


External left-hand thread

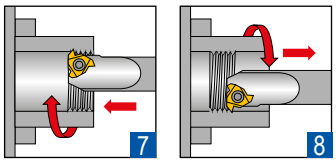


The machining examples 2, 4, 6 and 8 require negative shims!
These shims can be found on → **Page 43.**

Internal right-hand thread

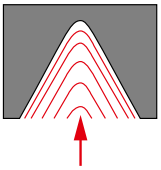


Internal left-hand thread



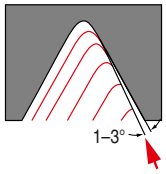
Thread infeed methods

Radial Infeed



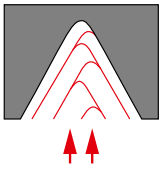
- for pitches less than 1.5 mm
- for short chipping materials
- for machining hardened materials
- simple and quick method

Flank infeed



- for pitches larger than 1.5 mm
- with radial penetration the effective cutting edge length is too large, which may lead to chattering
- with trapezoidal and ACME threads, chip flow on three sides can be problematic

Alternating infeed



- with large pitches
- for long chipping materials
- uniform wear of the cutting edges
- complicated programming process

Recommended number of cuts and cutting depths

Standard Threading Inserts

Pitch (TP/TPI)		mm	0,50	0,75	1,00	1,25	1,50	1,75	2,00	2,50	3,00	3,50	4,00	4,50	5,00	5,50	6,00	8,00
		TPI	48	32	24	20	16	14	12	10	8	7	6	5.5	5	4.5	4	3
Number of passes			4–6	4–7	4–8	5–9	6–10	7–12	7–12	8–14	9–16	10–18	11–18	11–19	12–20	12–20	12–20	15–24
Number of passes	**(CCN7525)**		3–4	3–4	3–5	4–6	5–6	6–8	6–8	8–10								
Number of passes	**Mini Inserts**		6–9	6–11	6–12	8–14	9–15	11–18	11–18									

Multi edge thread turning insert

Standard	Insert	Insert size		Pitch (TP)	Number of flutes (NT)	Designation	Passes	Cutting depth per pass		
		IC	L mm					1	2	3
ISO external	M	3/8"	16	1,0 mm	3	3 ER 1.0 ISO 3M	2	0,38	0,25	
ISO external	M	3/8"	16	1,5 mm	2	3 ER 1.5 ISO 2M	3	0,42	0,30	0,20

Pitch angle

Important Information about Standard Shims

- ▲ the pitch angle should be determined through calculation or by using the chart below.
- ▲ the standard threading holder is supplied with a 1.5° inclined insert seat and a shim without angular correction.
  Hence the Tool holders are delivered with an angle of inclination β of 1.5°.

Without the appropriate correction of the helix angle, the following may occur

- ▲ the profile will be distorted.
- ▲ insufficient clearance angle.
- ▲ the tool life of the insert is greatly reduced.

Method 1: Calculation

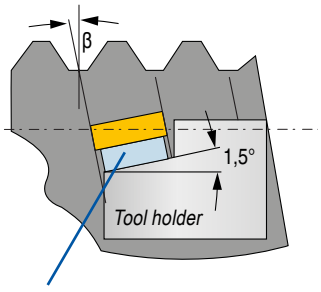
Calculating the helix angle β:

$$\beta = \frac{20 \times TP}{DMIN}$$

For trapezium:

$$\frac{15 \times TP}{DMIN}$$

20 = constant
β = Helix angle (°)
TP = Pitch (mm)
DMIN = Nominal diameter (mm)



Example calculation

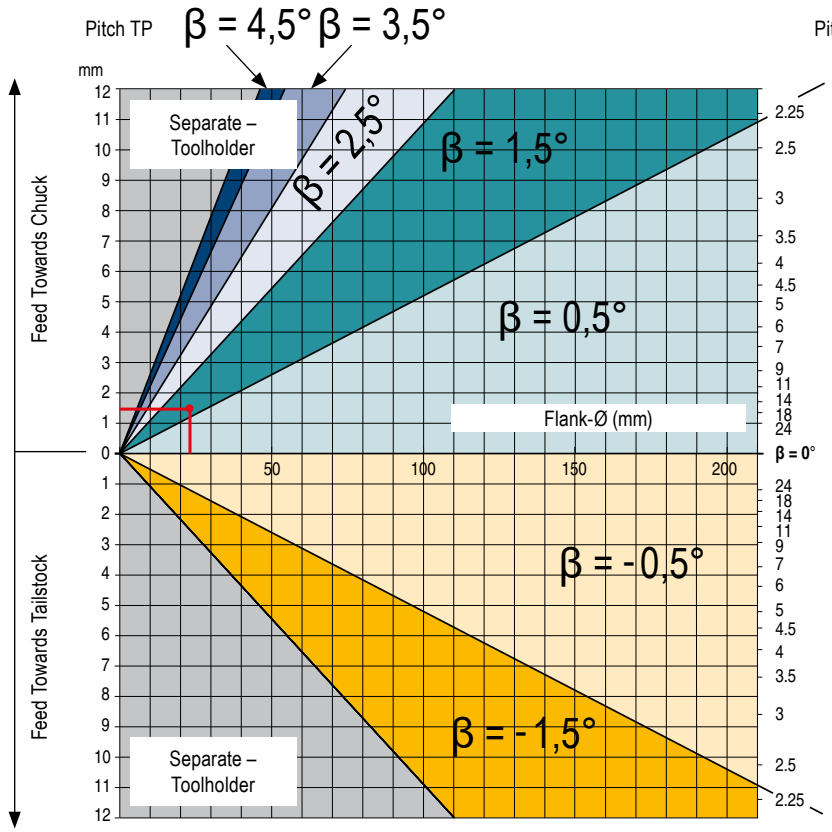
External thread M24 x 1.5
Feed towards chuck
DMIN = Nominal Ø: M24 = 24 mm
TP = Pitch: 1.5 mm

$$\beta = \frac{20 \times 1{,}5 \text{ mm}}{24 \text{ mm}}$$

β = 1,25°

Method 2: Diagram

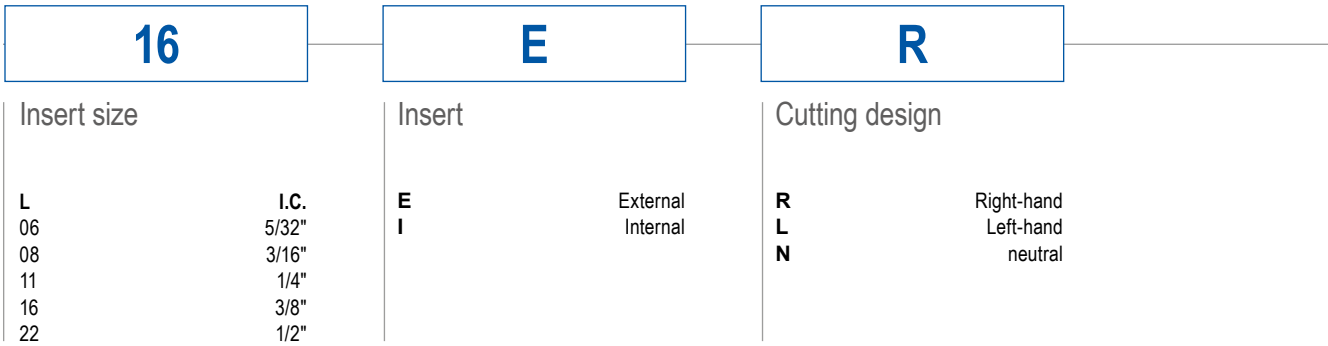
From the flank Ø in the diagram, a line is drawn vertically upwards until it intersects with the line of the pitch of the thread to be produced. In the color-coded region in which it is now, a horizontal line to the edge of the chart indicates the appropriate factor.



Calculated pitch angle β value	Correction angle α
0,0°–0,49°	-1,5°
0,5°–0,99°	-1°
1,0°–1,99°	0°
2,0°–2,99°	+1°
3,0°–3,99°	+2°
4,0°–4,99°	+3°
0,0°–(-0,49°)	-2°
-0,5°–(-1,5°)	-3°

8

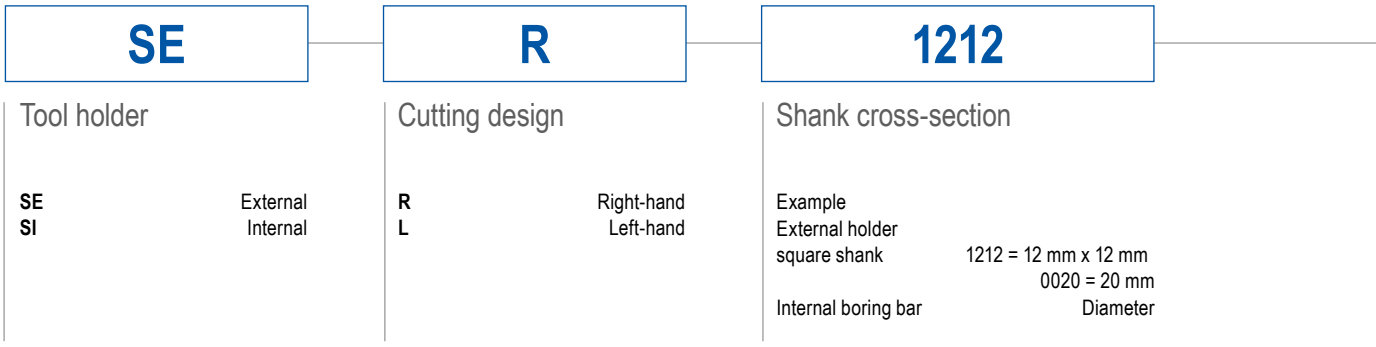
Designation key – indexable inserts



Example

16 ER AG 60
ER16 right hand – external insert with a pitch of 0.5-3.0 mm

Designation key – holders



Example

SE R 1212 F 16
Right hand holder with 12 x 12 mm square shank,
overall length of 80 mm, only suitable for an ER16 threading insert

AG 60

Pitch (TP/TPI)

Full profile

mm	G/Z
0,35	72–4

Partial profile

	mm	G/Z
A	0,5–1,5	48–16
AG	0,5–3,0	48–8
M	1,7–2,0	14–11
G	1,75–3,0	14–8
N	3,5–5,0	7–5
U	5,5–8,0	4,5–3,5

Flank angle
55°
60°

Number of flutes (NT)

2M	Multi-tooth insert with 2 teeth
3M	Multi-tooth insert with 3 teeth

8

F

Overall length

	mm
F	80
H	100
K	125
L	140
M	150
P	170
R	200
S	250
T	300

16

Insert size

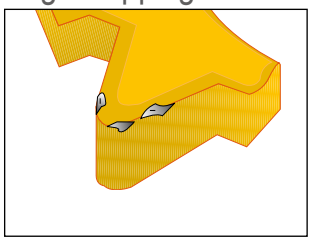
L	I.C.
06	5/32"
08	3/16"
11	1/4"
16	3/8"
22	1/2"

Properties

B	with thro' coolant
C	with carbide shank
U	neutral holder

Troubleshooting

Edge chipping



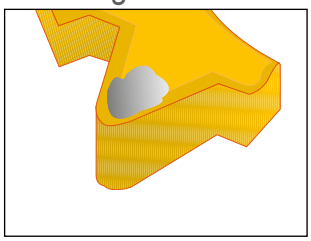
Cause

- Common in stainless materials
- Incorrect grade

Remedy

- Minimize tool overhang length
- Check that the insert is clamped
- Minimize vibration
- Use a tougher grade

Cratering



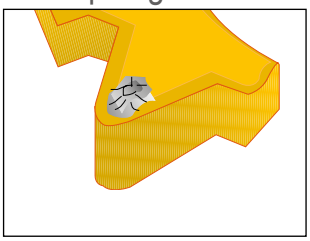
Cause

- Common in stainless materials
- Cutting speed too high
- Incorrect grade

Remedy

- Apply coolant
- Reduce depth of cut
- Use a harder grade

Built-up edge



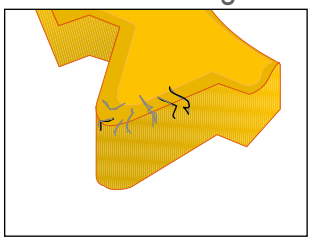
Cause

- Cutting speed too low
- Incorrect grade

Remedy

- Apply coolant
- Increase cutting speed
- Use a tougher grade

Thermal cracking



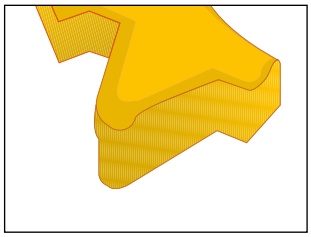
Cause

- Insufficient coolant
- Cutting speed too high
- Incorrect grade

Remedy

- Apply coolant
- Reduce cutting speed
- Use a tougher grade

Plastic deformation



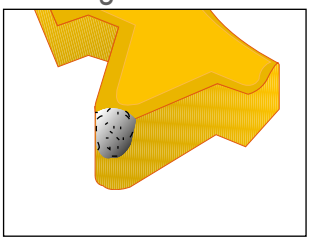
Cause

- Infeed too large
- Insufficient coolant
- Cutting speed too high
- Incorrect grade

Remedy

- Apply coolant
- Reduce depth of cut
- Reduce cutting speed
- Use a harder grade

Breakage



Cause

- Infeed too large
- Insufficient coolant
- Plastic deformation
- Instability
- Helix angle not appropriate
- Incorrect grade

Remedy

- Reduce depth of cut
- Check machine and tool stability
- Reduce cutting speed
- Check helix angle
- Use a tougher grade

Grade description

Universal

CCN7525
- Carbide, TiAlN-coated
- ISO | **P25** | **M25** | **K25** | **S25** | H25
- The universal carbide grade with sintered chip breaker for medium to high cutting speeds

CCN2520
- Carbide, TiAlN-coated
- ISO | P25 | **M25** | K25 | **S25** | H25
- The coated carbide grade for the machining of stainless steels at medium to high cutting speeds

CCN1525
- Carbide, TiN-coated
- ISO | **P25** | **M25** | **K25** | N25 | O25
- The coated carbide grade for machining steels and stainless steels at low cutting speeds

Non-ferrous metals

CWK20
- Carbide, uncoated
- ISO | M10 | **K10** | **N10** | S10
- The wear-resistant carbide grade for machining aluminium and other non-ferrous metals

Steel

CCN20
- Carbide, TiAlN-coated
- ISO | **P20** | **M20** | **K20** | S20 | H20
- The all-round carbide grade for machining steels at low cutting speeds

CWN1525
- Carbide, TiN-coated
- ISO | **P25** | M25 | **K25** | **N25** | O25
- The universal carbide grade for machining steels and non-ferrous metals at low cutting speeds

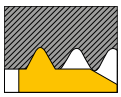
Stainless steel

HCN2525
- Carbide, TiAlN-coated
- ISO | P25 | **M25** | K25 | N25 | S25 | H25
- The coated carbide grade for machining stainless steels at high cutting speeds
- Also suitable for exotic materials

8

Profile Type Description

Full profile



- Thread diameter must not be turned to final thread size
- a minimum infeed of 0.07 mm is necessary
- Insert can only be used only for a specific pitch

Advantages:
- High-quality thread
- No burr formation
- No rework
- In part longer service life

Partial profile



- Core diameter must be premachined to the finished size
- A minimum infeed of 0.07 mm is required

Advantages:
- One threading insert can be used to machine several pitches
- Threading insert can be used for any application
- Reduced stock requirements

Multi-Tooth Thread Turning Insert



- Thread diameter must not be turned to final thread size
- a minimum infeed of 0.07 mm is necessary
- Insert can only be used only for a specific pitch

Advantages:
- Fewer passes required
- Thread production in less time

Attention:
- Check there is sufficient thread run-out

Mini Thread Turning Insert





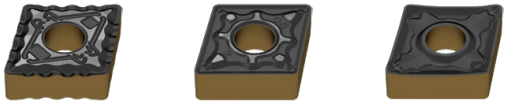
- From a min. core hole diameter of Ø 6 mm or Ø 8 mm

Advantages:
- Special cutting materials for low cutting speeds
- 3 cutting edges for miniature applications

New products for machining technicians

NEW

Steel machining with the new ISO-P grades



Thanks to a CVD multilayer coating with the latest Dragonskin coating technology, the indexable inserts are ideally suited to versatile steel machining. In combination with a balanced carbide base substrate, the new grades in the ISO-P category boast a wide application area with improved wear resistance. Depending on the cutting conditions, the perfect cutting material can be selected from three grades.

NEW

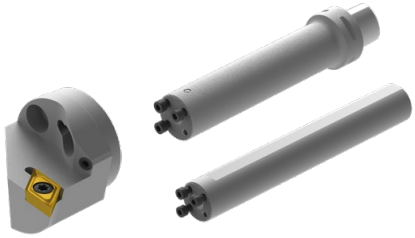
-M23 chip breaker



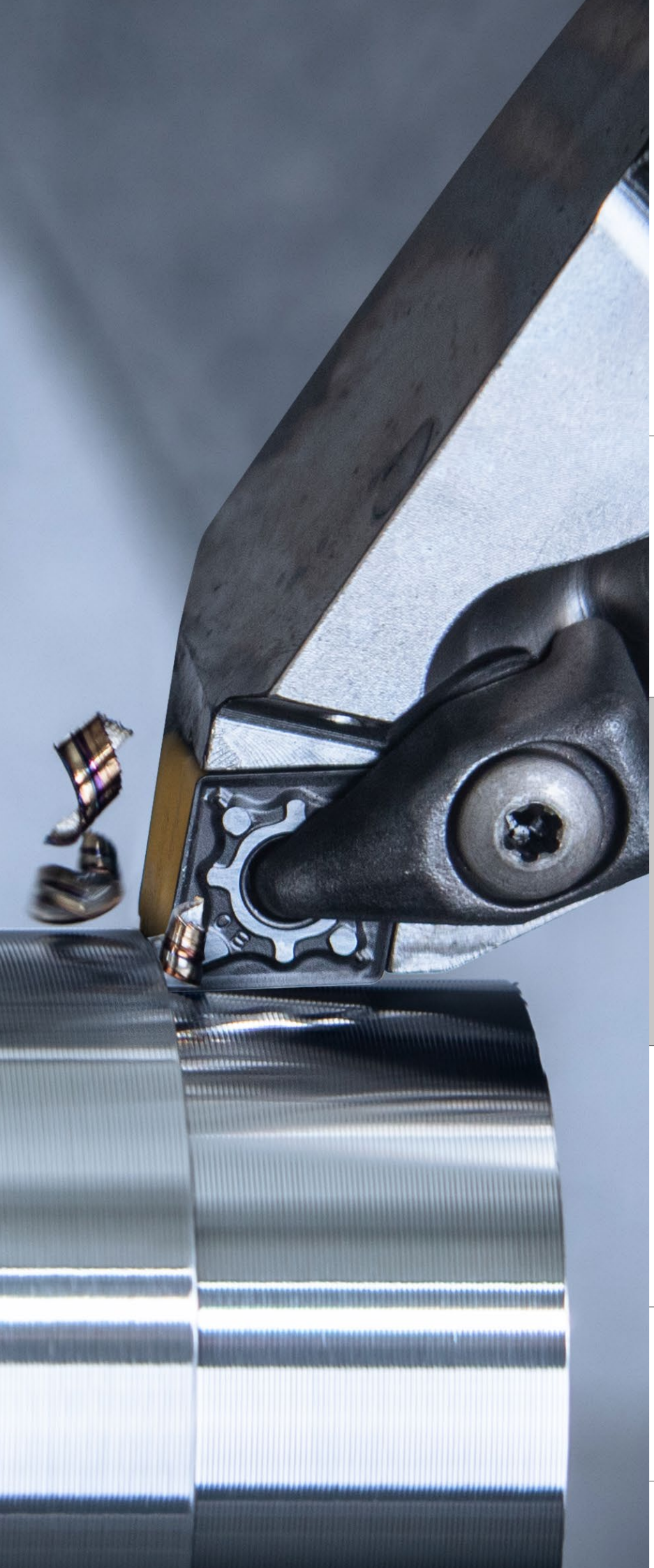
Soft cutting geometry with excellent Chip breaking behavior at low cutting depths for steel machining. Available for positive round inserts in the ISO-P carbide grades.

NEW

MaxiChange – Exchangeable head system



The new actively vibration-dampened basic holder for demanding internal turning operations. Available with the Machine interface PSC, HSK-T and cylindrical shank.



Solid drilling and bore machining	Metric Catalog	HSS drilling	1
	Metric Catalog	Solid carbide drilling	2
		Indexable drilling	3
		Reaming and Countersinking	4
		Indexable Boring	5
Threading	Metric Catalog	Taps and thread formers	6
	Metric Catalog	Circular and Thread Milling	7
	Metric Catalog	Thread turning	8
Turning		Indexable Turning	9
		Multifunction	10
		Parting and Grooving	11
	Metric Catalog	Miniature turning tools	12
Milling	Metric Catalog	HSS Milling Cutters	13
		Solid Milling	14
		Indexable Milling	15
Clamping technology		Adaptors and Accessories	16
	Metric Catalog	Workpiece clamping	17
		Material examples and article no. Index	18

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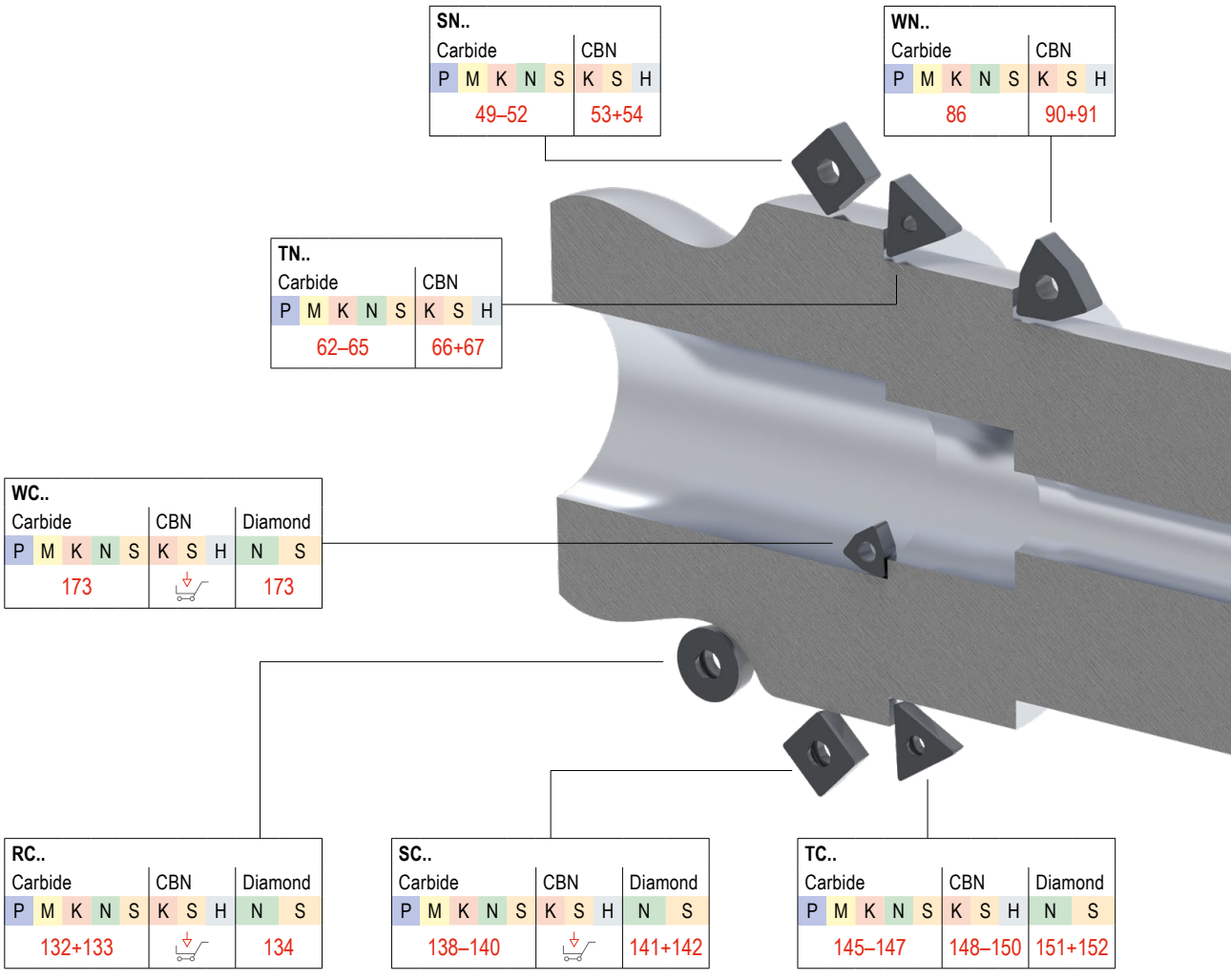
CERATIZIT \ Performance

Premium quality tools for high performance.

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

Toolfinder – Application



Symbol explanation

CTCP125-P *Carbide Grade*

F	Fine Machining
M	Medium Machining
R	Rough Machining

Smooth cut
Irregular cutting depth
Interrupted cut

Internal coolant supply

Direct Cooling — DirectCooling

A detailed overview of grades can be found in the technical appendix on → **page 232**



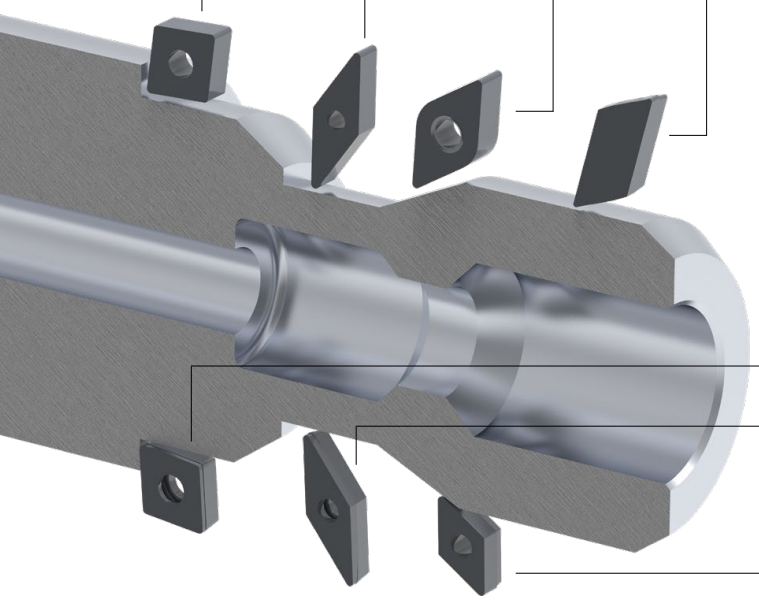
Hard turning with PCBN indexable inserts

cts.ceratizit.com/en/us/pcbn-indexable-inserts



The tool selection for Sliding head machines

cts.ceratizit.com/en/us/sliding-head-turning



CN..										
Carbide						CBN			Diamond	
P	M	K	N	S	K	S	H	N	S	
11–16					17+18			19		

DN..										
Carbide						CBN			Diamond	
P	M	K	N	S	K	S	H	N	S	
31–34					35+36			37		

VN..										
Carbide						CBN				
P	M	K	N	S	K	S	H			
77+78					79+80					

KN..					
Carbide					
P	M	K	N	S	

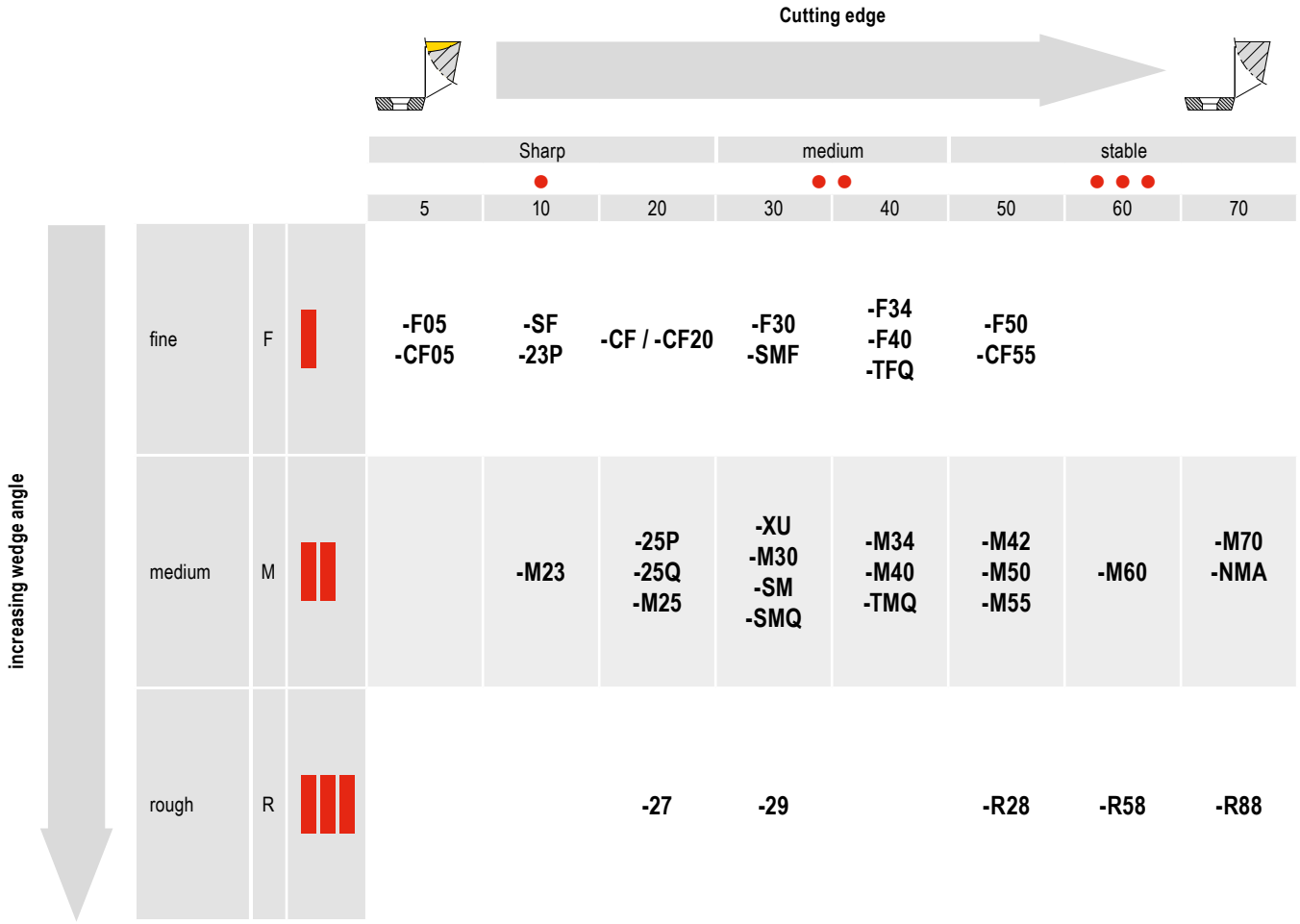
CC..										
Carbide						CBN			Diamond	
P	M	K	N	S	K	S	H	N	S	
96–99					100–102			103–107		

VC..										
Carbide						CBN			Diamond	
P	M	K	N	S	K	S	H	N	S	
156–159					160–162			163–165		

DC..										
Carbide						CBN			Diamond	
P	M	K	N	S	K	S	H	N	S	
113–117					118–120			121–125		

This article can be found in our online shop at cuttingtools.ceratizit.com

Chip Breakers Overview



Grade description

C T C P 1 2 5 -P (Example)

CT
CERATIZIT

-P
Performance

Degree of hardness

05	ISO 05
10	ISO 10
15	ISO 15
20	ISO 20
25	ISO 25
30	ISO 30
35	ISO 35
40	ISO 40

Application

1	Turning
2	Milling
3	Grooving
4	Drilling
5	Thread turning
6	Others
7	Several processes

Main application – material

P	Steel
M	Stainless steel
K	Cast iron
N	Non-ferrous metals
S	Heat-resistant
H	Tempered steel
O	Non-metal materials
X	Universal application

Coating

W	Uncoated carbide
C	CVD-coated carbide
P	PVD-coated carbide
T	Cermet, uncoated
E	Cermet, coated
N	Silicon nitride, uncoated
M	Silicon nitride, coated
S	Mixed ceramic
K	Whisker ceramic
I	SiAlON
D	PDC
B	PcBN
H	HSS sintered

Toolfinder – negative inserts

				Steel	Stainless steel	Cast iron	Non-ferrous metals	Heat-resistant	Tempered steel	Non-metal materials	Geometry						
				P	M	K	N	S	H	O	CN..	DN..	KN..	SN..	TN..	VN..	WN..
Main application: **Steel and cast iron**	Sharp – stable	Fine	-CF / -CF20	●	○	○					11	31			62		86
			-F40	●		○										77	
			-F50	●		○					11	31		49	62	77	86
			-TFQ	●	○	○					11+12	31+32					86
		Medium	-XU	●		○					12	32				77	87
			-M40	●		○										77	
			-M50	●	○	○					12+13	32		49	62	77	87
			-TMQ	●		○					13	32					87
			-M70 | -11, -12	●	○	○					13+14	33		50+51	63		87
		Rough	.NMA	●	○						14	33		50+51	63		88
			-R28	●	○	○					14	33		51	63		
			-R58	●	○	○					14+15	33+34		51	63+64		
			-R88	●	○	○					15			51			
Main application: **Stainless**	Sharp – stable	Fine	-F30	○	●			○			15	34		52	64	77	88
		Medium	-M30	○	●			○			15	34		52	64	78	88
			-42	○	●			○			16						
			-M42	○	●			●			16	34		52	65		88
			-M60	○	●			○			16	34		52	64		88
			-M70	○	●			○			13+14	33		52	65		89
Main application: **Heat-resistant**	Sharp – stable	Fine	-F32		●		○	●									
			-F34	○	●		○	●			16						89
		Medium	-M34	●	●		○	●			16	34		52	64	78	89
			-M42	○	●		○	●			16						
			-M52		●		○	●									
Main application: **Non-ferrous metals**		Diamond	FN , FL, FR				●			●	19	37					

This article can be found in our online shop at cuttingtools.ceratizit.com

Toolfinder – positive inserts

				Steel P	Stainless steel M	Cast iron K	Non-ferrous metals N	Heat-resistant S	Tempered steel H	Non-metal materials O	Geometry CC..	DC..	RC..	SC..	SP..	TC..	TP..	VC..	WC..
Main application: **Steel and cast iron**	Sharp	Fine	-CF05	●	○	○					96	113		138		145		156	
			-SF	●	○	○					96–98	113–115		138		145		156+157	173
		Medium	-CF55	●	○	○					96	113		138		145		156	
			-M23	●		○							133						
			-SMF	●	○	○					96+97	113+114	132	138		145		156+157	
			-SM	●	○	●					97+98	122+123	132+133	139		146		157	
			-SMQ	●		○					97+98	115							
	stable		-EN, -EL, -ER	●	○	●													
Main application: **Stainless**	Sharp	Fine	-F43	○	●			○			98	115				146			
			-M81	○	●			○											
		Medium	-M25	○	●			●			98	115		139		146		157	
	stable		-M55	○	●			●			98	115		139		146+147		157+158	
Main application: **Non-ferrous metals**	Sharp	Fine	-23P			○	●			○	98	116							
		Medium	-25P	●	●	○	●	●		○	98	116	133	140				158	
			-25Q	●	●	○	●	●		○	99	116						158	
			-27	●	●	○	●	●		○	99	116	133	140		147		159	
	stable		-29			○	●			○	99	117						159	
		Diamond	-FN , -FL, -FR				●			●	103–107	121–124	134	141+142		151+152		163	173
			CB1				●			●	104+107	122–125	134	141		151		164+165	
			CB2				●			●	104+107	122 124+125	134	142		152		164+165	
			CB3				●			●	106	124+125		142		152		165	
Main application: **Heat-resistant**	Sharp	Fine	-F05	●	●		●	●			99	117						159	
	stable		-F23		●	○	○	●											

This article can be found in our online shop at cuttingtools.ceratizit.com

Toolfinder – holders

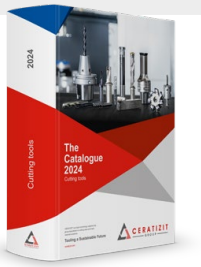
Toolholders and boring bars for negative inserts

Geometry	Tool holder	Boring bars	HSK-T	PSC
CN..	20–25	28+29	26	27
DN..	38–40	47+48	41–43	43–46
SN..	55–60	61	60	
TN..	68–74	61		
VN..	81+82	85	81	83+84
WN..	92+93	95	93	94

Toolholders and boring bars for positive inserts

Geometry	Tool holder	Boring bars	HSK-T	PSC
CC..	108	108	108+109	109+110
DC..	126	130	127	128+129
RC..	135+136		136+137	
SC..	143	144		
TC..	153+154	155		
VC..	166+167	171+172	167–169	169+170
WC..	metric	metric		

metric Additional metric items are available in our Online-Shop at cuttingtools.ceratizit.com and in the metric main catalog.



MaxiChange – Overview of the product range

Exchangeable heads

Turning Tools

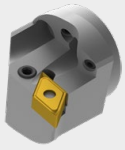
For negative inserts

PCLN 95°



183

PDUN 93°



183

PDQN 107,5°



184

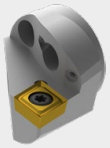
PWLN 95°



184

For positive inserts

SCLC 95°



185

SDUC 93°



185

SDQC 107,5°



186

NEW

SVPC 117,5°



186

NEW

SVUC 93°



187

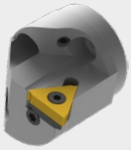
NEW

SVQC 107,5°



187

For internal thread



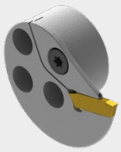
188

Grooving Tools

For radial grooving

NEW

GX 16

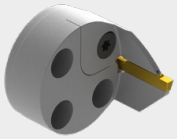


→ Chapter 11

For axial grooving

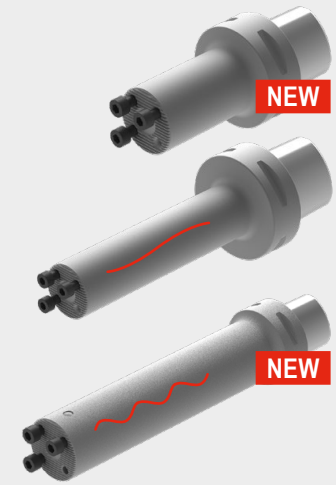
NEW

GX 24



→ Chapter 11

Tool holder



PSC

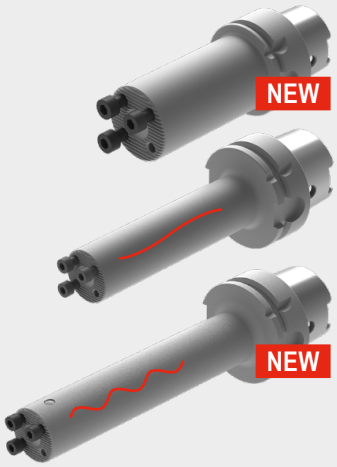
174

Vibration damped

175

Actively vibration-damped

176



HSK-T

177

Vibration damped metric

Actively vibration-damped

178

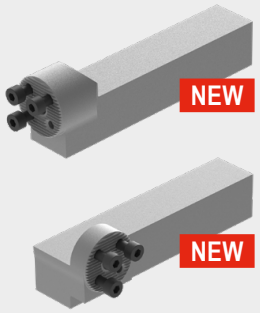


Cylindrical shank

179

Actively vibration-damped

180



Square shank holder 0°

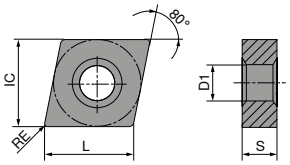
181

Square shank holder 90°

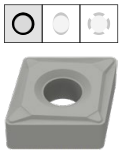
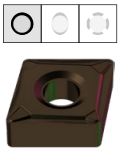
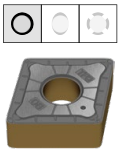
182

CNMG / CNMA / CNMM

Designation	L inch	S inch	D1 inch	IC inch
CNMG 32..	0.3819	0.1252	0.1500	0.3748
CNM. 43..	0.5079	0.1874	0.2032	0.5000
CNM. 54..	0.6339	0.250	0.2500	0.6248
CNM. 64..	0.7598	0.250	0.3126	0.7500
CNMM 86..	1.0158	0.3748	0.3591	1.0000

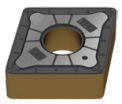
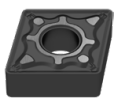
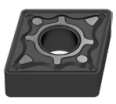
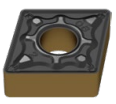
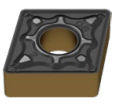


CNMG

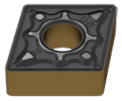
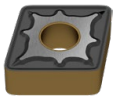
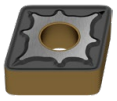
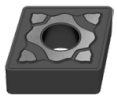
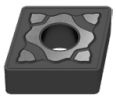
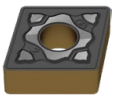
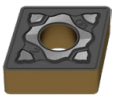
		NEW	NEW	NEW	NEW
	-CF TCM10	**-CF20** CTEP110	**-TFQ** CTEP110	**-F50** CTCP115-P	**-F50** CTCP125-P	**-F50** CTCP135-P	**-TFQ** CTCP115-P
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
							
	F	**F**	**F**	**F**	**F**	**F**	**F**
	CERMET CNMG	**CERMET** CNMG	**CERMET** CNMG	CNMG	CNMG	CNMG	CNMG
	70 101 ...	**76 101 ...**	**76 110 ...**	**76 132 ...**	**76 132 ...**	**76 132 ...**	**76 110 ...**
ANSI RE inch							
321EN 0.0157				**31601**	**51601**	**71601**	
322EN 0.0315				**31801**	**51801**	**71801**	
431EN 0.0157	**904**	**028**	**028**	**32801**	**52801**	**72801**	**32801**
432EN 0.0315	**908**	**030**	**030**	**33001**	**53001**	**73001**	**33001**
433EN 0.0472			**032**	**33201**	**53201**	**73201**	**32001**
P	●	●	●	●	●	●	●
M	○	○	○			○	
K	○	○	○	○	○		○
N							
S							
H							
O							

9

CNMG

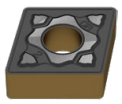
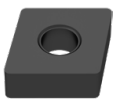
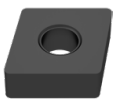
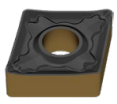
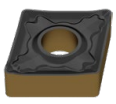
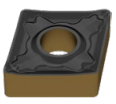
		NEW	NEW	NEW			NEW	NEW
		-TFQ CTCP125-P	-XU CTCP115-P	-XU CTCP125-P	-M50 CTCK110	-M50 CTCK120	-M50 CTCP115-P	-M50 CTCP125-P
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
								
		F	M	M	M	M	M	M
		CNMG	CNMG	CNMG	CNMG	CNMG	CNMG	CNMG
		76 110 ...	76 290 ...	76 290 ...	70 132 ...	70 132 ...	76 135 ...	76 135 ...
ANSI	RE inch							
431EN	0.0157	52801	32801	52801	028		32801	52801
432EN	0.0315	53001	33001	53001	030	530	33001	53001
433EN	0.0472	53201	33201	53201	032	532	32001	53201
434EN	0.0630						33401	53401
542EN	0.0315						34201	54201
543EN	0.0472						34401	54401
544EN	0.0630						34601	54601
P		●	●	●	○	○	●	●
M								
K		○	○	○	●	●	○	○
N								
S								
H								
O								

CNMG

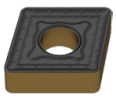
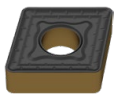
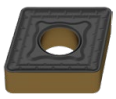
		NEW	NEW	NEW			NEW	NEW
		-M50 CTCP135-P	-TMQ CTCP115-P	-TMQ CTCP125-P	-M70 CTCK110	-M70 CTCK120	-M70 CTCP115-P	-M70 CTCP125-P
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
								
		M	M	M	M	M	M	M
		CNMG	CNMG	CNMG	CNMG	CNMG	CNMG	CNMG
		76 135 ...	76 196 ...	76 196 ...	70 119 ...	70 119 ...	76 119 ...	76 119 ...
ANSI	RE inch							
431EN	0.0157	72801						
432EN	0.0315	73001	33001	53001	030	530	33001	53001
433EN	0.0472	73201	32001	53201	032	532	32001	53201
434EN	0.0630	73401			034	534	33401	53401
542EN	0.0315	74201			042	542	34201	54201
543EN	0.0472	74401			044	544	34401	54401
544EN	0.0630	74601			046	546	34601	54601
546EN	0.0945						34801	54801
642EN	0.0315						35401	55401
643EN	0.0472				056	556	35601	55601
644EN	0.0630				058	558	35801	55801
646EN	0.0945						36001	56001
P		●	●	●	○	○	●	●
M		○						
K			○	○	●	●	○	○
N								
S								
H								
O								

9

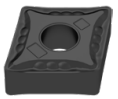
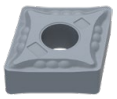
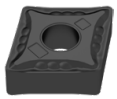
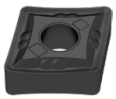
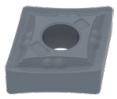
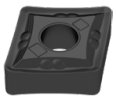
CNMG / CNMA / CNMM

		NEW			NEW	NEW	NEW	NEW
		-M70 CTCP135-P	CTCK110	CTCK120	-R28 CTCP115-P	-R28 CTCP125-P	-R28 CTCP135-P	-R58 CTCP115-P
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
								
		M	R	R	R	R	R	R
		CNMG	CNMA	CNMA	CNMM	CNMM	CNMM	CNMM
		76 119 ...	70 100 ...	70 100 ...	76 114 ...	76 114 ...	76 114 ...	76 115 ...
ANSI	RE inch							
431EN	0.0157		028	528				
432EN	0.0315	73001	030	530	33001	53001		33001
433EN	0.0472	73201	032	532	33201	53201	73201	33201
434EN	0.0630	73401	034	534	33401	53401	73401	33401
542EN	0.0315	74201	042	542				
543EN	0.0472	74401	044	544	34401	54401	74401	34401
544EN	0.0630	74601	046	546	34601	54601	74601	34601
546EN	0.0945	74801						34801
642EN	0.0315	75401						
643EN	0.0472	75601	056	556	35601	55601	75601	35601
644EN	0.0630	75801	058	558	35801	55801	75801	35801
646EN	0.0945	76001			36001	56001	76001	36001
866EN	0.0945				38401	58401	78401	38401
P		●	○	○	●	●	●	●
M		○					○	
K			●	●	○	○		○
N								
S								
H								
O								

CNMM

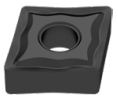
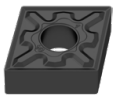
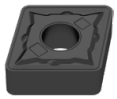
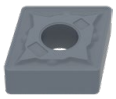
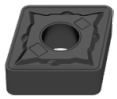
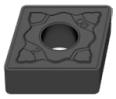
		NEW	NEW	NEW	NEW	NEW
		-R58 CTCP125-P	-R58 CTCP135-P	-R88 CTCP115-P	-R88 CTCP125-P	-R88 CTCP135-P
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
						
		R CNMM	R CNMM	R CNMM	R CNMM	R CNMM
		76 115 ...	76 115 ...	76 133 ...	76 133 ...	76 133 ...
ANSI	RE inch					
432EN	0.0315	53001	73001			
433EN	0.0472	53201	73201			
434EN	0.0630	53401	73401			
543EN	0.0472	54401	74401			
544EN	0.0630	54601	74601			
546EN	0.0945	54801	74801			
546SN	0.0945			34801	54801	74801
643EN	0.0472	55601	75601			
644EN	0.0630	55801	75801			
644SN	0.0630			35801	55801	75801
646EN	0.0945	52401	76001			
646SN	0.0945			36001	56001	76001
866EN	0.0945	58401	78401			
866SN	0.0945			38401	58401	78401
P		●	●	●	●	●
M			○			○
K		○		○	○	
N						
S						
H						
O						

CNMG

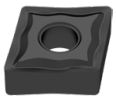
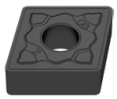
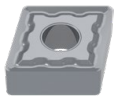
		-F30 CTCM120	-F30 CTPM125	-F30 CTCM130	-M30 CTCM120	-M30 CTPM125	-M30 CTCM130
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
							
		F CNMG	F CNMG	F CNMG	M CNMG	M CNMG	M CNMG
		75 010 ...	75 010 ...	75 010 ...	75 011 ...	75 011 ...	75 011 ...
ANSI	RE inch						
431EN	0.0157	12800	280	32800			
432EN	0.0315	13000	230	33000	13000	230	33000
433EN	0.0472				13200	232	33200
434EN	0.0630				13400	234	33400
P		○	○	○	○	○	○
M		●	●	●	●	●	●
K							
N							
S				○			○
H							
O							

9

CNMG

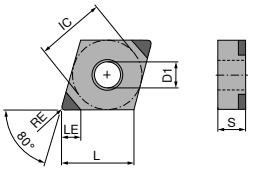
		NEW	NEW				NEW
		-42 CTCM130	-M42 CTCM130	-M60 CTCM120	-M60 CTPM125	-M60 CTCM130	-M70 CTCM130
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
							
		M	M	M	M	M	M
		CNMG	CNMG	CNMG	CNMG	CNMG	CNMG
		75 030 ...	75 029 ...	75 012 ...	75 012 ...	75 012 ...	75 037 ...
ANSI	RE inch						
431EN	0.0157		32800				
432EN	0.0315	33000	33000	13000	230	33000	33000
433EN	0.0472		33200	13200	232	33200	33200
434EN	0.0630			13400	234	33400	
543EN	0.0472			14400	24400	34400	34400
643EN	0.0472						35600
644EN	0.0630						35800
P		○	○	○	○	○	○
M		●	●	●	●	●	●
K							
N							
S		○	○			○	○
H							
O							

CNMG

		NEW	NEW	NEW		NEW
		-42 CTCM130	-M70 CTCM130	-F34 CTPX710	-M34 CTPX710	-M42 CTPX710
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
						
		M	M	F	M	M
		CNMG	CNMG	CNMG	CNMG	CNMG
		75 030 ...	75 037 ...	75 299 ...	75 003 ...	75 007 ...
ANSI	RE inch					
431EN	0.0157			62800	62800	
432EN	0.0315	33000	33000	63000	63000	63000
433EN	0.0472		33200	63200	63200	63200
434EN	0.0630				63400	
543EN	0.0472		34400			
643EN	0.0472		35600			
644EN	0.0630		35800			
P		○	○	●	●	●
M		●	●	●	●	●
K						
N				○	○	○
S		○	○	●	●	●
H						
O						

CNGA

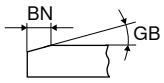
Designation	L inch	S inch	D1 inch	IC inch
CNGA 431E..	0.5079	0.1874	0.202	0.500
CNGA 431S..	0.5079	0.1874	0.202	0.500
CNGA 432E..	0.5079	0.1874	0.202	0.500
CNGA 432S..	0.5079	0.1874	0.202	0.500
CNGA 433E..	0.5079	0.1874	0.202	0.500
CNGA 433S..	0.5079	0.1874	0.202	0.500

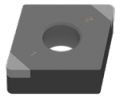
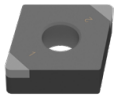
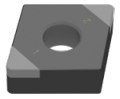


CNGA B

CNGA

▲ TCE(NOI) = Design and number of equipped cutting edge corners

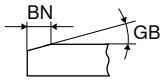


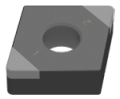
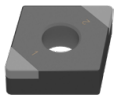
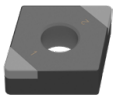
						NEW	NEW	NEW
						CTBH1000C	CTBH2000C	CTBH3000C
								
								
						F	F	F
						PCBN CNGA	PCBN CNGA	PCBN CNGA
						71 003 ...	71 003 ...	71 003 ...
ANSI	RE inch	BN inch	GB	**TCE (NOI)**	LE inch			
431EN	0.0157			**B (2)**	0.1299	**70002**	**80002**	
431SN	0.0157	0.0055	20°	**B (2)**	0.1299			**90002**
432EN	0.0315			**B (2)**	0.1299	**70302**	**80302**	
432SN	0.0315	0.0055	20°	**B (2)**	0.1299			**90302**
433EN	0.0472			**B (2)**	0.1220	**70602**	**80602**	
433SN	0.0472	0.0055	20°	**B (2)**	0.1220			**90602**
P								
M								
K								
N								
S								
H						●	●	●
O								

9

CNGA

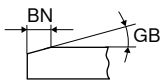
▲ TCE(NOI) = Design and number of equipped cutting edge corners

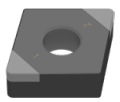
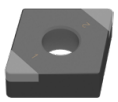
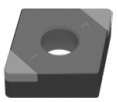


						NEW	NEW	NEW
						CTBH1000C	CTBH2000C	CTBH3000C
								
						M	M	M
						PCBN CNGA	PCBN CNGA	PCBN CNGA
						71 003 ...	71 003 ...	71 003 ...
ANSI	RE inch	BN inch	GB	**TCE (NOI)**	LE inch			
431SN	0.0157	0.0035	15°	**B (2)**	0.1299	**70102**	**80102**	
431SN	0.0157	0.0071	25°	**B (2)**	0.1299			**90102**
432SN	0.0315	0.0035	15°	**B (2)**	0.1299	**70402**	**80402**	
432SN	0.0315	0.0071	25°	**B (2)**	0.1299			**90402**
433SN	0.0472	0.0035	15°	**B (2)**	0.1220	**70702**	**80702**	
433SN	0.0472	0.0071	25°	**B (2)**	0.1220			**90702**
P								
M								
K								
N								
S								
H						●	●	●
O								

CNGA

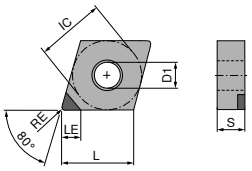
▲ TCE(NOI) = Design and number of equipped cutting edge corners



						NEW	NEW	NEW
						CTBH1000C	CTBH2000C	CTBH3000C
								
						R	R	R
						PCBN CNGA	PCBN CNGA	PCBN CNGA
						71 003 ...	71 003 ...	71 003 ...
ANSI	RE inch	BN inch	GB	**TCE (NOI)**	LE inch			
431SN	0.0157	0.0055	20°	**B (2)**	0.1299	**70202**	**80202**	
431SN	0.0157	0.0079	35°	**B (2)**	0.1299			**90202**
432SN	0.0315	0.0055	20°	**B (2)**	0.1299	**70502**	**80502**	
432SN	0.0315	0.0079	35°	**B (2)**	0.1299			**90502**
433SN	0.0472	0.0055	20°	**B (2)**	0.1220	**70802**	**80802**	
433SN	0.0472	0.0079	35°	**B (2)**	0.1220			**90802**
P								
M								
K								
N								
S								
H						●	●	●
O								

CNGA

Designation	L inch	S inch	D1 inch	IC inch
CNGA 43..	0.5079	0.1874	0.202	0.500



CNGA A

CNGA

▲ TCE(NOI) = Design and number of equipped cutting edge corners

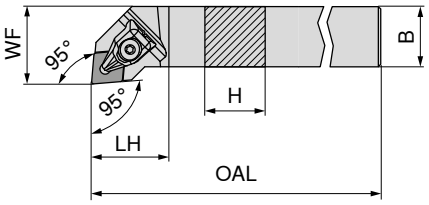
ANSI	RE inch	TCE (NOI)	LE inch	CTDPD20 F DIAMOND CNGA 71 127 ...	CTDPS30 F DIAMOND CNGA 71 127 ...
431FN	0.0157	**A (1)**	0.2480	**10001**	**20001**
432FN	0.0315	**A (1)**	0.2362	**10101**	**20101**
433FN	0.0472	**A (1)**	0.2244	**10201**	**20201**
P					
M					
K					
N				●	●
S					
H					
O				●	●

MaxiLock-D – DCLN 95° – Toolholder with top clamping

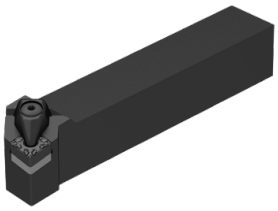
▲ ...A-N = with thru coolant
▲ ...N = without thru' coolant

Scope of supply:
Tool holder with allen key





Illustrations show right-hand versions



Designation	H inch	B inch	OAL inch	LH inch	WF inch	Insert	Left-hand 78 501 ...	Right-hand 78 500 ...
DCLN R/L 12-4BA-N	0.750	0.750	4.500	1.250	1.000	CN..43..	**01294**	**01294**
DCLN R/L 12-4B-N	0.750	0.750	4.500	1.250	1.000	CN..43..	**01293**	**01293**
DCLN R/L 16-4D-N	1.000	1.000	6.000	1.250	1.250	CN..43..	**01689**	**01689**
DCLN R/L 16-4DA-N	1.000	1.000	6.000	1.250	1.250	CN..43..	**01690**	**01690**
DCLN R/L 20-4D-N	1.250	1.250	6.000	1.250	1.500	CN..43..	**02089**	**02089**
DCLN R/L 20-4DA-N	1.250	1.250	6.000	1.250	1.500	CN..43..	**02090**	**02090**
DCLN R/L 20-5D-N	1.250	1.250	6.000	1.380	1.500	CN..54..	**02084**	**02084**
DCLN L 20-5DA-N	1.250	1.250	6.000	1.380	1.500	CN..54..	**02085**[1)]	**02085**[1)]
DCLN R/L 24-5E-N	1.500	1.500	7.000	1.380	2.000	CN..54..	**02482**[1)]	**02482**[1)]
DCLN R/L 24-5EA-N	1.500	1.500	7.000	1.380	2.000	CN..54..	**02483**[1)]	**02483**[1)]
DCLN L 20-6D-N	1.250	1.250	6.000	1.650	1.500	CN..64..	**02080**	**02080**
DCLN R/L 20-6DA-N	1.250	1.250	6.000	1.650	1.500	CN..64..	**02081**[1)]	**02081**[1)]
DCLN R/L 24-6E-N	1.500	1.500	7.000	1.650	2.000	CN..64..	**02477**[1)]	**02477**[1)]
DCLN R/L 24-6EA-N	1.500	1.500	7.000	1.650	2.000	CN..64..	**02478**[1)]	**02478**[1)]

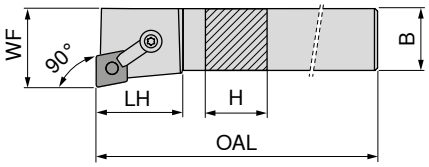
1) Not in stock

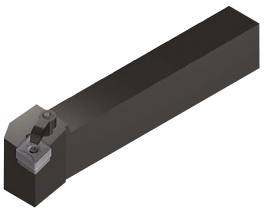
Spare parts for Article no.	 Clamping claw 78 950 ...	 Key I 78 950 ...	 Clamping screw 78 950 ...	 Carbide type C 78 950 ...	 Threaded bush 78 950 ...	 Spring 78 950 ...
78 500 01293 / 78 501 01293	**07600**	**08100**	**08300**		**08500**	**04900**
78 500 01689 / 78 501 01689	**07600**	**08100**	**08300**		**08500**	**04900**
78 500 01690 / 78 501 01690	**07600**	**08100**	**08300**		**08500**	**04900**
78 500 02089 / 78 501 02089	**07600**	**08100**	**08300**		**08500**	**04900**
78 500 02090 / 78 501 02090	**07600**	**08100**	**08300**		**08500**	**04900**
78 500 02084 / 78 501 02084	**07700**	**08100**	**08300**	**04100**	**08600**	**04900**
78 500 02085 / 78 501 02085	**07700**	**08100**	**08300**	**04100**	**08600**	**04900**
78 500 02482 / 78 501 02482	**07700**	**08100**	**08300**	**04100**	**08600**	**04900**
78 500 02483 / 78 501 02483	**07700**	**08100**	**08300**	**04100**	**08600**	**04900**
78 500 02080 / 78 501 02080	**07800**	**08100**	**08300**	**00900**	**08700**	**04900**
78 500 02081 / 78 501 02081	**07800**	**08100**	**08300**	**00900**	**08700**	**04900**
78 500 02477 / 78 501 02477	**07800**	**08100**	**08300**	**00900**	**08700**	**04900**
78 500 02478 / 78 501 02478	**07800**	**08100**	**08300**	**00900**	**08700**	**04900**

MaxiLock-M – MCFN 90° – Toolholder with top clamping

Scope of supply:
Tool holder with allen key







Illustrations show right-hand versions

Designation	H inch	B inch	OAL inch	LH inch	WF inch	Insert	Left-hand 78 517 ...	Right-hand 78 516 ...
MCFN R/L 12-4B	0.750	0.750	4.500	1.120	1.000	CN..43..	**01224**[1)]	**01224**[1)]
MCFN R/L 16-4D	1.000	1.000	6.000	1.120	1.250	CN..43..	**01644**[1)]	**01644**[1)]
MCFN R/L 20-4D	1.250	1.250	6.000	1.120	1.500	CN..43..	**02044**[1)]	**02044**[1)]
MCFN R/L 85-4D	1.250	1.000	6.000	1.120	1.250	CN..43..	**08544**[1)]	**08544**[1)]
MCFN R/L 16-5D	1.000	1.000	6.000	1.250	1.250	CN..54..	**01645**[1)]	**01645**[1)]
MCFN R/L 20-5D	1.250	1.250	6.000	1.250	1.500	CN..54..	**02045**[1)]	**02045**[1)]
MCFN R/L 24-5D	1.500	1.500	6.000	1.250	2.000	CN..54..	**02445**[1)]	**02445**[1)]
MCFN R/L 16-6D	1.000	1.000	6.000	1.310	1.250	CN..64..	**01646**[1)]	**01646**[1)]
MCFN R/L 20-6D	1.250	1.250	6.000	1.310	1.500	CN..64..	**02046**[1)]	**02046**[1)]
MCFN R/L 24-6D	1.500	1.500	6.000	1.250	2.000	CN..64..	**02446**[1)]	**02446**[1)]

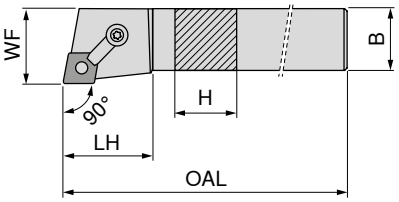
1) Not in stock

Spare parts for Article no.	 Clamp 78 950 ...	 Key I 78 950 ...	 Dowel pin 78 950 ...	 Clamping screw 78 950 ...	 Carbide type C 78 950 ...
78 516 01224 / 78 517 01224	**00400**	**06900**	**03100**	**03800**	**00800**
78 516 01644 / 78 517 01644	**00400**	**06900**	**03100**	**03800**	**00800**
78 516 02044 / 78 517 02044	**00400**	**06900**	**03100**	**03800**	**00800**
78 516 08544 / 78 517 08544	**00400**	**06900**	**03100**	**03800**	**00800**
78 516 01645 / 78 517 01645	**00300**	**08100**	**03200**	**03900**	**04100**
78 516 02045 / 78 517 02045	**00300**	**08100**	**03200**	**03900**	**04100**
78 516 02445 / 78 517 02445	**00300**	**08100**	**03200**	**03900**	**04100**
78 516 01646 / 78 517 01646	**00300**	**08100**	**03300**	**03900**	**00900**
78 516 02046 / 78 517 02046	**00300**	**08100**	**03300**	**03900**	**00900**
78 516 02446 / 78 517 02446	**00300**	**08100**	**03300**	**03900**	**00900**

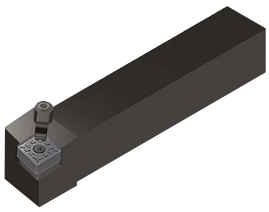
MaxiLock-M – MCGN 90° – Toolholder with top clamping

Scope of supply:
Tool holder with allen key





Illustrations show right-hand versions



Designation	H inch	B inch	OAL inch	LH inch	WF inch	Insert	Left-hand 78 519 ...	Right-hand 78 518 ...
MCGN R/L 12-4B	0.750	0.750	4.500	1.120	1.000	CN..43..	**01224**[1)]	**01224**[1)]
MCGN R/L 16-4D	1.000	1.000	6.000	1.120	1.250	CN..43..	**01644**[1)]	**01644**[1)]
MCGN R/L 20-4D	1.250	1.250	6.000	1.120	1.500	CN..43..	**02044**[1)]	**02044**[1)]
MCGN R/L 24-4D	1.500	1.500	6.000	1.250	2.000	CN..43..	**02444**[1)]	**02444**[1)]
MCGN R/L 16-5D	1.000	1.000	6.000	1.500	1.250	CN..54..	**01645**[1)]	**01645**[1)]
MCGN R/L 20-5D	1.250	1.250	6.000	1.500	1.500	CN..54..	**02045**[1)]	**02045**[1)]
MCGN R/L 24-5D	1.500	1.500	6.000	1.500	2.000	CN..54..	**02445**[1)]	**02445**[1)]
MCGN R/L 20-6D	1.250	1.250	6.000	1.650	1.500	CN..64..	**02046**[1)]	**02046**[1)]
MCGN R/L 24-6D	1.500	1.500	6.000	1.650	2.000	CN..64..	**02446**[1)]	**02446**[1)]

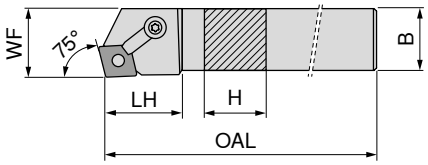
1) Not in stock

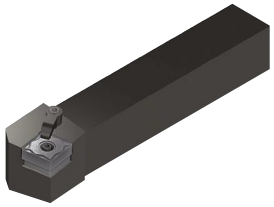
Spare parts for Article no.	 Clamp 78 950 ...	 Key I 78 950 ...	 Dowel pin 78 950 ...	 Clamping screw 78 950 ...	 Carbide type C 78 950 ...
78 518 01224 / 78 519 01224	**00400**	**06900**	**03100**	**03800**	**00800**
78 518 01644 / 78 519 01644	**00400**	**06900**	**03100**	**03800**	**00800**
78 518 02044 / 78 519 02044	**00400**	**06900**	**03100**	**03800**	**00800**
78 518 02444 / 78 519 02444	**00400**	**06900**	**03100**	**03800**	**00800**
78 518 01645 / 78 519 01645	**00300**	**08100**	**03200**	**03900**	**04100**
78 518 02045 / 78 519 02045	**00300**	**08100**	**03200**	**03900**	**04100**
78 518 02445 / 78 519 02445	**00300**	**08100**	**03200**	**03900**	**04100**
78 518 02046 / 78 519 02046	**00300**	**08100**	**03300**	**03900**	**00900**
78 518 02446 / 78 519 02446	**00300**	**08100**	**03300**	**03900**	**00900**

MaxiLock-M – MCKN 75° – Toolholder with top clamping

Scope of supply:
Tool holder with allen key







Illustrations show right-hand versions

Designation	H inch	B inch	OAL inch	LH inch	WF inch	Insert	Left-hand 78 521 ...	Right-hand 78 520 ...
MCKN R/L 12-4B	0.750	0.750	4.500	1.200	1.000	CN..43..	**01224**[1)]	**01224**[1)]
MCKN R/L 16-4D	1.000	1.000	6.000	1.200	1.250	CN..43..	**01644**[1)]	**01644**[1)]
MCKN R/L 20-4D	1.250	1.250	6.000	1.200	1.500	CN..43..	**02044**[1)]	**02044**[1)]
MCKN R/L 16-5D	1.000	1.000	6.000	1.350	1.250	CN..54..	**01645**[1)]	**01645**[1)]
MCKN R/L 20-5D	1.250	1.250	6.000	1.350	1.500	CN..54..	**02045**[1)]	**02045**[1)]
MCKN R/L 16-6D	1.000	1.000	6.000	1.470	1.250	CN..64..	**01646**[1)]	**01646**[1)]
MCKN R/L 20-6D	1.250	1.250	6.000	1.470	1.500	CN..64..	**02046**[1)]	**02046**[1)]
MCKN R/L 24-6D	1.500	1.500	6.000	1.470	2.000	CN..64..	**02446**[1)]	**02446**[1)]

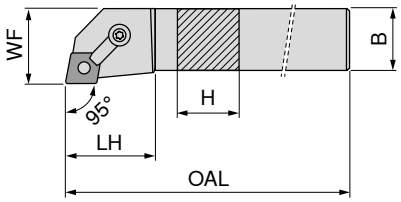
1) Not in stock

Spare parts for Article no.	 Clamp 78 950 ...	 Key I 78 950 ...	 Dowel pin 78 950 ...	 Clamping screw 78 950 ...	 Carbide type C 78 950 ...
78 520 01224 / 78 521 01224	**00400**	**06900**	**03100**	**03800**	**00800**
78 520 01644 / 78 521 01644	**00400**	**06900**	**03100**	**03800**	**00800**
78 520 02044 / 78 521 02044	**00400**	**06900**	**03100**	**03800**	**00800**
78 520 01645 / 78 521 01645	**00300**	**08100**	**03200**	**03900**	**04100**
78 520 02045 / 78 521 02045	**00300**	**08100**	**03200**	**03900**	**04100**
78 520 01646 / 78 521 01646	**00300**	**08100**	**03300**	**03900**	**00900**
78 520 02046 / 78 521 02046	**00300**	**08100**	**03300**	**03900**	**00900**
78 520 02446 / 78 521 02446	**00300**	**08100**	**03300**	**03900**	**00900**

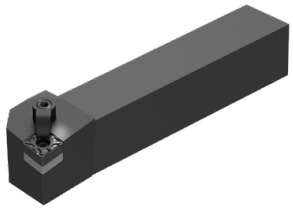
MaxiLock-M – MCLN 95° – Toolholder with top clamping

Scope of supply:
Tool holder with allen key





Illustrations show right-hand versions



Designation	H inch	B inch	OAL inch	LH inch	WF inch	Insert	Left-hand 78 523 ...	Right-hand 78 522 ...
MCLN R/L 12-4B	0.750	0.750	4.500	1.130	1.000	CN..43..	**01224**[1)]	**01224**[1)]
MCLN R/L 16-4D	1.000	1.000	6.000	1.130	1.250	CN..43..	**01644**[1)]	**01644**[1)]
MCLN R/L 85-4D	1.250	1.000	6.000	1.130	1.250	CN..43..	**08544**[1)]	**08544**[1)]
MCLN R/L 20-4D	1.250	1.250	6.000	1.130	1.500	CN..43..	**02044**[1)]	**02044**[1)]
MCLN R/L 16-5D	1.000	1.000	6.000	1.470	1.250	CN..54..	**01645**[1)]	**01645**[1)]
MCLN R/L 20-5D	1.250	1.250	6.000	1.470	1.500	CN..54..	**02045**[1)]	**02045**[1)]
MCLN R/L 24-5D	1.500	1.500	6.000	1.470	2.000	CN..54..	**02445**[1)]	**02445**[1)]
MCLN R/L 16-6D	1.000	1.000	6.000	1.510	1.250	CN..64..	**01646**[1)]	**01646**[1)]
MCLN R/L 20-6D	1.250	1.250	6.000	1.510	1.500	CN..64..	**02046**[1)]	**02046**[1)]
MCLN R/L 85-6D	1.250	1.000	6.000	1.510	1.250	CN..64..	**08546**[1)]	**08546**[1)]
MCLN R/L 24-6D	1.500	1.500	6.000	1.510	2.000	CN..64..	**02446**[1)]	**02446**[1)]
MCLN R/L 24-6E	1.500	1.500	7.000	1.500	2.000	CN..64..	**02456**[1)]	**02456**[1)]
MCLN R/L 86-6E	1.500	1.000	7.000	1.510	1.250	CN..64..	**08656**[1)]	**08656**[1)]

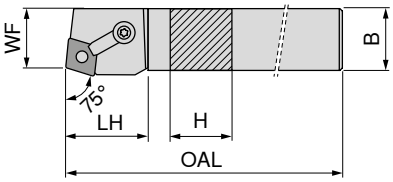
1) Not in stock

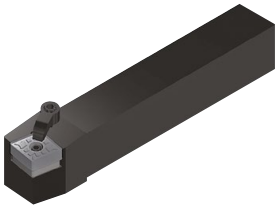
Spare parts for Article no.	 Clamp 78 950 ...	 Key I 78 950 ...	 Dowel pin 78 950 ...	 Clamping screw 78 950 ...	 Carbide type C 78 950 ...
78 522 01224 / 78 523 01224	**00400**	**06900**	**03100**	**03800**	**00800**
78 522 01644 / 78 523 01644	**00400**	**06900**	**03100**	**03800**	**00800**
78 522 08544 / 78 523 08544	**00400**	**06900**	**03100**	**03800**	**00800**
78 522 02044 / 78 523 02044	**00400**	**06900**	**03100**	**03800**	**00800**
78 522 01645 / 78 523 01645	**00300**	**08100**	**03200**	**03900**	**04100**
78 522 02045 / 78 523 02045	**00300**	**08100**	**03200**	**03900**	**04100**
78 522 02445 / 78 523 02445	**00300**	**08100**	**03200**	**03900**	**04100**
78 522 01646 / 78 523 01646	**00300**	**08100**	**03300**	**03900**	**00900**
78 522 02046 / 78 523 02046	**00300**	**08100**	**03300**	**03900**	**00900**
78 522 08546 / 78 523 08546	**00300**	**08100**	**03300**	**03900**	**00900**
78 522 02446 / 78 523 02446	**00300**	**08100**	**03300**	**03900**	**00900**
78 522 02456 / 78 523 02456	**00300**	**08100**	**03300**	**03900**	**00900**
78 522 08656 / 78 523 08656	**00300**	**08100**	**03300**	**03900**	**00900**

MaxiLock-M – MCRN 75° – Toolholder with top clamping

Scope of supply:
Tool holder with allen key







Illustrations show right-hand versions

Designation	H inch	B inch	OAL inch	LH inch	WF inch	Insert	Left-hand 78 525 ...	Right-hand 78 524 ...
MCRN R/L 12-4B	0.750	0.750	4.500	1.180	0.878	CN..43..	**01224**[1)]	**01224**[1)]
MCRN R/L 16-4D	1.000	1.000	6.000	1.180	1.128	CN..43..	**01644**[1)]	**01644**[1)]
MCRN R/L 20-4D	1.250	1.250	6.000	1.180	1.318	CN..43..	**02044**[1)]	**02044**[1)]
MCRN R/L 16-5D	1.000	1.000	6.000	1.100	1.101	CN..54..	**01645**[1)]	**01645**[1)]
MCRN R/L 20-5D	1.250	1.250	6.000	1.350	1.351	CN..54..	**02045**[1)]	**02045**[1)]
MCRN R/L 20-6D	1.250	1.250	6.000	1.318	1.318	CN..64..	**02046**[1)]	**02046**[1)]
MCRN R/L 24-6D	1.500	1.500	6.000	1.818	1.818	CN..64..	**02446**[1)]	**02446**[1)]

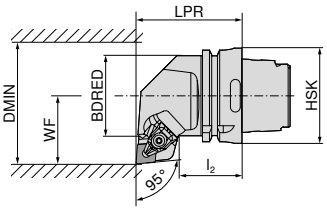
1) Not in stock

Spare parts for Article no.	 Clamp 78 950 ...	 Key I 78 950 ...	 Dowel pin 78 950 ...	 Clamping screw 78 950 ...	 Carbide type C 78 950 ...
78 524 01224 / 78 525 01224	**00400**	**06900**	**03100**	**03800**	**00800**
78 524 01644 / 78 525 01644	**00400**	**06900**	**03100**	**03800**	**00800**
78 524 02044 / 78 525 02044	**00400**	**06900**	**03100**	**03800**	**00800**
78 524 01645 / 78 525 01645	**00300**	**08100**	**03200**	**03900**	**04100**
78 524 02045 / 78 525 02045	**00300**	**08100**	**03200**	**03900**	**04100**
78 524 02046 / 78 525 02046	**00300**	**08100**	**03300**	**03900**	**00900**
78 524 02446 / 78 525 02446	**00300**	**08100**	**03300**	**03900**	**00900**

MaxiLock-D – DCLN 95° – Toolholder with top clamping

Scope of supply:
Tool holder with Torx key



Illustrations show right-hand versions



Designation	Adapter	LPR	l_2	BDRED	WF	DMIN	torque moment	Insert	Left-hand	Right-hand
		mm	mm	mm	mm	mm	Nm		74 504 ...	74 503 ...
HSK T63 DCLN R/L 12	HSK-T 63	70	42	53	45	100	4	CN.. 1204	**512**	**512**
HSK T63 DCLN R/L 16	HSK-T 63	70	42	53	45	125	4	CN.. 1606	**516**	**516**
HSK T63 DCLN R/L 19	HSK-T 63	70	42	53	45	125	8	CN.. 1906	**519**	**519**
HSK T100 DCLN R/L 12	HSK-T 100	80	45	88	55	125	4	CN.. 1204	**712**	**712**
HSK T100 DCLN R/L 19	HSK-T 100	80	45	88	55	125	8	CN.. 1906	**719**	**719**


XPress type
70 950 ...


Screwdriver
80 950 ...


Clamping screw
70 950 ...

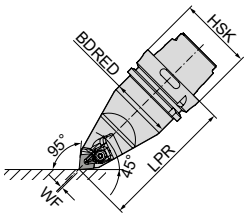

Carbide type C
70 950 ...

Spare parts						
74 504 516 / 74 503 516	**825**	T20 - IP	**129**	M5x14 - IP	**821**	**814**
74 504 512 / 74 503 712	**824**	T15 - IP	**128**	M4.5x12 - IP	**820**	**810**
74 504 519 / 74 503 719	**826**	T20 - IP	**129**	M5x14 - IP	**821**	**816**

MaxiLock-D – DCMN 95° – Toolholder with top clamping

Scope of supply:
Tool holder with Torx key





Neutral
74 506 ...

Designation	Adapter	LPR	BDRED	WF	torque moment	Insert	
		mm	mm	mm	Nm		
HSK T63 DCMN N 12	HSK-T 63	115	53	0	4	CN.. 1204	**512**
HSK T100 DCMN N 12	HSK-T 100	150	88	0	4	CN.. 1204	**712**


XPress type
70 950 ...


Screwdriver
80 950 ...


Clamping screw
70 950 ...

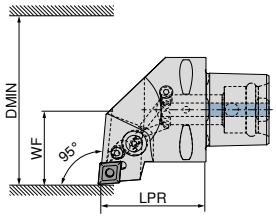

Carbide type C
70 950 ...

Spare parts						
74 506 512 / 74 506 712	**824**	T15 - IP	**128**	M4.5x12 - IP	**820**	**810**

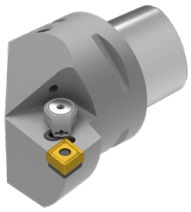
MaxiLock-N – PCLN 95° – Toolholder with lever clamping

Scope of supply:
without high-performance coolant set



Illustrations show right-hand versions



Designation	Adapter	LPR mm	WF mm	DMIN mm	torque moment Nm	Insert	Direct cooling compatible	Left-hand 84 657 ...	Right-hand 84 656 ...
PSC40 PCLN R/L 50050-12	PSC 40	50	27	50	5	CN.. 1204	DC	**01295**	**01295**
PSC50 PCLN R/L 65060-12	PSC 50	60	35	65	5	CN.. 1204	DC	**01294**	**01294**
PSC63 PCLN R/L 80065-12	PSC 63	65	45	80	5	CN.. 1204	DC	**01293**	**01293**

The high-performance coolant set with article number **84 950 27400** can be ordered as an optional extra → **Page 46.**

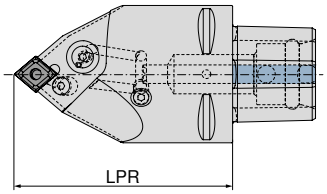
Spare parts

	Shim 84 950 ...		Elbow lever screw 84 950 ...	Lever 84 950 ...	Carbide type C 84 950 ...
84 656 01293 / 84 657 01295	**29200**	M8X1/L17 SW3	**28700**	**29000**	**27800**

MaxiLock-N – PCMN 50° – Toolholder with lever clamping

Scope of supply:
without high-performance coolant set





Designation	Adapter	LPR mm	torque moment Nm	Insert	Direct cooling compatible	Neutral 84 675 ...
PSC63 PCMN N 0100-12	PSC 63	100	5	CN.. 1204	DC	**01293**
PSC63 PCMN N 0130-12	PSC 63	130	5	CN.. 1204	DC	**11293**

The high-performance coolant set with article number **84 950 27400** can be ordered as an optional extra → **Page 46.**

Spare parts

	Shim 84 950 ...		Elbow lever screw 84 950 ...	Lever 84 950 ...	Carbide type C 84 950 ...
84 675 01293 / 84 675 11293	**29200**	M8X1/L17 SW3	**28700**	**29000**	**27800**

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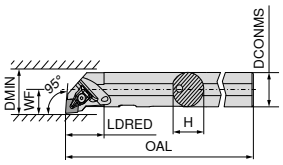
MaxiLock-D – DCLN 95° – Boring bar with top clamping

▲ A... = with thru coolant
▲ S... = without thru coolant

Scope of supply:
Tool holder with allen key







Illustrations show right-hand versions

Designation	DCONMS inch	H inch	OAL inch	LDRED inch	WF inch	DMIN inch	Insert	Left-hand 78 701 ...	Right-hand 78 700 ...
S16T DCLN R/L 4N	1.000	0.900	12.000	1.575	0.640	1.280	CN..43..	**41626**[1)]	**41626**[1)]
S20U DCLN R/L 4N	1.250	1.180	14.000	1.771	0.765	1.530	CN..43..	**42030**[1)]	**42030**[1)]
S24U DCLN R/L 4N	1.500	1.370	14.000	1.968	0.890	1.780	CN..43..	**42434**[1)]	**42434**[1)]

1) Not in stock

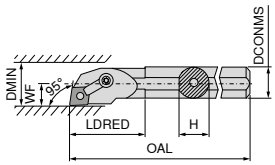
Spare parts for Article no.	 Clamping claw 78 950 ...	 Key I 78 950 ...	 Clamping screw 78 950 ...	 Carbide type C 78 950 ...	 Threaded bush 78 950 ...	 Spring 78 950 ...
78 700 41626 / 78 701 41626	**07600**	**08100**	**08300**	**07200**	**08500**	**04900**
78 700 42030 / 78 701 42030	**07600**	**08100**	**08300**	**07200**	**08500**	**04900**
78 700 42434 / 78 701 42434	**07600**	**08100**	**08300**	**07200**	**08500**	**04900**

MaxiLock-M – MCLN 95° – Boring bar with top clamping

▲ A... = with thru coolant
▲ S... = without thru coolant

Scope of supply:
Tool holder with allen key







Illustrations show right-hand versions

								Left-hand	Right-hand
								78 705 ...	78 704 ...
Designation	DCONMS inch	H inch	OAL inch	LDRED inch	WF inch	DMIN inch	Insert		
A16T MCLN R/L 4	1.000	0.900	12.000	2.500	0.640	1.280	CN..32..	**41616**	**41616**
S16T MCLN R/L 4	1.000	0.900	12.000	2.500	0.640	1.280	CN..43..	**41626**[1)]	**41626**[1)]
S20U MCLN R/L 4	1.250	1.118	14.000	3.000	0.765	1.530	CN..43..	**42030**[1)]	**42030**[1)]
A20U MCLN R/L 4	1.250	1.118	14.000	3.000	0.765	1.530	CN..43..	**42020**[1)]	**42020**[1)]
S24U MCLN R/L 4	1.500	1.370	14.000	3.000	0.890	1.780	CN..43..	**42434**[1)]	**42434**[1)]
A24U MCLN R/L 4	1.500	1.370	14.000	3.000	0.890	1.780	CN..43..	**42424**	**42424**
S28U MCLN R/L 4	1.750	1.630	14.000	4.000	1.015	2.030	CN..43..	**42838**[1)]	**42838**[1)]
A28U MCLN R/L 4	1.750	1.630	14.000	4.000	1.015	2.030	CN..43..	**42828**[1)]	**42828**[1)]
S32V MCLN R/L 4	2.000	1.870	16.000	4.000	1.281	2.562	CN..43..	**43242**[1)]	**43242**[1)]
S40V MCLN R/L 4	2.500	2.380	16.000	4.000	1.531	3.062	CN..43..	**44050**[1)]	**44050**[1)]
S32V MCLN R/L 5	2.000	1.870	16.000	4.000	1.281	2.562	CN..54..	**53242**[1)]	**53242**[1)]
A32V MCLN R/L 5	2.000	1.870	16.000	4.000	1.281	2.562	CN..54..	**53233**[1)]	**53233**[1)]
S40V MCLN R/L 5	2.500	2.380	16.000	4.000	1.531	3.062	CN..54..	**54050**[1)]	**54050**[1)]
A32V MCLN R/L 6	2.000	1.870	16.000	4.000	1.281	2.562	CN..64..	**63233**[1)]	**63233**[1)]
S32V MCLN R/L 6	2.000	1.870	16.000	4.000	1.281	2.562	CN..64..	**63242**[1)]	**63242**[1)]
S40V MCLN R/L 6	2.500	2.380	16.000	4.000	1.531	3.062	CN..64..	**64050**[1)]	**64050**[1)]

1) Not in stock


Clamp


Key I


Dowel pin


Clamping screw


Carbide type C

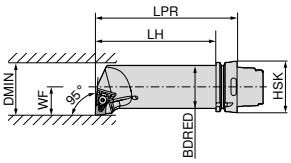
	78 950 ...	78 950 ...	78 950 ...	78 950 ...	78 950 ...
Spare parts for Article no.					
78 704 41616 / 78 705 41616	**00400**	**06900**	**03000**	**03700**	
78 704 41626 / 78 705 41626	**00400**	**06900**	**03000**	**03700**	
78 704 42030 / 78 705 42030	**00400**	**06900**	**03100**	**03800**	**00800**
78 704 42020 / 78 705 42020	**00400**	**06900**	**03100**	**03800**	**00800**
78 704 42434 / 78 705 42434	**00400**	**06900**	**03100**	**03800**	**00800**
78 704 42424 / 78 705 42424	**00400**	**06900**	**03100**	**03800**	**00800**
78 704 42838 / 78 705 42838	**00400**	**06900**	**03100**	**03800**	**00800**
78 704 42828 / 78 705 42828	**00400**	**06900**	**03100**	**03800**	**00800**
78 704 43242 / 78 705 43242	**00400**	**06900**	**03100**	**03800**	**00800**
78 704 44050 / 78 705 44050	**00400**	**06900**	**03100**	**03800**	**00800**
78 704 53242 / 78 705 53242	**00300**	**08100**	**03200**	**03900**	**04100**
78 704 53233 / 78 705 53233	**00300**	**08100**	**03200**	**03900**	**04100**
78 704 54050 / 78 705 54050	**00300**	**08100**	**03200**	**03900**	**04100**
78 704 63233 / 78 705 63233	**00300**	**08100**	**03300**	**03900**	**00900**
78 704 63242 / 78 705 63242	**00300**	**08100**	**03300**	**03900**	**00900**
78 704 64050 / 78 705 64050	**00300**	**08100**	**03300**	**03900**	**00900**

MaxiLock-D – DCLN 95° – Boring bar with top clamping

Scope of supply:
Boring bar with Torx key







Illustrations show right-hand versions



Designation	Adapter	LPR mm	LH mm	BDRED mm	WF mm	DMIN mm	torque moment Nm	Insert	Left-hand 74 529 ...		Right-hand 74 528 ...	
HSK T63 50Q DCLN R/L 12	HSK-T 63	175	149	50	35	63	4	CN.. 1204		**512**		**512**

Spare parts



XPress type **70 950 ...**

74 528 512 / 74 529 512 **824**



Screwdriver **80 950 ...**

T15 - IP **128**



Clamping screw **70 950 ...**

M4.5x12 - IP **820**

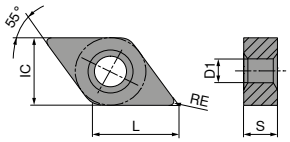


Carbide type C **70 950 ...**

810

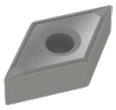
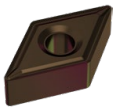
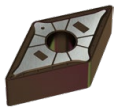
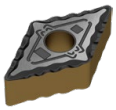
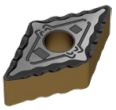
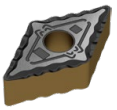
DNMG / DNMA / DNMM

Designation	L	S	D1	IC
	inch	inch	inch	inch
DNMG 33..	0.4567	0.1874	0.1500	0.3748
DNM. 43..	0.6102	0.1874	0.2032	0.5000
DNM. 44..	0.6102	0.250	0.2032	0.5000



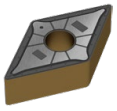
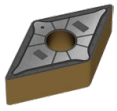
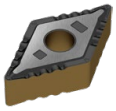
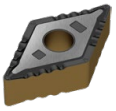
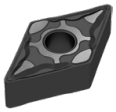
DNMG

NEW

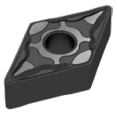
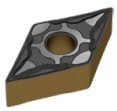
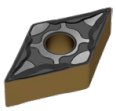
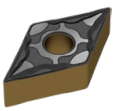
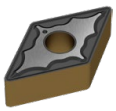
	-CF	-CF20	-TFQ	-F50	-F50	-F50
	TCM10	CTEP110	CTEP110	CTCP115-P	CTCP125-P	CTCP135-P
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
						
	F	F	F	F	F	F
	CERMET	CERMET	CERMET			
	DNMG	DNMG	DNMG	DNMG	DNMG	DNMG
	70 155 ...	76 102 ...	76 153 ...	76 134 ...	76 134 ...	76 134 ...
ANSI / RE inch						
33.5EN 0.0079				30201	50201	70201
331EN 0.0157	904	004		30401	50401	70401
332EN 0.0315		006		30601	50601	70601
333EN 0.0472				30801	50801	70801
431EN 0.0157				31601	51601	71601
432EN 0.0315				31801	51801	71801
433EN 0.0472				32001	52001	72001
441EN 0.0157	914	028	028	32801	52801	72801
442EN 0.0315		030	030	33001	53001	73001
443EN 0.0472		032		33201	53201	73201
P	●	●	●	●	●	●
M	○	○	○			○
K	○	○	○	○	○	
N						
S						
H						
O						

9

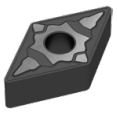
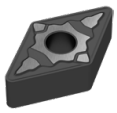
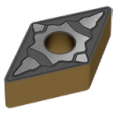
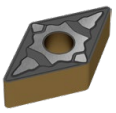
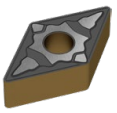
DNMG

		NEW	NEW	NEW	NEW	
		-TFQ CTCP115-P	-TFQ CTCP125-P	-XU CTCP115-P	-XU CTCP125-P	-M50 CTCK110
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
						
		F	F	M	M	M
		DNMG	DNMG	DNMG	DNMG	DNMG
		76 153 ...	76 153 ...	76 291 ...	76 291 ...	70 133 ...
ANSI	RE inch					
432EN	0.0315					018
433EN	0.0472					020
441EN	0.0157	32801	52801	32801	52801	
442EN	0.0315	33001	53001	33001	53001	030
443EN	0.0472			33201	53201	032
P		●	●	●	●	○
M						
K		○	○	○	○	●
N						
S						
H						
O						

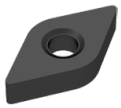
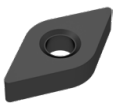
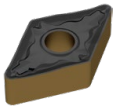
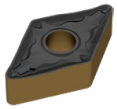
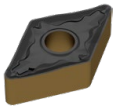
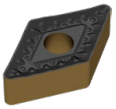
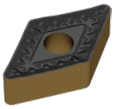
DNMG

			NEW	NEW	NEW	NEW
		-M50 CTCK120	-M50 CTCP115-P	-M50 CTCP125-P	-M50 CTCP135-P	-TMQ CTCP125-P
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
						
		M	M	M	M	M
		DNMG	DNMG	DNMG	DNMG	DNMG
		70 133 ...	76 136 ...	76 136 ...	76 136 ...	76 197 ...
ANSI	RE inch					
331EN	0.0157		30401	50401	70401	
332EN	0.0315		30601	50601	70601	
333EN	0.0472		30801	50801	70801	
431EN	0.0157		31601	51401	71601	
432EN	0.0315	518	31801	51801	71801	
433EN	0.0472	520	32001	51601	72001	
434EN	0.0630		32201	52201	72201	
441EN	0.0157		32801	52801	72801	
442EN	0.0315	530	33001	53001	73001	53001
443EN	0.0472	532	33201	53201	73201	53201
444EN	0.0630		33401	53401	73401	
P		○	●	●	●	●
M					○	
K		●	○	○		○
N						
S						
H						
O						

DNMG

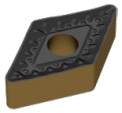
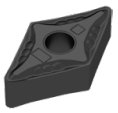
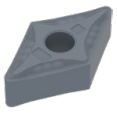
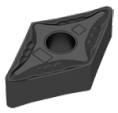
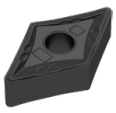
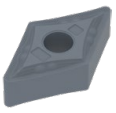
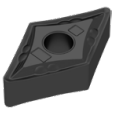
	-M70 CTCK110	-M70 CTCK120	-M70 CTCP115-P	-M70 CTCP125-P	-M70 CTCP135-P
	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
					
	M	M	M	M	M
	DNMG	DNMG	DNMG	DNMG	DNMG
	70 263 ...	70 263 ...	76 263 ...	76 263 ...	76 263 ...
ANSI / RE inch					
332EN 0.0315			30601	50601	70601
333EN 0.0472			30801	50801	70801
432EN 0.0315	018	518	31801	51801	71801
433EN 0.0472	020	520	32001	52001	72001
434EN 0.0630			32201	52201	72201
442EN 0.0315	030	530	33001	53001	73001
443EN 0.0472	032	532	33201	53201	73201
444EN 0.0630	034	534	33401	53401	73401
P	○	○	●	●	●
M					○
K	●	●	○	○	
N					
S					
H					
O					

DNMA / DNMM

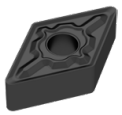
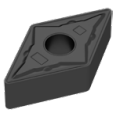
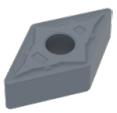
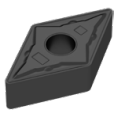
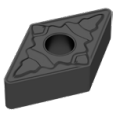
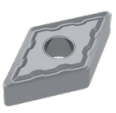
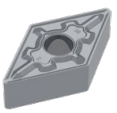
	CTCK110	CTCK120	-R28 CTCP115-P	-R28 CTCP125-P	-R28 CTCP135-P	-R58 CTCP115-P	-R58 CTCP125-P
	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
							
	R	R	R	R	R	R	R
	DNMA	DNMA	DNMM	DNMM	DNMM	DNMM	DNMM
	70 156 ...	70 156 ...	76 165 ...	76 165 ...	76 165 ...	76 166 ...	76 166 ...
ANSI / RE inch							
432EN 0.0315	018	518					
433EN 0.0472	020	520					
442EN 0.0315	030	530					
443EN 0.0472	032	532	33201	53201	73201	33201	53201
444EN 0.0630			33401	53401	73401	33401	53401
P	○	○	●	●	●	●	●
M					○		
K	●	●	○	○		○	○
N							
S							
H							
O							

9

DNMM / DNMG

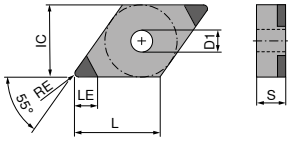
	-R58 CTCP135-P	-F30 CTCM120	-F30 CTPM125	-F30 CTCM130	-M30 CTCM120	-M30 CTPM125	-M30 CTCM130
	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
							
	R	F	F	F	M	M	M
	DNMM	DNMG	DNMG	DNMG	DNMG	DNMG	DNMG
	76 166 ...	75 013 ...	75 013 ...	75 013 ...	75 014 ...	75 014 ...	75 014 ...
ANSI / RE inch							
331EN 0.0157		10400	204	30400			
332EN 0.0315		10600	206	30600	10600	206	30600
333EN 0.0472					10800	208	30800
431EN 0.0157		11600		31600			
432EN 0.0315		11800		31800	11800		31800
433EN 0.0472					12000		32000
441EN 0.0157		12800	228	32800			
442EN 0.0315		13000	230	33000	13000	230	33000
443EN 0.0472	73201				13200	232	33200
444EN 0.0630	73401						
P	●	○	○	○	○	○	○
M	○	●	●	●	●	●	●
K							
N							
S				○			○
H							
O							

DNMG

	-M42 CTCM130	-M60 CTCM120	-M60 CTPM125	NEW -M60 CTCM130	NEW -M70 CTCM130	-M34 CTPX710	NEW -M42 CTPX710
	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
							
	M	M	M	M	M	M	M
	DNMG	DNMG	DNMG	DNMG	DNMG	DNMG	DNMG
	75 027 ...	75 015 ...	75 015 ...	75 015 ...	75 038 ...	75 004 ...	75 027 ...
ANSI / RE inch							
331EN 0.0157	30400						
332EN 0.0315	30600				30600		
431EN 0.0157	31600					61600	
432EN 0.0315	31800	11800		31800		61800	
433EN 0.0472		12000		32000		62000	
441EN 0.0157	32800						
442EN 0.0315	33000	13000	230	33000		63000	63000
443EN 0.0472		13200	232	33200		63200	
P	○	○	○	○	○	●	●
M	●	●	●	●	●	●	●
K							
N						○	○
S	○			○	○	●	●
H							
O							

DNGA

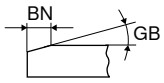
Designation	L inch	S inch	D1 inch	IC inch
DNGA 441E..	0.6102	0.250	0.2032	0.500
DNGA 441S..	0.6102	0.250	0.2032	0.500
DNGA 442E..	0.6102	0.250	0.2032	0.500
DNGA 442S..	0.6102	0.250	0.2032	0.500
DNGA 443E..	0.6102	0.250	0.2032	0.500
DNGA 443S..	0.6102	0.250	0.2032	0.500

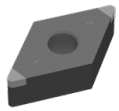
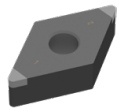
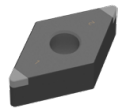


DNGA B

DNGA

▲ TCE(NOI) = Design and number of equipped cutting edge corners



						NEW	NEW	NEW
						CTBH1000C	CTBH2000C	CTBH3000C
								
						F	F	F
						PCBN DNGA	PCBN DNGA	PCBN DNGA
						71 017 ...	71 017 ...	71 017 ...
ANSI	RE inch	BN inch	GB	TCE (NOI)	LE inch			
441EN	0.0157			B (2)	0.1417	70002	80002	
441SN	0.0157	0.0055	20°	B (2)	0.1417			90002
442EN	0.0315			B (2)	0.1299	70302	80302	
442SN	0.0315	0.0055	20°	B (2)	0.1299			90302
443EN	0.0472			B (2)	0.1181	70602	80602	
443SN	0.0472	0.0055	20°	B (2)	0.1181			90602

P			
M			
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N			
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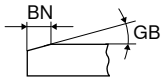
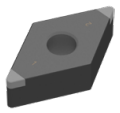
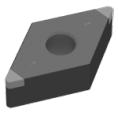
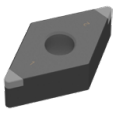
9

→ v_c Page 196–199

DNGA

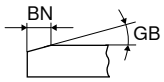
▲ TCE(NOI) = Design and number of equipped cutting edge corners

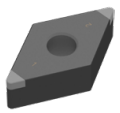
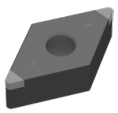
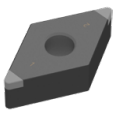


						NEW	NEW	NEW
						CTBH1000C	CTBH2000C	CTBH3000C
								
						M	M	M
						PCBN DNGA	PCBN DNGA	PCBN DNGA
						71 017 ...	71 017 ...	71 017 ...
ANSI	RE inch	BN inch	GB	**TCE (NOI)**	LE inch			
441SN	0.0157	0.0035	15°	**B (2)**	0.1417	**70102**	**80102**	
441SN	0.0157	0.0071	25°	**B (2)**	0.1417			**90102**
442SN	0.0315	0.0035	15°	**B (2)**	0.1299	**70402**	**80402**	
442SN	0.0315	0.0071	25°	**B (2)**	0.1299			**90402**
443SN	0.0472	0.0035	15°	**B (2)**	0.1181	**70702**	**80702**	
443SN	0.0472	0.0071	25°	**B (2)**	0.1181			**90702**
P								
M								
K								
N								
S								
H						●	●	●
O								

DNGA

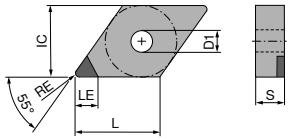
▲ TCE(NOI) = Design and number of equipped cutting edge corners



						NEW	NEW	NEW
						CTBH1000C	CTBH2000C	CTBH3000C
								
						R	R	R
						PCBN DNGA	PCBN DNGA	PCBN DNGA
						71 017 ...	71 017 ...	71 017 ...
ANSI	RE inch	BN inch	GB	**TCE (NOI)**	LE inch			
441SN	0.0157	0.0055	20°	**B (2)**	0.1417	**70202**	**80202**	
441SN	0.0157	0.0079	35°	**B (2)**	0.1417			**90202**
442SN	0.0315	0.0055	20°	**B (2)**	0.1299	**70502**	**80502**	
442SN	0.0315	0.0079	35°	**B (2)**	0.1299			**90502**
443SN	0.0472	0.0055	20°	**B (2)**	0.1181	**70802**	**80802**	
443SN	0.0472	0.0079	35°	**B (2)**	0.1181			**90802**
P								
M								
K								
N								
S								
H						●	●	●
O								

DNGA

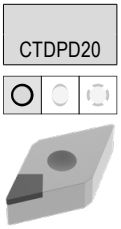
Designation	L inch	S inch	D1 inch	IC inch
DNGA 43..	0.6102	0.1874	0.2032	0.500
DNGA 44..	0.6102	0.250	0.2032	0.500



DNGA A

DNGA

▲ TCE(NOI) = Design and number of equipped cutting edge corners



F
DIAMOND
DNGA
71 128 ...

ANSI	RE inch	TCE (NOI)	LE inch	
441FN	0.0157	**A (1)**	0.2520	**10301**
431FN	0.0157	**A (1)**	0.2520	**10001**
432FN	0.0315	**A (1)**	0.2362	**10101**
433FN	0.0472	**A (1)**	0.2205	**10201**
442FN	0.0315	**A (1)**	0.2362	**10401**
443FN	0.0472	**A (1)**	0.2205	**10501**

P	
M	
K	
N	●
S	
H	
O	●

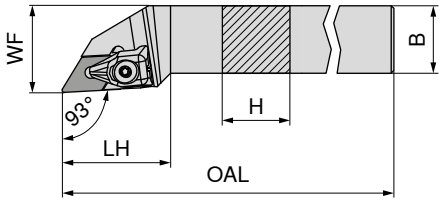
9

MaxiLock-D – DDJN 93° – Toolholder with top clamping

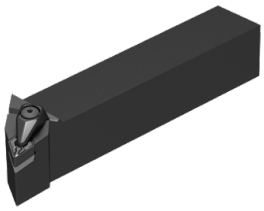
▲ ...A-N = with thru coolant
▲ ...N = without thru' coolant

Scope of supply:
Tool holder with allen key





Illustrations show right-hand versions



Designation	H inch	B inch	OAL inch	LH inch	WF inch	Insert	Left-hand 78 503 ...	Right-hand 78 502 ...
DDJN R/L 12-4BA-N	0.750	0.750	4.500	1.535	1.000	DN..43..	**01294**	**01294**
DDJN R/L 12-4B-N	0.750	0.750	4.500	1.535	1.000	DN..43..	**01293**	**01293**
DDJN R/L 16-4D-N	1.000	1.000	6.000	1.535	1.250	DN..43..	**01689**	**01689**
DDJN R/L 16-4DA-N	1.000	1.000	6.000	1.535	1.250	DN..43..	**01692**	**01692**
DDJN R/L 20-4D-N	1.250	1.250	6.000	1.535	1.500	DN..43..	**02089**	**02089**
DDJN R/L 20-4DA-N	1.250	1.250	6.000	1.535	1.500	DN..43..	**02092**	**02092**
DDJN R/L 24-4E-N	1.500	1.500	7.000	1.535	2.000	DN..43..	**02486**[1)]	**02486**[1)]
DDJN R/L 24-4EA-N	1.500	1.500	7.000	1.535	2.000	DN..43..	**02488**[1)]	**02488**[1)]

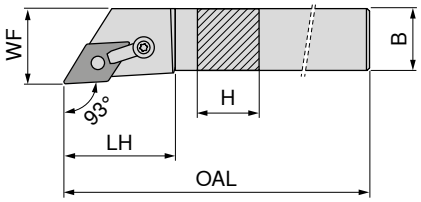
1) Not in stock

Spare parts for Article no.	 Clamping claw 78 950 ...	 Key I 78 950 ...	 Clamping screw 78 950 ...	 Solid Carbide Seat D 78 950 ...	 Threaded bush 78 950 ...	 Spring 78 950 ...
78 502 01293 / 78 503 01293	**07600**	**08100**	**08300**	**06700**	**08500**	**04900**
78 502 01689 / 78 503 01689	**07600**	**08100**	**08300**	**06700**	**08500**	**04900**
78 502 01692 / 78 503 01692	**07600**	**08100**	**08300**	**06700**	**08500**	**04900**
78 502 02089 / 78 503 02089	**07600**	**08100**	**08300**	**06700**	**08500**	**04900**
78 502 02092 / 78 503 02092	**07600**	**08100**	**08300**	**06700**	**08500**	**04900**
78 502 02486 / 78 503 02486	**07600**	**08100**	**08300**	**06700**	**08500**	**04900**
78 502 02488 / 78 503 02488	**07600**	**08100**	**08300**	**06700**	**08500**	**04900**

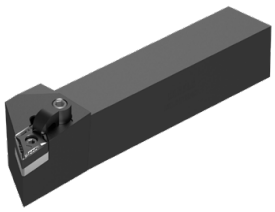
MaxiLock-M – MDJN 93° – Toolholder with top clamping

Scope of supply:
Tool holder with allen key





Illustrations show right-hand versions



Designation	H inch	B inch	OAL inch	LH inch	WF inch	Insert	Left-hand 78 527 ...	Right-hand 78 526 ...
MDJN R/L 08-3A	0.500	0.500	4.000	1.060	0.625	DN..33..	**00813**[1)]	**00813**[1)]
MDJN R/L 10-3B	0.625	0.625	4.500	1.250	0.875	DN..33..	**01023**[1)]	**01023**[1)]
MDJN R/L 12-4B	0.750	0.750	4.500	1.500	1.000	DN..43..	**01224**[1)]	**01224**[1)]
MDJN R/L 16-4D	1.000	1.000	6.000	1.500	1.250	DN..43..	**01644**[1)]	**01644**[1)]
MDJN R/L 20-4D	1.250	1.250	6.000	1.500	1.500	DN..43..	**02044**[1)]	**02044**[1)]
MDJN R/L 85-4D	1.250	1.000	6.000	1.500	1.250	DN..43..	**08544**[1)]	**08544**[1)]
MDJN R/L 24-4D	1.500	1.500	6.000	1.500	2.000	DN..43..	**02444**[1)]	**02444**[1)]

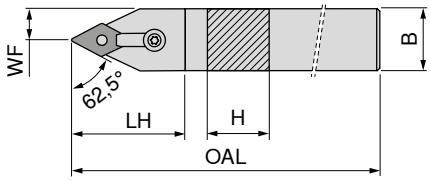
1) Not in stock

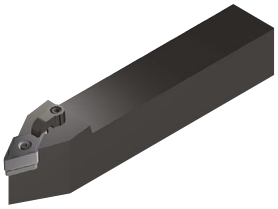
Spare parts for Article no.	 Clamp 78 950 ...	 Key I 78 950 ...	 Dowel pin 78 950 ...	 Clamping screw 78 950 ...	 Solid Carbide Seat D 78 950 ...
78 526 00813 / 78 527 00813	**00700**	**06800**		**03600**	
78 526 01023 / 78 527 01023	**00700**	**06800**		**03600**	
78 526 01224 / 78 527 01224	**00400**	**06900**	**03100**	**03800**	**04200**
78 526 01644 / 78 527 01644	**00400**	**06900**	**03100**	**03800**	**04200**
78 526 02044 / 78 527 02044	**00400**	**06900**	**03100**	**03800**	**04200**
78 526 08544 / 78 527 08544	**00400**	**06900**	**03100**	**03800**	**04200**
78 526 02444 / 78 527 02444	**00400**	**06900**	**03100**	**03800**	**04200**

MaxiLock-M – MDPN 62.5° – Toolholder with top clamping

Scope of supply:
Tool holder with allen key







Designation	H inch	B inch	OAL inch	LH inch	WF inch	Insert	Neutral 78 576 ...
MDPN N 12-4B	0.750	0.750	4.500	1.620	0.375	DN..43..	**01224**[1)]
MDPN N 16-4D	1.000	1.000	6.000	1.620	0.500	DN..43..	**01644**[1)]
MDPN N 20-4D	1.250	1.250	6.000	1.620	0.625	DN..43..	**02044**[1)]

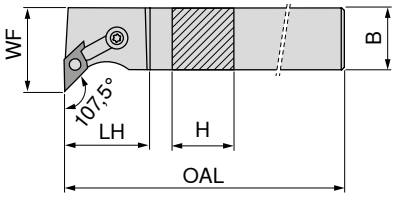
1) Not in stock

Spare parts for Article no.	Clamp 78 950 ...	Key I 78 950 ...	Dowel pin 78 950 ...	Clamping screw 78 950 ...	Solid Carbide Seat D 78 950 ...
78 576 01224	**09000**	**06900**	**03100**	**03800**	**04200**
78 576 01644	**09000**	**06900**	**03100**	**03800**	**04200**
78 576 02044	**09000**	**06900**	**03100**	**03800**	**04200**

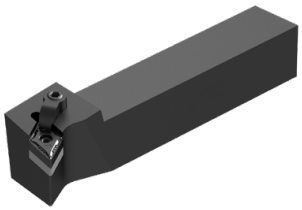
MaxiLock-M – MDQN 107.5° – Toolholder with top clamping

Scope of supply:
Tool holder with allen key





Illustrations show right-hand versions



Designation	H inch	B inch	OAL inch	LH inch	WF inch	Insert	Left-hand 78 529 ...	Right-hand 78 528 ...
MDQN R/L 12-4B	0.750	0.750	4.500	1.370	1.000	DN..43..	**01293**[1)]	**01293**[1)]
MDQN R/L 16-4D	1.000	1.000	6.000	1.370	1.250	DN..43..	**01689**[1)]	**01689**[1)]
MDQN R/L 20-4D	1.250	1.250	6.000	1.370	1.500	DN..43..	**02089**[1)]	**02089**[1)]
MDQN R/L 24-4E	1.500	1.500	7.000	1.370	2.000	DN..43..	**02486**[1)]	**02486**[1)]

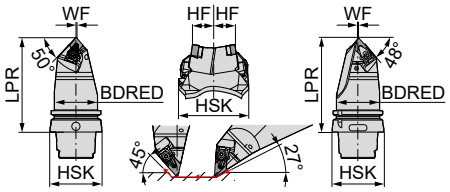
1) Not in stock

Spare parts for Article no.	Clamp 78 950 ...	Key I 78 950 ...	Dowel pin 78 950 ...	Clamping screw 78 950 ...	Solid Carbide Seat D 78 950 ...
78 528 01293 / 78 529 01293	**00400**	**06900**	**03100**	**03800**	**04200**
78 528 01689 / 78 529 01689	**00400**	**06900**	**03100**	**03800**	**04200**
78 528 02089 / 78 529 02089	**00400**	**06900**	**03100**	**03800**	**04200**
78 528 02486 / 78 529 02486	**00400**	**06900**	**03100**	**03800**	**04200**

MaxiLock-D – DCMN + DDMN – Toolholder with top clamping

Scope of supply:
Tool holder with Torx key





Designation	Adapter	LPR mm	BDRED mm	WF mm	HF mm	torque moment Nm	Insert	Neutral 74 600 ...
HSK T63 DCMN L 12 + DDMN L 15	HSK-T 63	115	53	0.5	20	4	CN.. 1204 / DN.. 1506	**501**
HSK T100 DCMN L 12 + DDMN L 15	HSK-T 100	150	88	0.5	20	4	CN.. 1204 / DN.. 1506	**701**

Face turning maximum 78 mm

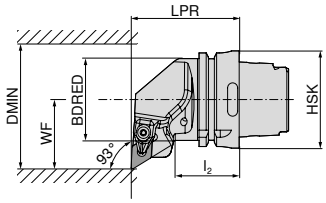
Spare parts	XPress type 70 950 ...		Screwdriver 80 950 ...		Clamping screw 70 950 ...		Solid Carbide Seat D 70 950 ...		Carbide type C 70 950 ...	
74 600 501 / 74 600 701		**824**	T15 - IP	**128**	M4.5x12 - IP	**820**		**811**		**810**

9

MaxiLock-D – DDUN 93° – Toolholder with top clamping

Scope of supply:
Tool holder with Torx key



Illustrations show right-hand versions



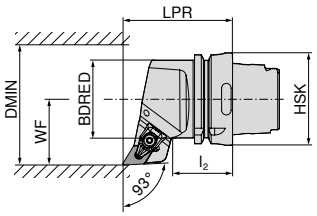
Designation	Adapter	LPR mm	l_2 mm	BDRED mm	WF mm	DMIN mm	torque moment Nm	Insert	Left-hand 74 516 ...	Right-hand 74 515 ...
HSK T63 DDUN R/L 15	HSK-T 63	70	42	53	45	125	4	DN.. 1506	**515**	**515**
HSK T100 DDUN R/L 15	HSK-T 100	80	45	88	55	125	4	DN.. 1506	**715**	**715**

Spare parts	XPress type 70 950 ...		Screwdriver 80 950 ...		Clamping screw 70 950 ...		Solid Carbide Seat D 70 950 ...	
74 516 515 / 74 515 715		**824**	T15 - IP	**128**	M4.5x12 - IP	**820**		**811**

MaxiLock-D – DDJN 93° – Toolholder with top clamping

Scope of supply:
Tool holder with Torx key



Illustrations show right-hand versions



									Left-hand	Right-hand
									74 512 ...	**74 511 ...**
Designation	Adapter	LPR mm	l_2 mm	BDRED mm	WF mm	DMIN mm	torque moment Nm	Insert		
HSK T63 DDJN R/L 15	HSK-T 63	75	42	53	45	125	4	DN.. 1506	**515**	**515**
HSK T100 DDJN R/L 15	HSK-T 100	85	45	88	55	125	4	DN.. 1506	**715**	**715**


XPress type
70 950 ...

Screwdriver
80 950 ...


Clamping screw
70 950 ...


Solid Carbide Seat D
70 950 ...

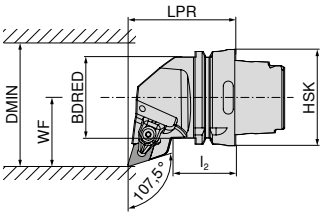
Spare parts

74 512 515 / 74 511 715	**824**	T15 - IP	**128**	M4.5x12 - IP	**820**	**811**

MaxiLock-D – DDHN 107.5° – Toolholder with top clamping

Scope of supply:
Tool holder with Torx key



Illustrations show right-hand versions



									Left-hand	Right-hand
									74 508 ...	**74 507 ...**
Designation	Adapter	LPR mm	l_2 mm	BDRED mm	WF mm	DMIN mm	torque moment Nm	Insert		
HSK T63 DDHN R/L 15	HSK-T 63	70	42	53	45	125	4	DN.. 1506	**515**	**515**


XPress type
70 950 ...

Screwdriver
80 950 ...


Clamping screw
70 950 ...


Solid Carbide Seat D
70 950 ...

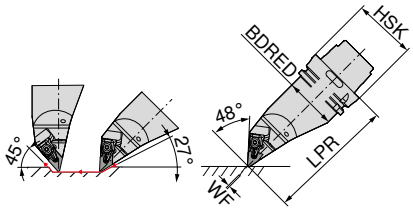
Spare parts

74 508 515 / 74 507 515	**824**	T15 - IP	**128**	M4.5x12 - IP	**820**	**811**

MaxiLock-D – DDMN 48° – Toolholder with top clamping

Scope of supply:
Tool holder with Torx key





Designation	Adapter	LPR mm	BDRED mm	WF mm	torque moment Nm	Insert	Left-hand 74 519 ...
HSK T63 DDMN L 15	HSK-T 63	130	53	0	4	DN.. 1506	**515**
HSK T100 DDMN L 15	HSK-T 100	160	88	0	4	DN.. 1506	**715**

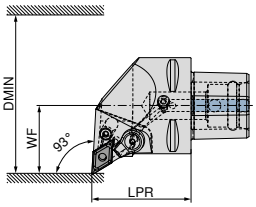
Spare parts

	 XPress type	 Screwdriver	 Clamping screw	 Solid Carbide Seat D
	70 950 ...	**80 950 ...**	**70 950 ...**	**70 950 ...**
74 519 515 / 74 519 715	**824**	**128**	**820**	**811**

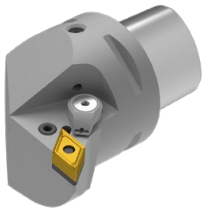
MaxiLock-N – PDUN 93° – Toolholder with lever clamping

Scope of supply:
without high-performance coolant set



Illustrations show right-hand versions



Designation	Adapter	LPR mm	WF mm	DMIN mm	torque moment Nm	Insert	Direct cooling compatible	Left-hand 84 661 ...	Right-hand 84 660 ...
PSC40 PDUN R/L 50050-15	PSC 40	50	27	50	5	DN.. 1504 / 1506	DC	**01595**	**01595**
PSC50 PDUN R/L 65060-15	PSC 50	60	35	65	5	DN.. 1504 / 1506	DC	**01594**	**01594**
PSC63 PDUN R/L 80065-15	PSC 63	65	45	80	5	DN.. 1504 / 1506	DC	**01593**	**01593**

Spare parts

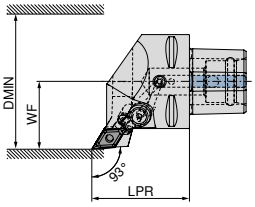
	 Shim		 Elbow lever screw	 Lever	 Solid Carbide Seat D
	84 950 ...		**84 950 ...**	**84 950 ...**	**84 950 ...**
84 660 01593 / 84 661 01595	**29200**	M8X1/L17 SW3	**28700**	**28900**	**27900**

The high-performance coolant set with article number **84 950 27400** can be ordered as an optional extra → **Page 46.**
When using DN1504.. inserts Shim item no. **84 950 28200**

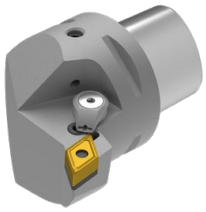
MaxiLock-N – PDJN 93° – Toolholder with lever clamping

Scope of supply:
without high-performance coolant set



Illustrations show right-hand versions



Designation	Adapter	LPR mm	WF mm	DMIN mm	torque moment Nm	Insert	Direct cooling compatible	Left-hand 84 665 ...	Right-hand 84 664 ...
PSC40 PDJN R/L 50050-15	PSC 40	50	27	50	5	DN.. 1504 / 1506	DC	**01595**	**01595**
PSC50 PDJN R/L 65060-15	PSC 50	60	35	65	5	DN.. 1504 / 1506	DC	**01594**	**01594**
PSC63 PDJN R/L 80065-15	PSC 63	65	45	80	5	DN.. 1504 / 1506	DC	**01593**	**01593**


Shim
84 950 ...


Elbow lever screw
84 950 ...


Lever
84 950 ...

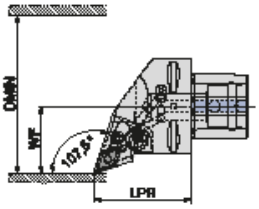

Solid Carbide Seat D
84 950 ...

Spare parts Adapter						
PSC 40	**29200**	M8X1/L17 SW3	**28700**	**28900**	**27900**
PSC 50	**29200**	M8X1/L17 SW3	**28700**	**28900**	**27900**
PSC 63	**29200**	M8X1/L17 SW3	**28700**	**28900**	**27900**

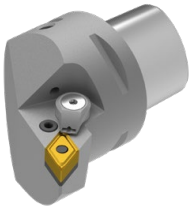
MaxiLock-N – PDHN 107.5° – Toolholder with lever clamping

Scope of supply:
without high-performance coolant set



Illustrations show right-hand versions



Designation	Adapter	LPR mm	WF mm	DMIN mm	torque moment Nm	Insert	Direct cooling compatible	Left-hand 84 669 ...	Right-hand 84 668 ...
PSC40 PDHN R/L 50050-15	PSC 40	50	27	50	5	DN.. 1504 / 1506	DC	**01595**	**01595**
PSC50 PDHN R/L 65060-15	PSC 50	60	35	65	5	DN.. 1504 / 1506	DC	**01594**	**01594**
PSC63 PDHN R/L 80065-15	PSC 63	65	45	80	5	DN.. 1504 / 1506	DC	**01593**	**01593**


Shim
84 950 ...


Elbow lever screw
84 950 ...


Lever
84 950 ...


Solid Carbide Seat D
84 950 ...

Spare parts				
84 668 01593 / 84 669 01595	**29200**	**28700**	**28900**	**27900**

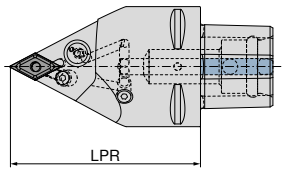
The high-performance coolant set with article number **84 950 27400** can be ordered as an optional extra → **Page 46.**

When using DN1504.. inserts Shim item no. **84 950 28200**

MaxiLock-N – PDNN 62.5° – Toolholder with lever clamping

Scope of supply:
without high-performance coolant set





Neutral
84 676 ...

Designation	Adapter	LPR mm	torque moment Nm	Insert	Direct cooling compatible	
PSC63 PDNN N 0100-15	PSC 63	100	5	DN.. 1504 / 1506	DC	**01593**
PSC63 PDNN N 0130-15	PSC 63	130	5	DN.. 1504 / 1506	DC	**11593**

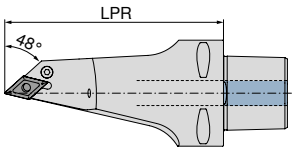
Spare parts

	 Shim	 Elbow lever screw	 Lever	 Solid Carbide Seat D
	84 950 ...	**84 950 ...**	**84 950 ...**	**84 950 ...**
84 676 01593 / 84 676 11593	**29200**	**28700**	**28900**	**27900**

MaxiLock-N – PDMN 48° – Toolholder with lever clamping

Scope of supply:
without high-performance coolant set





Neutral
84 680 ...

Designation	Adapter	LPR mm	torque moment Nm	Insert	Direct cooling compatible	
PSC63 PDMN L 0130-15	PSC 63	130	5	DN.. 1504 / 1506	DC	**11593**

Spare parts

	 Shim	 Elbow lever screw	 Lever	 Solid Carbide Seat D
	84 950 ...	**84 950 ...**	**84 950 ...**	**84 950 ...**
84 680 11593	**29200**	**28700**	**28900**	**27900**

The high-performance coolant set with article number **84 950 27400** can be ordered as an optional extra → **Page 46.**

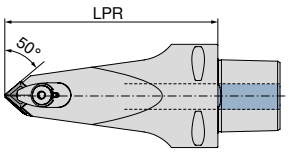
When using DN1504.. inserts Shim item no. **84 950 28200**

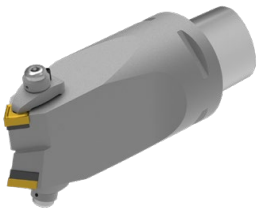
9

MaxiLock-D – DCMN + DDMN 50°/48° – Toolholder with top clamping









Designation	Adapter	LPR mm	torque moment Nm	Insert	Neutral 84 683 ...
PSC63 DCMN-DDMN L 0130-12/15	PSC 63	130	10	CN.. 1204 / DN.. 1506	**01293**

Spare parts	Clamping Screw 84 950 ...	Clamping claw 84 950 ...	Ring-shaped nozzle 84 950 ...	Clamping screw 84 950 ...	Solid Carbide Seat D 84 950 ...	Carbide type C 84 950 ...
84 683 01293	**28300**	**28500**	**28400**	**27500**	**27900**	**27800**

High-performance coolant set

- ▲ Using the DC kit blocks the other coolant outlet so that all of the pressure is concentrated by the kit!
- ▲ Can be used up to 100 bar

Scope of supply:
Direct cooling nozzle and O-ring



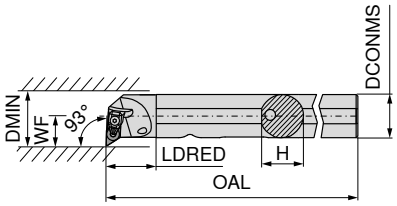
	84 950 ...
Coolant set	**27400**

MaxiLock-D – DDUN 93° – Boring bar with top clamping

▲ A... = with thru coolant
▲ S... = without thru coolant

Scope of supply:
Tool holder with allen key





Illustrations show right-hand versions



								Left-hand	Right-hand
								78 703 ...	78 702 ...
Designation	DCONMS inch	H inch	OAL inch	LDRED inch	WF inch	DMIN inch	Insert		
S20U DDUN R/L 4N	1.250	1.118	14.000	1.771	0.765	1.530	DN..43..	**42030**[1)]	**42030**[1)]
S24U DDUN R/L 4N	1.500	1.370	14.000	1.968	0.890	1.780	DN..43..	**42434**[1)]	**42434**[1)]

1) Not in stock

	 Clamping claw	 Key I	 Clamping screw	 Solid Carbide Seat D	 Threaded bush	 Spring
	78 950 ...	**78 950 ...**	**78 950 ...**	**78 950 ...**	**78 950 ...**	**78 950 ...**
Spare parts for Article no.						
78 702 42030 / 78 703 42030	**07600**	**08100**	**08300**	**04200**	**08500**	**04900**
78 702 42434 / 78 703 42434	**07600**	**08100**	**08300**	**04200**	**08500**	**04900**

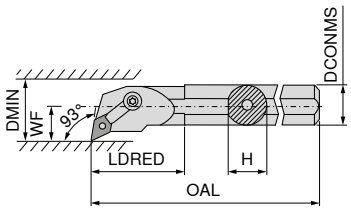
9

MaxiLock-M – MDUL 93° – Boring bar with top clamping

▲ A... = with thru coolant
▲ S... = without thru coolant

Scope of supply:
Tool holder with allen key





Illustrations show right-hand versions



Designation	DCONMS inch	H inch	OAL inch	LDRED inch	WF inch	DMIN inch	Insert	Left-hand 78 707 ...	Right-hand 78 706 ...
S16T MDUN R/L 4	1.000	0.900	12.000	2.500	0.875	1.750	DN..43..	**41626**[1)]	**41626**[1)]
A16T MDUN R/L 4	1.000	0.900	12.000	2.500	0.875	1.750	DN..43..	**41616**	**41616**
S20U MDUN R/L 4	1.250	1.118	14.000	3.000	1.000	2.000	DN..43..	**42030**[1)]	**42030**[1)]
A20U MDUN R/L 4	1.250	1.118	14.000	3.000	1.000	2.000	DN..43..	**42020**[1)]	**42020**[1)]
S24U MDUN R/L 4	1.500	1.370	14.000	3.000	1.125	2.250	DN..43..	**42434**[1)]	**42434**[1)]
A24U MDUN R/L 4	1.500	1.370	14.000	3.000	1.125	2.250	DN..43..	**42424**	**42424**
S32V MDUN R/L 4	2.000	1.870	16.000	4.000	1.375	3.000	DN..43..	**43242**[1)]	**43242**[1)]
A32V MDUN R/L 4	2.000	1.870	16.000	4.000	1.375	3.000	DN..43..	**43233**[1)]	**43233**[1)]

1) Not in stock

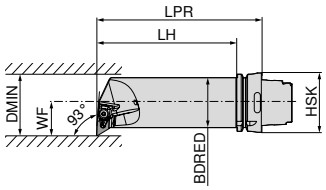
Spare parts for Article no.	 Clamp 78 950 ...	 Key I 78 950 ...	 Dowel pin 78 950 ...	 Clamping screw 78 950 ...	 Solid Carbide Seat D 78 950 ...
78 706 41626 / 78 707 41626	**00400**	**06900**	**03000**	**03700**	
78 706 41616 / 78 707 41616	**00400**	**06900**	**03000**	**03700**	
78 706 42030 / 78 707 42030	**00400**	**06900**	**03100**	**03800**	**04200**
78 706 42020 / 78 707 42020	**00400**	**06900**	**03100**	**03800**	**04200**
78 706 42434 / 78 707 42434	**00400**	**06900**	**03100**	**03800**	**04200**
78 706 42424 / 78 707 42424	**00400**	**06900**	**03100**	**03800**	**04200**
78 706 43242 / 78 707 43242	**00400**	**06900**	**03100**	**03800**	**04200**
78 706 43233 / 78 707 43233	**00400**	**06900**	**03100**	**03800**	**04200**

MaxiLock-D – DDUN 93° – Boring bar with top clamping

Scope of supply:
Boring bar with Torx key







Illustrations show right-hand versions

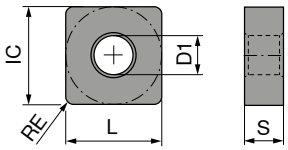


Designation	Adapter	LPR mm	LH mm	BDRED mm	WF mm	DMIN mm	torque moment Nm	Insert	Left-hand 74 533 ...	Right-hand 74 532 ...
HSK T63 50Q DDUN R/L 15	HSK-T 63	175	149	50	35	63	4	DN.. 1506	**515**	**515**

Spare parts	 XPress type 70 950 ...	 Screwdriver 80 950 ...	 Clamping screw 70 950 ...	 Solid Carbide Seat D 70 950 ...
74 533 515 / 74 532 515	**824** T15 - IP	**128**	M4.5x12 - IP **820**	**811**

SNMG / SNMA / SNMM

Designation	L inch	S inch	D1 inch	IC inch
SNMG 32..	0.3748	0.1252	0.1500	0.3748
SNM. 43..	0.5000	0.1874	0.2032	0.5000
SNM. 54..	0.6248	0.250	0.2500	0.6248
SNM. 64..	0.7500	0.250	0.3126	0.7500
SNMM 85..	1.0000	0.3126	0.3591	1.0000
SNMM 86..	1.0000	0.3748	0.3591	1.0000



SNMG

		NEW	NEW	NEW	NEW	NEW	NEW
		-F50 CTCP115-P	**-F50** CTCP125-P	**-F50** CTCP135-P	**-M50** CTCP115-P	**-M50** CTCP125-P	**-M50** CTCP135-P
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
							
		F	**F**	**F**	**M**	**M**	**M**
		SNMG	SNMG	SNMG	SNMG	SNMG	SNMG
		76 140 ...	**76 140 ...**	**76 140 ...**	**76 137 ...**	**76 137 ...**	**76 137 ...**
ANSI	RE inch						
322EN	0.0315	**30601**	**50601**	**70601**			
431EN	0.0157	**31601**	**51601**	**71601**			
432EN	0.0315	**31801**	**51801**	**71801**	**31801**	**51801**	**71801**
433EN	0.0472	**32001**	**52001**	**72001**	**32001**	**52001**	**72001**
434EN	0.0630				**32201**	**52201**	**72201**
542EN	0.0315				**33001**	**53001**	**73001**
543EN	0.0472				**33201**	**53201**	**73201**
544EN	0.0630				**33401**	**53401**	**73401**
P		●	●	●	●	●	●
M				○			○
K		○	○		○	○	
N							
S							
H							
O							

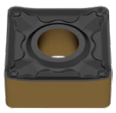
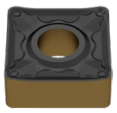
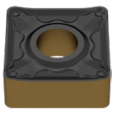
9

SNMG / SNMA

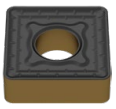
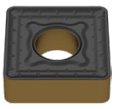
			NEW	NEW	NEW		
		-M70 CTCK110	-M70 CTCP115-P	-M70 CTCP125-P	-M70 CTCP135-P	-M70 CTCK120	CTCK110
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
							
		M	M	M	M	M	R
		SNMG	SNMG	SNMG	SNMG	SNMG	SNMA
		70 225 ...	76 225 ...	76 225 ...	76 225 ...	70 225 ...	70 114 ...
ANSI	RE inch						
432EN	0.0315	018	31801	51801	71801	518	018
433EN	0.0472	020	32001	52001	72001	520	020
434EN	0.0630	022	32201	52201	72201	522	022
543EN	0.0472	032	33201	53201	73201	532	032
544EN	0.0630	034	33401	53401	73401	534	034
643EN	0.0472	044	34401	54401	74401	544	044
644EN	0.0630	046	34601	54601	74601	546	046
646EN	0.0945		34801	54801	74801		
P		○	●	●	●	○	○
M					○		
K		●	○	○		●	●
N							
S							
H							
O							

→ v_c Page 192–211

SNMA / SNMM

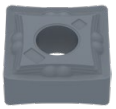
			NEW	NEW	NEW	NEW	NEW	NEW
		CTCK120	-R28 CTCP115-P	-R28 CTCP125-P	-R28 CTCP135-P	-R58 CTCP115-P	-R58 CTCP125-P	-R58 CTCP135-P
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
								
		R	R	R	R	R	R	R
		SNMA	SNMM	SNMM	SNMM	SNMM	SNMM	SNMM
		70 114 ...	76 128 ...	76 128 ...	76 128 ...	76 129 ...	76 129 ...	76 129 ...
ANSI	RE inch							
432EN	0.0315	518				31801	51801	71801
433EN	0.0472	520				32001	52001	72001
434EN	0.0630	522						
543EN	0.0472	532	33201	53201	73201	33201	53201	73201
544EN	0.0630	534	33401	53401	73401	33401	53401	73401
643EN	0.0472	544				34401	54401	74401
644EN	0.0630	546	34601	54601	74601	34601	54601	74601
646EN	0.0945					34801	54801	74801
856EN	0.0945				76001	36001	56001	76001
866EN	0.0945		37001	57001	77001	37001	57001	77001
P		○	●	●	●	●	●	●
M					○			○
K		●	○	○		○	○	
N								
S								
H								
O								

SNMM

		NEW	NEW	NEW
		-R88 CTCP115-P	-R88 CTCP125-P	-R88 CTCP135-P
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
				
		R	R	R
		SNMM	SNMM	SNMM
		76 130 ...	76 130 ...	76 130 ...
ANSI	RE inch			
644SN	0.0630	34601	54601	74601
646SN	0.0945	34801	54801	74801
856SN	0.0945	36001	56001	76001
866SN	0.0945	37001	57001	77001
P		●	●	●
M				○
K		○	○	
N				
S				
H				
O				

9

SNMG

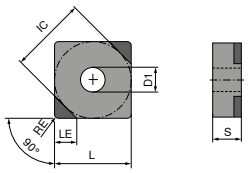
	-F30 CTCM120	-F30 CTPM125	-F30 CTCM130	-M30 CTCM120	-M30 CTPM125	-M30 CTCM130
	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
						
	F	F	F	M	M	M
	SNMG	SNMG	SNMG	SNMG	SNMG	SNMG
	75 016 ...	75 016 ...	75 016 ...	75 017 ...	75 017 ...	75 017 ...
ANSI RE inch						
431EN 0.0157	11600	216	31600			
432EN 0.0315	11800	218	31800	11800	218	31800
433EN 0.0472				12000		32000
P	○	○	○	○	○	○
M	●	●	●	●	●	●
K						
N						
S			○			○
H						
O						

SNMG

	NEW				NEW	
	-M42 CTCM130	-M60 CTCM120	-M60 CTPM125	-M60 CTCM130	-M70 CTCM130	-M34 CTPX710
	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
						
	M	M	M	M	M	M
	SNMG	SNMG	SNMG	SNMG	SNMG	SNMG
	75 034 ...	75 018 ...	75 018 ...	75 018 ...	75 039 ...	75 005 ...
ANSI RE inch						
432EN 0.0315	31800	11800	218	31800	31800	61800
433EN 0.0472	32000	12000	210	32000	32000	62000
434EN 0.0630		12200	220	32200		
644EN 0.0630					34600	
P	○	○	○	○	○	●
M	●	●	●	●	●	●
K						
N						○
S	○			○	○	●
H						
O						

SNGA

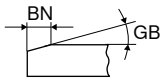
Designation	L inch	S inch	D1 inch	IC inch
SNGA 432E..	0.500	0.1874	0.2032	0.500
SNGA 432S..	0.500	0.1874	0.2032	0.500
SNGA 433E..	0.500	0.1874	0.2032	0.500
SNGA 433S..	0.500	0.1874	0.2032	0.500

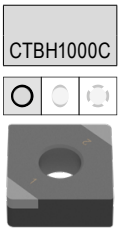


SNGA B

SNGA

▲ TCE(NOI) = Design and number of equipped cutting edge corners



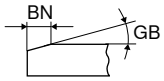
	NEW	NEW	NEW
	CTBH1000C	CTBH2000C	CTBH3000C
			
	F	F	F
	PCBN SNGA	PCBN SNGA	PCBN SNGA
	71 039 ...	71 039 ...	71 039 ...

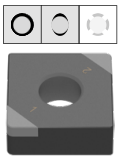
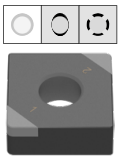
ANSI	RE inch	BN inch	GB	TCE (NOI)	LE inch					
432EN	0.0315			**B (2)**	0.1496		**70002**		**80002**	
432SN	0.0315	0.0055	20°	**B (2)**	0.1496					**90002**
433EN	0.0472			**B (2)**	0.1496		**70302**		**80302**	
433SN	0.0472	0.0055	20°	**B (2)**	0.1496					**90302**
P										
M										
K										
N										
S										
H							●		●	●
O										

9

SNGA

▲ TCE(NOI) = Design and number of equipped cutting edge corners

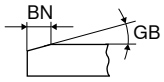


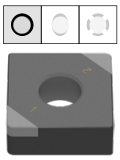
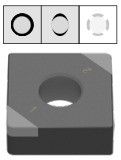
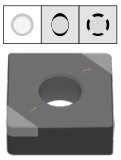
	NEW	NEW	NEW
	CTBH1000C	CTBH2000C	CTBH3000C
			
	M	M	M
	PCBN SNGA	PCBN SNGA	PCBN SNGA
	71 039 ...	71 039 ...	71 039 ...

ANSI	RE inch	BN inch	GB	TCE (NOI)	LE inch			
432SN	0.0315	0.0035	15°	B (2)	0.1496	70102	80102	
432SN	0.0315	0.0071	25°	B (2)	0.1496			90102
433SN	0.0472	0.0035	15°	B (2)	0.1496	70402	80402	
433SN	0.0472	0.0071	25°	B (2)	0.1496			90402
P								
M								
K								
N								
S								
H						●	●	●
O								

SNGA

▲ TCE(NOI) = Design and number of equipped cutting edge corners



	NEW	NEW	NEW
	CTBH1000C	CTBH2000C	CTBH3000C
			
	R	R	R
	PCBN SNGA	PCBN SNGA	PCBN SNGA
	71 039 ...	71 039 ...	71 039 ...

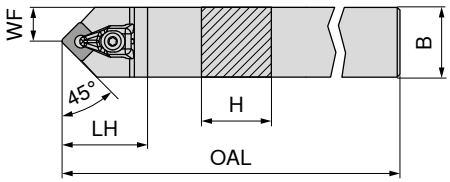
ANSI	RE inch	BN inch	GB	TCE (NOI)	LE inch			
432SN	0.0315	0.0055	20°	B (2)	0.1496	70202	80202	
432SN	0.0315	0.0079	35°	B (2)	0.1496			90202
433SN	0.0472	0.0055	20°	B (2)	0.1496	70502	80502	
433SN	0.0472	0.0079	35°	B (2)	0.1496			90502
P								
M								
K								
N								
S								
H						●	●	●
O								

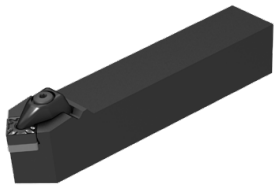
MaxiLock-D – DSDN 45° – Toolholder with top clamping

▲ ...A-N = with thru coolant
▲ ...N = without thru' coolant

Scope of supply:
Tool holder with allen key







Designation	H inch	B inch	OAL inch	LH inch	WF inch	Insert	Neutral 78 574 ...
DSDN N 12-4BA-N	0.750	0.750	4.500	1.380	0.375	SN..43..	**01224**[1]
DSDN N 16-4DA-N	1.000	1.000	6.000	1.457	0.500	SN..43..	**01690**
DSDN N 20-5DA-N	1.250	1.250	6.000	1.535	0.625	SN..54..	**02085**
DSDN N 20-6DA-N	1.250	1.250	6.000	1.535	0.625	SN..64..	**02081**[1]
DSDN N 24-6EA-N	1.500	1.500	7.000	1.650	0.750	SN..64..	**02479**[1]

1) Not in stock


Clamping claw


Key I


Clamping screw


Solid Carbide support S


Threaded bush


Spring

Spare parts for Article no.	Clamping claw 78 950 ...	Key I 78 950 ...	Clamping screw 78 950 ...	Solid Carbide support S 78 950 ...	Threaded bush 78 950 ...	Spring 78 950 ...
78 574 01224	**07600**	**08100**	**08300**		**08500**	**04900**
78 574 02081	**07800**	**08100**	**08300**	**01700**	**08700**	**04900**
78 574 02479	**07800**	**08100**	**08300**	**01700**	**08700**	**04900**

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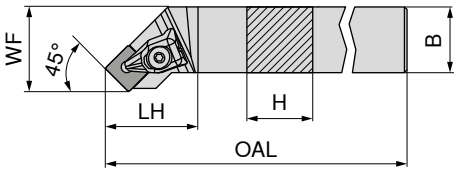
MaxiLock-D – DSSN 45° – Toolholder with top clamping

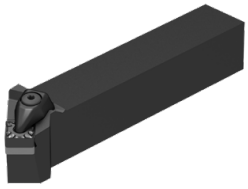
▲ ...A-N = with thru coolant
▲ ...N = without thru' coolant

Scope of supply:
Tool holder with allen key





Illustrations show right-hand versions



Designation	H inch	B inch	OAL inch	LH inch	WF inch	Insert	Left-hand 78 507 ...	Right-hand 78 506 ...
DSSN R/L 12-4B-N	0.750	0.750	4.500	1.457	1.000	SN..43..	**01293**[1]	**01293**[1]
DSSN R/L 16-4D-N	1.000	1.000	6.000	1.457	1.250	SN..43..	**01689**[1]	**01689**[1]
DSSN R/L 20-4D-N	1.250	1.250	6.000	1.457	1.500	SN..43..	**02089**[1]	**02089**[1]
DSSN R/L 20-6D-N	1.250	1.250	6.000	1.772	1.500	SN..64..	**02080**[1]	**02080**[1]
DSSN R/L 24-6E-N	1.500	1.500	7.000	1.772	2.000	SN..64..	**02477**[1]	**02477**[1]

1) Not in stock


Clamping claw


Key I


Clamping screw


Solid Carbide support S


Threaded bush


Spring

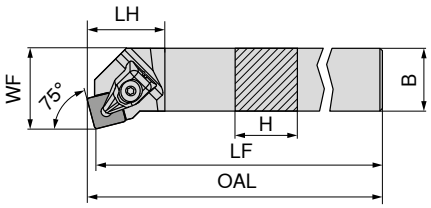
Spare parts for Article no.	Clamping claw 78 950 ...	Key I 78 950 ...	Clamping screw 78 950 ...	Solid Carbide support S 78 950 ...	Threaded bush 78 950 ...	Spring 78 950 ...
78 506 01293 / 78 507 01293	**07600**	**08100**	**08300**		**08500**	**04900**
78 506 01689 / 78 507 01689	**07600**	**08100**	**08300**		**08500**	**04900**
78 506 02089 / 78 507 02089	**07600**	**08100**	**08300**		**08500**	**04900**
78 506 02080 / 78 507 02080	**07800**	**08100**	**08300**	**01700**	**08700**	**04900**
78 506 02477 / 78 507 02477	**07800**	**08100**	**08300**	**01700**	**08700**	**04900**

MaxiLock-D – DSRN 75° – Toolholder with top clamping

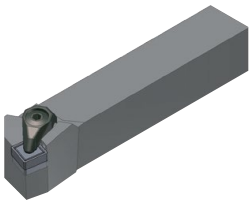
▲ ...A-N = with thru coolant
▲ ...N = without thru' coolant

Scope of supply:
Tool holder with allen key





Illustrations show right-hand versions



Designation	H inch	B inch	OAL inch	LH inch	WF inch	Insert	Left-hand 78 505 ...	Right-hand 78 504 ...
DSRN R/L 12-4BA-N	0.750	0.750	4.500	1.380	0.880	SN..43..	**01294**[1)]	**01294**[1)]
DSRN R/L 16-4DA-N	1.000	1.000	6.000	1.380	1.130	SN..43..	**01690**[1)]	**01690**[1)]
DSRN R/L 20-5DA-N	1.250	1.250	6.000	1.380	1.353	SN..54..	**02085**[1)]	**02085**[1)]
DSRN R/L 20-6DA-N	1.250	1.250	6.000	1.380	1.321	SN..64..	**02081**[1)]	**02081**[1)]

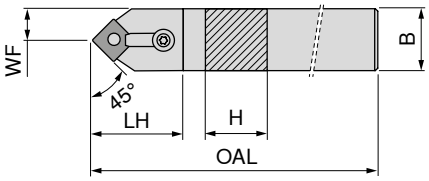
1) Not in stock

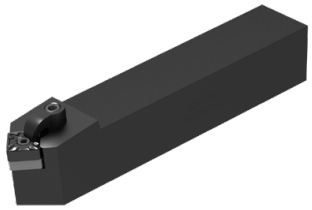
Spare parts for Article no.	 Clamping claw 78 950 ...	 Key I 78 950 ...	 Clamping screw 78 950 ...	 Solid Carbide support S 78 950 ...	 Threaded bush 78 950 ...	 Spring 78 950 ...
78 504 01294 / 78 505 01294	**07600**	**08100**	**08300**		**08500**	**04900**
78 504 01690 / 78 505 01690	**07600**	**08100**	**08300**		**08500**	**04900**
78 504 02085 / 78 505 02085	**07700**	**08100**	**08300**	**01600**	**08600**	**04900**
78 504 02081 / 78 505 02081	**07800**	**08100**	**08300**	**01700**	**08700**	**04900**

MaxiLock-M – MSDN 45° – Toolholder with top clamping

Scope of supply:
Tool holder with allen key







Neutral

Designation	H inch	B inch	OAL inch	LH inch	WF inch	Insert	78 577 ...
MSDN N 08-3A	0.500	0.500	4.000	1.000	0.250	SN..32..	**00813**[1)]
MSDN N 10-3B	0.625	0.625	4.500	1.000	0.313	SN..32..	**01023**[1)]
MSDN N 12-4B	0.750	0.750	4.500	1.300	0.375	SN..43..	**01224**[1)]
MSDN N 16-4D	1.000	1.000	6.000	1.300	0.500	SN..43..	**01644**[1)]
MSDN N 85-4D	1.250	1.000	6.000	1.300	0.625	SN..43..	**08544**[1)]
MSDN N 16-5D	1.000	1.000	6.000	1.500	0.500	SN..54..	**01645**[1)]
MSDN N 85-5D	1.250	1.000	6.000	1.500	0.625	SN..54..	**08545**[1)]
MSDN N 20-5D	1.250	1.250	6.000	1.500	0.625	SN..54..	**02045**[1)]
MSDN N 16-6D	1.000	1.000	6.000	1.730	0.500	SN..64..	**01646**[1)]
MSDN N 85-6D	1.250	1.000	6.000	1.750	0.625	SN..64..	**08546**[1)]
MSDN N 20-6D	1.250	1.250	6.000	1.750	0.625	SN..64..	**02046**[1)]
MSDN N 24-6E	1.500	1.500	7.000	1.750	0.750	SN..64..	**02456**[1)]

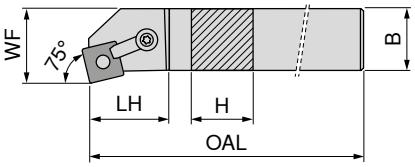
1) Not in stock

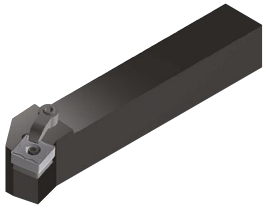
Spare parts for Article no.	 Clamp 78 950 ...	 Key I 78 950 ...	 Dowel pin 78 950 ...	 Clamping screw 78 950 ...	 Solid Carbide support S 78 950 ...
78 577 00813	**00600**	**07000**		**03600**	**01500**
78 577 01023	**00600**	**07000**		**03600**	**01500**
78 577 01224	**00400**	**06900**	**03100**	**03800**	**04300**
78 577 01644	**00400**	**06900**	**03100**	**03800**	**04300**
78 577 08544	**00400**	**06900**	**03100**	**03800**	**04300**
78 577 01645	**00300**	**08100**	**03200**	**03900**	**01600**
78 577 08545	**00300**	**08100**	**03200**	**03900**	**01600**
78 577 02045	**00300**	**08100**	**03200**	**03900**	**01600**
78 577 01646	**00300**	**08100**	**03300**	**03900**	**01700**
78 577 08546	**00300**	**08100**	**03300**	**03900**	**01700**
78 577 02046	**00300**	**08100**	**03300**	**03900**	**01700**
78 577 02456	**00300**	**08100**	**03300**	**03900**	**01700**

MaxiLock-M – MSKN 75° – Toolholder with top clamping

Scope of supply:
Tool holder with allen key







Illustrations show right-hand versions

Designation	H inch	B inch	OAL inch	LH inch	WF inch	Insert	Left-hand 78 533 ...	Right-hand 78 532 ...
MSKN R/L 12-4B	0.750	0.750	4.500	1.220	1.000	SN..43..	**01224**[1)]	**01224**[1)]
MSKN R/L 16-4D	1.000	1.000	6.000	1.220	1.250	SN..43..	**01644**[1)]	**01644**[1)]
MSKN R/L 16-5D	1.000	1.000	6.000	1.410	1.250	SN..54..	**01645**[1)]	**01645**[1)]
MSKN R/L 85-5D	1.250	1.000	6.000	1.410	1.250	SN..54..	**08545**[1)]	**08545**[1)]
MSKN R/L 20-5D	1.250	1.250	6.000	1.410	1.500	SN..54..	**02045**[1)]	**02045**[1)]
MSKN R/L 20-6D	1.250	1.250	6.000	1.500	1.500	SN..64..	**02046**[1)]	**02046**[1)]
MSKN R/L 24-6E	1.500	1.500	7.000	1.500	2.000	SN..64..	**02456**[1)]	**02456**[1)]

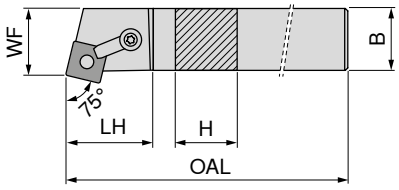
1) Not in stock

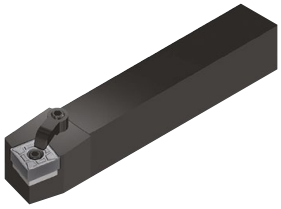
Spare parts for Article no.	 Clamp 78 950 ...	 Key I 78 950 ...	 Dowel pin 78 950 ...	 Clamping screw 78 950 ...	 Solid Carbide support S 78 950 ...
78 532 01224 / 78 533 01224	**00400**	**06900**	**03100**	**03800**	**04300**
78 532 01644 / 78 533 01644	**00400**	**06900**	**03100**	**03800**	**04300**
78 532 01645 / 78 533 01645	**00300**	**08100**	**03200**	**03900**	**01600**
78 532 08545 / 78 533 08545	**00300**	**08100**	**03200**	**03900**	**01600**
78 532 02045 / 78 533 02045	**00300**	**08100**	**03200**	**03900**	**01600**
78 532 02046 / 78 533 02046	**00300**	**08100**	**03300**	**03900**	**01700**
78 532 02456 / 78 533 02456	**00300**	**08100**	**03300**	**03900**	**01700**

MaxiLock-M – MSRN 75° – Toolholder with top clamping

Scope of supply:
Tool holder with allen key







Illustrations show right-hand versions

Designation	H inch	B inch	OAL inch	LH inch	WF inch	Insert	Left-hand 78 535 ...	Right-hand 78 534 ...
MSRN R/L 12-4B	0.750	0.750	4.500	1.250	0.880	SN..43..	**01224**[1)]	**01224**[1)]
MSRN R/L 16-4D	1.000	1.000	6.000	1.250	1.130	SN..43..	**01644**[1)]	**01644**[1)]
MSRN R/L 16-5D	1.000	1.000	6.000	1.500	1.103	SN..54..	**01645**[1)]	**01645**[1)]
MSRN R/L 20-5D	1.250	1.250	6.000	1.500	1.353	SN..54..	**02045**[1)]	**02045**[1)]
MSRN R/L 20-6D	1.250	1.250	6.000	1.590	1.321	SN..64..	**02046**[1)]	**02046**[1)]
MSRN R/L 24-6E	1.500	1.500	7.000	1.590	1.821	SN..64..	**02456**[1)]	**02456**[1)]

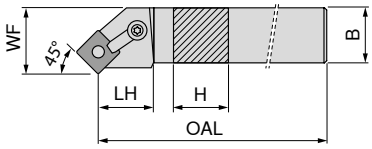
1) Not in stock

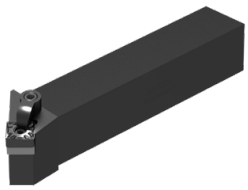
Spare parts for Article no.	 Clamp 78 950 ...	 Key I 78 950 ...	 Dowel pin 78 950 ...	 Clamping screw 78 950 ...	 Solid Carbide support S 78 950 ...
78 534 01224 / 78 535 01224	**00400**	**06900**	**03100**	**03800**	**04300**
78 534 01644 / 78 535 01644	**00400**	**06900**	**03100**	**03800**	**04300**
78 534 01645 / 78 535 01645	**00300**	**08100**	**03200**	**03900**	**01600**
78 534 02045 / 78 535 02045	**00300**	**08100**	**03200**	**03900**	**01600**
78 534 02046 / 78 535 02046	**00300**	**08100**	**03300**	**03900**	**01700**
78 534 02456 / 78 535 02456	**00300**	**08100**	**03300**	**03900**	**01700**

MaxiLock-M – MSSN 45° – Toolholder with top clamping

Scope of supply:
Tool holder with allen key







Illustrations show right-hand versions

Designation	H inch	B inch	OAL inch	LH inch	WF inch	Insert	Left-hand 78 537 ...	Right-hand 78 536 ...
MSSN R/L 12-4B	0.750	0.750	4.500	1.230	0.675	SN..43..	**01224**[1)]	**01224**[1)]
MSSN R/L 16-4D	1.000	1.000	6.000	1.230	0.925	SN..43..	**01644**[1)]	**01644**[1)]
MSSN R/L 16-5D	1.000	1.000	6.000	1.380	0.847	SN..54..	**01645**[1)]	**01645**[1)]
MSSN R/L 20-5D	1.250	1.250	6.000	1.380	1.097	SN..54..	**02045**[1)]	**02045**[1)]
MSSN R/L 20-6D	1.250	1.250	6.000	1.470	1.010	SN..64..	**02046**[1)]	**02046**[1)]
MSSN R/L 24-6E	1.500	1.500	7.000	1.470	1.511	SN..64..	**02456**[1)]	**02456**[1)]
MSSN R/L 86-6E	1.500	1.000	7.000	1.470	0.761	SN..64..	**08656**[1)]	**08656**[1)]

1) Not in stock

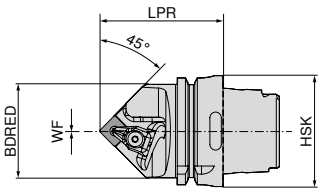
Spare parts for Article no.	 Clamp 78 950 ...	 Key I 78 950 ...	 Dowel pin 78 950 ...	 Clamping screw 78 950 ...	 Solid Carbide support S 78 950 ...
78 536 01224 / 78 537 01224	**00400**	**06900**	**03100**	**03800**	**04300**
78 536 01644 / 78 537 01644	**00400**	**06900**	**03100**	**03800**	**04300**
78 536 01645 / 78 537 01645	**00300**	**08100**	**03200**	**03900**	**01600**
78 536 02045 / 78 537 02045	**00300**	**08100**	**03200**	**03900**	**01600**
78 536 02046 / 78 537 02046	**00300**	**08100**	**03300**	**03900**	**01700**
78 536 02456 / 78 537 02456	**00300**	**08100**	**03300**	**03900**	**01700**
78 536 08656 / 78 537 08656	**00300**	**08100**	**03300**	**03900**	**01700**

MaxiLock-D – DSDN 45° – Toolholder with top clamping

Scope of supply:
Tool holder with Torx key









Designation	Adapter	LPR mm	BDRED mm	WF mm	torque moment Nm	Insert	Neutral 74 522 ...
HSK T63 DSDN N 12	HSK-T 63	70	53	0	4	SN.. 1204	**512**
HSK T63 DSDN N 15	HSK-T 63	75	53	0	4	SN.. 1506	**515**
HSK T100 DSDN N 12	HSK-T 100	80	88	0	4	SN.. 1204	**712**
HSK T100 DSDN N 19	HSK-T 100	85	88	0	8	SN.. 1906	**719**

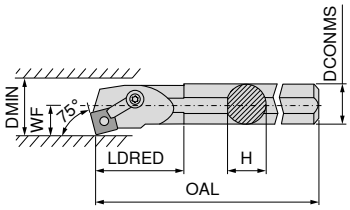
Spare parts	 XPress type 70 950 ...		Screwdriver 80 950 ...		 Clamping screw 70 950 ...		 Solid Carbide support S 70 950 ...
74 522 515	**825**	T20 - IP	**129**	M5x14 - IP	**821**		**833**
74 522 512 / 74 522 712	**824**	T15 - IP	**128**	M4.5x12 - IP	**820**		**813**
74 522 719	**826**	T20 - IP	**129**	M5x14 - IP	**821**		**817**

MaxiLock-M – MSKN 75° – Boring bar with top clamping

▲ A... = with thru coolant
▲ S... = without thru coolant

Scope of supply:
Tool holder with allen key





Illustrations show right-hand versions



Designation	H inch	OAL inch	LDRED inch	WF inch	Insert	Left-hand 78 709 ...	Right-hand 78 708 ...
S20U MSKN R/L 4	1.180	14.000	3.000	0.765	SN..43..	**42030**[1)]	**42030**[1)]
S24U MSKN R/L 4	1.370	14.000	3.000	0.890	SN..43..	**42434**[1)]	**42434**[1)]
S32V MSKN R/L 5	1.870	16.000	4.000	1.281	SN..54..	**53242**[1)]	**53242**[1)]
S32V MSKN R/L 6	1.870	16.000	4.000	1.281	SN..64..	**63242**[1)]	**63242**[1)]
S40V MSKN R/L 6	2.380	16.000	4.000	1.531	SN..64..	**64050**[1)]	**64050**[1)]

1) Not in stock

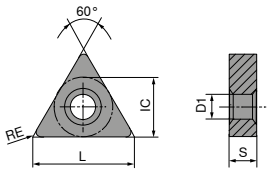
Spare parts

	 Clamp 78 950 ...	 Key I 78 950 ...	 Dowel pin 78 950 ...	 Clamping screw 78 950 ...	 Solid Carbide support S 78 950 ...
78 708 53242 / 78 709 53242	**00300**	**08100**	**03200**	**03900**	**01600**
78 708 42030 / 78 709 42434	**00400**	**06900**	**03100**	**03800**	**04300**
78 708 63242 / 78 709 64050	**00300**	**08100**	**03300**	**03900**	**01700**

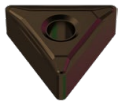
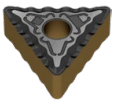
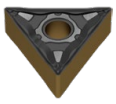
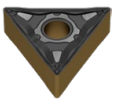
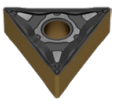
9

TNMG / TNMA / TNMM

Designation	L inch	S inch	D1 inch	IC inch
TNMG 22..	0.4331	0.1252	0.0890	0.2500
TNM. 33..	0.6496	0.1874	0.1500	0.3748
TNM. 43..	0.8661	0.1874	0.2032	0.5000



TNMG

		NEW	NEW	NEW	NEW	NEW	NEW
		-CF20 CTEP110	-F50 CTCP115-P	-F50 CTCP125-P	-F50 CTCP135-P	-M50 CTCP115-P	-M50 CTCP125-P	-M50 CTCP135-P
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
								
		F	F	F	F	M	M	M
		CERMET TNMG	TNMG	TNMG	TNMG	TNMG	TNMG	TNMG
		76 149 ...	76 146 ...	76 146 ...	76 146 ...	76 138 ...	76 138 ...	76 138 ...
ANSI	RE inch							
221EN	0.0157		30401	50401	70401			
222EN	0.0315		30601	50601	70601			
331EN	0.0157	016	31601	51601	71601	31601	51601	71601
332EN	0.0315	018	31801	51801	71801	31801	51801	71801
333EN	0.0472	020	32001	52001	72001	32001	52001	72001
432EN	0.0315					33001	53001	73001
433EN	0.0472					33201	53201	73201
P		●	●	●	●	●	●	●
M		○			○			○
K		○	○	○		○	○	
N								
S								
H								
O								

TNMG

				NEW		NEW		NEW		NEW		NEW	
		-M70 CTCK110		-M70 CTCK120		-M70 CTCP115-P		-M70 CTCP125-P		-M70 CTCP135-P		CTCP125-P	CTCP135-P
		DRAGONSKIN		DRAGONSKIN		DRAGONSKIN		DRAGONSKIN		DRAGONSKIN		DRAGONSKIN	DRAGONSKIN
		M		M		M		M		M		M	M
		TNMG		TNMG		TNMG		TNMG		TNMG		TNMG	TNMG
		70 155 ...		70 155 ...		76 155 ...		76 155 ...		76 155 ...		76 142 ...	76 142 ...
ANSI	RE inch												
331ER	0.0157											51601	71601
332EL	0.0315											51801	
332EN	0.0315		018		518		31801		51801		71801		
332ER	0.0315											51701	71801
333EN	0.0472		020		520		32001		52001		72001		
431EN	0.0157								52801				
432EN	0.0315		030		530		33001		53001		73001		
433EN	0.0472		032		532		33201		53201		73201		
434EN	0.0630		034		534		33401		53401		73401		
P			○		○		●		●		●		●	●
M											○			○
K			●		●		○		○				○	
N														
S														
H														
O														

9

TNMA / TNMM

						NEW		NEW		NEW		NEW		NEW	
		CTCK110		CTCK120		-R28 CTCP115-P		-R28 CTCP125-P		-R28 CTCP135-P		-R58 CTCP115-P		-R58 CTCP125-P	
		DRAGONSKIN		DRAGONSKIN		DRAGONSKIN		DRAGONSKIN		DRAGONSKIN		DRAGONSKIN		DRAGONSKIN	
		R		M		R		R		R		R		R	
		TNMA		TNMA		TNMM		TNMM		TNMM		TNMM		TNMM	
		70 134 ...		70 134 ...		76 154 ...		76 154 ...		76 154 ...		76 152 ...		76 152 ...	
ANSI	RE inch														
332EN	0.0315		018		518										
333EN	0.0472		020		520										
334EN	0.0630		022		522										
432EN	0.0315		030		530										
433EN	0.0472		032		532									33201	53201
434EN	0.0630		034		534		33401		53401		73401				
P			○		○		●		●		●		●		●
M											○				
K			●		●		○		○				○		○
N															
S															
H															
O															

TNMM / TNMG

NEW

	-R58 CTCP135-P	-F30 CTCM120	-F30 CTPM125	-F30 CTCM130	-M30 CTCM120	-M30 CTPM125	-M30 CTCM130
	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
							
	R	F	F	F	M	M	M
	TNMM	TNMG	TNMG	TNMG	TNMG	TNMG	TNMG
	76 152 ...	75 019 ...	75 019 ...	75 019 ...	75 020 ...	75 020 ...	75 020 ...
ANSI / RE inch							
331EN 0.0157		11600	216	31600			
332EN 0.0315		11800	218	31800	11800	218	31800
333EN 0.0472					12000	220	32000
433EN 0.0472	73201						
P	●	○	○	○	○	○	○
M	○	●	●	●	●	●	●
K							
N							
S				○			○
H							
O							

TNMG

	-M60 CTCM120	-M60 CTPM125	-M60 CTCM130	-M34 CTPX710
	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
				
	M	M	M	M
	TNMG	TNMG	TNMG	TNMG
	75 021 ...	75 021 ...	75 021 ...	75 006 ...
ANSI / RE inch				
332EN 0.0315	11800	218	31800	61800
333EN 0.0472	12000	220	32000	
431EN 0.0157				62800
432EN 0.0315				63000
434EN 0.0630				63400
P	○	○	○	●
M	●	●	●	●
K				
N				○
S			○	●
H				
O				

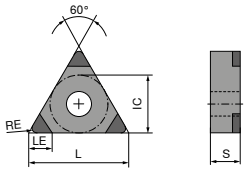
TNMG

		NEW	NEW
		-M42 CTCM130	-M70 CTCM130
		DRAGONSKIN	DRAGONSKIN
			
		M	M
		TNMG	TNMG
		75 035 ...	75 040 ...
ANSI	RE inch		
331EN	0.0157	**31600**	
332EN	0.0315	**31800**	**31800**
333EN	0.0472		**32000**
433EN	0.0472		**33200**
P		○	○
M		●	●
K			
N			
S		○	○
H			
O			

9

TNGA

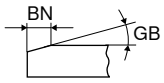
Designation	L inch	S inch	D1 inch	IC inch
TNGA 331E..	0.6496	0.1874	0.150	0.3748
TNGA 331S..	0.6496	0.1874	0.150	0.3748
TNGA 332E..	0.6496	0.1874	0.150	0.3748
TNGA 332S..	0.6496	0.1874	0.150	0.3748
TNGA 333E..	0.6496	0.1874	0.150	0.3748
TNGA 333S..	0.6496	0.1874	0.150	0.3748



TNGA C

TNGA

▲ TCE(NOI) = Design and number of equipped cutting edge corners



						NEW	NEW	NEW
						CTBH1000C	CTBH2000C	CTBH3000C
								
						F	F	F
						PCBN TNGA	PCBN TNGA	PCBN TNGA
						71 040 ...	71 040 ...	71 040 ...
ANSI	RE inch	BN inch	GB	**TCE (NOI)**	LE inch			
331EN	0.0157			**C (3)**	0.1417	**70002**	**80002**	
331SN	0.0157	0.0055	20°	**C (3)**	0.1417			**90002**
332EN	0.0315			**C (3)**	0.1299	**70302**	**80302**	
332SN	0.0315	0.0055	20°	**C (3)**	0.1299			**90302**
333EN	0.0472			**C (3)**	0.1181	**70602**	**80602**	
333SN	0.0472	0.0055	20°	**C (3)**	0.1181			**90602**

P			
M			
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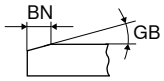
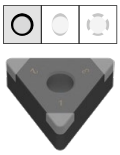
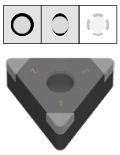
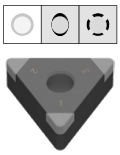
S			
H	●	●	●
O			

→ v_c Page 196–199

TNGA

▲ TCE(NOI) = Design and number of equipped cutting edge corners



	NEW	NEW	NEW
	CTBH1000C	CTBH2000C	CTBH3000C
			
	M	M	M
	PCBN TNGA	PCBN TNGA	PCBN TNGA
	71 040 ...	71 040 ...	71 040 ...

ANSI	RE inch	BN inch	GB	TCE (NOI)	LE inch			
331SN	0.0157	0.0035	15°	C (3)	0.1417	70102	80102	
331SN	0.0157	0.0071	25°	C (3)	0.1417			90102
332SN	0.0315	0.0035	15°	C (3)	0.1299	70402	80402	
332SN	0.0315	0.0071	25°	C (3)	0.1299			90402
333SN	0.0472	0.0035	15°	C (3)	0.1181	70702	80702	
333SN	0.0472	0.0071	25°	C (3)	0.1181			90702

P			
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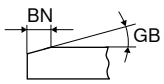
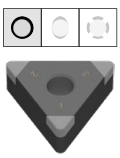
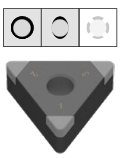
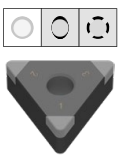
S			
H	●	●	●
O			

9

TNGA

▲ TCE(NOI) = Design and number of equipped cutting edge corners



	NEW	NEW	NEW
	CTBH1000C	CTBH2000C	CTBH3000C
			
	R	R	R
	PCBN TNGA	PCBN TNGA	PCBN TNGA
	71 040 ...	71 040 ...	71 040 ...

ANSI	RE inch	BN inch	GB	TCE (NOI)	LE inch			
331SN	0.0157	0.0055	20°	C (3)	0.1417	70202	80202	
331SN	0.0157	0.0079	35°	C (3)	0.1417			90202
332SN	0.0315	0.0055	20°	C (3)	0.1299	70502	80502	
332SN	0.0315	0.0079	35°	C (3)	0.1299			90502
333SN	0.0472	0.0055	20°	C (3)	0.1181	70802	80802	
333SN	0.0472	0.0079	35°	C (3)	0.1181			90802

P			
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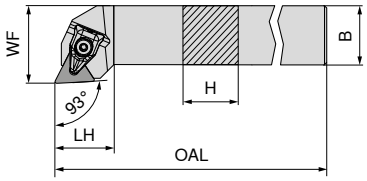
S			
H	●	●	●
O			

MaxiLock-D – DTJN 93° – Toolholder with top clamping

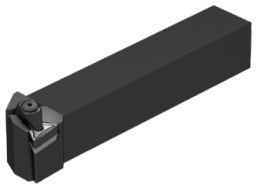
▲ ...A-N = with thru coolant
▲ ...N = without thru' coolant

Scope of supply:
Tool holder with allen key





Illustrations show right-hand versions



Designation	H inch	B inch	OAL inch	LH inch	WF inch	Insert	Left-hand 78 511 ...	Right-hand 78 510 ...
DTJN R/L 12-3BA-N	0.750	0.750	4.500	1.250	1.000	TN..33..	**01276**	**01276**
DTJN R/L 16-3DA-N	1.000	1.000	6.000	1.250	1.250	TN..33..	**01698**[1)]	**01698**[1)]
DTJN R/L 16-4DA-N	1.000	1.000	6.000	1.380	1.250	TN..43..	**01690**[1)]	**01690**[1)]
DTJN R/L 20-4DA-N	1.250	1.250	6.000	1.250	1.500	TN..43..	**02090**	**02090**
DTJN R/L 24-4EA-N	1.500	1.500	7.000	1.380	2.000	TN..43..	**02487**[1)]	**02487**[1)]

1) Not in stock

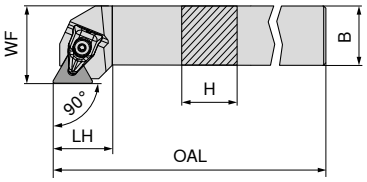
Spare parts for Article no.	 Clamping claw 78 950 ...	 Key I 78 950 ...	 Clamping screw 78 950 ...	 Solid Carbide Seat T 78 950 ...	 Threaded bush 78 950 ...	 Spring 78 950 ...
78 510 01698 / 78 511 01698	**07500**	**08100**	**07900**	**07400**	**08400**	**08000**
78 510 01690 / 78 511 01690	**07600**	**08100**	**08300**	**01900**	**08500**	**04900**
78 510 02090 / 78 511 02090	**07600**	**08100**	**08300**	**01900**	**08500**	**04900**
78 510 02487 / 78 511 02487	**07600**	**08100**	**08300**	**01900**	**08500**	**04900**

MaxiLock-D – DTGN 90° – Toolholder with top clamping

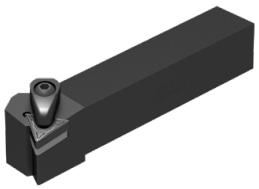
▲ ...A-N = with thru coolant
▲ ...N = without thru' coolant

Scope of supply:
Tool holder with allen key





Illustrations show right-hand versions



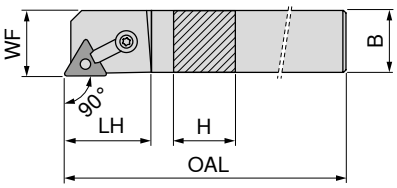
Designation	H inch	B inch	OAL inch	LH inch	WF inch	Insert	Left-hand 78 509 ...	Right-hand 78 508 ...
DTGN R/L 12-3B-N	0.750	0.750	4.500	1.100	1.000	TN..33..	**01299**	**01299**
DTGN R/L 16-3D-N	1.000	1.000	6.000	1.100	1.250	TN..33..	**01697**	**01697**
DTGN R/L 16-4D-N	1.000	1.000	6.000	1.338	1.250	TN..43..	**01689**	**01689**
DTGN R/L 20-4D-N	1.250	1.250	6.000	1.338	1.500	TN..43..	**02089**	**02089**

Spare parts for Article no.	 Clamping claw 78 950 ...	 Key I 78 950 ...	 Clamping screw 78 950 ...	 Solid Carbide Seat T 78 950 ...	 Threaded bush 78 950 ...	 Spring 78 950 ...
78 508 01299 / 78 509 01299	**07500**	**08100**	**07900**	**07400**	**08400**	**08000**
78 508 01697 / 78 509 01697	**07500**	**08100**	**07900**	**07400**	**08400**	**08000**
78 508 01689 / 78 509 01689	**07600**	**08100**	**08300**	**01900**	**08500**	**04900**
78 508 02089 / 78 509 02089	**07600**	**08100**	**08300**	**01900**	**08500**	**04900**

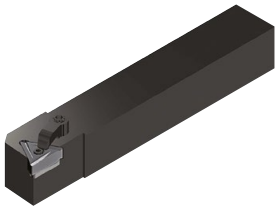
MaxiLock-M – MTAN 90° – Toolholder with top clamping

Scope of supply:
Tool holder with allen key





Illustrations show right-hand versions



Designation	H inch	B inch	OAL inch	LH inch	WF inch	Insert	Left-hand 78 539 ...	Right-hand 78 538 ...
MTAN R/L 08-2A	0.500	0.500	4.000	0.875	0.500	TN..22..	**00812**[1)]	**00812**[1)]
MTAN R/L 12-3B	0.750	0.750	4.500	1.060	0.750	TN..33..	**01223**[1)]	**01223**[1)]
MTAN R/L 16-3D	1.000	1.000	6.000	1.060	1.000	TN..33..	**01643**[1)]	**01643**[1)]
MTAN R/L 16-4D	1.000	1.000	6.000	1.220	1.000	TN..43..	**01644**[1)]	**01644**[1)]

1) Not in stock

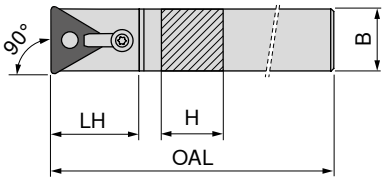
Spare parts for Article no.	 Clamp 78 950 ...	 Key I 78 950 ...	 Dowel pin 78 950 ...	 Clamping screw 78 950 ...	 Solid Carbide Seat T 78 950 ...
78 538 00812 / 78 539 00812	**00700**	**07000**		**05000**	
78 538 01223 / 78 539 01223	**00400**	**06900**	**02900**	**03800**	**01800**
78 538 01643 / 78 539 01643	**00400**	**06900**	**02900**	**03800**	**01800**
78 538 01644 / 78 539 01644	**00400**	**06900**	**03100**	**03800**	**01900**

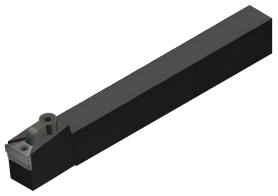
9

MaxiLock-M – MTCN 90° – Toolholder with top clamping

Scope of supply:
Tool holder with allen key







Designation	H inch	B inch	OAL inch	LH inch	WF inch	Insert	Neutral 78 578 ...
MTCN N 44-3F	1.000	0.500	8.000	1.000	0.325	TN..33..	**04463**[1)]
MTCN N 12-4B	0.750	0.750	4.500	1.380	0.433	TN..43..	**01224**[1)]
MTCN N 64-4F	1.000	0.750	8.000	1.380	0.433	TN..43..	**06464**[1)]
MTCN N 66-4F	1.500	0.750	8.000	1.380	0.433	TN..43..	**06664**[1)]

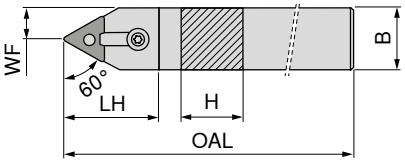
1) Not in stock

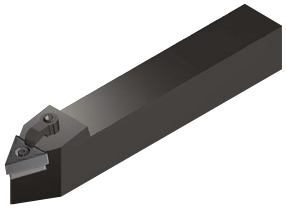
Spare parts for Article no.	 Clamp 78 950 ...	 Key I 78 950 ...	 Dowel pin 78 950 ...	 Clamping screw 78 950 ...	 Solid Carbide Seat T 78 950 ...
78 578 04463	**00400**	**06800**	**02900**	**04000**	**01800**
78 578 01224	**00400**	**07000**	**03100**	**03800**	**01900**
78 578 06464	**00300**	**07000**	**03100**	**03900**	**01900**
78 578 06664	**00300**	**07000**	**03100**	**03900**	**01900**

MaxiLock-M – MTEN 60° – Toolholder with top clamping

Scope of supply:
Tool holder with allen key







Designation	H inch	B inch	OAL inch	LH inch	WF inch	Insert	Neutral 78 580 ...
MTEN NS 08-2A	0.500	0.500	4.000	1.000	0.250	TN..22..	**00812**[1)]
MTEN NS 10-3B	0.625	0.625	4.500	1.130	0.313	TN..33..	**01023**[1)]
MTEN NS 12-3B	0.750	0.750	4.500	1.300	0.375	TN..33..	**01223**[1)]
MTEN NS 16-3D	1.000	1.000	6.000	1.300	0.500	TN..33..	**01643**[1)]
MTEN NS 16-4D	1.000	1.000	6.000	1.500	0.500	TN..43..	**01644**[1)]

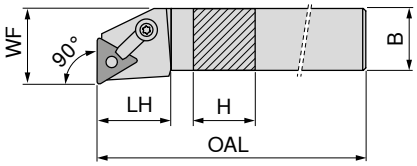
1) Not in stock

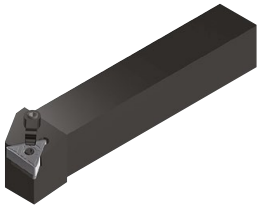
Spare parts for Article no.	 Clamp 78 950 ...	 Key I 78 950 ...	 Dowel pin 78 950 ...	 Clamping screw 78 950 ...	 Solid Carbide Seat T 78 950 ...
78 580 00812	**00700**	**07000**		**05000**	
78 580 01023	**00600**	**06800**	**02900**	**03600**	**01800**
78 580 01223	**00400**	**06800**	**02900**	**03800**	**01800**
78 580 01643	**00400**	**06800**	**02900**	**03800**	**01800**
78 580 01644	**00400**	**07000**	**03100**	**03800**	**01900**

MaxiLock-M – MTFN 90° – Toolholder with top clamping

Scope of supply:
Tool holder with allen key







Illustrations show right-hand versions

Designation	H inch	B inch	OAL inch	LH inch	WF inch	Insert	Left-hand 78 541 ...	Right-hand 78 540 ...
MTFN R/L 12-3B	0.750	0.750	4.500	1.000	1.000	TN..33..	**01223**[1)]	**01223**[1)]
MTFN R/L 16-3D	1.000	1.000	6.000	1.250	1.250	TN..33..	**01643**[1)]	**01643**[1)]
MTFN R/L 16-4D	1.000	1.000	6.000	1.250	1.250	TN..43..	**01644**[1)]	**01644**[1)]
MTFN R/L 20-4D	1.250	1.250	6.000	1.500	1.500	TN..43..	**02044**[1)]	**02044**[1)]
MTFN R/L 85-4D	1.250	1.000	6.000	1.250	1.250	TN..43..	**08544**[1)]	**08544**[1)]
MTFN R/L 86-4D	1.500	1.000	6.000	1.250	1.250	TN..43..	**08644**[1)]	**08644**[1)]

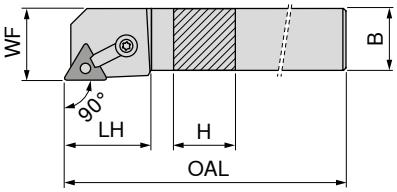
1) Not in stock

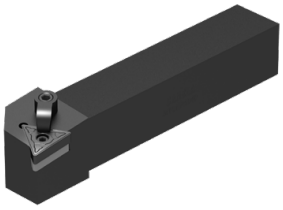
Spare parts for Article no.	 Clamp 78 950 ...	 Key I 78 950 ...	 Dowel pin 78 950 ...	 Clamping screw 78 950 ...	 Solid Carbide Seat T 78 950 ...
78 540 01223 / 78 541 01223	**00400**	**06800**	**02900**	**03800**	**01800**
78 540 01643 / 78 541 01643	**00400**	**06800**	**02900**	**03800**	**01800**
78 540 01644 / 78 541 01644	**00400**	**07000**	**03100**	**03800**	**01900**
78 540 02044 / 78 541 02044	**00400**	**07000**	**03100**	**03800**	**01900**
78 540 08544 / 78 541 08544	**00400**	**07000**	**03100**	**03800**	**01900**
78 540 08644 / 78 541 08644	**00400**	**07000**	**03100**	**03800**	**01900**

MaxiLock-M – MTGN 90° – Toolholder with top clamping

Scope of supply:
Tool holder with allen key







Illustrations show right-hand versions

Designation	H inch	B inch	OAL inch	LH inch	WF inch	Insert	Left-hand 78 543 ...	Right-hand 78 542 ...
MTGN R/L 08-2A	0.500	0.500	4.000	0.875	0.625	TN..22..	**00812**[1)]	**00812**[1)]
MTGN R/L 10-3B	0.625	0.625	4.500	1.000	0.875	TN..33..	**01023**[1)]	**01023**[1)]
MTGN R/L 12-3B	0.750	0.750	4.500	1.060	1.000	TN..33..	**01223**[1)]	**01223**[1)]
MTGN R/L 16-3D	1.000	1.000	6.000	1.060	1.250	TN..33..	**01643**[1)]	**01643**[1)]
MTGN R/L 16-4D	1.000	1.000	6.000	1.220	1.250	TN..43..	**01644**[1)]	**01644**[1)]
MTGN R/L 20-4D	1.250	1.250	6.000	1.220	1.500	TN..43..	**02044**[1)]	**02044**[1)]
MTGN R/L 85-4D	1.250	1.000	6.000	1.220	1.250	TN..43..	**08544**[1)]	**08544**[1)]
MTGN R/L 86-4D	1.500	1.000	6.000	1.220	1.250	TN..43..	**08644**[1)]	**08644**[1)]

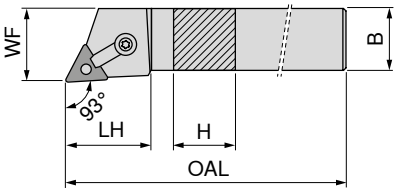
1) Not in stock

Spare parts for Article no.	 Clamp 78 950 ...	 Key I 78 950 ...	 Dowel pin 78 950 ...	 Clamping screw 78 950 ...	 Solid Carbide Seat T 78 950 ...
78 542 00812 / 78 543 00812	**00700**	**07000**		**05000**	
78 542 01023 / 78 543 01023	**00400**	**06800**	**02900**	**03800**	**01800**
78 542 01223 / 78 543 01223	**00400**	**06800**	**02900**	**03800**	**01800**
78 542 01643 / 78 543 01643	**00400**	**06800**	**02900**	**03800**	**01800**
78 542 01644 / 78 543 01644	**00400**	**07000**	**03100**	**03800**	**01900**
78 542 02044 / 78 543 02044	**00400**	**07000**	**03100**	**03800**	**01900**
78 542 08544 / 78 543 08544	**00400**	**07000**	**03100**	**03800**	**01900**
78 542 08644 / 78 543 08644	**00400**	**07000**	**03100**	**03800**	**01900**

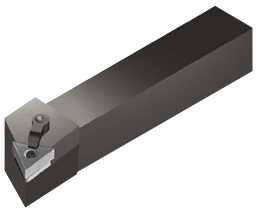
MaxiLock-M – MTJN 93° – Toolholder with top clamping

Scope of supply:
Tool holder with allen key





Illustrations show right-hand versions



							Left-hand	Right-hand
							78 545 ...	**78 544 ...**
Designation	H inch	B inch	OAL inch	LH inch	WF inch	Insert		
MTJN R/L 12-3B	0.750	0.750	4.500	1.030	1.000	TN..33..	**01223**[1)]	**01223**[1)]
MTJN R/L 16-3D	1.000	1.000	6.000	1.030	1.250	TN..33..	**01643**[1)]	**01643**[1)]
MTJN R/L 16-4D	1.000	1.000	6.000	1.250	1.250	TN..43..	**01644**[1)]	**01644**[1)]
MTJN R/L 20-4D	1.250	1.250	6.000	1.250	1.500	TN..43..	**02044**[1)]	**02044**[1)]

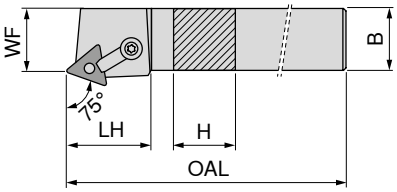
1) Not in stock

	 Clamp	 Key I	 Dowel pin	Clamping screw	 Solid Carbide Seat T
	78 950 ...	**78 950 ...**	**78 950 ...**	**78 950 ...**	**78 950 ...**
Spare parts for Article no.					
78 544 01223 / 78 545 01223	**00400**	**06800**	**02900**	**03800**	**01800**
78 544 01643 / 78 545 01643	**00400**	**06800**	**02900**	**03800**	**01800**
78 544 01644 / 78 545 01644	**00400**	**07000**	**03100**	**03800**	**01900**
78 544 02044 / 78 545 02044	**00400**	**07000**	**03100**	**03800**	**01900**

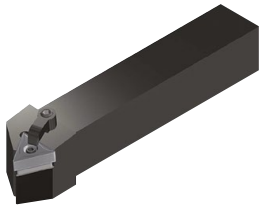
MaxiLock-M – MTRN 75° – Toolholder with top clamping

Scope of supply:
Tool holder with allen key





Illustrations show right-hand versions



Designation	H inch	B inch	OAL inch	LH inch	WF inch	Insert	Left-hand 78 547 ...	Right-hand 78 546 ...
MTRN R/L 12-3B	0.750	0.750	4.500	1.160	0.855	TN..33..	**01223**[1)]	**01223**[1)]
MTRN R/L 16-3D	1.000	1.000	6.000	1.160	1.105	TN..33..	**01643**[1)]	**01643**[1)]
MTRN R/L 16-4D	1.000	1.000	6.000	1.380	1.048	TN..43..	**01644**[1)]	**01644**[1)]
MTRN R/L 20-4D	1.250	1.250	6.000	1.380	1.298	TN..43..	**02044**[1)]	**02044**[1)]

1) Not in stock

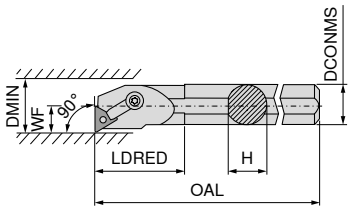
Spare parts for Article no.	 Clamp 78 950 ...	 Key I 78 950 ...	 Dowel pin 78 950 ...	 Clamping screw 78 950 ...	 Solid Carbide Seat T 78 950 ...
78 546 01223 / 78 547 01223	**00400**	**06800**	**02900**	**03800**	**01800**
78 546 01643 / 78 547 01643	**00400**	**06800**	**02900**	**03800**	**01800**
78 546 01644 / 78 547 01644	**00400**	**07000**	**03100**	**03800**	**01900**
78 546 02044 / 78 547 02044	**00400**	**07000**	**03100**	**03800**	**01900**

MaxiLock-M – MTFN 90° – Boring bar with top clamping

▲ A... = with thru coolant
▲ S... = without thru coolant

Scope of supply:
Tool holder with allen key





Illustrations show right-hand versions



Designation	DCONMS inch	H inch	OAL inch	LDRED inch	WF inch	DMIN inch	Insert	Left-hand 78 711 ...	Right-hand 78 710 ...
A16T MTFN R/L 3	1.000	0.900	12.000	2.500	0.640	1.280	TN..33..	**31616**	**31616**
S16T MTFN R/L 3	1.000	0.900	12.000	2.500	0.640	1.280	TN..33..	**31626**[1)]	**31626**[1)]
A20U MTFN R/L 3	1.250	1.180	14.000	3.000	0.765	1.530	TN..33..	**32020**[1)]	**32020**[1)]
S20U MTFN R/L 3	1.250	1.180	14.000	3.000	0.765	1.530	TN..33..	**32030**[1)]	**32030**[1)]
S24U MTFN R/L 3	1.500	1.370	14.000	3.000	0.890	1.780	TN..33..	**32434**[1)]	**32434**[1)]
S20U MTFN R/L 4	1.250	1.180	14.000	3.000	0.765	1.530	TN..43..	**42030**[1)]	**42030**[1)]
S24U MTFN R/L 4	1.500	1.370	14.000	3.000	0.890	1.780	TN..43..	**42434**[1)]	**42434**[1)]
A24U MTFN R/L 4	1.500	1.370	14.000	3.000	0.890	1.780	TN..43..	**42424**[1)]	**42424**[1)]
S28U MTFN R/L 4	1.750	1.630	14.000	4.000	1.015	2.030	TN..43..	**42838**[1)]	**42838**[1)]
A28U MTFN R/L 4	1.750	1.630	14.000	4.000	1.015	2.030	TN..43..	**42828**[1)]	**42828**[1)]
A32V MTFN L 4	2.000	1.870	16.000	4.000	1.281	2.562	TN..43..	**43233**[1)]	
S32V MTFN R/L 4	2.000	1.870	16.000	4.000	1.281	2.562	TN..43..	**43242**[1)]	**43242**[1)]
S40V MTFN R/L 4	2.500	2.380	16.000	4.000	1.531	3.062	TN..43..	**44050**[1)]	**44050**[1)]

1) Not in stock

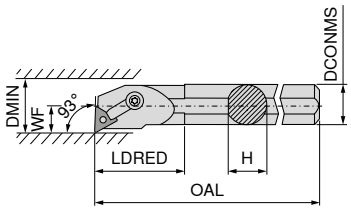
Spare parts for Article no.	 Clamp 78 950 ...	 Key I 78 950 ...	 Dowel pin 78 950 ...	 Clamping screw 78 950 ...	 Solid Carbide Seat T 78 950 ...
78 710 31616 / 78 711 31616	**00400**	**06800**		**03700**	
78 710 31626 / 78 711 31626	**00400**	**06800**		**03700**	
78 710 32020 / 78 711 32020	**00400**	**06800**	**02900**	**03800**	**01800**
78 710 32030 / 78 711 32030	**00400**	**06800**	**02900**	**03800**	**01800**
78 710 32434 / 78 711 32434	**00400**	**06800**	**02900**	**03800**	**01800**
78 710 42030 / 78 711 42030	**00400**	**06900**	**03100**	**03800**	**01900**
78 710 42434 / 78 711 42434	**00400**	**06900**	**03100**	**03800**	**01900**
78 710 42424 / 78 711 42424	**00400**	**06900**	**03100**	**03800**	**01900**
78 710 42838 / 78 711 42838	**00400**	**06900**	**03100**	**03800**	**01900**
78 710 42828 / 78 711 42828	**00400**	**06900**	**03100**	**03800**	**01900**
78 711 43233	**00400**	**06900**	**03100**	**03800**	**01900**
78 710 43242 / 78 711 43242	**00400**	**06900**	**03100**	**03800**	**01900**
78 710 44050 / 78 711 44050	**00400**	**06900**	**03100**	**03800**	**01900**

MaxiLock-M – MTUN 93° – Boring bar with top clamping

▲ A... = with thru coolant
▲ S... = without thru coolant

Scope of supply:
Tool holder with allen key





Illustrations show right-hand versions



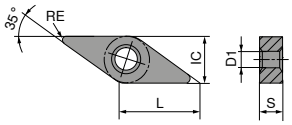
								Left-hand	Right-hand
								78 713 ...	**78 712 ...**
Designation	DCONMS inch	H inch	OAL inch	LDRED inch	WF inch	DMIN inch	Insert		
S16T MTUN R/L 3	1.000	0.900	12.000	2.500	0.640	1.280	TN..33..	**31626**[1)]	**31626**[1)]
S24U MTUN R/L 4	1.500	1.370	14.000	3.000	0.890	1.780	TN..43..	**42434**[1)]	**42434**

1) Not in stock

	 Clamp	 Key I	 Dowel pin	 Clamping screw
	78 950 ...	**78 950 ...**	**78 950 ...**	**78 950 ...**
Spare parts for Article no.				
78 712 31626 / 78 713 31626	**00400**	**06800**		**03700**
78 712 42434 / 78 713 42434	**00400**	**06900**	**03100**	**03800**

VNMG

Designation	L inch	S inch	D1 inch	IC inch
VNMG 33..	0.6535	0.1874	0.150	0.3748



VNMG

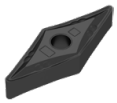
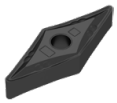
	NEW	NEW	NEW	NEW	NEW	NEW	NEW
	-F40 CTCP125-P	-F50 CTCP115-P	-F50 CTCP125-P	-F50 CTCP135-P	-XU CTCP115-P	-XU CTCP125-P	-M40 CTCP125-P
	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
	F VNMG	F VNMG	F VNMG	F VNMG	M VNMG	M VNMG	M VNMG
	76 000 ...	76 156 ...	76 156 ...	76 156 ...	76 294 ...	76 294 ...	76 001 ...
ANSI / RE inch							
331EN 0.0157	51601	31601	51601	71601	31601	51601	51601
332EN 0.0315	51801	31801	51801	71801	31801	51801	51801
P	●	●	●	●	●	●	●
M				○			
K	○	○	○		○	○	○
N							
S							
H							
O							

VNMG

	NEW		NEW	NEW			
	-M50 CTCK110	-M50 CTCK120	-M50 CTCP115-P	-M50 CTCP125-P	-F30 CTCM120	-F30 CTPM125	-F30 CTCM130
	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
	M VNMG	M VNMG	M VNMG	M VNMG	F VNMG	F VNMG	F VNMG
	70 190 ...	70 131 ...	76 131 ...	76 131 ...	75 022 ...	75 022 ...	75 022 ...
ANSI / RE inch							
331EN 0.0157			31601	51601	11600	216	31600
332EN 0.0315		518	31801	51801	11800	218	31800
333EN 0.0472	01200	520	32001	52001			
P	○	○	●	●	○	○	○
M					●	●	●
K	●	●	○	○			
N							
S							○
H							
O							

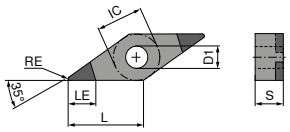
9

VNMG

	-M30 CTCM120	-M30 CTPM125	-M30 CTCM130	-M34 CTPX710
	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
				
	M	M	M	M
	VNMG	VNMG	VNMG	VNMG
	75 023 ...	75 023 ...	75 023 ...	75 009 ...
ANSI RE inch				
331EN 0.0157				**61600**
332EN 0.0315	**11800**	**218**	**31800**	**61800**
333EN 0.0472				**62000**
P	○	○	○	●
M	●	●	●	●
K				
N				○
S			○	●
H				
O				

VNGA

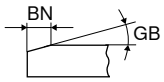
Designation	L inch	S inch	D1 inch	IC inch
VNGA 331E..	0.6535	0.1874	0.150	0.3748
VNGA 331S..	0.6535	0.1874	0.150	0.3748
VNGA 332E..	0.6535	0.1874	0.150	0.3748
VNGA 332S..	0.6535	0.1874	0.150	0.3748



VNGA B

VNGA

▲ TCE(NOI) = Design and number of equipped cutting edge corners



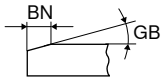
	NEW	NEW	NEW
	CTBH1000C	CTBH2000C	CTBH3000C
			
	F	**F**	**F**
	PCBN VNGA	**PCBN** VNGA	**PCBN** VNGA
	71 042 ...	**71 042 ...**	**71 042 ...**

ANSI	RE inch	BN inch	GB	TCE (NOI)	LE inch			
331EN	0.0157			**B (2)**	0.2008	**70002**	**80002**	
331SN	0.0157	0.0055	20°	**B (2)**	0.2008			**90002**
332EN	0.0315			**B (2)**	0.1654	**70302**	**80302**	
332SN	0.0315	0.0055	20°	**B (2)**	0.1654			**90302**
P								
M								
K								
N								
S								
H						●	●	●
O								

9

VNGA

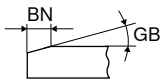
▲ TCE(NOI) = Design and number of equipped cutting edge corners



						NEW	NEW	NEW
						CTBH1000C	CTBH2000C	CTBH3000C
								
						M	M	M
						PCBN	PCBN	PCBN
						VNGA	VNGA	VNGA
						71 042 ...	71 042 ...	71 042 ...
ANSI	RE inch	BN inch	GB	**TCE (NOI)**	LE inch			
331SN	0.0157	0.0035	15°	**B (2)**	0.2008	**70102**	**80102**	
331SN	0.0157	0.0071	25°	**B (2)**	0.2008			**90102**
332SN	0.0315	0.0035	15°	**B (2)**	0.1654	**70402**	**80402**	
332SN	0.0315	0.0071	25°	**B (2)**	0.1654			**90402**
P								
M								
K								
N								
S								
H						●	●	●
O								

VNGA

▲ TCE(NOI) = Design and number of equipped cutting edge corners



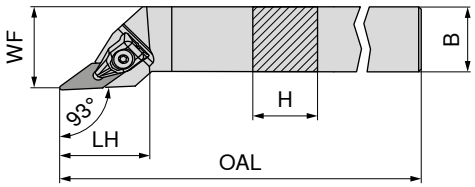
						NEW	NEW	NEW
						CTBH1000C	CTBH2000C	CTBH3000C
								
						R	R	R
						PCBN	PCBN	PCBN
						VNGA	VNGA	VNGA
						71 042 ...	71 042 ...	71 042 ...
ANSI	RE inch	BN inch	GB	**TCE (NOI)**	LE inch			
331SN	0.0157	0.0055	20°	**B (2)**	0.2008	**70202**	**80202**	
331SN	0.0157	0.0079	35°	**B (2)**	0.2008			**90202**
332SN	0.0315	0.0055	20°	**B (2)**	0.1654	**70502**	**80502**	
332SN	0.0315	0.0079	35°	**B (2)**	0.1654			**90502**
P								
M								
K								
N								
S								
H						●	●	●
O								

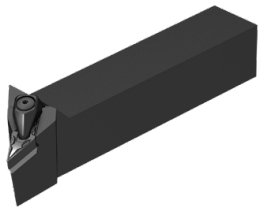
MaxiLock-D – DVJN 93° – Toolholder with top clamping

▲ ...A-N = with thru coolant
▲ ...N = without thru' coolant

Scope of supply:
Tool holder with allen key







Illustrations show right-hand versions

Designation	H inch	B inch	OAL inch	LH inch	WF inch	Insert	Left-hand 78 513 ...	Right-hand 78 512 ...
DVJN R/L 12-3BA-N	0.750	0.750	4.500	1.750	1.000	VN..33..	**01276**	**01276**
DVJN R/L 16-3DA-N	1.000	1.000	6.000	1.750	1.250	VN..33..	**01698**	**01698**
DVJN R/L 20-3DA-N	1.250	1.250	6.000	1.750	1.500	VN..33..	**02098**	**02098**
DVJN R/L 24-3EA-N	1.500	1.500	7.000	1.750	2.000	VN..33..	**02495**[1)]	**02495**[1)]

1) Not in stock

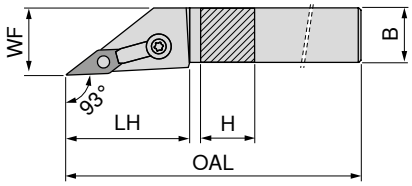
Spare parts for Article no.	 Clamping claw 78 950 ...	 Key I 78 950 ...	 Clamping screw 78 950 ...	 Solid Carbide Seat V 78 950 ...	 Threaded bush 78 950 ...	 Spring 78 950 ...
78 512 02098 / 78 513 02098	**07500**	**08100**	**07900**	**02200**	**08400**	**08000**
78 512 02495 / 78 513 02495	**07500**	**08100**	**07900**	**02200**	**08400**	**08000**

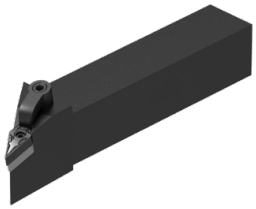
9

MaxiLock-M – MVJN 93° – Toolholder with top clamping

Scope of supply:
Tool holder with allen key







Illustrations show right-hand versions

Designation	H inch	B inch	OAL inch	LH inch	WF inch	Insert	Left-hand 78 549 ...	Right-hand 78 548 ...
MVJN R/L 12-3B	0.750	0.750	4.500	1.620	1.000	VN..33..	**01223**[1)]	**01223**[1)]
MVJN R/L 16-3D	1.000	1.000	6.000	1.620	1.250	VN..33..	**01643**[1)]	**01643**[1)]
MVJN R/L 20-3D	1.250	1.250	6.000	1.620	1.500	VN..33..	**02043**[1)]	**02043**[1)]

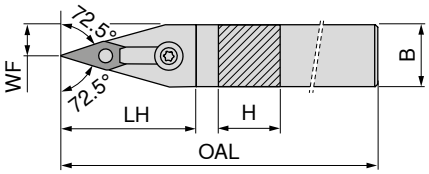
1) Not in stock

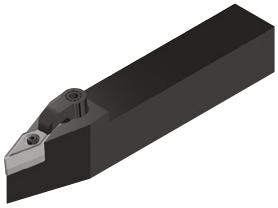
Spare parts for Article no.	 Clamp 78 950 ...	 Key I 78 950 ...	 Dowel pin 78 950 ...	 Clamping screw 78 950 ...	 Solid Carbide Seat V 78 950 ...
78 548 01223 / 78 549 01223	**09000**	**06800**	**02900**	**03800**	**02200**
78 548 01643 / 78 549 01643	**09000**	**06800**	**02900**	**03800**	**02200**
78 548 02043 / 78 549 02043	**09000**	**06800**	**02900**	**03800**	**02200**

MaxiLock-M – MVVN 72.5° – Toolholder with top clamping

Scope of supply:
Tool holder with allen key







Neutral

Designation	H inch	B inch	OAL inch	LH inch	WF inch	Insert	78 581 ...
MVVN N 12-3B	0.750	0.750	4.500	1.620	0.375	VN..33..	**01223**[1)]
MVVN N 16-3B	1.000	1.000	4.500	1.620	0.500	VN..33..	**01623**[1)]
MVVN N 20-3D	1.250	1.250	6.000	1.620	0.625	VN..33..	**02043**[1)]
MVVN N 24-3E	1.500	1.500	7.000	1.620	0.750	VN..33..	**02453**[1)]

1) Not in stock


Clamp


Key I


Dowel pin


Clamping screw


Solid Carbide Seat V

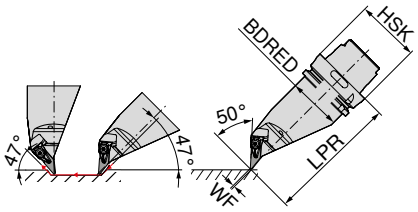
Spare parts for Article no.	78 950 ...	78 950 ...	78 950 ...	78 950 ...	78 950 ...
78 581 01223	**09000**	**06800**	**02900**	**03800**	**02200**
78 581 01623	**09000**	**06800**	**02900**	**03800**	**02200**
78 581 02043	**09000**	**06800**	**02900**	**03800**	**02200**
78 581 02453	**09000**	**06800**	**02900**	**03800**	**02200**

MaxiLock-D – DVMN 50° – Toolholder with top clamping

Scope of supply:
Tool holder with Torx key









Left-hand

Designation	Adapter	LPR mm	BDRED mm	WF mm	torque moment Nm	Insert	74 525 ...
HSK T63 DVMN L 16	HSK-T 63	130	53	0	2	VN.. 1604	**516**
HSK T100 DVMN L 16	HSK-T 100	160	88	0	2	VN.. 1604	**716**


XPress type


Screwdriver


Clamping screw

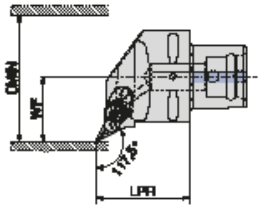

Solid Carbide Seat V

Spare parts	70 950 ...		80 950 ...		70 950 ...		70 950 ...	
74 525 516 / 74 525 716	**835**	T09 - IP	**126**	M3x7 - IP	**819**		**806**	

MaxiLock-D – DVPN 117.5° – Toolholder with top clamping







Illustrations show right-hand versions



Designation	Adapter	LPR mm	WF mm	DMIN mm	torque moment Nm	Insert	Left-hand 84 673 ...	Right-hand 84 672 ...
PSC40 DVPN R/L 50050-16	PSC 40	50	27	50	10	VN.. 1604	**01695**	**01695**
PSC50 DVPN R/L 65060-16	PSC 50	60	35	65	10	VN.. 1604	**01694**	**01694**
PSC63 DVPN R/L 80065-16	PSC 63	65	45	80	10	VN.. 1604	**01693**	**01693**

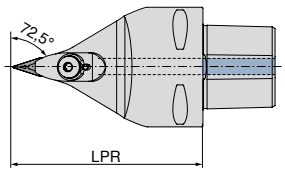
Spare parts

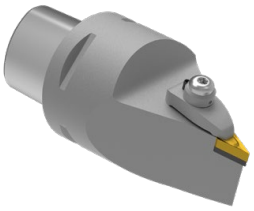
		Clamping Screw 84 950 ...	Clamping claw 84 950 ...	Ring-shaped nozzle 84 950 ...	Clamping screw 84 950 ...	Solid Carbide Seat V 84 950 ...
84 672 01693 / 84 673 01695	M6X28 SW4	**28300**	**28500**	**28400**	**27600**	**28000**

MaxiLock-D – DVVN 72.5° – Toolholder with top clamping









Designation	Adapter	LPR mm	torque moment Nm	Insert	Neutral 84 679 ...
PSC63 DVVN N 0100-16	PSC 63	100	10	VN.. 1604	**01693**
PSC63 DVVN N 0130-16	PSC 63	130	10	VN.. 1604	**11693**

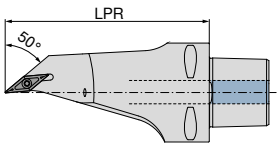
Spare parts

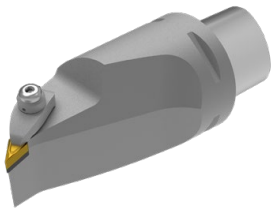
		Clamping Screw 84 950 ...	Clamping claw 84 950 ...	Ring-shaped nozzle 84 950 ...	Clamping screw 84 950 ...	Solid Carbide Seat V 84 950 ...
84 679 01693 / 84 679 11693	M6X28 SW4	**28300**	**28500**	**28400**	**27600**	**28000**

MaxiLock-D – DVMN 50° – Toolholder with top clamping









Designation	Adapter	LPR mm	torque moment Nm	Insert	Neutral 84 682 ...
PSC63 DVMN L 0130-16	PSC 63	130	10	VN.. 1604	**01693**

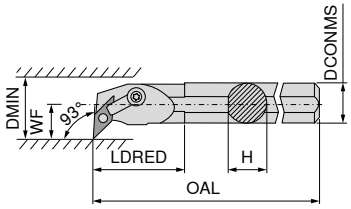
		 Clamping Screw	 Ring-shaped nozzle	 Clamping screw	 Solid Carbide Seat V
		84 950 ...	**84 950 ...**	**84 950 ...**	**84 950 ...**
Spare parts					
84 682 01693	M6X28 SW4	**28300**	**28400**	**27600**	**28000**

MaxiLock-M – MVUN 93° – Boring bar with top clamping

▲ A... = with thru coolant
▲ S... = without thru coolant

Scope of supply:
Tool holder with allen key





Illustrations show right-hand versions



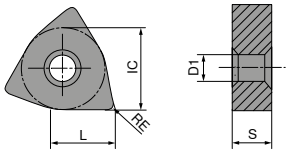
								Left-hand	Right-hand
								78 715 ...	78 714 ...
Designation	DCONMS inch	H inch	OAL inch	LDRED inch	WF inch	DMIN inch	Insert		
A16T MVUN R/L 3	1.000	0.900	12.000	2.500	1.000	2.000	VN..33..	**31616**	**31616**
S16T MVUN R/L 3	1.000	0.900	12.000	2.500	1.000	2.000	VN..33..	**31626**[1)]	**31626**[1)]
A20U MVUN R/L 3	1.250	1.180	14.000	3.000	1.125	2.250	VN..33..	**32020**[1)]	**32020**[1)]
S20U MVUN R/L 3	1.250	1.180	14.000	3.000	1.125	2.250	VN..33..	**32030**[1)]	**32030**[1)]
S24U MVUN R/L 3	1.500	1.370	14.000	3.000	1.250	2.500	VN..33..	**32434**[1)]	**32434**[1)]
A24U MVUN R/L 3	1.500	1.370	14.000	3.000	1.250	2.500	VN..33..	**32424**[1)]	**32424**[1)]

1) Not in stock

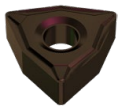
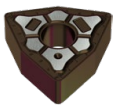
	 Clamp	 Key I	 Dowel pin	 Clamping screw	 Solid Carbide Seat V
	78 950 ...	**78 950 ...**	**78 950 ...**	**78 950 ...**	**78 950 ...**
Spare parts for Article no.					
78 714 31616 / 78 715 31616	**09000**	**06800**	**02900**	**03700**	**02200**
78 714 31626 / 78 715 31626	**09000**	**06800**	**02900**	**03700**	**02200**
78 714 32020 / 78 715 32020	**09000**	**06800**	**02900**	**03800**	**02200**
78 714 32030 / 78 715 32030	**09000**	**06800**	**02900**	**03800**	**02200**
78 714 32434 / 78 715 32434	**09000**	**06800**	**02900**	**03800**	**02200**
78 714 32424 / 78 715 32424	**09000**	**06800**	**02900**	**03800**	**02200**

WNMG / WNMA

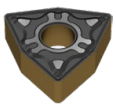
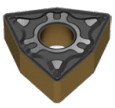
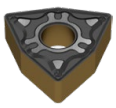
Designation	L inch	S inch	D1 inch	IC inch
WNMG 33..	0.2559	0.1874	0.1500	0.3748
WNM. 43..	0.3386	0.1874	0.2032	0.5000



WNMG

		NEW	NEW	NEW	NEW	NEW
		-CF20 CTEP110	-TFQ CTEP110	-F50 CTCP115-P	-F50 CTCP125-P	-F50 CTCP135-P	-TFQ CTCP115-P	-TFQ CTCP125-P
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
								
		F	F	F	F	F	F	F
		CERMET WNMG	CERMET WNMG	WNMG	WNMG	WNMG	WNMG	WNMG
		76 171 ...	76 177 ...	76 157 ...	76 157 ...	76 157 ...	76 177 ...	76 177 ...
ANSI	RE inch							
331EN	0.0157	004		30401	50401	70401	30401	51401
332EN	0.0315	006	006	30601	50601	70601	30601	50601
431EN	0.0157		016	31601	51601	71601		
432EN	0.0315	018	018	31801	51801	71801	31801	51801
433EN	0.0472			32001	52001	72001	32001	52001
P		●	●	●	●	●	●	●
M		○	○			○		
K		○	○	○	○		○	○
N								
S								
H								
O								

WNMG

		NEW	NEW			NEW	NEW	NEW
		-XU CTCP115-P	-XU CTCP125-P	-M50 CTCK110	-M50 CTCK120	-M50 CTCP115-P	-M50 CTCP125-P	-M50 CTCP135-P
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
								
		M	M	M	M	M	M	M
		WNMG	WNMG	WNMG	WNMG	WNMG	WNMG	WNMG
		76 295 ...	76 295 ...	70 139 ...	70 139 ...	76 139 ...	76 139 ...	76 139 ...
ANSI	RE inch							
331EN	0.0157					30401	50401	70401
332EN	0.0315					30601	50601	70601
333EN	0.0472					30801	50801	70801
431EN	0.0157	31601	51601			31601	51601	71601
432EN	0.0315	31801	51801	018	518	31801	51801	71801
433EN	0.0472	32001	52001	020	520	32001	52001	72001
434EN	0.0630					32201	52201	72201
P		●	●	○	○	●	●	●
M								○
K		○	○	●	●	○	○	
N								
S								
H								
O								

WNMG

		NEW	NEW			NEW	NEW	NEW
		-TMQ CTCP115-P	-TMQ CTCP125-P	-M70 CTCK110	-M70 CTCK120	-M70 CTCP115-P	-M70 CTCP125-P	-M70 CTCP135-P
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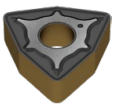
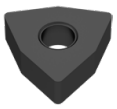
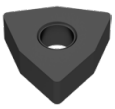
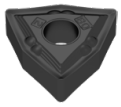
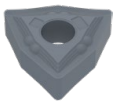
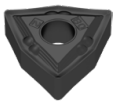
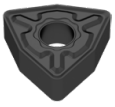
								
		M	M	M	M	M	M	M
		WNMG	WNMG	WNMG	WNMG	WNMG	WNMG	WNMG
		76 198 ...	76 198 ...	70 273 ...	70 273 ...	76 273 ...	76 273 ...	76 273 ...
ANSI	RE inch							
332EN	0.0315					30601	50601	70601
333EN	0.0472					30801	50801	70801
432EN	0.0315	31801	51801	018	518	31801	51801	71801
433EN	0.0472	32001	52001	020	520	32001	52001	72001
433EN	0.0630						52201	
434EN	0.0630			022	522	32201		72201
P		●	●	○	○	●	●	●
M								○
K		○	○	●	●	○	○	
N								
S								
H								
O								

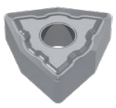
WNMA / WNMG

		CTCK110	CTCK120	-F30 CTCM120	-F30 CTPM125	-F30 CTCM130
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
						
		R	R	F	F	F
		WNMA	WNMA	WNMG	WNMG	WNMG
		70 169 ...	70 169 ...	75 024 ...	75 024 ...	75 024 ...
ANSI	RE inch					
331EN	0.0157			10400	204	30400
332EN	0.0315			10600	206	30600
431EN	0.0157			11600	216	31600
432EN	0.0315	018	518	11800	218	31800
433EN	0.0472	020	520			
434EN	0.0630	022	522			
P		○	○	○	○	○
M				●	●	●
K		●	●			
N						
S						○
H						
O						

WNMG

			NEW					
		-M30 CTCM120	-M30 CTPM125	-M30 CTCM130	-M42 CTCM130	-M60 CTCM120	-M60 CTPM125	-M60 CTCM130
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
								
		M	M	M	M	M	M	M
		WNMG	WNMG	WNMG	WNMG	WNMG	WNMG	WNMG
		75 025 ...	75 025 ...	75 025 ...	75 036 ...	75 026 ...	75 026 ...	75 026 ...
ANSI	RE inch							
331EN	0.0157				30400			
332EN	0.0315	10600	206	30600	30600	10600	206	30600
333EN	0.0472	10800	208	30800		10800	208	30800
431EN	0.0157				31600			
432EN	0.0315	11800	218	31800	31800	11800	218	31800
433EN	0.0472	12000	220	32000	32000	12000	220	32000
P		○	○	○	○	○	○	○
M		●	●	●	●	●	●	●
K								
N								
S				○	○			○
H								
O								

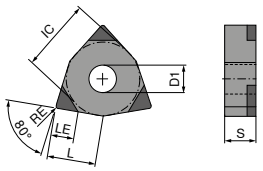
WNMG

		NEW	NEW	
		-M70 CTCM130	-F34 CTPX710	-M34 CTPX710
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
				
		M	F	M
		WNMG	WNMG	WNMG
		75 041 ...	75 313 ...	75 008 ...
ANSI	RE inch			
332EN	0.0315	30600		
432EN	0.0315	31800	61800	61800
433EN	0.0472	32000		62000
P		○	●	●
M		●	●	●
K				
N			○	○
S		○	●	●
H				
O				

9

WNGA

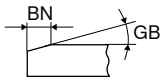
Designation	L inch	S inch	D1 inch	IC inch
WNGA 432E..	0.3346	0.1874	0.202	0.500
WNGA 432S..	0.3346	0.1874	0.202	0.500
WNGA 433E..	0.3346	0.1874	0.202	0.500
WNGA 433S..	0.3346	0.1874	0.202	0.500



WNGA C

WNGA

▲ TCE(NOI) = Design and number of equipped cutting edge corners



NEW NEW NEW

CTBH1000C | CTBH2000C | CTBH3000C



F F F

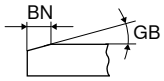
PCBN WNGA PCBN WNGA PCBN WNGA

71 044 ... 71 044 ... 71 044 ...

ANSI	RE inch	BN inch	GB	TCE (NOI)	LE inch			
432EN	0.0315			**C (3)**	0.1299	**70002**	**80002**	
432SN	0.0315	0.0055	20°	**C (3)**	0.1299			**90002**
433EN	0.0472			**C (3)**	0.1220	**70302**	**80302**	
433SN	0.0472	0.0055	20°	**C (3)**	0.1220			**90302**
P								
M								
K								
N								
S								
H						●	●	●
O								

WNGA

▲ TCE(NOI) = Design and number of equipped cutting edge corners



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							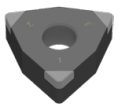	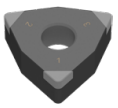
						M	M	M
						PCBN WNGA	PCBN WNGA	PCBN WNGA
						71 044 ...	71 044 ...	71 044 ...
ANSI	RE inch	BN inch	GB	**TCE (NOI)**	LE inch			
432SN	0.0315	0.0035	15°	**C (3)**	0.1299	**70102**	**80102**	
432SN	0.0315	0.0071	25°	**C (3)**	0.1299			**90102**
433SN	0.0472	0.0035	15°	**C (3)**	0.1220	**70402**	**80402**	
433SN	0.0472	0.0071	25°	**C (3)**	0.1220			**90402**
P								
M								
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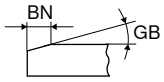
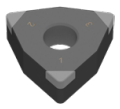
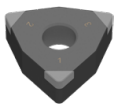
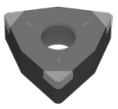
WNGA

▲ TCE(NOI) = Design and number of equipped cutting edge corners



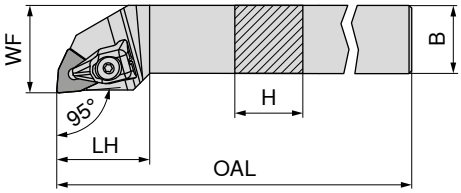
						NEW	NEW	NEW
						CTBH1000C	CTBH2000C	CTBH3000C
								
						R	R	R
						PCBN WNGA	PCBN WNGA	PCBN WNGA
						71 044 ...	71 044 ...	71 044 ...
ANSI	RE inch	BN inch	GB	**TCE (NOI)**	LE inch			
432SN	0.0315	0.0055	20°	**C (3)**	0.1299	**70202**	**80202**	
432SN	0.0315	0.0079	35°	**C (3)**	0.1299			**90202**
433SN	0.0472	0.0055	20°	**C (3)**	0.1220	**70502**	**80502**	
433SN	0.0472	0.0079	35°	**C (3)**	0.1220			**90502**
P								
M								
K								
N								
S								
H						●	●	●
O								

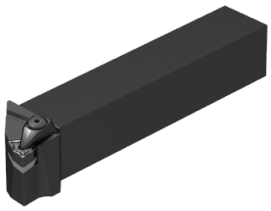
MaxiLock-D – DWLN 95° – Toolholder with top clamping

▲ ...A-N = with thru coolant
▲ ...N = without thru' coolant

Scope of supply:
Tool holder with allen key







Illustrations show right-hand versions

Designation	H inch	B inch	OAL inch	LH inch	WF inch	Insert	Left-hand 78 515 ...	Right-hand 78 514 ...
DWLN R 12-4BA-N	0.750	0.750	4.500	1.250	1.000	WN..43..		**01294**
DWLN R/L 12-4B-N	0.750	0.750	4.500	1.250	1.000	WN..43..	**01293**	**01293**
DWLN L 12-4BA-N	0.750	0.750		1.250	1.000	WN..43..	**01294**	
DWLN R/L 16-4DA-N	1.000	1.000	6.000	1.250	1.250	WN..43..	**01690**	**01690**
DWLN R/L 16-4D-N	1.000	1.000	6.000	1.250	1.250	WN..43..	**01689**	**01689**
DWLN R/L 20-4DA-N	1.250	1.250	6.000	1.250	1.500	WN..43..	**02092**	**02091**
DWLN R/L 20-4D-N	1.250	1.250	6.000	1.250	1.500	WN..43..	**02089**	**02089**
DWLN R/L 24-4E-N	1.500	1.500	7.000	1.250	2.000	WN..43..	**02486**[1)]	**02486**[1)]
DWLN R/L 24-4EA-N	1.500	1.500	7.000	1.250	2.000	WN..43..	**02488**[1)]	**02488**[1)]

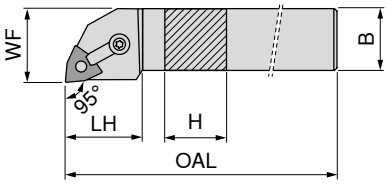
1) Not in stock

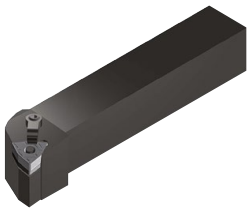
Spare parts for Article no.	 Clamping claw 78 950 ...	 Key I 78 950 ...	 Clamping screw 78 950 ...	 Solid Carbide Seat W 78 950 ...	 Threaded bush 78 950 ...	 Spring 78 950 ...
78 514 01293 / 78 515 01293	**07600**	**08100**	**08300**	**02400**	**08500**	**04900**
78 514 01689 / 78 515 01689	**07600**	**08100**	**08300**	**02400**	**08500**	**04900**
78 514 02091 / 78 515 02092	**07600**	**08100**	**08300**	**02400**	**08500**	**04900**
78 514 02089 / 78 515 02089	**07600**	**08100**	**08300**	**02400**	**08500**	**04900**
78 514 02486 / 78 515 02486	**07600**	**08100**	**08300**	**02400**	**08500**	**04900**
78 514 02488 / 78 515 02488	**07600**	**08100**	**08300**	**02400**	**08500**	**04900**

MaxiLock-M – MWLN 95° – Toolholder with top clamping

Scope of supply:
Tool holder with allen key







Illustrations show right-hand versions

Designation	H inch	B inch	OAL inch	LH inch	WF inch	Insert	Left-hand 78 551 ...	Right-hand 78 550 ...
MWLN L 12-3B	0.750	0.750	4.500	1.000	1.000	WN..33..	**01223**[1)]	**01223**[1)]
MWLN R/L 16-3D	1.000	1.000	6.000	1.000	1.250	WN..33..	**01643**[1)]	**01643**[1)]
MWLN R/L 12-4B	0.750	0.750	4.500	1.070	1.000	WN..43..	**01224**[1)]	**01224**[1)]
MWLN R/L 16-4D	1.000	1.000	6.000	1.070	1.250	WN..43..	**01644**[1)]	**01644**[1)]
MWLN R/L 20-4D	1.250	1.250	6.000	1.070	1.500	WN..43..	**02044**[1)]	**02044**[1)]
MWLN R/L 24-4E	1.500	1.500	7.000	1.070	2.000	WN..43..	**02454**[1)]	**02454**[1)]

1) Not in stock

Spare parts for Article no.	Clamp 78 950 ...	Key I 78 950 ...	Dowel pin 78 950 ...	Clamping screw 78 950 ...	Solid Carbide Seat W 78 950 ...	Solid Carbide Seat V 78 950 ...
78 551 01223	**00600**	**06800**	**02900**	**03600**		**02200**
78 550 01643 / 78 551 01643	**00600**	**06800**	**02900**	**03600**		**02200**
78 550 01224 / 78 551 01224	**00400**	**07000**	**03100**	**03800**		
78 550 01644	**00400**	**07000**	**03100**	**03800**	**02400**	
78 551 01644	**00400**	**07000**	**03100**	**03800**		
78 550 02044 / 78 551 02044	**00400**	**07000**	**03100**	**03800**		
78 550 02454 / 78 551 02454	**00400**	**07000**	**03100**	**03800**		

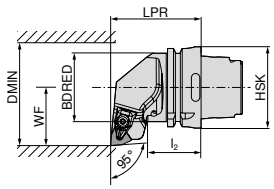
9

MaxiLock-D – DWLN 95° – Toolholder with top clamping

Scope of supply:
Tool holder with Torx key









Illustrations show right-hand versions

Designation	Adapter	LPR mm	l_2 mm	BDRED mm	WF mm	DMIN mm	Insert	Left-hand 74 529 ...	Right-hand 74 528 ...
HSK T63 DWLN R/L 08	HSK-T 63	70	42.00	52.6	45	125	WN.. 0804	**508**	**508**
HSK T100 DWLN R 08	HSK-T 100	80	45.00	87.6	55	125	WN.. 0804		**708**
HSK T100 DWLN L 08	HSK-T 100	80	53.96	87.6	55	125	WN.. 0804	**708**	

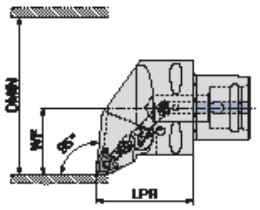
Spare parts	XPress type 70 950 ...	Screwdriver 80 950 ...		Clamping screw 70 950 ...	Solid Carbide Seat W 70 950 ...
74 528 508 / 74 529 708	**824**	T15 - IP	**128**	M4.5x12 - IP	**820**	**812**

MaxiLock-N – PWLN 95° – Toolholder with lever clamping

Scope of supply:
without high-performance coolant set







Illustrations show right-hand versions



Designation	Adapter	LPR mm	WF mm	DMIN mm	torque moment Nm	Insert	Direct cooling compatible	Left-hand 84 653 ...	Right-hand 84 652 ...
PSC40 PWLN R/L 50050-08	PSC 40	50	27	50	5	WN.. 0804	DC	**00895**	**00895**
PSC50 PWLN R/L 65060-08	PSC 50	60	35	65	5	WN.. 0804	DC	**00894**	**00894**
PSC63 PWLN R/L 80065-08	PSC 63	65	45	80	5	WN.. 0804	DC	**00893**	**00893**

The high-performance coolant set with article number **84 950 27400** can be ordered as an optional extra → **Page 46.**

Spare parts

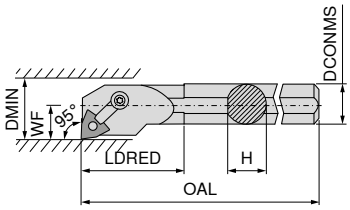
	Shim 84 950 ...		Elbow lever screw 84 950 ...	Lever 84 950 ...	Solid Carbide Seat W 84 950 ...
84 652 00893 / 84 653 00895	**29200**	M8X1/L17 SW3	**28700**	**28900**	**27700**

MaxiLock-M – MWLN 95° – Boring bar with top clamping

▲ A... = with thru coolant
▲ S... = without thru coolant

Scope of supply:
Tool holder with allen key





Illustrations show right-hand versions



Designation	DCONMS mm	H mm	OAL mm	LDRED mm	WF mm	DMIN mm	Insert	Left-hand 78 717 ...	Right-hand 78 716 ...
S16T MWLN R/L 4	25.40	22.860	304.8	63.5	16.256	32.512	WN..43..	**41626**[1)]	**41626**[1)]
A16T MWLN R/L 4	25.40	22.860	304.8	63.5	16.256	32.512	WN..43..	**41616**	**41616**
S20U MWLN R/L 4	31.75	29.972	355.6	76.2	19.431	38.862	WN..43..	**42030**[1)]	**42030**[1)]
A20U MWLN R/L 4	31.75	29.972	355.6	76.2	19.431	38.862	WN..43..	**42020**[1)]	**42020**[1)]
S24U MWLN R/L 4	38.10	34.798	355.6	76.2	22.606	45.212	WN..43..	**42434**[1)]	**42434**[1)]
A24U MWLN R/L 4	38.10	34.798	355.6	76.2	22.606	45.212	WN..43..	**42424**[1)]	**42424**[1)]

1) Not in stock

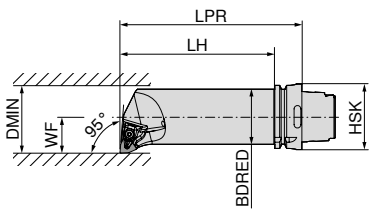
Spare parts for Article no.	Clamp 78 950 ...	Key I 78 950 ...	Dowel pin 78 950 ...	Clamping screw 78 950 ...	Solid Carbide Seat W 78 950 ...
78 716 41626 / 78 717 41626	**00400**	**06900**	**03000**	**03700**	
78 716 41616 / 78 717 41616	**00400**	**06900**	**03000**	**03700**	
78 716 42030 / 78 717 42030	**00400**	**06900**	**03100**	**03800**	**02400**
78 716 42020 / 78 717 42020	**00400**	**06900**	**03100**	**03800**	**02400**
78 716 42434 / 78 717 42434	**00400**	**06900**	**03100**	**03800**	**02400**
78 716 42424 / 78 717 42424	**00400**	**06900**	**03100**	**03800**	**02400**

MaxiLock-D – DWLN 95° – Boring bar with top clamping

Scope of supply:
Boring bar with Torx key







Illustrations show right-hand versions

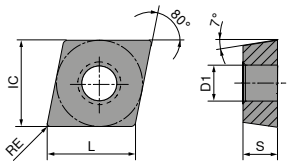


Designation	Adapter	LPR mm	LH mm	BDRED mm	WF mm	DMIN mm	torque moment Nm	Insert	Left-hand 74 537 ...	Right-hand 74 536 ...
HSK T63 50Q DWLN R/L 08	HSK-T 63	175	149	50	35	63	4	WN.. 0804	**508**	**508**

Spare parts	XPress type 70 950 ...		Screwdriver 80 950 ...		Clamping screw 70 950 ...		Solid Carbide Seat W 70 950 ...	
74 536 508 / 74 537 508		**824**	T15 - IP	**128**	M4.5x12 - IP	**820**		**812**

CCGT / CCMT / CCET

Designation	L inch	S inch	D1 inch	IC inch
CC.T 21..	0.2520	0.0937	0.1102	0.2500
CC.T 32..	0.3819	0.1563	0.1732	0.3748
CC.T 43..	0.5079	0.1874	0.2165	0.5000



CCGT / CCMT

		NEW	NEW
	-CF05 CTEP110	-CF55 CTEP110	-SF TCM407	-SF TCM10	-SMF TCM10	-SF CTCP125-P	-SF CTCP135-P
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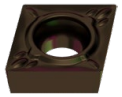
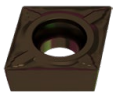
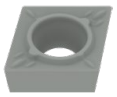
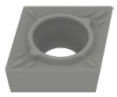
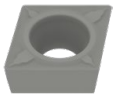
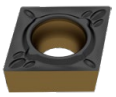
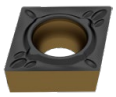
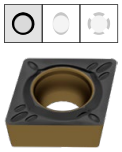
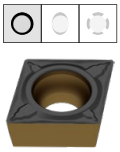
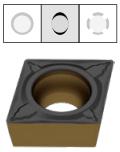
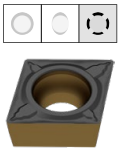
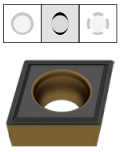
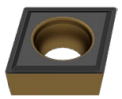
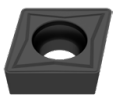
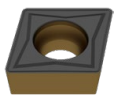
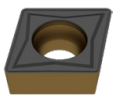
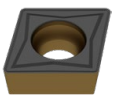
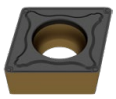
							
	F	F	F	F	F	F	F
	CERMET CCGT	CERMET CCMT	CERMET CCGT	CERMET CCGT	CERMET CCMT	CCGT	CCGT
	76 247 ...	76 248 ...	70 251 ...	70 251 ...	70 249 ...	76 251 ...	76 251 ...
ANSI / RE inch							
21.5.5EN 0.0079	002		850	900		50201	70201
21.51EN 0.0157	004	004	852	902	900		
32.5.5EN 0.0079	014		854	904			
32.51EN 0.0157	016	016		906	904		
32.52EN 0.0315	018	018		908	906		
431EN 0.0157		028		910			
P	●	●	●	●	●	●	●
M	○	○	○	○	○		○
K	○	○	○	○	○	○	
N							
S							
H							
O							

CCMT / CCGT

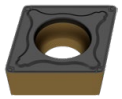
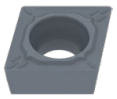
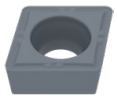
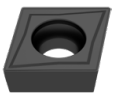
		NEW	NEW	NEW	NEW	NEW	NEW	NEW
		-SF CTCP115-P	-SF CTCP125-P	-SF CTCP135-P	-SMF CTCP115-P	-SMF CTCP125-P	-SMF CTCP135-P	-SM CTCP125-P
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
								
		F	F	F	F	F	F	M
		CCMT	CCMT	CCMT	CCMT	CCMT	CCMT	CCGT
		76 253 ...	76 253 ...	76 253 ...	76 249 ...	76 249 ...	76 249 ...	76 250 ...
ANSI	RE inch							
21.5.5EN	0.0079							50201
21.51EN	0.0157	30401	50401	70401		50401	70401	
21.52EN	0.0315					50601		
32.51EN	0.0157	31601	51601	71601	31601	51601	71601	
32.52EN	0.0315	31801	51801		31801	51801		
431EN	0.0157		52801			52801		
432EN	0.0315		53001		33001		73001	
P		●	●	●	●	●	●	●
M				○			○	
K		○	○		○	○		○
N								
S								
H								
O								

CCGT / CCMT

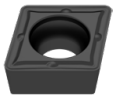
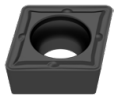
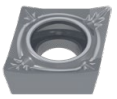
		NEW		NEW	NEW	NEW	NEW	NEW
		-SM CTCP135-P	-SM CTCK110	-SM CTCK120	-SM CTCP115-P	-SM CTCP125-P	-SM CTCP135-P	-SMQ CTCP115-P
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
								
		M	M	M	M	M	M	F
		CCGT	CCMT	CCMT	CCMT	CCMT	CCMT	CCMT
		76 250 ...	70 252 ...	70 252 ...	76 252 ...	76 252 ...	76 252 ...	76 194 ...
ANSI	RE inch							
21.5.5EN	0.0079	70201						
21.51EN	0.0157		004	554	30401	50401	70401	
21.52EN	0.0315		006	506	30601		70601	
32.51EN	0.0157		016	516	31601	51601	71601	31601
32.52EN	0.0315		018	518	31801	51801	71801	31801
32.53EN	0.0472		020	520				
431EN	0.0157		028	528	32801	52801	72801	32801
432EN	0.0315		030	530	33001	53001	73001	33001
433EN	0.0472					53201		
P		●	○	○	●	●	●	●
M		○					○	
K			●	●	○	○		○
N								
S								
H								
O								

9

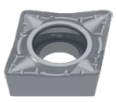
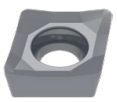
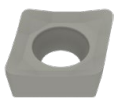
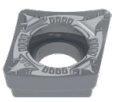
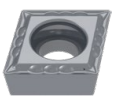
CCMT

		NEW		NEW		NEW		NEW
		-SMQ CTCP125-P	-M25 CTCM120	-SF CTPM125	-M25 CTPM125	-F43 CTCM130	-M25 CTCM130	-SM CTCM130
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
								
		F	F	F	F	F	F	M
		CCMT	CCMT	CCMT	CCMT	CCMT	CCMT	CCMT
		76 194 ...	75 210 ...	75 042 ...	75 210 ...	75 031 ...	75 210 ...	75 047 ...
ANSI	RE inch							
21.51EN	0.0157		10400	20400	204		30400	30400
32.51EN	0.0157	51601	11600	21600	216	31600	31600	31600
32.52EN	0.0315	51801	11800		218	31800	31800	31800
431EN	0.0157	52801						32800
432EN	0.0315	53001						33000
P		●	○	○	○	○	○	○
M			●	●	●	●	●	●
K		○						
N								
S						○	○	○
H								
O								

CCMT / CCGT

		-M55 CTCM120	-M55 CTPM125	-M55 CTCM130	-23P H216T	-25P H210T	-25P CTPX710
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN			DRAGONSKIN
							
		M	M	M	F	F	M
		CCMT	CCMT	CCMT	CCGT	CCGT	CCGT
		75 211 ...	75 211 ...	75 211 ...	70 255 ...	70 248 ...	70 248 ...
ANSI	RE inch						
21.5.5FN	0.0079				652	636	70200
21.51EN	0.0157	10400	204	30400			
21.51FN	0.0157				654	638	70400
32.5.5FN	0.0079					639	71400
32.51EN	0.0157	11600	216	31600			
32.51FN	0.0157				656	640	71600
32.52EN	0.0315	11800	218	31800			
32.52FN	0.0315				658	641	71800
43.5FN	0.0079					643	
431EN	0.0157	12800	228	32800			
431FN	0.0157					642	72800
432EN	0.0315	13000	230	33000			
432FN	0.0315					644	73000
P		○	○	○			●
M		●	●	●			●
K					○	○	
N					●	●	●
S				○		○	●
H							
O					○	○	

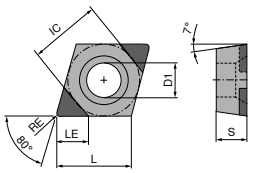
CCGT / CCMT / CCET

		-25Q H210T	-25Q CTPX710	-27 CTPX715	-27 H10T	-29 H216T	NEW -29 CTPX715	NEW -F05 CTPX710
			DRAGONSKIN	DRAGONSKIN			DRAGONSKIN	DRAGONSKIN
								
		M	M	M	M	M	M	F
		CCGT	CCGT	CCGT	CCGT	CCMT	CCMT	CCET
		70 248 ...	70 248 ...	70 254 ...	70 254 ...	70 245 ...	70 245 ...	76 243 ...
ANSI	RE inch							
21.5.5FN	0.0079			80200	600			10200
21.50FN	0.0039							10100
21.51EN	0.0157					60400	70400	
21.51FN	0.0157	678	75400	80400	602			10400
32.5.5FN	0.0079			81400	604			
32.51EN	0.0157					61600	71600	
32.51FN	0.0157	680	76600	81600	606			
32.52EN	0.0315					61800	71800	
32.52FN	0.0315	681	76800	81800	608			
32.54FN	0.0630			72200				
43.5FN	0.0079			82600	610			
431FN	0.0157	682	77800	82800	612			
432FN	0.0315	686	78000	83000	614			
P			●	●			●	●
M			●	●			●	●
K		○		○	○	○	○	
N		●	●	●	●	●	●	●
S		○	●	●			●	●
H								
O		○		○	○	○	○	

9

CCGW

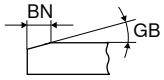
Designation	L inch	S inch	D1 inch	IC inch
CCGW 21.5..	0.2539	0.0937	0.1102	0.2500
CCGW 32.5..	0.3819	0.1563	0.1732	0.3748

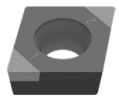
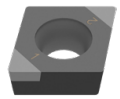
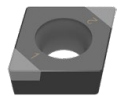


CCGW B

CCGW

▲ TCE(NOI) = Design and number of equipped cutting edge corners



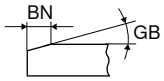
						NEW	NEW	NEW
						CTBH1000C	CTBH2000C	CTBH3000C
								
						F	F	F
						PCBN CCGW	PCBN CCGW	PCBN CCGW
						71 000 ...	71 000 ...	71 000 ...
ANSI	RE inch	BN inch	GB	**TCE (NOI)**	LE inch			
21.5.5EN	0.0079			**B (2)**	0.1142	**70002**	**80002**	
21.5.5SN	0.0079	0.0055	20°	**B (2)**	0.1142			**90002**
21.51EN	0.0157			**B (2)**	0.1142	**70302**	**80302**	
21.51SN	0.0157	0.0055	20°	**B (2)**	0.1142			**90302**
32.5.5EN	0.0079			**B (2)**	0.1299	**70602**	**80602**	
32.5.5SN	0.0079	0.0055	20°	**B (2)**	0.1299			**90602**
32.51EN	0.0157			**B (2)**	0.1299	**70902**	**80902**	
32.51SN	0.0157	0.0055	20°	**B (2)**	0.1299			**90902**
32.52EN	0.0315			**B (2)**	0.1299	**71202**	**81202**	
32.52SN	0.0315	0.0055	20°	**B (2)**	0.1299			**91202**

P			
M			
K			
N			
S			
H	●	●	●
O			

→ v_c Page 196–199

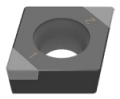
CCGW

▲ TCE(NOI) = Design and number of equipped cutting edge corners



NEW





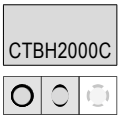
M

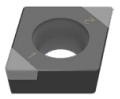
PCBN

CCGW

71 000 ...

NEW





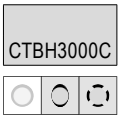
M

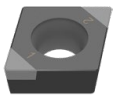
PCBN

CCGW

71 000 ...

NEW





M

PCBN

CCGW

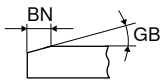
71 000 ...

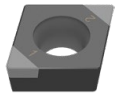
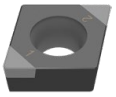
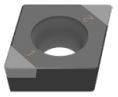
ANSI	RE inch	BN inch	GB	TCE (NOI)	LE inch					
21.5.5SN	0.0079	0.0035	15°	**B (2)**	0.1142	**70102**		**80102**		
21.5.5SN	0.0079	0.0071	25°	**B (2)**	0.1142					**90102**
21.51SN	0.0157	0.0035	15°	**B (2)**	0.1142	**70402**		**80402**		
21.51SN	0.0157	0.0071	25°	**B (2)**	0.1142					**90402**
32.5.5SN	0.0079	0.0035	15°	**B (2)**	0.1299	**70702**		**80702**		
32.5.5SN	0.0079	0.0071	25°	**B (2)**	0.1299					**90702**
32.51SN	0.0157	0.0035	15°	**B (2)**	0.1299	**71002**		**81002**		
32.51SN	0.0157	0.0071	25°	**B (2)**	0.1299					**91002**
32.52SN	0.0315	0.0035	15°	**B (2)**	0.1299	**71302**		**81302**		
32.52SN	0.0315	0.0071	25°	**B (2)**	0.1299					**91302**
P										
M										
K										
N										
S										
H						●		●		●
O										

9

CCGW

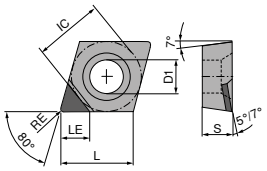
▲ TCE(NOI) = Design and number of equipped cutting edge corners



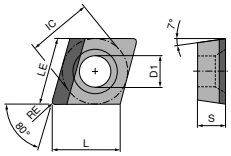
						NEW	NEW	NEW
						CTBH1000C	CTBH2000C	CTBH3000C
								
						R	R	R
						PCBN CCGW	PCBN CCGW	PCBN CCGW
						71 000 ...	71 000 ...	71 000 ...
ANSI	RE inch	BN inch	GB	**TCE (NOI)**	LE inch			
21.5.5SN	0.0079	0.0055	20°	**B (2)**	0.1142	**70202**	**80202**	
21.5.5SN	0.0079	0.0079	35°	**B (2)**	0.1142			**90202**
21.51SN	0.0157	0.0055	20°	**B (2)**	0.1142	**70502**	**80502**	
21.51SN	0.0157	0.0079	35°	**B (2)**	0.1142			**90502**
32.5.5SN	0.0079	0.0055	20°	**B (2)**	0.1299	**70802**	**80802**	
32.5.5SN	0.0079	0.0079	35°	**B (2)**	0.1299			**90802**
32.51SN	0.0157	0.0055	20°	**B (2)**	0.1299	**71102**	**81102**	
32.51SN	0.0157	0.0079	35°	**B (2)**	0.1299			**91102**
32.52SN	0.0315	0.0055	20°	**B (2)**	0.1299	**71402**	**81402**	
32.52SN	0.0315	0.0079	35°	**B (2)**	0.1299			**91402**
P								
M								
K								
N								
S								
H						●	●	●
O								

CCGW / CCGT

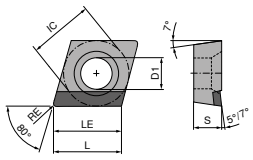
Designation	L inch	S inch	D1 inch	IC inch
CCG. 21..	0.2520	0.0937	0.1102	0.2500
CCG. 32..	0.3819	0.1563	0.1732	0.3748
CCG. 43..	0.5079	0.1874	0.2165	0.5000



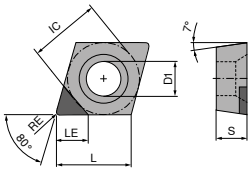
CCGT A



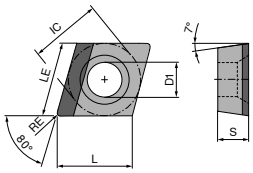
CCGT A LL



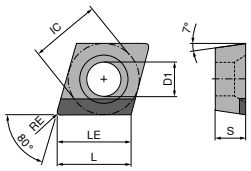
CCGT A RR



CCGW A



CCGW A LL



CCGW A RR

CCGW / CCGT

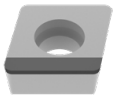
▲ TCE(NOI) = Design and number of equipped cutting edge corners

				CTDMD05	CTDPD20	CTDPD20	-Q CTDPD20	-Q CTDPD20
				F	F	F	F	F
				DIAMOND CCGW	DIAMOND CCGW	DIAMOND CCGT	DIAMOND CCGW	DIAMOND CCGT
				71 120 ...	71 120 ...	71 124 ...	71 125 ...	71 126 ...
ANSI	RE inch	TCE (NOI)	LE inch					
21.50FN	0.0039	A (1)	0.1339					101
21.50FN	0.0039	A (1)	0.1378			10100		
21.5.5FN	0.0079	A (1)	0.0984	050				
21.5.5FN	0.0079	A (1)	0.1299				102	102
21.5.5FN	0.0079	A (1)	0.1339		100	100		
21.51FN	0.0157	A (1)	0.0984	052				
21.51FN	0.0157	A (1)	0.1220					104
21.51FN	0.0157	A (1)	0.1260		102	102	104	
21.52FN	0.0315	A (1)	0.0984	05300				
21.52FN	0.0315	A (1)	0.1181		10300	10300		
32.50FN	0.0039	A (1)	0.1772				111	111
32.5.5FN	0.0079	A (1)	0.1732				112	112
32.5.5FN	0.0079	A (1)	0.1772		10500	10500		
32.51FN	0.0157	A (1)	0.0984	054				
32.51FN	0.0157	A (1)	0.1654				114	114
32.51FN	0.0157	A (1)	0.1693		104	104		
32.52FN	0.0315	A (1)	0.0984	056				
32.52FN	0.0315	A (1)	0.1614		106	106		
43.5FN	0.0079	A (1)	0.1732				122	122
431FN	0.0157	A (1)	0.1654				124	124
431FN	0.0157	A (1)	0.1693		108	108		
432FN	0.0315	A (1)	0.1614		110	110		
P								
M								
K								
N				●	●	●	●	●
S								
H								
O				●	●	●	●	●

9

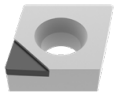
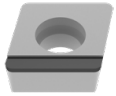
CCGW / CCGT

▲ TCE(NOI) = Design and number of equipped cutting edge corners

				CTDPD20	CTDPD20	-CB1 CTDPD20	-CB2 CTDPD20	-CB1 CTDPD20	-Q-CB2 CTDPD20
									
				F	F	F	M	F	M
				DIAMOND CCGW	DIAMOND CCGW	DIAMOND CCGT	DIAMOND CCGT	DIAMOND CCGT	DIAMOND CCGT
				71 172 ...	71 172 ...	71 300 ...	71 168 ...	71 305 ...	71 169 ...
ANSI	RE inch	TCE (NOI)	LE inch						
21.5.5FN	0.0079	A (1)	0.1339			102			
21.51FN	0.0157	A (1)	0.1220					104	
21.51FN	0.0157	A (1)	0.1260			104	10001		
21.51FRR	0.0157	A (1)	0.2539		10101				
21.51FLL	0.0157	A (1)	0.2539	10001					
21.52FN	0.0315	A (1)	0.1181			10600			
32.5.5FN	0.0079	A (1)	0.1732						10001
32.5.5FN	0.0079	A (1)	0.1772			112			
32.51FN	0.0157	A (1)	0.1654					114	10101
32.51FN	0.0157	A (1)	0.1693			114			
32.52FN	0.0315	A (1)	0.1614			118			
32.52FRR	0.0315	A (1)	0.3819		10301				
32.52FLL	0.0315	A (1)	0.3819	10201					
32.53FLL	0.0472	A (1)	0.3819	10401					
431FN	0.0157	A (1)	0.1654					124	10201
431FN	0.0157	A (1)	0.1693			124			
432FN	0.0315	A (1)	0.1614			128			
433FRR	0.0472	A (1)	0.5079		10601				
433FLL	0.0472	A (1)	0.5079	10501					
P									
M									
K									
N				●	●	●	●	●	●
S									
H									
O				●	●	●	●	●	●

CCGT / CCGW

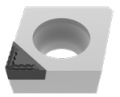
▲ TCE(NOI) = Design and number of equipped cutting edge corners

				CTDPS30	-Q CTDPS30	-Q CTDPS30	CTDPS30	CTDPS30	-CB2 CTDPS30
									
				F	F	F	F	F	M
				DIAMOND CCGT	DIAMOND CCGW	DIAMOND CCGT	DIAMOND CCGT	DIAMOND CCGT	DIAMOND CCGT
				71 166 ...	71 125 ...	71 126 ...	71 170 ...	71 170 ...	71 301 ...
ANSI	RE inch	TCE (NOI)	LE inch						
21.50FN	0.0039	A (1)	0.1378	20001					
21.5.5FN	0.0079	A (1)	0.1299		152	152			
21.5.5FN	0.0079	A (1)	0.1339	20101					202
21.51FN	0.0157	A (1)	0.1260						204
21.51FRR	0.0157	A (1)	0.2539					20101	
21.51FLL	0.0157	A (1)	0.2539				20001		
21.52FN	0.0315	A (1)	0.1181						208
21.52FRR	0.0315	A (1)	0.2539					20301	
21.52FLL	0.0315	A (1)	0.2539				20201		
32.50FN	0.0039	A (1)	0.1772		16300				
32.5.5FN	0.0079	A (1)	0.1732		162	162			
32.5.5FN	0.0079	A (1)	0.1772	20201					212
32.51FN	0.0157	A (1)	0.1693						214
32.52FN	0.0315	A (1)	0.1614						218
32.52FRR	0.0315	A (1)	0.3819					20501	
32.52FLL	0.0315	A (1)	0.3819				20401		
43.5FN	0.0079	A (1)	0.1732			172			
431FN	0.0157	A (1)	0.1654			174			
431FN	0.0157	A (1)	0.1693	20301					224
432FN	0.0315	A (1)	0.1614						228
433FRR	0.0472	A (1)	0.5079					20701	
433FLL	0.0472	A (1)	0.5079				20601		
P									
M									
K									
N				●	●	●	●	●	●
S									
H									
O				●	●	●	●	●	●

9

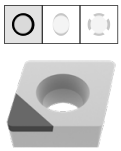
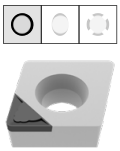
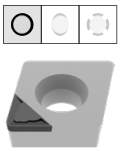
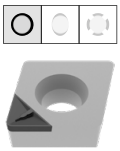
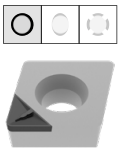
CCGT / CCGW

▲ TCE(NOI) = Design and number of equipped cutting edge corners

				-Q-CB2 CTDPS30	CTDPU20	-CB3 CTDPU20	CTDPS30
							
				M	F	R	F
				DIAMOND CCGT	DIAMOND CCGW	DIAMOND CCGT	DIAMOND CCGW
				71 306 ...	71 171 ...	71 302 ...	71 171 ...
ANSI	RE inch	TCE (NOI)	LE inch				
21.50FN	0.0039	A (1)	0.1378				20001
21.5.5FN	0.0079	A (1)	0.1299	202			
21.5.5FN	0.0079	A (1)	0.1339				20101
21.51FN	0.0157	A (1)	0.1220	204			
21.51FN	0.0157	A (1)	0.1260			204	20201
32.5.5FN	0.0079	A (1)	0.1732	212			
32.5.5FN	0.0079	A (1)	0.1772				20301
32.51FN	0.0157	A (1)	0.1654	214			
32.51FN	0.0157	A (1)	0.1693		30001	214	20401
32.52FN	0.0315	A (1)	0.1614		30101	218	
43.5FN	0.0079	A (1)	0.1732	222			
431FN	0.0157	A (1)	0.1654	224			
431FN	0.0157	A (1)	0.1693				20501
P							
M							
K							
N				●	●	●	●
S							
H							
O				●	●	●	●

CCGW / CCGT

▲ TCE(NOI) = Design and number of equipped cutting edge corners

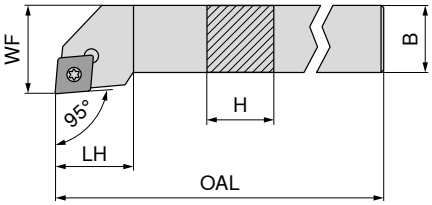
				CTDCD10	-CB1 CTDCD10	-Q-CB1 CTDCD10	-CB2 CTDCD10	-Q-CB2 CTDCD10
								
				F	F	F	M	M
				DIAMOND CCGW	DIAMOND CCGT	DIAMOND CCGT	DIAMOND CCGT	DIAMOND CCGT
				71 171 ...	71 300 ...	71 167 ...	71 301 ...	71 306 ...
ANSI	RE inch	TCE (NOI)	LE inch					
21.5.5FN	0.0079	A (1)	0.0906			40001		
21.5.5FN	0.0079	A (1)	0.0945	40001	302		30200	
21.51FN	0.0157	A (1)	0.0827			40101		304
21.51FN	0.0157	A (1)	0.0866	40101	304		304	
21.52FN	0.0315	A (1)	0.0787		30600			
32.5.5FN	0.0079	A (1)	0.0906					31200
32.5.5FN	0.0079	A (1)	0.0945	40201			31200	
32.51FN	0.0157	A (1)	0.0827			40201		314
32.51FN	0.0157	A (1)	0.0866	40301	314		314	
32.52FN	0.0315	A (1)	0.0787	40401			31600	
431FN	0.0157	A (1)	0.0827			40301		324
431FN	0.0157	A (1)	0.0866				32600	
432FN	0.0315	A (1)	0.0787	40501				
432FN	0.0315	A (1)	0.0827				328	
P								
M								
K								
N				●	●	●	●	●
S								
H								
O				●	●	●	●	●

9

MaxiLock-S – SCLC 95° – Toolholder with screw clamping

Scope of supply:
Tool holder with Torx key





Illustrations show right-hand versions



Designation	H inch	B inch	OAL inch	LH inch	WF inch	Insert	Left-hand 78 553 ...	Right-hand 78 552 ...
SCLC R/L 06-2	0.375	0.375	2.500	0.390	0.500	CC..21.5..	**00602**[1)]	**00602**[1)]
SCLC R/L 08-3	0.500	0.500	3.500	0.630	0.625	CC..32.5..	**00803**	**00803**
SCLC R/L 10-3	0.625	0.625	4.000	0.630	0.750	CC..32.5..	**01003**[1)]	**01003**[1)]
SCLC R/L 12-3B	0.750	0.750	4.500	0.630	1.000	CC..32.5..	**01223**	**01223**
SCLC R/L 16-3D	1.000	1.000	6.000	0.630	1.250	CC..32.5..	**01643**	**01643**
SCLC R/L 12-4B	0.750	0.750	4.500	1.000	1.000	CC..43..	**01224**[1)]	**01224**[1)]
SCLC R/L 16-4D	1.000	1.000	6.000	1.000	1.250	CC..43..	**01644**[1)]	**01644**[1)]
SCLC R/L 20-4D	1.250	1.250	6.000	1.000	1.500	CC..43..	**02044**[1)]	**02044**[1)]

1) Not in stock


Key I - TORX®


Clamping screw


Carbide type C


Threaded sleeve

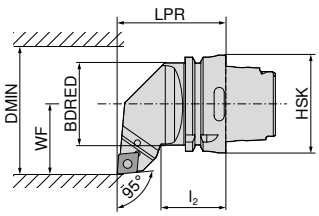
Spare parts for Article no.	Key I - TORX® 78 950 ...	Clamping screw 78 950 ...	Carbide type C 78 950 ...	Threaded sleeve 78 950 ...
78 552 00602 / 78 553 00602	**06400**	**06200**		
78 552 00803 / 78 553 00803	**05700**	**05600**		
78 552 01003 / 78 553 01003	**05700**	**05600**		
78 552 01223 / 78 553 01223	**05700**	**05600**		
78 552 01643 / 78 553 01643	**05700**	**05600**		
78 552 01224 / 78 553 01224	**04700**		**04500**	**04800**
78 552 01644 / 78 553 01644	**04700**		**04500**	**04800**
78 552 02044 / 78 553 02044	**04700**		**04500**	**04800**

MaxiLock-S – SCLC 95° – Toolholder with screw clamping

Scope of supply:
Tool holder with Torx key







Illustrations show right-hand versions



Designation	Adapter	LPR mm	l_2 mm	BDRED mm	WF mm	DMIN mm	torque moment Nm	Insert	Left-hand 74 541 ...	Right-hand 74 540 ...
HSK T63 SCLC R/L 12	HSK-T 63	70	42	53	45	100	5	CC.. 1204	**512**	**512**


Combination Key


Clamping screw


Carbide type C

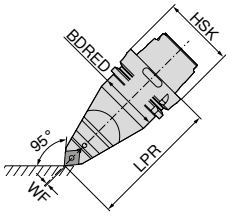

Threaded sleeve

Spare parts	Combination Key 70 950 ...	Clamping screw 70 950 ...	Carbide type C 70 950 ...	Threaded sleeve 70 950 ...
74 540 512 / 74 541 512	T15/SW **398**	M4.5x12 **114**	**166**	M4.5 **170**

MaxiLock-S – SCMC 50° – Toolholder with screw clamping

Scope of supply:
Tool holder with Torx key





Designation	Adapter	LPR mm	BDRED mm	WF mm	torque moment Nm	Insert	Neutral 74 542 ...
HSK T63 SCMC N 12	HSK-T 63	115	53	0	5	CC.. 1204	**512**


Combination Key


Clamping screw


Carbide type C

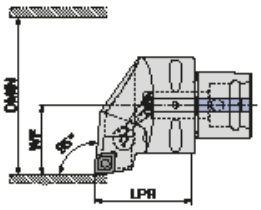

Threaded sleeve

Spare parts		70 950 ...		70 950 ...		70 950 ...		70 950 ...
74 542 512	T15/SW	**398**	M4.5x12	**114**		**166**	M4.5	**170**

MaxiLock-S – SCLC 95° – Toolholder with screw clamping

Scope of supply:
without high-performance coolant set



Illustrations show right-hand versions



Designation	Adapter	LPR mm	WF mm	DMIN mm	torque moment Nm	Insert	Direct cooling compatible	Left-hand 84 655 ...	Right-hand 84 654 ...
PSC40 SCLC R/L 50050-12	PSC 40	50	27	50	5	CC.. 1204	DC	**01295**	**01295**
PSC50 SCLC R/L 65060-12	PSC 50	60	35	65	5	CC.. 1204	DC	**01294**	**01294**
PSC63 SCLC R/L 80065-12	PSC 63	65	45	80	5	CC.. 1204	DC	**01293**	**01293**

The high-performance coolant set with article number **84 950 27400** can be ordered as an optional extra → **Page 46.**


Clamping screw

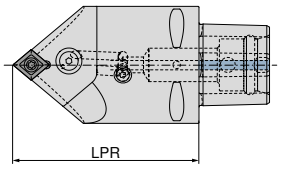
Spare parts	84 950 ...
84 654 01293 / 84 655 01295	**27500**

MaxiLock-S – SCMC 50° – Toolholder with screw clamping

Scope of supply:
without high-performance coolant set









Neutral
84 674 ...

Designation	Adapter	LPR mm	torque moment Nm	Insert	Direct cooling compatible	
PSC63 SCMC N 0100-12	PSC 63	100	5	CC.. 1204	DC	**01293**
PSC63 SCMC N 0130-12	PSC 63	130	5	CC.. 1204	DC	**11293**

The high-performance coolant set with article number **84 950 27400** can be ordered as an optional extra → **Page 46.**



Clamping screw
84 950 ...

Spare parts

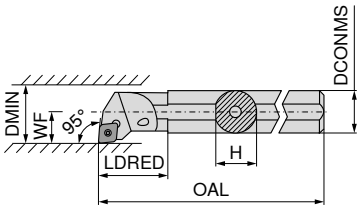
84 674 01293 / 84 674 11293	**27500**

MaxiLock-S – SCLC 95° – Boring bar with screw clamping

▲ A... = with thru coolant
▲ S... = without thru coolant

Scope of supply:
Tool holder with Torx key





Illustrations show right-hand versions



Designation	DCONMS inch	H inch	OAL inch	LDRED inch	WF inch	DMIN inch	Insert	Left-hand 78 719 ...	Right-hand 78 718 ...
S06M SCLC R/L 2	0.375	0.340	6.000	0.830	0.250	0.500	CC..21.5..	**20617**[1)]	**20617**[1)]
A06M SCLC L 2	0.375	0.340	6.000	0.830	0.250	0.500	CC..21.5..	**20606**	
S08M SCLC R/L 2	0.500	0.460	6.000	0.910	0.312	0.625	CC..21.5..	**20818**[1)]	**20818**[1)]
A08M SCLC R/L 2	0.500	0.460	6.000	0.910	0.312	0.625	CC..21.5..	**20808**[1)]	**20808**[1)]
S10R SCLC R/L 2	0.625	0.580	8.000	1.060	0.406	0.812	CC..21.5..	**21021**[1)]	**21021**[1)]
A10R SCLC R/L 2	0.625	0.580	8.000	1.060	0.406	0.812	CC..21.5..	**21010**	**21010**[1)]
S10R SCLC R/L 3	0.625	0.580	8.000	1.060	0.406	0.812	CC..32.5..	**31021**[1)]	**31021**[1)]
A10R SCLC R/L 3	0.625	0.580	8.000	1.060	0.406	0.812	CC..32.5..	**31010**	**31010**
S12S SCLC R/L 3M	0.750	0.710	10.000	1.580	0.500	1.000	CC..32.5..	**91222**[1)]	**91222**[1)]
A12S SCLC R/L 3M	0.750	0.710	10.000	1.580	0.500	1.000	CC..32.5..	**91212**	**91212**
S16T SCLC R/L 3M	1.000	0.900	12.000	1.810	0.640	1.280	CC..32.5..	**91626**[1)]	**91626**[1)]
S16T SCLC R/L 4	1.000	0.900	12.000	3.000	0.640	1.280	CC..43..	**41626**[1)]	**41626**[1)]
S20U SCLC R/L 4	1.250	1.180	14.000	3.000	0.765	1.530	CC..43..	**42030**[1)]	**42030**[1)]
S24V SCLC R/L 4	1.500	1.370	16.000	3.000	0.890	1.780	CC..43..	**42435**[1)]	**42435**[1)]

1) Not in stock


Key I - TORX®


Clamping screw

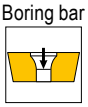

Carbide type C


Threaded sleeve

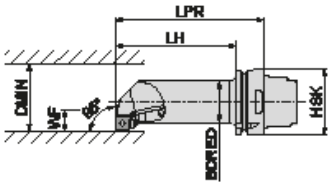
Spare parts for Article no.	Key I - TORX® 78 950 ...	Clamping screw 78 950 ...	Carbide type C 78 950 ...	Threaded sleeve 78 950 ...
78 718 20617 / 78 719 20617	**06400**	**05200**		
78 719 20606	**06400**	**05200**		
78 718 20818 / 78 719 20818	**06400**	**05200**		
78 718 20808 / 78 719 20808	**06400**	**05200**		
78 718 21021 / 78 719 21021	**06400**	**05200**		
78 718 21010 / 78 719 21010	**06400**	**05200**		
78 718 31021 / 78 719 31021	**06400**	**05200**		
78 718 31010 / 78 719 31010	**05700**	**05800**		
78 718 91222 / 78 719 91222	**05700**	**05800**		
78 718 91212 / 78 719 91212	**05700**	**05800**		
78 718 91626 / 78 719 91626	**05700**	**05800**		
78 718 41626 / 78 719 41626	**06600**	**06500**		
78 718 42030 / 78 719 42030	**04700**	**04600**	**04500**	**04800**
78 718 42435 / 78 719 42435	**04700**	**04600**	**04500**	**04800**

MaxiLock-S – SCLC 95° – Boring bar with screw clamping

Scope of supply:
Boring bar with Torx key







Illustrations show right-hand versions



Designation	Adapter	LPR mm	LH mm	BDRED mm	WF mm	DMIN mm	torque moment Nm	Insert	Left-hand 74 564 ...	Right-hand 74 563 ...
HSK T63 40L SCLC R/L 12	HSK-T 63	140	114	40	27	50	5	CC.. 1204	**512**	**512**



Combination Key **70 950 ...**



Clamping screw **70 950 ...**



Carbide type C **70 950 ...**

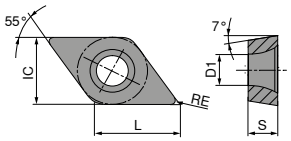


Threaded sleeve **70 950 ...**

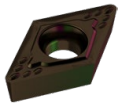
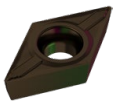
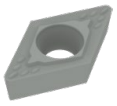
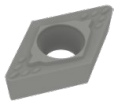
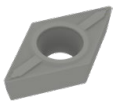
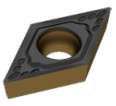
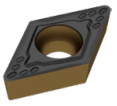
Spare parts						
74 563 512 / 74 564 512	T15/SW	**398**	M4.5x12	**114**	**166**	M4.5	**170**

DCGT / DCMT / DCET

Designation	L	S	D1	IC
	inch	inch	inch	inch
DC.T 21.5..	0.3051	0.0937	0.1102	0.2500
DC.T 32.5..	0.4567	0.1563	0.1732	0.3748

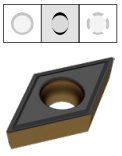
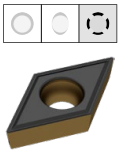


DCGT / DCMT

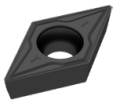
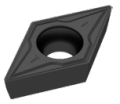
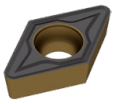
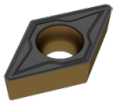
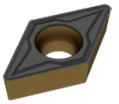
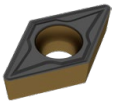
		-CF05 CTEP110	-CF55 CTEP110	-SF TCM407	-SF TCM10	-SMF TCM10	NEW -SF CTCP125-P	NEW -SF CTCP115-P
		DRAGONSKIN	DRAGONSKIN				DRAGONSKIN	DRAGONSKIN
								
		F	F	F	F	F	F	F
		CERMET DCGT	CERMET DCMT	CERMET DCGT	CERMET DCGT	CERMET DCMT	DCGT	DCMT
		76 245 ...	76 246 ...	70 257 ...	70 257 ...	70 265 ...	76 257 ...	76 259 ...
ANSI	RE inch							
21.5.5EN	0.0079	002	002		900	898	50201	
21.50EN	0.0039				898			
21.51EN	0.0157	004	004	852	902	900		30401
32.5.5EN	0.0079	014		854	904			
32.51EN	0.0157	016	016	856	906	904		31601
32.52EN	0.0315	018	018	858	908	906		31801
P		●	●	●	●	●	●	●
M		○	○	○	○	○		
K		○	○	○	○	○	○	○
N								
S								
H								
O								

9

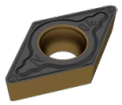
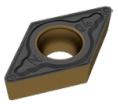
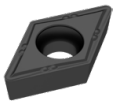
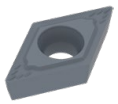
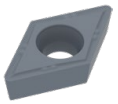
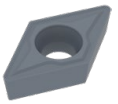
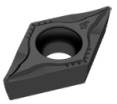
DCMT / DCGT

		NEW	NEW	NEW	NEW	NEW	NEW	NEW
		-SF CTCP125-P	-SF CTCP135-P	-SMF CTCP115-P	-SMF CTCP125-P	-SMF CTCP135-P	-SM CTCP125-P	-SM CTCP135-P
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
								
		F	F	F	F	F	M	M
		DCMT	DCMT	DCMT	DCMT	DCMT	DCGT	DCGT
		76 259 ...	76 259 ...	76 265 ...	76 265 ...	76 265 ...	76 256 ...	76 256 ...
ANSI	RE inch							
21.5.5EN	0.0079						50201	70201
21.51EN	0.0157	50401	70401		50401	70401		
21.52EN	0.0315					70601		
32.51EN	0.0157	51601	71601	31601	51601	71601		
32.52EN	0.0315	51801	71801	31801	51801	71801		
P		●	●	●	●	●	●	●
M			○			○		○
K		○		○	○		○	
N								
S								
H								
O								

DCMT

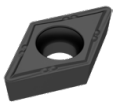
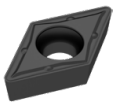
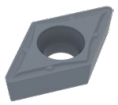
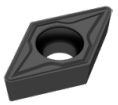
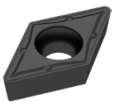
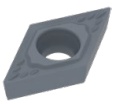
				NEW	NEW	NEW	NEW
		-SM CTCK110	-SM CTCK120	-SM CTCP115-P	-SM CTCP115-P	-SM CTCP125-P	-SM CTCP135-P
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
							
		M	M	M	M	M	M
		DCMT	DCMT	DCMT	DCMT	DCMT	DCMT
		70 258 ...	70 258 ...	76 183 ...	76 258 ...	76 258 ...	76 258 ...
ANSI	RE inch						
21.51EN	0.0157	004	554		30401	50401	70401
21.52EN	0.0315	006	506		30601	50601	70601
32.51EN	0.0157	016	516		31601	51601	71601
32.52EN	0.0315	018	518		31801	51801	71801
32.53EN	0.0472			32001		52001	
P		○	○	●	●	●	●
M							○
K		●	●	○	○	○	
N							
S							
H							
O							

DCMT

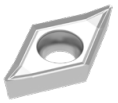
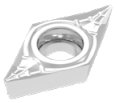
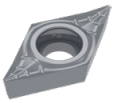
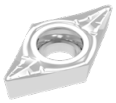
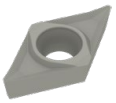
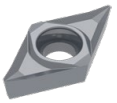
	NEW		NEW			NEW			NEW		NEW	
	-SMQ CTCP115-P		-SMQ CTCP125-P		-M25 CTCM120	-SF CTPM125		-M25 CTPM125		-SM CTPM125	-F43 CTCM130	
	DRAGONSKIN		DRAGONSKIN		DRAGONSKIN	DRAGONSKIN		DRAGONSKIN		DRAGONSKIN	DRAGONSKIN	
												
	M		M		F	F		F		M	F	
	DCMT		DCMT		DCMT	DCMT		DCMT		DCMT	DCMT	
	76 195 ...		76 195 ...		75 213 ...	75 044 ...		75 213 ...		75 048 ...	75 032 ...	
ANSI	RE inch											
21.5.5EN	0.0079				10200			202				
21.50.5EN	0.0079										30200	
21.51EN	0.0157	30401	50401		10400	20400		204			30400	
32.5.5EN	0.0079				11400			214				
32.50.5EN	0.0079										31400	
32.51EL	0.0157	31601	51601									
32.51EN	0.0157	31501	51501		11600	21600		216			31600	
32.51ER	0.0157	31701	51701									
32.52EN	0.0315	31801	51801		11800	21800		218		21800	31800	
P		●	●		○	○		○		○	○	
M					●	●		●		●	●	
K		○	○									
N												
S											○	
H												
O												

9

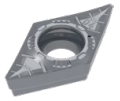
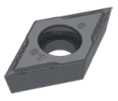
DCMT / DCGT

				NEW			NEW	
	-M25 CTCM130	-M55 CTCM120	-M55 CTPM125	-SM CTCM130	-M55 CTCM130	-SF CTPM125		
	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN		
								
	F	M	M	M	M	F		
	DCMT	DCMT	DCMT	DCMT	DCMT	DCGT		
	75 213 ...	75 214 ...	75 214 ...	75 048 ...	75 214 ...	75 043 ...		
ANSI	RE inch							
21.5.5EN	0.0079	30200						
21.50.5EN	0.0079							20200
21.51EN	0.0157	30400	10400	204	30400	30400		
21.52EN	0.0315		10600	206	30600	30600		
32.5.5EN	0.0079	31400						
32.51EN	0.0157	31600	11600	216	31600	31600		
32.52EN	0.0315	31800	11800	218	31800	31800		
P		○	○	○	○	○	○	
M		●	●	●	●	●	●	
K								
N								
S		○			○	○		
H								
O								

DCGT

	-23P H216T	-25P H210T	-25P CTPX710 DRAGONSKIN	-25Q H210T	-27 H10T	-27 CTPX715 DRAGONSKIN
						
	F	F	M	M	M	M
	DCGT	DCGT	DCGT	DCGT	DCGT	DCGT
	70 261 ...	70 263 ...	70 263 ...	70 263 ...	70 260 ...	70 260 ...
ANSI RE inch						
21.5.5FN 0.0079		**632**	**70200**		**600**	**80200**
21.51FN 0.0157	**654**	**634**	**70400**		**602**	**80400**
32.5.5FN 0.0079		**635**	**71400**		**604**	**81400**
32.51FN 0.0157	**664**	**636**	**71600**	**660**	**606**	**81600**
32.51FL 0.0157				**670**		
32.51FR 0.0157				**680**		
32.52FN 0.0315	**666**	**638**	**71800**	**662**	**608**	**81800**
32.52FL 0.0315				**672**		
32.52FR 0.0315				**682**		
P			●			●
M			●			●
K	○	○		○	○	○
N	●	●	●	●	●	●
S		○	●	○		●
H						
O	○	○		○	○	○

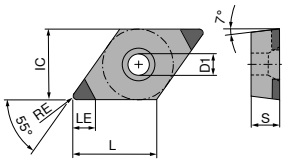
DCMT / DCET

		NEW		
		-29 H216T	-29 CTPX715	-F05 CTPX710
			DRAGONSKIN	DRAGONSKIN
				
		M	M	F
		DCMT	DCMT	DCET
		70 246 ...	70 246 ...	76 254 ...
ANSI	RE inch			
21.5.5FN	0.0079			10800
21.505FN	0.0059			10600
21.50FN	0.0039			10400
21.51EN	0.0157	60400	70400	
21.5X0FN	0.0020			10200
32.5.5FN	0.0079			12000
32.50FN	0.0039			11600
32.51EN	0.0157	61600	71600	
32.51FN	0.0157			12200
32.52EN	0.0315	61800	71800	
32.5X0FN	0.0059			11800
32.5X0FN	0.0020			11400
P			●	●
M			●	●
K		○	○	
N		●	●	●
S			●	●
H				
O		○	○	

9

DCGW

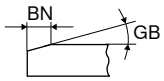
Designation	L inch	S inch	D1 inch	IC inch
DCGW 21.5..	0.3051	0.0937	0.0937	0.2500
DCGW 31.5..	0.4567	0.1563	0.1732	0.3748

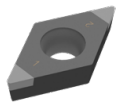
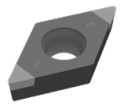
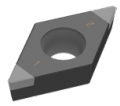


DCGW B

DCGW

▲ TCE(NOI) = Design and number of equipped cutting edge corners



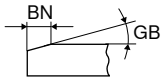
						NEW	NEW	NEW
						CTBH1000C	CTBH2000C	CTBH3000C
								
						F	F	F
						PCBN DCGW	PCBN DCGW	PCBN DCGW
						71 007 ...	71 007 ...	71 007 ...
ANSI	RE inch	BN inch	GB	**TCE (NOI)**	LE inch			
21.5.5EN	0.0079			**B (2)**	0.1457	**70002**	**80002**	
21.5.5SN	0.0079	0.0055	20°	**B (2)**	0.1457			**90002**
21.51EN	0.0157			**B (2)**	0.1417	**70302**	**80302**	
21.51SN	0.0157	0.0055	20°	**B (2)**	0.1417			**90302**
21.52EN	0.0315			**B (2)**	0.1299	**71202**	**81202**	
21.52SN	0.0315	0.0055	20°	**B (2)**	0.1299			**91202**
31.5.5EN	0.0079			**B (2)**	0.1457	**70602**	**80602**	
31.5.5SN	0.0079	0.0055	20°	**B (2)**	0.1457			**90602**
31.51EN	0.0157			**B (2)**	0.1417	**70902**	**80902**	
31.51SN	0.0157	0.0055	20°	**B (2)**	0.1417			**90902**
31.52EN	0.0315			**B (2)**	0.1299	**71302**	**81302**	
31.52SN	0.0315	0.0055	20°	**B (2)**	0.1299			**91302**

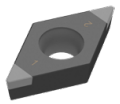
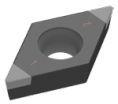
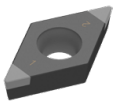
P			
M			
K			
N			
S			
H	●	●	●
O			

→ v_c Page 196–199

DCGW

▲ TCE(NOI) = Design and number of equipped cutting edge corners

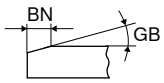


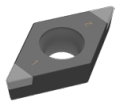
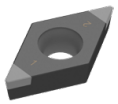
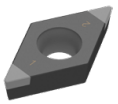
						NEW	NEW	NEW
						CTBH1000C	CTBH2000C	CTBH3000C
								
						M	M	M
						PCBN DCGW	PCBN DCGW	PCBN DCGW
						71 007 ...	71 007 ...	71 007 ...
ANSI	RE inch	BN inch	GB	**TCE (NOI)**	LE inch			
21.5.5SN	0.0079	0.0035	15°	**B (2)**	0.1457	**70102**	**80102**	
21.5.5SN	0.0079	0.0071	25°	**B (2)**	0.1457			**90102**
21.51SN	0.0157	0.0035	15°	**B (2)**	0.1417	**70402**	**80402**	
21.51SN	0.0157	0.0071	25°	**B (2)**	0.1417			**90402**
21.52SN	0.0315	0.0035	15°	**B (2)**	0.1299	**71402**	**81402**	
21.52SN	0.0315	0.0071	25°	**B (2)**	0.1299			**91402**
31.5.5SN	0.0079	0.0035	15°	**B (2)**	0.1457	**70702**	**80702**	
31.5.5SN	0.0079	0.0071	25°	**B (2)**	0.1457			**90702**
31.51SN	0.0157	0.0035	15°	**B (2)**	0.1417	**71002**	**81002**	
31.51SN	0.0157	0.0071	25°	**B (2)**	0.1417			**91002**
31.52SN	0.0315	0.0035	15°	**B (2)**	0.1299	**71502**	**81502**	
31.52SN	0.0315	0.0071	25°	**B (2)**	0.1299			**91502**
P								
M								
K								
N								
S								
H						●	●	●
O								

9

DCGW

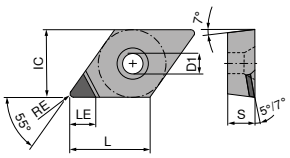
▲ TCE(NOI) = Design and number of equipped cutting edge corners



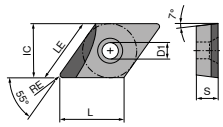
						NEW	NEW	NEW
						CTBH1000C	CTBH2000C	CTBH3000C
								
						R	R	R
						PCBN DCGW	PCBN DCGW	PCBN DCGW
						71 007 ...	71 007 ...	71 007 ...
ANSI	RE inch	BN inch	GB	**TCE (NOI)**	LE inch			
21.5.5SN	0.0079	0.0055	20°	**B (2)**	0.1457	**70202**	**80202**	
21.5.5SN	0.0079	0.0079	35°	**B (2)**	0.1457			**90202**
21.51SN	0.0157	0.0055	20°	**B (2)**	0.1417	**70502**	**80502**	
21.51SN	0.0157	0.0079	35°	**B (2)**	0.1417			**90502**
21.52SN	0.0315	0.0055	20°	**B (2)**	0.1299	**71602**	**81602**	
21.52SN	0.0315	0.0079	35°	**B (2)**	0.1299			**91602**
31.5.5SN	0.0079	0.0055	20°	**B (2)**	0.1457	**70802**	**80802**	
31.5.5SN	0.0079	0.0079	35°	**B (2)**	0.1457			**90802**
31.51SN	0.0157	0.0055	20°	**B (2)**	0.1417	**71102**	**81102**	
31.51SN	0.0157	0.0079	35°	**B (2)**	0.1417			**91102**
31.52SN	0.0315	0.0055	20°	**B (2)**	0.1299	**71702**	**81702**	
31.52SN	0.0315	0.0079	35°	**B (2)**	0.1299			**91702**
P								
M								
K								
N								
S								
H						●	●	●
O								

DCGW / DCGT

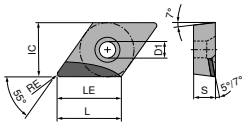
Designation	L inch	S inch	D1 inch	IC inch
DCG. 21.5..	0.3051	0.0937	0.1102	0.2500
DCG. 32.5..	0.4567	0.1563	0.1732	0.3748



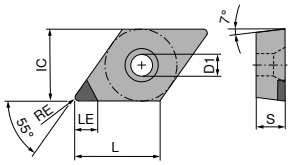
DCGT A



DCGT A L



DCGT A R



DCGW A

DCGW / DCGT

▲ TCE(NOI) = Design and number of equipped cutting edge corners

	CTDMD05	CTDMD05	-Q CTDMD05	-Q CTDMD05	CTDPD20	CTDPD20
	F	F	F	F	F	F
	DIAMOND DCGW	DIAMOND DCGT	DIAMOND DCGW	DIAMOND DCGT	DIAMOND DCGW	DIAMOND DCGT
	71 130 ...	71 134 ...	71 178 ...	71 176 ...	71 130 ...	71 134 ...
ANSI						
21.5.5FN	00200	050				
21.5.5FN					100	100
21.51FN	00400	052				
21.51FR				50001		
21.51FN					102	102
21.52FN	00600	054				
21.52FN					104	104
32.5.5FN		056				
32.5.5FN	056					
32.5.5FN					106	106
32.51FN		058				
32.51FL			50001			
32.51FN	058					
32.51FN					108	108
32.52FN		060				
32.52FN					110	110
32.53FN						11200
32.53FN					11200	

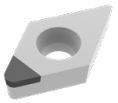
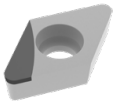
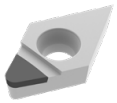
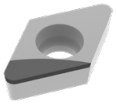
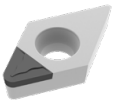
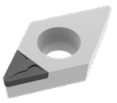
ANSI	RE inch	TCE (NOI)	LE inch
21.5.5FN	0.0079	A (1)	0.0984
21.5.5FN	0.0079	A (1)	0.1457
21.51FN	0.0157	A (1)	0.0984
21.51FR	0.0157	A (1)	0.0984
21.51FN	0.0157	A (1)	0.1339
21.52FN	0.0315	A (1)	0.0984
21.52FN	0.0315	A (1)	0.1181
32.5.5FN	0.0079	A (1)	0.0984
32.5.5FN	0.0079	A (1)	0.1181
32.5.5FN	0.0079	A (1)	0.1850
32.51FN	0.0157	A (1)	0.0984
32.51FL	0.0157	A (1)	0.1181
32.51FN	0.0157	A (1)	0.1181
32.51FN	0.0157	A (1)	0.1693
32.52FN	0.0315	A (1)	0.0984
32.52FN	0.0315	A (1)	0.1575
32.53FN	0.0472	A (1)	0.1378
32.53FN	0.0472	A (1)	0.1417

P						
M						
K						
N	●	●	●	●	●	●
S						
H						
O	●	●	●	●	●	●

9

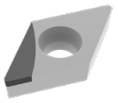
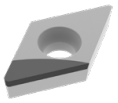
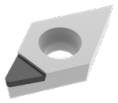
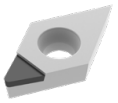
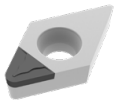
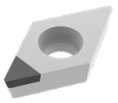
DCGW / DCGT

▲ TCE(NOI) = Design and number of equipped cutting edge corners

				CTDPS30	CTDPS30	CTDPS30	CTDPS30	-CB1 CTDPU20	-CB2 CTDPU20
									
				F	F	F	F	F	M
				DIAMOND DCGW	DIAMOND DCGT	DIAMOND DCGT	DIAMOND DCGT	DIAMOND DCGT	DIAMOND DCGT
				71 177 ...	71 173 ...	71 173 ...	71 173 ...	71 174 ...	71 175 ...
ANSI	RE inch	**TCE (NOI)**	LE inch						
21.50FN	0.0039	**A (1)**	0.1496	**20001**		**20001**			
21.5.5FN	0.0079	**A (1)**	0.1457	**20101**		**20101**		**30001**	
21.51FN	0.0157	**A (1)**	0.1339	**20201**				**30101**	**30001**
21.51FL	0.0157	**A (1)**	0.2165		**20201**				
21.52FN	0.0315	**A (1)**	0.1181	**20301**					
32.50FN	0.0039	**A (1)**	0.1890	**20401**		**20301**			
32.5.5FN	0.0079	**A (1)**	0.1850	**20501**		**20401**			
32.51FN	0.0157	**A (1)**	0.1693	**20601**				**30201**	**30101**
32.51FL	0.0157	**A (1)**	0.2953		**20501**				
32.52FN	0.0315	**A (1)**	0.1575	**20701**				**30301**	
32.52FL	0.0315	**A (1)**	0.2756		**20601**				
32.52FR	0.0315	**A (1)**	0.2756				**20701**		
32.53FN	0.0472	**A (1)**	0.1417	**20801**					
32.53FL	0.0472	**A (1)**	0.2559		**20801**				
32.53FR	0.0472	**A (1)**	0.2559				**20901**		
P									
M									
K									
N				●	●	●	●	●	●
S									
H									
O				●	●	●	●	●	●

DCGT / DCGW

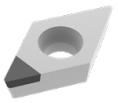
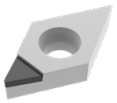
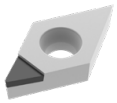
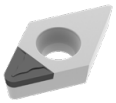
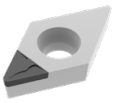
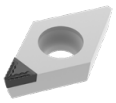
▲ TCE(NOI) = Design and number of equipped cutting edge corners

				CTDPD20	CTDPD20	-Q CTDPD20	-Q CTDPD20	-CB1 CTDPD20	-Q CTDPS30
									
				F	F	F	F	F	F
				DIAMOND DCGT	DIAMOND DCGT	DIAMOND DCGT	DIAMOND DCGT	DIAMOND DCGT	DIAMOND DCGW
				71 136 ...	71 135 ...	71 144 ...	71 145 ...	71 310 ...	71 138 ...
ANSI	RE inch	TCE (NOI)	LE inch						
21.50FN	0.0039	A (1)	0.1496					10100	
21.5.5FN	0.0079	A (1)	0.1457					102	
21.51FL	0.0157	A (1)	0.1181				104		
21.51FR	0.0157	A (1)	0.1181			104			
21.51FN	0.0157	A (1)	0.1339					104	
21.51FR	0.0157	A (1)	0.2165		102				
21.51FL	0.0157	A (1)	0.2165	102					
21.52FN	0.0315	A (1)	0.1181					108	
21.52FR	0.0315	A (1)	0.1969		104				
21.52FL	0.0315	A (1)	0.1969	104					
32.50FN	0.0039	A (1)	0.1890					11100	
32.5.5FR	0.0079	A (1)	0.1575						162
32.5.5FN	0.0079	A (1)	0.1850					112	
32.51FL	0.0157	A (1)	0.1575				114		
32.51FR	0.0157	A (1)	0.1575			114			164
32.51FN	0.0157	A (1)	0.1693					114	
32.51FR	0.0157	A (1)	0.2953		108				
32.51FL	0.0157	A (1)	0.2953	108					
32.52FN	0.0315	A (1)	0.1575					118	
32.52FR	0.0315	A (1)	0.2756		110				
32.52FL	0.0315	A (1)	0.2756	110					
P									
M									
K									
N				●	●	●	●	●	●
S									
H									
O				●	●	●	●	●	●

9

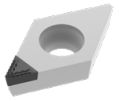
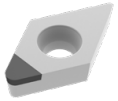
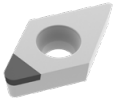
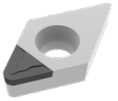
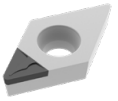
DCGW / DCGT

▲ TCE(NOI) = Design and number of equipped cutting edge corners

				-Q CTDPS30	-Q CTDPS30	-Q CTDPS30	-CB1 CTDPS30	-CB2 CTDPS30	-CB3 CTDPU20
									
				F	F	F	F	M	R
				DIAMOND DCGW	DIAMOND DCGT	DIAMOND DCGT	DIAMOND DCGT	DIAMOND DCGT	DIAMOND DCGT
				71 139 ...	71 144 ...	71 145 ...	71 310 ...	71 311 ...	71 312 ...
ANSI	RE inch	TCE (NOI)	LE inch						
21.50FL	0.0039	A (1)	0.1181			151			
21.50FR	0.0039	A (1)	0.1181		15000				
21.50FN	0.0039	A (1)	0.1496				20100		
21.5.5FL	0.0079	A (1)	0.1181			152			
21.5.5FR	0.0079	A (1)	0.1181		152				
21.5.5FN	0.0079	A (1)	0.1457				202	202	
21.51FN	0.0157	A (1)	0.1339				204	204	204
21.52FN	0.0315	A (1)	0.1181					208	
32.50FR	0.0039	A (1)	0.1575		161				
32.50FL	0.0039	A (1)	0.1575			161			
32.50FN	0.0039	A (1)	0.1890				21100	21100	
32.5.5FL	0.0079	A (1)	0.1575			162			
32.5.5FR	0.0079	A (1)	0.1575		162				
32.5.5FN	0.0079	A (1)	0.1850				212	212	
32.51FL	0.0157	A (1)	0.1575	164					
32.51FN	0.0157	A (1)	0.1693				214	214	214
32.52FN	0.0315	A (1)	0.1575				218	218	218
P									
M									
K									
N				●	●	●	●	●	●
S									
H									
O				●	●	●	●	●	●

DCGT / DCGW

▲ TCE(NOI) = Design and number of equipped cutting edge corners

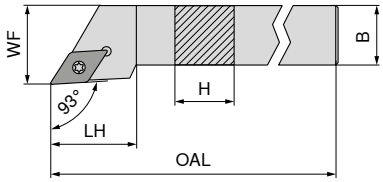
				-CB3 CTDPU20	CTDPU20	CTDCD10	-CB1 CTDCD10	-CB2 CTDCD10
								
				R	F	F	F	M
				DIAMOND DCGT	DIAMOND DCGW	DIAMOND DCGW	DIAMOND DCGT	DIAMOND DCGT
				71 312 ...	71 177 ...	71 177 ...	71 310 ...	71 311 ...
ANSI	RE inch	TCE (NOI)	LE inch					
21.5.5FN	0.0079	A (1)	0.1024			40001	302	30200
21.51FN	0.0157	A (1)	0.0906			40101	304	304
21.51FN	0.0157	A (1)	0.1339	204	30001			
21.52FN	0.0315	A (1)	0.0787			40201		308
21.52FN	0.0315	A (1)	0.1181		30101			
32.5.5FN	0.0079	A (1)	0.1024			40301	31200	31200
32.51FN	0.0157	A (1)	0.0906			40401	314	314
32.51FN	0.0157	A (1)	0.1693	214	30201			
32.52FN	0.0315	A (1)	0.0787			40501	318	318
32.52FN	0.0315	A (1)	0.1575	218	30301			
P								
M								
K								
N				●	●	●	●	●
S								
H								
O				●	●	●	●	●

9

MaxiLock-S – SDJC 93° – Toolholder with screw clamping

Scope of supply:
Tool holder with Torx key





Illustrations show right-hand versions



Designation	H inch	B inch	OAL inch	LH inch	WF inch	Insert	Left-hand 78 555 ...	Right-hand 78 554 ...
SDJC R/L 06-2	0.375	0.375	2.500	0.590	0.500	DC..21.5..	**00602**[1)]	**00602**[1)]
SDJC R/L 08-2	0.500	0.500	3.500	0.670	0.625	DC..21.5..	**00802**	**00802**
SDJC R/L 10-2	0.625	0.625	4.000	0.670	0.750	DC..21.5..	**01002**[1)]	**01002**[1)]
SDJC R/L 12-2B	0.750	0.750	4.500	0.708	1.000	DC..21.5..	**01222**[1)]	**01222**[1)]
SDJC R/L 12-3B	0.750	0.750	4.500	1.000	1.000	DC..32.5..	**01223**	**01223**
SDJC R/L 16-3D	1.000	1.000	6.000	1.100	1.250	DC..32.5..	**01643**	**01643**

1) Not in stock


Key I - TORX®
78 950 ...


Clamping screw
78 950 ...


Solid Carbide Seat D
78 950 ...

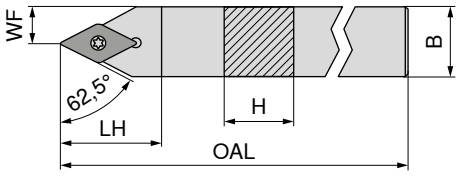

Threaded sleeve
78 950 ...

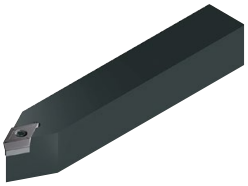
Spare parts for Article no.				
78 554 00602 / 78 555 00602	**06400**	**06200**		
78 554 00802 / 78 555 00802	**06400**	**06200**		
78 554 01002 / 78 555 01002	**06400**	**06200**		
78 554 01222 / 78 555 01222	**06400**	**06200**		
78 554 01223 / 78 555 01223	**05400**	**05100**	**06000**	**05300**
78 554 01643 / 78 555 01643	**05400**	**05100**	**06000**	**05300**

MaxiLock-S – SDPC 62.5° – Toolholder with screw clamping

Scope of supply:
Tool holder with Torx key







Designation	H inch	B inch	OAL inch	LH inch	WF inch	Insert	Neutral 78 582 ...
SDPC N 06-2	0.375	0.375	2.500	0.370	0.197	DC..21.5..	**00602**[1)]
SDPC N 08-2	0.500	0.500	3.500	0.492	0.260	DC..21.5..	**00802**[1)]
SDPC N 10-3	0.625	0.625	4.000	0.630	0.232	DC..32.5..	**01003**[1)]
SDPC N 12-3B	0.750	0.750	4.500	0.744	0.382	DC..32.5..	**01223**[1)]
SDPC N 16-3D	1.000	1.000	6.000	0.984	0.520	DC..32.5..	**01643**[1)]

1) Not in stock


Key I - TORX®
78 950 ...


Clamping screw
78 950 ...


Solid Carbide Seat D
78 950 ...

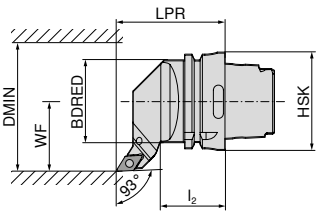

Threaded sleeve
78 950 ...

Spare parts for Article no.				
78 582 00602	**06400**	**06200**		
78 582 00802	**06400**	**06200**		
78 582 01003	**05400**	**05100**	**06000**	**05300**
78 582 01223	**05400**	**05100**	**06000**	**05300**
78 582 01643	**05400**	**05100**	**06000**	**05300**

MaxiLock-S – SDJC 93° – Toolholder with screw clamping

Scope of supply:
Tool holder with Torx key

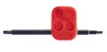


Illustrations show right-hand versions



Designation	Adapter	LPR mm	l_2 mm	BDRED mm	WF mm	DMIN mm	torque moment Nm	Insert	Left-hand 74 544 ...	Right-hand 74 543 ...
HSK T63 SDJC R/L 11	HSK-T 63	70	42	53	45	100	3.2	DC.. 11T3	**511**	**511**


Combination Key
70 950 ...


Clamping screw


Solid Carbide Seat D


Threaded sleeve
70 950 ...

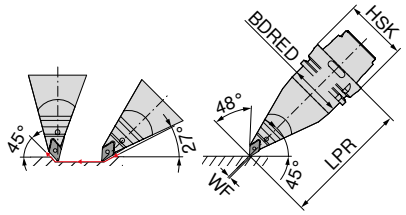
Spare parts

74 543 511 / 74 544 511	T15/SW	**398**	M3.5x11	**113**	**106**	M3.5	**171**

MaxiLock-S – SDMC 48° – Toolholder with screw clamping

Scope of supply:
Tool holder with Torx key





Left-hand 74 546 ...

Designation	Adapter	LPR mm	BDRED mm	WF mm	torque moment Nm	Insert	
HSK T63 SDMC L 11	HSK-T 63	130	53	0	3.2	DC.. 11T3	**511**


Combination Key
70 950 ...


Clamping screw


Solid Carbide Seat D


Threaded sleeve
70 950 ...

Spare parts

74 546 511	T15/SW	**398**	M3.5x11	**113**	**106**	M3.5	**171**

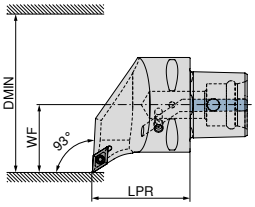
9

MaxiLock-S – SDUC 93° – Toolholder with screw clamping

Scope of supply:
Tool holder with Torx key







Illustrations show right-hand versions



Designation	Adapter	LPR mm	WF mm	DMIN mm	torque moment Nm	Insert	Left-hand 84 659 ...	Right-hand 84 658 ...
PSC40 SDUC R/L 50050-11	PSC 40	50	27	50	3	DC.. 11T3	**01195**	**01195**
PSC50 SDUC R/L 65060-11	PSC 50	60	35	65	3	DC.. 11T3	**01194**	**01194**
PSC63 SDUC R/L 80065-11	PSC 63	65	45	80	3	DC.. 11T3	**01193**	**01193**



Clamping screw
84 950 ...

Spare parts

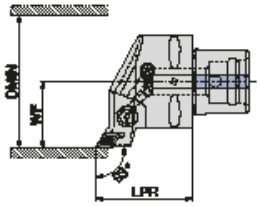
84 658 01193 / 84 659 01195 **27600**

MaxiLock-S – SDJC 93° – Toolholder with screw clamping

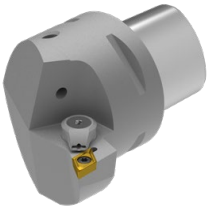
Scope of supply:
without high-performance coolant set







Illustrations show right-hand versions



Designation	Adapter	LPR mm	WF mm	DMIN mm	torque moment Nm	Insert	Direct cooling compatible	Left-hand 84 663 ...	Right-hand 84 662 ...
PSC40 SDJC R/L 50050-11	PSC 40	50	27	50	3	DC.. 11T3	DC	**01195**	**01195**
PSC50 SDJC R/L 65060-11	PSC 50	60	35	65	3	DC.. 11T3	DC	**01194**	**01194**
PSC63 SDJC R/L 80065-11	PSC 63	65	45	80	3	DC.. 11T3	DC	**01193**	**01193**

The high-performance coolant set with article number **84 950 27400** can be ordered as an optional extra → **Page 46.**



Clamping screw
84 950 ...

Spare parts

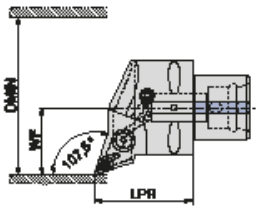
84 662 01193 / 84 663 01195 **27600**

MaxiLock-S – SDHC 107.5° – Toolholder with screw clamping

Scope of supply:
without high-performance coolant set







Illustrations show right-hand versions



Designation	Adapter	LPR mm	WF mm	DMIN mm	torque moment Nm	Insert	Direct cooling compatible	Left-hand 84 667 ...	Right-hand 84 666 ...
PSC40 SDHC R/L 50050-11	PSC 40	50	27	50	3	DC.. 11T3	DC	**01195**	**01195**
PSC50 SDHC R/L 65060-11	PSC 50	60	35	65	3	DC.. 11T3	DC	**01194**	**01194**
PSC63 SDHC R/L 80065-11	PSC 63	65	45	80	3	DC.. 11T3	DC	**01193**	**01193**

The high-performance coolant set with article number **84 950 27400** can be ordered as an optional extra → **Page 46.**



Clamping screw **84 950 ...**

Spare parts

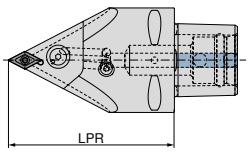
84 666 01193 / 84 667 01195	**27600**

MaxiLock-S – SDNC 62.5° – Toolholder with screw clamping

Scope of supply:
without high-performance coolant set









Neutral **84 677 ...**

Designation	Adapter	LPR mm	torque moment Nm	Insert	Direct cooling compatible	
PSC63 SDNC N 0100-11	PSC 63	100	3	DC.. 11T3	DC	**01193**
PSC63 SDNC N 0130-11	PSC 63	130	3	DC.. 11T3	DC	**11193**

The high-performance coolant set with article number **84 950 27400** can be ordered as an optional extra → **Page 46.**



Clamping screw **84 950 ...**

Spare parts

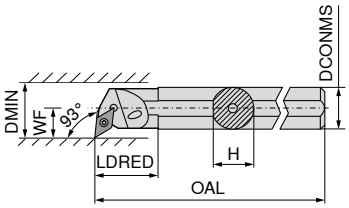
84 677 01193 / 84 677 11193	**27600**

MaxiLock-S – SDUC 93° – Boring bar with screw clamping

▲ A... = with thru coolant
▲ S... = without thru coolant

Scope of supply:
Tool holder with Torx key





Illustrations show right-hand versions



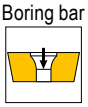
								Left-hand	Right-hand
								78 721 ...	**78 720 ...**
Designation	DCONMS inch	H inch	OAL inch	LDRED inch	WF inch	DMIN inch	Insert		
S06M SDUC R/L 2	0.375	0.340	6.000	0.830	0.375	0.750	DC..21.5..	**20617**[1)]	**20617**[1)]
A06M SDUC R/L 2	0.375	0.340	6.000	0.830	0.375	0.750	DC..21.5..	**20606**	**20606**
S08M SDUC R/L 2	0.500	0.460	6.000	0.910	0.438	0.875	DC..21.5..	**20818**[1)]	**20818**[1)]
A08M SDUC R/L 2	0.500	0.460	6.000	0.910	0.438	0.875	DC..21.5..	**20808**[1)]	**20808**[1)]
S10R SDUC R/L 2	0.625	0.580	8.000	1.060	0.500	1.000	DC..21.5..	**21021**[1)]	**21021**[1)]
A10R SDUC R/L 2	0.625	0.580	8.000	1.060	0.500	1.000	DC..21.5..	**21010**	**21010**
S12S SDUC R/L 2EX	0.750	0.710	10.000	0.760	0.625	1.250	DC..21.5..	**21222**[1)]	**21222**[1)]
S16T SDUC R/L 2DX	1.000	0.900	12.000	1.000	0.750	1.500	DC..21.5..	**21626**[1)]	**21626**[1)]
S12S SDUC R/L 3M	0.750	0.710	10.000	1.580	0.625	1.250	DC..32.5..	**91222**[1)]	**91222**[1)]
A12S SDUC R/L 3M	0.750	0.710	10.000	1.580	0.625	1.250	DC..32.5..	**91212**[1)]	**91212**[1)]
S16T SDUC R/L 3M	1.000	0.910	12.000	1.810	0.750	1.500	DC..32.5..	**91626**[1)]	**91626**[1)]
S20U SDUC R/L 3M	1.250	1.180	14.000	1.890	0.875	1.750	DC..32.5..	**92030**[1)]	**92030**[1)]
S20U SDUC R/L 3X	1.250	1.180	14.000	1.270	0.765	1.750	DC..32.5..	**32030**[1)]	**32030**[1)]

1) Not in stock

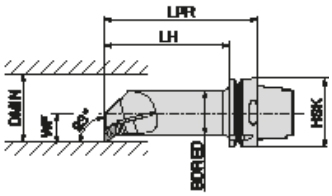
	 Key I - TORX®	 Clamping screw	 Solid Carbide Seat D	 Threaded sleeve
	78 950 ...	**78 950 ...**	**78 950 ...**	**78 950 ...**
Spare parts for Article no.				
78 720 20617 / 78 721 20617	**06400**	**05200**		
78 720 20606 / 78 721 20606	**06400**	**05200**		
78 720 20818 / 78 721 20818	**06400**	**05200**		
78 720 20808 / 78 721 20808	**06400**	**06200**		
78 720 21021 / 78 721 21021	**06400**	**05200**		
78 720 21010 / 78 721 21010	**06400**	**06200**		
78 720 21222 / 78 721 21222	**06400**	**06200**		
78 720 21626 / 78 721 21626	**06400**	**06200**		
78 720 91222 / 78 721 91222	**05700**	**05600**		
78 720 91212 / 78 721 91212	**05700**	**05600**		
78 720 91626 / 78 721 91626	**05700**	**05600**		
78 720 92030 / 78 721 92030	**05400**	**05100**	**06000**	**05300**
78 720 32030 / 78 721 32030	**05400**	**05100**	**06000**	**05300**

MaxiLock-S – SDUC 93° – Boring bar with screw clamping

Scope of supply:
Boring bar with Torx key







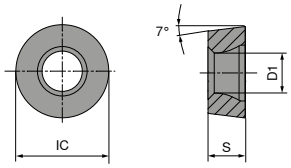
Illustrations show right-hand versions



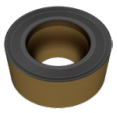
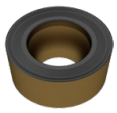
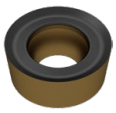
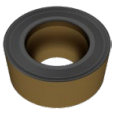
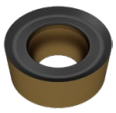
									Left-hand	Right-hand
									74 566 ...	**74 565 ...**
Designation	Adapter	LPR mm	LH mm	BDRED mm	WF mm	DMIN mm	torque moment Nm	Insert		
HSK T63 40L SDUC R/L 11	HSK-T 63	140	114	40	27	50	3.2	DC.. 11T3	**511**	**511**

RCMT / RCGT

Designation	S inch	D1 inch	IC inch
RCGT 06..	0.0937	0.1102	0.2362
RCGT 08..	0.1252	0.1339	0.3150
RC.T 10..	0.1252	0.1575	0.3937
RCMT 10..	0.1563	0.1732	0.3937
RCMT 12..	0.1874	0.1929	0.4724
RCMT 16..	0.250	0.2087	0.6299
RCMT 20..	0.250	0.2559	0.7874
RCMT 25..	0.3126	0.2835	0.9843



RCMT / RCGT

			NEW	NEW	NEW	NEW	NEW
		-SMF CTCK110	-SM CTCP115-P	-SM CTCP115-P	-SM CTCP125-P	-SM CTCP125-P	-SM CTCP135-P
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
							
		F	M	M	M	M	M
		RCMT	RCMT	RCMT	RCGT	RCMT	RCGT
		70 188 ...	76 186 ...	76 264 ...	76 262 ...	76 264 ...	76 262 ...
ANSI	RE inch						
0602MOEN	0.1181				50201		70201
0803MOEN	0.1575				51201		71201
1003MOSN	0.1969					51401	
1204MOSN	0.2362			32801		52601	
1606MOEN	0.3150	038					
1606MOSN	0.3150			34001		53801	
2006MOSN	0.3937		35001			55001	
2507MOSN	0.4921			36201		56201	
P		○	●	●	●	●	●
M							○
K		●	○	○	○	○	
N							
S							
H							
O							

RCMT

		NEW	NEW	NEW	NEW	NEW	NEW
		-SM CTCP135-P	-M23 CTCP115-P	-M23 CTCP115-P	-M23 CTCP125-P	-SM CTCM120	-SM CTPM125
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
							
		M	M	M	M	M	M
		RCMT	RCMT	RCMT	RCMT	RCMT	RCMT
		76 264 ...	74 117 ...	74 121 ...	74 121 ...	75 221 ...	75 221 ...
ANSI	RE inch						
1003MOSN	0.1969	71401		21400		11400	
10T3MOSN	0.1969						
1204MOSN	0.2362	72601		22600	62600		
1606MOSN	0.3150	73801		23800	63800		
2006MOSN	0.3937	75001	25000		65000		25000
2507MOSN	0.4921	76201					26200
P		●	●	●	●	○	○
M		○				●	●
K			○	○	○		
N							
S							
H							
O							

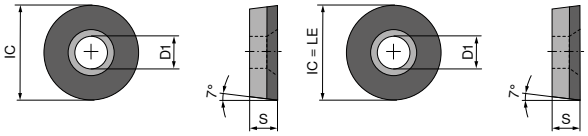
RCGT / RCMT

				NEW		
		-25P H210T	-27 H10T	-SM CTPX710	-27 CTPX715	
				DRAGONSKIN	DRAGONSKIN	
						
		F	M	M	M	
		RCGT	RCGT	RCMT	RCGT	
		70 241 ...	70 266 ...	75 221 ...	70 266 ...	
ISO	RE inch					
0602M0FN	0.1181		600		70200	
0803M0FN	0.1575	60200	602		80200	
1003M0FN	0.1969		604		80400	
1003M0SN	0.1969			61400		
P				●	●	
M				●	●	
K		○	○		○	
N		●	●	○	●	
S		○		●	●	
H						
O		○	○		○	

9

RCGW / RCGT

Designation	S inch	D1 inch	IC inch
RCG. 06..	0.0937	0.1102	0.2362
RCGW 10..	0.1252	0.1732	0.3937
RCGW 08..	0.1252	0.1339	0.3150
RCGT 10..	0.1563	0.1732	0.3937
RCGW 12..	0.1874	0.1732	0.4724



RCGT F RCGW F

RCGW / RCGT

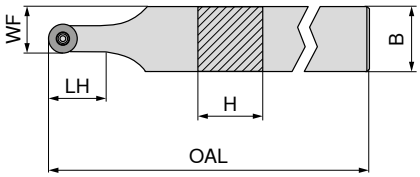
▲ TCE(NOI) = Design and number of equipped cutting edge corners

				CTDPD20	-CB1 CTDPD20		CTDPS30	-CB1 CTDPS30		-CB2 CTDPS30	
				F	F		F	F		M	
				DIAMOND RCGW	DIAMOND RCGT		DIAMOND RCGW	DIAMOND RCGT		DIAMOND RCGT	
				71 179 ...	71 315 ...		71 179 ...	71 315 ...		71 316 ...	
ANSI	RE inch	**TCE (NOI)**	LE inch								
0803M0FN	0.1575	**F**	0.3150	**10101**			**20101**				
0602M0FN	0.1181	**F**	0.2362	**10001**		**102**	**20001**		**202**		**202**
10T3M0FN	0.1969	**F**	0.3937			**104**			**204**		**204**
1003M0FN	0.2362	**F**	0.3937	**10201**							
1204M0FN	0.2362	**F**	0.4724	**10301**							
P											
M											
K											
N				●	●		●	●		●	
S											
H											
O				●	●		●	●		●	

MaxiLock-S – SRDC 0° – Toolholder with screw clamping

Scope of supply:
Tool holder with Torx key







Designation	H inch	B inch	OAL inch	LH inch	WF inch	Insert	Neutral 78 583 ...
SRDC N 08-2	0.500	0.500	3.500	0.8661	0.407	RC..0803M0	**00802**[1]
SRDC N 10-3	0.625	0.625	4.000	0.7665	0.510	RC..10T3M0	**01003**[1]
SRDC N 12-3B	0.750	0.750	4.500	0.7665	0.570	RC..10T3M0	**01223**
SRDC N 16-4D	1.000	1.000	6.000	1.1024	0.756	RC..1204M0	**01644**
SRDC N 20-4D	1.250	1.250	6.000	1.1024	0.861	RC..1204M0	**02044**

1) Not in stock


Key I - TORX®


Clamping screw


Solid carbide support R


Threaded sleeve

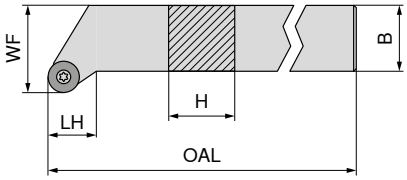
Spare parts for Article no.	Key I - TORX® 78 950 ...	Clamping screw 78 950 ...	Solid carbide support R 78 950 ...	Threaded sleeve 78 950 ...
78 583 00802	**00100**	**00200**		
78 583 01003	**05400**	**05100**	**05900**	**05300**
78 583 01223	**05400**	**05100**	**05900**	**05300**
78 583 01644	**05400**	**05100**	**06300**	**05300**
78 583 02044	**05400**	**05100**	**06300**	**05300**

9

MaxiLock-S – SRGC – Toolholder with screw clamping

Scope of supply:
Tool holder with Torx key





Illustrations show right-hand versions



Designation	H inch	B inch	OAL inch	WF inch	Insert	Left-hand 78 557 ...	Right-hand 78 556 ...
SRGC R/L 12-3B	0.750	0.750	4.500	1.000	RC..10T3M0	**01223**	**01223**
SRGC R/L 16-3D	1.000	1.000	6.000	1.250	RC..10T3M0	**01643**[1]	**01643**[1]
SRGC R/L 16-4D	1.000	1.000	6.000	1.250	RC..1204M0	**01644**	**01644**
SRGC R/L 20-4D	1.250	1.250	6.000	1.500	RC..1204M0	**02044**[1]	**02044**[1]
SRGC R/L 85-4D	1.250	1.000	6.000	1.250	RC..1204M0	**08544**[1]	**08544**[1]

1) Not in stock


Key I - TORX®


Clamping screw


Solid carbide support R

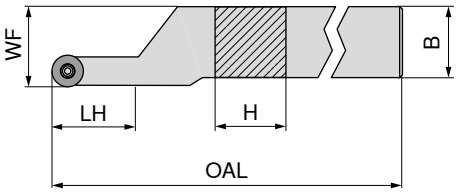

Threaded sleeve

Spare parts for Article no.	Key I - TORX® 78 950 ...	Clamping screw 78 950 ...	Solid carbide support R 78 950 ...	Threaded sleeve 78 950 ...
78 556 01223 / 78 557 01223	**05400**	**05100**	**05900**	**05300**
78 556 01643 / 78 557 01643	**05400**	**05100**	**05900**	**05300**
78 556 01644 / 78 557 01644	**05400**	**05100**	**06300**	**05300**
78 556 02044 / 78 557 02044	**05400**	**05100**	**06300**	**05300**
78 556 08544 / 78 557 08544	**05400**	**05100**	**06300**	**05300**

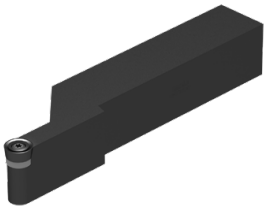
MaxiLock-S – SRSC 45° – Toolholder with screw clamping

Scope of supply:
Tool holder with Torx key





Illustrations show right-hand versions



Designation	H inch	B inch	OAL inch	LH inch	WF inch	Insert	Left-hand 78 559 ...	Right-hand 78 558 ...
SRSC R/L 16-3D	1.000	1.000	6.000	0.750	1.250	RC..10T3M0	**01643**[1)]	**01643**[1)]
SRSC R/L 20-3D	1.250	1.250	6.000	0.750	1.500	RC..10T3M0	**02043**[1)]	**02043**[1)]
SRSC R/L 12-4B	0.750	0.750	4.500	0.750	1.000	RC..1204M0	**01224**[1)]	**01224**[1)]
SRSC R/L 16-4D	1.000	1.000	6.000	1.000	1.250	RC..1204M0	**01644**[1)]	**01644**[1)]
SRSC R/L 20-4D	1.250	1.250	6.000	1.000	1.500	RC..1204M0	**02044**[1)]	**02044**[1)]

1) Not in stock

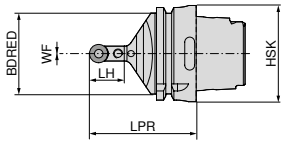
Spare parts for Article no.	Key I - TORX® 78 950 ...	Clamping screw 78 950 ...	Solid carbide support R 78 950 ...	Threaded sleeve 78 950 ...
78 558 01643 / 78 559 01643	**05400**	**05100**	**05900**	**05300**
78 558 02043 / 78 559 02043	**05400**	**05100**	**05900**	**05300**
78 558 01224 / 78 559 01224	**05400**	**05100**	**06300**	**05300**
78 558 01644 / 78 559 01644	**05400**	**05100**	**06300**	**05300**
78 558 02044 / 78 559 02044	**05400**	**05100**	**06300**	**05300**

MaxiLock-N – PRDC 0° – Toolholder with lever clamping

Scope of supply:
Tool holder with allen key









Designation	Adapter	LPR mm	BDRED mm	WF mm	torque moment Nm	Insert	Neutral 74 548 ...
HSK T63 PRDC N 12	HSK-T 63	70	53	0	3	RC.. 1204 M0	**512**
HSK T100 PRDC N 12	HSK-T 100	80	88	0	3	RC.. 1204 M0	**712**
HSK T100 PRDC N 16	HSK-T 100	80	88	0	4	RC.. 1606 M0	**716**

Spare parts		Key I 70 950 ...	Shim 70 950 ...	Assembly pin 70 950 ...	Lever 70 950 ...	Clamping screw 70 950 ...	Solid carbide support R 70 950 ...
74 548 716	SW3	**176**	**196**	**192**	**387**	**390**	**384**
74 548 512 / 74 548 712	SW2.5	**175**	**197**	**191**	**178**		**215**

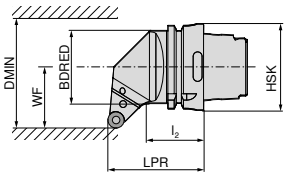
MaxiLock-N – PRSC – Toolholder with lever clamping

Scope of supply:

Tool holder with allen key







Illustrations show right-hand versions

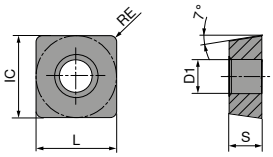


Designation	Adapter	LPR	l_2	BDRED	WF	DMIN	torque moment	Insert	Left-hand	Right-hand
		mm	mm	mm	mm	mm	Nm		74 552 ...	74 551 ...
HSK T63 PRSC R/L 12	HSK-T 63	70	44	53	45	100	3	RC.. 1204 M0	**512**	**512**
HSK T100 PRSC R/L 12	HSK-T 100	80	57	88	55	106	3	RC.. 1204 M0	**712**	**712**
HSK T100 PRSC R/L 16	HSK-T 100	80	55	88	55	125	4	RC.. 1606 M0	**716**	**716**

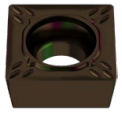
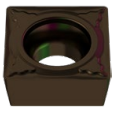
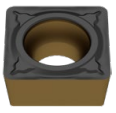
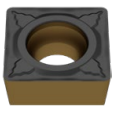
Spare parts		Key I	Shim	Assembly pin	Lever	Clamping screw	Solid carbide support R
		70 950 ...	70 950 ...	70 950 ...	70 950 ...	70 950 ...	70 950 ...
74 551 716 / 74 552 716	SW3	**176**	**196**	**192**	**387**	**390**	**384**
74 551 512 / 74 552 712	SW2.5	**175**	**197**	**191**	**178**		**215**

SCGT / SCMT

Designation	L inch	S inch	D1 inch	IC inch
SC.T 32..	0.3748	0.1563	0.1732	0.3748
SC.T 43..	0.5000	0.1874	0.2165	0.5000



SCGT / SCMT

		-CF05 CTEP110	-CF55 CTEP110	-SF TCM10	NEW -SF CTCP115-P	NEW -SF CTCP125-P	NEW -SMF CTCP115-P	NEW -SMF CTCP135-P
		DRAGONSKIN	DRAGONSKIN		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
								
		F	F	F	F	F	F	F
		CERMET SCGT	CERMET SCMT	CERMET SCGT	SCMT	SCMT	SCMT	SCMT
		76 261 ...	76 260 ...	70 271 ...	76 187 ...	76 269 ...	76 267 ...	76 267 ...
ANSI	RE inch							
32.51EN	0.0157	004	004	902		50401	30401	
32.52EN	0.0315	006	006	904	30601	50601	30601	
432EN	0.0315					51801		71801
P		●	●	●	●	●	●	●
M		○	○	○				○
K		○	○	○	○	○	○	
N								
S								
H								
O								

SCMT

		NEW		NEW	NEW
		-SM CTCK110	-SM CTCK120	-SM CTCP115-P	-SM CTCP125-P	-SM CTCP135-P
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
						
		M	M	M	M	M
		SCMT	SCMT	SCMT	SCMT	SCMT
		70 268 ...	70 268 ...	76 268 ...	76 268 ...	76 268 ...
ANSI	RE inch					
32.51EN	0.0157	004	504	30401	50401	70401
32.52EN	0.0315	006	506	30601	50601	70601
432EN	0.0315	018	518	31801	51801	71801
433EN	0.0472	020	520		52001	
P		○	○	●	●	●
M						○
K		●	●	○	○	
N						
S						
H						
O						

SCMT

		NEW	NEW			
		-M25 CTPM125	-SM CTPM125	-M55 CTCM120	-M55 CTPM125	-M55 CTCM130
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
						
		F	M	M	M	M
		SCMT	SCMT	SCMT	SCMT	SCMT
		75 222 ...	75 049 ...	75 216 ...	75 216 ...	75 216 ...
ANSI	RE inch					
32.51EN	0.0157	70400				
32.52EN	0.0315		20600	10600	206	30600
432EN	0.0315		21800	11800	218	31800
P		○	○	○	○	○
M		●	●	●	●	●
K						
N						
S						○
H						
O						

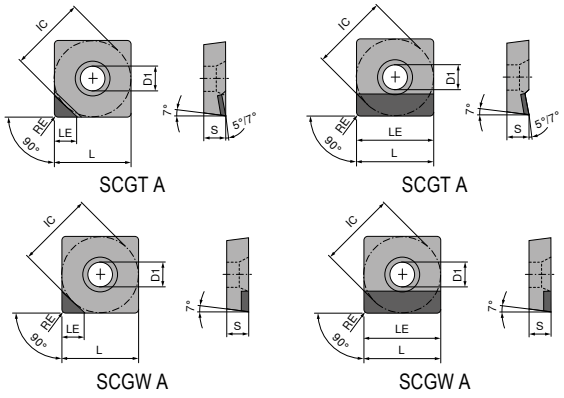
9

SCGT

	-25P H210T	-25P CTPX710	-27 CTPX715	-27 H10T
		DRAGONSKIN	DRAGONSKIN	
				
	F	M	M	M
	SCGT	SCGT	SCGT	SCGT
	70 283 ...	70 283 ...	70 270 ...	70 270 ...
ANSI RE inch				
32.51FN 0.0157			**80400**	**600**
32.52FN 0.0315			**80600**	**602**
432FN 0.0315	**634**	**71600**	**71800**	**604**
P		●	●	
M		●	●	
K	○		○	○
N	●	●	●	●
S	○	●	●	
H				
O	○		○	○

SCGW / SCGT

Designation	L inch	S inch	D1 inch	IC inch
SCG. 32..	0.3748	0.1563	0.1732	0.3748
SCG. 43..	0.5000	0.1874	0.2165	0.5000



SCGT A SCGT A SCGW A SCGW A

SCGW / SCGT

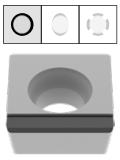
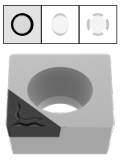
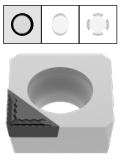
▲ TCE(NOI) = Design and number of equipped cutting edge corners

				CTDPD20	CTDPD20	-CB1 CTDPD20	CTDPS30	CTDPS30
				F	F	F	F	F
				DIAMOND SCGW	DIAMOND SCGW	DIAMOND SCGT	DIAMOND SCGW	DIAMOND SCGT
				71 182 ...	71 183 ...	71 320 ...	71 182 ...	71 180 ...
ANSI	RE inch	TCE (NOI)	LE inch					
32.51FN	0.0157	A (1)	0.1732	10001		114	20601	20001
32.51FNN	0.0157	A (1)	0.3748		10001			
32.52FN	0.0315	A (1)	0.1693	10101		118		20101
32.52FNN	0.0315	A (1)	0.3748		10101			
32.53FN	0.0472	A (1)	0.1654	10201				20201
431FN	0.0157	A (1)	0.1732	10301				
431FNN	0.0157	A (1)	0.5000		10201			
432FN	0.0315	A (1)	0.1693	10401				
432FNN	0.0315	A (1)	0.5000		10301			
433FN	0.0472	A (1)	0.1654	10501				
433FNN	0.0472	A (1)	0.5000		10401			
P								
M								
K								
N				●	●	●	●	●
S								
H								
O				●	●	●	●	●

9

SCGT

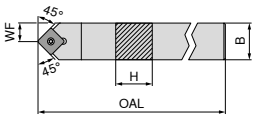
▲ TCE(NOI) = Design and number of equipped cutting edge corners

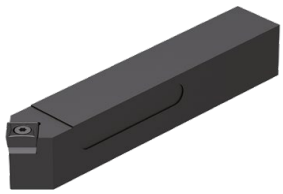
				CTDPS30	-CB2 CTDPS30	-CB3 CTDPU20
						
				F	M	R
				DIAMOND SCGT	DIAMOND SCGT	DIAMOND SCGT
				71 181 ...	71 321 ...	71 322 ...
ANSI	RE inch	**TCE (NOI)**	LE inch			
32.51FN	0.0157	**A (1)**	0.1732		214	214
32.52FN	0.0315	**A (1)**	0.1693		218	218
32.52FNN	0.0315	**A (1)**	0.3740	20001		
432FNN	0.0315	**A (1)**	0.5000	20101		
433FNN	0.0472	**A (1)**	0.4724	20201		
P						
M						
K						
N				●	●	●
S						
H						
O				●	●	●

MaxiLock-S – SSDC 45° – Toolholder with screw clamping

Scope of supply:
Tool holder with Torx key







Designation	H inch	B inch	OAL inch	WF inch	Insert	Neutral 78 584 ...
SSDC N 08-3	0.500	0.500	3.500	0.263	SC..32.5..	**00803**[1)]
SSDC N 10-3	0.625	0.625	4.000	0.325	SC..32.5..	**01003**[1)]
SSDC N 12-4B	0.750	0.750	4.500	0.388	SC..43..	**01224**[1)]

1) Not in stock

Spare parts for Article no.	 Key I - TORX® 78 950 ...	 Clamping screw 78 950 ...	 Solid Carbide support S 78 950 ...	 Threaded sleeve 78 950 ...
78 584 00803	**05700**	**05600**		
78 584 01003	**05700**	**05600**		
78 584 01224	**04700**	**04600**	**04400**	**04800**

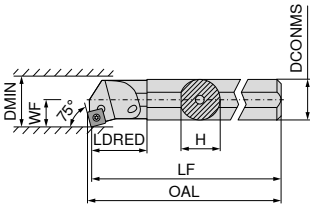
9

MaxiLock-S – SSKC 75° – Boring bar with screw clamping

▲ A... = with thru coolant
▲ S... = without thru coolant

Scope of supply:
Tool holder with Torx key





Illustrations show right-hand versions



	Left-hand	Right-hand
	78 723 ...	**78 722 ...**

Designation	DCONMS inch	H inch	OAL inch	LDRED inch	WF inch	DMIN inch	Insert		
S10R SSKC R/L 3	0.625	0.580	8.000	1.060	0.406	0.812	SC..32.5..	**31021**[1)]	**31021**[1)]
S12S SSKC R/L 3	0.750	0.710	10.000	1.580	0.500	1.000	SC..32.5..	**31222**[1)]	**31222**[1)]
S16T SSKC R/L 3	1.000	0.900	12.000	1.810	0.640	1.280	SC..32.5..	**31626**[1)]	**31626**[1)]

1) Not in stock



Key I - TORX®

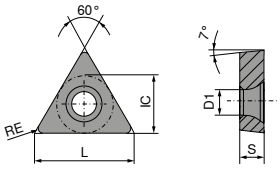


Clamping screw

	78 950 ...	**78 950 ...**
Spare parts for Article no.		
78 722 31021 / 78 723 31021	**05700**	**05800**
78 722 31222 / 78 723 31222	**05700**	**05600**
78 722 31626 / 78 723 31626	**05700**	**05600**

TCGT / TCMT

Designation	L inch	S inch	D1 inch	IC inch
TCMT 1...	0.3780	0.0937	0.0984	0.2189
TC.T 21..	0.4331	0.0937	0.1102	0.2500
TC.T 32..	0.6496	0.1563	0.1732	0.3748
TCMT 43..	0.8661	0.1874	0.2032	0.5000



TCGT / TCMT

		NEW	NEW	NEW
	-CF05 CTEP110	-CF55 CTEP110	-SF TCM10	-SMF TCM10	-SF CTCP125-P	-SMF CTCP115-P	-SMF CTCP135-P
	DRAGONSKIN	DRAGONSKIN			DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
	F	F	F	F	F	F	F
	CERMET TCGT	CERMET TCMT	CERMET TCGT	CERMET TCMT	TCMT	TCMT	TCMT
	76 272 ...	76 266 ...	70 273 ...	70 284 ...	76 275 ...	76 284 ...	76 284 ...
ANSI / RE inch							
21.5.5EN / 0.0079	014		900				
21.51EN / 0.0157	016	016	902	902	51601		
21.52EN / 0.0315	018				51801	31801	71801
32.51EN / 0.0157	028		906		52801	32801	
32.52EN / 0.0315		030			53001	33001	
P	●	●	●	●	●	●	●
M	○	○	○	○			○
K	○	○	○	○	○	○	
N							
S							
H							
O							

9

TCGT / TCMT

		NEW			NEW	NEW	NEW	NEW
		-SM CTCP135-P	-SM CTCK110	-SM CTCK120	-SM CTCP115-P	-SM CTCP115-P	-SM CTCP125-P	-SM CTCP135-P
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
								
		M	M	M	M	M	M	M
		TCGT	TCMT	TCMT	TCMT	TCMT	TCMT	TCMT
		76 270 ...	70 274 ...	70 274 ...	76 189 ...	76 274 ...	76 274 ...	76 274 ...
ANSI	RE inch							
1.81.51EN	0.0157						50401	70401
21.5.5EN	0.0079	71401						
21.51EN	0.0157		016	516		31601	51601	71601
21.52EN	0.0315		018	518		31801		71801
32.51EN	0.0157		028	528		32801	52801	72801
32.52EN	0.0315		030	530		33001	53001	73001
32.53EN	0.0472		032	532				
432EN	0.0315				34201		54201	74201
P		●	○	○	●	●	●	●
M		○						○
K			●	●	○	○	○	
N								
S								
H								
O								

TCMT

		NEW				NEW	
		-F43 CTCM130	-M25 CTCM120	-M25 CTPM125	-M25 CTCM130	-SM CTPM125	-M55 CTCM120
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
							
		F	F	F	F	M	M
		TCMT	TCMT	TCMT	TCMT	TCMT	TCMT
		75 033 ...	75 217 ...	75 217 ...	75 217 ...	75 050 ...	75 218 ...
ANSI	RE inch						
1.81.51EN	0.0157			20400		20400	10400
21.51EN	0.0157	31600	11600	216	31600	21600	11600
32.51EN	0.0157	32800	12800	228	32800	22800	
32.52EN	0.0315	33000	13000	230	33000	23000	13000
432EN	0.0315					24200	
433EN	0.0472					24400	
P		○	○	○	○	○	○
M		●	●	●	●	●	●
K							
N							
S		○			○		
H							
O							

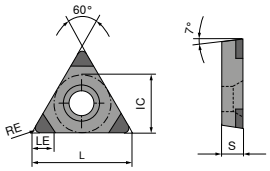
TCMT / TCGT

		-M55 CTPM125 DRAGONSKIN	-M55 CTCM130 DRAGONSKIN	-27 H10T	-27 CTPX715 DRAGONSKIN
					
		M	M	M	M
		TCMT	TCMT	TCGT	TCGT
		75 218 ...	75 218 ...	70 276 ...	70 276 ...
ANSI	RE inch				
1.81.51EN	0.0157	204	30400		
21.5.5FN	0.0079			600	71400
21.51EN	0.0157	216	31600		
21.51FN	0.0157			602	81600
32.5.5FN	0.0079			604	
32.51FN	0.0157			606	72800
32.52EN	0.0315	230	33000		
32.52FN	0.0315			608	83000
P		○	○		●
M		●	●		●
K				○	○
N				●	●
S			○		●
H					
O				○	○

9

TCGW

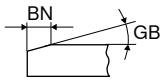
Designation	L inch	S inch	D1 inch	IC inch
TCGW 21.5..	0.4331	0.0937	0.1102	0.2500
TCGW 32.5..	0.6496	0.1563	0.1732	0.3748



TCGW C

TCGW

▲ TCE(NOI) = Design and number of equipped cutting edge corners



						NEW	NEW	NEW
						CTBH1000C	CTBH2000C	CTBH3000C
								
						F	F	F
						PCBN TCGW	PCBN TCGW	PCBN TCGW
						71 034 ...	71 034 ...	71 034 ...
ANSI	RE inch	BN inch	GB	**TCE (NOI)**	LE inch			
21.51EN	0.0157			**C (3)**	0.1417	**70002**	**80002**	
21.51SN	0.0157	0.0055	20°	**C (3)**	0.1417			**90002**
21.52EN	0.0315			**C (3)**	0.1299	**70302**	**80302**	
21.52SN	0.0315	0.0055	20°	**C (3)**	0.1299			**90302**
32.51EN	0.0157			**C (3)**	0.1417	**70602**	**80602**	
32.51SN	0.0157	0.0055	20°	**C (3)**	0.1417			**90602**
32.52EN	0.0315			**C (3)**	0.1299	**70902**	**80902**	
32.52SN	0.0315	0.0055	20°	**C (3)**	0.1299			**90902**

P			
M			
K			
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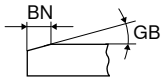
O			

→ v_c Page 196–199

TCGW

▲ TCE(NOI) = Design and number of equipped cutting edge corners



						NEW	NEW	NEW
						CTBH1000C	CTBH2000C	CTBH3000C
								
						M	M	M
						PCBN TCGW	PCBN TCGW	PCBN TCGW
						71 034 ...	71 034 ...	71 034 ...
ANSI	RE inch	BN inch	GB	**TCE (NOI)**	LE inch			
21.51SN	0.0157	0.0035	15°	**C (3)**	0.1417	**70102**	**80102**	
21.51SN	0.0157	0.0071	25°	**C (3)**	0.1417			**90102**
21.52SN	0.0315	0.0035	15°	**C (3)**	0.1299	**70402**	**80402**	
21.52SN	0.0315	0.0071	25°	**C (3)**	0.1299			**90402**
32.51SN	0.0157	0.0035	15°	**C (3)**	0.1417	**70702**	**80702**	
32.51SN	0.0157	0.0071	25°	**C (3)**	0.1417			**90702**
32.52SN	0.0315	0.0035	15°	**C (3)**	0.1299	**71002**	**81002**	
32.52SN	0.0315	0.0071	25°	**C (3)**	0.1299			**91002**
P								
M								
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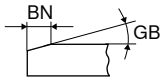
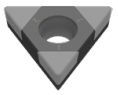
N								
S								
H						●	●	●
O								

9

TCGW

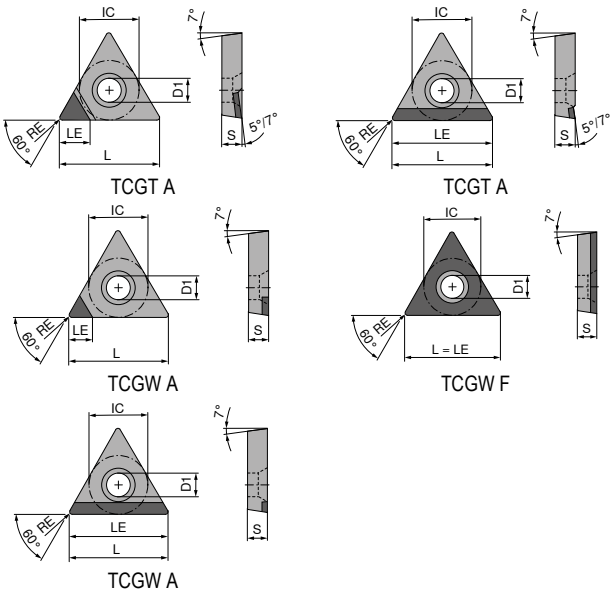
▲ TCE(NOI) = Design and number of equipped cutting edge corners



						NEW	NEW	NEW
						CTBH1000C	CTBH2000C	CTBH3000C
								
						R	R	R
						PCBN TCGW	PCBN TCGW	PCBN TCGW
						71 034 ...	71 034 ...	71 034 ...
ANSI	RE inch	BN inch	GB	**TCE (NOI)**	LE inch			
21.51SN	0.0157	0.0055	20°	**C (3)**	0.1417	**70202**	**80202**	
21.51SN	0.0157	0.0079	35°	**C (3)**	0.1417			**90202**
21.52SN	0.0315	0.0055	20°	**C (3)**	0.1299	**70502**	**80502**	
21.52SN	0.0315	0.0079	35°	**C (3)**	0.1299			**90502**
32.51SN	0.0157	0.0055	20°	**C (3)**	0.1417	**70802**	**80802**	
32.51SN	0.0157	0.0079	35°	**C (3)**	0.1417			**90802**
32.52SN	0.0315	0.0055	20°	**C (3)**	0.1299	**71102**	**81102**	
32.52SN	0.0315	0.0079	35°	**C (3)**	0.1299			**91102**
P								
M								
K								
N								
S								
H						●	●	●
O								

TCGW / TCGT

Designation	L inch	S inch	D1 inch	IC inch
TCGT 181...	0.3780	0.0937	0.0984	0.2189
TCGW 1.81..	0.3780	0.0937	0.0984	0.2189
TCG. 21.5..	0.4331	0.0937	0.1102	0.2500
TCG. 32.5..	0.6496	0.1563	0.1732	0.3748



TCGW / TCGT

▲ TCE(NOI) = Design and number of equipped cutting edge corners

	CTDPD20	CTDPD20	CTDPD20	CTDPD20	-CB1 CTDPD20	CTDPS30
	F	F	F	F	F	F
	DIAMOND TCGW	DIAMOND TCGW	DIAMOND TCGW	DIAMOND TCGT	DIAMOND TCGT	DIAMOND TCGT
	71 188 ...	71 187 ...	71 140 ...	71 184 ...	71 325 ...	71 184 ...

ANSI	RE inch	TCE (NOI)	LE inch											
1.81.5.5FN	0.0079	A (1)	0.1457					100						
181.5.5FN	0.0079	A (1)	0.1457									112		20001
1.81.5.1FN	0.0157	A (1)	0.1339					102						
181.5.1FN	0.0157	A (1)	0.1339									114		20101
1.81.5.2FN	0.0315	A (1)	0.1181					104						
181.5.2FN	0.0315	A (1)	0.1181							10001				
1.81.5.2FNN	0.0315	A (1)	0.3780	10001										
21.5.5FN	0.0079	A (1)	0.1457					106		10101		122		
21.5.5FN	0.0079	F	0.4331		10001									
21.51FN	0.0157	A (1)	0.1339					108		10201		124		20201
21.51FN	0.0157	F	0.4331		10101									
21.51FNN	0.0157	A (1)	0.4331	10101										
21.52FN	0.0315	A (1)	0.1181					110		10301				
21.52FNN	0.0315	A (1)	0.4331	10201										
32.51FN	0.0157	A (1)	0.1811					112		10401		134		20301
32.51FNN	0.0157	A (1)	0.6496	10301										
32.52FN	0.0315	A (1)	0.1654					114		10501		13600		
32.52FNN	0.0315	A (1)	0.6496	10401										
32.53FN	0.0472	A (1)	0.1496					11600						

P						
M						
K						
N	●	●	●	●	●	●
S						
H						
O	●	●	●	●	●	●

9

TCGW / TCGT

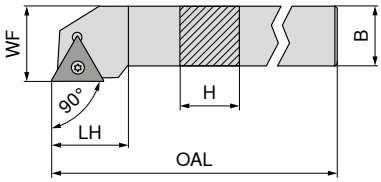
▲ TCE(NOI) = Design and number of equipped cutting edge corners

				CTDPS30	CTDPS30	-CB2 CTDPS30	CTDPU20	-CB3 CTDPU20	CTDCD10
									
				F	F	M	F	R	F
				DIAMOND TCGW	DIAMOND TCGT	DIAMOND TCGT	DIAMOND TCGW	DIAMOND TCGT	DIAMOND TCGW
				71 186 ...	71 185 ...	71 326 ...	71 188 ...	71 327 ...	71 186 ...
ANSI	RE inch	**TCE (NOI)**	LE inch						
181.5.5FN	0.0079	**A (1)**	0.1457			**212**			
1.81.5.5FN	0.0079	**A (1)**	0.1457	**20001**					
181.5.1FN	0.0157	**A (1)**	0.1339			**214**			
181.5.1FNN	0.0157	**A (1)**	0.3780		**20001**				
21.5.5FN	0.0079	**A (1)**	0.1024						**40001**
21.5.5FN	0.0079	**A (1)**	0.1457	**20101**		**222**			
21.51FN	0.0157	**A (1)**	0.0906						**40101**
21.51FN	0.0157	**A (1)**	0.1339	**20201**		**224**		**224**	
21.51FNN	0.0157	**A (1)**	0.4331		**20101**		**30001**		
21.52FN	0.0315	**A (1)**	0.0787						**40201**
21.52FNN	0.0315	**A (1)**	0.4331		**20201**				
32.51FN	0.0157	**A (1)**	0.0906						**40301**
32.51FN	0.0157	**A (1)**	0.1811			**234**			
32.51FNN	0.0157	**A (1)**	0.6496		**20301**				
32.52FN	0.0315	**A (1)**	0.0787						**40401**
32.52FN	0.0315	**A (1)**	0.1654					**238**	
32.52FNN	0.0315	**A (1)**	0.6496		**20401**				
P									
M									
K									
N				●	●	●	●	●	●
S									
H									
O				●	●	●	●	●	●

MaxiLock-S – STGC 90° – Toolholder with screw clamping

Scope of supply:
Tool holder with Torx key





Illustrations show right-hand versions



Designation	H inch	B inch	OAL inch	LH inch	WF inch	Insert	Left-hand 78 565 ...	Right-hand 78 564 ...
STGC R/L 06-2	0.375	0.375	2.500	0.500	0.500	TC..21.5..	**00602**[1)]	**00602**[1)]
STGC R/L 08-2	0.500	0.500	3.500	0.560	0.625	TC..21.5..	**00802**[1)]	**00802**[1)]
STGC R/L 10-3	0.625	0.625	4.000	1.000	0.750	TC..32.5..	**01003**[1)]	**01003**[1)]
STGC R/L 12-3B	0.750	0.750	4.500	1.000	1.000	TC..32.5..	**01223**[1)]	**01223**[1)]
STGC R/L 16-3D	1.000	1.000	6.000	1.000	1.250	TC..32.5..	**01643**[1)]	**01643**[1)]

1) Not in stock


Key I - TORX®


Clamping screw


Solid Carbide Seat T


Threaded sleeve

Spare parts for Article no.	78 950 ...	78 950 ...	78 950 ...	78 950 ...
78 564 00602 / 78 565 00602	**06400**	**06200**		
78 564 00802 / 78 565 00802	**06400**	**06200**		
78 564 01003 / 78 565 01003	**05400**	**05100**	**06100**	**05300**
78 564 01223 / 78 565 01223	**05400**	**05100**	**06100**	**05300**
78 564 01643 / 78 565 01643	**05400**	**05100**	**06100**	**05300**

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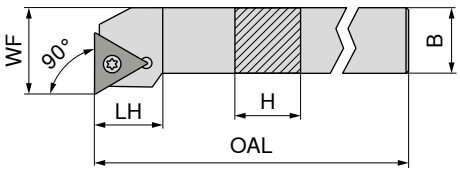
MaxiLock-S – STFC 90° – Toolholder with screw clamping

Scope of supply:
Tool holder with Torx key





Illustrations show right-hand versions



Designation	H inch	B inch	OAL inch	LH inch	WF inch	Insert	Left-hand 78 563 ...	Right-hand 78 562 ...
STFC R/L 06-2	0.375	0.375	2.500	0.400	0.500	TC..21.5..	**00602**[1)]	**00602**[1)]
STFC R/L 08-2	0.500	0.500	3.500	0.689	0.625	TC..21.5..	**00802**[1)]	**00802**[1)]
STFC R/L 10-3	0.625	0.625	4.000	1.000	0.750	TC..32.5..	**01003**[1)]	**01003**[1)]
STFC R/L 12-3B	0.750	0.750	4.500	1.000	1.000	TC..32.5..	**01223**[1)]	**01223**[1)]
STFC R/L 16-3D	1.000	1.000	6.000	1.000	1.250	TC..32.5..	**01643**[1)]	**01643**[1)]

1) Not in stock


Key I - TORX®


Clamping screw


Solid Carbide Seat T

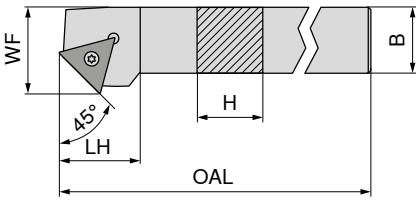

Threaded sleeve

Spare parts for Article no.	78 950 ...	78 950 ...	78 950 ...	78 950 ...
78 562 00602 / 78 563 00602	**06400**	**06200**		
78 562 00802 / 78 563 00802	**06400**	**06200**		
78 562 01003 / 78 563 01003	**05400**	**05100**	**06100**	**05300**
78 562 01223 / 78 563 01223	**05400**	**05100**	**06100**	**05300**
78 562 01643 / 78 563 01643	**05400**	**05100**	**06100**	**05300**

MaxiLock-S – STDC 45° – Toolholder with screw clamping

Scope of supply:
Tool holder with Torx key





Illustrations show right-hand versions



Designation	H inch	B inch	OAL inch	LH inch	WF inch	Insert	Left-hand 78 561 ...	Right-hand 78 560 ...
STDC R/L 06-2	0.375	0.375	2.500	0.410	0.433	TC..21.5..	**00602**[1)]	**00602**[1)]
STDC R/L 08-2	0.500	0.500	3.500	0.570	0.512	TC..21.5..	**00802**[1)]	**00802**[1)]
STDC R/L 10-3	0.625	0.625	4.000	1.000	0.669	TC..32.5..	**01003**[1)]	**01003**[1)]
STDC R/L 12-3B	0.750	0.750	4.500	1.000	0.866	TC..32.5..	**01223**[1)]	**01223**[1)]
STDC R/L 16-3D	1.000	1.000	6.000	1.000	1.063	TC..32.5..	**01643**[1)]	**01643**[1)]

1) Not in stock


Key I - TORX®


Clamping screw


Solid Carbide Seat T

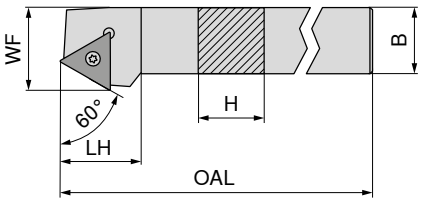

Threaded sleeve

Spare parts for Article no.	78 950 ...	78 950 ...	78 950 ...	78 950 ...
78 560 00602 / 78 561 00602	**06400**	**06200**		
78 560 00802 / 78 561 00802	**06400**	**06200**		
78 560 01003 / 78 561 01003	**05400**	**05100**	**06100**	**05300**
78 560 01223 / 78 561 01223	**05400**	**05100**	**06100**	**05300**
78 560 01643 / 78 561 01643	**05400**	**05100**	**06100**	**05300**

MaxiLock-S – STTC 60° – Toolholder with screw clamping

Scope of supply:
Tool holder with Torx key





Illustrations show right-hand versions



Designation	H inch	B inch	OAL inch	LH inch	WF inch	Insert	Left-hand 78 567 ...	Right-hand 78 566 ...
STTC R/L 12-3B	0.750	0.750	4.500	1.000	0.718	TC..32.5..	**01223**[1)]	**01223**[1)]
STTC R/L 16-3D	1.000	1.000	6.000	1.000	0.860	TC..32.5..	**01643**[1)]	**01643**[1)]

1) Not in stock


Key I - TORX®


Clamping screw


Solid Carbide Seat T


Threaded sleeve

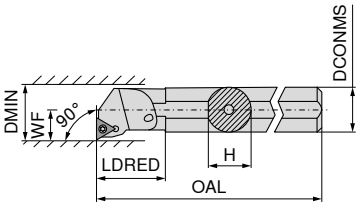
Spare parts for Article no.	78 950 ...	78 950 ...	78 950 ...	78 950 ...
78 566 01223 / 78 567 01223	**05400**	**05100**	**06100**	**05300**
78 566 01643 / 78 567 01643	**05400**	**05100**	**06100**	**05300**

MaxiLock-S – STFC 90° – Boring bar with screw clamping

▲ A... = with thru coolant
▲ S... = without thru coolant

Scope of supply:
Tool holder with Torx key





Illustrations show right-hand versions



Designation	DCONMS inch	H inch	OAL inch	LDRED inch	WF inch	DMIN inch	Insert	Left-hand 78 725 ...	Right-hand 78 724 ...
S06M STFC R/L 2	0.375	0.340	6.000	0.850	0.250	0.500	TC..21.5..	**20617**[1)]	**20617**[1)]
A06M STFC R/L	0.375	0.340	6.000	0.850	0.250	0.500	TC..21.5..	**20606**	**20606**
S08M STFC R/L 2	0.500	0.460	6.000	0.800	0.312	0.625	TC..21.5..	**20818**[1)]	**20818**[1)]
A08M STFC R/L	0.500	0.460	6.000	0.800	0.312	0.625	TC..21.5..	**20808**[1)]	**20808**[1)]
S10R STFC R/L 2	0.625	0.580	8.000	0.960	0.406	0.812	TC..21.5..	**21021**[1)]	**21021**[1)]
A10R STFC R/L	0.625	0.580	8.000	0.960	0.406	0.812	TC..21.5..	**21010**	**21010**
S12S STFC R/L 2	0.750	0.710	10.000	1.420	0.500	1.000	TC..21.5..	**21222**[1)]	**21222**[1)]
A12S STFC R/L	0.750	0.710	10.000	1.420	0.500	1.000	TC..21.5..	**21212**[1)]	**21212**[1)]
S16T STFC R/L 3	1.000	0.900	12.000	1.930	0.640	1.280	TC..32.5..	**31626**[1)]	**31626**[1)]
S20U STFC R/L 3	1.250	1.180	14.000	1.970	0.765	1.530	TC..32.5..	**32030**[1)]	**32030**[1)]
S24V STFC R/L 3	1.500	1.370	16.000	2.360	0.890	1.780	TC..32.5..	**32435**[1)]	**32435**[1)]

1) Not in stock


Key I - TORX®


Clamping screw

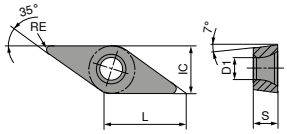

Solid Carbide Seat T


Threaded sleeve

Spare parts for Article no.	78 950 ...	78 950 ...	78 950 ...	78 950 ...
78 724 20617 / 78 725 20617	**06400**	**05200**		
78 724 20606 / 78 725 20606	**06400**	**05200**		
78 724 20818 / 78 725 20818	**06400**	**05200**		
78 724 20808 / 78 725 20808	**06400**	**06200**		
78 724 21021 / 78 725 21021	**06400**	**06200**		
78 724 21010 / 78 725 21010	**06400**	**06200**		
78 724 21222 / 78 725 21222	**06400**	**06200**		
78 724 21212 / 78 725 21212	**06400**	**06200**		
78 724 31626 / 78 725 31626	**05700**	**05600**		
78 724 32030 / 78 725 32030	**05400**	**05100**	**06100**	**05300**
78 724 32435 / 78 725 32435	**05400**	**05100**	**06100**	**05300**

VCGT / VCMT / VCET

Designation	L	S	D1	IC
	inch	inch	inch	inch
VC.T 22..	0.4370	0.1252	0.1142	0.2500
VC.T 33..	0.6535	0.1874	0.1732	0.3748
VCGT 43..	0.8701	0.2189	0.2165	0.5000



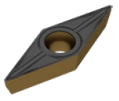
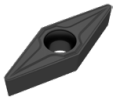
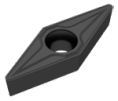
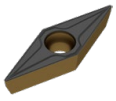
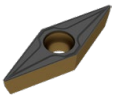
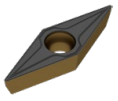
VCGT / VCMT

		-CF05 CTEP110	-CF55 CTEP110	-SF TCM407	-SF TCM10	-SMF TCM10	NEW -SF CTCP115-P	NEW -SF CTCP115-P
		DRAGONSKIN	DRAGONSKIN		DRAGONSKIN		DRAGONSKIN	DRAGONSKIN
		F	F	F	F	F	F	F
		CERMET VCGT	CERMET VCMT	CERMET VCGT	CERMET VCGT	CERMET VCMT	VCMT	VCGT
		76 276 ...	76 292 ...	70 277 ...	70 277 ...	70 288 ...	76 279 ...	76 277 ...
ANSI	RE inch							
22.5EN	0.0079	014		844	894			31401
220EN	0.0039				892			
221EN	0.0157	016	016	846	896	896		31601
222EN	0.0315							31801
331EN	0.0157	028	028	850	900	900	32801	
332EN	0.0315	030	030		902	902	33001	
P		●	●	●	●	●	●	●
M		○	○	○	○	○		
K		○	○	○	○	○	○	○
N								
S								
H								
O								

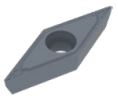
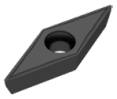
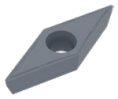
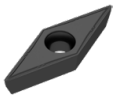
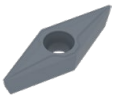
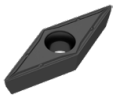
VCGT / VCMT

		NEW -SF CTCP125-P	NEW -SF CTCP125-P	NEW -SF CTCP135-P	NEW -SF CTCP135-P	NEW -SMF CTCP115-P	NEW -SMF CTCP125-P	NEW -SMF CTCP135-P
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
		F	F	F	F	F	F	F
		VCGT	VCMT	VCGT	VCMT	VCMT	VCMT	VCGT
		76 277 ...	76 279 ...	76 277 ...	76 279 ...	76 288 ...	76 288 ...	76 285 ...
ANSI	RE inch							
22.5EN	0.0079	51401		71401				71401
221EN	0.0157	51601		71601		31601	51601	
222EN	0.0315	51801		71801				
331EN	0.0157		52801		72801	32801	52801	
332EN	0.0315		53001			33001	53001	
P		●	●	●	●	●	●	●
M				○	○			○
K		○	○			○	○	
N								
S								
H								
O								

VCMT

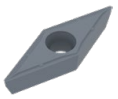
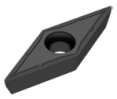
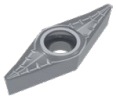
		NEW				NEW	NEW	NEW
		-SMF CTCP135-P	-SM CTCK110	-SM CTCK120	-SM CTCP115-P	-SM CTCP125-P	-SM CTCP135-P
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
							
		F	M	M	M	M	M
		VCMT	VCMT	VCMT	VCMT	VCMT	VCMT
		76 288 ...	70 278 ...	70 278 ...	76 278 ...	76 278 ...	76 278 ...
ANSI	RE inch						
221EN	0.0157	71601					
331.5EN	0.0236				32901		
331EN	0.0157	72801	028	528	32801	52801	72801
332EN	0.0315	73001	030	530	33001	53001	73001
333EN	0.0472		032	532	33201	53201	73201
P		●	○	○	●	●	●
M		○					○
K			●	●	○	○	
N							
S							
H							
O							

VCGT / VCMT

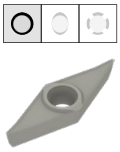
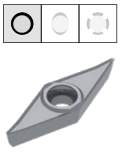
		NEW	NEW				NEW	
		-SF CTPM125	-SF CTPM125	-M25 CTCM120	-M25 CTPM125	-M25 CTCM130	-SM CTPM125	-M55 CTCM120
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
								
		F	F	F	F	F	M	M
		VCGT	VCMT	VCMT	VCMT	VCMT	VCMT	VCMT
		75 045 ...	75 046 ...	75 219 ...	75 219 ...	75 219 ...	75 051 ...	75 220 ...
ANSI	RE inch							
220.5EN	0.0079	21400						
221EN	0.0157	21600						
331EN	0.0157		22800	12800	228	32800	22800	12800
332EN	0.0315		23000	13000	23000	33000	23000	13000
P		○	○	○	○	○	○	○
M		●	●	●	●	●	●	●
K								
N								
S						○		
H								
O								

9

VCMT / VCGT

		-M55 CTPM125	-M55 CTCM130	-25P H210T	-25P CTPX710	-25Q H210T	NEW -25Q CTPX710
		DRAGONSKIN	DRAGONSKIN		DRAGONSKIN		
							
		M	M	F	M	M	M
		VCMT	VCMT	VCGT	VCGT	VCGT	VCGT
		75 220 ...	75 220 ...	70 282 ...	70 282 ...	70 282 ...	70 282 ...
ANSI	RE inch						
22.5FN	0.0079			638	71400		
221FL	0.0157					670	81600
221FN	0.0157			640	71600		
221FR	0.0157					680	81700
331EN	0.0157	228	32800				
331FN	0.0157			642	72800		
332EN	0.0315	230	33000				
332FN	0.0315			644	73000		
333FN	0.0472			646	73200		
43.57.5FN	0.1181			648	75000		
P		○	○		●		●
M		●	●		●		●
K				○		○	
N				●	●	●	●
S			○	○	●	○	●
H							
O				○		○	

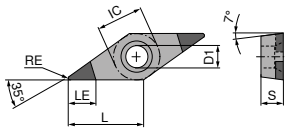
VCGT / VCMT / VCET

					NEW					
		-27 H10T		-27 CTPX715 DRAGONSKIN		-29 H216T		-29 CTPX715 DRAGONSKIN		-F05 CTPX710 DRAGONSKIN
										
		M		M		M		M		F
		VCGT		VCGT		VCMT		VCMT		VCET
		70 280 ...		70 280 ...		70 247 ...		70 247 ...		76 255 ...
ANSI	RE inch									
22.5FN	0.0079		606		81400					12000
2205FN	0.0059									11800
220FN	0.0039									11600
221FN	0.0157		608		81600					12200
222FN	0.0315		610		71800					
22X0FN	0.0020									11400
331EN	0.0157						62800		72800	
331FN	0.0157		612		82800					
332EN	0.0315						63000		73000	
332FN	0.0315		614		83000					
333EN	0.0472						63200		73200	
333FN	0.0472		616							
43.57.5FN	0.1181		618							
P				●				●		●
M				●				●		●
K			○	○		○		○		
N			●	●		●		●		●
S				●				●		●
H										
O			○	○		○		○		

9

VCGW

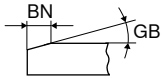
Designation	L inch	S inch	D1 inch	IC inch
VCGW 220...	0.4370	0.1252	0.1142	0.2500
VCGW 221E..	0.4370	0.1252	0.1142	0.2500
VCGW 221S..	0.4370	0.1252	0.1142	0.2500
VCGW 330...	0.6535	0.1874	0.1732	0.3748
VCGW 331E..	0.6535	0.1874	0.1732	0.3748
VCGW 331S..	0.6535	0.1874	0.1732	0.3748
VCGW 332E..	0.6535	0.1874	0.1732	0.3748
VCGW 332S..	0.6535	0.1874	0.1732	0.3748



VCGW B

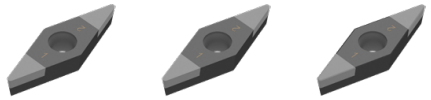
VCGW

▲ TCE(NOI) = Design and number of equipped cutting edge corners



NEW | NEW | NEW

CTBH1000C | CTBH2000C | CTBH3000C



F | F | F

PCBN VCGW | PCBN VCGW | PCBN VCGW

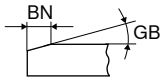
71 041 ... | 71 041 ... | 71 041 ...

ANSI	RE inch	BN inch	GB	TCE (NOI)	LE inch					
220.5EN	0.0079			B (2)	0.2165	70002		80002		
220.5SN	0.0079	0.0055	20°	B (2)	0.2165					90002
221EN	0.0157			B (2)	0.2008	70302		80302		
221SN	0.0157	0.0055	20°	B (2)	0.2008					90302
330.5EN	0.0079			B (2)	0.2165	70602		80602		
330.5SN	0.0079	0.0055	20°	B (2)	0.2165					90602
331EN	0.0157			B (2)	0.2008	70902		80902		
331SN	0.0157	0.0055	20°	B (2)	0.2008					90902
332EN	0.0315			B (2)	0.1654	71202		81202		
332SN	0.0315	0.0055	20°	B (2)	0.1654					91202

P			
M			
K			
N			
S			
H	●	●	●
O			

VCGW

▲ TCE(NOI) = Design and number of equipped cutting edge corners

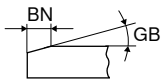


						NEW	NEW	NEW
						CTBH1000C	CTBH2000C	CTBH3000C
								
						M	M	M
						PCBN VCGW	PCBN VCGW	PCBN VCGW
						71 041 ...	71 041 ...	71 041 ...
ANSI	RE inch	BN inch	GB	**TCE (NOI)**	LE inch			
220.5SN	0.0079	0.0035	15°	**B (2)**	0.2165	**70102**	**80102**	
220.5SN	0.0079	0.0071	25°	**B (2)**	0.2165			**90102**
221SN	0.0157	0.0035	15°	**B (2)**	0.2008	**70402**	**80402**	
221SN	0.0157	0.0071	25°	**B (2)**	0.2008			**90402**
330.5SN	0.0079	0.0035	15°	**B (2)**	0.2165	**70702**	**80702**	
330.5SN	0.0079	0.0071	25°	**B (2)**	0.2165			**90702**
331SN	0.0157	0.0035	15°	**B (2)**	0.2008	**71002**	**81002**	
331SN	0.0157	0.0071	25°	**B (2)**	0.2008			**91002**
332SN	0.0315	0.0035	15°	**B (2)**	0.1654	**71302**	**81302**	
332SN	0.0315	0.0071	25°	**B (2)**	0.1654			**91302**
P								
M								
K								
N								
S								
H						●	●	●
O								

9

VCGW

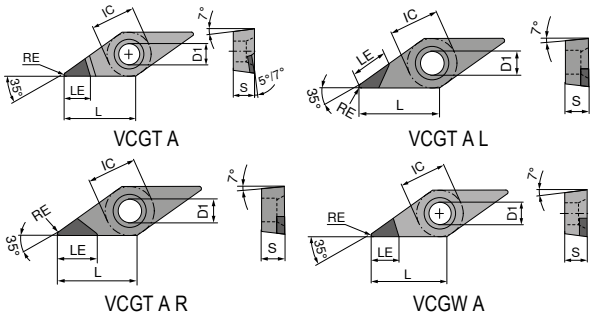
▲ TCE(NOI) = Design and number of equipped cutting edge corners



						NEW	NEW	NEW
						CTBH1000C	CTBH2000C	CTBH3000C
								
						R	R	R
						PCBN VCGW	PCBN VCGW	PCBN VCGW
						71 041 ...	71 041 ...	71 041 ...
ANSI	RE inch	BN inch	GB	**TCE (NOI)**	LE inch			
220.5SN	0.0079	0.0055	20°	**B (2)**	0.2165	**70202**	**80202**	
220.5SN	0.0079	0.0079	35°	**B (2)**	0.2165			**90202**
221SN	0.0157	0.0055	20°	**B (2)**	0.2008	**70502**	**80502**	
221SN	0.0157	0.0079	35°	**B (2)**	0.2008			**90502**
330.5SN	0.0079	0.0055	20°	**B (2)**	0.2165	**70802**	**80802**	
330.5SN	0.0079	0.0079	35°	**B (2)**	0.2165			**90802**
331SN	0.0157	0.0055	20°	**B (2)**	0.2008	**71102**	**81102**	
331SN	0.0157	0.0079	35°	**B (2)**	0.2008			**91102**
332SN	0.0315	0.0055	20°	**B (2)**	0.1654	**71402**	**81402**	
332SN	0.0315	0.0079	35°	**B (2)**	0.1654			**91402**
P								
M								
K								
N								
S								
H						●	●	●
O								

VCGT / VCGW

Designation	L inch	S inch	D1 inch	IC inch
VCG. 1...	0.2717	0.0937	0.0866	0.1563
VCG. 22..	0.4370	0.1252	0.1142	0.2500
VCG. 2...	0.5236	0.1252	0.1339	0.3126
VCG. 33..	0.6535	0.1874	0.1732	0.3748



VCGT / VCGW

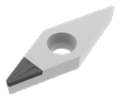
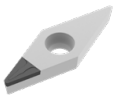
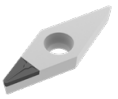
▲ TCE(NOI) = Design and number of equipped cutting edge corners

				CTDMD05	CTDMD05	CTDPD20	CTDPD20	CTDPD20	CTDPD20
				F	F	F	F	F	F
				DIAMOND VCGT	DIAMOND VCGW	DIAMOND VCGW	DIAMOND VCGT	DIAMOND VCGT	DIAMOND VCGT
				71 189 ...	71 160 ...	71 160 ...	71 062 ...	71 063 ...	71 064 ...
ANSI	RE inch	TCE (NOI)	LE inch						
1.21.5.5FN	0.0079	A (1)		50001					
1.21.51FN	0.0157	A (1)		50101					
220FN	0.0039	A (1)	0.2126				10100		
22.5FN	0.0079	A (1)	0.1181		050				
22.5FN	0.0079	A (1)	0.1811	50201		100	100		
221FN	0.0157	A (1)	0.1181		052				
221FN	0.0157	A (1)	0.1535	50301		102	102		
221FR	0.0157	A (1)	0.2559					102	
221FL	0.0157	A (1)	0.2559						102
222FN	0.0315	A (1)	0.1299			104	104		
222FR	0.0315	A (1)	0.2362					104	
222FL	0.0315	A (1)	0.2362						104
330FN	0.0039	A (1)	0.2362				10700		
33.5FN	0.0079	A (1)	0.2323			105	105		
33.5FN	0.0079	A (1)		50401					
331FN	0.0157	A (1)	0.2165			106	106		
331FN	0.0157	A (1)		50501					
331FR	0.0157	A (1)	0.2953					106	
331FL	0.0157	A (1)	0.2953						106
332FN	0.0315	A (1)	0.1969		07800	108	108		
332FR	0.0315	A (1)	0.2756					108	
332FL	0.0315	A (1)	0.2756						108
332FN	0.0315	A (1)		50601					
333FN	0.0472	A (1)	0.1772			110	110		
333FR	0.0472	A (1)	0.2756					110	
333FL	0.0472	A (1)	0.2756						110
P									
M									
K									
N				●	●	●	●	●	●
S									
H									
O				●	●	●	●	●	●

9

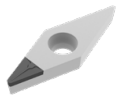
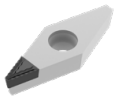
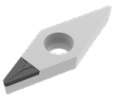
VCGT / VCGW

▲ TCE(NOI) = Design and number of equipped cutting edge corners

				-CB1 CTDPD20	CTDPS30	CTDPS30	-CB1 CTDPS30	-CB2 CTDPS30	CTDPU20
									
				F	F	F	F	M	F
				DIAMOND VCGT	DIAMOND VCGW	DIAMOND VCGT	DIAMOND VCGT	DIAMOND VCGT	DIAMOND VCGW
				71 330 ...	71 191 ...	71 189 ...	71 330 ...	71 331 ...	71 191 ...
ANSI	RE inch	**TCE (NOI)**	LE inch						
1.21.50FN	0.0039	**A (1)**	0.1496			**20001**			
1.21.5.5FN	0.0079	**A (1)**	0.1417		**20001**				
1.21.51FN	0.0157	**A (1)**	0.1260		**20101**				
220FN	0.0039	**A (1)**	0.2126	**11000**	**20201**	**20101**			
22.5FN	0.0079	**A (1)**	0.1811	**112**	**20301**	**20201**	**21200**	**212**	
221FN	0.0157	**A (1)**	0.1535	**114**	**20401**	**20301**	**214**	**214**	
222FN	0.0315	**A (1)**	0.1299					**21800**	
2.52.5FN	0.0079	**A (1)**	0.2323		**20501**	**20401**			
330FN	0.0039	**A (1)**	0.2362		**20601**	**20501**			
33.5FN	0.0079	**A (1)**	0.2323	**13200**		**20601**		**23200**	
331FN	0.0157	**A (1)**	0.2165	**134**	**20701**	**20701**	**234**	**234**	**30001**
332FN	0.0315	**A (1)**	0.1969	**138**	**20801**		**238**	**238**	
333FN	0.0472	**A (1)**	0.1772	**14000**	**20901**		**24000**	**242**	
P									
M									
K									
N				●	●	●	●	●	●
S									
H									
O				●	●	●	●	●	●

VCGT / VCGW

▲ TCE(NOI) = Design and number of equipped cutting edge corners

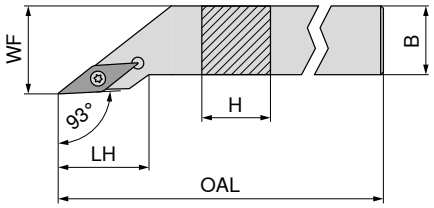
				-CB2 CTDPU20	-CB3 CTDPU20	CTDCD10	-CB1 CTDCD10	-CB2 CTDCD10
								
				M	R	F	F	M
				DIAMOND VCGT	DIAMOND VCGT	DIAMOND VCGW	DIAMOND VCGT	DIAMOND VCGT
				71 190 ...	71 332 ...	71 191 ...	71 330 ...	71 331 ...
ANSI	RE inch	TCE (NOI)	LE inch					
220FN	0.0039	A (1)	0.1181				31000	
22.5FN	0.0079	A (1)	0.1181			40001	312	312
221FN	0.0157	A (1)	0.1181			40101	314	314
221FN	0.0157	A (1)	0.1535		214			
222FN	0.0315	A (1)	0.1181			40201		
33.5FN	0.0079	A (1)	0.1181			40301	32200	33200
331FN	0.0157	A (1)	0.1181			40401	32400	334
331FN	0.0157	A (1)	0.2165	30001	234			
332FN	0.0315	A (1)	0.1181			40501	32600	338
333FN	0.0472	A (1)	0.1181				32800	34000
P								
M								
K								
N				●	●	●	●	●
S								
H								
O				●	●	●	●	●

9

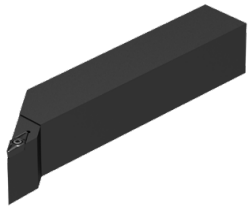
MaxiLock-S – SVJC 93° – Toolholder with screw clamping

Scope of supply:
Tool holder with Torx key





Illustrations show right-hand versions



Designation	H inch	B inch	OAL inch	LH inch	WF inch	Insert	Left-hand 78 571 ...	Right-hand 78 570 ...
SVJC R/L 12-3B	0.750	0.750	4.500	1.610	1.000	VC..33..	**01223**	**01223**
SVJC R/L 16-3D	1.000	1.000	6.000	1.610	1.250	VC..33..	**01643**	**01643**
SVJC R/L 20-3D	1.250	1.250	6.000	1.610	1.500	VC..33..	**02043**[1)]	**02043**[1)]

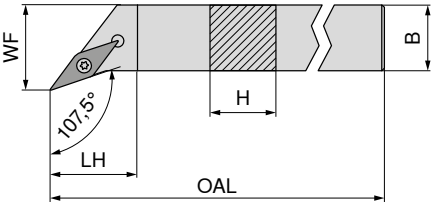
1) Not in stock

Spare parts for Article no.	Key I - TORX® 78 950 ...	Clamping screw 78 950 ...	Solid Carbide Seat V 78 950 ...	Threaded sleeve 78 950 ...
78 570 01223 / 78 571 01223	**05400**	**05100**	**05500**	**05300**
78 570 01643 / 78 571 01643	**05400**	**05100**	**05500**	**05300**
78 570 02043 / 78 571 02043	**05400**	**05100**	**05500**	**05300**

MaxiLock-S – SVHC 107.5° – Toolholder with screw clamping

Scope of supply:
Tool holder with Torx key





Illustrations show right-hand versions



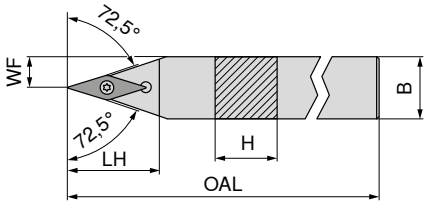
Designation	H inch	B inch	OAL inch	LH inch	WF inch	Insert	Left-hand 78 569 ...	Right-hand 78 568 ...
SVHC R/L 12-3B	0.750	0.750	4.500	0.744	1.000	VC..33..	**01223**	**01223**
SVHC R/L 16-3D	1.000	1.000	6.000	0.756	1.250	VC..33..	**01643**	**01643**

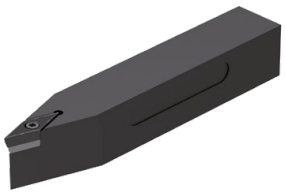
Spare parts for Article no.	Key I - TORX® 78 950 ...	Clamping screw 78 950 ...	Solid Carbide Seat V 78 950 ...	Threaded sleeve 78 950 ...
78 568 01223 / 78 569 01223	**05400**	**05100**	**05500**	**05300**
78 568 01643 / 78 569 01643	**05400**	**05100**	**05500**	**05300**

MaxiLock-S – SVVC 72.5° – Toolholder with screw clamping

Scope of supply:
Tool holder with Torx key







Designation	H inch	B inch	OAL inch	LH inch	WF inch	Insert	Neutral 78 585 ...
SVVC N 12-3B	0.750	0.750	4.500	1.212	0.398	VC..33..	**01223**
SVVC N 16-3D	1.000	1.000	6.000	1.610	0.523	VC..33..	**01643**
SVVC N 20-3D	1.250	1.250	6.000	2.008	0.648	VC..33..	**02043**[1)]

1) Not in stock

Spare parts for Article no.	 Key I - TORX® 78 950 ...	 Clamping screw 78 950 ...	 Solid Carbide Seat V 78 950 ...	 Threaded sleeve 78 950 ...
78 585 01223	**05400**	**05100**	**05500**	**05300**
78 585 01643	**05400**	**05100**	**05500**	**05300**
78 585 02043	**05400**	**05100**	**05500**	**05300**

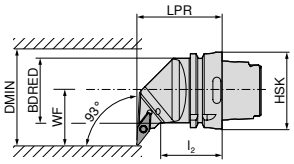
9

MaxiLock-S – SVUC 93° – Toolholder with screw clamping

Scope of supply:
Tool holder with Torx key







Illustrations show right-hand versions



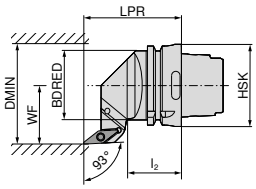
Designation	Adapter	LPR mm	l_2 mm	BDRED mm	WF mm	DMIN mm	torque moment Nm	Insert	Left-hand 74 557 ...	Right-hand 74 558 ...
HSK T63 SVUC R/L 16	HSK-T 63	70	42	53	45	100	3.2	VC.. 1604	**516**	**516**

Spare parts	 Combination Key 70 950 ...	 Clamping screw 70 950 ...	 Solid Carbide Seat V 70 950 ...	 Threaded sleeve 70 950 ...
74 558 516 / 74 557 516	T15/SW **398**	M3.5x11 **113**	**107**	M3.5 **171**

MaxiLock-S – SVJC 93° – Toolholder with screw clamping

Scope of supply:
Tool holder with Torx key

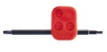


Illustrations show right-hand versions



Designation	Adapter	LPR mm	l_2 mm	BDRED mm	WF mm	DMIN mm	torque moment Nm	Insert	Left-hand 74 556 ...	Right-hand 74 555 ...
HSK T63 SVJC R/L 16	HSK-T 63	75	42	53	45	100	3.2	VC.. 1604	**516**	**516**


Combination Key
70 950 ...


Clamping screw
70 950 ...


Solid Carbide Seat V
70 950 ...


Threaded sleeve
70 950 ...

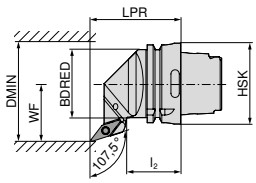
Spare parts

74 555 516 / 74 556 516	T15/SW	**398**	M3.5x11	**113**	**107**	M3.5	**171**

MaxiLock-S – SVHC 107.5° – Toolholder with screw clamping

Scope of supply:
Tool holder with Torx key

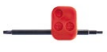


Illustrations show right-hand versions



Designation	Adapter	LPR mm	l_2 mm	BDRED mm	WF mm	DMIN mm	torque moment Nm	Insert	Left-hand 74 554 ...	Right-hand 74 553 ...
HSK T63 SVHC R/L 16	HSK-T 63	70	42	53	45	100	3.2	VC.. 1604	**516**	**516**


Combination Key
70 950 ...


Clamping screw
70 950 ...


Solid Carbide Seat V
70 950 ...

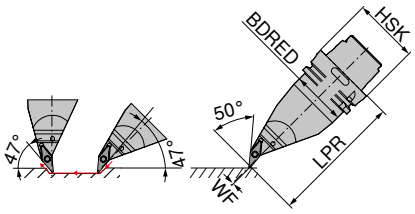

Threaded sleeve
70 950 ...

Spare parts

74 553 516 / 74 554 516	T15/SW	**398**	M3.5x11	**113**	**107**	M3.5	**171**

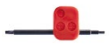
MaxiLock-S – SVMC 50° – Toolholder with screw clamping

Scope of supply:
Tool holder with Torx key





Designation	Adapter	LPR mm	BDRED mm	WF mm	torque moment Nm	Insert	Left-hand 74 560 ...
HSK T63 SVMC L 16	HSK-T 63	130	53	0	3.2	VC.. 1604	**516**


Combination Key
70 950 ...


Clamping screw
70 950 ...


Solid Carbide Seat V
70 950 ...

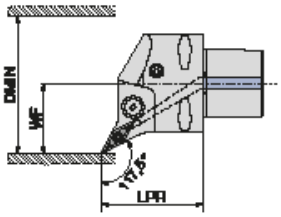

Threaded sleeve
70 950 ...

Spare parts

74 560 516	T15/SW	**398**	M3.5x11	**113**	**107**	M3.5	**171**

MaxiLock-S – SVPC 117.5° – Toolholder with screw clamping

Scope of supply:
without high-performance coolant set



Illustrations show right-hand versions



Designation	Adapter	LPR mm	WF mm	DMIN mm	torque moment Nm	Insert	Direct cooling compatible	Left-hand 84 671 ...	Right-hand 84 670 ...
PSC40 SVPC R/L 50050-16	PSC 40	50	27	50	3	VC.. 1604	DC	**01695**	**01695**
PSC50 SVPC R/L 65060-16	PSC 50	60	35	65	3	VC.. 1604	DC	**01694**	**01694**
PSC63 SVPC R/L 80065-16	PSC 63	65	45	80	3	VC.. 1604	DC	**01693**	**01693**

The high-performance coolant set with article number **84 950 27400** can be ordered as an optional extra → **Page 46.**


Clamping screw
84 950 ...

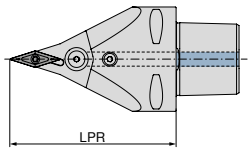
Spare parts

84 670 01693 / 84 671 01695	**27600**

MaxiLock-S – SVVC 72.5° – Toolholder with screw clamping

Scope of supply:
without high-performance coolant set





Neutral
84 678 ...

Designation	Adapter	LPR mm	torque moment Nm	Insert	Direct cooling compatible	
PSC63 SVVC N 0100-16	PSC 63	100	3	VC.. 1604	DC	**01693**
PSC63 SVVC N 0130-16	PSC 63	130	3	VC.. 1604	DC	**11693**

The high-performance coolant set with article number **84 950 27400** can be ordered as an optional extra → **Page 46.**



Clamping screw
84 950 ...

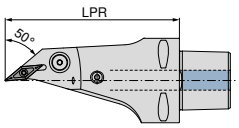
Spare parts

84 678 01693 / 84 678 11693 **27600**

MaxiLock-S – SVMC 50° – Toolholder with screw clamping

Scope of supply:
without high-performance coolant set





Neutral
84 681 ...

Designation	Adapter	LPR mm	torque moment Nm	Insert	Direct cooling compatible	
PSC63 SVMC L 0130-16	PSC 63	130	3	VC.. 1604	DC	**11693**

The high-performance coolant set with article number **84 950 27400** can be ordered as an optional extra → **Page 46.**



Clamping screw
84 950 ...

Spare parts

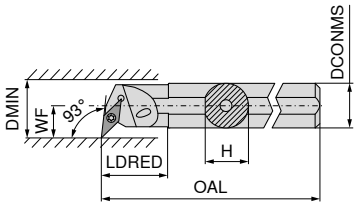
84 681 11693 **27600**

MaxiLock-S – SVUC 93° – Boring bar with screw clamping

▲ A... = with thru coolant
▲ S... = without thru coolant

Scope of supply:
Tool holder with Torx key





Illustrations show right-hand versions



Designation	DCONMS inch	H inch	OAL inch	LDRED inch	WF inch	DMIN inch	Insert	Left-hand 78 729 ...	Right-hand 78 728 ...
S10R SVUC R/L 2E	0.625	0.580	8.000	1.060	0.500	0.867	VC..22..	**21021**[1)]	**21021**[1)]
S12S SVUC R/L 2E	0.750	0.710	10.000	1.580	0.625	1.060	VC..22..	**21222**[1)]	**21222**[1)]
S16T SVUC R/L 2D	1.000	0.900	12.000	1.810	0.750	1.300	VC..22..	**21626**[1)]	**21626**[1)]
S20U SVUC R/L 3	1.250	1.180	14.000	3.000	1.000	2.000	VC..33..	**32030**[1)]	**32030**[1)]
S24V SVUC R/L 3	1.500	1.370	16.000	3.000	1.250	2.250	VC..33..	**32435**[1)]	**32435**[1)]
S32W SVUC R/L 3	2.000	1.870	18.000	4.000	1.375	2.750	VC..33..	**33243**[1)]	**33243**[1)]

1) Not in stock

Spare parts for Article no.	 Key I - TORX® 78 950 ...	 Clamping screw 78 950 ...	 Solid Carbide Seat V 78 950 ...	 Threaded sleeve 78 950 ...
78 728 21021 / 78 729 21021	**06400**	**06200**		
78 728 21222 / 78 729 21222	**06400**	**06200**		
78 728 21626 / 78 729 21626	**06400**	**06200**		
78 728 32030 / 78 729 32030	**05400**	**05100**	**05500**	**05300**
78 728 32435 / 78 729 32435	**05400**	**05100**	**05500**	**05300**
78 728 33243 / 78 729 33243	**05400**	**05100**	**05500**	**05300**

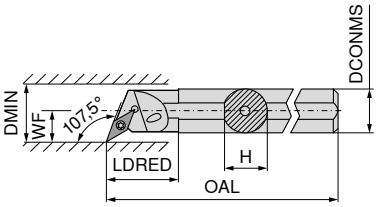
9

MaxiLock-S – SVQC 107.5° – Boring bar with screw clamping

▲ A... = with thru coolant
▲ S... = without thru coolant

Scope of supply:
Tool holder with Torx key





Illustrations show right-hand versions



								Left-hand	Right-hand
								78 727 ...	78 726 ...
Designation	DCONMS inch	H inch	OAL inch	LDRED inch	WF inch	DMIN inch	Insert		
S16T SVQC R/L 3	1.000	0.900	12.000	0.910	0.750	1.375	VC..33..	**31626**[1)]	**31626**[1)]
S20U SVQC R/L 3	1.250	1.180	14.000	1.060	0.875	1.625	VC..33..	**32030**[1)]	**32030**[1)]
S24V SVQC R/L 3	1.500	1.370	16.000	1.370	1.063	2.000	VC..33..	**32435**[1)]	**32435**[1)]

1) Not in stock

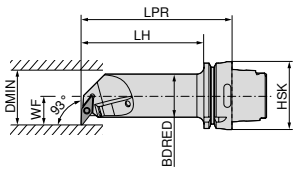
	 Key I - TORX®	 Clamping screw	 Solid Carbide Seat V	 Threaded sleeve
	78 950 ...	**78 950 ...**	**78 950 ...**	**78 950 ...**
Spare parts for Article no.				
78 726 31626 / 78 727 31626	**05700**	**05600**		
78 726 32030 / 78 727 32030	**05400**	**05100**	**05500**	**05300**
78 726 32435 / 78 727 32435	**05400**	**05100**	**05500**	**05300**

MaxiLock-S – SVUC 93° – Boring bar with screw clamping

Scope of supply:
Boring bar with Torx key







Illustrations show right-hand versions

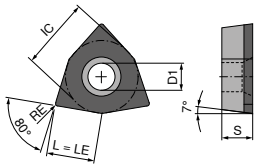


									Left-hand	Right-hand
									74 568 ...	74 567 ...
Designation	Adapter	LPR mm	LH mm	BDRED mm	WF mm	DMIN mm	torque moment Nm	Insert		
HSK T63 40L SVUC R/L 16	HSK-T 63	140	114	40	27	50	3.2	VC.. 1604	**516**	**516**

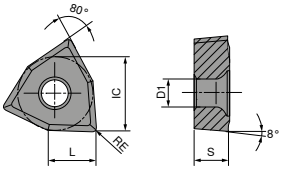
	 Combination Key		 Clamping screw	 Solid Carbide Seat V		 Threaded sleeve
	70 950 ...		**70 950 ...**	**70 950 ...**		**70 950 ...**
Spare parts						
74 567 516 / 74 568 516	T15/SW	**398**	M3.5x11	**113**	**107**	M3.5	**171**

WCGT / WCGW

Designation	L inch	S inch	D1 inch	IC inch
WCGW 1..	0.1063	0.0622	0.0906	0.1563
WCGT 1..	0.1067	0.0626	0.0827	0.1563



CBN/PKD WCGW F



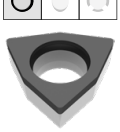
WCGT

WCGT

	-SF TCM10	-SF CTPP430	-SF H216T
		DRAGONSKIN	
			
	F	F	F
	CERMET WCGT	WCGT	WCGT
	70 287 ...	70 287 ...	70 287 ...
ANSI / RE inch			
1.21.5EN 0.0079		450	
1.21.5FN 0.0079	900		600
1.211EN 0.0157		452	
1.211FN 0.0157	902		602
P	●	●	
M	○	●	
K	○	○	○
N		○	●
S		○	
H			
O			○

WCGW

▲ TCE(NOI) = Design and number of equipped cutting edge corners

	CTDPD20
	
	F
	DIAMOND WCGW
	71 154 ...
ANSI / RE inch / TCE (NOI) / LE inch	
1.21.5FN 0.0079 F 0.1063	100
1.211FN 0.0157 F 0.1063	102
P	
M	
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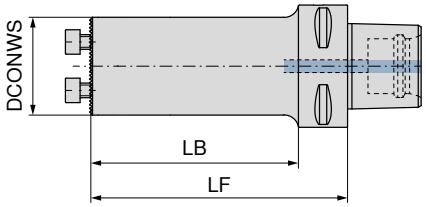
N	●
S	
H	
O	●

9

MaxiChange – Base holders for the exchangeable head system

Scope of supply:
Includes clamping screws







NEW

Adapter	LF mm	LB mm	DCONWS mm	84 192 ...
PSC 40	40	20	16	**01695**
PSC 40	50	30	20	**02095**
PSC 40	55	35	25	**02595**
PSC 40	75	55	32	**03295**
PSC 40	80		40	**04095**
PSC 50	40	20	16	**01694**
PSC 50	50	30	20	**02094**
PSC 50	55	35	25	**02594**
PSC 50	75	55	32	**03294**
PSC 50	100	80	40	**04094**
PSC 63	40	18	16	**01693**
PSC 63	50	28	20	**02093**
PSC 63	65	43	25	**02593**
PSC 63	90	68	32	**03293**
PSC 63	125	103	32	**13293**
PSC 63	100	78	40	**04093**
PSC 63	140	118	40	**14093**



Clamping Screw

Spare parts for Article no.		84 950 ...
84 192 02595	M4X12 (SW3)	**30000**
84 192 03295	M5X14 (SW4)	**29900**
84 192 04095	M6X16 (SW5)	**29800**
84 192 02594	M4X12 (SW3)	**30000**
84 192 03294	M5X14 (SW4)	**29900**
84 192 04094	M6X16 (SW5)	**29800**
84 192 02593	M4X12 (SW3)	**30000**
84 192 03293	M5X14 (SW4)	**29900**
84 192 13293	M5X14 (SW4)	**29900**
84 192 04093	M6X16 (SW5)	**29800**
84 192 14093	M6X16 (SW5)	**29800**

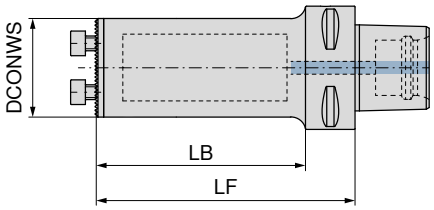
MaxiChange – Base holders for the exchangeable head system – vibration-damped

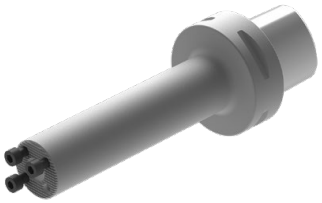
▲ Heavy metal core reduces vibrations

Scope of supply:

Includes clamping screws







Adapter	LF mm	LB mm	DCONWS mm	84 195 ...
PSC 63	115	93	25	**02593**
PSC 63	150	128	32	**03293**
PSC 63	185	163	40	**04093**



Clamping Screw

Spare parts for Article no.		84 950 ...
84 195 02593	M4X12 (SW3)	**30000**
84 195 03293	M5X14 (SW4)	**29900**
84 195 04093	M6X16 (SW5)	**29800**

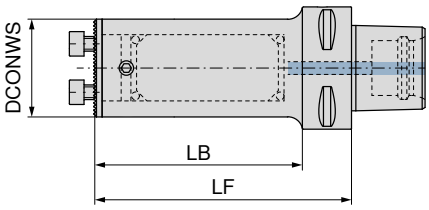
9

MaxiChange – Base holders for the exchangeable head system – actively vibration-damped

▲ Reduction of vibrations through actively mounted dampers
▲ Improvement in surface finish and chip evacuation

Scope of supply:
Includes clamping screws







NEW

Adapter	LF mm	LB mm	DCONWS mm	84 198 ...
PSC 40	88	68	16	31695
PSC 40	107	87	20	32095
PSC 40	132	112	25	42595
PSC 40	154	134	32	43295
PSC 40	173		40	44095
PSC 50	85	65	16	31694
PSC 50	109	89	20	32094
PSC 50	133	113	25	32594
PSC 50	180	160	25	42594
PSC 50	154	134	32	33294
PSC 50	224	204	32	43294
PSC 50	194	174	40	34094
PSC 50	288	268	40	44094
PSC 63	90	68	16	31693
PSC 63	110	88	20	32093
PSC 63	132	110	25	32593
PSC 63	180	158	25	42593
PSC 63	230	208	25	52593
PSC 63	159	137	32	33293
PSC 63	224	202	32	43293
PSC 63	288	266	32	53293
PSC 63	198	176	40	34093
PSC 63	288	266	40	44093
PSC 63	368	346	40	54093



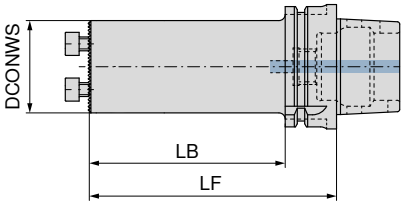
Clamping Screw

Spare parts for Article no.		84 950 ...
84 198 42595	M4X12 (SW3)	30000
84 198 43295	M5X14 (SW4)	29900
84 198 44095	M6X16 (SW5)	29800
84 198 32594	M4X12 (SW3)	30000
84 198 42594	M4X12 (SW3)	30000
84 198 33294	M5X14 (SW4)	29900
84 198 43294	M5X14 (SW4)	29900
84 198 34094	M6X16 (SW5)	29800
84 198 44094	M6X16 (SW5)	29800
84 198 32593	M4X12 (SW3)	30000
84 198 42593	M4X12 (SW3)	30000
84 198 52593	M4X12 (SW3)	30000
84 198 33293	M5X14 (SW4)	29900
84 198 43293	M5X14 (SW4)	29900
84 198 53293	M5X14 (SW4)	29900
84 198 34093	M6X16 (SW5)	29800
84 198 44093	M6X16 (SW5)	29800
84 198 54093	M6X16 (SW5)	29800

MaxiChange – Base holders for the exchangeable head system

Scope of supply:
Includes clamping screws







NEW

Adapter	LF mm	LB mm	DCONWS mm	84 193 ...
HSK-T 40	55	35	25	**02539**
HSK-T 40	75	55	25	**12539**
HSK-T 40	80	60	32	**03239**
HSK-T 40	80		40	**04039**
HSK-T 63	56	30	16	**01637**
HSK-T 63	80	54	20	**02037**
HSK-T 63	80	44	25	**02537**
HSK-T 63	90	64	32	**03237**
HSK-T 63	100	74	40	**04037**
HSK-T 63	125	99	32	**13237**
HSK-T 63	140	114	40	**14037**
HSK-T 100	140	111	40	**04035**



Clamping Screw

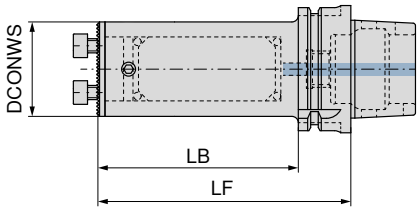
Spare parts for Article no.		84 950 ...
84 193 02539	M4X12 (SW3)	**30000**
84 193 12539	M4X12 (SW3)	**30000**
84 193 03239	M5X14 (SW4)	**29900**
84 193 04039	M6X16 (SW5)	**29800**
84 193 02537	M4X12 (SW3)	**30000**
84 193 03237	M5X14 (SW4)	**29900**
84 193 04037	M6X16 (SW5)	**29800**
84 193 13237	M5X14 (SW4)	**29900**
84 193 14037	M6X16 (SW5)	**29800**
84 193 04035	M6X16 (SW5)	**29800**

MaxiChange – Base holders for the exchangeable head system – actively vibration-damped

▲ Reduction of vibrations through actively mounted dampers
▲ Improvement in surface finish and chip evacuation

Scope of supply:
Includes clamping screws







NEW

Adapter	LF mm	LB mm	DCONWS mm	84 198 ...
HSK-T 63	90	64	16	**31637**
HSK-T 63	106	80	20	**32037**
HSK-T 63	126	100	25	**32537**
HSK-T 63	151	125	25	**42537**
HSK-T 63	154	128	32	**33237**
HSK-T 63	186	160	32	**43237**
HSK-T 63	186	160	40	**34037**
HSK-T 63	226	200	40	**44037**



Clamping Screw

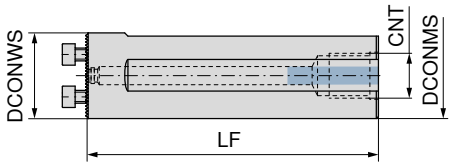
Spare parts for Article no.		84 950 ...
84 198 32537	M4X12 (SW3)	**30000**
84 198 42537	M4X12 (SW3)	**30000**
84 198 33237	M5X14 (SW4)	**29900**
84 198 43237	M5X14 (SW4)	**29900**
84 198 34037	M6X16 (SW5)	**29800**
84 198 44037	M6X16 (SW5)	**29800**

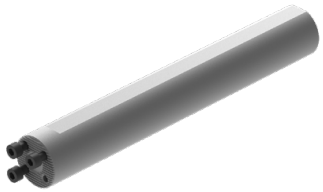
MaxiChange – Base holders for the exchangeable head system – cylindrical

▲ Connection thread for through coolant
▲ 3 clamping flats

Scope of supply:
Includes clamping screws







NEW

DCONWS mm	LF mm	DCONMS mm	CNT	84 194 ...
25	100	25	M8 x 1	**12599**
32	120	32	M8 x 1	**13299**
40	120	40	M8 x 1	**14099**
25	200	25	1/4	**02599**
32	218	32	3/8	**03299**
40	283	40	1/2	**04099**



Clamping Screw

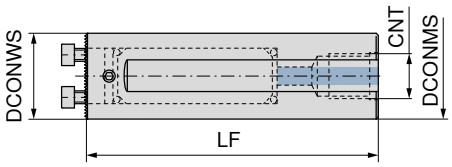
Spare parts for Article no.		84 950 ...
84 194 02599	M4X12 (SW3)	**30000**
84 194 03299	M5X14 (SW4)	**29900**
84 194 04099	M6X16 (SW5)	**29800**

MaxiChange – Base holders for the exchangeable head system – actively vibration-damped

▲ Reduction of vibrations through actively mounted dampers
▲ Improvement in surface finish and chip evacuation

Scope of supply:
Includes clamping screws







NEW

DCONWS mm	LF mm	DCONMS mm	CNT	84 198 ...
16	150	16	1/4	**31699**
20	180	20	1/4	**32099**
25	220	25	1/4	**32599**
32	285	32	1/2	**33299**
40	368	40	1/2	**34099**



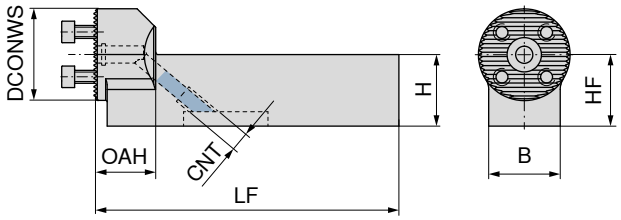
Clamping Screw

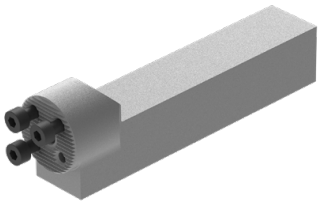
Spare parts for Article no.		84 950 ...
84 198 31699	M3x10	**44800**
84 198 32099	M3.5X12	**44900**
84 198 32599	M4X12 (SW3)	**30000**
84 198 33299	M5X14 (SW4)	**29900**
84 198 34099	M6X16 (SW5)	**29800**

MaxiChange – 0° base holders for the exchangeable head system

Scope of supply:
Includes clamping screws

Direct Cooling





NEW

DCONWS mm	H mm	B mm	HF mm	OAH mm	LF mm	CNT	84 185 ...
25	20	20	20	21	106	M8x1	**02500**
32	20	20	20	21	106	M8x1	**03200**
32	25	25	25	21	106	M8x1	**13200**
40	25	25	25	21	106	M8x1	**14000**


Clamping Screw

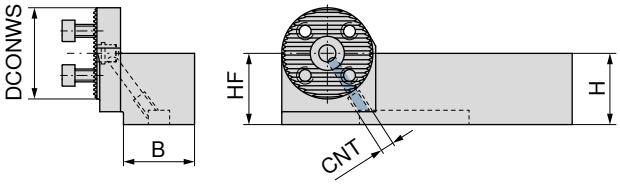
Spare parts for Article no.		84 950 ...
84 185 02500	M4X12 (SW3)	**30000**
84 185 03200	M5X14 (SW4)	**29900**
84 185 13200	M5X14 (SW4)	**29900**
84 185 14000	M6X16 (SW5)	**29800**

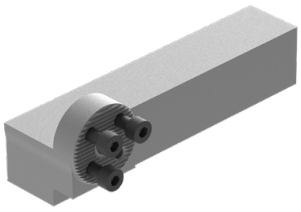
→ **Chapter 16 Adapters and accessories**
Here you will find the suitable base adaptors.

MaxiChange – 90° base holders for the exchangeable head system

Scope of supply:
Includes clamping screws

Direct Cooling





NEW

DCONWS mm	H mm	B mm	HF mm	CNT	84 184 ...
25	20	20	20	M8x1	**02500**
32	20	20	20	M8x1	**03200**
32	25	25	25	M8x1	**13200**
40	25	25	25	M8x1	**14000**

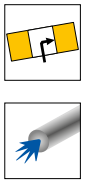


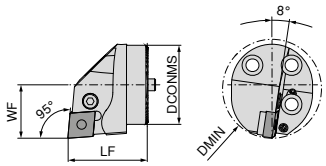
Clamping Screw

Spare parts for Article no.		84 950 ...
84 184 02500	M4X12 (SW3)	**30000**
84 184 03200	M4X12 (SW3)	**30000**
84 184 13200	M4X12 (SW3)	**30000**
84 184 14000	M6X16 (SW5)	**29800**

→ **Chapter 16 Adapters and accessories**
Here you will find the suitable base adaptors.

MaxiChange-N – Exchangeable cutting head PCLN 95°







Illustrations show right-hand versions

DCONMS	LF	DMIN	WF	torque moment	Insert	Left-hand	Right-hand
mm	mm	mm	mm	Nm		84 159 ...	84 160 ...
25	35	32	17	5	CN.. 1204	**02500**	**02500**
32	35	40	22	5	CN.. 1204	**03200**	**03200**
40	40	50	27	5	CN.. 1204	**04000**	**04000**


Shim


Elbow lever screw


Lever

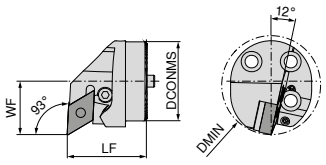

Carbide type C

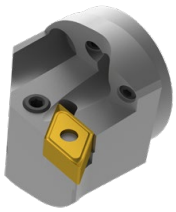
Spare parts for Article no.	Shim 84 950 ...		Elbow lever screw 84 950 ...	Lever 84 950 ...	Carbide type C 84 950 ...
84 160 02500 / 84 159 02500	**29200**	M8X1/L17 SW3	**28700**	**29000**	**27800**
84 160 03200 / 84 159 03200	**29200**	M8X1/L17 SW3	**28700**	**29000**	**27800**
84 160 04000 / 84 159 04000	**29200**	M8X1/L17 SW3	**28700**	**29000**	**27800**

MaxiChange-N – Exchangeable cutting head PDUN 93°









Illustrations show right-hand versions

DCONMS	LF	DMIN	WF	torque moment	Insert	Left-hand	Right-hand
mm	mm	mm	mm	Nm		84 161 ...	84 162 ...
25	35	32	17	5	DN.. 1104	**02500**	**02500**
32	35	40	22	5	DN.. 1104	**03200**	**03200**
32	35	40	22	5	DN.. 1504 / 1506	**13200**	**13200**
40	40	50	27	5	DN.. 1104	**04000**	**04000**
40	40	50	27	5	DN.. 1504 / 1506	**14000**	**14000**

When using DN.. 1504 indexable inserts, use insert seat article no. **84 950 28200**.


Shim


Elbow lever screw

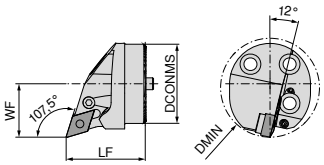

Lever


Solid Carbide Seat D

Spare parts for Article no.	Shim 84 950 ...		Elbow lever screw 84 950 ...	Lever 84 950 ...	Solid Carbide Seat D 84 950 ...
84 162 02500 / 84 161 02500	**29300**	M6/ L14 SW2.5	**28800**	**29100**	**28100**
84 162 03200 / 84 161 03200	**29300**	M6/ L14 SW2.5	**28800**	**29100**	**28100**
84 162 13200 / 84 161 13200	**29200**	M8X1/L17 SW3	**28700**	**28900**	**27900**
84 162 04000 / 84 161 04000	**29300**	M6/ L14 SW2.5	**28800**	**29100**	**28100**
84 162 14000 / 84 161 14000	**29200**	M8X1/L17 SW3	**28700**	**28900**	**27900**

MaxiChange-N – Exchangeable cutting head PDQN 107.5°





Illustrations show right-hand versions

DCONMS	LF	DMIN	WF	torque moment	Insert	Left-hand	Right-hand
mm	mm	mm	mm	Nm		84 163 ...	84 164 ...
25	35	32	17	5	DN.. 1104	**02500**	**02500**
32	35	40	22	5	DN.. 1104	**03200**	**03200**
40	40	50	27	5	DN.. 1104	**04000**	**04000**


Shim


Elbow lever screw

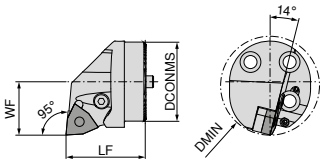

Lever


Solid Carbide Seat D

Spare parts for Article no.	84 950 ...		84 950 ...	84 950 ...	84 950 ...
84 163 02500 / 84 164 02500	**29300**	M6/ L14 SW2.5	**28800**	**29100**	**28100**
84 163 03200 / 84 164 03200	**29300**	M6/ L14 SW2.5	**28800**	**29100**	**28100**
84 163 04000 / 84 164 04000	**29300**	M6/ L14 SW2.5	**28800**	**29100**	**28100**

MaxiChange-N – Exchangeable cutting head PWLN 95°





Illustrations show right-hand versions

DCONMS	LF	DMIN	WF	torque moment	Insert	Left-hand	Right-hand
mm	mm	mm	mm	Nm		84 165 ...	84 166 ...
32	35	40	22	5	WN.. 0804	**03200**	**03200**
40	40	50	27	5	WN.. 0804	**04000**	**04000**


Shim


Elbow lever screw


Lever

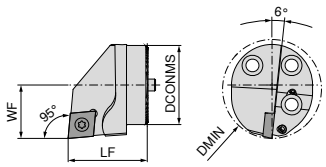

Solid Carbide Seat W

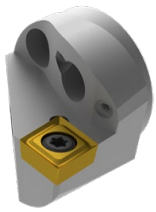
Spare parts for Article no.	84 950 ...		84 950 ...	84 950 ...	84 950 ...
84 166 03200 / 84 165 03200	**29200**	M8X1/L17 SW3	**28700**	**28900**	**27700**
84 166 04000 / 84 165 04000	**29200**	M8X1/L17 SW3	**28700**	**28900**	**27700**

MaxiChange-S – SCLC 95° – Exchangeable cutting head with screw clamping









Illustrations show right-hand versions

DCONMS mm	LF mm	DMIN mm	WF mm	torque moment Nm	Insert	NEW Left-hand 84 147 ...	NEW Right-hand 84 148 ...
16	20	20	11	0.9	CC.. 0602	**01600**	**01600**
20	20	25	13	3	CC.. 09T3	**02000**	**02000**
25	35	32	17	5	CC.. 1204	**02500**	**02500**
32	35	40	22	5	CC.. 1204	**03200**	**03200**
40	40	50	27	5	CC.. 1204	**04000**	**04000**



Clamping screw

84 950 ...

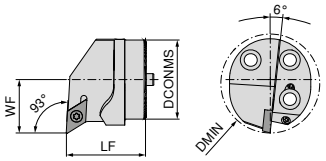
Spare parts for Article no.	
84 148 02500 / 84 147 02500	**27500**
84 148 03200 / 84 147 03200	**27500**
84 148 04000 / 84 147 04000	**27500**

9

MaxiChange-S – SDUC 93° – Exchangeable cutting head with screw clamping









Illustrations show right-hand versions

DCONMS mm	LF mm	DMIN mm	WF mm	torque moment Nm	Insert	NEW Left-hand 84 143 ...	NEW Right-hand 84 144 ...
16	20	20	11	0.9	DC.. 0702	**01600**	**01600**
20	20	25	13	3	DC.. 11T3	**02000**	**02000**
25	35	32	17	3	DC.. 11T3	**02500**	**02500**
32	35	40	22	3	DC.. 11T3	**03200**	**03200**
40	40	50	27	3	DC.. 11T3	**04000**	**04000**

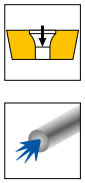


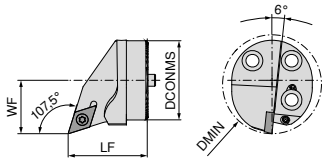
Clamping screw

84 950 ...

Spare parts for Article no.	
84 144 02500 / 84 143 02500	**27600**
84 144 03200 / 84 143 03200	**27600**
84 144 04000 / 84 143 04000	**27600**

MaxiChange-S – SDQC 107.5° – Exchangeable cutting head with screw clamping







Illustrations show right-hand versions

DCONMS mm	LF mm	DMIN mm	WF mm	torque moment Nm	Insert	NEW Left-hand 84 145 ...	NEW Right-hand 84 146 ...
20	20	25	13	3	DC.. 11T3	**02000**	**02000**
25	35	32	17	3	DC.. 11T3	**02500**	**02500**
32	35	40	22	3	DC.. 11T3	**03200**	**03200**
40	40	50	27	3	DC.. 11T3	**04000**	**04000**

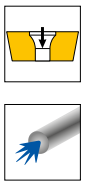


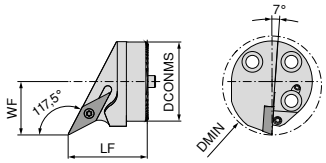
Clamping screw

84 950 ...

Spare parts for Article no.	
84 146 02500 / 84 145 02500	**27600**
84 146 03200 / 84 145 03200	**27600**
84 146 04000 / 84 145 04000	**27600**

MaxiChange-S – SVPC 117.5° – Exchangeable cutting head with screw clamping







Illustrations show right-hand versions

DCONMS mm	LF mm	DMIN mm	WF mm	torque moment Nm	Insert	NEW Left-hand 84 176 ...	NEW Right-hand 84 176 ...
25	35	32	17	3	VC.. 1103	**12500**	**02500**
32	35	40	22	3	VC.. 1604	**13200**	**03200**
40	40	50	27	3	VC.. 1604	**14000**	**04000**

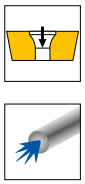


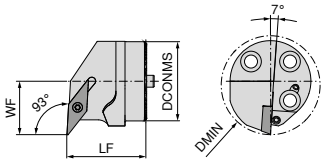
Clamping screw

84 950 ...

Spare parts for Article no.	
84 176 02500 / 84 176 12500	**27600**
84 176 03200 / 84 176 13200	**27600**
84 176 04000 / 84 176 14000	**27600**

MaxiChange-S – SVUC 93° – Exchangeable cutting head with screw clamping







Illustrations show right-hand versions

DCONMS	LF	DMIN	WF	torque moment	Insert	NEW Left-hand	NEW Right-hand
mm	mm	mm	mm	Nm		84 177 ...	84 177 ...
20	20	25	13	3	VC.. 1103	**12000**	**02000**
25	35	32	17	3	VC.. 1103	**12500**	**02500**
32	35	40	22	3	VC.. 1604	**13200**	**03200**
40	40	50	27	3	VC.. 1604	**14000**	**04000**

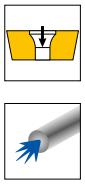


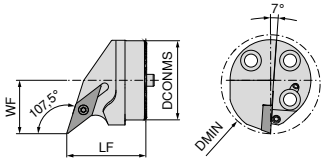
Clamping screw

84 950 ...

Spare parts for Article no.	
84 177 02000 / 84 177 12000	**27600**
84 177 02500 / 84 177 12500	**27600**
84 177 03200 / 84 177 13200	**27600**
84 177 04000 / 84 177 14000	**27600**

MaxiChange-S – SVQC 107.5° – Exchangeable cutting head with screw clamping







Illustrations show right-hand versions

DCONMS	LF	DMIN	WF	torque moment	Insert	NEW Left-hand	NEW Right-hand
mm	mm	mm	mm	Nm		84 178 ...	84 178 ...
20	20	25	13	3	VC.. 1103	**12000**	**02000**
25	35	32	17	3	VC.. 1103	**12500**	**02500**
32	35	40	22	3	VC.. 1604	**13200**	**03200**
40	40	50	27	3	VC.. 1604	**14000**	**04000**



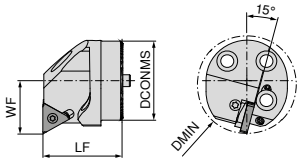
Clamping screw

84 950 ...

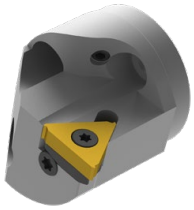
Spare parts for Article no.	
84 178 02000 / 84 178 12000	**27600**
84 178 02500 / 84 178 12500	**27600**
84 178 03200 / 84 178 13200	**27600**
84 178 04000 / 84 178 14000	**27600**

MaxiChange – Exchangeable cutting head for internal thread





Illustrations show right-hand versions



DCONMS	LF	DMIN	WF	torque moment	Insert	Left-hand	Right-hand
mm	mm	mm	mm	Nm		84 167 ...	84 168 ...
25	35	32	17	2	16 ..	**02500**	**02500**
32	35	40	22	2	16 ..	**03200**	**03200**
40	40	50	27	2	16 ..	**04000**	**04000**

Suitable internal thread inserts can be found in → **Chapter 8 Thread Turning Tools, pages 6-30**

Spare parts for Article no.	Shim		Screw-U		Clamping screw
	84 950 ...		84 950 ...		84 950 ...
84 168 02500	**29500**	UNC5x7.3	**29700**		**29400**
84 167 02500	**29600**	UNC5x7.3	**29700**		**29400**
84 168 03200	**29500**	UNC5x7.3	**29700**		**29400**
84 167 03200	**29600**	UNC5x7.3	**29700**		**29400**
84 168 04000	**29500**	UNC5x7.3	**29700**		**29400**
84 167 04000	**29600**	UNC5x7.3	**29700**		**29400**

Flexible coolant hoses

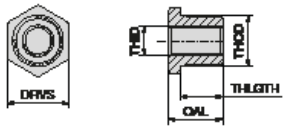
▲ incl. prefitted quick-coupler and coupler connector
▲ extremely flexible
▲ pressure-resistant up to 300 bar



72 990 ...

Designation	BD mm	CND mm	OAL mm	
MU.KSS-DN3-150	6.0	3	150	11005
MU.KSS-DN3-250	6.0	3	250	11006
MU.KSS-DN5-200	9.5	5	200	11001
MU.KSS-DN5-300	9.5	5	300	11002
MU.KSS-DN5-400	9.5	5	400	11003
MU.KSS-DN5-500	9.5	5	500	11004

Threaded adapter



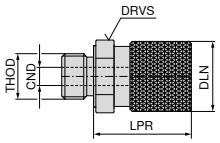


72 988 ...

THID	THOD	THLGTH mm	DRVS mm	OAL mm	
G1/8"	G1/4"	11.5	17	15.0	01005
G1/8"	M8x1	11.5	14	15.0	01006
G1/8"	M12x1	11.5	14	15.0	01007
G1/8"	M14x1	11.5	17	15.0	01008
M8x1	G1/4"	11.5	17	15.0	01003
M8x1	M12x1	11.5	14	15.0	01001
M8x1	M14x1	11.5	17	15.0	01002
M8x1	G1/8"	11.5	14	23.5	01004

Quick-coupler

▲ pressure-resistant up to at least 400 bar
▲ rapid change of coolant distribution without screws thanks to click system



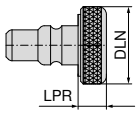


72 993 ...

THOD	BD mm	DLN mm	LPR mm	CND mm	DRVS mm	
G1/8"	16	15.5	21.5	4	14	15001

Sealing plugs

▲ for closing off the quick-coupler to protect against contamination



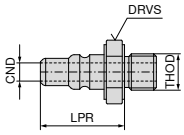


72 994 ...

Designation	LPR mm	DLN mm	
MU.KSVS	5.5	15.5	17001

Coupler connector

▲ pressure-resistant up to at least 400 bar





72 992 ...

Designation	LPR mm	CND mm	DRVS mm	OAL mm	
MU.KSKS-M8x1	18.5	4	12	19	13001

G1/8" screw plug

▲ Max. 200 bar/2900 psi
▲ No sealing ring required



72 950 ...

Designation	THSZMS	
VS.G1/8	G1/8"	010

Angled coolant connection for distributor



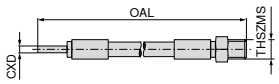
72 987 ...

Designation	THOD	THID	
MU.KS-KA-KSV	G1/8"	G1/8"	18003

9

Hose (connecting piece/thread)

▲ Max. 200 bar/2900 psi
▲ No sealing ring required

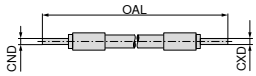




Designation	THSZMS	CXD mm	OAL mm	72 305 ...
HDKS.150.M5-4	M5	4	150	010
HDKS.200.M5-4	M5	4	200	021
HDKS.300.M5-4	M5	4	300	033
HDKS.500.M5-4	M5	4	500	045

Hose (connecting piece/connecting piece)

▲ Max. 200 bar/2900 psi

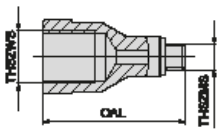




Designation	CND mm	CXD mm	OAL mm	72 305 ...
HDKS.150.4-4	4	4	150	003
HDKS.200.4-4	4	4	200	014
HDKS.300.4-4	4	4	300	025
HDKS.500.4-4	4	4	500	037

Reducer fitting

▲ Max. 200 bar/2900 psi
▲ Includes sealing ring

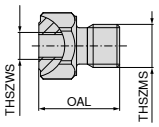




Designation	THSZWS	THSZMS	OAL mm	72 301 ...
RV.100.M5-M6	M6	M5	15	001
RV.100.M5-M8x1	M8x1	M5	23	003
RV.100.M5-M10x1	M10x1	M5	27	005
RV.100.M5-G1/8	G1/8"	M5	27	004

Reducer fitting

▲ Max. 200 bar/2900 psi
▲ No sealing ring required

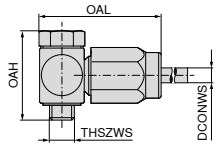




Designation	THSZWS	THSZMS	OAL mm	72 301 ...
RV.100.M6-M5	M5	M6	18	002
RV.100.M8x1-M5	M5	M8x1	15	008
RV.100.M10x1-M5	M5	M10x1	15	007
RV.100.G1/8-M5	M5	G1/8"	15	006

Swivel fitting

▲ Max. 200 bar/2900 psi

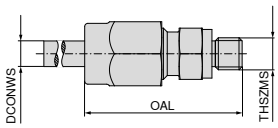


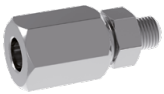


Designation	DCONWS mm	OAH mm	THSZMS	OAL mm	72 307 ...
KA.SV.M5-4	4	21	M5	28	017
KA.SV.G1/8-4	4	30	G1/8"	37	012

Straight fitting

▲ Max. 200 bar/2900 psi

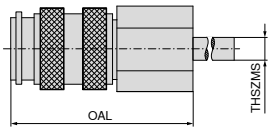




Designation	DCONWS mm	THSZMS	OAL mm	72 307 ...
KA. M5-4	4	M5	27	009
KA. G1/8-4	4	G1/8"	32	003

Quick connection (coupling)

▲ Max. 200 bar/2900 psi

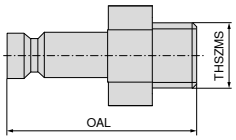




Designation	THSZMS	OAL mm	72 319 ...
KIG.M5	M5	26	001

Quick connection (connector)

▲ Max. 200 bar/2900 psi
▲ No sealing ring required





Designation	THSZMS	OAL mm	72 320 ...
SAG.M5	M5	20	001

9

Material examples for cutting data tables

	Material sub-group	Index	Composition / Structure / Heat treatment		Tensile strength lbf/in²* / HB / HRC	Material number	Material designation	Material number	Material designation
P	Unalloyed steel	P.1.1	< 0.15 % C	Annealed	60900 lbf/in² / 125 HB	1.0401	1015	1.0301	1010
		P.1.2	< 0.45 % C	Annealed	92800 lbf/in² / 190 HB	1.1191	1045	1.0737	12L14
		P.1.3		Tempered	121800 lbf/in² / 250 HB	1.1191	1045	1.0503	1043
		P.1.4	< 0.75 % C	Annealed	132000 lbf/in² / 270 HB	1.1223	1060	1.0535	1055
		P.1.5		Tempered	146500 lbf/in² / 300 HB	1.1223	1060	1.1274	1095
	Low-alloy steel	P.2.1		Annealed	88500 lbf/in² / 180 HB	1.7131	5115	1.6523	8620
		P.2.2		Tempered	134900 lbf/in² / 275 HB	1.7131	5115	1.6582	4340
		P.2.3		Tempered	146500 lbf/in² / 300 HB	1.7225	4142	1.7131	5115
		P.2.4		Tempered	174000 lbf/in² / 375 HB	1.7225	4142	17223	4140
	High-alloy steel and high-alloy tool steel	P.3.1		Annealed	98600 lbf/in² / 200 HB	1.4021	420	1.2379	D2
		P.3.2		Hardened and tempered	159500 lbf/in² / 300 HB	1.2343	H11	1.3343	M2
		P.3.3		Hardened and tempered	188500 lbf/in² / 400 HB	1.2343	H11	1.2363	A2
	Stainless steel	P.4.1	Ferritic / martensitic	Annealed	98600 lbf/in² / 200 HB	1.4016	430	1.4125	440C
		P.4.2	Martensitic	Tempered	117500 lbf/in² / 250 HB	1.4112	S44003	1.4021	420
M	Stainless steel	M.1.1	Austenitic / austenitic-ferritic	Quenched	88500 lbf/in² / 200 HB	1.4301	304	1.4401	316
		M.2.1	Austenitic	Tempered	300 HB	1.4841	314	1.4568	17-7 PH
		M.3.1	Austenitic / ferritic (Duplex)		113100 lbf/in² / 230 HB	1.4462	S32205	1.4410	S32750
K	Grey cast iron	K.1.1	Pearlitic / ferritic		88500 lbf/in² / 180 HB	0.6010	A48-20B	0.6025	A48-40 B
		K.1.2	Pearlitic (martensitic)		127600 lbf/in² / 260 HB	0.6030	A48-45B	0.6040	A48-60 B
	Spherulitic graphite cast iron	K.2.1	Ferritic		78300 lbf/in² / 160 HB	0.7040	60-40-18	0.7050	65-45-12
		K.2.2	Pearlitic		122600 lbf/in² / 250 HB	0.7070	100-70-03	0.7660	A439 Type D2
	Malleable iron	K.3.1	Ferritic		63800 lbf/in² / 130 HB	0.8035	GTW-35-04		
		K.3.2	Pearlitic		113100 lbf/in² / 230 HB	0.8170	70003		
N	Aluminium wrought alloy	N.1.1	Non-hardenable		60 HB	3.0255	A91060	3.0255	A91060
		N.1.2	Hardenable		49300 lbf/in² / 100 HB	3.1355	2024	3.1355	2024
	Cast aluminium alloy	N.2.1	≤ 12 % Si, non-hardenable		36300 lbf/in² / 75 HB	3.2581	A04130 / A413-0	3.2581	A04130 / A413-0
		N.2.2	≤ 12 % Si, hardenable		43500 lbf/in² / 90 HB	3.2134	G-AlSi5Cu1Mg		
		N.2.3	> 12 % Si, non-hardenable		63800 lbf/in² / 130 HB		G-AlSi17Cu4Mg		
	Copper and copper alloys (bronze/brass)	N.3.1	Free-machining alloys, PB > 1 %		54400 lbf/in² / 110 HB	2.0380	CuZn39Pb2 (Ms58)	2.0380	C37700
		N.3.2	CuZn, CuSnZn		43500 lbf/in² / 90 HB	2.0331	CuZn15	2.0331	C34000
		N.3.3	CuSn, lead-free copper and electrolytic copper		49300 lbf/in² / 100 HB	2.0060	E-Cu57		
	Magnesium alloys	N.4.1	Magnesium and magnesium alloys		70 HB	3.5612	MgAl6Zn		
S	Heat-resistant alloys	S.1.1	Fe - basis	Annealed	98600 lbf/in² / 200 HB	1.4864	X12NiCrSi 36-16	1.4864	330
		S.1.2			137800 lbf/in² / 280 HB	1.4980	X6NiCrTiMoVB25-15-2	1.4980	S66286
		S.2.1	Ni or Co basis	Annealed	121800 lbf/in² / 250 HB	2.4856	Inconel 625	2.4812	Hastelloy C
		S.2.2			171100 lbf/in² / 350 HB	2.4952	Nimonic 80A	2.4668	Inconel 718
		S.2.3		Cast	156600 lbf/in² / 320 HB	2.4674	Nimocast PK24	2.4670	Nimocast 713
	Titanium alloys	S.3.1	Pure titanium		5800 lbf/in²	3.7025	Ti99,8		
		S.3.2	Alpha + beta alloys		152300 lbf/in²	3.7165	TiAl6V4		
		S.3.3	Beta alloys		203100 lbf/in² / 410 HB	Ti555.3	Ti-5Al-5V-5Mo-3Cr		
H	Hardened steel	H.1.1		Hardened and tempered	46-55 HRC				
		H.1.2		Hardened and tempered	56-60 HRC				
		H.1.3		Hardened and tempered	61-65 HRC				
		H.1.4		Hardened and tempered	66-70 HRC				
	Chilled iron	H.2.1		Cast	400 HB				
	Hardened cast iron	H.3.1		Hardened and tempered	55 HRC				
O	Non-metal materials	O.1.1	Plastics, duroplastic		≤ 21800 lbf/in²				
		O.1.2	Plastics, thermoplastic		≤ 14500 lbf/in²				
		O.2.1	Aramid fibre-reinforced		≤ 145000 lbf/in²				
		O.2.2	Glass/carbon-fibre reinforced		≤ 145000 lbf/in²				
		O.3.1	Graphite						

*** Tensile Strength at Rupture (Rm)**

Cutting data standard values

Index			DRAGONSKIN													
	TCM407	TCM10	CTEP110	CTCP115-P	CTCP125-P	CTCP135-P	CTCK110	CTCK120	CTPM125	CTCM120	CTCM130	CTPX710 -F05 -F34 -M34 -M42	CTPX710 -25P -25Q	CTPX715 -27 -29	H210T	H10T H216T
	v_c in ft/min															
P.1.1	1250	1020	1530	1220	970	690	1300	1080	670	750	610	1070	1120	910		
P.1.2	1080	880	1330	1040	830	580	1140	930	560	660	500	940	990	780		
P.1.3	930	750	1150	890	690	480	980	780	470	570	400	830	860	660		
P.1.4	870	700	1090	830	660	450	930	740	440	540	370	790	830	620		
P.1.5	790	640	1000	760	590	400	850	670	390	500	320	730	780	560		
P.2.1	1110	900	1360	1070	860	590	1160	950	580	670	520	960	990	800		
P.2.2	860	690	1070	830	640	430	920	730	430	530	360	780	830	610		
P.2.3	790	640	1000	760	590	400	850	670	390	500	320	730	780	560		
P.2.4	600	480	770	560	430	280	660	490	270	380	200	580	630	410		
P.3.1	930	720	1140	660	560	500	900	730	470	520	410	460	500	450		
P.3.2	740	550	920	460	350	310	740	580	320	380	270	280	310	270		
P.3.3	550	380	700	280	130	120	590	430	170	240	130	100	120	80		
P.4.1	930	720	1140	660	560	510			470	520	410	460	510	450		
P.4.2	830	640	1030	560	450	410			390	450	340	370	430	360		
M.1.1	930	720	1140			510			470	520	410	460	500	450		
M.2.1						310			320	380	270	280	300	270		
M.3.1						450			420	480	370	410	430	400		
K.1.1			1350	840	560		1320	910						660	560	460
K.1.2			1020	780	530		1020	870						530	430	380
K.2.1	1170	860	1450	890	590		1060	960						630	590	500
K.2.2	1040	710	1160	680	530		910	760						500	430	360
K.3.1	1070	990	1370	830	660		1020	910						690	630	560
K.3.2	830	680	830	690	530		870	760						590	530	460
N.1.1												6070	6070	5780	5450	4620
N.1.2												5280	5280	4950	4460	3630
N.2.1												4130	4130	3960	3960	3140
N.2.2												4130	4130	3960	3630	3140
N.2.3												2480	2480	2310	1980	1650
N.3.1												2150	2150	2060	1730	1400
N.3.2												2080	2080	1980	1650	1320
N.3.3												1650	1650	1570	1240	910
N.4.1												1120	1120	1070	910	740
S.1.1											115	330	365	130	140	
S.1.2											85	265	280	100	110	
S.2.1											65	210	250	100	110	
S.2.2											65	130	150	80	80	
S.2.3											60	125	140	65	65	
S.3.1											365	315	330	365	365	
S.3.2											210	180	200	230	230	
S.3.3											150	130	150	165	165	
H.1.1																
H.1.2																
H.1.3																
H.1.4																
H.2.1																
H.3.1																
O.1.1														460	530	430
O.1.2																
O.2.1														495	460	350
O.2.2																
O.3.1																

The cutting data is strongly influenced by external conditions, such as the stability of the tool and workpiece clamping, material and type of machine.
The specified values represent guideline cutting data that can be adjusted by approx. **±20%** according to the usage conditions.

Cutting data standard values

Index			DRAGONSKIN														
	TCM407	TCM10	CTEP110	CTCP115-P	CTCP125-P	CTCP135-P	CTCK110	CTCK120	CTPM125	CTCM120	CTCM130	CTPX710 -F05 -F34 -M34 -M42	CTPX710 -25P -25Q	CTPX715 -27 -29	H210T	H10T H216T
	v_c in m/min															
P.1.1	380	310	460	370	295	210	395	330	200	230	185	325	340	275		
P.1.2	330	265	400	315	250	175	345	280	170	200	150	290	300	235		
P.1.3	280	230	350	270	210	145	300	240	140	175	125	250	260	200		
P.1.4	265	210	330	250	200	135	280	220	130	165	115	240	250	190		
P.1.5	240	190	300	230	180	120	260	200	120	150	100	220	235	170		
P.2.1	335	270	410	325	260	180	350	290	175	200	160	290	300	240		
P.2.2	260	210	325	250	195	130	280	220	130	160	110	235	250	185		
P.2.3	240	190	300	230	180	120	260	200	120	150	100	220	235	170		
P.2.4	180	145	230	170	130	85	200	150	80	115	60	175	190	125		
P.3.1	280	220	345	200	170	150	270	220	140	160	125	140	150	140		
P.3.2	225	170	280	140	105	95	225	175	100	115	80	85	95	80		
P.3.3	170	115	210	85	40	35	180	130	50	75	40	30	35	25		
P.4.1	280	220	345	200	170	155			140	160	125	140	155	140		
P.4.2	250	195	310	170	135	125			120	140	100	115	130	110		
M.1.1	280	220	345			155			140	160	125	140	150	140		
M.2.1						95			100	115	80	85	90	80		
M.3.1						135			130	150	110	125	130	120		
K.1.1			410	255	170		400	275						200	170	140
K.1.2			310	235	160		310	265						160	130	115
K.2.1	355	260	440	270	180		320	290						190	180	150
K.2.2	315	215	350	205	160		275	230						150	130	110
K.3.1	325	300	415	250	200		310	275						210	190	170
K.3.2	250	205	250	210	160		265	230						180	160	140
N.1.1												1840	1840	1750	1650	1400
N.1.2												1600	1600	1500	1350	1100
N.2.1												1250	1250	1200	1200	950
N.2.2												1250	1250	1200	1100	950
N.2.3												750	750	700	600	500
N.3.1												650	650	625	525	425
N.3.2												630	630	600	500	400
N.3.3												500	500	475	375	275
N.4.1												340	340	325	275	225
S.1.1											35	100	110	40	45	
S.1.2											25	80	85	30	35	
S.2.1											20	65	75	30	35	
S.2.2											20	40	45	25	25	
S.2.3											20	40	45	20	20	
S.3.1											110	95	100	110	110	
S.3.2											65	55	60	70	70	
S.3.3											45	40	45	50	50	
H.1.1																
H.1.2																
H.1.3																
H.1.4																
H.2.1																
H.3.1																
O.1.1														140	160	130
O.1.2																
O.2.1														150	140	105
O.2.2																
O.3.1																

The cutting data is strongly influenced by external conditions, such as the stability of the tool and workpiece clamping, material and type of machine.
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Machinability of non-ferrous metals with carbide indexable inserts

	Material group	Material examples			Machinability of aluminium alloys *	Comments
N	Pure aluminium	non hardenable	Al 99.5	W7	5	▲ Snarl chips ▲ Possibly bad surface ▲ Excessive built-up edge ▲ Long tool life ▲ Use coolant emulsion
			Al 99.5	F13	4	
			Al 99	W8	5	
			Al 99	F14	4	
	Aluminium wrought alloys	non hardenable	Al Mn	W10	5	▲ Snarl, continuous or fragmented chip ▲ Large feed rates necessary for good chip control ▲ Built-up edge ▲ Long tool life ▲ Emulsion coolant is advantageous
			Al Mn	F16	4	
			Al Mg 1	W10	5	
			Al Mg 1	F19	4	
			Al Mg 3	W18	4	
			Al Mg 3	F25	3	
			Al Mg 5	W25	4	
			AL Mg 5	F28	2	
			Al Mg 4.5 Mn	W27	4	
			Al Mg 4.5 Mn	G35	3	
		hardenable	Al Mg Si 0.5	W	4	▲ Good chip control with higher feed rates
			Al Mg Si 0.5	F13-25	3	
			Al Mg Si 1	W	4	
			Al Mg Si 1	F21-30	3	
			Al Mg Si Pb	F20-28	2	▲ Very good chip control ▲ No built up edge ▲ Very good surface quality
			Al Cu Si Pb	F28-37	1	
			Al Cu Mg Pb	F34-37	1	
			Al Cu Mg 1	W	3	▲ Good chip control ▲ Good surface quality ▲ Little built-up edge
			Al Cu Mg 1	F33-40	2	
			Al Cu Mg 2	W	3	
			Al Cu Mg 2	F40-47	2	
			Al Cu Si Mn	W	3	
			Al Cu Si Mn	F43-46	2	
			Al Zn Mg Cu 1.5	F50-52	2	
			Al Sn 6 Cu		1	
	Cast Aluminium Alloys	non hardenable	G-Al Si 12		3	▲ Good chip control ▲ Built-up edge ▲ Higher Si content results in lower tool life
			G-Al Si 10 Mg		3	
			G-Al Si 5 Mg		2	
			G-Al Si 7 Mg (9 Mg)		2	
			G-Al Si Cu 3		2	▲ High wear of the carbide
			G-Al Si 6 Cu 4		2	
			G-Al Mg 3 (Mg 5)		2	▲ Good chip control ▲ Good surface quality ▲ Long tool life
			G-Al Mg 9		2	
			G-Al Mg 10		2	
			G-Al Mg 3 Si (5 Si)		2	
			G-Al Cu 4 Ti (Mg)		2	
			G-Al Si 12 Cu Mg Ni		2	
	Copper wrought alloys		Cu Ag			
			Cu As			
			Cu Cd			
			Cu Cd Sn			
			Cu Mg			
			Cu Mn			
		brass	Cu Zn Al			
		bronze	Cu Sn			
			Cu Sn Zn			
			Cu Ni			
			Cu Ni Fe			
			Cu Al			
O	Non metal materials	Duroplastics				
		Fibre-reinforced plastics				
		hard rubber				

* 1 = good machinability, 5 = bad machinability

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Cutting data standard values for negative PCBN inserts

Index	Material	Strength	Cutting edges code negative insert* Ra (theo.)	Cutting condition	Main Application	Extended application	CTBH 1000C EN-F 1.6–6.4 v_c	f	a_p
H.1.1	Hardened steel	46–55 HRC	x	Smooth	●		660	0.002–0.006	0.002–0.02
			x	Interrupted		○			
			x	Extremely interrupted					
H.1.2		56–60 HRC	x	Smooth	●		725	0.002–0.006	0.002–0.02
			x	Interrupted		○			
			x	Extremely interrupted					
H.1.3		61–65 HRC	x	Smooth	●		725	0.002–0.006	0.002–0.02
			x	Interrupted		○			
			x	Extremely interrupted					
H.1.4		66–70 HRC	x	Smooth	●		800	0.002–0.006	0.002–0.02
			x	Interrupted		○			
			x	Extremely interrupted					
H.2.1	Chilled iron	400 HB	x	Smooth					
			x	Interrupted					
			x	Extremely interrupted					
H.3.1	Hardened cast iron	55 HRC	x	Smooth					
			x	Interrupted					
			x	Extremely interrupted					

Index	Material	Strength	Cutting edges code negative insert* Ra (theo.)	Cutting condition	Main Application	Extended application	CTBH 2000C EN-F 1.6–6.4 v_c	f	a_p
H.1.1	Hardened steel	46–55 HRC	x	Smooth	●		525	0.002–0.006	0.004–0.02
			x	Interrupted	●		525	0.002–0.006	0.004–0.02
			x	Extremely interrupted		○			
H.1.2		56–60 HRC	x	Smooth	●		600	0.002–0.006	0.004–0.02
			x	Interrupted	●		600	0.002–0.006	0.004–0.02
			x	Extremely interrupted		○			
H.1.3		61–65 HRC	x	Smooth	●		600	0.002–0.006	0.004–0.02
			x	Interrupted	●		600	0.002–0.006	0.004–0.02
			x	Extremely interrupted		○			
H.1.4		66–70 HRC	x	Smooth	●		660	0.002–0.006	0.004–0.02
			x	Interrupted	●		660	0.002–0.006	0.004–0.02
			x	Extremely interrupted		○			
H.2.1	Chilled iron	400 HB	x	Smooth					
			x	Interrupted					
			x	Extremely interrupted					
H.3.1	Hardened cast iron	55 HRC	x	Smooth					
			x	Interrupted					
			x	Extremely interrupted					

Index	Material	Strength	Cutting edges code negative insert* Ra (theo.)	Cutting condition	Main Application	Extended application	CTBH 3000C SN-014D-F 1.0–3.2 v_c	f	a_p
H.1.1	Hardened steel	46–55 HRC	x	Smooth		○	600	0.002–0.006	0.004–0.02
			x	Interrupted	●		600	0.002–0.006	0.004–0.02
			x	Extremely interrupted	●		600	0.002–0.006	0.004–0.02
H.1.2		56–60 HRC	x	Smooth		○	660	0.002–0.006	0.004–0.02
			x	Interrupted	●		660	0.002–0.006	0.004–0.02
			x	Extremely interrupted	●		660	0.002–0.006	0.004–0.02
H.1.3		61–65 HRC	x	Smooth		○	660	0.002–0.006	0.004–0.02
			x	Interrupted	●		660	0.002–0.006	0.004–0.02
			x	Extremely interrupted	●		660	0.002–0.006	0.004–0.02
H.1.4		66–70 HRC	x	Smooth		○	725	0.002–0.006	0.004–0.02
			x	Interrupted	●		725	0.002–0.006	0.004–0.02
			x	Extremely interrupted	●		725	0.002–0.006	0.004–0.02
H.2.1	Chilled iron	400 HB	x	Smooth		○	660	0.003–0.006	0.004–0.016
			x	Interrupted		○	600	0.002–0.005	0.004–0.016
			x	Extremely interrupted		○	525	0.002–0.005	0.004–0.016
H.3.1	Hardened cast iron	55 HRC	x	Smooth		○	660	0.003-0.006	0.004-0.016
			x	Interrupted		○	600	0.002–0.005	0.004–0.016
			x	Extremely interrupted		○	525	0.002–0.005	0.004–0.016

With our PCBN indexable inserts, we recommend dry machining – information about this can be found in our **HardCut – PCBN Selection brochure**

* Note chamfer width: The wider the chamfer, the more stable the cutting edge.

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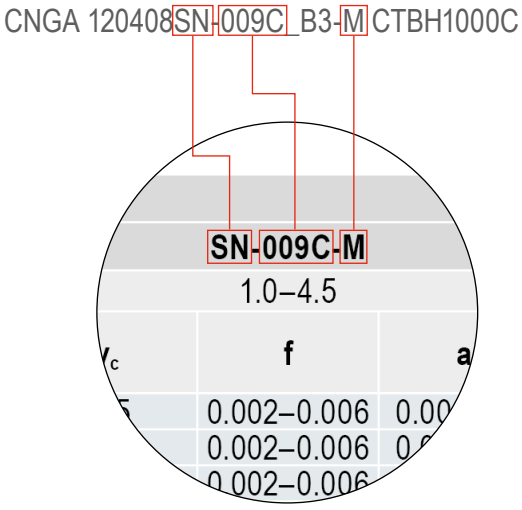
CTBH 1000C					
SN-009C-M			SN-014D-R		
1.0–3.2			0.5–1.6		
v_c	f	a_p	v_c	f	a_p
660	0.002–0.006	0.004–0.02	600	0.002–0.01	0.005–0.02
660	0.002–0.006	0.004–0.02	600	0.002–0.01	0.005–0.02
725	0.002–0.006	0.004–0.02	660	0.002–0.01	0.005–0.02
725	0.002–0.006	0.004–0.02	660	0.002–0.01	0.005–0.02
725	0.002–0.006	0.004–0.02	660	0.002–0.01	0.005–0.02
725	0.002–0.02	0.004–0.02	660	0.002–0.01	0.005–0.02
800	0.002–0.006	0.004–0.02	725	0.002–0.01	0.005–0.02
800	0.002–0.006	0.004–0.02	725	0.002–0.01	0.005–0.02

CTBH 2000C					
SN-009C-M			SN-014D-R		
1.0–4.5			0.8–3.0		
v_c	f	a_p	v_c	f	a_p
525	0.002–0.006	0.004–0.02	460	0.002–0.01	0.005–0.02
525	0.002–0.006	0.004–0.02	460	0.002–0.01	0.005–0.02
525	0.002–0.006	0.004–0.02	460	0.002–0.01	0.005–0.02
600	0.002–0.006	0.004–0.02	525	0.002–0.01	0.005–0.02
600	0.002–0.006	0.004–0.02	525	0.002–0.01	0.005–0.02
600	0.002–0.006	0.004–0.02	525	0.002–0.01	0.005–0.02
600	0.002–0.006	0.004–0.02	525	0.002–0.01	0.005–0.02
600	0.002–0.006	0.004–0.02	525	0.002–0.01	0.005–0.02
600	0.002–0.006	0.004–0.02	525	0.002–0.01	0.005–0.02
660	0.002–0.006	0.004–0.02	600	0.002–0.01	0.005–0.02
660	0.002–0.006	0.004–0.02	600	0.002–0.01	0.005–0.02
660	0.002–0.006	0.004–0.02	600	0.002–0.01	0.005–0.02

CTBH 3000C					
SN-018E-M			SN-020G-R		
1.6–3.2			0.8–3.0		
v_c	f	a_p	v_c	f	a_p
500	0.002–0.01	0.004–0.02	500	0.003-0.016	0.006-0.02
500	0.002–0.01	0.004–0.02	500	0.003-0.016	0.006-0.02
500	0.002–0.01	0.004–0.02	500	0.003-0.016	0.006-0.02
560	0.002–0.01	0.004–0.02	560	0.003-0.016	0.006-0.02
560	0.002–0.01	0.004–0.02	560	0.003-0.016	0.006-0.02
560	0.002–0.01	0.004–0.02	560	0.003-0.016	0.006-0.02
560	0.002–0.01	0.004–0.02	560	0.003-0.016	0.006-0.02
560	0.002–0.01	0.004–0.02	560	0.003-0.016	0.006-0.02
560	0.002–0.01	0.004–0.02	560	0.003-0.016	0.006-0.02
625	0.002–0.01	0.004–0.02	625	0.003-0.016	0.006-0.02
625	0.002–0.01	0.004–0.02	625	0.003-0.016	0.006-0.02
625	0.002–0.01	0.004–0.02	625	0.003-0.016	0.006-0.02
600	0.003-0.008	0.004–0.02	600	0.003-0.008	0.006-0.02
525	0.003-0.006	0.004–0.02	525	0.003-0.006	0.006-0.02
460	0.003-0.006	0.004–0.02	460	0.003-0.006	0.006-0.02
600	0.003-0.008	0.004–0.02	600	0.003-0.008	0.006-0.02
525	0.003-0.006	0.004–0.02	525	0.003-0.006	0.006-0.02
460	0.003-0.006	0.004–0.02	460	0.003-0.006	0.006-0.02



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Cutting data standard values for positive PCBN inserts

Index	Material	Strength	Cutting edges code positive insert* Ra (theo.)	Cutting condition	Main Application	Extended application	CTBH 1000C EN-F 1.6–6.4 v_c	f	a_p
H.1.1	Hardened steel	46–55 HRC	x	Smooth	●		750	0.002–0.006	0.004–0.02
			x	Interrupted		○			
			x	Extremely interrupted					
H.1.2		56–60 HRC	x	Smooth	●		825	0.002–0.006	0.004–0.02
			x	Interrupted		○			
			x	Extremely interrupted					
H.1.3		61–65 HRC	x	Smooth	●		825	0.002–0.006	0.004–0.02
			x	Interrupted		○			
			x	Extremely interrupted					
H.1.4		66–70 HRC	x	Smooth	●		890	0.002–0.006	0.004–0.02
			x	Interrupted		○			
			x	Extremely interrupted					
H.2.1	Chilled iron	400 HB	x	Smooth					
			x	Interrupted					
			x	Extremely interrupted					
H.3.1	Hardened cast iron	55 HRC	x	Smooth					
			x	Interrupted					
			x	Extremely interrupted					

Index	Material	Strength	Cutting edges code positive insert* Ra (theo.)	Cutting condition	Main Application	Extended application	CTBH 2000C EN-F 1.6–6.4 v_c	f	a_p
H.1.1	Hardened steel	46–55 HRC	x	Smooth	●		600	0.002–0.006	0.004–0.02
			x	Interrupted	●		594	0.002–0.006	0.004–0.02
			x	Extremely interrupted		○			
H.1.2		56–60 HRC	x	Smooth	●		700	0.002–0.006	0.004–0.02
			x	Interrupted	●		693	0.002–0.006	0.004–0.02
			x	Extremely interrupted		○			
H.1.3		61–65 HRC	x	Smooth	●		700	0.002–0.006	0.004–0.02
			x	Interrupted	●		700	0.002–0.006	0.004–0.02
			x	Extremely interrupted		○			
H.1.4		66–70 HRC	x	Smooth	●		750	0.002–0.006	0.004–0.02
			x	Interrupted	●		750	0.002–0.006	0.004–0.02
			x	Extremely interrupted		○			
H.2.1	Chilled iron	400 HB	x	Smooth					
			x	Interrupted					
			x	Extremely interrupted					
H.3.1	Hardened cast iron	55 HRC	x	Smooth					
			x	Interrupted					
			x	Extremely interrupted					

Index	Material	Strength	Cutting edges code positive insert* Ra (theo.)	Cutting condition	Main Application	Extended application	CTBH 3000C SN-014D-F 1.0–3.2 v_c	f	a_p
H.1.1	Hardened steel	46–55 HRC	x	Smooth		○	700	0.002–0.006	0.004–0.02
			x	Interrupted	●		600	0.002–0.006	0.004–0.02
			x	Extremely interrupted	●		600	0.002–0.006	0.004–0.02
H.1.2		56–60 HRC	x	Smooth		○	750	0.002–0.006	0.004–0.02
			x	Interrupted	●		660	0.002–0.006	0.004–0.02
			x	Extremely interrupted	●		660	0.002–0.006	0.004–0.02
H.1.3		61–65 HRC	x	Smooth		○	660	0.002–0.006	0.004–0.02
			x	Interrupted	●		660	0.002–0.006	0.004–0.02
			x	Extremely interrupted	●		660	0.002–0.006	0.004–0.02
H.1.4		66–70 HRC	x	Smooth		○	825	0.002–0.006	0.004–0.02
			x	Interrupted	●		725	0.002–0.006	0.004–0.02
			x	Extremely interrupted	●		725	0.002–0.006	0.004–0.02
H.2.1	Chilled iron	400 HB	x	Smooth		○	759	0.003-0.006	0.004–0.02
			x	Interrupted		○	700	0.002–0.005	0.004–0.02
			x	Extremely interrupted		○	600	0.002–0.005	0.004–0.02
H.3.1	Hardened cast iron	55 HRC	x	Smooth		○	750	0.003-0.006	0.004–0.02
			x	Interrupted		○	700	0.002–0.005	0.004–0.02
			x	Extremely interrupted		○	600	0.002–0.005	0.004–0.02

With our PCBN indexable inserts, we recommend dry machining – information about this can be found in our **HardCut – PCBN Selection brochure**

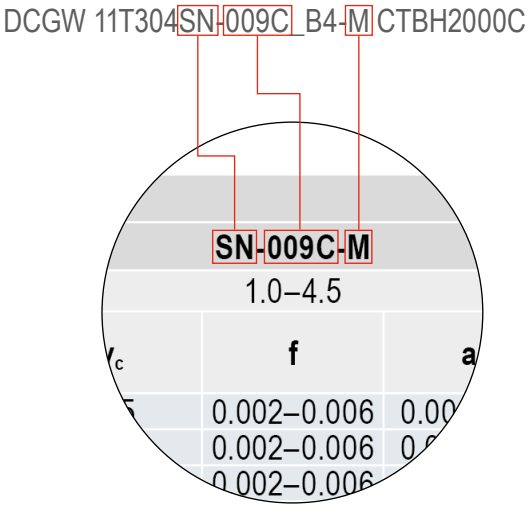
* Note chamfer width: The wider the chamfer, the more stable the cutting edge.

The cutting data is strongly influenced by external conditions, such as the stability of the tool and workpiece clamping, material and type of machine.
The specified values represent guideline cutting data that can be adjusted by approx. **±20%** according to the usage conditions.

CTBH 1000C					
SN-009C-M			SN-014D-R		
1.0–3.2			0.5–1.6		
v_c	f	a_p	v_c	f	a_p
760	0.002–0.006	0.004–0.02	700	0.002–0.01	0.005–0.02
760	0.002–0.006	0.004–0.02	700	0.002–0.01	0.005–0.02
825	0.002–0.006	0.004–0.02	760	0.002–0.01	0.005–0.02
825	0.002–0.006	0.004–0.02	760	0.002–0.01	0.005–0.02
825	0.002–0.006	0.004–0.02	760	0.002–0.01	0.005–0.02
825	0.002–0.006	0.004–0.02	760	0.002–0.01	0.005–0.02
890	0.002–0.006	0.004–0.02	825	0.002–0.01	0.005–0.02
890	0.002–0.006	0.004–0.02	825	0.002–0.01	0.005–0.02

CTBH 2000C					
SN-009C-M			SN-014D-R		
1.0–4.5			0.8–3.0		
v_c	f	a_p	v_c	f	a_p
600	0.002–0.006	0.004–0.02	525	0.002–0.01	0.005–0.02
600	0.002–0.006	0.004–0.02	525	0.002–0.01	0.005–0.02
600	0.002–0.006	0.004–0.02	525	0.002–0.01	0.005–0.02
600	0.002–0.006	0.004–0.02	600	0.002–0.01	0.005–0.02
600	0.002–0.006	0.004–0.02	600	0.002–0.01	0.005–0.02
600	0.002–0.006	0.004–0.02	600	0.002–0.01	0.005–0.02
600	0.002–0.006	0.004–0.02	600	0.002–0.01	0.005–0.02
600	0.002–0.006	0.004–0.02	600	0.002–0.01	0.005–0.02
600	0.002–0.006	0.004–0.02	600	0.002–0.01	0.005–0.02
660	0.002–0.006	0.004–0.02	700	0.002–0.01	0.005–0.02
660	0.002–0.006	0.004–0.02	700	0.002–0.01	0.005–0.02
660	0.002–0.006	0.004–0.02	700	0.002–0.01	0.005–0.02

CTBH 3000C					
SN-018E-M			SN-020G-R		
1.6–3.2			0.8–3.0		
v_c	f	a_p	v_c	f	a_p
560	0.002–0.01	0.004–0.02	560	0.003–0.016	0.006–0.02
560	0.002–0.01	0.004–0.02	560	0.003–0.016	0.006–0.02
560	0.002–0.01	0.004–0.02	560	0.003–0.016	0.006–0.02
640	0.002–0.01	0.004–0.02	645	0.003–0.016	0.006–0.02
640	0.002–0.01	0.004–0.02	645	0.003–0.016	0.006–0.02
640	0.002–0.01	0.004–0.02	645	0.003–0.016	0.006–0.02
640	0.002–0.01	0.004–0.02	645	0.003–0.016	0.006–0.02
640	0.002–0.01	0.004–0.02	645	0.003–0.016	0.006–0.02
640	0.002–0.01	0.004–0.02	645	0.003–0.016	0.006–0.02
725	0.002–0.01	0.004–0.02	725	0.003–0.016	0.006–0.02
725	0.002–0.01	0.004–0.02	725	0.003–0.016	0.006–0.02
725	0.002–0.01	0.004–0.02	725	0.003–0.016	0.006–0.02
700	0.003–0.008	0.004–0.02	700	0.003–0.008	0.006–0.02
600	0.003–0.006	0.004–0.02	600	0.003–0.006	0.006–0.02
525	0.003–0.006	0.004–0.02	525	0.003–0.006	0.006–0.02
700	0.003–0.008	0.004–0.02	700	0.003–0.008	0.006–0.02
600	0.003–0.006	0.004–0.02	600	0.003–0.006	0.006–0.02
525	0.003–0.006	0.004–0.02	525	0.003–0.006	0.006–0.02



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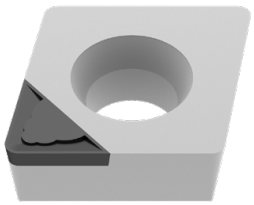
Cutting data standard values for diamond cutting materials CTD PD20 / PS30 / PU20 / CD10 / MD05

Index	Material group			a_p = 0.0015“–0.016“ Surface roughness R_z in µm 2.5–5.0	a_p = 0.0015“–0.016“ Surface roughness R_z in µm 5.0–10	a_p = 0.0016“–0.040“ Surface roughness R_z in µm 2.5–5.0	a_p = 0.0016“–0.040“ Surface roughness R_z in µm 5.0–10	a_p = 0.0016“–0.100“ Surface roughness R_z in µm 2.5–5.0	a_p = 0.0016“–0.100“ Surface roughness R_z in µm 5.0–10
				CTD ...	CTD ...	CTD ...	CTD ...	CTD ...	CTD ...
N.1.1 N.1.2	Aluminium wrought alloys without Si f=0.002–0.020 inch/rev.	○	Tool Material	PD20 / PU20 / CD10 / MD05	PD20 / PU20 / CD10 / MD05	PD20 / PU20 / CD10 / MD05	PD20 / PU20 / CD10 / MD05	PD20 / PU20 / CD10 / MD05	PD20 / PU20 / CD10 / MD05
			v_c in ft/min	**1300–8250**	**1300–8250**	**1300–6600**	**1300–6600**	**1300–5300**	**1300–5300**
		◐	Tool Material		PD20 / CD10		PD20 / CD10		PD20 / CD10
			v_c in ft/min		**1300–8250**		**1300–6600**		**1300–5300**
		◌	Tool Material	PD20 / PU20	PD20 / PU20	PD20 / PU20	PD20 / PU20	PD20 / PU20	PD20 / PU20
			v_c in ft/min	**1300–8250**	**1300–8250**	**1300–6600**	**1300–6600**	**1300–5300**	**1300–5300**
N.2.1	Cast Aluminium Alloys Si≤12 % – hardened or Si=12–20% – non hardened f=0.002–0.020 inch/rev.	○	Tool Material	PS30 / PU20 / CD10 / MD05	PS30 / PU20 / CD10 / MD05	PS30 / PU20 / CD10 / MD05	PS30 / PU20 / CD10 / MD05	PS30 / PU20 / CD10 / MD05	PS30 / PU20 / CD10 / MD05
			v_c in ft/min	**2000–6600**	**2000–7000**	**2000–6000**	**2000–6600**	**2000–5000**	**2000–6000**
		◐	Tool Material	PD20 / PU20 / CD10	PD20 / PU20 / CD10	PD20 / PU20 / CD10	PS30 / PU20 / CD10	PS30 / PU20 / CD10	PS30 / PU20 / CD10
			v_c in ft/min	**1300–6600**	**1300–7000**	**1300–6000**	**2000–6600**	**1000–5000**	**1300–6000**
		◌	Tool Material	PS30	PS30	PS30	PS30	PS30	
			v_c in ft/min	**2000–6600**	**2000–7000**	**2000–6000**	**2000–6600**	**2000–5000**	
N.2.2 N.2.3	Aluminium cast alloys Si=12–20 % f=0.002–0.020 inch/rev.	○	Tool Material	PU20 / CD10 / MD05	PU20 / CD10 / MD05	PU20 / CD10 / MD05	PU20 / CD10 / MD05	PU20 / CD10 / MD05	PU20 / CD10 / MD05
			v_c in ft/min	**2600–4000**	**1300–6000**	**2300–3300**	**1000–5000**	**2000–3000**	**1200–4000**
		◐	Tool Material		PU20 / CD10		PU20 / CD10		PU20 / CD10
			v_c in ft/min		**2000–6000**		**2000–5000**		**2000–4000**
		◌	Tool Material		PU20		PU20		
			v_c in ft/min		**2000–6000**		**2000–5000**		
N.3.1 N.3.2 N.3.3	Copper and copper wrought alloys f=0.002–0.020 inch/rev.	○	Tool Material	PD20 / PU20 / CD10 / MD05	PD20 / PU20 / CD10 / MD05	PD20 / PU20 / CD10 / MD05	PS30 / PU20 / CD10 / MD05	PD20 / PU20 / CD10 / MD05	PD20 / PU20 / CD10 / MD05
			v_c in ft/min	**1300–6000**	**1000–5200**	**1300–5300**	**1000–5000**	**1300–4600**	**1300–5300**
		◐	Tool Material	PU20 / CD10	PD20 / PU20 / CD10	PD20 / PU20 / CD10	PS30 / PU20 / CD10	PD20 / PU20 / CD10	PD20 / PU20 / CD10
			v_c in ft/min	**1000–5000**	**1000–5000**	**1300–5300**	**1000–5000**	**1300–5300**	**1000–5000**
		◌	Tool Material		PD20 / PU20		PS30 / PU20	PD20 / PU20	PS30 / PU20
			v_c in ft/min		**1000–6000**		**1000–5700**	**1000–5000**	**650–4300**
O.1.1 O.1.2	Plastic materials without reinforcement (acrylic glass) f=0.002–0.028 inch/rev.	○	Tool Material		PD20 / CD10 / MD05		PD20 / CD10 / MD05		PS30 / CD10 / MD05
			v_c in ft/min		**1200–4000**		**1000–3300**		**650–3300**
		◐	Tool Material		PD20 / CD10		PD20 / CD10		PS30 / CD10
			v_c in ft/min		**1000–4000**		**650–3300**		**650–3000**
		◌	Tool Material		PD20 / CD10		PD20 / CD10		PD20 / CD10
			v_c in ft/min		**1200–4000**		**1000–3300**		**650–3300**
O.2.1 O.2.2	Plastic materials with reinforcement (glass-fibre, carbon-fibre reinforced) f=0.002–0.028 inch/rev.	○	Tool Material	PS30 / PU20 / CD10 / MD05		PS30 / PU20 / CD10 / MD05	PS30 / PU20 / CD10 / MD05	PS30 / PU20 / CD10 / MD05	PS30 / PU20 / CD10 / MD05
			v_c in ft/min	**1650–3300**		**1200–3000**	**1000–3000**	**1300–5300**	**650–4000**
		◐	Tool Material	PS30 / PU20 / CD10		PS30 / PU20 / CD10	PS30 / PU20 / CD10	PS30 / PU20 / CD10	PS30 / PU20 / CD10
			v_c in ft/min	**1300–3000**		**1300–5300**	**650–3000**	**650–3000**	**650–4600**
		◌	Tool Material	PU20		PU20	PU20	PU20	
			v_c in ft/min	**1650–3300**		**1300–2600**	**1000–3300**	**1300–5300**	
O.3.1	Graphite		Tool Material	PD20 / PS30 / PU20 / CD10		PD20 / PS30 / PU20 / CD10		PD20 / PS30 / PU20 / CD10	
			v_c in ft/min	**330–11000**		**330–10000**		**330–10000**	

○ Smooth cut | ◐ Irregular cutting depth | ◌ Interrupted cut

Cutting data standard values for the CB chip breaker geometries

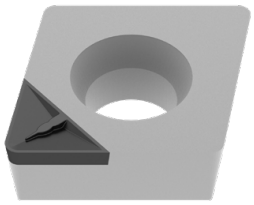
-CB1



3D-Chip Breaker -CB1				
Corner Radius	a_p inch		f_z inch/rev.	
	min.	max.	min.	max.
0.004	0.002	0.012	0.001	0.002
0.008	0.002	0.016	0.001	0.003
0.016	0.004	0.031	0.002	0.006
0.032	0.006	0.039	0.003	0.008
0.064	0.012	0.059	0.005	0.010

- ▲ Finish and Superfinish
- ▲ Extremely sharp cutting edge geometry
- ▲ Depth of Cut a_p: 0.002–0.06 inch
- ▲ Smallest cutting pressure for highest accuracies
- ▲ For machining of thin-walled and unstable workpieces

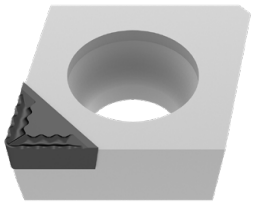
-CB2



3D-Chip Breaker -CB2				
Corner Radius	a_p inch		f_z inch/rev.	
	min.	max.	min.	max.
0.008	0.020	0.031	0.003	0.005
0.016	0.024	0.059	0.003	0.008
0.032	0.028	0.059	0.006	0.012
0.064	0.031	0.079	0.008	0.016

- ▲ Semi-finish and Finish machining
- ▲ Negative edge preperation
- ▲ Cutting Depth a_p: 0.020–0.078 inch
- ▲ High surface quality and tight tolerances
- ▲ Machining of solid workpieces under stable conditions

-CB3



3D-Chip Breaker -CB3				
Corner Radius	a_p inch		f_z inch/rev.	
	min.	max.	min.	max.
0.016	0.039	0.118	0.004	0.008
0.032	0.039	0.118	0.006	0.014

- ▲ Medium and rough machining
- ▲ Highly aggressive chip breaker
- ▲ Cutting depth a_p: 0.04–0.12 inch
- ▲ Stable component conditions necessary
- ▲ Cooling must be ensured

Cutting data standard values for negative inserts

	Designation	-CF20 (Cermet)						-F50					
		f			a_p			f			a_p		
		min.	Recommended	max.	min.	Recommended	max.	min.	Recommended	max.	min.	Recommended	max.
		inch/rev.			inch			inch/rev.			inch		
	CN.. 321							0.002	**0.006**	0.010	0.008	**0.020**	0.059
	CN.. 322							0.004	**0.008**	0.012	0.016	**0.039**	0.079
	CN.. 431	0.002	**0.006**	0.010	0.012	**0.020**	0.059	0.002	**0.006**	0.010	0.008	**0.024**	0.059
	CN.. 432	0.003	**0.006**	0.010	0.012	**0.020**	0.059	0.004	**0.008**	0.012	0.016	**0.039**	0.079
	CN.. 433							0.006	**0.010**	0.014	0.024	**0.055**	0.102
	CN.. 434												
	CN.. 542												
	CN.. 543												
	CN.. 544												
	CN.. 546												
	CN.. 642												
	CN.. 643												
	CN.. 644												
	CN.. 646												
	CN.. 866												
	DN.. 330.5							0.002	**0.004**	0.008	0.004	**0.016**	0.091
	DN.. 331	0.002	**0.006**	0.010	0.012	**0.020**	0.059	0.002	**0.006**	0.010	0.008	**0.024**	0.059
	DN.. 332	0.003	**0.006**	0.010	0.012	**0.020**	0.059	0.004	**0.008**	0.012	0.016	**0.039**	0.079
	DN.. 333							0.006	**0.010**	0.014	0.024	**0.055**	0.102
	DN.. 431							0.002	**0.006**	0.010	0.008	**0.024**	0.059
	DN.. 432							0.004	**0.008**	0.012	0.016	**0.039**	0.079
	DN.. 433							0.006	**0.010**	0.014	0.024	**0.055**	0.102
	DN.. 434												
	DN.. 441	0.002	**0.006**	0.010	0.012	**0.020**	0.059	0.002	**0.006**	0.010	0.008	**0.024**	0.059
	DN.. 442	0.003	**0.006**	0.010	0.012	**0.020**	0.059	0.004	**0.008**	0.012	0.016	**0.039**	0.079
	DN.. 443	0.004	**0.008**	0.012	0.020	**0.028**	0.059	0.006	**0.010**	0.014	0.024	**0.055**	0.102
	DN.. 444												
	SN.. 332							0.004	**0.008**	0.012	0.016	**0.039**	0.079
	SN.. 431							0.002	**0.006**	0.010	0.008	**0.024**	0.059
	SN.. 432							0.004	**0.008**	0.012	0.016	**0.039**	0.079
	SN.. 433							0.006	**0.010**	0.014	0.024	**0.055**	0.102
	SN.. 434												
	SN.. 442												
	SN.. 443												
	SN.. 444												
	SN.. 543												
	SN.. 544												
	SN.. 546												
	SN.. 856												
	SN.. 866												
	TN.. 221							0.002	**0.006**	0.010	0.008	**0.024**	0.059
	TN.. 222							0.004	**0.008**	0.012	0.016	**0.039**	0.079
	TN.. 331	0.002	**0.006**	0.010	0.012	**0.020**	0.059	0.002	**0.006**	0.010	0.008	**0.024**	0.059
	TN.. 332	0.003	**0.006**	0.010	0.012	**0.020**	0.059	0.004	**0.008**	0.012	0.016	**0.039**	0.079
	TN.. 333	0.004	**0.008**	0.012	0.020	**0.028**	0.059	0.006	**0.010**	0.014	0.024	**0.055**	0.102
	TN.. 431												
	TN.. 432												
	TN.. 433												
	TN.. 434												
	VN.. 331							0.002	**0.006**	0.010	0.008	**0.024**	0.059
	VN.. 332							0.004	**0.008**	0.012	0.016	**0.039**	0.079
	VN.. 333												
	WN.. 331	0.002	**0.006**	0.010	0.012	**0.020**	0.059	0.002	**0.006**	0.010	0.008	**0.024**	0.059
	WN.. 332	0.003	**0.006**	0.010	0.012	**0.020**	0.059	0.004	**0.008**	0.012	0.016	**0.039**	0.079
	WN.. 333												
	WN.. 431							0.002	**0.006**	0.010	0.008	**0.024**	0.059
	WN.. 432	0.003	**0.006**	0.010	0.012	**0.020**	0.059	0.004	**0.008**	0.012	0.016	**0.039**	0.079
	WN.. 433							0.006	**0.010**	0.014	0.024	**0.055**	0.102
	WN.. 434												

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The data shows reference values. An adjustment to the actual conditions may be required.

Designation	-TFQ						-XU						-M50					
	f			a_p			f			a_p			f			a_p		
	min.	Recommended	max.	min.	Recommended	max.	min.	Recommended	max.	min.	Recommended	max.	min.	Recommended	max.	min.	Recommended	max.
	inch/rev.			inch			inch/rev.			inch			inch/rev.			inch		
CN.. 321																		
CN.. 322																		
CN.. 431	0.004	**0.006**	0.014	0.016	**0.039**	0.118	0.003	**0.006**	0.010	0.012	**0.059**	0.098	0.004	**0.008**	0.012	0.016	**0.079**	0.197
CN.. 432	0.004	**0.010**	0.020	0.020	**0.059**	0.157	0.005	**0.010**	0.014	0.024	**0.079**	0.118	0.006	**0.010**	0.016	0.024	**0.079**	0.197
CN.. 433	0.006	**0.012**	0.028	0.031	**0.079**	0.197	0.006	**0.012**	0.018	0.035	**0.079**	0.138	0.008	**0.012**	0.020	0.039	**0.079**	0.197
CN.. 434													0.010	**0.016**	0.024	0.055	**0.079**	0.197
CN.. 542													0.006	**0.010**	0.016	0.024	**0.118**	0.315
CN.. 543													0.008	**0.012**	0.020	0.039	**0.118**	0.315
CN.. 544													0.010	**0.016**	0.024	0.055	**0.118**	0.315
CN.. 546																		
CN.. 642																		
CN.. 643																		
CN.. 644																		
CN.. 646																		
CN.. 866																		
DN.. 330.5																		
DN.. 331													0.004	**0.008**	0.012	0.016	**0.059**	0.157
DN.. 332													0.006	**0.010**	0.016	0.024	**0.059**	0.157
DN.. 333													0.008	**0.012**	0.020	0.039	**0.059**	0.157
DN.. 431													0.004	**0.008**	0.012	0.016	**0.079**	0.197
DN.. 432													0.006	**0.010**	0.016	0.024	**0.079**	0.197
DN.. 433													0.008	**0.012**	0.020	0.039	**0.079**	0.197
DN.. 434													0.010	**0.016**	0.024	0.055	**0.079**	0.197
DN.. 441	0.004	**0.006**	0.012	0.016	**0.039**	0.118	0.003	**0.006**	0.010	0.012	**0.059**	0.098	0.004	**0.008**	0.012	0.016	**0.079**	0.197
DN.. 442	0.004	**0.010**	0.016	0.020	**0.059**	0.157	0.005	**0.010**	0.014	0.024	**0.079**	0.118	0.006	**0.010**	0.016	0.024	**0.079**	0.197
DN.. 443	0.004	**0.014**	0.020	0.039	**0.098**	0.157	0.006	**0.010**	0.016	0.035	**0.079**	0.138	0.008	**0.012**	0.020	0.039	**0.079**	0.197
DN.. 444													0.010	**0.016**	0.024	0.055	**0.079**	0.197
SN.. 332																		
SN.. 431																		
SN.. 432													0.006	**0.010**	0.016	0.024	**0.079**	0.197
SN.. 433													0.008	**0.012**	0.020	0.039	**0.079**	0.197
SN.. 434													0.010	**0.016**	0.024	0.055	**0.079**	0.197
SN.. 442													0.006	**0.010**	0.016	0.024	**0.118**	0.315
SN.. 443													0.008	**0.012**	0.020	0.039	**0.118**	0.315
SN.. 444													0.010	**0.016**	0.024	0.055	**0.118**	0.315
SN.. 543																		
SN.. 544																		
SN.. 546																		
SN.. 856																		
SN.. 866																		
TN.. 221																		
TN.. 222																		
TN.. 331													0.004	**0.008**	0.012	0.016	**0.079**	0.197
TN.. 332													0.006	**0.010**	0.016	0.024	**0.079**	0.197
TN.. 333													0.008	**0.012**	0.020	0.039	**0.079**	0.197
TN.. 431																		
TN.. 432													0.006	**0.010**	0.016	0.024	**0.118**	0.315
TN.. 433													0.008	**0.012**	0.020	0.039	**0.118**	0.315
TN.. 434																		
VN.. 331							0.003	**0.006**	0.008	0.012	**0.039**	0.071	0.004	**0.008**	0.012	0.016	**0.039**	0.157
VN.. 332							0.005	**0.008**	0.012	0.024	**0.059**	0.098	0.006	**0.010**	0.016	0.024	**0.039**	0.157
VN.. 333													0.008	**0.012**	0.020	0.039	**0.039**	0.157
WN.. 331	0.004	**0.007**	0.014	0.016	**0.031**	0.118							0.004	**0.008**	0.012	0.016	**0.039**	0.118
WN.. 332	0.004	**0.008**	0.020	0.020	**0.059**	0.118							0.006	**0.010**	0.016	0.024	**0.039**	0.118
WN.. 333													0.008	**0.012**	0.020	0.039	**0.039**	0.118
WN.. 431	0.004	**0.006**	0.014	0.016	**0.039**	0.118	0.003	**0.006**	0.010	0.012	**0.059**	0.098	0.004	**0.008**	0.012	0.016	**0.059**	0.157
WN.. 432	0.004	**0.010**	0.020	0.020	**0.059**	0.157	0.005	**0.009**	0.014	0.024	**0.079**	0.118	0.006	**0.010**	0.016	0.024	**0.059**	0.157
WN.. 433	0.006	**0.012**	0.028	0.031	**0.079**	0.197	0.006	**0.010**	0.018	0.035	**0.079**	0.138	0.008	**0.012**	0.020	0.039	**0.059**	0.157
WN.. 434													0.010	**0.016**	0.024	0.055	**0.059**	0.157

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Information on the cutting data of chip breakers not included in this overview, can be found on → **Page 215–221**.

Cutting data standard values for negative inserts

	Designation	-TMQ						-M70					
		f			a_p			f			a_p		
		min.	Recommended	max.	min.	Recommended	max.	min.	Recommended	max.	min.	Recommended	max.
		inch/rev.			inch			inch/rev.			inch		
	CN.. 321												
	CN.. 322												
	CN.. 431												
	CN.. 432	0.008	**0.016**	0.026	0.031	**0.118**	0.197	0.008	**0.012**	0.018	0.031	**0.118**	0.236
	CN.. 433	0.010	**0.020**	0.033	0.039	**0.118**	0.236	0.010	**0.016**	0.024	0.047	**0.118**	0.236
	CN.. 434							0.012	**0.018**	0.028	0.063	**0.118**	0.236
	CN.. 542							0.008	**0.012**	0.018	0.031	**0.157**	0.315
	CN.. 543							0.010	**0.016**	0.024	0.047	**0.157**	0.315
	CN.. 544							0.012	**0.018**	0.028	0.063	**0.157**	0.315
	CN.. 546							0.016	**0.028**	0.047	0.094	**0.157**	0.315
	CN.. 642							0.008	**0.012**	0.018	0.031	**0.177**	0.354
	CN.. 643							0.010	**0.016**	0.024	0.047	**0.177**	0.354
	CN.. 644							0.012	**0.018**	0.028	0.063	**0.177**	0.354
	CN.. 646							0.016	**0.028**	0.047	0.094	**0.177**	0.354
	CN.. 866							0.016	**0.028**	0.047	0.094	**0.236**	0.512
	DN.. 330.5												
	DN.. 331												
	DN.. 332							0.008	**0.010**	0.018	0.031	**0.079**	0.197
	DN.. 333							0.010	**0.014**	0.024	0.047	**0.079**	0.197
	DN.. 431												
	DN.. 432							0.008	**0.010**	0.018	0.031	**0.098**	0.236
	DN.. 433							0.010	**0.014**	0.024	0.047	**0.098**	0.236
	DN.. 434							0.012	**0.016**	0.028	0.063	**0.098**	0.236
	DN.. 441												
	DN.. 442	0.006	**0.012**	0.020	0.031	**0.098**	0.197	0.008	**0.010**	0.018	0.031	**0.098**	0.236
	DN.. 443	0.008	**0.016**	0.024	0.039	**0.118**	0.197	0.010	**0.014**	0.024	0.047	**0.098**	0.236
	DN.. 444							0.012	**0.016**	0.028	0.063	**0.098**	0.236
	SN.. 332												
	SN.. 431												
	SN.. 432							0.008	**0.012**	0.020	0.031	**0.118**	0.236
	SN.. 433							0.010	**0.016**	0.026	0.047	**0.118**	0.236
	SN.. 434							0.012	**0.018**	0.028	0.063	**0.118**	0.236
	SN.. 442												
	SN.. 443							0.010	**0.016**	0.026	0.047	**0.157**	0.315
	SN.. 444							0.012	**0.018**	0.030	0.063	**0.157**	0.315
	SN.. 543							0.010	**0.016**	0.026	0.047	**0.177**	0.354
	SN.. 544							0.012	**0.018**	0.030	0.063	**0.177**	0.354
	SN.. 546							0.016	**0.028**	0.047	0.094	**0.177**	0.354
	SN.. 856												
	SN.. 866							0.016	**0.028**	0.047	0.094	**0.236**	0.512
	TN.. 221												
	TN.. 222												
	TN.. 331												
	TN.. 332							0.008	**0.010**	0.018	0.031	**0.098**	0.236
	TN.. 333							0.010	**0.014**	0.024	0.047	**0.098**	0.236
	TN.. 431							0.006	**0.008**	0.012	0.016	**0.118**	0.276
	TN.. 432							0.008	**0.010**	0.018	0.031	**0.118**	0.276
	TN.. 433							0.010	**0.014**	0.024	0.047	**0.118**	0.276
	TN.. 434							0.012	**0.016**	0.028	0.063	**0.118**	0.276
	VN.. 331												
	VN.. 332												
	VN.. 333												
	WN.. 331												
	WN.. 332							0.008	**0.012**	0.018	0.031	**0.079**	0.157
	WN.. 333							0.010	**0.016**	0.024	0.047	**0.079**	0.157
	WN.. 431												
	WN.. 432	0.008	**0.012**	0.026	0.031	**0.118**	0.197	0.008	**0.012**	0.018	0.031	**0.098**	0.197
	WN.. 433	0.010	**0.016**	0.033	0.039	**0.118**	0.236	0.010	**0.016**	0.024	0.047	**0.098**	0.197
	WN.. 434							0.012	**0.018**	0.028	0.063	**0.098**	0.197

Sharp ◄——————————————————————► stable

The data shows reference values. An adjustment to the actual conditions may be required.

Designation	-R28						-R58						-R88					
	f			a_p			f			a_p			f			a_p		
	min.	Recommended	max.	min.	Recommended	max.	min.	Recommended	max.	min.	Recommended	max.	min.	Recommended	max.	min.	Recommended	max.
	inch/rev.			inch			inch/rev.			inch			inch/rev.			inch		
CN.. 321																		
CN.. 322																		
CN.. 431																		
CN.. 432	0.010	**0.014**	0.022	0.031	**0.118**	0.276	0.010	**0.018**	0.028	0.039	**0.118**	0.276						
CN.. 433	0.012	**0.018**	0.028	0.039	**0.118**	0.276	0.012	**0.022**	0.033	0.059	**0.118**	0.276						
CN.. 434	0.012	**0.024**	0.035	0.059	**0.118**	0.276	0.014	**0.026**	0.039	0.079	**0.118**	0.276						
CN.. 542																		
CN.. 543	0.012	**0.018**	0.028	0.039	**0.157**	0.354	0.012	**0.022**	0.033	0.059	**0.157**	0.354						
CN.. 544	0.014	**0.024**	0.035	0.059	**0.157**	0.354	0.014	**0.026**	0.039	0.079	**0.157**	0.354						
CN.. 546							0.016	**0.030**	0.047	0.098	**0.157**	0.354	0.016	**0.028**	0.047	0.079	**0.197**	0.354
CN.. 642																		
CN.. 643	0.012	**0.018**	0.028	0.039	**0.217**	0.472	0.014	**0.022**	0.033	0.059	**0.217**	0.472						
CN.. 644	0.014	**0.024**	0.035	0.059	**0.217**	0.472	0.016	**0.026**	0.039	0.079	**0.217**	0.472	0.016	**0.028**	0.039	0.079	**0.197**	0.472
CN.. 646	0.014	**0.026**	0.039	0.079	**0.217**	0.472	0.016	**0.030**	0.047	0.098	**0.217**	0.472	0.016	**0.028**	0.047	0.079	**0.197**	0.472
CN.. 866	0.014	**0.028**	0.039	0.079	**0.276**	0.630	0.018	**0.031**	0.051	0.098	**0.315**	0.630	0.024	**0.039**	0.059	0.138	**0.394**	0.709
DN.. 330.5																		
DN.. 331																		
DN.. 332																		
DN.. 333																		
DN.. 431																		
DN.. 432																		
DN.. 433																		
DN.. 434																		
DN.. 441																		
DN.. 442																		
DN.. 443	0.010	**0.018**	0.028	0.039	**0.098**	0.236	0.012	**0.020**	0.031	0.059	**0.098**	0.236						
DN.. 444	0.012	**0.024**	0.033	0.059	**0.098**	0.236	0.014	**0.024**	0.035	0.079	**0.098**	0.236						
SN.. 332																		
SN.. 431																		
SN.. 432							0.010	**0.018**	0.028	0.039	**0.118**	0.276						
SN.. 433							0.012	**0.022**	0.033	0.059	**0.118**	0.276						
SN.. 434																		
SN.. 442																		
SN.. 443	0.012	**0.014**	0.028	0.039	**0.157**	0.354	0.012	**0.022**	0.033	0.059	**0.157**	0.354						
SN.. 444	0.014	**0.024**	0.035	0.059	**0.157**	0.354	0.014	**0.026**	0.039	0.079	**0.157**	0.354						
SN.. 543							0.014	**0.022**	0.033	0.059	**0.217**	0.472						
SN.. 544	0.014	**0.024**	0.035	0.059	**0.217**	0.472	0.016	**0.026**	0.039	0.079	**0.217**	0.472	0.016	**0.028**	0.039	0.079	**0.197**	0.472
SN.. 546							0.016	**0.030**	0.047	0.079	**0.217**	0.472	0.016	**0.028**	0.047	0.079	**0.197**	0.472
SN.. 856	0.014	**0.026**	0.039	0.079	**0.276**	0.630	0.018	**0.031**	0.051	0.098	**0.315**	0.630	0.024	**0.039**	0.059	0.138	**0.394**	0.709
SN.. 866	0.014	**0.026**	0.039	0.079	**0.276**	0.630	0.018	**0.031**	0.051	0.098	**0.315**	0.630	0.024	**0.039**	0.059	0.138	**0.394**	0.709
TN.. 221																		
TN.. 222																		
TN.. 331																		
TN.. 332																		
TN.. 333																		
TN.. 431																		
TN.. 432																		
TN.. 433							0.012	**0.020**	0.031	0.059	**0.118**	0.276						
TN.. 434	0.012	**0.022**	0.033	0.059	**0.118**	0.276												
VN.. 331																		
VN.. 332																		
VN.. 333																		
WN.. 331																		
WN.. 332																		
WN.. 333																		
WN.. 431																		
WN.. 432																		
WN.. 433																		
WN.. 434																		

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Information on the cutting data of chip breakers not included in this overview, can be found on → **Page 215–221**.

Cutting data standard values for negative inserts

	Designation	-F30						-M30					
		f			a_p			f			a_p		
		min.	Recommended	max.	min.	Recommended	max.	min.	Recommended	max.	min.	Recommended	max.
		inch/rev.			inch			inch/rev.			inch		
	CN.. 321												
	CN.. 322												
	CN.. 431	0.002	**0.006**	0.010	0.016	**0.039**	0.079						
	CN.. 432	0.004	**0.009**	0.014	0.031	**0.059**	0.098	0.006	**0.010**	0.016	0.039	**0.079**	0.177
	CN.. 433							0.008	**0.012**	0.020	0.047	**0.098**	0.197
	CN.. 434							0.010	**0.014**	0.022	0.063	**0.098**	0.197
	CN.. 542												
	CN.. 543												
	CN.. 544												
	CN.. 546												
	CN.. 642												
	CN.. 643												
	CN.. 644												
	CN.. 646												
	CN.. 866												
	DN.. 330.5												
	DN.. 331	0.002	**0.006**	0.010	0.016	**0.039**	0.079						
	DN.. 332	0.004	**0.008**	0.014	0.031	**0.059**	0.098	0.006	**0.010**	0.016	0.039	**0.079**	0.177
	DN.. 333							0.008	**0.012**	0.020	0.047	**0.079**	0.177
	DN.. 431	0.002	**0.006**	0.010	0.016	**0.039**	0.079						
	DN.. 432	0.004	**0.008**	0.014	0.031	**0.059**	0.098	0.006	**0.010**	0.014	0.039	**0.098**	0.157
	DN.. 433							0.008	**0.012**	0.020	0.039	**0.098**	0.157
	DN.. 434												
	DN.. 441	0.002	**0.006**	0.010	0.016	**0.039**	0.079						
	DN.. 442	0.004	**0.008**	0.014	0.031	**0.059**	0.098	0.006	**0.010**	0.016	0.039	**0.079**	0.217
	DN.. 443							0.008	**0.012**	0.020	0.047	**0.079**	0.217
	DN.. 444												
	SN.. 332												
	SN.. 431	0.004	**0.006**	0.012	0.016	**0.039**	0.079						
	SN.. 432	0.006	**0.008**	0.016	0.031	**0.059**	0.098	0.008	**0.010**	0.018	0.039	**0.079**	0.177
	SN.. 433	0.006	**0.008**	0.016	0.047	**0.071**	0.098	0.010	**0.012**	0.020	0.047	**0.079**	0.197
	SN.. 434												
	SN.. 442												
	SN.. 443												
	SN.. 444												
	SN.. 543												
	SN.. 544												
	SN.. 546												
	SN.. 856												
	SN.. 866												
	TN.. 221												
	TN.. 222												
	TN.. 331	0.002	**0.006**	0.010	0.016	**0.039**	0.079						
	TN.. 332	0.004	**0.006**	0.014	0.031	**0.059**	0.098	0.006	**0.010**	0.016	0.039	**0.079**	0.177
	TN.. 333							0.008	**0.012**	0.020	0.047	**0.079**	0.177
	TN.. 431												
	TN.. 432												
	TN.. 433												
	TN.. 434												
	VN.. 331	0.003	**0.004**	0.008	0.016	**0.039**	0.079						
	VN.. 332	0.004	**0.006**	0.012	0.031	**0.059**	0.098	0.006	**0.010**	0.016	0.039	**0.059**	0.157
	VN.. 333												
	WN.. 331	0.002	**0.006**	0.010	0.016	**0.039**	0.079						
	WN.. 332	0.004	**0.008**	0.012	0.031	**0.059**	0.098	0.006	**0.010**	0.016	0.039	**0.059**	0.138
	WN.. 333							0.008	**0.012**	0.018	0.047	**0.059**	0.157
	WN.. 431	0.002	**0.006**	0.010	0.016	**0.039**	0.079						
	WN.. 432	0.004	**0.008**	0.014	0.031	**0.059**	0.098	0.006	**0.010**	0.016	0.039	**0.079**	0.177
	WN.. 433							0.008	**0.012**	0.020	0.047	**0.079**	0.197
	WN.. 434												

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The data shows reference values. An adjustment to the actual conditions may be required.

Designation	-M60						-M34						-M42					
	f			a_p			f			a_p			f			a_p		
	min.	Recommended	max.	min.	Recommended	max.	min.	Recommended	max.	min.	Recommended	max.	min.	Recommended	max.	min.	Recommended	max.
	inch/rev.			inch			inch/rev.			inch			inch/rev.			inch		
CN.. 321																		
CN.. 322																		
CN.. 431							0.003	**0.005**	0.007	0.039	**0.059**	0.118	0.004	**0.008**	0.010	0.031	**0.059**	0.157
CN.. 432	0.010	**0.012**	0.020	0.059	**0.098**	0.236	0.004	**0.006**	0.014	0.039	**0.071**	0.138	0.008	**0.012**	0.017	0.039	**0.098**	0.157
CN.. 433	0.012	**0.014**	0.022	0.079	**0.118**	0.236	0.005	**0.008**	0.016	0.059	**0.079**	0.157	0.011	**0.014**	0.022	0.047	**0.118**	0.165
CN.. 434	0.012	**0.016**	0.024	0.079	**0.118**	0.236	0.006	**0.010**	0.018	0.079	**0.118**	0.177						
CN.. 542																		
CN.. 543	0.012	**0.014**	0.022	0.079	**0.118**	0.315												
CN.. 544																		
CN.. 546																		
CN.. 642																		
CN.. 643																		
CN.. 644																		
CN.. 646																		
CN.. 866																		
DN.. 330.5																		
DN.. 331													0.006	**0.010**	0.012	0.039	**0.079**	0.138
DN.. 332													0.008	**0.012**	0.016	0.047	**0.098**	0.157
DN.. 333																		
DN.. 431							0.003	**0.005**	0.007	0.031	**0.047**	0.098	0.006	**0.010**	0.014	0.039	**0.079**	0.157
DN.. 432	0.010	**0.012**	0.018	0.059	**0.098**	0.236	0.004	**0.006**	0.012	0.039	**0.071**	0.138	0.008	**0.012**	0.016	0.047	**0.098**	0.197
DN.. 433	0.012	**0.016**	0.022	0.059	**0.098**	0.236	0.005	**0.008**	0.015	0.059	**0.079**	0.157						
DN.. 434																		
DN.. 441													0.006	**0.010**	0.014	0.039	**0.079**	0.157
DN.. 442	0.010	**0.012**	0.018	0.059	**0.098**	0.236	0.004	**0.006**	0.012	0.039	**0.071**	0.138	0.008	**0.012**	0.017	0.047	**0.098**	0.197
DN.. 443	0.012	**0.016**	0.022	0.059	**0.098**	0.236	0.005	**0.008**	0.015	0.059	**0.079**	0.157						
DN.. 444																		
SN.. 332																		
SN.. 431																		
SN.. 432	0.012	**0.014**	0.020	0.059	**0.079**	0.236	0.006	**0.010**	0.016	0.039	**0.079**	0.157	0.006	**0.010**	0.016	0.039	**0.079**	0.177
SN.. 433	0.012	**0.016**	0.022	0.079	**0.098**	0.236	0.006	**0.010**	0.018	0.059	**0.098**	0.177	0.008	**0.010**	0.018	0.039	**0.079**	0.197
SN.. 434	0.012	**0.016**	0.024	0.079	**0.098**	0.236												
SN.. 442																		
SN.. 443																		
SN.. 444																		
SN.. 543																		
SN.. 544																		
SN.. 546																		
SN.. 856																		
SN.. 866																		
TN.. 221																		
TN.. 222																		
TN.. 331													0.004	**0.008**	0.012	0.031	**0.079**	0.197
TN.. 332	0.010	**0.010**	0.018	0.059	**0.098**	0.197	0.004	**0.006**	0.014	0.039	**0.079**	0.157	0.005	**0.008**	0.014	0.031	**0.079**	0.197
TN.. 333	0.012	**0.012**	0.022	0.079	**0.098**	0.217												
TN.. 431							0.004	**0.006**	0.014	0.039	**0.079**	0.157						
TN.. 432							0.005	**0.008**	0.016	0.059	**0.098**	0.157						
TN.. 433																		
TN.. 434							0.006	**0.010**	0.018	0.079	**0.098**	0.177						
VN.. 331							0.003	**0.004**	0.007	0.031	**0.047**	0.079						
VN.. 332							0.004	**0.006**	0.008	0.039	**0.059**	0.098						
VN.. 333							0.005	**0.007**	0.010	0.059	**0.071**	0.118						
WN.. 331													0.004	**0.009**	0.014	0.020	**0.039**	0.118
WN.. 332	0.010	**0.012**	0.018	0.059	**0.079**	0.157							0.004	**0.009**	0.014	0.020	**0.039**	0.118
WN.. 333	0.012	**0.014**	0.020	0.079	**0.098**	0.177												
WN.. 431													0.004	**0.008**	0.014	0.016	**0.059**	0.157
WN.. 432	0.010	**0.012**	0.020	0.059	**0.079**	0.197	0.004	**0.006**	0.014	0.039	**0.079**	0.157	0.006	**0.010**	0.016	0.031	**0.059**	0.157
WN.. 433	0.012	**0.014**	0.022	0.079	**0.098**	0.217	0.005	**0.008**	0.016	0.059	**0.079**	0.157	0.008	**0.012**	0.018	0.039	**0.079**	0.157
WN.. 434																		

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Information on the cutting data of chip breakers not included in this overview, can be found on → **Page 215–221**.

Cutting data values for positive inserts

	Designation	-CF05						-SF					
		f			a_p			f			a_p		
		min.	Recommended	max.	min.	Recommended	max.	min.	Recommended	max.	min.	Recommended	max.
		inch/rev.			inch			inch/rev.			inch		
	CC.. 21.5X5							0.001	**0.001**	0.002	0.004	**0.016**	0.059
	CC.. 21.50							0.001	**0.001**	0.002	0.008	**0.016**	0.059
	CC.. 21.5.5	0.001	**0.003**	0.005	0.004	**0.012**	0.051	0.001	**0.004**	0.006	0.008	**0.016**	0.059
	CC.. 21.51	0.002	**0.004**	0.005	0.004	**0.012**	0.051	0.002	**0.004**	0.008	0.008	**0.024**	0.059
	CC.. 21.52							0.002	**0.005**	0.008	0.008	**0.039**	0.059
	CC..32.5X5							0.001	**0.001**	0.002	0.008	**0.030**	0.079
	CC.. 32.50							0.001	**0.001**	0.002	0.008	**0.030**	0.079
	CC.. 32.5.5	0.001	**0.003**	0.005	0.004	**0.012**	0.051	0.002	**0.003**	0.004	0.008	**0.030**	0.079
	CC.. 32.51	0.002	**0.004**	0.009	0.008	**0.016**	0.051	0.002	**0.005**	0.008	0.008	**0.030**	0.079
	CC.. 32.52	0.002	**0.005**	0.010	0.008	**0.016**	0.051	0.002	**0.005**	0.010	0.016	**0.039**	0.079
	CC.. 32.53												
	CC.. 430.5							0.002	**0.003**	0.004	0.008	**0.031**	0.098
	CC.. 431							0.002	**0.005**	0.008	0.008	**0.039**	0.098
	CC.. 432							0.003	**0.006**	0.010	0.016	**0.039**	0.098
	CC.. 433							0.003	**0.006**	0.010	0.016	**0.059**	0.098
	DC.. 21.5X5												
	DC.. 21.50												
	DC.. 21.50.3												
	DC.. 21.5.5	0.001	**0.003**	0.005	0.004	**0.012**	0.051	0.001	**0.004**	0.006	0.004	**0.016**	0.059
	DC.. 21.51	0.002	**0.004**	0.009	0.008	**0.016**	0.051	0.002	**0.005**	0.008	0.008	**0.024**	0.059
	DC.. 21.52												
	DC.. 32.5X5												
	DC.. 32.50												
	DC.. 32.50.3												
	DC.. 32.5.5	0.001	**0.003**	0.005	0.004	**0.012**	0.051						
	DC.. 32.51	0.002	**0.004**	0.009	0.008	**0.016**	0.051	0.002	**0.005**	0.008	0.008	**0.028**	0.079
	DC.. 32.52	0.002	**0.005**	0.010	0.008	**0.016**	0.051	0.003	**0.006**	0.010	0.016	**0.039**	0.079
	DC.. 32.53												
	RC.. 0602MO												
	RC.. 0803MO												
	RC.. 1003MO												
	RC.. 1204MO												
	RC.. 1606MO												
	RC.. 2006MO												
	RC.. 2507MO												
	SC.. 32.51	0.002	**0.004**	0.009	0.008	**0.016**	0.051	0.002	**0.005**	0.008	0.008	**0.028**	0.079
	SC.. 32.52	0.002	**0.005**	0.010	0.008	**0.016**	0.051	0.003	**0.006**	0.010	0.016	**0.039**	0.079
	SC.. 432							0.003	**0.006**	0.010	0.016	**0.039**	0.098
	SC.. 433												
	TC.. 1.81.51												
	TC.. 21.5.5	0.001	**0.003**	0.005	0.004	**0.012**	0.051						
	TC.. 21.51	0.002	**0.004**	0.009	0.008	**0.016**	0.051	0.002	**0.005**	0.008	0.008	**0.028**	0.079
	TC.. 21.52	0.002	**0.005**	0.010	0.008	**0.016**	0.051	0.003	**0.006**	0.010	0.016	**0.039**	0.079
	TC.. 32.5.5												
	TC.. 32.51	0.002	**0.004**	0.009	0.008	**0.016**	0.051	0.002	**0.005**	0.008	0.008	**0.031**	0.098
	TC.. 32.52							0.003	**0.006**	0.010	0.016	**0.039**	0.098
	TC.. 32.53												
	TC.. 432												
	VC.. 220.X12												
	VC.. 220.X25												
	VC.. 220.X37												
	VC.. 220.5	0.001	**0.002**	0.005	0.004	**0.012**	0.051	0.001	**0.003**	0.006	0.004	**0.016**	0.059
	VC.. 221	0.002	**0.003**	0.009	0.008	**0.016**	0.051	0.002	**0.004**	0.008	0.008	**0.024**	0.059
	VC.. 222							0.003	**0.005**	0.009	0.016	**0.039**	0.059
	VC.. 330.5												
	VC.. 331	0.002	**0.003**	0.009	0.008	**0.016**	0.051	0.002	**0.004**	0.008	0.008	**0.028**	0.079
	VC.. 332	0.002	**0.004**	0.009	0.008	**0.016**	0.051	0.003	**0.005**	0.009	0.016	**0.039**	0.079
	VC.. 333												
	VC.. 220530												
	WC.. 1.21.50							0.001	**0.003**	0.004	0.004	**0.016**	0.039
	WC.. 1.21.51							0.001	**0.004**	0.008	0.004	**0.024**	0.059

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The data shows reference values. An adjustment to the actual conditions may be required.

Designation	-CF55						-SMF						-SM					
	f			a_p			f			a_p			f			a_p		
	min.	Recommended	max.	min.	Recommended	max.	min.	Recommended	max.	min.	Recommended	max.	min.	Recommended	max.	min.	Recommended	max.
	inch/rev.			inch			inch/rev.			inch			inch/rev.			inch		
CC.. 21.5X5																		
CC.. 21.50																		
CC.. 21.5.5													0.002	**0.005**	0.008	0.008	**0.024**	0.098
CC.. 21.51	0.002	**0.005**	0.009	0.008	**0.020**	0.051	0.003	**0.006**	0.010	0.012	**0.028**	0.079	0.003	**0.007**	0.012	0.016	**0.031**	0.098
CC.. 21.52							0.004	**0.007**	0.011	0.024	**0.039**	0.079	0.005	**0.008**	0.014	0.031	**0.039**	0.098
CC..32.5X5																		
CC.. 32.50																		
CC.. 32.5.5																		
CC.. 32.51	0.002	**0.005**	0.009	0.008	**0.020**	0.051	0.003	**0.006**	0.010	0.012	**0.031**	0.098	0.003	**0.007**	0.012	0.016	**0.039**	0.118
CC.. 32.52	0.002	**0.006**	0.010	0.008	**0.020**	0.051	0.004	**0.007**	0.011	0.024	**0.039**	0.098	0.005	**0.008**	0.014	0.031	**0.047**	0.118
CC.. 32.53													0.006	**0.009**	0.016	0.047	**0.059**	0.118
CC.. 430.5																		
CC.. 431	0.002	**0.005**	0.009	0.008	**0.020**	0.051	0.003	**0.006**	0.010	0.012	**0.039**	0.118	0.003	**0.007**	0.012	0.016	**0.047**	0.138
CC.. 432							0.004	**0.007**	0.011	0.024	**0.047**	0.118	0.005	**0.008**	0.014	0.031	**0.059**	0.138
CC.. 433													0.006	**0.009**	0.016	0.047	**0.079**	0.138
DC.. 21.5X5																		
DC.. 21.50																		
DC.. 21.50.3																		
DC.. 21.5.5	0.001	**0.004**	0.005	0.004	**0.016**	0.051							0.002	**0.005**	0.008	0.008	**0.024**	0.098
DC.. 21.51	0.002	**0.005**	0.009	0.008	**0.020**	0.051	0.003	**0.006**	0.010	0.012	**0.028**	0.079	0.003	**0.007**	0.012	0.016	**0.031**	0.098
DC.. 21.52							0.004	**0.007**	0.011	0.024	**0.039**	0.079	0.005	**0.008**	0.012	0.031	**0.039**	0.098
DC.. 32.5X5																		
DC.. 32.50																		
DC.. 32.50.3																		
DC.. 32.5.5																		
DC.. 32.51	0.002	**0.005**	0.009	0.008	**0.020**	0.051	0.003	**0.006**	0.010	0.012	**0.031**	0.098	0.031	**0.007**	0.012	0.016	**0.039**	0.118
DC.. 32.52	0.002	**0.006**	0.010	0.008	**0.020**	0.051	0.004	**0.007**	0.011	0.024	**0.047**	0.098	0.005	**0.008**	0.014	0.031	**0.047**	0.118
DC.. 32.53													0.006	**0.009**	0.016	0.047	**0.067**	0.118
RC.. 0602MO													0.008	**0.012**	0.020	0.008	**0.020**	0.059
RC.. 0803MO													0.008	**0.012**	0.024	0.008	**0.024**	0.079
RC.. 1003MO													0.010	**0.016**	0.028	0.008	**0.028**	0.098
RC.. 1204MO													0.012	**0.020**	0.031	0.008	**0.031**	0.118
RC.. 1606MO							0.006	**0.012**	0.024	0.010	**0.079**	0.138	0.016	**0.024**	0.039	0.012	**0.039**	0.138
RC.. 2006MO													0.020	**0.031**	0.047	0.016	**0.047**	0.157
RC.. 2507MO													0.024	**0.035**	0.055	0.024	**0.079**	0.197
SC.. 32.51	0.002	**0.005**	0.009	0.008	**0.020**	0.051	0.003	**0.006**	0.010	0.012	**0.031**	0.098	0.003	**0.007**	0.012	0.016	**0.039**	0.118
SC.. 32.52	0.002	**0.006**	0.010	0.008	**0.020**	0.051	0.004	**0.007**	0.011	0.024	**0.039**	0.098	0.005	**0.008**	0.014	0.031	**0.047**	0.118
SC.. 432							0.004	**0.007**	0.011	0.024	**0.047**	0.118	0.005	**0.008**	0.014	0.031	**0.059**	0.138
SC.. 433													0.006	**0.009**	0.016	0.047	**0.079**	0.138
TC.. 1.81.51													0.003	**0.005**	0.008	0.016	**0.031**	0.079
TC.. 21.5.5													0.003	**0.004**	0.008	0.016	**0.024**	0.118
TC.. 21.51	0.002	**0.005**	0.009	0.008	**0.020**	0.051							0.005	**0.008**	0.014	0.031	**0.047**	0.118
TC.. 21.52							0.004	**0.007**	0.011	0.024	**0.039**	0.098	0.005	**0.008**	0.014	0.031	**0.047**	0.118
TC.. 32.5.5																		
TC.. 32.51							0.003	**0.006**	0.010	0.012	**0.039**	0.118	0.003	**0.007**	0.012	0.016	**0.047**	0.138
TC.. 32.52	0.002	**0.006**	0.010	0.008	**0.020**	0.051	0.004	**0.007**	0.011	0.024	**0.047**	0.118	0.005	**0.008**	0.014	0.031	**0.059**	0.138
TC.. 32.53													0.006	**0.009**	0.016	0.047	**0.067**	0.138
TC.. 432													0.005	**0.008**	0.014	0.031	**0.098**	0.236
VC.. 220.X12																		
VC.. 220.X25																		
VC.. 220.X37																		
VC.. 220.5							0.002	**0.004**	0.007	0.008	**0.020**	0.079						
VC.. 221	0.002	**0.004**	0.009	0.008	**0.020**	0.051	0.003	**0.006**	0.009	0.012	**0.028**	0.079						
VC.. 222																		
VC.. 330.5																		
VC.. 331	0.002	**0.004**	0.009	0.008	**0.020**	0.051	0.003	**0.006**	0.009	0.012	**0.031**	0.098	0.003	**0.007**	0.010	0.016	**0.039**	0.118
VC.. 332	0.002	**0.005**	0.009	0.008	**0.020**	0.051	0.004	**0.007**	0.011	0.024	**0.039**	0.098	0.005	**0.008**	0.012	0.031	**0.047**	0.118
VC.. 333													0.006	**0.009**	0.013	0.047	**0.059**	0.118
VC.. 220530																		
WC.. 1.21.50																		
WC.. 1.21.51																		

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Information on the cutting data of chip breakers not included in this overview, can be found on → **Page 215–221**.

Cutting data values for positive inserts

	Designation	-SMQ						-M25					
		f			a_p			f			a_p		
		min.	Recommended	max.	min.	Recommended	max.	min.	Recommended	max.	min.	Recommended	max.
		inch/rev.			inch			inch/rev.			inch		
	CC.. 21.5X5												
	CC.. 21.50												
	CC.. 21.5.5												
	CC.. 21.51							0.002	**0.005**	0.008	0.008	**0.043**	0.079
	CC.. 21.52												
	CC..32.5X5												
	CC.. 32.50												
	CC.. 32.5.5												
	CC.. 32.51	0.004	**0.010**	0.016	0.016	**0.079**	0.157	0.002	**0.006**	0.009	0.008	**0.047**	0.087
	CC.. 32.52	0.006	**0.012**	0.020	0.031	**0.079**	0.157	0.004	**0.008**	0.012	0.016	**0.071**	0.126
	CC.. 32.53												
	CC.. 430.5												
	CC.. 431	0.004	**0.010**	0.016	0.016	**0.079**	0.157						
	CC.. 432	0.006	**0.012**	0.020	0.031	**0.079**	0.157						
	CC.. 433												
	DC.. 21.5X5												
	DC.. 21.50												
	DC.. 21.50.3												
	DC.. 21.5.5							0.002	**0.004**	0.005	0.004	**0.035**	0.063
	DC.. 21.51	0.004	**0.007**	0.010	0.016	**0.059**	0.118	0.002	**0.005**	0.007	0.008	**0.043**	0.079
	DC.. 21.52												
	DC.. 32.5X5												
	DC.. 32.50												
	DC.. 32.50.3												
	DC.. 32.5.5							0.002	**0.004**	0.006	0.004	**0.043**	0.079
	DC.. 32.51	0.004	**0.010**	0.016	0.016	**0.079**	0.157	0.002	**0.006**	0.009	0.008	**0.047**	0.087
	DC.. 32.52	0.006	**0.012**	0.020	0.031	**0.079**	0.157	0.004	**0.008**	0.012	0.016	**0.071**	0.126
	DC.. 32.53												
	RC.. 0602MO												
	RC.. 0803MO												
	RC.. 1003MO												
	RC.. 1204MO												
	RC.. 1606MO												
	RC.. 2006MO												
	RC.. 2507MO												
	SC.. 32.51												
	SC.. 32.52												
	SC.. 432												
	SC.. 433												
	TC.. 1.81.51												
	TC.. 21.5.5												
	TC.. 21.51							0.002	**0.005**	0.008	0.008	**0.047**	0.087
	TC.. 21.52												
	TC.. 32.5.5												
	TC.. 32.51							0.002	**0.006**	0.009	0.008	**0.063**	0.118
	TC.. 32.52							0.004	**0.008**	0.012	0.016	**0.075**	0.134
	TC.. 32.53												
	TC.. 432												
	VC.. 220.X12												
	VC.. 220.X25												
	VC.. 220.X37												
	VC.. 220.5												
	VC.. 221												
	VC.. 222												
	VC.. 330.5												
	VC.. 331							0.002	**0.005**	0.008	0.008	**0.047**	0.087
	VC.. 332							0.004	**0.006**	0.010	0.016	**0.055**	0.118
	VC.. 333												
	VC.. 220530												
	WC.. 1.21.50												
	WC.. 1.21.51												

Sharp ◄——————————————————————————► stable

The data shows reference values. An adjustment to the actual conditions may be required.

Designation	-M55						-F05					
	f			a_p			f			a_p		
	min.	Recommended	max.	min.	Recommended	max.	min.	Recommended	max.	min.	Recommended	max.
	inch/rev.			inch			inch/rev.			inch		
CC.. 21.5X5												
CC.. 21.50							0.001	**0.001**	0.002	0.004	**0.039**	0.079
CC.. 21.5.5							0.001	**0.002**	0.004	0.004	**0.039**	0.079
CC.. 21.51	0.002	**0.005**	0.008	0.016	**0.059**	0.102	0.001	**0.004**	0.008	0.004	**0.039**	0.079
CC.. 21.52												
CC..32.5X5												
CC.. 32.50												
CC.. 32.5.5												
CC.. 32.51	0.003	**0.006**	0.009	0.016	**0.067**	0.118						
CC.. 32.52	0.005	**0.009**	0.014	0.031	**0.094**	0.157						
CC.. 32.53												
CC.. 430.5												
CC.. 431	0.003	**0.007**	0.011	0.016	**0.087**	0.157						
CC.. 432	0.005	**0.010**	0.016	0.031	**0.110**	0.189						
CC.. 433												
DC.. 21.5X5							0.001	**0.001**	0.002	0.004	**0.039**	0.079
DC.. 21.50							0.001	**0.001**	0.002	0.004	**0.039**	0.079
DC.. 21.50.3							0.001	**0.002**	0.003	0.004	**0.039**	0.079
DC.. 21.5.5							0.001	**0.002**	0.004	0.004	**0.039**	0.079
DC.. 21.51	0.002	**0.006**	0.009	0.016	**0.051**	0.087						
DC.. 21.52	0.003	**0.006**	0.009	0.031	**0.063**	0.094						
DC.. 32.5X5							0.001	**0.001**	0.002	0.004	**0.049**	0.098
DC.. 32.50							0.001	**0.001**	0.002	0.004	**0.049**	0.098
DC.. 32.50.3							0.001	**0.002**	0.003	0.004	**0.049**	0.098
DC.. 32.5.5							0.001	**0.003**	0.004	0.004	**0.049**	0.098
DC.. 32.51	0.003	**0.006**	0.009	0.016	**0.067**	0.118	0.001	**0.004**	0.010	0.004	**0.049**	0.098
DC.. 32.52	0.005	**0.009**	0.014	0.031	**0.094**	0.157						
DC.. 32.53												
RC.. 0602MO												
RC.. 0803MO												
RC.. 1003MO												
RC.. 1204MO												
RC.. 1606MO												
RC.. 2006MO												
RC.. 2507MO												
SC.. 32.51	0.005	**0.009**	0.014	0.031	**0.094**	0.157						
SC.. 32.52	0.005	**0.010**	0.016	0.031	**0.110**	0.189						
SC.. 432												
SC.. 433												
TC.. 1.81.51	0.002	**0.005**	0.007	0.016	**0.051**	0.087						
TC.. 21.5.5												
TC.. 21.51	0.002	**0.006**	0.009	0.016	**0.055**	0.094						
TC.. 21.52												
TC.. 32.5.5												
TC.. 32.51												
TC.. 32.52	0.005	**0.009**	0.014	0.031	**0.102**	0.173						
TC.. 32.53												
TC.. 432												
VC.. 220.X12							0.001	**0.001**	0.002	0.004	**0.049**	0.098
VC.. 220.X25							0.001	**0.001**	0.002	0.004	**0.049**	0.098
VC.. 220.X37							0.001	**0.002**	0.003	0.004	**0.049**	0.098
VC.. 220.5							0.001	**0.003**	0.004	0.004	**0.049**	0.098
VC.. 221							0.001	**0.006**	0.010	0.004	**0.049**	0.098
VC.. 222												
VC.. 330.5												
VC.. 331	0.003	**0.006**	0.008	0.016	**0.067**	0.118						
VC.. 332	0.005	**0.008**	0.012	0.031	**0.083**	0.134						
VC.. 333												
VC.. 220530												
WC.. 1.21.50												
WC.. 1.21.51												

Sharp ◄——————————————————————————► stable

Information on the cutting data of chip breakers not included in this overview, can be found on → **Page 215–221**.

Cutting edge preparation – PCBN

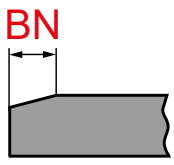
The stability of a cutting edge increases as the chamfer angle and chamfer width increase, but at the same time the cutting force increases and subsequently also the temperature in the process. A larger chamfer distributes the cutting force across a larger area of the cutting edge.
This increases the stability of the cutting edge, thereby facilitating higher feeds. If process stability and a constant tool life are the highest priority, then we recommend choosing a large chamfer.
If the highest priority is to achieve a very good surface quality and optimum dimensional accuracy, then it is advisable to use a small chamfer for the manufacturing process. Vibrations, cutting forces and temperature are hereby reduced.
Hard turning in most cases is the finishing of the workpiece, the optimum cutting edge preparation is a deciding factor in order to reliably produce high-quality components with a long service life.

In the case of indexable inserts with no chip breaker, the correct chamfer design is vital, as well as the type of cutting edge. For this reason, the designation system has been extended with the following key to the various chamfer designs. The design and angle can be seen in the overview below.

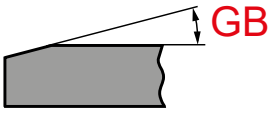
Preparation key at CERATIZIT

Designation in line with ISO Type of cutting edge	CERATIZIT chamfer design	Definition
SN (chamfered and rounded)	014D	0.0055“ x 20° / 0.14 x 20°
EN (rounded)	rounded	

Chamfer design **SN**



Chamfer width



Chamfer angle

Type of cutting edge **EN**



CODE FOR CHAMFER ANGLE GB

A	B	C	D	E	F	G
5°	10°	15°	20°	25°	30°	35°

Precision and geometrical accuracy

Process stability, tool life

Examples	Chamfer width [inch]	Chamfer width [mm]	Chamfer angle GB
CNGA 120408SN-009C	0.0035	0.09	15°
DCGW 11T304SN-014D	0.0055	0.14	20°

Measures in the case of turning problems with PCBN

Troubleshooting

Problem	Possible causes	Remedy
Poor tool lives	▲ Cutting speed not within the specifications ▲ Chip softening not carried out	▲ Increase the cutting speed ▲ Ideally, chip is red hot
Bad surface quality	▲ Feed too high ▲ Corner radius too small	▲ Reduce feed ▲ Increase corner radius
Chatter marks	▲ Tool overhang too long	▲ Reduce projection length ▲ Use more stable holder
Vibration	▲ Cutting pressure too high ▲ Chip thickness too large ▲ Centre height incorrect ▲ Unstable tool or workpiece clamping ▲ Indexable insert radius too large, high recoil force	▲ Reduce cutting pressure ▲ Reduce chip thickness ▲ Check/adjust centre height ▲ Use smaller radius
Burrs on workpiece	▲ With soft materials (sintered steel) ▲ Cutting pressure too high ▲ Corner radius too large ▲ Chamfer angle too large	▲ Use smaller radius ▲ Adjust chip thickness ▲ Increase cutting depth ▲ Increase cutting speed ▲ Reduce chamfer angle ▲ Use sharp cutting edge
Notch wear	▲ Constant cutting depth leaving witness	▲ For dual-cut strategy, use different cutting depths ▲ Increase chamfer angle
Edge breakage on the workpiece	▲ Sharp edge at the exit	▲ Change machining direction ▲ Reduce feed at entry and exit ▲ Program soft machining with chamfers and radii

Diamond as a cutting material



Ensures

- ▲ Optimal surface quality
- ▲ burr-free workpieces
- ▲ high service lives
- ▲ lowest cutting forces
- ▲ High Process Security

Complete programme of roughing, finishing and Trailing edge inserts for machining aluminium, non ferrous metals, plastics, ...

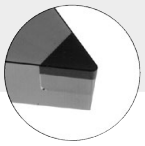
The cutting materials

	CTD CD10 (CVD)	CTD PD20 (PKD)	CTD PU20 (PKD)	CTD PS30 (PKD)
	Fine grain Size (N10)	Fine grain grade (N20)	Coarse grain grade (N20)	Coarse grain Size (N30)
Properties	▲ perfect sharp edges ▲ no cutting pressure ▲ very close tolerances ▲ highest abrasion resistance with highest toughness ▲ very high heat conductivity	▲ high sharpness ▲ lower cutting pressure than PDC-S ▲ close tolerance ▲ lower abrasion resistance with increased toughness	▲ Very sharp cutting edge ▲ Reduced cutting pressure ▲ Tight tolerances ▲ Very high level of wear resistance and toughness	▲ high sharpness ▲ lower cutting pressure ▲ close tolerance ▲ lower abrasion resistance than with the PDC, with increased toughness
Material	suitable for superfinishing and semi-finishing of all non ferrous metals and NE-composite materials with small to high levels of abrasiveness	suitable for fine machining of all NE-materials with low abrasiveness	suitable for finishing to roughing non-ferrous metals and non-ferrous materials with highly abrasive alloying element. High chip removal on fibre-reinforced plastics such as CFRP and GFRP.	suitable for fine machining of all NE-materials and non-ferrous metals with low to very high levels of abrasiveness

Cutting Geometries

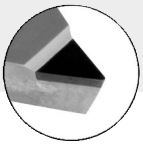
Neutral rake angle:

- ▲ higher cuting force
- ▲ higher temperature
- ▲ improved surface quality
- ▲ for stable workpieces



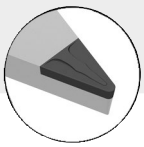
Positive rake angle: 5° / 7°

- ▲ Lower cutting force
- ▲ Lower temperature
- ▲ reduction in surface quality
- ▲ for unstable workpieces
- ▲ improved accuracy



CB chip breaker geometries:

- ▲ Reliable chip control
- ▲ Ideal for low-alloy aluminium
- ▲ For F | M | R applications



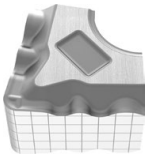
Notes on diamond usage

- ▲ Coolant is not generally needed, however it facilitates chip removal
- ▲ Note the chemical reaction to carbide-forming elements (PCD)
- ▲ Note the thermal interaction and critical temperature:
  PCD: 600 °C, CVD: 700 °C
  Depending on the material, use cooling.

Standard chip breakers / application notes

Main application steel and cast iron, secondary application stainless steels

Negative

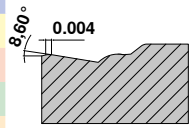
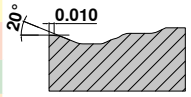
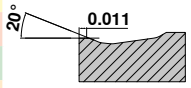
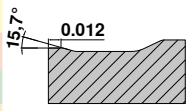
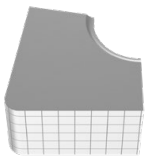
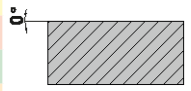
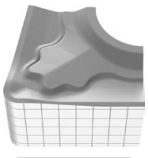
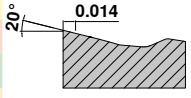
Model	Smooth cut ○	Irregular cutting depth ◔	Interrupted cut ◌	Sectional illustration a_p inch	Sectional illustration f inch	Geometry
-CF / -CF20 ▲ Fine finishing ▲ Sharp cutting edge for low cutting forces ▲ Good chip control even at small depths of cut	**CTEP110 / TCM10** CTEP110 / TCM10 CTEP110 / TCM10			12°	0.012–0.059	0.003–0.010	CN.. DN.. TN.. WN..
 **F**						
-F40 ▲ Fine turning chip breaker for machining steels ▲ Good chip control ▲ Ideal for copy turning work	**CTCP125-P** CTCP125-P	**CTCP125-P** CTCP125-P		24° 0.003	0.020–0.079	0.004–0.012	VN..
 **F**						
-F50 ▲ Fine turning chip breaker for fine machining ▲ Steel and stainless steels ▲ Excellent chip control ▲ High surface quality	**CTCP115-P / CTCP125-P**	**CTCP115-P / CTCP125-P / CTCP135-P** CTCP135-P	**CTCP135-P** CTCP135-P	15°	0.004–0.102	0.002–0.014	CN.. DN.. SN.. TN.. VN.. WN..
 **F**						
-TFQ ▲ Wiper geometry ▲ Finishing to medium machining ▲ Very high feeds ▲ High surface quality	**CTEP110 / CTCP115-P** CTEP110 CTEP110 / CTCP115-P	**CTCP115-P / CTCP125-P** CTCP115-P / CTCP125-P		17° 0.006	0.020–0.197	0.004–0.024	CN.. DN.. WN..
 **F**						
-XU ▲ Finishing to light roughing ▲ Universal chip breaker ▲ Copy turning ▲ Excellent chip formation ▲ Low cutting forces	**CTCP115-P / CTCP125-P** CTCP115-P	CTCP115-P / **CTCP125-P** CTCP115-P / CTCP125-P	CTCP125-P	10° 0.006	0.016–0.177	0.005–0.016	CN.. DN.. VN.. WN..
 **M**						

9

Standard chip breakers / application notes

Main application steel and cast iron, secondary application stainless steels

Negative

	Model	Smooth cut ○	Irregular cutting depth ◔	Interrupted cut ◌	Sectional illustration a_p inch	Sectional illustration f inch	Geometry
-M40 ▲ Stable geometry ▲ Medium feed rates ▲ Can be used for any application ▲ Good chip control	 **M**	**CTCP125-P** CTCP125-P	**CTCP125-P** CTCP125-P		 0.020–0.118	0.020–0.118	VN..
-M50 ▲ Medium machining ▲ First choice for steel machining ▲ Universal application ▲ Wide range of applications	 **M**	**CTCP115-P / CTCP125-P / CTCK110 / CTCK120** CTCP115-P CTCP115-P / CTCP125-P / **CTCK110 / CTCK120**	CTCP115-P / **CTCP125-P** CTCP125-P CTCP115-P / CTCP125-P / **CTCK110 / CTCK120**	CTCP125-P / **CTCP135-P** CTCP135-P CTCP125-P / **CTCK120**	 0.020–0.197	0.005–0.016	CN.. DN.. SN.. TN.. VN.. WN..
-TMQ ▲ Wiper geometry ▲ Light to medium rough machining ▲ Very high feeds ▲ High surface quality	 **M**	**CTCP115-P** CTCP125-P CTCP125-P	**CTCP125-P** CTCP125-P CTCP125-P		 0.031–0.236	0.008–0.033	CN.. DN.. WN..
-M70 ▲ Light to medium rough machining ▲ Cast crust and forging skin ▲ Stable cutting edge ▲ Interrupted cut ▲ Raw materials and forgings	 **M** **R**	**CTCK110 / CTCK120 / CTCP115-P** CTCP115-P **CTCK110 / CTCK120** / CTCP115-P / CTCP125-P	CTCP115-P / **CTCP125-P** CTCP125-P **CTCK120** / CTCP125-P	**CTCP125-P / CTCP135-P** CTCP135-P CTCP125-P / **CTCK120**	 0.059–0.177	0.008–0.031	CN.. DN.. SN.. TN.. WN..
-NMA ▲ Rough machining ▲ Stable cutting edge ▲ For short-chipping materials ▲ First choice for grey cast iron	 **R**	**CTCK110**	**CTCK110 / CTCK120**	**CTCK120**	 0.059–0.177	0.008–0.031	CN.. DN.. SN.. TN.. WN..
-R28 ▲ Single sided roughing geometry ▲ Longitudinal, face and copy turning ▲ Varying depths of cut ▲ Steels with low tensile strength (800 N / mm²) ▲ Good chip control	 **R**	**CTCP115-P** / CTCP125-P CTCP115-P / CTCP125-P CTCP115-P	**CTCP115-P / CTCP125-P / CTCP135-P** CTCP125-P / CTCP135-P CTCP125-P	**CTCP135-P** CTCP135-P CTCP135-P	 0.039–0.472	0.010–0.031	CN.. DN.. SN..

Standard chip breakers / application notes

Negative

Main application steel and cast iron, secondary application stainless steels

Model	Smooth cut ○	Irregular cutting depth ○	Interrupted cut ○	Sectional illustration a_p inch	Sectional illustration f inch	Geometry
-R58 ▲ Single sided roughing geometry ▲ Longitudinal and face turning ▲ Light interrupted cut ▲ Low cutting forces ▲ Unstable machines	CTCP115-P / CTCP125-P CTCP115-P / CTCP125-P CTCP115-P	CTCP115-P / CTCP125-P / CTCP135-P CTCP125-P / CTCP135-P CTCP115-P / CTCP125-P	**CTCP135-P** CTCP135-P CTCP125-P	20° 0.014 0.059–0.472	0.012–0.047	CN.. DN.. SN.. TN..
-R88 ▲ Single sided roughing geometry ▲ Longitudinal and face turning ▲ High feedrate ▲ Large depths of cut ▲ Heavily interrupted cut	CTCP115-P / CTCP125-P CTCP115-P / CTCP125-P CTCP115-P	CTCP115-P / CTCP125-P / CTCP135-P CTCP115-P / CTCP125-P CTCP115-P / CTCP125-P	**CTCP135-P** CTCP135-P CTCP125-P	20° 0.020 0.138–0.630	0.020–0.059	SN..

Negative

Main application stainless steels, secondary application steel and super alloys

Model	Smooth cut ○	Irregular cutting depth ○	Interrupted cut ○	Sectional illustration a_p inch	Sectional illustration f inch	Geometry
-F30 ▲ Finishing of stainless steels ▲ Continous cut ▲ High surface quality ▲ Good swarf control	CTCM120 / CTPM125 **CTCM120 / CTPM125**	CTCM120 / CTPM125 / CTCM130 **CTCM120 / CTPM125 / CTCM130**	CTCM130 **CTCM130**	15° 0.003–0.098	0.004–0.014	CN.. DN.. SN.. TN.. VN.. WN..
-M30 ▲ Option for stainless steel machining ▲ Good swarf control ▲ Little edg build up ▲ Low cutting forces ▲ Little built-up edge ▲ Applicable on unstable machines	CTCM120 / CTPM125 **CTCM120 / CTPM125**	CTCM120 / CTPM125 / CTCM130 **CTCM120 / CTPM125 / CTCM130**	CTCM130 **CTCM130**	15° 0.010 0.039–0.177	0.006–0.016	CN.. DN.. SN.. TN.. VN.. WN..
-42 ▲ Extremely soft-cutting chip breaker ▲ For small and medium widths of cut ▲ Suitable for thin-walled parts			CTCM130 **CTCM130** CTCM130	16° 0.020–0.177	0.002–0.014	CN..
-M42 ▲ For medium machining on stainless steels ▲ As a secondary application for general steels and super alloys			CTCM130 **CTCM130** CTCM130	20° 0.012 0.039–0.138	0.006–0.016	DN.. SN.. TN.. WN..

9

Standard chip breakers / application notes

Negative

Main application super alloys, secondary application stainless steels

Model	Smooth cut	Irregular cutting depth	Interrupted cut	Sectional illustration a_p inch	Sectional illustration f inch	Geometry
-M60 ▲ Light to medium roughing ▲ Stable cutting edge ▲ Interrupted cut ▲ Forged skin and cast crust	CTCM120 / CTPM125 **CTCM120 / CTPM125**	CTCM120 / CTPM125 / CTCM130 **CTCM120 / CTPM125 / CTCM130**	CTCM130 **CTCM130**	0.059–0.236	0.010–0.020	CN.. DN.. SN.. TN.. WN..
-F34 ▲ Stable, positive cutting edge ▲ Also for slightly interrupted cuts	CTPX710 **CTPX710** CTPX710 **CTPX710**	CTPX710 **CTPX710** CTPX710 **CTPX710**		0.020–0.098	0.003–0.010	CN.. WN..
-M34 ▲ First choice for superalloys ▲ Light cutting geometry ▲ Little built-up edge ▲ Low cutting forces	**CTPX710** **CTPX710** CTPX710 **CTPX710**	**CTPX710** **CTPX710** CTPX710 **CTPX710**		0.031–0.118	0.004–0.012	CN.. DN.. SN.. VN.. WN..
-M42 ▲ For medium machining on stainless steels ▲ As a secondary application for general steels and super alloys	**CTCM130** **CTPX710**	**CTCM130** **CTPX710**	**CTCM130**	0.039–0.138	0.006–0.016	CN.. DN..

Positive

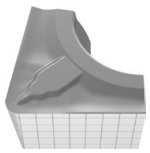
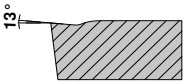
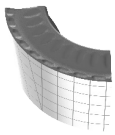
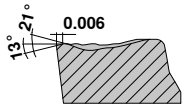
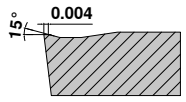
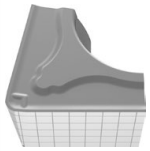
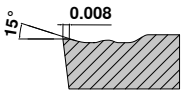
Main application steel and cast iron, secondary application stainless steels and super alloys

Model	Smooth cut	Irregular cutting depth	Interrupted cut	Sectional illustration a_p inch	Sectional illustration f inch	Geometry
-CF05 ▲ Fine finishing ▲ For all common steel materials, stainless steels and GGG ▲ Good swarf control ▲ High surface quality	**CTEP110 / TCM407** CTEP110 CTEP110	TCM10 / TCM407 TCM10 / TCM407		0.008–0.051	0.002–0.010	CC.. DC.. SC.. TC.. VC..
-SF ▲ Finishing / contour turning ▲ Good swarf control ▲ High surface quality ▲ Low cutting forces	**CTCP115-P**	**CTCP125-P** CTCP125-P	CTCP125-P / CTCP135-P CTCP125-P	0.002–0.098	0.002–0.010	CC.. DC.. SC.. TC.. VC.. WC..
-CF55 ▲ Finishing to medium machining ▲ Suitable for general and stainless steels ▲ Low cutting forces ▲ Good swarf control ▲ High surface quality	**CTEP110** CTEP110 CTEP110	**TCM10** / CTEP110 CTEP110 CTEP110		0.008–0.051	0.002–0.010	CC.. DC.. SC.. TC.. VC..

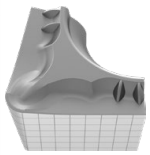
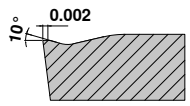
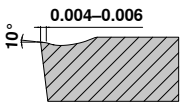
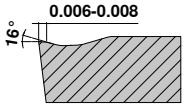
Standard chip breakers / application notes

Main application steel and cast iron, secondary application stainless steels and super alloys

Positive

Model	Smooth cut ○	Irregular cutting depth ○	Interrupted cut ○	Sectional illustration a_p inch	Sectional illustration f inch	Geometry
-SMF ▲ Finishing to medium machining ▲ Low cutting forces ▲ Good swarf control ▲ High surface quality						
 **F**	**CTEP110 / CTCP115-P**	**TCM10 / CTCP125-P / CTCP115-P**	**CTCP135-P**			CC.. DC.. SC.. TC.. VC..
	CTEP110	CTCP135-P	CTCP135-P			
	CTEP110					
M				0.008–0.051	0.002–0.010	
-M23 ▲ Soft cutting geometry with outstanding chip breaking behaviour at low cutting depths in finish machining						
 **M**	**CTCP115-P / CTCP125-P**	**CTCP125-P**	**CTCP125-P**			RC..
	CTCP115-P / CTCP125-P	CTCP125-P	CTCP125-P			
R				0.012–0.157	0.039–0.018	
-SM ▲ Medium machining ▲ Universal application ▲ Stable cutting edge ▲ Varying depths of cut ▲ Wide range of applications						
 **M**	**CTCP115-P / CTCP125-P**	**CTCP125-P / CTCP135-P / CTCP115-P**	**CTCP125-P / CTCP135-P**			CC.. DC.. RC.. SC.. TC.. VC..
		CTCP135-P	CTCP135-P			
	CTCP115-P / **CTCK110 / CTCK120**	CTCP125-P / **CTCK110 / CTCK120**	CTCK120			
M				0.002–0.197	0.006–0.018	
-SMQ ▲ Positive wiper geometry ▲ Finishing to medium machining ▲ Very high feeds ▲ High surface quality						
 **M**	**CTCP115-P**	**CTCP125-P**	**CTCP125-P**			CC.. DC..
	CTCP125-P / CTCP115-P	CTCP125-P	CTCP125-P			
				0.039–0.157	0.006–0.018	

Positive

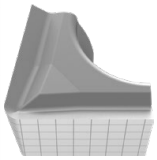
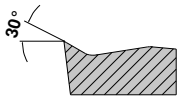
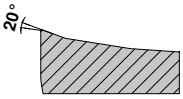
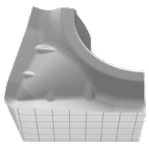
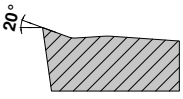
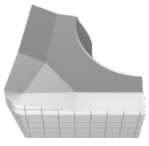
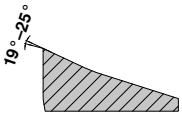
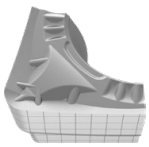
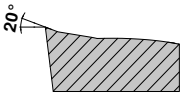
Model	Smooth cut ○	Irregular cutting depth ○	Interrupted cut ○	Sectional illustration a_p inch	Sectional illustration f inch	Geometry
-F43 ▲ For the light to medium machining of all stainless steels, general steels and superalloys						
 **F**			CTCM130			CC.. DC.. TC..
			CTCM130			
			CTCM130			
				0.020–0.098	0.002-0.010	
-M25 ▲ First choice for medium machining of stainless steels ▲ High surface quality ▲ Little built-up edge						
 **F**	CTCM120 / CTPM125	CTCM120 / CTPM125 / CTCM130	CTCM130			CC.. DC.. TC.. VC..
M	**CTCM120 / CTPM125**	**CTCM120 / CTPM125 / CTCM130**	**CTCM130**			
				0.016–0.126	0.004–0.012	
-M55 ▲ First choice for medium machining to roughing of stainless steels ▲ Smooth to lightly interrupted cut ▲ Good swarf control ▲ Stable cutting edge						
 **M**	CTCM120 / CTPM125	CTCM120 / CTPM125 / CTCM130	CTCM130			CC.. DC.. SC.. TC.. VC..
	CTCM120 / CTPM125	**CTCM120 / CTPM125 / CTCM130**	**CTCM130**			
				0.016–0.189	0.002–0.014	

9

Standard chip breakers / application notes

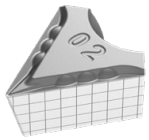
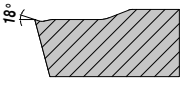
Positive

Main application non-ferrous metals, secondary application stainless steels, steels, super alloys, cast iron

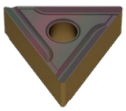
Model	Smooth cut	Irregular cutting depth	Interrupted cut	Sectional illustration a_p inch	Sectional illustration f inch	Geometry
-23P ▲ Low adhesion ▲ Good chip control with soft aluminium alloys						
	H216T	H216T				CC.. DC..
	H216T	**H216T**	**H216T**			
F	H216T	H216T	H216T	0.008–0.157	0.002–0.012	
-25P ▲ Sharp cutting edge ▲ Good swarf control on soft aluminium alloys ▲ Low adhesion	**CTPX710**	CTPX710				
	**CTPX710**	CTPX710				CC.. DC.. SC.. VC..
	CTPX710 / H216T	**CTPX710 / H216T**	**CTPX710 / H216T**			
F **M**	**CTPX710**	CTPX710		0.020–0.177	0.002–0.024	
	CTPX710	CTPX710				
-25Q ▲ Wiper geometry ▲ High feeds ▲ High surface quality ▲ Good chip control with softer aluminium alloys ▲ Low adhesion	**CTPX710**	CTPX710				
	**CTPX710**	CTPX710				CC.. DC.. VC..
	H210T	H210T				
	H210T / CTPX710	**H210T / CTPX710**	**H210T / CTPX710**			
	H210T / **CTPX710**	H210T / CTPX710				
M	H210T	H210T	H210T	0.002–0.256	0.002–0.024	
-27 ▲ The universal Alu geometry ▲ Sharp cutting edge ▲ Extremely positive rake angle ▲ Low adhesion ▲ High feed rates	**CTPX715**	CTPX715				
	**CTPX715**	CTPX715				CC.. DC.. RC.. SC.. TC.. VC..
	CTPX715 / H216T	CTPX715 / H216T				
	CTPX715 / H216T	**CTPX715 / H216T**	**CTPX715 / H216T**			
	CTPX715	CTPX715				
M **R**	CTPX715 / H216T	CTPX715 / H216T	CTPX715 / H216T	0.039–0.394	0.004–0.030	
-29 ▲ Direct sintered aluminium geometry ▲ Positive rake angle ▲ Good chip control ▲ For medium to rough machining	CTPX710	CTPX710				
	CTPX710	CTPX710				CC.. DC.. VC..
	CTPX710	**CTPX710**				
	H216T	**H216T**	**H216T**			
	CTPX710	CTPX710				
M **R**				0.039–0.236	0.010–0.024	

Positive

Main application super alloys and stainless steels, secondary application steels and non-ferrous metals

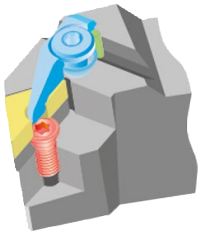
Model	Smooth cut	Irregular cutting depth	Interrupted cut	Sectional illustration a_p inch	Sectional illustration f inch	Geometry
-F05 ▲ Maximum tolerance class ▲ Outstanding chip control, even with the smallest cutting depths ▲ Very low cutting forces	**CTPX710**	CTPX710				
	**CTPX710**	CTPX710				DC.. VC..
	CTPX710	CTPX710				
	CTPX710	**CTPX710**				
	CTPX710	**CTPX710**				
F	CTPX710	CTPX710		0.004–0.098	0.001–0.010	

Supplementary chip breakers / application notes

	Model	Smooth cut	Irregular cutting depth	Interrupted cut
-EN ▲ Universal chip breaker for general steels	 M	**CTCP115-P** CTCP125-P **CTCK110**	**CTCP125-P** CTCP135-P **CTCK120**	**CTCP135-P** CTCP135-P CTCP125-P
-ER | -EL ▲ A problem solver for unstable conditions ▲ Can be used on less powerful machines ▲ Can be used for general steels and on stainless materials as a secondary application	 M		**CTCP125-P**	**CTCP135-P**

Clamping systems

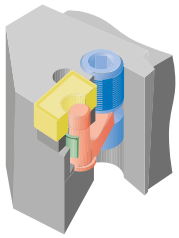
MaxiLock D



- Clamping element
- Inserts
- Insert seat
- Pin
- Screw

The first-choice tool for machining with negative centre-hole inserts. Secure and precise positioning of the indexable insert thanks to the double clamping effect of the clamping element.

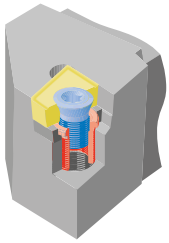
MaxiLock N



- Clamping element
- Inserts
- Insert seat
- Shim
- Lever

This clamping system is suitable for all centre-hole inserts with a negative basic shape. The clamping screw is easy to access from the top and bottom of the holder. When the clamping system is released, there are no loose spare parts.

MaxiLock S

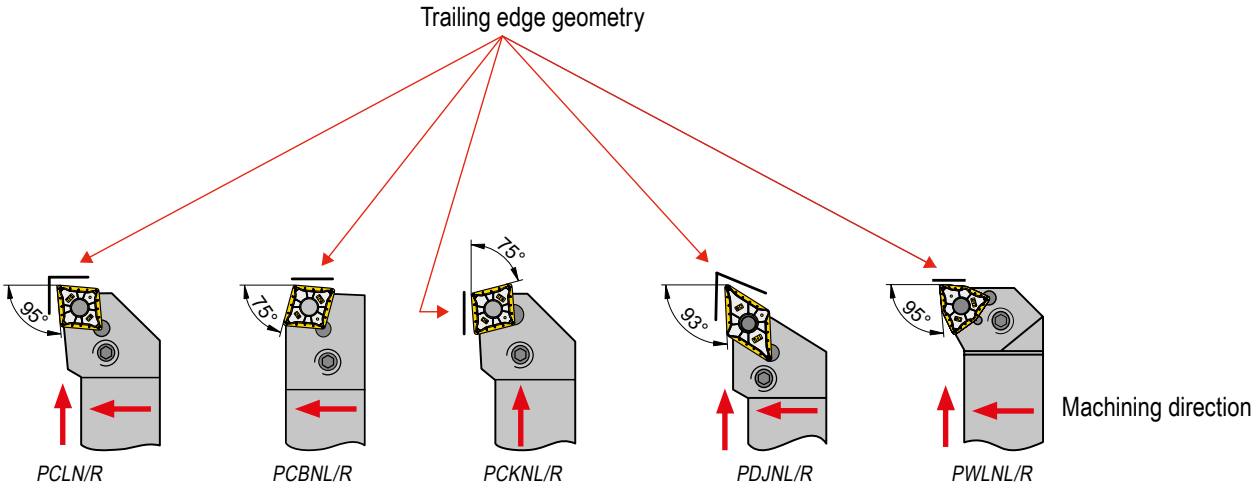


- Clamping element
- Inserts
- Insert seat
- Threaded sleeve

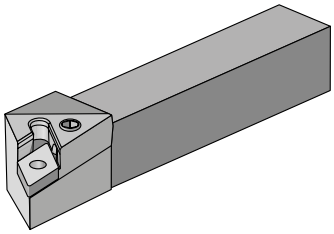
The positive screw clamping guarantees a secure connection between the indexable insert and the tool holder. The chip flow is not disrupted by protruding clamping elements. Thanks to the neutral insert position, the effective available rake angle is identical to the rake angle of the indexable insert.

Trailing edge geometry – information

Through the use of indexable inserts with wiper edge (-TFQ; -TMQ; -SMQ; -25Q) high quality surfaces can be produced economically.

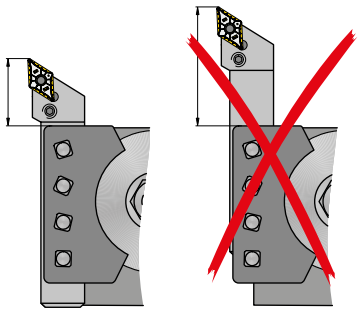


All turning inserts with trailing edge are clamped in standard ISO tool holders

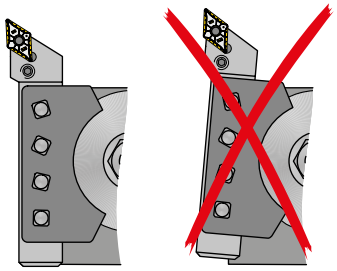


Check toolholder:

- ▲ Insert seat
- ▲ Shim
- ▲ Clamping Lever



Short tool overhang



Ensure correct tool alignment

Feed rate guide values for surface finish quality

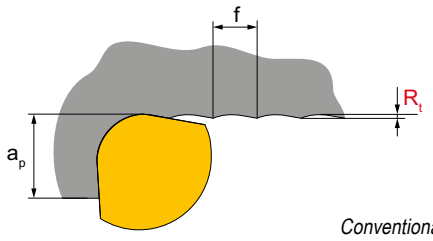
Roughness range R_Z in µm	R_{th}	Corresponds to R_a	Roughness index	ISO 1302	Corner radius r_ε in inch and feed rate f in inch/rev.						
					RE = 0.004"	RE = 0.008"	RE = 0.016"	RE = 0.032"	RE = 0.048"	RE = 0.064"	RE = 0.094"
63–100	$R_{th}63$	12.5–25	N11	25	0.008*	0.012*	0.018*	0.025	0.031	0.035	0.043
40–63	$R_{th}40$	6.3–12.5	N10	12.5	0.007*	0.010*	0.014	0.02	0.024	0.028	0.035
31.5–40	$R_{th}31.5$	4.9–6.3	N9	6.3	0.006*	0.008*	0.013	0.018	0.022	0.025	0.031
25–31.5	$R_{th}25$	4.0–4.9			0.005	0.008*	0.011	0.016	0.019	0.022	0.027
16–25	$R_{th}16$	2.5–4.0	N8	3.2	0.004*	0.006	0.009	0.013	0.015	0.018	0.022
10–16	$R_{th}10$	1.6–2.5			0.004	0.005	0.007	0.01	0.012	0.014	0.017
6.3–10	$R_{th}6.3$	1.0–1.6	N7	1.6	0.003	0.004	0.006	0.008	0.01	0.011	0.014
4–6.3	$R_{th}4$	0.8–1.0	N6	0.8	0.002	0.003	0.004	0.006	0.008	0.009	0.011
2.5–4	$R_{th}2.5$	0.4–0.8	N5	0.4	0.002	0.002	0.004	0.005	0.006	0.007	0.009
1.6–2.5	$R_{th}1.6$	0.2–0.4	N4	0.2	0.002	0.002	0.003	0.004	0.005	0.006	0.007
1–1.6	$R_{th}1$	0.1–0.2	N3	0.1	0.001	0.002	0.002	0.003	0.004	0.004	0.006

Trailing edge geometry – operating principle

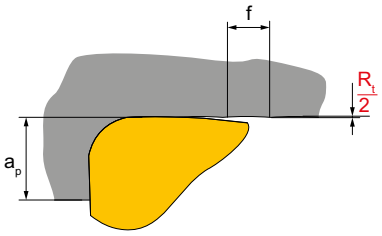
Relationship of feed rate to surface roughness

Improved Surface Quality

With the same feed rate an insert with wiper cutting edge reaches a roughness value R_t which is many times better than a conventional insert.



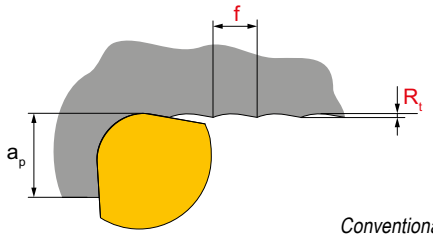
Conventional



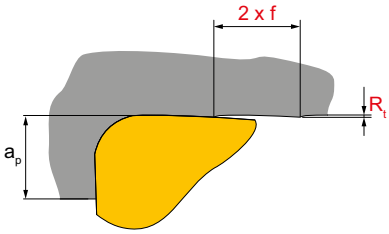
-TFQ

Shorter machining time

To achieve the same R_t-value as with a standard insert, double the feed rate can be applied for the insert with wiper cutting edge **(= shorter production time per component!)**



Conventional



-TFQ

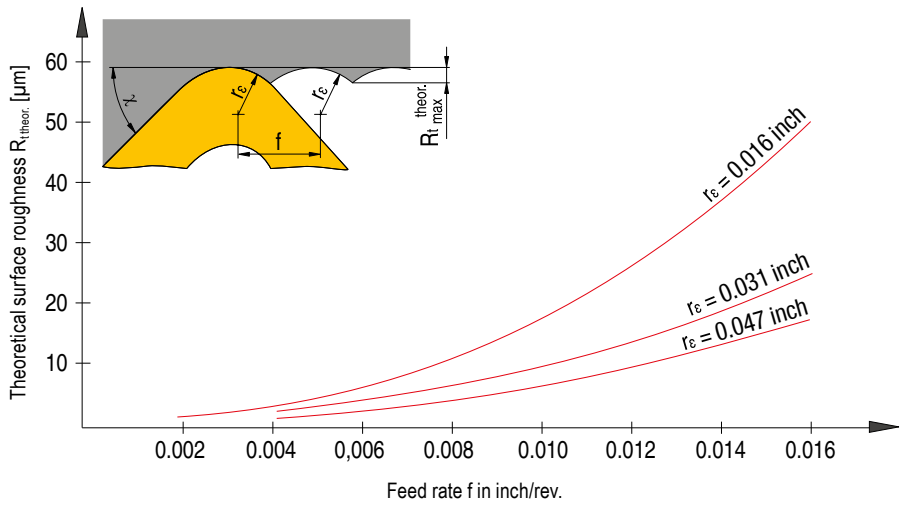
Theoretical Surface Quality

The maximum theoretical surface roughness with turning $Rt_{theor.}$ is the combination of feed rate and corner radius:

$$Rt_{theor.} = \left(r_\varepsilon - \sqrt{r_\varepsilon^2 - \frac{f^2}{4}} \right) \cdot 1000$$

or approximately:

$$Rt_{theor.} = \frac{125 \cdot f^2}{r\varepsilon} \quad [\mu m]$$



ISO designation system for inserts

Indexable inserts – metric

C	N	M	G	12	04	08	E	N	-	M50
1	2	3	4	5	6	7	8	9		13

Indexable inserts – inch

C	N	M	G	4	3	2	E	N	-	M50
1	2	3	4	5	6	7	8	9		13

Indexable inserts, CBN, ceramic – metric

C	N	G	A	12	04	08	S	N	-	020D	_	B	3	-	Q
1	2	3	4	5	6	7	8	9		10		11	12		13

Indexable inserts, CBN, ceramic – inch

C	N	G	A	4	3	2	S	N	-	020D	_	B	3	-	Q
1	2	3	4	5	6	7	8	9		10		11	12		13

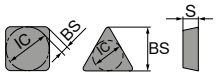
1 Insert shape

V	35°	Included angle
D	55°	
E	75°	
C	80°	
M	86°	
K	55°	Included angle
B	82°	
A	85°	
L	90°	Other shapes
P	108°	
H	120°	
O	135°	
R	-	
S	90°	
T	60°	
W	80°	

2 Clearance angle

	α		α
A	3°	F	25°
B	5°	G	30°
C	7°	N	0°
D	15°	P	11°
E	20°		
O	Clearance angles not included within the standard for which particular information is necessary.		

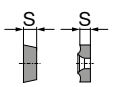
3 Tolerances



	IC±		BS		S	
	mm	inch	mm	inch	mm	inch
A	0.025	.0010	0.005	.0002	0.025	.001
F	0.013	.0005	0.005	.0002	0.025	.001
C	0.025	.0010	0.013	.0005	0.025	.001
H	0.013	.0005	0.013	.0005	0.025	.001
E	0.025	.0010	0.025	.0010	0.025	.001
G	0.025	.0010	0.025	.0010	0.13	.005
J	0.05-0.15*	.002-.006*	0.005	.0002	0.025	.001
K	0.05-0.15*	.002-.006*	0.013	.0005	0.025	.001
L	0.05-0.15*	.002-.006*	0.025	.0010	0.025	.001
M	0.05-0.15*	.002-.006*	0.05-0.20*	.003-.008*	0.13	.005
N	0.05-0.15*	.002-.006*	0.05-0.20*	.003-.008*	0.025	.001
U	0.08-0.25*	.003-.010*	0.13-0.38*	.005-.015*	0.13	.005

* Depends on insert size

6 Insert thickness



Code			
mm	inch	mm	inch
1.59	1/16	01	1
2.38	3/32	02	1.5
3.18	1/8	03	2
3.97	5/32	T3	2.5
4.76	3/16	04	3
5.56	7/32	05	3.5
6.35	1/4	06	4
7.94	5/16	07	5
9.52	3/8	09	6

7 Corner radius

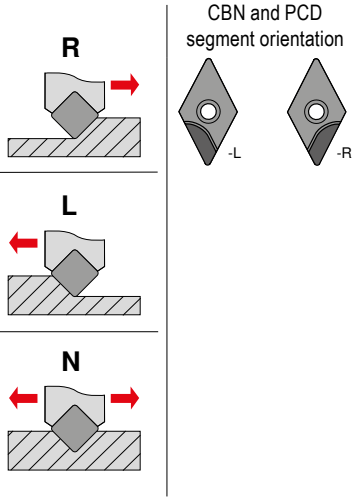


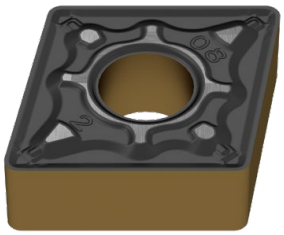
Code				RN 00 RC MO
mm	inch	mm	inch	
≤ 0.05	.0015	00	X0	
0.1	.004	01	0	
0.2	.008	02	.5	
0.4	1/64	04	1	
0.8	1/32	08	2	
1.2	3/64	12	3	
1.6	1/16	16	4	
2.0	5/64	20	5	
2.4	3/32	24	6	
2.8	7/64	28	7	
3.2	1/8	32	8	

8 Cutting edge

F	Sharp
E	rounded
T	chamfered
S	Chamfered and honed
K	Double-chamfered
P	Double-chamfered and honed
R	Round chamfer

9 Direction of cut





4 Characteristics

N	
R	
F	
A	
M, P	
G, P	
W	
T	
Q	
U	
B	
H	
C	
J	
X	Special version

inch
Change at inscribed circle
IK < 1/4"

IK > 1/4"	IK < 1/4"
N / R / F	E
A / M / G	D
X	X

5 Cutting length

Type	ISO	ANSI	L mm	L inch	IC mm	IC inch
C	06	2	6.4	.250	6.35	.250
	09	3	9.7	.382	9.525	.375
	12	4	12.9	.508	12.70	.500
	16	5	16,1	.634	15.875	.625
	19	6	19.3	.760	19.05	.750
	25	8	25.8	1.016	25.4	1.000
	32	12	35.24	1.269	31.75	1.250
S	06	2	6.35	.250	6.35	.250
	09	3	9.525	.375	9.525	.375
	12	4	12.7	.500	12.7	.500
	15	5	15.875	.625	15.875	.625
	19	6	19,05	.750	19.05	.750
	25	8	25.4	1.000	25.4	1.000
	31	10	31.75	1.250	31.75	1.250
D	07	2	7.7	.303	6.35	.250
	11	3	11.6	.457	9.525	.375
	15	4	15.5	.610	12.70	.500
V	11	2	11.1	.437	6.35	.250
	16	3	16.6	.653	9.525	.375
	22	4	22.10	.870	12.70	.500

Type	ISO	ANSI	L mm	L inch	IC mm	IC inch
T	06	1.2	6.9	.272	3.97	.156
	09	1.8	9.6	.378	5.56	.219
	11	2	11.0	.433	6.35	.250
	16	3	16.5	.650	9.525	.375
	22	4	22.	.079	12.70	.039
	27	5	27.5	1.083	15.875	.625
	33	6	33.0	1.299	19.05	.750
W	06	3	6.5	.256	9.525	.375
	08	4	8.7	.331	12.70	.039
	10	5	10.9	.429	15.875	.625
R	06	2	6.35	.250	6.35	.250
	08	-	8.0	.315	8.0	.315
	09	3	9.52	.375	9.52	.375
	10	-	10.0	.394	10.0	.394
	12*	-	12.0	.472	12.0	.472
	12	4	12.7	.488	12.70	.488
	15	5	15.875	.625	15.875	.625
	16	-	16.0	.630	16.0	.630
	19	6	19.05	.750	19.05	.750
	25	8	25.0	.984	25.0	.984
	25*	-	25.4	1.000	25.4	1.000
	31	10	31.75	1.250	31.75	1.250
	32	-	32.0	1.260	32.0	1.260

* inch version

10 Chamfer type



	mm	inch		
015	0.15	.006	A	05°
020	0.20	.008	B	10°
025	0.25	.010	C	15°
050	0.50	.020	D	20°
075	0.75	.030	E	25°
100	1.00	.040	F	30°
			G	35°

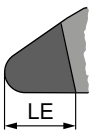
1) Two letters are assigned for double-chamfered cutting edges
e.g. BE =
chamfer angle 1 (y_1) = 10°
chamfer angle 2 (y_2) = 25°

11 Number of cutting edges

Single sided		Complete insert thickness	
A		T	
B		U	
C		V	
D		W	
G		X	
H		Y	

Double sided		Entire clamping flat	
K		S	
L		F	
M		E	
N			
P			
Q			

12 Segment length



Approx. specification in mm

13 Grade description

You can find a comprehensive chip breaker overview on → **page 215–221**

9

ISO designation system for tool holders

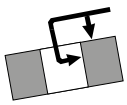
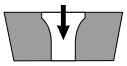
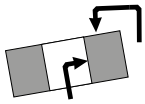
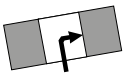
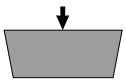
D	C	L	N	R	1	6	4	D	-	
1	2	3	4	5	6	7	9	8		11
P	C	L	N	R	20	20	K	12	-	T
1	2	3	4	5	6	7	8	9		10
UT50	-	P	C	L	N	R			-12	
0		1	2	3	4	5	6	7	8	9	10
HSK-T63	-	D	C	L	N	R			-12	
0		1	2	3	4	5	6	7	8	9	10

0 System/size

UT = UTS
according to ISO 26622
UT40 = UTS 40 mm
UT50 = UTS 50 mm
UT63 = UTS 63 mm

HSK-T
according to ISO 12164
HSK-T63 = 63 mm
HSK-T100 = 100 mm

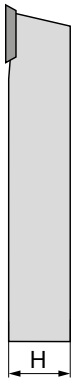
1 Tool holder

D	 Retained from above and via bore	**S**	 Retained via centre screw
M	 Retained from above and via bore	**P**	 Retained via the bore
C	 Retained from above	**X**	Special version

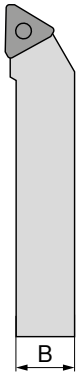
2 Insert shape

V	35°	Included angle	
D	55°		
E	75°		
C	80°		
M	86°		
K	55°	Included angle	
B	82°		
A	85°		
L	90°		Other shapes
P	108°		
H	120°		
O	135°		
R	-		
S	90°		
T	60°		
W	80°		

6 Shank height

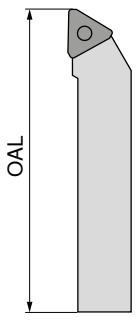


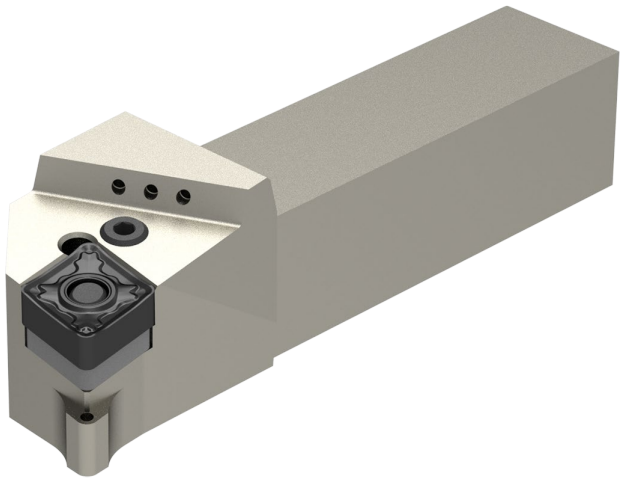
7 Shank width



8 Tool length

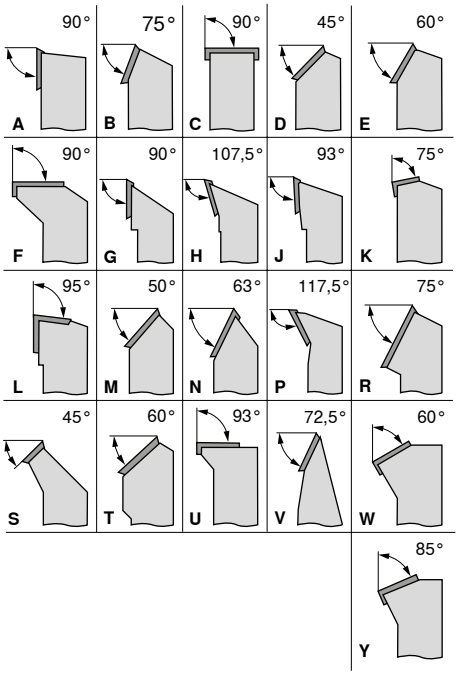
OAL			OAL		
mm	inch		mm	inch	
32	4.000	**A**	160	4.500	**N**
40	4.500	**B**	170	5.500	**P**
50	5.000	**C**	180	–	**Q**
60	6.000	**D**	200	6.000	**R**
70	7.000	**E**	250	7.000	**S**
80	8.000	**F**	300	8.000	**T**
90	5.500	**G**	350	5.500	**U**
100	5.625	**H**	400	3.500	**V**
110	5.300	**J**	450	3.500	**W**
125	14.000	**K**	500	3.750	**Y**
140	6.800	**L**	Special version		**X**
150	4.400	**M**			





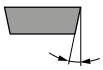
3

Style



4

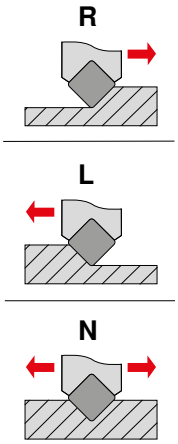
Clearance angle



	α		α
A	3°	F	25°
B	5°	G	30°
C	7°	N	0°
D	15°	P	11°
E	20°		
O	Clearance angles not included within the standard for which particular information is necessary.		

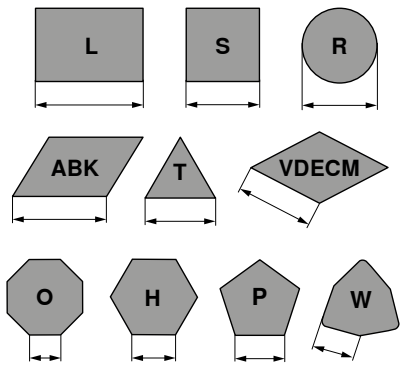
5

Direction of cut

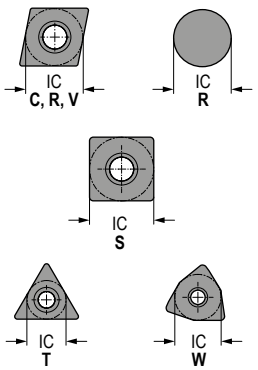


9

Cutting length



Inch inscribed circle dimensions



1.2	=	5/32
1.5	=	3/16
1.8	=	7/32
2	=	1/4
2.5	=	5/8
3	=	3/8
4	=	1/2
5	=	5/8
6	=	3/4
8	=	1
10	=	1 1/4

10

Manufacturer specification

T = Toggle
Special length (mm)
Insert thickness (deviating from standard)
Special version (X..)
Machine manufacturer (specific)
DC = DirectCooling

11

When required a supplementary symbol of maximum 3 letters may be added to the ISO code, separated by a dash, for example: W for wedge design.

ISO designation system for boring bars

		A	25	R		P	C	L	N	R	12	
		1	2	3		4	5	6	7	8	9	10
UT40	-		25	G	-	P	C	L	N	R	- 12	
0		1	2	3		4	5	6	7	8	9	10
HSK-T63	-		50	Q	-	D	C	L	N	R	- 12	
0		1	2	3		4	5	6	7	8	9	10

0 System/size

UT = UTS
according to ISO 26622
UT40 = UTS 40 mm
UT50 = UTS 50 mm
UT63 = UTS 63 mm

HSK-T
according to ISO 12164
HSK-T63 = 63 mm
HSK-T100 = 100 mm

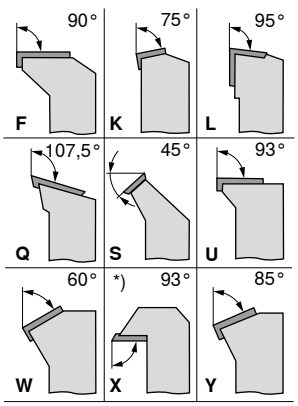
1 Shank type

S	Steel shank	**E**	As C with coolant hole
A	Steel shank with coolant hole	**F**	As C with antivibration system
B	Steel shank with antivibration system	**G**	As C with coolant hole and antivibration system
D	Steel shank with coolant hole and antivibration system	**H**	Heavy metal
C	Carbide shank with steel head	**J**	Heavy metal with coolant hole

5 Insert shape

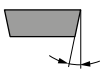
V	35°	Included angle	
D	55°		
E	75°		
C	80°		
M	86°		
K	55°	Included angle	
B	82°		
A	85°		
L	90°		Other shapes
P	108°		
H	120°		
O	135°		
R	-		
S	90°		
T	60°		
W	80°		

6 Style

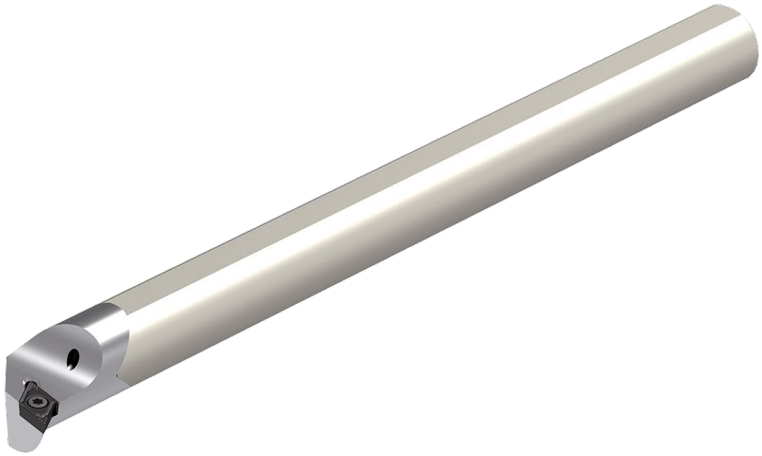


*) CERATIZIT factory standard

7 Clearance angle

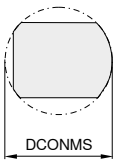


	α		α
A	3°	**F**	25°
B	5°	**G**	30°
C	7°	**N**	0°
D	15°	**P**	11°
E	20°		
O	Clearance angles not included within the standard for which particular information is necessary.		



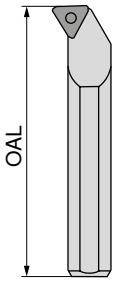
2 Shank type & size

DCONMS mm	DCONMS inch
08	A two-digit figure indicating the boring bar diameter in 1/16 of an inch.
10	
12	
16	
20	
25	
32	
40	
50	
60	

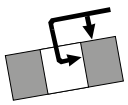
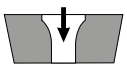
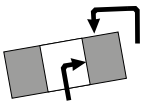
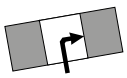
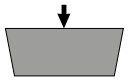


3 Tool length

OAL mm	OAL inch	
80	3	F
100	3.5	H
110	4	J
125	4.5	K
140	5	L
150	5.5	M
160	6	N
170	6.5	P
180	6.75	Q
200	7	R
250	8	S
300	10	T
350	12	U
400	14	V
450	16	W
500	18	Y
	20	
Special version		X

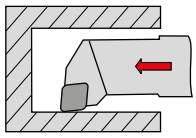


4 Clamping method

D  Retained from above and via bore	S  Retained via centre screw
M  Retained from above and via bore	P  Retained via the bore
C  Retained from above	X Special version

8 Direction of cut

R



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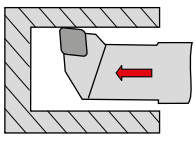
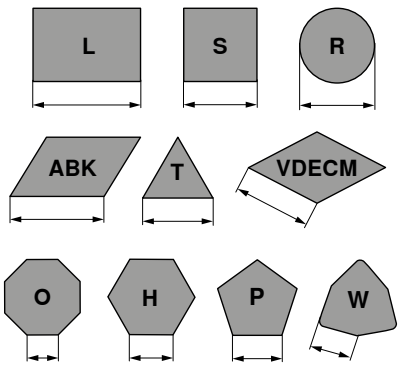


9 Cutting length



10 Manufacturer specification

T = Toggle
Special length (mm)
Insert thickness (deviating from standard)
Special version (X..)
Machine manufacturer (specific)

Types of wear

Wear on clearance face



Abrasion on flank: normal wear after a certain machining time

Cause
- Too high cutting speed
- Carbide grade with too low wear resistance
- Feed rate not adapted

Remedy
- Reduce cutting speed
- Use grade with higher wear resistance
- Adapt feed rate to cutting speed and cutting depth

Edge chipping



Through excessive mechanical stress at the cutting edge fracture and chipping can occur.

Cause
- Grade with too high wear resistance
- Vibration
- Too high cutting speed and / or feed rate
- Interrupted cut
- Swarf damage

Remedy
- Use tougher grade
- Use negative cutting edge geometry with chip groove
- Improve stability (tool, work piece)

Cratering



The hot chip which is being evacuated causes cratering at the rake face of the cutting edge.

Cause
- Too high cutting speed and / or feed rate
- Rake angle too shallow
- Grade with insufficient wear resistance
- Insufficient coolant supply

Remedy
- Reduce cutting speed and / or feed rate
- Use grade with higher wear resistance
- Increase coolant quantity and / or pressure, optimise coolant supply
- Use grade which is more resistant to cratering

Plastic deformation

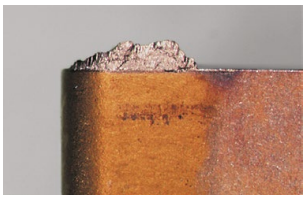


High machining temperature and simultaneous mechanical stress can lead to plastic deformation.

Cause
- Too high machining temperature resulting in softening of substrate
- Damage of coating
- Grade with insufficient wear resistance
- Insufficient coolant supply

Remedy
- Reduce cutting speed
- Use grade with higher wear resistance
- Provide cooling

Built-up edge



Built-up material / edges occur when the chip is not evacuated properly due to insufficient cutting temperature.

Cause
- Insufficient cutting speed
- Rake angle too shallow
- Wrong cutting material
- Lack of cooling / lubrication

Remedy
- Increase cutting speed
- Increase rake angle
- Apply TiN coating
- Use emulsion with higher concentration

Insert breakage

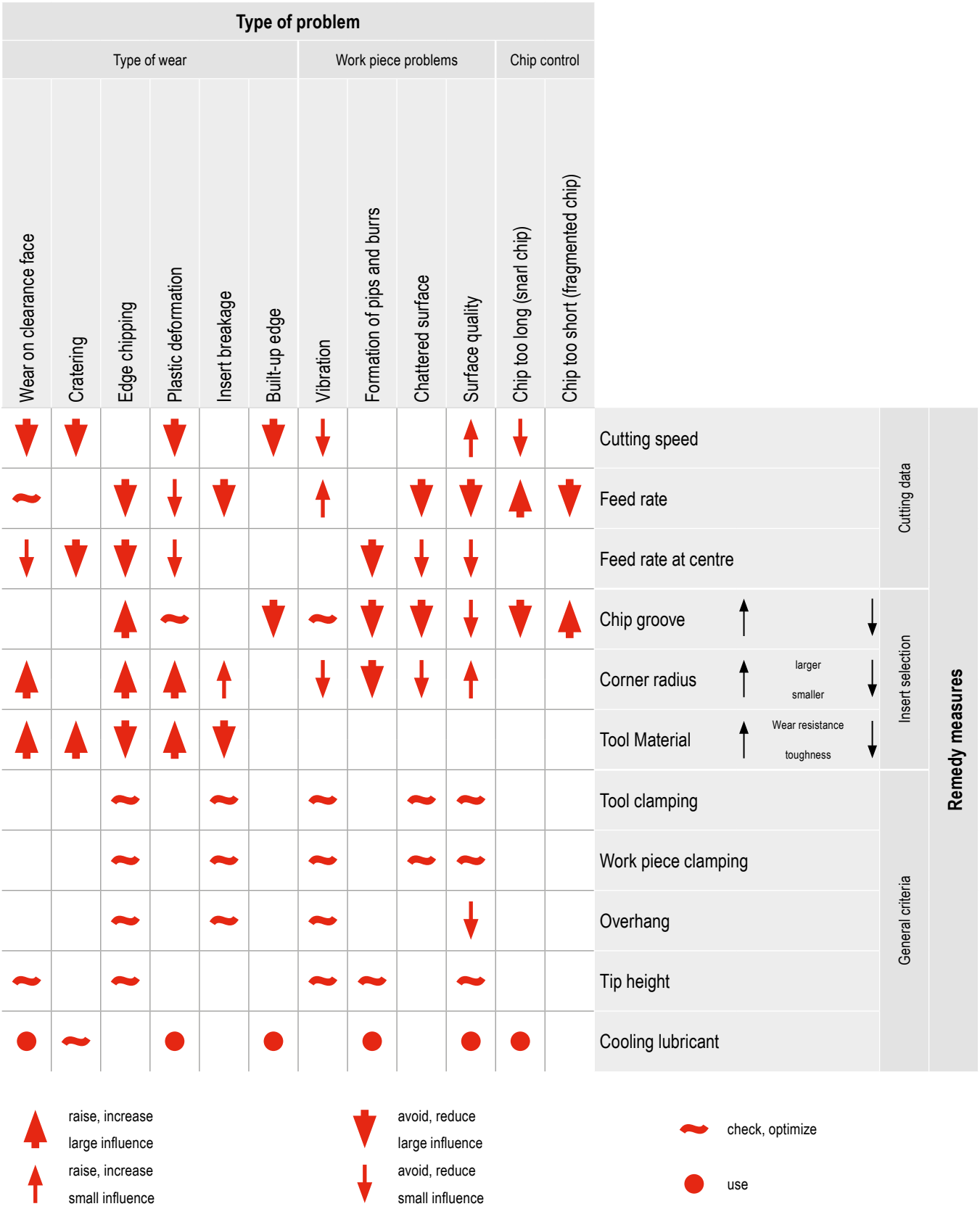


Excessive stress of the insert causes breakage.

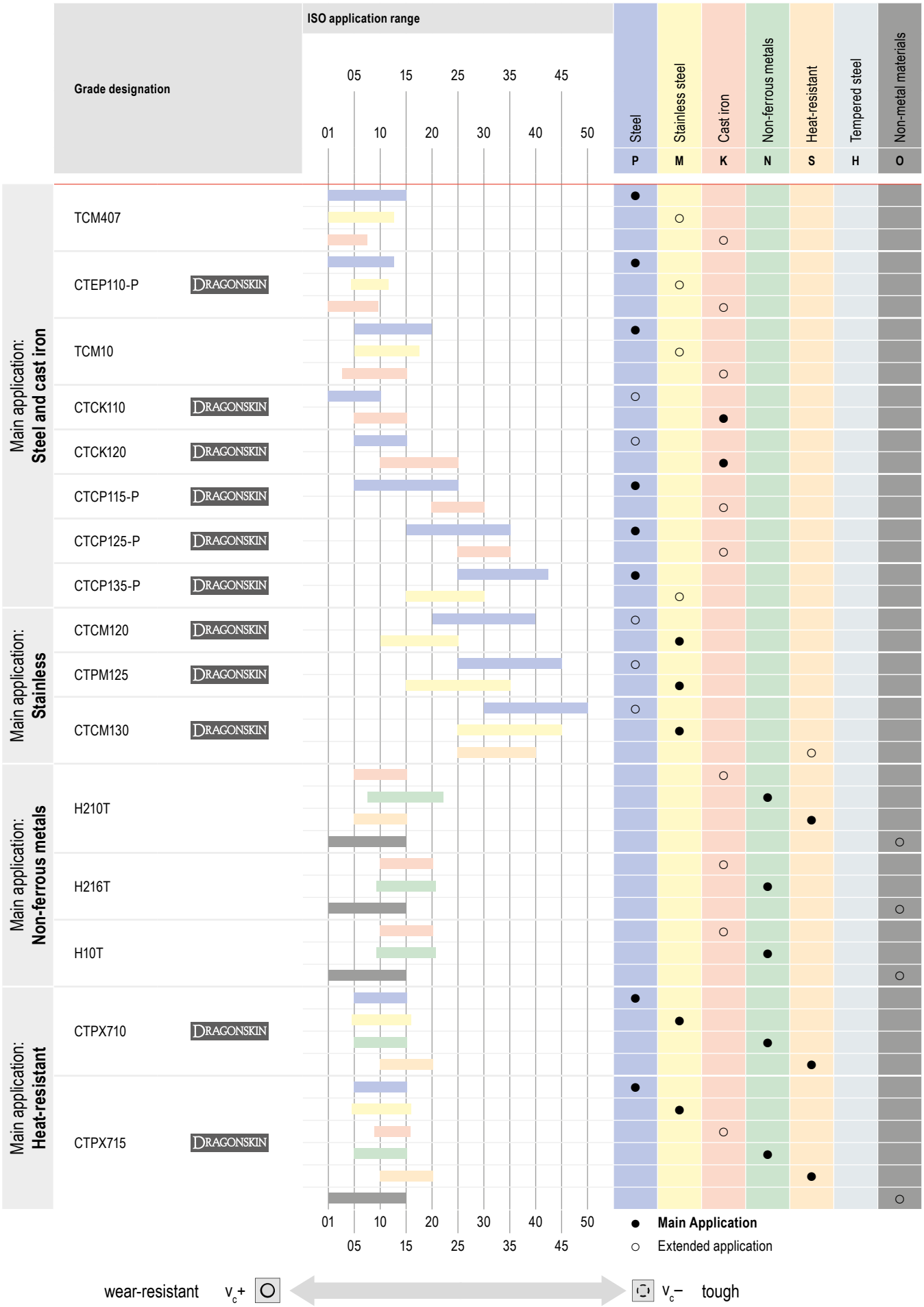
Cause
- Excessive stress of cutting material
- Lack of stability
- Clearance angle too small

Remedy
- Use tougher grade
- Use protective edge chamfer
- Increase edge hone
- Use geometry with higher stability

Recommendation for Optimum Results



Grades Overview



Grade description

TCM407

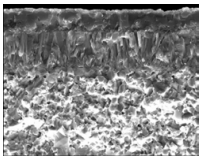


ISO | **P10** | M05 | K05

Specification:
Composition: Co 8.0%; WC 16.0%; TaNbC 10.0%; TiCN balance | Grain size: 2-3 µm | Hardness: HV30 1760

Usage recommendation:
The uncoated cermet grade for fine finishing steel materials.

CTEP110-P



ISO | **P10** | M10 | K05

Specifications:
Composition: Co/Ni 12.2%; additives 26.4%; Ti(C,N) balance | Grain size: 0.8-1.0 µm | Hardness: HV_{30} 1650 | Layer system: CVD TiCN-Al_2O_3 + TiN cover layer

Recommended use:
Coated cermet grade with reserves of toughness for finish machining at high cutting speeds.

TCM10

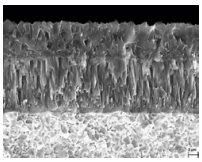


P15 | K10

Specification:
Composition: Cermet Co/Ni 12,2%; WC 15,0%; TaNbC 10,0%; TiCN balance | Grain size: 2-3 µm | Hardness: HV_{30} 1650

Usage recommendation:
The uncoated cermet grade for finishing steel, stainless steel and tempered steel.

CTCK110

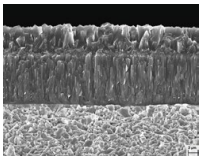


ISO | P10 | **K10**

Specification:
Composition: Co 5.0%, mixed carbides 2.0%, WC balance | Grain size: 1-2 µm | Hardness: HV30 1730 | Layer system: CVD TiCN-Al2O3

Usage recommendation:
The wear-resistant grade for machining cast iron materials and steels at high cutting speeds with a continuous cut.

CTCK120

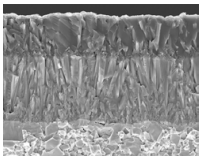


ISO | P20 | **K20**

Specification:
Composition: Co 6.0%; TaC 2.0%; WC balance | Grain size: 1 µm | Hardness: HV_{30} 1630 | Coating specification: CVD TiCN-Al_2O_3

Recommended application:
The grade for cast iron machining with high toughness reserves for difficult conditions and interrupted cut

CTCP115-P

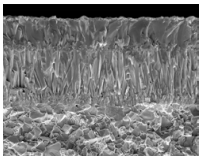


ISO | **P15** | K25

Specification:
Composition: Co 5.5%; mixed carbides 6.4%; WC balance | Grain size: 1 µm | Hardness: HV_{30} 1530 | Layer system: CVD TiCN-Al_2O_3

Usage recommendation:
The wear-resistant high-performance grade for steel machining with stable conditions and a continuous cut.

CTCP125-P

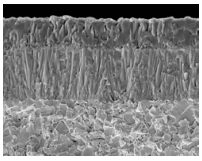


ISO | **P25** | K30

Specification:
Composition: Co 7.0%, mixed carbides 6.0%, WC balance | Grain size: 1-2 µm | Hardness: HV_{30} 1500 | Layer system: CVD TiCN-Al_2O_3

Usage recommendation:
The first choice for the universal machining of steels.

CTCP135-P



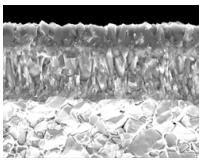
ISO | **P35** | M25

Specification:
Composition: Co 9.6%, mixed carbides 7.8%, WC balance | Grain size: 1-2 µm | Hardness: HV_{30} 1460 | Layer system: CVD TiCN-Al_2O_3

Usage recommendation:
The tough alternative for extremely interrupted cutting conditions.

Grade description

CTCM120

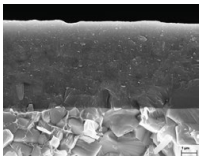


ISO | P15 | **M20**

Specification:
Composition: Co 7%, mixed carbides 6%, WC balance | Grain size: 1-2 µm | Hardness: HV_{30} 1500 | Layer system: CVD TiCN-Al_2O_3

Usage recommendation:
Wear-resistant carbide grade for austenitic, stainless steel with the best levels of performance with a smooth cut.

CTPM125

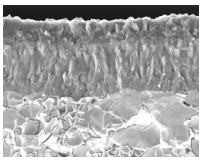


ISO | P35 | **M25**

Specification:
Composition: Co 9.6%; mixed carbides 7.8%; others 0.4%; WC balance | Grain size: 1 - 2 µm | Hardness: HV_{30} 1460 | Coating specification: PVD TiAlTaN

Recommended application:
The first choice for the machining of austenitic steels

CTCM130

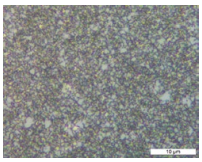


ISO | P25 | **M30** | S30

Specification:
Composition: Co 9.6%, mixed carbides 7.8%, WC balance | Grain size: 1-2 µm | Hardness: HV_{30} 1460 | Layer system: CVD TiCN-Al_2O_3

Usage recommendation:
Robust turning grade for austenitic stainless steel with interrupted cuts.

H210T



ISO | K10 | **N10 | S10** | O10

Specification:
Composition: Co 6.0%; WC balance | Grain size: 0.8 µm | Hardness: HV_{30} 1850

Recommended application:
The wear-resistant uncoated carbide grade for the machining of aluminium and other non-ferrous metals.

H10T

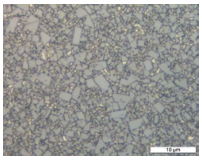


ISO | K15 | **N15** | S15 | O10

Specification:
Composition: Co 6.0%; WC balance | Grain size: 1 µm | Hardness: HV_{30} 1630

Recommended application:
The uncoated carbide grade for the machining of aluminium and other non-ferrous metals

H216T

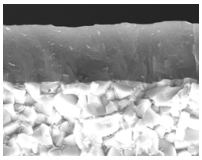


ISO | K15 | **N15** | S15 | O10

Specification:
Composition: Co 6.0%; WC balance | Grain size: 1 µm | Hardness: HV_{30} 1630

Recommended application:
The uncoated carbide grade for the machining of aluminium and other non-ferrous metals

CTPX710

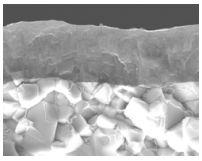


ISO | **P10 | M10** | K10 | **N10 | S15**

Specification:
Composition: Co 6.0%; WC balance | Grain size: 0.8 µm | Hardness: HV_{30} 1820 | Layer system: PVD AlTiN

Usage recommendation:
The universal carbide grade for the most demanding machining requirements on multiple materials.

CTPX715

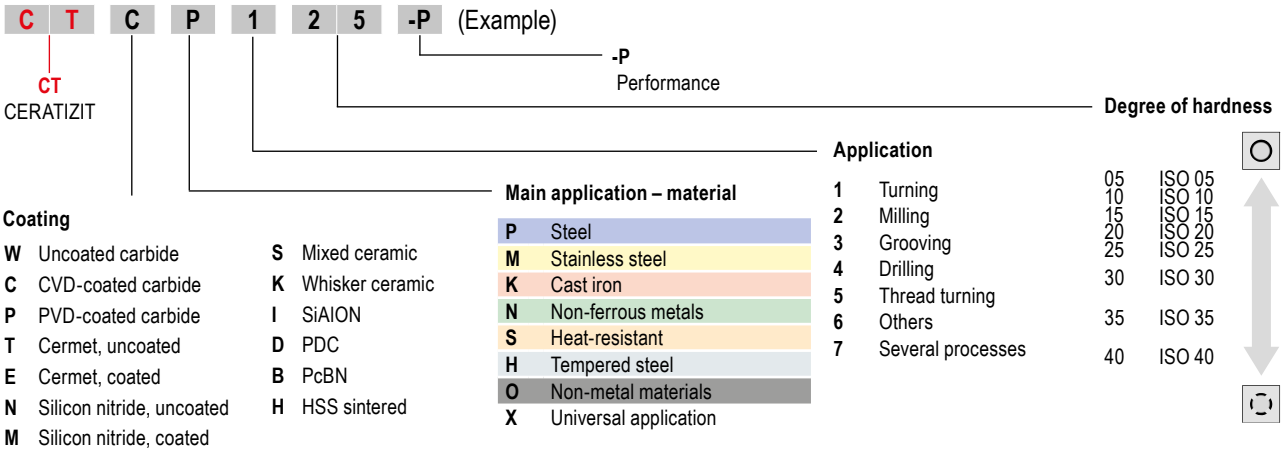


ISO | **P15 | M15** | K15 | **N15 | S20** | O10

Specification:
Composition: Co 6.0%; WC balance | Grain size: 1 µm | Hardness: HV_{30} 1650 | Layer system: PVD AlTiN

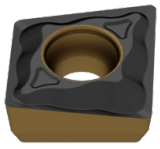
Usage recommendation:
The universal carbide grade for the most demanding machining requirements on multiple materials.

Grade description



New products for machining technicians

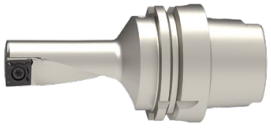
NEW ISO-P indexable inserts



Update of the reliable CVD EcoCut grades CTCP425 / CTCP435. With the update, the grades are more wear-resistant and have a wear-detection coating layer.

→ Page 13

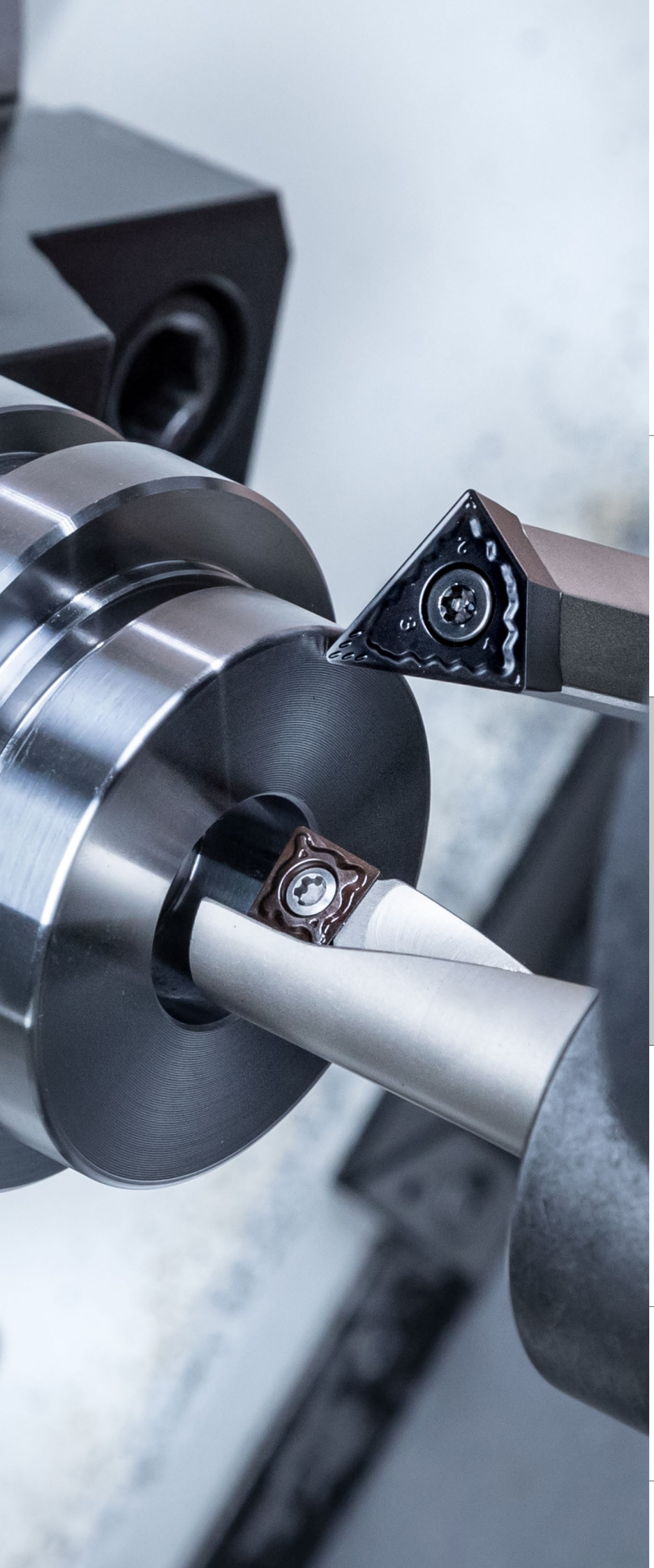
NEW EcoCut Classic with direct machine interface





The new EcoCut Classic product range with direct machine interface performs the same application functions as all other EcoCut Classic tools, but the new monotools impress when it comes to stability – and therefore run quietly and very reliably. Furthermore, chip removal has been optimised thanks to the updated chip space, guaranteeing process security.

→ Page 20+21



Solid drilling and bore machining	Metric Catalog	HSS drilling	1
	Metric Catalog	Solid carbide drilling	2
		Indexable drilling	3
		Reaming and Countersinking	4
		Indexable Boring	5
Threading	Metric Catalog	Taps and thread formers	6
	Metric Catalog	Circular and Thread Milling	7
	Metric Catalog	Thread turning	8
Turning		Indexable Turning	9
		Multifunction	**10**
		Parting and Grooving	11
	Metric Catalog	Miniature turning tools	12
Milling	Metric Catalog	HSS Milling Cutters	13
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Clamping technology		Adaptors and Accessories	16
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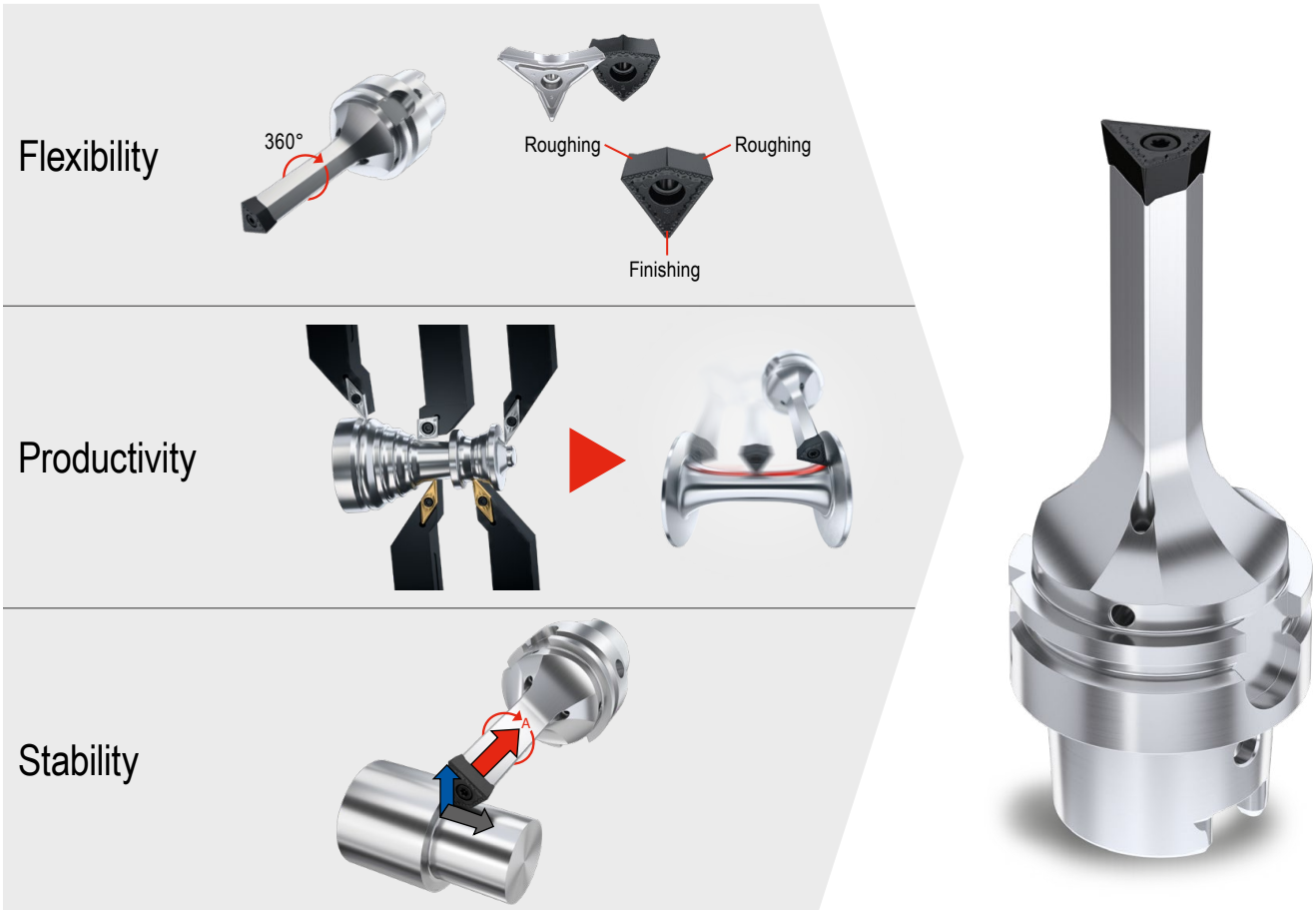
CERATIZIT \ Performance

Premium quality tools for high performance.

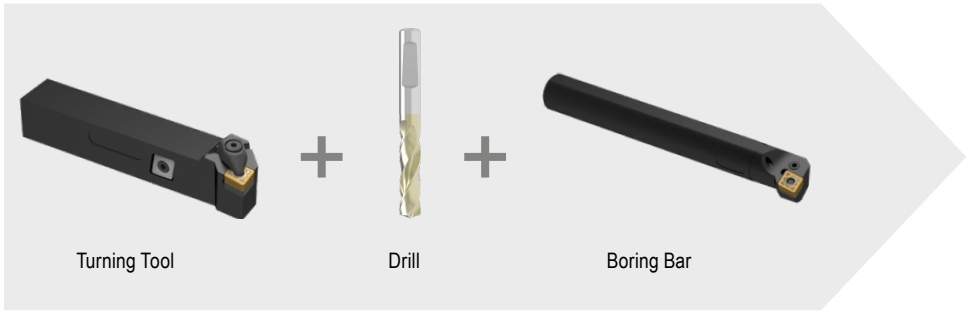
The premium quality tools from the **CERATIZIT Performance** product line have been designed for specific applications and are distinguished by their outstanding performance. If you make high demands on the performance of your production and want to achieve the very best results, we recommend the Premium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

Advantages of FreeTurn



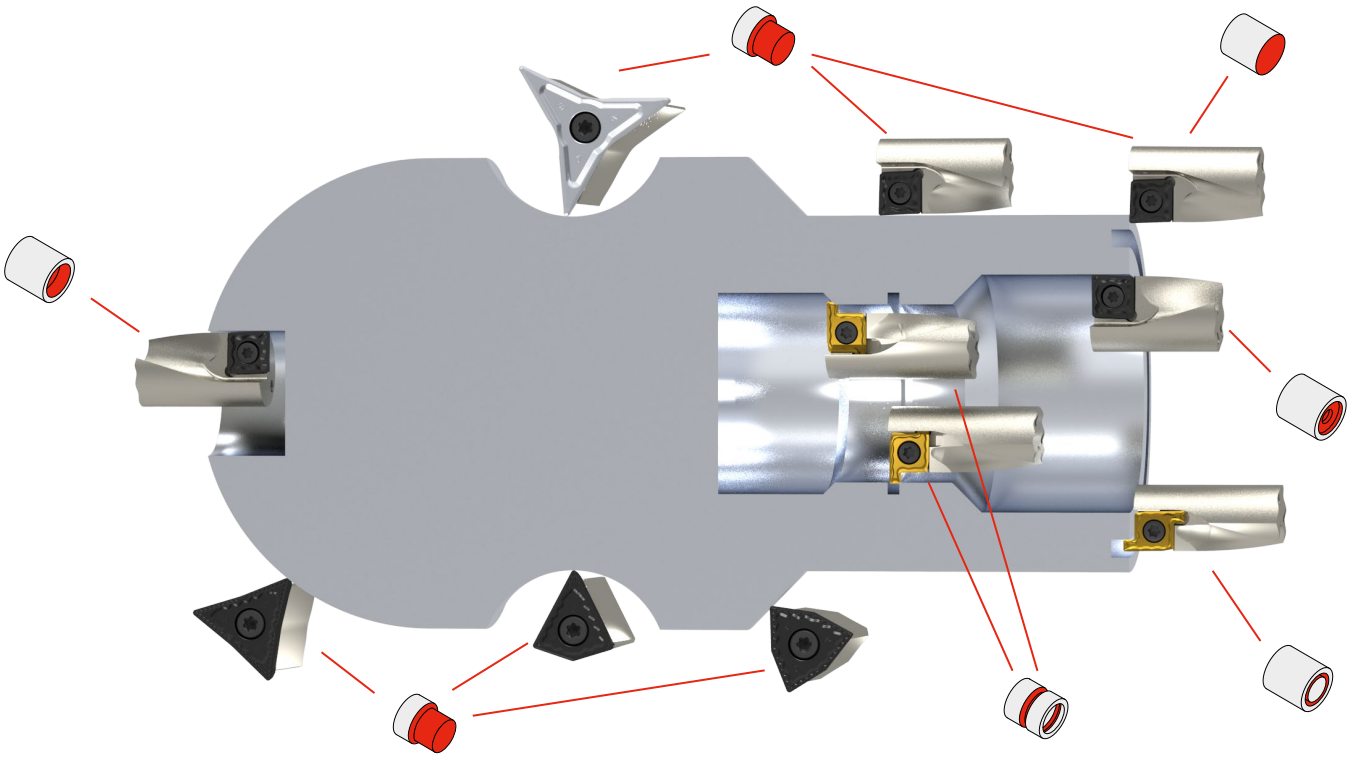
Advantages of EcoCut

- ▲ reduced machining time
- ▲ reduced need for tool positions
- ▲ generates flat bottom of hole
- ▲ less programming
- ▲ lower set-up costs / reduced setting time
- ▲ time savings due to fewer tool changes





Application examples



Symbol explanation


Turning outside profiles


Face turning


Drilling into solid material


Turning internal profiles


External / internal radial grooving

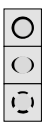

Axial grooving


Internal coolant supply

-28P — Polished chip breaker
H216T — Carbide Grade

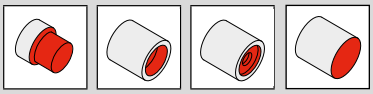
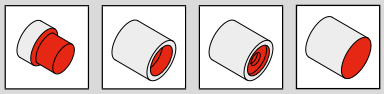
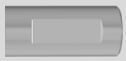
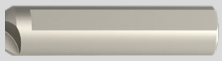
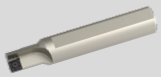
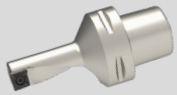
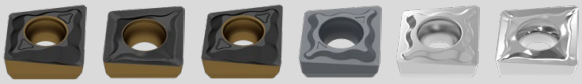
F	Fine Machining
M	Medium Machining
R	Rough Machining





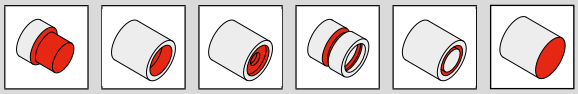
Smooth cut
Irregular cutting depth
Interrupted cut

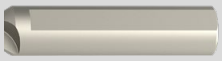
Toolfinder

Tool system	EcoCut Mini	EcoCut Classic
Application		
Machine interface	  → 10–12 Adapter for EcoCut Mini	  HSK-T 63  PSC 50 PSC 63
Lengths and diameters Versions	2.25xD Ø 0.078–0.314" 4xD Ø 0.078–0.314"  → 8 2.25xD Ø 0.078–0.314" 4xD Ø 0.078–0.314"  → 9	1.5xD Ø 0.314–1.260" Ø 8–32 mm  → 14+15 2.25xD Ø 0.314–1.260" Ø 8–32 mm  → 16+17 3xD Ø 0.314–1.260" Ø 8–32 mm  → 18+19 2.25xD Ø 16–32 mm  HSK-T → 20 2.25xD Ø 16–32 mm  PSC → 21
Cutting material designation	CTPP435	CTPP435	CTWN425	CTWN425	CTCP425-P	-M50Q CTCP425-P	CTCP435-P	CTPP430	-27P H216T	-27Q H210T
Cutting conditions	DRAGONSKIN	DRAGONSKIN			DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN		
										
	Solid carbide	Solid carbide	Solid carbide	Solid carbide	M	M	M	M	M	M
	Left-hand	Right-hand	Left-hand	Right-hand	XCNT	XCNT	XCNT	XCNT	XCET	XCET
Application range	● ● ○ ○ ● ○	● ● ○ ○ ● ○	○ ● ○	○ ● ○	● ○ ○	● ○ ○	● ○ ○	● ● ○	○ ● ○	○ ● ●
Page No.	○ → 8	○ → 8	○ → 9	○ → 9	○ → 13	○ → 13	○ → 13	○ → 13	○ → 13	○ → 13
	→ v_c Page 36+37				→ v_c Page 36+37					

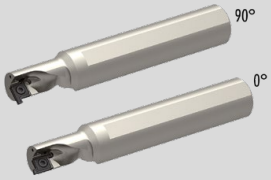
→ **Page 56**
EcoCut tools are suitable for off-centre drilling. This permits certain deviations from the nominal tool diameter to be achieved.

EcoCut ProfileMaster



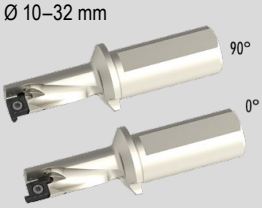


1.5xD
Ø 0.394–1.260"
Ø 10–32 mm



→ 24+25

2.25xD
Ø 0.394–1.260"
Ø 10–32 mm



→ 26+27

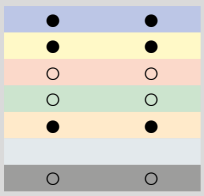
-M20
CTPP430

DRAGONSKIN



M

PM-R



→ 22+23

-M20
CTPP430

DRAGONSKIN

M

PM-L

→ 22+23

→ v_c Page 36+37

FreeTurn





HSK-T 63



PSC 63

HSK-T
LPR = 3.937"
LPR = 4.921"



→ 31+34

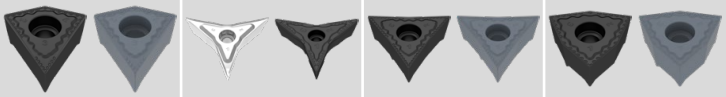
PSC
LPR = 3.937"
LPR = 4.921"



→ 32+34

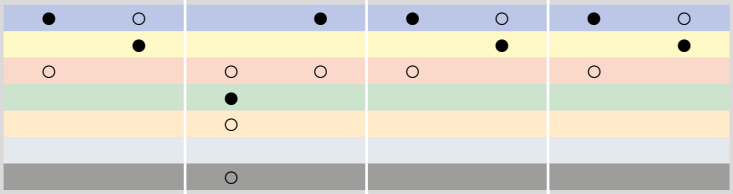
CTCP125 | CTPM125 | -28P H216T | -F CTCP125 | CTCP125 | CTPM125 | CTCP125 | CTPM125

DRAGONSKIN



M M F | F F F | F F F | M M M

FT15 . 808055... | FT15 . 353535... | FT15 . 555555... | FT17 . 808080...



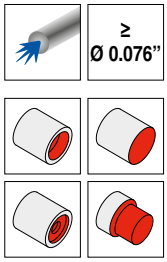
→ 28 → 28 | → 29 → 29 | → 30 → 30 | → 33 → 33

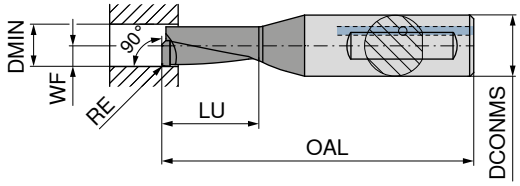
→ v_c Page 38+39

10

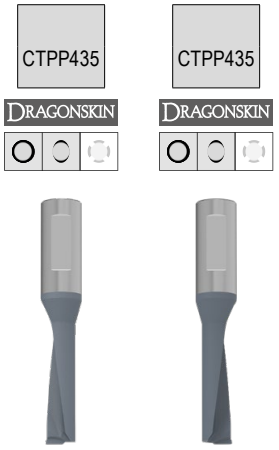
EcoCut – Mini

▲ Drilling and turning tool for small diameters





Illustrations show right-hand versions

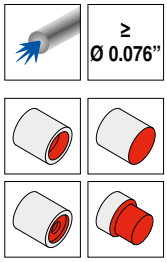


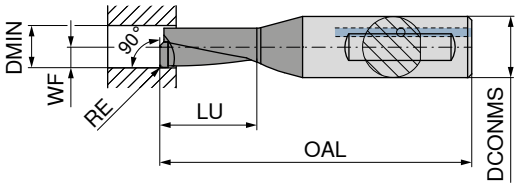
Designation	DMIN inch	DCONMS inch	OAL inch	LU inch	WF inch	RE inch	Solid carbide Left-hand 70 805 ...	Solid carbide Right-hand 70 804 ...
ECM 02 R/L 2,25D	0.079	0.157	1.102	0.177	0.039	0.004	320	320
ECM 02 R/L 4,00D	0.079	0.157	1.220	0.315	0.039	0.004	321	321
ECM 02,5 R/L 2,25D	0.098	0.157	1.142	0.222	0.049	0.004	325	325
ECM 02,5 R/L 4,00D	0.098	0.157	1.299	0.394	0.049	0.004	326	326
ECM 03 R/L 2,25D	0.118	0.157	1.220	0.266	0.059	0.004	330	330
ECM 03 R/L 4,00D	0.118	0.157	1.378	0.472	0.059	0.004	331	331
ECM 03,5 R/L 2,25D	0.138	0.157	1.260	0.310	0.069	0.004	335	335
ECM 03,5 R/L 4,00D	0.138	0.157	1.457	0.551	0.069	0.004	336	336
ECM 04 R/L 2,25D	0.157	0.236	1.378	0.354	0.079	0.008	300	300
ECM 04 R/L 4,00D	0.157	0.236	1.614	0.630	0.079	0.008	301	301
ECM 05 R/L 2,25D	0.197	0.236	1.457	0.443	0.098	0.008	302	302
ECM 05 R/L 4,00D	0.197	0.236	1.772	0.787	0.098	0.008	303	303
ECM 06 R/L 2,25D	0.236	0.315	1.496	0.531	0.118	0.008	306	306
ECM 06 R/L 4,00D	0.236	0.315	1.929	0.945	0.118	0.008	312	312
ECM 07 R/L 2,25D	0.276	0.315	1.654	0.620	0.138	0.008	308	308
ECM 07 R/L 4,00D	0.276	0.315	2.087	1.102	0.138	0.008	314	314
ECM 08 R/L 2,25D	0.315	0.315	1.772	0.709	0.157	0.008	310	310
ECM 08 R/L 4,00D	0.315	0.315	2.244	1.260	0.157	0.008	316	316
P							●	●
M							●	●
K							○	○
N							○	○
S							●	●
H								
O							○	○

→ v_c Page 36+37

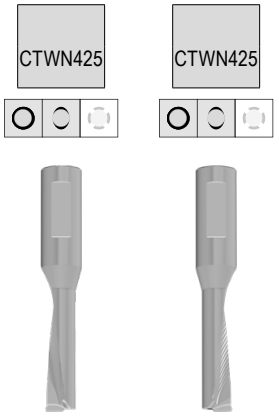
EcoCut – Mini

▲ Drilling and turning tool for small diameters





Illustrations show right-hand versions



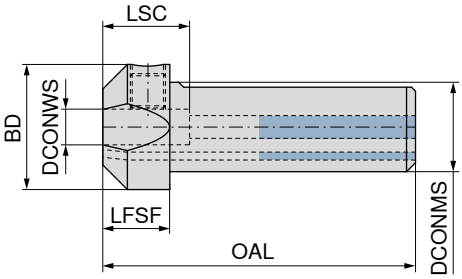
Designation	DMIN inch	DCONMS inch	OAL inch	LU inch	WF inch	RE inch	Solid carbide Left-hand 70 805 ...		Solid carbide Right-hand 70 804 ...
ECM 02 R/L 2,25D AL	0.079	0.157	1.102	0.177	0.039	0.004	**420**		**420**
ECM 02 R/L 4,00D AL	0.079	0.157	1.220	0.315	0.039	0.004	**421**		**421**
ECM 02,5 R/L 2,25D AL	0.098	0.157	1.142	0.222	0.049	0.004	**425**		**425**
ECM 02,5 R/L 4,00D AL	0.098	0.157	1.299	0.394	0.049	0.004	**426**		**426**
ECM 03 R/L 2,25D AL	0.118	0.157	1.220	0.266	0.059	0.004	**430**		**430**
ECM 03 R/L 4,00D AL	0.118	0.157	1.378	0.472	0.059	0.004	**431**		**431**
ECM 03,5 R/L 2,25D AL	0.138	0.157	1.260	0.310	0.069	0.004	**435**		**435**
ECM 03,5 R/L 4,00D AL	0.138	0.157	1.457	0.551	0.069	0.004	**436**		**436**
ECM 04 R/L 2,25D AL	0.157	0.236	1.378	0.354	0.079	0.008	**450**		**450**
ECM 04 R/L 4,00D AL	0.157	0.236	1.614	0.630	0.079	0.008	**451**		**451**
ECM 05 R/L 2,25D AL	0.197	0.236	1.457	0.443	0.098	0.008	**452**		**452**
ECM 05 R/L 4,00D AL	0.197	0.236	1.772	0.787	0.098	0.008	**453**		**453**
ECM 06 R/L 2,25D AL	0.236	0.315	1.496	0.531	0.118	0.008	**456**		**456**
ECM 06 R/L 4,00D AL	0.236	0.315	1.929	0.945	0.118	0.008	**462**		**462**
ECM 07 R/L 2,25D AL	0.276	0.315	1.654	0.620	0.138	0.008	**458**		**458**
ECM 07 R/L 4,00D AL	0.276	0.315	2.087	1.102	0.138	0.008	**464**		**464**
ECM 08 R/L 2,25D AL	0.315	0.315	1.772	0.709	0.157	0.008	**460**		**460**
ECM 08 R/L 4,00D AL	0.315	0.315	2.244	1.260	0.157	0.008	**466**		**466**
P									
M									
K							○		○
N							●		●
S							○		○
H									
O							○		○

→ v_c Page 36+37

EcoCut – Adapter Mini

Scope of supply:
Toolholder with one clamping screw







Designation	DCONWS inch	DCONMS inch	BD inch	OAL inch	LFSF inch	LSC inch	70 800 ...
EC-ADX12-04-E	0.157	0.750	0.984	2.500	0.551	0.709	**719**
EC-ADX12-06-E	0.236	0.750	0.984	2.500	0.551	0.709	**986**
EC-ADX12-08-E	0.315	0.750	0.984	2.500	0.551	0.709	**988**


Clamping screw

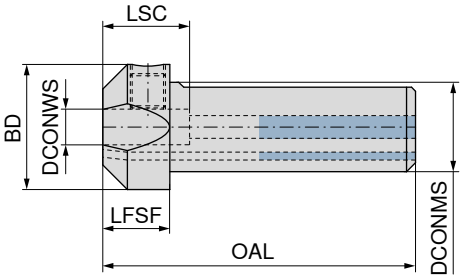
Spare parts DCONWS		70 950 ...
0.157	M5x10 ISO 4026	**867**
0.236	M8x1x8 - SW4	**123**
0.315	M8x1x8 - SW4	**123**

Metric Adaptors can be found in our Metric Catalogue 2024, in the Metric eCatalog 2024 and in the online shop at cuttingtools.ceratizit.com

EcoCut – Adapter Mini

Scope of supply:
Toolholder with one clamping screw







Designation	DCONWS mm	DCONMS mm	BD mm	OAL mm	LFSF mm	LSC mm	70 800 ...
EC-ADX16-04	4	16	22	59	14	18	**716**
EC-ADX20-04	4	20	25	64	14	18	**720**
EC-ADX16-06	6	16	22	59	14	18	**976**
EC-ADX20-06	6	20	25	64	14	18	**996**
EC-ADX16-08	8	16	22	59	14	18	**978**
EC-ADX20-08	8	20	25	64	14	18	**998**


Clamping screw

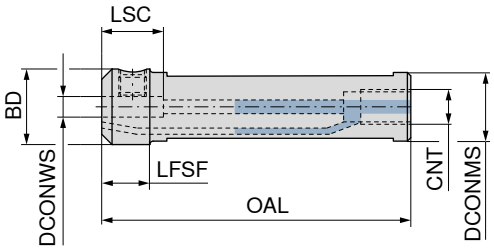
Spare parts DCONWS		70 950 ...
4	M5x10 ISO 4026	**867**
6	M8x1x8 - SW4	**123**
8	M8x1x8 - SW4	**123**

Metric Adaptors can be found in our Metric Catalogue 2024, in the Metric eCatalog 2024 and in the online shop at cuttingtools.ceratizit.com

EcoCut – Mini adapter with coolant connection thread

Scope of supply:
Toolholder with one clamping screw







Designation	DCONWS mm	DCONMS mm	BD mm	OAL mm	LFSF mm	LSC mm	CNT	70 801 ...
ECA 16-04	4	16	20.0	75	14	18	G 1/8	**716**
ECA 20-04	4	20	19.6	90	14	18	G 1/8	**720**
ECA 22-04	4	22	21.6	110	14	18	G 1/8	**722**
ECA 16-06	6	16	22.0	75	14	18	G 1/8	**816**
ECA 20-06	6	20	22.0	90	14	18	G 1/8	**820**
ECA 22-06	6	22	21.6	110	14	18	G 1/8	**822**
ECA 16-08	8	16	22.0	75	14	18	G 1/8	**916**
ECA 20-08	8	20	22.0	90	14	18	G 1/8	**920**
ECA 22-08	8	22	21.6	110	14	18	G 1/8	**922**

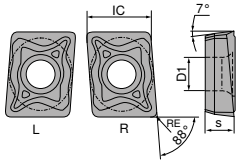

Clamping screw

Spare parts DCONWS		70 950 ...
4	M5X8 - DIN 913	**13200**
6	M8x1x8 - SW4	**123**
8	M8x1x8 - SW4	**123**

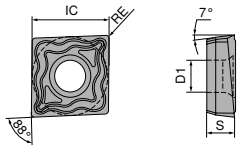
Metric Adaptors can be found in our Metric Catalogue 2024, in the Metric eCatalog 2024 and in the online shop at cuttingtools.ceratizit.com

XCNT / XCET

Designation	S inch	D1 inch	IC inch
XC.T 0401..	0.071	0.083	0.177
XC.T 0502..	0.083	0.089	0.228
XC.T 0602..	0.094	0.098	0.256
XC.T 0703..	0.125	0.110	0.299
XC.T 0803..	0.125	0.134	0.335
XC.T 09T3..	0.156	0.134	0.378
XC.T 10T3..	0.156	0.173	0.417
XC.T 1304..	0.187	0.209	0.531
XC.T 1705..	0.219	0.209	0.689

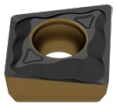
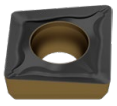
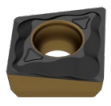
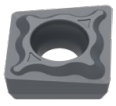
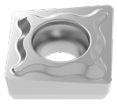


XC. T 04..



XC. T 05../06../07../08../09../10../13../17..

XCNT / XCET

	NEW	NEW	NEW			
	-EN CTCP425-P	-M50Q CTCP425-P	-EN CTCP435-P	-EN CTPP430	-27P H216T	-27Q H210T
	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN		
						
	M	M	M	M	M	M
	XCNT	XCNT	XCNT	XCNT	XCET	XCET
	70 386 ...	70 386 ...	70 386 ...	70 386 ...	70 286 ...	70 286 ...
ISO	RE inch					
040102EL	0.008	72001		82001	920		
040102ER	0.008	72201		82201	922		
040102FL	0.008					620	120
040102FR	0.008					622	122
040104EL	0.016	70001	75001	80001	900		
040104ER	0.016	70201	75201	80201	902		
040104FL	0.016					600	100
040104FR	0.016					602	102
050202EN	0.008	72301		82301	923		
050202FN	0.008					623	123
050204EN	0.016	70301	75301	80301	903		
050204FN	0.016					603	103
060202EN	0.008	72401		82401	924		
060202FN	0.008					624	124
060204EN	0.016	70401	75401	80401	904		
060204FN	0.016					604	104
070304EN	0.016	70501	75501	80501	905		
070304FN	0.016					605	105
080304EN	0.016	70601	75601	80601	906		
080304FN	0.016					606	106
09T304EN	0.016	70701	75701	80701	907		
09T304FN	0.016					607	107
10T304EN	0.016	70801	75801	80801	908		
10T304FN	0.016					608	108
10T308EN	0.031	73801	78801	83801	938		
10T308FN	0.031					628	128
130404EN	0.016	71001	76001	81001	910		
130404FN	0.016					610	110
130408EN	0.031	74001	79001	84001	940		
130408FN	0.031					611	111
170508EN	0.031	71201	76201	81201	912		
170508FN	0.031					612	112
P		●	●	●	●		
M		○	○	○	●		
K		○	○	○	○	●	○
N					○	●	●
S				○	○	○	●
H							
O					○	○	○

→ v_c Page 36+37

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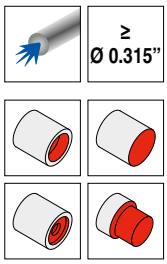
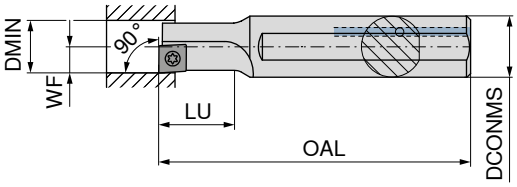
EcoCut – Classic 1.5xD

▲ Drilling and turning tool

Scope of supply:

Toolholder with one clamping screw, two spare screws and a screwdriver





Illustrations show right-hand versions



	Left-hand	Right-hand
	78 805 ...	78 804 ...

Designation	DMIN inch	DCONMS inch	OAL inch	LU inch	WF inch	torque moment Nm	Insert		
ECC 08 L 1,5D 04-E	0.315	0.500	3.100	0.470	0.157	0.4	XC.T 0401..EL	**00800**[2]	
ECC 08 R 1,5D 04-E	0.315	0.500	3.100	0.470	0.157	0.4	XC.T 0401..ER		**00800**[1]
ECC 10 R/L 1,5D 05-E	0.394	0.500	3.500	0.590	0.197	0.7	XC.T 0502..	**01000**	**01000**
ECC 12 R/L 1,5D 06-E	0.472	0.625	3.900	0.710	0.236	1.0	XC.T 0602..	**01200**	**01200**
ECC 14 R/L 1,5D 07-E	0.551	0.625	4.300	0.830	0.276	1.2	XC.T 0703..	**01400**	**01400**
ECC 16 R/L 1,5D 08-E	0.630	0.750	4.900	0.940	0.315	2.2	XC.T 0803..	**01600**	**01600**
ECC 18 R/L 1,5D 09-E	0.709	1.000	5.300	1.060	0.354	2.2	XC.T 09T3..	**01800**	**01800**
ECC 20 R/L 1,5D 10-E	0.787	1.000	5.900	1.180	0.394	3.2	XC.T 10T3..	**02000**	**02000**
ECC 25 R/L 1,5D 13-E	0.984	1.250	7.000	1.480	0.492	5.0	XC.T 1304..	**02500**	**02500**
ECC 32 R/L 1,5D 17-E	1.260	1.500	7.800	1.890	0.630	5.0	XC.T 1705..	**03200**	**03200**

1) Note! Right-hand insert on right-hand tool
2) Note! Left-hand insert on left-hand tool



Screwdriver



Clamping screw

		80 950 ...		70 950 ...
Spare parts				
Insert				
XC.T 0401..EL	T06 - IP	**123**	M1.8x3.6 - IP	**862**
XC.T 0401..ER	T06 - IP	**123**	M1.8x3.6 - IP	**862**
XC.T 0502..	T06 - IP	**123**	M2x4.3 - IP	**863**
XC.T 0602..	T07 - IP	**124**	M2.2x5 - IP	**856**
XC.T 0703..	T08 - IP	**125**	M2.5x6 - IP	**857**
XC.T 0803..	T09 - IP	**126**	M3x7 - IP	**819**
XC.T 09T3..	T09 - IP	**126**	M3x7 - IP	**819**
XC.T 10T3..	T15 - IP	**128**	M3.5x8.6 - IP	**859**
XC.T 1304..	T20 - IP	**129**	M4.5x10.5 - IP	**864**
XC.T 1705..	T20 - IP	**129**	M4.5x10.5 - IP	**864**

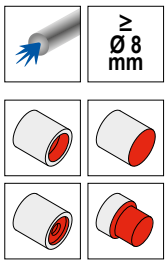
Metric Adaptors can be found in our Metric Catalogue 2024, in the Metric eCatalog 2024 and in the online shop at cuttingtools.ceratizit.com

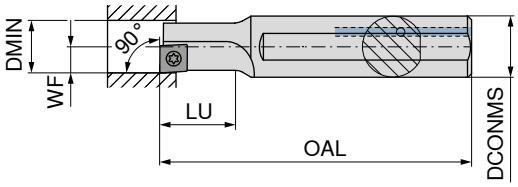
EcoCut – Classic 1.5xD

▲ Drilling and turning tool

Scope of supply:

Toolholder with 1 clamping screw + 2 spare screws and screwdriver





Illustrations show right-hand versions



Left-hand



Right-hand

Designation	DMIN mm	DCONMS mm	OAL mm	LU mm	WF mm	torque moment Nm	Insert	70 805 ...	70 804 ...
ECC 08 L 1,5D 04	8	12	80	12.0	4.0	0.4	XC.T 0401..EL	**008** [2]	
ECC 08 R 1,5D 04	8	12	80	12.0	4.0	0.4	XC.T 0401..ER		**008** [1]
ECC 10 R/L 1,5D 05	10	12	90	15.0	5.0	0.7	XC.T 0502..	**010**	**010**
ECC 12 R/L 1,5D 06	12	16	100	18.0	6.0	1.0	XC.T 0602..	**012**	**012**
ECC 14 R/L 1,5D 07	14	16	110	21.0	7.0	1.2	XC.T 0703..	**014**	**014**
ECC 16 R/L 1,5D 08	16	20	125	24.0	8.0	2.2	XC.T 0803..	**016**	**016**
ECC 18 R/L 1,5D 09	18	25	135	27.0	9.0	2.2	XC.T 09T3..	**018**	**018**
ECC 20 R/L 1,5D 10	20	25	150	30.0	10.0	3.2	XC.T 10T3..	**020**	**020**
ECC 25 R/L 1,5D 13	25	32	180	37.5	12.5	5.0	XC.T 1304..	**025**	**025**
ECC 32 R/L 1,5D 17	32	40	200	48.0	16.0	5.0	XC.T 1705..	**032**	**032**

1) Note! Right-hand insert on right-hand tool
2) Note! Left-hand insert on left-hand tool



Screwdriver



Clamping screw

Spare parts Insert	80 950 ...		70 950 ...	
XC.T 0401..EL	T06 - IP	**123**	M1.8x3.6 - IP	**862**
XC.T 0401..ER	T06 - IP	**123**	M1.8x3.6 - IP	**862**
XC.T 0502..	T06 - IP	**123**	M2x4.3 - IP	**863**
XC.T 0602..	T07 - IP	**124**	M2.2x5 - IP	**856**
XC.T 0703..	T08 - IP	**125**	M2.5x6 - IP	**857**
XC.T 0803..	T09 - IP	**126**	M3x7 - IP	**819**
XC.T 09T3..	T09 - IP	**126**	M3x7 - IP	**819**
XC.T 10T3..	T15 - IP	**128**	M3.5x8.6 - IP	**859**
XC.T 1304..	T20 - IP	**129**	M4.5x10.5 - IP	**864**
XC.T 1705..	T20 - IP	**129**	M4.5x10.5 - IP	**864**

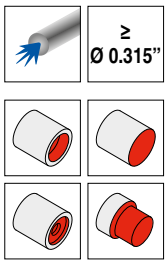
Metric Adaptors can be found in our Metric Catalogue 2024, in the Metric eCatalog 2024 and in the online shop at cuttingtools.ceratizit.com

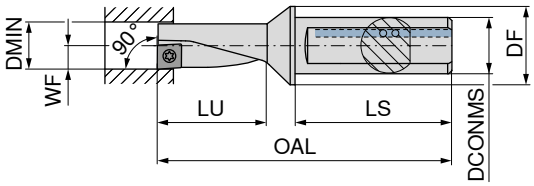
EcoCut – Classic 2.25xD

▲ Drilling and turning tool

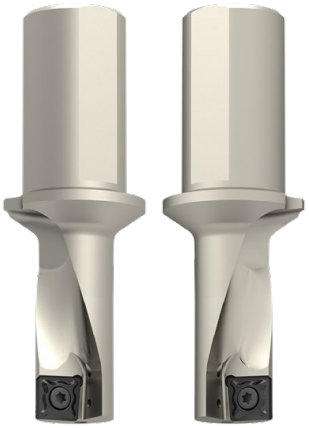
Scope of supply:

Toolholder with one clamping screw, two spare screws and a screwdriver





Illustrations show right-hand versions



Left-hand | Right-hand

78 805 ... | **78 804 ...**

Designation	DMIN inch	DCONMS inch	DF inch	OAL inch	LU inch	LS inch	WF inch	torque moment Nm	Insert			
ECC 08 L 2,25D 04-E	0.315	0.375	0.472	2.300	0.710	1.430	0.157	0.4	XC.T 0401..EL	**10800**[2]		
ECC 08 R 2,25D 04-E	0.315	0.375	0.472	2.300	0.710	1.430	0.157	0.4	XC.T 0401..ER			**10800**[1]
ECC 10 R/L 2,25D 05-E	0.394	0.500	0.630	2.700	0.890	1.615	0.197	0.7	XC.T 0502..	**11000**		**11000**
ECC 12 R/L 2,25D 06-E	0.472	0.625	0.787	3.000	1.060	1.700	0.236	1.0	XC.T 0602..	**11200**		**11200**
ECC 14 R/L 2,25D 07-E	0.551	0.625	0.787	3.200	1.240	1.700	0.276	1.2	XC.T 0703..	**11400**		**11400**
ECC 16 R/L 2,25D 08-E	0.630	0.750	0.984	3.700	1.420	1.970	0.315	2.2	XC.T 0803..	**11600**		**11600**
ECC 18 R/L 2,25D 09-E	0.709	1.000	1.260	4.300	1.590	2.190	0.354	2.2	XC.T 09T3..	**11800**		**11800**
ECC 20 R/L 2,25D 10-E	0.787	1.000	1.260	4.400	1.770	2.230	0.394	3.2	XC.T 10T3..	**12000**		**12000**
ECC 25 R/L 2,25D 13-E	0.984	1.250	1.575	5.000	2.220	2.285	0.492	5.0	XC.T 1304..	**12500**		**12500**
ECC 32 R/L 2,25D 17-E	1.260	1.500	1.969	6.200	2.830	2.740	0.630	5.0	XC.T 1705..	**13200**		**13200**

1) Note! Right-hand insert on right-hand tool
2) Note! Left-hand insert on left-hand tool



Screwdriver



Clamping screw

80 950 ... | **70 950 ...**

Spare parts **Insert**				
XC.T 0401..EL	T06 - IP	**123**	M1.8x3.6 - IP	**862**
XC.T 0401..ER	T06 - IP	**123**	M1.8x3.6 - IP	**862**
XC.T 0502..	T06 - IP	**123**	M2x4.3 - IP	**863**
XC.T 0602..	T07 - IP	**124**	M2.2x5 - IP	**856**
XC.T 0703..	T08 - IP	**125**	M2.5x6 - IP	**857**
XC.T 0803..	T09 - IP	**126**	M3x7 - IP	**819**
XC.T 09T3..	T09 - IP	**126**	M3x7 - IP	**819**
XC.T 10T3..	T15 - IP	**128**	M3.5x8.6 - IP	**859**
XC.T 1304..	T20 - IP	**129**	M4.5x10.5 - IP	**864**
XC.T 1705..	T20 - IP	**129**	M4.5x10.5 - IP	**864**

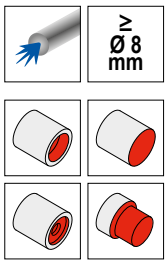
Metric Adaptors can be found in our Metric Catalogue 2024, in the Metric eCatalog 2024 and in the online shop at cuttingtools.ceratizit.com

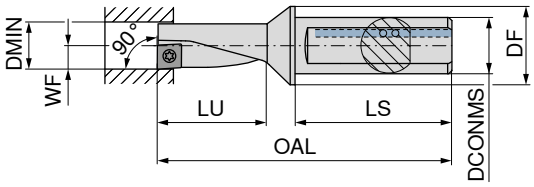
EcoCut – Classic 2.25xD

▲ Drilling and turning tool

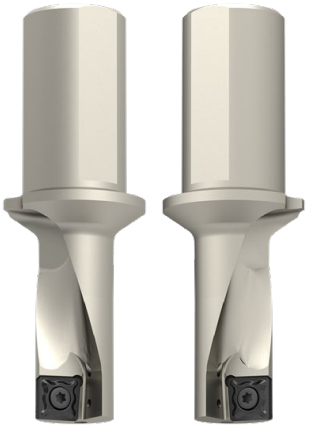
Scope of supply:

Toolholder with 1 clamping screw + 2 spare screws and screwdriver





Illustrations show right-hand versions



Left-hand | Right-hand

Designation	DMIN mm	DCONMS mm	DF mm	OAL mm	LU mm	LS mm	WF mm	torque moment Nm	Insert	70 805 ...	70 804 ...
ECC 08 L 2,25D 04	8	10	15	60.0	18.0	38	4.0	0.4	XC.T 0401..EL	**108** [2]	
ECC 08 R 2,25D 04	8	10	15	60.0	18.0	38	4.0	0.4	XC.T 0401..ER		**108** [1]
ECC 10 R/L 2,25D 05	10	12	18	69.5	22.5	42	5.0	0.7	XC.T 0502..	**110**	**110**
ECC 12 R/L 2,25D 06	12	16	22	78.0	27.0	45	6.0	1.0	XC.T 0602..	**112**	**112**
ECC 14 R/L 2,25D 07	14	16	23	83.5	31.5	45	7.0	1.2	XC.T 0703..	**114**	**114**
ECC 16 R/L 2,25D 08	16	20	28	94.0	36.0	50	8.0	2.2	XC.T 0803..	**116**	**116**
ECC 18 R/L 2,25D 09	18	25	36	109.5	40.5	56	9.0	2.2	XC.T 09T3..	**118**	**118**
ECC 20 R/L 2,25D 10	20	25	35	111.0	45.0	56	10.0	3.2	XC.T 10T3..	**120**	**120**
ECC 25 R/L 2,25D 13	25	32	44	129.0	56.5	60	12.5	5.0	XC.T 1304..	**125**	**125**
ECC 32 R/L 2,25D 17	32	40	54	158.0	72.0	70	16.0	5.0	XC.T 1705..	**132**	**132**

1) Note! Right-hand insert on right-hand tool
2) Note! Left-hand insert on left-hand tool



Screwdriver



Clamping screw

Spare parts Insert	80 950 ...		70 950 ...	
XC.T 0401..EL	T06 - IP	**123**	M1.8x3.6 - IP	**862**
XC.T 0401..ER	T06 - IP	**123**	M1.8x3.6 - IP	**862**
XC.T 0502..	T06 - IP	**123**	M2x4.3 - IP	**863**
XC.T 0602..	T07 - IP	**124**	M2.2x5 - IP	**856**
XC.T 0703..	T08 - IP	**125**	M2.5x6 - IP	**857**
XC.T 0803..	T09 - IP	**126**	M3x7 - IP	**819**
XC.T 09T3..	T09 - IP	**126**	M3x7 - IP	**819**
XC.T 10T3..	T15 - IP	**128**	M3.5x8.6 - IP	**859**
XC.T 1304..	T20 - IP	**129**	M4.5x10.5 - IP	**864**
XC.T 1705..	T20 - IP	**129**	M4.5x10.5 - IP	**864**

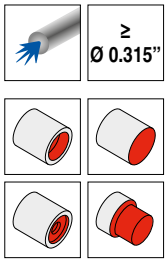
Metric Adaptors can be found in our Metric Catalogue 2024, in the Metric eCatalog 2024 and in the online shop at cuttingtools.ceratizit.com

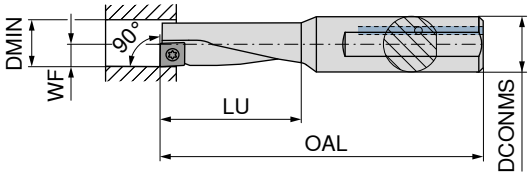
EcoCut – Classic 3xD – Heavy metal

▲ Drilling and turning tool
▲ vibration-damped

Scope of supply:

Toolholder with one clamping screw, two spare screws and a screwdriver





Illustrations show right-hand versions



Left-hand



Right-hand

Designation	DMIN inch	DCONMS inch	OAL inch	LU inch	WF inch	torque moment Nm	Insert	78 805 ...	78 804 ...
ECC 08 L 3,00D 04 H-E	0.315	0.500	3.100	0.940	0.157	0.4	XC.T 0401..EL	**60800**[2]	
ECC 08 R 3,00D 04 H-E	0.315	0.500	3.100	0.940	0.157	0.4	XC.T 0401..ER		**60800**[1]
ECC 10 R/L 3,00D 05 H-E	0.394	0.500	3.300	1.180	0.197	0.7	XC.T 0502..	**61000**	**61000**
ECC 12 R/L 3,00D 06 H-E	0.472	0.625	3.700	1.420	0.236	1.0	XC.T 0602..	**61200**	**61200**
ECC 14 R/L 3,00D 07 H-E	0.551	0.625	3.900	1.650	0.276	1.2	XC.T 0703..	**61400**	**61400**
ECC 16 R/L 3,00D 08 H-E	0.630	0.750	4.300	1.860	0.315	2.2	XC.T 0803..	**61600**	**61600**
ECC 18 R/L 3,00D 09 H-E	0.709	1.000	5.000	2.120	0.354	2.2	XC.T 09T3..	**61800**	**61800**
ECC 20 R/L 3,00D 10 H-E	0.787	1.000	5.100	2.360	0.394	3.2	XC.T 10T3..	**62000**	**62000**
ECC 25 R/L 3,00D 13 H-E	0.984	1.250	5.900	2.950	0.492	5.0	XC.T 1304..	**62500**	**62500**
ECC 32 R/L 3,00D 17 H-E	1.260	1.500	7.200	3.780	0.630	5.0	XC.T 1705..	**63200**	**63200**

1) Note! Right-hand insert on right-hand tool
2) Note! Left-hand insert on left-hand tool



Screwdriver



Clamping screw

Spare parts Insert		80 950 ...		70 950 ...
XC.T 0401..EL	T06 - IP	**123**	M1.8x3.6 - IP	**862**
XC.T 0401..ER	T06 - IP	**123**	M1.8x3.6 - IP	**862**
XC.T 0502..	T06 - IP	**123**	M2x4.3 - IP	**863**
XC.T 0602..	T07 - IP	**124**	M2.2x5 - IP	**856**
XC.T 0703..	T08 - IP	**125**	M2.5x6 - IP	**857**
XC.T 0803..	T09 - IP	**126**	M3x7 - IP	**819**
XC.T 09T3..	T09 - IP	**126**	M3x7 - IP	**819**
XC.T 10T3..	T15 - IP	**128**	M3.5x8.6 - IP	**859**
XC.T 1304..	T20 - IP	**129**	M4.5x10.5 - IP	**864**
XC.T 1705..	T20 - IP	**129**	M4.5x10.5 - IP	**864**

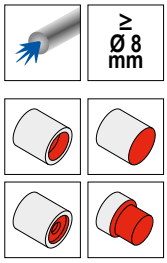
Metric Adaptors can be found in our Metric Catalogue 2024, in the Metric eCatalog 2024 and in the online shop at cuttingtools.ceratizit.com

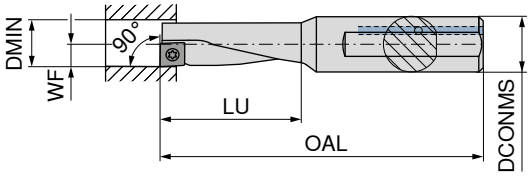
EcoCut – Classic 3xD – Heavy metal

▲ Drilling and turning tool
▲ vibration-damped

Scope of supply:

Toolholder with 1 clamping screw + 2 spare screws and screwdriver





Illustrations show right-hand versions



Left-hand



Right-hand

Designation	DMIN mm	DCONMS mm	OAL mm	LU mm	WF mm	torque moment Nm	Insert	70 805 ...	70 804 ...
ECC 08 L 3,00D 04 H	8	12	80	24	4.0	0.4	XC.T 0401..EL	**608** [2]	
ECC 08 R 3,00D 04 H	8	12	80	24	4.0	0.4	XC.T 0401..ER		**608** [1]
ECC 10 R/L 3,00D 05 H	10	12	85	30	5.0	0.7	XC.T 0502..	**610**	**610**
ECC 12 R/L 3,00D 06 H	12	16	95	36	6.0	1.0	XC.T 0602..	**612**	**612**
ECC 14 R/L 3,00D 07 H	14	16	100	42	7.0	1.2	XC.T 0703..	**614**	**614**
ECC 16 R/L 3,00D 08 H	16	20	110	48	8.0	2.2	XC.T 0803..	**616**	**616**
ECC 18 R/L 3,00D 09 H	18	25	125	54	9.0	2.2	XC.T 09T3..	**618**	**618**
ECC 20 R/L 3,00D 10 H	20	25	130	60	10.0	3.2	XC.T 10T3..	**620**	**620**
ECC 25 R/L 3,00D 13 H	25	32	150	75	12.5	5.0	XC.T 1304..	**625**	**625**
ECC 32 R/L 3,00D 17 H	32	40	185	96	16.0	5.0	XC.T 1705..	**632**	**632**

1) Note! Right-hand insert on right-hand tool
2) Note! Left-hand insert on left-hand tool



Screwdriver



Clamping screw

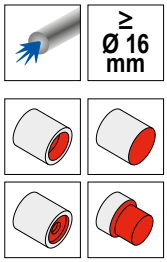
Spare parts Insert		80 950 ...		70 950 ...	
XC.T 0401..EL	T06 - IP	**123**	M1.8x3.6 - IP	**862**
XC.T 0401..ER	T06 - IP	**123**	M1.8x3.6 - IP	**862**
XC.T 0502..	T06 - IP	**123**	M2x4.3 - IP	**863**
XC.T 0602..	T07 - IP	**124**	M2.2x5 - IP	**856**
XC.T 0703..	T08 - IP	**125**	M2.5x6 - IP	**857**
XC.T 0803..	T09 - IP	**126**	M3x7 - IP	**819**
XC.T 09T3..	T09 - IP	**126**	M3x7 - IP	**819**
XC.T 10T3..	T15 - IP	**128**	M3.5x8.6 - IP	**859**
XC.T 1304..	T20 - IP	**129**	M4.5x10.5 - IP	**864**
XC.T 1705..	T20 - IP	**129**	M4.5x10.5 - IP	**864**

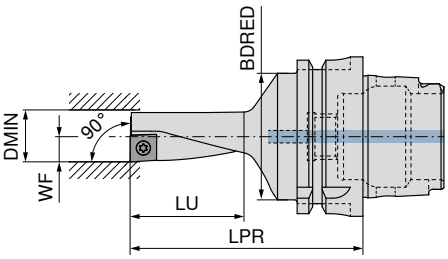
Metric Adaptors can be found in our Metric Catalogue 2024, in the Metric eCatalog 2024 and in the online shop at cuttingtools.ceratizit.com

EcoCut – HSK-T 2.25xD

Scope of supply:

Toolholder with 1 clamping screw + 2 spare screws and screwdriver





Illustrations show right-hand versions

NEW NEW



									Left-hand		Right-hand	
									74 591 ...		**74 590 ...**	
Designation	Adapter	LPR mm	LU mm	BDRED mm	WF mm	DMIN mm	torque moment Nm	Insert				
HSK-T 63 ECC 16 R/L 2,25D 08	HSK-T 63	84	36.00	50	8.0	16	2.2	XC.T 0803..		**51637**		**51637**
HSK-T 63 ECC 20 R/L 2,25D 10	HSK-T 63	92	45.00	50	10.0	20	3.2	XC.T 10T3..		**52037**		**52037**
HSK-T 63 ECC 25 R/L 2,25D 13	HSK-T 63	104	56.25	50	12.5	25	5.0	XC.T 1304..		**52537**		**52537**
HSK-T 63 ECC 32 R/L 2,25D 17	HSK-T 63	120	72.00	50	16.0	32	5.0	XC.T 1705..		**53237**		**53237**



Screwdriver



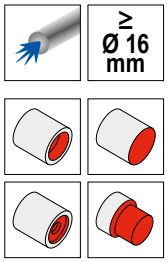
Clamping screw

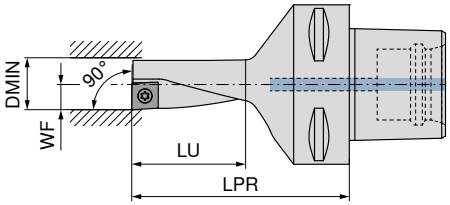
		80 950 ...		**70 950 ...**
Spare parts				
Insert				
XC.T 0803..	T09 - IP	**126**	M3x7 - IP	**819**
XC.T 10T3..	T15 - IP	**128**	M3.5x8.6 - IP	**859**
XC.T 1304..	T20 - IP	**129**	M4.5x10.5 - IP	**864**
XC.T 1705..	T20 - IP	**129**	M4.5x10.5 - IP	**864**

EcoCut – Classic PSC 2.25xD

Scope of supply:

Toolholder with 1 clamping screw + 2 spare screws and screwdriver





Illustrations show right-hand versions

NEW NEW



Designation	Adapter	LPR mm	LU mm	WF mm	DMIN mm	torque moment Nm	Insert	Left-hand 74 591 ...	Right-hand 74 590 ...
PSC 50 ECC 16 R/L 2,25D 08	PSC 50	70	36.00	8.0	16	2.2	XC.T 0803..	**51694**	**51694**
PSC 50 ECC 20 R/L 2,25D 10	PSC 50	81	45.00	10.0	20	3.2	XC.T 10T3..	**52094**	**52094**
PSC 50 ECC 25 R/L 2,25D 13	PSC 50	93	56.25	12.5	25	5.0	XC.T 1304..	**52594**	**52594**
PSC 50 ECC 32 R/L 2,25D 17	PSC 50	110	72.00	16.0	32	5.0	XC.T 1705..	**53294**	**53294**
PSC 63 ECC 16 R/L 2,25D 08	PSC 63	75	36.00	8.0	16	2.2	XC.T 0803..	**51693**	**51693**
PSC 63 ECC 20 R/L 2,25D 10	PSC 63	86	45.00	10.0	20	3.2	XC.T 10T3..	**52093**	**52093**
PSC 63 ECC 25 R/L 2,25D 13	PSC 63	97	56.25	12.5	25	5.0	XC.T 1304..	**52593**	**52593**
PSC 63 ECC 32 R/L 2,25D 17	PSC 63	114	72.00	16.0	32	5.0	XC.T 1705..	**53293**	**53293**



Screwdriver

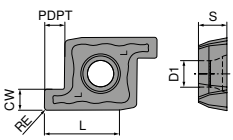


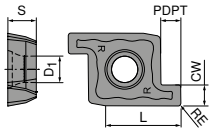
Clamping screw

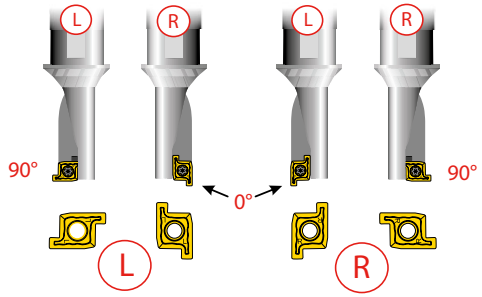
Spare parts Insert	Screwdriver 80 950 ...		Clamping screw 70 950 ...	
XC.T 0803..	T09 - IP	**126**	M3x7 - IP	**819**
XC.T 10T3..	T15 - IP	**128**	M3.5x8.6 - IP	**859**
XC.T 1304..	T20 - IP	**129**	M4.5x10.5 - IP	**864**
XC.T 1705..	T20 - IP	**129**	M4.5x10.5 - IP	**864**

PM-R / PM-L

Designation	CW inch	PDPT inch	L inch	S inch	D1 inch
PM 10 G 201504	0.079	0.059	0.197	0.083	0.083
PM 12 G 201804	0.079	0.071	0.236	0.091	0.098
PM 16 G 252004	0.098	0.079	0.315	0.110	0.134
PM 20 G 302504	0.118	0.098	0.394	0.146	0.157
PM 25 G 353004	0.138	0.118	0.492	0.177	0.173
PM 32 G 404004	0.157	0.157	0.630	0.220	0.236







PM-L / PM-R

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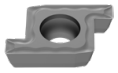
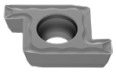
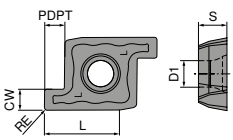
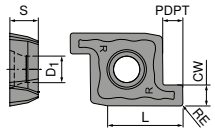
		
	M PM-L	M PM-R
	70 289 ...	70 289 ...
ISO / RE inch		
PM 10 G 201504 / 0.016	510	511
PM 12 G 201804 / 0.016	515	516
PM 16 G 252004 / 0.016	520	521
PM 20 G 302504 / 0.016	525	526
PM 25 G 353004 / 0.016	530	531
PM 32 G 404004 / 0.016	535	536
P	●	●
M	●	●
K	○	○
N	○	○
S	●	●
H		
O	○	○

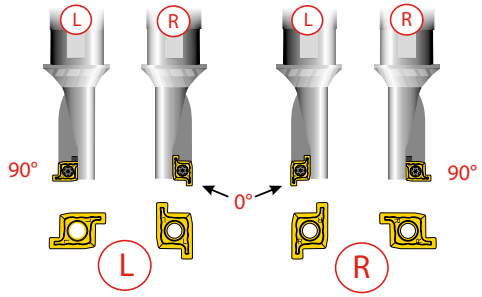
→ v_c Page 36+37

PM-L / PM-R

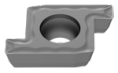
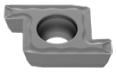
Designation	CW mm	PDPT mm	L mm	S mm	D1 mm
PM 10 G 201504	2.0	1.5	5.0	2.10	2.1
PM 12 G 201804	2.0	1.8	6.0	2.30	2.5
PM 16 G 252004	2.5	2.0	8.0	2.80	3.4
PM 20 G 302504	3.0	2.5	10.0	3.70	4.0
PM 25 G 353004	3.5	3.0	12.5	4.50	4.4
PM 32 G 404004	4.0	4.0	16.0	5.60	6.0







PM-L / PM-R

	-M20 CTPP430 DRAGONSKIN	-M20 CTPP430 DRAGONSKIN
		
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ISO / RE mm	70 289 ...	70 289 ...
PM 10 G 201504 / 0.4	510	511
PM 12 G 201804 / 0.4	515	516
PM 16 G 252004 / 0.4	520	521
PM 20 G 302504 / 0.4	525	526
PM 25 G 353004 / 0.4	530	531
PM 32 G 404004 / 0.4	535	536
P	●	●
M	●	●
K	○	○
N	○	○
S	●	●
H		
O	○	○

→ v_c Page 36+37

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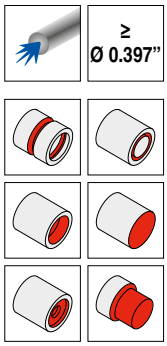
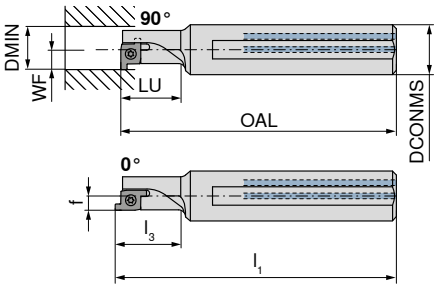
EcoCut – ProfileMaster 1.5xD

▲ Drilling, turning and grooving tool

Scope of supply:

Toolholder with one clamping screw and one screwdriver





Illustrations show right-hand versions



Designation	DMIN inch	DCONMS inch	OAL inch	LU inch	WF inch	l_1 inch	l_3 inch	f inch	torque moment Nm	Insert	Left-hand 78 811 ...	Right-hand 78 810 ...
PMC 10 R/L 1,5D-E	0.394	0.500	3.100	0.590	0.197				0.4	PM 10R/L	**01000**[1]	**01000**[1]
PMC 12 R/L 1,5D-E	0.472	0.625	3.500	0.709	0.236				1.0	PM 12R/L	**01200**[1]	**01200**[1]
PMC 16 R/L 1,5D-E	0.630	0.750	4.900	1.004	0.315	4.991	1.094	0.224	2.2	PM 16R/L	**01600**	**01600**
PMC 20 R/L 1,5D-E	0.787	1.000	5.900	1.181	0.394	6.010	1.291	0.283	2.2	PM 20R/L	**02000**	**02000**
PMC 25 R/L 1,5D-E	0.984	1.250	7.000	1.476	0.492	7.130	1.606	0.362	3.2	PM 25R/L	**02500**	**02500**
PMC 32 R/L 1,5D-E	1.260	1.500	7.800	1.890	0.630	7.969	2.059	0.461	5.0	PM 32R/L	**03200**	**03200**

1) only usable as 90° version



Screwdriver



Clamping screw

Spare parts Insert		80 950 ...		70 950 ...
PM 10R/L	T06	**100**	M1.8x3.8	**57300**
PM 12R/L	T07	**101**	M2.2x4	**360**
PM 16R/L	T08	**102**	M3x5.7	**365**
PM 20R/L	T15	**105**	M3.5x7.2	**110**
PM 25R/L	T15	**105**	M3.5x8.6	**304**
PM 32R/L	T20 - IP	**129**	M5x10.8 - IP	**010**

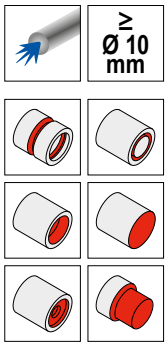
Metric Adaptors can be found in our Metric Catalogue 2024, in the Metric eCatalog 2024 and in the online shop at cuttingtools.ceratizit.com

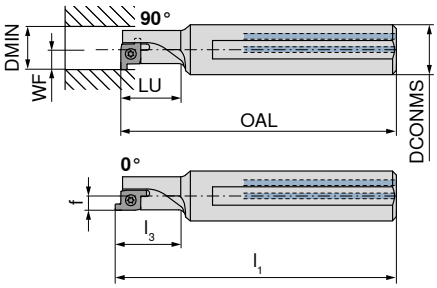
EcoCut – ProfileMaster 1.5xD

▲ Drilling, turning and grooving tool

Scope of supply:

Toolholder with one clamping screw and one screwdriver





Illustrations show right-hand versions



											Left-hand	Right-hand
											70 821 ...	**70 820 ...**
Designation	DMIN	DCONMS	OAL	LU	WF	l_1	l_3	f	torque moment	Insert		
	mm	mm	mm	mm	mm	mm	mm	mm	Nm			
PMC 10 R/L 1,5D	10	12	80	15	5.0				0.4	PM 10R/L	**010** [1]	**010** [1]
PMC 12 R/L 1,5D	12	16	90	18	6.0				1.0	PM 12R/L	**012** [1]	**012** [1]
PMC 16 R/L 1,5D	16	20	125	24	8.0	127.3	26.3	5.7	2.2	PM 16R/L	**016**	**016**
PMC 20 R/L 1,5D	20	25	150	30	10.0	152.8	32.8	7.2	2.2	PM 20R/L	**020**	**020**
PMC 25 R/L 1,5D	25	32	180	38	12.5	183.3	40.8	9.2	3.2	PM 25R/L	**025**	**025**
PMC 32 R/L 1,5D	32	40	200	48	16.0	204.3	52.3	11.7	5.0	PM 32R/L	**032**	**032**

1) only usable as 90° version

		Screwdriver		Clamping screw	
		80 950 ...		**70 950 ...**	
Spare parts					
Insert					
PM 10R/L	T06 - IP	**123**	M1.8x3.6 - IP	**862**
PM 12R/L	T07 - IP	**124**	M2.2x4.2 - IP	**137**
PM 16R/L	T09 - IP	**126**	M3x5.7 - IP	**008**
PM 20R/L	T15 - IP	**128**	M3x5.7 - IP	**009**
PM 25R/L	T15 - IP	**128**	M3.5x8.6 - IP	**859**
PM 32R/L	T20 - IP	**129**	M5x10.8 - IP	**010**

Metric Adaptors can be found in our Metric Catalogue 2024, in the Metric eCatalog 2024 and in the online shop at cuttingtools.ceratizit.com

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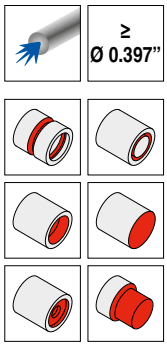
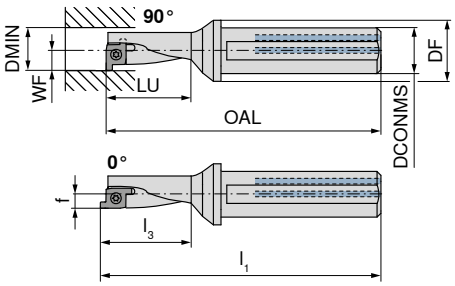
EcoCut – ProfileMaster 2.25xD

▲ Drilling, turning and grooving tool

Scope of supply:

Toolholder with one clamping screw and one screwdriver





Illustrations show right-hand versions



												Left-hand	Right-hand
												78 811 ...	**78 810 ...**
Designation	DMIN inch	DCONMS inch	DF inch	OAL inch	LU inch	WF inch	l_1 inch	l_3 inch	f inch	torque moment Nm	Insert		
PMC 10 R/L 2,25D-E	0.394	0.500	0.630	2.800	0.886	0.197				0.4	PM 10R/L	**11000**[1)]	**11000**[1)]
PMC 12 R/L 2,25D-E	0.472	0.625	0.787	3.000	1.063	0.236				1.0	PM 12R/L	**11200**[1)]	**11200**[1)]
PMC 16 R/L 2,25D-E	0.630	0.750	0.984	3.800	1.417	0.315	3.891	1.508	0.224	2.2	PM 16R/L	**11600**	**11600**
PMC 20 R/L 2,25D-E	0.787	1.000	1.260	4.400	1.772	0.394	4.510	1.882	0.283	2.2	PM 20R/L	**12000**	**12000**
PMC 25 R/L 2,25D-E	0.984	1.250	1.575	5.200	2.217	0.492	5.330	2.347	0.362	3.2	PM 25R/L	**12500**	**12500**
PMC 32 R/L 2,25D-E	1.260	1.500	1.969	6.200	2.835	0.630	6.369	3.004	0.461	5.0	PM 32R/L	**13200**	**13200**

1) only usable as 90° version



Screwdriver



Clamping screw

		80 950 ...		**70 950 ...**
Spare parts				
Insert				
PM 10R/L	T06	**100**	M1.8x3.8	**57300**
PM 12R/L	T07	**101**	M2.2x4	**360**
PM 16R/L	T08	**102**	M3x5.7	**365**
PM 20R/L	T15	**105**	M3.5x7.2	**110**
PM 25R/L	T15	**105**	M3.5x8.6	**304**
PM 32R/L	T20 - IP	**129**	M5x10.8 - IP	**010**

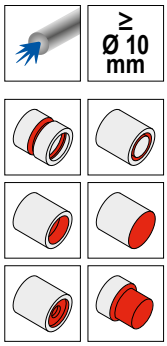
Metric Adaptors can be found in our Metric Catalogue 2024, in the Metric eCatalog 2024 and in the online shop at cuttingtools.ceratizit.com

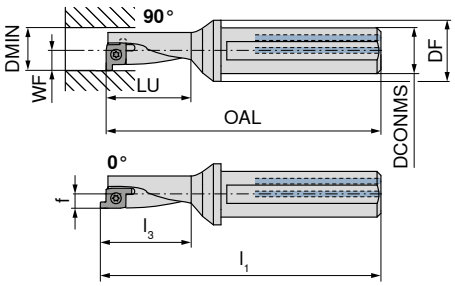
EcoCut – ProfileMaster 2.25xD

▲ Drilling, turning and grooving tool

Scope of supply:

Toolholder with one clamping screw and one screwdriver





Illustrations show right-hand versions



Designation	DMIN mm	DCONMS mm	DF mm	OAL mm	LU mm	WF mm	l_1 mm	l_3 mm	f mm	torque moment Nm	Insert	Left-hand 70 821 ...	Right-hand 70 820 ...
PMC 10 R/L 2,25D	10	12	18	72.4	22.50	5.0				0.4	PM 10R/L	**110** 1)	**110** 1)
PMC 12 R/L 2,25D	12	16	22	78.0	27.00	6.0				1.0	PM 12R/L	**112** 1)	**112** 1)
PMC 16 R/L 2,25D	16	20	28	96.5	36.00	8.0	98.8	38.3	5.7	2.2	PM 16R/L	**116**	**116**
PMC 20 R/L 2,25D	20	25	32	111.0	45.00	10.0	113.8	47.8	7.2	2.2	PM 20R/L	**120**	**120**
PMC 25 R/L 2,25D	25	32	44	132.6	56.25	12.5	135.9	59.6	9.2	3.2	PM 25R/L	**125**	**125**
PMC 32 R/L 2,25D	32	40	54	158.0	72.00	16.0	162.3	76.3	11.7	5.0	PM 32R/L	**132**	**132**

1) only usable as 90° version



Screwdriver



Clamping screw

Spare parts Insert		80 950 ...		70 950 ...
PM 10R/L	T06 - IP	**123**	M1.8x3.6 - IP	**862**
PM 12R/L	T07 - IP	**124**	M2.2x4.2 - IP	**137**
PM 16R/L	T09 - IP	**126**	M3x5.7 - IP	**008**
PM 20R/L	T15 - IP	**128**	M3x5.7 - IP	**009**
PM 25R/L	T15 - IP	**128**	M3.5x8.6 - IP	**859**
PM 32R/L	T20 - IP	**129**	M5x10.8 - IP	**010**

Metric Adaptors can be found in our Metric Catalogue 2024, in the Metric eCatalog 2024 and in the online shop at cuttingtools.ceratizit.com

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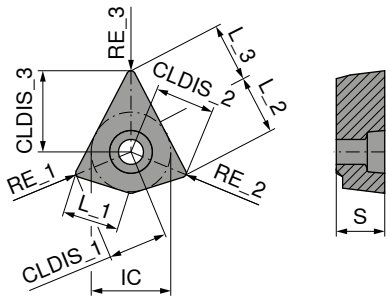
FT15 . 808055...



Designation	IC inch	CLDIS_1 inch	L_1 inch	CLDIS_2 inch	L_2 inch	CLDIS_3 inch	L_3 inch	S inch
FT15 M 808055R080804-MMF	0.591	0.442	0.425	0.442	0.449	0.621	0.449	0.360
FT15 M 808055R08-MMF	0.591	0.442	0.425	0.442	0.441	0.603	0.441	0.360
FT15 M 808055R121208-MMF	0.591	0.433	0.421	0.433	0.441	0.603	0.441	0.360

ISO	RE_1 inch	RE_2 inch	RE_3 inch	CTCP125 DRAGONSKIN M M F FT15 . 808055... 74 003 ...	CTPM125 DRAGONSKIN M M F FT15 . 808055... 74 003 ...
FT15 M 808055R080804-MMF	0.031	0.031	0.016	**00400**	
FT15 M 808055R08-MMF	0.031	0.031	0.031	**00200**	**10200**
FT15 M 808055R121208-MMF	0.047	0.047	0.031	**00600**	
P				●	○
M					●
K				○	
N					
S					
H					
O					

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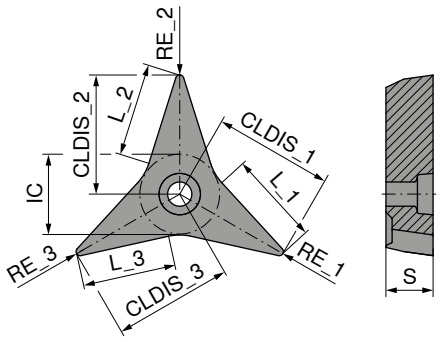
FT15 . 353535...



Designation	IC inch	CLDIS_1 inch	L_1 inch	CLDIS_2 inch	L_2 inch	CLDIS_3 inch	L_3 inch	S inch
FT15 G 353535R04-28P	0.591	0.945	0.634	0.945	0.634	0.945	0.634	0.360
FT15 G 353535R08-28P	0.591	0.909	0.598	0.909	0.598	0.909	0.598	0.360
FT15 G 353535R08-F	0.591	0.909	0.589	0.909	0.589	0.909	0.589	0.360

ISO	RE_1 inch	RE_2 inch	RE_3 inch	-F CTCP125	-28P H216T
				DRAGONSKIN	DRAGONSKIN
					
				F F F	F F F
				FT15 . 353535...	FT15 . 353535...
				74 077 ...	74 001 ...
FT15 G 353535R04-28P	0.016	0.016	0.016		20200
FT15 G 353535R08-28P	0.031	0.031	0.031		20400
FT15 G 353535R08-F	0.031	0.031	0.031	00400	
P				●	
M					
K				○	○
N					●
S					○
H					
O					○

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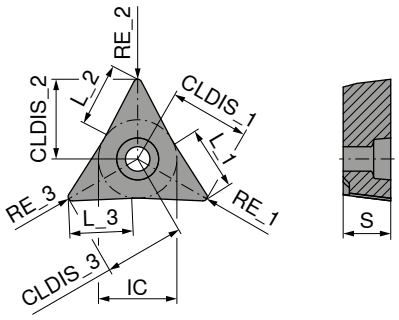
FT15 . 555555...



Designation	IC inch	CLDIS_1 inch	L_1 inch	CLDIS_2 inch	L_2 inch	CLDIS_3 inch	L_3 inch	S inch
FT15 M 555555R04-FFF	0.591	0.621	0.496	0.621	0.496	0.621	0.496	0.360
FT15 M 555555R08-FFF	0.591	0.603	0.484	0.603	0.484	0.603	0.484	0.360





F F F
FT15 . 555555...
74 002 ...

F F F
FT15 . 555555...
74 002 ...

ISO	RE_1 inch	RE_2 inch	RE_3 inch		
FT15 M 555555R04-FFF	0.016	0.016	0.016	**00200**	
FT15 M 555555R08-FFF	0.031	0.031	0.031	**00400**	**10400**
P				●	○
M					●
K				○	
N					
S					
H					
O					

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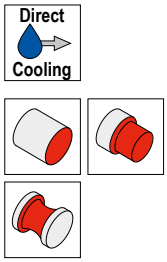
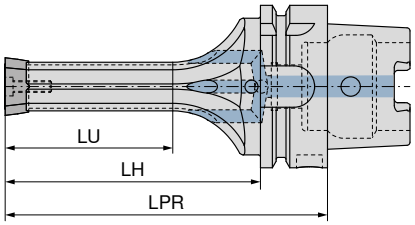
FreeTurn – HSK-T tool holder FT15

▲ Tool holder for FreeTurn indexable insert
▲ DirectCooling coolant supply

Scope of supply:

Toolholder with one clamping screw and one screwdriver







Figures show version FT15 . 808055...

Designation	Adapter	LPR inch	LH inch	LU inch	Insert	DirectCooling 74 700 ...
HSK-T63-100-FT15 353535	HSK-T 63	3.937	2.913	1.575	FT15 . 353535...	**00137**
HSK-T63-100-FT15 808055	HSK-T 63	3.937	2.913	1.575	FT15 . 808055...	**00537**
HSK-T63-100-FT15 555555	HSK-T 63	3.937	2.913	1.575	FT15 . 555555...	**00337**
HSK-T63-125-FT15 353535	HSK-T 63	4.921	3.898	2.559	FT15 . 353535...	**00237**
HSK-T63-125-FT15 808055	HSK-T 63	4.921	3.898	2.559	FT15 . 808055...	**00637**
HSK-T63-125-FT15 555555	HSK-T 63	4.921	3.898	2.559	FT15 . 555555...	**00437**

Spare parts		Screwdriver 80 950 ...		Clamping screw 70 950 ...	
Adapter					
HSK-T 63		T20 - IP	**121**	M4.5x18 - IP	**25900**

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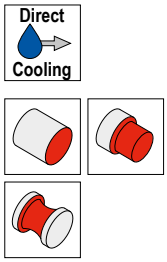
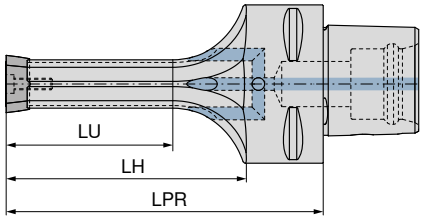
FreeTurn – PSC tool holder FT15

▲ Tool holder for FreeTurn indexable insert
▲ DirectCooling coolant supply

Scope of supply:

Toolholder with one clamping screw and one screwdriver





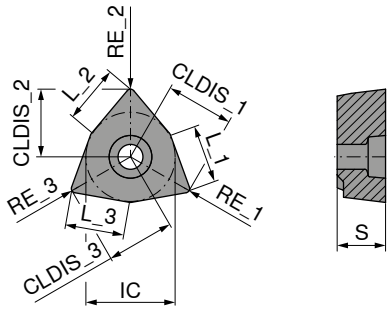


Figures show version FT15 . 808055...

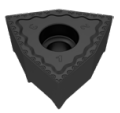
Designation	Adapter	LPR inch	LH inch	LU inch	Insert	DirectCooling 74 700 ...
PSC-63-100-FT15 353535	PSC 63	3.937	2.732	1.575	FT15 . 353535...	**00193**
PSC-63-100-FT15 808055	PSC 63	3.937	2.728	1.575	FT15 . 808055...	**00593**
PSC-63-100-FT15 555555	PSC 63	3.937	2.740	1.575	FT15 . 555555...	**00393**
PSC-63-125-FT15 353535	PSC 63	4.921	3.717	2.559	FT15 . 353535...	**00293**
PSC-63-125-FT15 808055	PSC 63	4.921	3.713	2.559	FT15 . 808055...	**00693**
PSC-63-125-FT15 555555	PSC 63	4.921	3.724	2.559	FT15 . 555555...	**00493**

Spare parts		Screwdriver 80 950 ...		Clamping screw 70 950 ...	
Adapter					
PSC 63		T20 - IP	**121**	M4.5x18 - IP	**25900**

FT17 . 808080...



Designation	IC inch	CLDIS_1 inch	L_1 inch	CLDIS_2 inch	L_2 inch	CLDIS_3 inch	L_3 inch	S inch
FT17 M 808080R04-MMM	0.669	0.512	0.445	0.512	0.445	0.512	0.445	0.360
FT17 M 808080R08-MMM	0.669	0.503	0.445	0.503	0.445	0.503	0.445	0.360
FT17 M 808080R12-MMM	0.669	0.494	0.441	0.494	0.441	0.494	0.441	0.360

ISO	RE_1 inch	RE_2 inch	RE_3 inch	CTCP125 DRAGONSKIN	CTPM125 DRAGONSKIN
					
				M M M	M M M
FT17 . 808080...				74 000 ...	74 000 ...
FT17 M 808080R04-MMM	0.016	0.016	0.016	**00200**	
FT17 M 808080R08-MMM	0.031	0.031	0.031	**00400**	**10400**
FT17 M 808080R12-MMM	0.047	0.047	0.047	**00600**	
P				●	○
M					●
K				○	
N					
S					
H					
O					

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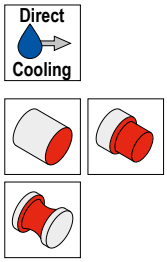
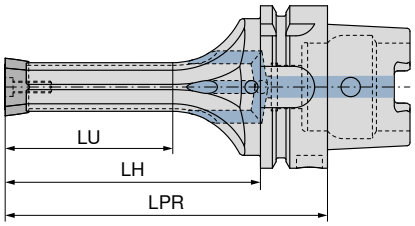
FreeTurn – HSK-T tool holder FT17

▲ Tool holder for FreeTurn indexable insert
▲ DirectCooling coolant supply

Scope of supply:

Toolholder with one clamping screw and one screwdriver







Designation	Adapter	LPR inch	LH inch	LU inch	Insert	DirectCooling 74 701 ...
HSK-T63-100-FT17 808080	HSK-T 63	3.937	2.913	1.575	FT17 . 808080...	**00737**
HSK-T63-125-FT17 808080	HSK-T 63	4.921	3.898	2.559	FT17 . 808080...	**00837**


Screwdriver


Clamping screw

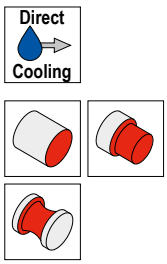
Spare parts		Screwdriver 80 950 ...		Clamping screw 70 950 ...	
Adapter					
HSK-T 63	T20 - IP	**121**	M4.5x18 - IP	**25900**	

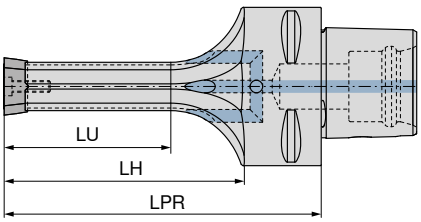
FreeTurn – PSC tool holder FT17

▲ Tool holder for FreeTurn indexable insert
▲ DirectCooling coolant supply

Scope of supply:

Toolholder with one clamping screw and one screwdriver







Designation	Adapter	LPR inch	LH inch	LU inch	Insert	DirectCooling 74 701 ...
PSC-63-100-FT17 808080	PSC 63	3.937	2.728	1.575	FT17 . 808080...	**00793**
PSC-63-125-FT17 808080	PSC 63	4.921	3.713	2.559	FT17 . 808080...	**00893**


Screwdriver


Clamping screw

Spare parts		Screwdriver 80 950 ...		Clamping screw 70 950 ...	
Adapter					
PSC 63	T20 - IP	**121**	M4.5x18 - IP	**25900**	

Material examples for cutting data tables

	Material sub-group	Index	Composition / Structure / Heat treatment		Tensile strength lbf/in²* / HB / HRC	Material number	Material designation	Material number	Material designation
P	Unalloyed steel	P.1.1	< 0.15 % C	Annealed	60900 lbf/in² / 125 HB	1.0401	1015	1.0301	1010
		P.1.2	< 0.45 % C	Annealed	92800 lbf/in² / 190 HB	1.1191	1045	1.0737	12L14
		P.1.3		Tempered	121800 lbf/in² / 250 HB	1.1191	1045	1.0503	1043
		P.1.4	< 0.75 % C	Annealed	132000 lbf/in² / 270 HB	1.1223	1060	1.0535	1055
		P.1.5		Tempered	146500 lbf/in² / 300 HB	1.1223	1060	1.1274	1095
	Low-alloy steel	P.2.1		Annealed	88500 lbf/in² / 180 HB	1.7131	5115	1.6523	8620
		P.2.2		Tempered	134900 lbf/in² / 275 HB	1.7131	5115	1.6582	4340
		P.2.3		Tempered	146500 lbf/in² / 300 HB	1.7225	4142	1.7131	5115
		P.2.4		Tempered	174000 lbf/in² / 375 HB	1.7225	4142	17223	4140
	High-alloy steel and high-alloy tool steel	P.3.1		Annealed	98600 lbf/in² / 200 HB	1.4021	420	1.2379	D2
		P.3.2		Hardened and tempered	159500 lbf/in² / 300 HB	1.2343	H11	1.3343	M2
		P.3.3		Hardened and tempered	188500 lbf/in² / 400 HB	1.2343	H11	1.2363	A2
	Stainless steel	P.4.1	Ferritic / martensitic	Annealed	98600 lbf/in² / 200 HB	1.4016	430	1.4125	440C
		P.4.2	Martensitic	Tempered	117500 lbf/in² / 250 HB	1.4112	S44003	1.4021	420
M	Stainless steel	M.1.1	Austenitic / austenitic-ferritic	Quenched	88500 lbf/in² / 200 HB	1.4301	304	1.4401	316
		M.2.1	Austenitic	Tempered	300 HB	1.4841	314	1.4568	17-7 PH
		M.3.1	Austenitic / ferritic (Duplex)		113100 lbf/in² / 230 HB	1.4462	S32205	1.4410	S32750
K	Grey cast iron	K.1.1	Pearlitic / ferritic		88500 lbf/in² / 180 HB	0.6010	A48-20B	0.6025	A48-40 B
		K.1.2	Pearlitic (martensitic)		127600 lbf/in² / 260 HB	0.6030	A48-45B	0.6040	A48-60 B
	Spherulitic graphite cast iron	K.2.1	Ferritic		78300 lbf/in² / 160 HB	0.7040	60-40-18	0.7050	65-45-12
		K.2.2	Pearlitic		122600 lbf/in² / 250 HB	0.7070	100-70-03	0.7660	A439 Type D2
	Malleable iron	K.3.1	Ferritic		63800 lbf/in² / 130 HB	0.8035	GTW-35-04		
		K.3.2	Pearlitic		113100 lbf/in² / 230 HB	0.8170	70003		
N	Aluminium wrought alloy	N.1.1	Non-hardenable		60 HB	3.0255	A91060	3.0255	A91060
		N.1.2	Hardenable		49300 lbf/in² / 100 HB	3.1355	2024	3.1355	2024
	Cast aluminium alloy	N.2.1	≤ 12 % Si, non-hardenable		36300 lbf/in² / 75 HB	3.2581	A04130 / A413-0	3.2581	A04130 / A413-0
		N.2.2	≤ 12 % Si, hardenable		43500 lbf/in² / 90 HB	3.2134	G-AlSi5Cu1Mg		
		N.2.3	> 12 % Si, non-hardenable		63800 lbf/in² / 130 HB		G-AlSi17Cu4Mg		
	Copper and copper alloys (bronze/brass)	N.3.1	Free-machining alloys, PB > 1 %		54400 lbf/in² / 110 HB	2.0380	CuZn39Pb2 (Ms58)	2.0380	C37700
		N.3.2	CuZn, CuSnZn		43500 lbf/in² / 90 HB	2.0331	CuZn15	2.0331	C34000
		N.3.3	CuSn, lead-free copper and electrolytic copper		49300 lbf/in² / 100 HB	2.0060	E-Cu57		
	Magnesium alloys	N.4.1	Magnesium and magnesium alloys		70 HB	3.5612	MgAl6Zn		
S	Heat-resistant alloys	S.1.1	Fe - basis	Annealed	98600 lbf/in² / 200 HB	1.4864	X12NiCrSi 36-16	1.4864	330
		S.1.2			137800 lbf/in² / 280 HB	1.4980	X6NiCrTiMoVB25-15-2	1.4980	S66286
		S.2.1	Ni or Co basis	Annealed	121800 lbf/in² / 250 HB	2.4856	Inconel 625	2.4812	Hastelloy C
		S.2.2			171100 lbf/in² / 350 HB	2.4952	Nimonic 80A	2.4668	Inconel 718
		S.2.3		Cast	156600 lbf/in² / 320 HB	2.4674	Nimocast PK24	2.4670	Nimocast 713
	Titanium alloys	S.3.1	Pure titanium		5800 lbf/in²	3.7025	Ti99,8		
		S.3.2	Alpha + beta alloys		152300 lbf/in²	3.7165	TiAl6V4		
		S.3.3	Beta alloys		203100 lbf/in² / 410 HB	Ti555.3	Ti-5Al-5V-5Mo-3Cr		
H	Hardened steel	H.1.1		Hardened and tempered	46-55 HRC				
		H.1.2		Hardened and tempered	56-60 HRC				
		H.1.3		Hardened and tempered	61-65 HRC				
		H.1.4		Hardened and tempered	66-70 HRC				
	Chilled iron	H.2.1		Cast	400 HB				
	Hardened cast iron	H.3.1		Hardened and tempered	55 HRC				
O	Non-metal materials	O.1.1	Plastics, duroplastic		≤ 21800 lbf/in²				
		O.1.2	Plastics, thermoplastic		≤ 14500 lbf/in²				
		O.2.1	Aramid fibre-reinforced		≤ 145000 lbf/in²				
		O.2.2	Glass/carbon-fibre reinforced		≤ 145000 lbf/in²				
		O.3.1	Graphite						

*** Tensile Strength at Rupture (Rm)**

10

Cutting data standard values for EcoCut

Index		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN			DRAGONSKIN
	EcoCut Mini CTWN425	EcoCut Mini CTPP435	EcoCut Classic CTCP425-P	EcoCut Classic CTCP435-P	EcoCut Classic CTPP430	EcoCut Classic H210T	EcoCut Classic H216T	EcoCut ProfileMaster CTPP430
	v_c in ft/min							
P.1.1		**480**	**890**	**760**	**600**			**561**
P.1.2		**410**	**780**	**660**	**510**			**470**
P.1.3		**350**	**660**	**545**	**440**			**380**
P.1.4		**330**	**630**	**510**	**430**			**350**
P.1.5		**300**	**580**	**460**	**370**			**310**
P.2.1		**420**	**790**	**660**	**530**			**480**
P.2.2		**320**	**610**	**510**	**400**			**340**
P.2.3		**300**	**580**	**460**	**370**			**310**
P.2.4		**220**	**430**	**350**	**270**			**200**
P.3.1		**340**	**610**	**530**	**380**			**370**
P.3.2		**220**	**450**	**360**	**280**			**250**
P.3.3		**100**	**265**	**200**	**190**			**130**
P.4.1		**340**	**510**	**470**	**380**			**370**
P.4.2		**280**	**610**	**530**	**330**			**310**
M.1.1		**340**	530	530	**380**			**370**
M.2.1		**220**			**280**			**250**
M.3.1		**310**			**350**			**340**
K.1.1	460	460	680	610	530	360	**560**	590
K.1.2	380	400	680	610	460	300	**430**	860
K.2.1	500	460	660	590	530	400	**590**	530
K.2.2	360	400	660	590	460	280	**430**	830
K.3.1	560	500	640	580	410	460	**630**	430
K.3.2	460	410	640	580	360	360	**530**	760
N.1.1	**990**	130			130	**130**	**200**	990
N.1.2	**170**	960			960	**960**	**1020**	660
N.2.1	**990**	960			960	**960**	**200**	990
N.2.2	**990**	630			630	**630**	**1520**	660
N.2.3	**1490**	1120			1120	**1120**	**200**	500
N.3.1	**1160**	790			790	**790**	**1520**	990
N.3.2	**1160**	790			790	**790**	**1520**	990
N.3.3	**830**	630			630	**630**	**1190**	660
N.4.1	**660**	460			460	**460**	**860**	660
S.1.1	132	**120**		120	180	**110**	140	**120**
S.1.2	90	**100**		100	180	**80**	110	**100**
S.2.1	90	**60**		60	180	**80**	110	**70**
S.2.2	80	**50**		50	180	**70**	80	**50**
S.2.3	70	**50**		50	180	**70**	70	**50**
S.3.1	300	**280**		280	230	**210**	360	**280**
S.3.2	180	**130**		130	200	**140**	230	**130**
S.3.3	130	**100**		100	130	**100**	170	**100**
H.1.1								
H.1.2								
H.1.3								
H.1.4								
H.2.1								
H.3.1								
O.1.1	430	360			360	360	510	430
O.1.2								
O.2.1	350	310			310	310	460	350
O.2.2								
O.3.1								

The cutting data is strongly influenced by external conditions, such as the stability of the tool and workpiece clamping, material and type of machine. The specified values represent guideline cutting data that can be adjusted by approx. **±20%** according to the usage conditions.

Cutting data standard values for EcoCut

Index		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN			DRAGONSKIN
	EcoCut Mini CTWN425	EcoCut Mini CTPP435	EcoCut Classic CTCP425-P	EcoCut Classic CTCP435-P	EcoCut Classic CTPP430	EcoCut Classic H210T	EcoCut Classic H216T	EcoCut ProfileMaster CTPP430
	v_c in m/min							
P.1.1		**145**	**270**	**230**	**180**			**170**
P.1.2		**125**	**235**	**200**	**155**			**140**
P.1.3		**105**	**200**	**165**	**130**			**115**
P.1.4		**100**	**190**	**155**	**125**			**105**
P.1.5		**90**	**175**	**140**	**110**			**95**
P.2.1		**130**	**240**	**200**	**160**			**145**
P.2.2		**100**	**185**	**155**	**120**			**105**
P.2.3		**90**	**175**	**140**	**110**			**95**
P.2.4		**70**	**130**	**105**	**80**			**60**
P.3.1		**105**	**185**	**160**	**115**			**110**
P.3.2		**70**	**135**	**110**	**85**			**75**
P.3.3		**30**	**80**	**60**	**55**			**40**
P.4.1		**105**	**185**	**160**	**115**			**110**
P.4.2		**85**	**160**	**130**	**100**			**95**
M.1.1		**105**	160	160	**115**			**110**
M.2.1		**65**			**85**			**75**
M.3.1		**95**			**110**			**100**
K.1.1	140	140	205	185	160	110	**170**	180
K.1.2	115	120	205	185	140	90	**130**	260
K.2.1	150	140	200	180	160	120	**180**	160
K.2.2	110	120	200	180	140	85	**130**	250
K.3.1	170	150	195	175	125	140	**190**	130
K.3.2	140	125	195	175	110	110	**160**	230
N.1.1	**300**	40			40	**40**	**60**	300
N.1.2	**50**	290			290	**290**	**310**	200
N.2.1	**300**	290			290	**290**	**60**	300
N.2.2	**300**	190			190	**190**	**460**	200
N.2.3	**450**	340			340	**340**	**60**	150
N.3.1	**350**	240			240	**240**	**460**	300
N.3.2	**350**	240			240	**240**	**460**	300
N.3.3	**250**	190			190	**190**	**360**	200
N.4.1	**200**	140			140	**140**	**260**	200
S.1.1	40	**35**		35	55	**35**	45	**35**
S.1.2	30	**30**		30	55	**25**	35	**30**
S.2.1	30	**20**		20	55	**25**	35	**20**
S.2.2	25	**15**		15	55	**20**	25	**15**
S.2.3	20	**15**		15	55	**20**	20	**15**
S.3.1	90	**85**		85	70	**65**	110	**85**
S.3.2	55	**40**		40	60	**45**	70	**40**
S.3.3	40	**30**		30	40	**30**	50	**30**
H.1.1								
H.1.2								
H.1.3								
H.1.4								
H.2.1								
H.3.1								
O.1.1	130	110			110	110	155	130
O.1.2								
O.2.1	105	95			95	95	140	105
O.2.2								
O.3.1								

The cutting data is strongly influenced by external conditions, such as the stability of the tool and workpiece clamping, material and type of machine. The specified values represent guideline cutting data that can be adjusted by approx. **±20%** according to the usage conditions.

Cutting data standard values for FreeTurn

Index	F		M		-28P
	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	
	CTCP125	CTPM125	CTCP125	CTPM125	H216T
	v_c in ft/min				
P.1.1	**980**	670	**980**	670	
P.1.2	**830**	560	**830**	560	
P.1.3	**700**	470	**700**	470	
P.1.4	**660**	440	**660**	440	
P.1.5	**590**	390	**590**	390	
P.2.1	**850**	580	**850**	580	
P.2.2	**650**	430	**650**	430	
P.2.3	**590**	390	**590**	390	
P.2.4	**430**	270	**430**	270	
P.3.1	**560**	470	**560**	470	
P.3.2	**350**	320	**350**	320	
P.3.3	**140**	170	**140**	170	
P.4.1	**560**	470	**560**	470	
P.4.2	**450**	390	**450**	390	
M.1.1		**470**		**470**	
M.2.1		**320**		**320**	
M.3.1		**420**		**420**	
K.1.1	560		560		560
K.1.2	530		530		430
K.2.1	590		590		590
K.2.2	530		530		430
K.3.1	660		660		630
K.3.2	530		530		530
N.1.1					**5450**
N.1.2					**4460**
N.2.1					**3960**
N.2.2					**3630**
N.2.3					**1980**
N.3.1					**1730**
N.3.2					**1650**
N.3.3					**1240**
N.4.1					**910**
S.1.1					150
S.1.2					115
S.2.1					115
S.2.2					85
S.2.3					65
S.3.1					360
S.3.2					230
S.3.3					165
H.1.1					
H.1.2					
H.1.3					
H.1.4					
H.2.1					
H.3.1					
O.1.1					530
O.1.2					
O.2.1					460
O.2.2					
O.3.1					

The cutting data is strongly influenced by external conditions, such as the stability of the tool and workpiece clamping, material and type of machine. The specified values represent guideline cutting data that can be adjusted by approx. **±20%** according to the usage conditions.

Cutting data standard values for FreeTurn

Index	F		M		-28P
	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	
	CTCP125	CTPM125	CTCP125	CTPM125	H216T
	v_c in m/min				
P.1.1	**295**	205	**295**	205	
P.1.2	**255**	170	**255**	170	
P.1.3	**215**	140	**215**	140	
P.1.4	**200**	130	**200**	130	
P.1.5	**180**	120	**180**	120	
P.2.1	**260**	175	**260**	175	
P.2.2	**195**	130	**195**	130	
P.2.3	**180**	120	**180**	120	
P.2.4	**130**	80	**130**	80	
P.3.1	**170**	140	**170**	140	
P.3.2	**105**	95	**105**	95	
P.3.3	**45**	50	**45**	50	
P.4.1	**170**	140	**170**	140	
P.4.2	**140**	120	**140**	120	
M.1.1		**140**		**140**	
M.2.1		**100**		**100**	
M.3.1		**130**		**130**	
K.1.1	170		170		170
K.1.2	160		160		130
K.2.1	180		180		180
K.2.2	160		160		130
K.3.1	200		200		190
K.3.2	160		160		160
N.1.1					**1650**
N.1.2					**1350**
N.2.1					**1200**
N.2.2					**1100**
N.2.3					**600**
N.3.1					**525**
N.3.2					**500**
N.3.3					**375**
N.4.1					**275**
S.1.1					45
S.1.2					35
S.2.1					35
S.2.2					25
S.2.3					20
S.3.1					110
S.3.2					70
S.3.3					50
H.1.1					
H.1.2					
H.1.3					
H.1.4					
H.2.1					
H.3.1					
O.1.1					160
O.1.2					
O.2.1					140
O.2.2					
O.3.1					

The cutting data is strongly influenced by external conditions, such as the stability of the tool and workpiece clamping, material and type of machine. The specified values represent guideline cutting data that can be adjusted by approx. **±20%** according to the usage conditions.

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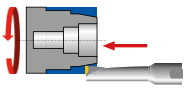
Depth of Cut and Feedrate for EcoCut Mini

Turning

2.25xD

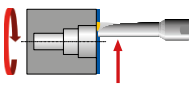


EcoCut Mini Size	Depth of Cut a_p in inch									
	0.010	0.020	0.030	0.040	0.060	0.080	0.100	0.120	0.140	0.160
	Feed rate f in inch/rev.									
ECM 02..	.0008–.0028	.0008–.0028								
ECM 02.5..	.0008–.0028	.0008–.0028	.0008–.0020							
ECM 03..	.0008–.0028	.0008–.0028	.0008–.0020	.0008–.0020						
ECM 03.5..	.0008–.0028	.0008–.0028	.0008–.0020	.0008–.0020	.0008–.0020					
ECM 04..	.0016–.0040	.0016–.0040	.0016–.0040	.0016–.0040	.0012–.0028	.0004–.0020				
ECM 05..	.0016–.0040	.0016–.0040	.0016–.0040	.0016–.0040	.0012–.0032	.0008–.0024	.0004–.0016			
ECM 06..	.0016–.0040	.0016–.0040	.0016–.0040	.0016–.0040	.0016–.0040	.0012–.0032	.0008–.0024	.0004–.0016		
ECM 07..	.0016–.0040	.0016–.0040	.0016–.0040	.0016–.0040	.0016–.0040	.0016–.0040	.0012–.0032	.0008–.0024	.0004–.0016	
ECM 08..	.0016–.0040	.0016–.0040	.0016–.0040	.0016–.0040	.0016–.0040	.0016–.0040	.0016–.0040	.0012–.0032	.0008–.0024	.0004–.0016

4xD

EcoCut Mini Size	Depth of Cut a_p in inch									
	0.010	0.020	0.030	0.040	0.060	0.080	0.100	0.120	0.140	0.160
	Feed rate f in inch/rev.									
ECM 02..	.0008–.0020	.0004–.0020								
ECM 02.5..	.0008–.0020	.0004–.0020								
ECM 03..	.0008–.0020	.0008–.0020	.0004–.0020							
ECM 03.5..	.0008–.0020	.0008–.0020	.0008–.0020	.0004–.0020						
ECM 04..	.0016–.0040	.0016–.0040	.0016–.0040	.0012–.0032	.0004–.0020					
ECM 05..	.0016–.0040	.0016–.0040	.0016–.0040	.0012–.00325	.0008–.0024	.0004–.0016				
ECM 06..	.0016–.0040	.0016–.0040	.0016–.0040	.0012–.00325	.0008–.0024	.0004–.0016				
ECM 07..	.0016–.0040	.0016–.0040	.0016–.0040	.0016–.0040	.0012–.0032	.0008–.0024	.0004–.0016			
ECM 08..	.0016–.0040	.0016–.0040	.0016–.0040	.0016–.0040	.0016–.00365	.0012–.0032	.0008–.0024	.0004–.0016		

Face turning

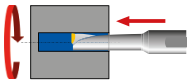


EcoCut Mini Size	2.25xD		4xD	
	$a_{p\ max.}$ in inch	f in inch/rev.	$a_{p\ max.}$ in inch	f in inch/rev.
ECM 02..	0.012	.0004–.0020	0.012	.0004–.0012
ECM 02.5..	0.012	.0004–.0020	0.012	.0004–.0012
ECM 03..	0.020	.0004–.0024	0.020	.0004–.0016
ECM 03.5..	0.020	.0004–.0024	0.020	.0004–.0016
ECM 04..	0.028	.0012–.0028	0.028	.0008–.0020
ECM 05..	0.028	.0012–.0028	0.028	.0008–.0020
ECM 06..	0.028	.0012–.0028	0.028	.0008–.0020
ECM 07..	0.039	.0016–.0032	0.039	.0012–.0024
ECM 08..	0.039	.0016–.0032	0.039	.0012–.0024

Depth of Cut and Feedrate for EcoCut Mini

Drilling

Feed rate



EcoCut Mini Size	2.25xD	4xD
	f in inch/rev.	f in inch/rev.
ECM 02..	.0001–.0003	.0001–.0002
ECM 02.5..	.0001–.0004	.0001–.0002
ECM 03..	.0001–.0005	.0001–.0004
ECM 03.5..	.0001–.0006	.0001–.0004
ECM 04..	.0002–.0012	.0002–.0005
ECM 05..	.0002–.0012	.0002–.0006
ECM 06..	.0002–.0012	.0002–.0008
ECM 07..	.0002–.0014	.0002–.0010
ECM 08..	.0002–.0016	.0002–.0012

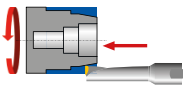
max. bore depth

EcoCut Mini Size	2.25xD	4xD
	Max. hole depth in inch	Max. hole depth in inch
ECM 02..	0.177	0.315
ECM 02.5..	0.222	0.394
ECM 03..	0.266	0.472
ECM 03.5..	0.310	0.551
ECM 04..	0.354	0.630
ECM 05..	0.443	0.787
ECM 06..	0.531	0.945
ECM 07..	0.620	1.102
ECM 08..	0.709	1.260

Depth of Cut and Feedrate for EcoCut Mini

Turning

2.25xD

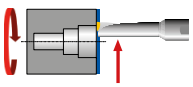


EcoCut Mini Size	Depth of Cut a_p in mm									
	0.25	0.5	0.75	1.0	1.5	2.0	2.5	3.0	3.5	4.0
	Feed rate f in mm/rev.									
ECM 02..	0.02–0.07	0.02–0.07								
ECM 02,5..	0.02–0.07	0.02–0.07	0.02–0.05							
ECM 03..	0.02–0.07	0.02–0.07	0.02–0.05	0.02–0.05						
ECM 03,5..	0.02–0.07	0.02–0.07	0.02–0.05	0.02–0.05	0.02–0.05					
ECM 04..	0.04–0.1	0.04–0.1	0.04–0.1	0.04–0.1	0.03–0.07	0.01–0.05				
ECM 05..	0.04–0.1	0.04–0.1	0.04–0.1	0.04–0.1	0.03–0.08	0.02–0.06	0.01–0.04			
ECM 06..	0.04–0.1	0.04–0.1	0.04–0.1	0.04–0.1	0.04–0.1	0.03–0.08	0.02–0.06	0.01–0.04		
ECM 07..	0.04–0.1	0.04–0.1	0.04–0.1	0.04–0.1	0.04–0.1	0.04–0.1	0.03–0.08	0.02–0.06	0.01–0.04	
ECM 08..	0.04–0.1	0.04–0.1	0.04–0.1	0.04–0.1	0.04–0.1	0.04–0.1	0.04–0.1	0.03–0.08	0.02–0.06	0.01–0.04

4xD

EcoCut Mini Size	Depth of Cut a_p in mm									
	0.25	0.5	0.75	1.0	1.5	2.0	2.5	3.0	3.5	4.0
	Feed rate f in mm/rev.									
ECM 02..	0.02–0.05	0.01–0.05								
ECM 02,5..	0.02–0.05	0.01–0.05								
ECM 03..	0.02–0.05	0.02–0.05	0.01–0.05							
ECM 03,5..	0.02–0.05	0.02–0.05	0.02–0.05	0.01–0.05						
ECM 04..	0.04–0.1	0.04–0.1	0.04–0.1	0.03–0.08	0.01–0.05					
ECM 05..	0.04–0.1	0.04–0.1	0.04–0.1	0.03–0.085	0.02–0.06	0.01–0.04				
ECM 06..	0.04–0.1	0.04–0.1	0.04–0.1	0.03–0.085	0.02–0.06	0.01–0.04				
ECM 07..	0.04–0.1	0.04–0.1	0.04–0.1	0.04–0.1	0.03–0.08	0.02–0.06	0.01–0.04			
ECM 08..	0.04–0.1	0.04–0.1	0.04–0.1	0.04–0.1	0.04–0.095	0.03–0.08	0.02–0.06	0.01–0.04		

Face turning

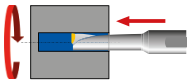


EcoCut Mini Size	2.25xD		4xD	
	$a_{p\,max.}$ in mm	f in mm/rev.	$a_{p\,max.}$ in mm	f in mm/rev.
ECM 02..	0.30	0.01–0.05	0.30	0.01–0.03
ECM 02,5..	0.30	0.01–0.05	0.30	0.01–0.03
ECM 03..	0.50	0.01–0.06	0.50	0.01–0.04
ECM 03,5..	0.50	0.01–0.06	0.50	0.01–0.04
ECM 04..	0.70	0.03–0.07	0.70	0.02–0.05
ECM 05..	0.70	0.03–0.07	0.70	0.02–0.05
ECM 06..	0.70	0.03–0.07	0.70	0.02–0.05
ECM 07..	1.00	0.04–0.08	1.00	0.03–0.06
ECM 08..	1.00	0.04–0.08	1.00	0.03–0.06

Depth of Cut and Feedrate for EcoCut Mini

Drilling

Feed rate



EcoCut Mini Size	2.25xD	4xD
	f in mm/rev.	f in mm/rev.
ECM 02..	0.0025–0.0075	0.0025–0.005
ECM 02.5..	0.0025–0.010	0.0025–0.005
ECM 03..	0.0025–0.0125	0.0025–0.010
ECM 03.5..	0.0025–0.0150	0.0025–0.010
ECM 04..	0.005–0.030	0.005–0.0125
ECM 05..	0.005–0.030	0.005–0.015
ECM 06..	0.005–0.030	0.005–0.020
ECM 07..	0.005–0.035	0.005–0.025
ECM 08..	0.005–0.040	0.005–0.030

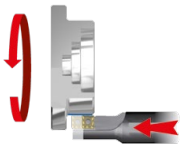
max. bore depth

EcoCut Mini Size	2.25xD	4xD
	Max. hole depth in mm	Max. hole depth in mm
ECM 02..	4.50	8.0
ECM 02.5..	5.63	10.0
ECM 03..	6.75	12.0
ECM 03.5..	7.88	14.0
ECM 04..	9.0	16.0
ECM 05..	11.25	20.0
ECM 06..	13.5	24.0
ECM 07..	15.75	28.0
ECM 08..	18.0	32.0

Depth of Cut and Feedrate for EcoCut Classic

Turning

1.5xD



EcoCut Classic Size	Depth of Cut a_p in inch											
	0.039	0.079	0.118	0.157	0.197	0.236	0.276	0.315	0.354	0.394	0.472	0.551
	Feed rate f in inch/rev.											
ECC 08	.0024–.0048	.0024–.0048	.0016–.0040	.0008–.0032								
ECC 10	.0028–.0060	.0028–.0060	.0020–.0052	.0016–.0043	.0008–.0036							
ECC 12	.0032–.0064	.0032–.0064	.0032–.0064	.0024–.0056	.0016–.0048	.0008–.0040						
ECC 14	.0036–.0072	.0036–.0072	.0036–.0072	.0036–.0072	.0028–.0064	.0020–.0056	.0008–.0043					
ECC 16	.0040–.0080	.0040–.0080	.0040–.0080	.0040–.0080	.0032–.0072	.0024–.0064	.0016–.0056	.0008–.0048				
ECC 18	.0043–.0088	.0043–.0088	.0043–.0088	.0043–.0088	.0043–.0088	.0036–.0080	.0028–.0072	.0020–.0064	.0012–.0052			
ECC 20	.0048–.0096	.0048–.0096	.0048–.0096	.0048–.0096	.0048–.0096	.0043–.0092	.0036–.0084	.0028–.0076	.0020–.0066	.0012–.0060		
ECC 25	.0052–.0102	.0052–.0102	.0052–.0102	.0052–.0102	.0052–.0102	.0052–.0102	.0052–.0102	.0043–.0096	.0036–.0088	.0028–.0080	.0012–.0064	
ECC 32	.0060–.0120	.0060–.0120	.0060–.0120	.0060–.0120	.0060–.0120	.0056–.0120	.0060–.0120	.0060–.0120	.0052–.0110	.0043–.0102	.0028–.0088	.0012–.0072

Feed f may be increased by 50–75 % when using -M50Q and -27Q.

2.25xD

EcoCut Classic Size	Depth of Cut a_p in inch										
	0.039	0.079	0.098	0.118	0.138	0.157	0.177	0.197	0.217	0.236	0.276
	Feed rate f in inch/rev.										
ECC 08	.0024–.0048	.0016–.0040	.0008–.0032								
ECC 10	.0028–.0060	.0020–.0052	.0012–.0043	.0008–.0036							
ECC 12	.0032–.0064	.0032–.0064	.0024–.0056	.0016–.0048	.0008–.0040						
ECC 14	.0036–.0072	.0036–.0072	.0028–.0064	.0020–.0056	.0016–.0052	.0008–.0043					
ECC 16	.0040–.0080	.0040–.0080	.0036–.0076	.0028–.0066	.0020–.0060	.0012–.0052					
ECC 18	.0043–.0088	.0043–.0088	.0043–.0088	.0036–.0080	.0028–.0072	.0020–.0064	.0012–.0056				
ECC 20	.0048–.0096	.0048–.0096	.0048–.0096	.0048–.0096	.0040–.0088	.0032–.0080	.0024–.0072	.0016–.0064			
ECC 25	.0052–.0102	.0052–.0102	.0052–.0102	.0052–.0102	.0052–.0102	.0048–.0100	.0040–.0092	.0032–.0084	.0024–.0076	.0016–.0066	
ECC 32	.0060–.0120	.0060–.0120	.0060–.0120	.0060–.0120	.0060–.0120	.0060–.0120	.0056–.0114	.0048–.0106	.0040–.0100	.0032–.0092	.0020–.0080

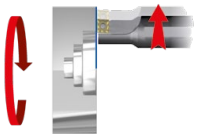
Feed f may be increased by 50–75 % when using -M50Q and -27Q.

3xD

EcoCut Classic Size	Depth of Cut a_p in inch								
	0.039	0.079	0.098	0.118	0.138	0.157	0.197	0.236	0.276
	Feed rate f in inch/rev.								
ECC 08	.0020–.0040	.0008–.0024							
ECC 10	.0024–.0043	.0012–.0028							
ECC 12	.0024–.0048	.0016–.0040	.0008–.0032						
ECC 14	.0028–.0052	.0020–.0043	.0008–.0036						
ECC 16	.0028–.0060	.0024–.0056	.0016–.0048	.0008–.0036					
ECC 18	.0032–.0064	.0032–.0064	.0024–.0056	.0016–.0048					
ECC 20	.0036–.0072	.0036–.0072	.0036–.0072	.0028–.0064	.0020–.0056	.0012–.0048			
ECC 25	.0040–.0076	.0040–.0076	.0040–.0076	.0032–.0066	.0024–.0060	.0012–.0052			
ECC 32	.0043–.0088	.0043–.0088	.0043–.0088	.0043–.0088	.0036–.0080	.0028–.0072	.0012–.0056		

Depth of Cut and Feedrate for EcoCut Classic

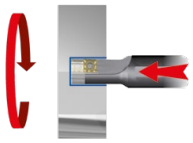
Face turning



EcoCut Classic Size	1.5xD		2.25xD		3xD	
	a_p inch	f in inch/rev.	a_p inch	f in inch/rev.	a_p inch	f in inch/rev.
ECC 08	0.079	.0020–.0040	0.075	.0016–.0036	0.043	.0016–.0028
ECC 10	0.098	.0024–.0048	0.087	.0020–.0040	0.047	.0016–.0036
ECC 12	0.118	.0028–.0056	0.102	.0024–.0048	0.055	.0020–.0044
ECC 14	0.138	.0032–.0064	0.118	.0028–.0056	0.063	.0024–.0048
ECC 16	0.157	.0036–.0072	0.134	.0032–.0064	0.075	.0024–.0052
ECC 18	0.177	.0040–.0080	0.150	.0036–.0072	0.079	.0028–.0056
ECC 20	0.197	.0044–.0088	0.165	.0040–.0080	0.087	.0032–.0060
ECC 25	0.236	.0048–.0094	0.197	.0044–.0088	0.102	.0036–.0072
ECC 32	0.315	.0052–.0106	0.236	.0048–.0100	0.118	.0040–.0080

Drilling

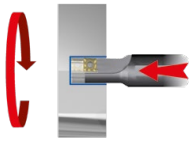
Feed rate



EcoCut Classic Size	1.5xD	2.25xD	3xD
	f in inch/rev.	f in inch/rev.	f in inch/rev.
ECC 08	.0004–.0016	.0004–.0016	.0004–.0008
ECC 10	.0004–.0020	.0004–.0020	.0004–.0012
ECC 12	.0004–.0020	.0004–.0020	.0004–.0016
ECC 14	.0004–.0028	.0004–.0028	.0004–.0020
ECC 16	.0008–.0032	.0008–.0032	.0008–.0024
ECC 18	.0012–.0036	.0012–.0036	.0012–.0028
ECC 20	.0012–.0040	.0012–.0040	.0012–.0032
ECC 25	.0012–.0048	.0012–.0048	.0016–.0036
ECC 32	.0020–.0060	.0020–.0060	.0020–.0044

10

max. bore depth

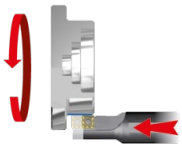


EcoCut Classic Size	1.5xD	2.25xD	3xD
	Max. hole depth in inch	Max. hole depth in inch	Max. hole depth in inch
ECC 08	0.472	0.709	0.945
ECC 10	0.591	0.886	1.181
ECC 12	0.709	1.063	1.417
ECC 14	0.827	1.240	1.654
ECC 16	0.945	1.417	1.890
ECC 18	1.063	1.594	2.126
ECC 20	1.181	1.772	2.362
ECC 25	1.476	2.224	2.953
ECC 32	1.890	2.835	3.780

Depth of Cut and Feedrate for EcoCut Classic

Turning

1.5xD



EcoCut Classic Size	Depth of Cut a_p in mm											
	1	2	3	4	5	6	7	8	9	10	12	14
	Feed rate f in mm/rev.											
ECC 08	0.06–0.12	0.06–0.12	0.04–0.10	0.02–0.08								
ECC 10	0.07–0.15	0.07–0.15	0.05–0.13	0.04–0.11	0.02–0.09							
ECC 12	0.08–0.16	0.08–0.16	0.08–0.16	0.06–0.14	0.04–0.12	0.02–0.10						
ECC 14	0.09–0.18	0.09–0.18	0.09–0.18	0.09–0.18	0.07–0.16	0.05–0.14	0.02–0.11					
ECC 16	0.10–0.20	0.10–0.20	0.10–0.20	0.10–0.20	0.08–0.18	0.06–0.16	0.04–0.14	0.02–0.12				
ECC 18	0.11–0.22	0.11–0.22	0.11–0.22	0.11–0.22	0.11–0.22	0.09–0.20	0.07–0.18	0.05–0.16	0.03–0.13			
ECC 20	0.12–0.24	0.12–0.24	0.12–0.24	0.12–0.24	0.12–0.24	0.11–0.23	0.09–0.21	0.07–0.19	0.05–0.17	0.03–0.15		
ECC 25	0.13–0.26	0.13–0.26	0.13–0.26	0.13–0.26	0.13–0.26	0.13–0.26	0.13–0.26	0.11–0.24	0.09–0.22	0.07–0.20	0.03–0.16	
ECC 32	0.15–0.30	0.15–0.30	0.15–0.30	0.15–0.30	0.15–0.30	0.14–0.30	0.15–0.30	0.15–0.30	0.13–0.28	0.11–0.26	0.07–0.22	0.03–0.18

Feed f may be increased by 50–75 % when using -M50Q and -27Q.

2.25xD

EcoCut Classic Size	Depth of Cut a_p in mm										
	1.0	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0	7.0
	Feed rate f in mm/rev.										
ECC 08	0.06–0.12	0.04–0.10	0.02–0.08								
ECC 10	0.07–0.15	0.05–0.13	0.03–0.11	0.02–0.09							
ECC 12	0.08–0.16	0.08–0.16	0.06–0.14	0.04–0.12	0.02–0.10						
ECC 14	0.09–0.18	0.09–0.18	0.07–0.16	0.05–0.14	0.04–0.13	0.02–0.11					
ECC 16	0.10–0.20	0.10–0.20	0.09–0.19	0.07–0.17	0.05–0.15	0.03–0.13					
ECC 18	0.11–0.22	0.11–0.22	0.11–0.22	0.09–0.20	0.07–0.18	0.05–0.16	0.03–0.14				
ECC 20	0.12–0.24	0.12–0.24	0.12–0.24	0.12–0.24	0.10–0.22	0.08–0.20	0.06–0.18	0.04–0.16			
ECC 25	0.13–0.26	0.13–0.26	0.13–0.26	0.13–0.26	0.13–0.26	0.12–0.25	0.10–0.23	0.08–0.21	0.06–0.19	0.04–0.17	
ECC 32	0.15–0.30	0.15–0.30	0.15–0.30	0.15–0.30	0.15–0.30	0.15–0.30	0.14–0.29	0.12–0.27	0.10–0.25	0.08–0.23	0.05–0.20

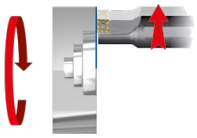
Feed f may be increased by 50–75 % when using -M50Q and -27Q.

3xD

EcoCut Classic Size	Depth of Cut a_p in mm								
	1.0	2.0	2.5	3.0	3.5	4.0	5.0	6.0	7.0
	Feed rate f in mm/rev.								
ECC 08	0.05–0.10	0.02–0.06							
ECC 10	0.06–0.11	0.03–0.07							
ECC 12	0.06–0.12	0.04–0.10	0.02–0.08						
ECC 14	0.07–0.13	0.05–0.11	0.02–0.09						
ECC 16	0.07–0.15	0.06–0.14	0.04–0.12	0.02–0.09					
ECC 18	0.08–0.16	0.08–0.16	0.06–0.14	0.04–0.12					
ECC 20	0.09–0.18	0.09–0.18	0.09–0.18	0.07–0.16	0.05–0.14	0.03–0.12			
ECC 25	0.10–0.19	0.10–0.19	0.10–0.19	0.08–0.17	0.06–0.15	0.03–0.13			
ECC 32	0.11–0.22	0.11–0.22	0.11–0.22	0.11–0.22	0.09–0.20	0.07–0.18	0.03–0.14		

Depth of Cut and Feedrate for EcoCut Classic

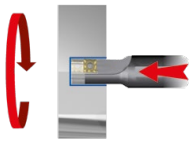
Face turning



EcoCut Classic Size	1.5xD		2.25xD		3xD	
	a_p mm	f in mm/rev.	a_p mm	f in mm/rev.	a_p mm	f in mm/rev.
ECC 08	2.00	0.05–0.10	1.90	0.04–0.09	1.10	0.04–0.07
ECC 10	2.50	0.06–0.12	2.20	0.05–0.10	1.20	0.04–0.09
ECC 12	3.00	0.07–0.14	2.60	0.06–0.12	1.40	0.05–0.11
ECC 14	3.50	0.08–0.16	3.00	0.07–0.14	1.60	0.06–0.12
ECC 16	4.00	0.09–0.18	3.40	0.08–0.16	1.90	0.06–0.13
ECC 18	4.50	0.10–0.20	3.80	0.09–0.18	2.00	0.07–0.14
ECC 20	5.00	0.11–0.22	4.20	0.10–0.20	2.20	0.08–0.15
ECC 25	6.00	0.12–0.24	5.00	0.11–0.22	2.60	0.09–0.18
ECC 32	8.00	0.13–0.27	6.00	0.12–0.25	3.00	0.10–0.20

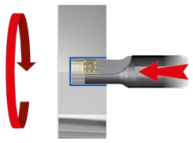
Drilling

Feed rate



EcoCut Classic Size	1.5xD	2.25xD	3xD
	f in mm/rev.	f in mm/rev.	f in mm/rev.
ECC 08	0.01–0.04	0.01–0.04	0.01–0.02
ECC 10	0.01–0.05	0.01–0.05	0.01–0.03
ECC 12	0.01–0.05	0.01–0.05	0.01–0.04
ECC 14	0.01–0.07	0.01–0.07	0.01–0.05
ECC 16	0.02–0.08	0.02–0.08	0.02–0.06
ECC 18	0.03–0.09	0.03–0.09	0.03–0.07
ECC 20	0.03–0.10	0.03–0.10	0.03–0.08
ECC 25	0.03–0.12	0.03–0.12	0.04–0.09
ECC 32	0.05–0.15	0.05–0.15	0.05–0.11

max. bore depth

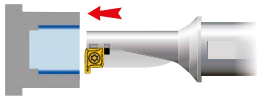


EcoCut Classic Size	1.5xD	2.25xD	3xD
	Max. hole depth in mm	Max. hole depth in mm	Max. hole depth in mm
ECC 08	12.0	18.0	24.0
ECC 10	15.0	22.5	30.0
ECC 12	18.0	27.0	36.0
ECC 14	21.0	31.5	42.0
ECC 16	24.0	36.0	48.0
ECC 18	27.0	40.5	54.0
ECC 20	30.0	45.0	60.0
ECC 25	37.5	56.5	75.0
ECC 32	48.0	72.0	96.0

Depth of Cut and Feedrate for EcoCut ProfileMaster 90°

Turning

1.5xD



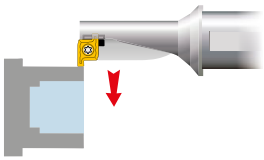
EcoCut ProfileMaster Size	Depth of Cut a_p in inch							
	0.039	0.079	0.118	0.157	0.197	0.236	0.276	0.315
	Feed rate f in inch/rev.							
EC PM 10	.0028–.0080	.0020–.0068	.0008–.0048					
EC PM 12	.0028–.0080	.0020–.0068	.0008–.0048					
EC PM 16	.0040–.0100	.0028–.0092	.0020–.0084	.0008–.0068				
EC PM 20	.0048–.0108	.0040–.0104	.0027–.0096	.0020–.0080	.0008–.0056			
EC PM 25	.0060–.0118	.0060–.0118	.0052–.0110	.0040–.0104	.0020–.0088	.0008–.0072		
EC PM 32	.0060–.0118	.0060–.0118	.0060–.0118	.0060–.0118	.0040–.0108	.0028–.0096	.0020–.0084	.0008–.0060

2.25xD

EcoCut ProfileMaster Size	Depth of Cut a_p in inch							
	0.039	0.079	0.118	0.157	0.197	0.236	0.276	0.315
	Feed rate f in inch/rev.							
EC PM 10	.0028–.0076	.0008–.0052						
EC PM 12	.0028–.0076	.0008–.0052						
EC PM 16	.0040–.0100	.0028–.0084	.0008–.0052					
EC PM 20	.0048–.0108	.0028–.0096	.0020–.0076					
EC PM 25	.0060–.0118	.0040–.0108	.0028–.0092	.0008–.0060				
EC PM 32	.0060–.0118	.0060–.0118	.0040–.0108	.0028–.0092	.0008–.0060			

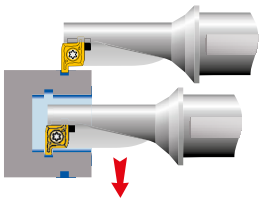
Face turning

1.5xD and 2.25xD



EcoCut ProfileMaster Size	Depth of Cut a_p in inch					
	0.039	0.059	0.079	0.098	0.118	0.138
	Feed rate f in inch/rev.					
EC PM 10	.0008–.0060	.0008–.0060				
EC PM 12	.0008–.0060	.0008–.0060				
EC PM 16	.0020–.0080	.0020–.0080	.0020–.0080			
EC PM 20	.0032–.0088	.0032–.0088	.0032–.0088	.0032–.0088		
EC PM 25	.0040–.0100	.0040–.0100	.0040–.0100	.0040–.0100	.0040–.0100	
EC PM 32	.0040–.0100	.0040–.0100	.0040–.0100	.0040–.0100	.0040–.0100	.0040–.0100

Internal + external – radial grooving

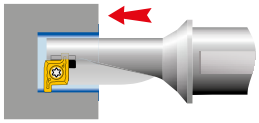


EcoCut ProfileMaster Size	1.5xD
	f in inch/rev.
EC PM 10	.0004–.0032
EC PM 12	.0008–.0040
EC PM 16	.0016–.0060
EC PM 20	.0016–.0064
EC PM 25	.0028–.0080
EC PM 32	.0032–.0088

EcoCut ProfileMaster Size	2.25xD
	f in inch/rev.
EC PM 10	.0004–.0032
EC PM 12	.0008–.0040
EC PM 16	.0016–.0060
EC PM 20	.0016–.0064
EC PM 25	.0028–.0080
EC PM 32	.0032–.0088

Drilling

Feed and max. hole depth



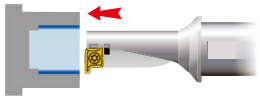
EcoCut ProfileMaster Size	1.5xD	
	f in inch/rev.	Max. hole depth in inch
EC PM 10	.0004–.0020	0.59
EC PM 12	.0004–.0024	0.71
EC PM 16	.0008–.0036	0.94
EC PM 20	.0012–.0040	1.18
EC PM 25	.0016–.0048	1.48
EC PM 32	.0016–.0056	1.89

EcoCut ProfileMaster Size	2.25xD	
	f in inch/rev.	Max. hole depth in inch
EC PM 10	.0004–.0020	0.89
EC PM 12	.0004–.0024	1.06
EC PM 16	.0008–.0036	1.42
EC PM 20	.0012–.0040	1.77
EC PM 25	.0016–.0048	2.22
EC PM 32	.0016–.0056	2.83

Depth of Cut and Feedrate for EcoCut ProfileMaster 90°

Turning

1.5xD



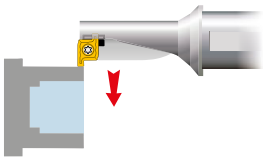
EcoCut ProfileMaster Size	Depth of Cut a_p in mm							
	1	2	3	4	5	6	7	8
	Feed rate f in mm/rev.							
EC PM 10	0.07–0.20	0.05–0.17	0.02–0.12					
EC PM 12	0.07–0.20	0.05–0.17	0.02–0.12					
EC PM 16	0.10–0.25	0.07–0.23	0.05–0.21	0.02–0.17				
EC PM 20	0.12–0.27	0.10–0.26	0.007–0.24	0.05–0.20	0.02–0.14			
EC PM 25	0.15–0.30	0.15–0.30	0.13–0.28	0.10–0.26	0.05–0.22	0.02–0.18		
EC PM 32	0.15–0.30	0.15–0.30	0.15–0.30	0.15–0.30	0.10–0.27	0.07–0.24	0.05–0.21	0.02–0.15

2.25xD

EcoCut ProfileMaster Size	Depth of Cut a_p in mm							
	1	2	3	4	5	6	7	8
	Feed rate f in mm/rev.							
EC PM 10	0.07–0.19	0.02–0.13						
EC PM 12	0.07–0.19	0.02–0.13						
EC PM 16	0.10–0.25	0.07–0.21	0.02–0.13					
EC PM 20	0.12–0.27	0.07–0.24	0.05–0.19					
EC PM 25	0.15–0.30	0.10–0.27	0.07–0.23	0.02–0.15				
EC PM 32	0.15–0.30	0.15–0.30	0.10–0.27	0.07–0.23	0.02–0.15			

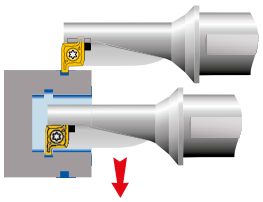
Face turning

1.5xD and 2.25xD



EcoCut ProfileMaster Size	Depth of Cut a_p in mm					
	1.0	1.5	2.0	2.5	3.0	3.5
	Feed rate f in mm/rev.					
EC PM 10	0.02–0.15	0.02–0.15				
EC PM 12	0.02–0.15	0.02–0.15				
EC PM 16	0.05–0.20	0.05–0.20	0.05–0.20			
EC PM 20	0.08–0.22	0.08–0.22	0.08–0.22	0.08–0.22		
EC PM 25	0.10–0.25	0.10–0.25	0.10–0.25	0.10–0.25	0.10–0.25	
EC PM 32	0.10–0.25	0.10–0.25	0.10–0.25	0.10–0.25	0.10–0.25	0.10–0.25

Internal + external – radial grooving

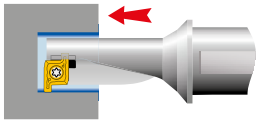


EcoCut ProfileMaster Size	1.5xD
	f in mm/rev.
EC PM 10	0.01–0.08
EC PM 12	0.02–0.10
EC PM 16	0.04–0.15
EC PM 20	0.04–0.16
EC PM 25	0.07–0.20
EC PM 32	0.08–0.22

EcoCut ProfileMaster Size	2.25xD
	f in mm/rev.
EC PM 10	0.01–0.08
EC PM 12	0.02–0.10
EC PM 16	0.04–0.15
EC PM 20	0.04–0.16
EC PM 25	0.07–0.20
EC PM 32	0.08–0.22

Drilling

Feed and max. hole depth



EcoCut ProfileMaster Size	1.5xD	
	f in mm/rev.	Max. hole depth in mm
EC PM 10	0.01–0.05	15.0
EC PM 12	0.01–0.06	18.0
EC PM 16	0.02–0.09	24.0
EC PM 20	0.03–0.10	30.0
EC PM 25	0.04–0.12	37.5
EC PM 32	0.04–0.14	48.0

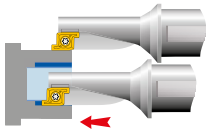
EcoCut ProfileMaster Size	2.25xD	
	f in mm/rev.	Max. hole depth in mm
EC PM 10	0.01–0.05	22.5
EC PM 12	0.01–0.06	27.0
EC PM 16	0.02–0.09	36.0
EC PM 20	0.03–0.10	45.0
EC PM 25	0.04–0.12	56.3
EC PM 32	0.04–0.14	72.0

Depth of Cut and Feedrate for EcoCut ProfileMaster 0°

EcoCut ProfileMaster Sizes 10 and 12 can not be used as 0° version.

Turning

1.5xD



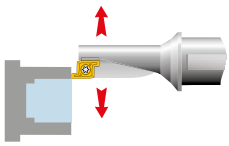
EcoCut ProfileMaster Size	Depth of cut a_p in inch					
	0.039	0.059	0.079	0.098	0.118	0.138
	Feed rate f in inch/rev.					
EC PM 16	.0016–.0080	.0016–.0080	.0016–.0080			
EC PM 20	.0024–.0088	.0024–.0088	.0024–.0088	.0024–.0088		
EC PM 25	.0032–.0100	.0032–.0100	.0032–.0100	.0032–.0100	.0032–.0100	
EC PM 32	.0040–.0112	.0040–.0112	.0040–.0112	.0040–.0112	.0040–.0112	.0040–.0112

2.25xD

EcoCut ProfileMaster Size	Depth of cut a_p in inch					
	0.039	0.059	0.079	0.098	0.118	0.138
	Feed rate f in inch/rev.					
EC PM 16	.0016–.0080	.0016–.0080	.0016–.0080			
EC PM 20	.0024–.0088	.0024–.0088	.0024–.0088	.0024–.0088		
EC PM 25	.0032–.0100	.0032–.0100	.0032–.0100	.0032–.0100	.0032–.0100	
EC PM 32	.0040–.0112	.0040–.0112	.0040–.0112	.0040–.0112	.0040–.0112	.0040–.0112

Face turning

1.5xD

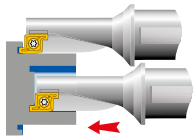


EcoCut ProfileMaster Size	Depth of cut a_p in inch						
	0.039	0.059	0.079	0.098	0.118	0.138	0.157
	Feed rate f in inch/rev.						
EC PM 16	.0020–.0080	.0020–.0080	.0020–.0080				
EC PM 20	.0020–.0080	.0020–.0080	.0020–.0080	.0020–.0080			
EC PM 25	.0040–.0100	.0040–.0100	.0040–.0100	.0040–.0100	.0040–.0100		
EC PM 32	.0040–.0100	.0040–.0100	.0040–.0100	.0040–.0100	.0040–.0100	.0040–.0100	.0040–.0100

2.25xD

EcoCut ProfileMaster Size	Depth of cut a_p in inch						
	0.039	0.059	0.079	0.098	0.118	0.138	0.157
	Feed rate f in inch/rev.						
EC PM 16	.0020–.0080	.0020–.0080	.0020–.0080				
EC PM 20	.0020–.0080	.0020–.0080	.0020–.0080	.0020–.0080			
EC PM 25	.0040–.0100	.0040–.0100	.0040–.0100	.0040–.0100	.0040–.0100		
EC PM 32	.0040–.0100	.0040–.0100	.0040–.0100	.0040–.0100	.0040–.0100	.0040–.0100	.0040–.0100

Axial grooving external + internal



EcoCut ProfileMaster Size	1.5xD
	Feed rate f in inch/rev.
EC PM 16	.0008–.0048
EC PM 20	.0016–.0056
EC PM 25	.0024–.0072
EC PM 32	.0032–.0080

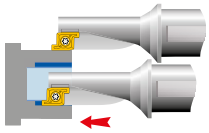
EcoCut ProfileMaster Size	2.25xD
	Feed rate f in inch/rev.
EC PM 16	.0008–.0048
EC PM 20	.0016–.0056
EC PM 25	.0024–.0072
EC PM 32	.0032–.0080

Depth of Cut and Feedrate for EcoCut ProfileMaster 0°

EcoCut ProfileMaster Sizes 10 and 12 can not be used as 0° version.

Turning

1.5xD



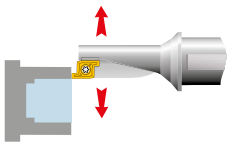
EcoCut ProfileMaster Size	Depth of cut a_p in mm					
	1.0	1.5	2.0	2.5	3.0	3.5
	Feed rate f in mm/rev.					
EC PM 16	0.04–0.20	0.04–0.20	0.04–0.20			
EC PM 20	0.06–0.22	0.06–0.22	0.06–0.22	0.06–0.22		
EC PM 25	0.08–0.25	0.08–0.25	0.08–0.25	0.08–0.25	0.08–0.25	
EC PM 32	0.10–0.28	0.10–0.28	0.10–0.28	0.10–0.28	0.10–0.28	0.10–0.28

2.25xD

EcoCut ProfileMaster Size	Depth of cut a_p in mm					
	1.0	1.5	2.0	2.5	3.0	3.5
	Feed rate f in mm/rev.					
EC PM 16	0.04–0.20	0.04–0.20	0.04–0.20			
EC PM 20	0.06–0.22	0.06–0.22	0.06–0.22	0.06–0.22		
EC PM 25	0.08–0.25	0.08–0.25	0.08–0.25	0.08–0.25	0.08–0.25	
EC PM 32	0.10–0.28	0.10–0.28	0.10–0.28	0.10–0.28	0.10–0.28	0.10–0.28

Face turning

1.5xD

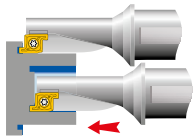


EcoCut ProfileMaster Size	Depth of cut a_p in mm						
	1.0	1.5	2.0	2.5	3.0	3.5	4.0
	Feed rate f in mm/rev.						
EC PM 16	0.05–0.20	0.05–0.20	0.05–0.20				
EC PM 20	0.05–0.20	0.05–0.20	0.05–0.20	0.05–0.20			
EC PM 25	0.10–0.25	0.10–0.25	0.10–0.25	0.10–0.25	0.10–0.25		
EC PM 32	0.10–0.25	0.10–0.25	0.10–0.25	0.10–0.25	0.10–0.25	0.10–0.25	0.10–0.25

2.25xD

EcoCut ProfileMaster Size	Depth of cut a_p in mm						
	1.0	1.5	2.0	2.5	3.0	3.5	4.0
	Feed rate f in mm/rev.						
EC PM 16	0.05–0.20	0.05–0.20	0.05–0.20				
EC PM 20	0.05–0.20	0.05–0.20	0.05–0.20	0.05–0.20			
EC PM 25	0.10–0.25	0.10–0.25	0.10–0.25	0.10–0.25	0.10–0.25		
EC PM 32	0.10–0.25	0.10–0.25	0.10–0.25	0.10–0.25	0.10–0.25	0.10–0.25	0.10–0.25

Axial grooving external + internal



EcoCut ProfileMaster Size	1.5xD
	Feed rate f in mm/rev.
EC PM 16	0.02–0.12
EC PM 20	0.04–0.14
EC PM 25	0.06–0.18
EC PM 32	0.08–0.20

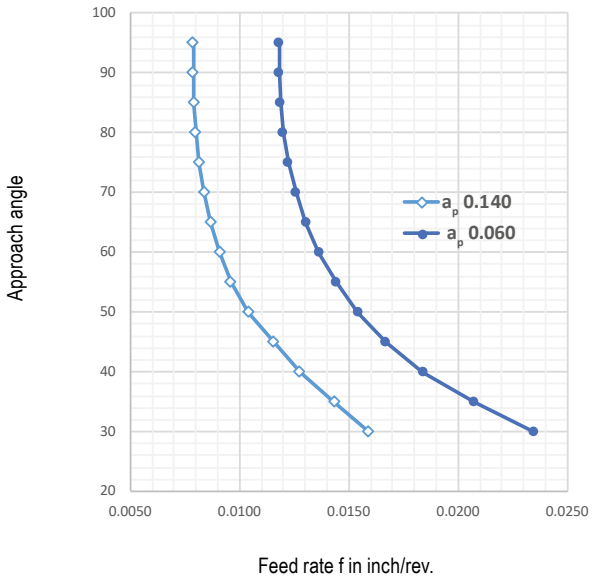
EcoCut ProfileMaster Size	2.25xD
	Feed rate f in mm/rev.
EC PM 16	0.02–0.12
EC PM 20	0.04–0.14
EC PM 25	0.06–0.18
EC PM 32	0.08–0.20

10

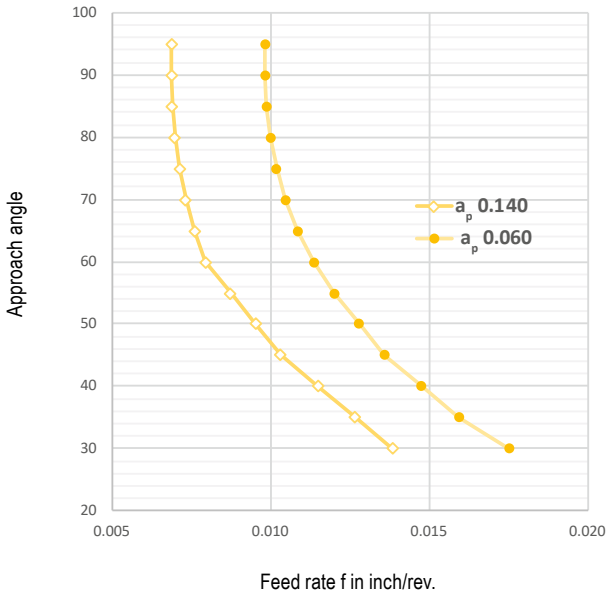
Initial curves for FreeTurn

	Material				Inserts		v_c in ft/min	Cooling
Steel	1.7225	42CrMo4	1010 N/mm²	P.2.3	FT1x M 80xxxxR08 -M	CTCP125	660	Emulsion
Stainless steel	1.4301	X5CrNi18-10	610 N/mm²	M.1.1	FT1x M 80xxxxR08 -M	CTPM125	320	dry
Non-ferrous metals	3.2341	G-AlSi 5 Mg	200 N/mm²	N2.2	FT1x G 35xxxxR08-28P	H210T	1320	Emulsion

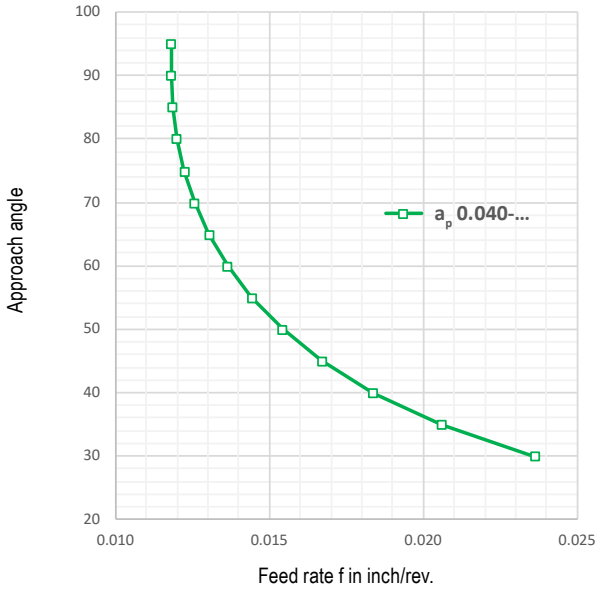
Steel



Stainless steel



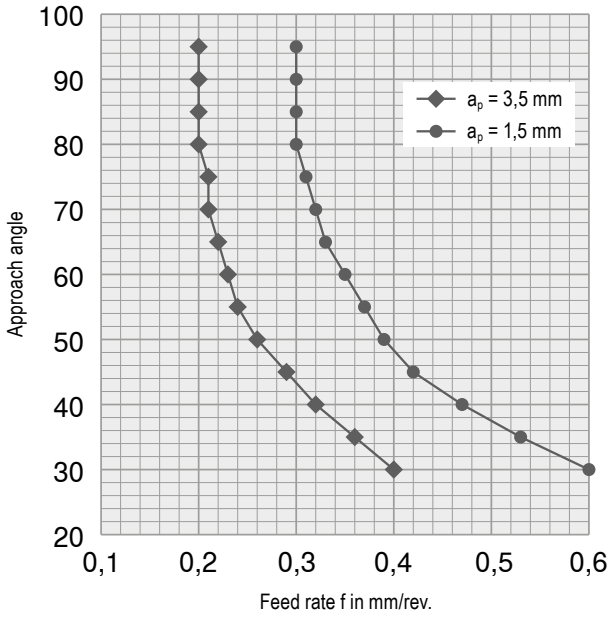
Non-ferrous metals



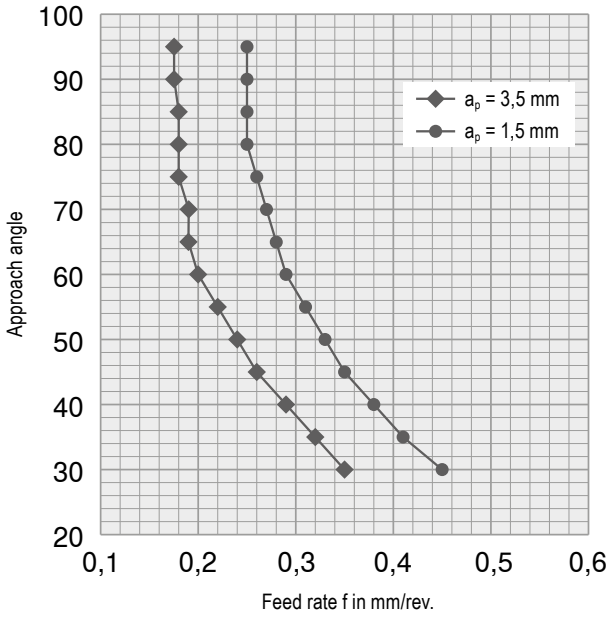
Initial curves for FreeTurn

	Material				Inserts		v_c in m/min	Cooling
Steel	1.7225	42CrMo4	1010 N/mm²	P.2.3	FT1x M 80xxxxR08 -M	CTCP125	200	Emulsion
Stainless steel	1.4301	X5CrNi18-10	610 N/mm²	M.1.1	FT1x M 80xxxxR08 -M	CTPM125	140	Emulsion
Non-ferrous metals	3.2341	G-AlSi 5 Mg	200 N/mm²	N2.2	FT1x G 35xxxxR08-28P	H210T	1100	Emulsion

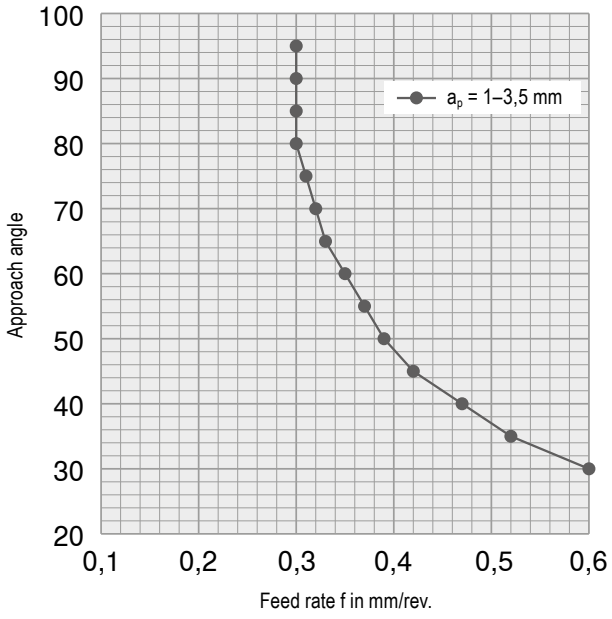
Steel



Stainless steel



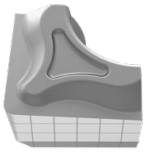
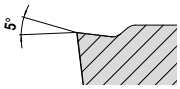
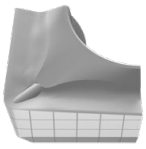
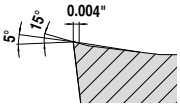
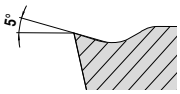
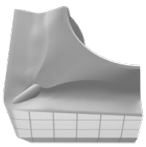
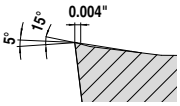
Non-ferrous metals



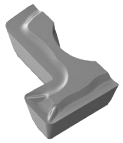
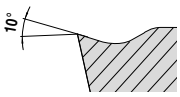
10

Chip Breakers Overview

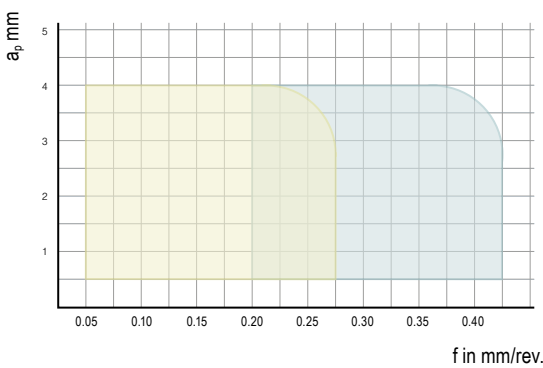
EcoCut Classic

	Model	Smooth cut	Irregular cutting depth	Interrupted cut	Sectional illustration
		○	◔	◌	Feed f
-EN ▲ Universal geometry ▲ Excellent chip breakage ▲ Positive cutting edge ▲ Low to medium feeds		**CTCP425-P** **CTCP425-P / CTPP430** CTCP425-P CTPP430 CTCP435-P / CTPP430 CTCP435-P / CTPP430	**CTCP435-P / CTPP430** **CTPP430** CTCP435-P / CTPP430 CTPP430 CTCP435-P / CTPP430 CTCP435-P / CTPP430	**CTPP430 / CTCP435-P** **CTPP430** CTCP435-P CTPP430 CTCP435-P CTCP435-P	 0.002" – 0.011" 0.05 – 0.275 mm
-M50Q ▲ With wiper geometry ▲ Excellent surface qualities ▲ Good chip formation ▲ Medium to high feeds		**CTCP425-P** CTCP425-P CTCP425-P	**CTCP425-P** CTCP425-P		 0.008" – 0.017" 0.2 – 0.425 mm
-27P ▲ Positive cutting edge ▲ Periphery ground ▲ Polished rake face ▲ First choice for non-ferrous metals		**H216T** **H216T** H216T H216T	**H216T** **H216T** H216T H216T	**H216T** **H216T** 	 0.004" – 0.016" 0.1 – 0.4 mm
-27Q ▲ With wiper geometry ▲ Extremely positive geometry ▲ Periphery ground ▲ Low adhesion		H210T **H210T** **H210T** H210T	H210T **H210T** **H210T** H210T		 0.008" – 0.020" 0.2 – 0.5 mm

EcoCut ProfileMaster

-M20 ▲ Positive geometry ▲ Universal application ▲ Low to medium feeds		**CTPP430** **CTPP430** CTPP430 CTPP430 **CTPP430** CTPP430	**CTPP430** **CTPP430** CTPP430 CTPP430 **CTPP430** CTPP430	**CTPP40** **CTPP430** CTPP430 CTPP430 CTPP430	 0.002" – 0.010" 0.05 – 0.25 mm

Application area of -EN and -M50Q chip breakers



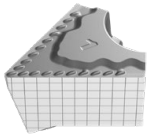
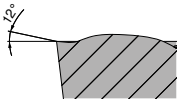
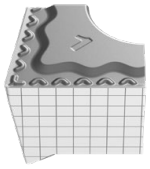
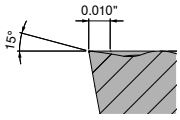
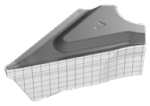
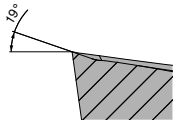
EcoCut Classic 2.25xD – ECC16 – XCNT 080304

= -M50Q

= Standard

Chip Breakers Overview

FreeTurn

	Model	Smooth cut	Irregular cutting depth	Interrupted cut	Sectional illustration
		○	◔	◌	Feed f
-F ▲ Traditional finishing geometry ▲ High surface quality ▲ First choice for finishing steel		**CTCP125** CTCP125	**CTCP125** CTCP125		 0 – 0.236" 0 – 6 mm
-M ▲ Average to rough machining ▲ Aggressive chip breaker		CTPM125 **CTPM125**	CTPM125 **CTPM125**		 0 – 0.236" 0 – 6 mm
-28P ▲ Traditional finishing geometry ▲ Sharp cutting edge ▲ First choice for aluminium		H216T **H216T** H216T H216T	H216T **H216T** H216T H216T	H216T **H216T**	 0 – 0.070" 0 – 1.8 mm

10

EcoCut Classic – Application as the most stable boring tool

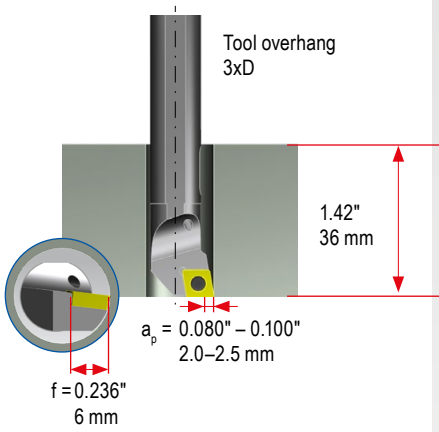
EcoCut can be used not only as a multifunctional tool.
In comparison with a boring bar EcoCut used as a pure boring tool gives the user enormous benefits.

Example: machining bores, 0.629" (16 mm) diameter by 1.420" (36 mm) depth

Differences in the tool

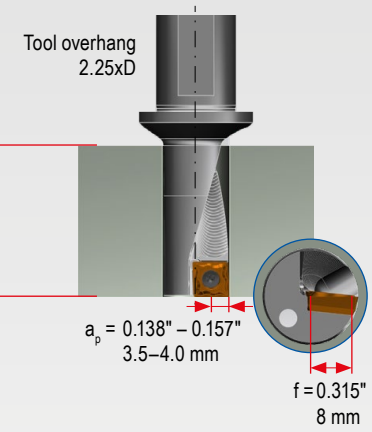
Boring Bar

A12K SCFCR 06



EcoCut Classic

ECC 16R-2.25D 08



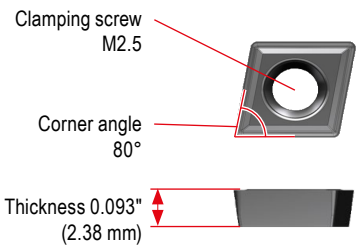
Your Advantages

Large, stable toolholder
- Absorption of high cutting forces
- Low vibration
- Chip Booster for perfect cooling and chip evacuation

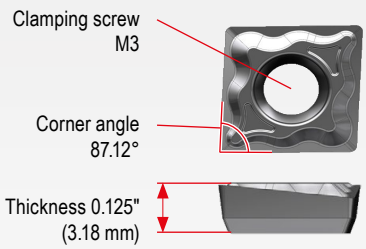
Benefits
- High surface quality
- Perfect chip control
- Max. process security

Differences in the insert

CCMT 060204



XCNT 080304

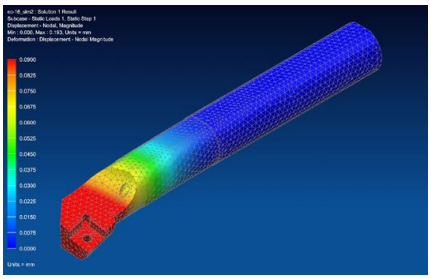


Large and stable insert
- Increased process security
- Enables large depths of cut
- Higher cutting data
- Higher tool life

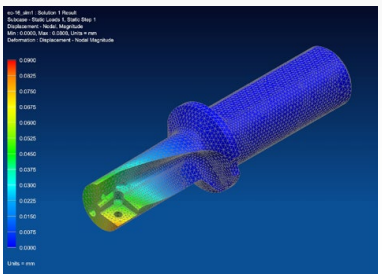
Benefits
- Reduction in machining time
- Increased productivity
- Reduced tooling costs

Stability Comparison

Calculation using FEM
A load of 1000 N on the insert seat corresponds to an approx. a_p of 0.080" (2.0 mm) and f 0.008" (0.2 mm)



Deflection 0.007" (0.19 mm)

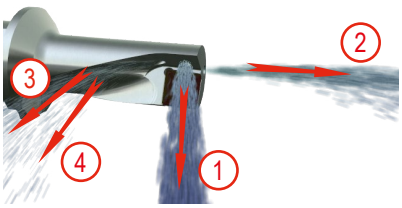


Deflection 0.003" (0.08 mm)

Practical experience shows:

- Reduced machining time by up to **75 %**
- Increase in tool life by **400 %** possible

Innovative chip removal – Chip-Booster



EcoCut tools are equipped with a unique coolant and chip removal system.

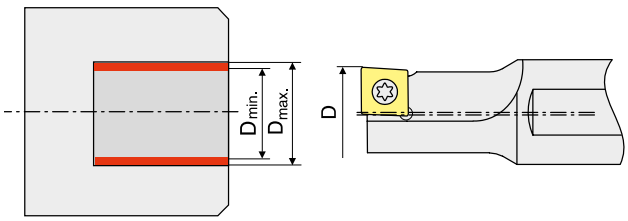
1. Cooling of the indexable insert
2. General coolant stream
3. Chip booster for improved chip transport
4. Chip booster prevents chips from getting stuck between tool and workpiece

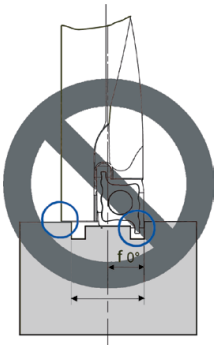
For maximum chip transport efficiency when drilling, coolant pressure must be 3–6 bar minimum (optimal 7–10 bar).

Application Tips

Drilling off-center

Due to the special construction of the EcoCut tool and insert, off-centre drilling is possible. Deviations from the tool nominal Ø, can be achieved (see adjacent table).





ProfileMaster 0°
Not suitable for drilling!

EcoCut Mini	Tool nominal-Ø		Work piece bore Ø			
	D		Dmin		Dmax	
ECM 02 L/R - …D	0.079"	2 mm	0.077"	1.95 mm	0.083"	2.1 mm
ECM 02.5 L/R - …D	0.098"	2.5 mm	0.096"	2.45 mm	0.102"	2.6 mm
ECM 03 L/R - …D	0.118"	3 mm	0.116"	2.95 mm	0.124"	3.15 mm
ECM 03.5 L/R - …D	0.138"	3.5 mm	0.136"	3.45 mm	0.144"	3.65 mm
ECM 04 R/L - ...D	0.157"	4 mm	0.154"	3.90 mm	0.165"	4.20 mm
ECM 05 R/L - ...D	0.197"	5 mm	0.193"	4.90 mm	0.205"	5.20 mm
ECM 06 R/L - ...D	0.236"	6 mm	0.232"	5.90 mm	0.244"	6.20 mm
ECM 07 R/L - ...D	0.276"	7 mm	0.272"	6.90 mm	0.283"	7.20 mm
ECM 08 R/L - ...D	0.315"	8 mm	0.311"	7.90 mm	0.323"	8.20 mm

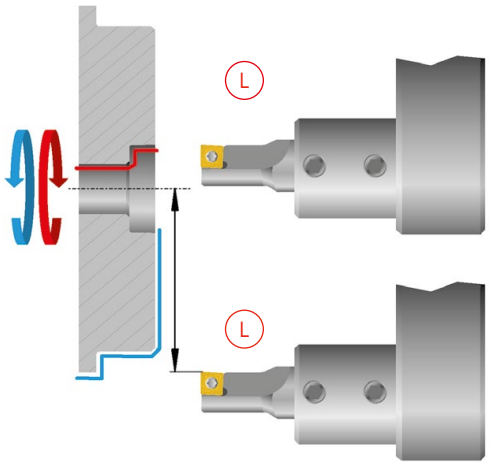
EcoCut Classic	Tool nominal-Ø		Work piece bore Ø			
	D		Dmin		Dmax	
ECC 08 R/L - ... 04	0.315"	8 mm	0.309"	7.85 mm	0.327"	8.3 mm
ECC 10 R/L - ... 05	0.394"	10 mm	0.388"	9.85 mm	0.413"	10.5 mm
ECC 12 R/L - ... 06	0.472"	12 mm	0.467"	11.85 mm	0.492"	12.5 mm
ECC 14 R/L - ... 07	0.551"	14 mm	0.545"	13.85 mm	0.571"	14.5 mm
ECC 16 R/L - ... 08	0.630"	16 mm	0.624"	15.85 mm	0.650"	16.5 mm
ECC 18 R/L - ... 09	0.709"	18 mm	0.703"	17.85 mm	0.728"	18.5 mm
ECC 20 R/L - ... 10	0.787"	20 mm	0.780"	19.80 mm	0.807"	20.5 mm
ECC 25 R/L - ... 13	0.984"	25 mm	0.976"	24.80 mm	1.016"	25.8 mm
ECC 32 R/L - ... 17	1.260"	32 mm	1.252"	31.80 mm	1.299"	33.0 mm

EcoCut ProfileMaster	Tool nominal-Ø		Work piece bore Ø			
	D		Dmin		Dmax	
PM 10R/L ...	0.394"	10 mm	0.388"	9.85 mm	0.472"	12 mm
PM 12R/L ...	0.472"	12 mm	0.467"	11.85 mm	0.591"	15 mm
PM 16R/L ...	0.630"	16 mm	0.624"	15.85 mm	0.748"	19 mm
PM 20R/L ...	0.787"	20 mm	0.780"	19.80 mm	0.945"	24 mm
PM 25R/L ...	0.984"	25 mm	0.976"	24.80 mm	1.142"	29 mm
PM 32R/L ...	1.260"	32 mm	1.252"	31.80 mm	1.496"	38 mm

Machining over center

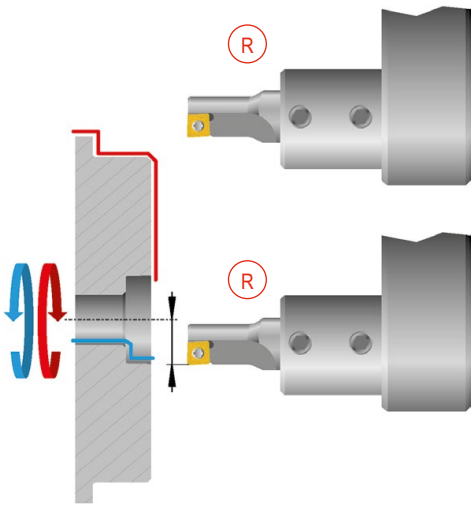
Problem

In case of insufficient movement of the machine across the centre line, the external diameter can not be machined with the same tool.



Solution

Use a right hand EcoCut tool.

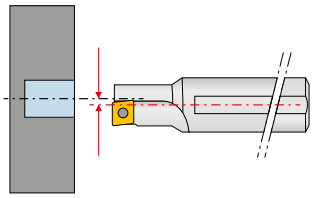


Application Tips

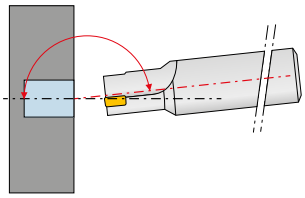
With axial displacement there is the danger of collision!

Problems

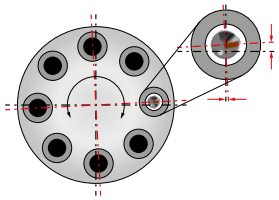
Displacement in x-direction:



Angular error:



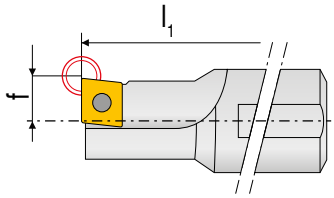
Turret position error:



Remedy

When pre-setting the tool:

▲ Definition as an internal turning tool for programming

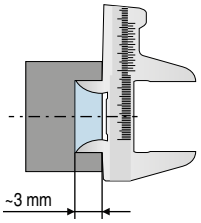


▲ Enter the tool nominal Ø as bore target Ø

At the machine:

▲ Make measuring cut, approx. 0.120" (3 mm) deep

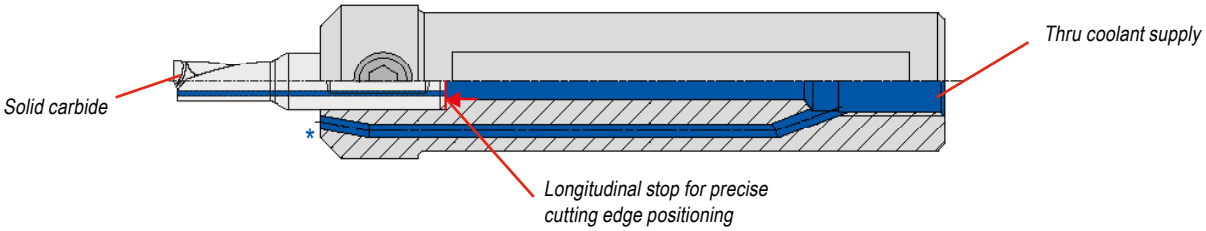
▲ Measure drilled diameter produced



▲ If necessary correct drilling Ø

▲ Start machining

EcoCut Mini adapter – Design



* Cross-section rotated by 90° for clarity

Mounting of the insert for EcoCut Classic

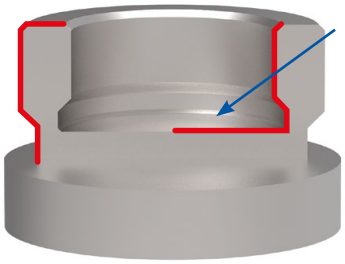
For tools up to Ø 0.315" right and left handed inserts are required.
From Ø 0.394"-1.260"neutral inserts are used.

Note!
Ensure correct installation position.





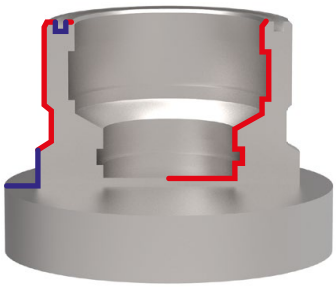
EcoCut ProfileMaster – the highlight with regard to efficiency



Right hand tool



right hand insert



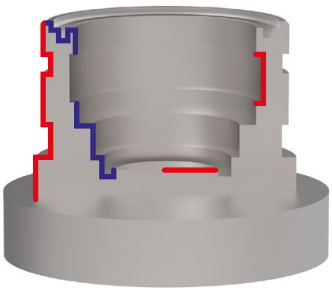
Right hand tool



left hand insert



right hand insert



Left hand tool

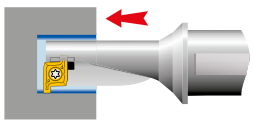


Right hand tool



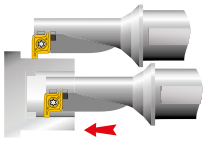
right hand insert

Version 90°



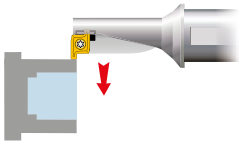
Drilling into solid material with flat bottom hole

Boring

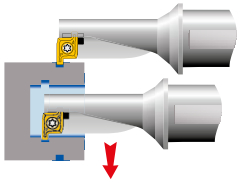


Turning External Diameters

Turning Internal Diameters



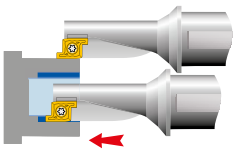
Turning Profiles



External radial grooving

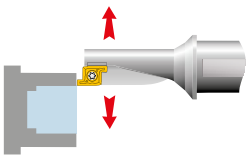
Internal radial grooving

Version 0°

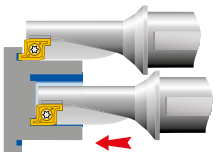


Turning External Diameters

Turning Internal Diameters



Turning Profiles



Axial grooving external

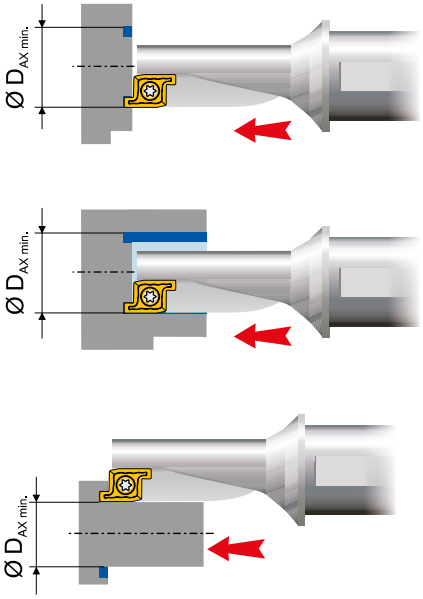
Axial grooving internal

For maximum chip transport efficiency when drilling, coolant pressure must be 3–6 bar minimum (optimal 7–10 bar).

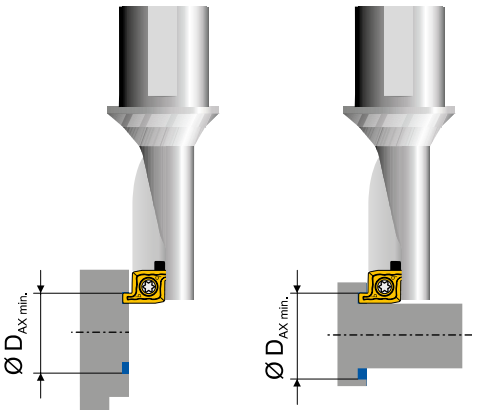
10

EcoCut ProfileMaster – Axial Grooving

0° (from Ø .629" / 16 mm)

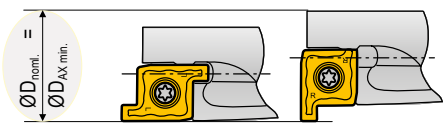


90°



EcoCut ProfileMaster	$ØD_{noml.}$		$ØD_{AX\ min.}$		$ØD_{AX\ max.}$	
	inch	mm	inch	mm	inch	mm
PM 10R/L 1.5D	0.394	10	0.394	10	> 0.394	> 10
PM 10R/L 2.25D	0.394	10	0.394	10	> 0.394	> 10
PM 12R/L 1.5D	0.472	12	0.472	12	> 0.472	> 12
PM 12R/L 2.25D	0.472	12	0.472	12	> 0.472	> 12
PM 16R/L 1.5D	0.630	16	0.630	16	> 0.630	> 16
PM 16R/L 2.25D	0.630	16	0.630	16	> 0.630	> 16
PM 20R/L 1.5D	0.787	20	0.787	20	> 0.787	> 20
PM 20R/L 2.25D	0.787	20	0.787	20	> 0.787	> 20
PM 25R/L 1.5D	0.984	25	0.984	25	> 0.984	> 25
PM 25R/L 2.25D	0.984	25	0.984	25	> 0.984	> 25
PM 32R/L 1.5D	1.260	32	1.260	32	> 1.260	> 32
PM 32R/L 2.25D	1.260	32	1.260	32	> 1.260	> 32

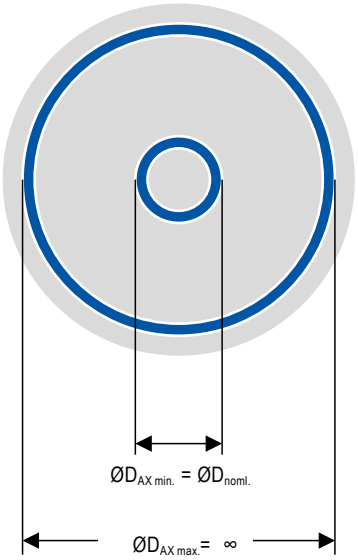
$ØD_{AX\ min.} = ØD_{noml.}$



$ØD_{noml.}$ = Nominal tool diameter

$ØD_{AX\ min.}$ = smallest diameter for axial grooving

$ØD_{AX\ max.}$ = largest diameter for axial grooving



Application Tips

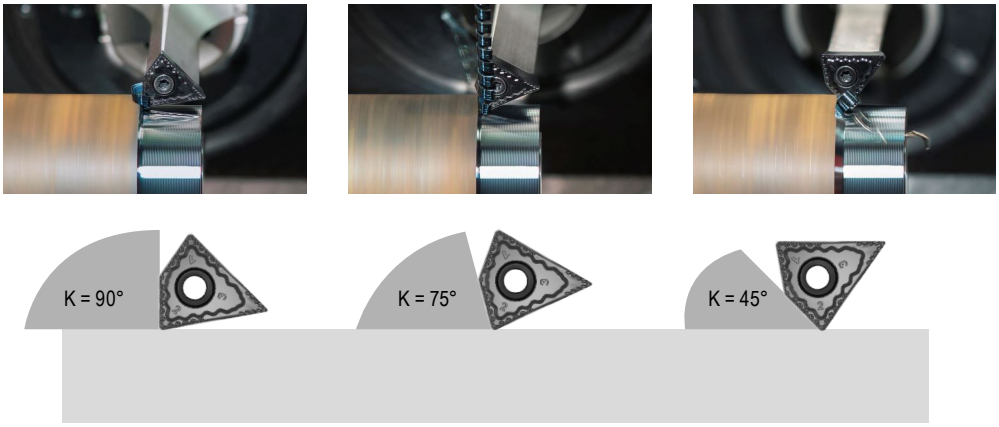
Recommendation for Optimum Results

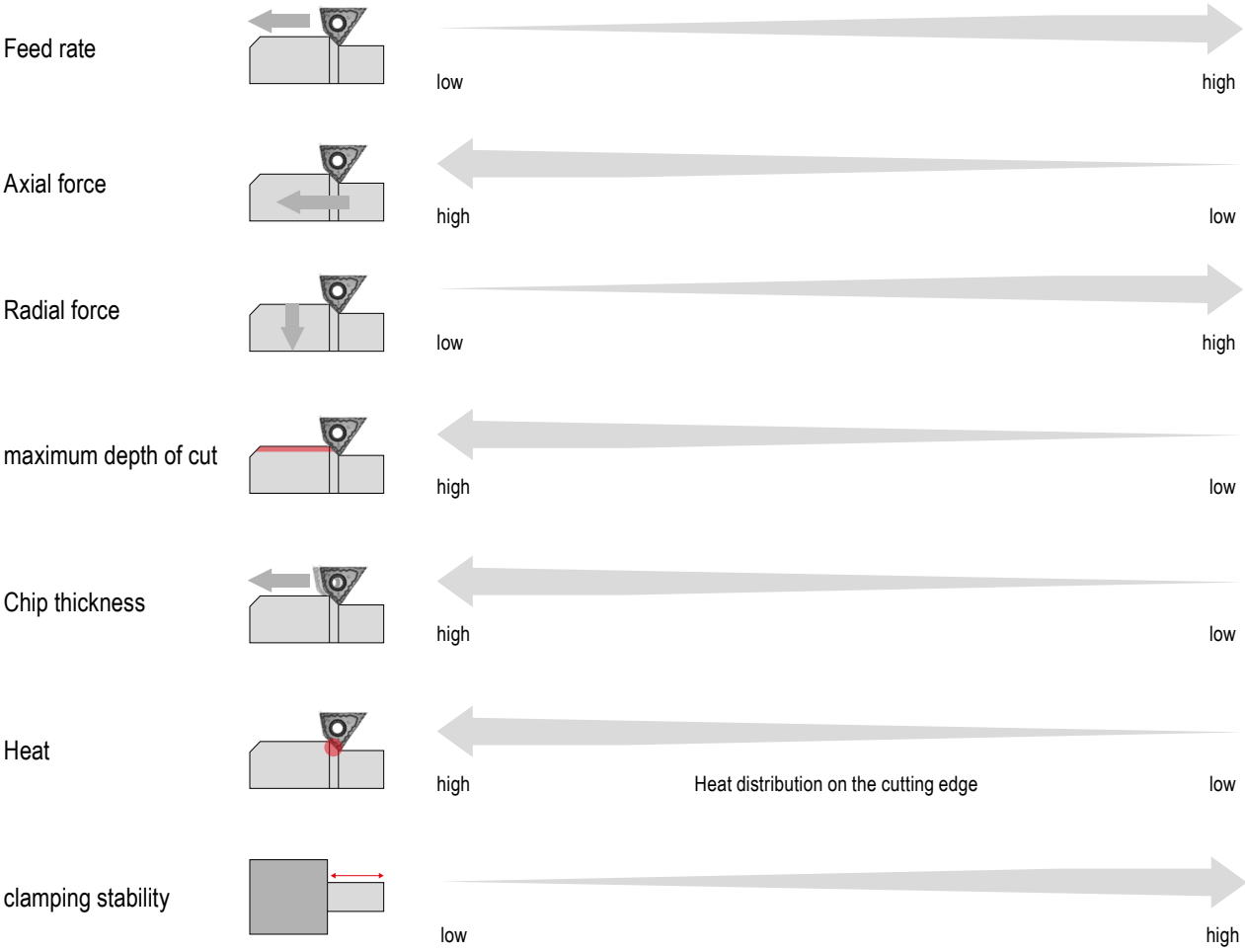
Type of problem										
Type of wear				Work piece problems		Chip control				
Edge breakage	Built-up edge	Wear on clearance face	Plastic deformation	Vibration	Surface quality	Chip too long (snarl chip)	Chip too short (fragmented chip)	Remedy measures		
	▲	▼	▼	↓	↑	↓			Cutting data	Cutting speed
▼		~	↓	↑	▼	▲	▼			Feed rate
▲		▲	▲	↓	↑				Insert selection	Corner radius (larger ↑ / smaller ↓)
▼		▲	▲							Tool Material (Wear resistance ↑ / toughness ↓)
~				~	~				General criteria	Tool clamping
~				~	~					Work piece clamping
~				~	↓					Overhang
~		~		~	~					Tip height
	●	●	●		●	●				Cooling lubricant

▲ raise, increase large influence
↑ raise, increase small influence
▼ avoid, reduce large influence
↓ avoid, reduce small influence
~ control, optimize
● use

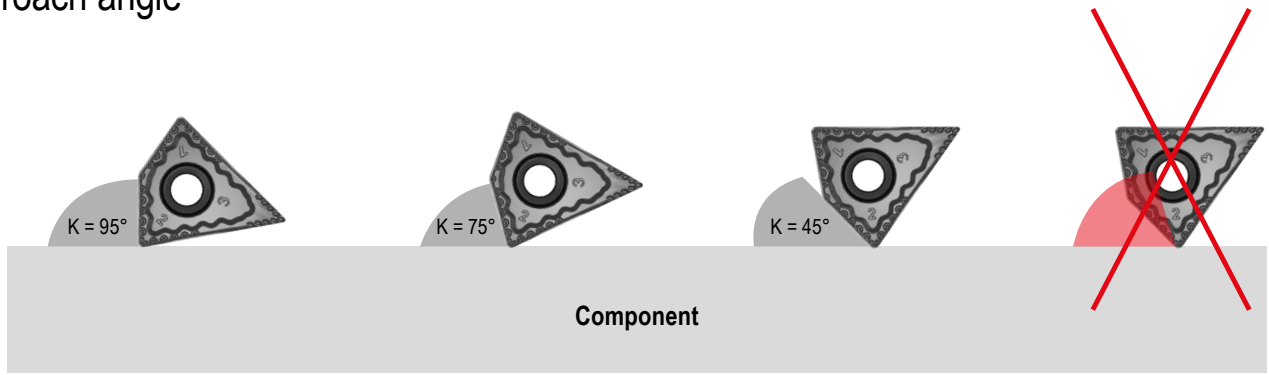
10

Factors influencing the selection of the correct cutting angle





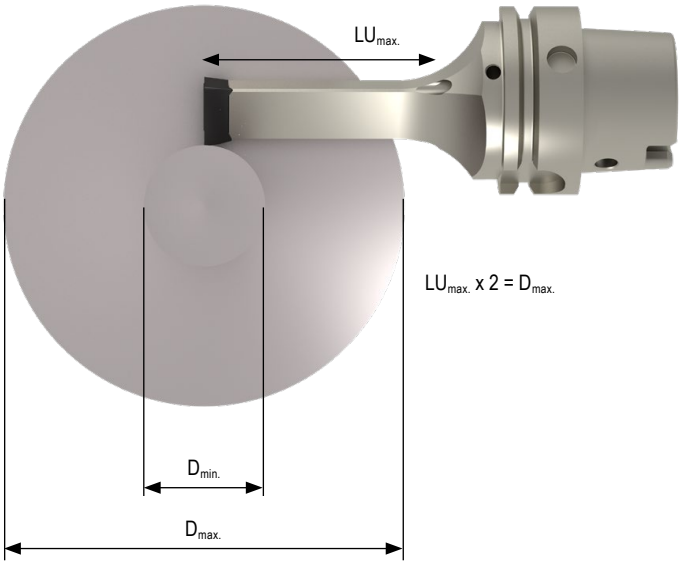
Approach angle



The approach angle always works from the edge of the component to the main cutting edge (tool).

Tool / workpiece length ratio



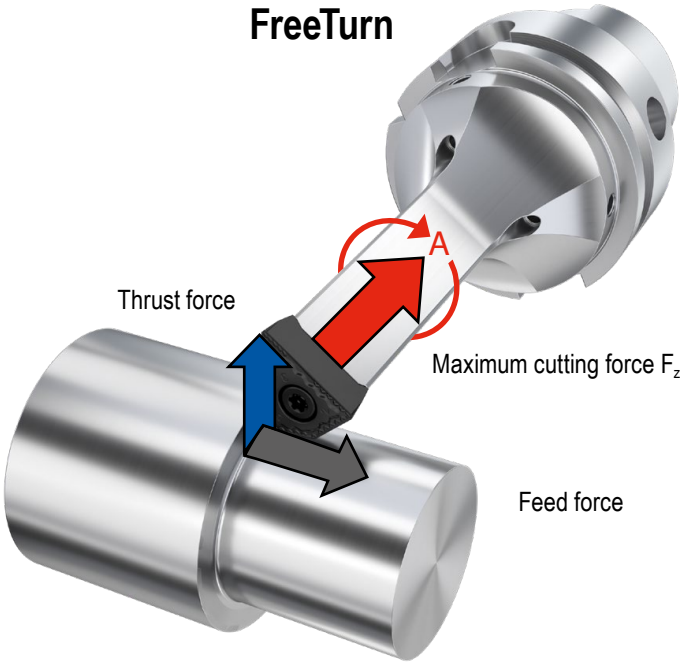


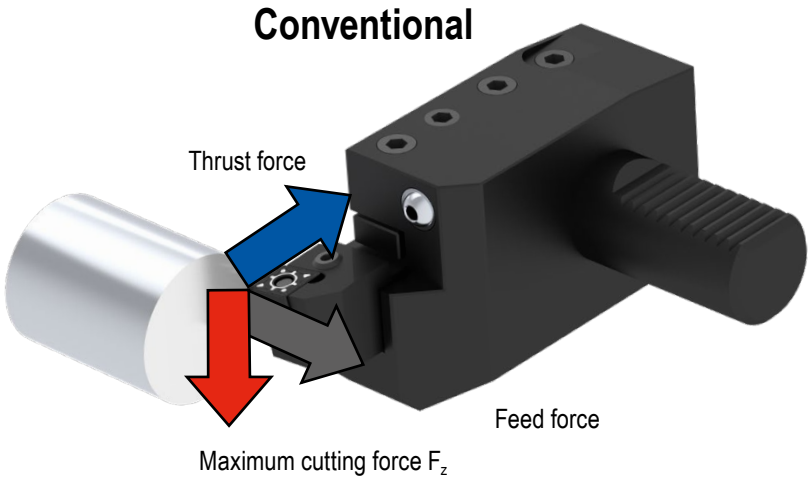
This table shows the diameter ranges you can work in with the different tool lengths.

Tool	$D_{max.}$ in inch	7.87	7.48	7.09	6.69	6.30	5.91	5.51	5.12	4.72	4.33	3.94	3.54	3.15
PSC-63-**100**-FT 808055	$D_{min.}$ in inch					5.00	4.53	4.02	3.46	2.87	2.20	1.34	0.00	0.00
PSC-63-**125**-FT 808055	$D_{min.}$ in inch	5.43	4.92	4.33	3.54	2.76	1.65	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Tool	$D_{max.}$ in mm	200	190	180	170	160	150	140	130	120	110	100	90	80
PSC-63-**100**-FT 808055	$D_{min.}$ in mm					127	115	102	88	73	56	34	0	0
PSC-63-**125**-FT 808055	$D_{min.}$ in mm	138	125	110	90	70	42	0	0	0	0	0	0	0

Force data from the process





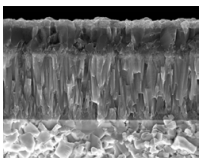
Practical test	
Steel machining shaft Ø 60 mm 1.7227 / 42CrMoS4 R_m 850 Nm	Cutting data: v_c = 175 m/min. f = 0.3 mm/rev. a_p = 3.0 mm K = 95°
Steel machining shaft Ø 2.36" 4140 material Rm 850 Nm	Cutting data: v_c = 575 ft/min. f = 0.012 inch/rev. a_p = 0.120" K = 95°

FreeTurn		Conventional
2136 N	F XYZ	2206 N
920 N	F XY (feed force)	2143 N
1928 N	Maximum cutting force F_z	526 N

Grade description

EcoCut Classic

CTCP425-P

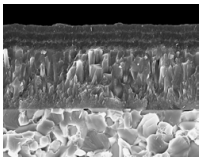


ISO **P25** | M20 | K30

Specification:
Composition: Co 7.0%; mixed carbides 8.1%; WC balance | Grain size: 1-2 µm | Hardness: HV_{30} 1470 |
Coating specification: CVD Ti(CN) + Al_2O_3 multi-layer

Recommended application:
The wear-resistant solution for steel and cast iron under stable conditions and with high cutting speed

CTCP435-P

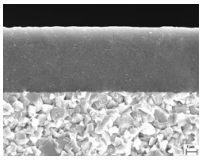


ISO **P35** | M30 | K40 | S25

Specification:
Composition: Co 9.6%; mixed carbides 7.8%; others 0.4%; WC balance | Grain size: 1-2 µm | Hardness: HV_{30} 1400 |
Coating specification: CVD Ti(C,N) + Al_2O_3 multi-layer

Recommended application:
The reliable choice when machining steel and cast iron under unstable conditions.

CTPP430

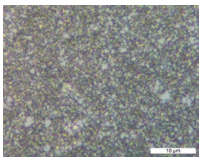


ISO | **P30** | **M25** | K30 | N25 | S25 | O25

Specification:
Composition: Co 9.0%; others 0.75%; WC balance | Grain size: 0.85 µm | Hardness: HV_{30} 1590 | Coating specification: PVD TiAlN

Recommended application:
The universal high-performance grade for steel, austenitic steel and heat-resistant alloys

H210T

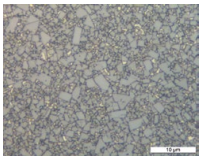


ISO | K10 | **N10** | **S10** | O10

Specification:
Composition: Co 6.0%; WC balance | Grain size: 0.8 µm | Hardness: HV_{30} 1850

Recommended application:
The wear-resistant uncoated carbide grade for the machining of aluminium and other non-ferrous metals.

H216T



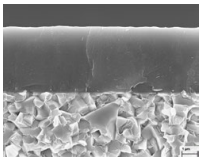
ISO | K15 | **N15** | S15 | O10

Specification:
Composition: Co 6.0%; WC balance | Grain size: 1 µm | Hardness: HV_{30} 1630

Recommended application:
The uncoated carbide grade for the machining of aluminium and other non-ferrous metals

EcoCut Mini

CTPP435

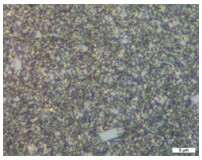


ISO **P35** | **M30** | K30 | N30 | **S30** | O30

Specification:
Composition: Co 10.3%; others 1.2%; WC balance | Grain size: 0.7 µm | Hardness: HV_{30} 1600 | Coating specification: PVD TiN / TiAlN

Recommended application:
The universal high-performance grade for steel, austenitic steel and heat-resistant alloys

CTWN425



ISO K20 | **N25** | S25 | O25

Specification:
Composition: Co 10.3%; others 1.2%; WC balance | Grain size: 0.7 µm (submicron grade) | Hardness: HV_{30} 1600

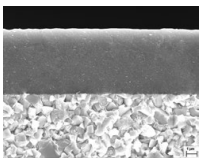
Recommended application:
The uncoated carbide grade for the machining of aluminium and other non-ferrous metals.

10

Grade description

EcoCut ProfileMaster

CTPP430



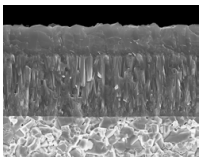
ISO | **P30** | **M25** | K30 | N25 | S25 | O25

Specification:
Composition: Co 9.0%; others 0.75%; WC balance | Grain size: 0.85 µm | Hardness: HV_{30} 1590 | Coating specification: PVD TiAlN

Recommended application:
The universal high-performance grade for steel, austenitic steel and heat-resistant alloys

FreeTurn

CTCP125

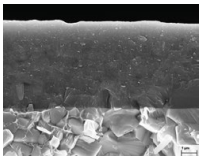


ISO | **P25** | K25

Specification:
Composition: Co 7.0%; mixed carbides 8.0%; WC balance | Grain size: 1 - 2 µm | Hardness: HV_{30} 1450 |
Coating specification: CVD TiCN-Al_2O_3

Recommended application:
The first choice for the universal machining of steel

CTPM125

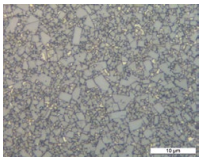


ISO | P35 | **M25**

Specification:
Composition: Co 9.6%; mixed carbides 7.8%; others 0.4%; WC balance | Grain size: 1 - 2 µm | Hardness: HV_{30} 1460 |
Coating specification: PVD TiAlTaN

Recommended application:
The first choice for the machining of austenitic steels

H216T

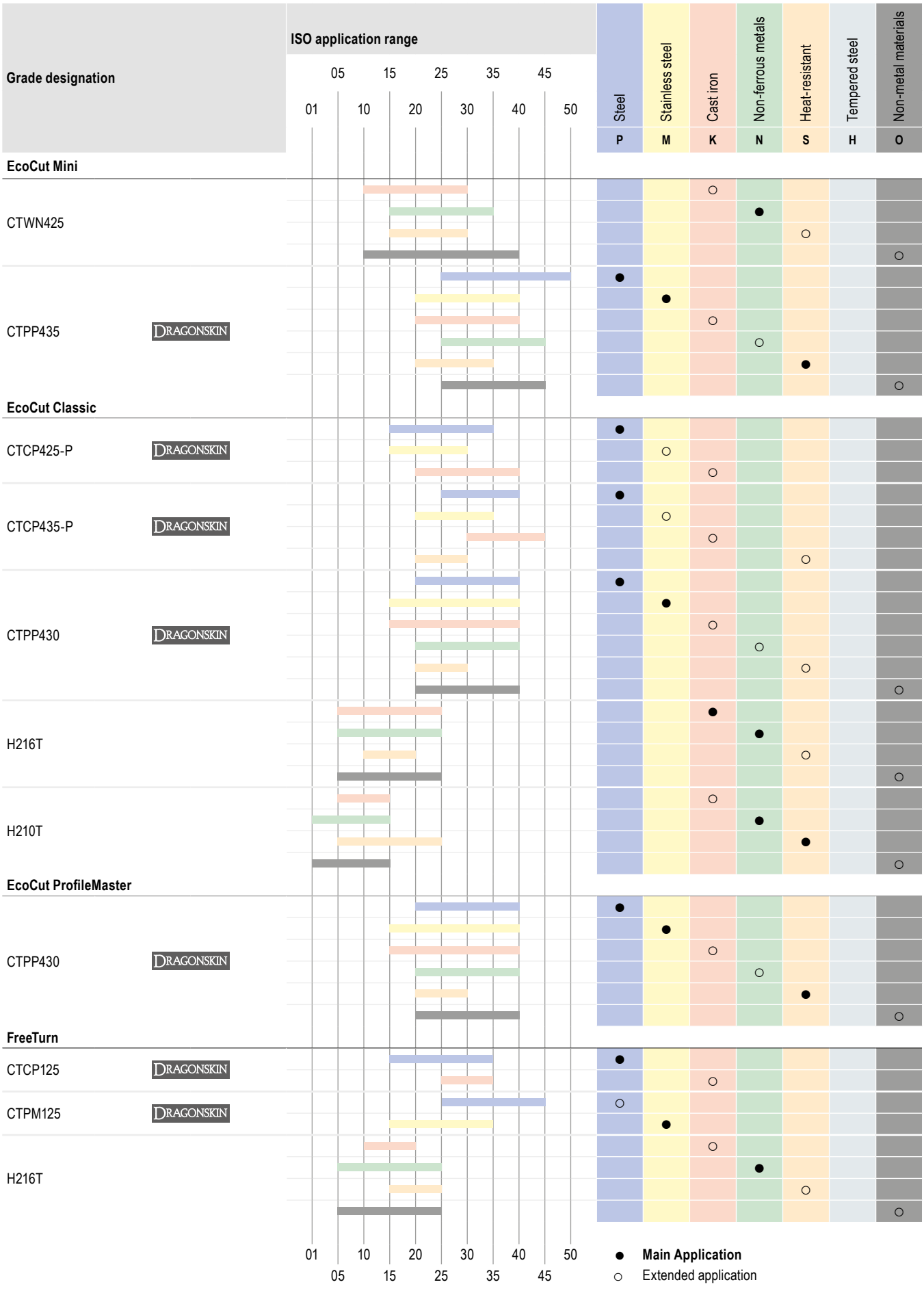


ISO | K15 | **N15** | S15 | O10

Specification:
Composition: Co 6.0%; WC balance | Grain size: 1 µm | Hardness: HV_{30} 1630

Recommended application:
The uncoated carbide grade for the machining of aluminium and other non-ferrous metals

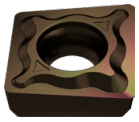
Application



Designation System

EcoCut – indexable insert designation

X	C	E	T		17	05	08	F	N	-	27P
1	2	3	4		5	6	7	8	9		10



1 Insert shape
2 Clearance angle
3 Tolerances
4 Characteristics
5 Cutting length
6 Insert thickness
7 Corner radius
8 Cutting edge
9 Direction of cut
10 Chip groove

EcoCut – holder designation

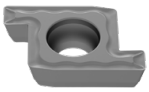
ECC	32	R	-	3.0D	17	H	-	E
1	2	3		4	5	6		7



1 System
2 Nominal diameter in mm
3 Direction of cut
4 maximum hole depth
5 insert size
6 Tool holder version in Densimet
7 Inch size shank

EcoCut ProfileMaster – indexable insert designation

PM	25	R	G	35	30	04	-	M20
1	2	3	4	5	6	7		8



1 ProfileMaster
2 Nominal diameter in mm
3 Direction of cut
4 Version
5 Groove width in mm/10
6 Groove depth in mm/10
7 Corner radius
8 Chip groove

EcoCut ProfileMaster – holder designation

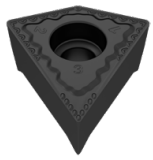
PMC	25	R	-	2.25D	-	E
1	2	3		4		5



1 ProfileMaster
2 Nominal diameter in mm
3 Direction of cut
4 maximum hole depth
5 Inch size shank

Designation System

FreeTurn – indexable insert designation



FT15 M/G 808055R080804 Q MMF CTCP125

1 2 3 4 5 6 7 8 9 10 11 12

1 FreeTurn
2 Nominal diameter in mm
3 ISO tolerance (M = sintered, G = polished)
4 Cutter angle 1 in degrees
5 Cutter angle 2 in degrees
6 Cutter angle 3 in degrees
7 Corner radius 1 in mm
8 Corner radius 2 in mm
9 Corner radius 3 in mm
10 Wiper geometry
11 Chip breaker (M = medium, F = fine)
12 Carbide Grade

FreeTurn – holder designation



HSK - T63 - 100 - FT15 808055

1 2 3 4 5 6 7 8

1 System
2 Size
3 Overhang length
4 FreeTurn
5 Nominal diameter in mm
6 Cutter angle 1 in degrees
7 Cutter angle 2 in degrees
8 Cutter angle 3 in degrees

New products for machining technicians

NEW -M7



The new M7 geometry is designed for grooving and parting off. With medium-high feed rates, its best performance is achieved in steel.

→ Page 18

NEW -M8



The ground M8 geometry will become the first choice for the machining of stainless steel. This geometry can only be used for grooving and parting off.

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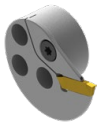
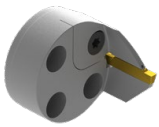
NEW **MaxiChange** – Exchangeable head system





As the MaxiChange exchangeable head system is modular, it is extremely flexible and can be used for a variety of applications thanks to the wide selection of exchangeable heads. On top of these advantages, the MaxiChange GX also includes a grooving function for internal and external machining as well as axial and radial machining.

For radial grooving GX 16 → Page 48
For axial grooving GX 24 → Page 65



Solid drilling and bore machining	Metric Catalog	HSS drilling	1
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		Indexable drilling	3
		Reaming and Countersinking	4
		Indexable Boring	5
Threading	Metric Catalog	Taps and thread formers	6
	Metric Catalog	Circular and Thread Milling	7
	Metric Catalog	Thread turning	8
Turning		Indexable Turning	9
		Multifunction	10
		Parting and Grooving	11
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Grade description and overview	114+115

CERATIZIT \ Performance

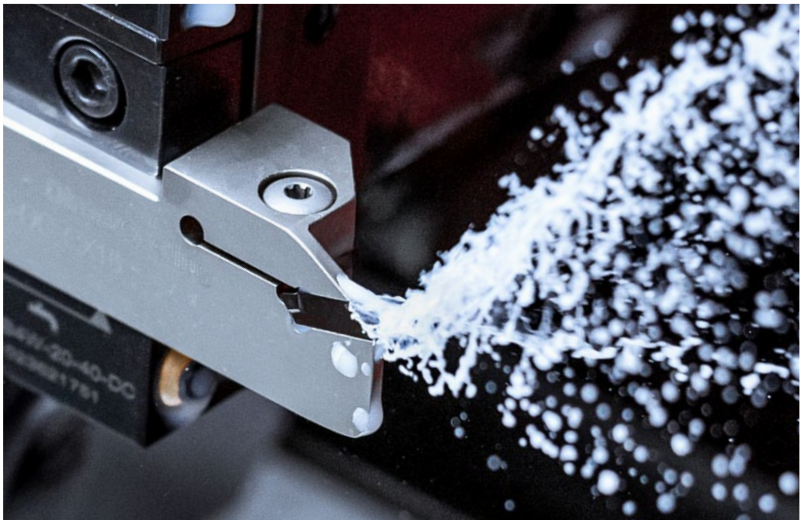
Premium quality tools for high performance.

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

Advantages due to DirectCooling

Direct Cooling

- ▲ Improved chip control
- ▲ Longer service life of the indexable insert
- ▲ Greater process security
- ▲ Application of higher cutting data
- ▲ Reduced wear
- ▲ Universal application



cutting.tools/us/en/direct-cooling

Symbol explanation


Grooving


Parting


Grooving and Turning


Copy Turning


Axial Grooving and Turning


Circlip Grooves


Internal machining


Internal thread


External thread

F Fine Machining
M Medium Machining
R Rough Machining


Main Application
Extended application



DirectCooling


Internal coolant supply


Repeatability

-F2 CTPP345
Chip groove
Carbide Grade


Smooth cut
Irregular cutting depth
Interrupted cut

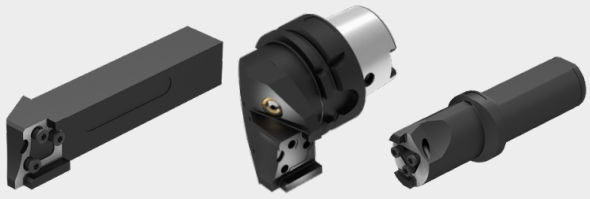
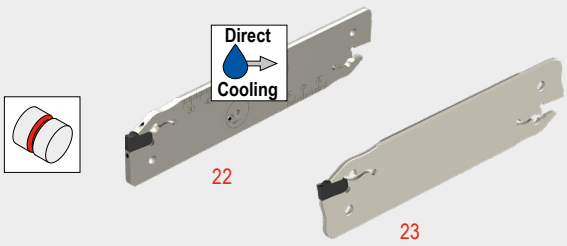
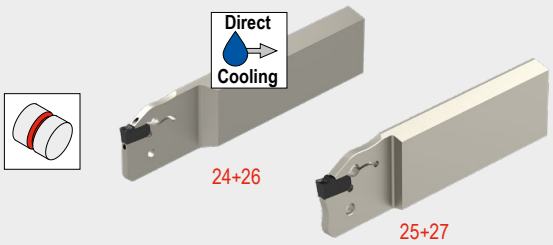
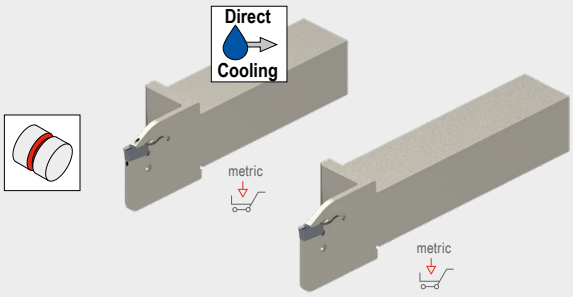
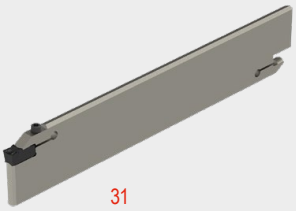
System overview

No. of cutting edges	System	Grooving	Parting	Grooving and Turning	Copy Turning	Axial Grooving and Turning	Circlip Grooves	Internal machining	External machining CW	External machining CDX max.	Internal machining DMIN	Internal machining CDX max.	Axial machining DAXN	Axial machining CDX max.	Page No.
1	SX	●	●	●	●				.078–.236" 2–6 mm	2.362" 60 mm					14–27
	LX	●	●	●	●	●			.314–.393" 8–10 mm	3.149" 80 mm	7.874" 200 mm	1.339" 34 mm	19.685" 500 mm	1.535" 39 mm	28–31
2	GX 09	●	●	●	●		●	●	.078–.138" 2–3.5 mm	.275" 7 mm	.630" 16 mm	.236" 6 mm			32–48
	GX 16	●	●	●	●		●	●	.078–.236" 2–6 mm	.472" 12 mm	.807" 20.5 mm	.433" 11 mm			32–48
	GX 24	●	●	●	●	●		●	.078–.236" 2–6 mm	.827" 21 mm	1.654" 42 mm	.748" 19 mm	1.772" 45 mm	.984" 25 mm	49–65
3	TX	●	●	●	●	●	●	●	.020–.203" 0.5–5.15 mm	.314" 8 mm	1.811" 46 mm	.078" 2 mm	.787" 20 mm	.118" 3 mm	66–74

metric

Additional metric items are available in our Online-Shop at cuttingtools.ceratizit.com and in the metric main catalog.

Toolfinder

System	ModularClamp	MonoClamp
	 0° / 45° / 90° 75–79 · 0° 80 · 1.5xD / 2.5xD 81+82	 83–88 · → Chapter 16 · metric
SX	 21	 Direct Cooling 22 · 23  Direct Cooling 24+26 · 25+27  Direct Cooling metric · metric
LX	  30	 31

System		Chip groove	Groove width	Grooving	Parting	Grooving and Turning	Copy Turning	Axial Grooving and Turning	Circlip Grooves	Fine Machining F	Medium Machining M	Rough Machining R	Steel P	Stainless steel M	Cast iron K	Non-ferrous metals N	Heat-resistant S	Tempered steel H	Non-metal materials O	Page No.
SX		-F2	.078"–.157" 2–4 mm										●	●	●	○	●		○	14
		-M1	.078"–.236" 2–6 mm										●	●	●	○	●		○	15
		-M2	.078"–.236" 2–6 mm										●	●	●	○	●		○	16
		-M3	CRE .059"–.118" 1.5–3.0 mm										●	●	●	○	●		○	17
		NEW -M7	.078"–.236" 2–6 mm										●	●	●	○	●		○	18
		NEW -M8	.078"–.236" 2–6 mm										●	●	●	○	●		○	19
		-27P	.078"–.157" 2–4 mm												●	●	○		○	20
LX		-M2	.314"–.393" 8–10 mm										●	●	●	○	●		○	28
		-M3	CRE .157" 4.0 mm										●	●	●	○	●		○	29

11

Toolfinder

System

ModularClamp



0° / 45° / 90°
75–79

0°
80

1.5xD / 2.5xD
81+82

MonoClamp



metric

metric

GX 09





40



41



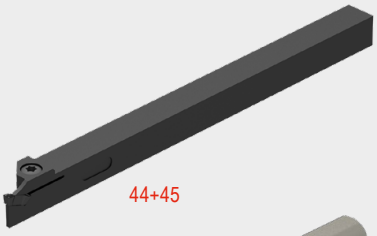


42



43





44+45





46+47

GX 16





40



41



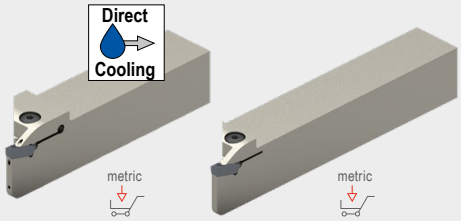


42



43

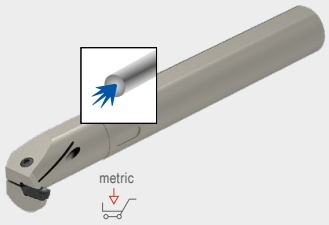




metric

metric

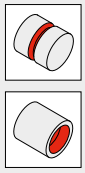




metric

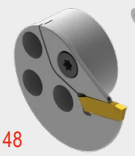
MaxiChange

→ Page 12+13
Here you will find a detailed system overview.

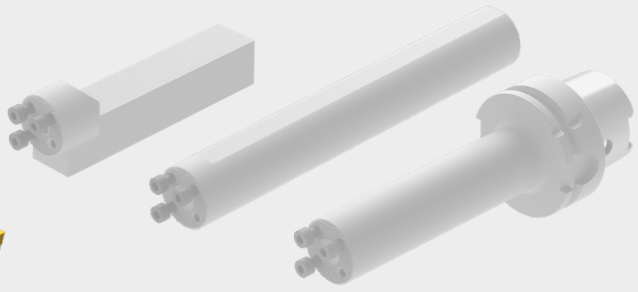


NEW

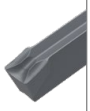




48



→ Chapter 9 – Turning Tools
Here you will find the suitable base adaptors.

System		Chip groove	Groove width	Grooving	Parting	Grooving and Turning	Copy Turning	Axial Grooving and Turning	Circlip Grooves	Fine Machining F	Medium Machining M	Rough Machining R	Steel P	Stainless steel M	Cast iron K	Non-ferrous metals N	Heat-resistant S	Tempered steel H	Non-metal materials O	Page No.
GX 09 GX 16		-F2	.078"–.196" 2–5 mm										●	●	●	○	●		○	32
		Standard	.078"–.236" 2–6 mm										●	●	●	○	●		○	33
		-M40	.078"–.236" 2–6 mm										●	●	●	○	●		○	34
		Standard	CRE .031"–.118" 0.8–3.0 mm										●	●	●	○	●		○	38
		Standard	.039"–.167" 1–4.25 mm										●	●	●	○	●		○	37
GX 16		-M1	.078"–.157" 2–4 mm										●	●	●	○	●		○	35
		-27P	.078"–.236" 2–6 mm												●	●	○		○	36
		-27P	CRE .059"–.098" 1.5–2.5 mm												●	●	○		○	39

11

Toolfinder

System

ModularClamp



0° / 45° / 90°
75–79

0°
80

1.5xD / 2.5xD
81+82

MonoClamp



85–88

metric

metric

GX 24





57





58



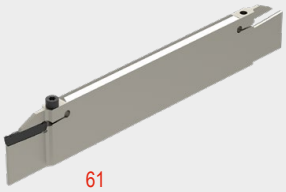
59





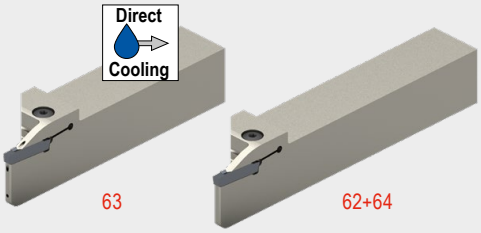
60





61



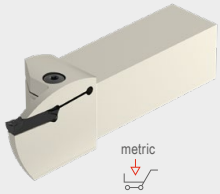


Direct Cooling

63

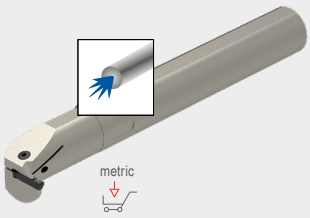
62+64





metric





metric

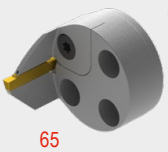
MaxiChange

→ Page 12+13
Here you will find a detailed system overview.



NEW





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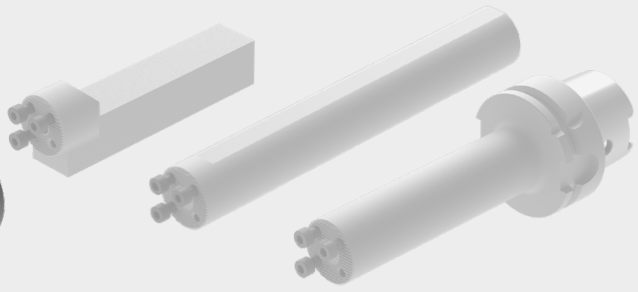
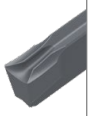
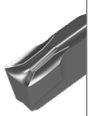


→ Chapter 9 – Turning Tools
Here you will find the suitable base adaptors.

System		Chip groove	Groove width	Grooving	Parting	Grooving and Turning	Copy Turning	Axial Grooving and Turning	Circlip Grooves	Fine Machining F	Medium Machining M	Rough Machining R	Steel P	Stainless steel M	Cast iron K	Non-ferrous metals N	Heat-resistant S	Tempered steel H	Non-metal materials O	Page No.
GX 24		-F2	.118"–.236" 3–6 mm	●	●	●		●		●			●	●	●	○	●		○	49
		-E	.118"–.236" 3–6 mm	●	●	●		●		●	●		●	●	●	○	●		○	50
		-M1	.079"–.157" 2–4 mm	●	●					●	●		●	●	●	○	●		○	51
		-M40	.118"–.236" 3–6 mm	●	●	●		●		●	●		●	●	●	○	●		○	52
		-M3	CRE .059"–.118" 1.5–3.0 mm	●		●	●	●			●	●	●	○	●		○			53
		-M33	CRE .059"–.118" 1.5–3.0 mm	●		●	●	●		●	●		●	○	●		○			54
		-27P	.118"–.236" 3–6 mm	●		●		●		●	●				●	●	○		○	55
		-27PF	CRE .118"–.157" 3–4 mm	●		●	●	●		●	●				●	●	○		○	56

11

Toolfinder

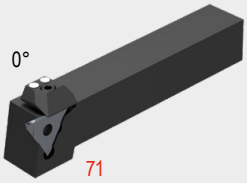
System

MonoClamp


metric


metric

TX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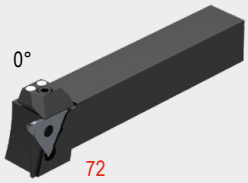
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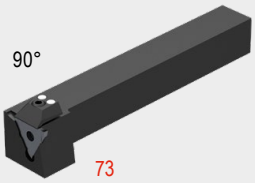
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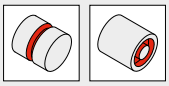
73


74









System overview

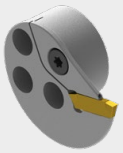
MaxiChange

Exchangeable heads

For radial grooving

NEW

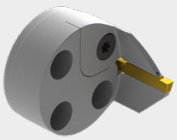
GX 16



For axial grooving

NEW

GX 24



→ **Chapter 9 – Turning Tools**

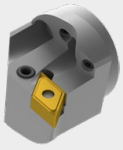
Exchangeable heads

For negative inserts

PCLN 95°



PDUN 93°



PDQN 107,5°

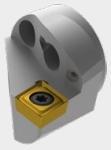


PWLN 95°

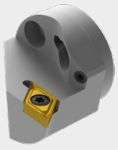


For positive inserts

SCLC 95°



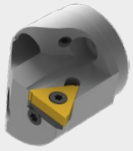
SDUC 93°



SDQC 107,5°



For internal thread



SVPC 117,5°



SVUC 93°



SVQC 107,5°



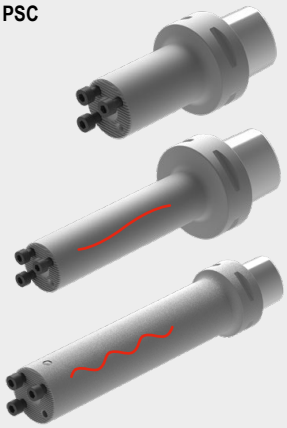
System		Chip groove	Groove width	Grooving	Parting	Grooving and Turning	Copy Turning	Axial Grooving and Turning	Circlip Grooves	Fine Machining F	Medium Machining M	Rough Machining R	Steel P	Stainless steel M	Cast iron K	Non-ferrous metals N	Heat-resistant S	Tempered steel H	Non-metal materials O	Page No.
TX			1.99–2.79 mm										●	●	●	●	●	○	●	66
			0.57–5.29 mm										●	●	●	●	●	○	●	67
			CRE 0.25–2.5 mm										●	●	●	●	●	○	●	68
			1.5–4.0 mm										●	●	●	●	●	○	●	69
			1.5–3.0 mm										●	●	●	●	●	○	●	70

MaxiChange

→ **Chapter 9 – Turning Tools**

Tool holder

PSC



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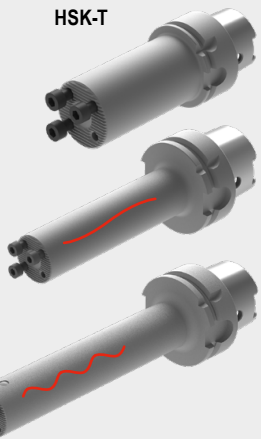
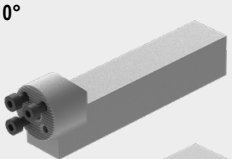


Vibration damped

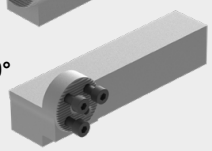
Actively vibration-damped

Square shank holder

0°



90°



Cylindrical shank



Actively vibration-damped

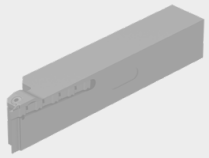
→ **cuttingtools.ceratizit.com**

VertiClamp

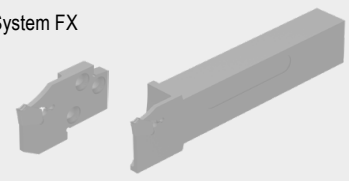
→ catalouge: sliding head



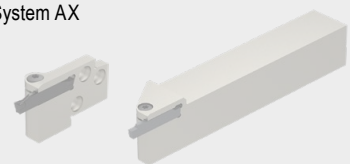
MaxiClick



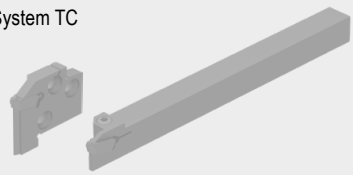
System FX



System AX



System TC



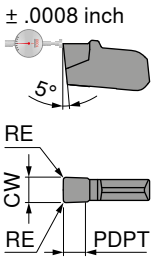
11

Insert SX

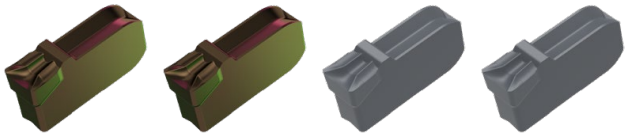
▲ High precision ground geometry



F	M	R



-F2 CTCP325	-F2 CTCP335	-F2 CTPP345	-F2 CTP1340
DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN



Designation	CW +/-0,02 inch	RE +/-0,05 inch	PDPT inch	for tool holder	70 346 ...	70 346 ...	70 346 ...	70 346 ...
SX E2.00 N 0.20	0.079	0.008	0.059	-SX2			**822**	**622**
SX E3.00 N 0.30	0.118	0.012	0.079	-SX3	**923**	**523**	**823**	**623**
SX E4.00 N 0.40	0.157	0.016	0.098	-SX4			**824**	**624**
P					●	●	●	●
M					○	○	●	●
K					●	●		●
N								○
S					○		○	●
H								
O								○

→ v_c Page 90+91
→ Application recommendation on page 92+93

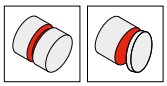
Internal machining | *External machining*



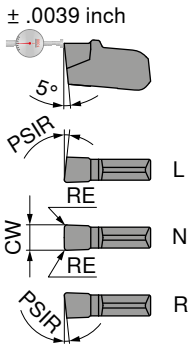
→ 21 | → 22+23 | → 24–27

Insert SX

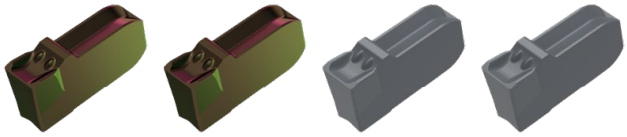
▲ Specially developed geometry with negative edge-chamfers available in right, left and neutral types



F	M	R



-M1 CTCP325	-M1 CTCP335	-M1 CTPP345	-M1 CTP1340
DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN



Designation	IH	CW +/-0,05 inch	RE +/-0,05 inch	PSIR	for tool holder	70 342 ...	70 342 ...	70 342 ...	70 342 ...
SX E2.00 L 6	L	0.079	0.008	6°	-SX2				**612**
SX E3.00 L 6	L	0.118	0.008	6°	-SX3	**913**			**613**
SX E4.00 L 6	L	0.157	0.012	6°	-SX4				**614**
SX E2.00 N 0.20	N	0.079	0.008		-SX2	**922**	**52200**	**822**	**622**
SX E3.00 N 0.20	N	0.118	0.008		-SX3	**923**	**523**	**823**	**623**
SX E4.00 N 0.30	N	0.157	0.012		-SX4	**924**	**524**	**824**	**624**
SX E5.00 N 0.30	N	0.197	0.012		-SX5	**925**	**52500**	**825**	**625**
SX E6.00 N 0.40	N	0.236	0.016		-SX6	**926**	**52600**	**826**	**626**
SX E2.00 R 6	R	0.079	0.008	6°	-SX2				**602**
SX E3.00 R 6	R	0.118	0.008	6°	-SX3	**903**			**603**
SX E4.00 R 6	R	0.157	0.012	6°	-SX4				**604**
P						●	●	●	●
M						○	○	●	●
K						●	●		●
N									○
S						○		○	●
H									
O									○

→ v_c Page 90+91
→ Application recommendation on page 92+93

11

Note: reduce feed rate by 20–50 % with R/L version!

→ **Page 107**
Here you will find further information.

Internal machining

External machining



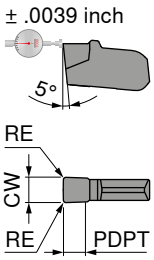
→ 21 → 22+23 → 24–27

Insert SX

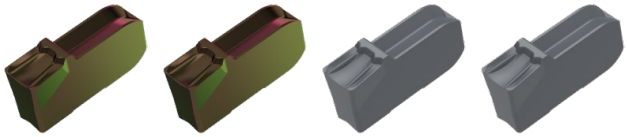
▲ All purpose geometry for parting, grooving & turning.



F	M	R



-M2 CTCP325	-M2 CTCP335	-M2 CTPP345	-M2 CTP1340
DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN



Designation	CW +/-0,05 inch	RE +/-0,05 inch	PDPT inch	for tool holder	70 343 ...	70 343 ...	70 343 ...	70 343 ...
SX E2.00 N 0.20	0.079	0.008	0.059	-SX2	**922**	**522**	**822**	**622**
SX E3.00 N 0.30	0.118	0.012	0.079	-SX3	**923**	**523**	**823**	**623**
SX E4.00 N 0.40	0.157	0.016	0.098	-SX4	**924**	**524**	**824**	**624**
SX E5.00 N 0.40	0.197	0.016	0.106	-SX5	**925**	**525**	**825**	**625**
SX E6.00 N 0.50	0.236	0.020	0.118	-SX6	**926**	**526**	**826**	**626**
P					●	●	●	●
M					○	○	●	●
K					●	●		●
N								○
S					○		○	●
H								
O								○

→ v_c Page 90+91
→ Application recommendation on page 92+93

Internal machining | *External machining*



→ 21 | → 22+23 | → 24–27

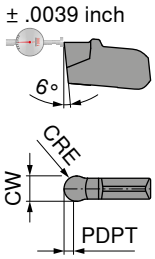
metric

Radius Grooving Insert SX

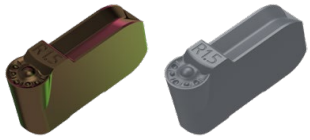
▲ for grooving and copy turning
▲ very good chip control



F	M	R



-M3 CTCP335	-M3 CTP1340
DRAGONSKIN	DRAGONSKIN



Designation	CW +/-0,05 inch	CRE inch	PDPT inch	for tool holder	70 344 ...		70 344 ...	
SX R1.50 N	0.118	0.059	0.059	-SX3	**531**		**631**	
SX R2.00 N	0.157	0.079	0.079	-SX4	**532**		**632**	
SX R2.50 N	0.197	0.098	0.098	-SX5	**533**		**633**	
SX R3.00 N	0.236	0.118	0.118	-SX6			**634**	
P					●		●	
M					○		●	
K					●		●	
N							○	
S							●	
H								
O							○	

→ v_c Page 90+91
→ Application recommendation on page 94+95

Internal machining | *External machining*

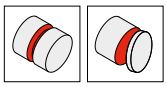


			→ 21	→ 22+23	→ 24–27	metric	

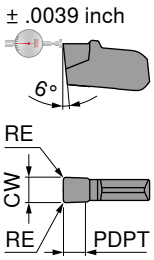
11

Insert SX

▲ For grooving and parting off in steel at medium to high feed rates



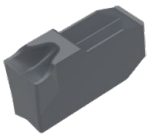
F	M	R



NEW

-M7
CTP1340

DRAGONSKIN

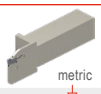


70 347 ...

Designation	CW +/-0,05 inch	RE +/-0,05 inch	PDPT inch	for tool holder	
SX E2.00 N 0.20	0.079	0.008	0.059	-SX2	**62200**
SX E3.00 N 0.20	0.118	0.008	0.079	-SX3	**62300**
SX E4.00 N 0.30	0.157	0.012	0.098	-SX4	**62400**
SX E5.00 N 0.30	0.197	0.012	0.106	-SX5	**62500**
SX E6.00 N 0.40	0.236	0.016	0.118	-SX6	**62600**

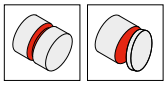
P	●
M	●
K	●
N	○
S	●
H	
O	○

→ v_c Page 90+91
→ Application recommendation on page 92+93

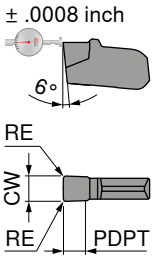
Internal machining			*External machining*				
						 metric	
			→ 21	→ 22+23	→ 24–27		

Insert SX

▲ Ground geometry
▲ First choice for the grooving and parting off of stainless steel



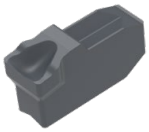
F	M	R



NEW

-M8
CTP1340

DRAGONSKIN



70 348 ...

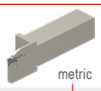
Designation	CW +/-0,05 inch	RE +/-0,05 inch	PDPT inch	for tool holder	
SX E2.00 N 0.20	0.079	0.008	0.059	-SX2	**62200**
SX E3.00 N 0.20	0.118	0.008	0.079	-SX3	**62300**
SX E4.00 N 0.30	0.157	0.012	0.098	-SX4	**62400**
SX E5.00 N 0.30	0.197	0.012	0.106	-SX5	**62500**
SX E6.00 N 0.40	0.236	0.016	0.118	-SX6	**62600**

P	●
M	●
K	●
N	○
S	●
H	
O	○

→ v_c Page 90+91
→ Application recommendation on page 92+93

Internal machining | *External machining*



→ 21 | → 22+23 | → 24–27

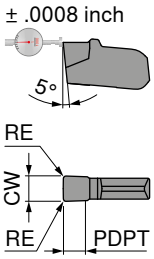
11

Insert SX

▲ Insert with highly positive cutting edge geometry and sharp cutting edge, polished chip breaker
▲ Specialist for aluminum and other soft long-chipping non-ferrous metals

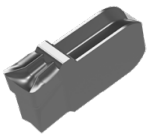


F	M	R
	●	



-27P
H216T



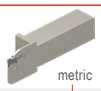


70 349 ...

Designation	CW +/-0.02 inch	RE +/-0.05 inch	PDPT inch	for tool holder	
SX E2.00 N 0.20	0.079	0.008	0.079	-SX2	**122**
SX E3.00 N 0.30	0.118	0.012	0.098	-SX3	**123**
SX E4.00 N 0.40	0.157	0.016	0.118	-SX4	**124**

P	
M	
K	●
N	●
S	○
H	
O	○

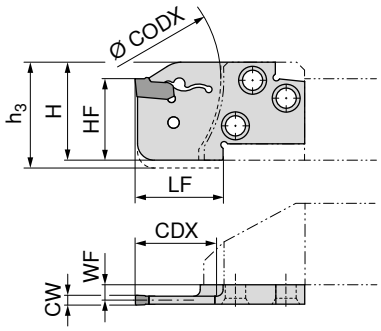
→ v_c Page 90+91
→ Application recommendation on page 92+93

Internal machining			*External machining*			
						 metric
			→ 21	→ 22+23	→ 24–27	

ModularClamp MSS – Radial grooving module SX

▲ for parting, grooving and finish turning

Scope of supply:
Grooving module only





Illustrations show right-hand versions

Designation	HF inch	CW inch	WF inch	LF inch	H inch	h_3 inch	CODX inch	CDX inch	for grooving inserts	Left-hand 70 897 ...	Right-hand 70 896 ...
E20 R/L 20-SX2	0.787	0.079	0.141	0.866	0.945	1.063	2.362	0.787	SX .2..	**020**	**020**
E20 R/L 20-SX3	0.787	0.118	0.126	0.866	0.945	1.063	2.362	0.787	SX .3..	**120**	**120**
E25 R/L 20-SX2	0.984	0.079	0.200	0.866	1.181		2.953	0.787	SX .2..	**025**	**025**
E25 R/L 25-SX3	0.984	0.118	0.185	1.063	1.181		2.953	0.984	SX .3..	**125**	**125**
E25 R/L 35-SX3	0.984	0.118	0.185	1.457	1.181		2.953	1.378	SX .3..	**225**	**225**
E25 R/L 25-SX4	0.984	0.157	0.169	1.063	1.181		2.953	0.984	SX .4..	**325**	**325**
E25 R/L 35-SX4	0.984	0.157	0.169	1.457	1.181		2.953	1.378	SX .4..	**425**	**425**

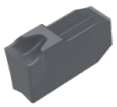


Insert mounting key SX

70 950 ...

Spare parts for grooving inserts		
SX .2..	SX 2-3	**836**
SX .3..	SX 2-3	**836**
SX .4..	SX 4-6	**837**

Please order SX assembly key separately if required.





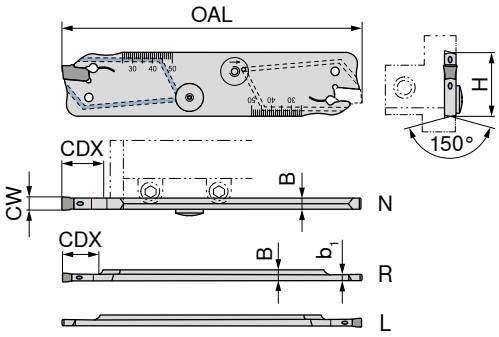
→ 14–20 → 75–79 → 80

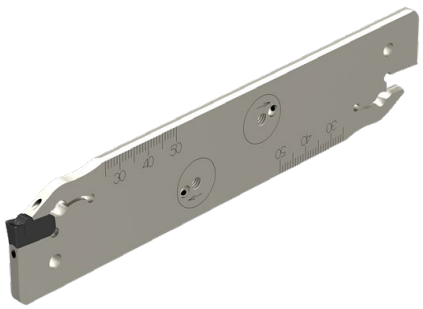
11

MonoClamp – Radial Blade SX-DC Standard

Scope of supply:
Blade incl. 1 sealing screw

Direct Cooling

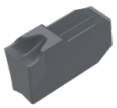




Designation	R/L/N	CW inch	H inch	B inch	b_1 inch	OAL inch	CDX inch	for grooving inserts	70 884 ...
XLCF L 2602-DC-SX2	L	0.079	1.024	0.094	0.063	4.331	0.984	SX .2..	**712**
XLCF R 2602-DC-SX2	R	0.079	1.024	0.094	0.063	4.331	0.984	SX .2..	**512**
XLCF N 2603-DC-SX3	N	0.118	1.024	0.098		4.331	1.378	SX .3..	**613**
XLCF N 2604-DC-SX4	N	0.157	1.024	0.130		4.331	1.575	SX .4..	**614**
XLCF L 3202-DC-SX2	L	0.079	1.260	0.094	0.063	5.906	1.024	SX .2..	**702**
XLCF R 3202-DC-SX2	R	0.079	1.260	0.094	0.063	5.906	1.024	SX .2..	**502**
XLCF N 3203-DC-SX3	N	0.118	1.260	0.098		5.906	1.969	SX .3..	**603**
XLCF N 3204-DC-SX4	N	0.157	1.260	0.130		5.906	1.969	SX .4..	**604**
XLCF N 3205-DC-SX5	N	0.197	1.260	0.169		5.906	2.165	SX .5..	**605**
XLCF N 3206-DC-SX6	N	0.236	1.260	0.205		5.906	2.362	SX .6..	**606**

	 Screwdriver		 Insert mounting key SX		 Sealing screw	
	80 950 ...		**70 950 ...**		**70 950 ...**	
Spare parts for grooving inserts						
SX .2..	T15 - IP	**128**	SX 2-3	**836**	M4 x 3	**450**
SX .3..	T15 - IP	**128**	SX 2-3	**836**	M4 x 3	**450**
SX .4..	T15 - IP	**128**	SX 4-6	**837**	M4 x 3	**450**
SX .5..	T15 - IP	**128**	SX 4-6	**837**	M4 x 3	**450**
SX .6..	T15 - IP	**128**	SX 4-6	**837**	M4 x 3	**450**

Please order SX assembly key separately if required.



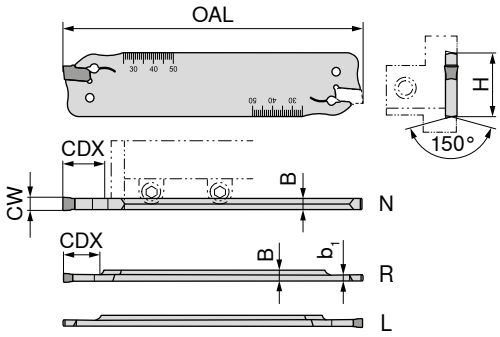


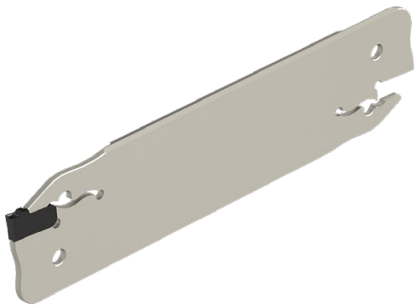

metric

→ 14–20 → 83+84 → **Chapter 16**

MonoClamp – Radial Blade SX Standard

Scope of supply:
Blade only





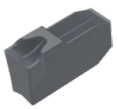
Designation	R/L/N	CW inch	H inch	B inch	b_1 inch	OAL inch	CDX inch	for grooving inserts	70 884 ...
XLCF L 2602-SX2	L	0.079	1.024	0.094	0.059	4.331	0.984	SX .2..	**212**
XLCF R 2602-SX2	R	0.079	1.024	0.094	0.059	4.331	0.984	SX .2..	**012**
XLCF N 2603-SX3	N	0.118	1.024	0.094		4.331	1.378	SX .3..	**113**
XCLF N 2604-SX4	N	0.157	1.024	0.126		4.331	1.575	SX .4..	**114**
XLCF L 3202-SX2	L	0.079	1.260	0.094	0.059	5.906	0.984	SX .2..	**202**
XLCF R 3202-SX2	R	0.079	1.260	0.094	0.059	5.906	0.984	SX .2..	**002**
XLCF N 3203-SX3	N	0.118	1.260	0.094		5.906	1.969	SX .3..	**103**
XLCF N 3204-SX4	N	0.157	1.260	0.126		5.906	1.969	SX .4..	**104**
XLCF N 3205-SX5	N	0.197	1.260	0.165		5.906	2.165	SX .5..	**105**
XLCF N 3206-SX6	N	0.236	1.260	0.205		5.906	2.362	SX .6..	**106**



Insert mounting key SX

Spare parts for grooving inserts		70 950 ...
SX .2..	SX 2-3	**836**
SX .3..	SX 2-3	**836**
SX .4..	SX 4-6	**837**
SX .5..	SX 4-6	**837**
SX .6..	SX 4-6	**837**

Please order SX assembly key separately if required.





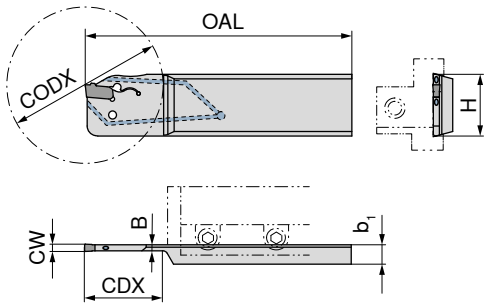

metric

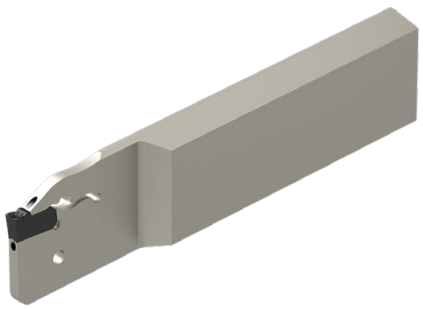
→ 14–20 → 85–88 → **Chapter 16**

MonoClamp – Radial Blade SX-DC reinforced

Scope of supply:
Blade only

Direct Cooling





Illustrations show right-hand versions

Designation	R/L/N	CW inch	H inch	B inch	b_1 inch	OAL inch	CODX inch	CDX inch	for grooving inserts	70 879 ...
XLCF L 2608-DC-SX3	L	0.118	1.024	0.098	0.315	4.331	2.598	1.299	SX .3..	**713**
XLCF R 2608-DC-SX3	R	0.118	1.024	0.098	0.315	4.331	2.598	1.299	SX .3..	**513**
XLCF L 3208-DC-SX3	L	0.118	1.260	0.098	0.315	4.331	2.598	1.299	SX .3..	**703**
XLCF R 3208-DC-SX3	R	0.118	1.260	0.098	0.315	4.331	2.598	1.299	SX .3..	**503**

Insert mounting key SX

Spare parts for grooving inserts		70 950 ...
SX .3..	SX 2-3	**836**

Please order SX assembly key separately if required.

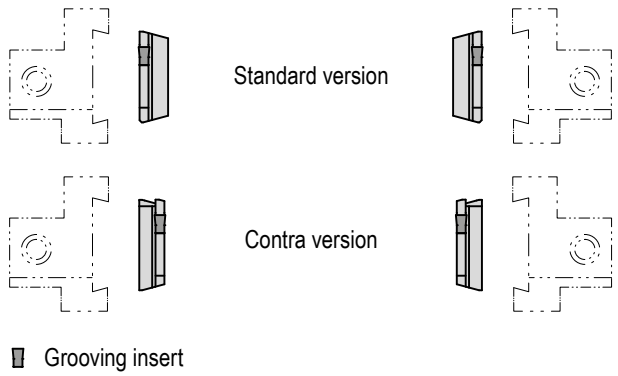

→ 14–20

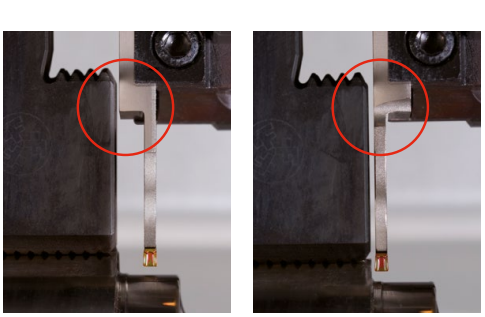

→ 83+84


→ **Chapter 16**


metric

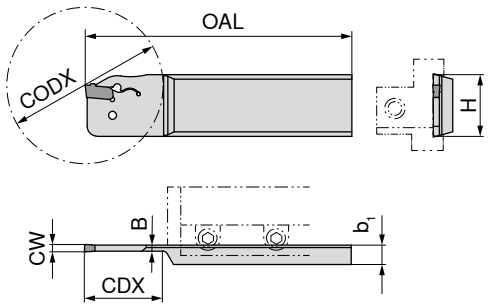
Correct Tool Selection

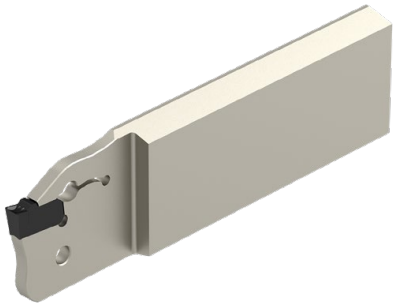




MonoClamp – Radial Blade SX reinforced

Scope of supply:
Blade only





Illustrations show right-hand versions

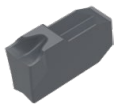
Designation	R/L/N	CW inch	H inch	B inch	b_1 inch	OAL inch	CODX inch	CDX inch	for grooving inserts	70 879 ...
XLCF L 2608-SX3	L	0.118	1.024	0.098	0.315	4.331	1.732	0.866	SX .3..	**213** [1]
XLCF R 2608-SX3	R	0.118	1.024	0.098	0.315	4.331	1.732	0.866	SX .3..	**013** [1]
XLCF L 3208-SX3	L	0.118	1.260	0.098	0.315	4.331	2.598	1.299	SX .3..	**203**
XLCF R 3208-SX3	R	0.118	1.260	0.098	0.315	4.331	2.598	1.299	SX .3..	**003**
XLCF L 3208-SX4	L	0.157	1.260	0.134	0.315	4.331	2.598	1.299	SX .4..	**204**
XLCF R 3208-SX4	R	0.157	1.260	0.134	0.315	4.331	2.598	1.299	SX .4..	**004**

1) can be used in both directions

Insert mounting key SX

Spare parts for grooving inserts		70 950 ...
SX .3..	SX 2-3	**836**
SX .4..	SX 4-6	**837**

Please order SX assembly key separately if required.





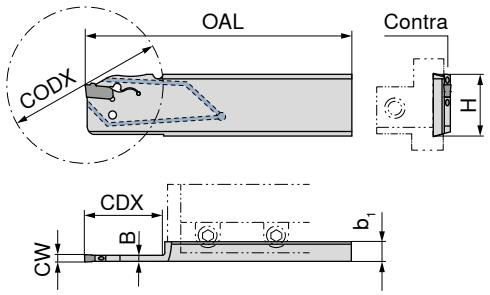

metric

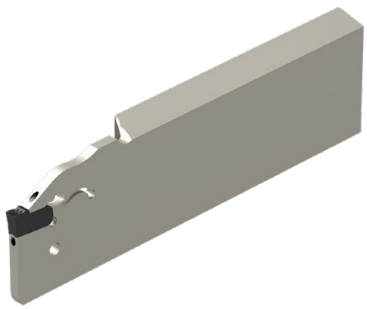
→ 14–20 | → 85–88 | → **Chapter 16**

MonoClamp – SX-DC reinforced Contra radial blade

Scope of supply:
Blade only

Direct Cooling





Illustrations show right-hand versions

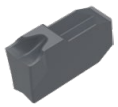
Designation	R/L/N	Version	CW inch	H inch	B inch	b_1 inch	OAL inch	CODX inch	CDX inch	for grooving inserts	70 877 ...
XLCF L 3208C-DC-SX3	L	Contra	0.118	1.260	0.098	0.315	4.331	2.598	1.299	SX .3..	**703**
XLCF R 3208C-DC-SX3	R	Contra	0.118	1.260	0.098	0.315	4.331	2.598	1.299	SX .3..	**503**



Insert mounting key SX

Spare parts for grooving inserts		70 950 ...
SX .3..	SX 2-3	**836**

Please order SX assembly key separately if required.

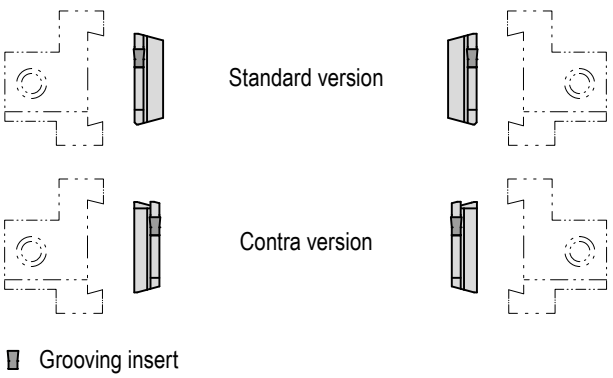


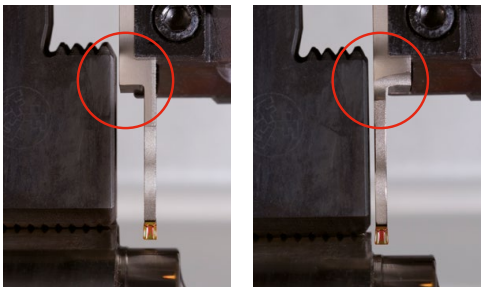



metric

→ 14–20 → 83+84 → **Chapter 16**

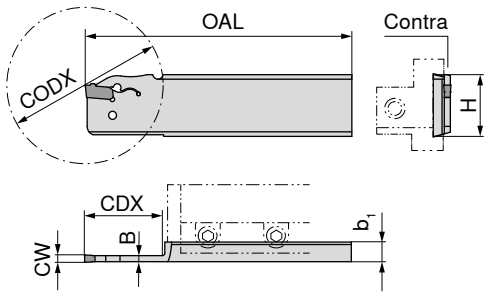
Correct Tool Selection

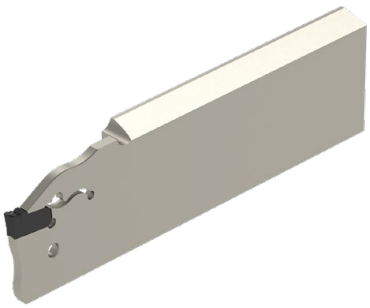




MonoClamp – SX reinforced Contra radial blade

Scope of supply:
Blade only





Illustrations show right-hand versions

Designation	R/L/N	Version	CW inch	H inch	B inch	b_1 inch	OAL inch	CODX inch	CDX inch	for grooving inserts	70 877 ...
XLCF L 3208C-SX3	L	Contra	0.118	1.260	0.098	0.315	4.331	2.598	1.299	SX .3..	**203**
XLCF R 3208C-SX3	R	Contra	0.118	1.260	0.098	0.315	4.331	2.598	1.299	SX .3..	**003**



Insert mounting key SX

Spare parts for grooving inserts		70 950 ...
SX .3..	SX 2-3	**836**

Please order SX assembly key separately if required.



→ 14–20



→ 85–88



→ **Chapter 16**

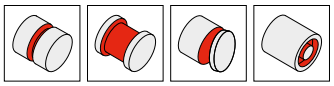


metric

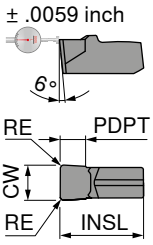
11

Insert LX

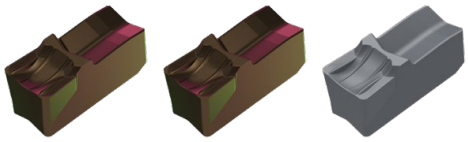
▲ Grooving width 0.315 and 0.394 inch
▲ Axial grooving from Ø 19.7 inch onwards
▲ Internal grooving and turning, from Ø 7.9 inch onwards



F	M	R



-M2 CTCP325	-M2 CTCP335	-M2 CTP1340
DRAGONSKIN	DRAGONSKIN	DRAGONSKIN



Designation	INSL inch	CW -/+0.08 inch	RE +/-0.1 inch	PDPT inch	for tool holder	70 337 ...		70 337 ...		70 337 ...	
LXE 8.00N0.80-M2	0.748	0.315	0.031	0.197	E32 N ..-LX	**928**		**578**		**682**	
LXE 10.00N0.80-M2	0.748	0.394	0.031	0.197	E32 N ..-LX	**932**		**582**		**678**	
P						●		●		●	
M						○		○		●	
K						●		●		●	
N										○	
S						○				●	
H											
O										○	

→ v_c Page 90+91
→ Application recommendation on page 94+95

Internal machining



→ 30

External machining

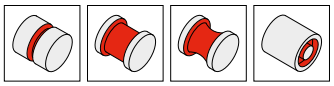




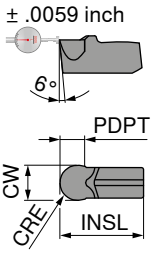
→ 30 → 31

Radial Grooving Insert LX

▲ Grooving width 0.315 inch
▲ Axial grooving from Ø 19.7 inch
▲ Internal grooving and turning, from Ø 7.9 inch



F	M	R



-M3 CTCP325	-M3 CTCP335	-M3 CTP1340
DRAGONSKIN	DRAGONSKIN	DRAGONSKIN



Designation	INSL inch	CW -/+0,08 inch	CRE inch	PDPT inch	for tool holder	70 337 ... 908	70 337 ... 518	70 337 ... 618
LXR 4.00N-M3	0.748	0.315	0.157	0.197	E32 N ..-LX			
P						●	●	●
M						○	○	●
K						●	●	●
N								○
S						○		●
H								
O								○

→ v_c Page 90+91
→ Application recommendation on page 94+95

Internal machining



→ 30

External machining





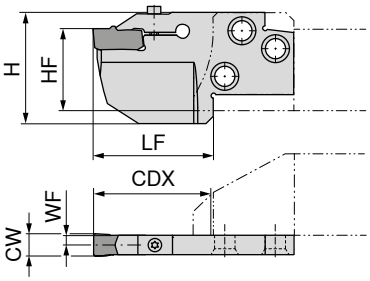
→ 30
→ 31

11

ModularClamp MSS – Axial and radial grooving module LX

▲ Grooving width 0.315 and 0.94 inch
▲ Axial grooving from Ø 19.7 inch onwards
▲ Internal grooving and turning, from Ø 7.9 inch onwards

Scope of supply:
Grooving module only



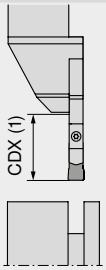


Neutral

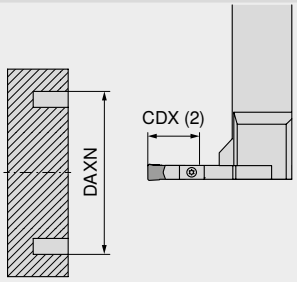
70 835 ...

Designation	CW inch	WF inch	LF inch	HF inch	H inch	CDX (1) inch	CDX (2) inch	CDX (3) inch	for grooving inserts	
E32 N 25-LX	0.315/0.394	0.134	1.063	1.260	1.732	0.984	0.748	0.551	LX ..	**032**
E32 N 32-LX	0.315/0.394	0.134	1.339	1.260	1.732	1.260	1.024	0.827	LX ..	**132**
E32 N 45-LX	0.315/0.394	0.134	1.850	1.260	1.732	1.772	1.535	1.339	LX ..	**232**

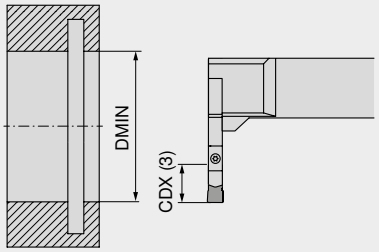
Radial grooving



Axial grooving DAXN > 19.7 inch



Internal grooving DMIN > 7.9 inch





Screwdriver

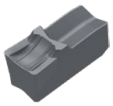
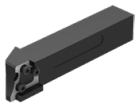
80 950 ...



Clamping screw

70 950 ...

Spare parts for grooving inserts				
LX ..	T20	**114**	M4x18	**204**

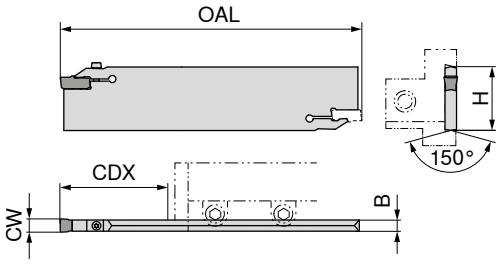



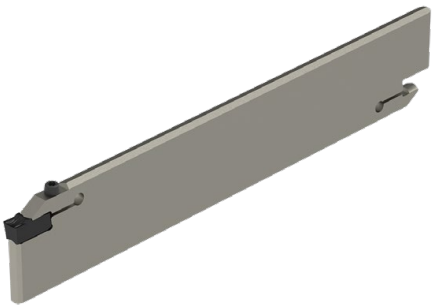


→ 28+29 → 75–79 → 80 → 81–82

MonoClamp – Blade LX

Scope of supply:
Blade incl. key and clamping screw





Designation	H inch	B inch	OAL inch	CW inch	CDX inch	for grooving inserts		70 833 ...
XLCEN 4608-LX	1.811	0.268	9.843	0.315/0.394	3.150	LX ..		**108**

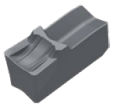


Screwdriver



Clamping screw

Spare parts for grooving inserts		80 950 ...		70 950 ...
LX ..	T20	**114**	M4x18	**204**







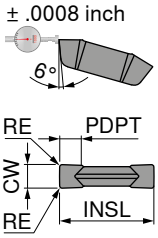
→ 28+29 → 85–88 → **Chapter 16**

Insert GX 09/16

▲ Insert with ground periphery
▲ Suitable also for parting off tubes and thin-walled workpieces



F	M	R



-F2
CTP1340

DRAGONSKIN



70 360 ...

Designation	INSL inch	CW +/-0,02 inch	RE +/-0,05 inch	PDPT inch	for tool holder	
GX 09-1 E2.00 N 0.20	0.354	0.079	0.008	0.059	GX 09-1	**600**
GX 09-1 E2.50 N 0.20	0.354	0.098	0.008	0.059	GX 09-1	**602**
GX 09-2 E3.00 N 0.30	0.354	0.118	0.012	0.079	GX 09-2	**604**
GX 16-1 E2.00 N 0.20	0.630	0.079	0.008	0.098	GX 16-1	**650**
GX 16-2 E3.00 N 0.30	0.630	0.118	0.012	0.118	GX 16-2	**652**
GX 16-3 E4.00 N 0.40	0.630	0.157	0.016	0.138	GX 16-3	**654**
GX 16-3 E5.00 N 0.40	0.630	0.197	0.016	0.138	GX 16-3	**656**

P	●
M	●
K	●
N	○
S	●
H	
O	○

→ v_c Page 90+91
→ Application recommendation on page 96+97

Internal machining





→ 42+43 | → 46+47 | → 48

External machining





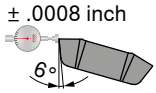
→ 40+41 | → 44+45 | → 48

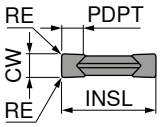
Insert GX 09/16 – Standard

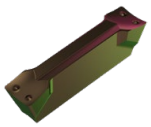
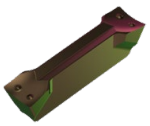
▲ Suitable for parting thin-walled workpieces



F	M	R
		





CTCP325	CTCP335	CTP1340
DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
		

Designation	INSL inch	CW +/-0.02 inch	RE +/-0.05 inch	PDPT inch	for tool holder	70 350 ...		70 350 ...		70 350 ...	
GX 09-1 E2.00 N 0.20	0.354	0.079	0.008	0.059	GX 09-1	**984**				**634**	
GX 09-1 E2.50 N 0.20	0.354	0.098	0.008	0.059	GX 09-1	**988**				**638**	
GX 09-2 E3.00 N 0.30	0.354	0.118	0.012	0.079	GX 09-2	**992**				**642**	
GX 16-1 E2.00 N 0.20	0.630	0.079	0.008	0.098	GX 16-1	**900**		**500**		**600**	
GX 16-1 E2.50 N 0.20	0.630	0.098	0.008	0.098	GX 16-1	**904**		**504**		**604**	
GX 16-2 E3.00 N 0.30	0.630	0.118	0.012	0.118	GX 16-2	**908**		**508**		**608**	
GX 16-2 E3.00 N 0.50	0.630	0.118	0.020	0.118	GX 16-2	**910**					
GX 16-2 E3.50 N 0.30	0.630	0.138	0.012	0.118	GX 16-2	**912**		**512**		**612**	
GX 16-3 E4.00 N 0.40	0.630	0.157	0.016	0.138	GX 16-3	**916**		**516**		**616**	
GX 16-3 E5.00 N 0.40	0.630	0.197	0.016	0.138	GX 16-3	**924**		**524**		**624**	
GX 16-4 E6.00 N 0.50	0.630	0.236	0.020	0.157	GX 16-4	**928**				**628**	
GX 16-4 E6.00 N 0.80	0.630	0.236	0.031	0.157	GX 16-4	**930**					
P						●		●		●	
M						○		○		●	
K						●		●		●	
N										○	
S						○				●	
H											
O										○	

→ v_c Page 90+91
→ Application recommendation on page 96+97

11

Internal machining


→ 42+43


→ 46+47


→ 48

External machining


→ 40+41


→ 44+45

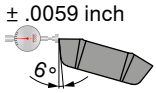

→ 48

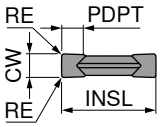
Insert GX 09/16

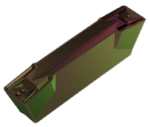
▲ Very good chip control



F	M	R
		





-M40 CTCP325	-M40 CTPP345	-M40 CTP1340
DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
		

Designation	INSL inch	CW +/-0,05 inch	RE +/-0,05 inch	PDPT inch	for tool holder	70 351 ...	70 351 ...	70 351 ...
GX 09-1 E2.00 N 0.20	0.354	0.079	0.008	0.059	GX 09-1	**986**	**886**	**686**
GX 09-2 E3.00 N 0.30	0.354	0.118	0.012	0.079	GX 09-2	**994**	**894**	**694**
GX 16-1 E2.00 N 0.20	0.630	0.079	0.008	0.098	GX 16-1	**902**	**802**	**602**
GX 16-2 E3.00 N 0.30	0.630	0.118	0.012	0.118	GX 16-2	**910**	**810**	**610**
GX 16-3 E4.00 N 0.40	0.630	0.157	0.016	0.138	GX 16-3	**918**	**818**	**618**
GX 16-3 E5.00 N 0.40	0.630	0.197	0.016	0.138	GX 16-3	**926**	**826**	**626**
GX 16-4 E6.00 N 0.50	0.630	0.236	0.020	0.157	GX 16-4	**930**	**830**	**630**
P						●	●	●
M						○	●	●
K						●		●
N								○
S						○	○	●
H								
O								○

→ v_c Page 90+91
→ Application recommendation on page 96+97

Internal machining


→ 42+43


→ 46+47


→ 48

External machining

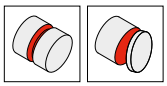

→ 40+41


→ 44+45

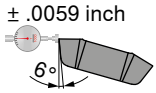

→ 48

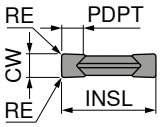
Insert GX 16

▲ Very good chip control



F	M	R
		





-M1 CTCP325	-M1 CTPP345	-M1 CTP1340
DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
		

Designation	INSL inch	CW +/-0,05 inch	RE +/-0,05 inch	PDPT inch	for tool holder	70 362 ...	70 362 ...	70 362 ...
GX 16-1 E2.00 N 0.20	0.630	0.079	0.008	0.079	GX 16-1		**800**	**600**
GX 16-2 E3.00 N 0.20	0.630	0.118	0.008	0.098	GX 16-2	**902**	**802**	**602**
GX 16-3 E4.00 N 0.30	0.630	0.157	0.012	0.118	GX 16-3	**904**		**604**
P						●	●	●
M						○	●	●
K						●		●
N								○
S						○	○	●
H								
O								○

→ v_c Page 90+91
→ Application recommendation on page 98+99

Internal machining






→ 42+43
→ 48

External machining






→ 40+41
→ 48

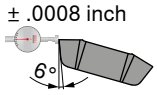
11

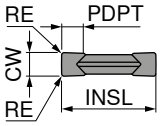
Insert GX 16

▲ Insert with highly positive cutting edge geometry and sharp cutting edge, polished chip breaker
▲ ground periphery

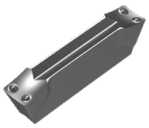


F	M	R
		





-27P
H216T



70 350 ...

Designation	INSL inch	CW +/-0,02 inch	RE +/-0,05 inch	PDPT inch	for tool holder	
GX 16-1 E2.00 N 0.20	0.630	0.079	0.008	0.098	GX 16-1	**650**
GX 16-2 E3.00 N 0.30	0.630	0.118	0.012	0.118	GX 16-2	**658**
GX 16-3 E4.00 N 0.40	0.630	0.157	0.016	0.138	GX 16-3	**670**
GX 16-4 E6.00 N 0.50	0.630	0.236	0.020	0.157	GX 16-4	**678**

P	
M	
K	●
N	●
S	○
H	
O	○

→ v_c Page 90+91
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Internal machining



→ 42+43





→ 48

External machining



→ 40+41



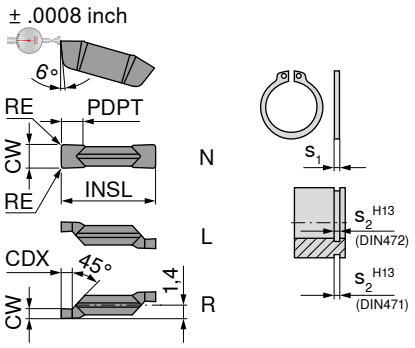


→ 48

Circlip groove insert GX 09/16 – Standard



F	M	R
		











Designation	IH	INSL inch	s_1 inch	s_2 inch	CW +/-0,02 inch	RE +/-0,05 inch	CDX inch	PDPT inch	for tool holder	70 352 ...	70 352 ...
GX 09-1 S1.00 L	L	0.354	0.031	0.035	0.039		0.045		R/L 02-GX 09-1		**684**
GX 09-1 S1.20 L	L	0.354	0.039	0.043	0.047		0.053		R/L 02-GX 09-1		**686**
GX 09-1 S1.40 L	L	0.354	0.047	0.051	0.055		0.060		R/L 02-GX 09-1		**688**
GX 09-1 S1.70 L	L	0.354	0.059	0.063	0.067		0.072		R/L 02-GX 09-1		**690**
GX 09-1 S1.95 N	N	0.354	0.069	0.073	0.077	0.004		0.079	GX 09-1	**692**	
GX 09-1 S2.25 N	N	0.354	0.079	0.085	0.089	0.004		0.079	GX 09-1	**694**	
GX 09-2 S2.75 N	N	0.354	0.098	0.104	0.108	0.004		0.079	GX 09-2	**696**	
GX 09-2 S3.25 N	N	0.354	0.118	0.124	0.128	0.004		0.079	GX 09-2	**698**	
GX 09-1 S1.00 R	R	0.354	0.031	0.035	0.039		0.045		R/L 02-GX 09-1		**676**
GX 09-1 S1.20 R	R	0.354	0.039	0.043	0.047		0.053		R/L 02-GX 09-1		**678**
GX 09-1 S1.40 R	R	0.354	0.047	0.051	0.055		0.060		R/L 02-GX 09-1		**680**
GX 09-1 S1.70 R	R	0.354	0.059	0.063	0.067		0.072		R/L 02-GX 09-1		**682**
GX 16-2 S0.60 L	L	0.630	0.016	0.020	0.024		0.030		R/L 03-GX 16-2		**607**
GX 16-2 S0.80 L	L	0.630	0.024	0.028	0.031		0.037		R/L 03-GX 16-2		**609**
GX 16-2 S0.90 L	L	0.630	0.028	0.031	0.035		0.041		R/L 03-GX 16-2		**611**
GX 16-2 S1.00 L	L	0.630	0.031	0.035	0.039		0.045		R/L 03-GX 16-2		**612**
GX 16-2 S1.20 L	L	0.630	0.039	0.043	0.047		0.053		R/L 03-GX 16-2		**614**
GX 16-2 S1.40 L	L	0.630	0.047	0.051	0.055		0.060		R/L 03-GX 16-2		**616**
GX 16-2 S1.70 L	L	0.630	0.059	0.063	0.067		0.072		R/L 03-GX 16-2		**618**
GX 16-2 S1.95 L	L	0.630	0.069	0.073	0.077		0.081		R/L 03-GX 16-2		**620**
GX 16-2 S2.25 L	L	0.630	0.079	0.085	0.089		0.093		R/L 03-GX 16-2		**622**
GX 16-2 S2.75 N	N	0.630	0.098	0.104	0.108	0.004		0.118	GX 16-2	**624**	
GX 16-2 S3.25 N	N	0.630	0.118	0.124	0.128	0.004		0.118	GX 16-2	**626**	
GX 16-3 S4.25 N	N	0.630	0.157	0.163	0.167	0.008		0.138	GX 16-3	**628**	
GX 16-2 S0.60 R	R	0.630	0.016	0.020	0.024		0.030		R/L 03-GX 16-2		**695**
GX 16-2 S0.80 R	R	0.630	0.024	0.028	0.031		0.037		R/L 03-GX 16-2		**697**
GX 16-2 S0.90 R	R	0.630	0.028	0.031	0.035		0.041		R/L 03-GX 16-2		**699**
GX 16-2 S1.00 R	R	0.630	0.031	0.035	0.039		0.045		R/L 03-GX 16-2		**600**
GX 16-2 S1.20 R	R	0.630	0.039	0.043	0.047		0.053		R/L 03-GX 16-2		**602**
GX 16-2 S1.40 R	R	0.630	0.047	0.051	0.055		0.060		R/L 03-GX 16-2		**604**
GX 16-2 S1.70 R	R	0.630	0.059	0.063	0.067		0.072		R/L 03-GX 16-2		**606**
GX 16-2 S1.95 R	R	0.630	0.069	0.073	0.077		0.081		R/L 03-GX 16-2		**608**
GX 16-2 S2.25 R	R	0.630	0.079	0.085	0.089		0.093		R/L 03-GX 16-2		**610**

P	●	●
M	●	●
K	●	●
N	○	○
S	●	●
H		
O	○	○

→ v_c Page 90+91
→ Application recommendation on page 98+99

Attention – applies only to internal machining:
Right-hand insert → left-hand module or monobloc boring bar
Left-hand insert → right-hand module or monobloc boring bar

Internal machining





→ 42+43 → 46+47 → 48

External machining



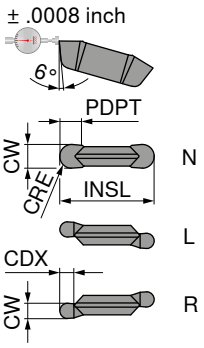


→ 40+41 → 44+45 → 48

Radius groove insert GX 09/16 – Standard



F	M	R
		







Designation	IH	INSL inch	CW +/-0.02 inch	CRE inch	PDPT inch	CDX inch	for tool holder	70 354 ...	70 354 ...	70 354 ...
GX 09-1 R1.00 N	N	0.354	0.079	0.039	0.039		GX 09-1		**992**	
GX 09-1 R1.20 N	N	0.354	0.094	0.047	0.047		GX 09-1		**996**	
GX 16-2 R0.80 L	L	0.630	0.063	0.031		0.070	R/L 03-GX 16-2	**912**		
GX 16-2 R1.00 L	L	0.630	0.079	0.039		0.086	R/L 03-GX 16-2	**916**		
GX 16-2 R1.20 L	L	0.630	0.094	0.047		0.102	R/L 03-GX 16-2	**920**		
GX 16-2 R1.50 N	N	0.630	0.118	0.059	0.059		GX 16-2		**924**	**624**
GX 16-3 R2.00 N	N	0.630	0.157	0.079	0.079		GX 16-3		**928**	**628**
GX 16-3 R2.50 N	N	0.630	0.197	0.098	0.098		GX 16-3		**932**	**632**
GX 16-4 R3.00 N	N	0.630	0.236	0.118	0.118		GX 16-4		**936**	**636**
GX 16-2 R0.80 R	R	0.630	0.063	0.031		0.070	R/L 03-GX 16-2	**900**		
GX 16-2 R1.00 R	R	0.630	0.079	0.039		0.086	R/L 03-GX 16-2	**904**		
GX 16-2 R1.20 R	R	0.630	0.094	0.047		0.102	R/L 03-GX 16-2	**908**		
P								●	●	●
M								○	○	●
K								●	●	●
N										○
S								○	○	●
H										
O										○

→ v_c Page 90+91
→ Application recommendation on page 98+99

Attention – applies only to internal machining:
Right-hand insert → left-hand module or monobloc boring bar
Left-hand insert → right-hand module or monobloc boring bar

Internal machining


→ 42+43


→ 46+47


→ 48

External machining


→ 40+41


→ 44+45

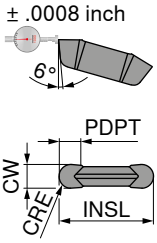

→ 48

Radius groove insert GX 16

▲ Insert with highly positive cutting edge geometry and sharp cutting edge, polished chip breaker
▲ ground periphery



F	M	R
		



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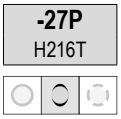




70 354 ...

Designation	INSL inch	CW +/-0.02 inch	CRE inch	PDPT inch	for tool holder	
GX 16-2 R1.50 N	0.630	0.118	0.059	0.059	GX 16-2	**674**
GX 16-3 R2.00 N	0.630	0.157	0.079	0.079	GX 16-3	**678**
GX 16-3 R2.50 N	0.630	0.197	0.098	0.098	GX 16-3	**682**

P	
M	
K	●
N	●
S	○
H	
O	○

→ v_c Page 90+91
→ Application recommendation on page 98+99

Internal machining


→ 42+43




→ 48

External machining


→ 40+41



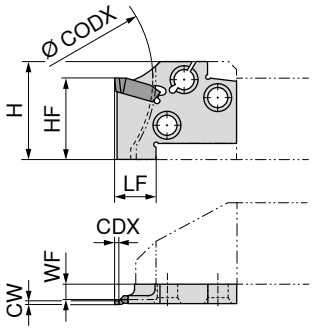

→ 48

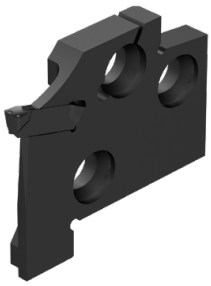
11

ModularClamp MSS – Radial grooving module GX 09/16

▲ For circlip grooves ≤ 0.1083 inch
▲ For radius grooves up to ≤ 0.0472 inch
▲ For external recessing

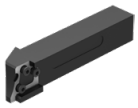
Scope of supply:
Grooving module only





Illustrations show right-hand versions

									Left-hand	Right-hand
									70 871 ...	**70 870 ...**
Designation	CW inch	WF inch	LF inch	HF inch	H inch	CODX inch	CDX inch	for grooving inserts		
E16 R/L 02-GX 09-1	<0.077	0.124	0.315	0.630	0.768	1.890	0.079	GX 09-1 ..R/L	**116**	**116**
E20 R/L 03-GX 16-2	<0.108	0.134	0.512	0.787	0.945	2.362	0.118	GX 16-2 ..R/L	**120**	**120**
E25 R/L 03-GX 16-2	<0.108	0.193	0.512	0.984	1.181	2.953	0.118	GX 16-2 ..R/L	**125**	**125**

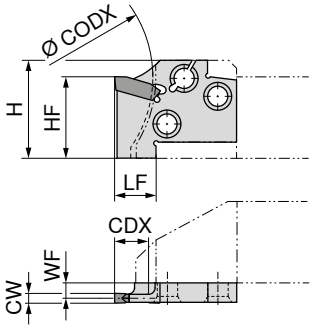




→ 32–39 → 75–79 → 80

ModularClamp MSS – Radial grooving module GX 09/16

▲ For grooving and turning
▲ For circlip grooves ≤ 0.2067 inch
▲ For radius grooves up to ≤ 0.0984 inch
▲ For external recessing

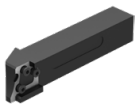
Scope of supply:
Grooving module only





Illustrations show right-hand versions

									Left-hand		Right-hand	
									70 866 ...		**70 865 ...**	
Designation	CW inch	WF inch	LF inch	HF inch	H inch	CODX inch	CDX inch	for grooving inserts				
E16 R/L 07-GX 09-1	0.079 - 0.108	0.124	0.315	0.630	0.768	1.890	0.276	GX 09-1 ..N	**016**		**016**	
E16 R/L 07-GX 09-2	0.109 - 0.148	0.110	0.315	0.630	0.768	1.890	0.276	GX 09-2 ..N	**116**		**116**	
E20 R/L 12-GX 16-1	0.079 - 0.108	0.148	0.512	0.787	0.945	2.362	0.472	GX 16-1 ..N	**020**		**020**	
E20 R/L 12-GX 16-2	0.109 - 0.148	0.134	0.512	0.787	0.945	2.362	0.472	GX 16-2 ..N	**120**		**120**	
E20 R/L 12-GX 16-3	0.148 - 0.197	0.115	0.512	0.787	0.945	2.362	0.472	GX 16-3 ..N	**220**		**220**	
E25 R/L 12-GX 16-1	0.079 - 0.108	0.207	0.512	0.984	1.181	2.953	0.472	GX 16-1 ..N	**025**		**025**	
E25 R/L 12-GX 16-2	0.109 - 0.148	0.193	0.512	0.984	1.181	2.953	0.472	GX 16-2 ..N	**125**		**125**	
E25 R/L 12-GX 16-3	0.148 - 0.197	0.174	0.512	0.984	1.181	2.953	0.472	GX 16-3 ..N	**225**		**225**	
E25 R/L 12-GX 16-4	0.197 - 0.256	0.150	0.512	0.984	1.181	2.953	0.472	GX 16-4 ..N	**325**		**325**	

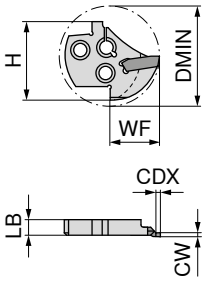

→ 32–39 → 75–79 → 80

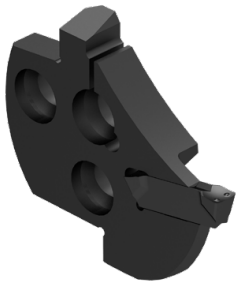
11

ModularClamp MSS – Radial Grooving module GX 09/16 for Internal machining

▲ For circlip grooves ≤ 0.1083 inch
▲ For radius grooves up to ≤ 0.0472 inch

Scope of supply:
Grooving module only





Illustrations show right-hand versions

Designation	CW inch	LB inch	WF inch	H inch	CDX inch	DMIN inch	for grooving inserts	Left-hand 70 886 ...	Right-hand 70 885 ...
I16 R/L 02-GX 09-1	<0.077	0.150	0.394	0.646	0.079	0.787	GX 09-1 ..R/L	**016**	**016**
I20 R/L 02-GX 09-1	<0.077	0.150	0.472	0.799	0.079	0.984	GX 09-1 ..R/L	**020**	**020**
I25 R/L 02-GX 09-1	<0.077	0.150	0.610	0.980	0.079	1.260	GX 09-1 ..R/L	**025**	**025**
I32 R/L 03-GX 16-2	<0.108	0.232	0.787	1.268	0.118	1.575	GX 16-2 ..R/L	**032**	**032**
I40 R/L 03-GX 16-2	<0.108	0.232	0.965	1.559	0.118	1.969	GX 16-2 ..R/L	**040**	**040**

Right hand module → left hand insert only
Left hand module → right hand insert only



→ 32–39

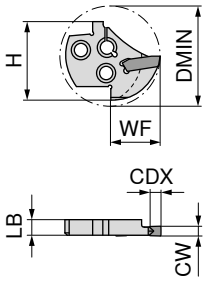


→ 81+82

ModularClamp MSS – Radial Grooving module GX 09/16 for Internal machining

▲ For circlip grooves ≤ 0.2067 inch
▲ For radius grooves up to ≤ 0.0984 inch

Scope of supply:
Grooving module only





Illustrations show right-hand versions

Designation	CW inch	LB inch	WF inch	H inch	CDX inch	DMIN inch	for grooving inserts	Left-hand 70 881 ...	Right-hand 70 880 ...
I16 R/L 04-GX 09-1	0.079 - 0.108	0.150	0.394	0.646	0.157	0.787	GX 09-1 ..N	**017**	**017**
I16 R/L 04-GX 09-2	0.109 - 0.148	0.150	0.394	0.646	0.157	0.787	GX 09-2 ..N	**117**	**117**
I20 R/L 05-GX 09-1	0.079 - 0.108	0.150	0.472	0.799	0.197	0.984	GX 09-1 ..N	**021**	**021**
I20 R/L 05-GX 09-2	0.109 - 0.148	0.150	0.472	0.799	0.197	0.984	GX 09-2 ..N	**121**	**121**
I25 R/L 06-GX 09-1	0.079 - 0.108	0.150	0.610	0.980	0.236	1.260	GX 09-1 ..N	**026**	**026**
I25 R/L 06-GX 09-2	0.109 - 0.148	0.150	0.610	0.980	0.236	1.260	GX 09-2 ..N	**126**	**126**
I32 R/L 09-GX 16-1	0.079 - 0.108	0.232	0.787	1.268	0.354	1.575	GX 16-1 ..N	**033**	**033**
I32 R/L 09-GX 16-2	0.109 - 0.148	0.232	0.787	1.268	0.354	1.575	GX 16-2 ..N	**133**	**133**
I32 R/L 09-GX 16-3	0.148 - 0.197	0.232	0.787	1.268	0.354	1.575	GX 16-3 ..N	**233**	**233**
I32 R/L 09-GX 16-4	0.197 - 0.256	0.232	0.787	1.268	0.354	1.575	GX 16-4 ..N	**333**	**333**
I40 R/L 10-GX 16-1	0.079 - 0.108	0.232	0.965	1.559	0.394	1.969	GX 16-1 ..N	**041**	**041**
I40 R/L 10-GX 16-2	0.109 - 0.148	0.232	0.965	1.559	0.394	1.969	GX 16-2 ..N	**141**	**141**
I40 R/L 10-GX 16-3	0.148 - 0.197	0.232	0.965	1.559	0.394	1.969	GX 16-3 ..N	**241**	**241**
I40 R/L 10-GX 16-4	0.197 - 0.256	0.232	0.965	1.559	0.394	1.969	GX 16-4 ..N	**341**	**341**

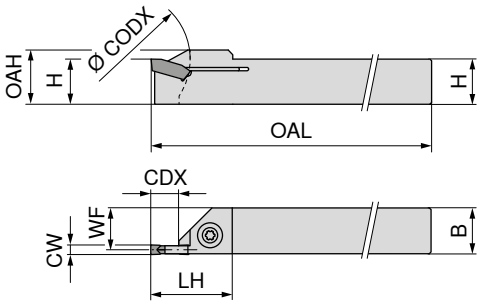


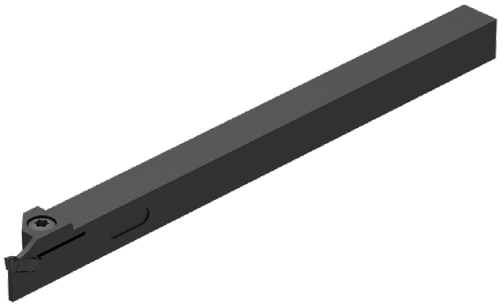
→ 32–39



→ 81+82

MonoClamp – Radial Monoholder GX 09



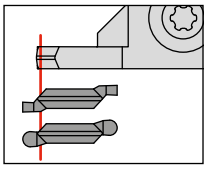


Illustrations show right-hand versions

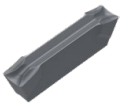
Designation	H inch	B inch	CW inch	WF inch	OAH inch	OAL inch	LH inch	CODX inch	CDX inch	for grooving inserts	Left-hand 78 863 ...	Right-hand 78 862 ...
E10 R/L 00-06-GX09-E	0.375	0.375	0.079 - 0.138	0.349	0.472	6.000	0.709	1.181	0.270	GX 09 ..	**03800**[1)]	**03800**[1)]

1) Not ex-stock

When using 'R' or 'L' tools the tool must be modified at the end face to ensure cutting clerance.



Spare parts for grooving inserts		Screwdriver		Clamping screw	
		80 950 ...		**70 950 ...**	
GX 09 ..	T15	**113**	M4x11	**442**	



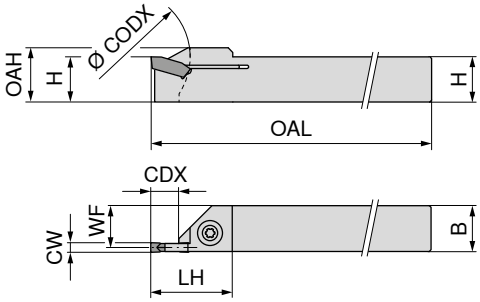


metric

→ 32–38

MonoClamp – Radial Monoholder GX 09

Scope of supply:
Mono holder incl. Torx key and clamping screw

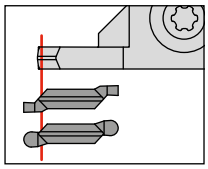




Illustrations show right-hand versions

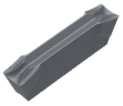
Designation	H mm	B mm	CW mm	WF mm	OAH mm	OAL mm	LH mm	CODX mm	CDX mm	for grooving inserts	Left-hand 70 863 ...	Right-hand 70 862 ...
E10 R/L 00-1010M-GX09	10	10	2.00 - 3.50	9.35	12	150	18	30	7	GX 09 ..	**010**	**010**

When using 'R' or 'L' tools the tool must be modified at the end face to ensure cutting clerance.



Spare parts for grooving inserts

		Screwdriver 80 950 ...		Clamping screw 70 950 ...
GX 09 ..	T15	**113**	M4x11	**442**



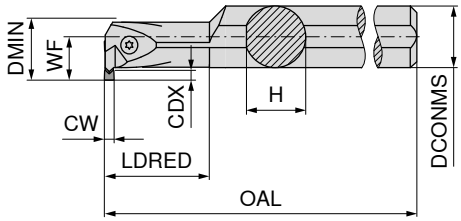


metric

→ 32–38

11

MonoClamp – Radial Mono-boring bars GX 09





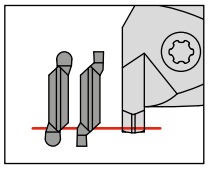
Illustrations show right-hand versions

										Left-hand	Right-hand
										78 859 ...	**78 858 ...**
Designation	H inch	DCONMS inch	DMIN inch	CW inch	CDX inch	WF inch	OAL inch	LDRED inch	for grooving inserts		
I12 R/L 90-2.5D-GX09-E	0.600	0.625	0.630	0.079 - 0.148	0.118	0.433	6.000	1.181	GX 09 ..	**06300**[1)]	**06300**

1) Not ex-stock

Right hand boring bar → left hand insert only
Left hand boring bar → right hand insert only

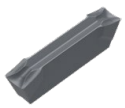
When using „R“ or „L“ tools the insert support seat requires modification to prevent the insert fouling.




Screwdriver


Clamping screw

			80 950 ...		**70 950 ...**
Spare parts for grooving inserts					
GX 09 ..	T15	**113**		M3.5x12.5	**441**

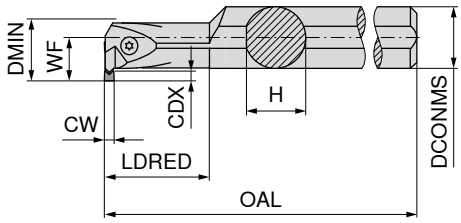



metric

→ 32–38

MonoClamp – Radial Mono-boring bars GX 09

Scope of supply:
Boring bar incl. key and clamping screw



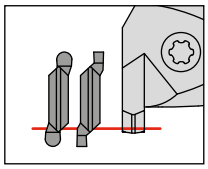


Illustrations show right-hand versions

Designation	H mm	DCONMS mm	DMIN mm	CW mm	CDX mm	WF mm	OAL mm	LDRED mm	for grooving inserts	Left-hand 70 859 ...	Right-hand 70 858 ...
I12 R/L 90-2,5D-GX09	15.25	16	16	2.00 - 3.75	3	11	150	30	GX 09 ..	**012**	**012**

Right hand boring bar → left hand insert only
Left hand boring bar → right hand insert only

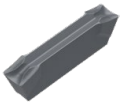
When using „R“ or „L“ tools the insert support seat requires modification to prevent the insert fouling.




Screwdriver
80 950 ...


Clamping screw
70 950 ...

Spare parts for grooving inserts				
GX 09 ..	T15	**113**	M3.5x12.5	**441**





metric

→ 32–38

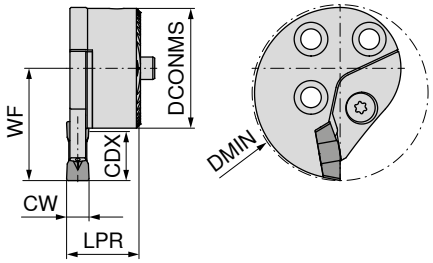
11

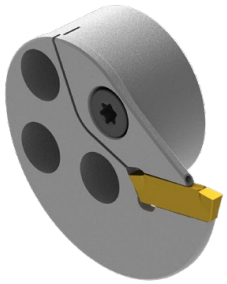
MaxiChange-GX – GX-DC 16 exchangeable grooving head

▲ For grooving and turning

Scope of supply:
Exchangeable grooving head with clamping claw and clamping screw





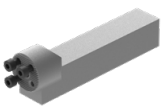


Illustrations show right-hand versions

Designation	DCONMS mm	CW mm	WF mm	LPR mm	DMIN mm	CDX mm	for grooving inserts	NEW Left-hand 84 188 ...	NEW Right-hand 84 189 ...
WK25 R/L 14-DC GX 16-S2	25	2	27	14.00	41	14	GX 16-1 ..N	**22500**	**22500**
WK25 R/L 14-DC GX 16-S3	25	3	27	14.75	41	14	GX 16-2 ..N	**32500**	**32500**
WK25 R/L 14-DC GX 16-S4/5	25	4/5	27	15.75	41	14	GX 16-3 ..N	**42500**	**42500**
WK32 R/L 13-DC GX 16-S4/5	32	4/5	30	17.75	47	13	GX 16-3 ..N	**43200**	**43200**
WK32 R/L 13-DC GX 16-S6	32	6	30	19.35	47	13	GX 16-3 ..N	**63200**	**63200**

Spare parts for Article no.	 Clamping claw 84 950 ...		 O-Ring 84 950 ...		 Clamping screw 84 950 ...		 Guide pin 84 950 ...
84 189 22500	**50400**	2x1	**50300**	M4X4/T15	**50000**	D3H6X10	**53000**
84 188 22500	**50500**	2x1	**50300**	M4X4/T15	**50000**	D3H6X10	**53000**
84 189 32500	**50600**	2x1	**50300**	M4X4/T15	**50000**	D3H6X10	**53000**
84 188 32500	**50700**	2x1	**50300**	M4X4/T15	**50000**	D3H6X10	**53000**
84 189 42500	**50800**	2x1	**50300**	M4X4/T15	**50000**	D3H6X10	**53000**
84 188 42500	**50900**	2x1	**50300**	M4X4/T15	**50000**	D3H6X10	**53000**
84 189 43200	**51000**	2x1	**50300**	M5X5.5/T15	**50100**	D4H6X10	**53100**
84 188 43200	**51100**	2x1	**50300**	M5X5.5/T15	**50100**	D4H6X10	**53100**
84 189 63200	**51200**	2x1	**50300**	M5X5.5/T15	**50100**	D4H6X10	**53100**
84 188 63200	**51300**	2x1	**50300**	M5X5.5/T15	**50100**	D4H6X10	**53100**

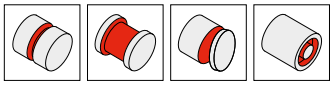




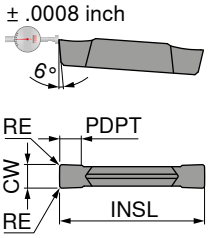
→ 32–39 → **Chapter 9**

Insert GX 24

▲ Insert with ground periphery
▲ Suitable also for parting off tubes and thin-walled workpieces



F	M	R
◆		



-F2 CTCP325	-F2 CTPP345	-F2 CTP1340
DRAGONSKIN	DRAGONSKIN	DRAGONSKIN



Designation	INSL inch	CW +/-0,02 inch	RE +/-0,05 inch	PDPT inch	for tool holder	70 350 ...	70 350 ...	70 350 ...
GX 24-2 E3.00 N 0.30	0.945	0.118	0.012	0.098	GX 24-2	**962**	**862**	**662**
GX 24-2 E3.50 N 0.30	0.945	0.138	0.012	0.098	GX 24-2		**864**	
GX 24-3 E4.00 N 0.40	0.945	0.157	0.016	0.118	GX 24-3	**966**	**866**	**666**
GX 24-3 E5.00 N 0.40	0.945	0.197	0.016	0.138	GX 24-3	**970**	**870**	**671**
GX 24-4 E6.00 N 0.50	0.945	0.236	0.020	0.157	GX 24-4		**872**	**672**
P						●	●	●
M						○	●	●
K						●		●
N								○
S						○	○	●
H								
O								○

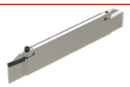
→ v_c Page 90+91
→ Application recommendation on page 96+97

Internal machining




→ 60

External machining



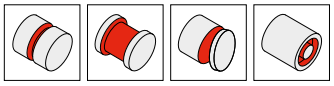


→ 57–59
→ 61
→ 62–64
→ 65

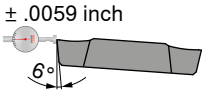
11

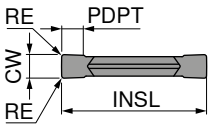
Insert GX 24

▲ Universal application
▲ First choice for axial grooving



F	M	R
		





-E CTCP325	-E CTCP335	-E CTPP345	-E CTP1340
DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
			

Designation	INSL inch	CW +/-0,05 inch	RE +/-0,05 inch	PDPT inch	for tool holder	70 350 ...		70 350 ...		70 350 ...		70 350 ...	
GX 24-2 E3.00 N 0.30	0.945	0.118	0.012	0.098	GX 24-2	**932**		**532**		**832**		**632**	
GX 24-3 E4.00 N 0.40	0.945	0.157	0.016	0.118	GX 24-3	**936**		**536**		**836**		**636**	
GX 24-3 E5.00 N 0.40	0.945	0.197	0.016	0.118	GX 24-3	**940**		**540**		**840**		**640**	
GX 24-4 E6.00 N 0.50	0.945	0.236	0.020	0.138	GX 24-4	**944**		**544**		**844**		**644**	
P						●		●		●		●	
M						○		○		●		●	
K						●		●				●	
N												○	
S						○				○		●	
H													
O												○	

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→ Application recommendation on page 96+97

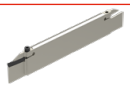
Internal machining


→ 60



External machining


→ 57–59


→ 61

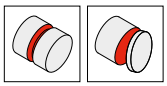

→ 62–64



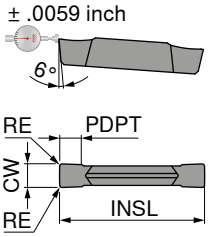

→ 65

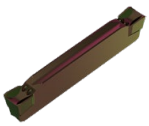
Insert GX 24

▲ Very good chip control



F	M	R
		



-M1 CTCP325	-M1 CTPP345	-M1 CTP1340
DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
		

Designation	INSL inch	CW +/-0,05 inch	RE +/-0,05 inch	for tool holder	70 363 ...	70 363 ...	70 363 ...
GX 24-1 E2.00 N 0.20	0.945	0.079	0.008	GX 24-1	**900**	**800**	**600**
GX 24-2 E3.00 N 0.20	0.945	0.118	0.008	GX 24-2	**902**	**802**	**602**
GX 24-3 E4.00 N 0.30	0.945	0.157	0.012	GX 24-3	**904**	**804**	**604**
P					●	●	●
M					○	●	●
K					●		●
N							○
S					○	○	●
H							
O							○

→ v_c Page 90+91
→ Application recommendation on page 98+99

Internal machining




→ 60

External machining



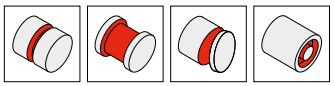



→ 57–60
→ 61
→ 62–64

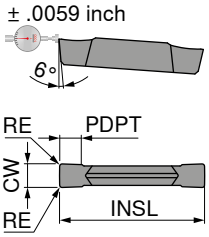
11

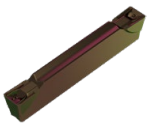
Insert GX 24

▲ Very good chip control



F	M	R
		



-M40 CTCP325	-M40 CTPP345	-M40 CTP1340
DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
		
		

Designation	INSL inch	CW +/-0,05 inch	RE +/-0,05 inch	PDPT inch	for tool holder	70 364 ...		70 364 ...		70 364 ...	
GX 24-2 E3.00 N 0.30	0.945	0.118	0.012	0.138	GX 24-2	**900**		**800**		**600**	
GX 24-3 E4.00 N 0.40	0.945	0.157	0.016	0.157	GX 24-3	**902**		**802**		**602**	
GX 24-3 E5.00 N 0.40	0.945	0.197	0.016	0.157	GX 24-3	**904**		**804**		**604**	
GX 24-4 E6.00 N 0.50	0.945	0.236	0.020	0.157	GX 24-4	**906**		**806**		**606**	
P						●		●		●	
M						○		●		●	
K						●				●	
N										○	
S						○		○		●	
H											
O										○	

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Internal machining


→ 60



External machining


→ 57–60

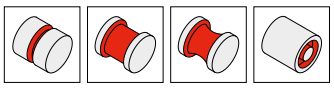

→ 61


→ 62–64

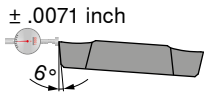


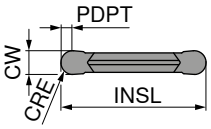

→ 65

Radius groove insert GX 24

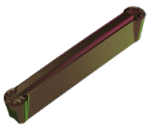


F	M	R





-M3 CTCP325	-M3 CTCP335
DRAGONSKIN	DRAGONSKIN



Designation	INSL inch	CW +/-0,05 inch	CRE inch	PDPT inch	for tool holder	70 354 ...		70 354 ...	
GX 24-2 R1.50 N	0.961	0.118	0.059	0.059	GX 24-2	**952**		**552**	
GX 24-3 R2.00 N	0.961	0.157	0.079	0.098	GX 24-3	**954**		**554**	
GX 24-3 R2.50 N	0.961	0.197	0.098	0.118	GX 24-3	**956**		**556**	
GX 24-4 R3.00 N	0.961	0.236	0.118	0.157	GX 24-4	**958**		**558**	
P						●		●	
M						○		○	
K						●		●	
N									
S						○			
H									
O									

→ v_c Page 90+91
→ Application recommendation on page 98+99

Internal machining




→ 60

External machining





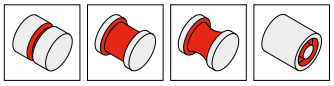



→ 57–60
→ 61
→ 62–64
→ 65

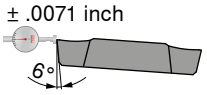
11

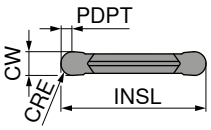
Radius groove insert GX 24

▲ Suitable for the machining of tough and ductile materials



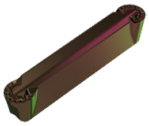
F	M	R
		





-M33
CTCP325

DRAGONSKIN



70 365 ...

Designation	INSL inch	CW +/-0,05 inch	CRE inch	PDPT inch	for tool holder	
GX 24-2 R1.50 N	0.961	0.118	0.059	0.059	GX 24-2	**95200**
GX 24-3 R2.00 N	0.961	0.157	0.079	0.098	GX 24-3	**95400**
GX 24-3 R2.50 N	0.961	0.197	0.098	0.118	GX 24-3	**95600**
GX 24-4 R3.00 N	0.961	0.236	0.118	0.157	GX 24-4	**95800**

P	●
M	○
K	●
N	
S	○
H	
O	

→ v_c Page 90+91
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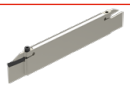
Internal machining


→ 60



External machining


→ 57–60


→ 61


→ 62–64



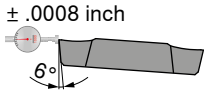

→ 65

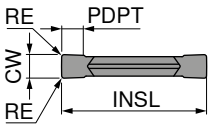
Insert GX 24

▲ Insert with highly positive cutting edge geometry and sharp cutting edge, polished chip breaker
▲ ground periphery

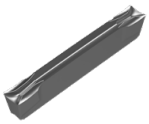


F	M	R
		





-27P
H216T



70 350 ...

Designation	INSL inch	CW +/-0,02 inch	RE +/-0,05 inch	PDPT inch	for tool holder	
GX 24-2 E3.00 N 0.30	0.945	0.118	0.012	0.098	GX 24-2	**682**
GX 24-3 E4.00 N 0.40	0.945	0.157	0.016	0.118	GX 24-3	**684**
GX 24-3 E5.00 N 0.40	0.945	0.197	0.016	0.138	GX 24-3	**686**
GX 24-4 E6.00 N 0.50	0.945	0.236	0.020	0.157	GX 24-4	**688**

P	
M	
K	●
N	●
S	○
H	
O	○

→ v_c Page 90+91
→ Application recommendation on page 96+97

Internal machining




→ 60

External machining





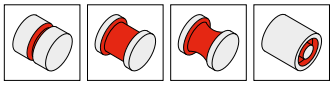



→ 57–60
→ 61
→ 62–64
→ 65

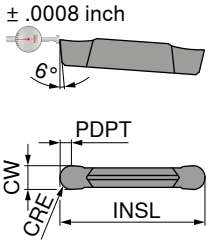
11

Radius grooving insert GX 24

▲ Insert with highly positive cutting edge geometry and sharp cutting edge, polished chip breaker
▲ ground periphery



F	M	R
		



-27PF
H216T





70 353 ...

Designation	INSL inch	CW +/-0.02 inch	CRE inch	PDPT inch	for tool holder	
GX 24-4 R3.00 N	1.000	0.236	0.118	0.157	GX 24-4	**500**
GX 24-5 R4.00 N	1.000	0.315	0.157	0.197	GX 24-5	**506**

P	
M	
K	●
N	●
S	○
H	
O	○

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Internal machining




→ 60

External machining





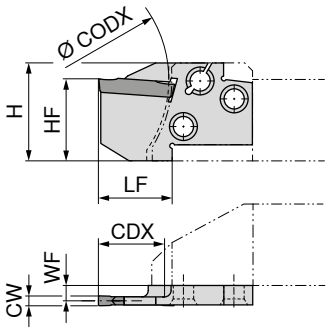


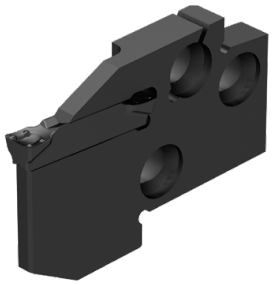

→ 57–60
→ 61
→ 62–64
→ 65

ModularClamp MSS – Radial grooving module GX 24

▲ For deep radial parting and grooving
▲ For turning

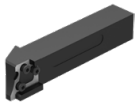
Scope of supply:
Grooving module only





Illustrations show right-hand versions

Designation	CW inch	WF inch	LF inch	HF inch	H inch	CODX inch	CDX inch	for grooving inserts	Left-hand 70 868 ...	Right-hand 70 867 ...
E20 R/L 21-GX 24-1	0.079 - 0.108	0.142	0.866	0.787	0.945	2.362	0.827	GX 24-1	**020**	**020**
E20 R/L 21-GX 24-2	0.118	0.134	0.866	0.787	0.945	2.362	0.827	GX 24-2	**120**	**120**
E20 R/L 21-GX 24-3	0.157/0.197	0.115	0.866	0.787	0.945	1.181	0.827	GX 24-3	**22000**	**22000**
E25 R/L 21-GX 24-1	0.079 - 0.108	0.201	0.866	0.984	1.181	2.953	0.827	GX 24-1	**025**	**025**
E25 R/L 21-GX 24-2	0.118	0.193	0.866	0.984	1.181	2.953	0.827	GX 24-2	**125**	**125**
E25 R/L 21-GX 24-3	0.157/0.197	0.174	0.866	0.984	1.181	2.953	0.827	GX 24-3	**225**	**225**
E25 R/L 21-GX 24-4	0.236	0.150	0.866	0.984	1.181	2.953	0.827	GX 24-4	**325**	**325**
E25 R/L 21-GX 24-5	0.315	0.116	0.906	0.984	1.181	2.953	0.827	GX 24-5	**425**	**425**

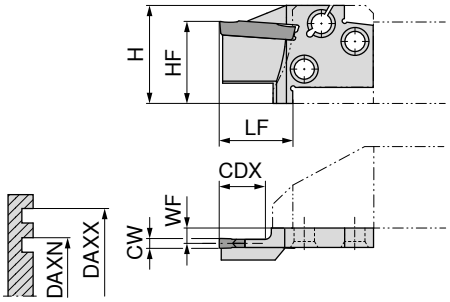



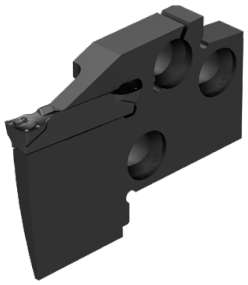

→ 49–56 → 75–79 → 80

ModularClamp MSS – Axial grooving module GX 24 short

▲ For axial grooving
▲ For face turning

Scope of supply:
Grooving module only





Illustrations show right-hand versions

										Left-hand	Right-hand
										70 891 ...	**70 890 ...**
Designation	DAXN inch	DAXX inch	CW inch	WF inch	LF inch	HF inch	H inch	CDX inch	for grooving inserts		
E20 R/L 14-GX 24-2 A	1.969	2.756	0.118	0.134	0.866	0.787	0.945	0.551	GX 24-2	**100**	**100**
E20 R/L 14-GX 24-2 A	2.756	3.937	0.118	0.134	0.866	0.787	0.945	0.551	GX 24-2	**102**	**102**
E20 R/L 14-GX 24-2 A	3.937	5.906	0.118	0.134	0.866	0.787	0.945	0.551	GX 24-2	**104**	**104**
E25 R/L 15-GX 24-2 A	1.969	2.756	0.118	0.193	0.866	0.984	1.181	0.591	GX 24-2	**200**	**200**
E25 R/L 15-GX 24-2 A	2.756	3.937	0.118	0.193	0.866	0.984	1.181	0.591	GX 24-2	**202**	**202**
E25 R/L 15-GX 24-2 A	3.937	5.906	0.118	0.193	0.866	0.984	1.181	0.591	GX 24-2	**204**	**204**
E25 R/L 15-GX 24-3 A	1.969	2.756	0.157/0.197	0.174	0.866	0.984	1.181	0.591	GX 24-3	**206**	**206**
E25 R/L 15-GX 24-3 A	2.756	3.937	0.157/0.197	0.174	0.866	0.984	1.181	0.591	GX 24-3	**208**	**208**
E25 R/L 15-GX 24-3 A	3.937	5.906	0.157/0.197	0.174	0.866	0.984	1.181	0.591	GX 24-3	**210**	**210**
E25 R/L 15-GX 24-3 A	5.906	11.811	0.157/0.197	0.174	0.866	0.984	1.181	0.591	GX 24-3	**212**	**212**
E25 R/L 15-GX 24-4 A	1.969	2.756	0.236	0.150	0.866	0.984	1.181	0.591	GX 24-4	**214**	**214**
E25 R/L 15-GX 24-4 A	2.756	3.937	0.236	0.150	0.866	0.984	1.181	0.591	GX 24-4	**216**	**216**
E25 R/L 15-GX 24-4 A	3.937	5.906	0.236	0.150	0.866	0.984	1.181	0.591	GX 24-4	**218**	**218**
E25 R/L 15-GX 24-4 A	5.906	11.811	0.236	0.150	0.866	0.984	1.181	0.591	GX 24-4	**220**	**220**



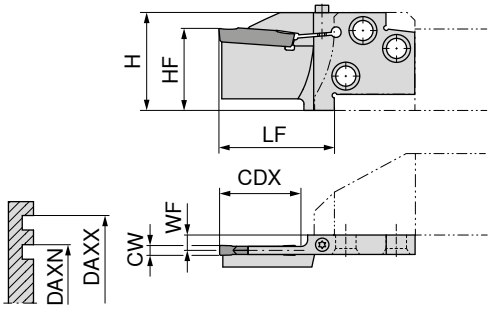


→ 49–56 → 75–79 → 80

ModularClamp MSS – Axial grooving module GX 24 long

▲ For axial grooving
▲ For face turning

Scope of supply:
Grooving module only



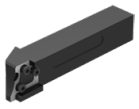


Illustrations show right-hand versions

Designation	DAXN inch	DAXX inch	CW inch	WF inch	LF inch	HF inch	H inch	CDX inch	for grooving inserts	Left-hand 70 895 ...	Right-hand 70 894 ...
E25 R/L 21-GX 24-3 AS	1.969	2.756	0.157/0.197	0.178	1.378	0.984	1.181	0.827	GX 24-3	**200**	**200**
E25 R/L 21-GX 24-3 AS	2.756	3.937	0.157/0.197	0.178	1.378	0.984	1.181	0.827	GX 24-3	**202**	**202**
E25 R/L 21-GX 24-3 AS	3.937	5.906	0.157/0.197	0.178	1.378	0.984	1.181	0.827	GX 24-3	**204**	**204**
E25 R/L 21-GX 24-3 AS	5.906	11.811	0.157/0.197	0.178	1.378	0.984	1.181	0.827	GX 24-3	**206**	**206**
E25 R/L 25-GX 24-4 AS	1.969	2.756	0.236	0.154	1.378	0.984	1.181	0.984	GX 24-4	**210**	**210**
E25 R/L 25-GX 24-4 AS	2.756	3.937	0.236	0.154	1.378	0.984	1.181	0.984	GX 24-4	**212**	**212**
E25 R/L 25-GX 24-4 AS	3.937	5.906	0.236	0.154	1.378	0.984	1.181	0.984	GX 24-4	**214**	**214**
E25 R/L 25-GX 24-4 AS	5.906	11.811	0.236	0.154	1.378	0.984	1.181	0.984	GX 24-4	**216**	**216**

Axial modules version „GX 24 long“ can be clamped on both sides.

Spare parts for grooving inserts	Screwdriver 80 950 ...		Clamping screw 70 950 ...	
GX 24-3	T15	**113**	M3.5x14	**160**
GX 24-4	T15	**113**	M3.5x14	**160**

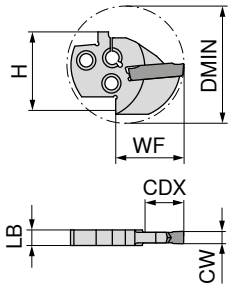




→ 49–56 → 75–79 → 80

ModularClamp MSS – Radial Grooving module GX 24 for Internal machining

▲ for grooving and turning

Scope of supply:
Grooving module only





Neutral

70 880 ...

Designation	CW inch	LB inch	WF inch	H inch	CDX inch	DMIN inch	for grooving inserts	
I40 N 19-GX 24-2	0.109 - 0.148	0.244	1.319	1.602	0.748	2.362	GX 24-2 ..N	**340**
I40 N 19-GX 24-3	0.148 - 0.197	0.244	1.319	1.602	0.748	2.362	GX 24-3 ..N	**440**
I40 N 19-GX 24-4	0.197 - 0.256	0.244	1.319	1.602	0.748	2.362	GX 24-4 ..N	**540**

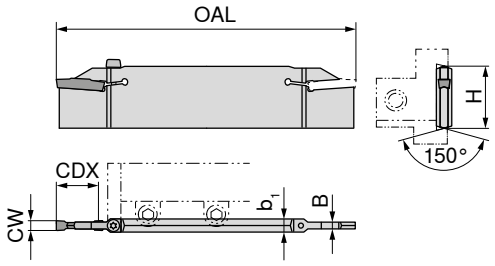


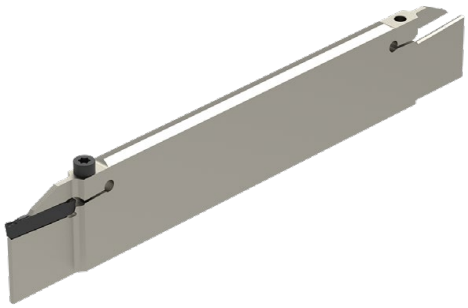


→ 49–56 → 81+82

MonoClamp – Radial Blade GX 24

Scope of supply:
Blade incl. key and clamping screw





Designation	CW inch	H inch	B inch	b_1 inch	OAL inch	CDX inch	for grooving inserts	70 834 ...
XLCF N 3203-GX24-1S	0.079	1.260	0.041	0.244	7.087	0.827	GX 24-1	**102**
XLCF N 3203-GX24-2S	0.118	1.260	0.083	0.244	7.087	0.827	GX 24-2	**103**
XLCF N 3204-GX24-3S	0.157/0.197	1.260	0.120	0.244	7.087	0.827	GX 24-3	**104**
XLCF N 3206-GX24-4S	0.236	1.260	0.165	0.244	7.087	0.827	GX 24-4	**106**

Screwdriver


Clamping screw

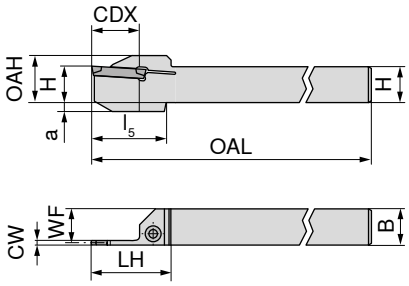
Spare parts for grooving inserts		80 950 ...		70 950 ...
GX 24-1	T15	**113**	M3.5x14	**160**
GX 24-2	T15	**113**	M3.5x14	**160**
GX 24-3	T15	**113**	M3.5x14	**160**
GX 24-4	T15	**113**	M3.5x14	**160**


→ 49–56


→ 85–88


→ **Chapter 16**

MonoClamp – Radial Monoholder GX 24





Illustrations show right-hand versions

Designation	H inch	B inch	CW inch	WF inch	OAH inch	OAL inch	LH inch	l_5 inch	CDX inch	a mm	for grooving inserts	Left-hand 78 863 ...	Right-hand 78 862 ...
E 16 R/L 0021-10C-GX24-2-E	0.625	0.625	0.109 - 0.148	0.586	0.822	5.000	1.378	1.260	0.827	4.1148	GX 24-2	**26300**[1)]	**26300**[1)]
E 20 R/L 0021-12C-GX24-2-E	0.750	0.750	0.109 - 0.148	0.711	0.947	5.000	1.378		0.827		GX 24-2	**27500**	**27500**
E 20 R/L 0021-12C-GX24-3-E	0.750	0.750	0.148 - 0.197	0.692	0.947	5.000	1.378		0.827		GX 24-3	**37500**[1)]	**37500**[1)]
E 25 R/L 0021-16D-GX24-2-E	1.000	1.000	0.109 - 0.148	0.961	1.197	6.000	1.378		0.827		GX 24-2	**20000**	**20000**
E 25 R/L 0021-16D-GX24-3-E	1.000	1.000	0.148 - 0.197	0.942	1.197	6.000	1.378		0.827		GX 24-3	**30000**[1)]	**30000**
E 25 R/L 0021-16D-GX24-4-E	1.000	1.000	0.197 - 0.256	0.917	1.197	6.000	1.378		0.827		GX 24-4	**40000**[1)]	**40000**
E 32 R/L 0021-85D-GX24-2-E	1.250	1.000	0.109 - 0.148	0.961	1.447	6.000	1.378		0.827		GX 24-2	**22500**[1)]	**22500**[1)]
E 32 R/L 0021-85D-GX24-3-E	1.250	1.000	0.148 - 0.197	0.942	1.447	6.000	1.378		0.827		GX 24-3	**32500**[1)]	**32500**[1)]
E 32 R/L 0021-85D-GX24-4-E	1.250	1.000	0.197 - 0.256	0.917	1.447	6.000	1.378		0.827		GX 24-4	**42500**[1)]	**42500**[1)]

1) Not ex-stock

Screwdriver



Clamping screw

Spare parts for grooving inserts		80 950 ...		70 950 ...
GX 24-2	T20	**114**	M4x18	**204**
GX 24-3	T20	**114**	M4x18	**204**
GX 24-4	T20	**114**	M4x18	**204**



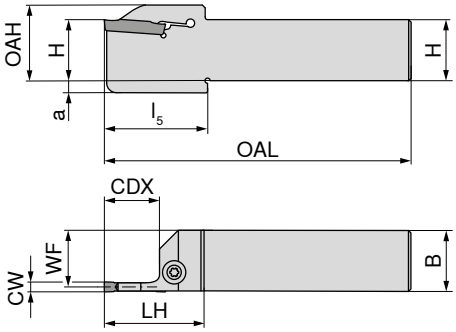


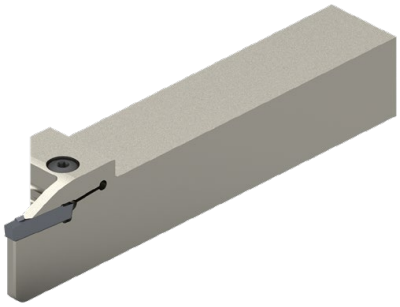
metric

→ 49–56

MonoClamp – Radial Monoholder GX 24

Scope of supply:
Mono holder incl. key and clamping screw





Illustrations show right-hand versions

												Left-hand	Right-hand
												70 845 ...	**70 845 ...**
Designation	H	B	CW	WF	OAH	OAL	LH	l_5	CDX	a	for grooving inserts		
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm			
E16 R/L 0021S2-1616K-S-GX24	16	16	2	15.2	22	125	39	40	21	4	GX 24-1 E2..	**21601**	**21600**
E16 R/L 0021S3-1616K-S-GX24	16	16	3	14.8	22	125	39	40	21	4	GX 24-2 E3..	**31601**	**31600**
E20 R/L 0021S2-2020K-S-GX24	20	20	2	19.2	26	125	40		21		GX 24-1 E2..	**22001**	**22000**
E20 R/L 0021S3-2020K-S-GX24	20	20	3	18.8	26	125	40		21		GX 24-2 E3..	**32001**	**32000**
E20 R/L 0021S4-2020K-S-GX24	20	20	4	18.3	26	125	40		21		GX 24-3 E4..	**42001**	**42000**
E20 R/L 0021S5-2020K-S-GX24	20	20	5	18.0	26	125	40		21		GX 24-3 E5..	**52001**	**52000**
E25 R/L 0021S3-2525M-S-GX24	25	25	3	23.8	31	150	40		21		GX 24-2 E3..	**32501**	**32500**
E25 R/L 0021S4-2525M-S-GX24	25	25	4	23.3	31	150	40		21		GX 24-3 E4..	**42501**	**42500**
E25 R/L 0021S5-2525M-S-GX24	25	25	5	23.0	31	150	40		21		GX 24-3 E5..	**52501**	**52500**
E25 R/L 0021S6-2525M-S-GX24	25	25	6	22.5	31	150	40		21		GX 24-4 E6..	**62501**	**62500**


Screwdriver


Clamping screw

			80 950 ...		**70 950 ...**
Spare parts for grooving inserts					
GX 24-1 E2..	T15 - IP	**128**	M5x18 - 15IP	**865**
GX 24-2 E3..	T15 - IP	**128**	M5x18 - 15IP	**865**
GX 24-3 E4..	T15 - IP	**128**	M5x18 - 15IP	**865**
GX 24-3 E5..	T15 - IP	**128**	M5x18 - 15IP	**865**
GX 24-4 E6..	T15 - IP	**128**	M5x18 - 15IP	**865**



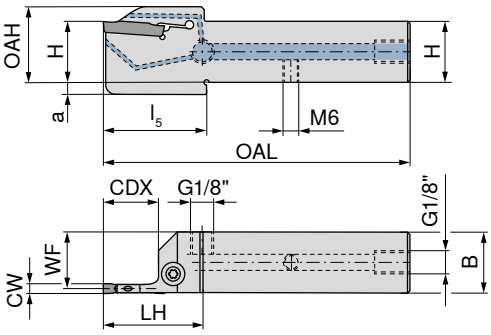

metric

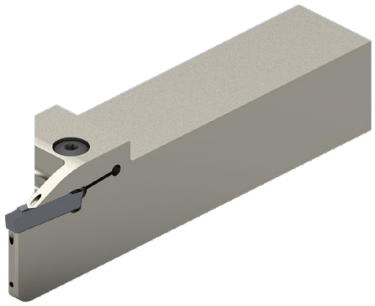
→ 49–56

MonoClamp – Radial Monoholder GX-DC 24

Scope of supply:
Mono holder incl. key and clamping screw

Direct Cooling





Illustrations show right-hand versions

Designation	H mm	B mm	CW mm	WF mm	OAH mm	OAL mm	LH mm	l_5 mm	CDX mm	a mm	for grooving inserts	Left-hand 70 844 ...	Right-hand 70 844 ...
E16 R/L 0021S2-1616X-S-DC-GX24	16	16	2	15.2	22	94	39	40	21	4	GX 24-1 E2..	**21601**	**21600**
E16 R/L 0021S3-1616X-S-DC-GX24	16	16	3	14.8	22	94	39	40	21	4	GX 24-2 E3..	**31601**	**31600**
E20 R/L 0021S2-2020X-S-DC-GX24	20	20	2	19.2	26	109	40		21		GX 24-1 E2..	**22001**	**22000**
E20 R/L 0021S3-2020X-S-DC-GX24	20	20	3	18.8	26	109	40		21		GX 24-2 E3..	**32001**	**32000**
E20 R/L 0021S4-2020X-S-DC-GX24	20	20	4	18.3	26	109	40		21		GX 24-3 E4..	**42001**	**42000**
E20 R/L 0021S5-2020X-S-DC-GX24	20	20	5	18.0	26	109	40		21		GX 24-3 E5..	**52001**	**52000**
E25 R/L 0021S3-2525X-S-DC-GX24	25	25	3	23.8	31	124	40		21		GX 24-2 E3..	**32501**	**32500**
E25 R/L 0021S4-2525X-S-DC-GX24	25	25	4	23.3	31	124	40		21		GX 24-3 E4..	**42501**	**42500**
E25 R/L 0021S5-2525X-S-DC-GX24	25	25	5	23.0	31	124	40		21		GX 24-3 E5..	**52501**	**52500**
E25 R/L 0021S6-2525X-S-DC-GX24	25	25	6	22.5	31	124	40		21		GX 24-4 E6..	**62501**	**62500**


Screwdriver


Clamping screw

Spare parts for grooving inserts		80 950 ...		70 950 ...
GX 24-1 E2..	T15 - IP	**128**	M5x18 - 15IP	**865**
GX 24-2 E3..	T15 - IP	**128**	M5x18 - 15IP	**865**
GX 24-3 E4..	T15 - IP	**128**	M5x18 - 15IP	**865**
GX 24-3 E5..	T15 - IP	**128**	M5x18 - 15IP	**865**
GX 24-4 E6..	T15 - IP	**128**	M5x18 - 15IP	**865**




metric

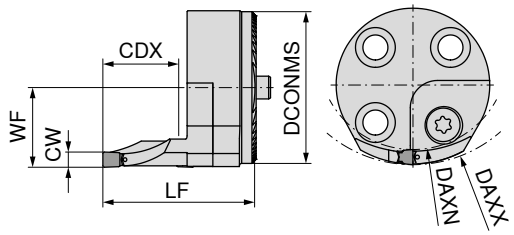
→ 49–56

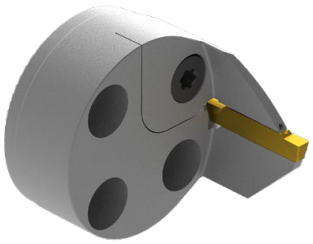
MaxiChange-GX – GX-DC 24 axial exchangeable grooving head

▲ For axial grooving

Scope of supply:
Exchangeable grooving head with clamping claw and clamping screw





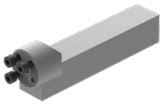


Illustrations show right-hand versions

Designation	DCONMS mm	DAXN mm	DAXX mm	CW mm	WF mm	LF mm	CDX mm	for grooving inserts	NEW Left-hand 84 186 ...	NEW Right-hand 84 187 ...
WK40 R/L 20-DC GX 24-S3 D50-70	40	50	70	3	21	40	20	GX 24-2 ..N	**34000**	**34000**
WK40 R/L 20-DC GX 24-S3 D70-100	40	70	100	3	21	40	20	GX 24-2 ..N	**34100**	**34100**
WK40 R/L 20-DC GX 24-S3 D100-150	40	100	150	3	21	40	20	GX 24-2 ..N	**34200**	**34200**
WK40 R/L 20-DC GX 24-S3 D150-300	40	150	300	3	21	40	20	GX 24-2 ..N	**34300**	**34300**
WK40 R/L 20-DC GX 24-S4 D50-70	40	50	70	4	21	40	20	GX 24-3 ..N	**44000**	**44000**
WK40 R/L 20-DC GX 24-S4 D70-100	40	70	100	4	21	40	20	GX 24-3 ..N	**44100**	**44100**
WK40 R/L 20-DC GX 24-S4 D100-150	40	100	150	4	21	40	20	GX 24-3 ..N	**44200**	**44200**
WK40 R/L 20-DC GX 24-S4 D150-300	40	150	300	4	21	40	20	GX 24-3 ..N	**44300**	**44300**

Spare parts for Article no.	 Clamping claw 84 950 ...		 O-Ring 84 950 ...		 Clamping screw 84 950 ...		 Guide pin 84 950 ...	
84 187 34000	**51400**	2x1	**50300**	M6x0.5X5/T25	**50200**	D4H6X12	**53200**	
84 186 34000	**51800**	2x1	**50300**	M6x0.5X5/T25	**50200**	D4H6X12	**53200**	
84 187 34100	**51500**	2x1	**50300**	M6x0.5X5/T25	**50200**	D4H6X12	**53200**	
84 186 34100	**51900**	2x1	**50300**	M6x0.5X5/T25	**50200**	D4H6X12	**53200**	
84 187 34200	**51600**	2x1	**50300**	M6x0.5X5/T25	**50200**	D4H6X12	**53200**	
84 186 34200	**52000**	2x1	**50300**	M6x0.5X5/T25	**50200**	D4H6X12	**53200**	
84 187 34300	**51700**	2x1	**50300**	M6x0.5X5/T25	**50200**	D4H6X12	**53200**	
84 186 34300	**52100**	2x1	**50300**	M6x0.5X5/T25	**50200**	D4H6X12	**53200**	
84 187 44000	**52200**	2x1	**50300**	M6x0.5X5/T25	**50200**	D4H6X12	**53200**	
84 186 44000	**52600**	2x1	**50300**	M6x0.5X5/T25	**50200**	D4H6X12	**53200**	
84 187 44100	**52300**	2x1	**50300**	M6x0.5X5/T25	**50200**	D4H6X12	**53200**	
84 186 44100	**52700**	2x1	**50300**	M6x0.5X5/T25	**50200**	D4H6X12	**53200**	
84 187 44200	**52400**	2x1	**50300**	M6x0.5X5/T25	**50200**	D4H6X12	**53200**	
84 186 44200	**52800**	2x1	**50300**	M6x0.5X5/T25	**50200**	D4H6X12	**53200**	
84 187 44300	**52500**	2x1	**50300**	M6x0.5X5/T25	**50200**	D4H6X12	**53200**	
84 186 44300	**52900**	2x1	**50300**	M6x0.5X5/T25	**50200**	D4H6X12	**53200**	

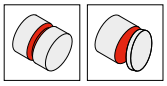




→ 49–56 → **Chapter 9**

TX grooving insert for grooving and parting off

▲ Cutting depth 5.0 mm
▲ Cutting width 1.99–2.79 mm



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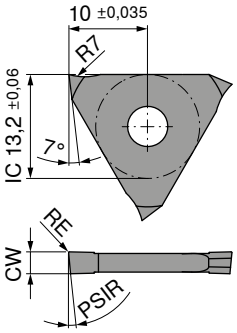
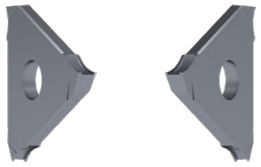


Illustrations show right-hand versions

CWX500 CWX500



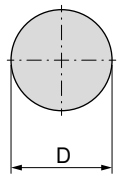
Designation	CW -0,05 mm	RE mm	PSIR	for tool holder	Left-hand 73 302 ...	Right-hand 73 301 ...
TX R/L 0518.00.1	1.99	0.1	5°	R/L 207 .. . / 780 .. . 1	**204**	**204**
TX R/L 0521.00.2	2.29	0.1	5°	R/L 207 .. . / 780 .. . 2	**206**	**206**
TX R/L 0526.00.2	2.79	0.1	5°	R/L 207 .. . / 780 .. . 2	**208**	**208**

P	●	●
M	●	●
K	●	●
N	●	●
S	●	●
H	○	○
O	●	●

→ v_c Page 91

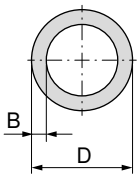
Grooving depth

Full material



max. 10 mm

Pipe



D ≤ 50 mm: Wall thickness B = approx. 5 mm
D ≥ 50 mm: Wall thickness B = approx. 4 mm

Internal machining



→ 74

External machining



→ 71–73

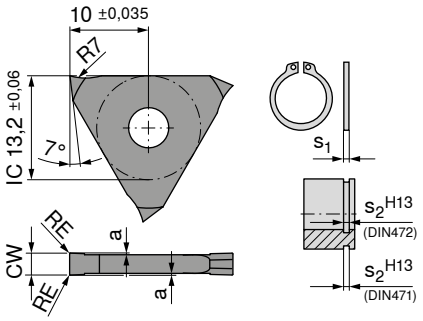
TX insert for circlip grooves

▲ For circlip grooves according to DIN 471 / 472



CWX500

F	M	R
		





Neutral

73 300 ...

Designation	s_2 mm	CW $_{-0,05}$ mm	RE mm	a $_{+/-0,02}$ mm	for tool holder	
TX N 0050.00.1	0.50	0.57	0.05	0.07	R/L .. .1	**204**
TX N 0060.00.1	0.60	0.67	0.05	0.07	R/L .. .1	**206**
TX N 0070.00.1	0.70	0.77	0.05	0.08	R/L .. .1	**208**
TX N 0080.00.1	0.80	0.87	0.05	0.08	R/L .. .1	**210**
TX N 0090.00.1	0.90	0.97	0.05	0.08	R/L .. .1	**212**
TX N 0100.00.1	1.00	1.07	0.10	0.09	R/L .. .1	**214**
TX N 0110.00.1	1.10	1.24	0.10	0.15	R/L .. .1	**216**
TX N 0130.00.1	1.30	1.44	0.10	0.15	R/L .. .1	**218**
TX N 0160.00.1	1.60	1.74	0.10	0.20	R/L .. .1	**220**
TX N 0185.00.1	1.85	1.99	0.10	0.20	R/L .. .1	**222**
TX N 0215.00.2	2.15	2.29	0.10	0.20	R/L .. .2	**224**
TX N 0265.00.2	2.65	2.79	0.10	0.20	R/L .. .2	**226**
TX N 0315.00.3	3.15	3.29	0.10	0.20	R/L .. .3	**228**
TX N 0415.00.4	4.15	4.29	0.10	0.20	R/L .. .4	**230**
TX N 0515.00.4	5.15	5.29	0.10	0.20	R/L .. .4	**232**

P	●
M	●
K	●
N	●
S	●
H	○
O	●

→ v_c Page 91

Internal machining



→ 74

External machining



→ 71–73

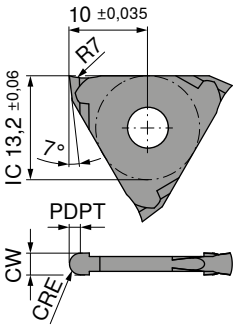
Radial TX insert for corner recessing

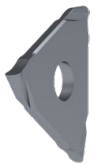
▲ Full radius for cutting width 0.5–5.0 mm



CWX500

F	M	R
		





Neutral

73 304 ...

Designation	CRE mm	CW +/-0,05 mm	PDPT mm	for tool holder	
TX N 0002.05.1	0.25	0.5	0.20	R/L .. .1	**212**
TX N 0005.10.1	0.50	1.0	0.35	R/L .. .1	**214**
TX N 0006.12.1	0.60	1.2	0.40	R/L .. .1	**216**
TX N 0008.16.1	0.80	1.6	0.55	R/L .. .1	**218**
TX N 0010.20.2	1.00	2.0	0.70	R/L .. .2	**204**
TX N 0012.25.2	1.25	2.5	0.85	R/L .. .2	**220**
TX N 0015.30.3	1.50	3.0	1.00	R/L .. .3	**206**
TX N 0020.40.4	2.00	4.0	1.20	R/L .. .4	**208**
TX N 0025.50.4	2.50	5.0	1.50	R/L .. .4	**210**

P	●
M	●
K	●
N	●
S	●
H	○
O	●

→ v_c Page 91

Internal machining



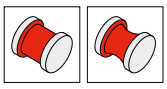
→ 74

External machining

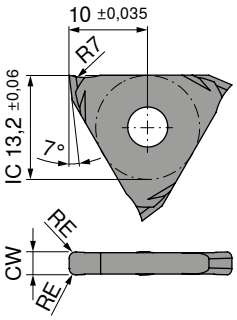


→ 71–73

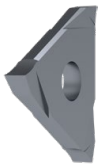
TX insert for fine and copy turning



F	M	R



CWX500



Neutral

73 303 ...

Designation	CW +0,03 mm	RE mm	for tool holder	
TX N 0150.02.1	1.5	0.2	R/L 207 .. . / 738 .. . / 660 .. . 1	**204**
TX N 0200.02.1	2.0	0.2	R/L 207 .. . / 738 .. . / 660 .. . 1	**206**
TX N 0200.04.1	2.0	0.4	R/L 207 .. . / 738 .. . / 660 .. . 1	**208**
TX N 0300.02.2	3.0	0.2	R/L 207 .. . / 738 .. . / 660 .. . 2	**210**
TX N 0300.06.2	3.0	0.6	R/L 207 .. . / 738 .. . / 660 .. . 2	**212**
TX N 0300.08.2	3.0	0.8	R/L 207 .. . / 738 .. . / 660 .. . 2	**214**
TX N 0400.02.3	4.0	0.2	R/L 207 .. . / 738 .. . / 660 .. . 3	**216**
TX N 0400.08.3	4.0	0.8	R/L 207 .. . / 738 .. . / 660 .. . 3	**218**
TX N 0400.12.3	4.0	1.2	R/L 207 .. . / 738 .. . / 660 .. . 3	**220**

P	●
M	●
K	●
N	●
S	●
H	○
O	●

→ v_c Page 91

11

Internal machining



→ 74

External machining



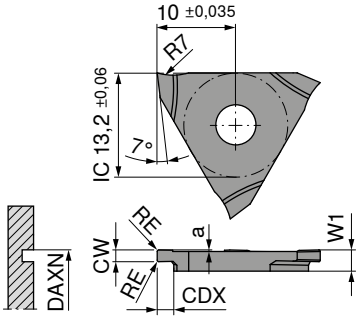
→ 71–73

TX insert for axial grooving

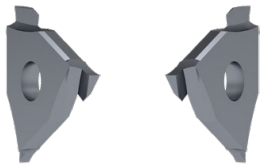
▲ Up to cutting depth 3.5 mm
▲ Cutting width 1.5–5.0 mm
▲ Groove-Ø external D_a ≥ 20 mm



F	M	R
		



CWX500 CWX500



Illustrations show right-hand versions

Designation	CW mm	W1 mm	CDX mm	a mm	DAXN mm	RE mm	for tool holder	Left-hand 73 306 ...	Right-hand 73 305 ...
TX R/L 2015.2.2	1.5	2.7	2	0.2	20	0.2	R/L 207 .. . 2	**204**	**204**
TX R/L 3020.2.2	2.0	2.7	3	0.2	30	0.2	R/L 207 .. . 2	**206**	**206**
TX R/L 3030.2.3	3.0	3.7	3	0.2	30	0.2	R/L 207 .. . 3	**208**	**208**
P								●	●
M								●	●
K								●	●
N								●	●
S								●	●
H								○	○
O								●	●

→ v_c Page 91

Internal machining | *External machining*

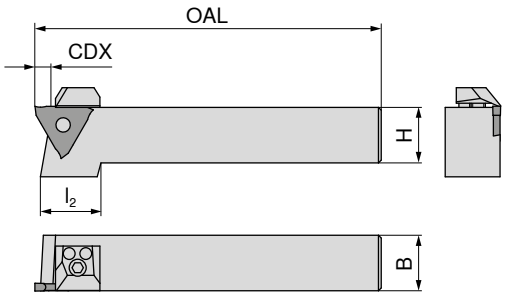


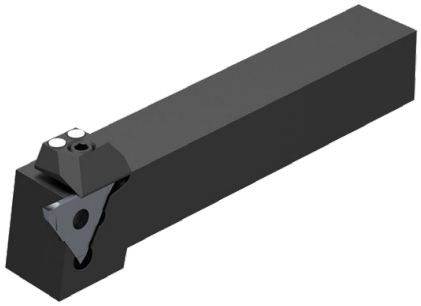
→ 71+72

MonoClamp – Radial/Axial TX Grooving Holder 0° 6 mm cutting depth

▲ For radial and axial grooving
▲ Cutting width 0.5–6.3 mm

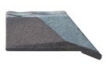
Scope of supply:
Grooving holder only





Illustrations show right-hand versions

Designation	H mm	B +/-0,1 mm	OAL mm	l_2 mm	CDX mm	for grooving inserts	Left-hand 73 501 ...	Right-hand 73 500 ...
R/L 207.1212.1	12	12	100	24	4	TX R/N/L ...1	**112**	**112**
R/L 207.1616.1	16	16	125	22	4	TX R/N/L ...1	**116**	**116**
R/L 207.2020.1	20	20	125	21	4	TX R/N/L ...1	**120**	**120**
R/L 207.2525.1	25	25	150		4	TX R/N/L ...1	**125**	**125**
R/L 207.1212.2	12	12	100	24	6	TX R/N/L ...2	**212**	**212**
R/L 207.1616.2	16	16	125	22	6	TX R/N/L ...2	**216**	**216**
R/L 207.2020.2	20	20	125	21	6	TX R/N/L ...2	**220**	**220**
R/L 207.2525.2	25	25	150		6	TX R/N/L ...2	**225**	**225**
R/L 207.1212.3	12	12	100	24	6	TX R/N/L ...3	**312**	**312**
R/L 207.1616.3	16	16	125	22	6	TX R/N/L ...3	**316**	**316**
R/L 207.2020.3	20	20	125	21	6	TX R/N/L ...3	**320**	**320**
R/L 207.2525.3	25	25	150		6	TX R/N/L ...3	**325**	**325**
R 207.3232.3	32	32	170		6	TX R/N/L ...3		**332**
R/L 207.1616.4	16	16	125	22	6	TX R/N/L ...4	**416**	**416**
R/L 207.2020.4	20	20	125	21	6	TX R/N/L ...4	**420**	**420**
R/L 207.2525.4	25	25	150		6	TX R/N/L ...4	**425**	**425**


right hand


left hand


Key I


Clamping screw


Guide pin

Spare parts for grooving inserts	right hand 73 950 ...	left hand 73 950 ...	Key I 70 950 ...		Clamping screw 73 950 ...		Guide pin 73 950 ...	
TX R/N/L ...1	**020**		SW3	**176**	M6x20	**028**	Ø 4x18	**030**
TX R/N/L ...1		**024**	SW3	**176**	M6x20	**028**	Ø 4x18	**030**
TX R/N/L ...2		**024**	SW3	**176**	M6x20	**028**	Ø 4x18	**030**
TX R/N/L ...2	**020**		SW3	**176**	M6x20	**028**	Ø 4x18	**030**
TX R/N/L ...3		**024**	SW3	**176**	M6x20	**028**	Ø 4x18	**030**
TX R/N/L ...3	**020**		SW3	**176**	M6x20	**028**	Ø 4x18	**030**
TX R/N/L ...4	**022**		SW3	**176**	M6x20	**028**	Ø 4x18	**030**
TX R/N/L ...4		**026**	SW3	**176**	M6x20	**028**	Ø 4x18	**030**





metric

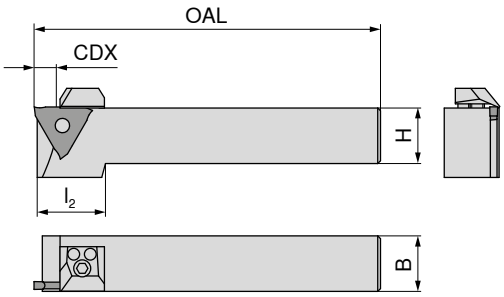
→ 66–70

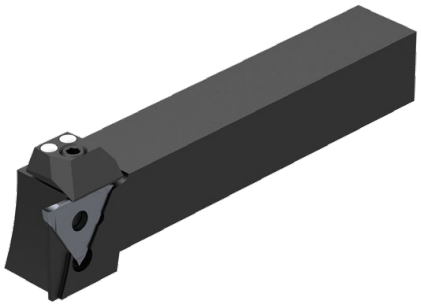
11

MonoClamp – Radial TX Grooving holder 0° 8 mm cutting depth

▲ For radial parting and grooving
▲ Cutting width 1.9–6.3 mm

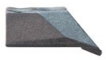
Scope of supply:
Grooving holder only

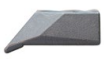




Illustrations show right-hand versions

Designation	H mm	B +/-0,1 mm	OAL mm	l_2 mm	CDX mm	for grooving inserts	Left-hand 73 503 ...	Right-hand 73 502 ...
R/L 780.2020.2	20	20	125	24	8	TX R/N/L ...2	**120**	**120**
R/L 780.2525.2	25	25	150		8	TX R/N/L ...2	**125**	**125**
R/L 780.2020.3	20	20	125	24	8	TX R/N/L ...3	**220**	**220**
R/L 780.2525.3	25	25	150		8	TX R/N/L ...3	**225**	**225**
R/L 780.2020.4	20	20	125	24	8	TX R/N/L ...4	**320**	**320**
R/L 780.2525.4	25	25	150		8	TX R/N/L ...4	**325**	**325**


right hand


left hand


Key I


Clamping screw


Guide pin

Spare parts for grooving inserts	73 950 ...	73 950 ...	70 950 ...		73 950 ...		73 950 ...	
TX R/N/L ...2	**020**		SW3	**176**	M6x20	**028**	Ø 4x18	**030**
TX R/N/L ...2		**024**	SW3	**176**	M6x20	**028**	Ø 4x18	**030**
TX R/N/L ...3	**020**		SW3	**176**	M6x20	**028**	Ø 4x18	**030**
TX R/N/L ...3		**024**	SW3	**176**	M6x20	**028**	Ø 4x18	**030**
TX R/N/L ...4	**022**		SW3	**176**	M6x20	**028**	Ø 4x18	**030**
TX R/N/L ...4		**026**	SW3	**176**	M6x20	**028**	Ø 4x18	**030**



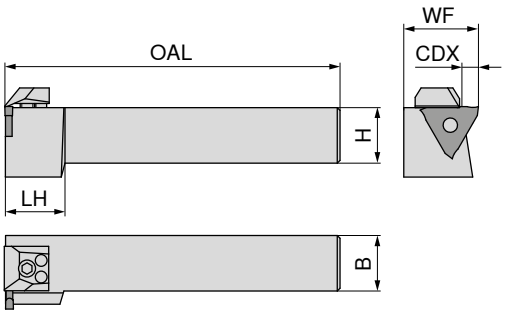

metric

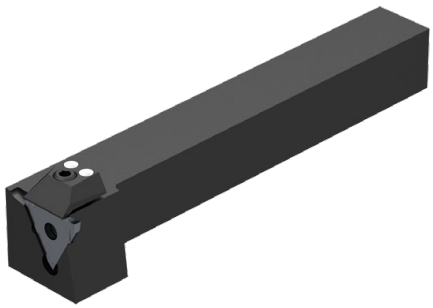
→ 66–70

MonoClamp – Radial TX Grooving holder 90° 6 mm cutting depth

▲ For radial grooving
▲ Cutting width 0.5–6.3 mm

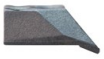
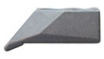
Scope of supply:
Grooving holder only





Illustrations show right-hand versions

								Left-hand		Right-hand	
								73 505 ...		**73 504 ...**	
Designation	H mm	B +/-0,1 mm	OAL mm	LH mm	WF +/-0,07 mm	CDX mm	for grooving inserts				
R/L 738.2020.1	20	20	150	20	27	4	TX R/N/L ...1	**120**		**120**	
R/L 738.2525.1	25	25	150		32	4	TX R/N/L ...1	**125**		**125**	
R/L 738.2020.2	20	20	150	20	27	6	TX R/N/L ...2	**220**		**220**	
R/L 738.2525.2	25	25	150		32	6	TX R/N/L ...2	**225**		**225**	
R/L 738.2020.3	20	20	150	20	27	6	TX R/N/L ...3	**320**		**320**	
R/L 738.2525.3	25	25	150		32	6	TX R/N/L ...3	**325**		**325**	
R/L 738.2020.4	20	20	150	20	27	6	TX R/N/L ...4	**420**		**420**	
R/L 738.2525.4	25	25	150		32	6	TX R/N/L ...4	**425**		**425**	

	 right hand		 left hand		 Key I		 Clamping screw		 Guide pin	
	73 950 ...		**73 950 ...**		**70 950 ...**		**73 950 ...**		**73 950 ...**	
Spare parts for grooving inserts										
TX R/N/L ...1		**020**			SW3	**176**	M6x20	**028**	Ø 4x18	**030**
TX R/N/L ...1				**024**	SW3	**176**	M6x20	**028**	Ø 4x18	**030**
TX R/N/L ...2				**024**	SW3	**176**	M6x20	**028**	Ø 4x18	**030**
TX R/N/L ...2		**020**			SW3	**176**	M6x20	**028**	Ø 4x18	**030**
TX R/N/L ...3				**024**	SW3	**176**	M6x20	**028**	Ø 4x18	**030**
TX R/N/L ...3		**020**			SW3	**176**	M6x20	**028**	Ø 4x18	**030**
TX R/N/L ...4		**022**			SW3	**176**	M6x20	**028**	Ø 4x18	**030**
TX R/N/L ...4				**026**	SW3	**176**	M6x20	**028**	Ø 4x18	**030**



metric

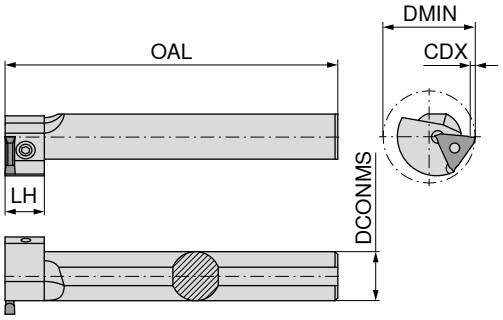
→ 66–70

11

MonoClamp – Radial Boring bar TX

▲ For radial internal grooving
▲ Cutting width 0.5–6.3 mm

Scope of supply:
Boring bar only





Illustrations show right-hand versions

Designation	DCONMS $_{g7}$ mm	DMIN mm	OAL mm	LH mm	CDX mm	for grooving inserts	Left-hand 73 511 ...	Right-hand 73 510 ...
R/L 660.0025.1	25	46	170	20	2	TX R/N/L ...1	**125**	**125**
R/L 660.0032.1	32	46	200	20	2	TX R/N/L ...1	**132**	**132**
R/L 660.0040.1	40	46	250		2	TX R/N/L ...1	**140**	**140**
R/L 660.0025.2	25	46	170	20	2	TX R/N/L ...2	**225**	**225**
R/L 660.0032.2	32	46	200	20	2	TX R/N/L ...2	**232**	**232**
R/L 660.0040.2	40	46	250		2	TX R/N/L ...2	**240**	**240**
R/L 660.0025.3	25	46	170	20	2	TX R/N/L ...3	**325**	**325**
R/L 660.0032.3	32	46	200	20	2	TX R/N/L ...3	**332**	**332**
R/L 660.0040.3	40	46	250		2	TX R/N/L ...3	**340**	**340**

Bore-Ø$_{min.}$ in mm	46	50	60	80	100	for grooving insert
CDX$_{max.}$ (mm)	2	3	4	4.5	5	TX R/N/L ...1
	2	3	4	4.5	5	TX R/N/L ...2
	2	3	4	4.5	5	TX R/N/L ...3
	2	3	4	4.5	5	TX R/N/L ...4


Clamping element
73 950 ...


Key I
70 950 ...


Clamping screw
73 950 ...

Spare parts for grooving inserts						
TX R/N/L ...1	**011**	SW3	**176**	M6x30	**009**
TX R/N/L ...2	**011**	SW3	**176**	M6x30	**009**
TX R/N/L ...3	**011**	SW3	**176**	M6x30	**009**

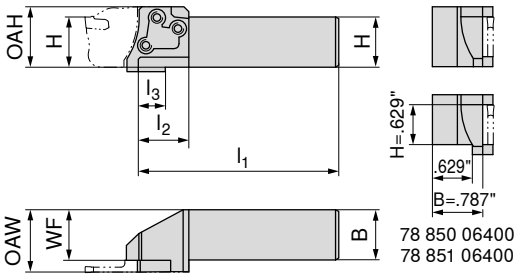


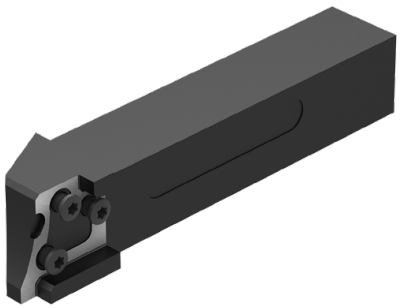
metric

→ 66–69

ModularClamp MSS – Tool holder 0°

Scope of supply:
Base holder incl. clamping screw





Illustrations show right-hand versions

Designation	H inch	B inch	OAW inch	OAH inch	WF inch	l_1 inch	l_2 inch	l_3 inch	for modules	Left-hand 78 851 ...	Right-hand 78 850 ...
E12 R/L 00-08-E	0.500	0.500	0.650	0.598	0.512	3.000	0.472		E12 R/L ...	**05000**[1]	**05000**[1]
E16 R/L 00-10-E	0.625	0.625	0.787	0.763	0.650	3.500	0.630		E16 R/L ...	**06300**[1]	**06300**
E 20 R/L 00-10-E	0.625	0.787	0.955	0.955	0.793	3.500	0.787		E20 R/L ...	**06400**[1]	**06400**[1]
E 20 R/L 00-12-E	0.750	0.750	0.955	0.907	0.793	4.500	0.787	0.393	E20 R/L ...	**07500**	**07500**
E 25 R/L 00-16-E	1.000	1.000	1.236	1.197	1.020	5.500	0.984		E25 R/L ...	**10000**	**10000**
E 32 R/L 00-20-E	1.250	1.000	1.236	1.486	1.020	6.500	1.260	0.630	E32 R/L ...	**12500**[1]	**12500**
E 32 R/L 00-85-E	1.250	1.250	1.496	1.528	1.279	7.000	1.260	0.630	E32 R/L ...	**12600**	**12600**[1]

1) Not ex-stock

for right hand holder → use right hand (or neutral) module
for left hand holder → use left hand (or neutral) module

Spare parts for Article no.	Screwdriver 80 950 ...		Clamping screw 70 950 ...	
78 851 05000	T08	**110**	M2.5x10	**440**
78 850 05000	T08	**110**	M2.5x10	**440**
78 850 06300	T15	**113**	M3.5x12.5	**441**
78 851 06300	T15	**113**	M3.5x12.5	**441**
78 850 06400	T15	**113**	M4x14	**403**
78 851 06400	T15	**113**	M4x14	**403**
78 850 07500	T15	**113**	M4x14	**403**
78 851 07500	T15	**113**	M4x14	**403**
78 851 10000	T20	**114**	M5x18	**404**
78 850 10000	T20	**114**	M5x18	**404**
78 851 12500	T25	**115**	M6x20	**405**
78 850 12500	T25	**115**	M6x20	**405**
78 851 12600	T25	**115**	M6x20	**405**
78 850 12600	T25	**115**	M6x20	**405**


SX
→ 21

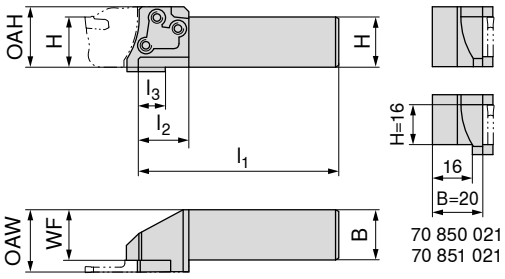

LX
→ 30

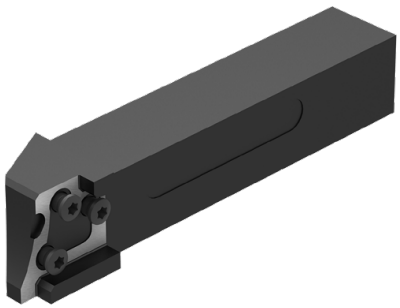

GX 09 / GX 16
→ 40+41


GX 24
→ 57–59

ModularClamp MSS – Tool holder 0°

Scope of supply:
Base holder incl. clamping screw





Illustrations show right-hand versions

Designation	H mm	B mm	OAW mm	OAH mm	WF mm	l_1 mm	l_2 mm	l_3 mm	for modules	Left-hand 70 851 ...	Right-hand 70 850 ...
E16 R/L 00-1616G	16	16	19.25	19.5	15.75	90	16		E16 R/L ...	**016**	**016**
E20 R/L 00-1620G	16	20	24.25	24.0	20.15	90	20		E20 R/L/N ...	**021** 1)	**021** 1)
E20 R/L 00-2020J	20	20	24.25	24.0	20.15	110	20		E20 R/L/N ...	**020**	**020**
E25 R/L 00-2525L	25	25	31.00	30.0	25.50	140	25		E25 R/L ...	**025**	**025**
E32 R/L 00-3225N	32	25	31.00	38.0	25.50	160	32		E32 R/L ...	**032**	**032**
E32 L 00-3232N	32	32	38.00	38.8	32.50	180	32	16	E32 R/L ...	**13200**	
E32 R 00-3232Q	32	32	38.00	38.8	32.50	180	32	16	E32 R/L ...		**13200**

1) see drawing

for right hand holder → use right hand (or neutral) module
for left hand holder → use left hand (or neutral) module



Screwdriver



Clamping screw

Spare parts for Article no.		80 950 ...		70 950 ...
70 851 016 / 70 850 016	T15	**113**	M3.5x12.5	**441**
70 851 021 / 70 850 021	T15	**113**	M4x14	**403**
70 851 020 / 70 850 020	T15	**113**	M4x14	**403**
70 851 025 / 70 850 025	T20	**114**	M5x18	**404**
70 851 032 / 70 850 032	T25	**115**	M6x20	**405**



SX

→ 21



LX

→ 30



GX 09 / GX 16

→ 40+41

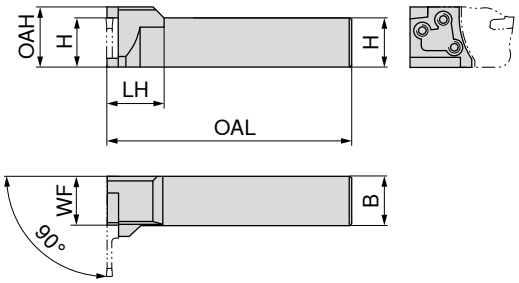


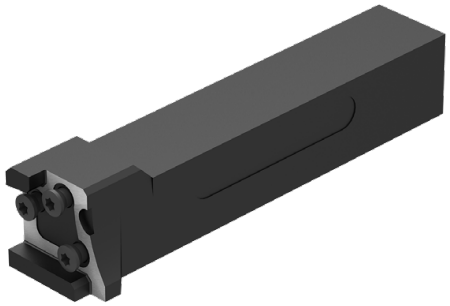
GX 24

→ 57–59

ModularClamp MSS – Tool holder 90°

Scope of supply:
Base holder incl. clamping screw





Illustrations show right-hand versions

Designation	H inch	B inch	OAH inch	WF inch	OAL inch	LH inch	for modules	Left-hand 78 855 ...	Right-hand 78 854 ...
E20 R/L 90-12-E	0.750	0.750	0.907	0.787	4.500	0.783	E20 R/L ...	**07500**	**07500**[1]
E25 R/L 90-16-E	1.000	1.000	1.197	1.000	5.500	1.098	E25 R/L ...	**10000**	**10000**
E32 R/L 90-85-E	1.250	1.000	1.486	1.260	6.500	1.339	E32 R/L ...	**12500**[1]	**12500**[1]
E32 R/L 90-20-E	1.250	1.250	1.528	1.260	8.000	1.339	E32 R/L ...	**12600**[1]	**12600**

1) Not ex-stock

for right hand holder → use left hand (or neutral) module
for left hand holder → use right hand (or neutral) module


Screwdriver


Clamping screw

Spare parts for Article no.		80 950 ...		70 950 ...
78 854 07500 / 78 855 07500	T15	**113**	M4x14	**403**
78 854 10000 / 78 855 10000	T20	**114**	M5x18	**404**
78 854 12500 / 78 855 12500	T25	**115**	M6x20	**405**
78 854 12600 / 78 855 12600	T25	**115**	M6x20	**405**


SX → 21


LX → 30

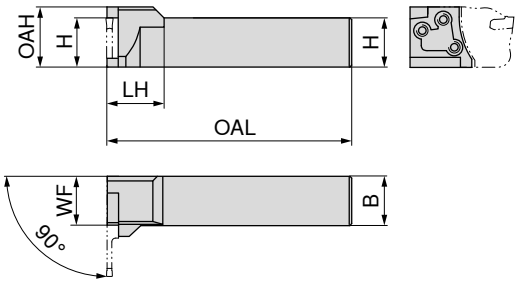

GX 09 / GX 16 → 40+41

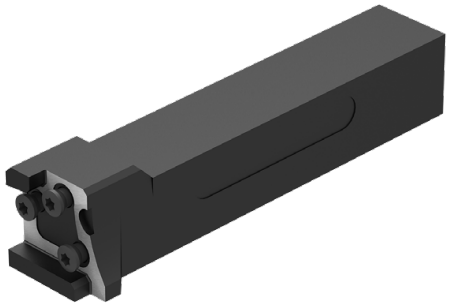

GX 24 → 57–59

11

ModularClamp MSS – Tool holder 90°

Scope of supply:
Base holder incl. clamping screw





Illustrations show right-hand versions

Designation	H mm	B mm	OAH mm	WF mm	OAL mm	LH mm	for modules	Left-hand 70 855 ...	Right-hand 70 854 ...
E20 R/L 90-2020J	20	20	24	20	110	20	E20 R/L/N ...	**020**	**020**
E25 R/L 90-2525L	25	25	30	25	140	28	E25 R/L ...	**025**	**025**
E32 R/L 90-3225N	32	25	38	32	160	34	E32 R/L ...	**032**	**032**

for right hand holder → use left hand (or neutral) module
for left hand holder → use right hand (or neutral) module


Screwdriver


Clamping screw

Spare parts for Article no.		Screwdriver 80 950 ...		Clamping screw 70 950 ...
70 854 020 / 70 855 020	T15	**113**	M4x14	**403**
70 854 025 / 70 855 025	T20	**114**	M5x18	**404**
70 854 032 / 70 855 032	T25	**115**	M6x20	**405**


SX
→ 21

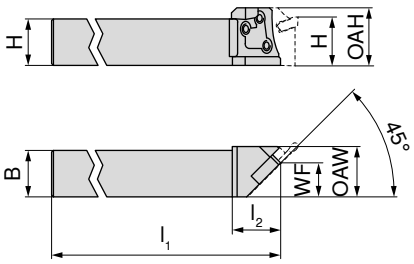

LX
→ 30

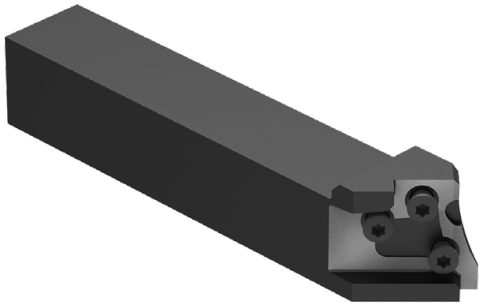

GX 09 / GX 16
→ 40+41


GX 24
→ 57–59

ModularClamp MSS – Tool holder 45°

Scope of supply:
Base holder incl. clamping screw





Illustrations show right-hand versions

									Left-hand		Right-hand	
									78 853 ...		78 852 ...	
Designation	H inch	B inch	OAW inch	OAH inch	WF inch	l_1 inch	l_2 inch	for modules				
E20 R/L 45-12-E	0.750	0.750	0.846	0.984	0.571	4.500	0.787	E20 R/L ...	**07500**[1)]		**07500**[1)]	
E25 R/L 45-12-E	1.000	1.000	1.024	1.197	0.709	5.500	0.984	E25 R/L ...	**10000**[1)]		**10000**	

1) Not ex-stock

for right hand holder → use left hand (or neutral) module
for left hand holder → use right hand (or neutral) module

			 Screwdriver		 Clamping screw		 Clamping screw	
			80 950 ...		**70 950 ...**		**70 950 ...**	
Spare parts for Article no.								
78 852 07500 / 78 853 07500	T15	**113**	M4x11	**442**	M4x14	**403**		
78 852 10000 / 78 853 10000	T20	**114**	M5x13.5	**513**	M5x18	**404**		


SX
→ 21


LX
→ 30

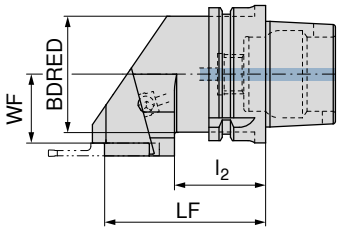

GX 09 / GX 16
→ 40+41


GX 24
→ 57–59

11

ModularClamp MSS – HSK-T Base Holder 0°

Scope of supply:
Base holder incl. clamping screw





Illustrations show right-hand versions

Designation	Adapter	LF mm	l_2 mm	BDRED mm	WF mm	for modules	Left-hand 74 581 ...	Right-hand 74 580 ...
HSK T63 E25 R/L 00	HSK-T 63	67	42	53	38.7	E25 R/L...	**525**	**525**

for right hand holder → use right hand module
for left hand holder → use left hand module

Spare parts for Article no.	Protection plugs 70 950 ...	Nozzle 70 950 ...	Screwdriver 80 950 ...	Clamping screw 70 950 ...	Hollow key with nose 70 950 ...
74 580 525 / 74 581 525	**05600**	**05500**	**114**	**404**	**05700**


SX → 21


LX → 30

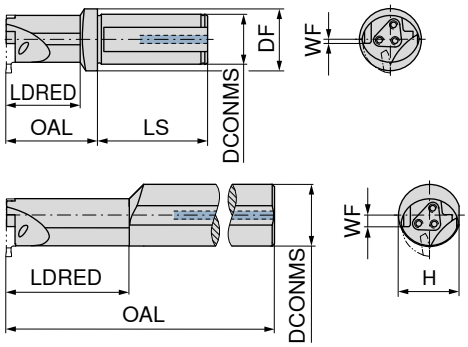

GX 09 / GX 16 → 40+41

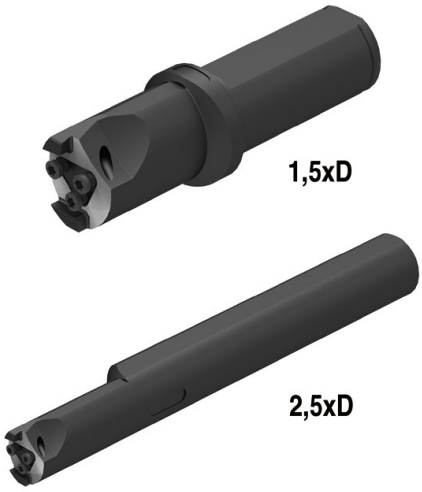

GX 24 → 57–59

ModularClamp MSS – Boring bars GX

▲ with through coolant

Scope of supply:
Boring bar incl. clamping screw





Illustrations show right-hand versions

	Designation	DCONMS inch	DF inch	WF inch	H inch	OAL inch	LDRED inch	LS inch	for modules	Left-hand 78 861 ...	Right-hand 78 860 ...
≤ 1,5xD	I16 R/L 90-1.5 D-E	0.750	1.000	0.039	0.728	1.260	0.945	2.000	I 16 R/L	07500[1]	07500[1]
	I20 R/L 90-1.5 D-E	0.750	1.000	0.039	0.953	1.457	1.181	2.000	I 20 R/L	07600	07600[1]
	I25 R/L 90-1.5 D-E	1.000	1.260	0.059	1.216	1.811	1.496	2.250	I 25 R/L	10000[1]	10000[1]
	I32 R/L 90-1.5 D-E	1.250	1.575	0.079	1.425	2.323	1.890	2.500	I 32 R/L	12500[1]	12500
	I40 R/L 90-1.5 D-E	1.500	1.969	0.098	1.941	2.835	2.362	3.000	I 40 R/L/N	15000[1]	15000[1]
≤ 2,5xD	I16 R/L 90-2.5 D-E	0.750	1.000	0.177	0.728	7.000	1.575	2.000	I 16 R/L	27500[1]	27500[1]
	I20 R/L 90-2.5 D-E	1.000	1.000	0.236	0.953	8.000	1.969	2.000	I 20 R/L	20000[1]	20000
	I25 R/L 90-2.5 D-E	1.250	1.260	0.276	1.216	10.000	2.480	2.250	I 25 R/L	22500[1]	22500[1]
	I32 R/L 90-2.5 D-E	1.500	1.969	0.374	1.425	12.000	3.150	2.500	I 32 R/L	25000[1]	25000[1]
	I40 R/L 90-2.5 D-E	2.000	1.575	0.433	1.941	14.000	3.937	3.000	I 40 R/L/N	20100[1]	20100[1]

1) Not ex-stock

for right hand holder → use right hand (or neutral) module
for left hand holder → use left hand (or neutral) module

Spare parts for modules		Screwdriver 80 950 ...		Clamping screw 70 950 ...	
I 16 R/L	T08	110	M2.5x10	440
I 20 R/L	T10	112	M3x11	444
I 25 R/L	T15	113	M3.5x12.5	441
I 32 R/L	T20	114	M4.5x17	445
I 40 R/L/N	T20	114	M5x18	404

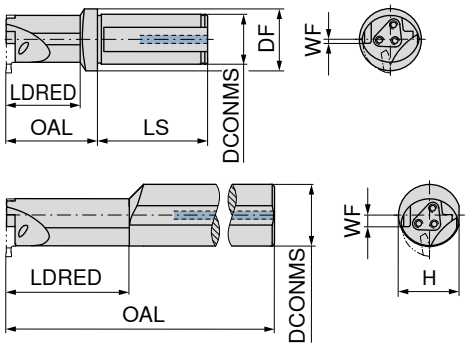

GX 09 / GX 16
→ 42+43

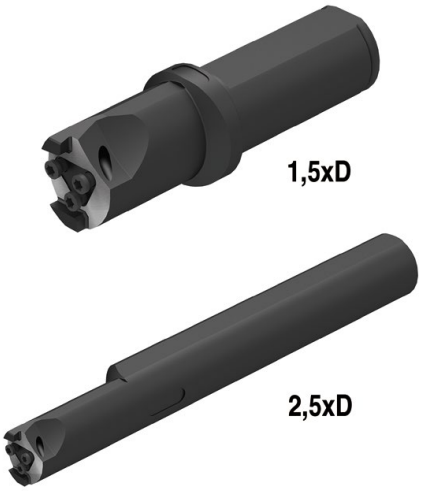

GX 24
→ 60

ModularClamp MSS – Boring bars GX

▲ with through coolant

Scope of supply:
Boring bar incl. clamping screw





Illustrations show right-hand versions

	Designation	DCONMS mm	DF mm	WF mm	H mm	OAL mm	LDRED mm	LS mm	for modules	Left-hand 70 861 ...	Right-hand 70 860 ...
≤ 1,5xD	I16 R/L 90-1,5 D-N	20	25	1.0		32	24	50	I 16 R/L	017	017
	I20 R/L 90-1,5 D-N	20	25	1.0		37	30	50	I 20 R/L	021	021
	I25 R/L 90-1,5 D-N	25	32	1.5		46	38	56	I 25 R/L	026	026
	I32 R/L 90-1,5 D-N	32	40	2.0		59	48	60	I 32 R/L	033 1)	033 1)
	I40 R/L 90-1,5 D-N	40	50	2.5		72	60	70	I 40 R/L/N	041	041
≤ 2,5xD	I16 R/L 90-2,5 D-N	20		4.5	19.0	180	40		I 16 R/L	117	117
	I20 R/L 90-2,5 D-N	25		6.0	24.0	200	50		I 20 R/L	121	121
	I25 R/L 90-2,5 D-N	32		7.0	31.0	250	63		I 25 R/L	126	126
	I32 R/L 90-2,5 D-N	40		9.5	38.0	300	80		I 32 R/L	133 1)	133 1)
	I40 R/L 90-2,5 D-N	50		11.5	48.5	350	100		I 40 R/L/N	141	141

1) with 2 clamping surfaces

for right hand holder → use right hand (or neutral) module
for left hand holder → use left hand (or neutral) module

Spare parts for modules	Screwdriver	80 950 ...	Clamping screw	70 950 ...
I 16 R/L	T08	110	M2.5x10	440
I 20 R/L	T10	112	M3x11	444
I 25 R/L	T15	113	M3.5x12.5	441
I 32 R/L	T20	114	M4.5x17	445
I 40 R/L/N	T20	114	M5x18	404



GX 09 / GX 16

→ 42+43



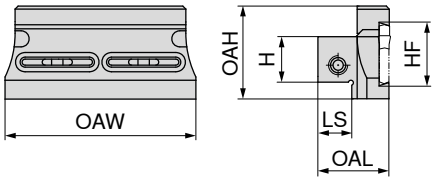
GX 24

→ 60

Split clamping block for blades DC

Scope of supply:
Complete clamping block, but without blade and coolant set

Direct Cooling





Designation	H inch	HF inch	OAH inch	LS inch	OAL inch	OAW inch	for blades	78 829 ...
SBN 12-26-DC-E	0.750	1.024	1.690	0.700	1.487	3.230	XLC.. 26..	**07500**
SBN 16-32-DC-E	1.000	1.260	1.910	0.950	1.752	3.740	XLC.. 32..	**10000**
SBN 20-32-DC-E	1.250	1.260	2.037	1.200	2.000	3.740	XLC.. 32..	**12500**


Coolant screw plug


Clamping rail


clamping screw

Spare parts for Article no.		70 950 ...		70 950 ...		70 950 ...
78 829 07500	G 1/8"	**294**	CU70	**290**	M6x12	**861**
78 829 10000	G 1/8"	**294**	CU85	**291**	M6x12	**861**
78 829 12500	G 1/8"	**294**	CU85	**291**	M6x12	**861**


O-Ring


O-Ring

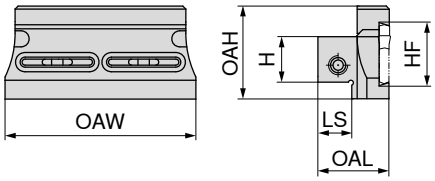
Spare parts for Article no.		70 950 ...		70 950 ...
78 829 07500	19x2,5	**293**		
78 829 10000			23x2.5	**292**
78 829 12500			23x2.5	**292**

11

Split clamping block for blades DC

Scope of supply:
Complete clamping block, but without blade

Direct Cooling





Designation	H mm	HF mm	OAH mm	LS mm	OAL mm	OAW mm	for blades	70 829 ...
SBN 2020-26-DC	20	26	43.0	20	40.0	82	XLC.. 26..	**020**
SBN 2020-32-DC	20	32	43.0	20	40.0	95	XLC.. 32..	**120**
SBN 2525-32-DC	25	32	48.5	25	44.5	95	XLC.. 32..	**025**
SBN 3232-32-DC	32	32	52.0	32	51.0	95	XLC.. 32..	**032**


Coolant screw plug


Clamping rail


clamping screw

Spare parts for Article no.		70 950 ...		70 950 ...		70 950 ...
70 829 020	G 1/8"	**294**	CU70	**290**	M6x12	**861**
70 829 120	G 1/8"	**294**	CU85	**291**	M6x12	**861**
70 829 025	G 1/8"	**294**	CU85	**291**	M6x12	**861**
70 829 032	G 1/8"	**294**	CU85	**291**	M6x12	**861**


Key I

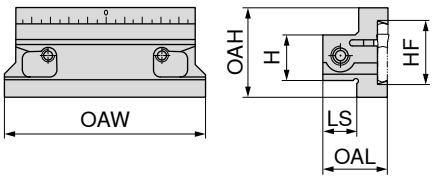

O-Ring

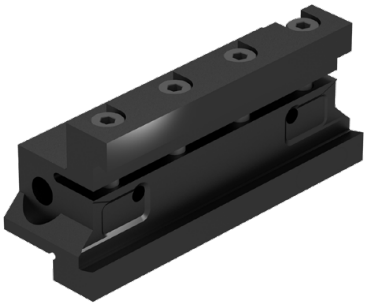

O-Ring

Spare parts for Article no.		70 950 ...		70 950 ...		70 950 ...
70 829 020	SW5	**265**	19x2.5	**293**		
70 829 120	SW5	**265**	19x2.5	**293**	23x2.5	**292**
70 829 025	SW5	**265**			23x2.5	**292**
70 829 032	SW5	**265**			23x2.5	**292**

Clamping block for blades

Scope of supply:
Clamping block complete, but without blade and coolant set





Designation	H inch	HF inch	OAH inch	LS inch	OAL inch	OAW inch	for blades	78 830 ...
SBN 12-26K-E	0.750	1.024	1.535	0.700	1.369	3.540	XLC.. 26..	**07500**
SBN 16-32K-E	1.000	1.260	1.890	0.950	1.647	4.330	XLC.. 32..	**10000**
SBN 20-32K-E	1.250	1.260	1.890	1.200	1.909	4.720	XLC.. 32..	**12500**
SBN 20-46K-E	1.250	1.811	2.756	1.200	2.106	5.910	XLC.. 46..	**12600**[1)]
SBN 24-46K-E	1.500	1.811	2.756	1.450	2.362	5.910	XLC.. 46..	**15000**

1) Not ex-stock


Key I


Cooling agent set


clamping screw

Spare parts for blades	Key I	70 950 ...	Cooling agent set	70 950 ...	clamping screw	70 950 ...
XLC.. 26..	SW5	**265**		**278**	M6x25	**269**
XLC.. 32..	SW5	**265**		**278**	M6x25	**269**
XLC.. 46..	SW6	**266**		**279**	M8x35	**282**

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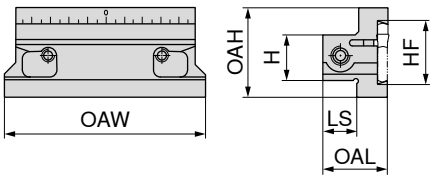
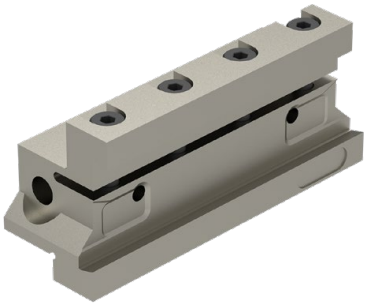
Clamping block for blades

Scope of supply:
Clamping block complete, but without blade and coolant set





Designation	H mm	HF mm	OAH mm	LS mm	OAL mm	OAW mm	for blades	70 830 ...
SBN 2020-26-K	20	26	39	20	33.0	90	XLC.. 26..	**020**
SBN 2520-32-K	25	32	48	20	36.0	110	XLC.. 32..	**025**
SBN 3229-32-K	32	32	48	29	44.5	120	XLC.. 32..	**032**
SBN 3229-46-K	32	46	70	29	52.0	150	XLC.. 46..	**132**
SBN 4037-46-K	40	46	70	37	60.0	150	XLC.. 46..	**140**


Key I

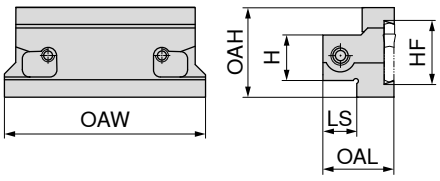

Cooling agent set


clamping screw

Spare parts for blades		70 950 ...		70 950 ...		70 950 ...
XLC.. 26..	SW5	**265**		**278**	M6x25	**269**
XLC.. 32..	SW5	**265**		**278**	M6x25	**269**
XLC.. 46..	SW6	**266**		**279**	M8x35	**282**

Split clamping block for blades

Scope of supply:
Clamping block complete, but without blade and coolant set





Designation	H inch	HF inch	OAH inch	LS inch	OAL inch	OAW inch	for blades	78 831 ...
SBN 12-26KS-E	0.750	1.024	1.688	0.700	1.369	3.540	XLC.. 26..	**07500**
SBN 16-32KS-E	1.000	1.260	1.929	0.950	1.647	4.330	XLC.. 32..	**10000**
SBN 20-32KS-E	1.250	1.260	2.044	1.200	1.909	4.720	XLC.. 32..	**12500**

		 Key I		 Cooling agent set		 clamping screw	
		70 950 ...		**70 950 ...**		**70 950 ...**	
Spare parts for blades							
XLC.. 26..	SW5	**265**		**278**	M6x25	**269**	
XLC.. 32..	SW5	**265**		**278**	M6x25	**269**	

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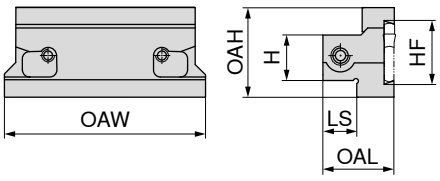
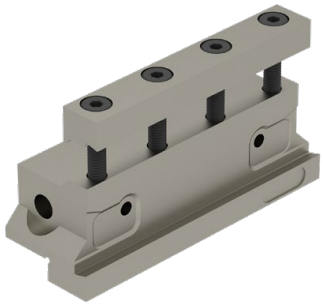
Split clamping block for blades

Scope of supply:
Clamping block complete, but without blade and coolant set





Designation	H mm	HF mm	OAH mm	LS mm	OAL mm	OAW mm	for blades	70 831 ...
SBN 2020-26-KS	20	26	39	20	35.0	90	XLC.. 26..	**020**
SBN 2520-32-KS	25	32	48	20	38.0	110	XLC.. 32..	**025**
SBN 3229-32-KS	32	32	48	29	46.5	120	XLC.. 32..	**032**

Key I


Cooling agent set


clamping screw

Spare parts for blades		70 950 ...		70 950 ...		70 950 ...
XLC.. 26..	SW5	**265**		**278**	M6x25	**269**
XLC.. 32..	SW5	**265**		**278**	M6x25	**269**

Material examples for cutting data tables

	Material sub-group	Index	Composition / Structure / Heat treatment		Tensile strength lbf/in²* / HB / HRC	Material number	Material designation	Material number	Material designation
P	Unalloyed steel	P.1.1	< 0.15 % C	Annealed	60900 lbf/in² / 125 HB	1.0401	1015	1.0301	1010
		P.1.2	< 0.45 % C	Annealed	92800 lbf/in² / 190 HB	1.1191	1045	1.0737	12L14
		P.1.3		Tempered	121800 lbf/in² / 250 HB	1.1191	1045	1.0503	1043
		P.1.4	< 0.75 % C	Annealed	132000 lbf/in² / 270 HB	1.1223	1060	1.0535	1055
		P.1.5		Tempered	146500 lbf/in² / 300 HB	1.1223	1060	1.1274	1095
	Low-alloy steel	P.2.1		Annealed	88500 lbf/in² / 180 HB	1.7131	5115	1.6523	8620
		P.2.2		Tempered	134900 lbf/in² / 275 HB	1.7131	5115	1.6582	4340
		P.2.3		Tempered	146500 lbf/in² / 300 HB	1.7225	4142	1.7131	5115
		P.2.4		Tempered	174000 lbf/in² / 375 HB	1.7225	4142	17223	4140
	High-alloy steel and high-alloy tool steel	P.3.1		Annealed	98600 lbf/in² / 200 HB	1.4021	420	1.2379	D2
		P.3.2		Hardened and tempered	159500 lbf/in² / 300 HB	1.2343	H11	1.3343	M2
		P.3.3		Hardened and tempered	188500 lbf/in² / 400 HB	1.2343	H11	1.2363	A2
	Stainless steel	P.4.1	Ferritic / martensitic	Annealed	98600 lbf/in² / 200 HB	1.4016	430	1.4125	440C
		P.4.2	Martensitic	Tempered	117500 lbf/in² / 250 HB	1.4112	S44003	1.4021	420
M	Stainless steel	M.1.1	Austenitic / austenitic-ferritic	Quenched	88500 lbf/in² / 200 HB	1.4301	304	1.4401	316
		M.2.1	Austenitic	Tempered	300 HB	1.4841	314	1.4568	17-7 PH
		M.3.1	Austenitic / ferritic (Duplex)		113100 lbf/in² / 230 HB	1.4462	S32205	1.4410	S32750
K	Grey cast iron	K.1.1	Pearlitic / ferritic		88500 lbf/in² / 180 HB	0.6010	A48-20B	0.6025	A48-40 B
		K.1.2	Pearlitic (martensitic)		127600 lbf/in² / 260 HB	0.6030	A48-45B	0.6040	A48-60 B
	Spherulitic graphite cast iron	K.2.1	Ferritic		78300 lbf/in² / 160 HB	0.7040	60-40-18	0.7050	65-45-12
		K.2.2	Pearlitic		122600 lbf/in² / 250 HB	0.7070	100-70-03	0.7660	A439 Type D2
	Malleable iron	K.3.1	Ferritic		63800 lbf/in² / 130 HB	0.8035	GTW-35-04		
		K.3.2	Pearlitic		113100 lbf/in² / 230 HB	0.8170	70003		
N	Aluminium wrought alloy	N.1.1	Non-hardenable		60 HB	3.0255	A91060	3.0255	A91060
		N.1.2	Hardenable		49300 lbf/in² / 100 HB	3.1355	2024	3.1355	2024
	Cast aluminium alloy	N.2.1	≤ 12 % Si, non-hardenable		36300 lbf/in² / 75 HB	3.2581	A04130 / A413-0	3.2581	A04130 / A413-0
		N.2.2	≤ 12 % Si, hardenable		43500 lbf/in² / 90 HB	3.2134	G-AlSi5Cu1Mg		
		N.2.3	> 12 % Si, non-hardenable		63800 lbf/in² / 130 HB		G-AlSi17Cu4Mg		
	Copper and copper alloys (bronze/brass)	N.3.1	Free-machining alloys, PB > 1 %		54400 lbf/in² / 110 HB	2.0380	CuZn39Pb2 (Ms58)	2.0380	C37700
		N.3.2	CuZn, CuSnZn		43500 lbf/in² / 90 HB	2.0331	CuZn15	2.0331	C34000
		N.3.3	CuSn, lead-free copper and electrolytic copper		49300 lbf/in² / 100 HB	2.0060	E-Cu57		
	Magnesium alloys	N.4.1	Magnesium and magnesium alloys		70 HB	3.5612	MgAl6Zn		
S	Heat-resistant alloys	S.1.1	Fe - basis	Annealed	98600 lbf/in² / 200 HB	1.4864	X12NiCrSi 36-16	1.4864	330
		S.1.2			137800 lbf/in² / 280 HB	1.4980	X6NiCrTiMoVB25-15-2	1.4980	S66286
		S.2.1	Ni or Co basis	Annealed	121800 lbf/in² / 250 HB	2.4856	Inconel 625	2.4812	Hastelloy C
		S.2.2			171100 lbf/in² / 350 HB	2.4952	Nimonic 80A	2.4668	Inconel 718
		S.2.3		Cast	156600 lbf/in² / 320 HB	2.4674	Nimocast PK24	2.4670	Nimocast 713
	Titanium alloys	S.3.1	Pure titanium		5800 lbf/in²	3.7025	Ti99,8		
		S.3.2	Alpha + beta alloys		152300 lbf/in²	3.7165	TiAl6V4		
		S.3.3	Beta alloys		203100 lbf/in² / 410 HB	Ti555.3	Ti-5Al-5V-5Mo-3Cr		
H	Hardened steel	H.1.1		Hardened and tempered	46-55 HRC				
		H.1.2		Hardened and tempered	56-60 HRC				
		H.1.3		Hardened and tempered	61-65 HRC				
		H.1.4		Hardened and tempered	66-70 HRC				
	Chilled iron	H.2.1		Cast	400 HB				
	Hardened cast iron	H.3.1		Hardened and tempered	55 HRC				
O	Non-metal materials	O.1.1	Plastics, duroplastic		≤ 21800 lbf/in²				
		O.1.2	Plastics, thermoplastic		≤ 14500 lbf/in²				
		O.2.1	Aramid fibre-reinforced		≤ 145000 lbf/in²				
		O.2.2	Glass/carbon-fibre reinforced		≤ 145000 lbf/in²				
		O.3.1	Graphite						

*** Tensile Strength at Rupture (Rm)**

Cutting data values for grooving inserts

Index	System SX, LX, GX							System TX		● 1st choice ○ suitable		
	CTCP325	CTCP335	CTPP345	CTPP520	CTPP535	CTP1340	H216T	CWX500				
	DRAGONSKIN											
	v_c (ft/min)							v_c (ft/min)	f (inch/rev)	Emulsion	Compressed air	MQL
P.1.1	730	620	450	780	600	600		530	0.0012–0.0039	●		
P.1.2	650	530	400	680	500	500		470	0.0012–0.0039	●		
P.1.3	570	470	350	580	420	420		370	0.0012–0.0039	●		
P.1.4	550	430	330	550	400	380		370	0.0012–0.0039	●		
P.1.5	500	400	320	500	350	330		300	0.0012–0.0039	●		
P.2.1	660	550	400	700	530	520		370	0.0012–0.0039	●		
P.2.2	530	430	330	530	380	370		300	0.0012–0.0039	●		
P.2.3	500	400	320	500	350	330		300	0.0012–0.0028	●		
P.2.4	400	300	250	380	250	240		270	0.0012–0.0024	●		
P.3.1	500	430	330	620	400	370		270	0.0012–0.0028	●		
P.3.2	320	300	270	430	300	250		200	0.0012–0.0028	●		
P.3.3	150	170	200	250	200	140		170	0.0012–0.0028	●		
P.4.1	500	430	330	620	400	370		330	0.0012–0.0024	●		
P.4.2	420	370	300	530	350	320		300	0.0012–0.0024	●		
M.1.1	500	430	330	620	400	370		370	0.0008–0.0024	●		
M.2.1	320	300	270	430	300	270		300	0.0008–0.0024	●		
M.3.1	450	380	320	570	370	330		240	0.0008–0.0024	●		
K.1.1	570	450		470	550	500	470	470	0.0012–0.0039	●		
K.1.2	500	380		380	500	420	380	330	0.0012–0.0039	●		
K.2.1	530	430		600	480	470	500	300	0.0012–0.0039	●		
K.2.2	480	350		380	520	400	370	270	0.0012–0.0039	●		
K.3.1	700	500		430	630	570	570	470	0.0012–0.0039	●		
K.3.2	470	380		370	480	400	470	400	0.0012–0.0039	●		
N.1.1						990	1320	1090	0.002–0.0047	●		
N.1.2						660	1320	1030	0.002–0.0047	●		
N.2.1						990	1490	900	0.002–0.0047	●		
N.2.2						660	1490	760	0.002–0.0047	●		
N.2.3						500	1650	470	0.002–0.0047	●		
N.3.1						990	1410	800	0.002–0.0047	●		
N.3.2						990	1320	660	0.002–0.0047	●		
N.3.3						660	910	600	0.002–0.0047	●		
N.4.1						660	750	600	0.002–0.0047	●		
S.1.1	120			140	100	120	140	200	0.0008–0.0028	●		
S.1.2	100		100	100	90	100	100	170	0.0008–0.0031	●		
S.2.1	70		90	70	50	70	100	200	0.0008–0.0035	●		
S.2.2	50			50	50	50	90	170	0.0008–0.0039	●		
S.2.3	50			70	50	50	70	140	0.0008–0.0043	●		
S.3.1				420	290	290	300	200	0.0008–0.0047	●		
S.3.2				170	120	140	190	140	0.0008–0.0051	●		
S.3.3				120	90	100	140	100	0.0008–0.0055	●		
H.1.1				50				170	0.0004–0.0028	●		
H.1.2				50								
H.1.3												
H.1.4												
H.2.1				50								
H.3.1				140								
O.1.1						430	430	600	0.002–0.0047	●		
O.1.2								600	0.002–0.0047	●		
O.2.1						350	350	500	0.002–0.0047	●		
O.2.2								370	0.002–0.0047	●		
O.3.1								570	0.0012–0.0039	●		

The cutting data is strongly influenced by external conditions, such as the stability of the tool and workpiece clamping, material and type of machine. The specified values represent guideline cutting data that can be adjusted by approx. **±20%** according to the usage conditions.

Cutting data values for grooving inserts

Index	System SX, LX, GX							System TX		● 1st choice ○ suitable		
	CTCP325	CTCP335	CTPP345	CTPP520	CTPP535	CTP1340	H216T	CWX500				
	DRAGONSKIN											
	v_c (m/min)							v_c (m/min)	f (mm/rev)	Emulsion	Compressed air	MQL
P.1.1	220	185	135	235	180	180		160	0.03–0.10	●		
P.1.2	195	160	120	205	150	150		140	0.03–0.10	●		
P.1.3	170	140	105	175	125	125		110	0.03–0.10	●		
P.1.4	165	130	100	165	120	115		110	0.03–0.10	●		
P.1.5	150	120	95	150	105	100		90	0.03–0.10	●		
P.2.1	200	165	120	210	160	155		110	0.03–0.10	●		
P.2.2	160	130	100	160	115	110		90	0.03–0.10	●		
P.2.3	150	120	95	150	105	100		90	0.03–0.07	●		
P.2.4	120	90	75	115	75	70		80	0.03–0.06	●		
P.3.1	150	130	100	185	120	110		80	0.03–0.07	●		
P.3.2	95	90	80	130	90	75		60	0.03–0.07	●		
P.3.3	45	50	60	75	60	40		50	0.03–0.07	●		
P.4.1	150	130	100	185	120	110		100	0.03–0.06	●		
P.4.2	125	110	90	160	105	95		90	0.03–0.06	●		
M.1.1	150	130	100	185	120	110		110	0.02–0.06	●		
M.2.1	95	90	80	130	90	80		90	0.02–0.06	●		
M.3.1	135	115	95	170	110	100		70	0.02–0.06	●		
K.1.1	170	135		140	165	150	140	140	0.03–0.10	●		
K.1.2	150	115		115	150	125	115	100	0.03–0.10	●		
K.2.1	160	130		180	145	140	150	90	0.03–0.10	●		
K.2.2	145	105		115	155	120	110	80	0.03–0.10	●		
K.3.1	210	150		130	190	170	170	140	0.03–0.10	●		
K.3.2	140	115		110	145	120	140	120	0.03–0.10	●		
N.1.1						300	400	330	0.05–0.12	●		
N.1.2						200	400	310	0.05–0.12	●		
N.2.1						300	450	270	0.05–0.12	●		
N.2.2						200	450	230	0.05–0.12	●		
N.2.3						150	500	140	0.05–0.12	●		
N.3.1						300	425	240	0.05–0.12	●		
N.3.2						300	400	200	0.05–0.12	●		
N.3.3						200	275	180	0.05–0.12	●		
N.4.1						200	225	180	0.05–0.12	●		
S.1.1	35			40	30	35	40	60	0.02–0.07	●		
S.1.2	30		30	30	25	30	30	50	0.02–0.08	●		
S.2.1	20		25	20	15	20	30	60	0.02–0.09	●		
S.2.2	15			15	15	15	25	50	0.02–0.10	●		
S.2.3	15			20	15	15	20	40	0.02–0.11	●		
S.3.1				125	85	85	90	60	0.02–0.12	●		
S.3.2				50	35	40	55	40	0.02–0.13	●		
S.3.3				35	25	30	40	30	0.02–0.14	●		
H.1.1				15				50	0.01–0.07	●		
H.1.2				15								
H.1.3												
H.1.4												
H.2.1				15								
H.3.1				40								
O.1.1						130	130	180	0.05–0.12	●		
O.1.2								180	0.05–0.12	●		
O.2.1						105	105	150	0.05–0.12	●		
O.2.2								110	0.05–0.12	●		
O.3.1								170	0.03–0.10	●		

The cutting data is strongly influenced by external conditions, such as the stability of the tool and workpiece clamping, material and type of machine. The specified values represent guideline cutting data that can be adjusted by approx. **±20%** according to the usage conditions.

SX – Depths of cut and feed rates

SX-F2

Groove width CW (inch)	Turning Depth of cut a_p (inch) .020	.003	.040	.050	.060	.070	.080	Parting / Grooving
	Feed rate f (inch/rev.)							f (inch/rev)
.080	.0012–.0059	.0012–.0059	.0012–.0059	.0012–.0039				.0020–.0059
.120	.0016–.0067	.0016–.0067	.0016–.0067	.0016–.0059	.0016–.0051	.0016–.0047		.0028–.0079
.160	.0020–.0079	.0020–.0079	.0020–.0079	.0020–.0079	.0020–.0079	.0020–.0067	.0020–.0059	.0039–.0098

SX-27P

Groove width CW (inch)	Turning Depth of cut a_p (inch) .020	.040	.060	.080	.100	.120	Parting / Grooving
	Feed rate f (inch/rev.)						f (inch/rev)
.080	.0029–.0091	.0020–.0091	.0020–.0091	.0020–.0079			.0020–.0079
.120	.0020–.0098	.0020–.0098	.0020–.0098	.0020–.0098	.0020–.0079		.0020–.0098
.160	.0039–.0118	.0039–.0118	.0039–.0118	.0039–.0118	.0039–.0118	.0039–.0098	.0020–.0118

SX-M2

Groove width CW (inch)	Turning Depth of cut a_p (inch) .020	.040	.060	.080	.100	.120	Parting / Grooving
	Feed rate f (inch/rev.)						f (inch/rev)
.080	.0020–.0067	.0020–.0051	.0020–.0039				.0020–.0059
.120	.0028–.0079	.0028–.0079	.0028–.0071	.0028–.0059			.0028–.0079
.160	.0039–.0098	.0039–.0098	.0039–.0098	.0039–.0087	.0039–.0071		.0039–.0098
.200	.0047–.0106	.0047–.0106	.0047–.0106	.0047–.0098	.0047–.0087		.0039–.0118
.240	.0059–.0118	.0059–.0118	.0059–.0118	.0059–.0118	.0059–.0098	.0059–.0079	.0059–.0138

SX-M1

Groove width CW (inch)	Parting / Grooving f (inch/rev)
.080	.0020–.0059
.120	.0039–.0079
.160	.0039–.0098
.200	.0059–.0118
.240	.0059–.0138

SX-M7

Groove width CW (inch)	Parting / Grooving f (inch/rev)
.080	.0039–.0079
.120	.0039–.0079
.160	.0039–.0079
.200	.0059–.0098
.240	.0059–.0098

SX-M8

Groove width CW (inch)	Parting / Grooving f (inch/rev)
.080	.0019–.0079
.120	.0019–.0079
.160	.0019–.0059
.200	.0019–.0059
.240	.0019–.0059

SX – Depths of cut and feed rates

SX-F2								
Groove width CW (mm)	Turning Depth of cut a_p (mm)							Parting / Grooving
	0.50	0.75	1.00	1.25	1.50	1.75	2.00	
	Feed rate f (mm/rev.)							f (mm/rev)
2	0.03–0.15	0.03–0.15	0.03–0.15	0.03–0.10				0.05–0.15
3	0.04–0.17	0.04–0.17	0.04–0.17	0.04–0.15	0.04–0.13	0.04–0.12		0.075–0.20
4	0.05–0.20	0.05–0.20	0.05–0.20	0.05–0.20	0.05–0.20	0.05–0.17	0.05–0.15	0.10–0.25

SX-27P							
Groove width CW (mm)	Turning Depth of cut a_p (mm)						Parting / Grooving
	0.5	1.0	1.5	2.0	2.5	3.0	
	Feed rate f (mm/rev.)						f (mm/rev)
2	0.05–0.23	0.05–0.23	0.05–0.23	0.05–0.20			0.05–0.20
3	0.05–0.25	0.05–0.25	0.05–0.25	0.05–0.25	0.05–0.20		0.05–0.25
4	0.10–0.30	0.10–0.30	0.10–0.30	0.10–0.30	0.10–0.30	0.10–0.25	0.05–0.30

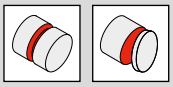
SX-M2							
Groove width CW (mm)	Turning Depth of cut a_p (mm)						Parting / Grooving
	0.5	1.0	1.5	2.0	2.5	3.0	
	Feed rate f (mm/rev.)						f (mm/rev)
2	0.05–0.17	0.05–0.13	0.05–0.10				0.05–0.15
3	0.07–0.20	0.07–0.20	0.07–0.18	0.07–0.15			0.075–0.20
4	0.10–0.25	0.10–0.25	0.10–0.25	0.10–0.22	0.10–0.18		0.10–0.25
5	0.12–0.27	0.12–0.27	0.12–0.27	0.12–0.25	0.12–0.22		0.10–0.30
6	0.15–0.30	0.15–0.30	0.15–0.30	0.15–0.30	0.15–0.25	0.15–0.20	0.15–0.35

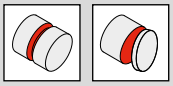
SX-M1	
Groove width CW (mm)	Parting / Grooving
	f (mm/rev)
2	0.05–0.15
3	0.10–0.20
4	0.10–0.25
5	0.15–0.30
6	0.15–0.35

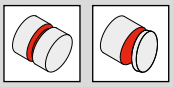
SX-M7	
Groove width CW (mm)	Parting / Grooving
	f (mm/rev)
2	0.10–0.20
3	0.10–0.20
4	0.10–0.20
5	0.15–0.25
6	0.15–0.25

SX-M8	
Groove width CW (mm)	Parting / Grooving
	f (mm/rev)
2	0.05–0.20
3	0.05–0.20
4	0.05–0.15
5	0.05–0.15
6	0.05–0.15

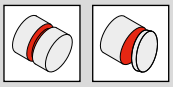
SX/LX – Depths of cut and feed rates

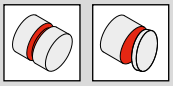
SX-M3							
	 Turning						
Radius CRE (inch)	Depth of cut a_p (inch) .020	.040	.060	.080	.100	.120	Parting / Grooving
	Feed rate f (inch/rev.)						f (inch/rev)
.060	.0059–.0138	.0059–.0138	.0059–.0118				.0022–.0079
.080	.0059–.0157	.0059–.0157	.0059–.0157	.0059–.0118			.0039–.0010
.100	.0059–.0197	.0059–.0197	.0059–.0197	.0059–.0157	.0059–.0138		.0039–.0010
.120	.0079–.0276	.0079–.0276	.0079–.0276	.0079–.0236	.0079–.0197	.0079–.0157	.0039–.0014

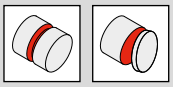
LX-M2									
	 Turning								
Groove width CW (inch)	Depth of cut a_p (inch) .020	.040	.060	.080	.100	.120	.140	.160	Parting / Grooving
	Feed rate f (inch/rev.)								f (inch/rev)
.320	.0067–.0177	.0067–.0177	.0067–.0177	.0067–.0177	.0067–.0157	.0067–.0146	.0067–.0138		.0080–.0020
.400	.0079–.0197	.0079–.0197	.0079–.0197	.0079–.0197	.0079–.0181	.0079–.0165	.0079–.0150	.0079–.0138	.0080–.0020

LX-M3									
	 Turning								
Radius CRE (inch)	Depth of cut a_p (inch) .020	.040	.060	.080	.100	.120	.140	.160	Parting / Grooving
	Feed rate f (inch/rev.)								f (inch/rev)
.160	.0098–.0315	.0098–.0315	.0098–.0315	.0098–.0315	.0098–.0315	.0098–.0276	.0098–.0236	.0098–.0197	.0060–.0014

SX/LX – Depths of cut and feed rates

SX-M3							
	 Turning						
Radius CRE (mm)	Depth of cut a_p (mm) 0.5	1.0	1.5	2.0	2.5	3.0	Parting / Grooving
	Feed rate f (mm/rev.)						f (mm/rev)
1.5	0.15–0.35	0.15–0.35	0.15–0.30				0.05–0.20
2	0.15–0.40	0.15–0.40	0.15–0.40	0.15–0.30			0.10–0.25
2.5	0.15–0.50	0.15–0.50	0.15–0.50	0.15–0.40	0.15–0.35		0.10–0.25
3	0.20–0.70	0.20–0.70	0.20–0.70	0.20–0.60	0.20–0.50	0.20–0.40	0.10–0.35

LX-M2									
	 Turning								
Groove width CW (mm)	Depth of cut a_p (mm) 0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	Parting / Grooving
	Feed rate f (mm/rev.)								f (mm/rev)
8	0.17–0.45	0.17–0.45	0.17–0.45	0.17–0.45	0.17–0.40	0.17–0.37	0.17–0.35		0.20–0.50
10	0.20–0.50	0.20–0.50	0.20–0.50	0.20–0.50	0.20–0.46	0.20–0.42	0.20–0.38	0.20–0.35	0.20–0.50

LX-M3									
	 Turning								
Radius CRE (mm)	Depth of cut a_p (mm) 0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	Parting / Grooving
	Feed rate f (mm/rev.)								f (mm/rev)
4	0.25–0.80	0.25–0.80	0.25–0.80	0.25–0.80	0.25–0.80	0.25–0.70	0.25–0.60	0.25–0.50	0.15–0.35

GX – Depths of cut and feed rates

GX Standard / GX-E

Groove width CW (inch)	Turning Depth of cut a_p (inch) .020	.040	.060	.080	.100	.120	.140	Parting / Grooving	Axial grooving
	Feed rate f (inch/rev)							f (inch/rev)	f (inch/rev)
.040	.0039–.0059	.0020–.0059	.0020–.0047	.0020–.0039				.0020–.0079	When axial grooving reduce feed by 40%.
.060	.0039–.0067	.0020–.0067	.0020–.0067	.0020–.0059	.0020–.0047			.0039–.0098	
.080	.0039–.0079	.0028–.0079	.0028–.0079	.0028–.0079	.0028–.0067	.0028–.0059		.0039–.0098	
.100	.0039–.0098	.0039–.0098	.0028–.0098	.0028–.0098	.0028–.0087	.0028–.0079		.0039–.0118	
.120	.0059–.0118	.0059–.0118	.0059–.0118	.0059–.0118	.0059–.0118	.0059–.0098	.0059–.0087	.0059–.0138	

GX-M40

Groove width CW (inch)	Turning Depth of cut a_p (inch) .020	.040	.060	.080	.100	.120	.140	.160	Parting / Grooving	Axial grooving
	Feed rate f (inch/rev)								f (inch/rev)	f (inch/rev)
.040	.0039–.0079	.0020–.0079	.0020–.0067	.0020–.0059					.0020–.0059	When axial grooving reduce feed by 40%.
.060	.0039–.0087	.0039–.0087	.0039–.0083	.0039–.0079	.0039–.0067				.0028–.0079	
.080	.0039–.0098	.0039–.0098	.0039–.0098	.0039–.0098	.0039–.0087	.0039–.0067			.0039–.0098	
.100	.0039–.0118	.0039–.0118	.0039–.0118	.0039–.0118	.0039–.0106	.0039–.0091	.0039–.0079		.0039–.0118	
.120	.0039–.0138	.0039–.0138	.0039–.0138	.0039–.0138	.0039–.0126	.0039–.0106	.0039–.0091	.0039–.0079	.0059–.0128	

GX-F2

Groove width CW (inch)	Turning Depth of cut a_p (inch) .020	.030	.040	.050	.060	.070	.080	.090	.100	Parting / Grooving	Axial grooving
	Feed rate f (inch/rev)									f (inch/rev)	f (inch/rev)
.040	.0012–.0059	.0012–.0059	.0012–.0059	.0012–.0039						.0020–.0059	When axial grooving reduce feed by 40%.
.060	.0016–.0067	.0016–.0067	.0016–.0067	.0016–.0059	.0016–.0051	.0016–.0047				.0028–.0079	
.080	.0020–.0079	.0020–.0079	.0020–.0079	.0020–.0079	.0020–.0079	.0020–.0067	.0020–.0059			.0039–.0098	
.100	.0028–.0079	.0028–.0079	.0028–.0079	.0028–.0079	.0028–.0079	.0028–.0079	.0028–.0067	.0028–.0059		.0039–.0118	
.120	.0039–.0091	.0039–.0091	.0039–.0091	.0039–.0091	.0039–.0091	.0039–.0091	.0039–.0091	.0039–.0075	.0039–.0059	.0059–.0128	

GX-27P

Groove width CW (inch)	Turning Depth of cut a_p (inch) .020	.040	.060	.080	.100	.120	.140	.160	Parting / Grooving	Axial grooving
	Feed rate f (inch/rev)								f (inch/rev)	f (inch/rev)
.040	.0020–.0091	.0020–.0091	.0020–.0091	.0020–.0079					.0020–.0079	When axial grooving reduce feed by 40%.
.060	.0020–.0098	.0020–.0098	.0020–.0098	.0020–.0098	.0020–.0079				.0020–.0098	
.080	.0039–.0118	.0039–.0118	.0039–.0118	.0039–.0118	.0039–.0118	.0039–.0098			.0020–.0118	
.100	.0039–.0138	.0039–.0138	.0039–.0138	.0039–.0138	.0039–.0138	.0039–.0126	.0039–.0118		.0039–.0138	
.120	.0039–.0157	.0039–.0157	.0039–.0157	.0039–.0157	.0039–.0157	.0039–.0142	.0039–.0130	.0039–.0118	.0039–.0157	

GX – Depths of cut and feed rates

GX Standard / GX-E

Groove width CW (mm)	Turning – Depth of cut a_p (mm) 0.5	1.0	1.5	2.0	2.5	3.0	3.5	Parting / Grooving	Axial grooving
	Feed rate f (mm/rev.)							f (mm/rev)	f (mm/rev)
2	0.10–0.15	0.05–0.15	0.05–0.12	0.05–0.10				0.05–0.20	When axial grooving reduce feed by 40%.
3	0.10–0.17	0.05–0.17	0.05–0.17	0.05–0.15	0.05–0.12			0.10–0.25	
4	0.10–0.20	0.07–0.20	0.07–0.20	0.07–0.20	0.07–0.17	0.07–0.15		0.10–0.25	
5	0.10–0.25	0.10–0.25	0.07–0.25	0.07–0.25	0.07–0.22	0.07–0.20		0.10–0.30	
6	0.15–0.30	0.15–0.30	0.15–0.30	0.15–0.30	0.15–0.30	0.15–0.25	0.15–0.22	0.15–0.35	

GX-M40

Groove width CW (mm)	Turning – Depth of cut a_p (mm) 0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	Parting / Grooving	Axial grooving
	Feed rate f (mm/rev.)								f (mm/rev)	f (mm/rev)
2	0.10–0.20	0.05–0.20	0.05–0.17	0.05–0.15					0.05–0.15	When axial grooving reduce feed by 40%.
3	0.10–0.22	0.10–0.22	0.10–0.21	0.10–0.20	0.10–0.17				0.075–0.20	
4	0.10–0.25	0.10–0.25	0.10–0.25	0.10–0.25	0.10–0.22	0.10–0.17			0.10–0.25	
5	0.10–0.30	0.10–0.30	0.10–0.30	0.10–0.30	0.10–0.27	0.10–0.23	0.10–0.20		0.10–0.30	
6	0.10–0.35	0.10–0.35	0.10–0.35	0.10–0.35	0.10–0.32	0.10–0.27	0.10–0.23	0.10–0.20	0.15–0.325	

GX-F2

Groove width CW (mm)	Turning – Depth of cut a_p (mm) 0.50	0.75	1.00	1.25	1.50	1.75	2.00	2.25	2.50	Parting / Grooving	Axial grooving
	Feed rate f (mm/rev.)									f (mm/rev)	f (mm/rev)
2	0.03–0.15	0.03–0.15	0.03–0.15	0.03–0.10						0.05–0.15	When axial grooving reduce feed by 40%.
3	0.04–0.17	0.04–0.17	0.04–0.17	0.04–0.15	0.04–0.13	0.04–0.12				0.075–0.20	
4	0.05–0.20	0.05–0.20	0.05–0.20	0.05–0.20	0.05–0.20	0.05–0.17	0.05–0.15			0.10–0.25	
5	0.07–0.20	0.07–0.20	0.07–0.20	0.07–0.20	0.07–0.20	0.07–0.20	0.07–0.17	0.07–0.15		0.10–0.30	
6	0.10–0.23	0.10–0.23	0.10–0.23	0.10–0.23	0.10–0.23	0.10–0.23	0.10–0.23	0.10–0.19	0.10–0.15	0.15–0.325	

GX-27P

Groove width CW (mm)	Turning – Depth of cut a_p (mm) 0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	Parting / Grooving	Axial grooving
	Feed rate f (mm/rev.)								f (mm/rev)	f (mm/rev)
2	0.05–0.23	0.05–0.23	0.05–0.23	0.05–0.20					0.05–0.20	When axial grooving reduce feed by 40%.
3	0.05–0.25	0.05–0.25	0.05–0.25	0.05–0.25	0.05–0.20				0.05–0.25	
4	0.10–0.30	0.10–0.30	0.10–0.30	0.10–0.30	0.10–0.30	0.10–0.25			0.05–0.30	
5	0.10–0.35	0.10–0.35	0.10–0.35	0.10–0.35	0.10–0.35	0.10–0.32	0.10–0.30		0.10–0.35	
6	0.10–0.40	0.10–0.40	0.10–0.40	0.10–0.40	0.10–0.40	0.10–0.36	0.10–0.33	0.10–0.30	0.10–0.40	

GX – Depths of cut and feed rates

GX-M1	
Groove width CW (inch)	Parting / Grooving
	Feed rate f (inch/rev.)
.080	.0020–.0059
.120	.0039–.0079
.160	.0039–.0098

GX circlip grooving	
Groove width CW (mm)	Grooving
	Feed rate f (inch/rev.)
.0240–.0670	.0008–.0036
.0760–.0880	.0020–.0040
.1080–.1270	.0020–.0050

GX Standard / GX-27P / GX-27PF									
	Turning								Parting / Grooving
Radius CRE (inch)	Depth of cut a_p (inch) .020	.040	.060	.080	.100	.120	.140	.160	
	Feed rate f (inch/rev.)								f (inch/rev)
.030									.0020–.0059
.040									.0020–.0059
.050									.0020–.0059
.060	.0039–.0177	.0020–.0177	.0020–.0157						.0020–.0059
.080	.0059–.0197	.0039–.0197	.0039–.0197	.0039–.0157					.0030–.0079
.100	.0059–.0236	.0039–.0236	.0039–.0236	.0039–.0197	.0039–.0177				.0039–.0098
.120	.0098–.0276	.0079–.0276	.0059–.0276	.0059–.0276	.0059–.0256	.0059–.0236	.0059–.0217		.0039–.0118
.160	.0098–.0315	.0079–.0315	.0059–.0315	.0059–.0315	.0059–.0315	.0059–.0315	.0059–.0295	.0059–.0276	.0059–.0138

GX-M3							
	Turning						Parting / Grooving
Radius CRE (inch)	Depth of cut a_p (inch) .020	.040	.060	.080	.100	.120	
	Feed rate f (inch/rev.)						f (inch/rev)
.060	.0059–.0138	.0059–.0138	.0059–.0118				.0020–.0079
.080	.0059–.0157	.0059–.0157	.0059–.0157	.0059–.0118			.0039–.0098
.100	.0059–.0197	.0059–.0197	.0059–.0197	.0059–.0157	.0059–.0138		.0039–.0098
.120	.0079–.0276	.0079–.0276	.0079–.0276	.0079–.0236	.0079–.0197	.0079–.0157	.0039–.0138

GX-M33							
	Turning						Parting / Grooving
Radius CRE (inch)	Depth of cut a_p (inch) .020	.040	.060	.080	.100	.120	
	Feed rate f (inch/rev.)						f (inch/rev)
.060	.0020–.0098	.0020–.0078	.0020–.0059				.0020–.0059
.080	.0020–.0140	.0020–.0118	.0020–.0098	.0020–.0078			.0020–.0078
.100	.0020–.0180	.0039–.0157	.0020–.0014	.0039–.0118	.0039–.0098		.0020–.0098
.120	.0039–.0196	.0039–.0177	.0039–.0157	.0039–.0137	.0039–.0137	.0039–.0098	.0039–.0098

GX – Depths of cut and feed rates

GX-M1	
Groove width CW (mm)	Parting / Grooving Feed rate f (mm/rev.)
2	0.05–0.15
3	0.10–0.20
4	0.10–0.25

GX circlip grooving	
Groove width CW (mm)	Grooving Feed rate f (mm/rev.)
0.60–1.70	0.02–0.09
1.95–2.25	0.05–0.10
2.75–3.25	0.05–0.12

GX Standard / GX-27P / GX-27PF									
	Turning								Parting / Grooving
Radius CRE (mm)	Depth of cut a_p (mm) 0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	
	Feed rate f (mm/rev.)								f (mm/rev)
0.8									0.05–0.10
1.0									0.05–0.15
1.2									0.05–0.15
1.5	0.10–0.45	0.05–0.45	0.05–0.40						0.05–0.15
2.0	0.15–0.50	0.10–0.50	0.10–0.50	0.10–0.40					0.075–0.20
2.5	0.15–0.60	0.10–0.60	0.10–0.60	0.10–0.50	0.10–0.45				0.10–0.25
3.0	0.25–0.70	0.20–0.70	0.15–0.70	0.15–0.70	0.15–0.65	0.15–0.60	0.15–0.55		0.10–0.30
4.0	0.25–0.80	0.20–0.80	0.15–0.80	0.15–0.80	0.15–0.80	0.15–0.80	0.15–0.75	0.15–0.70	0.15–0.35

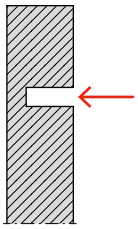
GX-M3							
	Turning						Parting / Grooving
Radius CRE (mm)	Depth of cut a_p (mm) 0.5	1.0	1.5	2.0	2.5	3.0	
	Feed rate f (mm/rev.)						f (mm/rev)
1.5	0.15–0.35	0.15–0.35	0.15–0.30				0.05–0.20
2.0	0.15–0.40	0.15–0.40	0.15–0.40	0.15–0.30			0.10–0.25
2.5	0.15–0.50	0.15–0.50	0.15–0.50	0.15–0.40	0.15–0.35		0.10–0.25
3.0	0.20–0.70	0.20–0.70	0.20–0.70	0.20–0.60	0.20–0.50	0.20–0.40	0.10–0.35

GX-M33							
	Turning						Parting / Grooving
Radius CRE (mm)	Depth of cut a_p (mm) 0.5	1.0	1.5	2.0	2.5	3.0	
	Feed rate f (mm/rev.)						f (mm/rev)
1.5	0.05–0.25	0.05–0.20	0.05–0.15				0.05–0.15
2.0	0.05–0.35	0.05–0.30	0.05–0.25	0.05–0.20			0.05–0.20
2.5	0.10–0.45	0.10–0.40	0.10–0.35	0.10–0.30	0.10–0.25		0.05–0.25
3.0	0.10–0.50	0.10–0.45	0.10–0.40	0.10–0.35	0.10–0.30	0.10–0.25	0.10–0.25

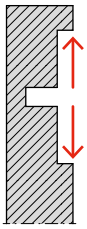
GX 24 – Axial grooving and face turning

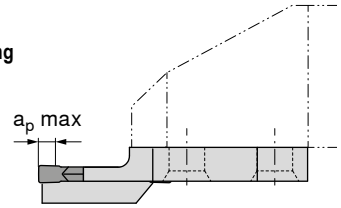
Approximate feed rates

Axial grooving



Face turning

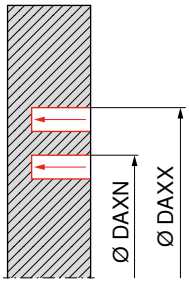




Designation	Axial grooving		Face turning			
	f		f		a_p max.	
	(inch/rev)	(mm/rev)	(inch/rev)	(mm/rev)	(inch)	(mm)
GX 24-2 E 3.00 ..	.0019–.0057	0.05–0.15	.0019–.0078	0.05–0.20	0.100	2.5
GX 24-3 E 4.00 ..	.0019–.0057	0.05–0.15	.0019–.0098	0.05–0.25	0.120	3.0
GX 24-3 E 5.00 ..	.0019–.0057	0.05–0.15	.0039–.0098	0.10–0.25	0.120	3.0
GX 24-4 E 6.00 ..	.0019–.0078	0.05–0.20	.0039–.0117	0.10–0.30	0.140	3.5

Processing notes

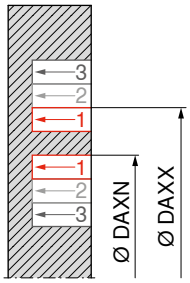
Axial grooving



It is only possible to plunge within the fixed diameter range of the axial grooving module or monoholder (1.9685 – 2.7559 inch / 50 – 70 mm).

Important: The indicated diameter range is always valid for the external diameter of the groove!

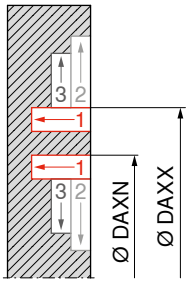
Axial grooving – Groove widening



In case of face turning it is possible to widen the groove above and below the diameter range indicated on the Axial grooving module or monoholder.

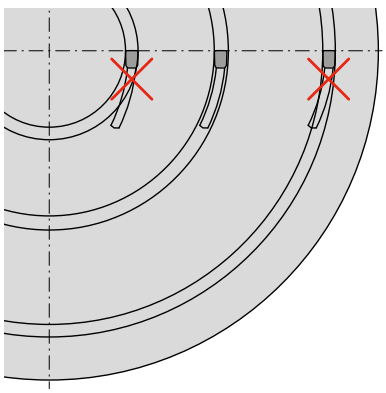
Important: Only the first groove must lie within the diameter range of the axial grooving module or axial monoholder. The depth of the widening groove must not be larger than the depth of the original groove.

Axial grooving and face turning



Groove widening by face turning in the diameter range above and below the values specified for the Axial grooving module and Axial monoholder are possible.

Important: Only the first groove must lie within the diameter range of the module.



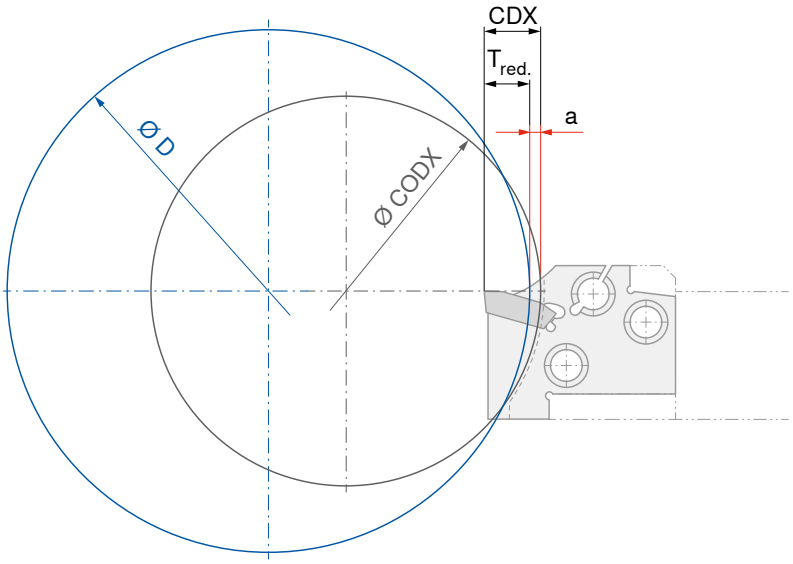
Attention: The diameter of face grooves must lie within the diameter range indicated on the axial grooving module and axial monoholder. Not following this range will result in the tool being damaged or destroyed.

ModularClamp – Grooving depth reduction

The ModularClamp grooving modules are matched according to size on a particular workpiece diameter CODX. If the diameter of the workpiece is greater than CODX of the grooving Modules, this reduces the achievable penetration depth by the dimension „a“. The extent of reduction can be determined with the following table.

Size		Reduction "a" of the maximum grooving depth (CDX)															
		.020" 0.5 mm	.040" 1.0 mm	.060" 1.5 mm	.080" 2.0 mm	.100" 2.5 mm	.120" 3.0 mm	.140" 3.5 mm	.160" 4.0 mm	.180" 4.5 mm	.200" 5.0 mm	.220" 5.5 mm	.240" 6.0 mm	.260" 6.5 mm	.280" 7.0 mm	.300" 7.5 mm	.320" 8.0 mm
	E12	1.38" 35 mm	1.57" 40 mm	1.77" 45 mm	2.36" 60 mm	2.95" 75 mm	4.53" 115 mm	9.84" > 250 mm									
	E16	1.97" 50 mm	2.17" 55 mm	2.36" 60 mm	2.76" 70 mm	3.15" 80 mm	3.94" 100 mm	5.12" 130 mm	7.87" 200 mm	> 16.54" > 420 mm							
	E20	2.36" 60 mm	2.56" 65 mm	2.76" 70 mm	2.95" 75 mm	3.35" 85 mm	3.74" 95 mm	4.33" 110 mm	5.12" 130 mm	6.50" 165 mm	8.66" 220 mm	> 12.99" > 330 mm					
	E25	2.95" 75 mm	3.15" 80 mm	3.35" 85 mm	3.54" 90 mm	3.94" 100 mm	4.33" 110 mm	4.92" 125 mm	5.51" 140 mm	6.30" 160 mm	7.48" 190 mm	9.45" 240 mm	12.60" 320 mm	> 19.69" > 500 mm			
	E32	3.74" 95 mm	3.94" 100 mm	4.13" 105 mm	4.33" 110 mm	4.72" 120 mm	4.92" 125 mm	5.31" 135 mm	5.71" 145 mm	6.30" 160 mm	7.09" 180 mm	7.87" 200 mm	8.86" 225 mm	10.63" 270 mm	12.60" 320 mm	15.75" 400 mm	20.87" 530 mm	> 31.50" > 800 mm
		Workpiece diameter D															
		Maximum workpiece diameter (CODX) with full penetration depth (CDX)															

Calculation example:



CDX =
maximum plunge depth

CODX =
maximum workpiece Ø with full penetration depth

a =
Reduction amount

$$T_{red.} = CDX - a$$

E25R**21**-GX24-3
- **21**: CDX = .826" (21 mm); Ø CODX = 2.95" (75 mm)
- **E25**: Size 25

Workpiece diameter
D = Ø 3.93" (Ø 100 mm)

$T_{red.}$ = CDX – a = .826" – .080" = .746"
$T_{red.}$ = CDX – a = 21 mm – 2 mm = 19 mm

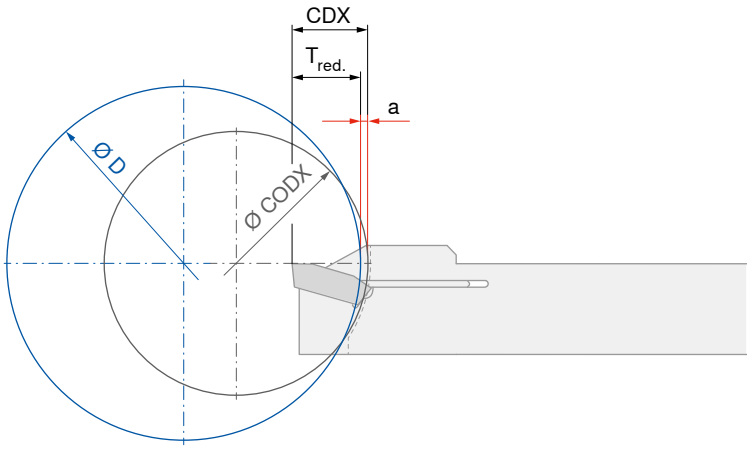
11

MonoClamp – Grooving depth reduction

Depending on the groove width and shank size, the MonoClamp tools are designed for use with a specific workpiece diameter CODX. If the workpiece diameter is larger than the CODX of the grooving module, the achievable groove depth is reduced by the dimension „a“. The extent of the reduction is determined using the following table.

Shank			Reduction "a"of the maximum grooving depth (CDX)								
			.020" 0.5 mm	.040" 1.0 mm	.060" 1.5 mm	.080" 2.0 mm	.100" 2.5 mm	.120" 3.0 mm	.140" 3.5 mm	.160" 4.0 mm	.180" 4.5 mm
	E12R/L0022...	1.73" 44 mm	2.76" 70 mm	3.15" 80 mm	3.74" 95 mm	4.53" 115 mm	5.91" 150 mm	8.86" 225 mm	> 17.72" > 450 mm		
	E16R/L0026...	2.05" 52 mm	3.54" 90 mm	4.13" 105 mm	4.92" 125 mm	6.10" 155 mm	8.27" 210 mm	12.01" 305 mm	> 23.62" > 600 mm		
	E20R/L0026...	2.05" 52 mm	4.33" 110 mm	4.92" 125 mm	5.51" 140 mm	6.30" 160 mm	7.68" 195 mm	9.45" 240 mm	12.60" 320 mm	18.70" 475 mm	> 37.40" > 950 mm
	E20R/L0033...	2.60" 66 mm	4.33" 110 mm	4.92" 125 mm	5.51" 140 mm	6.30" 160 mm	7.68" 195 mm	9.45" 240 mm	12.60" 320 mm	18.70" 475 mm	> 37.40" > 950 mm
	E25R/L0026...	2.05" 52 mm	5.51" 140 mm	6.30" 160 mm	7.48" 190 mm	9.25" 235 mm	12.20" 310 mm	18.31" 465 mm	> 36.61" > 930 mm		
	E25R/L0033...	2.60" 66 mm	6.10" 155 mm	6.89" 175 mm	7.87" 200 mm	9.06" 230 mm	10.83" 275 mm	13.39" 340 mm	17.72" 450 mm	26.57" 675 mm	> 53.15" > 1350 mm
	E25R/L0040...	3.15" 80 mm	6.10" 155 mm	6.89" 175 mm	7.87" 200 mm	9.06" 230 mm	10.83" 275 mm	13.39" 340 mm	17.72" 450 mm	26.57" 675 mm	> 53.15" > 1350 mm
		Maximum workpiece diameter (CODX) with full penetration depth (CDX)	Workpiece diameter D								

Calculation example:



CDX =
maximum plunge depth

CODX =
maximum workpiece Ø with full penetration depth

a =
Reduction amount

$$T_{red.} = CDX - a$$

E25R0033...
CDX = 1.30" (33 mm)
Ø CODX = 2.60" (66 mm)

Workpiece diameter
D = Ø 7.87" (Ø 200 mm)

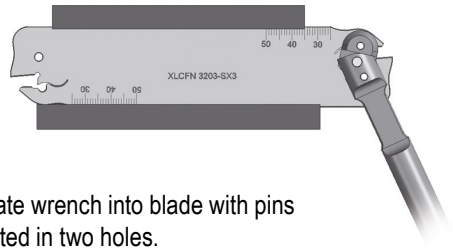
$T_{red.}$ = CDX – a = 1.30" – .060" = 1.24"
$T_{red.}$ = CDX – a = 33 mm – 1.5 mm = 31.5 mm

Clamping Method – SX-System

System function – inserting and removing the cutting inserts

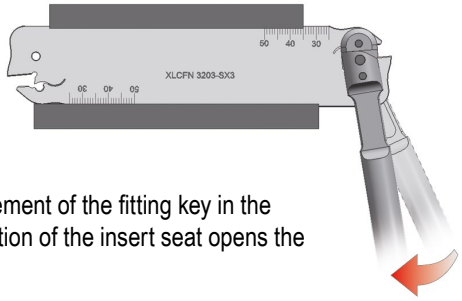
Precision system for internal and external grooving.
The key has been designed in such a way that it will not stress the material beyond its 'elastic limit'.
With this alternate system the material always remains in its flexible range and provides a substantial increase in tool life.

1



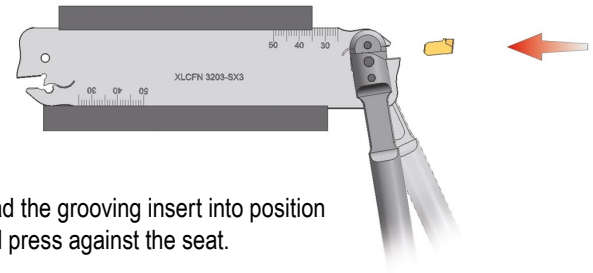
Locate wrench into blade with pins located in two holes.

2



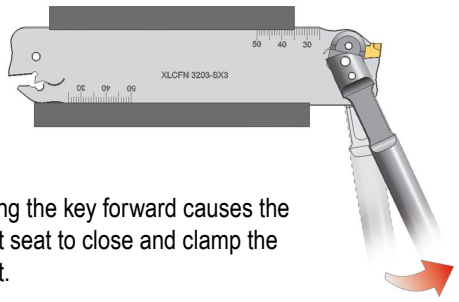
Movement of the fitting key in the direction of the insert seat opens the tool.

3



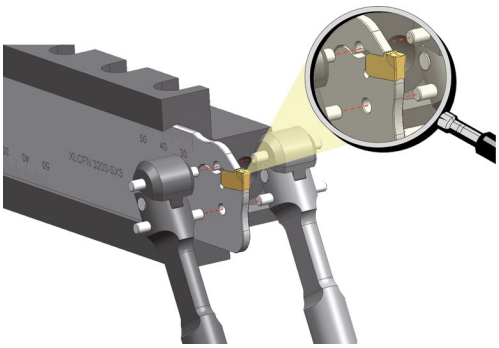
Load the grooving insert into position and press against the seat.

4



Moving the key forward causes the insert seat to close and clamp the insert.

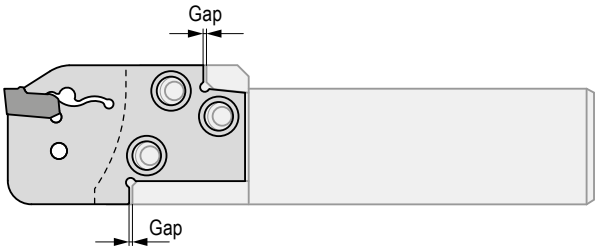
When changing the inserts, always maintain tension on the key!



The clamp is designed so that the wrench can be inserted from both sides of the blade according to the accessibility.

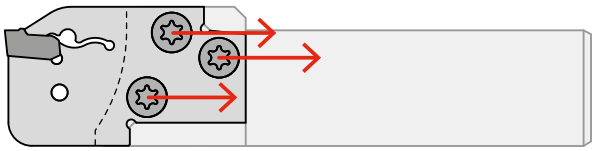
Maximum blade projection when turning		
Blade	max. overhang	
SX 2 – SX 3	.984 inch	25 mm
SX 4 – SX 5	1.181 inch	30 mm
SX 6	1.378 inch	35 mm

Clamping function – ModularClamp-Module



Module unclamped

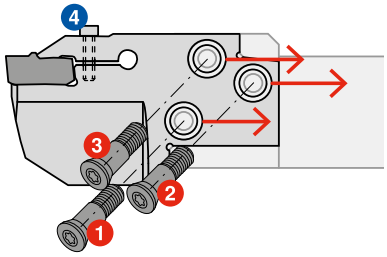
▲ Gap between module and support face for axial clamping



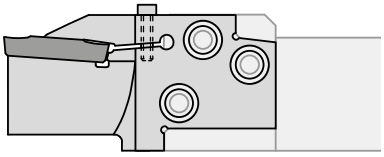
Module clamped

▲ Axial clamping with support face
▲ Connection free from play, therefore maximum stability

System
LX



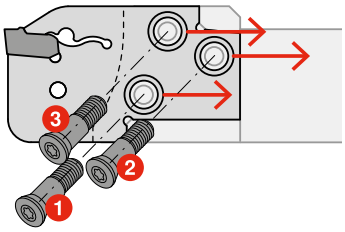
GX 24



Active insert clamping

Clamping screws 1, 2 and 3 are used to clamp the modules.
The insert is clamped in the module via the additional screw 4.

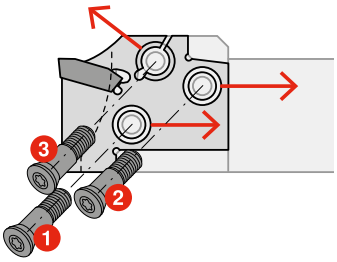
System
SX



Self clamping of the insert

Clamping screws 1, 2 and 3 are used for clamping the module.
The insert is self-clamping.

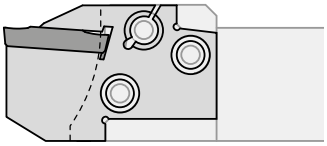
System
GX 09 / GX 16



Active insert clamping

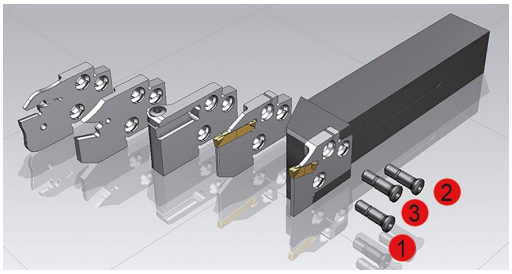
Clamping screws 1 and 2 are used for clamping the module.
Important: first tighten clamp screws 1 and 2.
Then clamp the insert with screw 3.

GX 24



Torque Moment ModularClamp Module Screws

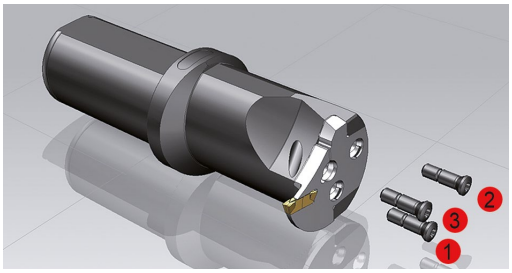
ModularClamp – Tool holder



ModularClamp – Tool holder	Screw	Torx	Torque moment	
			Nm	in.lbs
E12..	M2.5x10	T08	1.2	10.6
E16..	M3.5x12.5	T15	3.2	28.3
E20..	M4x14	T15	4.0	35.4
E25..	M5x18	T20	5.0	44.3
E32..	M6x20	T25	6.0	53.1

Tighten screws to the correct Torque moment in this order.

ModularClamp – Boring bar



ModularClamp – Boring bar	Screw	Torx	Torque moment	
			Nm	in.lbs
I16..	M2.5x10	T08	1.2	10.6
I20..	M3x11	T10	2.0	17.7
I25..	M3.5x12.5	T15	3.2	28.3
I32..	M4.5x17	T20	4.0	35.4
I40..	M5x18	T20	5.0	44.3

Tighten screws to the correct Torque moment in this order.

Tightening torque for the insert clamping

Recommended tightening torque

Grooving systems	Screw	Torx	Torque moment	
			Nm	in.lbs
GX / AX / LX	M3.5	T15	3.2	28.3
	M4.0	T15/T20	4.0	35.4
	M5.0	T20	5.0	44.3

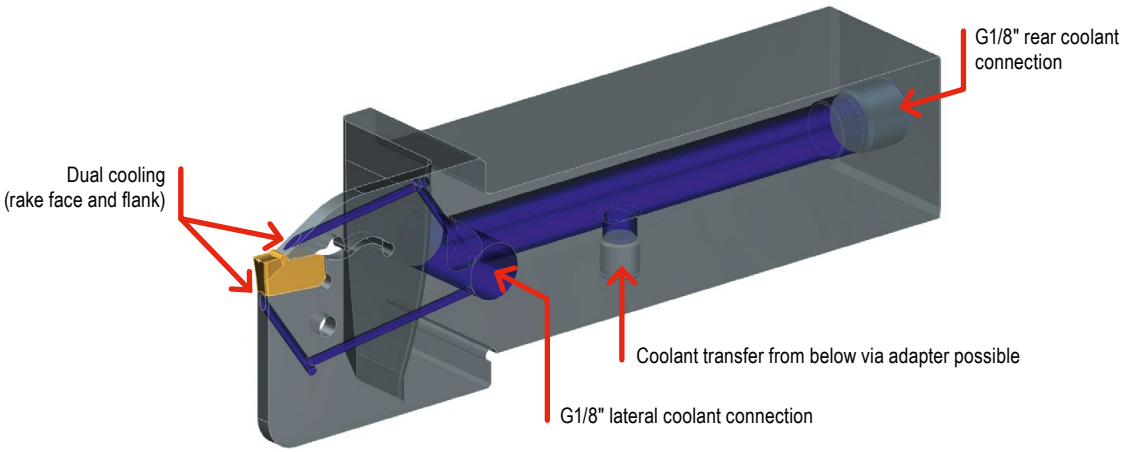
Advantages due to DirectCooling

Internal coolant supply with groove machining has a decisively positive effect on your turning process.
In our CERATIZIT grooving range, the following grooving systems have an internal coolant supply:

- **SX** Grooving holder (single tool)
- **GX** Grooving holder (single tool)

Advantages due to DirectCooling

- Improved chip control
- Longer service life of the indexable insert
- Greater process security
- Application of higher cutting data

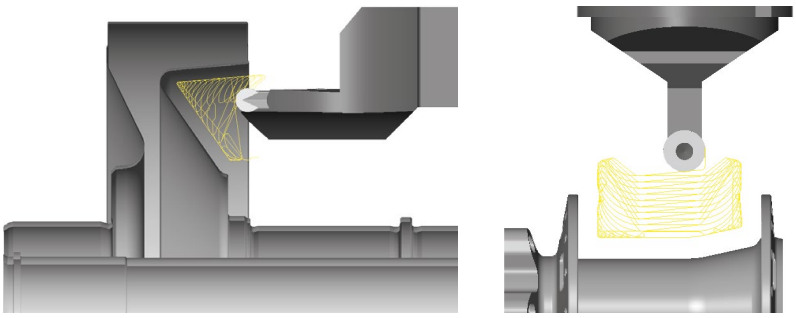


Advantages of the trochoidal turning strategy

- Less wear and longer tool life due to softer entry and exit
- Smaller angle of engagement = less vibration
- Up to 40% higher feed rate values possible
- Broad field of application in austenitic steels, heat-resistant steels, Inconel and nickel-base alloys as well as long-chipping ductile materials
- Savings on tools

Trochoidal turning with support of the following CAM systems:

- hyperMill – High-performance turning
- Esprit CAM – ProfitTurning
- SolidCAM – Turning
- EdgeCAM – Waveform turning
- MasterCAM – Dynamic turning

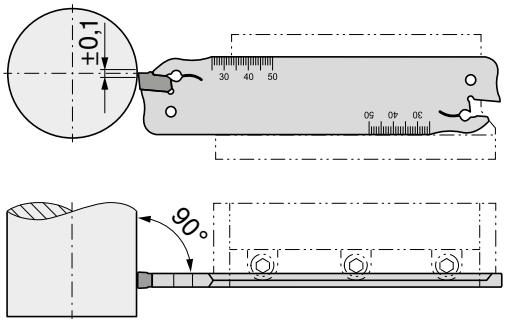


Possible applications

- Radial and axial recesses and grooves
- Rough machining – high-speed turning with button insert

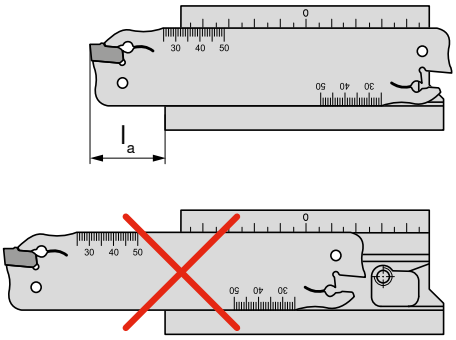
General references

Tool position

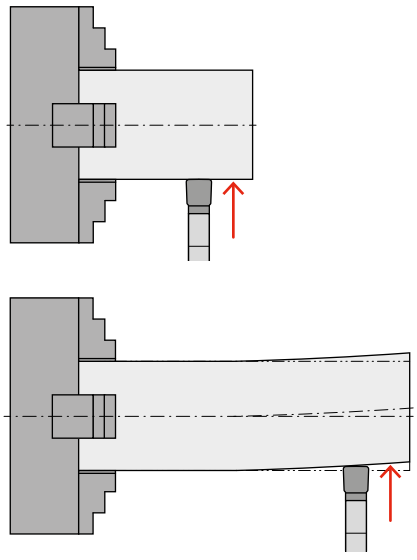


Tool overhang

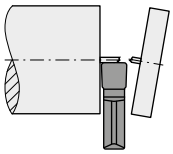
As a rule of thumb: Overhang l_a should not be greater than 8 x CW (Groove width).



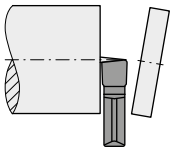
Workpiece overhang



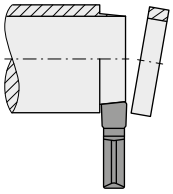
References for Parting off



From Ø 0.1969 inch (Ø 5 mm) on, reduce feed “f“ by approx. 50 %. No parting across centre (risk of breakage).

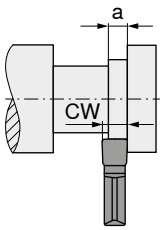


For parting pip-free, use R or L inserts. In order to minimize lateral deflection reduce feed by approx. 20–50 %.

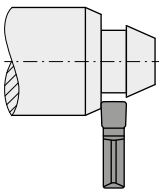


In order to prevent ring formation, use R or L inserts. Reduce feed “f“ because of lateral deflection by approx. 20–50 %.

References for grooving



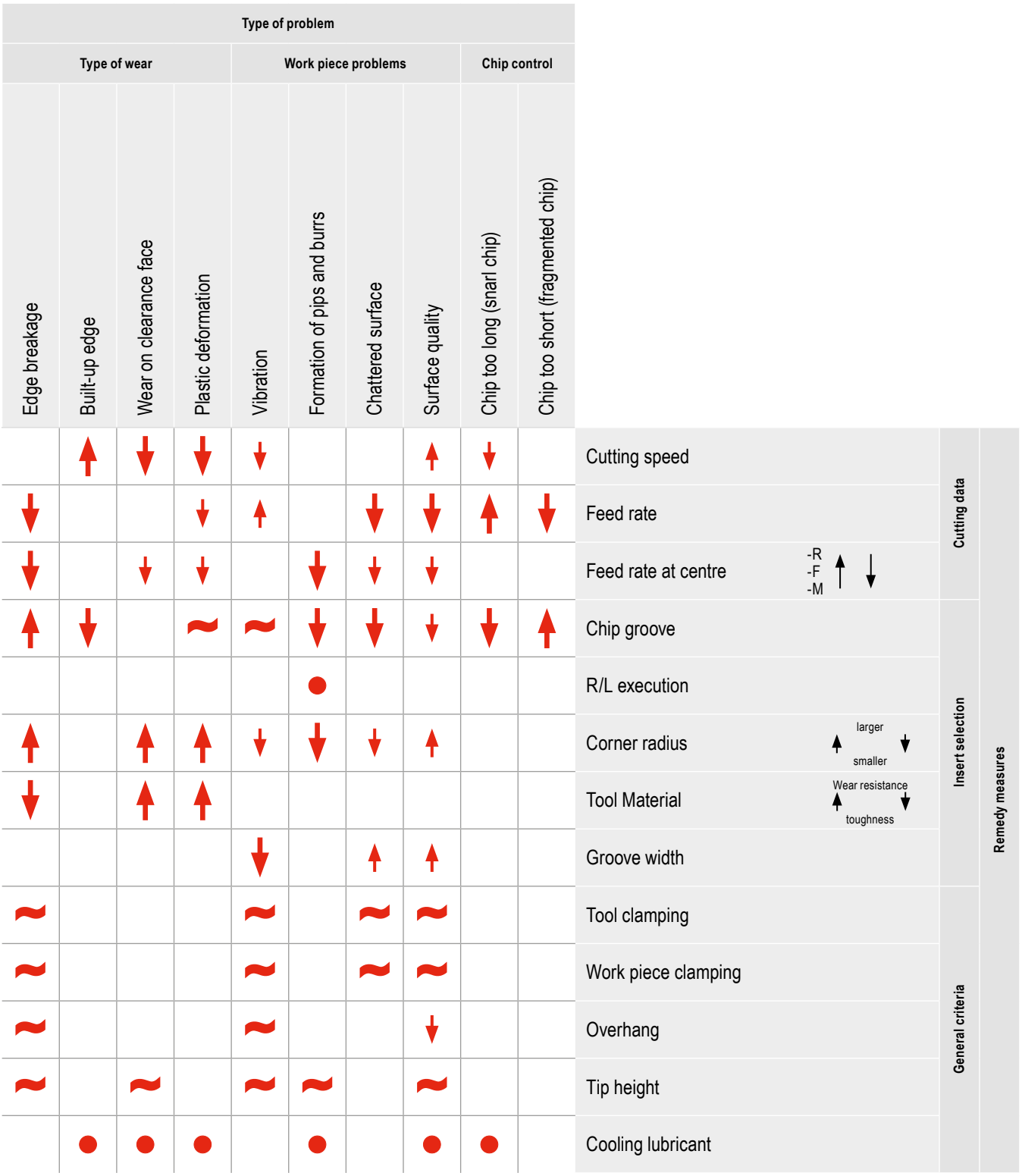
When grooving with an axial displacement the width „a“ should amount to at least 70 % of the grooving width „CW“.



When grooving oblique surfaces the feed should be reduced by approx. 20–50 % until fully engaged.

11

Trouble shooting guide for grooving FX/SX/GX/LX



raise, increase large influence

raise, increase small influence

avoid, reduce large influence

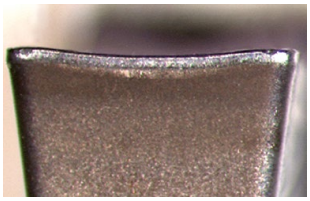
avoid, reduce small influence

check, optimize

use

Wear causes

Wear on clearance face



Abrasion on the flank, normal wear after a given operation time.

Cause

- ▲ cutting speed too high
- ▲ grade with too low wear resistance
- ▲ insufficient coolant

Remedy

- ▲ Reduce the cutting speed
- ▲ select a more wear resistant grade
- ▲ Improve/check coolant feed

Edge chipping



Excessive mechanical stress on the cutting edge causing carbide particles to break out.

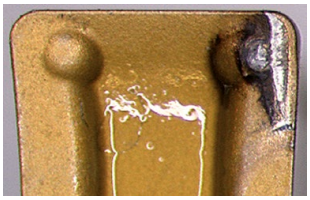
Cause

- ▲ too hard grade
- ▲ vibration
- ▲ too high feed and depth of cut
- ▲ chip impact

Remedy

- ▲ use tougher grade
- ▲ use negative geometry with chip breaker
- ▲ reduce overhang, check center height
- ▲ stabilize the cutting edge

Cratering



The outgoing hot chip causes cratering of the insert on the clamping surface.

Cause

- ▲ too high cutting speed, feed, or both
- ▲ too low rake angle
- ▲ grade with too low wear resistance
- ▲ incorrectly supplied cooling

Remedy

- ▲ Reduce cutting speed and / or feed
- ▲ Check coolant flow and / or increase pressure
- ▲ Use harder grade

Plastic deformation



Large mechanical load produces high temperature machining, this can lead to plastic deformation.

Cause

- ▲ too high operating temperature, thus softening the base material
- ▲ unsuitable grade
- ▲ inadequate coolant supply

Remedy

- ▲ Reduce the cutting speed
- ▲ select a more wear resistant grade
- ▲ use coolant

Built-up edge



Weld deposits of material on the cutting edge occurs when the chip does not flow caused by low average temperature.

Cause

- ▲ too low cutting speed
- ▲ too low rake angle
- ▲ Incorrect grade
- ▲ lack of cooling / lubrication

Remedy

- ▲ Increase the cutting speed
- ▲ Increase rake angle
- ▲ Use TiN coating
- ▲ increase coolant strength

Notch wear



Contraction at maximum cutting depth.

Cause

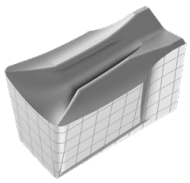
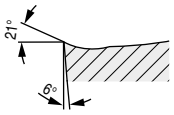
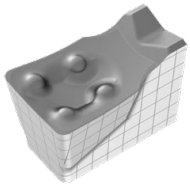
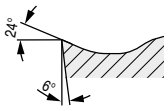
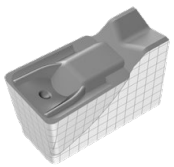
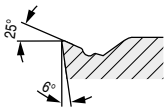
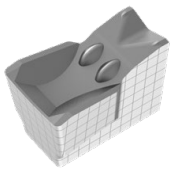
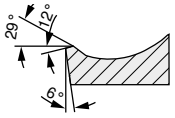
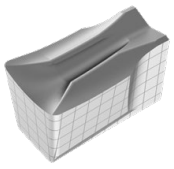
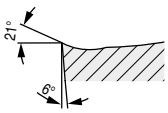
- ▲ Oxidation at the cutting edge
- ▲ Too high a temperature at the edge

Remedy

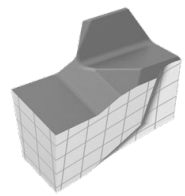
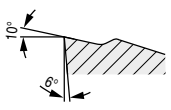
- ▲ Use different cutting depths
- ▲ Reduce cutting speed
- ▲ Improve/check coolant feed

Chip breakers / Applications

System GX

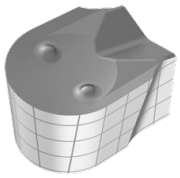
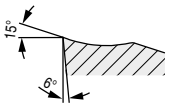
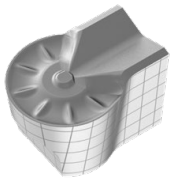
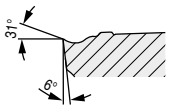
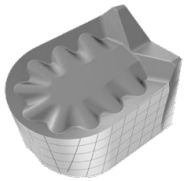
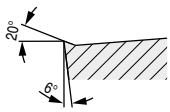
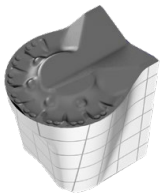
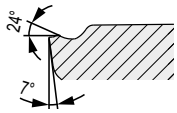
		Smooth cut	irregular cut	interrupted cut	Model	Feed f
-F2 ▲ very positive geometry ▲ honed cutting edge ▲ low feed rates ▲ low cutting forces ▲ first choice for stainless materials		**CTCP325** **CTP1340** **CTCP325** **CTP1340** CTCP325 CTP1340	**CTP1340** **CTP1340/CTPP345** **CTP1340** **CTP1340** CTP1340	**CTPP345** **CTPP345** CTPP345 		.002–.006 inch/rev 0.05–0.15 mm/rev
-Standard / -E ▲ positive geometry ▲ low-medium feed rates ▲ low cutting forces ▲ universal application ▲ first choice for axial grooving		**CTCP325** **CTP1340** **CTCP325** **CTP1340** CTCP325 CTP1340	**CTCP335/CTP1340** **CTP1340/CTPP345** **CTCP335/CTP1340** **CTP1340** CTP1340	**CTPP345** **CTPP345** CTP1340 CTPP345 		.002–.007 inch/rev 0.05–0.17 mm/rev
-M40 ▲ stable geometry ▲ medium feed rates ▲ universal application ▲ good chip control		**CTCP325** **CTP1340** **CTCP325** **CTP1340** CTCP325 CTP1340	**CTP1340** **CTP1340/CTPP345** **CTCP325/CTP1340** **CTP1340** CTP1340	**CTPP345** **CTPP345** CTP1340 CTPP345 		.003–.008 inch/rev 0.075–0.20 mm/rev
-M1 ▲ very stable cutting edge ▲ medium-high feed rates ▲ for intterrupted cut ▲ for high tensile materials ▲ first choice for parting off		**CTCP325** **CTP1340** **CTCP325** **CTP1340** CTCP325 CTP1340	**CTP1340** **CTP1340/CTPP345** **CTCP325/CTP1340** **CTP1340** CTP1340	**CTPP345** **CTPP345** CTP1340 CTPP345 		.004–.008 inch/rev 0.1–0.20 mm/rev
-27P ▲ very positive geometry ▲ ground periphery ▲ sharp cutting edge ▲ polished chip breaker ▲ first choice for non-ferrous metals		 **H216T** **H216T** H216T H216T	 **H216T** **H216T** H216T 	 **H216T** **H216T** 		.002–.010 inch/rev 0.05–0.25 mm/rev

Circlip grooving

Standard ▲ positive geometry ▲ honed cuttign edge ▲ low feed rates ▲ small corner radius ▲ Circlip grooves		**CTP1340** **CTP1340** **CTP1340** CTP1340 **CTP1340** CTP1340	**CTP1340** **CTP1340** **CTP1340** CTP1340 **CTP1340** CTP1340	CTP1340 CTP1340 CTP1340 CTP1340 CTP1340 		.002–.012 inch/rev 0.05–0.30 mm/rev

Chip breakers / Applications

System GX

		Smooth cut	irregular cut	interrupted cut	Model	Feed f
Standard – Radius ▲ positive geometry ▲ honed cutting edge ▲ low-medium feed rates ▲ low cutting forces ▲ Radius grooving/copy turning		**CTCP325** **CTP1340** **CTCP325** **CTP1340** CTCP325 CTP1340	**CTCP325/CTP1340** **CTP1340** **CTCP325/CTP1340** **CTP1340** CTP1340	CTP1340 CTP1340 CTP1340 		.0018–.008 inch/rev 0.05–0.20 mm/rev
-M3 – Radius ▲ stable geometry ▲ medium-high feed rates ▲ high surface quality ▲ Radius grooving/copy turning		**CTCP325** CTCP335 **CTCP325** CTCP325 CTCP325 	**CTCP325/CTCP335** CTCP335 **CTCP325/CTCP335** 	**CTCP335** **CTCP335** 		.003–.008 inch/rev 0.07–0.20 mm/rev
-27P – Radius ▲ very positive geometry ▲ ground periphery ▲ sharp cutting edge ▲ polished chip breaker ▲ first choice for non-ferrous metals		 **H216T** **H216T** H216T H216T	 **H216T** **H216T** H216T 	 **H216T** **H216T** 		.002–.012 inch/rev 0.05–0.30 mm/rev
-M33 ▲ Radius grooving & copy turning ▲ Finishing geometry ▲ Specially for tough and ductile steels ▲ Low - medium feed rates ▲ High surface quality		**CTCP325** CTCP325 **CTCP325** 	**CTCP325** CTCP325 **CTCP325** 	CTCP325 CTCP325 CTCP325 		.002–.008 inch/rev 0.05–0.20 mm/rev

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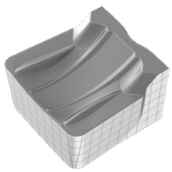
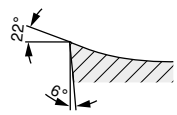
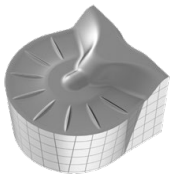
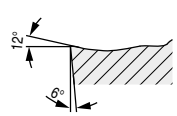
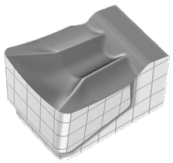
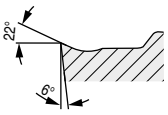
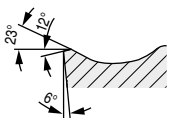
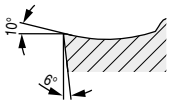
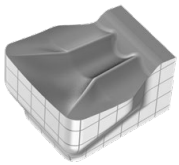
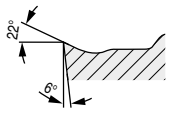
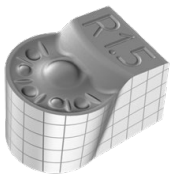
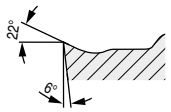
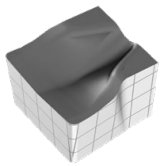
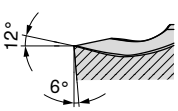
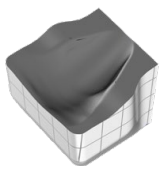
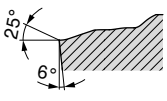
System LX

		Smooth cut	irregular cut	interrupted cut	Model	Feed f
-M2 ▲ stable geometry ▲ medium feed rates ▲ universal application ▲ good chip control		**CTCP325** CTCP335 **CTCP325** **CTP1340** CTCP325 CTP1340	**CTCP335/CTP1340** **CTP1340** **CTCP325** **CTP1340** CTP1340	**CTCP335** CTP1340 **CTCP335** CTP1340 		.008–.020 inch/rev 0.20–0.50 mm/rev
-M3 – Radius ▲ stable geometry ▲ medium-high feed rates ▲ high surface quality ▲ Radius grooving/copy turning		**CTCP325** CTCP335 **CTCP325** **CTP1340** CTCP325 CTP1340	**CTCP335/CTP1340** **CTCP335/CTP1340** **CTCP325/CTCP335** **CTP1340** CTP1340	**CTCP335** CTP1340 **CTCP335** CTP1340 		.002–.014 inch/rev 0.15–0.35 mm/rev

Chip breakers / Applications

System SX

		Smooth cut ○	irregular cut ◔	interrupted cut ◌	Model	Feed f
-F2 ▲ very positive geometry ▲ honed cutting edge ▲ low feed rates ▲ low cutting forces ▲ first choice for stainless materials		**CTCP325** **CTP1340** **CTCP325** **CTP1340** CTCP325 CTP1340	**CTCP325/CTP1340** **CTP1340/CTPP345** **CTCP325/CTP1340** **CTP1340** CTP1340	**CTPP345** **CTPP345** **CTP1340** CTPP345 CTP1340		.002–.006 inch/rev 0.05–0.15 mm/rev
-M1 ▲ very stable cutting edge ▲ medium-high feed rates ▲ for intterrupted cut ▲ for high tensile materials ▲ first choice for parting off		CTCP325 **CTP1340** **CTCP325** **CTP1340** CTCP325 CTP1340	CTCP335/CTP1340 **CTP1340** **CTCP325/CTP1340** **CTP1340** CTP1340	CTPP345 **CTPP345** CTP1340 CTPP345 CTP1340		.004–.008 inch/rev 0.10–0.20 mm/rev
-M2 ▲ stable geometry ▲ medium feed rates ▲ universal application ▲ good chip control		CTCP325 **CTP1340** **CTCP325** **CTP1340** CTCP325 CTP1340	CTCP335/CTP1340 **CTP1340** **CTCP325/CTP1340** **CTP1340** CTP1340	CTPP345 **CTPP345** CTP1340 CTPP345 CTP1340		.003–.008 inch/rev 0.075–0.20 mm/rev
-27P ▲ very positive geometry ▲ ground periphery ▲ sharp cutting edge ▲ polished chip breaker ▲ first choice for non-ferrous metals		 **H216T** **H216T** H216T H216T	 **H216T** **H216T** H216T 	 **H216T** **H216T** 		.002–.010 inch/rev 0.05–0.25 mm/rev
-M3 – Radius ▲ stable geometry ▲ medium-high feed rates ▲ high surface quality ▲ Radius grooving / Copy turning		**CTCP335** **CTP1340** **CTCP335** **CTP1340** CTP1340	**CTCP335/CTP1340** **CTP1340** **CTCP335/CTP1340** **CTP1340** CTP1340	**CTP1340** **CTP1340** **CTP1340** CTP1340 		.002–.008 inch/rev 0.05–0.20 mm/rev
-M7 ▲ Grooving & parting off ▲ First choice for steel ▲ Medium – high feed rates ▲ Good chip control ▲ Positive geometry		**CTP1340** **CTP1340** **CTP1340** CTP1340 **CTP1340** CTP1340	**CTP1340** **CTP1340** **CTP1340** CTP1340 CTP1340 CTP1340	 		.004–.008 inch/rev 0.10–0.20 mm/rev
-M8 ▲ Grooving & parting off ▲ Ground cutting edge ▲ Good chip control ▲ First choice for stainless steel ▲ Low feeds		**CTP1340** **CTP1340** **CTP1340** CTP1340 **CTP1340** CTP1340	**CTP1340** **CTP1340** **CTP1340** CTP1340 CTP1340 CTP1340	 		.001–.006 inch/rev 0.03–0.15 mm/rev

Example of Coding Grooving Tools

Grooving insert

GX	24	2	E	3.00	N	0.30
Grooving system (GX)	Insert length (24 mm / .945 inch)	Width class of the holder / module or support surface (2 mm / .0787 inch)	Type of insert, application	Groove width (3.0 mm / .118 inch)	Insert seat N = Neutral L = Left R = Right	Corner radius size (0.3 mm / .012 inch)

Module

E	25	R	21	GX	24	2
Application E = External I = Internal	Size (25 mm / .984 inch)	Module version R = Right L = Left	Maximum groove depth (21 mm / .827 inch)	Grooving system (GX)	Insert length (24 mm / .945 inch)	Width class 2

Basic holder (mm)

E	25	R	00	2525	L
Application E = External I = Internal	Size 25 mm	Holder version R = Right L = Left	Approach angle 0°	Shank type 25x25mm	Shank length L = (see ISO)

Basic holder (inch)

E	25	R	00	16	E
Application E = External I = Internal	Size .984 inch (25 mm)	Holder version R = Right L = Left	Approach angle 0°	Shank height 16/16's or 1.00 inch	Combination metric-inch E = end F = front EF = end+front

Monobloc tool holder (mm)

E	25	R	00	21	S3	2525	X	S	DC	GX24
Application E = External I = Internal	Size 25 mm	Holder version R = Right L = Left	Approach angle 0°	Groove depth (21 mm)	Groove width (3.0 mm)	Shank type 25x25 mm	Shank length X = (see ISO)	Insert clamping S = Key	Cooling system DC = DirectCooling	Grooving system

Monobloc tool holder (inch)

E	25	R	00	21	16	D	GX24	2	E
Application E = External I = Internal	Size .984 inch (25 mm)	Holder version R = Right L = Left	Approach angle 0°	Groove depth .827 inch (21 mm)	Shank height 16/16's or 1.00 inch	Tool length D = 6.000 inch	Grooving system	Width class 2	Combination metric-inch E = end F = front EF = end+front



Grooving insert

GX 24-2 E3.00 N 0.30



Module

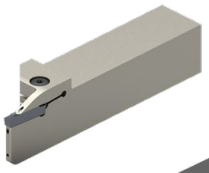
E25 R 21-GX 24-2

Basic holder (mm)

E25 R 00 - 2525L

Basic holder (inch)

E25 R 00-16-E



Monobloc tool holder (mm)

E25 R 0021S3-2525X-S-DC-GX24



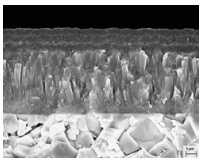
Monobloc tool holder (inch)

E25 R 0021-16D-GX24-2-E

11

Grade description

CTCP325

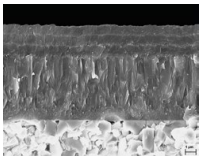


ISO | **P25** | M20 | **K30** | S25

Specifications:
Composition: Co 7.0%; mixed carbide 8.1%; WC balance | grain size: 1-2 µm Hardness: HV_{30} 1470 |
Layer system: CVD TiCN-Al_2O_3 Multilayer

Recommended use:
The wear-resistant solution for steel and cast iron materials at high cutting speeds

CTCP335

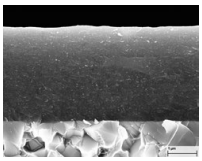


ISO | **P35** | M30 | **K35**

Specifications:
Composition: Co 10.5%; mixed carbide 1.9%; WC balance | grain size: 1 µm | Hardness: HV_{30} 1370 |
Layer system: CVD TiCN-Al_2O_3 Multilayer

Recommended use:
The reliable choice for machining steel and cast iron materials.

CTP1340

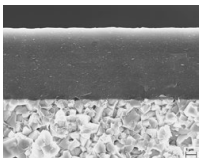


ISO | **P30** | **K30** | N30 | **S30** | O30

Specifications:
Composition: Co 9.0%; mixed carbide 0.75%; WC balance | grain size: 0.7–1 µm | Hardness: HV_{30} 1590 |
Layer system: PVD TiAlTaN

Recommended use:
The universal high-performance grade for steels, austenitic steel, cast iron materials and heat-resistant alloys

CTPP345

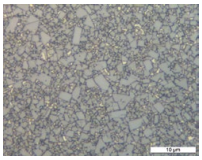


ISO | **P45** | **M40** | S40

Specifications:
Composition: Co 12.5%; mixed carbide 2.0%; WC balance | grain size: 1-1.5 µm | Hardness: HV_{30} 1350 | Layer system: PVD TiAlTaN

Recommended use:
The reliable solution for steel and austenitic steels in unstable conditions.

H216T

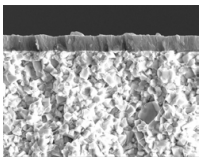


ISO | **K15** | **N15** | S15 | O10

Specification:
Composition: Co 6.0%; WC balance | Grain size: 1 µm | Hardness: HV_{30} 1630

Recommended application:
The uncoated carbide grade for the machining of aluminium and other non-ferrous metals

CWX500



ISO | **P30** | **M30** | **K35** | **N35** | **S15** | H05 | **O10**

Specification:
Composition: Co 10.0%; Others 0.7 %, WC balance | Grain size: 1 µm | Hardness: HV_{30} 1660

Recommended application:
The universal carbide grade for almost all materials

Application

Grade designation		ISO application range	Steel	Stainless steel	Cast iron	Non-ferrous metals	Heat-resistant	Tempered steel	Non-metal materials
		01 05 10 15 20 25 30 35 40 45 50	P	M	K	N	S	H	O
Grooving									
CTCP325	DRAGONSKIN		●	○	●		○		
CTCP335	DRAGONSKIN		●	○	●				
CTPP345	DRAGONSKIN		●	●			○		
CTP1340	DRAGONSKIN		●	●	●	○	●		○
H216T					●	●	○		○

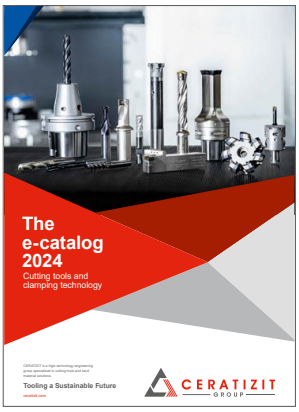
● **Main Application**
○ Extended application

wear-resistant v_c+ ⟷ v_c– tough

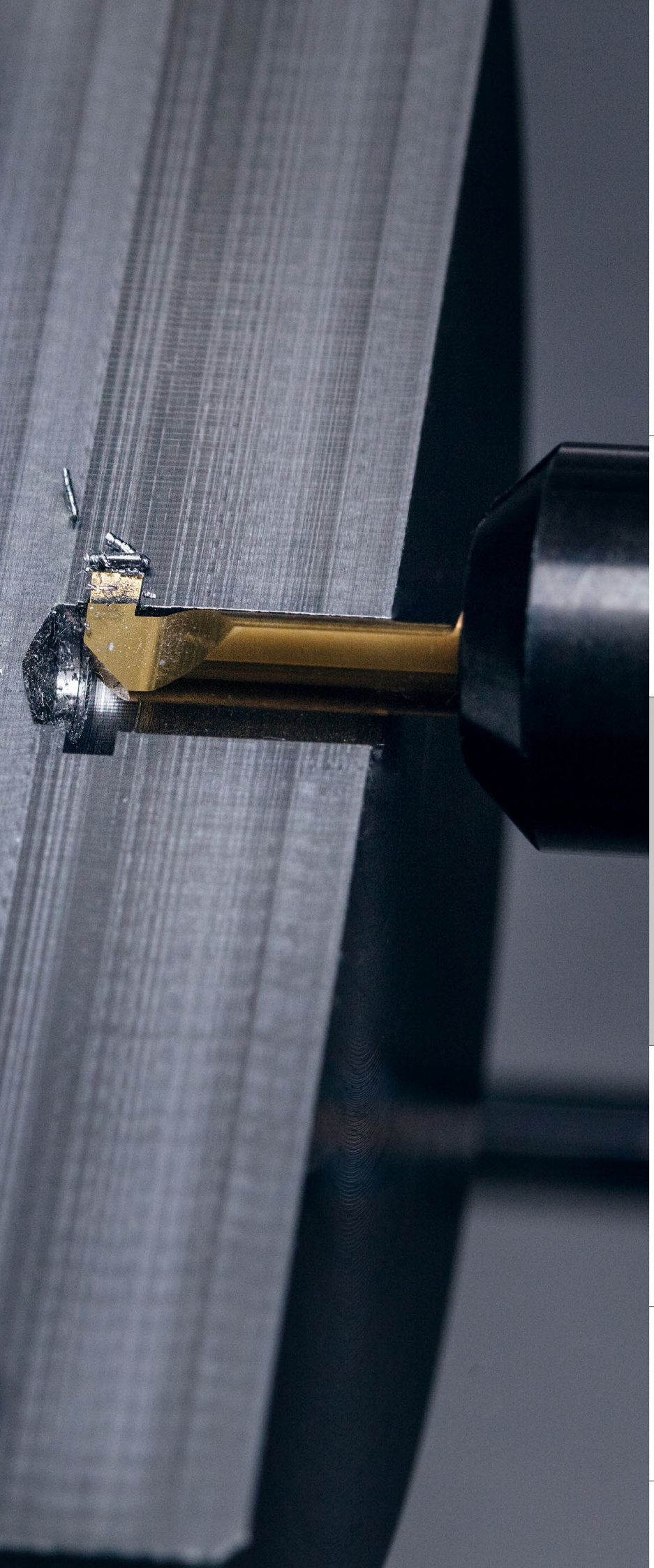
11

Metric Products

The entire content of this chapter can be found
in the Metric Catalog.
Use the QR code or the link shown below.



https://cutting.tools/us/en/digitalcatalogmetric



Solid drilling and bore machining	Metric Catalog	HSS drilling	1
	Metric Catalog	Solid carbide drilling	2
		Indexable drilling	3
		Reaming and Countersinking	4
		Indexable Boring	5
Threading	Metric Catalog	Taps and thread formers	6
	Metric Catalog	Circular and Thread Milling	7
	Metric Catalog	Thread turning	8
Turning		Indexable Turning	9
		Multifunction	10
		Parting and Grooving	11
	Metric Catalog	Miniature turning tools	12
Milling	Metric Catalog	HSS Milling Cutters	13
		Solid Milling	14
		Indexable Milling	15
Clamping technology		Adaptors and Accessories	16
	Metric Catalog	Workpiece clamping	17
		Material examples and article no. Index	18

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System overview	5
Toolfinder	4+5
Product programme	
UltraMini	6–34
MiniCut	35–53
UltraMini + MiniCut Hard Turning	10+36
SlotCut – Broaching	54–57
Technical Information	
Cutting Data	58–61
Broaching – Recommendations for Correct Use	62
Symbol explanation, coatings and thread types	63

WNT \ Performance

Premium quality tools for high performance.

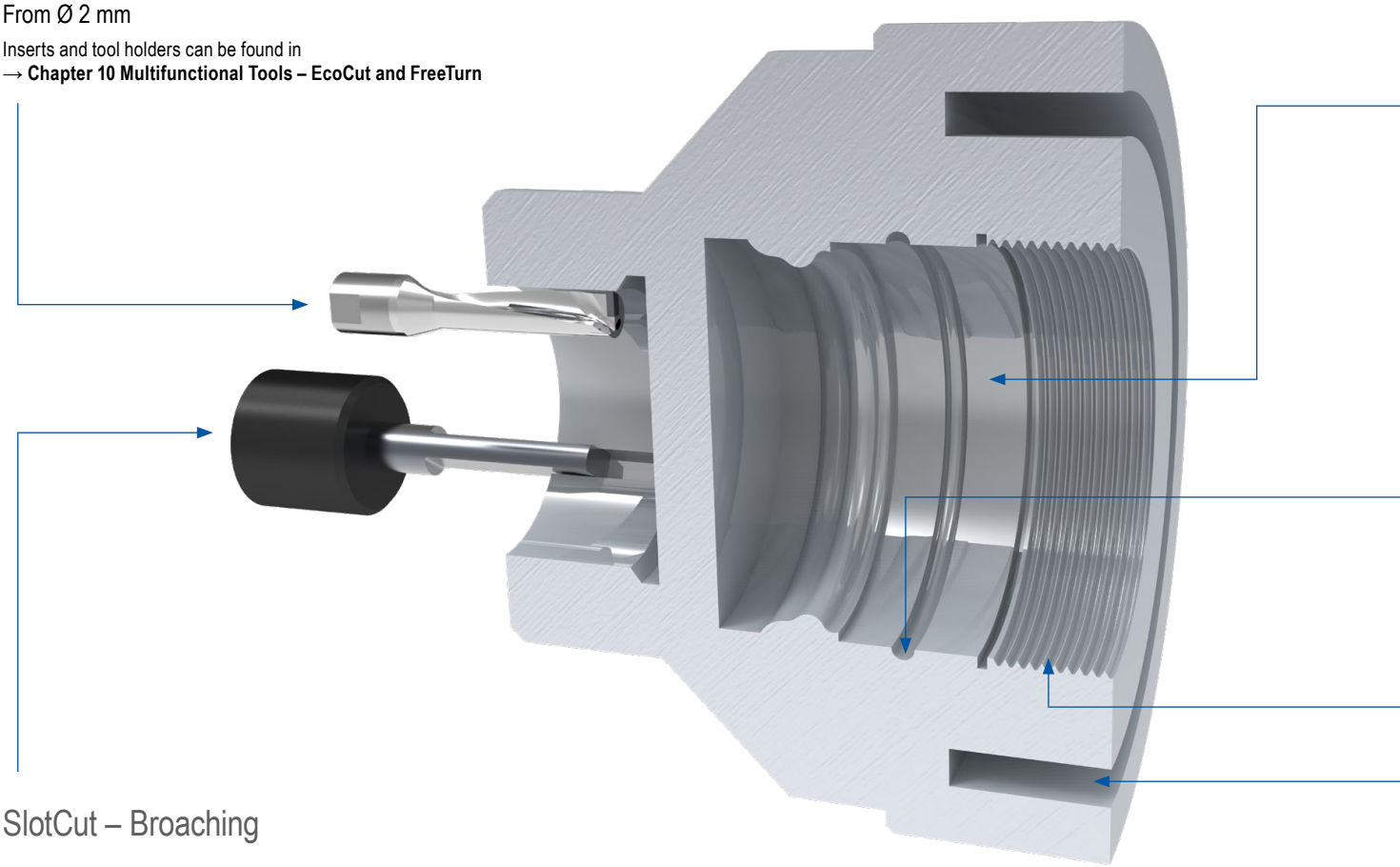
The premium quality tools from the **WNT Performance** product line have been designed for specific applications and are distinguished by their outstanding performance. If you make high demands on the performance of your production and want to achieve the very best results, we recommend the Premium tools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

Toolfinder

EcoCut Mini

From Ø 2 mm

Inserts and tool holders can be found in
→ **Chapter 10 Multifunctional Tools – EcoCut and FreeTurn**



SlotCut – Broaching

Inserts + Holder DIN138 54–57

Symbol explanation

 Internal machining

 Internal grooving

 Internal thread turning

 Axial machining

System overview

UltraMini



- ▲ from Ø 0.5 mm
- ▲ flexible system
- ▲ ground inserts
- ▲ high repeatability
- ▲ coolant supply to the cutting edge

MiniCut



- ▲ from Ø 7.8 mm
- ▲ stable three-rib interface
- ▲ easy handling
- ▲ coolant supply to the cutting edge
- ▲ precise cutting edge position

SlotCut



- ▲ broaching directly on the machine
- ▲ usable from Ø 6 mm
- ▲ low machine load
- ▲ variety of tolerance classes

		UltraMini									MiniCut				
Hole diameter (mm)		**≥ 0,5**	**≥ 2**	**≥ 2,4**	**≥ 2,8**	**≥ 3**	**≥ 4**	**≥ 5**	**≥ 6**	**≥ 8**	**≥ 16**	**≥ 8**	**≥ 9**	**≥ 11**	**≥ 14**	**≥ 16**
Internal turning and profiling		6–9	6–9	6–9	6–9		6–9	6–9	6–9			35	35	35	35	35
Internal turning and profiling – hard turning			10		10		10	10	10			36		36	36	36
High-feed turning			11			11	11	11	11							
Internal turning					12		12	12				37	37	37	37	37
Back boring						13	13	13	13			38	38	38	38	
Turning and chamfering								14	14			38	38	38	38	
Pre-parting and chamfering							14	14	14			39	39	39	39	39
Internal Undercuts			18		18		18	18	18			42	42	42	42	42
Groove turning			15–17			15–17	15–17	15–17	15–17			40+41	40+41	40+41	40+41	40+41
Groove and profile turning							19	19	19			43	43	43	43	43
Internal thread turning				20–22			20–22	20–22	20–22			44–47	44–47	44–47	44–47	44–47
Axial grooving								23–28	23–28	23–28	23–28	48+49	48+49	48+49	48+49	48+49
suitable holder		31–34										50–53				
Sets		29+30														

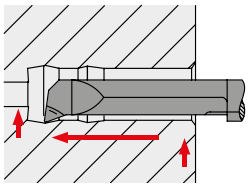
12

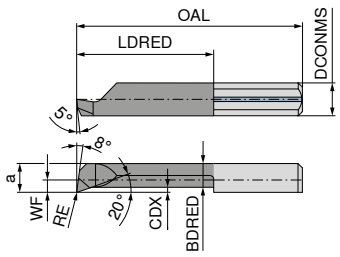
UltraMini – Inserts for internal turning and profiling

▲ CDX = Maximum depth of cut when turning outwards









Illustrations show right-hand versions

TiN	TiN	TiAlN	TiAlN
			
Left-hand	Right-hand	Left-hand	Right-hand
73 005 ...	**73 004 ...**	**73 005 ...**	**73 004 ...**

ISO designation	DCONMS h6	WF	DMIN	a	OAL	LDRED	CDX	BDRED	RE				
	mm	mm	mm	mm	mm	mm	mm	mm	mm				
R/L 050.05-2	4		0,5	0,4	20	2	0,03	0,32	0,02	**500**	**500**		
R/L 050.06-2	4		0,6	0,5	20	2	0,05	0,40	0,04	**510**	**510**		
R/L 050.06-3	4		0,6	0,5	20	3	0,05	0,40	0,04	**511**	**511**		
R/L 050.08-4	4		0,8	0,7	20	4	0,05	0,60	0,04			**812**	**812**
R/L 050.1-8	4		1,0	0,9	22	8	0,10	0,75	0,05			**813**	**813**
R/L 050.15-5	4		1,5	1,3	19	5	0,10	1,15	0,05	**515**	**515**		
R/L 050.15-10	4		1,5	1,3	24	10	0,10	1,15	0,05	**516**	**516**		
R/L 050.15-12	4		1,5	1,3	26	12	0,10	1,15	0,05			**818**	**818**
R/L 050.2-5	4		2,0	1,7	19	5	0,10	1,50	0,05	**520**	**520**		
R/L 050.2-10	4		2,0	1,7	24	10	0,10	1,50	0,05	**521**	**521**		
R/L 050.2-15	4		2,0	1,7	29	15	0,10	1,50	0,05	**522**	**522**		
R/L 050.3-10	4	0,6	2,8	2,6	24	10	0,20	2,30	0,10	**531**	**531**		
R/L 050.3-16	4	0,6	2,8	2,6	30	16	0,20	2,30	0,10	**530**	**530**		
R/L 050.3-20	4	0,6	2,8	2,6	34	20	0,20	2,30	0,10	**532**	**532**		
R/L 050.35-10	4	1,1	3,5	3,1	24	10	0,25	2,80	0,10			**835**	**835**
R/L 050.35-16	4	1,1	3,5	3,1	30	16	0,25	2,80	0,10			**836**	**836**
R/L 050.35-20	4	1,1	3,5	3,1	34	20	0,25	2,80	0,10			**837**	**837**
R/L 050.35-24	4	1,1	3,5	3,1	38	24	0,25	2,80	0,10			**838**	**838**
R/L 050.4-10	4	1,5	4,0	3,5	24	10	0,30	3,00	0,10	**541**	**541**	**841**	**841**
R/L 050.4-16	4	1,5	4,0	3,5	30	16	0,30	3,00	0,10	**540**	**540**	**840**	**840**
R/L 050.4-20	4	1,5	4,0	3,5	34	20	0,30	3,00	0,10	**542**	**542**	**842**	**842**
R/L 050.4-24	4	1,5	4,0	3,5	38	24	0,30	3,00	0,10	**545**	**545**	**845**	**845**
R/L 050.4-28	4	1,5	4,0	3,5	42	28	0,30	3,00	0,10	**546**	**546**	**846**	**846**
R/L 050.5-10	5	1,9	5,0	4,4	25	10	0,50	3,80	0,15	**551**	**551**	**851**	**851**
R/L 050.5-15	5	1,9	5,0	4,4	30	15	0,50	3,80	0,15	**552**	**552**	**852**	**852**
R/L 050.5-20	5	1,9	5,0	4,4	35	20	0,50	3,80	0,15	**550**	**550**	**850**	**850**
R/L 050.5-25	5	1,9	5,0	4,4	40	25	0,50	3,80	0,15	**553**	**553**	**853**	**853**
R/L 050.5-30	5	1,9	5,0	4,4	45	30	0,50	3,80	0,15	**554**	**554**	**854**	**854**
R/L 050.5-35	5	1,9	5,0	4,4	50	35	0,50	3,80	0,15	**556**	**556**	**856**	**856**
R/L 050.5-40	5	1,9	5,0	4,4	55	40	0,50	3,80	0,15			**857**	**857**
R/L 050.6-15	6	2,3	6,0	5,3	30	15	0,50	4,50	0,15	**561**	**561**	**861**	**861**
R/L 050.6-22	6	2,3	6,0	5,3	37	22	0,50	4,50	0,15	**560**	**560**	**860**	**860**
R/L 050.6-25	6	2,3	6,0	5,3	40	25	0,50	4,50	0,15	**562**	**562**	**862**	**862**
R/L 050.6-30	6	2,3	6,0	5,3	45	30	0,50	4,50	0,15	**563**	**563**	**863**	**863**
R/L 050.6-35	6	2,3	6,0	5,3	50	35	0,50	4,50	0,15	**564**	**564**	**864**	**864**
R/L 050.6-42	6	2,3	6,0	5,3	57	42	0,50	4,50	0,15	**565**	**565**	**865**	**865**
R/L 050.7-20	7	2,8	6,8	6,3	35	20	0,60	5,50	0,15	**572**	**572**	**872**	**872**
R/L 050.7-25	7	2,8	6,8	6,3	40	25	0,60	5,50	0,15	**573**	**573**	**873**	**873**
R/L 050.7-30	7	2,8	6,8	6,3	45	30	0,60	5,50	0,15	**574**	**574**	**874**	**874**
R/L 050.7-35	7	2,8	7,0	6,3	50	35	0,60	5,50	0,15	**575**	**575**	**875**	**875**
R/L 050.7-40	7	2,8	7,0	6,3	55	40	0,60	5,50	0,15	**576**	**576**	**876**	**876**
R/L 050.7-45	7	2,8	7,0	6,3	60	45	0,60	5,50	0,15	**577**	**577**	**877**	**877**
R/L 050.7-50	7	2,8	7,0	6,3	65	50	0,60	5,50	0,15	**578**	**578**	**878**	**878**

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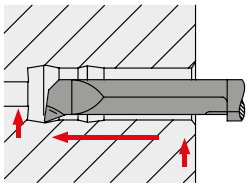
→ v_c Page 59

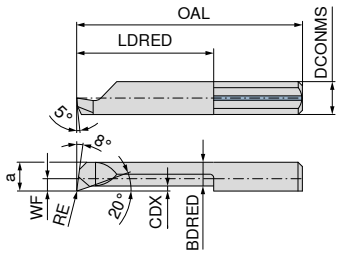
UltraMini – Inserts for internal turning and profiling

▲ CDX = Maximum depth of cut when turning outwards













	K10F	K10F
	Left-hand	Right-hand
	73 005 ...	**73 004 ...**

ISO designation	DCONMS $_{h6}$	WF	DMIN	a	OAL	LDRED	CDX	BDRED	RE		
	mm	mm	mm	mm	mm	mm	mm	mm	mm		
R/L 050.2-5	4		2,0	1,7	19	5	0,1	1,5	0,05	**020**	**020**
R/L 050.2-10	4		2,0	1,7	24	10	0,1	1,5	0,05	**021**	**021**
R/L 050.2-15	4		2,0	1,7	29	15	0,1	1,5	0,05	**022**	**022**
R/L 050.3-10	4	0,6	2,8	2,6	24	10	0,2	2,3	0,10	**031**	**031**
R/L 050.3-16	4	0,6	2,8	2,6	30	16	0,2	2,3	0,10	**030**	**030**
R/L 050.3-20	4	0,6	2,8	2,6	34	20	0,2	2,3	0,10	**032**	**032**
R/L 050.4-10	4	1,5	4,0	3,5	24	10	0,3	3,0	0,10	**041**	**041**
R/L 050.4-16	4	1,5	4,0	3,5	30	16	0,3	3,0	0,10	**040**	**040**
R/L 050.4-20	4	1,5	4,0	3,5	34	20	0,3	3,0	0,10	**042**	**042**
R/L 050.5-10	5	1,9	5,0	4,4	25	10	0,5	3,8	0,15	**051**	**051**
R/L 050.5-15	5	1,9	5,0	4,4	30	15	0,5	3,8	0,15	**052**	**052**
R/L 050.5-20	5	1,9	5,0	4,4	35	20	0,5	3,8	0,15	**050**	**050**
R/L 050.5-25	5	1,9	5,0	4,4	40	25	0,5	3,8	0,15	**053**	**053**
R 050.5-30	5	1,9	5,0	4,4	45	30	0,5	3,8	0,05		**054**
L 050.5-30	5	1,9	5,0	4,4	45	30	0,5	3,8	0,15	**054**	
R/L 050.6-15	6	2,3	6,0	5,3	30	15	0,5	4,5	0,15	**061**	**061**
R/L 050.6-22	6	2,3	6,0	5,3	37	22	0,5	4,5	0,15	**060**	**060**
R/L 050.6-25	6	2,3	6,0	5,3	40	25	0,5	4,5	0,15	**062**	**062**
R/L 050.6-30	6	2,3	6,0	5,3	45	30	0,5	4,5	0,15	**063**	**063**
R/L 050.7-20	7	2,8	6,8	6,3	35	20	0,6	5,5	0,15	**072**	**072**
R/L 050.7-25	7	2,8	6,8	6,3	40	25	0,6	5,5	0,15	**073**	**073**
R/L 050.7-30	7	2,8	6,8	6,3	45	30	0,6	5,5	0,15	**074**	**074**

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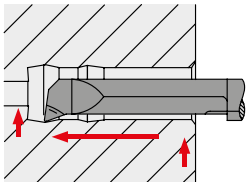
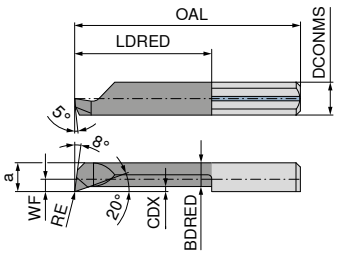
UltraMini – Inserts for internal turning and profiling

▲ with corner radius ≤ 0.05 mm
▲ CDX = Maximum depth of cut when turning outwards









Illustrations show right-hand versions



										Left-hand	Right-hand	Left-hand	Right-hand
										73 021 ...	**73 020 ...**	**73 023 ...**	**73 022 ...**
ISO designation	DCONMS $_{h6}$	WF	DMIN	a	OAL	LDRED	CDX	BDRED	RE				
	mm	mm	mm	mm	mm	mm	mm	mm	mm				
R/L 053.3-10	4	0,6	2,8	2,6	24	10	0,2	2,3	0,03	**310**	**310**		
R/L 053.3-16	4	0,6	2,8	2,6	30	16	0,2	2,3	0,03	**316**	**316**		
R/L 053.3-20	4	0,6	2,8	2,6	34	20	0,2	2,3	0,03	**320**	**320**		
R/L 053.4-10	4	1,5	4,0	3,5	24	10	0,3	3,0	0,03	**410**	**410**		
R/L 053.4-16	4	1,5	4,0	3,5	30	16	0,3	3,0	0,03	**416**	**416**		
R/L 053.4-20	4	1,5	4,0	3,5	34	20	0,3	3,0	0,03	**420**	**420**		
R/L 053.4-24	4	1,5	4,0	3,5	38	24	0,3	3,0	0,03	**424**	**424**		
R/L 053.4-28	4	1,5	4,0	3,5	42	28	0,3	3,0	0,03	**428**	**428**		
R/L 055.2-10	4		2,0	1,7	24	10	0,1	1,5	0,05			**210**	**210**
R/L 055.2-15	4		2,0	1,7	29	15	0,1	1,5	0,05			**215**	**215**
R/L 055.2-5	4		2,0	1,7	19	5	0,1	1,5	0,05			**205**	**205**
R/L 055.3-10	4	0,6	2,8	2,6	24	10	0,2	2,3	0,05			**310**	**310**
R/L 055.3-16	4	0,6	2,8	2,6	30	16	0,2	2,3	0,05			**316**	**316**
R/L 055.3-20	4	0,6	2,8	2,6	34	20	0,2	2,3	0,05			**320**	**320**
R/L 055.4-10	4	1,5	4,0	3,5	24	10	0,3	3,0	0,05			**410**	**410**
R/L 055.4-16	4	1,5	4,0	3,5	30	16	0,3	3,0	0,05			**416**	**416**
R/L 055.4-20	4	1,5	4,0	3,5	34	20	0,3	3,0	0,05			**420**	**420**
R/L 055.4-24	4	1,5	4,0	3,5	38	24	0,3	3,0	0,05			**424**	**424**
R/L 055.4-28	4	1,5	4,0	3,5	42	28	0,3	3,0	0,05			**428**	**428**
R/L 055.5-10	5	1,9	5,0	4,4	25	10	0,5	3,8	0,05			**510**	**510**
R/L 055.5-15	5	1,9	5,0	4,4	30	15	0,5	3,8	0,05			**515**	**515**
R/L 055.5-20	5	1,9	5,0	4,4	35	20	0,5	3,8	0,05			**520**	**520**
R/L 055.5-25	5	1,9	5,0	4,4	40	25	0,5	3,8	0,05			**525**	**525**
R/L 055.5-30	5	1,9	5,0	4,4	45	30	0,5	3,8	0,05			**530**	**530**
R/L 055.5-35	5	1,9	5,0	4,4	50	35	0,5	3,8	0,05			**535**	**535**
R/L 055.6-15	6	2,3	6,0	5,3	30	15	0,5	4,5	0,05			**615**	**615**
R/L 055.6-22	6	2,3	6,0	5,3	37	22	0,5	4,5	0,05			**622**	**622**
R/L 055.6-25	6	2,3	6,0	5,3	40	25	0,5	4,5	0,05			**625**	**625**
R/L 055.6-30	6	2,3	6,0	5,3	45	30	0,5	4,5	0,05			**630**	**630**
R/L 055.6-35	6	2,3	6,0	5,3	50	35	0,5	4,5	0,05			**635**	**635**
R/L 055.6-42	6	2,3	6,0	5,3	57	42	0,5	4,5	0,05			**642**	**642**
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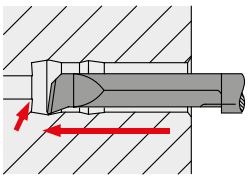
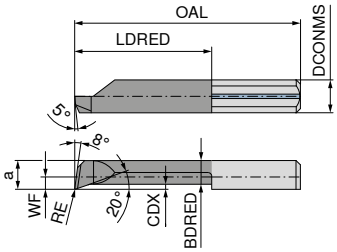
UltraMini – Inserts for internal turning and profiling

▲ with chip former
▲ CDX = Maximum depth of cut when turning outwards









Illustrations show right-hand versions

TiAlN



TiAlN



ISO designation	DCONMS $_{h6}$	WF	DMIN	a	OAL	LDRED	CDX	BDRED	RE	Left-hand	Right-hand
	mm	mm	mm	mm	mm	mm	mm	mm	mm	**73 017 ...**	**73 016 ...**
R/L 050.4-10C	4	1,5	4	3,5	24	10	0,3	3,0	0,2	**410**	**410**
R/L 050.4-16C	4	1,5	4	3,5	30	16	0,3	3,0	0,2	**416**	**416**
R/L 050.4-20C	4	1,5	4	3,5	34	20	0,3	3,0	0,2	**420**	**420**
R/L 050.4-24C	4	1,5	4	3,5	38	24	0,3	3,0	0,2	**424**	**424**
R/L 050.4-28C	4	1,5	4	3,5	42	28	0,3	3,0	0,2	**428**	**428**
R/L 050.5-10C	5	1,9	5	4,4	25	10	0,5	3,8	0,2	**510**	**510**
R/L 050.5-15C	5	1,9	5	4,4	30	15	0,5	3,8	0,2	**515**	**515**
R/L 050.5-20C	5	1,9	5	4,4	35	20	0,5	3,8	0,2	**520**	**520**
R/L 050.5-25C	5	1,9	5	4,4	40	25	0,5	3,8	0,2	**525**	**525**
R/L 050.5-30C	5	1,9	5	4,4	45	30	0,5	3,8	0,2	**530**	**530**
R/L 050.5-35C	5	1,9	5	4,4	50	35	0,5	3,8	0,2	**535**	**535**
R/L 050.6-15C	6	2,3	6	5,3	30	15	0,5	4,5	0,2	**615**	**615**
R/L 050.6-22C	6	2,3	6	5,3	37	22	0,5	4,5	0,2	**622**	**622**
R/L 050.6-25C	6	2,3	6	5,3	40	25	0,5	4,5	0,2	**625**	**625**
R/L 050.6-30C	6	2,3	6	5,3	45	30	0,5	4,5	0,2	**630**	**630**
R/L 050.6-35C	6	2,3	6	5,3	50	35	0,5	4,5	0,2	**635**	**635**
R/L 050.6-42C	6	2,3	6	5,3	57	42	0,5	4,5	0,2	**642**	**642**
R/L 050.7-20C	7	2,8	7	6,3	35	20	0,6	5,5	0,2	**720**	**720**
R/L 050.7-25C	7	2,8	7	6,3	40	25	0,6	5,5	0,2	**725**	**725**
R/L 050.7-30C	7	2,8	7	6,3	45	30	0,6	5,5	0,2	**730**	**730**
R/L 050.7-35C	7	2,8	7	6,3	50	35	0,6	5,5	0,2	**735**	**735**
R/L 050.7-40C	7	2,8	7	6,3	55	40	0,6	5,5	0,2	**740**	**740**
R/L 050.7-45C	7	2,8	7	6,3	60	45	0,6	5,5	0,2	**745**	**745**
R/L 050.7-50C	7	2,8	7	6,3	65	50	0,6	5,5	0,2	**750**	**750**

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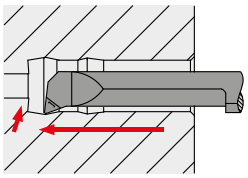
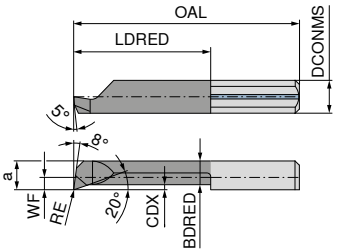
UltraMini – Inserts for internal turning and profiling – hard turning

▲ 46 to 65 HRC
▲ CDX = Maximum depth of cut when turning outwards









Illustrations show right-hand versions

TiAlN+



Left-hand

TiAlN+



Right-hand

ISO designation	DCONMS h6	WF	DMIN	a	OAL	LDRED	CDX	BDRED	RE	73 025 ...	73 024 ...
	mm	mm	mm	mm	mm	mm	mm	mm	mm		
R/L 050.2-5	4		2,0	1,7	19	5	0,1	1,5	0,05	920	920
R/L 050.2-10	4		2,0	1,7	24	10	0,1	1,5	0,05	921	921
R/L 050.2-15	4		2,0	1,7	29	15	0,1	1,5	0,05	922	922
R/L 050.3-10	4	0,6	2,8	2,6	24	10	0,2	2,3	0,10	931	931
R/L 050.3-16	4	0,6	2,8	2,6	30	16	0,2	2,3	0,10	930	930
R/L 050.3-20	4	0,6	2,8	2,6	34	20	0,2	2,3	0,10	932	932
R/L 050.4-10	4	1,5	4,0	3,5	24	10	0,3	3,0	0,10	941	941
R/L 050.4-16	4	1,5	4,0	3,5	30	16	0,3	3,0	0,10	940	940
R/L 050.4-20	4	1,5	4,0	3,5	34	20	0,3	3,0	0,10	942	942
R/L 050.4-24	4	1,5	4,0	3,5	38	24	0,3	3,0	0,10	945	945
R/L 050.4-28	4	1,5	4,0	3,5	42	28	0,3	3,0	0,10	946	946
R/L 050.5-10	5	1,9	5,0	4,4	25	10	0,5	3,8	0,15	951	951
R/L 050.5-15	5	1,9	5,0	4,4	30	15	0,5	3,8	0,15	952	952
R/L 050.5-20	5	1,9	5,0	4,4	35	20	0,5	3,8	0,15	950	950
R/L 050.5-25	5	1,9	5,0	4,4	40	25	0,5	3,8	0,15	953	953
R/L 050.5-30	5	1,9	5,0	4,4	45	30	0,5	3,8	0,15	954	954
R/L 050.5-35	5	1,9	5,0	4,4	50	35	0,5	3,8	0,15	956	956
R/L 050.6-15	6	2,3	6,0	5,3	30	15	0,5	4,5	0,15	961	961
R/L 050.6-22	6	2,3	6,0	5,3	37	22	0,5	4,5	0,15	960	960
R/L 050.6-25	6	2,3	6,0	5,3	40	25	0,5	4,5	0,15	962	962
R/L 050.6-30	6	2,3	6,0	5,3	45	30	0,5	4,5	0,15	963	963
R/L 050.6-35	6	2,3	6,0	5,3	50	35	0,5	4,5	0,15	964	964
R/L 050.6-42	6	2,3	6,0	5,3	57	42	0,5	4,5	0,15	965	965
R/L 050.7-20	7	2,8	6,8	6,3	35	20	0,6	5,5	0,15	972	972
R/L 050.7-25	7	2,8	6,8	6,3	40	25	0,6	5,5	0,15	973	973
R/L 050.7-30	7	2,8	6,8	6,3	45	30	0,6	5,5	0,15	974	974
R/L 050.7-35	7	2,8	6,8	6,3	50	35	0,6	5,5	0,15	975	975
R/L 050.7-40	7	2,8	6,8	6,3	55	40	0,6	5,5	0,15	976	976
R/L 050.7-45	7	2,8	6,8	6,3	60	45	0,6	5,5	0,15	977	977
R/L 050.7-50	7	2,8	6,8	6,3	65	50	0,6	5,5	0,15	978	978
P										○	○
M										○	○
K										○	○
N										○	○
S										○	○
H										●	●
O										○	○

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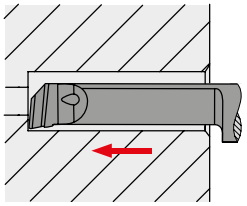
Machining with cooling is recommended.

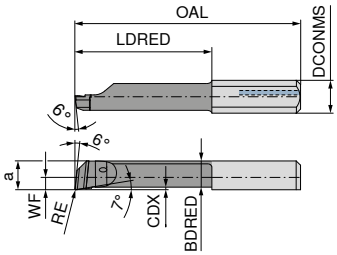
UltraMini – Inserts for internal turning

▲ with chip former
▲ High-feed internal turning
▲ CDX = Maximum depth of cut when turning outwards









Illustrations show right-hand versions

DPX77S
DRAGONSKIN



Left-hand

DPX77S
DRAGONSKIN



Right-hand

ISO designation	DCONMS $_{h6}$	WF	DMIN	a	OAL	LDRED	CDX	BDRED	RE	73 001 ...	73 000 ...
	mm	mm	mm	mm	mm	mm	mm	mm	mm		
R/L X050.1-5	4		1,0	0,90	20	5	0,03	0,85	0,05	121	121
R/L X050.15-7	4		1,5	1,35	22	7	0,05	1,25	0,10	233	233
R/L X050.2-5	4		2,0	1,80	19	5	0,10	1,60	0,15	245	245
R/L X050.2-10	4		2,0	1,80	24	10	0,10	1,60	0,05	215	215
R/L X050.2-10	4		2,0	1,80	24	10	0,10	1,60	0,15	241	241
R/L X050.3-10	4	0,7	3,0	2,70	24	10	0,15	2,55	0,05	341	341
R/L X050.3-10	4	0,7	3,0	2,70	24	10	0,15	2,55	0,20	347	347
R/L X050.3-16	4	0,7	3,0	2,70	30	16	0,15	2,55	0,05	371	371
R/L X050.3-16	4	0,7	3,0	2,70	30	16	0,15	2,55	0,10	373	373
R/L X050.3-16	4	0,7	3,0	2,70	30	16	0,15	2,55	0,20	377	377
R/L X050.4-10	4	1,6	4,0	3,60	24	10	0,20	3,20	0,10	403	403
R/L X050.4-10	4	1,6	4,0	3,60	24	10	0,20	3,20	0,20	407	407
R/L X050.4-16	4	1,6	4,0	3,60	30	16	0,20	3,20	0,05	431	431
R/L X050.4-16	4	1,6	4,0	3,60	30	16	0,20	3,20	0,10	433	433
R/L X050.4-16	4	1,6	4,0	3,60	30	16	0,20	3,20	0,20	437	437
R/L X050.4-24	4	1,6	4,0	3,60	38	24	0,20	3,20	0,10	463	463
R/L X050.4-24	4	1,6	4,0	3,60	38	24	0,20	3,20	0,20	467	467
R/L X050.5-15	5	2,1	5,0	4,60	30	15	0,30	4,05	0,05	511	511
R/L X050.5-15	5	2,1	5,0	4,60	30	15	0,30	4,05	0,10	513	513
R/L X050.5-15	5	2,1	5,0	4,60	30	15	0,30	4,05	0,20	517	517
R/L X050.5-25	5	2,1	5,0	4,60	40	25	0,30	4,05	0,10	543	543
R/L X050.5-25	5	2,1	5,0	4,60	40	25	0,30	4,05	0,20	547	547
R/L X050.5-30	5	2,1	5,0	4,60	45	30	0,30	4,05	0,10	553	553
R/L X050.5-30	5	2,1	5,0	4,60	45	30	0,30	4,05	0,20	557	557
R/L X050.6-15	6	2,5	6,0	5,50	30	15	0,40	4,90	0,05	611	611
R/L X050.6-15	6	2,5	6,0	5,50	30	15	0,40	4,90	0,10	613	613
R/L X050.6-15	6	2,5	6,0	5,50	30	15	0,40	4,90	0,20	617	617
R/L X050.6-22	6	2,5	6,0	5,50	37	22	0,40	4,90	0,20	637	637
R/L X050.6-30	6	2,5	6,0	5,50	45	30	0,40	4,90	0,20	657	657
R/L X050.6-35	6	2,5	6,0	5,50	50	35	0,40	4,90	0,20	667	667
R/L X050.6-50	6	2,5	6,0	5,50	65	50	0,40	4,90	0,20	697	697
R/L X050.7-25	7	3,0	7,0	6,50	40	25	0,50	5,90	0,20	747	747
R/L X050.7-30	7	3,0	7,0	6,50	45	30	0,50	5,90	0,20	757	757

P	●	●
M	●	●
K	●	●
N	○	○
S	○	○
H	○	○
O	○	○

→ v_c Page 60+61

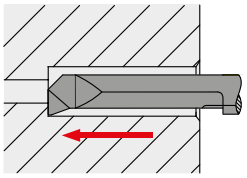
12

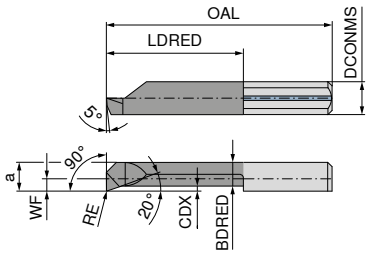
UltraMini – Inserts for internal turning

▲ CDX = Maximum depth of cut when turning outwards









Illustrations show right-hand versions

TiN



Left-hand

TiN



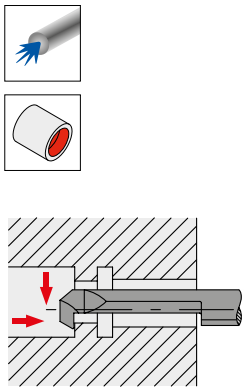
Right-hand

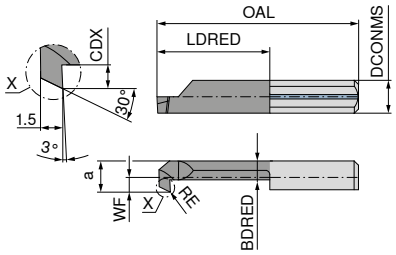
ISO designation	DCONMS h6	WF	DMIN	a	OAL	LDRED	CDX	BDRED	RE	73 015 ...	73 014 ...
	mm	mm	mm	mm	mm	mm	mm	mm	mm		
R/L 090.3-10	4	0,6	2,8	2,6	24	10	0,2	2,3	0,2	**541**	**541**
R/L 090.3-16	4	0,6	2,8	2,6	30	16	0,2	2,3	0,2	**542**	**542**
R/L 090.4-10	4	1,5	4,0	3,5	24	10	0,3	3,0	0,2	**545**	**545**
R/L 090.4-16	4	1,5	4,0	3,5	30	16	0,3	3,0	0,2	**546**	**546**
R/L 090.5-10	5	1,9	5,0	4,4	25	10	0,5	3,8	0,2	**550**	**550**
R/L 090.5-15	5	1,9	5,0	4,4	30	15	0,5	3,8	0,2	**551**	**551**
R/L 090.5-20	5	1,9	5,0	4,4	35	20	0,5	3,8	0,2	**552**	**552**
P										●	●
M										●	●
K										●	●
N										●	●
S										○	○
H										○	○
O										●	●

→ v_c Page 59

UltraMini – Inserts for back boring

▲ CDX = Maximum depth of cut when turning outwards





Illustrations show right-hand versions

TiN



Left-hand

TiN



Right-hand

ISO designation	DCONMS $_{h6}$ mm	WF mm	DMIN mm	a mm	OAL mm	LDRED mm	CDX mm	BDRED mm	RE mm	73 013 ...	73 012 ...
R/L 080.0003-15	4	0,6	3	2,6	29	15	0,5	2,0	0,10	542	542
R/L 080.0003-20	4	0,6	3	2,6	34	20	0,5	2,0	0,10	544	544
R/L 080.0004-15	4	1,5	4	3,5	29	15	0,8	2,4	0,15	546	546
R/L 080.0004-25	4	1,5	4	3,5	39	25	0,8	2,4	0,15	548	548
R/L 080.0005-20	5	1,9	5	4,4	35	20	1,0	3,3	0,20	554	554
R/L 080.0005-30	5	1,9	5	4,4	45	30	1,0	3,3	0,20	558	558
R/L 080.0006-20	6	2,3	6	5,3	35	20	1,8	3,4	0,20	564	564
R/L 080.0006-30	6	2,3	6	5,3	45	30	1,8	3,4	0,20	568	568
R/L 080.0007-20	7	2,7	7	6,3	35	20	2,5	3,8	0,20	574	574
R/L 080.0007-30	7	2,7	7	6,3	45	30	2,5	3,8	0,20	578	578
P										●	●
M										●	●
K										●	●
N										●	●
S										○	○
H										○	○
O										●	●

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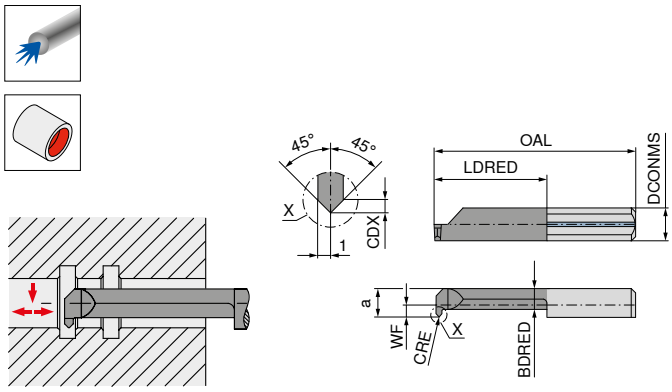
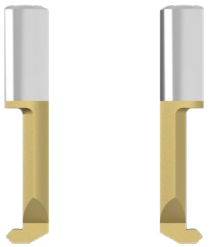
12

UltraMini – Inserts for internal turning and chamfering

▲ CDX = Maximum depth of cut when turning outwards



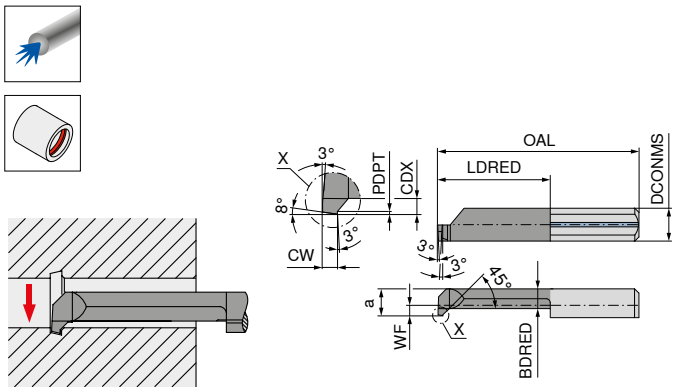
Illustrations show right-hand versions



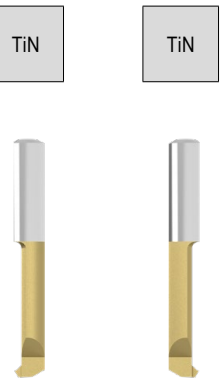
ISO designation	DCONMS h6	WF	DMIN	a	OAL	LDRED	CDX	BDRED	CRE	Left-hand	Right-hand
	mm	mm	mm	mm	mm	mm	mm	mm	mm	73 007 ...	73 006 ...
R/L 060.5-15	5	1,9	5,0	4,4	30	15	0,7	3,3	0,2	551	551
R/L 060.5-20	5	1,9	5,0	4,4	35	20	0,7	3,3	0,2	550	550
R/L 060.7-20	7	2,7	6,8	6,3	35	20	0,7	3,8	0,2	570	570
P										●	●
M										●	●
K										●	●
N										●	●
S										○	○
H										○	○
O										●	●

→ v_c Page 59

UltraMini – Inserts for internal chamfering for subsequent parting off



Illustrations show right-hand versions



ISO designation	DCONMS h6	WF	DMIN	a	OAL	LDRED	CDX	BDRED	CW	PDPT	Left-hand	Right-hand
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	73 009 ...	73 008 ...
R/L 070.4-10	4	1,5	4	3,5	25	10	0,8	2,4	1	0,2	410	410
R/L 070.4-16	4	1,5	4	3,5	30	16	0,8	2,4	1	0,2	416	416
R/L 070.5-15	5	1,9	5	4,4	30	15	1,0	3,3	1	0,2	551	551
R/L 070.5-20	5	1,9	5	4,4	35	20	1,0	3,3	1	0,2	550	550
R/L 070.5-30	5	1,9	5	4,4	45	30	1,0	3,3	1	0,2	530	530
R/L 070.6-30	6	2,3	6	5,3	45	30	1,0	4,2	1	0,2	630	630
R/L 070.6-42	6	2,3	6	5,3	57	42	1,0	4,2	1	0,2	642	642
P											●	●
M											●	●
K											●	●
N											●	●
S											○	○
H											○	○
O											●	●

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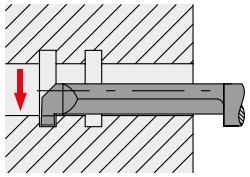
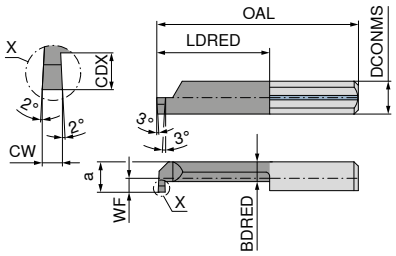
UltraMini – Inserts for Internal Grooving









Illustrations show right-hand versions





ISO designation	DCONMS h6	WF	DMIN	a	OAL	LDRED	CDX	BDRED	CW	Left-hand 73 003 ...	Right-hand 73 002 ...
	mm	mm	mm	mm	mm	mm	mm	mm	mm		
R/L 004.0100-10	4	1,5	4,0	3,5	24	10	0,8	2,4	1,0	540	540
R/L 004.0100-16	4	1,5	4,0	3,5	30	16	0,8	2,4	1,0	541	541
R/L 004.0100-20	4	1,5	4,0	3,5	34	20	0,8	2,4	1,0	542	542
R/L 005.0100-10	5	1,9	5,0	4,4	25	10	1,0	3,3	1,0	650	650
R/L 005.0150-10	5	1,9	5,0	4,4	25	10	1,0	3,3	1,5	654	654
R/L 005.0200-10	5	1,9	5,0	4,4	25	10	1,0	3,3	2,0	658	658
R/L 005.0100-15	5	1,9	5,0	4,4	30	15	1,0	3,3	1,0	651	651
R/L 005.0150-15	5	1,9	5,0	4,4	30	15	1,0	3,3	1,5	655	655
R/L 005.0200-15	5	1,9	5,0	4,4	30	15	1,0	3,3	2,0	659	659
R/L 005.0100-20	5	1,9	5,0	4,4	35	20	1,0	3,3	1,0	551	551
R/L 005.0150-20	5	1,9	5,0	4,4	35	20	1,0	3,3	1,5	552	552
R/L 005.0200-20	5	1,9	5,0	4,4	35	20	1,0	3,3	2,0	553	553
R/L 005.0100-25	5	1,9	5,0	4,4	40	25	1,0	3,3	1,0	652	652
R/L 005.0150-25	5	1,9	5,0	4,4	40	25	1,0	3,3	1,5	656	656
R/L 005.0200-25	5	1,9	5,0	4,4	40	25	1,0	3,3	2,0	750	750
R/L 005.0100-30	5	1,9	5,0	4,4	45	30	1,0	3,3	1,0	653	653
R/L 005.0150-30	5	1,9	5,0	4,4	45	30	1,0	3,3	1,5	657	657
R/L 005.0200-30	5	1,9	5,0	4,4	45	30	1,0	3,3	2,0	751	751
R/L 005.0100-35	5	1,9	5,0	4,4	50	35	1,0	3,3	1,0	680	680
R/L 006.0100-10	6	2,3	6,0	5,3	25	10	1,8	3,4	1,0	660	660
R/L 006.0150-10	6	2,3	6,0	5,3	25	10	1,8	3,4	1,5	664	664
R/L 006.0200-10	6	2,3	6,0	5,3	25	10	1,8	3,4	2,0	668	668
R/L 006.0100-15	6	2,3	6,0	5,3	30	15	1,8	3,4	1,0	661	661
R/L 006.0150-15	6	2,3	6,0	5,3	30	15	1,8	3,4	1,5	665	665
R/L 006.0200-15	6	2,3	6,0	5,3	30	15	1,8	3,4	2,0	669	669
R/L 006.0100-22	6	2,3	6,0	5,3	37	22	1,8	3,4	1,0	561	561
R/L 006.0150-22	6	2,3	6,0	5,3	37	22	1,8	3,4	1,5	562	562
R/L 006.0200-22	6	2,3	6,0	5,3	37	22	1,8	3,4	2,0	563	563
R/L 006.0100-25	6	2,3	6,0	5,3	40	25	1,8	3,4	1,0	662	662
R/L 006.0150-25	6	2,3	6,0	5,3	40	25	1,8	3,4	1,5	666	666
R/L 006.0200-25	6	2,3	6,0	5,3	40	25	1,8	3,4	2,0	760	760
R/L 006.0100-30	6	2,3	6,0	5,3	45	30	1,8	3,4	1,0	663	663
R/L 006.0150-30	6	2,3	6,0	5,3	45	30	1,8	3,4	1,5	667	667
R/L 006.0200-30	6	2,3	6,0	5,3	45	30	1,8	3,4	2,0	761	761
R/L 006.0100-35	6	2,3	6,0	5,3	50	35	1,8	3,4	1,0	682	682
R/L 006.0150-35	6	2,3	6,0	5,3	50	35	1,8	3,4	1,5	684	684
R/L 006.0100-42	6	2,3	6,0	5,3	57	42	1,8	3,4	1,0	685	685
R/L 007.0100-10	7	2,7	6,8	6,3	25	10	2,5	3,8	1,0	570	570
R/L 007.0150-10	7	2,7	6,8	6,3	25	10	2,5	3,8	1,5	575	575
R/L 007.0200-10	7	2,7	6,8	6,3	25	10	2,5	3,8	2,0	670	670
R/L 007.0100-15	7	2,7	6,8	6,3	30	15	2,5	3,8	1,0	571	571
R/L 007.0150-15	7	2,7	6,8	6,3	30	15	2,5	3,8	1,5	576	576
R/L 007.0200-15	7	2,7	6,8	6,3	30	15	2,5	3,8	2,0	671	671
R/L 007.0100-22	7	2,7	6,8	6,3	37	22	2,5	3,8	1,0	572	572
R/L 007.0150-22	7	2,7	6,8	6,3	37	22	2,5	3,8	1,5	577	577
R/L 007.0200-22	7	2,7	6,8	6,3	37	22	2,5	3,8	2,0	672	672
R/L 007.0100-25	7	2,7	6,8	6,3	40	25	2,5	3,8	1,0	573	573
R/L 007.0150-25	7	2,7	6,8	6,3	40	25	2,5	3,8	1,5	578	578
R/L 007.0200-25	7	2,7	6,8	6,3	40	25	2,5	3,8	2,0	673	673
R/L 007.0100-30	7	2,7	6,8	6,3	45	30	2,5	3,8	1,0	574	574
R/L 007.0150-30	7	2,7	6,8	6,3	45	30	2,5	3,8	1,5	579	579
R/L 007.0200-30	7	2,7	6,8	6,3	45	30	2,5	3,8	2,0	674	674
R/L 007.0100-35	7	2,7	7,0	6,3	50	35	2,5	3,8	1,0	688	688
R/L 007.0150-35	7	2,7	7,0	6,3	50	35	2,5	3,8	1,5	690	690
R/L 007.0200-35	7	2,7	7,0	6,3	50	35	2,5	3,8	2,0	692	692
R/L 007.0100-40	7	2,7	7,0	6,3	55	40	2,5	3,8	1,0	700	700
R/L 007.0150-40	7	2,7	7,0	6,3	55	40	2,5	3,8	1,5	702	702
R/L 007.0100-45	7	2,7	7,0	6,3	60	45	2,5	3,8	1,0	712	712
R/L 007.0100-50	7	2,7	7,0	6,3	65	50	2,5	3,8	1,0	714	714

P	●	●
M	●	●
K	●	●
N	●	●
S	○	○
H	○	○
O	●	●

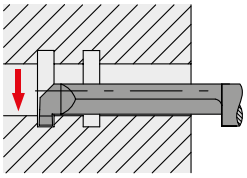
→ v_c Page 59

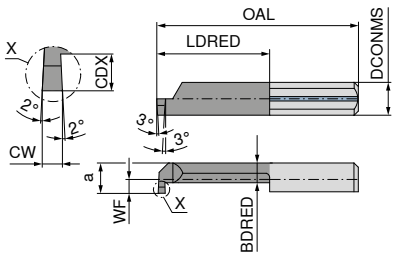
12

UltraMini – Inserts for Internal Grooving









Illustrations show right-hand versions

TiAlN



Left-hand

TiAlN



Right-hand

ISO designation	DCONMS h6 mm	WF mm	DMIN mm	a mm	OAL mm	LDRED mm	CDX mm	BDRED mm	CW mm	73 003 ...	73 002 ...
R/L 002.0050-5	4		2	1,8	19	5	0,4	1,2	0,5	**820**	**820**
R/L 002.0050-10	4		2	1,8	24	10	0,4	1,2	0,5	**821**	**821**
R/L 002.0050-15	4		2	1,8	29	15	0,4	1,2	0,5	**822**	**822**
R/L 003.0070-5	4	0,7	3	2,7	19	5	0,6	1,9	0,7	**830**	**830**
R/L 003.0070-10	4	0,7	3	2,7	24	10	0,6	1,9	0,7	**831**	**831**
R/L 003.0070-16	4	0,7	3	2,7	30	16	0,6	1,9	0,7	**832**	**832**
P										●	●
M										●	●
K										●	●
N										●	●
S										●	●
H										●	●
O										●	●

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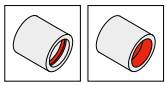
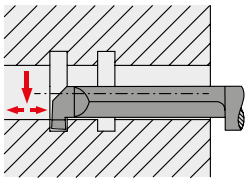
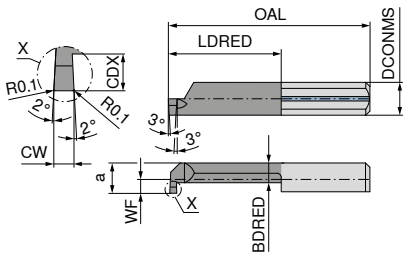
UltraMini – Inserts for Internal Grooving

▲ with corner radius
▲ CDX = Maximum depth of cut when turning outwards









Illustrations show right-hand versions

TiAlN



Left-hand

TiAlN



Right-hand

ISO designation	DCONMS h6	WF	DMIN	a	OAL	LDRED	CDX	BDRED	CW	73 203 ...	73 202 ...
	mm	mm	mm	mm	mm	mm	mm	mm	mm		
R/L 004M0100-10	4	1,5	4,0	3,5	24	10	0,8	2,4	1,0	800	800
R/L 004M0100-16	4	1,5	4,0	3,5	30	16	0,8	2,4	1,0	802	802
R/L 004M0100-20	4	1,5	4,0	3,5	34	20	0,8	2,4	1,0	804	804
R/L 005M0100-10	5	1,9	5,0	4,4	25	10	1,0	3,3	1,0	806	806
R/L 005M0150-10	5	1,9	5,0	4,4	25	10	1,0	3,3	1,5	816	816
R/L 005M0200-10	5	1,9	5,0	4,4	25	10	1,0	3,3	2,0	826	826
R/L 005M0100-15	5	1,9	5,0	4,4	30	15	1,0	3,3	1,0	808	808
R/L 005M0150-15	5	1,9	5,0	4,4	30	15	1,0	3,3	1,5	818	818
R/L 005M0200-15	5	1,9	5,0	4,4	30	15	1,0	3,3	2,0	828	828
R/L 005M0100-20	5	1,9	5,0	4,4	35	20	1,0	3,3	1,0	810	810
R/L 005M0150-20	5	1,9	5,0	4,4	35	20	1,0	3,3	1,5	820	820
R/L 005M0200-20	5	1,9	5,0	4,4	35	20	1,0	3,3	2,0	830	830
R/L 005M0100-25	5	1,9	5,0	4,4	40	25	1,0	3,3	1,0	812	812
R/L 005M0150-25	5	1,9	5,0	4,4	40	25	1,0	3,3	1,5	822	822
R/L 005M0200-25	5	1,9	5,0	4,4	40	25	1,0	3,3	2,0	832	832
R/L 005M0100-30	5	1,9	5,0	4,4	45	30	1,0	3,3	1,0	814	814
R/L 005M0150-30	5	1,9	5,0	4,4	45	30	1,0	3,3	1,5	824	824
R/L 005M0200-30	5	1,9	5,0	4,4	45	30	1,0	3,3	2,0	834	834
R/L 006M0100-10	6	2,3	6,0	5,3	25	10	1,8	3,4	1,0	836	836
R/L 006M0150-10	6	2,3	6,0	5,3	25	10	1,8	3,4	1,5	846	846
R/L 006M0200-10	6	2,3	6,0	5,3	25	10	1,8	3,4	2,0	856	856
R/L 006M0100-15	6	2,3	6,0	5,3	30	15	1,8	3,4	1,0	838	838
R/L 006M0150-15	6	2,3	6,0	5,3	30	15	1,8	3,4	1,5	848	848
R/L 006M0200-15	6	2,3	6,0	5,3	30	15	1,8	3,4	2,0	858	858
R/L 006M0100-20	6	2,3	6,0	5,3	35	22	1,8	3,4	1,0	840	840
R/L 006M0150-20	6	2,3	6,0	5,3	37	22	1,8	3,4	1,5	850	850
R/L 006M0200-20	6	2,3	6,0	5,3	37	22	1,8	3,4	2,0	860	860
R/L 006M0100-25	6	2,3	6,0	5,3	40	25	1,8	3,4	1,0	842	842
R/L 006M0150-25	6	2,3	6,0	5,3	40	25	1,8	3,4	1,5	852	852
R/L 006M0200-25	6	2,3	6,0	5,3	40	25	1,8	3,4	2,0	862	862
R/L 006M0100-30	6	2,3	6,0	5,3	45	30	1,8	3,4	1,0	844	844
R/L 006M0150-30	6	2,3	6,0	5,3	45	30	1,8	3,4	1,5	854	854
R/L 006M0200-30	6	2,3	6,0	5,3	45	30	1,8	3,4	2,0	864	864
R/L 007M0100-10	7	2,7	6,8	6,3	25	10	2,5	3,7	1,0	866	866
R/L 007M0150-10	7	2,7	6,8	6,3	25	10	2,5	3,7	1,5	876	876
R/L 007M0200-10	7	2,7	6,8	6,3	25	10	2,5	3,7	2,0	886	886
R/L 007M0100-15	7	2,7	6,8	6,3	30	15	2,5	3,7	1,0	868	868
R/L 007M0150-15	7	2,7	6,8	6,3	30	15	2,5	3,7	1,5	878	878
R/L 007M0200-15	7	2,7	6,8	6,3	30	15	2,5	3,7	2,0	888	888
R/L 007M0100-22	7	2,7	6,8	6,3	37	22	2,5	3,7	1,0	870	870
R/L 007M0150-22	7	2,7	6,8	6,3	37	22	2,5	3,7	1,5	880	880
R/L 007M0200-22	7	2,7	6,8	6,3	37	22	2,5	3,7	2,0	890	890
R/L 007M0100-25	7	2,7	6,8	6,3	40	25	2,5	3,7	1,0	872	872
R/L 007M0150-25	7	2,7	6,8	6,3	40	25	2,5	3,7	1,5	882	882
R/L 007M0200-25	7	2,7	6,8	6,3	40	25	2,5	3,7	2,0	892	892
R/L 007M0100-30	7	2,7	6,8	6,3	45	30	2,5	3,7	1,0	874	874
R/L 007M0150-30	7	2,7	6,8	6,3	45	30	2,5	3,7	1,5	884	884
R/L 007M0200-30	7	2,7	6,8	6,3	45	30	2,5	3,7	2,0	894	894
P										●	●
M										●	●
K										●	●
N										●	●
S										●	●
H										●	●
O										●	●

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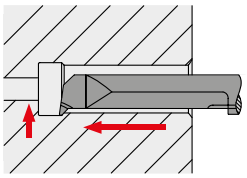
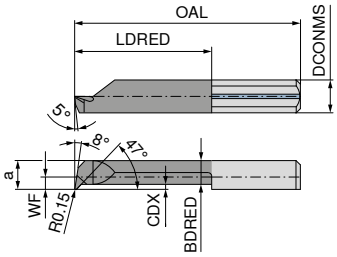
UltraMini – Inserts for internal undercuts

▲ CDX = Maximum depth of cut when turning outwards









Illustrations show right-hand versions

TiN	TiN	TiAlN	TiAlN
			
Left-hand	Right-hand	Left-hand	Right-hand
73 011 ...	**73 010 ...**	**73 011 ...**	**73 010 ...**

ISO designation	DCONMS h6	WF	DMIN	a	OAL	LDRED	CDX	BDRED				
	mm	mm	mm	mm	mm	mm	mm	mm				
R/L 047.2-10	4		2,0	1,7	24	10	0,4	1,2			**221**	**221**
R/L 047.3-15	4	0,6	2,8	2,6	29	15	0,6	1,9			**231**	**231**
R/L 047.4-10	4	1,5	4,0	3,5	24	10	0,6	2,8			**241**	**241**
R/L 047.T4-20	4	1,5	4,0	3,5	34	20	0,6	2,8			**242**	**242**
R/L 047.4-20	4	1,5	4,0	3,5	34	20	0,3	3,0	**542**	**542**		
R/L 047.5-15	5	1,9	5,0	4,4	30	15	0,8	3,5			**251**	**251**
R/L 047.T5-25	5	1,9	5,0	4,4	40	25	0,8	3,5			**252**	**252**
R/L 047.5-25	5	1,9	5,0	4,4	40	25	0,5	3,8	**552**	**552**		
R/L 047.T6-22	6	2,3	6,0	5,3	37	22	1,8	3,4			**262**	**262**
R/L 047.T6-30	6	2,3	6,0	5,3	45	30	1,8	3,4			**263**	**263**
R/L 047.6-30	6	2,3	6,0	5,3	45	30	0,5	4,5	**562**	**562**		

P	●	●	●	●
M	●	●	●	●
K	●	●	●	●
N	●	●	●	●
S	○	○	●	●
H	○	○	●	●
O	●	●	●	●

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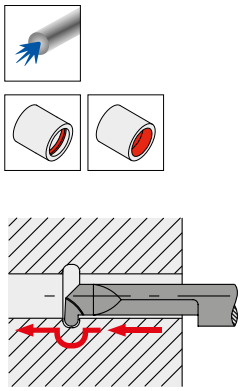
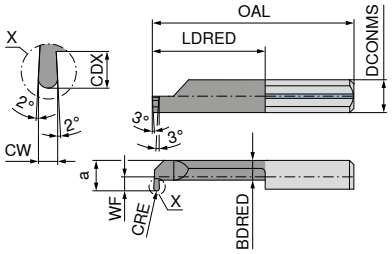
UltraMini – Inserts for internal grooving and turning

▲ CDX = Maximum depth of cut when turning outwards





Illustrations show right-hand versions

TiN



Left-hand

TiN



Right-hand

ISO designation	DCONMS h6 mm	WF mm	DMIN mm	a mm	OAL mm	LDRED mm	CDX mm	BDRED mm	CW mm	CRE mm	73 019 ...	73 018 ...
R/L 006-0.75-25	6	2,3	6,0	5,3	40	25	1,8	3,4	1,5	0,75	**564**	**564**
R/L 004-0.50-16	4	1,5	4,0	3,5	30	16	0,8	2,4	1,0	0,50	**541**	**541**
R/L 005-0.50-20	5	1,9	5,0	4,4	35	20	1,0	3,3	1,0	0,50	**552**	**552**
R/L 005-0.75-20	5	1,9	5,0	4,4	35	20	1,0	3,3	1,5	0,75	**554**	**554**
R/L 005-1.00-20	5	1,9	5,0	4,4	35	20	1,0	3,3	2,0	1,00	**556**	**556**
R/L 006-0.50-25	6	2,3	6,0	5,3	40	25	1,8	3,4	1,0	0,50	**562**	**562**
R/L 006-1.00-25	6	2,3	6,0	5,3	40	25	1,8	3,4	2,0	1,00	**566**	**566**
R/L 007-0.50-30	7	2,7	6,8	6,3	45	30	2,5	3,8	1,0	0,50	**572**	**572**
R/L 007-0.75-30	7	2,7	6,8	6,3	45	30	2,5	3,8	1,5	0,75	**574**	**574**
R/L 007-1.00-30	7	2,7	6,8	6,3	45	30	2,5	3,8	2,0	1,00	**576**	**576**

P	●	●
M	●	●
K	●	●
N	●	●
S	○	○
H	○	○
O	●	●

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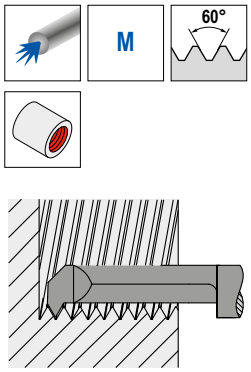
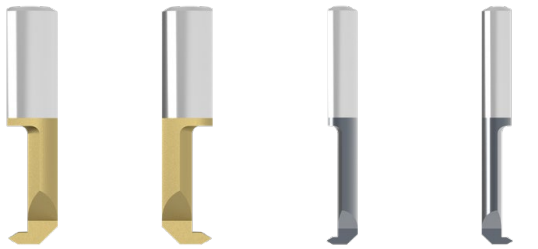
UltraMini – Inserts for internal threading (Partial profile)



Illustrations show right-hand versions



											Left-hand	Right-hand	Left-hand	Right-hand
											73 101 ...	**73 100 ...**	**73 101 ...**	**73 100 ...**
ISO designation	DCONMS	TP	WF	DMIN	a	OAL	LDRED	BDRED	PDPT	PDX				
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm				
R/L 003.0105-8	4	0,5 - 0,7	0,30	2,4	2,3	22	8	1,8	0,27	0,33			**551**	**551**
R/L 004.0408-15	4	0,8 - 1,0	1,75	4,0	3,5	30	15	2,4	0,43	0,45			**552**	**552**
R/L 005.0510-20	5	1,0 - 1,25	1,90	4,8	4,4	35	20	3,3	0,55	0,55	**544**	**544**		
R/L 005.0510-15	5	1,0 - 1,25	1,90	4,8	4,4	30	15	3,3	0,55	0,55	**545**	**545**		
R/L 006.0612-22	6	1,25 - 1,5	2,30	6,0	5,3	37	22	3,4	0,68	0,65	**546**	**546**		
R/L 006.0612-15	6	1,25 - 1,5	2,30	6,0	5,3	30	15	3,4	0,68	0,65	**547**	**547**		
R/L 006.0815-15	6	1,5 - 1,75	2,30	6,0	5,3	30	15	3,4	0,81	0,75	**549**	**549**		
R/L 006.0815-22	6	1,5 - 1,75	2,30	6,0	5,3	37	22	3,4	0,81	0,75	**548**	**548**		
R/L 007.0815-15	7	1,5 - 1,75	2,70	7,0	6,3	30	15	3,8	0,81	0,75	**550**	**550**		
P											●	●	●	●
M											●	●	●	●
K											●	●	●	●
N											●	●	●	●
S											○	○	●	●
H											○	○	●	●
O											●	●	●	●

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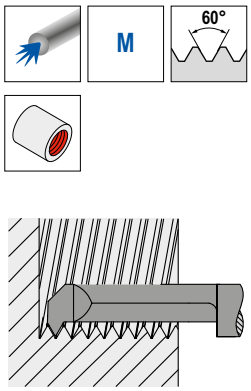
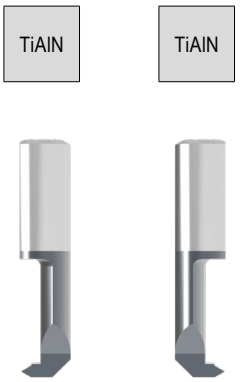
UltraMini – Inserts for Internal thread turning (Full profile)



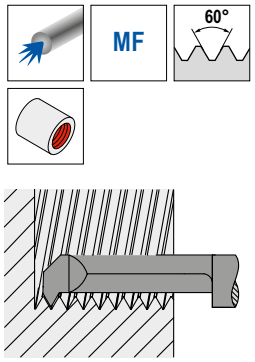
Illustrations show right-hand versions

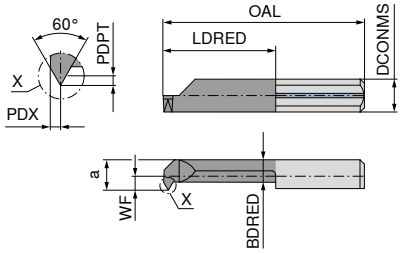


												Left-hand	Right-hand
												73 209 ...	**73 208 ...**
ISO designation	DCONMS	TP	WF	DMIN	a	OAL	LDRED	BDRED	PDPT	PDX	CW		
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm		
R/L 105.0408-15	5	0,80	1,9	4,8	4,4	30	15	3,3	0,43	0,50	0,10	**799**	**799**
R/L 105.510-15	5	1,00	1,9	4,8	4,4	30	15	3,3	0,54	0,55	0,12	**800**	**800**
R/L 106.612-15	6	1,25	2,3	6,0	5,3	30	15	3,4	0,67	0,65	0,15	**802**	**802**
R/L 106.815-15	6	1,50	2,3	6,0	5,3	30	15	3,4	0,81	0,75	0,18	**804**	**804**
R/L 106.815-15	7	1,50	2,7	7,0	6,3	30	15	3,8	0,81	0,75	0,18	**806**	**806**
P												●	●
M												●	●
K												●	●
N												●	●
S												●	●
H												●	●
O												●	●

→ v_c Page 59

UltraMini – Inserts for internal thread turning (Partial profile)





Illustrations show right-hand versions



ISO designation	DCONMS mm	TP mm	WF mm	DMIN mm	a mm	OAL mm	LDRED mm	BDRED mm	PDPT mm	PDX mm	Left-hand 73 103 ...	Right-hand 73 102 ...	Left-hand 73 103 ...	Right-hand 73 102 ...
R/L 004.0205-15	4	0,5 - 0,75	1,5	4,0	3,5	30	15	2,4	0,27	0,35	510	510		
R/L 004.0105-10	4	0,5 - 0,75	1,0	3,2	3,0	24	10	2,3	0,27	0,44			509	509
R/L 005.0205-15	5	0,5 - 0,75	1,9	5,0	4,4	30	15	3,3	0,27	0,35	539	539		
R/L 005.0205-20	5	0,5 - 0,75	1,9	5,0	4,4	35	20	3,3	0,27	0,35	540	540		
L 005.0407-15	5	0,75 - 1,0	1,9	5,0	4,4	30	15	3,3	0,40	0,45	541			
R 005.0407-15	5	0,75 - 1,0	1,9	5,0	4,4	30	15	3,3	0,40	0,45		541		
R/L 005.0407-20	5	0,75 - 1,0	1,9	5,0	4,4	35	20	3,3	0,40	0,45	542	542		
R/L 006.0510-22	6	1,0 - 1,25	2,3	6,0	5,3	37	22	3,4	0,55	0,55	544	544		
R/L 006.0510-15	6	1,0 - 1,25	2,3	6,0	5,3	30	15	3,4	0,55	0,55	543	543		
P											●	●	●	●
M											●	●	●	●
K											●	●	●	●
N											●	●	●	●
S											○	○	●	●
H											○	○	●	●
O											●	●	●	●

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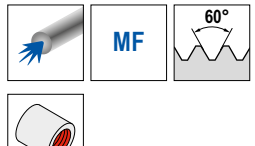
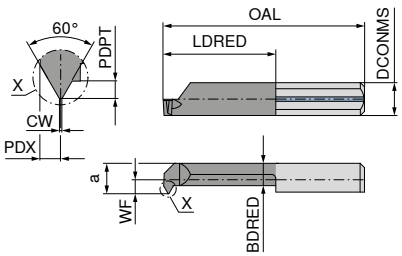
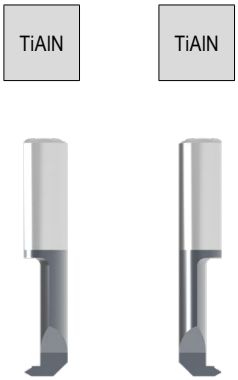
UltraMini – Inserts for Internal thread turning (Full profile)





Illustrations show right-hand versions



ISO designation	DCONMS h6 mm	TP mm	WF mm	DMIN mm	a mm	OAL mm	LDRED mm	BDRED mm	PDPT mm	PDX mm	CW mm	Left-hand 73 207 ...	Right-hand 73 206 ...
R/L 104.0205-15	5	0,50	1,5	4	3,5	30	15	2,4	0,27	0,35	0,06	800	800
R/L 105.0205-15	5	0,50	1,9	5	4,4	30	15	3,3	0,27	0,35	0,06	802	802
R/L 105.0407-15	5	0,75	1,9	5	4,4	30	15	3,3	0,40	0,45	0,09	804	804
R/L 106.0510-15	6	1,00	2,3	6	5,3	30	15	3,4	0,54	0,55	0,12	806	806
P												●	●
M												●	●
K												●	●
N												●	●
S												●	●
H												●	●
O												●	●

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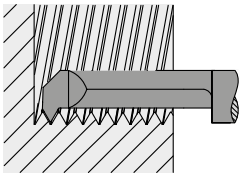
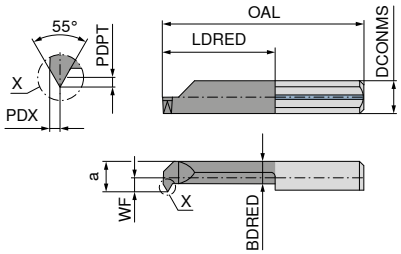
12

UltraMini – Inserts for internal thread turning (Partial profile)









Illustrations show right-hand versions

TiN



Left-hand

TiN



Right-hand

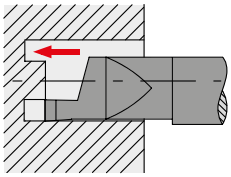
ISO designation	DCONMS $_{h6}$ mm	TPI 1/"	WF mm	DMIN mm	a mm	OAL mm	LDRED mm	BDRED mm	PDPT mm	PDX mm	**73 105 ...**	**73 104 ...**
R/L 005.5548-15	5	48 - 24	1,9	4,8	4,4	30	15	3,3	0,40	0,45	**552**	**552**
R/L 006.5548-15	6	48 - 24	2,3	6,0	5,3	30	15	3,4	0,40	0,45	**562**	**562**
R/L 006.5524-15	6	24 - 16	2,3	6,0	5,3	30	15	3,4	0,81	0,75	**563**	**563**
R/L 007.5524-15	7	24 - 16	2,7	7,0	6,3	30	15	3,8	0,81	0,75	**572**	**572**
P											●	●
M											●	●
K											●	●
N											●	●
S											○	○
H											○	○
O											●	●

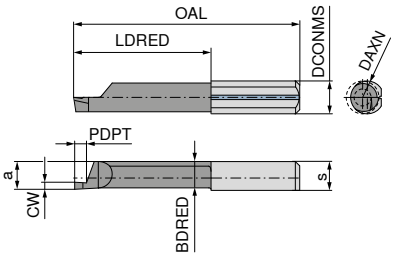
→ v_c Page 59

UltraMini – Inserts for axial grooving









Illustrations show right-hand versions

TiAlN



TiAlN



										Left-hand		Right-hand	
										73 053 ...		**73 052 ...**	
ISO designation	DCONMS $_{h6}$	a	DAXN	s	OAL	LDRED	PDPT	BDRED	CW				
	mm	mm	mm	mm	mm	mm	mm	mm	mm				
R/L 010.1006-10	6	5,2	6	5,3	26	11	1,5	4,9	1,0	**561**		**561**	
R/L 010.1506-10	6	5,2	6	5,3	26	11	2,0	4,9	1,5	**563**		**563**	
R/L 010.1008-10	7	5,9	8	6,3	26	11	1,5	5,6	1,0	**571**		**571**	
R/L 010.1008-20	7	5,9	8	6,3	35	20	1,5	5,6	1,0	**671**		**671**	
R/L 010.1008-30	7	5,9	8	6,3	45	30	1,5	5,6	1,0	**771**		**771**	
R/L 010.1508-10	7	5,9	8	6,3	26	11	2,5	5,6	1,5	**573**		**573**	
R/L 010.1508-20	7	5,9	8	6,3	35	20	2,5	5,6	1,5	**673**		**673**	
R/L 010.1508-30	7	5,9	8	6,3	45	30	2,5	5,6	1,5	**773**		**773**	
R/L 010.2008-10	7	5,9	8	6,3	26	11	3,0	5,6	2,0	**575**		**575**	
R/L 010.2008-20	7	5,9	8	6,3	35	20	3,0	5,6	2,0	**675**		**675**	
R/L 010.2008-30	7	5,9	8	6,3	45	30	3,0	5,6	2,0	**775**		**775**	
R/L 010.2508-10	7	5,9	8	6,3	26	11	3,5	5,6	2,5	**577**		**577**	
R/L 010.2508-20	7	5,9	8	6,3	35	20	3,5	5,6	2,5	**677**		**677**	
R/L 010.2508-30	7	5,9	8	6,3	45	30	3,5	5,6	2,5	**777**		**777**	
R/L 010.3008-10	7	5,9	8	6,3	26	11	3,5	5,6	3,0	**579**		**579**	
R/L 010.3008-20	7	5,9	8	6,3	35	20	3,5	5,6	3,0	**679**		**679**	
R/L 010.3008-30	7	5,9	8	6,3	45	30	3,5	5,6	3,0	**779**		**779**	
P										●		●	
M										●		●	
K										●		●	
N										●		●	
S										●		●	
H										●		●	
O										●		●	

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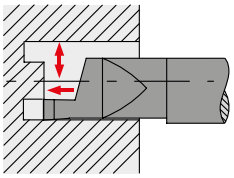
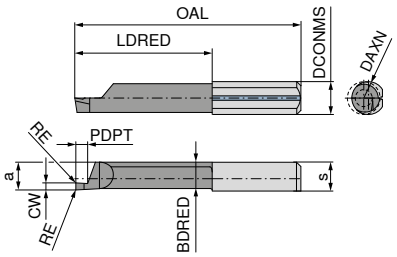
UltraMini – Inserts for axial grooving

▲ with corner radius









Illustrations show right-hand versions

TiAlN



Left-hand

TiAlN



Right-hand

ISO designation	DCONMS $_{h6}$	a	DAXN	s	OAL	LDRED	PDPT	BDRED	CW	RE	73 253 ...	73 252 ...
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm		
R/L 510M1008-10	5	4,3	5	6,3	26	11	2	4,0	1,0	0,05	**510**	**510**
R/L 510M1008-20	5	4,3	5	6,3	35	20	2	4,0	1,0	0,05	**610**	**610**
R/L 510M1508-10	5	4,3	5	6,3	26	11	3	4,0	1,5	0,05	**515**	**515**
R/L 510M1508-20	5	4,3	5	6,3	35	20	3	4,0	1,5	0,05	**615**	**615**
R/L 510M2008-10	5	4,3	5	6,3	26	11	4	4,0	2,0	0,05	**520**	**520**
R/L 510M2008-20	5	4,3	5	6,3	35	20	4	4,0	2,0	0,05	**620**	**620**
R/L 010M1008-10	7	5,9	8	6,3	26	11	2	5,6	1,0	0,10	**800**	**800**
R/L 010M1008-20	7	5,9	8	6,3	35	20	2	5,6	1,0	0,10	**810**	**810**
R/L 010M1008-30	7	5,9	8	6,3	45	30	2	5,6	1,0	0,10	**820**	**820**
R/L 010M1508-10	7	5,9	8	6,3	26	11	3	5,6	1,5	0,10	**802**	**802**
R/L 010M1508-20	7	5,9	8	6,3	35	20	3	5,6	1,5	0,10	**812**	**812**
R/L 010M1508-30	7	5,9	8	6,3	45	30	3	5,6	1,5	0,10	**822**	**822**
R/L 010M2008-10	7	5,9	8	6,3	26	11	4	5,6	2,0	0,10	**804**	**804**
R/L 010M2008-20	7	5,9	8	6,3	35	20	4	5,6	2,0	0,10	**814**	**814**
R/L 010M2008-30	7	5,9	8	6,3	45	30	4	5,6	2,0	0,10	**824**	**824**
R/L 010M2508-10	7	5,9	8	6,3	26	11	5	5,6	2,5	0,10	**806**	**806**
R/L 010M2508-20	7	5,9	8	6,3	35	20	5	5,6	2,5	0,10	**816**	**816**
R/L 010M2508-30	7	5,9	8	6,3	45	30	5	5,6	2,5	0,10	**826**	**826**
R/L 010M3008-10	7	5,9	8	6,3	26	11	6	5,6	3,0	0,10	**808**	**808**
R/L 010M3008-20	7	5,9	8	6,3	35	20	6	5,6	3,0	0,10	**818**	**818**
R/L 010M3008-30	7	5,9	8	6,3	45	30	6	5,6	3,0	0,10	**828**	**828**

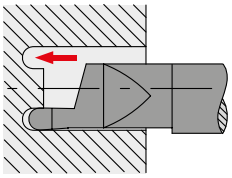
P	●	●
M	●	●
K	●	●
N	●	●
S	●	●
H	●	●
O	●	●

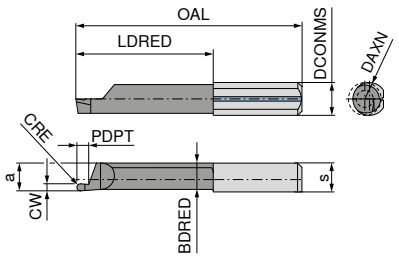
→ v_c Page 59

UltraMini – Inserts for axial grooving (Full radius)









Illustrations show right-hand versions

TiAlN



TiAlN



Left-hand

Right-hand

ISO designation	DCONMS $_{h6}$	a	DAXN	s	OAL	LDRED	PDPT	BDRED	CW	CRE	73 059 ...	73 058 ...
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm		
R/L 610.1005-10	6	5,2	6	5,3	26	11	2	4,9	1,0	0,50	071	071
R/L 610.1005-20	6	5,2	6	5,3	35	20	2	4,9	1,0	0,50	171	171
R/L 610.1608-10	6	5,2	6	5,3	26	11	3	4,9	1,6	0,80	073	073
R/L 610.1608-20	6	5,2	6	5,3	35	20	3	4,9	1,6	0,80	173	173
R/L 610.2010-10	6	5,2	6	5,3	26	11	4	4,9	2,0	1,00	075	075
R/L 610.2010-20	6	5,2	6	5,3	35	20	4	4,9	2,0	1,00	175	175
R/L 610.2512-10	6	5,2	6	5,3	26	11	5	4,9	2,5	1,25	077	077
R/L 610.2512-20	6	5,2	6	5,3	35	20	5	4,9	2,5	1,25	177	177
R/L 610.3015-10	6	5,2	6	5,3	26	11	6	4,9	3,0	1,50	079	079
R/L 610.3015-20	6	5,2	6	5,3	35	20	6	4,9	3,0	1,50	179	179
R/L 010.1005-10	7	5,9	8	6,3	26	11	2	5,6	1,0	0,50	571	571
R/L 010.1005-20	7	5,9	8	6,3	35	20	2	5,6	1,0	0,50	671	671
R/L 010.1608-10	7	5,9	8	6,3	26	11	3	5,6	1,6	0,80	573	573
R/L 010.1608-20	7	5,9	8	6,3	35	20	3	5,6	1,6	0,80	673	673
R/L 010.2010-10	7	5,9	8	6,3	26	11	4	5,6	2,0	1,00	575	575
R/L 010.2010-20	7	5,9	8	6,3	35	20	4	5,6	2,0	1,00	675	675
R/L 010.2512-10	7	5,9	8	6,3	26	11	5	5,6	2,5	1,25	577	577
R/L 010.2512-20	7	5,9	8	6,3	35	20	5	5,6	2,5	1,25	677	677
R/L 010.3015-10	7	5,9	8	6,3	26	11	6	5,6	3,0	1,50	579	579
R/L 010.3015-20	7	5,9	8	6,3	35	20	6	5,6	3,0	1,50	679	679
P											●	●
M											●	●
K											●	●
N											●	●
S											●	●
H											●	●
O											●	●

→ v_c Page 59

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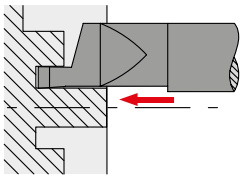
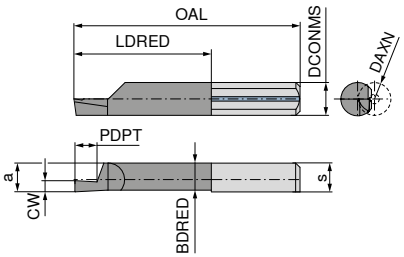
UltraMini – Inserts for axial grooving over a spigot



Illustrations show right-hand versions

TiAlN



Left-hand

73 061 ...

TiAlN



Right-hand

73 060 ...

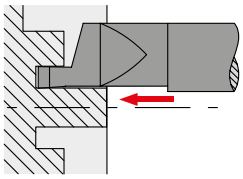
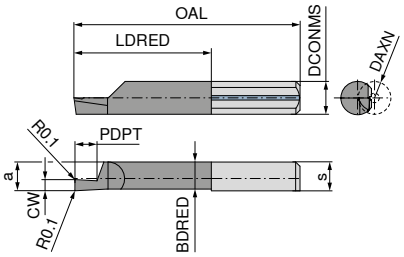
ISO designation	DCONMS h6 mm	a mm	DAXN mm	s mm	OAL mm	LDRED mm	PDPT mm	BDRED mm	CW mm		
R/L 620.1006-20	6	5,2	6	5,3	35	20	2	4,9	1,0	**561**	**561**
R/L 620.1506-20	6	5,2	6	5,3	35	20	3	4,9	1,5	**563**	**563**
R/L 620.2006-20	6	5,2	6	5,3	35	20	4	4,9	2,0	**565**	**565**
R/L 620.2506-20	6	5,2	6	5,3	35	20	5	4,9	2,5	**567**	**567**
R/L 620.3006-20	6	5,2	6	5,3	35	20	6	4,9	3,0	**569**	**569**
P										●	●
M										●	●
K										●	●
N										●	●
S										●	●
H										●	●
O										●	●

→ v_c Page 59

UltraMini – Inserts for axial grooving over a spigot

▲ with corner radius



Illustrations show right-hand versions

TiAlN



Left-hand

73 261 ...

TiAlN



Right-hand

73 260 ...

ISO designation	DCONMS h6 mm	a mm	DAXN mm	s mm	OAL mm	LDRED mm	PDPT mm	BDRED mm	CW mm		
R/L 620M1006-20	6	5,2	6	5,3	35	20	2	4,9	1,0	**800**	**800**
R/L 620M1506-20	6	5,2	6	5,3	35	20	3	4,9	1,5	**802**	**802**
R/L 620M2006-20	6	5,2	6	5,3	35	20	4	4,9	2,0	**804**	**804**
R/L 620M2506-20	6	5,2	6	5,3	35	20	5	4,9	2,5	**806**	**806**
R/L 620M3006-20	6	5,2	6	5,3	35	20	6	4,9	3,0	**808**	**808**
P										●	●
M										●	●
K										●	●
N										●	●
S										●	●
H										●	●
O										●	●

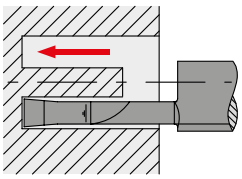
→ v_c Page 59

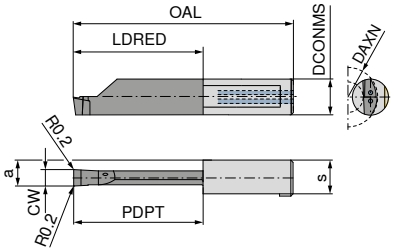
UltraMini – Inserts for axial grooving

▲ up to 70 bar
▲ dual cooling channel









Illustrations show right-hand versions

TiAlN



Left-hand

TiAlN



Right-hand

ISO designation	DCONMS h6	a	DAXN	s	OAL	LDRED	PDPT	CW	73 263 ...	73 262 ...
	mm	mm	mm	mm	mm	mm	mm	mm		
R/L 012.0200-10	8	5,00	12	7,3	30	10	10	2,0	**700**	**700**
R/L 012.0200-15	8	5,00	12	7,3	35	15	15	2,0	**702**	**702**
R/L 012.0250-10	8	5,25	12	7,3	30	10	10	2,5	**704**	**704**
R/L 012.0250-20	8	5,25	12	7,3	40	20	20	2,5	**706**	**706**
R/L 016.0300-10	8	5,50	16	7,3	30	10	10	3,0	**800**	**800**
R/L 016.0300-20	8	5,50	16	7,3	40	20	20	3,0	**802**	**802**
R/L 020.0300-25	8	5,50	20	7,3	45	25	25	3,0	**804**	**804**
R/L 020.0300-30	8	5,50	20	7,3	50	30	30	3,0	**806**	**806**
R/L 020.0300-35	8	5,50	20	7,3	55	35	35	3,0	**808**	**808**
R/L 020.0300-40	8	5,50	20	7,3	60	40	40	3,0	**810**	**810**
R/L 016.0400-10	8	6,00	16	7,3	30	10	10	4,0	**812**	**812**
R/L 016.0400-20	8	6,00	16	7,3	40	20	20	4,0	**814**	**814**
R/L 020.0400-25	8	6,00	20	7,3	45	25	25	4,0	**816**	**816**
R/L 020.0400-30	8	6,00	20	7,3	50	30	30	4,0	**818**	**818**
R/L 020.0400-35	8	6,00	20	7,3	55	35	35	4,0	**820**	**820**
R/L 020.0400-40	8	6,00	20	7,3	60	40	40	4,0	**822**	**822**
R/L 020.0500.20	8	6,50	20	7,3	40	20	20	5,0	**824**	**824**
R/L 020.0500.25	8	6,50	20	7,3	45	25	25	5,0	**826**	**826**
R/L 020.0500.30	8	6,50	20	7,3	50	30	30	5,0	**828**	**828**
R/L 020.0500.35	8	6,50	20	7,3	55	35	35	5,0	**830**	**830**
R/L 020.0500.40	8	6,50	20	7,3	60	40	40	5,0	**832**	**832**
P									●	●
M									●	●
K									●	●
N									●	●
S									●	●
H									●	●
O									●	●

12

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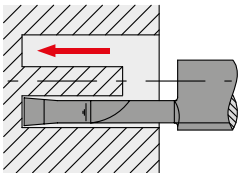
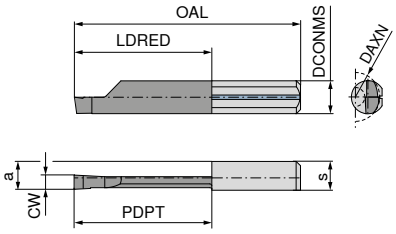
UltraMini – Inserts for axial grooving









Illustrations show right-hand versions





ISO designation	DCONMS $_{h6}$ mm	a mm	DAXN mm	s mm	OAL mm	LDRED mm	PDPT mm	CW mm	Left-hand 73 057 ...	Right-hand 73 056 ...
R/L 015.2515-20	7	5,9	15	6,3	35	20	20	2,5	572	572
R/L 015.3015-20	7	5,9	15	6,3	35	20	20	3,0	574	574
R/L 015.3015-30	7	5,9	15	6,3	45	30	30	3,0	674	674

P	●	●
M	●	●
K	●	●
N	●	●
S	●	●
H	●	●
O	●	●

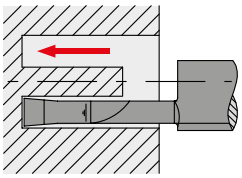
→ v_c Page 59

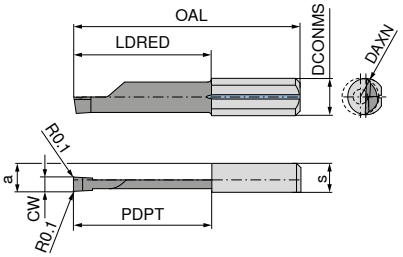
UltraMini – Inserts for axial grooving

▲ with corner radius









Illustrations show right-hand versions





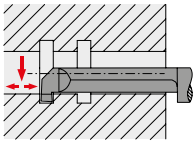
ISO designation	DCONMS $_{h6}$ mm	a mm	DAXN mm	s mm	OAL mm	LDRED mm	PDPT mm	CW mm	Left-hand 73 257 ...	Right-hand 73 256 ...
R/L 015M2515-20	7	5,9	8	6,3	35	20	20	2,5	800	800
R/L 015M3015-20	7	5,9	8	6,3	35	20	20	3,0	802	802
R/L 015M3015-30	7	5,9	8	6,3	45	30	30	3,0	804	804

P	●	●
M	●	●
K	●	●
N	●	●
S	●	●
H	●	●
O	●	●

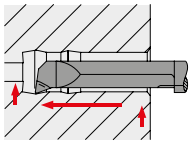
→ v_c Page 59

UltraMini – Set: Internal turning, grooving and chamfering, right hand

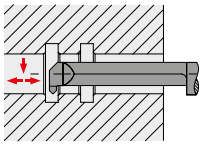
▲ extensive assortment of right-hand tools
▲ K10F – TiN



Grooving (E)



Profile turn (A)



Chamfers (F)

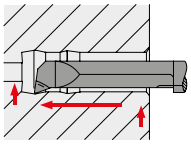


73 085 ...

Tool	Designation	Article no.	Bore Ø mm	Boring depth mm	Grooving depth mm	Groove width mm	Piece	fig.	
Inserts	**R 004.0100-16**	**73 002 541**	4	16	0,8	1,0	1	E	
Inserts	**R 005.0150-20**	**73 002 552**	5	20	1,0	1,5	1	E	
Inserts	**R 005.0200-20**	**73 002 553**	5	20	1,0	2,0	1	E	
Inserts	**R 006.0150-22**	**73 002 562**	6	22	1,8	1,5	1	E	
Inserts	**R 006.0200-22**	**73 002 563**	6	22	1,8	2,0	1	E	
Inserts	**R 050.3-16**	**73 004 530**	3	16			1	A	**999**
Inserts	**R 050.4-16**	**73 004 540**	4	16			1	A	
Inserts	**R 050.5-20**	**73 004 550**	5	20			1	A	
Inserts	**R 050.6-22**	**73 004 560**	6	22			1	A	
Inserts	**R 060.5-20**	**73 006 550**	5	20			1	F	
Tool holder	**645.0016-D**	**73 080 164**					1		
Tool holder	**676.0016-D**	**73 080 166**					1		
Tightening Key	**110.645**	**70 950 175**					1		

UltraMini – Set: Internal Turning

▲ extensive assortment of right-hand tools
▲ K10F – TiN





73 085 ...

Tool	Designation	Article no.	Bore Ø mm	Boring depth mm	Piece	
Inserts	R 050.3-16	73 004 530	3	16	1	
Inserts	R 050.4-16	73 004 540	4	16	1	
Inserts	R 050.5-20	73 004 550	5	20	1	**994**
Inserts	R 050.6-22	73 004 560	6	22	1	
Tool holder	645.0016-D	73 080 164			1	
Tool holder	676.0016-D	73 080 166			1	
Tightening Key	110.645	70 950 175			1	

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UltraMini – Set: Holder

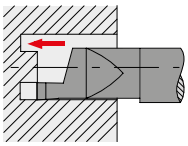


73 085 ...

Tool	Designation	Article no.	for cutting insert Ø mm	Piece	
Tool holder	**645.0016-D**	**73 080 164**	3 / 4 / 5	1	
Tool holder	**676.0016-D**	**73 080 166**	6 / 7	1	**990**
Tightening Key	**110.645**	**70 950 175**		1	

UltraMini – Set: Axial Grooving

▲ extensive assortment of right-hand tools
▲ K10F – TiN





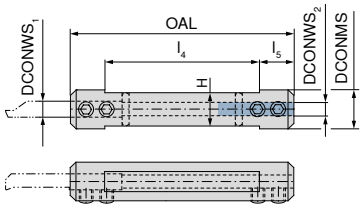
73 085 ...

Tool	Designation	Article no.	Bore Ø mm	Boring depth mm	Grooving depth mm	Groove width mm	Piece	
Inserts	**R 010.1008-10**	**73 050 571**	8	10	1,5	1,0	1	
Inserts	**R 010.1508-10**	**73 050 573**	8	10	2,5	1,5	1	
Inserts	**R 010.2008-10**	**73 050 575**	8	10	3,0	2,0	1	**996**
Inserts	**R 010.2508-20**	**73 050 677**	8	20	3,5	2,5	1	
Inserts	**R 010.3008-20**	**73 050 679**	8	20	3,5	3,0	1	
Tool holder	**676.0016-D**	**73 080 166**					1	
Tightening Key	**110.645**	**70 950 175**					1	

UltraMini – Standard tool holder for cutting inserts

▲ double ended
▲ Machining diameter from Ø 0.5 mm

Scope of supply:
Tool holder with allen key





Designation	$DCONWS_1$ mm	$DCONWS_2$ mm	DCONMS mm	OAL mm	l_4 mm	l_5 mm	H mm	73 080 ...
645.0012-D	4	5	12,00	75	55	10	10,3	**163**
645.0016-D	4	5	16,00	75	55	10	14,0	**164**
645.001905-D	4	5	19,05	90	70	10	17,2	**170**
645.0020-D	4	5	20,00	90	70	10	18,0	**165**
645.0022-D	4	5	22,00	90	70	10	20,0	**171**
645.00254-D	4	5	25,40	95	75	10	23,4	**172**
676.0016-D	6	7	16,00	75	55	10	14,0	**166**
676.001905-D	6	7	19,05	90	70	10	17,2	**173**
676.0020-D	6	7	20,00	90	70	10	18,0	**167**
676.0022-D	6	7	22,00	90	70	10	20,0	**174**
676.00254-D	6	7	25,40	95	75	10	23,4	**175**
687.0016-D	7	8	16,00	75	55	10	14,0	**168**
687.0020-D	7	8	20,00	90	70	10	18,0	**169**


Key I


Clamping screw

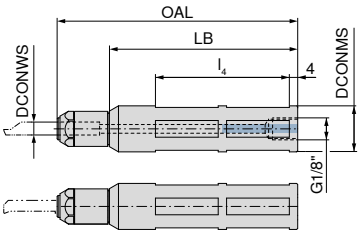
Spare parts for Article no.	70 950 ...		73 082 ...	
73 080 163	SW2,5	**175**	M5x4	**013**
73 080 164	SW2,5	**175**	M5x6	**001**
73 080 170	SW2,5	**175**	M5x6	**001**
73 080 165	SW2,5	**175**	M5x8	**008**
73 080 171	SW2,5	**175**	M5x8	**008**
73 080 172	SW2,5	**175**	M5x8	**008**
73 080 166	SW2,5	**175**	M5x6	**001**
73 080 173	SW2,5	**175**	M5x6	**001**
73 080 167	SW2,5	**175**	M5x8	**008**
73 080 174	SW2,5	**175**	M5x8	**008**
73 080 175	SW2,5	**175**	M5x8	**008**
73 080 168	SW2,5	**175**	M6x6	**014**
73 080 169	SW2,5	**175**	M6x6	**014**

UltraMini – Quick change tool holder for cutting inserts

Scope of supply:

Tool holder, lock nut and clamping wedge







Designation	DCONWS	DCONMS $_{g6}$	OAL	LB	l_4	73 089 ...
	mm	mm	mm	mm	mm	
UM600H.0012.4	4	12,00	115	90	64	**124**
UM600H.0016.4	4	16,00	115	90	64	**164**
UM600H.001905.4	4	19,05	115	90	64	**194**
UM600H.0020.4	4	20,00	115	90	64	**204**
UM600H.0022.4	4	22,00	115	90	64	**224**
UM600H.0025.4	4	25,00	115	90	64	**254**
UM600H.00254.4	4	25,40	115	90	64	**264**
UM600H.0028.4	4	28,00	115	90	64	**284**
UM600H.0012.5	5	12,00	115	90	64	**125**
UM600H.0016.5	5	16,00	115	90	64	**165**
UM600H.001905.5	5	19,05	115	90	64	**195**
UM600H.0020.5	5	20,00	115	90	64	**205**
UM600H.0022.5	5	22,00	115	90	64	**225**
UM600H.0025.5	5	25,00	115	90	64	**255**
UM600H.00254.5	5	25,40	115	90	64	**265**
UM600H.0028.5	5	28,00	115	90	64	**285**
UM600H.0012.6	6	12,00	115	90	64	**126**
UM600H.0016.6	6	16,00	115	90	64	**166**
UM600H.001905.6	6	19,05	115	90	64	**196**
UM600H.0020.6	6	20,00	115	90	64	**206**
UM600H.0022.6	6	22,00	115	90	64	**226**
UM600H.0025.6	6	25,00	115	90	64	**256**
UM600H.00254.6	6	25,40	115	90	64	**266**
UM600H.0028.6	6	28,00	115	90	64	**286**
UM600H.0012.7	7	12,00	115	90	64	**127**
UM600H.0016.7	7	16,00	115	90	64	**167**
UM600H.001905.7	7	19,05	115	90	64	**197**
UM600H.0020.7	7	20,00	115	90	64	**207**
UM600H.0022.7	7	22,00	115	90	64	**227**
UM600H.0025.7	7	25,00	115	90	64	**257**
UM600H.00254.7	7	25,40	115	90	64	**267**
UM600H.0028.7	7	28,00	115	90	64	**287**

Avoid pulling cuts. Ensure a suitable clamping force is used when using thro' coolant supply. Can be tightened using a key.

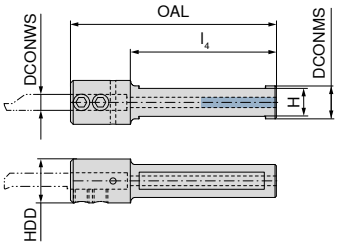
		 Lock nut UM600H	 Clamping wedge UM600H
		73 950 ...	73 950 ...
Spare parts DCONWS			
4	M4	**104**	**111**
5	M5	**105**	**111**
6	M6	**106**	**111**
7	M7	**107**	**111**

UltraMini – Toolholder for inserts

▲ single ended

Scope of supply:

Tool holder with allen key





73 081 ...

Designation	DCONWS mm	HDD mm	DCONMS mm	OAL mm	l_4 mm	H mm	
640.0012-D	4	16	12	75	53	10,2	**264**
650.0012-D	5	16	12	75	53	10,2	**265**
660.0012-D	6	16	12	75	53	10,2	**266**
670.0012-D	7	16	12	75	53	10,2	**267**
680.0012-D	8	16	12	75	53	10,2	**268**



Key I



Clamping screw

Spare parts DCONWS		**70 950 ...**		**73 082 ...**
4	SW2,5	**175**	M5x0,5x6	**010**
5	SW2,5	**175**	M5x0,5x6	**010**
6	SW2,5	**175**	M5x0,5x6	**010**
7	SW2,5	**175**	M5x0,5x6	**010**
8	SW2,5	**175**	M5x0,5x6	**010**

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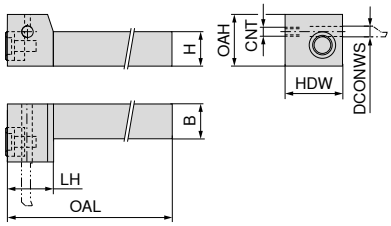
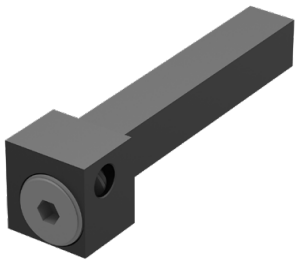
UltraMini – Toolholder for inserts

Scope of supply:

Tool holder with allen key







ISO designation	DCONWS	OAL	LH	B	HDW	H	OAH	CNT	Left-hand	Right-hand
	mm	mm	mm	mm	mm	mm	mm		73 083 ...	73 084 ...
R/L .IK.UHCM.1212.4	4	90	17	12	20	12	18	M5	124	124
R/L .IK.UHCM.1212.5	5	90	17	12	20	12	18	M5	125	125
R/L .IK.UHCM.1212.6	6	90	17	12	20	12	21	M5	126	126
R/L .IK.UHCM.1212.7	7	90	17	12	20	12	21	M5	127	127

Suitable coolant connections can be found in our sliding head tooling catalogue.



Clamping key – T

80 397 ...



Clamping screw

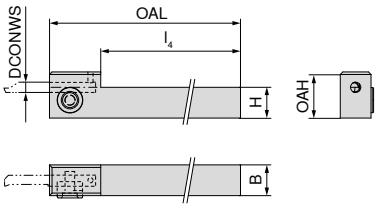
73 082 ...

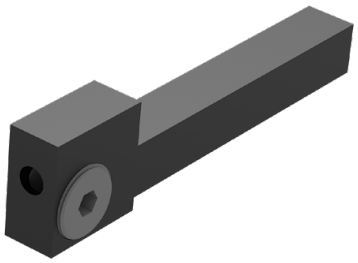
Spare parts DCONWS				
4	SW5	050	UM 12	011
5	SW5	050	UM 12	011
6	SW5	050	UM 16	012
7	SW5	050	UM 16	012

UltraMini – Toolholder for inserts

Scope of supply:

Tool holder with allen key





73 086 ...

Designation	DCONWS	OAL	l_4	B	H	OAH	
	mm	mm	mm	mm	mm	mm	
UM.1010.4	4	100	75	10	10	20	104
UM.1010.5	5	100	75	10	10	20	105
UM.1212.4	4	100	75	12	12	22	124
UM.1212.5	5	100	75	12	12	22	125
UM.1212.6	6	100	75	12	12	22	126

Clamping key – T

80 397 ...

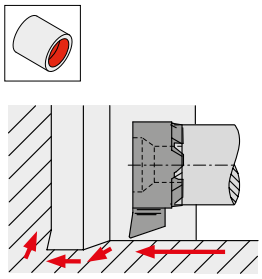


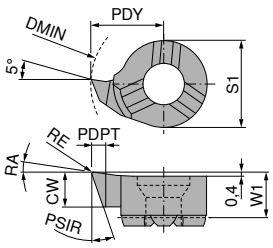
Clamping screw

73 082 ...

Spare parts DCONWS				
4	SW5	050	UM 12	011
5	SW5	050	UM 12	011
6	SW5	050	UM 16	012

MiniCut – Insert for turning and profiling





CWX500 CWX500



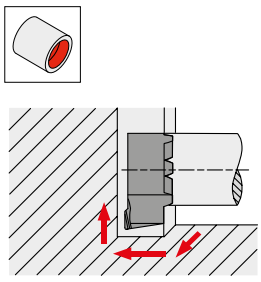
Illustrations show right-hand versions

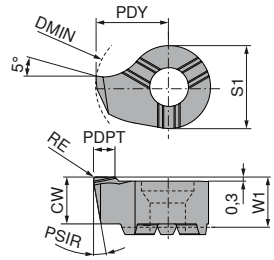
Size	ISO designation	DMIN	CW	W1	PDY	S1	RE	PDPT	PSIR	RA	Left-hand 73 324 ...	Right-hand 73 322 ...
		mm	mm	mm	mm	mm	mm	mm	°	°		
08	8,00. R/L .3,30.18°	7,8	3,3	3,5	4,65	6,0	0,20	0,6	18	8	033	033
	8,00. R/L .3,50.18°	7,8	3,5	3,5	4,65	6,0	0,05	0,6	18	8	035	035
	8,00. R/L .3,50.20°	7,8	3,5	3,5	4,65	6,0	0,20	0,6	20	20	135	135
09	9,00. R/L .3,60.18°	9,0	3,6	3,6	5,50	6,2	0,20	0,8	18	8	136	136
	9,00. R/L .3,60.20°	9,0	3,6	3,6	5,50	6,2	0,20	0,8	20	20	236	236
11	9,80. R/L .3,90.18°	9,8	3,9	4,2	5,50	8,0	0,20	1,0	18	8	139	139
	11,00. R/L .3,90.18°	11,0	3,9	4,2	6,70	8,0	0,20	1,0	18	8	339	339
	11,00. R/L .4,20.20°	11,0	4,2	4,2	6,70	8,0	0,20	1,0	20	20	342	342
14	14,00. R/L .5,00.18°	13,8	5,0	5,1	8,70	9,0	0,20	1,5	18	8	550	550
	14,00. R/L .5,30.20°	14,0	5,3	5,3	8,70	9,0	0,20	1,5	20	20	553	553
16	15,50. R/L .5,00.18°	15,5	5,0	5,4	9,70	11,0	0,20	1,5	18	8	750	750
P											●	●
M											●	●
K											●	●
N											●	●
S											●	●
H											●	●
O											●	●

→ v_c Page 59

MiniCut – Insert for copy turning

▲ with chip breaker





CWX500 CWX500



Illustrations show right-hand versions

Size	ISO designation	DMIN	CW	W1	PDY	S1	RE	PDPT	PSIR	Left-hand 73 388 ...	Right-hand 73 386 ...
		mm	mm	mm	mm	mm	mm	mm	°		
08	8,00. R/L .3,40.10°	8	3,4	3,5	4,65	6,0	0,2	0,5	10	13400	13400
09	9,00. R/L .3,50.10°	9	3,5	3,6	5,50	6,2	0,2	0,5	10	136	136
11	11,00. R .4,10.10°	11	4,1	4,2	6,70	8,0	0,2	0,5	10	14100	14100
P										●	●
M										●	●
K										●	●
N										●	●
S										●	●
H										●	●
O										●	●

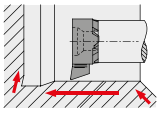
→ v_c Page 59

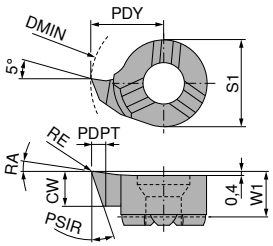
12

MiniCut – CBN insert for profiling – hard turning

▲ 56 to 65 HRC









Illustrations show right-hand versions

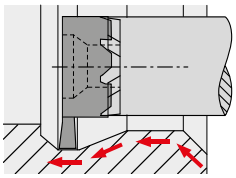
Size	ISO designation	DMIN mm	CW mm	W1 mm	PDY mm	S1 mm	RE mm	PDPT mm	PSIR °	RA °	Left-hand CBN 73 368 ...	Right-hand CBN 73 366 ...
08	8,00. R/L .3,30.18°	7,8	3,3	3,5	4,65	6	0,2	0,39	18	8	033	033
11	11,00. R/L .3,90.18°	11,0	3,9	4,2	6,70	8	0,2	0,55	18	8	139	139
14	14,00. R/L .5,00.18°	13,8	5,0	5,3	8,70	9	0,2	0,69	18	8	550	550
16	16,00. R/L .5,00.18°	15,5	5,0	5,4	9,70	11	0,2	0,77	18	8	750	750
P												
M												
K												
N												
S											○	○
H											●	●
O												

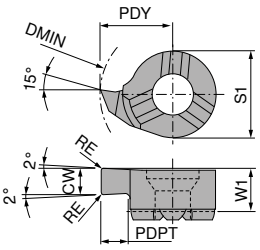
→ v_c Page 59

MiniCut – Internal turning insert

▲ CDX = ap_{max}







CWX500 CWX500



Illustrations show right-hand versions

Size	ISO designation	DMIN mm	CW mm	PDPT mm	W1 mm	PDY mm	S1 mm	RE mm	CDX mm	Left-hand 73 316 ...	Right-hand 73 314 ...
08	8,00. R/L .1,50.1,0	8	1,5	1,0	3,3	4,8	6,0	0,2	0,2	015	015
	8,00. R/L .2,00.1,0	8	2,0	1,0	3,3	4,8	6,0	0,2	0,2	020	020
09	9,00. R/L .1,50.2,0	9	1,5	2,0	3,6	5,5	6,2	0,2	0,2	115	115
	9,00. R/L .1,50.3,0	10	1,5	3,0	3,6	6,5	6,2	0,2	0,2	121	121
	9,00. R/L .2,00.2,0	9	2,0	2,0	3,6	5,5	6,2	0,2	0,2	120	120
	9,00. R/L .2,00.3,0	10	2,0	3,0	3,6	6,5	6,2	0,2	0,2	122	122
11	11,00. R/L .1,50.2,3	11	1,5	2,3	4,2	6,7	8,0	0,2	0,2	315	315
	11,00. R/L .2,00.2,3	11	2,0	2,3	4,2	6,7	8,0	0,2	0,2	320	320
14	14,00. R/L .1,50.4,0	14	1,5	4,0	5,3	9,0	9,0	0,2	0,2	515	515
	14,00. R/L .1,50,5,5	16	1,5	5,5	5,2	10,5	9,0	0,2	0,2	516	516
	14,00. R/L .1,50.6,5	17	1,5	6,5	5,2	11,5	9,0	0,2	0,2	517	517
	14,00. R/L .2,00.4,0	14	2,0	4,0	5,3	9,0	9,0	0,2	0,2	520	520
	14,00. R/L .2,00.5,5	16	2,0	5,5	5,2	10,5	9,0	0,2	0,2	521	521
	14,00. R/L .2,00.6,5	17	2,0	6,5	5,2	11,5	9,0	0,2	0,2	522	522
	14,00. R/L .2,50.5,5	16	2,5	5,5	5,2	10,5	9,0	0,2	0,2	525	525
	14,00. R/L .2,50.6,5	17	2,5	6,5	5,2	11,5	9,0	0,2	0,2	526	526
	14,00. R/L .3,00.5,5	16	3,0	5,5	5,2	10,5	9,0	0,2	0,2	530	530
	14,00. R/L .3,00.6,5	17	3,0	6,5	5,2	11,5	9,0	0,2	0,2	531	531
16	16,00. R/L .2,00.4,3	16	2,0	4,3	5,4	10,2	11,0	0,2	0,2	720	720
P										●	●
M										●	●
K										●	●
N										●	●
S										●	●
H										●	●
O										●	●

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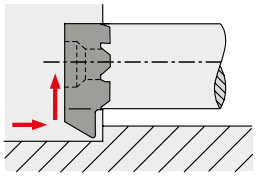
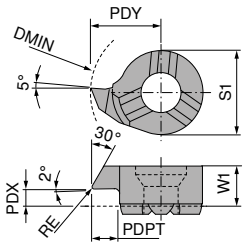
MiniCut – Back boring insert

▲ CDX = ap_{max}







CWX500 CWX500



Illustrations show right-hand versions

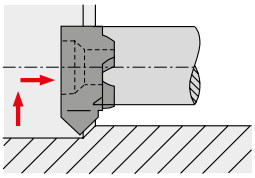
Size	ISO designation	DMIN mm	PDPT mm	W1 mm	PDX mm	PDY mm	S1 mm	RE mm	CDX mm	Left-hand 73 332 ...	Right-hand 73 330 ...
08	8,00. R/L .30°.1,3	7,8	1,3	3,50	1,0	4,65	6,0	0,2	0,6	013	013
09	9,00. R/L .30°.1,7	9,0	1,7	3,55	1,2	5,50	6,2	0,2	0,8	117	117
	9,00. R/L .30°.2,3	10,0	2,3	3,55	1,2	6,50	6,2	0,2	0,8	123	123
11	11,00. R/L .30°.2,3	11,0	2,3	4,30	1,6	6,70	8,0	0,2	1,0	323	323
14	14,00. R/L .30°.3,5	13,8	3,5	5,40	2,4	8,70	9,0	0,2	1,5	535	535
P										●	●
M										●	●
K										●	●
N										●	●
S										●	●
H										●	●
O										●	●

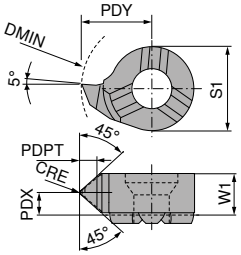
→ v_c Page 59

MiniCut – Internal turning and chamfering insert

▲ CDX = ap_{max}







CWX500 CWX500



Illustrations show right-hand versions

Size	ISO designation	DMIN mm	PDPT mm	W1 mm	PDX mm	PDY mm	S1 mm	CRE mm	CDX mm	Left-hand 73 336 ...	Right-hand 73 334 ...
08	8,00. R/L .45°.1,4	8	1,4	3,50	1,8	4,8	6,0	0,2	0,6	010	010
09	9,00. R/L .45°.1,3	9	1,3	3,55	1,8	5,5	6,2	0,2	0,8	110	110
11	11,00. R/L .45°.1,5	11	1,5	4,30	2,2	6,7	8,0	0,2	1,0	310	310
14	14,00. R/L .45°.1,5	14	1,5	5,40	2,8	9,0	9,0	0,2	1,2	510	510
P										●	●
M										●	●
K										●	●
N										●	●
S										●	●
H										●	●
O										●	●

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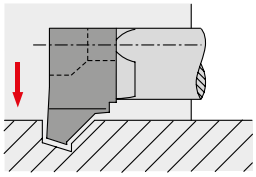
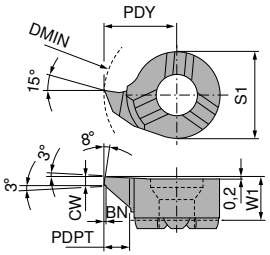
MiniCut – Insert for pregrooving and chamfering







CWX500 CWX500



Illustrations show right-hand versions

Size	ISO designation	DMIN mm	CW mm	PDPT mm	W1 mm	PDY mm	S1 mm	BN mm	Left-hand 73 340 ...	Right-hand 73 338 ...
08	8,00. R/L .1,00.45°	8	1	1,0	3,3	4,8	6,0	0,2	100	100
09	9,00. R/L .1,00.45°	9	1	1,5	3,6	5,5	6,2	0,2	215	215
11	11,00. R/L .1,00.45°	11	1	1,5	4,2	6,7	8,0	0,2	315	315
14	14,00. R/L .1,00.45°	14	1	1,5	5,3	9,0	9,0	0,2	515	515
16	16,00. R/L .1,00.45°	16	1	1,5	5,4	10,2	11,0	0,2	715	715
P									●	●
M									●	●
K									●	●
N									●	●
S									●	●
H									●	●
O									●	●

→ v_c Page 59

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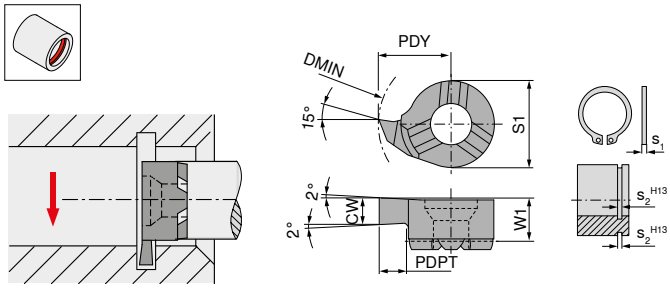
MiniCut – Grooving insert

CWX500 CWX500





Illustrations show right-hand versions

Size	ISO designation	DMIN	CW	PDPT	W1	s_1	$s_{2\ H13}$	PDY	S1	Left-hand 73 312 ...	Right-hand 73 310 ...
		mm	mm	mm	mm	mm	mm	mm	mm		
08	8,00. R/L .0,73.1,0	8	0,73	1,0	3,3	0,6	0,7	4,8	6,0	073	073
	8,00. R/L .0,83.1,0	8	0,83	1,0	3,3	0,7	0,8	4,8	6,0	083	083
	8,00. R/L .0,93.1,0	8	0,93	1,0	3,3	0,8	0,9	4,8	6,0	093	093
	8,00. R/L .1,00.1,0	8	1,00	1,0	3,3			4,8	6,0	110	110
	8,00. R/L .1,20.1,0	8	1,20	1,0	3,3	1,0	1,1	4,8	6,0	112	112
	8,00. R/L .1,40.1,0	8	1,40	1,0	3,3	1,2	1,3	4,8	6,0	114	114
	8,00. R/L .1,50.1,0	8	1,50	1,0	3,3			4,8	6,0	115	115
	8,00. R/L .1,70.1,0	8	1,70	1,0	3,3	1,5	1,6	4,8	6,0	117	117
	8,00. R/L .2,00.1,0	8	2,00	1,0	3,3			4,8	6,0	120	120
09	9,00. R/L .0,73.1,2	9	0,73	1,2	3,6	0,6	0,7	5,5	6,2	173	173
	9,00. R/L .0,83.1,3	9	0,83	1,3	3,6	0,7	0,8	5,5	6,2	183	183
	9,00. R/L .0,93.1,5	9	0,93	1,5	3,6	0,8	0,9	5,5	6,2	193	193
	9,00. R/L .1,00.1,8	9	1,00	1,8	3,6			5,5	6,2	210	210
	9,00. R/L .1,20.1,8	9	1,20	1,8	3,6	1,0	1,1	5,5	6,2	212	212
	9,00. R/L .1,40.1,8	9	1,40	1,8	3,6	1,2	1,3	5,5	6,2	214	214
	9,00. R/L .1,50.1,8	9	1,50	1,8	3,6			5,5	6,2	215	215
	9,00. R/L .1,70.1,8	9	1,70	1,8	3,6	1,5	1,6	5,5	6,2	217	217
	9,00. R/L .2,00.1,8	9	2,00	1,8	3,6			5,5	6,2	220	220
	9,00. R/L .2,50.1,8	9	2,50	1,8	3,6			5,5	6,2	225	225
	9,00. R/L .3,00.1,8	9	3,00	1,8	3,6			5,5	6,2	230	230
11	11,00. R/L .0,73.1,2	11	0,73	1,2	4,2	0,6	0,7	6,7	8,0	373	373
	11,00. R/L .0,83.1,3	11	0,83	1,3	4,2	0,7	0,8	6,7	8,0	383	383
	11,00. R .0,93.1,5	11	0,93	1,5	4,2	0,9	0,9	6,7	8,0		393
	11,00. L .0,93.1,5	11	0,93	1,5	4,2	0,8	0,9	6,7	8,0	393	
	11,00. R/L .1,00.2,3	11	1,00	2,3	4,2			6,7	8,0	310	310
	11,00. R/L .1,20.2,3	11	1,20	2,3	4,2	1,0	1,1	6,7	8,0	312	312
	11,00. R/L .1,40.2,3	11	1,40	2,3	4,2	1,2	1,3	6,7	8,0	314	314
	11,00. R/L .1,50.2,3	11	1,50	2,3	4,2			6,7	8,0	315	315
	11,00. R/L .1,70.2,3	11	1,70	2,3	4,2	1,5	1,6	6,7	8,0	317	317
	11,00. R/L .2,00.2,3	11	2,00	2,3	4,2			6,7	8,0	320	320
	11,00. R/L .2,50.2,3	11	2,50	2,3	4,2			6,7	8,0	325	325
	11,00. R/L .3,00.2,3	11	3,00	2,3	4,2			6,7	8,0	330	330
14	14,00. R/L .0,73.1,2	14	0,73	1,2	5,3	0,6	0,7	9,0	9,0	573	573
	14,00. R/L .0,83.1,3	14	0,83	1,3	5,3	0,7	0,8	9,0	9,0	583	583
	14,00. R/L .0,93.1,5	14	0,93	1,5	5,3	0,8	0,9	9,0	9,0	593	593
	14,00. R/L .1,20.4,0	14	1,20	4,0	5,3	1,0	1,1	9,0	9,0	512	512
	14,00. R/L .1,40.4,0	14	1,40	4,0	5,3	1,2	1,3	9,0	9,0	514	514
	14,00. R/L .1,50.4,0	14	1,50	4,0	5,3			9,0	9,0	515	515
	14,00. R/L .1,70.4,0	14	1,70	4,0	5,3	1,5	1,6	9,0	9,0	517	517
	14,00. R/L .2,00.4,0	14	2,00	4,0	5,3			9,0	9,0	520	520
	14,00. R/L .2,50.4,0	14	2,50	4,0	5,3			9,0	9,0	525	525
	14,00. R/L .3,00.4,0	14	3,00	4,0	5,3			9,0	9,0	530	530
16	16,00. R/L .0,73.1,2	16	0,73	1,2	5,4	0,6	0,7	10,2	11,0	773	773
	16,00. R/L .0,83.1,3	16	0,83	1,3	5,4	0,7	0,8	10,2	11,0	783	783
	16,00. R/L .0,93.1,5	16	0,93	1,5	5,4	0,8	0,9	10,2	11,0	793	793
	16,00. R/L .1,20.4,3	16	1,20	4,3	5,4	1,0	1,1	10,2	11,0	712	712
	16,00. R/L .1,40.4,3	16	1,40	4,3	5,4	1,2	1,3	10,2	11,0	714	714
	16,00. R/L .1,50.4,3	16	1,50	4,3	5,4			10,2	11,0	715	715
	16,00. R/L .1,70.4,3	16	1,70	4,3	5,4	1,5	1,6	10,2	11,0	717	717
	16,00. R/L .2,00.4,3	16	2,00	4,3	5,4			10,2	11,0	720	720
	16,00. R/L .2,50.4,3	16	2,50	4,3	5,4			10,2	11,0	725	725
	16,00. R/L .3,00.4,3	16	3,00	4,3	5,4			10,2	11,0	730	730
	16,00. R/L .3,50.4,3	16	3,50	4,3	5,4			10,2	11,0	735	735
	16,00. R/L .4,00.4,3	16	4,00	4,3	5,4			10,2	11,0	740	740

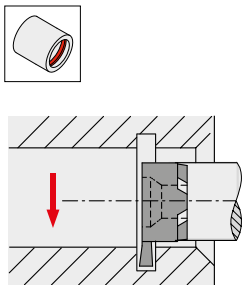
P	●	●
M	●	●
K	●	●
N	●	●
S	●	●
H	●	●
O	●	●

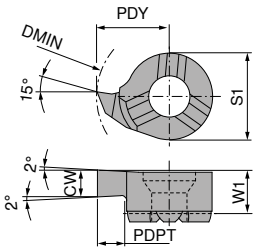
→ v_c Page 59

MiniCut – Grooving insert

▲ large groove depth ($T_{max.}$ 5.5 mm)

CWX500 CWX500







Illustrations show right-hand versions

Size	ISO designation	DMIN mm	CW mm	PDPT mm	W1 mm	PDY mm	S1 mm	Left-hand 73 372 ...	Right-hand 73 370 ...
14	14,00. R/L .1,50.5,5	16	1,5	5,5	5,2	10,5	9	715	715
	14,00. R/L .2,00.5,5	16	2,0	5,5	5,2	10,5	9	720	720
	14,00. R/L .2,50.5,5	16	2,5	5,5	5,2	10,5	9	725	725
	14,00. R/L .3,00.5,5	16	3,0	5,5	5,2	10,5	9	730	730

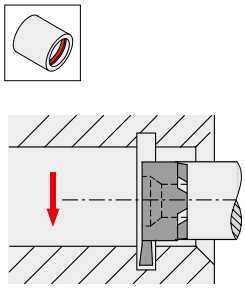
P	●	●
M	●	●
K	●	●
N	●	●
S	●	●
H	●	●
O	●	●

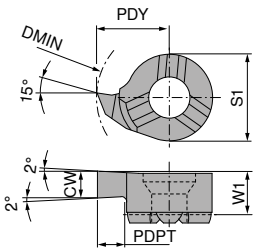
→ v_c Page 59

MiniCut – Grooving insert

▲ large groove depth ($T_{max.}$ 6.5 mm)

CWX500 CWX500







Illustrations show right-hand versions

Size	ISO designation	DMIN mm	CW mm	PDPT mm	W1 mm	PDY mm	S1 mm	Left-hand 73 384 ...	Right-hand 73 382 ...
14	14,00. R/L .1,50.6,5	17	1,5	6,5	5,2	11,5	9	515	515
	14,00. R/L .2,00.6,5	17	2,0	6,5	5,2	11,5	9	520	520
	14,00. R/L .2,50.6,5	17	2,5	6,5	5,2	11,5	9	525	525
	14,00. R/L .3,00.6,5	17	3,0	6,5	5,2	11,5	9	530	530

P	●	●
M	●	●
K	●	●
N	●	●
S	●	●
H	●	●
O	●	●

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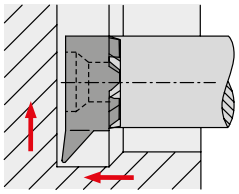
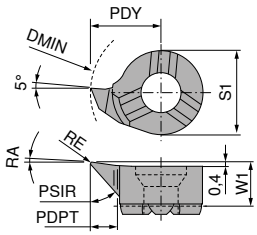
12

MiniCut – Internal undercut insert

▲ CDX = ap_{max}







CWX500 CWX500



Illustrations show right-hand versions

Size	ISO designation	DMIN mm	PDPT mm	W1 mm	PDY mm	S1 mm	RE mm	CDX mm	PSIR °	RA °	Left-hand 73 328 ...	Right-hand 73 326 ...
08	8,00. R/L .30°.1,0	7,8	1,0	3,5	4,65	6,0	0,2	0,4	30	3	010	010
	8,00. R/L .47°.1,2	7,8	1,2	3,5	4,65	6,0	0,2	0,4	47	3	012	012
09	9,00. R/L .47°.1,5	9,0	1,5	3,6	5,50	6,2	0,2	0,5	47	3	115	115
11	11,00. R/L .30°.2,3	11,0	2,3	4,2	6,70	8,0	0,2	0,6	30	3	423	423
	11,00. R/L .47°.2,3	11,0	2,3	4,2	6,70	8,0	0,2	0,6	47	3	323	323
14	13,70. R/L .47°.3,0	13,7	3,0	5,3	8,70	9,0	0,2	0,8	47	3	530	530
	13,70. R/L .30°.4,0	13,7	4,0	5,3	8,70	9,0	0,2	0,8	30	3	540	540
16	15,80. R/L .30°.4,3	15,8	4,3	5,4	10,20	11,0	0,2	1,0	30	3	744	744
P											●	●
M											●	●
K											●	●
N											●	●
S											●	●
H											●	●
O											●	●

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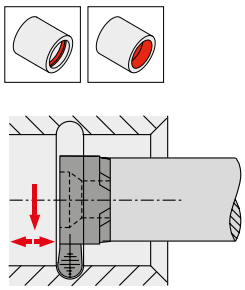
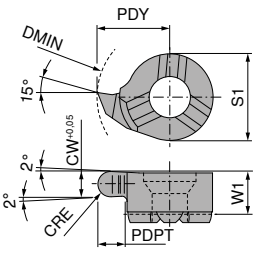
MiniCut – Full radius grooving and turning insert





CWX500 CWX500



Illustrations show right-hand versions

Size	ISO designation	DMIN mm	CW mm	PDPT mm	W1 mm	PDY mm	S1 mm	CRE mm	Left-hand 73 320 ...	Right-hand 73 318 ...
08	8,00. R/L .0,80.1,0	8	0,8	1,0	3,3	4,8	6,0	0,4	008	008
	8,00. R/L .1,20.1,0	8	1,2	1,0	3,3	4,8	6,0	0,6	012	012
	8,00. R/L .1,80.1,0	8	1,8	1,0	3,3	4,8	6,0	0,9	018	018
	8,00. R/L .2,00.1,0	8	2,0	1,0	3,3	4,8	6,0	1,0	020	020
09	9,00. R/L .0,80.1,6	9	0,8	1,6	3,6	5,5	6,2	0,4	108	108
	9,00. R/L .1,20.1,6	9	1,2	1,6	3,6	5,5	6,2	0,6	112	112
	9,00. R/L .1,80.1,6	9	1,8	1,6	3,6	5,5	6,2	0,9	118	118
	9,00. R/L .2,00.1,6	9	2,0	1,6	3,6	5,5	6,2	1,0	120	120
11	11,00. R/L .0,80.2,3	11	0,8	2,3	4,2	6,7	8,0	0,4	308	308
	11,00. R/L .1,20.2,3	11	1,2	2,3	4,2	6,7	8,0	0,6	312	312
	11,00. R/L .1,60.2,3	11	1,6	2,3	4,2	6,7	8,0	0,8	316	316
	11,00. R/L .1,80.2,3	11	1,8	2,3	4,2	6,7	8,0	0,9	318	318
	11,00. R/L .2,00.2,3	11	2,0	2,3	4,2	6,7	8,0	1,0	320	320
	11,00. R/L .2,40.2,3	11	2,4	2,3	4,2	6,7	8,0	1,2	324	324
	11,00. R/L .3,00.2,3	11	3,0	2,3	4,2	6,7	8,0	1,5	330	330
14	14,00. R/L .0,80.4,0	14	0,8	4,0	5,3	9,0	9,0	0,4	508	508
	14,00. R/L .1,20.4,0	14	1,2	4,0	5,3	9,0	9,0	0,6	512	512
	14,00. R/L .1,80.4,0	14	1,8	4,0	5,3	9,0	9,0	0,9	518	518
	14,00. R/L .2,00.4,0	14	2,0	4,0	5,3	9,0	9,0	1,0	520	520
	14,00. R/L .2,20.4,0	14	2,2	4,0	5,3	9,0	9,0	1,1	522	522
	14,00. R/L .3,00.4,0	14	3,0	4,0	5,3	9,0	9,0	1,5	530	530
16	16,00. R/L .1,60.4,3	16	1,6	4,3	5,4	10,2	11,0	0,8	716	716
	16,00. R/L .1,80.4,3	16	1,8	4,3	5,4	10,2	11,0	0,9	718	718
	16,00. R/L .2,00.4,3	16	2,0	4,3	5,4	10,2	11,0	1,0	720	720
	16,00. R/L .2,20.4,3	16	2,2	4,3	5,4	10,2	11,0	1,1	722	722
	16,00. R/L .2,40.4,3	16	2,4	4,3	5,4	10,2	11,0	1,2	724	724
	16,00. R/L .3,00.4,3	16	3,0	4,3	5,4	10,2	11,0	1,5	730	730
	16,00. R/L .3,20.4,3	16	3,2	4,3	5,4	10,2	11,0	1,6	732	732
	16,00. R/L .4,00.4,3	16	4,0	4,3	5,4	10,2	11,0	2,0	740	740
P									●	●
M									●	●
K									●	●
N									●	●
S									●	●
H									●	●
O									●	●

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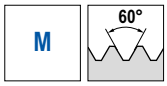
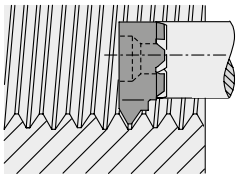
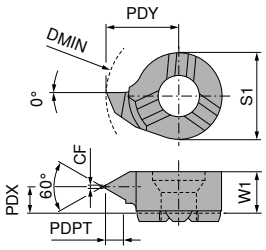
MiniCut – Threading insert (Partial profile)















Illustrations show right-hand versions

Size	ISO designation	DMIN mm	TP mm	CF mm	PDPT mm	W1 mm	PDX mm	PDY mm	S1 mm	Left-hand 73 344 ...	Right-hand 73 342 ...
08	8,00. R/L .0,5/0,75.60°	8	0,5 - 0,75	0,06	0,43	3,50	2,7	4,8	6,0	012	012
	8,00. R/L .1,0/1,25.60°	8	1,0 - 1,25	0,12	0,70	3,50	2,7	4,8	6,0	014	014
	8,00. R/L .1,5/1,75.60°	8	1,5 - 1,75	0,18	0,95	3,50	2,5	4,8	6,0	010	010
09	9,00. R/L .0,5/0,75.60°	9	0,5 - 0,75	0,06	0,27	3,55	3,2	5,5	6,2	112	112
	9,00. R/L .1,0/1,25.60°	9	1,0 - 1,25	0,12	0,54	3,55	3,0	5,5	6,2	114	114
	9,00. R/L .1,5/1,75.60°	9	1,5 - 1,75	0,18	0,81	3,55	2,8	5,5	6,2	116	116
	9,00. R/L .1,75/2,0.60°	9	1,75 - 2,0	0,20	0,95	3,55	2,6	5,5	6,2	118	118
	9,00. R/L .2,0/2,5.60°	9	2,0 - 2,5	0,25	1,08	3,55	2,5	5,5	6,2	120	120
	9,00. R/L .2,5/3,0.60°	9	2,5 - 3,0	0,31	1,35	3,55	2,1	5,5	6,2	122	122
	9,00. R/L .3,0/3,5.60°	9	3,0 - 3,5	0,37	1,62	3,55	1,9	5,5	6,2	124	124
11	11,00. R/L .0,5/0,75.60°	11	0,5 - 0,75	0,06	0,75	4,30	3,5	6,7	8,0	312	312
	11,00. R/L .1,0/1,25.60°	11	1,0 - 1,25	0,12	0,55	4,30	3,5	6,7	8,0	314	314
	11,00. R/L .1,5/1,75.60°	11	1,5 - 1,75	0,18	0,81	4,30	3,5	6,7	8,0	316	316
	11,00. R/L .2,0/2,5.60°	11	2,0 - 2,5	0,25	1,08	4,30	3,0	6,7	8,0	310	310
	11,00. R/L .2,5/3,0.60°	11	2,5 - 3,0	0,31	1,35	4,30	3,0	6,7	8,0	320	320
14	14,00. R/L .1,0/1,25.60°	14	1,0 - 1,25	0,12	0,55	5,40	4,7	9,0	9,0	512	512
	14,00. R/L .1,5/1,75.60°	14	1,5 - 1,75	0,18	0,81	5,40	4,5	9,0	9,0	514	514
	14,00. R/L .2,0/2,5.60°	14	2,0 - 2,5	0,25	1,08	5,40	4,2	9,0	9,0	510	510
	14,00. R/L .2,5/3,0.60°	14	2,5 - 3,0	0,31	1,35	5,40	4,7	9,0	9,0	520	520
16	16,00. R/L .1,0/1,25.60°	16	1,0 - 1,25	0,12	0,55	5,50	4,7	10,2	11,0	712	712
	16,00. R/L .1,5/1,75.60°	16	1,5 - 1,75	0,18	0,81	5,50	4,5	10,2	11,0	714	714
	16,00. R/L .2,0/2,5.60°	16	2,0 - 2,5	0,25	1,08	5,50	4,2	10,2	11,0	716	716
	16,00. R/L .2,5/3,0.60°	16	2,5 - 3,0	0,31	1,35	5,50	4,2	10,2	11,0	710	710
P										●	●
M										●	●
K										●	●
N										●	●
S										●	●
H										●	●
O										●	●

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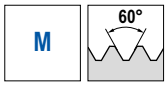
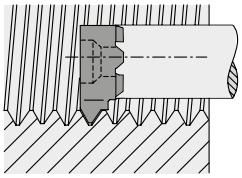
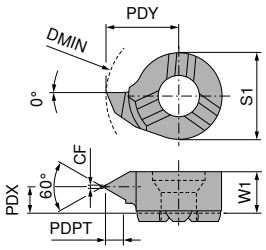
MiniCut – Threading insert (Full profile)















Illustrations show right-hand versions

Size	ISO designation	DMIN mm	TP mm	CF mm	PDPT mm	W1 mm	PDX mm	PDY mm	S1 mm	Left-hand 73 348 ...	Right-hand 73 346 ...
09	9,00. R/L .0,5.60°	9	0,50	0,06	0,27	3,55	3,25	5,5	6,2	405	405
	9,00. R/L .1,0.60°	9	1,00	0,12	0,54	3,55	3,00	5,5	6,2	410	410
	9,00. R/L .1,5.60°	9	1,50	0,18	0,81	3,55	2,80	5,5	6,2	415	415
	9,00. R/L .1,75.60°	9	1,75	0,20	0,95	3,55	2,70	5,5	6,2	418	418
	9,00. R/L .2,0.60°	9	2,00	0,25	1,08	3,55	2,60	5,5	6,2	420	420
	9,00. R/L .2,5.60°	9	2,50	0,31	1,35	3,55	2,50	5,5	6,2	425	425
	9,00. R/L .3,0.60°	9	3,00	0,37	1,62	3,55	2,20	5,5	6,2	430	430
11	11,00. R/L .1,0.60°	11	1,00	0,12	0,54	4,30	3,50	6,7	8,0	314	314
	11,00. R/L .1,5.60°	11	1,50	0,18	0,81	4,30	3,50	6,7	8,0	316	316
	11,00. R/L .2,0.60°	11	2,00	0,25	1,08	4,30	3,20	6,7	8,0	310	310
	11,00. R/L .2,5.60°	11	2,50	0,31	1,35	4,30	3,00	6,7	8,0	320	320
	11,00. R/L .3,0.60°	11	3,00	0,37	1,62	4,30	2,90	6,7	8,0	330	330
14	14,00. R/L .0,5.60°	14	0,50	0,06	0,27	5,40	3,50	9,0	9,0	510	510
	14,00. R/L .1,0.60°	14	1,00	0,12	0,54	5,40	3,50	9,0	9,0	512	512
	14,00. R/L .1,5.60°	14	1,50	0,18	0,81	5,40	3,30	9,0	9,0	514	514
	14,00. R/L .2,0.60°	14	2,00	0,25	1,08	5,40	4,20	9,0	9,0	610	610
	14,00. R/L .2,5.60°	14	2,50	0,31	1,35	5,40	4,70	9,0	9,0	520	520
16	16,00. R/L .1,0.60°	16	1,00	0,12	0,54	5,50	4,70	10,2	11,0	712	712
	16,00. R/L .1,5.60°	16	1,50	0,18	0,81	5,50	4,50	10,2	11,0	714	714
	16,00. R/L .2,0.60°	16	2,00	0,25	1,08	5,50	4,20	10,2	11,0	716	716
	16,00. R/L .2,5.60°	16	2,50	0,31	1,35	5,50	4,20	10,2	11,0	710	710
	16,00. R/L .3,0.60°	16	3,00	0,37	1,62	5,50	4,00	10,2	11,0	720	720
	16,00. R/L .3,5.60°	16	3,50	0,43	1,89	5,50	3,80	10,2	11,0	730	730
	16,00. R/L .4,0.60°	16	4,00	0,50	2,16	5,50	3,60	10,2	11,0	740	740
P										●	●
M										●	●
K										●	●
N										●	●
S										●	●
H										●	●
O										●	●

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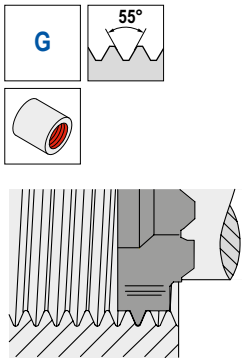
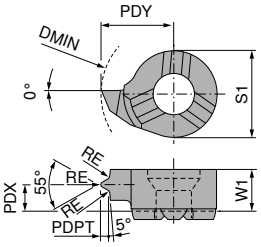
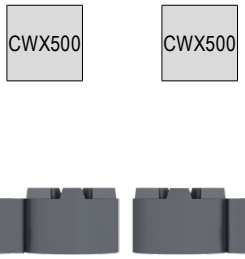
MiniCut – Threading insert (Full profile)







Illustrations show right-hand versions

Size	ISO designation	DMIN mm	TP mm	TPI 1/"	PDPT mm	W1 mm	PDX mm	PDY mm	S1 mm	RE mm	Left-hand 73 352 ...	Right-hand 73 350 ...
11	11,00. R/L .1,814.55°	11	1,814	14	1,16	4,30	3,0	6,7	8	0,24	306	306
	11,00. R/L .1,337.55°	11	1,337	19	0,85	4,30	2,7	6,7	8	0,18	304	304
14	14,00. R/L .1,814.55°	14	1,814	14	1,16	5,35	3,6	9,0	9	0,24	506	506
	14,00. R/L .1,337.55°	14	1,337	19	0,85	5,35	3,8	9,0	9	0,18	504	504
16	16,00. R/L .2,309.55°	16	2,309	11	1,48	5,50	3,5	10,2	11	0,31	708	708
	16,00. R/L .1,814.55°	16	1,814	14	1,16	5,50	3,9	10,2	11	0,24	706	706
P											●	●
M											●	●
K											●	●
N											●	●
S											●	●
H											●	●
O											●	●

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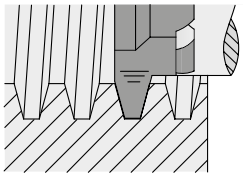
MiniCut – Threading insert (Partial profile)

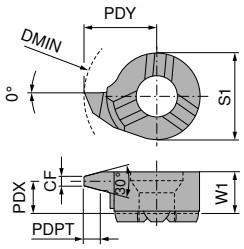
▲ Trapezoidal thread DIN 103

















Illustrations show right-hand versions

Size	ISO designation	DMIN mm	TP mm	CF mm	PDPT mm	W1 mm	PDX mm	PDY mm	S1 mm	Left-hand 73 356 ...	Right-hand 73 354 ...
09	9,00. R/L .1,5.30°	9	1,5	0,47	0,90	3,55	3,00	5,5	6,2	415	415
	9,00. R/L .2,0.30°	9	2,0	0,60	1,25	3,55	2,85	5,5	6,2	420	420
	9,00. R/L .3,0.30°	9	3,0	0,96	1,75	3,55	2,25	5,5	6,2	430	430
	9,00. R/L .4,0.30°	10	4,0	1,33	2,25	3,55	2,25	5,5	6,2	440	440
11	11,00. R/L .1,5.30°	11	1,5	0,47	0,90	4,30	3,70	6,7	8,0	315	315
	11,00. R/L .2,0.30°	11	2,0	0,60	1,25	4,30	3,50	6,7	8,0	320	320
	11,00. R/L .3,0.30°	11	3,0	0,96	1,75	4,30	3,20	6,7	8,0	330	330
	11,00. R/L .4,0.30°	11	4,0	1,33	2,25	3,95	2,60	6,7	8,0	340	340
14	14,00. R/L .2,0.30°	14	2,0	0,60	1,25	5,30	4,30	9,0	9,0	520	520
	14,00. R/L .3,0.30°	14	3,0	0,96	1,75	5,30	4,00	9,0	9,0	530	530
	14,00. R/L .4,0.30°	14	4,0	1,33	2,25	5,30	3,60	9,0	9,0	540	540
	14,00. R/L .5,0.30°	14	5,0	1,69	2,75	5,30	3,30	9,0	9,0	550	550
16	16,00. R/L .2,0.30°	16	2,0	0,60	1,25	5,50	4,50	9,7	11,0	720	720
	16,00. R/L .3,0.30°	16	3,0	0,96	1,75	5,50	4,30	9,7	11,0	730	730
	16,00. R/L .4,0.30°	16	4,0	1,33	2,25	5,50	4,00	9,7	11,0	740	740
	16,00. R/L .5,0.30°	16	5,0	1,69	2,75	5,50	3,55	9,7	11,0	750	750
	16,00. R/L .6,0.30°	16	6,0	1,92	3,50	5,50	3,30	10,2	11,0	760	760
P										●	●
M										●	●
K										●	●
N										●	●
S										●	●
H										●	●
O										●	●

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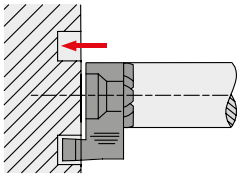
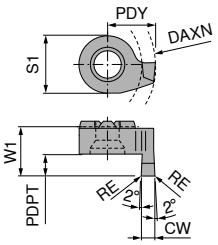
12

MiniCut – Axial grooving insert







CWX500 CWX500



Illustrations show right-hand versions

Size	ISO designation	DAXN mm	CW mm	PDPT mm	W1 mm	PDY mm	RE mm	S1 mm	Left-hand 73 364 ...	Right-hand 73 362 ...
14	14,00. R/L .1,0.1,5	14	1,0	1,5	8,3	9		9	510	510
	14,00. R/L .1,5.2,5	14	1,5	2,5	8,3	9	0,2	9	515	515
	14,00. R/L .2,0.3,0	14	2,0	3,0	8,3	9	0,2	9	520	520
	14,00. R/L .2,0.5,0	14	2,0	5,0	10,3	9	0,2	9	620	620
	14,00. R/L .2,5.3,0	14	2,5	3,0	8,3	9	0,2	9	525	525
	14,00. R/L .2,5.5,0	14	2,5	5,0	10,3	9	0,2	9	625	625
	14,00. R/L .3,0.3,0	14	3,0	3,0	8,3	9	0,2	9	530	530
	14,00. R/L .3,0.5,0	14	3,0	5,0	10,3	9	0,2	9	630	630
P									●	●
M									●	●
K									●	●
N									●	●
S									●	●
H									●	●
O									●	●

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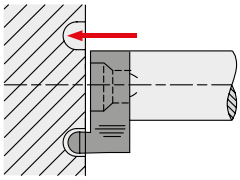
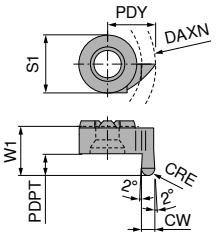
MiniCut – Full radius axial grooving insert







CWX500 CWX500



Illustrations show right-hand versions

Size	ISO designation	DAXN mm	CW mm	PDPT mm	W1 mm	PDY mm	CRE mm	S1 mm	Left-hand 73 376 ...	Right-hand 73 374 ...
14	14,00. R/L . 1,0.1,5	14	1,0	1,5	8,3	9	0,5	9	510	510
	14,00. R/L . 1,6.2,5	14	1,6	2,5	8,3	9	0,8	9	516	516
	14,00. R/L . 2,0.3,0	14	2,0	3,0	8,3	9	1,0	9	520	520
	14,00. R/L . 2,5.3,0	14	2,5	3,0	8,3	9	1,2	9	525	525
	14,00. R/L . 3,0.3,0	14	3,0	3,0	8,3	9	1,5	9	530	530
P									●	●
M									●	●
K									●	●
N									●	●
S									●	●
H									●	●
O									●	●

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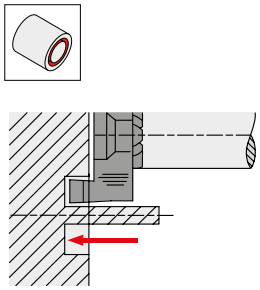
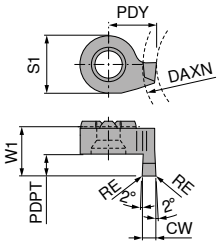
MiniCut – Axial grooving insert over a spigot

CWX500 CWX500







Illustrations show right-hand versions

Size	ISO designation	DAXN mm	CW mm	PDPT mm	W1 mm	PDY mm	RE mm	S1 mm	Left-hand 73 360 ...	Right-hand 73 358 ...
14	14/12. R/L .1,0.1,5	12	1,0	1,5	8,3	7,0		9	310	310
	14/12. R/L .1,5.2,5	12	1,5	2,5	8,3	7,5	0,2	9	315	315
	14/12. R/L .2,0.3,0	12	2,0	3,0	8,3	8,0	0,2	9	320	320
	14/12. R/L .2,0.5,0	12	2,0	5,0	10,3	8,0	0,2	9	420	420
	14/12. R/L .2,5.3,0	12	2,5	3,0	8,3	8,5	0,2	9	325	325
	14/12. R/L .2,5.5,0	12	2,5	5,0	10,3	8,5	0,2	9	425	425
	14/12. R/L .3,0.3,0	12	3,0	3,0	8,3	9,0	0,2	9	330	330
	14/12. R/L .3,0.5,0	12	3,0	5,0	10,3	9,0	0,2	9	430	430
P									●	●
M									●	●
K									●	●
N									●	●
S									●	●
H									●	●
O									●	●

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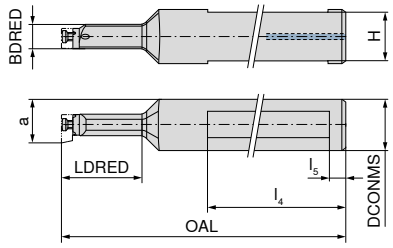
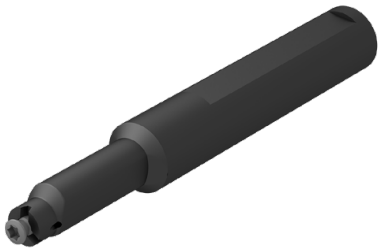
MiniCut – Steel Tool holder

Scope of supply:
Holder with clamping screw





Size	Designation	a	DCONMS	OAL	l_4	LDRED	BDRED	H	l_5	73 522 ...
		mm	mm	mm	mm	mm	mm	mm	mm	
08	8,00/16.N.12.1,0	7,8	16	80	60	12		15,0	5	012
	8,00/16.N.22.1,0	7,8	16	90	60	22	7,0	15,0	5	122
09	9,00/16.N.14.1,8	8,6	16	95	60	14	7,4	15,0	5	014
	9,00/16.N.25.1,8	8,6	16	105	60	25	7,4	15,0	5	125
11	11,00/16.N.16.2,3	10,7	16	97	60	16		14,5	5	016
	11,00/16.N.29.2,3	10,7	16	110	60	29	9,5	14,5	5	129
14	14,00/16.N.18.4,0	13,8	16	100	60	18	11,0	14,5	5	018
	14,00/16.N.38.4,0	13,8	16	120	60	38	11,0	14,5	5	138
16	16,00/16.N.22.4,3	15,7	16	100	60	22		14,5	5	022
	16,00/16.N.42.4,3	15,7	16	120	60	42	13,5	14,5	5	142

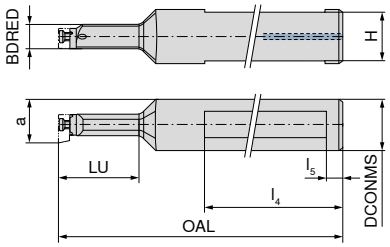

Key D

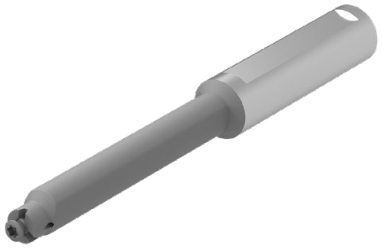

Clamping screw

Spare parts		80 950 ...		73 082 ...	
Size					
08	T08	110	M2,6	002
09	T08	110	M2,6	002
11	T10	112	M3,5	003
14	T15	113	M4	004
16	T20	114	M5	005

MiniCut – Solid Carbide Tool holder – vibration damped

Scope of supply:
Holder with clamping screw





Size	Designation	a	DCONMS	OAL	l_4	LU	BDRED	H	l_5	73 520 ...
		mm	mm	mm	mm	mm	mm	mm	mm	
08	8,00/12.N.21.1,0 HM	7,8	12	80	50	22,60		11,0	5	021
	8,00/12.N.30.1,0 HM	7,8	12	90	54	30,80		11,0	5	030
	8,00/12.N.42.1,0 HM	7,8	12	100	54	42,80		11,0	5	042
	8,00/12.N.50.1,0 HM	7,8	12	115	48	51,60	7,2	11,0	5	050
09	9,00/12.N.22.1,0 HM	8,6	12	90	60	23,60	7,4	11,0	5	222
	9,00/12.N.30.2,0 HM	8,6	12	98	60	30,54	7,4	11,0	5	230
	9,00/12.N.42.3,0 HM	8,6	12	110	60	43,60	7,4	11,0	5	242
	9,00/12.N.56.4,0 HM	8,6	12	122	56	57,60	7,4	11,0	5	256
11	11,00/12.N.29.2,3 HM	10,7	12	95	60	26,40		10,5	5	129
	11,00/12.N.42.2,3 HM	10,7	12	110	56	42,50		10,5	5	142
	11,00/12.N.56.2,3 HM	10,7	12	120	56	57,60		10,5	5	156
	11,00/12.N.64.2,3 HM	10,7	12	130	56	65,60	9,5	10,5	5	164
14	14,00/12.N.34.4,0 HM	13,8	12	100	59	35,00	11,0	10,5	5	234
	14,00/12.N.45.4,0 HM	13,8	12	110	59	46,25	11,0	10,5	5	245
	14,00/12.N.64.4,0 HM	13,8	12	130	60	65,25	11,0	10,5	5	264
	14,00/16.N.34.4,0 HM	13,8	16	100	59	35,60	11,0	14,5	5	334
	14,00/16.N.45.4,0 HM	13,8	16	110	56	46,60	11,0	14,5	5	345
	14,00/16.N.64.4,0 HM	13,8	16	130	59	65,40	11,0	14,5	5	364
	14,00/16.N.75.4,0 HM	13,8	16	145	56	81,60	11,0	14,5	5	375
16	16,00/12.N.40.4,3 HM	15,7	12	130	60	41,25		10,5	5	440
	16,00/12.N.56.4,3 HM	15,7	12	130	60	57,25		10,5	5	456
	16,00/12.N.80.4,3 HM	15,7	12	150	60	81,06		10,5	5	480
	16,00/16.N.56.4,3 HM	15,7	16	130	60	57,60		14,5	5	556
	16,00/16.N.40.4,3 HM	15,7	16	130	60	41,60		14,5	5	540
	16,00/16.N.80.4,3 HM	15,7	16	150	60	81,60		14,5	5	580

12


Key D

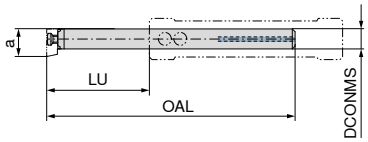

Clamping screw

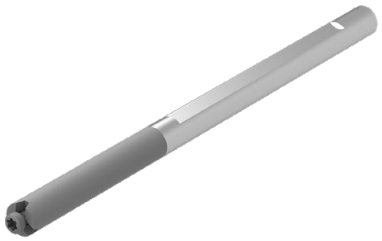
Spare parts		80 950 ...		73 082 ...
Size				
08	T08	110	M2,6	002
09	T08	110	M2,6	002
11	T10	112	M3,5	003
14	T15	113	M4	004
16	T20	114	M5	005

MiniCut – HM – Flexoholder

Scope of supply:
Holder with clamping screw







Size	Designation	DCONMS mm	OAL mm	LU mm	a mm	73 525 ...
08	8,0/6.N16/2	6	65	18	8	818
	8,0/6.N40/4	6	103	40	8	840
11	11,0/8.N20/2	8	79	20	11	120 1)
	11,0/8.N50/4	8	129	50	11	150 1)

1) with thro' coolant

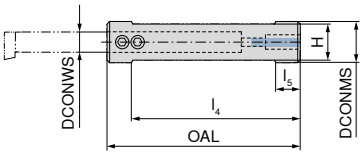

Key D


Clamping screw

Spare parts Size		80 950 ...		73 082 ...
08	T08	110	M2,6	002
11	T10	112	M3,5	003

MiniCut – Base holder for solid carbide Flexoholder

Scope of supply:
Holder with clamping screw





Size	Designation	DCONWS mm	DCONMS mm	H mm	OAL mm	l_4 mm	l_5 mm	73 526 ...
08	8/16.75	6	16	14	75	55	10	816
	8/20.75	6	20	18	75	70	10	820
11	11/16.75	8	16	14	75	55	10	116
	11/20.75	8	20	18	75	70	10	120


Key I

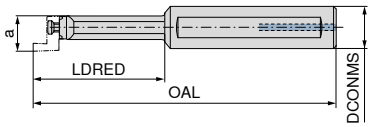

Clamping screw

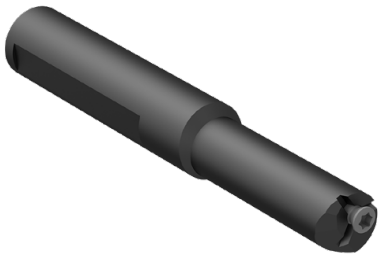
Spare parts for Article no.		70 950 ...		73 082 ...
73 526 816	SW2,5	175	M5x0,5x6	010
73 526 820	SW2,5	175	M5x0,5x6	010
73 526 116	SW2,5	175	M5x0,5x4	009
73 526 120	SW2,5	175	M5x0,5x6	010

MiniCut – Steel holder

▲ for axial machining

Scope of supply:
Holder with clamping screw





Size	Designation	a mm	DCONMS mm	OAL mm	LDRED mm	Left-hand 73 523 ...	Right-hand 73 524 ...
14	14,0/16. L .25.1,0	13,5	16	90	25	025	
	14,0/16. R .25.1,0	13,5	16	90	25		025
	14,0/16. L .45.1,0	13,5	16	110	45	145	
	14,0/16. R .45.1,0	13,5	16	110	45		145



Key D



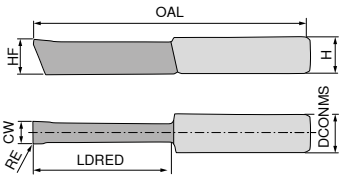
Clamping screw

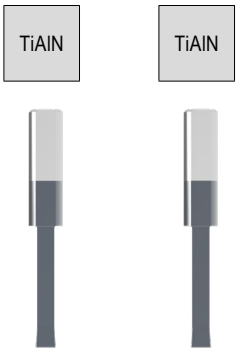
Spare parts Size		Key D 80 950 ...		Clamping screw 73 082 ...
14	T15	113	M4	004

12

SlotCut – Inserts – DIN 138

▲ b_1 = Groove width





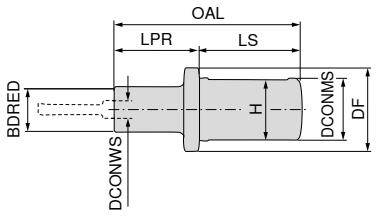
Designation	$b_{1\ P9/JS9}$	CW	HF	RE	OAL	LDRED	DMIN	DCONMS	H	73 601 ...	73 602 ...
	mm	mm	mm	mm	mm	mm	mm	mm	mm		
NPU.0198.01.1	2	1,98	5,5	0,1	38	12,5	6	7	6,3		**099**
NPU.0200.01.1	2	2,01	5,5	0,1	38	12,5	6	7	6,3	**099**	
NPU.0298.01.1	3	2,98	6,2	0,1	38	12,5	7	7	6,3		**100**
NPU.0300.01.1	3	3,01	6,2	0,1	38	12,5	7	7	6,3	**100**	
NPU.0398.01.1	4	3,98	6,2	0,1	40	15,0	7	7	6,3		**101**
NPU.0398.02.2	4	3,98	6,2	0,2	50	25,0	7	7	6,3		**102**
NPU.0400.01.1	4	4,01	6,2	0,1	40	15,0	7	7	6,3	**101**	
NPU.0400.02.1	4	4,01	6,2	0,2	40	15,0	7	7	6,3	**102**	
NPU.0400.02.2	4	4,01	6,2	0,2	50	25,0	7	7	6,3	**103**	
NPU.0498.02.2	5	4,98	5,8	0,2	50	25,0	7	7	6,3		**103**
NPU.0500.02.2	5	5,01	5,8	0,2	50	25,0	8	7	6,3	**104**	

Tolerance **JS 9** for 73 601, Tolerance **P 9** for 73 602

SlotCut – Toolholder for broaching inserts

Scope of supply:

Tool holder with clamping screw, without insert





Designation	DCONWS	BDRED	DCONMS	DF	OAL	LS	LPR	H	73 610 ...
	mm	mm	mm	mm	mm	mm	mm	mm	
NHU.25	7	18	25	33	73	40	33	23	**025**
NHU.32	7	20	32	40	73	40	33	30	**032**

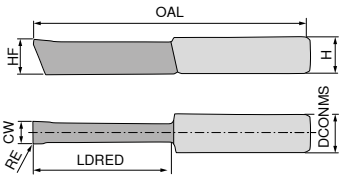

Key I

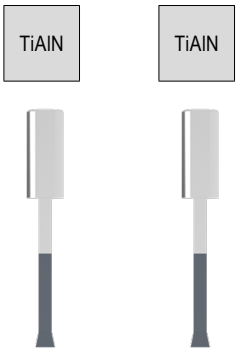

Clamping screw

Spare parts DCONMS		70 950 ...		73 082 ...
25	SW2,5	**175**	M5x6	**001**
32	SW2,5	**175**	M5x6	**001**

SlotCut – Inserts – DIN 138

▲ b_1 = Groove width





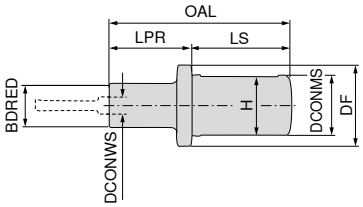
Designation	$b_{1\ JS\ 9/P\ 9}$	CW	HF	RE	OAL	LDRED	DMIN	DCONMS	H	73 607 ...	73 608 ...
	mm	mm	mm	mm	mm	mm	mm	mm	mm		
NP10.398.02.2	4	3,98	9	0,2	50	25	10	10	9,2	**101**	
NP10.398.02.3	4	3,98	9	0,2	66	41	10	10	9,2	**102**	
NP10.400.02.2	4	4,01	9	0,2	50	25	10	10	9,2		**101**
NP10.400.02.3	4	4,01	9	0,2	66	41	10	10	9,2		**102**
NP10.498.02.2	5	4,98	9	0,2	50	25	10	10	9,2	**103**	
NP10.498.02.3	5	4,98	9	0,2	66	41	10	10	9,2	**104**	
NP10.500.02.2	5	5,01	9	0,2	50	25	10	10	9,2		**103**
NP10.500.02.3	5	5,01	9	0,2	66	41	10	10	9,2		**104**

Tolerance **P 9** for 73 607, Tolerance **JS 9** for 73 608

SlotCut – Toolholder for Cutting Inserts

Scope of supply:

Tool holder with clamping screw, without insert





Designation	DCONWS	BDRED	$DCONMS_{g6}$	DF	OAL	LS	LPR	H	73 612 ...
	mm	mm	mm	mm	mm	mm	mm	mm	
NH10.0025.1	10	20	25	33	73	40	33	23	**025**
NH10.0032.1	10	20	32	40	73	40	33	30	**032**





Spare parts DCONMS			70 950 ...		70 950 ...
25	SW3	**176**		M6x5,5	**031**
32	SW3	**176**		M6x5,5	**031**

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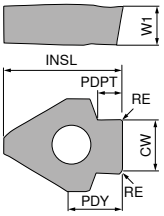
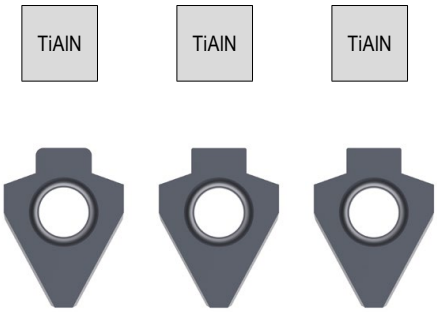
SlotCut – Inserts – DIN 138

▲ b_1 = Groove width





Designation	$b_{1\ P\,9/JS\,9/C\,11}$	CW	RE	PDY	INSL	PDPT	DMIN	W1	clamping holder	73 603 ...	73 604 ...	73 605 ...
	mm	mm	mm	mm	mm	mm	mm	mm				
NV15.0398.02	4	3,98	0,20	6,5	13,0	2,3	15	3,2	NHV 15			**110**
NV15.0401.02	4	4,01	0,20	6,5	13,0	2,3	15	3,2	NHV 15		**110**	
NV15.0410.050	4	4,10	0,50	6,5	13,0	2,2	15	3,2	NHV 15	**108**		
NV15.0498.02	5	4,98	0,20	6,5	13,0	2,8	15	3,2	NHV 15			**111**
NV15.0501.02	5	5,01	0,20	6,5	13,0	2,8	15	3,2	NHV 15		**111**	
NV15.0510.050	5	5,10	0,50	6,5	13,0	2,5	15	3,2	NHV 15	**109**		
NV15.0598.02	6	5,98	0,20	6,5	13,0	3,3	15	3,2	NHV 15			**112**
NV15.0601.02	6	6,01	0,20	6,5	13,0	3,3	15	3,2	NHV 15		**112**	
NV15.0612.085	6	6,12	0,85	6,5	13,0	2,6	15	3,2	NHV 15	**110**		
NPV.0498.02	5	4,98	0,20	8,0	17,3	2,7	22	5,3	NHV 22			**100**
NPV.0501.02	5	5,01	0,20	8,0	17,3	2,7	22	5,3	NHV 22		**100**	
NPV.0598.02	6	5,98	0,20	8,0	17,3	3,4	22	5,3	NHV 22			**101**
NPV.0601.02	6	6,01	0,20	8,0	17,3	3,4	22	5,3	NHV 22		**101**	
NPV.0612.085	6	6,12	0,85	8,0	17,3	2,6	22	5,3	NHV 22	**101**		
NPV.0713.085	7	7,13	0,85	8,0	17,3	3,3	22	5,3	NHV 22	**102**		
NPV.0798.02	8	7,98	0,20	8,0	17,3	4,1	22	5,3	NHV 22/30			**102**
NPV.0801.02	8	8,01	0,20	8,0	17,3	4,1	22	5,3	NHV 22/30		**102**	
NPV.0813.105	8	8,13	1,05	8,0	17,3	3,4	22	5,3	NHV 22/30	**103**		
NPV.0998.03	10	9,98	0,30	8,0	17,3	4,2	30	5,3	NHV 30			**103**
NPV.1001.03	10	10,01	0,30	8,0	17,3	4,2	30	5,3	NHV 30		**103**	
NPV.1013.105	10	10,13	1,05	10,9	20,2	4,2	40	5,3	NHV 38	**104**		
NPV.1197.03	12	11,97	0,30	10,9	20,2	5,7	40	5,3	NHV 38			**104**
NPV.1202.03	12	12,02	0,30	10,9	20,2	5,7	40	5,3	NHV 38		**104**	
NPV.1202.05	20	12,02	0,50	10,9	20,2	8,5	40	5,3	NHV 38		**105**	
NPV.1215.135	12	12,15	1,35	10,9	20,2	5,1	40	5,3	NHV 38	**105**		
NPV.1215.175	16	12,15	1,75	10,9	20,2	6,6	40	5,3	NHV 38	**106**		
NPV.1215.225	24	12,15	2,25	10,9	20,2	8,5	40	5,3	NHV 38	**107**		
NPV.1397.03	14	13,97	0,30	10,9	20,1	7,5	45	5,3	NHV 45			**106**
NPV.1402.03	14	14,02	0,30	10,9	20,1	7,5	45	5,3	NHV 45		**106**	
NPV.1597.03	16	15,97	0,30	10,9	20,1	7,5	45	5,3	NHV 45			**107**
NPV.1602.03	16	16,02	0,30	10,9	20,1	7,5	45	5,3	NHV 45		**107**	
NPV.1797.05	18	17,97	0,50	10,9	20,1	9,5	45	5,3	NHV 45			**108**
NPV.1802.05	18	18,02	0,50	10,9	20,1	9,5	45	5,3	NHV 45		**108**	
NPV.1997.05	20	19,97	0,50	10,9	20,1	10,0	45	5,3	NHV 45			**109**
NPV.2002.05	20	20,02	0,50	10,9	20,1	10,0	45	5,3	NHV 45		**109**	

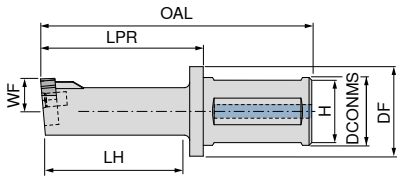
Tolerance **C 11** for 73 603, Tolerance **JS 9** for 73 604, Tolerance **P 9** for 73 605

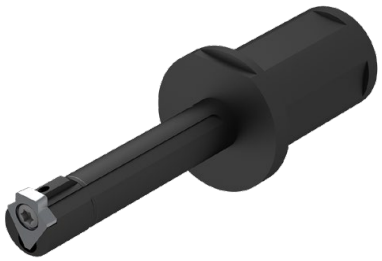
SlotCut – Toolholder for inserts

Scope of supply:

Tool holder with clamping screw, without insert







Designation	DCONMS mm	DMIN mm	DF mm	OAL mm	LH mm	LPR mm	H mm	WF mm	73 613 ...
NHV.15.1	25	15	33	75	25	35	23	8,4	**025**
NHV.15.2	25	15	33	90	40	50	23	8,4	**125**
NHV.15.3	25	15	33	110	60	70	23	8,4	**225**



Key D

80 950 ...



Clamping screw

73 950 ...

Spare parts

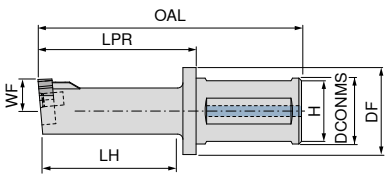
DCONMS				
25	T15	**113**	M4x10	**029**

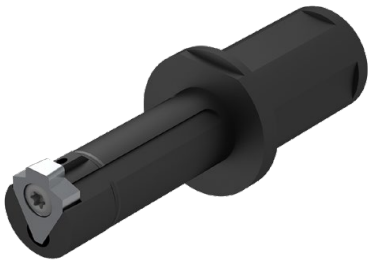
SlotCut – Toolholder for inserts

Scope of supply:

Tool holder with clamping screw, without insert







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Designation	DCONMS $_{g6}$ mm	DMIN mm	DF mm	OAL mm	LH mm	LPR mm	H mm	WF mm	73 611 ...
NHV.22	25	22	33	100	50	60	23	12,0	**025**
NHV.30	32	30	45	100	50	60	30	16,5	**032**
NHV.30	32	30	45	125	75	85	30	16,5	**532**
NHV.38	32	38	45	100	50	60	30	22,0	**132**
NHV.38	32	38	45	125	75	85	30	22,0	**632**
NHV.45	40	45	55	175	105	115	38	24,0	**140**
NHV.45	40	45	55	120	50	60	38	24,0	**040**
NHV.45	40	45	55	225	155	165	38	24,0	**240**



Key D

80 950 ...



Clamping screw

73 082 ...

Spare parts

DCONMS				
25	T20	**114**	M5x13	**007**
32	T20	**114**	M5x13	**007**
40	T20	**114**	M5x13	**007**

Material examples for cutting data tables

	Material sub-group	Index	Composition / Structure / Heat treatment		Tensile strength N/mm²* / HB / HRC	Material number	Material designation	Material number	Material designation
P	Unalloyed steel	P.1.1	< 0,15 % C	Annealed	420 N/mm² / 125 HB	1.0401	C15	1.1141	Ck15
		P.1.2	< 0,45 % C	Annealed	640 N/mm² / 190 HB	1.1191	C45E	1.0718	9SMnPb28
		P.1.3		Tempered	840 N/mm² / 250 HB	1.1191	C45E	1.0535	C55
		P.1.4	< 0,75 % C	Annealed	910 N/mm² / 270 HB	1.1223	C60R	1.0535	C55
		P.1.5		Tempered	1010 N/mm² / 300 HB	1.1223	C60R	1.0727	45S20
	Low-alloy steel	P.2.1		Annealed	610 N/mm² / 180 HB	1.7131	16MnCr5	1.6587	17CrNiMo6
		P.2.2		Tempered	930 N/mm² / 275 HB	1.7131	16MnCr5	1.6587	17CrNiMo6
		P.2.3		Tempered	1010 N/mm² / 300 HB	1.7225	42CrMo4	1.3505	100Cr6
		P.2.4		Tempered	1200 N/mm² / 375 HB	1.7225	42CrMo4	1.3505	100Cr6
	High-alloy steel and high-alloy tool steel	P.3.1		Annealed	680 N/mm² / 200 HB	1.4021	X20Cr13	1.4034	X46Cr13
		P.3.2		Hardened and tempered	1100 N/mm² / 300 HB	1.2343	X38CrMoV5-1	1.4034	X46Cr13
		P.3.3		Hardened and tempered	1300 N/mm² / 400 HB	1.2343	X38CrMoV5-1	1.4034	X46Cr13
	Stainless steel	P.4.1	Ferritic / martensitic	Annealed	680 N/mm² / 200 HB	1.4016	X6Cr17	1.2316	X36CrMo16
		P.4.2	Martensitic	Tempered	1010 N/mm² / 300 HB	1.4112	X90CrMoV18	1.2316	X36CrMo16
M	Stainless steel	M.1.1	Austenitic / austenitic-ferritic	Quenched	610 N/mm² / 180 HB	1.4301	X5CrNi18-10	1.4571	X6CrNiMoTi17-12-2
		M.2.1	Austenitic	Tempered	300 HB	1.4841	X15CrNiSi25-21	1.4539	X1NiCrMoCu25-20-5
		M.3.1	Austenitic / ferritic (Duplex)		780 N/mm² / 230 HB	1.4462	X2CrNiMoN22-5-3	1.4501	X2CrNiMoCuWN25-7-4
K	Grey cast iron	K.1.1	Pearlitic / ferritic		350 N/mm² / 180 HB	0.6010	GG-10	0.6025	GG-25
		K.1.2	Pearlitic (martensitic)		500 N/mm² / 260 HB	0.6030	GG-30	0.6045	GG-45
	Spherulitic graphite cast iron	K.2.1	Ferritic		540 N/mm² / 160 HB	0.7040	GGG-40	0.7060	GGG-60
		K.2.2	Pearlitic		845 N/mm² / 250 HB	0.7070	GGG-70	0.7080	GGG-80
	Malleable iron	K.3.1	Ferritic		440 N/mm² / 130 HB	0.8035	GTW-35-04	0.8045	GTW-45
		K.3.2	Pearlitic		780 N/mm² / 230 HB	0.8165	GTS-65-02	0.8170	GTS-70-02
N	Aluminium wrought alloy	N.1.1	Non-hardenable		60 HB	3.0255	Al99,5	3.3315	AlMg1
		N.1.2	Hardenable	Age-hardened	340 N/mm² / 100 HB	3.1355	AlCuMg2	3.2315	AlMgSi1
	Cast aluminium alloy	N.2.1	≤ 12 % Si, non-hardenable		250 N/mm² / 75 HB	3.2581	G-AlSi12	3.2163	G-AlSi9Cu3
		N.2.2	≤ 12 % Si, hardenable	Age-hardened	300 N/mm² / 90 HB	3.2134	G-AlSi5Cu1Mg	3.2373	G-AlSi9Mg
		N.2.3	> 12 % Si, non-hardenable		440 N/mm² / 130 HB		G-AlSi17Cu4Mg		G-AlSi18CuNiMg
	Copper and copper alloys (bronze/brass)	N.3.1	Free-machining alloys, PB > 1 %		375 N/mm² / 110 HB	2.0380	CuZn39Pb2 (Ms58)	2.0410	CuZn44Pb2
		N.3.2	CuZn, CuSnZn		300 N/mm² / 90 HB	2.0331	CuZn15	2.4070	CuZn28Sn1As
		N.3.3	CuSn, lead-free copper and electrolytic copper		340 N/mm² / 100 HB	2.0060	E-Cu57	2.0590	CuZn40Fe
	Magnesium alloys	N.4.1	Magnesium and magnesium alloys		70 HB	3.5612	MgAl6Zn	3.5312	MgAl3Zn
S	Heat-resistant alloys	S.1.1	Fe - basis	Annealed	680 N/mm² / 200 HB	1.4864	X12NiCrSi 36-16	1.4865	G-X40NiCrSi38-18
		S.1.2		Age-hardened	950 N/mm² / 280 HB	1.4980	X6NiCrTiMoVB25-15-2	1.4876	X10NiCrAlTi32-20
		S.2.1	Ni or Co basis	Annealed	840 N/mm² / 250 HB	2.4631	NiCr20TiAl (Nimonic80A)	3.4856	NiCr22Mo9Nb
		S.2.2		Age-hardened	1180 N/mm² / 350 HB	2.4668	NiCr19Nb5Mo3 (Inconel 718)	2.4955	NiFe25Cr20NbTi
		S.2.3		Cast	1080 N/mm² / 320 HB	2.4765	CoCr20W15Ni	1.3401	G-X120Mn12
	Titanium alloys	S.3.1	Pure titanium		400 N/mm²	3.7025	Ti99,8	3.7034	Ti99,7
		S.3.2	Alpha + beta alloys	Age-hardened	1050 N/mm² / 320 HB	3.7165	TiAl6V4	Ti-6246	Ti-6Al-2Sn-4Zr-6Mo
		S.3.3	Beta alloys		1400 N/mm² / 410 HB	Ti555.3	Ti-5Al-5V-5Mo-3Cr	R56410	Ti-10V-2Fe-3Al
H	Hardened steel	H.1.1		Hardened and tempered	46–55 HRC				
		H.1.2		Hardened and tempered	56–60 HRC				
		H.1.3		Hardened and tempered	61–65 HRC				
		H.1.4		Hardened and tempered	66–70 HRC				
	Chilled iron	H.2.1		Cast	400 HB				
	Hardened cast iron	H.3.1		Hardened and tempered	55 HRC				
O	Non-metal materials	O.1.1	Plastics, duroplastic		≤ 150 N/mm²				
		O.1.2	Plastics, thermoplastic		≤ 100 N/mm²				
		O.2.1	Aramid fibre-reinforced		≤ 1000 N/mm²				
		O.2.2	Glass/carbon-fibre reinforced		≤ 1000 N/mm²				
		O.3.1	Graphite						

*** Tensile strength**

Cutting data standard values

Index	UltraMini K10F uncoated	UltraMini TiN	UltraMini TiAlN	UltraMini DPX 57S	UltraMini TiAlN+	MiniCut CWX500	MiniCut CBN
	v_c in m/min						
P.1.1		**90**	**110**	110	110	**160**	
P.1.2		**80**	**100**	100	100	**140**	
P.1.3		**60**	**80**	80	80	**140**	
P.1.4		**60**	**80**	80	80	**110**	
P.1.5		**60**	**60**	60	60	**100**	
P.2.1		**60**	**80**	80	80	**110**	
P.2.2		**60**	**60**	60	60	**100**	
P.2.3		**50**	**60**	60	60	**90**	
P.2.4		**50**	**60**	60	60	**80**	
P.3.1		**50**	**60**	60	60	**80**	
P.3.2		**30**	**50**	**50**	50	**70**	
P.3.3		**30**	**30**	**30**	30	**50**	
P.4.1		**60**	**70**	**70**	70	**100**	
P.4.2		**50**	**60**	**60**	60	**90**	
M.1.1		**60**	**80**	**80**	80	**80**	
M.2.1		**50**	**60**	**60**	60	**70**	
M.3.1		**40**	**50**	**50**	50	**60**	
K.1.1		**80**	**100**	100	100	**90**	
K.1.2		**60**	**70**	70	70	**100**	
K.2.1		**60**	**60**	60	60	**80**	
K.2.2		**50**	**60**	60	60	**70**	
K.3.1		**80**	**100**	100	100	**120**	
K.3.2		**70**	**80**	80	80	**100**	
N.1.1	100	**200**	**230**	230	230	**290**	
N.1.2	100	**180**	**220**	220	220	**280**	
N.2.1	90	**160**	**190**	190	190	**240**	
N.2.2	70	**140**	**170**	170	170	**200**	
N.2.3	50	**80**	**100**	100	100	**120**	
N.3.1	80	**140**	**170**	170	170	**210**	
N.3.2	70	**120**	**140**	140	140	**180**	
N.3.3	50	**100**	**120**	120	120	**130**	
N.4.1	50	**100**	**120**	120	120	**100**	
S.1.1		30	**50**	50	50	**50**	
S.1.2		30	**30**	30	30	**30**	30
S.2.1		30	**50**	50	50	**50**	50
S.2.2		30	**30**	30	30	**40**	30
S.2.3			**30**	30	30	**30**	30
S.3.1		30	**50**	50	50	**50**	
S.3.2		20	**30**	30	30	**40**	
S.3.3			**20**	20	20	**30**	20
H.1.1		30	**40**	40	**40**	**50**	**40**
H.1.2			30	30	**30**	40	**30**
H.1.3				20	**30**		**30**
H.1.4							
H.2.1							
H.3.1		20	**30**	30	**30**	**40**	**30**
O.1.1	**50**	**90**	**110**	110	110	**150**	
O.1.2	**50**	**100**	**120**	120	120	**150**	
O.2.1		**90**	**110**	110	110	**130**	
O.2.2		**60**	**80**	80	80	**100**	
O.3.1	50	**100**	**120**	120	120	**150**	

	UltraMini	MiniCut
	f in mm/rev.	
Internal turning and profiling	0,02–0,05	0,03–0,10
Internal turning and profiling – hard turning	0,02–0,06	0,03–0,10
Turning and profile turning – super alloys	0,02–0,08	
Internal turning	0,02–0,05	0,01–0,03
Back boring	0,02–0,04	0,03–0,10
Turning and chamfering	0,01–0,03	0,03–0,10
Pre-parting and chamfering	0,01–0,02	0,01–0,03
Groove turning	0,01–0,02	0,01–0,03
Internal Undercuts	0,01–0,03	0,03–0,08
Groove and profile turning	0,01–0,02	0,01–0,03
Axial grooving	0,02–0,05	0,02–0,05

The cutting data is strongly influenced by external conditions, such as the stability of the tool and workpiece clamping, material and type of machine.
The specified values represent guideline cutting data that can be adjusted by approx. **±20%** according to the usage conditions.

Cutting data standard values – 73 000 ... / 73 001 ...

		Roughing										
	UltraMini DPX77S	Ø ≤ 2 mm Corner radius in mm			Ø 2,5–4 mm Corner radius in mm				Ø ≥ 5 mm Corner radius in mm			
Index		0,05	0,1	0,15	0,05	0,1	0,15	0,2 / 0,4	0,05	0,1	0,15	0,2 / 0,4
	v_c in m/min	f in mm/rev.			f in mm/rev.				f in mm/rev.			
P.1.1	110	0,026–0,076	0,029–0,082	0,031–0,088	0,053–0,151	0,058–0,165	0,062–0,176	0,064–0,184	0,099–0,284	0,108–0,309	0,116–0,33	0,121–0,345
P.1.2	100	0,026–0,076	0,029–0,082	0,031–0,088	0,053–0,151	0,058–0,165	0,062–0,176	0,064–0,184	0,099–0,284	0,108–0,309	0,116–0,33	0,121–0,345
P.1.3	80	0,026–0,076	0,029–0,082	0,031–0,088	0,053–0,151	0,058–0,165	0,062–0,176	0,064–0,184	0,099–0,284	0,108–0,309	0,116–0,33	0,121–0,345
P.1.4	80	0,023–0,065	0,025–0,071	0,026–0,076	0,046–0,13	0,05–0,142	0,053–0,151	0,055–0,158	0,085–0,244	0,093–0,266	0,099–0,284	0,104–0,297
P.1.5	60	0,024–0,068	0,026–0,074	0,028–0,079	0,048–0,136	0,052–0,148	0,055–0,158	0,058–0,166	0,089–0,255	0,097–0,278	0,104–0,297	0,109–0,311
P.2.1	80	0,024–0,068	0,026–0,074	0,028–0,079	0,048–0,136	0,052–0,148	0,055–0,158	0,058–0,166	0,089–0,255	0,097–0,278	0,104–0,297	0,109–0,311
P.2.2	60	0,021–0,06	0,023–0,066	0,025–0,07	0,042–0,121	0,046–0,132	0,049–0,141	0,052–0,147	0,079–0,227	0,087–0,247	0,092–0,264	0,097–0,276
P.2.3	60	0,019–0,054	0,021–0,059	0,022–0,063	0,038–0,109	0,042–0,119	0,044–0,127	0,046–0,132	0,071–0,204	0,078–0,222	0,083–0,238	0,087–0,248
P.2.4	60	0,018–0,051	0,02–0,056	0,021–0,06	0,036–0,103	0,039–0,112	0,042–0,12	0,044–0,125	0,067–0,193	0,074–0,21	0,079–0,224	0,082–0,235
P.3.1	60	0,021–0,06	0,023–0,066	0,025–0,07	0,042–0,121	0,046–0,132	0,049–0,141	0,052–0,147	0,079–0,227	0,087–0,247	0,092–0,264	0,097–0,276
P.3.2	50	0,02–0,057	0,022–0,063	0,023–0,067	0,04–0,115	0,044–0,125	0,047–0,134	0,049–0,14	0,075–0,215	0,082–0,235	0,088–0,251	0,092–0,262
P.3.3	30	0,016–0,045	0,017–0,049	0,018–0,053	0,032–0,091	0,035–0,099	0,037–0,106	0,039–0,11	0,06–0,17	0,065–0,185	0,069–0,198	0,072–0,207
P.4.1	70	0,022–0,064	0,024–0,069	0,026–0,074	0,044–0,127	0,048–0,138	0,052–0,148	0,054–0,155	0,083–0,238	0,091–0,26	0,097–0,277	0,101–0,29
P.4.2	60	0,021–0,06	0,023–0,066	0,025–0,07	0,042–0,121	0,046–0,132	0,049–0,141	0,052–0,147	0,079–0,227	0,087–0,247	0,092–0,264	0,097–0,276
M.1.1	80	0,015–0,042	0,016–0,046	0,017–0,049	0,03–0,085	0,032–0,092	0,034–0,099	0,036–0,103	0,056–0,159	0,061–0,173	0,065–0,185	0,068–0,193
M.2.1	60	0,013–0,038	0,014–0,041	0,015–0,044	0,026–0,076	0,029–0,082	0,031–0,088	0,032–0,092	0,05–0,142	0,054–0,155	0,058–0,165	0,06–0,173
M.3.1	50	0,014–0,039	0,015–0,043	0,016–0,046	0,028–0,079	0,03–0,086	0,032–0,092	0,033–0,096	0,052–0,147	0,056–0,161	0,06–0,172	0,063–0,179
K.1.1	100	0,026–0,076	0,029–0,082	0,031–0,088	0,053–0,151	0,058–0,165	0,062–0,176	0,064–0,184	0,099–0,284	0,108–0,309	0,116–0,33	0,121–0,345
K.1.2	70	0,024–0,068	0,026–0,074	0,028–0,079	0,048–0,136	0,052–0,148	0,055–0,158	0,058–0,166	0,089–0,255	0,097–0,278	0,104–0,297	0,109–0,311
K.2.1	60	0,024–0,068	0,026–0,074	0,028–0,079	0,048–0,136	0,052–0,148	0,055–0,158	0,058–0,166	0,089–0,255	0,097–0,278	0,104–0,297	0,109–0,311
K.2.2	60	0,021–0,059	0,022–0,064	0,024–0,069	0,041–0,118	0,045–0,129	0,048–0,137	0,05–0,144	0,077–0,221	0,084–0,241	0,09–0,257	0,094–0,269
K.3.1	100	0,025–0,073	0,028–0,079	0,03–0,084	0,051–0,145	0,055–0,158	0,059–0,169	0,062–0,177	0,095–0,272	0,104–0,297	0,111–0,317	0,116–0,331
K.3.2	80	0,021–0,06	0,023–0,066	0,025–0,07	0,042–0,121	0,046–0,132	0,049–0,141	0,052–0,147	0,079–0,227	0,087–0,247	0,092–0,264	0,097–0,276
N.1.1	230	0,032–0,091	0,035–0,099	0,037–0,106	0,064–0,181	0,069–0,198	0,074–0,211	0,077–0,221	0,119–0,34	0,13–0,371	0,139–0,396	0,145–0,414
N.1.2	220	0,031–0,089	0,034–0,097	0,036–0,104	0,062–0,178	0,068–0,194	0,073–0,208	0,076–0,217	0,117–0,335	0,128–0,365	0,136–0,389	0,142–0,407
N.2.1	190	0,03–0,085	0,032–0,092	0,034–0,099	0,059–0,169	0,065–0,185	0,069–0,197	0,072–0,206	0,111–0,318	0,121–0,346	0,129–0,37	0,135–0,386
N.2.2	170	0,029–0,083	0,032–0,091	0,034–0,097	0,058–0,166	0,063–0,181	0,068–0,194	0,071–0,202	0,109–0,312	0,119–0,34	0,127–0,363	0,133–0,38
N.2.3	100	0,029–0,082	0,031–0,089	0,033–0,095	0,057–0,163	0,062–0,178	0,067–0,19	0,07–0,199	0,107–0,306	0,117–0,334	0,125–0,356	0,13–0,373
N.3.1	170	0,03–0,085	0,032–0,092	0,034–0,099	0,059–0,169	0,065–0,185	0,069–0,197	0,072–0,206	0,111–0,318	0,121–0,346	0,129–0,37	0,135–0,386
N.3.2	140	0,028–0,08	0,031–0,087	0,033–0,093	0,056–0,16	0,061–0,175	0,065–0,187	0,068–0,195	0,105–0,301	0,115–0,328	0,122–0,35	0,128–0,366
N.3.3	120	0,027–0,077	0,029–0,084	0,031–0,09	0,054–0,154	0,059–0,168	0,063–0,18	0,066–0,188	0,101–0,289	0,11–0,315	0,118–0,337	0,123–0,352
N.4.1	120	0,027–0,077	0,029–0,084	0,031–0,09	0,054–0,154	0,059–0,168	0,063–0,18	0,066–0,188	0,101–0,289	0,11–0,315	0,118–0,337	0,123–0,352
S.1.1	50	0,024–0,068	0,026–0,074	0,028–0,079	0,048–0,136	0,052–0,148	0,055–0,158	0,058–0,166	0,089–0,255	0,097–0,278	0,104–0,297	0,109–0,311
S.1.2	30	0,019–0,053	0,02–0,058	0,022–0,062	0,037–0,106	0,04–0,115	0,043–0,123	0,045–0,129	0,069–0,198	0,076–0,216	0,081–0,231	0,085–0,242
S.2.1	50	0,018–0,051	0,02–0,056	0,021–0,06	0,036–0,103	0,039–0,112	0,042–0,12	0,044–0,125	0,067–0,193	0,074–0,21	0,079–0,224	0,082–0,235
S.2.2	30	0,014–0,039	0,015–0,043	0,016–0,046	0,028–0,079	0,03–0,086	0,032–0,092	0,033–0,096	0,052–0,147	0,056–0,161	0,06–0,172	0,063–0,179
S.2.3	30	0,015–0,042	0,016–0,046	0,017–0,049	0,03–0,085	0,032–0,092	0,034–0,099	0,036–0,103	0,056–0,159	0,061–0,173	0,065–0,185	0,068–0,193
S.3.1	50	0,024–0,068	0,026–0,074	0,028–0,079	0,048–0,136	0,052–0,148	0,055–0,158	0,058–0,166	0,089–0,255	0,097–0,278	0,104–0,297	0,109–0,311
S.3.2	30	0,019–0,054	0,021–0,059	0,022–0,063	0,038–0,109	0,042–0,119	0,044–0,127	0,046–0,132	0,071–0,204	0,078–0,222	0,083–0,238	0,087–0,248
S.3.3	20	0,013–0,038	0,014–0,041	0,015–0,044	0,026–0,076	0,029–0,082	0,031–0,088	0,032–0,092	0,05–0,142	0,054–0,155	0,058–0,165	0,06–0,173
H.1.1	40	0,013–0,038	0,014–0,041	0,015–0,044	0,026–0,076	0,029–0,082	0,031–0,088	0,032–0,092	0,05–0,142	0,054–0,155	0,058–0,165	0,06–0,173
H.1.2	30	0,011–0,03	0,012–0,033	0,012–0,035	0,021–0,06	0,023–0,066	0,025–0,07	0,026–0,074	0,036–0,102	0,039–0,111	0,042–0,119	0,043–0,124
H.1.3												
H.1.4												
H.2.1	30	0,014–0,041	0,016–0,044	0,017–0,048	0,029–0,082	0,031–0,089	0,033–0,095	0,035–0,099	0,054–0,153	0,058–0,167	0,062–0,178	0,065–0,186
H.3.1	30	0,013–0,036	0,014–0,04	0,015–0,042	0,025–0,073	0,028–0,079	0,03–0,084	0,031–0,088	0,048–0,136	0,052–0,148	0,055–0,158	0,058–0,166
O.1.1	110	0,031–0,089	0,034–0,097	0,036–0,104	0,062–0,178	0,068–0,194	0,073–0,208	0,076–0,217	0,117–0,335	0,128–0,365	0,136–0,389	0,142–0,407
O.1.2	120	0,028–0,079	0,03–0,086	0,032–0,092	0,055–0,157	0,06–0,171	0,064–0,183	0,067–0,191	0,103–0,295	0,112–0,321	0,12–0,343	0,126–0,359
O.2.1	110	0,017–0,05	0,019–0,054	0,02–0,058	0,035–0,1	0,038–0,109	0,041–0,116	0,043–0,121	0,065–0,187	0,071–0,204	0,076–0,218	0,08–0,228
O.2.2	80	0,017–0,048	0,018–0,053	0,02–0,056	0,034–0,097	0,037–0,105	0,039–0,113	0,041–0,118	0,064–0,181	0,069–0,198	0,074–0,211	0,077–0,221
O.3.1	120											

The cutting data is strongly influenced by external conditions, such as the stability of the tool and workpiece clamping, material and type of machine.
The specified values represent guideline cutting data that can be adjusted by approx. **±20%** according to the usage conditions.

Index	Finishing												
	Ø ≤ 2 mm Corner radius in mm			Ø 2,5–4 mm Corner radius in mm					Ø ≥ 5 mm Corner radius in mm				
	0,05	0,1	0,15	0,05	0,1	0,15	0,2	0,4	0,05	0,1	0,15	0,2	0,4
	f in mm/rev.			f in mm/rev.					f in mm/rev.				
P.1.1	0,007–0,019	0,008–0,022	0,009–0,025	0,017–0,049	0,02–0,058	0,023–0,065	0,025–0,072	0,032–0,092	0,027–0,076	0,031–0,089	0,035–0,1	0,039–0,11	0,05–0,142
P.1.2	0,007–0,019	0,008–0,022	0,009–0,025	0,017–0,049	0,02–0,058	0,023–0,065	0,025–0,072	0,032–0,092	0,027–0,076	0,031–0,089	0,035–0,1	0,039–0,11	0,05–0,142
P.1.3	0,007–0,019	0,008–0,022	0,009–0,025	0,017–0,049	0,02–0,058	0,023–0,065	0,025–0,072	0,032–0,092	0,027–0,076	0,031–0,089	0,035–0,1	0,039–0,11	0,05–0,142
P.1.4	0,006–0,016	0,007–0,019	0,008–0,022	0,015–0,042	0,017–0,05	0,02–0,056	0,022–0,061	0,028–0,079	0,023–0,065	0,027–0,077	0,03–0,086	0,033–0,095	0,043–0,122
P.1.5	0,006–0,017	0,007–0,02	0,008–0,023	0,016–0,044	0,018–0,052	0,02–0,059	0,023–0,064	0,029–0,083	0,024–0,068	0,028–0,08	0,032–0,09	0,035–0,099	0,045–0,128
P.2.1	0,006–0,017	0,007–0,02	0,008–0,023	0,016–0,044	0,018–0,052	0,02–0,059	0,023–0,064	0,029–0,083	0,024–0,068	0,028–0,08	0,032–0,09	0,035–0,099	0,045–0,128
P.2.2	0,005–0,015	0,006–0,018	0,007–0,02	0,014–0,04	0,016–0,046	0,018–0,052	0,02–0,057	0,026–0,074	0,021–0,061	0,025–0,071	0,028–0,08	0,031–0,088	0,04–0,114
P.2.3	0,005–0,014	0,006–0,016	0,006–0,018	0,012–0,036	0,015–0,042	0,016–0,047	0,018–0,051	0,023–0,066	0,019–0,055	0,022–0,064	0,025–0,072	0,028–0,079	0,036–0,102
P.2.4	0,005–0,013	0,005–0,015	0,006–0,017	0,012–0,034	0,014–0,039	0,015–0,044	0,017–0,049	0,022–0,063	0,018–0,052	0,021–0,061	0,024–0,068	0,026–0,075	0,034–0,097
P.3.1	0,005–0,015	0,006–0,018	0,007–0,02	0,014–0,04	0,016–0,046	0,018–0,052	0,02–0,057	0,026–0,074	0,021–0,061	0,025–0,071	0,028–0,08	0,031–0,088	0,04–0,114
P.3.2	0,005–0,014	0,006–0,017	0,007–0,019	0,013–0,038	0,015–0,044	0,017–0,049	0,019–0,054	0,025–0,07	0,02–0,058	0,024–0,068	0,027–0,076	0,029–0,084	0,038–0,108
P.3.3	0,004–0,011	0,005–0,013	0,005–0,015	0,01–0,03	0,012–0,035	0,014–0,039	0,015–0,043	0,019–0,055	0,016–0,046	0,019–0,053	0,021–0,06	0,023–0,066	0,03–0,085
P.4.1	0,006–0,016	0,007–0,019	0,007–0,021	0,015–0,041	0,017–0,049	0,019–0,055	0,021–0,06	0,027–0,078	0,022–0,064	0,026–0,075	0,029–0,084	0,032–0,092	0,042–0,119
P.4.2	0,005–0,015	0,006–0,018	0,007–0,02	0,014–0,04	0,016–0,046	0,018–0,052	0,02–0,057	0,026–0,074	0,021–0,061	0,025–0,071	0,028–0,08	0,031–0,088	0,04–0,114
M.1.1	0,004–0,011	0,004–0,012	0,005–0,014	0,01–0,028	0,011–0,032	0,013–0,036	0,014–0,04	0,018–0,052	0,015–0,043	0,017–0,05	0,02–0,056	0,022–0,062	0,028–0,08
M.2.1	0,003–0,01	0,004–0,011	0,004–0,013	0,009–0,025	0,01–0,029	0,011–0,033	0,013–0,036	0,016–0,046	0,013–0,038	0,016–0,045	0,018–0,05	0,019–0,055	0,025–0,071
M.3.1	0,003–0,01	0,004–0,012	0,005–0,013	0,009–0,026	0,011–0,03	0,012–0,034	0,013–0,037	0,017–0,048	0,014–0,04	0,016–0,046	0,018–0,052	0,02–0,057	0,026–0,074
K.1.1	0,007–0,019	0,008–0,022	0,009–0,025	0,017–0,049	0,02–0,058	0,023–0,065	0,025–0,072	0,032–0,092	0,027–0,076	0,031–0,089	0,035–0,1	0,039–0,11	0,05–0,142
K.1.2	0,006–0,017	0,007–0,02	0,008–0,023	0,016–0,044	0,018–0,052	0,02–0,059	0,023–0,064	0,029–0,083	0,024–0,068	0,028–0,08	0,032–0,09	0,035–0,099	0,045–0,128
K.2.1	0,006–0,017	0,007–0,02	0,008–0,023	0,016–0,044	0,018–0,052	0,02–0,059	0,023–0,064	0,029–0,083	0,024–0,068	0,028–0,08	0,032–0,09	0,035–0,099	0,045–0,128
K.2.2	0,005–0,015	0,006–0,017	0,007–0,02	0,013–0,039	0,016–0,045	0,018–0,051	0,02–0,056	0,025–0,072	0,021–0,059	0,024–0,069	0,027–0,078	0,03–0,086	0,039–0,111
K.3.1	0,006–0,018	0,007–0,021	0,008–0,024	0,017–0,047	0,019–0,056	0,022–0,062	0,024–0,069	0,031–0,089	0,026–0,073	0,03–0,085	0,034–0,096	0,037–0,106	0,048–0,136
K.3.2	0,005–0,015	0,006–0,018	0,007–0,02	0,014–0,04	0,016–0,046	0,018–0,052	0,02–0,057	0,026–0,074	0,021–0,061	0,025–0,071	0,028–0,08	0,031–0,088	0,04–0,114
N.1.1	0,008–0,023	0,009–0,027	0,011–0,03	0,02–0,058	0,024–0,068	0,027–0,077	0,03–0,084	0,038–0,109	0,027–0,076	0,031–0,089	0,035–0,1	0,039–0,11	0,05–0,142
N.1.2	0,008–0,022	0,009–0,026	0,01–0,03	0,02–0,058	0,024–0,068	0,027–0,077	0,03–0,084	0,038–0,109	0,027–0,076	0,031–0,089	0,035–0,1	0,039–0,11	0,05–0,142
N.2.1	0,007–0,021	0,009–0,025	0,01–0,028	0,019–0,055	0,023–0,065	0,025–0,073	0,028–0,08	0,036–0,103	0,027–0,076	0,031–0,089	0,035–0,1	0,039–0,11	0,05–0,142
N.2.2	0,007–0,021	0,009–0,024	0,01–0,028	0,019–0,054	0,022–0,064	0,025–0,072	0,028–0,079	0,036–0,102	0,027–0,076	0,031–0,089	0,035–0,1	0,039–0,11	0,05–0,142
N.2.3	0,007–0,021	0,008–0,024	0,009–0,027	0,019–0,053	0,022–0,062	0,025–0,07	0,027–0,077	0,035–0,1	0,027–0,076	0,031–0,089	0,035–0,1	0,039–0,11	0,05–0,142
N.3.1	0,007–0,021	0,009–0,025	0,01–0,028	0,019–0,055	0,023–0,065	0,025–0,073	0,028–0,08	0,036–0,103	0,027–0,076	0,031–0,089	0,035–0,1	0,039–0,11	0,05–0,142
N.3.2	0,007–0,02	0,008–0,024	0,009–0,027	0,018–0,052	0,021–0,061	0,024–0,069	0,027–0,076	0,034–0,098	0,027–0,076	0,031–0,089	0,035–0,1	0,039–0,11	0,05–0,142
N.3.3	0,007–0,019	0,008–0,023	0,009–0,026	0,018–0,05	0,021–0,059	0,023–0,066	0,026–0,073	0,033–0,094	0,027–0,076	0,031–0,089	0,035–0,1	0,039–0,11	0,05–0,142
N.4.1	0,007–0,019	0,008–0,023	0,009–0,026	0,018–0,05	0,021–0,059	0,023–0,066	0,026–0,073	0,033–0,094	0,027–0,078	0,032–0,091	0,036–0,102	0,039–0,112	0,051–0,145
S.1.1	0,006–0,017	0,007–0,02	0,008–0,023	0,016–0,044	0,018–0,052	0,02–0,059	0,023–0,064	0,029–0,083	0,024–0,068	0,028–0,08	0,032–0,09	0,035–0,099	0,045–0,128
S.1.2	0,005–0,013	0,005–0,016	0,006–0,018	0,012–0,035	0,014–0,04	0,016–0,046	0,018–0,05	0,023–0,065	0,019–0,053	0,022–0,062	0,025–0,07	0,027–0,077	0,035–0,099
S.2.1	0,005–0,013	0,005–0,015	0,006–0,017	0,012–0,034	0,014–0,039	0,015–0,044	0,017–0,049	0,022–0,063	0,018–0,052	0,021–0,061	0,024–0,068	0,026–0,075	0,034–0,097
S.2.2	0,003–0,01	0,004–0,012	0,005–0,013	0,009–0,026	0,011–0,03	0,012–0,034	0,013–0,037	0,017–0,048	0,014–0,04	0,016–0,046	0,018–0,052	0,02–0,057	0,026–0,074
S.2.3	0,004–0,011	0,004–0,012	0,005–0,014	0,01–0,028	0,011–0,032	0,013–0,036	0,014–0,04	0,018–0,052	0,015–0,043	0,017–0,05	0,02–0,056	0,022–0,062	0,028–0,08
S.3.1	0,006–0,017	0,007–0,02	0,008–0,023	0,016–0,044	0,018–0,052	0,02–0,059	0,023–0,064	0,029–0,083	0,024–0,068	0,028–0,08	0,032–0,09	0,035–0,099	0,045–0,128
S.3.2	0,005–0,014	0,006–0,016	0,006–0,018	0,012–0,036	0,015–0,042	0,016–0,047	0,018–0,051	0,023–0,066	0,019–0,055	0,022–0,064	0,025–0,072	0,028–0,079	0,036–0,102
S.3.3	0,003–0,01	0,004–0,011	0,004–0,013	0,009–0,025	0,01–0,029	0,011–0,033	0,013–0,036	0,016–0,046	0,013–0,038	0,016–0,045	0,018–0,05	0,019–0,055	0,025–0,071
H.1.1	0,003–0,01	0,004–0,011	0,004–0,013	0,009–0,025	0,01–0,029	0,011–0,033	0,013–0,036	0,016–0,046	0,013–0,038	0,016–0,045	0,018–0,05	0,019–0,055	0,025–0,071
H.1.2	0,003–0,008	0,003–0,009	0,004–0,01	0,007–0,02	0,008–0,023	0,009–0,026	0,01–0,029	0,013–0,037	0,011–0,03	0,012–0,036	0,014–0,04	0,015–0,044	0,02–0,057
H.1.3													
H.1.4													
H.2.1	0,004–0,01	0,004–0,012	0,005–0,014	0,009–0,027	0,011–0,031	0,012–0,035	0,014–0,039	0,017–0,05	0,014–0,041	0,017–0,048	0,019–0,054	0,021–0,059	0,027–0,077
H.3.1	0,003–0,009	0,004–0,011	0,004–0,012	0,008–0,024	0,01–0,028	0,011–0,031	0,012–0,034	0,016–0,044	0,013–0,036	0,015–0,043	0,017–0,048	0,018–0,053	0,024–0,068
O.1.1	0,008–0,022	0,009–0,026	0,01–0,03	0,02–0,058	0,024–0,068	0,027–0,077	0,03–0,084	0,038–0,109	0,027–0,076	0,031–0,089	0,035–0,1	0,039–0,11	0,05–0,142
O.1.2	0,007–0,02	0,008–0,023	0,009–0,026	0,018–0,051	0,021–0,06	0,024–0,068	0,026–0,074	0,034–0,096	0,028–0,079	0,032–0,093	0,036–0,104	0,04–0,114	0,052–0,148
O.2.1	0,004–0,013	0,005–0,015	0,006–0,017	0,011–0,033	0,013–0,038	0,015–0,043	0,017–0,047	0,021–0,061	0,018–0,05	0,021–0,059	0,023–0,066	0,025–0,073	0,033–0,094
O.2.2	0,004–0,012	0,005–0,014	0,006–0,016	0,011–0,032	0,013–0,037	0,015–0,042	0,016–0,046	0,021–0,059	0,017–0,049	0,02–0,057	0,022–0,064	0,025–0,07	0,032–0,091
O.3.1													

12

Broaching – Recommendations for Correct Use

SlotCut

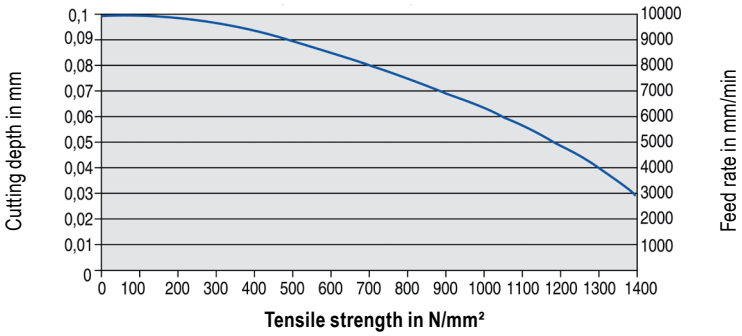
More and more often small and medium sized batch sizes are manufactured with precision grooves.

To directly machine such grooves in one set-up on one machine, it requires a special application of “Broaching” tools.

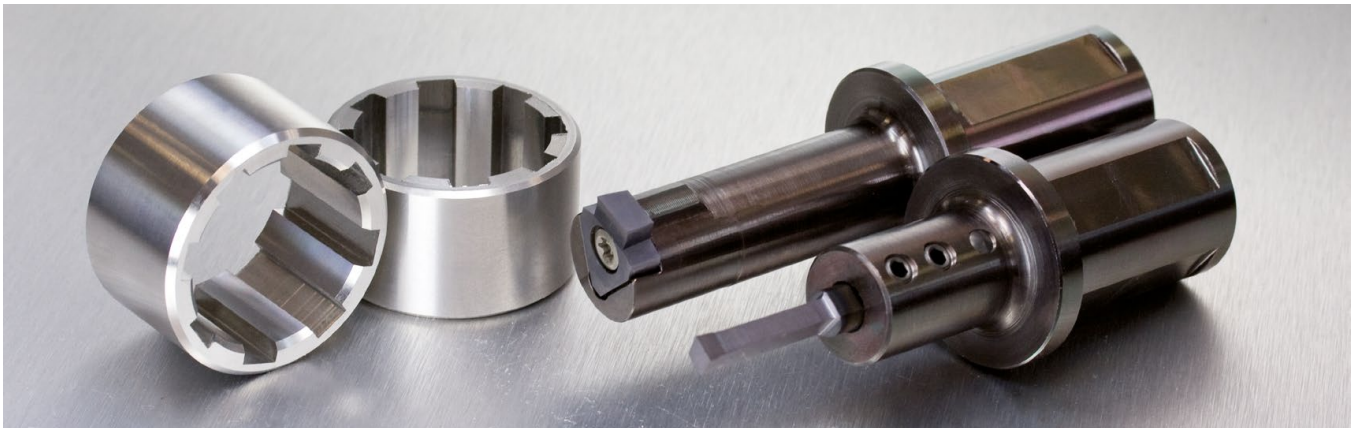
The SlotCut system can produce grooves with the most common groove tolerances.
To this end, there are four options. Two concepts are based on a solid carbide solution, which gives great success with small diameters.
For larger diameters, the concept with screw-on inserts is more suitable.

Broaching, on both lathes and machining centers is now economical, and provides highly accurate results in the shortest possible time.

Appoximate values when broaching



The data depends strongly on the conditions and represent only an appoximate value, factors such as machine stability, application and material may require adjustment of the data upward or downward.



Tips for the User

- ▲ Avoid interrupted cuts.
- ▲ Where possible, orientate the part so the groove is at the top, so the chips fall away!
- ▲ Ensure there is a relief at the end of the groove.
- ▲ Lift the tool out of the groove when retracting.
- ▲ Use coolant
  This will increase tool life and surface quality.
- ▲ Adjustment of the tool is essential, therefore the tool diameter must be considered.



Coatings

TiAlN+
- ▲ TiAlN multilayer coating
- ▲ Maximum application temperature: 1000°C

TiN
- ▲ TiN coating
- ▲ Maximum application temperature: 450°C

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

CWX500
- ▲ Carbide, TiAlN-coated
- ▲ The universal carbide grade for almost all materials

DPX77S
- ▲ TiAlN+X-coating
- ▲ Maximum application temperature: 900°C

DPX57S
- ▲ TiCrN coating
- ▲ Maximum application temperature: 900°C

Thread types

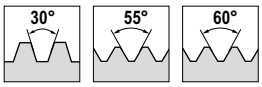
M Metric ISO standard thread

MF Metric ISO fine thread

G Whitworth thread

Tr Metric ISO trapezoidal fine thread

Thread flank angle



Cooling

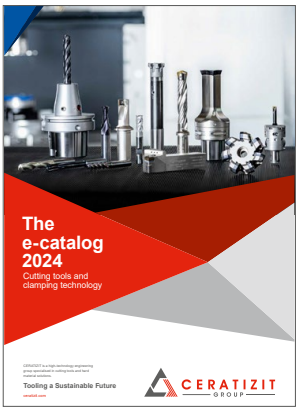


with thro' coolant

12

Metric Products

The entire content of this chapter can be found
in the Metric Catalog.
Use the QR code or the link shown below.



https://cutting.tools/us/en/digitalcatalogmetric



Solid drilling and bore machining	Metric Catalog	HSS drilling	1
	Metric Catalog	Solid carbide drilling	2
		Indexable drilling	3
		Reaming and Countersinking	4
		Indexable Boring	5
Threading	Metric Catalog	Taps and thread formers	6
	Metric Catalog	Circular and Thread Milling	7
	Metric Catalog	Thread turning	8
Turning		Indexable Turning	9
		Multifunction	10
		Parting and Grooving	11
	Metric Catalog	Miniature turning tools	12
Milling	Metric Catalog	HSS Milling Cutters	13
		Solid Milling	14
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Clamping technology		Adaptors and Accessories	16
	Metric Catalog	Workpiece clamping	17
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Technical Information:	
Cutting Data	32–40
Formula for cutting data calculation	40
Version description	41
Differences between the milling cutter types	41
Coating	41

WNT \ Performance

Premium quality tools for high performance.

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

Symbol explanation

Shank



Shank type



Length: extra short / short / medium / long / extra long

Cutting edge preparation



Sharp



Corner chamfer (CHW = chamfer width in mm)



Full Radius



Application



Machining example



The red arrows describe the possible feed directions



Cutting geometry
λ_s = helix angle
γ_s = rake angle

ZEFP = Number of flutes

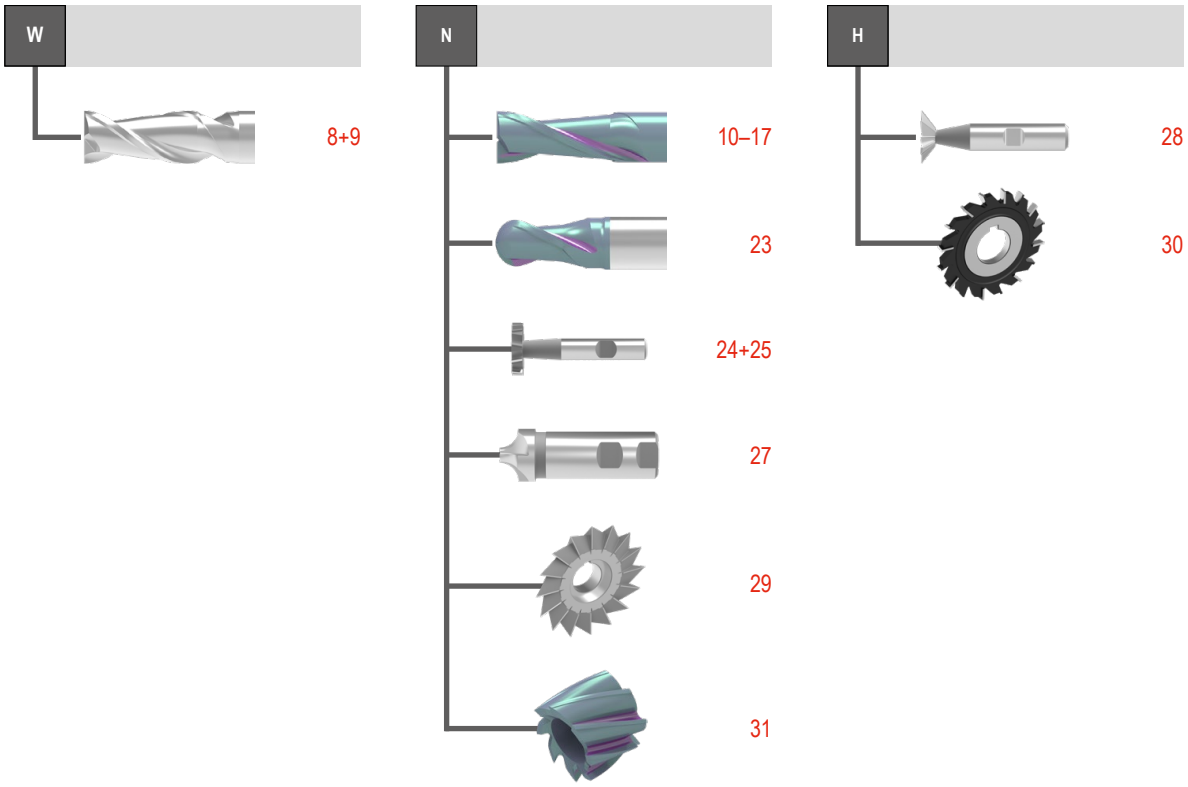
● = **Main Application**

○ = Extended application

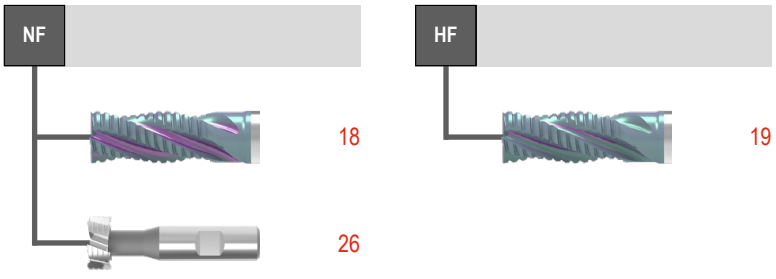
Toolfinder

softer — Material to machine — harder

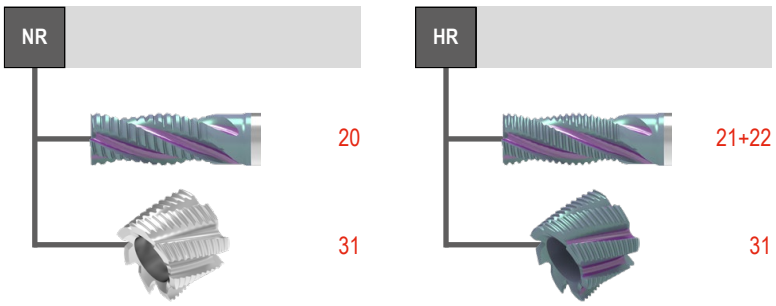
Finish milling



Rough and finish machining



Rough machining



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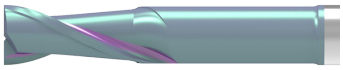
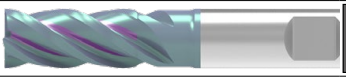
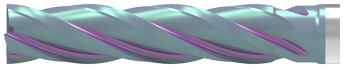
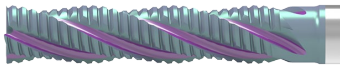
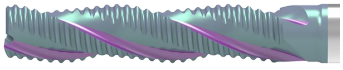
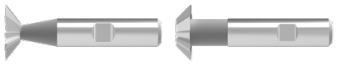
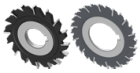
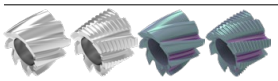
Overview HSS milling cutters

	Tool type	Number of flutes ZEFP	Diameter in mm Ø DC	Steel P	Stainless steel M	Cast iron K	Non-ferrous metals N	Heat-resistant S	Tempered steel H	Non-metal materials O	Sharp	Corner chamfer	Corner radius	Full Radius	Length	Material, e.g. PM = Powdersteel	coated	uncoated	WNT \ Performance
Finishing cutter																			
	W	2	2–20				●			●	■				▤	HSS-E		□	8
	W	3–4	2–32				●			●	■				▤	HSS-E		□	9
	N	2	1–26	●	●	●	○	○		○	■				▤	HSS-E	■	□	10+11
	N	3	1–10	●	●	●	○	○		○	■				▤	HSS-E	■	□	12
	N	3	1,8–22,0	●	●	●	○	○		○	■				▤	HSS-E	■		13+14
	N	4	4–20	○	●	○	●	●		●	■				▤	HSS-E	■	□	15
	N	4–8	2–50	●	●	●	○	○		○	■				▤	HSS-E	■	□	16+17
Rough and finish milling cutters																			
	NF	4	6–25	●	○	●	○	○		○	■				▤	HSS-E	■		18
	HF	4	6–20	●	○	●	○	○		○	■				▤	PM	■		19
Rough milling cutters																			
	NR	3	6–25	●	○	●	○	○		○		■			▤	HSS-E	■		20
	HR	4–6	6–32	●	●	●	○	○		○		■			▤	PM	■		21
	HR	3–6	4–32	●	●	●	○	○		○		■			▤	HSS-E	■		22
Ball nose end milling cutters																			
	N	2	2–30	●	○	●	○	○		○				◡	▤	HSS-E	■	□	23

Overview HSS milling cutters

Form / Side and Face / Shell milling cutters

	Tool type	Number of flutes ZEFP	Diameter in mm Ø DC	Steel P	Stainless steel M	Cast iron K	Non-ferrous metals N	Heat-resistant S	Tempered steel H	Non-metal materials O	Sharp	Corner chamfer	Corner radius	Full Radius	Length	Material, e.g. PM = Powdersteel	coated	uncoated	WNT \ Performance
	N	6–10	11–60	●	○	●	○	○		○						HSS-E		☐	24
	N	6–12	10,5–45,5	●	○	●	○	○		○						HSS-E		☐	25
	NF	6–8	21–45	●	○	●	○	○		○						HSS-E		☐	26
	N	4–6	6–16	●	○	●	○	○		○						HSS-E		☐	27
	H	10	16–25	●	○	●	○	○		○						HSS-E		☐	28
	N	14–28	40–125	●	○	●	○	○		○						HSS-E		☐	29
	H	16–48	50–160	●	○	●	●	●		●						HSS-E		☐	30
		7–10	40–80	●	●	●	●	○		●						HSS-E	☐	☐	31

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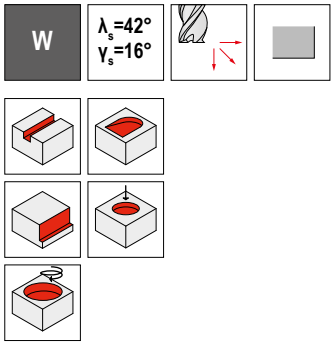
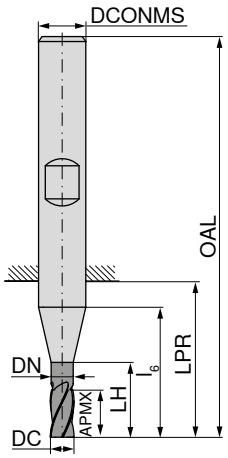
Slot milling cutter HSS-E Co 8









DIN 844



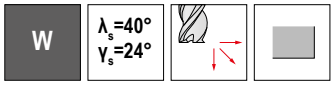
50 144 ...

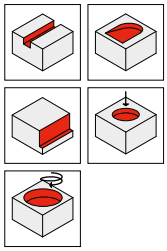
DC e8 mm	APMX mm	DN mm	LH mm	l_6 mm	LPR mm	OAL mm	DCONMS h6 mm	ZEFP	
2,0	7		7	13	15	51	6	2	**020**
2,5	8		8	14	16	52	6	2	**025**
3,0	8		8	14	16	52	6	2	**030**
4,0	11		11	17	19	55	6	2	**040**
5,0	13		13	19	21	57	6	2	**050**
6,0	13		13	19	21	57	6	2	**060**
6,5	16	6,0	22	24	26	66	10	2	**065**
8,0	19	7,5	25	27	29	69	10	2	**080**
10,0	22	9,5	30	30	32	72	10	2	**100**
12,0	26	11,5	36	36	38	83	12	2	**120**
14,0	26	11,5	36	36	38	83	12	2	**140**
16,0	32	15,0	42	42	44	92	16	2	**160**
18,0	32	15,0	42	42	44	92	16	2	**180**
20,0	38	19,0	52	52	54	104	20	2	**200**

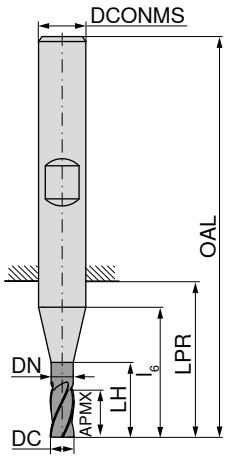
P	
M	
K	
N	●
S	
H	
O	●

→ v_c/f_z Page 33–35

End milling cutter HSS-E Co 8









	DIN 69844	DIN 844
	50 120 ...	50 121 ...

DC k10 mm	APMX mm	DN mm	LH mm	l_6 mm	LPR mm	OAL mm	DCONMS h6 mm	ZEFP		
2	7		7	13	15	51	6	3	020	
3	8		8	14	16	52	6	3	030	
3	12		12	18	20	56	6	3		030
4	11		11	17	19	55	6	3	040	
4	19		19	25	27	63	6	3		040
5	13		13	19	21	57	6	3	050	
5	24		24	30	32	68	6	3		050
6	13	5,5	19	19	21	57	6	3	060	
6	24	5,5	30	30	32	68	6	3		060
7	16	6,5	22	24	26	66	10	3	070	
7	30	6,5	36	38	40	80	10	3		070
8	19	7,5	25	27	29	69	10	3	080	
8	38	7,5	44	46	48	88	10	3		080
9	19	8,5	26	27	29	69	10	3	090	
9	38	8,5	45	46	48	88	10	3		090
10	22	9,5	30	30	32	72	10	3	100	
10	45	9,5	53	53	55	95	10	3		100
12	26	11,5	36	36	38	83	12	3	120	
12	53	11,5	63	63	65	110	12	3		120
14	26	11,5	36	36	38	83	12	3	140	
14	53	11,5	63	63	65	110	12	3		140
16	32	15,0	42	42	44	92	16	3	160	
16	63	15,0	73	73	75	123	16	3		160
18	32	15,0	42	42	44	92	16	3	180	
18	63	15,0	73	73	75	123	16	3		180
20	38	19,0	52	52	54	104	20	3	200	
20	75	19,0	89	89	91	141	20	3		200
22	38	19,0	52	52	54	104	20	3	220	
22	75	19,0	89	89	91	141	20	3		220
24	90	23,0	106	108	110	166	25	3		240
25	45	24,0	63	45	65	121	25	4	250	
25	90	24,0	108	108	110	166	25	4		250
28	90	24,0	108	108	110	166	25	4		280
30	90	24,0	108	108	110	166	25	4		300
32	106	31,0	123	123	126	186	32	4		320

P		
M		
K		
N	●	●
S		
H		
O	●	●

→ v_c/f_z Page 33–35

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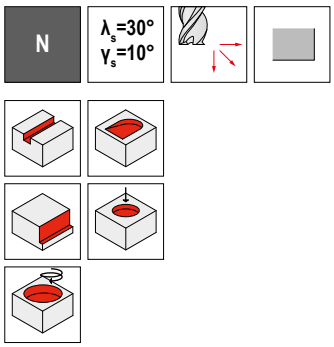
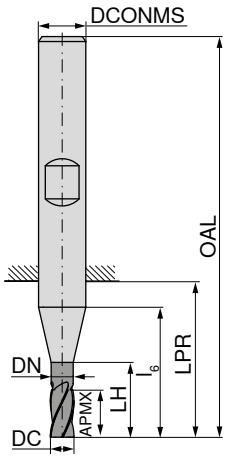
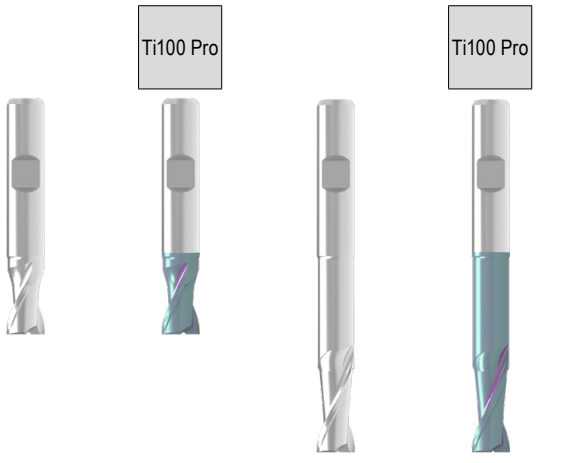
Slot milling cutter HSS-E Co 8







	DIN 327	DIN 327	Factory standard	Factory standard
	50 100 ...	54 025 ...	50 122 ...	54 020 ...

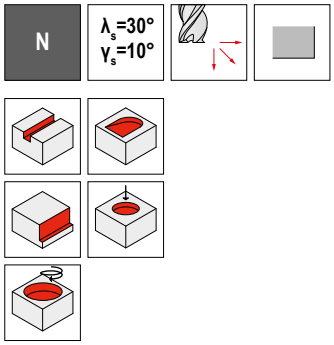
DC mm	DC Tol.	APMX mm	DN mm	LH mm	l_6 mm	LPR mm	OAL mm	DCONMS $_{h6}$ mm	ZEFP				
1,0	h10	2,5		2,5	9	11	47	6	2	010 [1]	010 [1]		
1,5	h10	3,0		3,0	9	11	47	6	2	015 [1]	015 [1]		
1,8	h10	4,0		4,0	10	12	48	6	2	018	018		
2,0	e8	4,0		4,0	10	12	48	6	2	020	020		
2,5	e8	5,0		5,0	11	13	49	6	2	025	025		
3,0	e8	5,0		5,0	11	13	49	6	2	030	030		
3,0	e8	8,0		8,0	18	20	56	6	2			030	030
3,5	h10	6,0		6,0	12	14	50	6	2	035	035		
4,0	e8	7,0		7,0	13	15	51	6	2	040	040		
4,0	e8	11,0		11,0	25	27	63	6	2			040	040
4,5	h10	7,0		7,0	13	15	51	6	2	045	045		
5,0	e8	8,0		8,0	14	16	52	6	2	050	050		
5,0	e8	13,0		13,0	30	32	68	6	2			050	050
5,5	h10	8,0		8,0	14	16	52	6	2	055	055		
6,0	e8	8,0	5,50	14,0	14	16	52	6	2	060	060		
6,0	e8	13,0	5,50	30,0	30	32	68	6	2			060	060
6,5	h10	10,0	6,00	16,0	18	20	60	10	2	065	065		
7,0	e8	10,0	6,50	16,0	18	20	60	10	2	070	070		
7,0	e8	16,0	6,35	36,0	38	40	80	10	2			070	070
7,5	h10	10,0	7,00	16,0	18	20	60	10	2	075	075		
8,0	e8	11,0	7,50	17,0	19	21	61	10	2	080	080		
8,0	e8	19,0	7,35	44,0	46	48	88	10	2			080	080
8,5	h10	11,0	8,00	18,0	19	21	61	10	2	085	085		
9,0	h10	11,0	8,50	18,0	19	21	61	10	2	090	090		
9,0	h10	19,0	8,35	45,0	46	48	88	10	2			090	090
9,5	h10	11,0	9,00	18,0	19	21	61	10	2	095	095		
10,0	e8	13,0	9,50	21,0	21	23	63	10	2	100	100		
10,0	e8	22,0	9,35	53,0	53	55	95	10	2			100	100
10,5	h10	13,0	10,00	21,0	23	25	70	12	2	105	105		
11,0	h10	13,0	10,50	21,0	23	25	70	12	2	110	110		
11,0	h10	22,0	10,50	53,0	55	57	102	12	2			110	110
11,5	h10	13,0	11,00	21,0	23	25	70	12	2	115	115		
12,0	e8	16,0	11,50	26,0	26	28	73	12	2	120	120		
12,0	e8	26,0	11,50	63,0	63	65	110	12	2			120	120
13,0	h10	16,0	11,50	26,0	26	28	73	12	2	130	130		
14,0	e8	16,0	11,50	26,0	26	28	73	12	2	140	140		
14,0	e8	26,0	11,50	63,0	63	65	110	12	2			140	140
15,0	h10	16,0	11,50	26,0	26	28	73	12	2	150	150		
15,0	h10	26,0	11,50	63,0	63	65	110	12	2			150	150
16,0	e8	19,0	15,00	29,0	29	31	79	16	2	160	160		
16,0	e8	32,0	15,00	73,0	73	75	123	16	2			160	160
P										●	●	●	●
M										○	●	○	●
K										●	●	●	●
N										○	○	○	○
S										○	○	○	○
H													
O										○	○	○	○

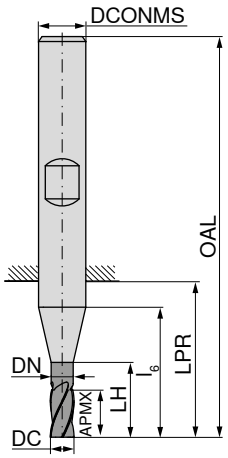
1) Factory standard

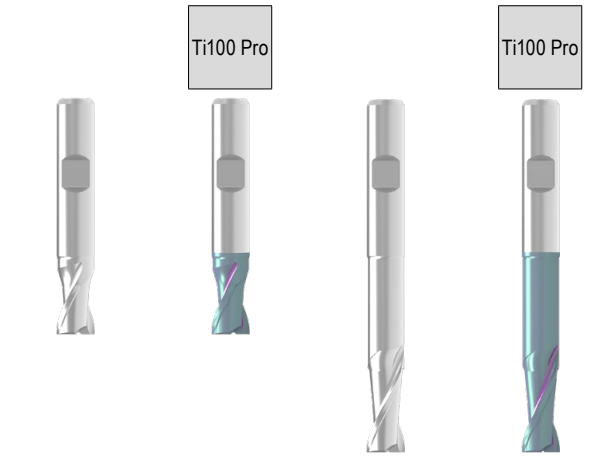
→ v_c/f_z Page 33–35

Continued on next page

Slot milling cutter HSS-E Co 8









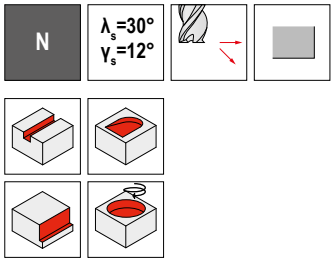
										DIN 327		DIN 327		Factory standard		Factory standard	
										50 100 ...		54 025 ...		50 122 ...		54 020 ...	
DC mm	DC Tol.	APMX mm	DN mm	LH mm	l_6 mm	LPR mm	OAL mm	DCONMS $_{h6}$ mm	ZEFP								
17,0	h10	19,0	15,00	29,0	29	31	79	16	2	**170**		**170**					
18,0	e8	19,0	15,00	29,0	29	31	79	16	2	**180**		**180**					
18,0	e8	32,0	15,00	73,0	73	75	123	16	2					**180**		**180**	
19,0	h10	19,0	15,00	29,0	29	31	79	16	2	**190**		**190**					
20,0	e8	22,0	19,00	36,0	36	38	88	20	2	**200**		**200**					
20,0	e8	38,0	19,00	89,0	89	91	141	20	2					**200**		**200**	
22,0	e8	22,0	19,00	36,0	36	38	88	20	2	**220**		**220**					
24,0	e8	26,0	23,00	42,0	44	46	102	25	2	**240**		**240**					
25,0	e8	26,0	24,00	44,0	44	46	102	25	2	**250**		**250**					
26,0	h10	26,0	24,00	44,0	44	46	102	25	2	**260**		**260**					
P										●		●		●		●	
M										○		●		○		●	
K										●		●		●		●	
N										○		○		○		○	
S										○		○		○		○	
H																	
O										○		○		○		○	

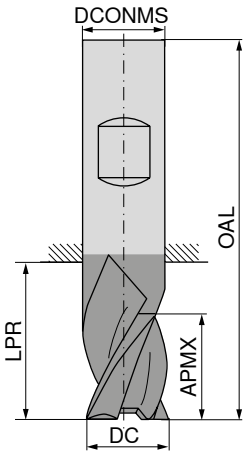
1) Factory standard

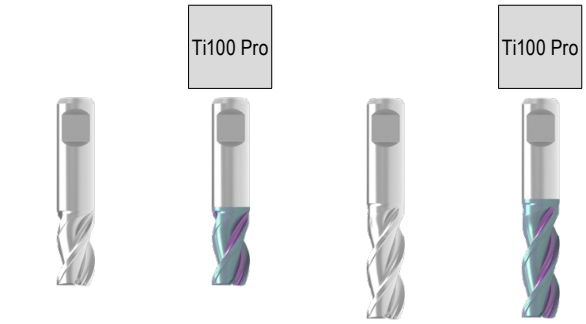
→ v_c/f_z Page 33–35

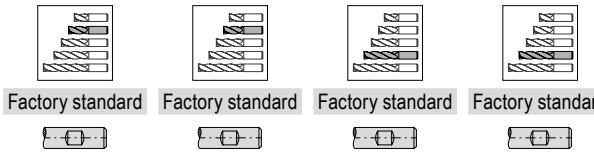
Throw-away milling cutter, HSS-E Co 8

▲ Shank similar to DIN 1835 B









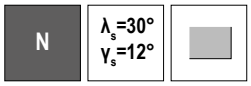
DC e8 mm	APMX mm	LPR mm	OAL mm	DCONMS h6 mm	ZEFP	50 092 ...	54 014 ...	50 093 ...	54 042 ...
1,00	2	8	34	6	3	010	010		
1,50	3	8	34	6	3	015	015		
1,50	4	10	35	6	3			015 [1]	015 [1]
1,80	3	8	34	6	3	018	018		
2,00	4	9	35	6	3	020	020		
2,00	7	12	38	6	3			020 [1]	020
2,30	4	9	35	6	3	023	023		
2,50	5	10	36	6	3	025	025		
2,50	8	13	39	6	3			025 [1]	025
2,80	5	10	36	6	3	028	028		
3,00	5	10	36	6	3	030	030		
3,00	8	13	39	6	3			030 [1]	030
3,30	6	11	37	6	3	033	033		
3,50	6	11	37	6	3	035	035		
3,50	10	15	41	6	3			035 [1]	035
3,80	7	12	38	6	3	038	038		
4,00	7	12	38	6	3	040	040		
4,00	11	16	42	6	3			040 [1]	040
4,30	7	12	38	6	3	043	043		
4,50	7	12	38	6	3	045	045		
4,50	11	16	42	6	3			045 [1]	045
4,80	8	13	39	6	3	048	048		
5,00	8	13	39	6	3	050	050		
5,00	13	18	44	6	3			050 [1]	050
5,30	8	13	39	6	3	053	053		
5,50	8	13	39	6	3	055	055		
5,50	13	18	44	6	3			055 [1]	055
5,75	8	13	39	6	3	057	057		
6,00	8	13	39	6	3	060	060		
6,00	13	18	44	6	3			060 [1]	060
6,50	10	14	42	8	3	065	065		
6,50	16	20	48	8	3			065 [1]	065
7,00	10	14	42	8	3	070	070		
7,00	16	20	48	8	3			070 [1]	070
7,50	10	14	42	8	3	075	075		
7,50	16	20	48	8	3			075 [1]	075
8,00	11	15	43	8	3	080	080		
8,00	19	23	51	8	3			080 [1]	080
8,50	11	16	48	10	3	085	085		
8,50	19	24	56	10	3			085 [1]	085
9,00	11	16	48	10	3	090	090		
9,00	19	24	56	10	3			090 [1]	090
9,50	11	16	48	10	3	095	095		
9,50	19	24	56	10	3			095 [1]	095
10,00	13	18	50	10	3	100	100		
10,00	22	27	59	10	3			100 [1]	100
P						●	●	●	●
M						○	●	○	●
K						●	●	●	●
N						○	○	○	○
S						○	○	○	○
H									
O						○	○	○	○

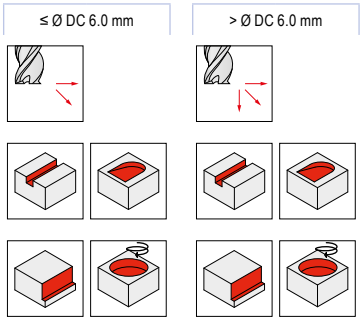
1) Shank tolerance -0,025 / -0,0323

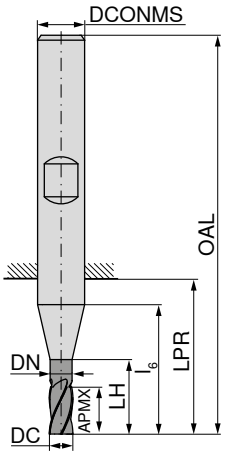
→ v_c/f_z Page 33–35

End milling cutter HSS-E Co 8

▲ ≤ Ø DC 6 mm, 3 cutting edges to centre















DIN 327 | DIN 844 K





DC	DC Tol.	APMX	DN	LH	l_6	LPR	OAL	DCONMS	ZEFP	54 021 ...	54 016 ...
mm		mm	mm	mm	mm	mm	mm	mm			
1,8	h10	4		4	10	12	48	6	3	018	
2,0	e8	4		4	10	12	48	6	3	020	
2,5	e8	5		5	11	13	49	6	3	025	
3,0	e8	5		5	11	13	49	6	3	030	
3,0	e8	8		8	14	16	52	6	3		030
3,5	h10	6		6	12	14	50	6	3	035	
3,5	h10	10		10	16	18	54	6	3		035
4,0	e8	7		7	13	15	51	6	3	040	
4,0	e8	11		11	17	19	55	6	3		040
4,5	h10	7		7	13	15	51	6	3	045	
4,5	h10	11		11	17	19	55	6	3		045
5,0	e8	8		8	14	16	52	6	3	050	
5,0	e8	13		13	19	21	57	6	3		050
5,5	h10	8		8	14	16	52	6	3	055	
5,5	h10	13		13	19	21	57	6	3		055
6,0	e8	8	5,5	14	14	16	52	6	3	060	
6,0	e8	13	5,5	19	19	21	57	6	3		060
6,5	h10	10	6,0	16	18	20	60	10	3	065	
6,5	h10	16	6,0	22	24	26	66	10	3		065
7,0	e8	10	6,5	16	18	20	60	10	3	070	
7,0	e8	16	6,5	22	24	26	66	10	3		070
7,5	h10	10	7,0	16	18	20	60	10	3	075	
7,5	h10	16	7,0	22	24	26	66	10	3		075
8,0	e8	11	7,5	17	19	21	61	10	3	080	
8,0	e8	19	7,5	25	27	29	69	10	3		080
8,5	h10	11	8,0	18	19	21	61	10	3	085	
8,5	h10	19	8,0	26	27	29	69	10	3		085
9,0	h10	11	8,5	18	19	21	61	10	3	090	
9,0	h10	19	8,5	26	27	29	69	10	3		090
9,5	h10	11	9,0	18	19	21	61	10	3	095	
9,5	h10	19	9,0	26	27	29	69	10	3		095
10,0	e8	13	9,5	21	21	23	63	10	3	100	
10,0	e8	22	9,5	30	30	32	72	10	3		100
10,5	h10	13	10,0	21	23	25	70	12	3	105	
11,0	h10	13	10,5	21	23	25	70	12	3	110	
11,0	h10	22	10,5	30	32	34	79	12	3		110
11,5	h10	13	11,0	21	23	25	70	12	3	115	
11,5	h10	22	11,0	30	32	34	79	12	3		115
12,0	e8	16	11,5	26	26	28	73	12	3	120	
12,0	e8	26	11,5	36	36	38	83	12	3		120

P	●	●
M	●	●
K	●	●
N	○	○
S	○	○
H		
O	○	○

→ v_c/f_z Page 33–35

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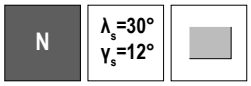
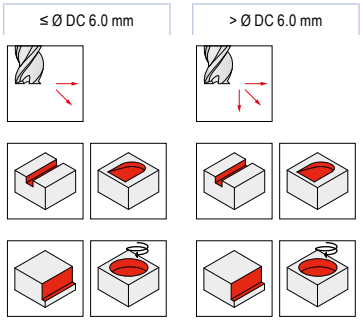
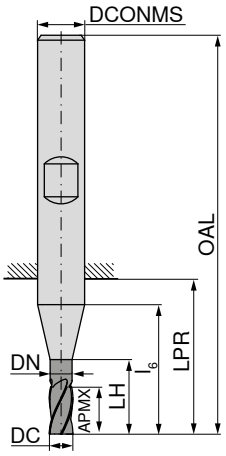
Continued on next page

End milling cutter HSS-E Co 8

▲ ≤ Ø DC 6 mm, 3 cutting edges to centre















DIN 327 | DIN 844 K

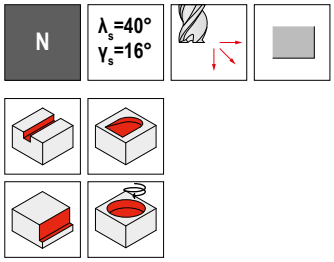


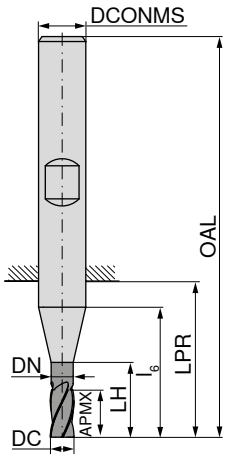


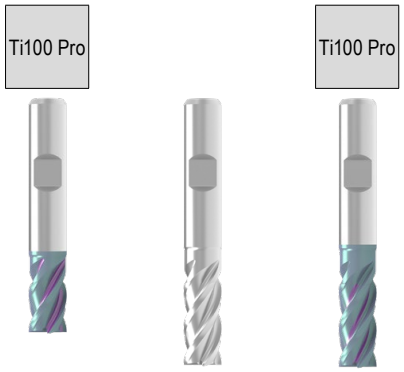
DC mm	DC Tol.	APMX mm	DN mm	LH mm	l_6 mm	LPR mm	OAL mm	DCONMS mm	ZEFP	54 021 ...	54 016 ...
13,0	h10	16	11,5	26	26	28	73	12	3	**130**	
13,0	h10	26	11,5	36	36	38	83	12	3		**130**
14,0	e8	16	11,5	26	26	28	73	12	3	**140**	
14,0	e8	26	11,5	36	36	38	83	12	3		**140**
15,0	h10	16	11,5	26	26	28	73	12	3	**150**	
15,0	h10	26	11,5	36	36	38	83	12	3		**150**
15,5	h10	32	15,0	42	42	44	92	16	3		**155**
16,0	e8	19	15,0	29	29	31	79	16	3	**160**	
16,0	e8	32	15,0	42	42	44	92	16	3		**160**
17,0	h10	19	15,0	29	29	31	79	16	3	**170**	
17,0	h10	32	15,0	42	42	44	92	16	3		**170**
18,0	e8	19	15,0	29	29	31	79	16	3	**180**	
18,0	e8	32	15,0	42	42	44	92	16	3		**180**
19,0	h10	19	15,0	29	29	31	79	16	3	**190**	
19,0	h10	32	15,0	42	42	44	92	16	3		**190**
19,5	h10	38	19,0	52	52	54	104	20	3		**195**
20,0	e8	22	19,0	36	36	38	88	20	3	**200**	
20,0	e8	38	19,0	52	52	54	104	20	3		**200**
22,0	e8	38	19,0	52	52	54	104	20	3		**220**
P										●	●
M										●	●
K										●	●
N										○	○
S										○	○
H											
O										○	○

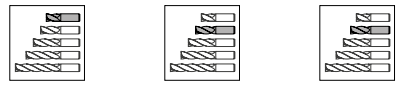
→ v_c/f_z Page 33–35

End milling cutter HSS-E Co 8









	Factory standard	DIN 844	DIN 844
	54 017 ...	50 124 ...	54 011 ...

DC mm	DC Tol.	APMX mm	DN mm	LH mm	l_6 mm	LPR mm	OAL mm	DCONMS $_{h6}$ mm	ZEFP				
4	k10	11		11	17	19	55	6	4			**040**	**040**
5	k10	13		13	19	21	57	6	4			**050**	**050**
6	e8	8	5,5	14	14	16	52	6	4	**060**			
6	k10	13	5,5	19	19	21	57	6	4			**060**	**060**
8	e8	11	7,5	17	19	21	61	10	4	**080**			
8	k10	19	7,5	25	27	29	69	10	4			**080**	**080**
10	e8	13	9,5	21	21	23	63	10	4	**100**			
10	k10	22	9,5	30	30	32	72	10	4			**100**	**100**
12	e8	16	11,5	26	26	28	73	12	4	**120**			
12	k10	26	11,5	36	36	38	83	12	4			**120**	**120**
14	e8	16	11,5	26	26	28	73	12	4	**140**			
14	k10	26	11,5	36	36	38	83	12	4			**140**	**140**
15	k10	26	11,5	36	36	38	83	12	4			**150**	
16	e8	19	15,0	29	29	31	79	16	4	**160**			
16	k10	32	15,0	42	42	44	92	16	4			**160**	**160**
20	e8	22	19,0	36	36	38	88	20	4	**200**			
20	k10	38	19,0	52	52	54	104	20	4			**200**	**200**
P										○		○	○
M										●		●	●
K										○		○	○
N										●		●	●
S										●		●	●
H													
O										●		●	●

→ v_c/f_z Page 33–35

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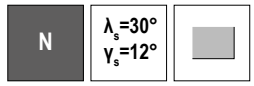
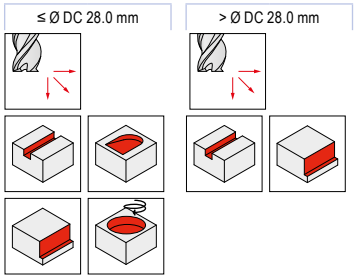
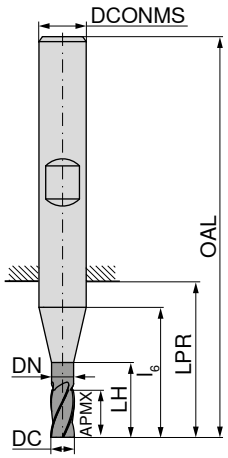
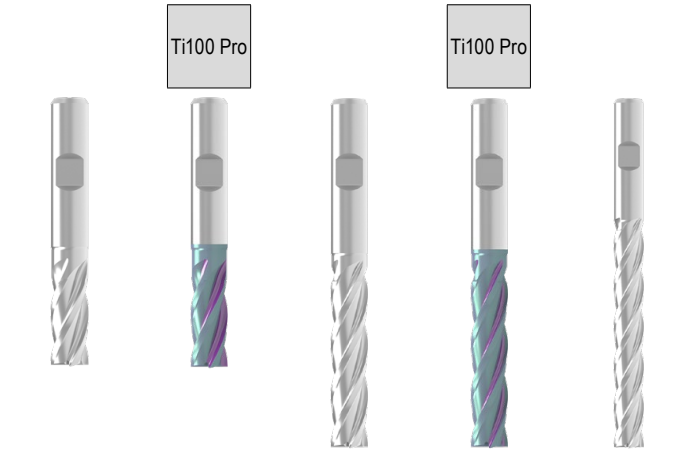
End milling cutter HSS-E Co 8

▲ > Ø 28,0 mm recessed centre









	DIN 69844	DIN 69844	DIN 844	DIN 844	Factory standard
	50 110 ...	54 018 ...	50 111 ...	54 019 ...	50 104 ...

DC mm	APMX mm	DN mm	LH mm	l_6 mm	LPR mm	OAL mm	DCONMS mm	ZEFP									
2,0	7		7	13	15	51	6	4	**020**		**020**						
2,5	8		8	14	16	52	6	4	**025**		**025**						
3,0	8		8	14	16	52	6	4	**030**		**030**						
3,0	12		12	18	20	56	6	4					**030**		**030**		
4,0	11		11	17	19	55	6	4	**040**		**040**						
4,0	19		19	25	27	63	6	4					**040**		**040**		
5,0	13		13	19	21	57	6	4	**050**		**050**						
5,0	24		24	30	32	68	6	4					**050**		**050**		
6,0	13	5,5	19	19	21	57	6	4	**060**		**060**						
6,0	24	5,5	30	30	32	68	6	4					**060**		**060**		
6,0	56	5,5	62	62	64	100	6	4									**060**
7,0	16	6,5	22	24	26	66	10	4	**070**		**070**						
8,0	19	7,5	25	27	29	69	10	4	**080**		**080**						
8,0	38	7,5	44	46	48	88	10	4					**080**		**080**		
8,0	70	7,5	73	73	75	115	10	4									**080**
9,0	19	8,5	26	27	29	69	10	4	**090**		**090**						
10,0	22	9,5	30	30	32	72	10	4	**100**		**100**						
10,0	45	9,5	53	53	55	95	10	4					**100**		**100**		
10,0	75	9,5	79	79	81	121	10	4									**100**
11,0	22	10,5	30	32	34	79	12	4	**110**		**110**						
12,0	26	11,5	36	36	38	83	12	4	**120**		**120**						
12,0	53	11,5	63	63	65	110	12	4					**120**		**120**		
12,0	85		85	85	85	130	12	4									**120**
13,0	26	11,5	36	36	38	83	12	4	**130**		**130**						
14,0	26	11,5	36	36	38	83	12	4	**140**		**140**						
14,0	53	11,5	63	63	65	110	12	4					**140**		**140**		
14,0	85		85	85	85	130	12	4									**140**
15,0	26	11,5	36	36	38	83	12	4	**150**		**150**						
15,0	53	11,5	63	63	65	110	12	4					**150**		**150**		
16,0	32	15,0	42	42	44	92	16	4	**160**		**160**						
16,0	63	15,0	73	73	75	123	16	4					**160**		**160**		
16,0	90	15,0	95	95	97	145	16	4									**160**
18,0	32	15,0	42	42	44	92	16	4	**180**		**180**						
18,0	63	15,0	73	73	75	123	16	4					**180**		**180**		
18,0	100	15,0	110	110	112	160	16	5									**180**
20,0	38	19,0	52	52	54	104	20	4	**200**		**200**						
20,0	75	19,0	89	89	91	141	20	4					**200**		**200**		
20,0	110	19,0	128	128	130	180	20	5									**200**

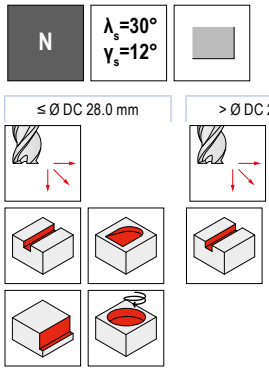
P	●	●	●	●	●
M	○	●	○	●	○
K	●	●	●	●	●
N	○	○	○	○	○
S	○	○	○	○	○
H					
O	○	○	○	○	○

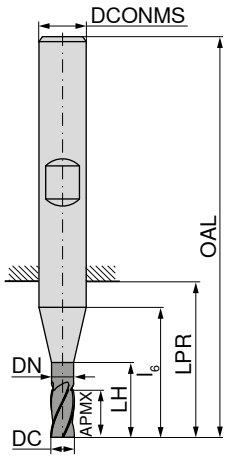
→ v_c/f_z Page 33–35

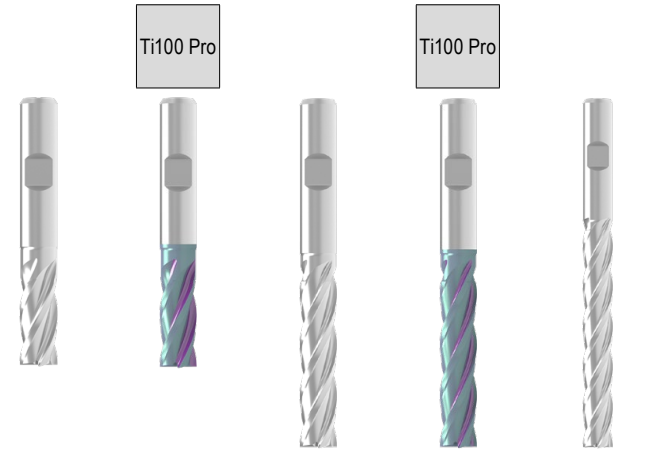
Continued on next page

End milling cutter HSS-E Co 8

▲ > Ø 28,0 mm recessed centre







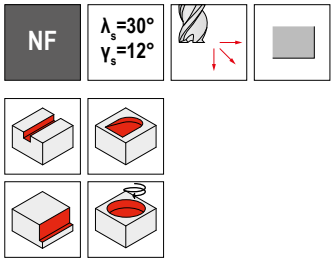
	DIN 69844	DIN 69844	DIN 844	DIN 844	Factory standard
	50 110 ...	54 018 ...	50 111 ...	54 019 ...	50 104 ...

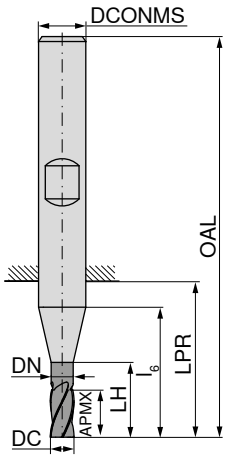
DC mm	APMX mm	DN mm	LH mm	l_6 mm	LPR mm	OAL mm	DCONMS mm	ZEFP						
22,0	38	19,0	52	52	54	104	20	5	**220**	**220**				
22,0	75	19,0	89	89	91	141	20	5			**220**	**220**		
22,0	110	19,0	128	128	130	180	20	5						**220**
25,0	45	24,0	63	63	65	121	25	5	**250**	**250**				
25,0	90	24,0	108	108	110	166	25	5			**250**	**250**		
25,0	125	24,0	142	142	144	200	25	6						**250**
28,0	45	24,0	63	63	65	121	25	5	**280**	**280**				
28,0	90	24,0	108	108	110	166	25	5			**280**	**280**		
28,0	140	24,0	147	147	149	205	25	6						**280**
30,0	45	24,0	63	63	65	121	25	5	**300**	**300**				
30,0	90	24,0	108	108	110	166	25	5			**300**	**300**		
32,0	53	31,0	70	70	73	133	32	5		**320**				
32,0	53	31,0	70	70	73	133	32	6	**320**					
32,0	106	31,0	123	123	126	186	32	6			**320**	**320**		
32,0	160	31,0	167	167	170	230	32	6						**320**
40,0	63	38,0	80	80	85	155	40	6	**400**	**400**				
40,0	125	38,0	142	142	147	217	40	6			**400**	**400**		
40,0	180	31,0	197	197	200	260	32	8						**400**
50,0	150	48,0	172	172	172	252	50	8			**500**	**500**		

P	●	●	●	●	●
M	○	●	○	●	○
K	●	●	●	●	●
N	○	○	○	○	○
S	○	○	○	○	○
H					
O	○	○	○	○	○

→ v_c/f_z Page 33–35

Roughing-finishing milling cutter HSS-E Co 5













DIN 69844 | DIN 844





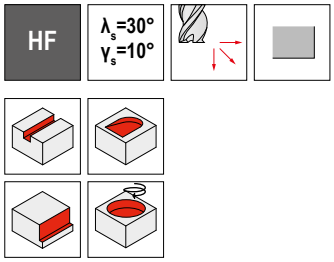
DC k12 mm	APMX mm	DN mm	LH mm	l_6 mm	LPR mm	OAL mm	DCONMS h6 mm	ZEFP	54 028 ...	54 029 ...
6	13	5,5	19	19	21	57	6	4	060	
6	24	5,5	30	30	32	68	6	4		060
7	16	6,5	22	24	26	66	10	4	070	
8	19	7,5	25	27	29	69	10	4	080	
8	38	7,5	44	46	48	88	10	4		080
9	19	8,5	26	27	29	69	10	4	090	
10	22	9,5	30	30	32	72	10	4	100	
10	45	9,5	53	53	55	95	10	4		100
11	22	10,5	30	32	32	79	12	4	110	
11	45	10,5	53	55	57	102	12	4		110
12	26	11,5	36	36	38	83	12	4	120	
12	53	11,5	63	63	65	110	12	4		120
13	26	11,5	36	36	38	83	12	4	130	
14	26	11,5	36	36	38	83	12	4	140	
16	32	15,0	42	42	44	92	16	4	160	
16	63	15,0	73	73	75	123	16	4		160
18	32	15,0	42	42	44	92	16	4	180	
20	38	19,0	52	52	54	104	20	4	200	
20	75	19,0	89	89	91	141	20	4		200
22	38	19,0	52	52	54	104	20	4	220	
22	75	19,0	89	89	91	141	20	4		220
25	45	24,0	63	63	65	121	25	4	250	
25	90	24,0	108	108	110	166	25	4		250

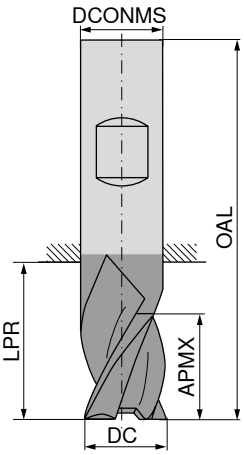
P	●	●
M	○	○
K	●	●
N	○	○
S	○	○
H		
O	○	○

→ v_c/f_z Page 33–35

Powdersteel roughing finishing cutter

HF | λ_s=30° γ_s=10°





Ti100 Pro





DIN 844



54 034 ...

DC $_{k12}$ mm	APMX mm	LPR mm	OAL mm	DCONMS $_{h6}$ mm	ZEFP	
6	13	21	57	6	4	**060**
8	19	29	69	10	4	**080**
10	22	32	72	10	4	**100**
12	26	38	83	12	4	**120**
16	32	44	92	16	4	**160**
20	38	54	104	20	4	**200**

P	●
M	○
K	●
N	○
S	○
H	
O	○

→ v_c/f_z Page 33–35

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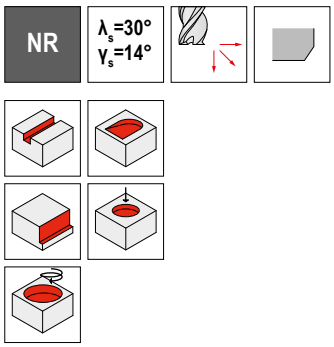
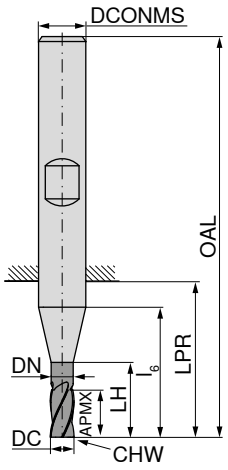
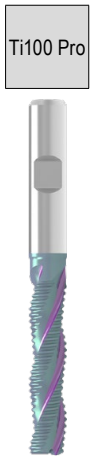
Rough milling cutter HSS-E Co 8













DIN 69844 | DIN 844



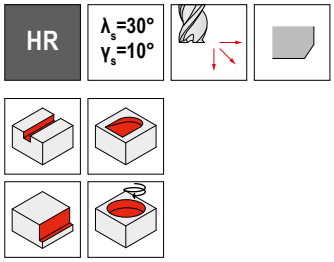


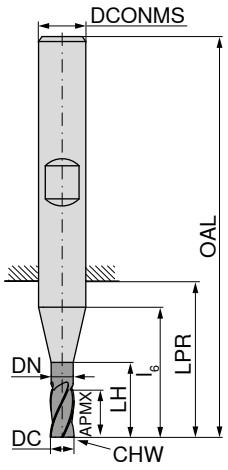
DC k12 mm	APMX mm	DN mm	LH mm	l_6 mm	LPR mm	OAL mm	DCONMS h6 mm	CHW mm	ZEFP	54 026 ...	54 027 ...
6	13	5,5	19	19	21	57	6	0,5	3	**060**	
6	24	5,5	30	30	32	68	6	0,5	3		**060**
8	19	7,5	25	27	29	69	10	0,7	3	**080**	
8	38	7,5	44	46	48	88	10	0,7	3		**080**
10	22	9,5	30	30	32	72	10	0,7	3	**100**	
10	45	9,5	53	53	55	95	10	0,7	3		**100**
12	26	11,5	36	36	38	83	12	0,7	3	**120**	
12	53	11,5	63	63	65	110	12	0,7	3		**120**
14	26	11,5	36	36	38	83	12	0,9	3	**140**	
14	53	11,5	63	63	65	110	12	0,9	3		**140**
16	32	15,0	42	42	44	92	16	0,9	3	**160**	
16	63	15,0	73	73	75	123	16	0,9	3		**160**
18	32	15,0	42	42	44	92	16	0,9	3	**180**	
18	63	15,0	73	73	75	123	16	0,9	3		**180**
20	38	19,0	52	52	54	104	20	0,9	3	**200**	
20	75	19,0	89	89	91	141	20	0,9	3		**200**
25	45	24,0	63	63	65	121	25	0,9	3	**250**	
25	90	24,0	108	108	110	166	25	0,9	3		**250**
P										●	●
M										○	○
K										●	●
N										○	○
S										○	○
H											
O										○	○

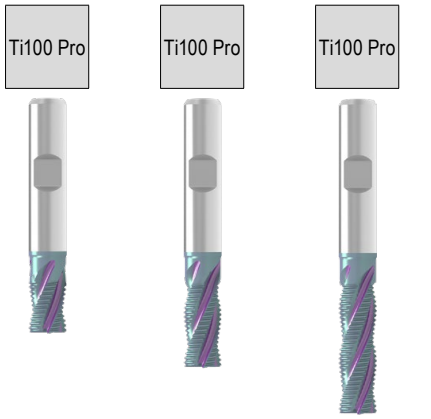
→ v_c/f_z Page 33–35

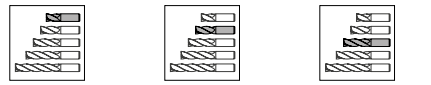
Powdersteel Fine rough milling cutter

HR | λ_s=30° γ_s=10°









	Factory standard	DIN 844	Factory standard
	54 031 ...	54 032 ...	54 033 ...

DC $_{k12}$ mm	APMX mm	DN mm	LH mm	l_6 mm	LPR mm	OAL mm	DCONMS $_{h6}$ mm	CHW mm	ZEFP			
6	8	5,5	14	14	16	52	6	0,35	4	**060**		
6	13	5,5	19	19	21	57	6	0,35	4		**060**	
8	11	7,5	17	19	21	61	10	0,45	4	**080**		
8	19	7,5	25	27	29	69	10	0,45	4		**080**	
8	28	7,5	34	36	38	78	10	0,45	4			**080**
10	13	9,5	21	21	23	63	10	0,45	4	**100**		
10	22	9,5	30	30	32	72	10	0,45	4		**100**	
10	34	9,5	42	42	44	84	10	0,45	4			**100**
12	16	11,5	26	26	28	73	12	0,60	4	**120**		
12	26	11,5	36	36	38	83	12	0,60	4		**120**	
12	40	11,5	50	50	52	97	12	0,60	4			**120**
14	16	11,5	26	26	28	73	12	0,60	4	**140**		
14	26	11,5	36	36	38	83	12	0,60	4		**140**	
14	40	11,5	50	50	52	97	12	0,60	4			**140**
16	19	15,0	29	29	31	79	16	0,70	4	**160**		
16	32	15,0	42	42	44	92	16	0,70	4		**160**	
16	48	15,0	58	58	60	108	16	0,70	4			**160**
18	19	15,0	29	29	31	79	16	0,70	4	**180**		
18	32	15,0	42	42	44	92	16	0,70	4		**180**	
18	48	15,0	58	58	60	108	16	0,70	4			**180**
20	22	19,0	36	36	38	88	20	0,70	4	**200**		
20	38	19,0	52	52	54	104	20	0,70	4		**200**	
20	56	19,0	70	70	72	122	20	0,70	4			**200**
22	22	19,0	36	36	38	88	20	0,70	4	**220**		
22	38	19,0	52	52	54	104	20	0,70	4		**220**	
22	56	19,0	70	70	72	122	20	0,70	4			**220**
25	26	24,0	44	44	46	102	25	0,70	4	**250**		
25	45	24,0	63	63	65	121	25	0,70	4		**250**	
25	68	24,0	86	86	88	144	25	0,70	4			**250**
32	32	31,0	49	49	52	112	32	0,90	6	**320**		
32	53	31,0	70	70	73	133	32	0,90	6		**320**	

P	●	●	●
M	●	●	●
K	●	●	●
N	○	○	○
S	○	○	○
H			
O	○	○	○

→ v_c/f_z Page 33–35

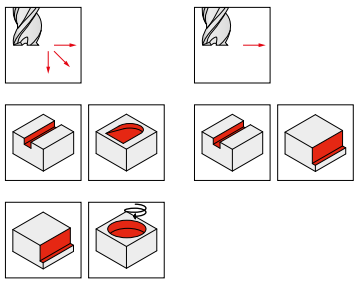
13

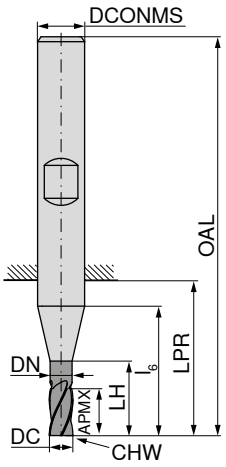
Fine profile milling cutter HSS-E Co 8

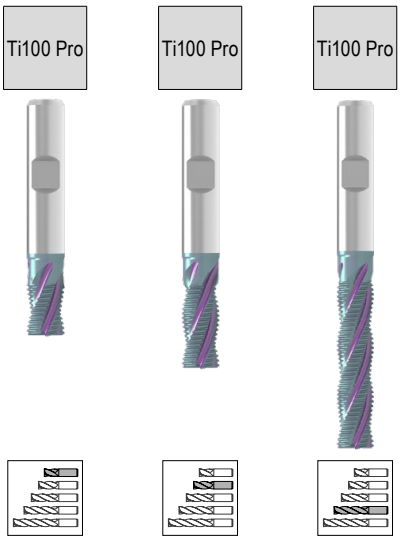
▲ > Ø 28,0 mm recessed centre

HR | λ_s=30° γ_s=10°

≤ Ø DC 28.0 mm | > Ø DC 28.0 mm



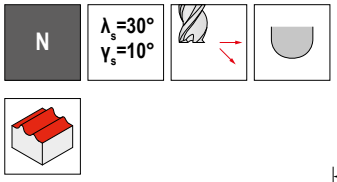


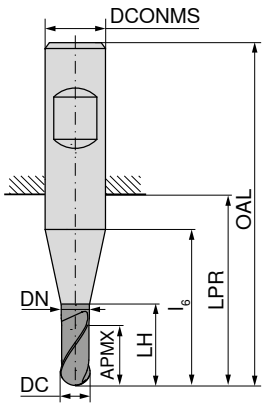


DC mm	APMX mm	DN mm	LH mm	l_6 mm	LPR mm	OAL mm	DCONMS mm	CHW mm	ZEFP	Factory standard 54 022 ...	DIN 69844 54 023 ...	DIN 844 54 024 ...
4	11		11	17	19	55	6	0,35	3		**040**	
5	13		13	19	21	57	6	0,35	3		**050**	
6	8	5,5	14	14	16	52	6	0,35	4	**060**		
6	13	5,5	19	19	21	57	6	0,35	4		**060**	
6	24	5,5	30	30	32	68	6	0,35	4			**060**
8	11	7,5	17	19	21	61	10	0,45	4	**080**		
8	19	7,5	25	27	29	69	10	0,45	4		**080**	
8	38	7,5	44	46	48	88	10	0,45	4			**080**
10	13	9,5	21	21	23	63	10	0,45	4	**100**		
10	22	9,5	30	30	32	72	10	0,45	4		**100**	
10	45	9,5	53	53	55	95	10	0,45	4			**100**
12	16	11,5	26	26	28	73	12	0,60	4	**120**		
12	26	11,5	36	36	38	83	12	0,60	4		**120**	
12	53	11,5	63	63	65	110	12	0,60	4			**120**
14	16	11,5	26	26	28	73	12	0,60	4	**140**		
14	26	11,5	36	36	38	83	12	0,60	4		**140**	
14	53	11,5	63	63	65	110	12	0,60	4			**140**
16	19	15,0	29	29	31	79	16	0,70	4	**160**		
16	32	15,0	42	42	44	92	16	0,70	4		**160**	
16	63	15,0	73	73	75	123	16	0,70	4			**160**
18	19	15,0	29	29	31	79	16	0,70	4	**180**		
18	32	15,0	42	42	44	92	16	0,70	4		**180**	
18	63	15,0	73	73	75	123	16	0,70	4			**180**
20	22	19,0	36	36	38	88	20	0,70	4	**200**		
20	38	19,0	52	52	54	104	20	0,70	4		**200**	
20	75	19,0	89	89	91	141	20	0,70	4			**200**
22	38	19,0	52	52	54	114	20	0,70	4		**220**	
22	75	19,0	89	89	91	141	20	0,70	4			**220**
25	45	24,0	63	63	65	121	25	0,70	4		**250**	
25	90	24,0	108	108	110	166	25	0,70	4			**250**
28	45	24,0	63	63	65	121	25	0,90	5		**280**	
28	90	24,0	108	108	110	166	25	0,90	5			**280**
30	45	24,0	63	63	65	121	25	0,90	5		**300**	
30	90	24,0	108	108	110	166	25	0,90	5			**300**
32	53	31,0	70	70	73	133	32	0,90	6		**320**	
32	106	31,0	123	123	126	186	32	0,90	6			**320**
P										●	●	●
M										●	●	●
K										●	●	●
N										○	○	○
S										○	○	○
H												
O										○	○	○

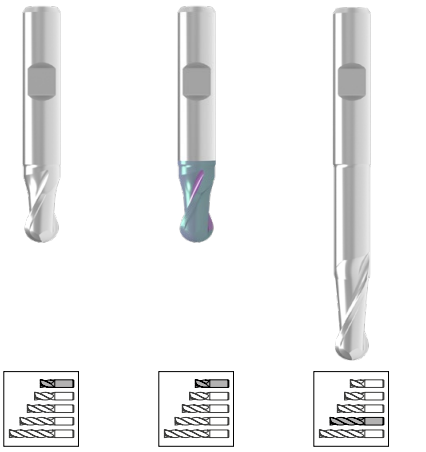
→ v_c/f_z Page 33–35

Ball nosed end milling cutter HSS-E Co 8









Factory standard | Factory standard | Factory standard

DC h10 mm	APMX mm	DN mm	LH mm	l_6 mm	LPR mm	OAL mm	DCONMS h6 mm	ZEFP	50 320 ...	54 041 ...	50 321 ...
2	4		4	10	12	48	6	2	020	020	
3	5		5	11	13	49	6	2	030	030	
3	8		8	18	20	56	6	2			030
4	7		7	13	15	51	6	2	040	040	
4	11		11	25	27	63	6	2			040
5	8		8	14	16	52	6	2	050	050	
5	13		13	30	32	68	6	2			050
6	8	5,50	14	14	16	52	6	2	060	060	
6	13	5,50	30	30	32	68	6	2			060
7	10	6,50	16	18	20	60	10	2	070	070	
7	16	6,35	36	38	40	80	10	2			070
8	11	7,50	17	19	21	61	10	2	080	080	
8	19	7,35	44	46	48	88	10	2			080
9	11	8,50	18	19	21	61	10	2	090	090	
9	19	8,35	45	46	48	88	10	2			090
10	13	9,50	21	21	23	63	10	2	100	100	
10	22	9,35	53	53	55	95	10	2			100
11	13	10,50	21	23	25	70	12	2	110		
11	22	10,50	53	55	57	102	12	2			110
12	16	11,50	26	26	28	73	12	2	120	120	
12	26	11,50	63	63	65	110	12	2			120
13	16	11,50	26	26	28	73	12	2	130	130	
14	16	11,50	26	26	28	73	12	2	140	140	
14	26	11,50	63	63	65	110	12	2			140
15	16	11,50	26	26	28	73	12	2	150	150	
15	26	11,50	63	63	65	110	12	2			150
16	19	15,50	29	29	31	79	16	2	160	160	
16	32	15,00	73	73	75	123	16	2			160
18	19	15,50	29	29	31	79	16	2	180	180	
18	32	15,00	73	73	75	123	16	2			180
20	22	19,00	36	36	38	88	20	2	201	201	
22	22	19,00	36	36	38	88	20	2	220		
24	26	23,00	42	44	46	102	25	2	240	240	
24	45	23,00	106	108	110	166	25	2			240
25	26	24,00	44	44	46	102	25	2	250		
25	45	24,00	108	108	110	166	25	2			250
26	26	24,00	44	44	46	102	25	2	260		
28	26	24,00	44	44	46	102	25	2	280		
30	26	24,00	44	44	46	102	25	2	300		
30	45	24,00	108	108	110	166	25	2			300
P									●	●	●
M									○	○	○
K									●	●	●
N									○	○	○
S									○	○	○
H											
O									○	○	○

→ v_c/f_z Page 33–35

13

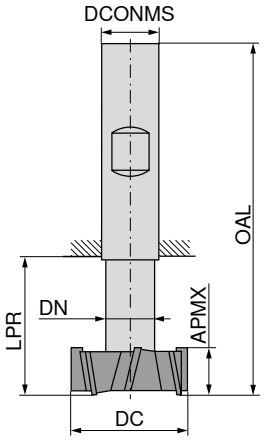
T-slot milling cutter HSS-E Co 5, cross pitched

▲ For slots according to DIN 650

N

λ_s=10°
γ_s=11°







DIN 851 A



50 240 ...

DC $_{d11}$ mm	APMX $_{d11}$ mm	DN $_{h12}$ mm	LPR mm	OAL mm	DCONMS $_{h6}$ mm	ZEFP	
11,0	4	4	13,5	53,5	10	6	**110**
12,5	6	5	17,0	57,0	10	6	**125**
16,0	8	7	22,0	62,0	10	6	**160**
18,0	8	8	25,0	70,0	12	6	**180**
19,0	9	8	26,0	71,0	12	6	**190** 1)
21,0	9	10	29,0	74,0	12	6	**210**
22,0	10	10	30,0	75,0	12	6	**220** 1)
25,0	11	12	34,0	82,0	16	8	**250**
28,0	12	13	37,0	85,0	16	8	**280** 1)
32,0	14	15	42,0	90,0	16	8	**320**
36,0	16	17	47,0	103,0	25	8	**360** 1)
40,0	18	19	52,0	108,0	25	10	**400**
45,0	20	21	57,0	113,0	25	10	**450** 1)
50,0	22	25	64,0	124,0	32	10	**500**
60,0	28	30	79,0	139,0	32	10	**600**

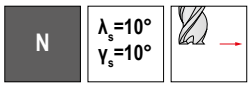
P	●
M	○
K	●
N	○
S	○
H	
O	○

1) Factory standard

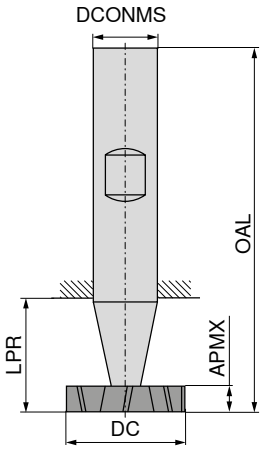
→ v_c/f_z Page 36

Slot milling cutter HSS-E Co 5, cross-pitched

▲ For slots according to DIN 6888
▲ CDX = $a_{p\ max.}$









DIN 850



50 234 ...

DC h12 mm	APMX e8 mm	LPR mm	OAL mm	DCONMS h6 mm	CDX mm	ZEFP	
10,5	2,0	14	50	6	3,25	6	**100**
10,5	2,5	14	50	6	3,15	6	**101**
10,5	3,0	14	50	6	3,15	6	**102**
13,5	2,0	16	56	10	4,45	6	**130** 1)
13,5	3,0	16	56	10	4,45	6	**132**
13,5	4,0	16	56	10	4,45	6	**133**
16,5	3,0	16	56	10	5,95	6	**161**
16,5	4,0	16	56	10	5,95	6	**162**
16,5	5,0	16	56	10	5,75	6	**163**
19,5	3,0	23	63	10	6,95	8	**190** 1)
19,5	4,0	23	63	10	6,95	8	**191**
19,5	5,0	23	63	10	6,75	8	**192**
22,5	4,0	23	63	10	8,25	8	**220** 1)
22,5	5,0	23	63	10	8,25	8	**221**
22,5	6,0	23	63	10	8,00	8	**222**
25,5	5,0	23	63	10	9,00	10	**250** 1)
25,5	6,0	23	63	10	9,00	10	**251**
28,5	6,0	23	63	10	10,00	10	**281**
28,5	8,0	23	63	10	10,00	10	**283**
32,5	6,0	26	71	12	12,00	10	**321** 1)
32,5	8,0	26	71	12	12,00	10	**322**
38,5	8,0	26	71	12	13,35	10	**381** 1)
45,5	10,0	26	71	12	16,85	12	**450**

P	●
M	○
K	●
N	○
S	○
H	
O	○

1) Factory standard

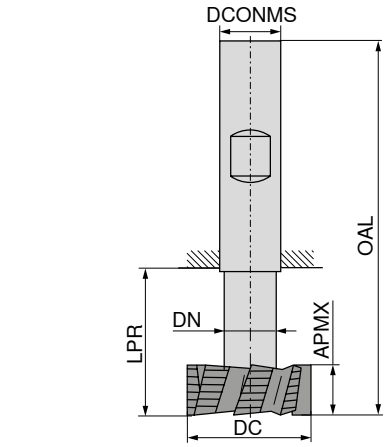
→ v_c/f_z Page 36

T-slot milling cutter HSS-E Co 5

▲ For slots according to DIN 650

NF | λ_s=20° γ_s=11°







DIN 851 A



50 241 ...

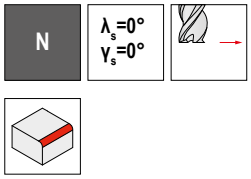
DC d11 mm	APMX mm	DN h12 mm	LPR mm	OAL mm	DCONMS h6 mm	ZEFP	
21	9	10	29	74	12	6	**210**
22	10	10	30	75	12	6	**220** 1)
25	11	12	34	82	16	6	**250**
28	12	13	37	85	16	6	**280** 1)
32	14	15	42	90	16	6	**320**
36	16	17	47	103	25	6	**360** 1)
40	18	19	52	108	25	8	**400**
45	20	21	57	113	25	8	**450** 1)

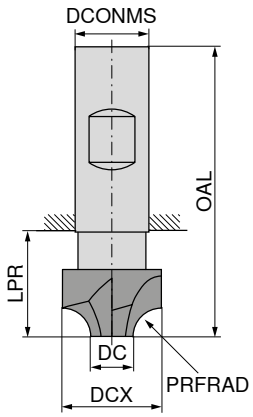
P	●
M	○
K	●
N	○
S	○
H	
O	○

1) Factory standard

→ v_c/f_z Page 36

Quarter-round profile milling cutter HSS-E Co 5, concave







DIN 6518



50 248 ...

PRFRAD $_{H11}$ mm	DCX mm	DC mm	LPR mm	OAL mm	DCONMS $_{h6}$ mm	ZEFP	
1,0	8	6	20	60	10	4	**010**
1,5	9	6	20	60	10	4	**015**
2,0	10	6	20	60	10	4	**020**
2,5	11	6	20	60	10	4	**025**
3,0	12	6	15	60	12	4	**030**
4,0	14	6	15	60	12	4	**040**
5,0	16	6	15	60	12	4	**050**
6,0	20	8	19	67	16	4	**060**
8,0	24	8	23	71	16	4	**080**
9,0	26	8	29	85	25	4	**090**
10,0	28	8	29	85	25	4	**100**
12,0	34	10	34	90	25	4	**120**
15,0	46	16	44	100	25	6	**150**
16,0	48	16	44	100	25	6	**160**

P	●
M	○
K	●
N	○
S	○
H	
O	○

→ v_c/f_z Page 36

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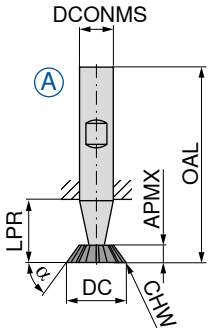
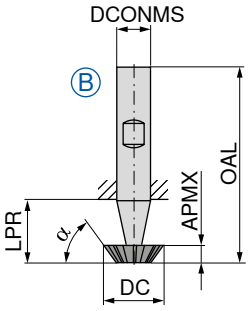
Single angle miling cutters HSS-E Co 5

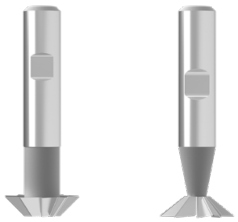
H

λ_s=0°
γ_s=0°









α°	DC mm	APMX mm	LPR mm	OAL mm	DCONMS h6 mm	CHW mm	ZEFP	Fig.	DIN 1833 50 246 ...	DIN 1833 50 245 ...
45	16	4,0	15	60	12	0,3	10	A		016
	16	4,0	15	60	12		10	B	016	
	20	5,0	18	63	12	0,3	10	A		020
	20	5,0	18	63	12		10	B	020	
	25	6,3	22	67	12	0,3	10	A		025
	25	6,3	22	67	12		10	B	025	
60	16	6,3	15	60	12	0,3	10	A		116
	16	6,3	15	60	12		10	B	116	
	20	8,0	18	63	12	0,3	10	A		120
	20	8,0	18	63	12		10	B	120	
	25	10,0	22	67	12	0,3	10	A		125
	25	10,0	22	67	12		10	B	125	
70	16	7,0	15	60	12	0,3	10	A		216 1)
	20	9,0	18	63	12	0,3	10	A		220 1)
	25	11,0	19	67	16	0,3	10	A		225 1)
P									●	●
M									○	○
K									●	●
N									○	○
S									○	○
H										
O									○	○

1) Factory standard

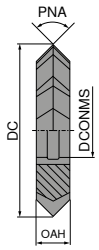
→ v_c/f_z Page 37

Double angle milling cutter HSS

▲ with keyway to DIN 138

N | λ_s=0° γ_s=0°







DIN 847

50 360 ...

PNA °	DC mm	OAH mm	DCONMS mm	ZEFP	
45	50	8	16	22	**045**
	63	10	22	24	**145**
	80	12	27	26	**245**
	100	18	32	28	**345**
60	50	10	16	18	**060**
	63	14	22	20	**160**
	80	18	27	22	**260**
	100	25	32	24	**360**
90	50	14	16	16	**090**
	63	20	22	18	**190**
	80	22	27	20	**290**
	100	32	32	24	**390**
120	50	14	16	16	**120** 1)
	63	20	22	16	**121** 1)

P	●
M	○
K	●
N	○
S	○
H	
O	○

1) Factory standard

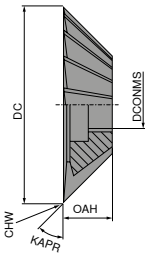
→ v_c/f_z Page 37

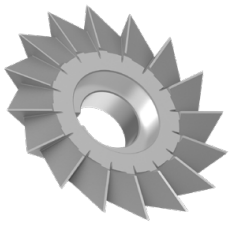
Shell type single angle milling cutter HSS

▲ with keyway to DIN 138

N | λ_s=0° γ_s=2°







DIN 842 A

50 362 ...

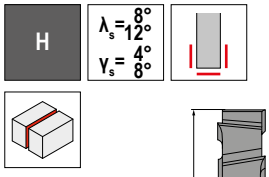
KAPR °	DC mm	OAH mm	DCONMS mm	CHW mm	ZEFP	
45	40	10	10	0,3	14	**045**
	50	13	13	0,3	16	**145**
	63	18	16	0,3	18	**245**
	80	22	22	0,3	20	**345**
	100	28	27	0,3	22	**445**
50	50	16	13	0,3	16	**150**
60	40	13	10	0,3	14	**060**
	50	16	13	0,3	16	**160**
	63	20	16	0,3	18	**260**
	80	25	22	0,3	20	**360**
	100	32	27	0,3	22	**460**
	125	40	32	0,3	28	**560**

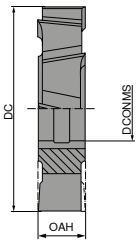
P	●
M	○
K	●
N	○
S	○
H	
O	○

→ v_c/f_z Page 37

Side and face milling cutter HSS-E Co 5

▲ Fine cross-pitched version
▲ with keyway to DIN 138







DIN 885 A

50 349 ...

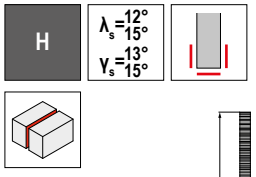
DC mm	OAH mm	DCONMS mm	ZEFP	
50	4	16	16	100
50	5	16	16	102
50	6	16	16	104
50	8	16	16	106
50	10	16	16	108
63	4	22	18	200
63	5	22	18	202
63	6	22	18	204
63	8	22	18	206
63	10	22	18	208
63	12	22	18	210
63	14	22	18	212
80	5	27	20	300
80	6	27	20	302
80	8	27	20	304
80	10	27	18	306
80	12	27	18	308
80	14	27	18	310
80	16	27	18	312
80	18	27	18	314
80	20	27	18	316
100	6	32	22	400
100	8	32	22	402
100	10	32	20	404
100	12	32	20	406
100	14	32	20	408
100	16	32	20	410
100	18	32	20	412
100	20	32	20	414
100	25	32	20	418
125	8	32	24	500
125	10	32	22	502
125	12	32	22	504
125	14	32	22	506
125	16	32	22	508
125	18	32	22	510
125	20	32	22	512
125	25	32	22	516
160	10	40	26	600
160	12	40	26	602
160	14	40	26	604
160	16	40	26	606
160	18	40	26	608
160	20	40	26	610
160	25	40	26	614
160	32	40	26	618

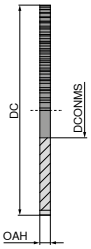
P	●
M	○
K	●
N	●
S	○
H	
O	●

→ v_c/f_z Page 38

Narrow side and face milling cutter HSS-E Co 5

▲ Fine cross-pitched version
▲ with keyway to DIN 138







DIN 1834 A

50 340 ...

DC mm	OAH mm	DCONMS mm	ZEFP	
63	1,6	22	28	200
63	2,0	22	28	202
63	2,5	22	28	204
63	3,0	22	28	206
80	1,6	27	32	300
80	2,0	27	32	302
80	2,5	27	32	304
80	3,0	27	32	306
80	4,0	27	32	310
100	1,6	32	36	400
100	2,0	32	36	402
100	2,5	32	36	404
100	3,0	32	36	406
100	4,0	32	36	410
100	5,0	32	36	414
125	1,6	32	40	500
125	2,0	32	40	502
125	2,5	32	40	504
125	3,0	32	40	506
125	4,0	32	40	510
125	5,0	32	40	514
125	6,0	32	40	516
160	2,0	40	48	600
160	2,5	40	48	602
160	3,0	40	48	604
160	4,0	40	48	606
160	5,0	40	48	608
160	6,0	40	48	610
160	8,0	40	36	612

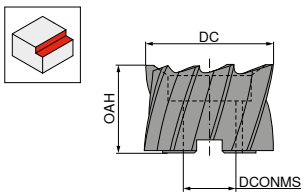
P	●
M	
K	●
N	●
S	●
H	
O	●

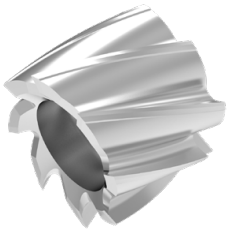
→ v_c/f_z Page 38

Face milling cutters HSS-E Co 5

▲ with keyway to DIN 138

N | λ_s=25° γ_s=10°





DIN 1880

50 250 ...

DC mm	OAH mm	DCONMS mm	ZEFP	
40	32	16	8	**040**
50	36	22	8	**050**
63	40	27	8	**063**
80	45	27	10	**080**

P	●
M	●
K	●
N	●
S	○
H	
O	●

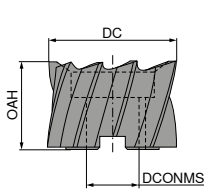
→ v_c/f_z Page 39+40

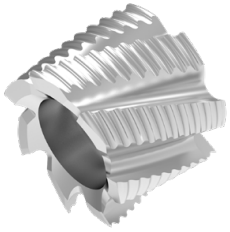
Roughing face milling cutters HSS-E Co 5

▲ with keyway to DIN 138

▲ Manufacturing tolerance lies on the plus range of the tolerance js14

NR | λ_s=25° γ_s=10°





DIN 1880

50 260 ...

DC mm	OAH mm	DCONMS mm	ZEFP	
40	32	16	7	**040**
50	36	22	8	**050**
63	40	27	8	**063**
80	45	27	10	**080**

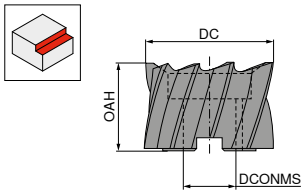
P	●
M	●
K	●
N	●
S	○
H	
O	●

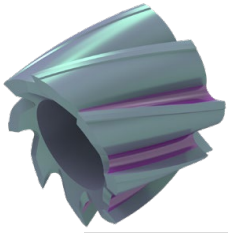
→ v_c/f_z Page 39+40

Face milling cutters HSS-E Co 5

▲ with keyway to DIN 138

N | λ_s=25° γ_s=10° | Ti100 Pro





DIN 1880

54 035 ...

DC mm	OAH mm	DCONMS mm	ZEFP	
40	32	16	8	**040**
50	36	22	8	**050**
63	40	27	8	**063**
80	45	27	10	**080**

P	●
M	●
K	●
N	●
S	○
H	
O	●

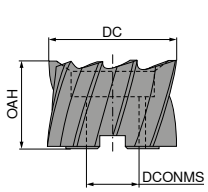
→ v_c/f_z Page 39+40

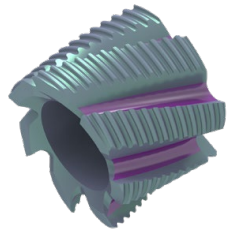
Roughing-finishing face milling cutters HSS-E Co 8

▲ with keyway to DIN 138

▲ Manufacturing tolerance lies on the plus range of the tolerance js14

HR | λ_s=25° γ_s=10° | Ti100 Pro





DIN 1880

54 037 ...

DC mm	OAH mm	DCONMS mm	ZEFP	
40	32	16	7	**040**
50	36	22	8	**050**
63	40	27	8	**063**
80	45	27	10	**080**

P	●
M	●
K	●
N	●
S	○
H	
O	●

→ v_c/f_z Page 39+40

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Material examples for cutting data tables

	Material sub-group	Index	Composition / Structure / Heat treatment		Tensile strength N/mm²* / HB / HRC	Material number	Material designation	Material number	Material designation
P	Unalloyed steel	P.1.1	< 0,15 % C	Annealed	420 N/mm² / 125 HB	1.0401	C15	1.1141	Ck15
		P.1.2	< 0,45 % C	Annealed	640 N/mm² / 190 HB	1.1191	C45E	1.0718	9SMnPb28
		P.1.3		Tempered	840 N/mm² / 250 HB	1.1191	C45E	1.0535	C55
		P.1.4	< 0,75 % C	Annealed	910 N/mm² / 270 HB	1.1223	C60R	1.0535	C55
		P.1.5		Tempered	1010 N/mm² / 300 HB	1.1223	C60R	1.0727	45S20
	Low-alloy steel	P.2.1		Annealed	610 N/mm² / 180 HB	1.7131	16MnCr5	1.6587	17CrNiMo6
		P.2.2		Tempered	930 N/mm² / 275 HB	1.7131	16MnCr5	1.6587	17CrNiMo6
		P.2.3		Tempered	1010 N/mm² / 300 HB	1.7225	42CrMo4	1.3505	100Cr6
		P.2.4		Tempered	1200 N/mm² / 375 HB	1.7225	42CrMo4	1.3505	100Cr6
	High-alloy steel and high-alloy tool steel	P.3.1		Annealed	680 N/mm² / 200 HB	1.4021	X20Cr13	1.4034	X46Cr13
		P.3.2		Hardened and tempered	1100 N/mm² / 300 HB	1.2343	X38CrMoV5-1	1.4034	X46Cr13
		P.3.3		Hardened and tempered	1300 N/mm² / 400 HB	1.2343	X38CrMoV5-1	1.4034	X46Cr13
	Stainless steel	P.4.1	Ferritic / martensitic	Annealed	680 N/mm² / 200 HB	1.4016	X6Cr17	1.2316	X36CrMo16
		P.4.2	Martensitic	Tempered	1010 N/mm² / 300 HB	1.4112	X90CrMoV18	1.2316	X36CrMo16
M	Stainless steel	M.1.1	Austenitic / austenitic-ferritic	Quenched	610 N/mm² / 180 HB	1.4301	X5CrNi18-10	1.4571	X6CrNiMoTi17-12-2
		M.2.1	Austenitic	Tempered	300 HB	1.4841	X15CrNiSi25-21	1.4539	X1NiCrMoCu25-20-5
		M.3.1	Austenitic / ferritic (Duplex)		780 N/mm² / 230 HB	1.4462	X2CrNiMoN22-5-3	1.4501	X2CrNiMoCuWN25-7-4
K	Grey cast iron	K.1.1	Pearlitic / ferritic		350 N/mm² / 180 HB	0.6010	GG-10	0.6025	GG-25
		K.1.2	Pearlitic (martensitic)		500 N/mm² / 260 HB	0.6030	GG-30	0.6045	GG-45
	Spherulitic graphite cast iron	K.2.1	Ferritic		540 N/mm² / 160 HB	0.7040	GGG-40	0.7060	GGG-60
		K.2.2	Pearlitic		845 N/mm² / 250 HB	0.7070	GGG-70	0.7080	GGG-80
	Malleable iron	K.3.1	Ferritic		440 N/mm² / 130 HB	0.8035	GTW-35-04	0.8045	GTW-45
		K.3.2	Pearlitic		780 N/mm² / 230 HB	0.8165	GTS-65-02	0.8170	GTS-70-02
N	Aluminium wrought alloy	N.1.1	Non-hardenable		60 HB	3.0255	Al99,5	3.3315	AlMg1
		N.1.2	Hardenable	Age-hardened	340 N/mm² / 100 HB	3.1355	AlCuMg2	3.2315	AlMgSi1
	Cast aluminium alloy	N.2.1	≤ 12 % Si, non-hardenable		250 N/mm² / 75 HB	3.2581	G-AlSi12	3.2163	G-AlSi9Cu3
		N.2.2	≤ 12 % Si, hardenable	Age-hardened	300 N/mm² / 90 HB	3.2134	G-AlSi5Cu1Mg	3.2373	G-AlSi9Mg
		N.2.3	> 12 % Si, non-hardenable		440 N/mm² / 130 HB		G-AlSi17Cu4Mg		G-AlSi18CuNiMg
	Copper and copper alloys (bronze/brass)	N.3.1	Free-machining alloys, PB > 1 %		375 N/mm² / 110 HB	2.0380	CuZn39Pb2 (Ms58)	2.0410	CuZn44Pb2
		N.3.2	CuZn, CuSnZn		300 N/mm² / 90 HB	2.0331	CuZn15	2.4070	CuZn28Sn1As
		N.3.3	CuSn, lead-free copper and electrolytic copper		340 N/mm² / 100 HB	2.0060	E-Cu57	2.0590	CuZn40Fe
	Magnesium alloys	N.4.1	Magnesium and magnesium alloys		70 HB	3.5612	MgAl6Zn	3.5312	MgAl3Zn
S	Heat-resistant alloys	S.1.1	Fe - basis	Annealed	680 N/mm² / 200 HB	1.4864	X12NiCrSi 36-16	1.4865	G-X40NiCrSi38-18
		S.1.2		Age-hardened	950 N/mm² / 280 HB	1.4980	X6NiCrTiMoVB25-15-2	1.4876	X10NiCrAlTi32-20
		S.2.1	Ni or Co basis	Annealed	840 N/mm² / 250 HB	2.4631	NiCr20TiAl (Nimonic80A)	3.4856	NiCr22Mo9Nb
		S.2.2		Age-hardened	1180 N/mm² / 350 HB	2.4668	NiCr19Nb5Mo3 (Inconel 718)	2.4955	NiFe25Cr20NbTi
		S.2.3		Cast	1080 N/mm² / 320 HB	2.4765	CoCr20W15Ni	1.3401	G-X120Mn12
	Titanium alloys	S.3.1	Pure titanium		400 N/mm²	3.7025	Ti99,8	3.7034	Ti99,7
		S.3.2	Alpha + beta alloys	Age-hardened	1050 N/mm² / 320 HB	3.7165	TiAl6V4	Ti-6246	Ti-6Al-2Sn-4Zr-6Mo
		S.3.3	Beta alloys		1400 N/mm² / 410 HB	Ti555.3	Ti-5Al-5V-5Mo-3Cr	R56410	Ti-10V-2Fe-3Al
H	Hardened steel	H.1.1		Hardened and tempered	46–55 HRC				
		H.1.2		Hardened and tempered	56–60 HRC				
		H.1.3		Hardened and tempered	61–65 HRC				
		H.1.4		Hardened and tempered	66–70 HRC				
	Chilled iron	H.2.1		Cast	400 HB				
	Hardened cast iron	H.3.1		Hardened and tempered	55 HRC				
O	Non-metal materials	O.1.1	Plastics, duroplastic		≤ 150 N/mm²				
		O.1.2	Plastics, thermoplastic		≤ 100 N/mm²				
		O.2.1	Aramid fibre-reinforced		≤ 1000 N/mm²				
		O.2.2	Glass/carbon-fibre reinforced		≤ 1000 N/mm²				
		O.3.1	Graphite						

*** Tensile strength**

Cutting speeds – slot, end milling and ball-nosed end milling cutters

Index	Kf f_z	uncoated	Ti100 Pro	Ti100 Pro	● 1st choice ○ suitable		
				Powder steel	Emulsion	Compressed air	MMS
		v_c (m/min)					
P.1.1	1,2	20	45	50	●		
P.1.2	1,2	20	45	50	●		
P.1.3	1,2	20	45	50	●		
P.1.4	1,0	15	30	35	●		
P.1.5	1,0	15	30	35	●		
P.2.1	1,2	20	40	45	●		
P.2.2	1,0	15	40	45	●		
P.2.3	0,8	15	30	35	●		
P.2.4	0,8	15	30	35	●		
P.3.1	1,0	15	30	35	●		
P.3.2	0,8	12	25	30	●		
P.3.3	0,8	10	20	25	●		
P.4.1	1,0	10	20	25	●		
P.4.2	1,0	10	20	25	●		
M.1.1	1,0	10	20	25	●		
M.2.1	0,9	7	15	20	●		
M.3.1	1,0	5	10	15	●		
K.1.1	1,0	18	35	40	●		
K.1.2	1,0	18	25	30	●		
K.2.1	1,0	15	30	35	●		
K.2.2	1,0	15	30	35	●		
K.3.1	1,0	15	35	40	●		
K.3.2	0,8	12	25	30	●		
N.1.1	1,9	150	240	260	●		
N.1.2	1,9	100	130	150	●		
N.2.1	1,8		100	140	●		
N.2.2	1,7		60	80	●		
N.2.3							
N.3.1	1,1		100	130	●		
N.3.2	1,2	30	60	80	●		
N.3.3	1,2	30	60	80	●		
N.4.1	1,8	90	140	160		●	
S.1.1							
S.1.2							
S.2.1							
S.2.2							
S.2.3							
S.3.1	1,0	10	15	25	●		
S.3.2	1,1	10	15	25	●		
S.3.3							
H.1.1							
H.1.2							
H.1.3							
H.1.4							
H.2.1							
H.3.1							
O.1.1	2,0	30	50	70	●		
O.1.2	2,0	20	25	40	●		
O.2.1							
O.2.2							
O.3.1	1,0		30	40	○		

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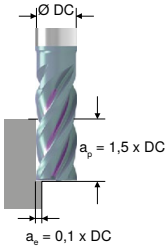
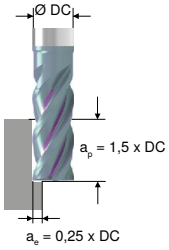
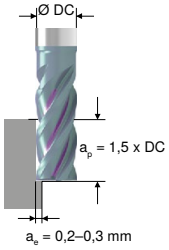
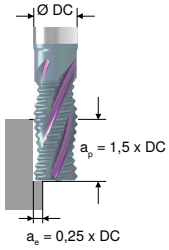
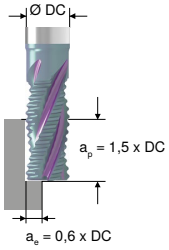
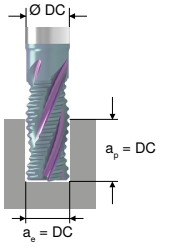
For full slot milling reduce the cutting speed (Vc), indicated in this table by approx. 15 - 20%!

Kf fz = Correction factor for feed per tooth

Feed per tooth for HSS end mills

Appoximate values (in mm) for the feed per tooth (f_z)

	Finish milling						Rough machining					
	Peripheral milling										Full slot milling	
												
	f_z in mm		f_z in mm		f_z in mm		f_z in mm		f_z in mm		f_z in mm	
Ø DC mm	uncoated	coated	uncoated	coated	uncoated	coated	uncoated	coated	uncoated	coated	uncoated	coated
2	0,008	0,009	0,008	0,009	0,008	0,009						
3	0,011	0,012	0,009	0,010	0,010	0,012						
4	0,017	0,018	0,013	0,014	0,014	0,015	0,015	0,016	0,013	0,014	0,011	0,012
5	0,024	0,026	0,014	0,015	0,018	0,020	0,019	0,021	0,016	0,018	0,014	0,016
6	0,032	0,035	0,015	0,017	0,022	0,024	0,024	0,027	0,020	0,022	0,018	0,019
8	0,047	0,051	0,020	0,022	0,029	0,032	0,032	0,036	0,027	0,030	0,024	0,026
10	0,065	0,072	0,026	0,028	0,037	0,041	0,042	0,047	0,035	0,039	0,031	0,034
12	0,084	0,091	0,031	0,034	0,044	0,049	0,051	0,057	0,043	0,047	0,037	0,041
14	0,100	0,106	0,037	0,041	0,054	0,059	0,063	0,069	0,053	0,058	0,045	0,050
16	0,111	0,121	0,042	0,046	0,061	0,067	0,072	0,079	0,060	0,066	0,052	0,057
18	0,126	0,136	0,048	0,053	0,070	0,077	0,084	0,093	0,071	0,078	0,061	0,067
20	0,141	0,151	0,052	0,057	0,076	0,083	0,092	0,101	0,077	0,084	0,066	0,073
22	0,160	0,166	0,059	0,065	0,085	0,094	0,104	0,114	0,087	0,096	0,075	0,082
25	0,170	0,188	0,065	0,072	0,095	0,104	0,117	0,129	0,098	0,108	0,084	0,093
28	0,196	0,210	0,075	0,083	0,109	0,120	0,136	0,150	0,114	0,125	0,098	0,108
32	0,212	0,240	0,086	0,094	0,124	0,137	0,157	0,173	0,131	0,145	0,113	0,125
36	0,224	0,240	0,099	0,109	0,144	0,159	0,170	0,194	0,142	0,162	0,126	0,140
40	0,240	0,240	0,108	0,119	0,157	0,173	0,184	0,202	0,154	0,169	0,132	0,146
45	0,240	0,240	0,108	0,119	0,157	0,173	0,200	0,220	0,170	0,180	0,140	0,160
50	0,240	0,240	0,108	0,119	0,157	0,173	0,200	0,220	0,170	0,180	0,140	0,160

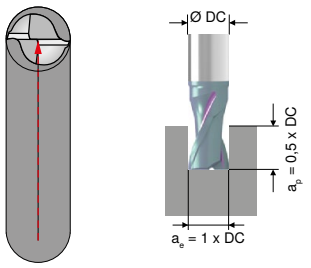
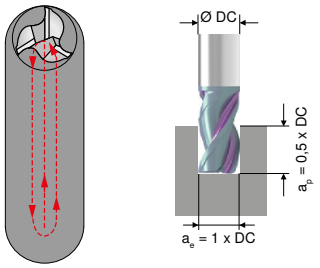
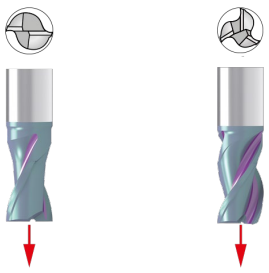
Attention:
In the case of uncoated milling cutters climb milling is preferred to conventional milling. When using coated milling cutters climb milling is necessary in order to achieve optimum results.

Feed rate correction:
Please multiply the f_z value in the table above with the corresponding **correction factor Kf f_z** from the table on → **page 33.**

In general the following is valid:
f_z (milling) = f_z x Kf f_z
f_z (drilling) = f_z (milling) ÷ no. of teeth

Feed per tooth when milling parallel key slots with HSS slot drills

Appoximate values (in mm) for the feed per tooth (f_z)

	Full slot milling (in one cut)		Profile slot milling (internal profile milling)				Circular ramping			
										
			Roughing cut		Finishing cut					
	f_z in mm		f_z in mm				f_z in mm			
Ø DC mm	uncoated	coated	uncoated	coated	uncoated	coated	uncoated	coated	uncoated	coated
2	0,005	0,006	0,005	0,006	0,008	0,009	0,003	0,003	0,002	0,002
3	0,009	0,010	0,009	0,010	0,015	0,016	0,004	0,005	0,003	0,003
4	0,012	0,013	0,012	0,013	0,022	0,024	0,006	0,007	0,004	0,004
5	0,016	0,017	0,016	0,017	0,030	0,033	0,008	0,009	0,005	0,006
6	0,020	0,022	0,020	0,022	0,039	0,043	0,010	0,011	0,007	0,007
8	0,026	0,029	0,026	0,029	0,055	0,061	0,013	0,014	0,009	0,010
10	0,034	0,037	0,034	0,037	0,075	0,082	0,017	0,019	0,011	0,012
12	0,040	0,044	0,040	0,044	0,093	0,101	0,020	0,022	0,013	0,015
14	0,049	0,054	0,049	0,054	0,117	0,118	0,024	0,027	0,016	0,018
16	0,056	0,062	0,056	0,062	0,135	0,135	0,028	0,031	0,019	0,021
18	0,065	0,072	0,065	0,072	0,151	0,151	0,033	0,036	0,022	0,024
20	0,071	0,078	0,071	0,078	0,167	0,167	0,035	0,039	0,024	0,026
22	0,080	0,088	0,080	0,088	0,184	0,184	0,040	0,044	0,027	0,029
25	0,089	0,098	0,089	0,098	0,208	0,208	0,044	0,049	0,030	0,033
28	0,103	0,113	0,103	0,113	0,233	0,233	0,051	0,056	0,034	0,037
32	0,118	0,130	0,118	0,130	0,260	0,260	0,060	0,065	0,040	0,043
36	0,130	0,143	0,130	0,143	0,260	0,260	0,060	0,065	0,040	0,043
40	0,130	0,143	0,130	0,143	0,260	0,260	0,060	0,065	0,040	0,043
45	0,130	0,143	0,130	0,143	0,260	0,260	0,060	0,065	0,040	0,043
50	0,130	0,143	0,130	0,143	0,260	0,260	0,060	0,065	0,040	0,043

Attention:
In the case of uncoated milling cutters climb milling is preferred to conventional milling. When using coated milling cutters climb milling is necessary in order to achieve optimum results.

Feed rate correction:
Please multiply the f_z value in the table above with the corresponding **correction factor Kf f_z** from the table on → **page 33.**

In general the following is valid:
f_z (milling) = f_z x Kf f_z
f_z (drilling) = f_z (milling) ÷ no. of teeth

Cutting data standard values – Form cutters

Index	v_c (m/min)	50 241 ... Ø DC (mm) = 21–25	28–36	40–45	50 240 ... Ø DC (mm) = 11–16	18–22	25–32	36–45	50–60	v_c (m/min)	50 234 ... Ø DC (mm) = 10–17	19–26	28–33	33–46	50 248 ... Ø DCX (mm) = 8–11	12–24	26–34	46–48	● 1st choice ○ suitable Emulsion	Compressed air	MMS
		f_z (mm)			f_z (mm)						f_z (mm)				f_z (mm)						
P.1.1	28	0,07	0,1	0,12	0,015	0,03	0,03	0,03	0,04	28	0,02	0,03	0,04	0,05	0,03	0,06	0,1	0,12	●		
P.1.2	28	0,07	0,1	0,12	0,015	0,03	0,03	0,03	0,04	28	0,02	0,03	0,04	0,05	0,03	0,06	0,1	0,12	●		
P.1.3	28	0,07	0,1	0,12	0,015	0,03	0,03	0,03	0,04	28	0,02	0,03	0,04	0,05	0,03	0,06	0,1	0,12	●		
P.1.4	22	0,06	0,08	0,1	0,015	0,03	0,03	0,03	0,04	22	0,02	0,03	0,035	0,045	0,025	0,055	0,08	0,1	●		
P.1.5	22	0,06	0,08	0,1	0,015	0,03	0,03	0,03	0,04	22	0,02	0,03	0,035	0,045	0,025	0,055	0,08	0,1	●		
P.2.1	22	0,06	0,08	0,1	0,015	0,03	0,03	0,03	0,04	22	0,02	0,03	0,035	0,045	0,025	0,055	0,08	0,1	●		
P.2.2	28	0,07	0,1	0,12	0,015	0,03	0,03	0,03	0,04	28	0,02	0,03	0,04	0,05	0,03	0,06	0,1	0,12	●		
P.2.3	20	0,06	0,08	0,1	0,015	0,03	0,03	0,03	0,04	20	0,02	0,03	0,035	0,045	0,025	0,055	0,08	0,1	●		
P.2.4	20	0,06	0,08	0,1	0,015	0,03	0,03	0,03	0,04	20	0,02	0,03	0,035	0,045	0,025	0,055	0,08	0,1	●		
P.3.1																					
P.3.2																					
P.3.3																					
P.4.1	10	0,06	0,08	0,1	0,01	0,025	0,025	0,025	0,03	10	0,02	0,025	0,03	0,04	0,02	0,045	0,08	0,09	●		
P.4.2	10	0,06	0,08	0,1	0,01	0,025	0,025	0,025	0,03	10	0,02	0,025	0,03	0,04	0,02	0,045	0,08	0,09	●		
M.1.1	10	0,06	0,08	0,1	0,01	0,025	0,025	0,025	0,03	10	0,02	0,025	0,03	0,04	0,02	0,045	0,08	0,09	●		
M.2.1																					
M.3.1																					
K.1.1	28	0,07	0,1	0,12	0,015	0,03	0,025	0,04	0,035	24	0,025	0,03	0,04	0,05	0,03	0,06	0,1	0,12	●		
K.1.2																					
K.2.1	22	0,07	0,1	0,12	0,015	0,03	0,025	0,04	0,035	22	0,025	0,03	0,04	0,05	0,03	0,06	0,1	0,12	●		
K.2.2	20	0,07	0,1	0,12	0,015	0,03	0,025	0,04	0,035	20	0,025	0,03	0,04	0,05	0,03	0,06	0,1	0,12	●		
K.3.1	15	0,07	0,1	0,12	0,015	0,03	0,025	0,04	0,035	15	0,025	0,03	0,04	0,05	0,03	0,06	0,1	0,12	●		
K.3.2	15	0,07	0,1	0,12	0,015	0,03	0,025	0,04	0,035	15	0,025	0,03	0,04	0,05	0,03	0,06	0,1	0,12	●		
N.1.1	100	0,1	0,12	0,15	0,02	0,045	0,045	0,045	0,055	90	0,03	0,04	0,06	0,07	0,035	0,07	0,14	0,15	●		
N.1.2	100	0,1	0,12	0,15	0,02	0,045	0,045	0,045	0,055	90	0,03	0,04	0,06	0,07	0,035	0,07	0,14	0,15	●		
N.2.1	80	0,09	0,11	0,13	0,015	0,04	0,035	0,04	0,045	80	0,03	0,035	0,045	0,055	0,03	0,06	0,12	0,12	●		
N.2.2	60	0,09	0,11	0,13	0,015	0,04	0,035	0,04	0,045	60	0,03	0,035	0,045	0,055	0,03	0,06	0,12	0,12	●		
N.2.3																					
N.3.1	25	0,08	0,1	0,12	0,015	0,04	0,035	0,03	0,035	25	0,02	0,035	0,045	0,055	0,03	0,06	0,12	0,12	●		
N.3.2	25	0,08	0,1	0,12	0,015	0,04	0,035	0,03		25	0,02	0,035	0,045	0,055	0,03	0,06	0,12	0,12	●		
N.3.3	25	0,08	0,1	0,12	0,015	0,04	0,035	0,03		25	0,02	0,035	0,045	0,055	0,03	0,06	0,12	0,12	●		
N.4.1	70	0,1	0,12	0,15	0,018	0,04	0,03	0,035	0,045	70	0,03	0,035	0,05	0,06	0,025	0,06	0,1	0,12	●		
S.1.1																					
S.1.2																					
S.2.1																					
S.2.2																					
S.2.3																					
S.3.1	20	0,06	0,08	0,1	0,012	0,025	0,025	0,025	0,035	20	0,015	0,025	0,035	0,045	0,02	0,05	0,07	0,09	●		
S.3.2																					
S.3.3																					
H.1.1																					
H.1.2																					
H.1.3																					
H.1.4																					
H.2.1																					
H.3.1																					
O.1.1	65	0,12	0,15	0,18		0,06	0,055	0,055	0,07	65	0,04	0,05	0,07	0,09	0,045	0,1	0,18	0,18	●		
O.1.2	80	0,12	0,15	0,18		0,06	0,055	0,055	0,07	80	0,04	0,05	0,07	0,09	0,045	0,1	0,18	0,18	●		
O.2.1																					
O.2.2																					
O.3.1																					

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

Cutting data standard values – Form cutters

Index	v_c (m/min)	50 245 ... / 50 246 ... Ø DC (mm) = 16	20	25	v_c (m/min)	50 360 ... Ø DC (mm) = 50	63	80	100	50 362 ... Ø DC (mm) = 40–50	63	80	100	● 1st choice ○ suitable Emulsion	Compressed air	MMS
		a_e = 3,2	a_e = 4	a_e = 5		a_e = 5	a_e = 6,3	a_e = 8	a_e = 10							
		f_z (mm)				f_z (mm)				f_z (mm)						
P.1.1	28	0,01	0,015	0,018	22	0,01	0,01	0,015	0,02	0,005	0,008	0,01	0,012	●		
P.1.2	28	0,01	0,015	0,018	22	0,01	0,01	0,015	0,02	0,005	0,008	0,01	0,012	●		
P.1.3	28	0,01	0,015	0,018	22	0,01	0,01	0,015	0,02	0,005	0,008	0,01	0,012	●		
P.1.4	22	0,01	0,015	0,018	20	0,008	0,01	0,012	0,018	0,005	0,008	0,01	0,012	●		
P.1.5	22	0,01	0,015	0,018	20	0,01	0,01	0,015	0,02	0,005	0,008	0,01	0,012	●		
P.2.1	22	0,01	0,015	0,018	20	0,01	0,01	0,015	0,02	0,005	0,008	0,01	0,012	●		
P.2.2	28	0,01	0,015	0,018	22	0,008	0,01	0,012	0,018	0,005	0,008	0,01	0,012	●		
P.2.3	20	0,01	0,015	0,018	20	0,01	0,01	0,015	0,02	0,005	0,008	0,01	0,012	●		
P.2.4	20	0,01	0,015	0,018	20	0,01	0,01	0,015	0,02	0,005	0,008	0,01	0,012	●		
P.3.1																
P.3.2																
P.3.3																
P.4.1	10	0,007	0,01	0,012	10	0,008	0,01	0,012	0,018	0,005	0,008	0,01	0,012	●		
P.4.2	10	0,007	0,01	0,012	10	0,008	0,01	0,012	0,018	0,005	0,008	0,01	0,012	●		
M.1.1	10	0,007	0,01	0,012	10	0,008	0,01	0,012	0,018	0,005	0,008	0,01	0,012	●		
M.2.1																
M.3.1																
K.1.1	24	0,01	0,012	0,015	19	0,008	0,01	0,012	0,018	0,005	0,008	0,01	0,012	●		
K.1.2					12	0,008	0,01	0,012	0,018	0,005	0,008	0,01	0,012			
K.2.1	22	0,01	0,012	0,015	15	0,008	0,01	0,012	0,018	0,005	0,008	0,01	0,012	●		
K.2.2	20	0,01	0,012	0,015	12	0,008	0,01	0,012	0,018	0,005	0,008	0,01	0,012	●		
K.3.1	15	0,01	0,012	0,015	16	0,008	0,01	0,012	0,018	0,005	0,008	0,01	0,012	●		
K.3.2	15	0,01	0,012	0,015	13	0,008	0,01	0,012	0,018	0,005	0,008	0,01	0,012	●		
N.1.1	90	0,01	0,015	0,02										●		
N.1.2	90	0,01	0,015	0,02	70	0,012	0,015	0,02	0,024	0,008	0,012	0,014	0,018	●		
N.2.1	80	0,01	0,015	0,02	60	0,012	0,015	0,02	0,024	0,008	0,012	0,014	0,018	●		
N.2.2	60	0,01	0,015	0,02	60	0,012	0,015	0,02	0,024	0,008	0,012	0,014	0,018	●		
N.2.3																
N.3.1	25	0,01	0,015	0,02	20	0,01	0,012	0,015	0,018	0,005	0,008	0,01	0,012	●		
N.3.2	25	0,01	0,015	0,02	20	0,01	0,012	0,015	0,018	0,005	0,008	0,01	0,012	●		
N.3.3	25	0,01	0,015	0,02	20	0,01	0,012	0,015	0,018	0,005	0,008	0,01	0,012	●		
N.4.1	70	0,01	0,015	0,0175	45	0,01	0,012	0,015	0,018	0,005	0,008	0,01	0,01	●		
S.1.1																
S.1.2																
S.2.1																
S.2.2																
S.2.3																
S.3.1	20	0,008	0,01	0,015	20	0,008	0,01	0,012	0,016	0,005	0,007	0,009	0,012	●		
S.3.2																
S.3.3																
H.1.1																
H.1.2																
H.1.3																
H.1.4																
H.2.1																
H.3.1																
O.1.1	65	0,018	0,02	0,025	60	0,015	0,02	0,025	0,03	0,008	0,012	0,018	0,022	●		
O.1.2	80	0,018	0,02	0,025	65	0,015	0,02	0,025	0,03	0,008	0,012	0,018	0,022	●		
O.2.1																
O.2.2																
O.3.1																

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

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Cutting data – side and face cutters

Index	v_c (m/min)	50 340 ... / 50 349 ... Ø DC (mm) = 50	63	80	100	125	160	Emulsion	Compressed air	MMS
		f (mm)						● 1st choice ○ suitable		
P.1.1	30	0,025–0,030	0,030–0,035	0,035–0,040	0,040–0,045	0,047–0,055	0,050–0,060	●		
P.1.2	20	0,025–0,030	0,030–0,035	0,035–0,040	0,040–0,045	0,047–0,055	0,050–0,060	●		
P.1.3	20	0,025–0,035	0,030–0,040	0,035–0,045	0,040–0,050	0,047–0,060	0,050–0,065	●		
P.1.4	15	0,020–0,025	0,025–0,030	0,030–0,035	0,035–0,040	0,040–0,045	0,045–0,050	●		
P.1.5	15	0,020–0,025	0,025–0,030	0,030–0,035	0,035–0,040	0,040–0,045	0,045–0,050	●		
P.2.1	20	0,020–0,025	0,025–0,030	0,030–0,035	0,035–0,040	0,040–0,045	0,045–0,050	●		
P.2.2	20	0,020–0,025	0,025–0,030	0,030–0,035	0,035–0,040	0,040–0,045	0,045–0,050	●		
P.2.3	10	0,015–0,020	0,020–0,025	0,025–0,030	0,030–0,035	0,035–0,040	0,040–0,045	●		
P.2.4	10	0,015–0,020	0,020–0,025	0,025–0,030	0,030–0,035	0,035–0,040	0,040–0,045	●		
P.3.1	15	0,020–0,025	0,025–0,030	0,030–0,035	0,035–0,040	0,040–0,045	0,045–0,050	●		
P.3.2	10	0,015–0,020	0,020–0,025	0,025–0,030	0,030–0,035	0,035–0,040	0,040–0,045	●		
P.3.3	10	0,015–0,020	0,020–0,025	0,025–0,030	0,030–0,035	0,035–0,040	0,040–0,045	●		
P.4.1	10	0,020–0,025	0,025–0,030	0,030–0,035	0,035–0,040	0,040–0,045	0,045–0,050	●		
P.4.2	10	0,020–0,030	0,025–0,035	0,030–0,040	0,035–0,045	0,040–0,050	0,045–0,100	●		
M.1.1	10	0,015–0,020	0,020–0,025	0,025–0,030	0,030–0,035	0,035–0,040	0,040–0,045	●		
M.2.1	10	0,015–0,020	0,020–0,025	0,025–0,030	0,030–0,035	0,035–0,040	0,040–0,045	●		
M.3.1	8	0,020–0,025	0,025–0,030	0,030–0,035	0,035–0,040	0,040–0,045	0,045–0,050	●		
K.1.1	20	0,020–0,025	0,025–0,030	0,030–0,035	0,035–0,040	0,040–0,045	0,045–0,050	●		
K.1.2	18	0,020–0,025	0,025–0,030	0,030–0,035	0,035–0,040	0,040–0,045	0,045–0,050	●		
K.2.1	18	0,020–0,025	0,025–0,030	0,030–0,035	0,035–0,040	0,040–0,045	0,045–0,050	●		
K.2.2	15	0,020–0,025	0,025–0,030	0,030–0,035	0,035–0,040	0,040–0,045	0,045–0,050	●		
K.3.1	18	0,020–0,025	0,025–0,030	0,030–0,035	0,035–0,040	0,040–0,045	0,045–0,050	●		
K.3.2	18	0,020–0,025	0,025–0,030	0,030–0,035	0,035–0,040	0,040–0,045	0,045–0,050	●		
N.1.1	150	0,030–0,037	0,037–0,045	0,045–0,050	0,050–0,060	0,060–0,067	0,067–0,075	●		
N.1.2	100	0,030–0,037	0,037–0,045	0,045–0,050	0,050–0,060	0,060–0,067	0,067–0,075	●		
N.2.1	80	0,025–0,030	0,030–0,035	0,035–0,040	0,040–0,045	0,047–0,055	0,050–0,060	●		
N.2.2	40	0,025–0,030	0,030–0,035	0,035–0,040	0,040–0,045	0,047–0,055	0,050–0,060	●		
N.2.3										
N.3.1	80	0,020–0,025	0,025–0,030	0,030–0,035	0,035–0,040	0,040–0,045	0,045–0,050	●		
N.3.2	30	0,025–0,030	0,030–0,035	0,035–0,040	0,040–0,045	0,047–0,055	0,050–0,060	●		
N.3.3	30	0,025–0,035	0,030–0,040	0,035–0,045	0,040–0,050	0,047–0,060	0,050–0,065	●		
N.4.1	90	0,025–0,030	0,030–0,035	0,035–0,040	0,040–0,045	0,047–0,055	0,050–0,060		●	
S.1.1										
S.1.2										
S.2.1										
S.2.2										
S.2.3										
S.3.1	10	0,020–0,025	0,025–0,030	0,030–0,035	0,035–0,040	0,040–0,045	0,045–0,050	●		
S.3.2	10	0,020–0,025	0,025–0,030	0,030–0,035	0,035–0,040	0,040–0,045	0,045–0,050	●		
S.3.3										
H.1.1										
H.1.2										
H.1.3										
H.1.4										
H.2.1										
H.3.1										
O.1.1	30	0,040–0,050	0,050–0,060	0,060–0,070	0,070–0,080	0,080–0,090	0,090–0,100	●		
O.1.2	20	0,040–0,050	0,050–0,060	0,060–0,070	0,070–0,080	0,080–0,090	0,090–0,100	●		
O.2.1										
O.2.2										
O.3.1										

Feed correction factor (Kf f_z) for side and face cutters in relation to the cutting depth (a_e)

a_e	Kf f_z
0,05 x DC	1,4
0,1 x DC	1,0
0,15 x DC	0,8
0,2 x DC	0,7
0,25 x DC	0,6

Cutting data – face mills

Index	Kf f_z	50 250 ... / 50 260 ... uncoated v_c (m/min)	54 035 ... / 54 037 ... Ti100 Pro v_c (m/min)	● 1st choice ○ suitable Emulsion	Compressed air	MMS
P.1.1	1,2	25	45	●		
P.1.2	1,2	20	40	●		
P.1.3	1,2	20	40	●		
P.1.4	1,0	15	30	●		
P.1.5	1,0	15	30	●		
P.2.1	1,2	20	40	●		
P.2.2	1,0	20	40	●		
P.2.3	0,8	10	20	●		
P.2.4	0,8	10	20	●		
P.3.1	1,0	15	30	●		
P.3.2	0,8	10	20	●		
P.3.3	0,8	10	20	●		
P.4.1	1,0	10	15	●		
P.4.2	1,0	10	15	●		
M.1.1	1,0	10	15	●		
M.2.1	0,9	7	15	●		
M.3.1	1,0	5	10	●		
K.1.1	1,0	20	30	●		
K.1.2	1,0	18	30	●		
K.2.1	1,0	18	30	●		
K.2.2	1,0	15	25	●		
K.3.1	1,0	18	30	●		
K.3.2	1,0	18	30	●		
N.1.1	1,5	150				
N.1.2	1,5	100				
N.2.1	1,3	80				
N.2.2	1,3	40				
N.2.3						
N.3.1	1,1	80	110	●		
N.3.2	1,2	30	60	●		
N.3.3	1,2	30	60	●		
N.4.1	1,3	90	120		●	
S.1.1						
S.1.2						
S.2.1						
S.2.2						
S.2.3						
S.3.1	1,0	10	15	●		
S.3.2	1,1	10	15	●		
S.3.3	0,8		10	●		
H.1.1						
H.1.2						
H.1.3						
H.1.4						
H.2.1						
H.3.1						
O.1.1	2,0	30	50	●		
O.1.2	2,0	20	25	●		
O.2.1						
O.2.2						
O.3.1						

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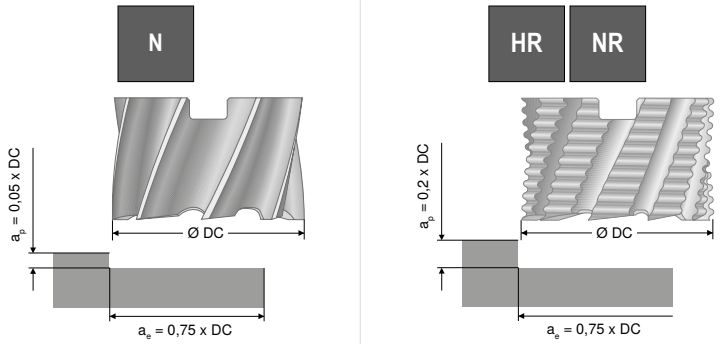
Feed per tooth for HSS face mills

Appoximate values (in mm) for the feed per tooth (f_z)



	f_z in mm		f_z in mm	
Ø DC mm	uncoated	Ti100 Pro	uncoated	Ti100 Pro
40	0,049	0,054	0,064	0,070
50	0,055	0,060	0,071	0,078
63	0,061	0,067	0,079	0,087
80	0,065	0,071	0,084	0,092

Feed rate correction:
Please multiply the f_z value in the table above with the corresponding **correction factor Kf f_z** from the table on → **page 33.**

In general the following is valid:
f_z (milling) = f_z x Kf f_z
f_z (drilling) = f_z (milling) ÷ no. of teeth

Formula for cutting data calculation

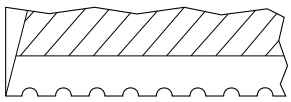
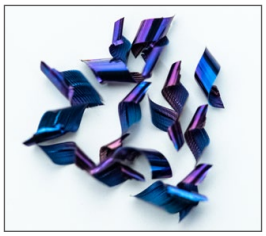
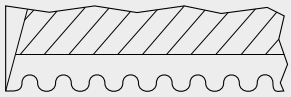
Designation	Abbreviation	Unit	Formula
Number of revolutions	n	min^{-1}	$n = \frac{v_C \times 1000}{DC \times \pi}$
Cutting speed	v_c	m/min	$v_c = \frac{DC \times \pi \times n}{1000}$
Feed per tooth	f_z	mm	$f_z = \frac{v_f}{ZEFP \times n}$ $f_z = h_m \times \sqrt{\frac{DC}{a_e}}$
Feed per revolution	f	mm	$f = f_z \times ZEFP$
Feed rate	v_f	mm/min.	$v_f = f_z \times ZEFP \times n$
Average chip thickness	h_m	mm	$h_m = f_z \times \sqrt{\frac{a_e}{DC}}$

ZEFP = Number of flutes
a_e = cutting width (for side milling cutter cutting depth)
DC = Cutting diameter

Version description

W	For soft materials and non-ferrous metals (aluminium, copper, brass)
N	For machining steel and cast materials, as well as stainless steels
H	For high-strength steels and tempered materials
NF	For machining steel and cast materials, as well as stainless steels – with roughing-finishing profile
HF	For high-strength steels and tempered materials – with roughing-finishing profile
NR	For machining steel and cast materials, as well as stainless steels – with roughing profile
HR	For high-strength steels and tempered materials – with roughing profile

Differences between the milling cutter types

Designation	Type	Shape of the chip breaker	Application description	Chip shape
Rough and finish milling cutters	NF HF	Chip breaker with flat profile 	▲ High chip volume, even on less powerful machines ▲ Surface quality mostly sufficient ▲ Lower cutting pressure compared to smooth-edged milling cutters ▲ Finish machining not needed	
Rough milling cutters	NR HR	Chip breaker with round profile 	▲ Produces very small and short chips ▲ Problem-solver in unstable conditions ▲ High chip volume, even on the weakest machines ▲ Exceptionally well suited to full slot milling ▲ Additional finish machining needed ▲ High feeds possible	

Coating

Ti100 Pro	▲ Ti multilayer coating ▲ $HV_{0.05}$ = 3500 ▲ Coefficient of friction (against steel) = 0.7 ▲ Maximum application temperature: 900°C

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New products for machining technicians

NEW

OptiLine – P166 - End- and Ball nosed Milling Cutter

P166



54



55



83+84

OptiLine – P166 – a 6-fluted solid carbide end mill specifically designed for difficult-to-machine materials. Applications include trochoidal and high-efficiency milling.

OptiLine High Performance Solid Carbide End Mills in Inch Sizes

These end mills are versatile in milling strategies yet optimized for multiple materials. The are made for universal machining in 4, 5, 6, and 7 flutes. They are all Dragonskin coated and edge prepped and are useful in a variety of machining strategies – HEM, Trochoidal, helical interpolation.
Chip splitters available for the new six flute for trochoidal machining)

https://cts.ceratizit.com/us/inch-assortment



Solid drilling and bore machining	Metric Catalog	HSS drilling	1
	Metric Catalog	Solid carbide drilling	2
		Indexable drilling	3
		Reaming and Countersinking	4
		Indexable Boring	5
Threading	Metric Catalog	Taps and thread formers	6
	Metric Catalog	Circular and Thread Milling	7
	Metric Catalog	Thread turning	8
Turning		Indexable Turning	9
		Multifunction	10
		Parting and Grooving	11
	Metric Catalog	Miniature turning tools	12
Milling	Metric Catalog	HSS Milling Cutters	13
		Solid Milling	**14**
		Indexable Milling	15
Clamping technology		Adaptors and Accessories	16
	Metric Catalog	Workpiece clamping	17
		Material examples and article no. Index	18

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More Tools can be found in the Metric Catalog.



CERATIZIT \ Performance

Premium quality tools for high performance.

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

CERATIZIT \ Standard

Quality tools for standard applications.

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

Symbol explanation

Shank



Shank type



Length: extra short / short / medium / long / extra long

Cutting edge preparation



Square end



Corner chamfer (CHW = chamfer width in inch)



Corner radius



Full Radius



Application



High volume machining



Machining example



The red arrows describe the possible feed directions



Number of flutes



Cutting geometry
λ_s = Helix Angle
γ_s = Rake Angle



Variable helix angle



Unequal Helix

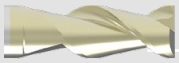
ZEFP = Number of flutes
● = **Main Application**
○ = Extended application

Toolfinder

softer — Material to machine — harder

Finish milling

P		•	• Steel
M		•	• Stainless steel
K		•	• Cast iron
N	•	•	• Non-ferrous metals
S		•	• Heat resistant alloys
H			Hardened steel
O			Non metal materials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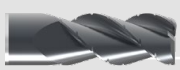
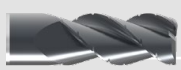
Rough and finish machining

P		•	• Steel
M		•	• Stainless steel
K		•	• Cast iron
N	•		Non-ferrous metals
S		•	• Heat resistant alloys
H			Hardened steel
O			Non metal materials


57+58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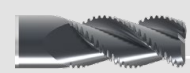
Rough machining

P	•	Steel
M	•	Stainless steel
K	•	Cast iron
N	•	Non-ferrous metals
S	•	Heat resistant alloys
H		Hardened steel
O		Non metal materials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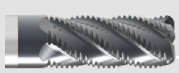
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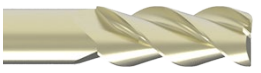
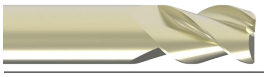
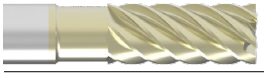
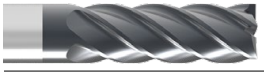
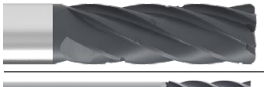
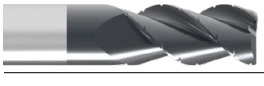
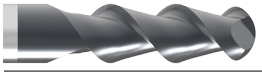
Overview High Performance Milling Cutters

	Series	Tool type	Number of flutes ZEFP	Diameter in inch Ø DC	Steel	Stainless steel	Cast iron	Non-ferrous metals	Heat-resistant	Tempered steel	Non-metal materials	Square end	Corner chamfer	Corner radius	Full Radius	Length	Tool design	coated	uncoated	CERATIZIT \ Standard	CERATIZIT \ Performance
	P220	AL	2	1/8"–3/4"			HA	●					■			■			□		9
	S142	AL	2	1/8"–1"			HA	●				■				■		■	□	10+11	
	P109	AL	3	1/8"–1"			HA	●				■				■		■			12+13
	P362	AL	3	3/16"–1"			HA	●				■				■	HPC	■			14
	P362	AL	3	3/16"–1"			HA	●						■		■	HPC	■			15–18
	P376	AL	6	1/4"–1"			HA	●				■				■		■			19
	S642	UN	2	1/16"–1"	●	●	HA	●	●			■				■		■		20+21	
	S642	UN	2	1/8"–3/4"	●	●	HA	●	●					■		■		■		22+23	
	S643	UN	3	1/16"–1"	●	●	HA	●	●			■				■		■		24+25	
	S643	UN	3	1/8"–1"	●	●	HA	●	●					■		■		■		26+27	
	S644	UN	4	1/32"–1"	●	●	HA	●	●			■				■		■		28+29	
	S644	UN	4	1/8"–1"	●	●	HA	●	●					■		■		■		30–38	
	S645	UN	5	1/8"–1"	●	●	HA					■				■		■		39	
	P007	UN	4	1/8"–1"	●	●	HA	○	●			■				■	HPC	■			40
	P007	UN	4	1/8"–1"	●	●	HA	○	●					■		■	HPC	■			41–44
	P556	UN	5	1/4"–1"	●	●	HA		●			■				■	HPC	■			45
	P556	UN	5	1/4"–1"	●	●	HA		●					■		■	HPC	■			46–50
	P166	UN	6	1/4"–1"	●	●	HA		●			■				■	HPC	■			51
	P166	UN	6	1/4"–1"	●	●	HA		●					■		■	HPC	■			52–54
	P160	UN	7	1/4"–1"	●	●	HA		●			■				■	HPC	■			55
	P161	UN	7	1/4"–1"	●	●	HA		●					■		■		■			56
	P119	AL	3	1/8"–1"			HA	●						■		■		■			57+58

Overview High Performance Milling Cutters

	Series	Tool type	Number of flutes ZEFP	Diameter in inch Ø DC	Steel	Stainless steel	Cast iron	Non-ferrous metals	Heat-resistant	Tempered steel	Non-metal materials	Square end	Corner chamfer	Corner radius	Full Radius	Length	Tool design	coated	uncoated	CERATIZIT \ Standard	CERATIZIT \ Performance
	P117	UN	3	1/8"–3/4"	●	●	●	○	●					■				■			59
					HA																
	P120	UN	4	1/8"–1"	●		●							■				■			60–62
					HA				HB												
	P121	UN	5	3/4"–1"	●	●	●		●					■				■			63
									HB												
	P102	AL	3	3/16"–1"				●						■				■			64–66
					HA				HB												
	P190	UN	4	3/16"–1"	●		●					■						■			67
					HA																
	P191	UN	4	3/16"–1"	●		●							■				■			68
					HA																
	P100	UN	3	3/16"	●		●							■				■			69
					HA																
	P100	UN	4	1/4"–3/4"	●		●							■				■			70+71
					HA				HB												
	P100	UN	5	1"	●		●							■				■			72
									HB												
	P101	UN	3	3/16"	●		●							■				■			73
					HA																
	P101	UN	4	1/4"–3/4"	●		●							■				■			74+75
					HA				HB												
	P101	UN	5	1"	●		●							■				■			76
									HB												
	S662	UN	2	1/16"–1"	●	●	●	●	●						■			■			77+78
					HA																
	S663	UN	3	1/8"–1"	●	●	●	●	●						■			■			79+80
					HA																
	P157	UN	4	1/8"–1"	●	●	●	●							■		HPC	■			81
					HA																
	S664	UN	4	1/32"–1"	●	●	●	●							■			■			82+83
					HA																
	P166	UN	6	1/4"–1"	●	●	●		●						■		HPC	■			84
					HA																
	P250	ST	2	1/8"–1/2"	●	●	●	●	●						■			■			85
					HA																
	P251	UN	2	0.031"–0.188"	●	●	●	●	●						■			■			86
					HA																
	P252	UN	2	0.031"–0.188"	●	●	●	●	●						■			■			87
					HA																
	P253	UN	2	0.031"–0.188"	●	●	●	●	●						■			■			88
					HA																
	P254	UN	2	0.031"–0.188"	●	●	●	●	●						■			■			89
					HA																

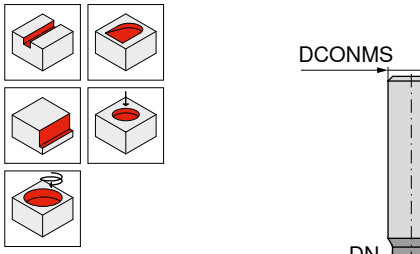
14

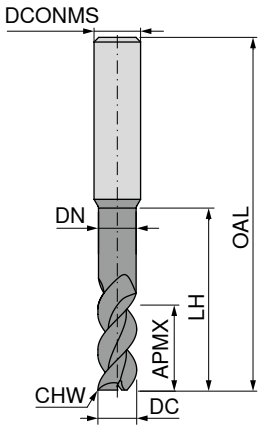
Overview High Performance Milling Cutters

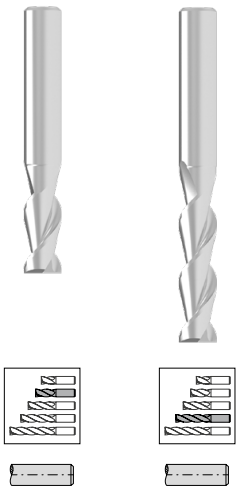
	Series	Tool type	Number of flutes ZEFP	Diameter in inch Ø DC	Steel	Stainless steel	Cast iron	Non-ferrous metals	Heat-resistant	Tempered steel	Non-metal materials	Square end	Corner chamfer	Corner radius	Full Radius	Length	Tool design	coated	uncoated	CERATIZIT \ Standard	CERATIZIT \ Performance
	P501	UN	4	0.005"–0.120"	●	●	●	●	●			■						■			90–92
	P504	UN	4	0.005"–0.120"	●	●	●	●	●			■						■			93–95
	P503	UN	4	0.005"–0.120"	●	●	●	●	●						■			■			96–98
	P506	UN	4	0.005–0.120	●	●	●	●	●						■			■			99–101
	P137	UN	2	0.010–0.155	●		●											■	□		102
	P139	UN	4	0.010–0.155	●		●											■	□		103
	P132	UN	2	1/8–1/2	●		●											■	□		104
	P133	UN	4	1/4–1/2	●		●											■	□		105
	P134	UN	2	1/8–1/2	●		●											■	□		106
	P135	UN	4	1/4–1/2	●		●											■	□		107
	P130	UN	2	1/4–1/2	●		●											■	□		108
	P131	UN	4	1/4–1/2	●		●											■	□		109

End milling cutter

P220 | AL | λ_s=50° γ_s=7°





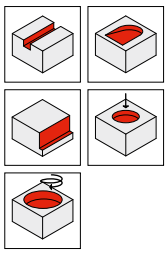


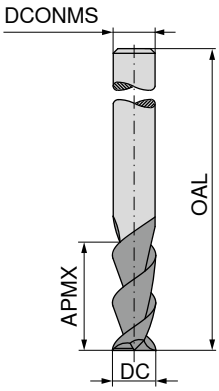
DC +0.000/-0.002 inch	APMX inch	DN inch	LH inch	OAL inch	DCONMS -0.0001 / -0.0004 inch	CHW inch	ZEFP	59 003 ...	59 003 ...
1/8	3/8	0.120	3/4	2	1/8	0.006	2	**12530**	
3/16	7/16	0.180	3/4	2	3/16	0.006	2	**18824**	
1/4	1/2	0.240	13/16	2 1/2	1/4	0.006	2		**25020**
5/16	3/4	0.300	1	3	5/16	0.006	2		**31324**
3/8	7/8	0.360	1 1/8	3	3/8	0.006	2		**37523**
1/2	1	0.480	1 3/8	3	1/2	0.006	2	**50020**	
1/2	1 1/4	0.480	1 5/8	3 1/2	1/2	0.006	2		**50025**
5/8	1 1/4	0.600	1 7/8	4	5/8	0.006	2		**62520**
3/4	1 1/2	0.720	2 1/4	5	3/4	0.006	2		**75020**
P									
M									
K									
N								●	●
S									
H									
O									

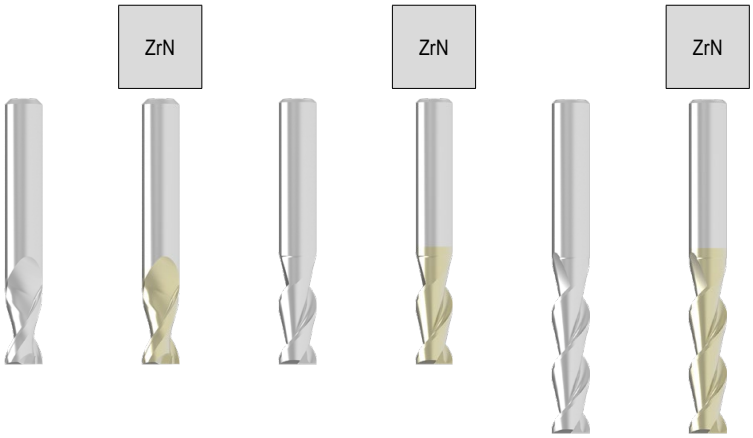
→ v_c/f_z Page 111

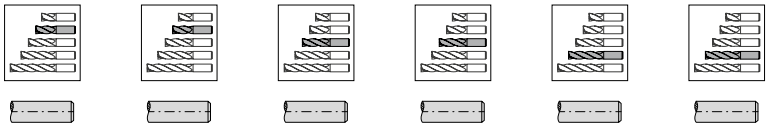
End milling cutter

S142 | AL | λ_s=40° γ_s=12°







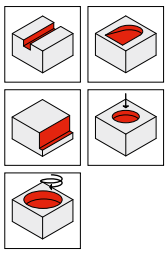


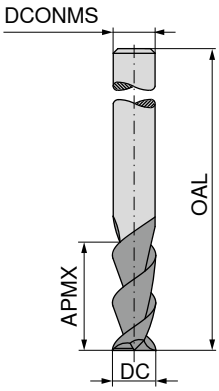
DC +0.000/-0.002 inch	APMX inch	OAL inch	DCONMS -0.0001 / -0.0004 inch	ZEFP	59 053 ...	59 054 ...	59 053 ...	59 054 ...	59 053 ...	59 054 ...
1/8	1/4	1 1/2	1/8	2	12520	12520				
1/8	3/8	1 1/2	1/8	2					12530	12530
5/32	5/16	2	3/16	2	15620	15620				
5/32	9/16	2	3/16	2					15636	15636
3/16	5/16	2	3/16	2	18817	18817				
3/16	9/16	2	3/16	2					18830	18830
7/32	3/8	2	1/4	2	21917	21917				
1/4	3/8	2	1/4	2	25015	25015				
1/4	3/4	2 1/2	1/4	2					25030	25030
5/16	13/16	2 1/2	5/16	2	31326	31326				
5/16	1 1/4	4	5/16	2					31340	31340
11/32	1	2 1/2	3/8	2	34429	34429				
3/8	1/2	2 1/2	3/8	2	37513	37513				
3/8	1	2 1/2	3/8	2			37527	37527		
3/8	1 1/2	4	3/8	2					37540	37540
1/2	5/8	2 1/2	1/2	2	50013	50013				
1/2	1 1/4	3	1/2	2				50025	50025	
1/2	2	4	1/2	2			50040			50040
5/8	1 5/8	3 1/2	5/8	2					62526	62526
3/4	1	4	3/4	2	75013	75013				
3/4	1 5/8	4	3/4	2			75022	75022		
3/4	3	6	3/4	2					75040	75040
1	2	5	1	2					99920	99920
P										
M										
K										
N					●	●	●	●	●	●
S										
H										
O										

→ v_c/f_z Page 112

End milling cutter

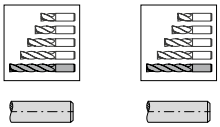
S142 | AL | λ_s=40° γ_s=12°





ZrN





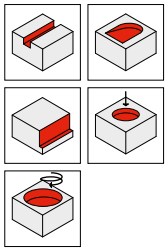
DC +0.000/-0.002 inch	APMX inch	OAL inch	DCONMS -0.0001 / -0.0004 inch	ZEFP	59 053 ...	59 054 ...
1/4	1 1/4	3 1/2	1/4	2	**25050**	**25050**
5/16	2 1/8	4	5/16	2	**31368**	**31368**
3/8	2 1/2	6	3/8	2	**37567**	**37567**
1/2	3	6	1/2	2	**50060**	**50060**
3/4	4	7	3/4	2	**75053**	**75053**
1	3	6	1	2	**99930**	**99930**

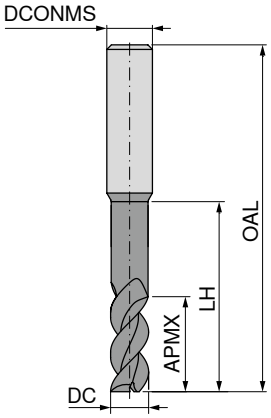
P		
M		
K		
N	●	●
S		
H		
O		

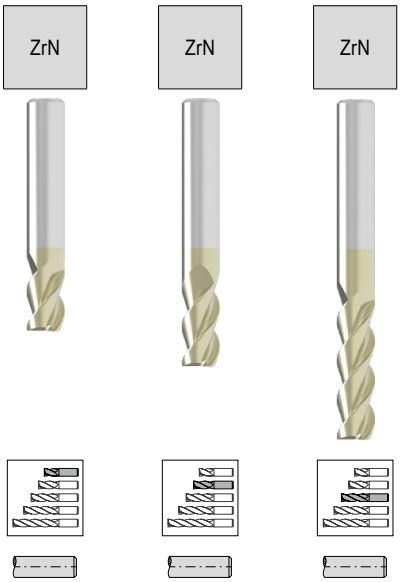
→ v_c/f_z Page 112

End milling cutter

P109 AL λ_s=40° γ_s=15°







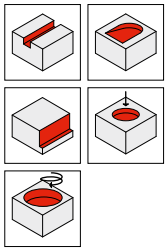
DC +0.000/-0.002 inch	APMX inch	OAL inch	DCONMS -0.0001 / -0.0004 inch	ZEFP	59 027 ...	59 027 ...	59 027 ...
1/8	1/4	1 1/2	1/8	3		12520	
5/32	3/8	2	3/16	3		15624	
3/16	3/8	2	3/16	3		18820	
7/32	3/8	2	1/4	3		21917	
1/4	3/8	2	1/4	3	25015		
1/4	3/4	2 1/2	1/4	3		25030	
1/4	1 1/4	3	1/4	3			25050
9/32	1/2	2 1/2	5/16	3		28118	
5/16	1/2	2 1/2	5/16	3		31316	
3/8	5/8	2	3/8	3	37517		
3/8	7/8	2 1/2	3/8	3		37523	
3/8	1 1/2	3 1/2	3/8	3			37540
7/16	1	2 3/4	7/16	3		43823	
1/2	5/8	2 1/2	1/2	3		50013	
1/2	1 1/2	3 1/2	1/2	3			50030
5/8	7/8	3	5/8	3		62514	
5/8	1 3/4	4	5/8	3			62528
3/4	1	3	3/4	3		75013	
3/4	2 1/2	5	3/4	3			75033
1	2 3/4	5	1	3			99928

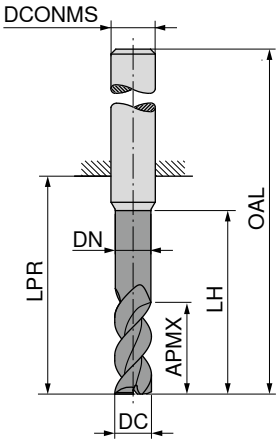
P			
M			
K			
N	●	●	●
S			
H			
O			

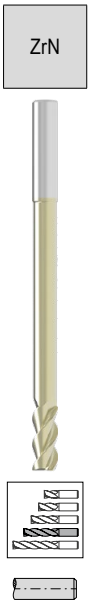
→ v_c/f_z Page 113

End milling cutter

P109 | AL | λ_s=40° γ_s=15°









DC +0.000/-0.002 inch	APMX inch	DN inch	LH inch	OAL inch	DCONMS -0.0001 / -0.0004 inch	ZEFP	59 027 ...	59 027 ...
1/8	1/2			1 1/2	1/8	3	12540	
5/32	1/2			2	3/16	3	15632	
3/16	5/8			2	3/16	3	18833	
7/32	3/4			2 1/2	1/4	3	21934	
1/4	3/4	0.240	2 1/8	4	1/4	3	25130	
1/4	1 1/2			3 1/2	1/4	3		25060
9/32	3/4			2 1/2	5/16	3	28127	
5/16	3/4			2 1/2	5/16	3	31324	
3/8	1	0.360	2 3/8	6	3/8	3	37527	
3/8	2			4	3/8	3		37553
1/2	1 1/4			3	1/2	3	50025	
1/2	2			4	1/2	3		50040
9/16	1 1/4			3 1/2	9/16	3	56322	
5/8	1 1/4			3 1/2	5/8	3	62520	
5/8	2 1/2			5	5/8	3		62540
3/4	1 5/8			4	3/4	3	75022	
3/4	3 1/4			6	3/4	3		75043
1	1 3/4			4	1	3	99918	
1	3 3/8			6	1	3		99934

P		
M		
K		
N	●	●
S		
H		
O		

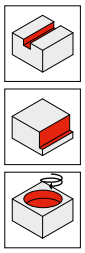
→ v_c/f_z Page 113

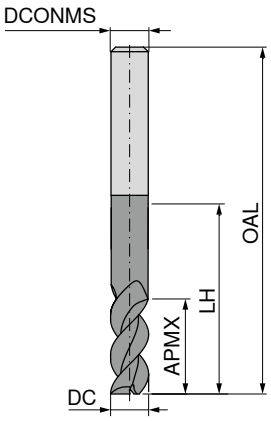
14

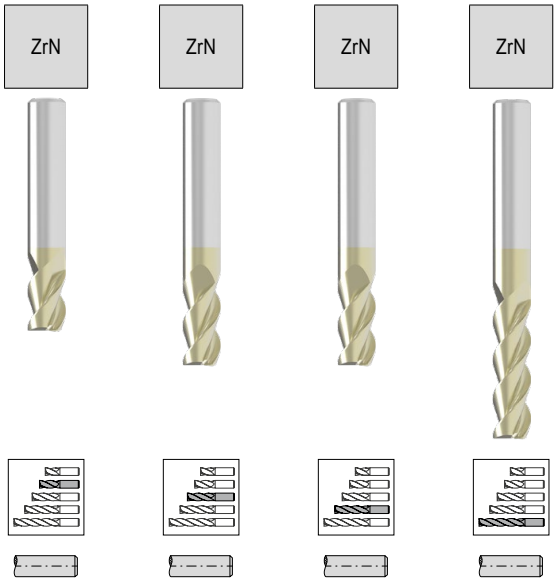
AluLine – End milling cutter

End mills ideal for machining aluminum and non-ferrous metals. The US inch version offers a ZrN coating reduced drag and aids in chip control.

P362 | AL | α β ≠ | λ_s var. | λ_s=43° 45° 48° γ_s=13° | HPC







DC +0.000/-0.002 inch	LH inch	APMX inch	OAL inch	DCONMS -0.0001 / -0.0004 inch	ZEFP	59 004 ...	59 004 ...	59 004 ...	59 004 ...
3/16		3/8	2	3/16	3	18820			
3/16	0.025	3/8	2	3/16	3			18920	
3/16		3/4	2 1/2	3/16	3			18840	
3/16		1	3	3/16	3				18853
1/4	0.030	3/8	2 1/2	1/4	3			25115	
1/4	0.044	3/8	3	1/4	3				25215
1/4	0.084	3/8	4	1/4	3				25315
1/4		3/8	2	1/4	3	25015			
1/4		3/4	2 1/2	1/4	3			25030	
1/4		1	3	1/4	3				25040
5/16	0.044	7/16	2 1/2	5/16	3			31414	
5/16		7/16	2 1/2	5/16	3	31314			
5/16	0.084	7/16	4	5/16	3				31514
3/8	0.044	1/2	3	3/8	3				37613
3/8	0.086	1/2	4	3/8	3				37713
3/8		1/2	2	3/8	3	37513			
3/8		1	2 1/2	3/8	3			37527	
3/8		1 1/2	3 1/2	3/8	3				37540
1/2	0.059	5/8	3	1/2	3				50113
1/2	0.089	5/8	4	1/2	3				50213
1/2	0.133	5/8	5	1/2	3				50313
1/2		5/8	2 1/2	1/2	3	50013			
1/2	0.157	5/8	6	1/2	3				50413
1/2		1	3	1/2	3		50020		
1/2		1 1/4	3	1/2	3			50025	
1/2		1 5/8	4	1/2	3				50033
1/2		2	4	1/2	3				50040
5/8	0.064	3/4	4	5/8	3				62612
5/8	0.094	3/4	6	5/8	3				62712
5/8		3/4	3	5/8	3	62512			
5/8		1 1/4	3 1/2	5/8	3		62520		
5/8		1 5/8	4	5/8	3			62526	
3/4		1	3	3/4	3	75013			
3/4	0.079	1	4	3/4	3				75113
3/4	0.103	1	6	3/4	3				75213
3/4		1 5/8	4	3/4	3			75022	
3/4		2 1/4	5	3/4	3				75030
1		1 1/4	4	1	3	99913			
1	0.103	1 1/4	5	1	3				99927
1	0.148	1 1/4	7	1	3				99940
1		2	5	1	3			99920	
1		3 1/4	6	1	3				99933

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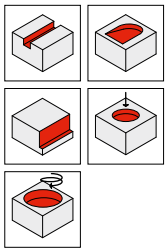
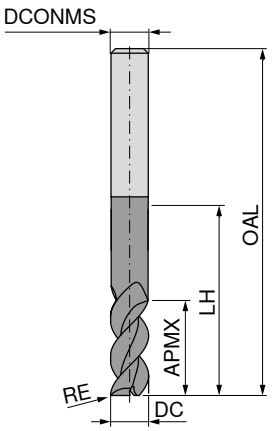
AluLine – End milling cutter with corner radius

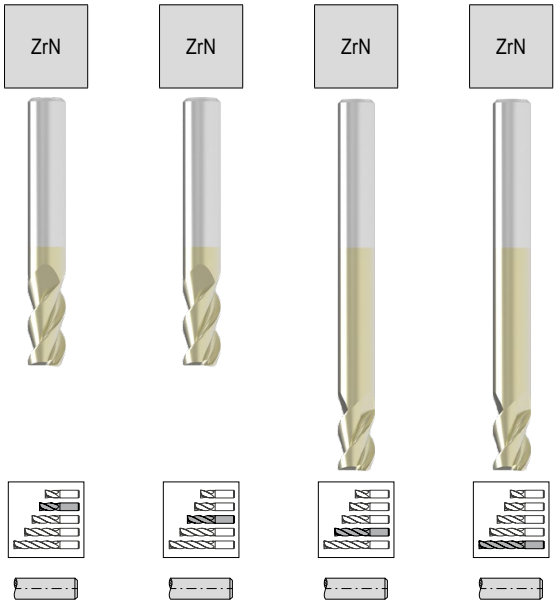
End mills ideal for machining aluminum and non-ferrous metals. The US inch version offers a ZrN coating reduced drag and aids in chip control.

▲ Radius accuracy: +/- 0.001 for Ø ≤ 0.060
+/- 0.0015 for Ø > 0.060

P362 | AL | α ≠ β | λ_s var. | λ_s=43° 45° 48° γ_s=13° | HPC







DC +0.000/-0.002 inch	RE inch	LH inch	APMX inch	OAL inch	DCONMS -0.0001 / -0.0004 inch	ZEFP	59 004 ...	59 004 ...	59 004 ...	59 004 ...
3/16	0.010	0.625	3/8	2	3/16	3			92120	
3/16	0.015		3/8	2	3/16	3	90020			
3/16	0.030		3/8	2	3/16	3	90120			
3/16	0.015		3/4	2 1/2	3/16	3			90040	
3/16	0.030		3/4	2 1/2	3/16	3			90140	
3/16	0.015		1	3	3/16	3				90053
3/16	0.030		1	3	3/16	3				90153
1/4	0.010	0.750	3/8	2 1/2	1/4	3			92115	
1/4	0.010	1.125	3/8	3	1/4	3			92315	
1/4	0.010	2.125	3/8	4	1/4	3				92515
1/4	0.015		3/8	2	1/4	3	90015			
1/4	0.030		3/8	2	1/4	3	90115			
1/4	0.030	0.750	3/8	2 1/2	1/4	3			92215	
1/4	0.030	1.125	3/8	3	1/4	3			92415	
1/4	0.030	2.125	3/8	4	1/4	3				92615
1/4	0.060		3/8	2	1/4	3	90215			
1/4	0.015		3/4	2 1/2	1/4	3			90030	
1/4	0.030		3/4	2 1/2	1/4	3			90130	
1/4	0.060		3/4	2 1/2	1/4	3			90230	
1/4	0.015		1	3	1/4	3				90240
1/4	0.030		1	3	1/4	3				90340
1/4	0.060		1	3	1/4	3				90440
5/16	0.010		7/16	2 1/2	5/16	3	92114			
5/16	0.010	1.125	7/16	2 1/2	5/16	3			92314	
5/16	0.010	2.125	7/16	4	5/16	3				92514
5/16	0.030	1.125	7/16	2 1/2	5/16	3			92414	
5/16	0.030		7/16	2 1/2	5/16	3	92214			
5/16	0.030	2.125	7/16	4	5/16	3				92614
3/8	0.010		1/2	2	3/8	3	92113			
3/8	0.010	1.125	1/2	3	3/8	3			92213	
3/8	0.010	2.188	1/2	4	3/8	3				92513
3/8	0.015		1/2	2	3/8	3	90013			
3/8	0.030		1/2	2	3/8	3	90113			
3/8	0.030	1.125	1/2	3	3/8	3			92313	
3/8	0.030	2.188	1/2	4	3/8	3				92613
3/8	0.060		1/2	2	3/8	3	90213			
3/8	0.060	1.125	1/2	3	3/8	3			92413	
3/8	0.060	2.188	1/2	4	3/8	3				92713
3/8	0.090		1/2	2	3/8	3	90313			
3/8	0.015		1	2 1/2	3/8	3	90027			
3/8	0.030		1	2 1/2	3/8	3	90127			

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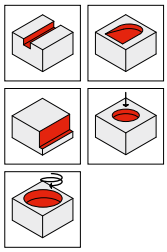
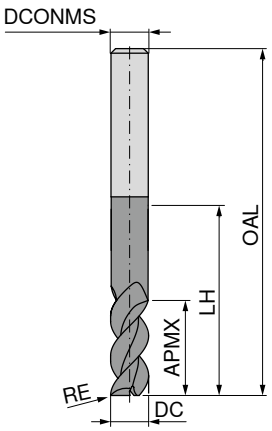
AluLine – End milling cutter with corner radius

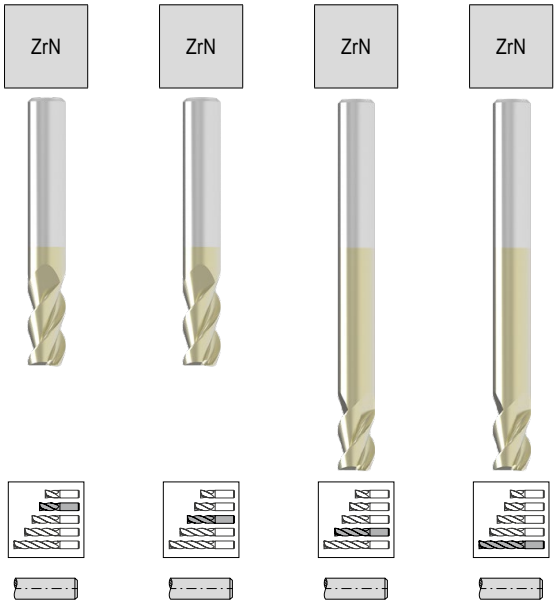
End mills ideal for machining aluminum and non-ferrous metals. The US inch version offers a ZrN coating reduced drag and aids in chip control.

▲ Radius accuracy: +/- 0.001 for Ø ≤ 0.060
+/- 0.0015 for Ø > 0.060

P362 | AL | α ≠ β | λ_s var. | λ_s=43° 45° 48° γ_s=13° | HPC







DC +0.000/-0.002 inch	RE inch	LH inch	APMX inch	OAL inch	DCONMS -0.0001 / -0.0004 inch	ZEFP	59 004 ...	59 004 ...	59 004 ...	59 004 ...
3/8	0.060		1	2 1/2	3/8	3	90227			
3/8	0.090		1	2 1/2	3/8	3	90327			
3/8	0.010		1	2 1/2	3/8	3			92127	
3/8	0.015		1 1/2	3 1/2	3/8	3				90540
3/8	0.030		1 1/2	3 1/2	3/8	3				90640
3/8	0.060		1 1/2	3 1/2	3/8	3				90740
3/8	0.090		1 1/2	3 1/2	3/8	3				90840
3/8	0.010		1 1/2	3 1/2	3/8	3				92140
1/2	0.010	3.375	5/8	5	1/2	3				93613
1/2	0.015		5/8	2 1/2	1/2	3	90413			
1/2	0.030		5/8	2 1/2	1/2	3	90513			
1/2	0.030	1.500	5/8	3	1/2	3				92813
1/2	0.030	2.250	5/8	4	1/2	3				93213
1/2	0.030	3.375	5/8	5	1/2	3				93713
1/2	0.030	4.000	5/8	6	1/2	3				94113
1/2	0.060		5/8	2 1/2	1/2	3	90613			
1/2	0.060	1.500	5/8	3	1/2	3				92913
1/2	0.060	2.250	5/8	4	1/2	3				93313
1/2	0.060	3.375	5/8	5	1/2	3				93813
1/2	0.060	4.000	5/8	6	1/2	3				94213
1/2	0.090		5/8	2 1/2	1/2	3	90713			
1/2	0.090	1.500	5/8	3	1/2	3				93013
1/2	0.090	2.250	5/8	4	1/2	3				93413
1/2	0.090	3.375	5/8	5	1/2	3				93913
1/2	0.090	4.000	5/8	6	1/2	3				94313
1/2	0.120	1.500	5/8	3	1/2	3				93113
1/2	0.120	2.250	5/8	4	1/2	3				93513
1/2	0.120	3.375	5/8	5	1/2	3				94013
1/2	0.120	4.000	5/8	6	1/2	3				94413
1/2	0.125		5/8	2 1/2	1/2	3	90813			
1/2	0.015		1	3	1/2	3		90220		
1/2	0.030		1	3	1/2	3		90320		
1/2	0.060		1	3	1/2	3		90420		
1/2	0.090		1	3	1/2	3		90520		
1/2	0.125		1	3	1/2	3		90620		
1/2	0.015		1 1/4	3	1/2	3			90025	
1/2	0.030		1 1/4	3	1/2	3			90125	
1/2	0.060		1 1/4	3	1/2	3			90225	
1/2	0.090		1 1/4	3	1/2	3			90325	
1/2	0.125		1 1/4	3	1/2	3			90425	
1/2	0.015		1 5/8	4	1/2	3				90033

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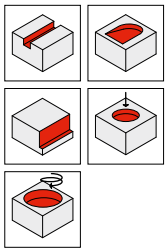
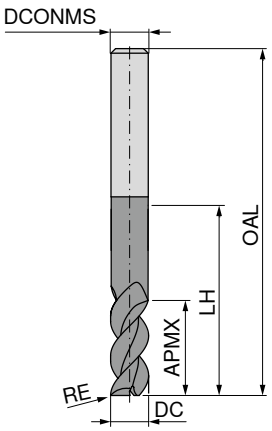
AluLine – End milling cutter with corner radius

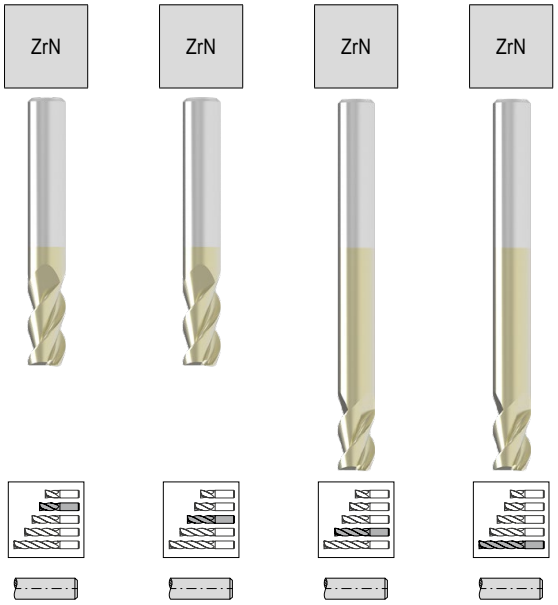
End mills ideal for machining aluminum and non-ferrous metals. The US inch version offers a ZrN coating reduced drag and aids in chip control.

▲ Radius accuracy: +/- 0.001 for Ø ≤ 0.060
+/- 0.0015 for Ø > 0.060

P362 | AL | α ≠ β | λ_s var. | λ_s=43° 45° 48° γ_s=13° | HPC







DC +0.000/-0.002 inch	RE inch	LH inch	APMX inch	OAL inch	DCONMS -0.0001 / -0.0004 inch	ZEFP	59 004 ...	59 004 ...	59 004 ...	59 004 ...
1/2	0.030		1 5/8	4	1/2	3				90133
1/2	0.060		1 5/8	4	1/2	3				90233
1/2	0.090		1 5/8	4	1/2	3				90333
1/2	0.125		1 5/8	4	1/2	3				90433
1/2	0.015		2	4	1/2	3				90940
1/2	0.030		2	4	1/2	3				91040
1/2	0.060		2	4	1/2	3				91140
1/2	0.090		2	4	1/2	3				91240
1/2	0.125		2	4	1/2	3				91340
5/8	0.030		3/4	3	5/8	3	90012			
5/8	0.060		3/4	3	5/8	3	90112			
5/8	0.060	1.625	3/4	4	5/8	3				92112
5/8	0.060	2.375	3/4	6	5/8	3				92512
5/8	0.090		3/4	3	5/8	3	90212			
5/8	0.090	1.625	3/4	4	5/8	3				92212
5/8	0.090	2.375	3/4	6	5/8	3				92612
5/8	0.120	1.625	3/4	4	5/8	3				92312
5/8	0.120	2.375	3/4	6	5/8	3				92712
5/8	0.125		3/4	3	5/8	3	90312			
5/8	0.190	1.625	3/4	4	5/8	3				92412
5/8	0.190	2.375	3/4	6	5/8	3				92812
5/8	0.030		1 1/4	3 1/2	5/8	3		90720		
5/8	0.060		1 1/4	3 1/2	5/8	3		90820		
5/8	0.090		1 1/4	3 1/2	5/8	3		90920		
5/8	0.125		1 1/4	3 1/2	5/8	3		91020		
5/8	0.030		1 5/8	4	5/8	3			90026	
5/8	0.060		1 5/8	4	5/8	3			90126	
5/8	0.090		1 5/8	4	5/8	3			90226	
5/8	0.125		1 5/8	4	5/8	3			90326	
3/4	0.030		1	3	3/4	3	90913			
3/4	0.060		1	3	3/4	3	91013			
3/4	0.090		1	3	3/4	3	91113			
3/4	0.125		1	3	3/4	3	91213			
3/4	0.190		1	3	3/4	3	91313			
3/4	0.250		1	3	3/4	3	91413			
3/4	0.060	2.000	1	4	3/4	3				94513
3/4	0.060	2.625	1	6	3/4	3				94913
3/4	0.090	2.000	1	4	3/4	3				94613
3/4	0.090	2.625	1	6	3/4	3				95013
3/4	0.120	2.000	1	4	3/4	3				94713
3/4	0.120	2.625	1	6	3/4	3				95113

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AluLine – End milling cutter with corner radius

End mills ideal for machining aluminum and non-ferrous metals. The US inch version offers a ZrN coating reduced drag and aids in chip control.

▲ Radius accuracy: +/- 0.001 for Ø ≤ 0.060
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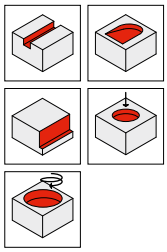
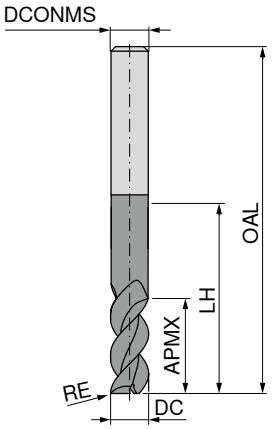
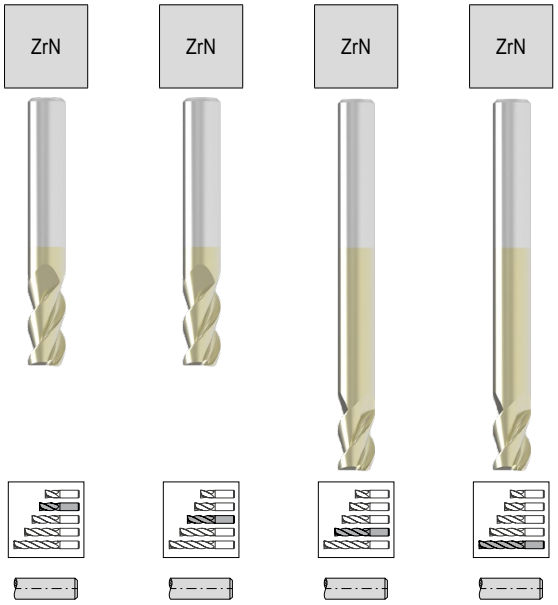
P362 | AL | α ≠ β | λ_s var. | λ_s=43° 45° 48° γ_s=13° | HPC







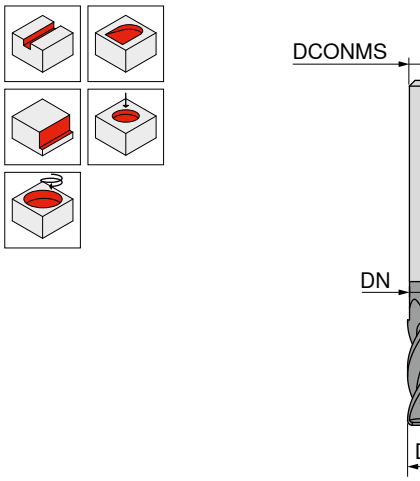
DC +0.000/-0.002 inch	RE inch	LH inch	APMX inch	OAL inch	DCONMS -0.0001 / -0.0004 inch	ZEFP	59 004 ...	59 004 ...	59 004 ...	59 004 ...
3/4	0.190	2.000	1	4	3/4	3				94813
3/4	0.190	2.625	1	6	3/4	3				95213
3/4	0.030		1 5/8	4	3/4	3			90022	
3/4	0.060		1 5/8	4	3/4	3			90122	
3/4	0.090		1 5/8	4	3/4	3			90222	
3/4	0.125		1 5/8	4	3/4	3			90322	
3/4	0.190		1 5/8	4	3/4	3			90422	
3/4	0.250		1 5/8	4	3/4	3			90522	
3/4	0.030		2 1/4	5	3/4	3				90330
3/4	0.060		2 1/4	5	3/4	3				90430
3/4	0.090		2 1/4	5	3/4	3				90530
3/4	0.125		2 1/4	5	3/4	3				90630
3/4	0.190		2 1/4	5	3/4	3				90730
3/4	0.250		2 1/4	5	3/4	3				90830
1	0.030		1 1/4	4	1	3	91513			
1	0.060		1 1/4	4	1	3	91613			
1	0.090		1 1/4	4	1	3	91713			
1	0.125		1 1/4	4	1	3	91813			
1	0.190		1 1/4	4	1	3	91913			
1	0.250		1 1/4	4	1	3	92013			
1	0.060	2.625	1 1/4	5	1	3				99915
1	0.060	3.750	1 1/4	7	1	3				99939
1	0.090	2.625	1 1/4	5	1	3				99926
1	0.090	3.750	1 1/4	7	1	3				99923
1	0.120	2.625	1 1/4	5	1	3				99930
1	0.120	3.750	1 1/4	7	1	3				99938
1	0.190	2.625	1 1/4	5	1	3				99948
1	0.190	3.750	1 1/4	7	1	3				99949
1	0.030		2	5	1	3		91120		
1	0.060		2	5	1	3		91220		
1	0.090		2	5	1	3		91320		
1	0.125		2	5	1	3		91420		
1	0.190		2	5	1	3		91520		
1	0.250		2	5	1	3		91620		
1	0.030		3 1/4	6	1	3				90533
1	0.060		3 1/4	6	1	3				90633
1	0.090		3 1/4	6	1	3				90733
1	0.125		3 1/4	6	1	3				90833
1	0.190		3 1/4	6	1	3				90933
1	0.250		3 1/4	6	1	3				91033

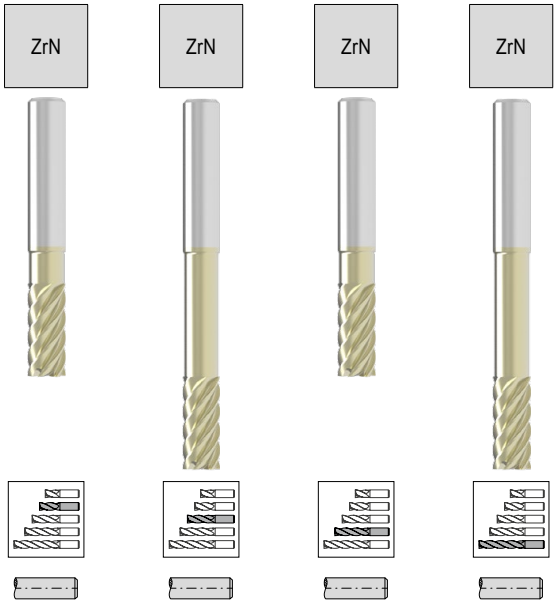
P				
M				
K				
N	●	●	●	●
S				
H				
O				

→ v_c/f_z Page 114

End milling cutter

P376 | AL | λ_s=44° γ_s=21°





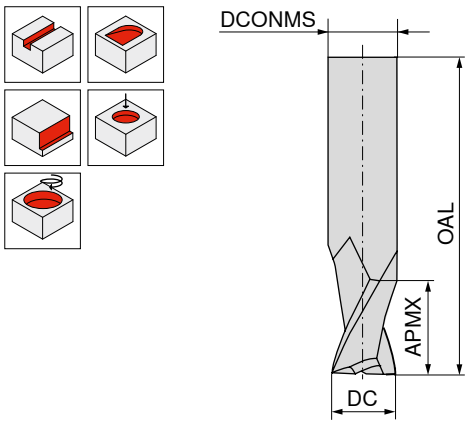
DC +0.000/-0.002 inch	APMX inch	DN inch	LH inch	OAL inch	DCONMS -0.0001 / -0.0004 inch	ZEFP	59 005 ...	59 005 ...	59 005 ...	59 005 ...
1/4	5/8	0.240	7/8	2 1/2	1/4	6			**25025**	
1/4	5/8	0.240	1 5/8	3	1/4	6				**25125**
5/16	3/4	0.300	1	2 1/2	5/16	6			**31324**	
5/16	3/4	0.300	2 3/8	4	5/16	6				**31424**
3/8	1	0.360	1 1/4	3	3/8	6			**37527**	
3/8	1	0.360	2 1/4	4	3/8	6				**37627**
1/2	1	0.480	1 1/4	3	1/2	6	**50020**			
1/2	1 1/4	0.480	1 1/2	3 1/2	1/2	6			**50025**	
1/2	1 1/4	0.480	3	5	1/2	6		**50125**		
1/2	1 7/8			5	1/2	6				**50038**
5/8	1 1/4	0.600	1 1/2	3 1/2	5/8	6			**62520**	
5/8	1 1/4	0.600	3 5/8	6	5/8	6		**62620**		
5/8	2 1/2			6	5/8	6				**62540**
3/4	1 5/8	0.720	2	4	3/4	6			**75022**	
3/4	1 5/8	0.720	3 5/8	6	3/4	6				**75122**
1	2	0.960	3 7/8	6	1	6				**99920**
P										
M										
K										
N							●	●	●	●
S										
H										
O										

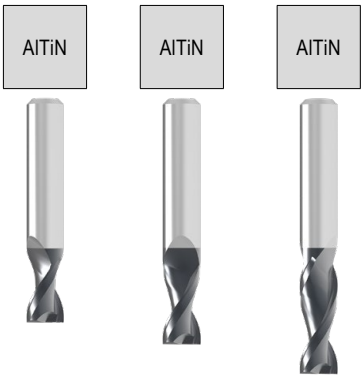
→ v_c/f_z Page 115

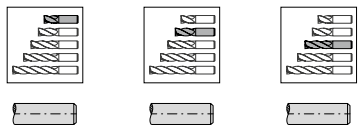
End milling cutter

▲ DC tolerance:
≤ Ø 7/64 inch: +/- 0.0005
≥ Ø 1/8 inch: 0 /- 0.002

S642 | UN | λ_s=38° γ_s=8°







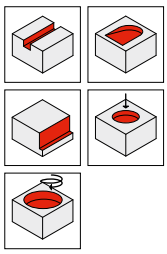
DC inch	APMX inch	OAL inch	DCONMS -0.0001 / -0.0004 inch	ZEFP	59 069 ...	59 069 ...	59 069 ...
1/16	1/8	1 1/2	1/8	2		06320	
3/32	3/16	1 1/2	1/8	2		09420	
1/8	1/4	1 1/2	1/8	2	12520		
1/8	1/2	1 1/2	1/8	2		12540	
1/8	3/4	3	1/8	2			12660
5/32	3/8	2	3/16	2		15624	
3/16	3/8	2	3/16	2	18820		
3/16	5/8	2	3/16	2		18833	
3/16	1	2 1/2	3/16	2			18853
7/32	3/8	2	1/4	2		21917	
1/4	3/8	2	1/4	2		25015	
1/4	1 1/8	3	1/4	2			25045
1/4	1	4	1/4	2			25040
9/32	1/2	2	5/16	2		28118	
5/16	1/2	2	5/16	2	31316		
5/16	3/4	2 1/2	5/16	2		31324	
5/16	1 3/8	3	5/16	2			31344
5/16	1	4	5/16	2			31332
3/8	5/8	2	3/8	2	37517		
3/8	7/8	2 1/2	3/8	2		37523	
3/8	1 3/8	3	3/8	2			37537
3/8	1	4	3/8	2			37527
1/2	5/8	2 1/2	1/2	2	50013		
1/2	1	3	1/2	2		50020	
1/2	1	4	1/2	2			50120
5/8	7/8	3	5/8	2	62514		
5/8	1 1/4	3 1/2	5/8	2		62520	
5/8	2	6	5/8	2			62532
3/4	1	3	3/4	2	75013		
3/4	1 1/2	4	3/4	2		75020	
3/4	2	6	3/4	2			75027
1	1 3/4	4	1	2		99918	
1	2	6	1	2			99920
P					●	●	●
M					●	●	●
K					●	●	●
N					●	●	●
S					●	●	●
H							
O							

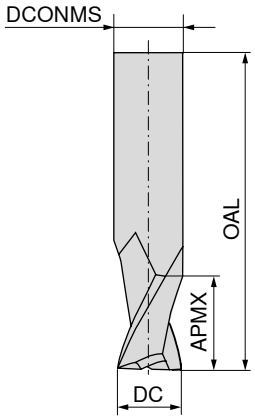
→ v_c/f_z Page 116

End milling cutter

▲ DC tolerance:
≤ Ø 7/64 inch: +/- 0.0005
≥ Ø 1/8 inch: 0 /- 0.002

S642 | UN | λ_s=38° γ_s=8°





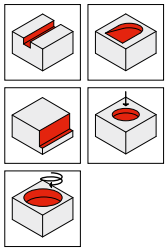


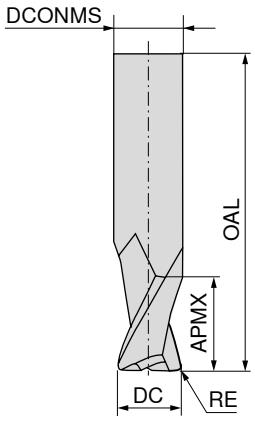
DC inch	APMX inch	OAL inch	DCONMS -0.0001 / -0.0004 inch	ZEFP	59 069 ...	59 069 ...
1/16	3/16	1 1/2	1/8	2	06330	
3/32	9/32	1 1/2	1/8	2	09430	
1/8	3/4	2 1/2	1/8	2	12560	
1/8	1	3	1/8	2		12580
5/32	1/2	2	3/16	2	15632	
5/32	3/4	2 1/2	3/16	2		15648
3/16	3/4	2 1/2	3/16	2	18840	
3/16	1 1/8	3	3/16	2		18860
3/16	1	4	3/16	2		18953
7/32	5/8	2 1/2	1/4	2	21929	
7/32	1	3	1/4	2		21946
1/4	3/4	2 1/2	1/4	2	25030	
1/4	1 1/4	3	1/4	2		25050
1/4	1 1/2	4	1/4	2		25060
1/4	1 1/2	6	1/4	2		25160
9/32	3/4	2 1/2	5/16	2	28127	
9/32	1 1/4	3	5/16	2		28144
5/16	1 1/8	3	5/16	2	31336	
5/16	1 5/8	4	5/16	2		31352
5/16	1 1/2	6	5/16	2		31348
3/8	1 1/8	3	3/8	2	37530	
3/8	1 3/4	4	3/8	2		37547
3/8	1 1/2	6	3/8	2		37540
3/8	3	6	3/8	2		37580
1/2	1 1/2	3 1/2	1/2	2	50030	
1/2	2	4	1/2	2		50040
1/2	1 1/2	6	1/2	2		50130
1/2	3	6	1/2	2		50060
5/8	2 1/8	4 5/8	5/8	2	62534	
5/8	3	6	5/8	2		62548
3/4	2 1/4	5	3/4	2	75030	
3/4	3	6	3/4	2		75040
1	2 1/4	5	1	2	99923	
1	3	6	1	2		99930
P					●	●
M					●	●
K					●	●
N					●	●
S					●	●
H						
O						

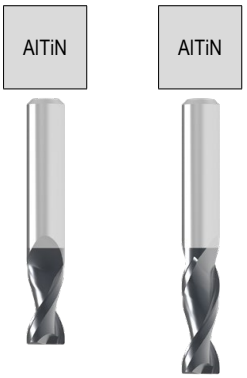
→ v_c/f_z Page 116

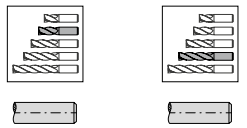
End milling cutter with corner radius

S642 | UN | λ_s=38° γ_s=8°









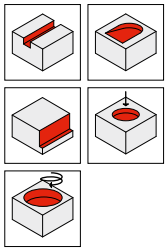
DC +0.000/-0.002 inch	RE +/- 0.001 inch	APMX inch	OAL inch	DCONMS -0.0001 / -0.0004 inch	ZEFP	59 069 ...	59 069 ...
1/8	0.010	1/2	1 1/2	1/8	2	90040	
1/8	0.015	1/2	1 1/2	1/8	2	90140	
1/8	0.020	1/2	1 1/2	1/8	2	90240	
1/8	0.030	1/2	1 1/2	1/8	2	90340	
1/8	0.045	1/2	1 1/2	1/8	2	90440	
3/16	0.010	5/8	2	3/16	2	90033	
3/16	0.015	5/8	2	3/16	2	90133	
3/16	0.020	5/8	2	3/16	2	90233	
3/16	0.030	5/8	2	3/16	2	90333	
3/16	0.045	5/8	2	3/16	2	90433	
3/16	0.060	5/8	2	3/16	2	90533	
1/4	0.010	3/4	2 1/2	1/4	2		90030
1/4	0.015	3/4	2 1/2	1/4	2		90130
1/4	0.020	3/4	2 1/2	1/4	2		90230
1/4	0.030	3/4	2 1/2	1/4	2		90330
1/4	0.045	3/4	2 1/2	1/4	2		90430
1/4	0.060	3/4	2 1/2	1/4	2		90530
1/4	0.090	3/4	2 1/2	1/4	2		90630
5/16	0.010	3/4	2 1/2	5/16	2	90024	
5/16	0.015	3/4	2 1/2	5/16	2	90124	
5/16	0.020	3/4	2 1/2	5/16	2	90224	
5/16	0.030	3/4	2 1/2	5/16	2	90324	
5/16	0.045	3/4	2 1/2	5/16	2	90424	
5/16	0.060	3/4	2 1/2	5/16	2	90524	
5/16	0.090	3/4	2 1/2	5/16	2	90624	
3/8	0.010	7/8	2 1/2	3/8	2	90023	
3/8	0.015	7/8	2 1/2	3/8	2	90223	
3/8	0.020	7/8	2 1/2	3/8	2	90323	
3/8	0.030	7/8	2 1/2	3/8	2	90423	
3/8	0.045	7/8	2 1/2	3/8	2	90523	
3/8	0.060	7/8	2 1/2	3/8	2	90623	
3/8	0.090	7/8	2 1/2	3/8	2	90723	
3/8	0.125	7/8	2 1/2	3/8	2	90123	

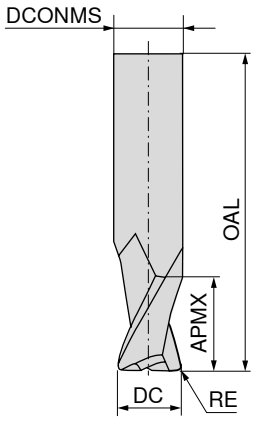
P	●	●
M	●	●
K	●	●
N	●	●
S	●	●
H		
O		

→ v_c/f_z Page 116

End milling cutter with corner radius

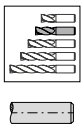
S642 | UN | λ_s=38° γ_s=8°

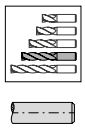












DC +0.000/-0.002 inch	RE +/- 0.001 inch	APMX inch	OAL inch	DCONMS -0.0001 / -0.0004 inch	ZEFP	59 069 ...	59 069 ...
1/2	0.010	1	3	1/2	2	**90020**	
1/2	0.015	1	3	1/2	2	**90220**	
1/2	0.020	1	3	1/2	2	**90320**	
1/2	0.030	1	3	1/2	2	**90420**	
1/2	0.045	1	3	1/2	2	**90520**	
1/2	0.060	1	3	1/2	2	**90620**	
1/2	0.090	1	3	1/2	2	**90720**	
1/2	0.125	1	3	1/2	2	**90120**	
5/8	0.030	1 1/4	3 1/2	5/8	2		**90920**
5/8	0.045	1 1/4	3 1/2	5/8	2		**91020**
5/8	0.060	1 1/4	3 1/2	5/8	2		**91120**
5/8	0.090	1 1/4	3 1/2	5/8	2		**91220**
5/8	0.125	1 1/4	3 1/2	5/8	2		**90820**
3/4	0.030	1 1/2	4	3/4	2		**91420**
3/4	0.045	1 1/2	4	3/4	2		**91520**
3/4	0.060	1 1/2	4	3/4	2		**91620**
3/4	0.090	1 1/2	4	3/4	2		**91720**
3/4	0.125	1 1/2	4	3/4	2		**91320**
P						●	●
M						●	●
K						●	●
N						●	●
S						●	●
H							
O							

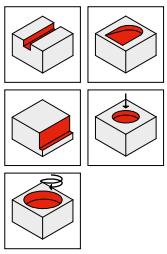
→ v_c/f_z Page 116

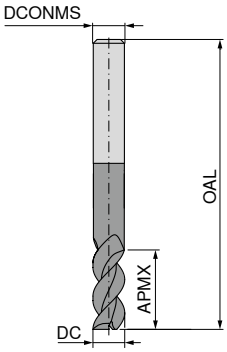
14

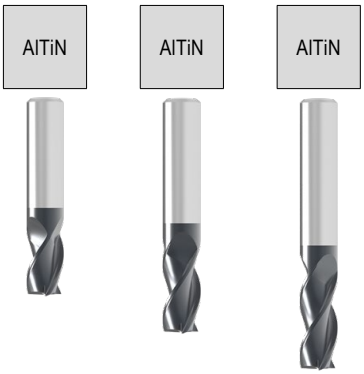
End milling cutter

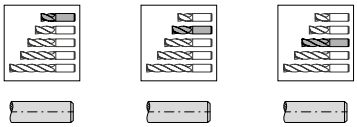
▲ DC tolerance:
≤ Ø 7/64 inch: +/- 0.0005
≥ Ø 1/8 inch: 0 /- 0.002

S643 | UN | λ_s=38° γ_s=8°









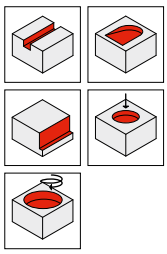
DC inch	APMX inch	OAL inch	DCONMS $_{-0.0001\ /\ -0.0004}$ inch	ZEFP	59 071 ...	59 071 ...	59 071 ...
1/16	1/8	1 1/2	1/8	3		06320	
5/64	1/4	1 1/2	1/8	3		07832	
3/32	3/16	1 1/2	1/8	3		09420	
1/8	1/4	1 1/2	1/8	3	12520		
1/8	1/2	1 1/2	1/8	3		12540	
1/8	3/4	3	1/8	3			12660
5/32	3/8	2	3/16	3		15624	
3/16	3/8	2	3/16	3	18820		
3/16	5/8	2	3/16	3		18833	
3/16	1	2 1/2	3/16	3			18853
7/32	3/8	2	1/4	3		21917	
1/4	3/8	2	1/4	3	25015		
1/4	3/4	2 1/2	1/4	3		25030	
1/4	1 1/8	3	1/4	3			25045
9/32	1/2	2	5/16	3		28118	
5/16	1/2	2	5/16	3	31316		
5/16	3/4	2 1/2	5/16	3		31324	
5/16	1 1/8	3	5/16	3			31336
3/8	5/8	2	3/8	3	37517		
3/8	7/8	2 1/2	3/8	3		37523	
3/8	1 1/8	3	3/8	3			37530
3/8	1 1/2	6	3/8	3			37540
1/2	5/8	2 1/2	1/2	3	50013		
1/2	1	3	1/2	3		50020	
1/2	1 1/2	6	1/2	3			50030
5/8	7/8	3	5/8	3	62514		
5/8	1 1/4	3 1/2	5/8	3		62520	
5/8	2 1/8	4 5/8	5/8	3			62534
3/4	1	3	3/4	3	75013		
3/4	1 1/2	4	3/4	3		75020	
3/4	2 1/4	5	3/4	3			75030
1	1 3/4	4	1	3		99918	
1	2 1/4	5	1	3			99923
P					●	●	●
M					●	●	●
K					●	●	●
N					●	●	●
S					●	●	●
H							
O							

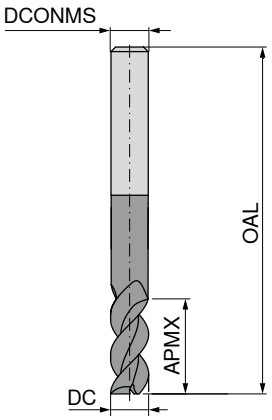
→ v_c/f_z Page 117

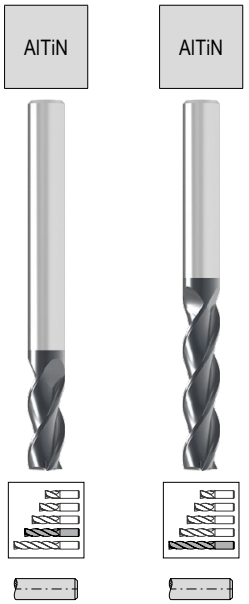
End milling cutter

▲ DC tolerance:
≤ Ø 7/64 inch: +/- 0.0005
≥ Ø 1/8 inch: 0 /- 0.002

S643 | UN | λ_s=38° γ_s=8°





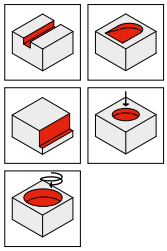


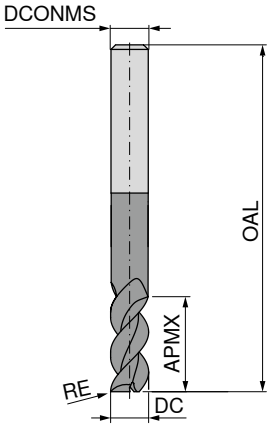
DC inch	APMX inch	OAL inch	DCONMS -0.0001 / -0.0004 inch	ZEFP	59 071 ...	59 071 ...
1/16	3/16	1 1/2	1/8	3	**06330**	
3/32	9/32	1 1/2	1/8	3	**09430**	
1/8	3/4	2 1/2	1/8	3	**12560**	
1/8	1	3	1/8	3		**12580**
5/32	1/2	2	3/16	3	**15632**	
3/16	3/4	2 1/2	3/16	3	**18840**	
3/16	1	4	3/16	3		**18953**
3/16	1 1/8	3	3/16	3		**18860**
7/32	5/8	2 1/2	1/4	3	**21929**	
1/4	1	4	1/4	3	**25040**	
1/4	1 1/2	6	1/4	3		**25160**
1/4	1 1/2	4	1/4	3		**25060**
9/32	3/4	2 1/2	5/16	3	**28127**	
5/16	1	4	5/16	3	**31332**	
5/16	1 1/2	6	5/16	3		**31348**
5/16	1 5/8	4	5/16	3		**31352**
3/8	1	4	3/8	3	**37527**	
3/8	1 3/4	4	3/8	3		**37547**
3/8	3	6	3/8	3		**37580**
1/2	1	4	1/2	3	**50120**	
1/2	2	4	1/2	3		**50040**
1/2	3	6	1/2	3		**50060**
5/8	2	6	5/8	3	**62532**	
5/8	3	6	5/8	3		**62548**
3/4	2	6	3/4	3	**75027**	
3/4	3	6	3/4	3		**75040**
1	2	6	1	3	**99920**	
1	3	6	1	3		**99930**
P					●	●
M					●	●
K					●	●
N					●	●
S					●	●
H						
O						

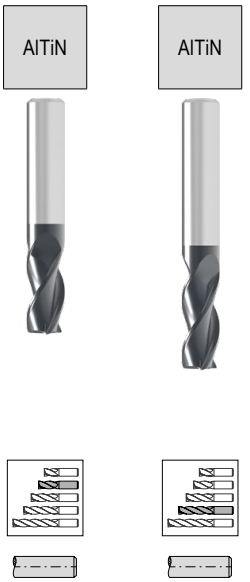
→ v_c/f_z Page 117

End milling cutter with corner radius

S643 | UN | λ_s=38° γ_s=8°







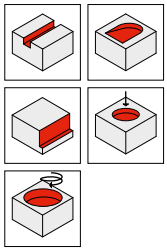
DC +0.000/-0.002 inch	RE +/- 0.001 inch	APMX inch	OAL inch	DCONMS -0.0001 / -0.0004 inch	ZEFP	59 071 ...	59 071 ...
1/8	0.010	1/2	1 1/2	1/8	3	90040	
1/8	0.015	1/2	1 1/2	1/8	3	90140	
1/8	0.020	1/2	1 1/2	1/8	3	90240	
1/8	0.030	1/2	1 1/2	1/8	3	90340	
1/8	0.045	1/2	1 1/2	1/8	3	90440	
3/16	0.010	5/8	2	3/16	3	90033	
3/16	0.015	5/8	2	3/16	3	90133	
3/16	0.020	5/8	2	3/16	3	90233	
3/16	0.030	5/8	2	3/16	3	90333	
3/16	0.045	5/8	2	3/16	3	90433	
3/16	0.060	5/8	2	3/16	3	90533	
1/4	0.010	3/4	2 1/2	1/4	3		90030
1/4	0.015	3/4	2 1/2	1/4	3		90130
1/4	0.020	3/4	2 1/2	1/4	3		90230
1/4	0.030	3/4	2 1/2	1/4	3		90330
1/4	0.045	3/4	2 1/2	1/4	3		90430
1/4	0.060	3/4	2 1/2	1/4	3		90530
1/4	0.090	3/4	2 1/2	1/4	3		90630
5/16	0.010	3/4	2 1/2	5/16	3	90024	
5/16	0.015	3/4	2 1/2	5/16	3	90124	
5/16	0.020	3/4	2 1/2	5/16	3	90224	
5/16	0.030	3/4	2 1/2	5/16	3	90324	
5/16	0.045	3/4	2 1/2	5/16	3	90424	
5/16	0.060	3/4	2 1/2	5/16	3	90524	
5/16	0.090	3/4	2 1/2	5/16	3	90624	
3/8	0.010	7/8	2 1/2	3/8	3	90023	
3/8	0.015	7/8	2 1/2	3/8	3	90223	
3/8	0.020	7/8	2 1/2	3/8	3	90323	
3/8	0.030	7/8	2 1/2	3/8	3	90423	
3/8	0.045	7/8	2 1/2	3/8	3	90523	
3/8	0.060	7/8	2 1/2	3/8	3	90623	
3/8	0.090	7/8	2 1/2	3/8	3	90723	
3/8	0.125	7/8	2 1/2	3/8	3	90123	

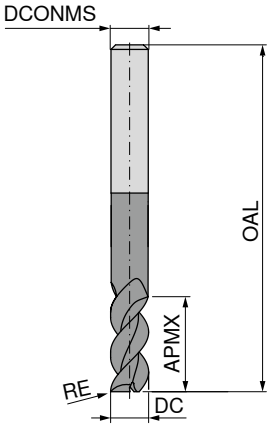
P	●	●
M	●	●
K	●	●
N	●	●
S	●	●
H		
O		

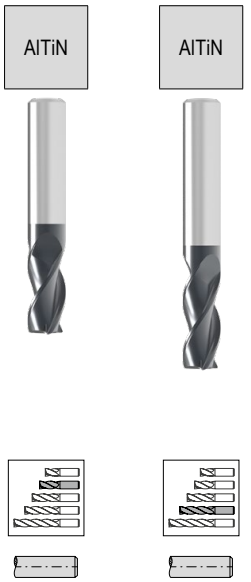
→ v_c/f_z Page 117

End milling cutter with corner radius

S643 | UN | λ_s=38° γ_s=8°







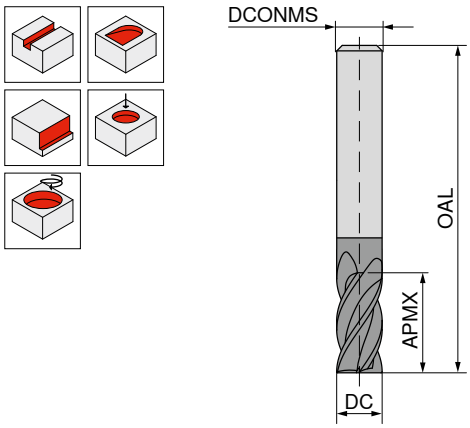
DC +0.000/-0.002 inch	RE +/- 0.001 inch	APMX inch	OAL inch	DCONMS -0.0001 / -0.0004 inch	ZEFP	59 071 ...	59 071 ...
1/2	0.010	1	3	1/2	3	90020	
1/2	0.015	1	3	1/2	3	90220	
1/2	0.020	1	3	1/2	3	90320	
1/2	0.030	1	3	1/2	3	90420	
1/2	0.045	1	3	1/2	3	90520	
1/2	0.060	1	3	1/2	3	90620	
1/2	0.090	1	3	1/2	3	90720	
1/2	0.125	1	3	1/2	3	90120	
5/8	0.015	1 1/4	3 1/2	5/8	3		90920
5/8	0.020	1 1/4	3 1/2	5/8	3		91020
5/8	0.030	1 1/4	3 1/2	5/8	3		91120
5/8	0.045	1 1/4	3 1/2	5/8	3		91220
5/8	0.060	1 1/4	3 1/2	5/8	3		91320
5/8	0.090	1 1/4	3 1/2	5/8	3		91420
5/8	0.125	1 1/4	3 1/2	5/8	3		90820
3/4	0.020	1 1/2	4	3/4	3		91620
3/4	0.030	1 1/2	4	3/4	3		91720
3/4	0.045	1 1/2	4	3/4	3		91820
3/4	0.060	1 1/2	4	3/4	3		91920
3/4	0.090	1 1/2	4	3/4	3		92020
3/4	0.125	1 1/2	4	3/4	3		91520
1	0.030	1 3/4	4	1	3	90118	
1	0.045	1 3/4	4	1	3	90218	
1	0.060	1 3/4	4	1	3	90318	
1	0.090	1 3/4	4	1	3	90418	
1	0.125	1 3/4	4	1	3	90018	
P						●	●
M						●	●
K						●	●
N						●	●
S						●	●
H							
O							

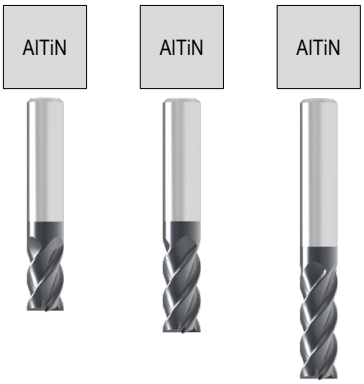
→ v_c/f_z Page 117

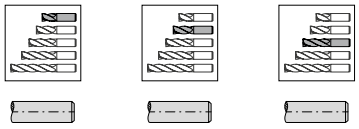
End milling cutter

▲ DC tolerance:
≤ Ø 7/64 inch: +/- 0.0005
≥ Ø 1/8 inch: 0 /- 0.002

S644 | UN | λ_s=38° γ_s=8°







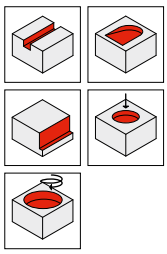
DC inch	APMX inch	OAL inch	DCONMS -0.0001 / -0.0004 inch	ZEFP	59 073 ...	59 073 ...	59 073 ...
1/32	1/16	1 1/2	1/8	4		03120	
3/64	3/32	1 1/2	1/8	4		04720	
1/16	1/8	1 1/2	1/8	4		06320	
5/64	1/4	1 1/2	1/8	4		07832	
3/32	3/16	1 1/2	1/8	4		09420	
7/64	3/16	1 1/2	1/8	4		10917	
1/8	1/4	1 1/2	1/8	4	12520		
1/8	1/2	1 1/2	1/8	4		12540	
1/8	3/4	3	1/8	4			12660
5/32	3/8	2	3/16	4		15624	
3/16	3/8	2	3/16	4	18820		
3/16	5/8	2	3/16	4		18833	
3/16	1	2 1/2	3/16	4			18853
7/32	3/8	2	1/4	4		21917	
1/4	3/8	2	1/4	4	25015		
1/4	3/4	2 1/2	1/4	4		25030	
1/4	1 1/4	3	1/4	4			25050
1/4	1	4	1/4	4			25040
9/32	1/2	2	5/16	4		28118	
5/16	1/2	2	5/16	4	31316		
5/16	3/4	2 1/2	5/16	4		31324	
5/16	1 3/8	3	5/16	4			31344
5/16	1	4	5/16	4			31332
3/8	5/8	2	3/8	4	37517		
3/8	7/8	2 1/2	3/8	4		37523	
3/8	1 1/8	3	3/8	4			37530
3/8	1 3/8	3	3/8	4			37537
1/2	5/8	2 1/2	1/2	4	50013		
1/2	1	3	1/2	4		50020	
1/2	1 1/2	3 1/2	1/2	4			50030
1/2	1 1/2	6	1/2	4			50130
5/8	7/8	3	5/8	4	62514		
5/8	1 1/4	3 1/2	5/8	4		62520	
5/8	2 1/8	4 5/8	5/8	4			62534
3/4	1	3	3/4	4	75013		
3/4	1 1/2	4	3/4	4		75020	
3/4	2 1/4	5	3/4	4			75030
1	1 3/4	4	1	4		99918	
1	2 1/4	5	1	4			99923
P					●	●	●
M					●	●	●
K					●	●	●
N					●	●	●
S					●	●	●
H							
O							

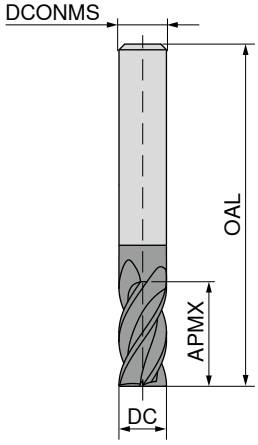
→ v_c/f_z Page 118

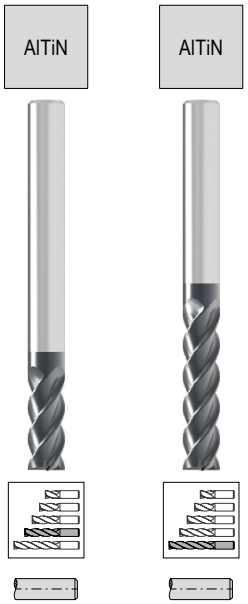
End milling cutter

▲ DC tolerance:
≤ Ø 7/64 inch: +/- 0.0005
≥ Ø 1/8 inch: 0 /- 0.002

S644 | UN | λ_s=38° γ_s=8°







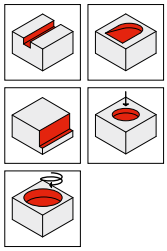
DC inch	APMX inch	OAL inch	DCONMS -0.0001 / -0.0004 inch	ZEFP	59 073 ...	59 073 ...
1/32	3/32	1 1/2	1/8	4	03130	
3/64	9/64	1 1/2	1/8	4	04730	
1/16	3/16	1 1/2	1/8	4	06330	
3/32	9/32	1 1/2	1/8	4	09430	
7/64	3/8	1 1/2	1/8	4	10934	
1/8	3/4	2 1/2	1/8	4	12560	
1/8	1	3	1/8	4		12580
5/32	1/2	2	3/16	4	15632	
5/32	3/4	2 1/2	3/16	4		15648
3/16	3/4	2 1/2	3/16	4	18840	
3/16	1 1/8	3	3/16	4		18860
3/16	1	4	3/16	4		18953
7/32	5/8	2 1/2	1/4	4	21929	
7/32	1	3	1/4	4		21946
1/4	1 1/8	3	1/4	4	25045	
1/4	1 1/2	4	1/4	4		25060
1/4	1 1/2	6	1/4	4		25160
9/32	3/4	2 1/2	5/16	4	28127	
9/32	1 1/4	3	5/16	4		28144
5/16	1 1/8	3	5/16	4	31336	
5/16	1 5/8	4	5/16	4		31352
5/16	1 1/2	6	5/16	4		31348
3/8	1	4	3/8	4	37527	
3/8	1 3/4	4	3/8	4		37547
3/8	1 1/2	6	3/8	4		37540
3/8	3	6	3/8	4		37580
1/2	1	4	1/2	4	50120	
1/2	2	4	1/2	4		50040
1/2	3	6	1/2	4		50060
5/8	2	6	5/8	4	62532	
5/8	3	6	5/8	4		62548
3/4	2	6	3/4	4	75027	
3/4	3	6	3/4	4		75040
1	2	6	1	4	99920	
1	3	6	1	4		99930

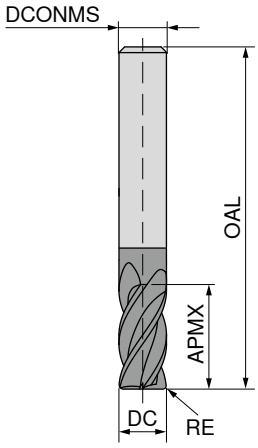
P	●	●
M	●	●
K	●	●
N	●	●
S	●	●
H		
O		

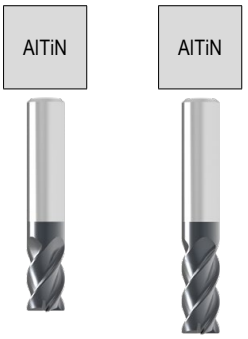
→ v_c/f_z Page 118

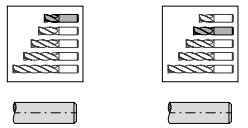
End milling cutter with corner radius

S644 | UN | λ_s=38° γ_s=8°









DC +0.000/-0.002 inch	RE +/- 0.001 inch	APMX inch	OAL inch	DCONMS -0.0001 / -0.0004 inch	ZEFP	59 073 ...	59 073 ...
1/8	0.010	1/4	1 1/2	1/8	4		92120
1/8	0.015	1/4	1 1/2	1/8	4		92220
1/8	0.020	1/4	1 1/2	1/8	4		92320
1/8	0.030	1/4	1 1/2	1/8	4		92420
1/8	0.045	1/4	1 1/2	1/8	4		92520
3/16	0.010	3/8	2	3/16	4		92620
3/16	0.015	3/8	2	3/16	4		92720
3/16	0.020	3/8	2	3/16	4		92820
3/16	0.030	3/8	2	3/16	4		92920
3/16	0.045	3/8	2	3/16	4		93020
3/16	0.060	3/8	2	3/16	4		93120
1/4	0.010	3/8	2	1/4	4	90015	
1/4	0.015	3/8	2	1/4	4	90115	
1/4	0.020	3/8	2	1/4	4	90215	
1/4	0.030	3/8	2	1/4	4	90315	
1/4	0.045	3/8	2	1/4	4	90415	
1/4	0.060	3/8	2	1/4	4	90515	
1/4	0.090	3/8	2	1/4	4	90615	
1/4	0.010	3/4	2 1/2	1/4	4		90030
1/4	0.015	3/4	2 1/2	1/4	4		90130
1/4	0.020	3/4	2 1/2	1/4	4		90230
1/4	0.030	3/4	2 1/2	1/4	4		90330
1/4	0.045	3/4	2 1/2	1/4	4		90430
1/4	0.060	3/4	2 1/2	1/4	4		90530
1/4	0.090	3/4	2 1/2	1/4	4		90630
5/16	0.010	1/2	2	5/16	4	90016	
5/16	0.015	1/2	2	5/16	4	90216	
5/16	0.020	1/2	2	5/16	4	90316	
5/16	0.030	1/2	2	5/16	4	90416	
5/16	0.045	1/2	2	5/16	4	90516	
5/16	0.060	1/2	2	5/16	4	90616	
5/16	0.090	1/2	2	5/16	4	90716	
5/16	0.125	1/2	2	5/16	4	90116	
5/16	0.010	3/4	2 1/2	5/16	4		90024
5/16	0.015	3/4	2 1/2	5/16	4		90124
5/16	0.020	3/4	2 1/2	5/16	4		90224
5/16	0.030	3/4	2 1/2	5/16	4		90324
5/16	0.045	3/4	2 1/2	5/16	4		90424
5/16	0.060	3/4	2 1/2	5/16	4		90524
5/16	0.090	3/4	2 1/2	5/16	4		90624
3/8	0.010	5/8	2	3/8	4	90017	

P	●	●
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S	●	●
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→ v_c/f_z Page 118

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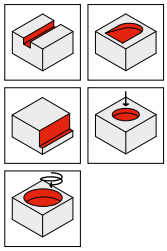
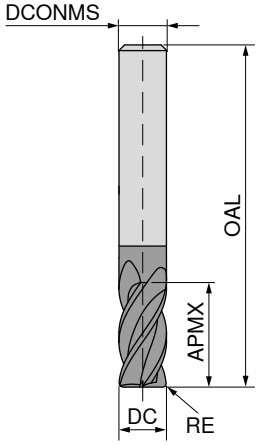
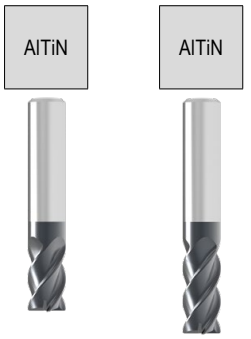
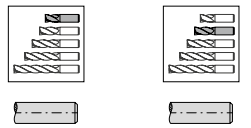
End milling cutter with corner radius

S644 | UN | λ_s=38° γ_s=8°









DC +0.000/-0.002 inch	RE +/- 0.001 inch	APMX inch	OAL inch	DCONMS -0.0001 / -0.0004 inch	ZEFP	59 073 ...	59 073 ...
3/8	0.015	5/8	2	3/8	4	90217	
3/8	0.020	5/8	2	3/8	4	90317	
3/8	0.030	5/8	2	3/8	4	90417	
3/8	0.045	5/8	2	3/8	4	90517	
3/8	0.060	5/8	2	3/8	4	90617	
3/8	0.090	5/8	2	3/8	4	90717	
3/8	0.125	5/8	2	3/8	4	90117	
3/8	0.010	7/8	2 1/2	3/8	4		90023
3/8	0.015	7/8	2 1/2	3/8	4		90223
3/8	0.020	7/8	2 1/2	3/8	4		90323
3/8	0.030	7/8	2 1/2	3/8	4		90423
3/8	0.045	7/8	2 1/2	3/8	4		90523
3/8	0.060	7/8	2 1/2	3/8	4		90623
3/8	0.090	7/8	2 1/2	3/8	4		90723
3/8	0.125	7/8	2 1/2	3/8	4		90123
1/2	0.010	5/8	2 1/2	1/2	4	90013	
1/2	0.015	5/8	2 1/2	1/2	4	90213	
1/2	0.020	5/8	2 1/2	1/2	4	90313	
1/2	0.030	5/8	2 1/2	1/2	4	90413	
1/2	0.045	5/8	2 1/2	1/2	4	90513	
1/2	0.060	5/8	2 1/2	1/2	4	90613	
1/2	0.090	5/8	2 1/2	1/2	4	90713	
1/2	0.125	5/8	2 1/2	1/2	4	90113	
1/2	0.010	1	3	1/2	4		90020
1/2	0.015	1	3	1/2	4		90220
1/2	0.020	1	3	1/2	4		90320
1/2	0.030	1	3	1/2	4		90420
1/2	0.045	1	3	1/2	4		90520
1/2	0.060	1	3	1/2	4		90620
1/2	0.090	1	3	1/2	4		90720
1/2	0.125	1	3	1/2	4		90120
1/2	0.010	1	4	1/2	4		93720
1/2	0.015	1	4	1/2	4		93920
1/2	0.020	1	4	1/2	4		94020
1/2	0.030	1	4	1/2	4		94120
1/2	0.045	1	4	1/2	4		94220
1/2	0.060	1	4	1/2	4		94320
1/2	0.090	1	4	1/2	4		94420
1/2	0.125	1	4	1/2	4		93820
5/8	0.015	1 1/4	3 1/2	5/8	4		90920
5/8	0.020	1 1/4	3 1/2	5/8	4		91020

P	●	●
M	●	●
K	●	●
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→ v_c/f_z Page 118

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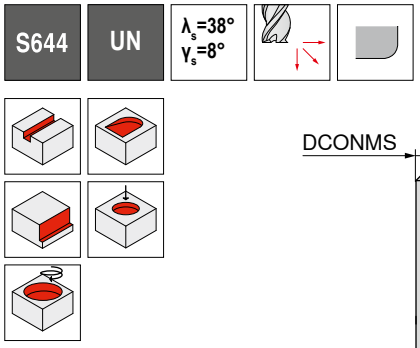
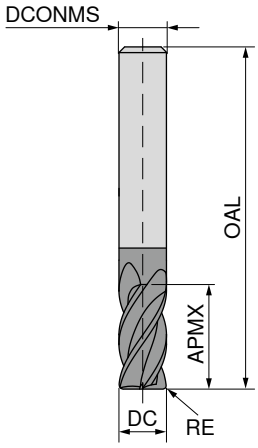
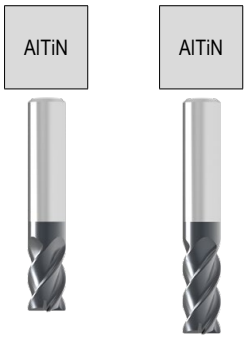
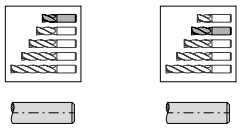
End milling cutter with corner radius







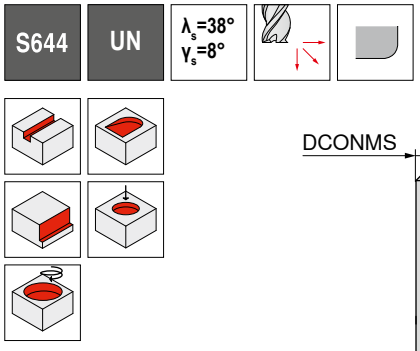


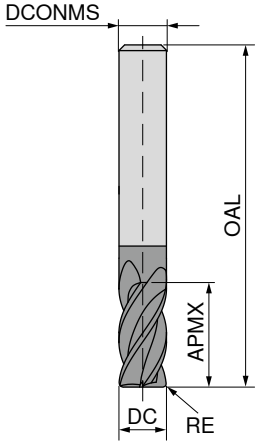
DC +0.000/-0.002 inch	RE +/- 0.001 inch	APMX inch	OAL inch	DCONMS -0.0001 / -0.0004 inch	ZEFP	59 073 ...	59 073 ...
5/8	0.030	1 1/4	3 1/2	5/8	4		**91120**
5/8	0.045	1 1/4	3 1/2	5/8	4		**91220**
5/8	0.060	1 1/4	3 1/2	5/8	4		**91320**
5/8	0.090	1 1/4	3 1/2	5/8	4		**91420**
5/8	0.125	1 1/4	3 1/2	5/8	4		**90820**
3/4	0.020	1 1/2	4	3/4	4		**91620**
3/4	0.030	1 1/2	4	3/4	4		**91720**
3/4	0.045	1 1/2	4	3/4	4		**91820**
3/4	0.060	1 1/2	4	3/4	4		**91920**
3/4	0.090	1 1/2	4	3/4	4		**92020**
3/4	0.125	1 1/2	4	3/4	4		**91520**
1	0.030	1 3/4	4	1	4		**90118**
1	0.045	1 3/4	4	1	4		**90218**
1	0.060	1 3/4	4	1	4		**90318**
1	0.090	1 3/4	4	1	4		**90418**
1	0.125	1 3/4	4	1	4		**90018**
P						●	●
M						●	●
K						●	●
N						●	●
S						●	●
H							
O							

→ v_c/f_z Page 118

End milling cutter with corner radius

S644 | UN | λ_s=38° γ_s=8°







DC +0.000/-0.002 inch	RE +/- 0.001 inch	APMX inch	OAL inch	DCONMS -0.0001 / -0.0004 inch	ZEFP	59 073 ...	59 073 ...
1/8	0.010	1/2	1 1/2	1/8	4		90040
1/8	0.015	1/2	1 1/2	1/8	4		90140
1/8	0.020	1/2	1 1/2	1/8	4		90240
1/8	0.030	1/2	1 1/2	1/8	4		90340
3/16	0.010	5/8	2	3/16	4	90033	
3/16	0.015	5/8	2	3/16	4	90133	
3/16	0.020	5/8	2	3/16	4	90233	
3/16	0.030	5/8	2	3/16	4	90333	
3/16	0.045	5/8	2	3/16	4	90433	
3/16	0.060	5/8	2	3/16	4	90533	
3/16	0.010	1	4	3/16	4		90153
3/16	0.015	1	4	3/16	4		90253
3/16	0.020	1	4	3/16	4		90353
3/16	0.030	1	4	3/16	4		90453
3/16	0.045	1	4	3/16	4		90553
3/16	0.060	1	4	3/16	4		90653
1/4	0.010	1	4	1/4	4	91840	
1/4	0.015	1	4	1/4	4	91940	
1/4	0.020	1	4	1/4	4	92040	
1/4	0.030	1	4	1/4	4	92140	
1/4	0.045	1	4	1/4	4	92240	
1/4	0.060	1	4	1/4	4	92340	
1/4	0.090	1	4	1/4	4	92440	
1/4	0.010	1 1/8	3	1/4	4		90045
1/4	0.015	1 1/8	3	1/4	4		90145
1/4	0.020	1 1/8	3	1/4	4		90245
1/4	0.030	1 1/8	3	1/4	4		90345
1/4	0.045	1 1/8	3	1/4	4		90445
1/4	0.060	1 1/8	3	1/4	4		90545
1/4	0.090	1 1/8	3	1/4	4		90645
5/16	0.010	1	4	5/16	4	90032	
5/16	0.015	1	4	5/16	4	90232	
5/16	0.020	1	4	5/16	4	90332	
5/16	0.030	1	4	5/16	4	90432	
5/16	0.045	1	4	5/16	4	90532	
5/16	0.060	1	4	5/16	4	90632	
5/16	0.090	1	4	5/16	4	90732	
5/16	0.125	1	4	5/16	4	90132	
5/16	0.010	1 1/8	3	5/16	4	90036	
5/16	0.015	1 1/8	3	5/16	4	90236	
5/16	0.020	1 1/8	3	5/16	4	90336	

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→ v_c/f_z Page 118

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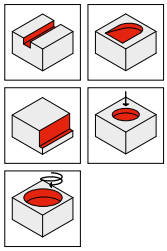
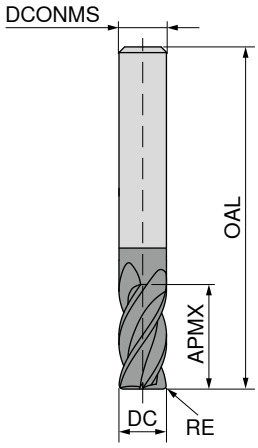
End milling cutter with corner radius

S644 | UN | λ_s=38° γ_s=8°







DC +0.000/-0.002 inch	RE +/- 0.001 inch	APMX inch	OAL inch	DCONMS -0.0001 / -0.0004 inch	ZEFP	59 073 ...	59 073 ...
5/16	0.030	1 1/8	3	5/16	4	90436	
5/16	0.045	1 1/8	3	5/16	4	90536	
5/16	0.060	1 1/8	3	5/16	4	90636	
5/16	0.090	1 1/8	3	5/16	4	90736	
5/16	0.125	1 1/8	3	5/16	4	90136	
5/16	0.010	1 1/2	6	5/16	4		90748
5/16	0.015	1 1/2	6	5/16	4		90948
5/16	0.020	1 1/2	6	5/16	4		91048
5/16	0.030	1 1/2	6	5/16	4		91148
5/16	0.045	1 1/2	6	5/16	4		91248
5/16	0.060	1 1/2	6	5/16	4		91348
5/16	0.090	1 1/2	6	5/16	4		91448
5/16	0.125	1 1/2	6	5/16	4		90848
3/8	0.010	1	4	3/8	4	90027	
3/8	0.015	1	4	3/8	4	90227	
3/8	0.020	1	4	3/8	4	90327	
3/8	0.030	1	4	3/8	4	90427	
3/8	0.045	1	4	3/8	4	90527	
3/8	0.060	1	4	3/8	4	90627	
3/8	0.090	1	4	3/8	4	90727	
3/8	0.125	1	4	3/8	4	90127	
3/8	0.010	1 1/8	3	3/8	4	90730	
3/8	0.015	1 1/8	3	3/8	4	90930	
3/8	0.020	1 1/8	3	3/8	4	91030	
3/8	0.030	1 1/8	3	3/8	4	91130	
3/8	0.045	1 1/8	3	3/8	4	91230	
3/8	0.060	1 1/8	3	3/8	4	91330	
3/8	0.090	1 1/8	3	3/8	4	91430	
3/8	0.125	1 1/8	3	3/8	4	90830	
3/8	0.010	1 1/2	6	3/8	4		92540
3/8	0.015	1 1/2	6	3/8	4		92740
3/8	0.020	1 1/2	6	3/8	4		92840
3/8	0.030	1 1/2	6	3/8	4		92940
3/8	0.045	1 1/2	6	3/8	4		93040
3/8	0.060	1 1/2	6	3/8	4		93140
3/8	0.090	1 1/2	6	3/8	4		93240
3/8	0.125	1 1/2	6	3/8	4		92640
3/8	0.010	1 3/4	4	3/8	4		90047
3/8	0.015	1 3/4	4	3/8	4		90247
3/8	0.020	1 3/4	4	3/8	4		90347
3/8	0.030	1 3/4	4	3/8	4		90447

P	●	●
M	●	●
K	●	●
N	●	●
S	●	●
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→ v_c/f_z Page 118

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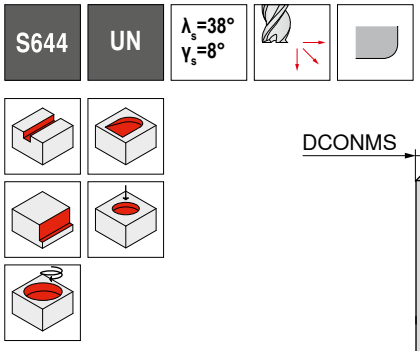
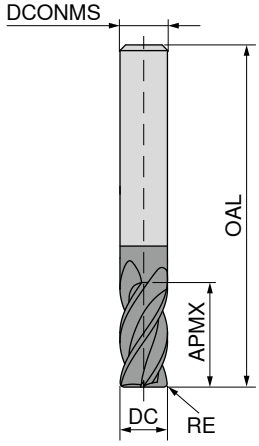
End milling cutter with corner radius

S644 | UN | λ_s=38° γ_s=8°







DC +0.000/-0.002 inch	RE +/- 0.001 inch	APMX inch	OAL inch	DCONMS -0.0001 / -0.0004 inch	ZEFP	59 073 ...	59 073 ...
3/8	0.045	1 3/4	4	3/8	4		90547
3/8	0.060	1 3/4	4	3/8	4		90647
3/8	0.090	1 3/4	4	3/8	4		90747
3/8	0.125	1 3/4	4	3/8	4		90147
1/2	0.010	1 1/2	6	1/2	4	92630	
1/2	0.015	1 1/2	6	1/2	4	92830	
1/2	0.020	1 1/2	6	1/2	4	92930	
1/2	0.030	1 1/2	6	1/2	4	93030	
1/2	0.045	1 1/2	6	1/2	4	93130	
1/2	0.060	1 1/2	6	1/2	4	93230	
1/2	0.090	1 1/2	6	1/2	4	93330	
1/2	0.125	1 1/2	6	1/2	4	92730	
1/2	0.010	2	4	1/2	4		90440
1/2	0.015	2	4	1/2	4		90640
1/2	0.020	2	4	1/2	4		90740
1/2	0.030	2	4	1/2	4		90840
1/2	0.045	2	4	1/2	4		90940
1/2	0.060	2	4	1/2	4		91040
1/2	0.090	2	4	1/2	4		91140
1/2	0.125	2	4	1/2	4		90540
5/8	0.015	2	6	5/8	4	90932	
5/8	0.020	2	6	5/8	4	91032	
5/8	0.030	2	6	5/8	4	91132	
5/8	0.045	2	6	5/8	4	91232	
5/8	0.060	2	6	5/8	4	91332	
5/8	0.090	2	6	5/8	4	91432	
5/8	0.125	2	6	5/8	4	90832	
5/8	0.015	2 1/8	4 5/8	5/8	4		90134
5/8	0.020	2 1/8	4 5/8	5/8	4		90234
5/8	0.030	2 1/8	4 5/8	5/8	4		90334
5/8	0.045	2 1/8	4 5/8	5/8	4		90434
5/8	0.060	2 1/8	4 5/8	5/8	4		90534
5/8	0.090	2 1/8	4 5/8	5/8	4		90634
5/8	0.125	2 1/8	4 5/8	5/8	4		90034
3/4	0.020	2	6	3/4	4	90927	
3/4	0.030	2	6	3/4	4	91027	
3/4	0.045	2	6	3/4	4	91127	
3/4	0.060	2	6	3/4	4	91227	
3/4	0.090	2	6	3/4	4	91327	
3/4	0.125	2	6	3/4	4	90827	
3/4	0.020	2 1/4	5	3/4	4		91630

P	●	●
M	●	●
K	●	●
N	●	●
S	●	●
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→ v_c/f_z Page 118

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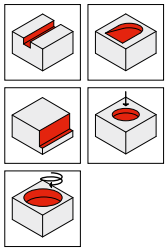
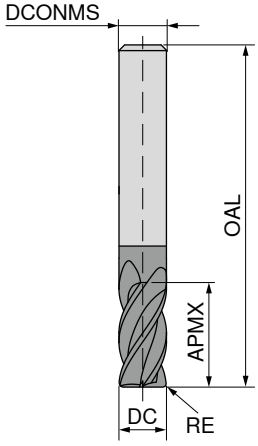
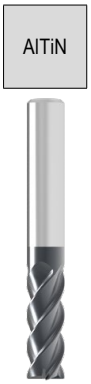
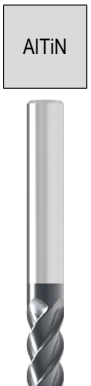
End milling cutter with corner radius

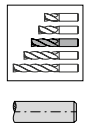
S644 | UN | λ_s=38° γ_s=8°

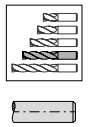












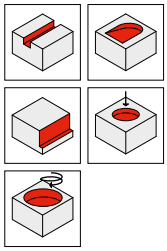
DC +0.000/-0.002 inch	RE +/- 0.001 inch	APMX inch	OAL inch	DCONMS -0.0001 / -0.0004 inch	ZEFP	59 073 ...	59 073 ...
3/4	0.030	2 1/4	5	3/4	4		**91730**
3/4	0.045	2 1/4	5	3/4	4		**91830**
3/4	0.060	2 1/4	5	3/4	4		**91930**
3/4	0.090	2 1/4	5	3/4	4		**92030**
3/4	0.125	2 1/4	5	3/4	4		**91530**
1	0.030	2	6	1	4	**93320**	
1	0.045	2	6	1	4	**93420**	
1	0.060	2	6	1	4	**93520**	
1	0.090	2	6	1	4	**93620**	
1	0.125	2	6	1	4	**93220**	
1	0.030	2 1/4	5	1	4		**90923**
1	0.045	2 1/4	5	1	4		**91023**
1	0.060	2 1/4	5	1	4		**91123**
1	0.090	2 1/4	5	1	4		**91223**
1	0.125	2 1/4	5	1	4		**90823**

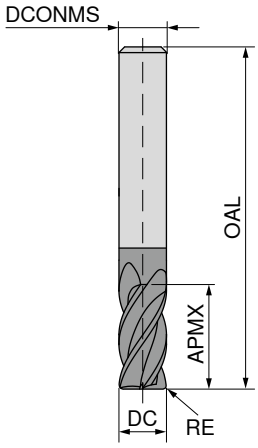
P	●	●
M	●	●
K	●	●
N	●	●
S	●	●
H		
O		

→ v_c/f_z Page 118

End milling cutter with corner radius

S644 | UN | λ_s=38° γ_s=8°





AlTiN



59 073 ...

DC +0.000/-0.002 inch	RE +/- 0.001 inch	APMX inch	OAL inch	DCONMS -0.0001 / -0.0004 inch	ZEFP	
1/8	0.010	1	3	1/8	4	90180
1/8	0.015	1	3	1/8	4	90280
1/8	0.020	1	3	1/8	4	90380
1/8	0.030	1	3	1/8	4	90480
1/8	0.045	1	3	1/8	4	90580
3/16	0.010	1 1/8	3	3/16	4	90160
3/16	0.015	1 1/8	3	3/16	4	90260
3/16	0.020	1 1/8	3	3/16	4	90360
3/16	0.030	1 1/8	3	3/16	4	90460
3/16	0.045	1 1/8	3	3/16	4	90560
3/16	0.060	1 1/8	3	3/16	4	90660
1/4	0.010	1 1/2	4	1/4	4	90760
1/4	0.015	1 1/2	4	1/4	4	90860
1/4	0.020	1 1/2	4	1/4	4	90960
1/4	0.030	1 1/2	4	1/4	4	91060
1/4	0.045	1 1/2	4	1/4	4	91160
1/4	0.060	1 1/2	4	1/4	4	91260
1/4	0.090	1 1/2	4	1/4	4	91360
1/4	0.010	1 1/2	6	1/4	4	92260
1/4	0.015	1 1/2	6	1/4	4	92360
1/4	0.020	1 1/2	6	1/4	4	92460
1/4	0.030	1 1/2	6	1/4	4	92560
1/4	0.045	1 1/2	6	1/4	4	92660
1/4	0.060	1 1/2	6	1/4	4	92760
1/4	0.090	1 1/2	6	1/4	4	92860
5/16	0.010	1 5/8	4	5/16	4	90152
5/16	0.015	1 5/8	4	5/16	4	90352
5/16	0.020	1 5/8	4	5/16	4	90452
5/16	0.030	1 5/8	4	5/16	4	90552
5/16	0.045	1 5/8	4	5/16	4	90652
5/16	0.060	1 5/8	4	5/16	4	90752
5/16	0.090	1 5/8	4	5/16	4	90852
5/16	0.125	1 5/8	4	5/16	4	90252
3/8	0.010	3	6	3/8	4	90680
3/8	0.015	3	6	3/8	4	90880
3/8	0.020	3	6	3/8	4	90980
3/8	0.030	3	6	3/8	4	91080
3/8	0.045	3	6	3/8	4	91180
3/8	0.060	3	6	3/8	4	91280
3/8	0.090	3	6	3/8	4	91380
3/8	0.125	3	6	3/8	4	90780

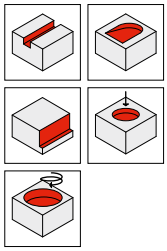
P	●
M	●
K	●
N	●
S	●
H	
O	

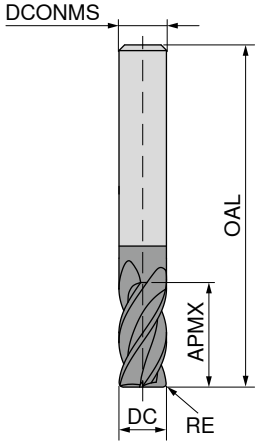
→ v_c/f_z Page 118

Continued on next page

End milling cutter with corner radius

S644 | UN | λ_s=38° γ_s=8°





AlTiN



59 073 ...

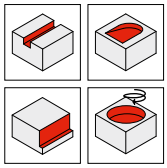
DC +0.000/-0.002 inch	RE +/- 0.001 inch	APMX inch	OAL inch	DCONMS -0.0001 / -0.0004 inch	ZEFP	
1/2	0.010	3	6	1/2	4	91460
1/2	0.015	3	6	1/2	4	91660
1/2	0.020	3	6	1/2	4	91760
1/2	0.030	3	6	1/2	4	91860
1/2	0.045	3	6	1/2	4	91960
1/2	0.060	3	6	1/2	4	92060
1/2	0.090	3	6	1/2	4	92160
1/2	0.125	3	6	1/2	4	91560
5/8	0.015	3	6	5/8	4	90148
5/8	0.020	3	6	5/8	4	90248
5/8	0.030	3	6	5/8	4	90348
5/8	0.045	3	6	5/8	4	90448
5/8	0.060	3	6	5/8	4	90548
5/8	0.090	3	6	5/8	4	90648
5/8	0.125	3	6	5/8	4	90048
3/4	0.020	3	6	3/4	4	91340
3/4	0.030	3	6	3/4	4	91440
3/4	0.045	3	6	3/4	4	91540
3/4	0.060	3	6	3/4	4	91640
3/4	0.090	3	6	3/4	4	91740
3/4	0.125	3	6	3/4	4	91240
1	0.030	3	6	1	4	92230
1	0.045	3	6	1	4	92330
1	0.060	3	6	1	4	92430
1	0.090	3	6	1	4	92530
1	0.125	3	6	1	4	92130

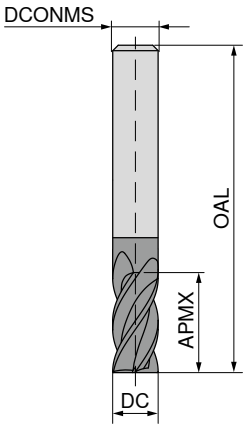
P	●
M	●
K	●
N	●
S	●
H	
O	

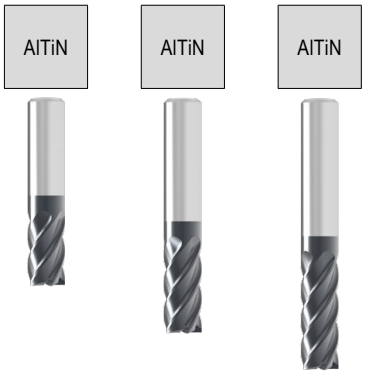
→ v_c/f_z Page 118

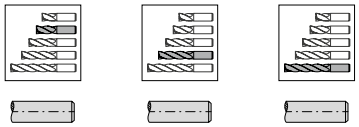
End milling cutter

S645 | UN | λ_s=43° γ_s=8°









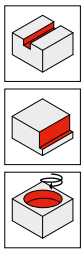
DC +0.000/-0.002 inch	APMX inch	OAL inch	DCONMS -0.0001 / -0.0004 inch	ZEFP	59 075 ...	59 075 ...	59 075 ...
1/8	1/4	1 1/2	1/8	5	12520		
1/8	1/2	1 1/2	1/8	5		12540	
5/32	5/16	2	3/16	5	15620		
5/32	9/16	2	3/16	5		15636	
3/16	5/16	2	3/16	5	18817		
3/16	9/16	2	3/16	5		18830	
7/32	3/8	2	1/4	5	21917		
7/32	3/4	2 1/2	1/4	5		21934	
1/4	3/8	2	1/4	5	25015		
1/4	3/4	2 1/2	1/4	5		25030	
1/4	1 1/4	4	1/4	5			25050
5/16	7/16	2	5/16	5	31314		
5/16	13/16	2 1/2	5/16	5		31326	
3/8	1/2	2	3/8	5	37513		
3/8	1	2 1/2	3/8	5		37527	
3/8	1 1/2	4	3/8	5			37540
1/2	5/8	2 1/2	1/2	5	50013		
1/2	1 1/4	3	1/2	5		50025	
1/2	2	4	1/2	5			50040
5/8	3/4	3	5/8	5	62512		
5/8	1 5/8	3 1/2	5/8	5		62526	
5/8	2 1/2	5	5/8	5			62540
3/4	1	3	3/4	5	75013		
3/4	1 5/8	4	3/4	5		75022	
3/4	3 1/4	6	3/4	5			75043
1	1 1/4	3	1	5	99913		
1	2	4	1	5		99920	
1	3 1/4	6	1	5			99933
P					●	●	●
M					●	●	●
K					●	●	●
N							
S							
H							
O							

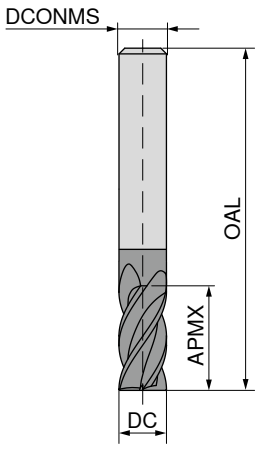
→ v_c/f_z Page 119

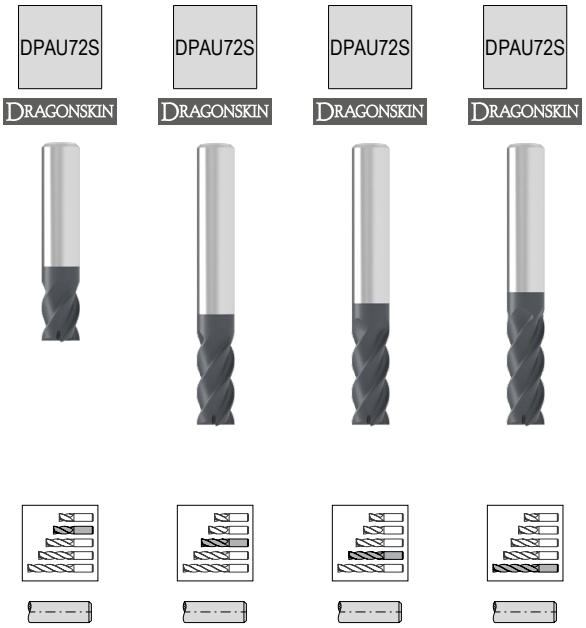
OptiLine – End milling cutter

End mills for universal machining of ISO S materials that feature variable helix and pitch and are optimized for maximum stability for demanding operations.

P007 | UN | α β ≠ | λ_s var. | λ_s = 35° 38° γ_s = 9° | HPC







DC +0.000/-0.002 inch	APMX inch	OAL inch	DCONMS -0.0001 / -0.0004 inch	ZEFP	59 002 ...	59 002 ...	59 002 ...	59 002 ...
1/8	1/4	1 1/2	1/8	4	12520			
1/8	1/2	2 1/2	1/8	4				12640
3/16	5/16	2	3/16	4	18817			
3/16	5/8	2 1/2	3/16	4			18833	
1/4	3/8	2	1/4	4	25015			
1/4	1/2	2 1/2	1/4	4		25020		
1/4	3/4	2 1/2	1/4	4			25030	
1/4	1	3	1/4	4				25040
5/16	1/2	2	5/16	4	31316			
5/16	3/4	2 1/2	5/16	4		31324		
5/16	1 1/4	3	5/16	4			31340	
3/8	1/2	2	3/8	4	37513			
3/8	7/8	3	3/8	4		37523		
3/8	1	3	3/8	4			37527	
3/8	1 1/4	3	3/8	4				37533
7/16	1	2 3/4	7/16	4			43823	
7/16	2	4	7/16	4				43846
1/2	5/8	2 1/2	1/2	4	50013			
1/2	1	3	1/2	4		50020		
1/2	1 1/4	3	1/2	4			50025	
1/2	1 5/8	4	1/2	4				50033
5/8	3/4	3	5/8	4	62512			
5/8	1 1/4	3 1/2	5/8	4		62520		
5/8	1 5/8	3 1/2	5/8	4			62526	
5/8	2	4	5/8	4				62532
5/8	3 1/4	6	5/8	4				62552
3/4	7/8	3	3/4	4	75012			
3/4	1 1/4	4	3/4	4		75017		
3/4	1 5/8	4	3/4	4			75022	
3/4	2 1/4	5	3/4	4				75030
3/4	3 1/4	6	3/4	4				75043
1	1 1/2	4	1	4	99915			
1	2	4 1/2	1	4		99920		
1	2 5/8	5	1	4			99926	
1	3	6	1	4				99930
1	4 1/4	7	1	4				99943

P	●	●	●	●
M	●	●	●	●
K	○	○	○	○
N	●	●	●	●
S	●	●	●	●
H				
O				

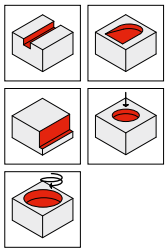
→ v_c/f_z Page 120

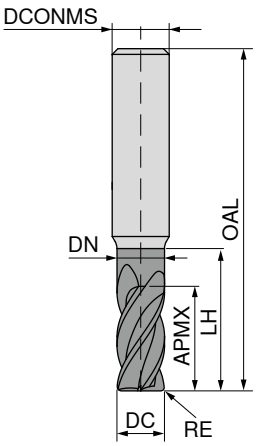
OptiLine – End milling cutter with corner radius

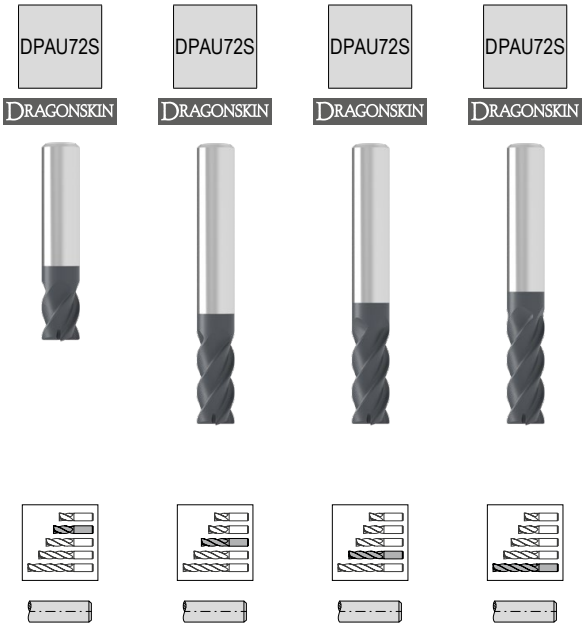
End mills for universal machining of ISO S materials that feature variable helix and pitch and are optimized for maximum stability for demanding operations.

▲ Radius accuracy: +/- 0.001 for Ø ≤ 0.060
+/- 0.0015 for Ø > 0.060

P007 | UN | α β ≠ | λ_s var. | λ_s 35° 38° γ_s 9° | HPC







DC +0.000/-0.002 inch	RE inch	DN inch	LH inch	APMX inch	OAL inch	DCONMS -0.0001 / -0.0004 inch	ZEFP	59 002 ...	59 002 ...	59 002 ...	59 002 ...
1/8	0.010	0.120	0.375	0.156	3	1/8	4	92012			
1/8	0.010	0.120	0.500	0.156	3	1/8	4		92112		
1/8	0.010	0.120	0.625	0.156	3	1/8	4			92212	
1/8	0.010			1/4	1 1/2	1/8	4	90020			
1/8	0.030			1/4	1 1/2	1/8	4	90120			
1/8	0.010			1/2	2 1/2	1/8	4			90040	
1/8	0.030			1/2	2 1/2	1/8	4				90140
3/16	0.010	0.180	0.500	0.219	3	3/16	4		92312		
3/16	0.010	0.180	0.750	0.219	3	3/16	4			92412	
3/16	0.010	0.180	1.000	0.219	3	3/16	4				92512
3/16	0.010			5/16	2	3/16	4	90017			
3/16	0.030			5/16	2	3/16	4	90117			
3/16	0.010			5/8	2 1/2	3/16	4			90033	
3/16	0.030			5/8	2 1/2	3/16	4			90133	
1/4	0.020			3/8	2	1/4	4	90015			
1/4	0.030			3/8	2	1/4	4	90115			
1/4	0.060			3/8	2	1/4	4	90215			
1/4	0.020	0.240	0.750	3/8	3	1/4	4			92015	
1/4	0.020	0.240	1.125	3/8	4	1/4	4				92115
1/4	0.020	0.240	1.625	3/8	4	1/4	4				92215
1/4	0.020	0.240	2.125	3/8	4	1/4	4				92315
1/4	0.020			1/2	2 1/2	1/4	4		90220		
1/4	0.030			1/2	2 1/2	1/4	4		90320		
1/4	0.060			1/2	2 1/2	1/4	4		90420		
1/4	0.020			3/4	2 1/2	1/4	4			90030	
1/4	0.030			3/4	2 1/2	1/4	4			90130	
1/4	0.060			3/4	2 1/2	1/4	4			90230	
1/4	0.020			1	3	1/4	4				90240
1/4	0.030			1	3	1/4	4				90340
1/4	0.060			1	3	1/4	4				90440
1/4	0.030	0.950	4.125	1 1/4	6	1	4				99941
5/16	0.020			1/2	2	5/16	4	90016			
5/16	0.030			1/2	2	5/16	4	90116			
5/16	0.060			1/2	2	5/16	4	90216			
5/16	0.020			3/4	2 1/2	5/16	4		90024		
5/16	0.030			3/4	2 1/2	5/16	4		90124		
5/16	0.060			3/4	2 1/2	5/16	4		90224		
5/16	0.020			1 1/4	3	5/16	4			90540	
5/16	0.030			1 1/4	3	5/16	4			90640	
5/16	0.060			1 1/4	3	5/16	4			90740	
3/8	0.020			1/2	2	3/8	4	90013			
3/8	0.030			1/2	2	3/8	4	90113			
3/8	0.060			1/2	2	3/8	4	90213			
3/8	0.090			1/2	2	3/8	4	90313			
3/8	0.030	0.360	1.125	1/2	4	3/8	4				92013

P	●	●	●	●
M	●	●	●	●
K	○	○	○	○
N	●	●	●	●
S	●	●	●	●
H				
O				

→ v_c/f_z Page 120

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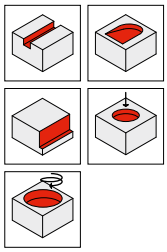
Continued on next page

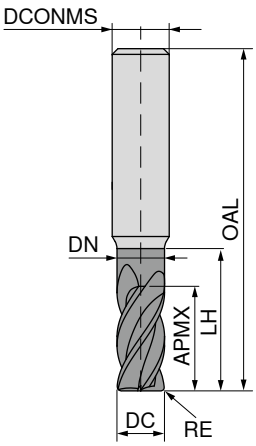
OptiLine – End milling cutter with corner radius

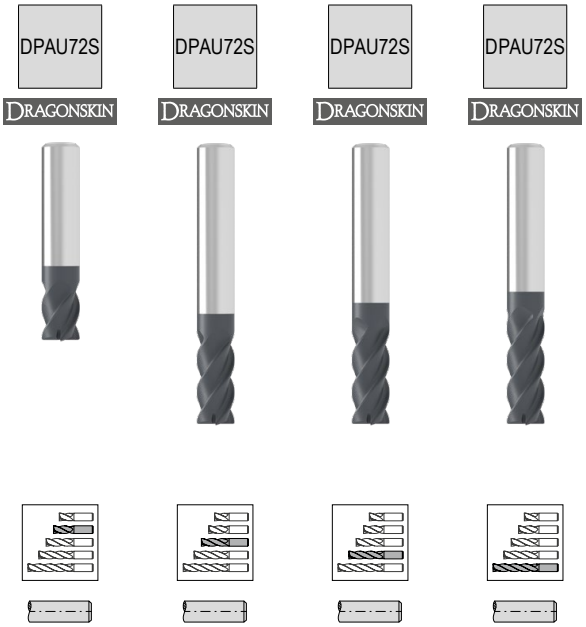
End mills for universal machining of ISO S materials that feature variable helix and pitch and are optimized for maximum stability for demanding operations.

▲ Radius accuracy: +/- 0.001 for Ø ≤ 0.060
+/- 0.0015 for Ø > 0.060

P007 | UN | α β ≠ | λ_s var. | λ_s 35° 38° γ_s 9° | HPC







DC +0.000/-0.002 inch	RE inch	DN inch	LH inch	APMX inch	OAL inch	DCONMS -0.0001 / -0.0004 inch	ZEFP	59 002 ...	59 002 ...	59 002 ...	59 002 ...
3/8	0.030	0.360	2.125	1/2	4	3/8	4				92113
3/8	0.030	0.360	3.125	1/2	6	3/8	4				92213
3/8	0.030	0.360	4.125	1/2	6	3/8	4				92313
3/8	0.020			7/8	3	3/8	4		90023		
3/8	0.030			7/8	3	3/8	4		90123		
3/8	0.060			7/8	3	3/8	4		90223		
3/8	0.090			7/8	3	3/8	4		90323		
3/8	0.020			1	3	3/8	4			90027	
3/8	0.030			1	3	3/8	4			90127	
3/8	0.060			1	3	3/8	4			90227	
3/8	0.090			1	3	3/8	4			90327	
3/8	0.020			1 1/4	3	3/8	4				90233
3/8	0.030			1 1/4	3	3/8	4				90333
3/8	0.060			1 1/4	3	3/8	4				90433
3/8	0.090			1 1/4	3	3/8	4				90533
1/2	0.020			5/8	2 1/2	1/2	4	90413			
1/2	0.030			5/8	2 1/2	1/2	4	90513			
1/2	0.060			5/8	2 1/2	1/2	4	90613			
1/2	0.090			5/8	2 1/2	1/2	4	90713			
1/2	0.125			5/8	2 1/2	1/2	4	90813			
1/2	0.030	0.480	1.500	5/8	4	1/2	4		92413		
1/2	0.030	0.480	2.250	5/8	4	1/2	4				92513
1/2	0.030	0.480	3.375	5/8	6	1/2	4				92613
1/2	0.030	0.480	4.125	5/8	6	1/2	4				92713
1/2	0.020			1	3	1/2	4		90520		
1/2	0.030			1	3	1/2	4		90620		
1/2	0.060			1	3	1/2	4		90720		
1/2	0.090			1	3	1/2	4		90820		
1/2	0.125			1	3	1/2	4		90920		
1/2	0.020			1 1/4	3	1/2	4			90025	
1/2	0.030			1 1/4	3	1/2	4			90125	
1/2	0.060			1 1/4	3	1/2	4			90225	
1/2	0.090			1 1/4	3	1/2	4			90325	
1/2	0.125			1 1/4	3	1/2	4			90425	
1/2	0.020			1 5/8	4	1/2	4				90633
1/2	0.030			1 5/8	4	1/2	4				90733
1/2	0.060			1 5/8	4	1/2	4				90833
1/2	0.090			1 5/8	4	1/2	4				90933
1/2	0.125			1 5/8	4	1/2	4				91033
5/8	0.030			3/4	3	5/8	4	90012			
5/8	0.060			3/4	3	5/8	4	90112			
5/8	0.090			3/4	3	5/8	4	90212			
5/8	0.125			3/4	3	5/8	4	90312			
5/8	0.030	0.600	1.625	3/4	4	5/8	4				92612
5/8	0.030	0.600	2.375	3/4	6	5/8	4				92712

P	●	●	●	●
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N	●	●	●	●
S	●	●	●	●
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→ v_c/f_z Page 120

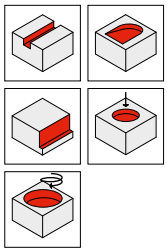
Continued on next page

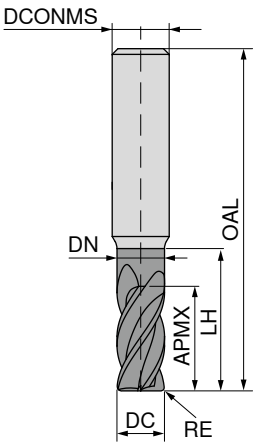
OptiLine – End milling cutter with corner radius

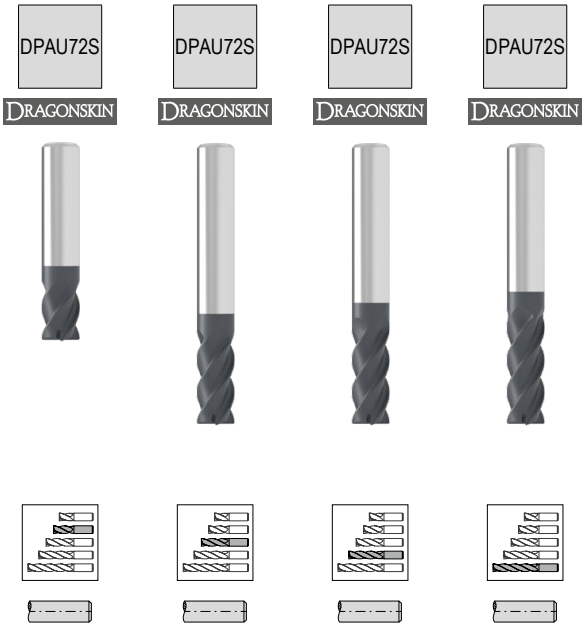
End mills for universal machining of ISO S materials that feature variable helix and pitch and are optimized for maximum stability for demanding operations.

▲ Radius accuracy: +/- 0.001 for Ø ≤ 0.060
+/- 0.0015 for Ø > 0.060

P007 | UN | α β ≠ | λ_s var. | λ_s 35° 38° γ_s 9° | HPC







DC +0.000/-0.002 inch	RE inch	DN inch	LH inch	APMX inch	OAL inch	DCONMS -0.0001 / -0.0004 inch	ZEFP	59 002 ...	59 002 ...	59 002 ...	59 002 ...
5/8	0.030	0.600	3.375	3/4	6	5/8	4				92812
5/8	0.030	0.600	4.125	3/4	6	5/8	4				92912
5/8	0.030			1 1/4	3 1/2	5/8	4		91020		
5/8	0.060			1 1/4	3 1/2	5/8	4		91120		
5/8	0.090			1 1/4	3 1/2	5/8	4		91220		
5/8	0.125			1 1/4	3 1/2	5/8	4		91320		
5/8	0.030			1 5/8	3 1/2	5/8	4			90026	
5/8	0.060			1 5/8	3 1/2	5/8	4			90126	
5/8	0.090			1 5/8	3 1/2	5/8	4			90226	
5/8	0.125			1 5/8	3 1/2	5/8	4				90326
5/8	0.030			2	4	5/8	4				90032
5/8	0.060			2	4	5/8	4				90132
5/8	0.090			2	4	5/8	4				90232
5/8	0.125			2	4	5/8	4				90332
5/8	0.030			3 1/4	6	5/8	4				90052
5/8	0.060			3 1/4	6	5/8	4				90152
5/8	0.090			3 1/4	6	5/8	4				90252
5/8	0.125			3 1/4	6	5/8	4				90352
3/4	0.030			7/8	3	3/4	4	90412			
3/4	0.060			7/8	3	3/4	4	90512			
3/4	0.090			7/8	3	3/4	4	90612			
3/4	0.125			7/8	3	3/4	4	90712			
3/4	0.190			7/8	3	3/4	4	90812			
3/4	0.250			7/8	3	3/4	4	90912			
3/4	0.030	0.720	2.000	1	4	3/4	4				92813
3/4	0.030	0.720	2.500	1	6	3/4	4				92913
3/4	0.030	0.720	3.375	1	6	3/4	4				93013
3/4	0.030	0.720	4.125	1	6	3/4	4				93113
3/4	0.030			1 1/4	4	3/4	4		90217		
3/4	0.060			1 1/4	4	3/4	4		90317		
3/4	0.090			1 1/4	4	3/4	4		90417		
3/4	0.125			1 1/4	4	3/4	4		90517		
3/4	0.190			1 1/4	4	3/4	4		90617		
3/4	0.250			1 1/4	4	3/4	4		90717		
3/4	0.030			1 5/8	4	3/4	4			90022	
3/4	0.060			1 5/8	4	3/4	4			90122	
3/4	0.090			1 5/8	4	3/4	4			90222	
3/4	0.125			1 5/8	4	3/4	4			90322	
3/4	0.190			1 5/8	4	3/4	4			90422	
3/4	0.250			1 5/8	4	3/4	4			90522	
3/4	0.030			2 1/4	5	3/4	4				90330
3/4	0.060			2 1/4	5	3/4	4				90430
3/4	0.090			2 1/4	5	3/4	4				90530
3/4	0.125			2 1/4	5	3/4	4				90630
3/4	0.190			2 1/4	5	3/4	4				90730

P	●	●	●	●
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S	●	●	●	●
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→ v_c/f_z Page 120

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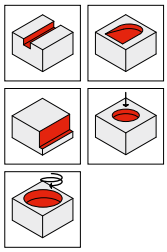
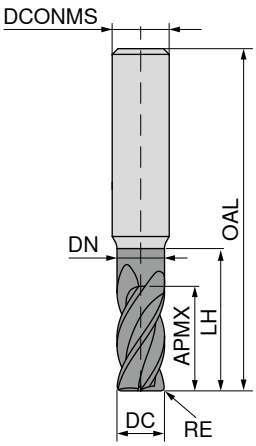
OptiLine – End milling cutter with corner radius

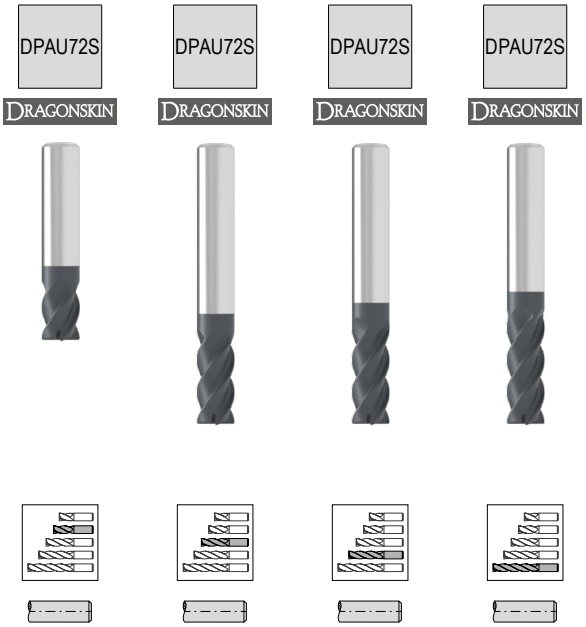
End mills for universal machining of ISO S materials that feature variable helix and pitch and are optimized for maximum stability for demanding operations.

▲ Radius accuracy: +/- 0.001 for Ø ≤ 0.060
+/- 0.0015 for Ø > 0.060

P007 | UN | α β ≠ | λ_s var. | λ_s 35° 38° γ_s 9° | HPC







DC +0.000/-0.002 inch	RE inch	DN inch	LH inch	APMX inch	OAL inch	DCONMS -0.0001 / -0.0004 inch	ZEFP	59 002 ...	59 002 ...	59 002 ...	59 002 ...
3/4	0.250			2 1/4	5	3/4	4				90830
3/4	0.030			3 1/4	6	3/4	4				90043
3/4	0.060			3 1/4	6	3/4	4				90143
3/4	0.090			3 1/4	6	3/4	4				90243
3/4	0.125			3 1/4	6	3/4	4				90343
3/4	0.190			3 1/4	6	3/4	4				90443
3/4	0.250			3 1/4	6	3/4	4				90543
1	0.030	0.950	2.250	1 1/4	4	1	4				99923
1	0.030	0.950	2.625	1 1/4	6	1	4				99913
1	0.030	0.950	3.375	1 1/4	6	1	4				99934
1	0.030			1 1/2	4	1	4	90315			
1	0.060			1 1/2	4	1	4	90415			
1	0.090			1 1/2	4	1	4	90515			
1	0.125			1 1/2	4	1	4	90615			
1	0.190			1 1/2	4	1	4	90715			
1	0.250			1 1/2	4	1	4	90815			
1	0.030			2	4 1/2	1	4		91420		
1	0.060			2	4 1/2	1	4		91520		
1	0.090			2	4 1/2	1	4		91620		
1	0.125			2	4 1/2	1	4		91720		
1	0.190			2	4 1/2	1	4		91820		
1	0.250			2	4 1/2	1	4		91920		
1	0.030			2 5/8	5	1	4			90426	
1	0.060			2 5/8	5	1	4			90526	
1	0.090			2 5/8	5	1	4			90626	
1	0.125			2 5/8	5	1	4			90726	
1	0.190			2 5/8	5	1	4			90826	
1	0.250			2 5/8	5	1	4			90926	
1	0.030			3	6	1	4				90930
1	0.060			3	6	1	4				91030
1	0.090			3	6	1	4				91130
1	0.125			3	6	1	4				91230
1	0.190			3	6	1	4				91330
1	0.250			3	6	1	4				91430
1	0.030			4 1/4	7	1	4				90643
1	0.060			4 1/4	7	1	4				90743
1	0.090			4 1/4	7	1	4				90843
1	0.125			4 1/4	7	1	4				90943
1	0.190			4 1/4	7	1	4				91043
1	0.250			4 1/4	7	1	4				91143

P	●	●	●	●
M	●	●	●	●
K	○	○	○	○
N	●	●	●	●
S	●	●	●	●
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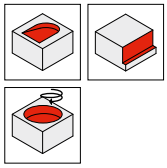
→ v_c/f_z Page 120

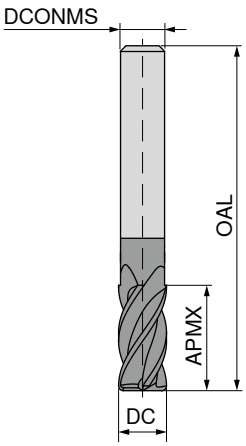
OptiLine – End milling cutter

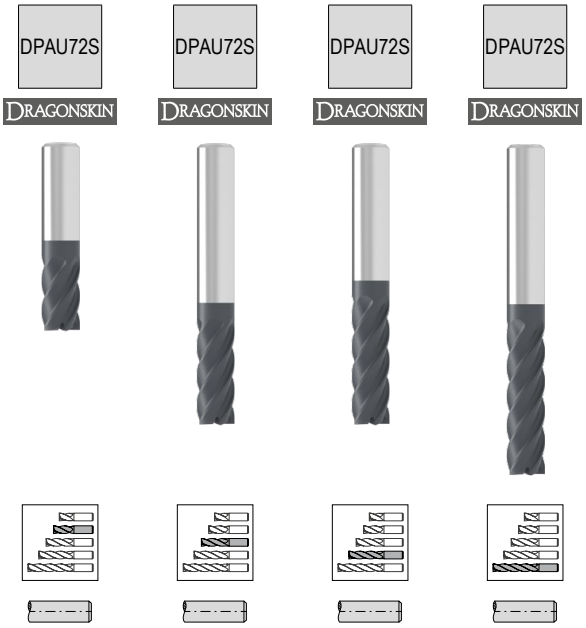
End mills for universal machining that feature a constant helix and variable pitch and are optimized for a wide range of materials.

▲ Cutting edges with irregular pitch

P556 | UN | α ≠ β | λ_s=38° γ_s=07° | HPC







DC +0.000/-0.002 inch	APMX inch	OAL inch	DCONMS -0.0001 / -0.0004 inch	ZEFP	59 006 ...	59 006 ...	59 006 ...	59 006 ...
1/8	1/4	1 1/2	1/8	5	12520			
1/8	1/2	1 1/2	1/8	5		12540		
3/16	5/16	2	3/16	5	18817			
3/16	5/8	2 1/2	3/16	5		18833		
1/4	3/8	2	1/4	5	25015			
1/4	1/2	2 1/2	1/4	5		25020		
1/4	3/4	2 1/2	1/4	5			25030	
1/4	1	3	1/4	5				25040
1/4	1 1/4	3	1/4	5				25050
5/16	1/2	2	5/16	5		31316		
5/16	3/4	2 1/2	5/16	5			31324	
5/16	1 1/4	3	5/16	5				31340
3/8	1/2	2	3/8	5	37513			
3/8	1	3	3/8	5		37527		
3/8	1 1/4	3	3/8	5			37533	
3/8	1 1/2	3 1/2	3/8	5				37540
7/16	1	2 3/4	7/16	5				43823
7/16	2	4	7/16	5				43846
1/2	5/8	2 1/2	1/2	5	50013			
1/2	1	3	1/2	5		50020		
1/2	1 1/4	3	1/2	5			50025	
1/2	1 5/8	4	1/2	5				50033
1/2	2	4	1/2	5				50040
5/8	3/4	3	5/8	5	62512			
5/8	1 1/4	3 1/2	5/8	5		62520		
5/8	1 5/8	3 1/2	5/8	5			62526	
5/8	2 1/4	4	5/8	5				62536
5/8	2 1/2	5	5/8	5				62540
3/4	1	3	3/4	5	75013			
3/4	1 5/8	4	3/4	5		75022		
3/4	2 1/4	5	3/4	5			75030	
3/4	2 3/4	5	3/4	5				75037
3/4	3 1/4	6	3/4	5				75043
1	1 1/4	4	1	5	99913			
1	2	4 1/2	1	5		99920		
1	2 5/8	5	1	5			99926	
1	3 1/4	6	1	5				99933
1	4 1/4	7	1	5				99943
1 1/4	2	4 1/2	1 1/4	5				93316
1 1/4	3 3/8	6	1 1/4	5				93327
1 1/4	4 3/4	8	1 1/4	5				93338
P					●	●	●	●
M					●	●	●	●
K					●	●	●	●
N								
S					●	●	●	●
H								
O								

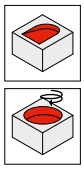
→ v_c/f_z Page 121

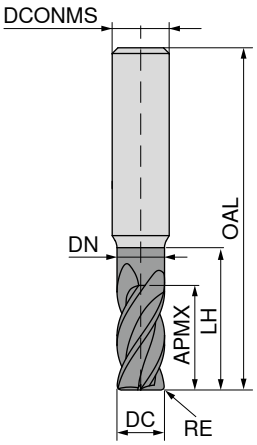
OptiLine – End milling cutter with corner radius

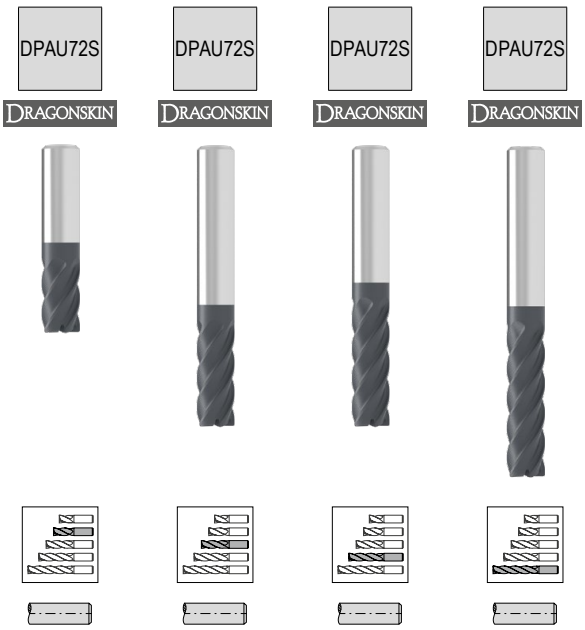
End mills for universal machining that feature a constant helix and variable pitch and are optimized for a wide range of materials.

▲ Cutting edges with irregular pitch
▲ Radius accuracy: +/- 0.001 for Ø ≤ 0.060
+/- 0.0015 for Ø > 0.060

P556 | UN | α ≠ β | λ_s=38° γ_s=07° | HPC







DC +0.000/-0.002 inch	RE inch	DN inch	LH inch	APMX inch	OAL inch	DCONMS -0.0001 / -0.0004 inch	ZEFP	59 006 ...	59 006 ...	59 006 ...	59 006 ...
1/8	0.010	0.118	0.375	0.156	3	1/8	5	92112			
1/8	0.010	0.118	0.500	0.156	3	1/8	5		92212		
1/8	0.010	0.118	0.625	0.156	3	1/8	5			92312	
1/8	0.010			1/4	1 1/2	1/8	5	92120			
1/8	0.030			1/4	1 1/2	1/8	5	92220			
1/8	0.010			1/2	1 1/2	1/8	5		92140		
1/8	0.030			1/2	1 1/2	1/8	5		92240		
3/16	0.010	0.178	0.500	0.219	3	3/16	5		92412		
3/16	0.010			0.219	3	3/16	5	92612			
3/16	0.010	0.178	0.750	0.219	3	3/16	5			92512	
3/16	0.010			5/16	2	3/16	5	92117			
3/16	0.030			5/16	2	3/16	5	92217			
3/16	0.010			5/8	2 1/2	3/16	5			92133	
3/16	0.030			5/8	2 1/2	3/16	5			92233	
1/4	0.015			3/8	2	1/4	5	90015			
1/4	0.030			3/8	2	1/4	5	90115			
1/4	0.060			3/8	2	1/4	5	90215			
1/4	0.020	0.237	0.750	3/8	3	1/4	5			92115	
1/4	0.020	0.237	1.125	3/8	4	1/4	5				92215
1/4	0.020	0.237	1.625	3/8	4	1/4	5				92315
1/4	0.020	0.237	2.125	3/8	4	1/4	5				92415
1/4	0.015			1/2	2 1/2	1/4	5		90020		
1/4	0.030			1/2	2 1/2	1/4	5		90120		
1/4	0.060			1/2	2 1/2	1/4	5		90220		
1/4	0.015			3/4	2 1/2	1/4	5			90030	
1/4	0.030			3/4	2 1/2	1/4	5			90130	
1/4	0.060			3/4	2 1/2	1/4	5			90230	
1/4	0.015			1	3	1/4	5				90040
1/4	0.030			1	3	1/4	5				90140
1/4	0.060			1	3	1/4	5				90240
1/4	0.015			1 1/4	3	1/4	5				90050
1/4	0.030			1 1/4	3	1/4	5				90150
1/4	0.060			1 1/4	3	1/4	5				90250
5/16	0.020			1/2	2	5/16	5		92116		
5/16	0.030			1/2	2	5/16	5		92216		
5/16	0.060			1/2	2	5/16	5		92316		
5/16	0.020			3/4	2 1/2	5/16	5			92124	
5/16	0.030			3/4	2 1/2	5/16	5			92224	
5/16	0.060			3/4	2 1/2	5/16	5			92324	
P								●	●	●	●
M								●	●	●	●
K								●	●	●	●
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S								●	●	●	●
H											
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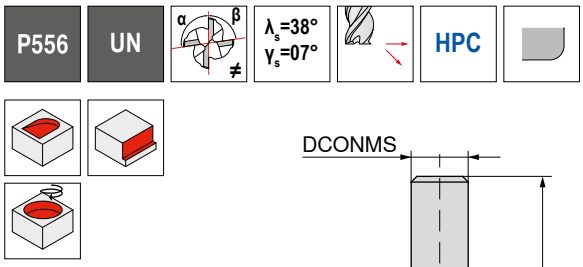
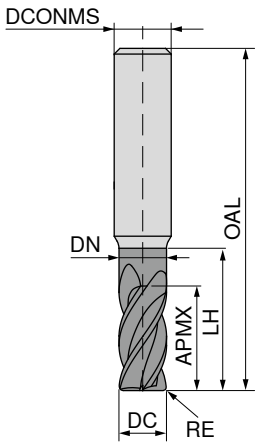
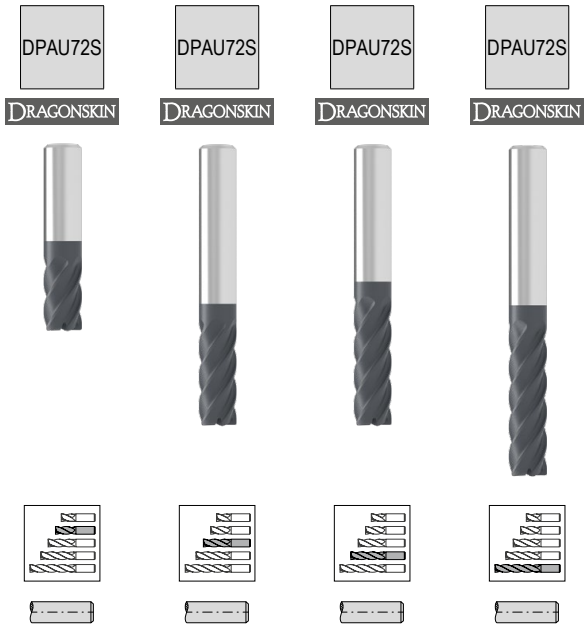
OptiLine – End milling cutter with corner radius

End mills for universal machining that feature a constant helix and variable pitch and are optimized for a wide range of materials.

▲ Cutting edges with irregular pitch
▲ Radius accuracy: +/- 0.001 for Ø ≤ 0.060
+/- 0.0015 for Ø > 0.060







DC +0.000/-0.002 inch	RE inch	DN inch	LH inch	APMX inch	OAL inch	DCONMS -0.0001 / -0.0004 inch	ZEFP	59 006 ...	59 006 ...	59 006 ...	59 006 ...
5/16	0.020			1 1/4	3	5/16	5				92340
5/16	0.030			1 1/4	3	5/16	5				92440
5/16	0.060			1 1/4	3	5/16	5				92540
3/8	0.015			1/2	2	3/8	5	90013			
3/8	0.030			1/2	2	3/8	5	90113			
3/8	0.060			1/2	2	3/8	5	90213			
3/8	0.090			1/2	2	3/8	5	90313			
3/8	0.030	0.356	1.125	1/2	4	3/8	5				92113
3/8	0.030	0.356	2.125	1/2	4	3/8	5				92213
3/8	0.030	0.356	3.125	1/2	6	3/8	5				92313
3/8	0.030	0.356	4.125	1/2	6	3/8	5				92413
3/8	0.015			1	3	3/8	5		90027		
3/8	0.030			1	3	3/8	5		90127		
3/8	0.060			1	3	3/8	5		90227		
3/8	0.090			1	3	3/8	5		90327		
3/8	0.015			1 1/4	3	3/8	5			90033	
3/8	0.030			1 1/4	3	3/8	5			90133	
3/8	0.060			1 1/4	3	3/8	5			90233	
3/8	0.090			1 1/4	3	3/8	5			90333	
3/8	0.015			1 1/2	3 1/2	3/8	5				90340
3/8	0.030			1 1/2	3 1/2	3/8	5				90440
3/8	0.060			1 1/2	3 1/2	3/8	5				90540
3/8	0.090			1 1/2	3 1/2	3/8	5				90640
1/2	0.015			5/8	2 1/2	1/2	5	90413			
1/2	0.030			5/8	2 1/2	1/2	5	90513			
1/2	0.060			5/8	2 1/2	1/2	5	90613			
1/2	0.090			5/8	2 1/2	1/2	5	90713			
1/2	0.125			5/8	2 1/2	1/2	5	90813			
1/2	0.030	0.475	1.500	5/8	4	1/2	5				92513
1/2	0.030	0.475	2.250	5/8	4	1/2	5				92613
1/2	0.030	0.475	3.375	5/8	6	1/2	5				92713
1/2	0.030	0.475	4.125	5/8	6	1/2	5				92813
1/2	0.015			1	3	1/2	5		90320		
1/2	0.030			1	3	1/2	5		90420		
1/2	0.060			1	3	1/2	5		90520		
1/2	0.090			1	3	1/2	5		90620		
1/2	0.125			1	3	1/2	5		90720		
1/2	0.015			1 1/4	3	1/2	5			90025	
1/2	0.030			1 1/4	3	1/2	5			90125	
1/2	0.060			1 1/4	3	1/2	5			90225	
P								●	●	●	●
M								●	●	●	●
K								●	●	●	●
N											
S								●	●	●	●
H											
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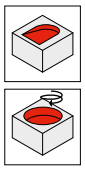
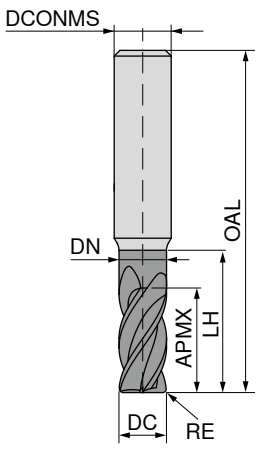
OptiLine – End milling cutter with corner radius

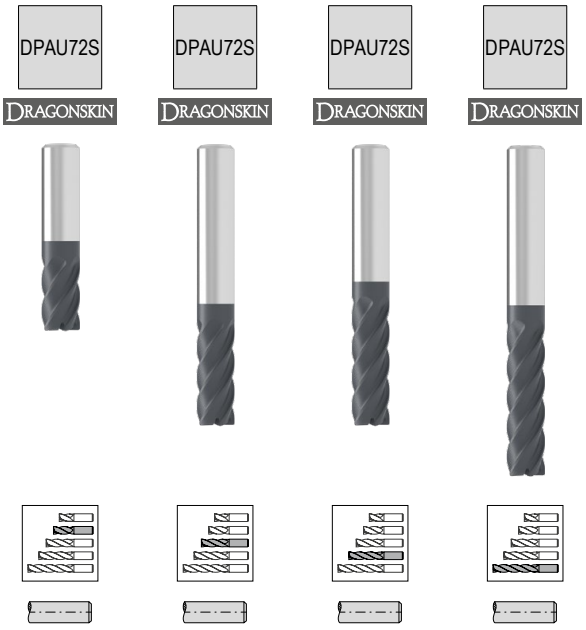
End mills for universal machining that feature a constant helix and variable pitch and are optimized for a wide range of materials.

▲ Cutting edges with irregular pitch
▲ Radius accuracy: +/- 0.001 for Ø ≤ 0.060
+/- 0.0015 for Ø > 0.060

P556 | UN | α β ≠ | λ_s=38° γ_s=07° | HPC







DC +0.000/-0.002 inch	RE inch	DN inch	LH inch	APMX inch	OAL inch	DCONMS -0.0001 / -0.0004 inch	ZEFP	59 006 ...	59 006 ...	59 006 ...	59 006 ...
1/2	0.090			1 1/4	3	1/2	5			90325	
1/2	0.125			1 1/4	3	1/2	5			90425	
1/2	0.015			1 5/8	4	1/2	5				90433
1/2	0.030			1 5/8	4	1/2	5				90533
1/2	0.060			1 5/8	4	1/2	5				90633
1/2	0.090			1 5/8	4	1/2	5				90733
1/2	0.125			1 5/8	4	1/2	5				90833
1/2	0.015			2	4	1/2	5				90740
1/2	0.030			2	4	1/2	5				90840
1/2	0.060			2	4	1/2	5				90940
1/2	0.090			2	4	1/2	5				91040
1/2	0.125			2	4	1/2	5				91140
5/8	0.030			3/4	3	5/8	5	90012			
5/8	0.060			3/4	3	5/8	5	90112			
5/8	0.090			3/4	3	5/8	5	90212			
5/8	0.125			3/4	3	5/8	5	90312			
5/8	0.030	0.593	1.625	3/4	4	5/8	5				92712
5/8	0.030	0.593	2.375	3/4	6	5/8	5				92812
5/8	0.030	0.593	3.375	3/4	6	5/8	5				92912
5/8	0.030	0.593	4.125	3/4	6	5/8	5				93012
5/8	0.030			1 1/4	3 1/2	5/8	5		90820		
5/8	0.060			1 1/4	3 1/2	5/8	5		90920		
5/8	0.090			1 1/4	3 1/2	5/8	5		91020		
5/8	0.125			1 1/4	3 1/2	5/8	5		91120		
5/8	0.030			1 5/8	3 1/2	5/8	5			90026	
5/8	0.060			1 5/8	3 1/2	5/8	5			90126	
5/8	0.090			1 5/8	3 1/2	5/8	5			90226	
5/8	0.125			1 5/8	3 1/2	5/8	5			90326	
5/8	0.030			2 1/4	4	5/8	5				90036
5/8	0.060			2 1/4	4	5/8	5				90136
5/8	0.090			2 1/4	4	5/8	5				90236
5/8	0.125			2 1/4	4	5/8	5				90336
5/8	0.030			2 1/2	5	5/8	5				91240
5/8	0.060			2 1/2	5	5/8	5				91340
5/8	0.090			2 1/2	5	5/8	5				91440
5/8	0.125			2 1/2	5	5/8	5				91540
3/4	0.030			1	3	3/4	5	90913			
3/4	0.060			1	3	3/4	5	91013			
3/4	0.090			1	3	3/4	5	91113			
3/4	0.125			1	3	3/4	5	91213			
P								●	●	●	●
M								●	●	●	●
K								●	●	●	●
N											
S								●	●	●	●
H											
O											

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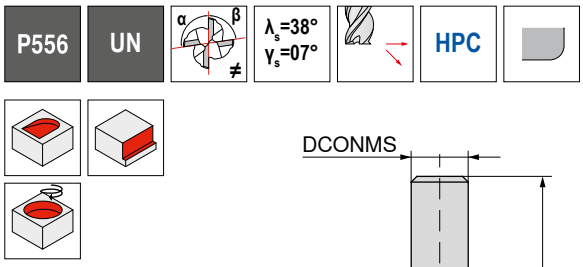
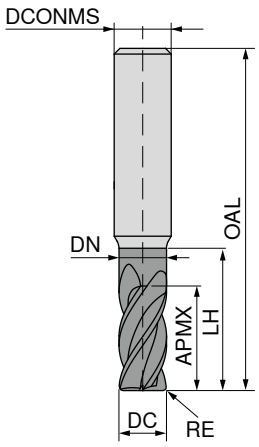
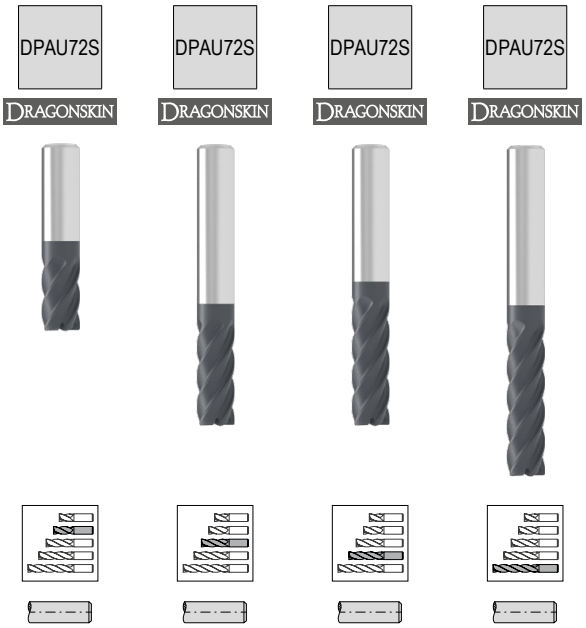
OptiLine – End milling cutter with corner radius

End mills for universal machining that feature a constant helix and variable pitch and are optimized for a wide range of materials.

▲ Cutting edges with irregular pitch
▲ Radius accuracy: +/- 0.001 for Ø ≤ 0.060
+/- 0.0015 for Ø > 0.060







DC +0.000/-0.002 inch	RE inch	DN inch	LH inch	APMX inch	OAL inch	DCONMS -0.0001 / -0.0004 inch	ZEFP	59 006 ...	59 006 ...	59 006 ...	59 006 ...
3/4	0.190			1	3	3/4	5	91313			
3/4	0.250			1	3	3/4	5	91413			
3/4	0.030			1	4	3/4	5				92913
3/4	0.030	0.712	2.500	1	6	3/4	5				93013
3/4	0.030	0.712	3.375	1	6	3/4	5				93113
3/4	0.030	0.712	4.125	1	6	3/4	5				93213
3/4	0.030			1 5/8	4	3/4	5		90022		
3/4	0.060			1 5/8	4	3/4	5		90122		
3/4	0.090			1 5/8	4	3/4	5		90222		
3/4	0.125			1 5/8	4	3/4	5		90322		
3/4	0.190			1 5/8	4	3/4	5		90422		
3/4	0.250			1 5/8	4	3/4	5		90522		
3/4	0.030			2 1/4	5	3/4	5			90330	
3/4	0.060			2 1/4	5	3/4	5			90430	
3/4	0.090			2 1/4	5	3/4	5			90530	
3/4	0.125			2 1/4	5	3/4	5			90630	
3/4	0.190			2 1/4	5	3/4	5			90730	
3/4	0.250			2 1/4	5	3/4	5			90830	
3/4	0.030			2 3/4	5	3/4	5				90037
3/4	0.060			2 3/4	5	3/4	5				90137
3/4	0.090			2 3/4	5	3/4	5				90237
3/4	0.125			2 3/4	5	3/4	5				90337
3/4	0.190			2 3/4	5	3/4	5				90437
3/4	0.250			2 3/4	5	3/4	5				90537
3/4	0.030			3 1/4	6	3/4	5				90043
3/4	0.060			3 1/4	6	3/4	5				90143
3/4	0.090			3 1/4	6	3/4	5				90243
3/4	0.125			3 1/4	6	3/4	5				90343
3/4	0.190			3 1/4	6	3/4	5				90443
3/4	0.250			3 1/4	6	3/4	5				90543
1	0.030	0.950	2.250	1 1/4	4	1	5				99923
1	0.030			1 1/4	4	1	5	91513			
1	0.060			1 1/4	4	1	5	91613			
1	0.090			1 1/4	4	1	5	91713			
1	0.125			1 1/4	4	1	5	91813			
1	0.190			1 1/4	4	1	5	91913			
1	0.250			1 1/4	4	1	5	92013			
1	0.030	0.950	2.625	1 1/4	6	1	5				99927
1	0.030	0.950	3.375	1 1/4	6	1	5				99934
1	0.030	0.950	4.125	1 1/4	6	1	5				99941
P								●	●	●	●
M								●	●	●	●
K								●	●	●	●
N											
S								●	●	●	●
H											
O											

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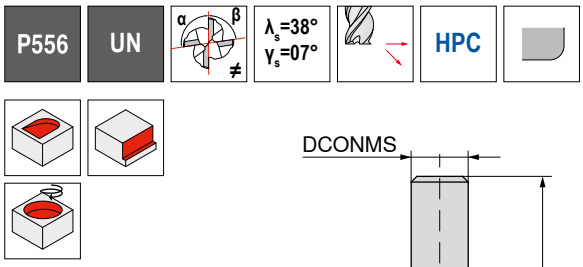
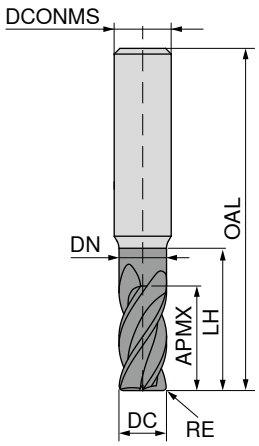
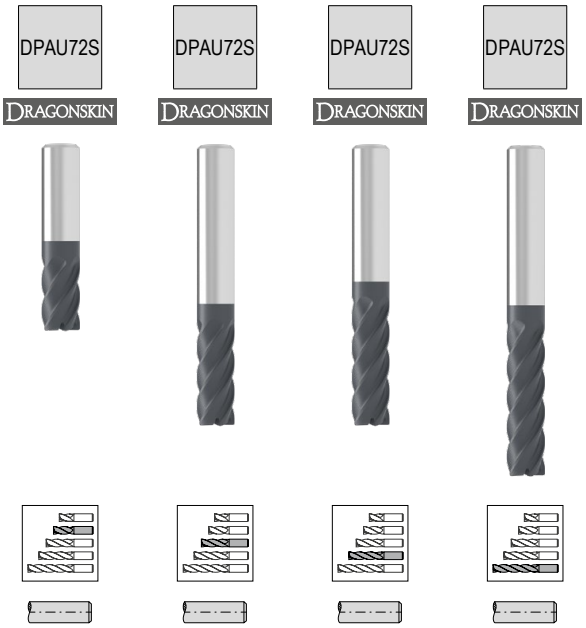
OptiLine – End milling cutter with corner radius

End mills for universal machining that feature a constant helix and variable pitch and are optimized for a wide range of materials.

▲ Cutting edges with irregular pitch
▲ Radius accuracy: +/- 0.001 for Ø ≤ 0.060
+/- 0.0015 for Ø > 0.060







DC +0.000/-0.002 inch	RE inch	DN inch	LH inch	APMX inch	OAL inch	DCONMS -0.0001 / -0.0004 inch	ZEFP	59 006 ...	59 006 ...	59 006 ...	59 006 ...
1	0.030			2	4 1/2	1	5		91220		
1	0.060			2	4 1/2	1	5		91320		
1	0.090			2	4 1/2	1	5		91420		
1	0.125			2	4 1/2	1	5		91520		
1	0.190			2	4 1/2	1	5		91620		
1	0.250			2	4 1/2	1	5		91720		
1	0.030			2 5/8	5	1	5			90426	
1	0.060			2 5/8	5	1	5			90526	
1	0.090			2 5/8	5	1	5			90626	
1	0.125			2 5/8	5	1	5			90726	
1	0.190			2 5/8	5	1	5			90826	
1	0.250			2 5/8	5	1	5			90926	
1	0.030			3 1/4	6	1	5				90933
1	0.060			3 1/4	6	1	5				91033
1	0.090			3 1/4	6	1	5				91133
1	0.125			3 1/4	6	1	5				91233
1	0.190			3 1/4	6	1	5				91333
1	0.250			3 1/4	6	1	5				91433
1	0.030			4 1/4	7	1	5				90643
1	0.060			4 1/4	7	1	5				90743
1	0.090			4 1/4	7	1	5				90843
1	0.125			4 1/4	7	1	5				90943
1	0.190			4 1/4	7	1	5				91043
1	0.250			4 1/4	7	1	5				91143
1 1/4	0.030			2	4 1/2	1 1/4	5				93416
1 1/4	0.030			3 3/8	6	1 1/4	5				93427
1 1/4	0.030			4 3/4	8	1 1/4	5				93438
P								●	●	●	●
M								●	●	●	●
K								●	●	●	●
N											
S								●	●	●	●
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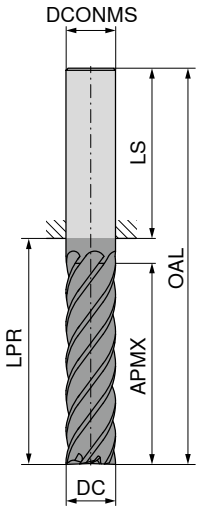
→ v_c/f_z Page 121

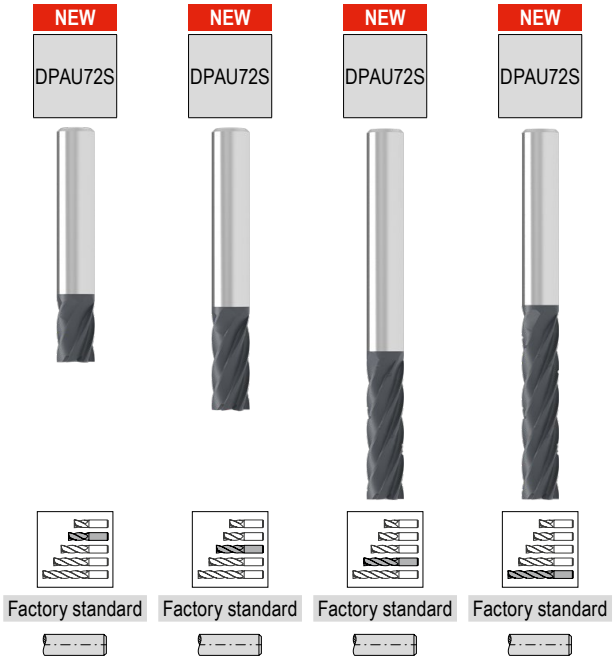
OptiLine – End milling cutter

End mills that feature an ultra-high fracture toughness, ensuring durability and stability and are optimized for trochoidal milling and other machining strategies in heat-resistant super alloys or titanium alloys.

P166 | UN | α β ≠ | λ_s var. | HPC







Factory standard | Factory standard | Factory standard | Factory standard

DC +.000/-.002 inch	APMX inch	LPR inch	LS inch	OAL inch	DCONMS -.0001 / -.0004 inch	ZEFP	59 082 ...	59 082 ...	59 082 ...	59 082 ...
1/4	3/8	0.583	1.417	2	1/4	6	**25015**			
1/4	1/2	1.083	1.417	2 1/2	1/4	6		**25020**		
1/4	3/4	1.083	1.417	2 1/2	1/4	6			**25030**	
1/4	1 1/4	1.583	1.417	3	1/4	6				**25050**
5/16	3/4	1.083	1.417	2 1/2	5/16	6		**31324**		
5/16	1	1.583	1.417	3	5/16	6			**31332**	
3/8	1/2	0.825	1.175	2	3/8	6	**37513**			
3/8	1	1.083	1.417	2 1/2	3/8	6		**37527**		
3/8	1 1/4	1.583	1.417	3	3/8	6			**37533**	
3/8	1 1/2	1.925	1.575	3 1/2	3/8	6				**37540**
1/2	5/8	0.735	1.765	2 1/2	1/2	6	**50013**			
1/2	1	1.235	1.765	3	1/2	6		**50020**		
1/2	1 1/4	1.425	1.575	3	1/2	6			**50025**	
1/2	1 1/2	1.625	2.375	4	1/2	6			**50030**	
1/2	2	2.235	1.765	4	1/2	6				**50040**
5/8	3/4	1.110	1.890	3	5/8	6	**62512**			
5/8	1 1/4	1.613	1.888	3 1/2	5/8	6		**62520**		
5/8	1 5/8	2.228	1.772	4	5/8	6			**62526**	
5/8	2	3.032	1.969	5	5/8	6				**62532**
3/4	1	1.228	1.773	3	3/4	6	**75013**			
3/4	1 1/4	2.032	1.969	4	3/4	6		**75017**		
3/4	1 5/8	3.032	1.969	5	3/4	6			**75022**	
3/4	2 1/4	3.032	1.969	5	3/4	6			**75030**	
3/4	3 1/4	4.032	1.969	6	3/4	6				**75043**
1	2	2.295	2.205	4 1/2	1	6	**99920**			
1	2 1/2	3.032	1.969	5	1	6		**99925**		
1	3 1/4	3.795	2.205	6	1	6			**99933**	
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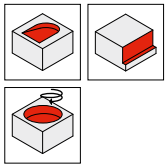
→ v_c/f_z Page 135

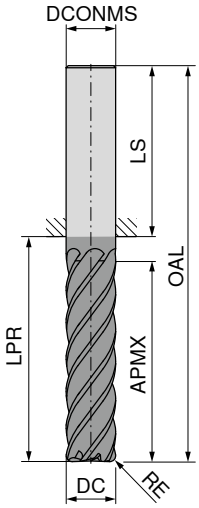
OptiLine – End milling cutter with corner radius

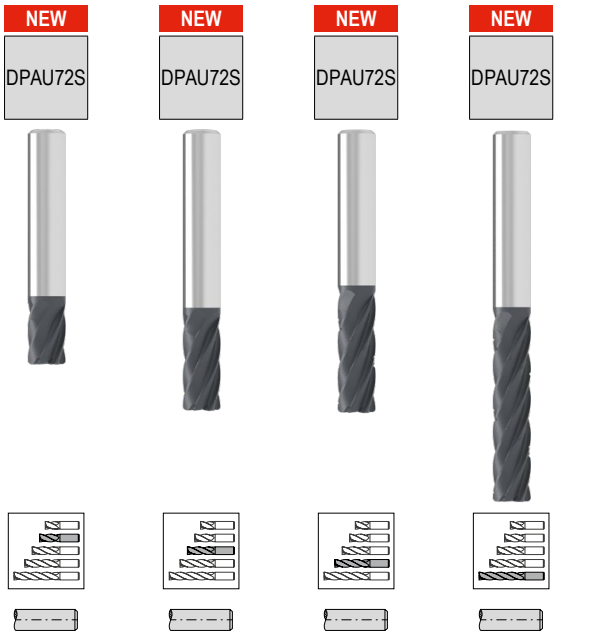
End mills that feature an ultra-high fracture toughness, ensuring durability and stability and are optimized for trochoidal milling and other machining strategies in heat-resistant super alloys or titanium alloys.

▲ Radius accuracy: +/- 0.001 for Ø ≤ 0.060 / +/- 0.0015 for Ø > 0.060

P166 | UN | α β ≠ | λ_s var. | HPC







DC +.000/-.002 inch	RE inch	APMX inch	LPR inch	LS inch	OAL inch	DCONMS -.0001 / -.0004 inch	ZEFP	59 083 ...	59 083 ...	59 083 ...	59 083 ...
1/4	0.015	3/8	0.583	1.417	2	1/4	6	90015			
1/4	0.030	3/8	0.583	1.417	2	1/4	6	90115			
1/4	0.015	1/2	1.083	1.417	2 1/2	1/4	6		90020		
1/4	0.030	1/2	1.083	1.417	2 1/2	1/4	6		90220		
1/4	0.015	3/4	1.083	1.417	2 1/2	1/4	6			90030	
1/4	0.030	3/4	1.083	1.417	2 1/2	1/4	6			90230	
1/4	0.015	1 1/4	1.583	1.417	3	1/4	6				90050
1/4	0.030	1 1/4	1.583	1.417	3	1/4	6				90150
5/16	0.015	3/4	1.083	1.417	2 1/2	5/16	6	90024			
5/16	0.030	3/4	1.083	1.417	2 1/2	5/16	6	90124			
5/16	0.015	1	1.583	1.417	3	5/16	6		90032		
5/16	0.030	1	1.583	1.417	3	5/16	6		90132		
5/16	0.060	1	1.583	1.417	3	5/16	6		90332		
3/8	0.015	1/2	0.825	1.175	2	3/8	6	90013			
3/8	0.030	1/2	0.825	1.175	2	3/8	6	90213			
3/8	0.060	1/2	0.825	1.175	2	3/8	6	90513			
3/8	0.015	1	1.083	1.417	2 1/2	3/8	6		90027		
3/8	0.030	1	1.083	1.417	2 1/2	3/8	6		90127		
3/8	0.060	1	1.083	1.417	2 1/2	3/8	6		90227		
3/8	0.015	1 1/4	1.583	1.417	3	3/8	6			90033	
3/8	0.030	1 1/4	1.583	1.417	3	3/8	6			90133	
3/8	0.060	1 1/4	1.583	1.417	3	3/8	6			90333	
3/8	0.015	1 1/2	1.925	1.575	3 1/2	3/8	6				90040
3/8	0.030	1 1/2	1.925	1.575	3 1/2	3/8	6				90240
3/8	0.060	1 1/2	1.925	1.575	3 1/2	3/8	6				90440
1/2	0.015	5/8	0.728	1.772	2 1/2	1/2	6	90113			
1/2	0.030	5/8	0.728	1.772	2 1/2	1/2	6	90313			
1/2	0.060	5/8	0.728	1.772	2 1/2	1/2	6	90613			
1/2	0.090	5/8	0.728	1.772	2 1/2	1/2	6	90813			
1/2	0.120	5/8	0.735	1.765	2 1/2	1/2	6	91013			
1/2	0.015	1	1.228	1.772	3	1/2	6		90120		
1/2	0.030	1	1.228	1.772	3	1/2	6		90320		
1/2	0.060	1	1.228	1.772	3	1/2	6		90620		
1/2	0.090	1	1.228	1.772	3	1/2	6		90920		
1/2	0.120	1	1.228	1.772	3	1/2	6		91320		
1/2	0.015	1 1/4	1.425	1.575	3	1/2	6			90025	
1/2	0.030	1 1/4	1.425	1.575	3	1/2	6		90125		
1/2	0.060	1 1/4	1.425	1.575	3	1/2	6			90325	
1/2	0.090	1 1/4	1.425	1.575	3	1/2	6			90525	
1/2	0.120	1 1/4	1.425	1.575	3	1/2	6			90725	
1/2	0.015	1 1/2	1.625	2.375	4	1/2	6				90130

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→ v_c/f_z Page 135

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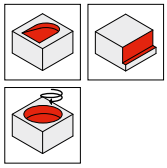
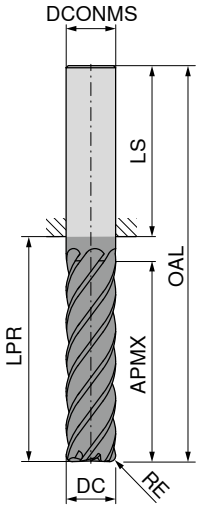
OptiLine – End milling cutter with corner radius

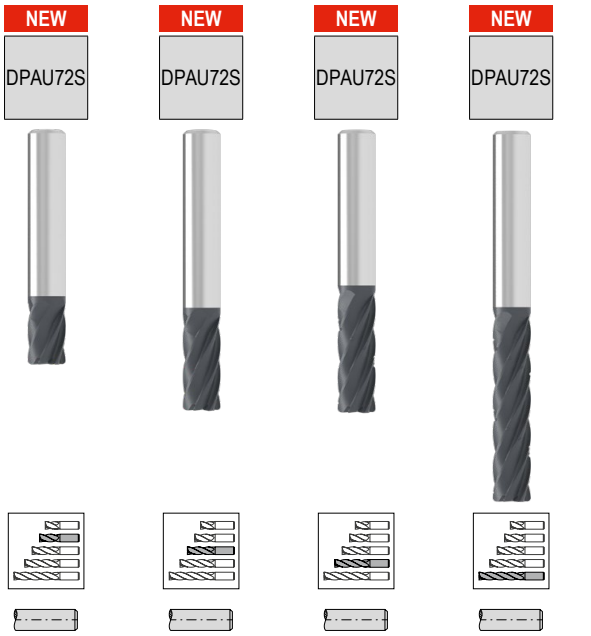
End mills that feature an ultra-high fracture toughness, ensuring durability and stability and are optimized for trochoidal milling and other machining strategies in heat-resistant super alloys or titanium alloys.

▲ Radius accuracy: +/- 0.001 for Ø ≤ 0.060 / +/- 0.0015 for Ø > 0.060

P166 | UN | α β ≠ | λ_s var. | HPC







DC +.000/-.002 inch	RE inch	APMX inch	LPR inch	LS inch	OAL inch	DCONMS -.0001 / -.0004 inch	ZEFP	59 083 ...		59 083 ...		59 083 ...		59 083 ...	
1/2	0.030	1 1/2	1.625	2.375	4	1/2	6								90330
1/2	0.060	1 1/2	1.625	2.375	4	1/2	6								90530
1/2	0.090	1 1/2	1.625	2.375	4	1/2	6								90730
1/2	0.120	1 1/2	1.625	2.375	4	1/2	6								90930
1/2	0.015	2	2.228	1.772	4	1/2	6								90140
1/2	0.030	2	2.228	1.772	4	1/2	6								90340
1/2	0.060	2	2.228	1.772	4	1/2	6								90540
1/2	0.090	2	2.228	1.772	4	1/2	6								90640
1/2	0.120	2	2.228	1.772	4	1/2	6								90740
5/8	0.030	3/4	1.122	1.890	3	5/8	6	90012							
5/8	0.060	3/4	1.122	1.890	3	5/8	6	90112							
5/8	0.090	3/4	1.122	1.890	3	5/8	6	90212							
5/8	0.120	3/4	1.110	1.890	3	5/8	6	90312							
5/8	0.030	1 1/4	1.610	1.890	3 1/2	5/8	6			90420					
5/8	0.060	1 1/4	1.610	1.890	3 1/2	5/8	6			90720					
5/8	0.090	1 1/4	1.610	1.890	3 1/2	5/8	6			91020					
5/8	0.120	1 1/4	1.610	1.890	3 1/2	5/8	6			91420					
5/8	0.030	1 5/8	2.228	1.772	4	5/8	6					90026			
5/8	0.060	1 5/8	2.228	1.772	4	5/8	6					90126			
5/8	0.090	1 5/8	2.228	1.772	4	5/8	6					90226			
5/8	0.120	1 5/8	2.228	1.772	4	5/8	6					90326			
5/8	0.030	2	3.032	1.969	5	5/8	6								90232
5/8	0.060	2	3.032	1.969	5	5/8	6								90432
5/8	0.090	2	3.032	1.969	5	5/8	6								90532
5/8	0.120	2	3.032	1.969	5	5/8	6								90632
3/4	0.030	1	1.228	1.773	3	3/4	6	90413							
3/4	0.060	1	1.228	1.773	3	3/4	6	90713							
3/4	0.090	1	1.228	1.773	3	3/4	6	90913							
3/4	0.120	1	1.228	1.773	3	3/4	6	91113							
3/4	0.160	1	1.228	1.773	3	3/4	6	91213							
3/4	0.190	1	1.228	1.773	3	3/4	6	91313							
3/4	0.250	1	1.228	1.773	3	3/4	6	91413							
3/4	0.030	1 1/4	2.032	1.969	4	3/4	6			90017					
3/4	0.060	1 1/4	2.032	1.969	4	3/4	6			90117					
3/4	0.090	1 1/4	2.032	1.969	4	3/4	6			90217					
3/4	0.120	1 1/4	2.032	1.969	4	3/4	6			90317					
3/4	0.160	1 1/4	2.032	1.969	4	3/4	6			90417					
3/4	0.190	1 1/4	2.032	1.969	4	3/4	6			90517					
3/4	0.250	1 1/4	2.032	1.969	4	3/4	6			90617					
3/4	0.030	1 5/8	3.032	1.969	5	3/4	6					90022			
3/4	0.060	1 5/8	3.032	1.969	5	3/4	6					90122			

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→ v_c/f_z Page 135

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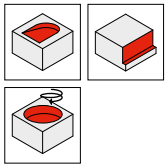
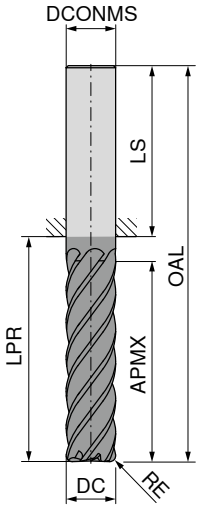
OptiLine – End milling cutter with corner radius

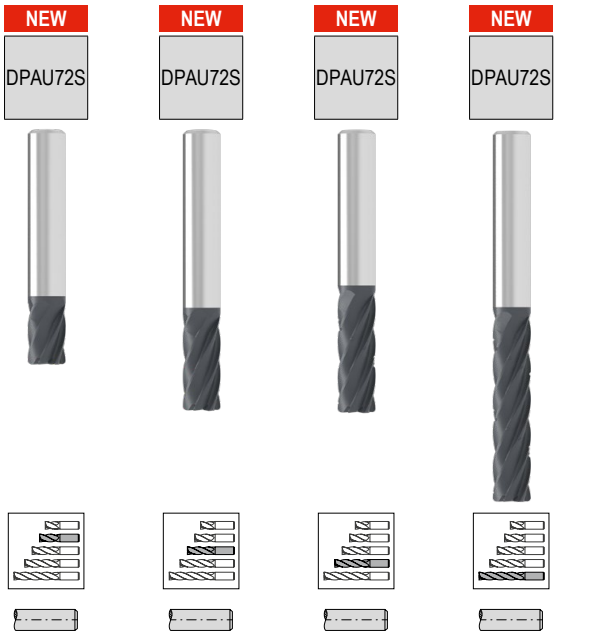
End mills that feature an ultra-high fracture toughness, ensuring durability and stability and are optimized for trochoidal milling and other machining strategies in heat-resistant super alloys or titanium alloys.

▲ Radius accuracy: +/- 0.001 for Ø ≤ 0.060 / +/- 0.0015 for Ø > 0.060

P166 | UN | α β ≠ | λ_s var. | HPC







DC +.000/-.002 inch	RE inch	APMX inch	LPR inch	LS inch	OAL inch	DCONMS -.0001 / -.0004 inch	ZEFP	59 083 ...		59 083 ...		59 083 ...		59 083 ...	
3/4	0.090	1 5/8	3.032	1.969	5	3/4	6						90222		
3/4	0.120	1 5/8	3.032	1.969	5	3/4	6						90322		
3/4	0.160	1 5/8	3.032	1.969	5	3/4	6						90422		
3/4	0.190	1 5/8	3.032	1.969	5	3/4	6						90522		
3/4	0.250	1 5/8	3.032	1.969	5	3/4	6						90622		
3/4	0.030	2 1/4	3.032	1.969	5	3/4	6								90430
3/4	0.060	2 1/4	3.032	1.969	5	3/4	6								90630
3/4	0.090	2 1/4	3.032	1.969	5	3/4	6								90830
3/4	0.120	2 1/4	3.032	1.969	5	3/4	6								91030
3/4	0.160	2 1/4	3.032	1.969	5	3/4	6								91130
3/4	0.190	2 1/4	3.032	1.969	5	3/4	6								91230
3/4	0.250	2 1/4	3.032	1.969	5	3/4	6								91330
3/4	0.030	3 1/4	4.032	1.969	6	3/4	6								90043
3/4	0.060	3 1/4	4.032	1.969	6	3/4	6								90143
3/4	0.090	3 1/4	4.032	1.969	6	3/4	6								90243
3/4	0.120	3 1/4	4.032	1.969	6	3/4	6								90343
3/4	0.160	3 1/4	4.032	1.969	6	3/4	6								90443
3/4	0.190	3 1/4	4.032	1.969	6	3/4	6								90543
3/4	0.250	3 1/4	4.032	1.969	6	3/4	6								90643
1	0.030	2	2.295	2.205	4 1/2	1	6				90520				
1	0.060	2	2.295	2.205	4 1/2	1	6				90820				
1	0.090	2	2.295	2.205	4 1/2	1	6				91220				
1	0.120	2	2.295	2.205	4 1/2	1	6				91520				
1	0.160	2	2.295	2.205	4 1/2	1	6				91620				
1	0.190	2	2.295	2.205	4 1/2	1	6				91720				
1	0.250	2	2.295	2.205	4 1/2	1	6				91820				
1	0.030	2 1/2	3.032	1.969	5	1	6						90225		
1	0.060	2 1/2	3.032	1.969	5	1	6						90425		
1	0.090	2 1/2	3.032	1.969	5	1	6						90625		
1	0.120	2 1/2	3.032	1.969	5	1	6						90825		
1	0.160	2 1/2	3.032	1.969	5	1	6						90925		
1	0.190	2 1/2	3.032	1.969	5	1	6						91025		
1	0.250	2 1/2	3.032	1.969	5	1	6						91125		
1	0.030	3 1/4	3.795	2.205	6	1	6								90233
1	0.060	3 1/4	3.795	2.205	6	1	6								90433
1	0.090	3 1/4	3.795	2.205	6	1	6								90533
1	0.120	3 1/4	3.795	2.205	6	1	6								90633
1	0.160	3 1/4	3.795	2.205	6	1	6								90733
1	0.190	3 1/4	3.795	2.205	6	1	6								90833
1	0.250	3 1/4	3.795	2.205	6	1	6								90933

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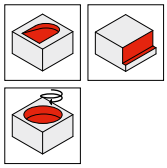
→ v_c/f_z Page 135

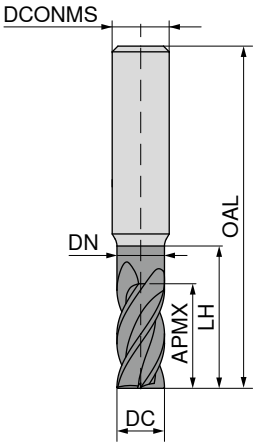
OptiLine – End milling cutter

End mills that offer maximum metal removal and are optimized for high efficiency machining (HEM) and light finishing.

▲ Cutting edges with irregular pitch

P160 | UN | λ_s=38° γ_s=10° | HPC







DC +0.000/-0.002 inch	APMX inch	DN inch	LH inch	OAL inch	DCONMS -0.0001 / -0.0004 inch	ZEFP	59 057 ...	59 057 ...	59 057 ...
1/4	3/8			2	1/4	7	**25015**		
1/4	1/2			2	1/4	7	**25020**		
1/4	3/4			2 1/2	1/4	7	**25030**		
3/8	1/2			2	3/8	7	**37613**		
3/8	7/8			2 1/2	3/8	7	**37523**		
3/8	1 1/4			3	3/8	7		**37533**	
3/8	1/2	0.360	3 1/8	6	3/8	7			**37513**
1/2	5/8			2 1/2	1/2	7	**50113**		
1/2	1			3	1/2	7	**50020**		
1/2	1 1/4			3	1/2	7	**50025**		
1/2	1 5/8			4	1/2	7		**50033**	
1/2	5/8	0.480	3 1/8	6	1/2	7			**50013**
5/8	3/4			3	5/8	7	**62612**		
5/8	1 1/4			3 1/2	5/8	7	**62520**		
5/8	1 5/8			3 1/2	5/8	7	**62526**		
5/8	2 1/8			4	5/8	7		**62534**	
5/8	3/4	0.600	3 1/8	6	5/8	7			**62512**
3/4	1			3	3/4	7	**75113**		
3/4	1 1/4			3 1/2	3/4	7	**75017**		
3/4	1 5/8			4	3/4	7	**75022**		
3/4	2 1/4			5	3/4	7		**75030**	
3/4	1	0.720	3 1/8	6	3/4	7			**75013**
1	2			4	1	7	**99920**		
1	2 5/8			5	1	7			**99926**
1	3 1/4			6	1	7			**99933**
P							●	●	●
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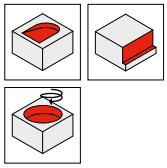
→ v_c/f_z Page 122

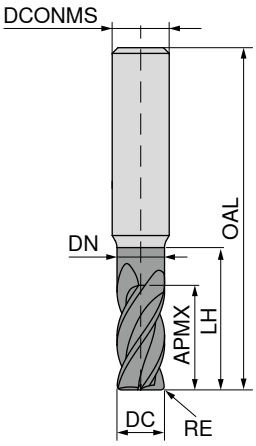
OptiLine – End milling cutter with corner radius

End mills that offer maximum metal removal and are optimized for high efficiency machining (HEM) and light finishing.

▲ Cutting edges with irregular pitch

P161 | UN | λ_s=38° γ_s=10°







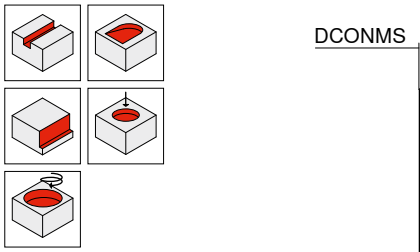
DC +0.000/-0.002 inch	RE inch	APMX inch	DN inch	LH inch	OAL inch	DCONMS -0.0001 / -0.0004 inch	ZEFP	59 058 ...	59 058 ...	59 058 ...
1/4	0.020	3/8			2	1/4		90215		
1/4	0.020	1/2			2	1/4		90220		
1/4	0.020	3/4			2 1/2	1/4	7	25030		
1/4	0.030	3/4			2 1/2	1/4	7	90030		
1/4	0.020	1 1/8			3	1/4	7		25045	
1/4	0.030	3/8	0.240	2 1/2	4	1/4	7			90015
1/4	0.020	3/8	0.240	2 1/2	4	1/4	7			25015
3/8	0.020	1/2			2	3/8		90213		
3/8	0.020	7/8			2 1/2	3/8	7	37523		
3/8	0.030	7/8			2 1/2	3/8	7	90023		
3/8	0.030	1 1/4			3	3/8	7		90033	
3/8	0.020	1 1/4			3	3/8	7		37533	
3/8	0.020	1/2	0.360	3 1/8	6	3/8	7			37513
1/2	0.030	5/8			2 1/2	1/2		90313		
1/2	0.030	1			3	1/2		90320		
1/2	0.020	1 1/4			3	1/2	7	50025		
1/2	0.030	1 1/4			3	1/2	7	90025		
1/2	0.030	1 5/8			4	1/2	7		90133	
1/2	0.020	1 5/8			4	1/2	7		50033	
1/2	0.030	5/8	0.480	3 1/8	6	1/2	7			90013
1/2	0.020	5/8	0.480	3 1/8	6	1/2	7			50013
5/8	0.030	3/4			3	5/8		90212		
5/8	0.030	1 1/4			3 1/2	5/8		90420		
5/8	0.030	1 5/8			3 1/2	5/8	7	62526		
5/8	0.030	2 1/8			4	5/8	7		62534	
5/8	0.030	3/4	0.600	3 1/8	6	5/8	7			62512
3/4	0.030	1			3	3/4		90413		
3/4	0.030	1 1/4			3 1/2	3/4		90217		
3/4	0.030	1 5/8			4	3/4	7	75022		
3/4	0.030	2 1/4			5	3/4	7		75030	
3/4	0.030	1	0.720	3 1/8	6	3/4	7			75013
1	0.030	2 5/8			5	1	7		99926	
1	0.030	3 1/4			6	1				99933
P								●	●	●
M								●	●	●
K								●	●	●
N										
S								●	●	●
H										
O										

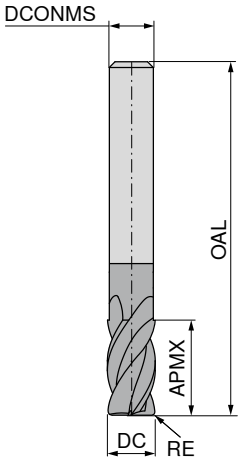
→ v_c/f_z Page 122

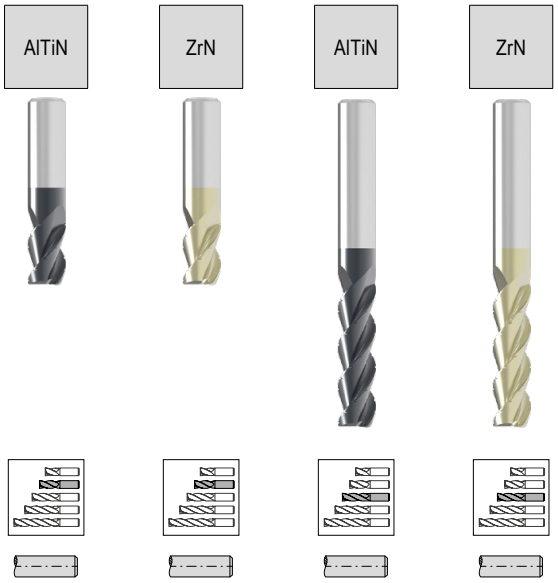
End milling cutter with corner radius

▲ with chip breaker

P119 | AL | λ_s=40° γ_s=15°







						59 029 ...		59 030 ...		59 029 ...		59 030 ...	
DC +0.000/-0.002 inch	RE ±0.001 inch	APMX inch	OAL inch	DCONMS -0.0001 / -0.0004 inch	ZEFP								
1/8	0.010	1/4	1 1/2	1/8	3	12520		12520					
5/32	0.010	3/8	2	3/16	3	15624		15624					
3/16	0.010	3/8	2	3/16	3	18820		18820					
7/32	0.020	3/8	2	1/4	3	21917		21917					
1/4	0.020	3/8	2	1/4	3	25015		25015					
1/4	0.020	1 1/4	3	1/4	3					25050		25050	
9/32	0.020	1/2	2 1/2	5/16	3	28118		28118					
5/16	0.020	1/2	2 1/2	5/16	3	31316		31316					
11/32	0.020	5/8	2	3/8	3	34418		34418					
3/8	0.020	5/8	2	3/8	3	37517		37517					
3/8	0.020	1 1/2	3 1/2	3/8	3					37540		37540	
7/16	0.020	1	2 3/4	7/16	3	43823		43823					
1/2	0.020	5/8	2 1/2	1/2	3	50013		50013					
1/2	0.020	1 1/2	3 1/2	1/2	3					50030		50030	
5/8	0.030	7/8	3	5/8	3	62514		62514					
5/8	0.030	1 3/4	4	5/8	3					62528		62528	
3/4	0.030	1	3	3/4	3	75013		75013					
3/4	0.030	2 1/2	5	3/4	3					75033		75033	
1	0.030	2 3/4	5	1	3					99928		99928	
P													
M													
K													
N							●		●		●		●
S													
H													
O													

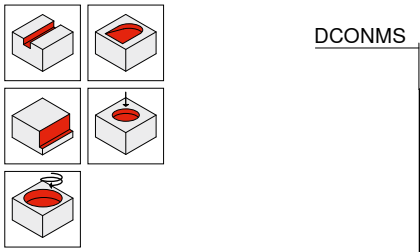
→ v_c/f_z Page 123

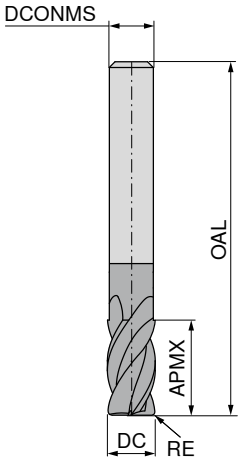
14

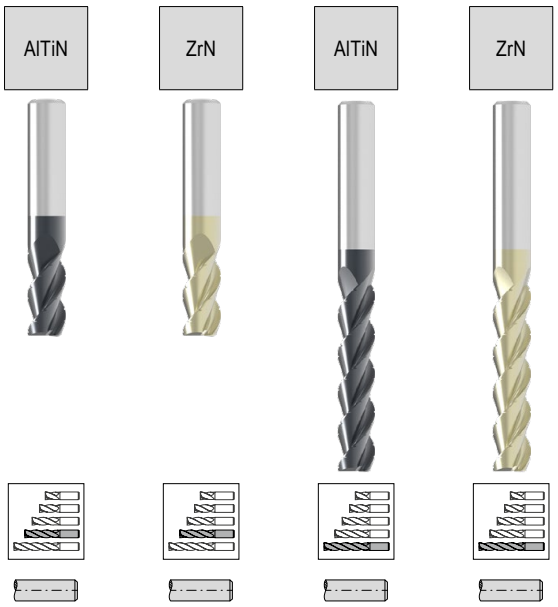
End milling cutter with corner radius

▲ with chip breaker

P119 AL λ_s=40° γ_s=15°







DC +0.000/-0.002 inch	RE ±0.001 inch	APMX inch	OAL inch	DCONMS -0.0001 / -0.0004 inch	ZEFP	59 029 ...		59 030 ...		59 029 ...		59 030 ...	
1/8	0.010	1/2	1 1/2	1/8	3	**12540**		**12540**					
5/32	0.010	1/2	2	3/16	3	**15632**		**15632**					
3/16	0.010	5/8	2	3/16	3	**18833**		**18833**					
7/32	0.020	3/4	2 1/2	1/4	3	**21934**		**21934**					
1/4	0.020	3/4	2 1/2	1/4	3	**25030**		**25030**					
1/4	0.020	1 1/2	3 1/2	1/4	3						**25060**		**25060**
9/32	0.020	3/4	2 1/2	5/16	3	**28127**		**28127**					
5/16	0.020	3/4	2 1/2	5/16	3	**31324**		**31324**					
11/32	0.020	7/8	2 1/2	3/8	3	**34425**		**34425**					
3/8	0.020	7/8	2 1/2	3/8	3	**37523**		**37523**					
3/8	0.020	2	4	3/8	3						**37553**		**37553**
1/2	0.020	1 1/4	3	1/2	3	**50025**		**50025**					
1/2	0.020	2	4	1/2	3						**50040**		**50040**
9/16	0.030	1 1/4	3 1/2	9/16	3	**56322**		**56322**					
5/8	0.030	1 1/4	3 1/2	5/8	3	**62520**		**62520**					
5/8	0.030	2 1/2	5	5/8	3						**62540**		**62540**
3/4	0.030	1 5/8	4	3/4	3	**75022**		**75022**					
3/4	0.030	3 1/4	6	3/4	3						**75043**		**75043**
1	0.030	1 3/4	4	1	3	**99918**		**99918**					
1	0.030	3 3/8	6	1	3						**99934**		**99934**

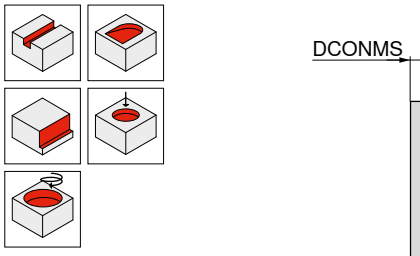
P													
M													
K													
N						●		●		●		●	
S													
H													
O													

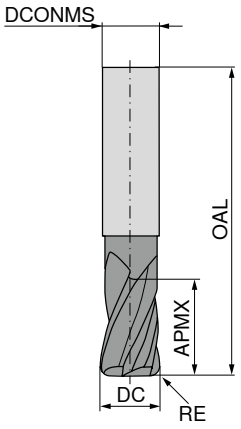
→ v_c/f_z Page 123

End milling cutter with corner radius

▲ with chip breaker

P117 | UN | λ_s=35° γ_s=8°







DC +0.000/-0.002 inch	RE ±0.001 inch	APMX inch	OAL inch	DCONMS -0.0001 / -0.0004 inch	ZEFP	59 028 ...	59 028 ...
1/8	0.010	1/2	1 1/2	1/8	3	**12540**	
3/16	0.010	5/16	2	3/16	3	**18817**	
3/16	0.010	5/8	2	3/16	3		**18833**
1/4	0.020	3/8	2	1/4	3	**25015**	
1/4	0.020	3/4	2 1/2	1/4	3		**25030**
5/16	0.020	13/16	2 1/2	5/16	3	**31326**	
3/8	0.020	1	2 1/2	3/8	3	**37527**	
7/16	0.020	5/8	2 3/4	7/16	3	**43814**	
7/16	0.020	1	2 3/4	7/16	3		**43823**
1/2	0.020	5/8	2 1/2	1/2	3	**50013**	
1/2	0.020	1 1/4	3	1/2	3		**50025**
5/8	0.030	1 1/4	3 1/2	5/8	3		**62520**
3/4	0.030	1 5/8	4	3/4	3		**75022**
P						●	●
M						●	●
K						●	●
N						○	○
S						●	●
H							
O							

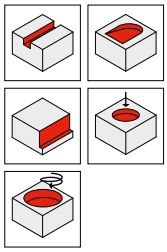
→ v_c/f_z Page 124

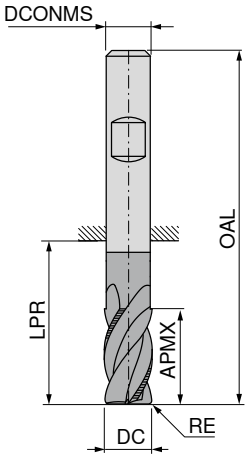
14

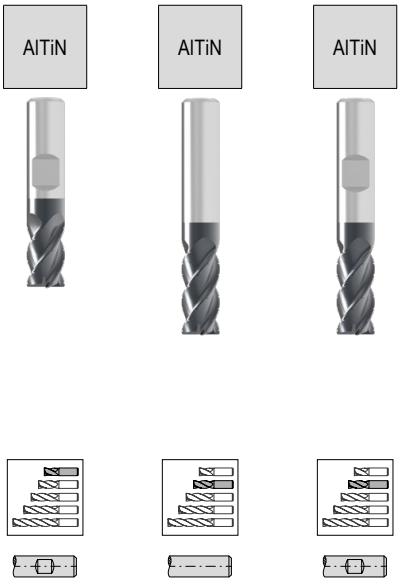
End milling cutter with corner radius

▲ with chip breaker

P120 | UN | λ_s=40° γ_s=10°







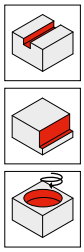
DC +0.000/-0.002 inch	RE ±0.001 inch	APMX inch	LPR inch	OAL inch	DCONMS -0.0001 / -0.0004 inch	ZEFP	59 032 ...	59 031 ...	59 032 ...
1/8	0.010	1/4	0.520	1 1/2	1/8	4		**12520**	
5/32	0.010	3/8	0.898	2	3/16	4		**15624**	
3/16	0.010	3/8	0.898	2	3/16	4		**18820**	
7/32	0.020	3/8	1.083	2	1/4	4		**21917**	
1/4	0.020	3/8	0.583	2	1/4	4		**25015**	
9/32	0.020	1/2	1.083	2 1/2	5/16	4		**28118**	
5/16	0.020	1/2	1.083	2 1/2	5/16	4		**31316**	
11/32	0.020	5/8	0.825	2	3/8	4			**34418**
3/8	0.020	5/8	0.825	2	3/8	4	**37517**		
3/8	0.020	7/8	0.960	2 1/2	3/8	4			**37523**
7/16	0.020	1	1.165	2 3/4	7/16	4			**43823**
1/2	0.020	5/8	0.735	2 1/2	1/2	4	**50013**		
1/2	0.020	1 1/4	1.425	3	1/2	4			**50025**
5/8	0.030	7/8	1.113	3	5/8	4			**62514**
3/4	0.030	1	1.228	3	3/4	4			**75013**
P							●	●	●
M									
K							●	●	●
N									
S									
H									
O									

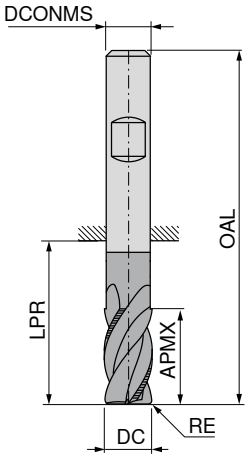
→ v_c/f_z Page 125

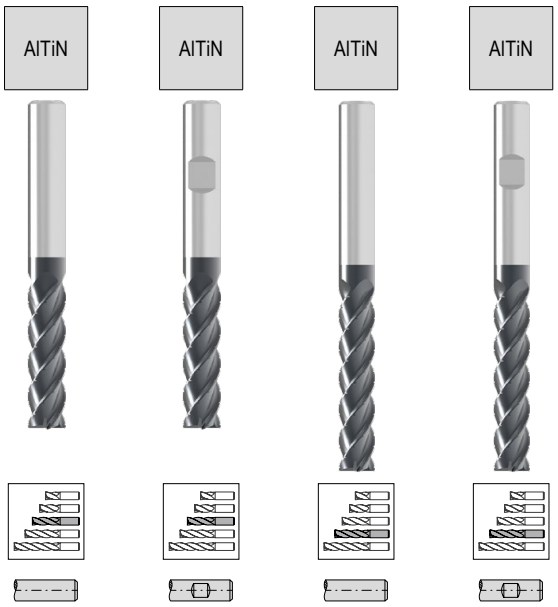
End milling cutter with corner radius

▲ with chip breaker

P120 | UN | λ_s=40° γ_s=10°







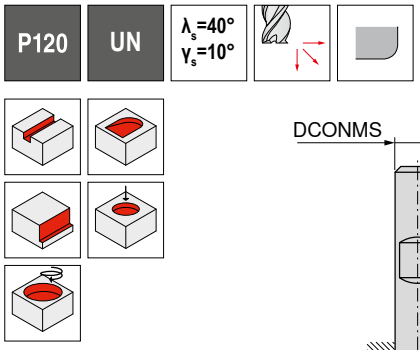
DC +0.000/-0.002 inch	RE ±0.001 inch	APMX inch	LPR inch	OAL inch	DCONMS -0.0001 / -0.0004 inch	ZEFP	59 031 ...	59 032 ...	59 031 ...	59 032 ...
1/8	0.010	1/2	0.520	1 1/2	1/8	4			**12540**	
5/32	0.010	1/2	0.898	2	3/16	4			**15632**	
3/16	0.010	5/8	0.898	2	3/16	4			**18833**	
7/32	0.020	3/4	0.583	2 1/2	1/4	4			**21934**	
1/4	0.020	3/4	1.083	2 1/2	1/4	4	**25030**			
1/4	0.020	1 1/4	1.583	3	1/4	4			**25050**	
9/32	0.020	3/4	1.083	2 1/2	5/16	4			**28127**	
5/16	0.020	3/4	1.083	2 1/2	5/16	4			**31324**	
11/32	0.020	7/8	0.960	2 1/2	3/8	4				**34425**
3/8	0.020	1 1/2	1.925	3 1/2	3/8	4		**37540**		
3/8	0.020	2	2.460	4	3/8	4				**37553**
1/2	0.020	1 1/2	1.735	3 1/2	1/2	4		**50030**		
1/2	0.020	2	2.235	4	1/2	4				**50040**
9/16	0.030	1 1/4	1.675	3 1/2	9/16	4				**56322**
5/8	0.030	1 1/4	1.613	3 1/2	5/8	4		**62520**		
5/8	0.030	1 3/4	2.113	4	5/8	4				**62528**
3/4	0.030	1 5/8	1.978	4	3/4	4				**75022**
P							●	●	●	●
M										
K							●	●	●	●
N										
S										
H										
O										

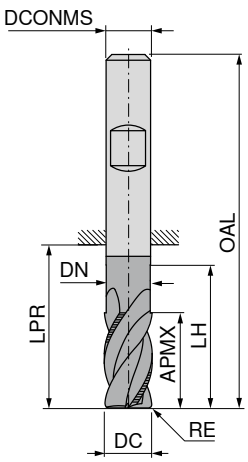
→ v_c/f_z Page 125

14

End milling cutter with corner radius

▲ with chip breaker





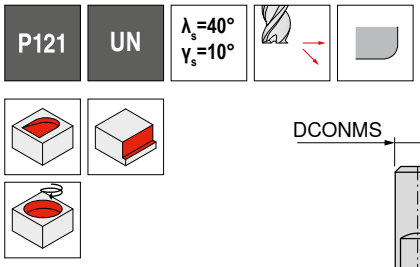


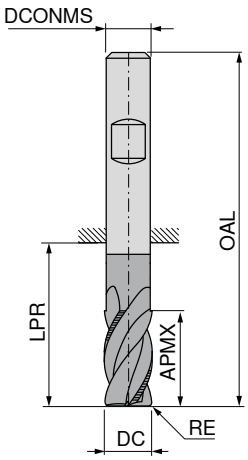
DC +0.000/-0.002 inch	RE ±0.001 inch	APMX inch	DN inch	LH inch	LPR inch	OAL inch	DCONMS -0.0001 / -0.0004 inch	ZEFP	59 031 ...	59 032 ...
1/4	0.020	3/4	0.240	2 1/8	2.5	4	1/4	4	**25130**	
1/4	0.020	1 1/2			2.0	3 1/2	1/4	4	**25060**	
3/8	0.020	7/8	0.360	2 1/8	2.4	4	3/8	4	**37523**	
3/8	0.020	7/8	0.360	3 3/8	4.4	6	3/8	4	**37623**	
1/2	0.020	1	0.480	2 3/8	4.2	6	1/2	4	**50020**	
1/2	0.020	1	0.480	3 3/8	4.2	6	1/2	4	**50120**	
5/8	0.030	2 1/2			3.1	5	5/8	4		**62540**
3/4	0.030	1 5/8	0.720	2 1/2	3.6	6	3/4	4	**75022**	
1	0.030	1 3/4			1.7	4	1	4		**99918**
P									●	●
M										
K									●	●
N										
S										
H										
O										

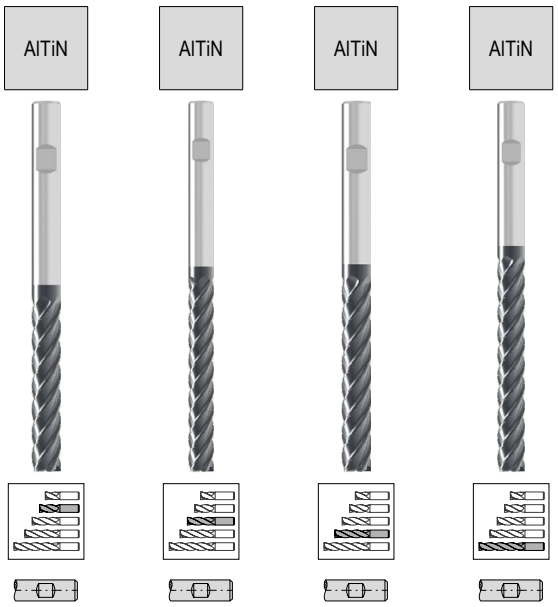
→ v_c/f_z Page 125

End milling cutter with corner radius

▲ with chip breaker







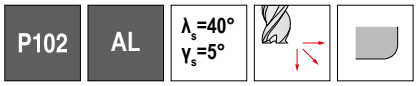
DC +0.000/-0.002 inch	RE ±0.001 inch	APMX inch	LPR inch	OAL inch	DCONMS -0.0001 / -0.0004 inch	ZEFP	59 035 ...	59 035 ...	59 035 ...	59 035 ...
3/4	0.030	2 1/2	2.9	5	3/4	5	**75033**			
3/4	0.030	3 1/4	3.9	6	3/4	5		**75043**		
1	0.030	2 3/4	2.7	5	1	5			**99928**	
1	0.030	3 3/8	3.7	6	1	5				**99934**
P							●	●	●	●
M							●	●	●	●
K							●	●	●	●
N										
S							●	●	●	●
H										
O										

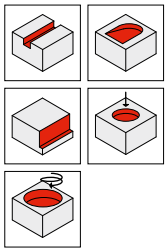
→ v_c/f_z Page 126

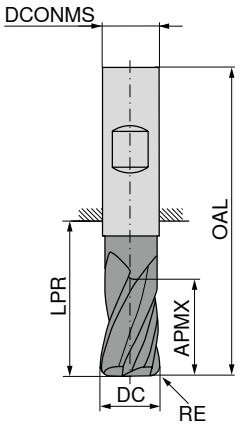
14

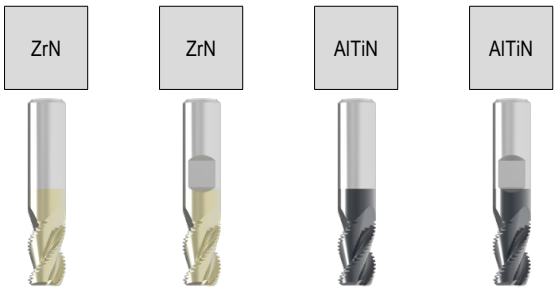
End milling cutter with corner radius

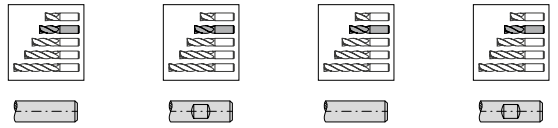
▲ with coarse pitch profile











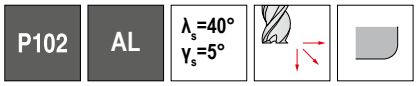
DC +0.000/-0.002 inch	RE +/-0.001 inch	APMX inch	LPR inch	OAL inch	DCONMS -0.0001 / -0.0004 inch	ZEFP	59 023 ...	59 024 ...	59 025 ...	59 026 ...
3/16	0.030	3/8	0.898	2	3/16	3	**18820**		**18820**	
1/4	0.045	3/8	0.583	2	1/4	3	**25015**		**25015**	
5/16	0.045	1/2	0.583	2	5/16	3	**31316**		**31316**	
3/8	0.060	5/8	0.825	2	3/8	3		**37517**		**37517**
7/16	0.060	1	1.165	2 3/4	7/16	3		**43823**		**43823**
1/2	0.060	5/8	0.735	2 1/2	1/2	3		**50013**		**50013**

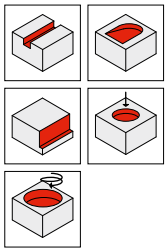
P				
M				
K				
N	●	●	●	●
S				
H				
O				

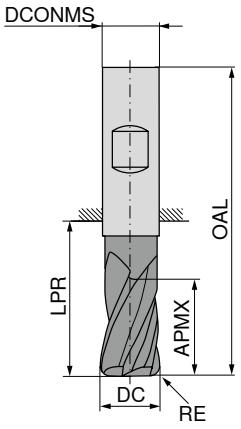
→ v_c/f_z Page 127

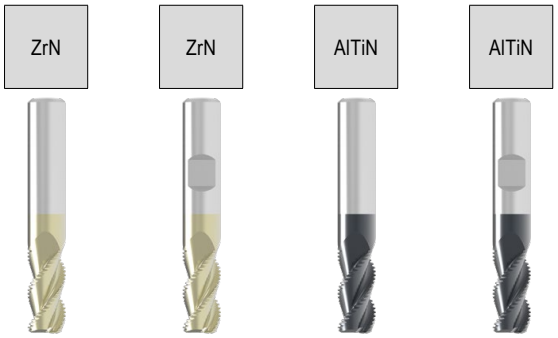
End milling cutter with corner radius

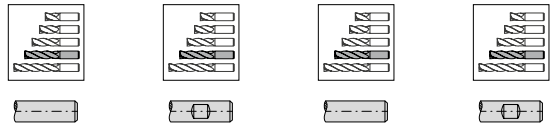
▲ with coarse pitch profile











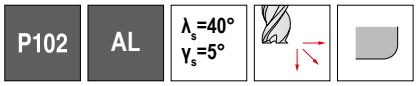
DC +0.000/-0.002 inch	RE +/-0.001 inch	APMX inch	LPR inch	OAL inch	DCONMS -0.0001 / -0.0004 inch	ZEFP	59 023 ...	59 024 ...	59 025 ...	59 026 ...
3/16	0.030	5/8	0.898	2	3/16	3	**18833**		**18833**	
1/4	0.045	3/4	1.083	2 1/2	1/4	3	**25030**		**25030**	
5/16	0.045	3/4	1.083	2 1/2	5/16	3	**31324**		**31324**	
3/8	0.060	7/8	0.960	2 1/2	3/8	3		**37523**		**37523**
1/2	0.060	1 1/4	1.425	3	1/2	3		**50025**		**50025**
9/16	0.060	1 1/4	1.675	3 1/2	9/16	3		**56322**		**56322**
5/8	0.060	1 1/4	1.613	3 1/2	5/8	3		**62520**		**62520**
3/4	0.060	1 5/8	1.978	4	3/4	3		**75022**		**75022**
1	0.060	1 3/4	1.795	4	1	3		**99918**		**99918**
P										
M										
K										
N							●	●	●	●
S										
H										
O										

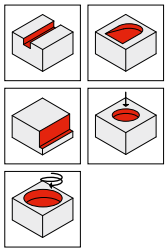
→ v_c/f_z Page 127

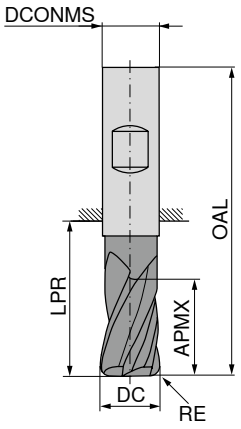
14

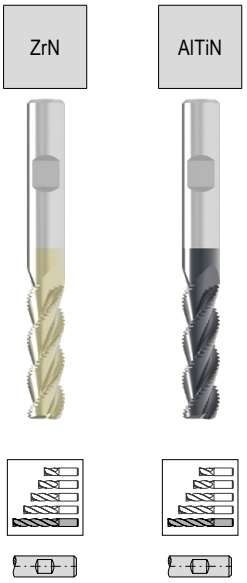
End milling cutter with corner radius

▲ with coarse pitch profile









DC +0.000/-0.002 inch	RE +/-0.001 inch	APMX inch	LPR inch	OAL inch	DCONMS -0.0001 / -0.0004 inch	ZEFP	59 024 ...	59 026 ...
1/2	0.060	1 1/2	1.735	3 1/2	1/2	3	**50030**	**50030**
3/4	0.060	2 1/4	2.978	5	3/4	3	**75030**	**75030**
1	0.060	2 5/8	2.795	5	1	3	**99926**	**99926**

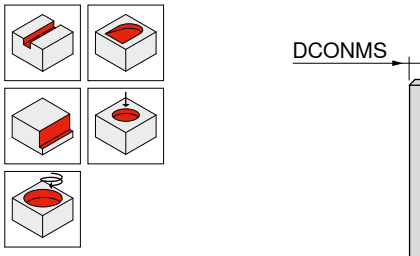
P		
M		
K		
N	●	●
S		
H		
O		

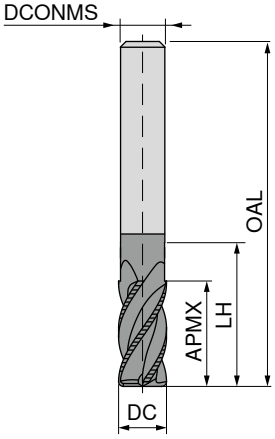
→ v_c/f_z Page 127

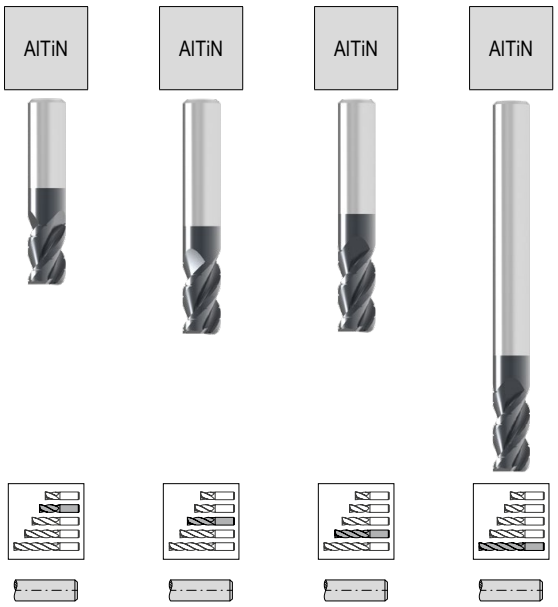
End milling cutter

▲ with chip breaker

P190 | UN | λ_s=40° γ_s=10°







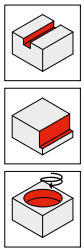
DC +0.000/-0.002 inch	APMX inch	LH inch	OAL inch	DCONMS -0.0001 / -0.0004 inch	ZEFP	59 059 ...	59 059 ...	59 059 ...	59 059 ...
3/16	5/8		2	3/16	4	18833			
1/4	3/8		2	1/4	4	25015			
1/4	3/4		2 1/2	1/4	4			25030	
5/16	3/4		2 1/2	5/16	4	31324			
3/8	5/8		2	3/8	4	37517			
3/8	7/8		2 1/2	3/8	4			37523	
3/8	7/8	2.125	4	3/8	4				37623
1/2	5/8		2 1/2	1/2	4	50013			
1/2	1	2.375	6	1/2	4				50020
1/2	1 1/4		3	1/2	4			50025	
1/2	2		4	1/2	4		50040		
5/8	7/8		3	5/8	4	62514			
5/8	1 1/4		3 1/2	5/8	4			62520	
3/4	1		3	3/4	4	75013			
3/4	1 5/8		4	3/4	4			75022	
1	1 3/4		4	1	4			99918	
P						●	●	●	●
M									
K						●	●	●	●
N									
S									
H									
O									

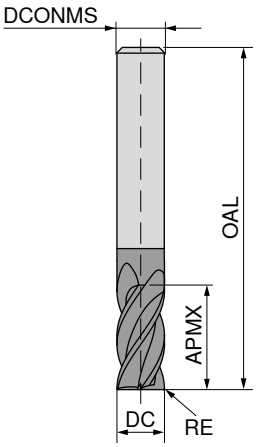
→ v_c/f_z Page 128

End milling cutter with corner radius

▲ with chip breaker

P191 | UN | λ_s=40° γ_s=10°







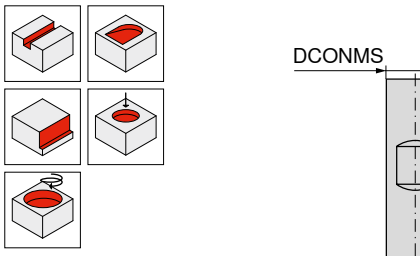
DC +0.000/-0.002 inch	RE +/- 0.001 inch	APMX inch	OAL inch	DCONMS -0.0001 / -0.0004 inch	ZEFP	59 061 ...	59 061 ...	59 061 ...
3/16	0.010	5/8	2	3/16	4	**18833**		
1/4	0.020	3/4	2 1/2	1/4	4	**25030**		
5/16	0.020	3/4	2 1/2	5/16	4	**31324**		
3/8	0.020	7/8	2 1/2	3/8	4	**37523**		
3/8	0.030	7/8	2 1/2	3/8	4	**90023**		
1/2	0.030	5/8	2 1/2	1/2	4	**90013**		
1/2	0.020	5/8	2 1/2	1/2	4	**50013**		
1/2	0.030	1 1/4	3	1/2	4		**90025**	
1/2	0.020	1 1/4	3	1/2	4		**50025**	
1/2	0.030	2	4	1/2	4			**90040**
1/2	0.020	2	4	1/2	4			**50040**
5/8	0.030	1 1/4	3 1/2	5/8	4		**62520**	
3/4	0.030	1 5/8	4	3/4	4		**75022**	
1	0.030	1 3/4	4	1	4		**99918**	
P						●	●	●
M								
K						●	●	●
N								
S								
H								
O								

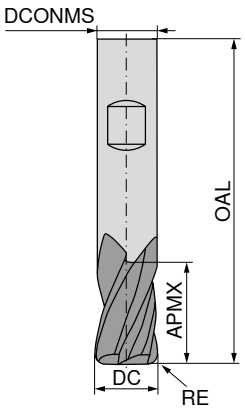
→ v_c/f_z Page 128

End milling cutter with corner radius

▲ with coarse pitch profile

P100 | UN | λ_s=30° γ_s= 5°







DC +0.000/-0.002 inch	RE +/-0.001/+/- 0.001 inch	APMX inch	OAL inch	DCONMS -0.0001 / -0.0004 inch	ZEFP	59 011 ...	59 011 ...
3/16	0.030	3/8	2	3/16	3	**18820**	
3/16	0.030	5/8	2	3/16	3		**18833**
P						●	●
M							
K						●	●
N							
S							
H							
O							

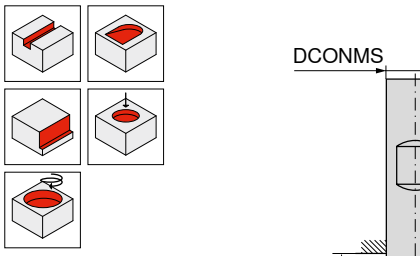
→ v_c/f_z Page 129

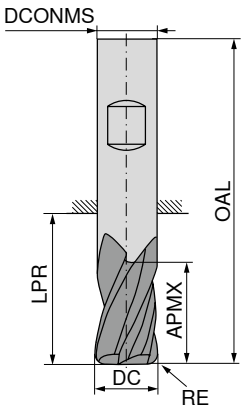
14

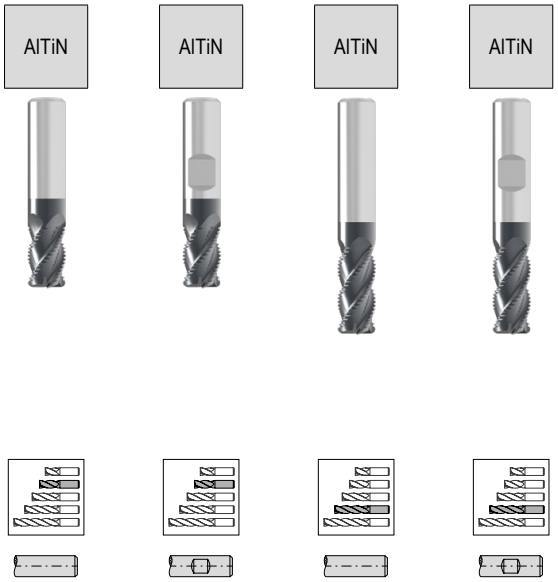
End milling cutter with corner radius

▲ with coarse pitch profile

P100 | UN | λ_s=30° γ_s= 5°







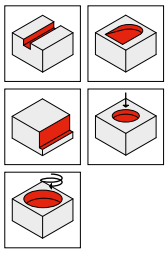
							59 012 ...	59 013 ...	59 012 ...	59 013 ...
DC +0.000/-0.002 inch	RE +/- 0.001 inch	APMX inch	LPR inch	OAL inch	DCONMS -0.0001 / -0.0004 inch	ZEFP				
1/4	0.045	3/8	0.5	2	1/4	4	**25015**			
1/4	0.045	3/4	1.0	2 1/2	1/4	4			**25030**	
5/16	0.045	1/2	1.0	2 1/2	5/16	4	**31316**			
5/16	0.045	3/4	1.0	2 1/2	5/16	4			**31324**	
3/8	0.060	5/8	0.8	2	3/8	4		**37517**		
3/8	0.060	7/8	0.9	2 1/2	3/8	4				**37523**
7/16	0.060	1	1.1	2 3/4	7/16	4		**43823**		
1/2	0.060	5/8	0.7	2 1/2	1/2	4		**50013**		
1/2	0.060	1 1/4	1.4	3	1/2	4				**50025**
9/16	0.060	1 1/4	1.6	3 1/2	9/16	4				**56322**
5/8	0.060	7/8	1.1	3	5/8	4		**62514**		
5/8	0.060	1 1/4	1.6	3 1/2	5/8	4				**62520**
3/4	0.060	1	1.2	3	3/4	4		**75013**		
3/4	0.060	1 5/8	1.9	4	3/4	4				**75022**
P							●	●	●	●
M										
K							●	●	●	●
N										
S										
H										
O										

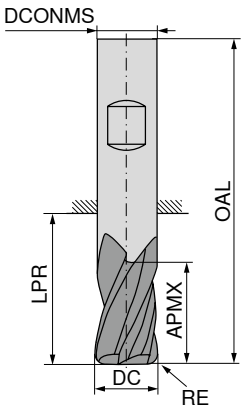
→ v_c/f_z Page 129

End milling cutter with corner radius

▲ with coarse pitch profile

P100 | UN | λ_s=30° γ_s= 5°





AlTiN







59 013 ...

DC +0.000/-0.002 inch	RE +/- 0.001 inch	APMX inch	LPR inch	OAL inch	DCONMS -0.0001 / -0.0004 inch	ZEFP	
1/2	0.060	1 1/2	1.735	3 1/2	1/2	4	**50030**
5/8	0.060	2	2.113	4	5/8	4	**62532**
3/4	0.060	2 1/4	2.978	5	3/4	4	**75030**

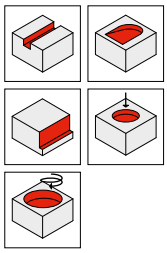
P	●
M	
K	●
N	
S	
H	
O	

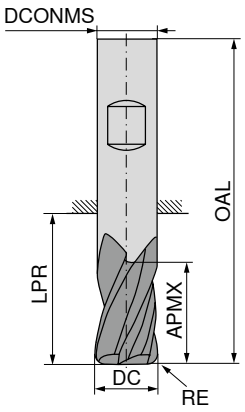
→ v_c/f_z Page 129

End milling cutter with corner radius

▲ with coarse pitch profile

P100 | UN | λ_s=30° γ_s= 5°







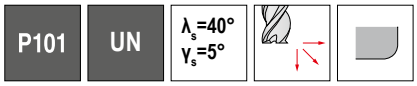


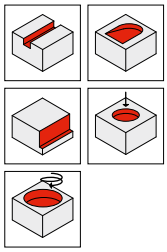
DC +0.000/-0.002 inch	RE +/- 0.001 inch	APMX inch	LPR inch	OAL inch	DCONMS -0.0001 / -0.0004 inch	ZEFP	59 014 ...	59 014 ...
1	0.060	1 3/4	1.795	4	1	5	99918	
1	0.060	2 5/8	2.795	5	1	5		99926
P							●	●
M								
K							●	●
N								
S								
H								
O								

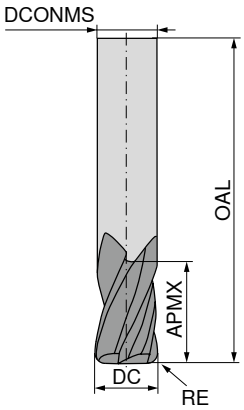
→ v_c/f_z Page 129

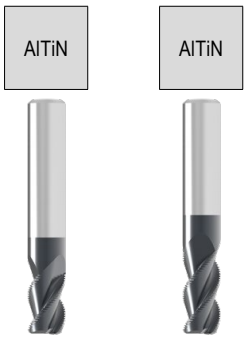
End milling cutter with corner radius

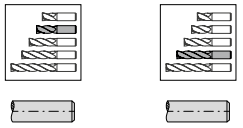
▲ with fine pitch profile











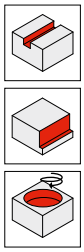
DC +0.000/-0.002 inch	RE +/- 0.001 inch	APMX inch	OAL inch	DCONMS -0.0001 / -0.0004 inch	ZEFP	59 015 ...	59 015 ...
3/16	0.030	3/8	2	3/16	3	18820	
3/16	0.030	5/8	2	3/16	3		18833
P						●	●
M							
K						●	●
N							
S							
H							
O							

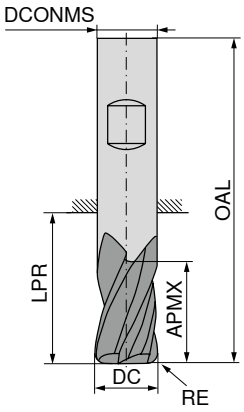
→ v_c/f_z Page 130

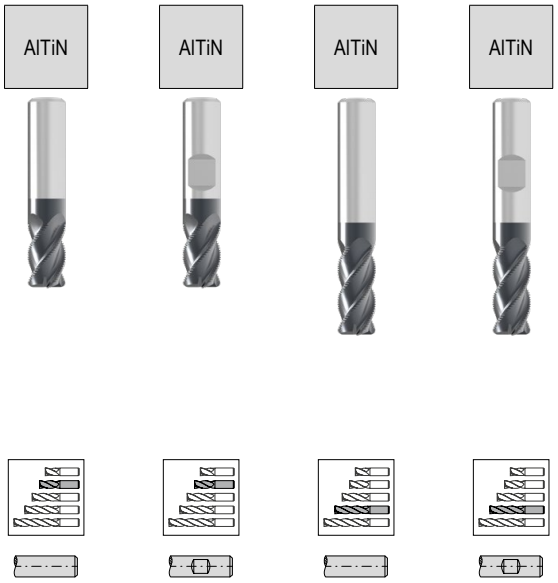
End milling cutter with corner radius

▲ with fine pitch profile

P101 | UN | λ_s=40° γ_s=5°







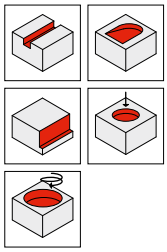
DC +0.000/-0.002 inch	RE +/- 0.001 inch	APMX inch	LPR inch	OAL inch	DCONMS -0.0001 / -0.0004 inch	ZEFP	59 016 ...	59 017 ...	59 016 ...	59 017 ...
1/4	0.045	3/8	0.583	2	1/4	4	**25015**			
1/4	0.045	3/4	1.083	2 1/2	1/4	4			**25030**	
5/16	0.045	1/2	1.083	2 1/2	5/16	4	**31316**			
5/16	0.045	3/4	1.083	2 1/2	5/16	4			**31324**	
3/8	0.060	5/8	0.825	2	3/8	4		**37517**		
3/8	0.060	7/8	0.960	2 1/2	3/8	4				**37523**
7/16	0.060	1	1.165	2 3/4	7/16	4		**43823**		
1/2	0.060	5/8	0.735	2 1/2	1/2	4		**50013**		
1/2	0.060	1 1/4	1.425	3	1/2	4				**50025**
9/16	0.060	1 1/4	1.675	3 1/2	9/16	4				**56322**
5/8	0.060	7/8	1.113	3	5/8	4		**62514**		
5/8	0.060	1 1/4	1.613	3 1/2	5/8	4				**62520**
3/4	0.060	1	1.228	3	3/4	4		**75013**		
3/4	0.060	1 5/8	1.978	4	3/4	4				**75022**
P							●	●	●	●
M										
K							●	●	●	●
N										
S										
H										
O										

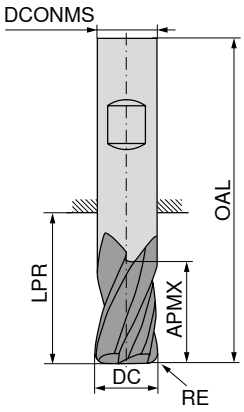
→ v_c/f_z Page 130

End milling cutter with corner radius

▲ with fine pitch profile

P101 | UN | λ_s=40° γ_s=5°





AlTiN







59 017 ...

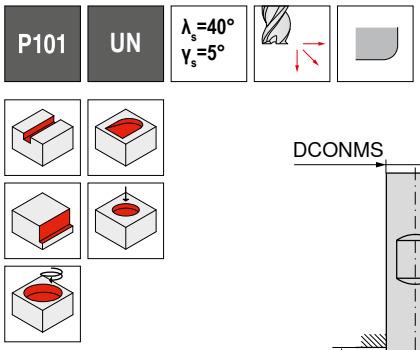
DC +0.000/-0.002 inch	RE +/- 0.001 inch	APMX inch	LPR inch	OAL inch	DCONMS -0.0001 / -0.0004 inch	ZEFP	
1/2	0.060	1 1/2	1.735	3 1/2	1/2	4	**50030**
5/8	0.060	2	2.113	4	5/8	4	**62532**
3/4	0.060	2 1/4	2.978	5	3/4	4	**75030**

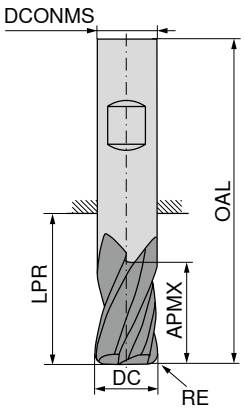
P	●
M	
K	●
N	
S	
H	
O	

→ v_c/f_z Page 130

End milling cutter with corner radius

▲ with fine pitch profile







DC +0.000/-0.002 inch	RE +/- 0.001 inch	APMX inch	LPR inch	OAL inch	DCONMS -0.0001 / -0.0004 inch	ZEFP	59 022 ...	59 022 ...
1	0.060	1 3/4	1.795	4	1	5	99918	
1	0.060	2 5/8	2.795	5	1	5		99926
P							●	●
M								
K							●	●
N								
S								
H								
O								

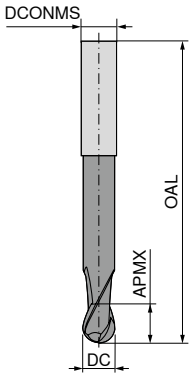
→ v_c/f_z Page 130

Ball Nosed Cutter

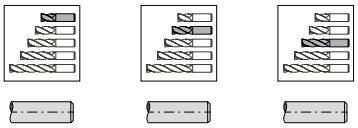
▲ DC tolerance:
≤ Ø 7/64 inch: +/- 0.0005
≥ Ø 1/8 inch: 0 /- 0.002
▲ Radius accuracy: +/- 0.001

S662 | UN | λ_s=38° γ_s=8°









DC inch	APMX inch	OAL inch	DCONMS -0.0001 / -0.0004 inch	ZEFP	59 077 ...	59 077 ...	59 077 ...
1/16	1/8	1 1/2	1/8	2		06320	
1/8	1/4	1 1/2	1/8	2	12520		
1/8	1/2	1 1/2	1/8	2		12540	
1/8	3/4	3	1/8	2			12660
3/16	3/8	2	3/16	2	18820		
3/16	5/8	2	3/16	2		18833	
3/16	1	4	3/16	2			18853
1/4	3/8	2	1/4	2	25015		
1/4	3/4	2 1/2	1/4	2		25030	
1/4	1 1/8	3	1/4	2			25045
5/16	1/2	2	5/16	2	31316		
5/16	3/4	2 1/2	5/16	2		31324	
5/16	1 1/8	3	5/16	2			31336
3/8	5/8	2	3/8	2	37517		
3/8	7/8	2 1/2	3/8	2		37523	
3/8	1 1/2	6	3/8	2			37540
1/2	5/8	2 1/2	1/2	2	50013		
1/2	1	3	1/2	2		50020	
1/2	1 1/2	6	1/2	2			50030
5/8	7/8	3	5/8	2	62514		
5/8	1 1/4	3 1/2	5/8	2		62520	
5/8	2 1/8	4 5/8	5/8	2			62534
3/4	1	3	3/4	2	75013		
3/4	1 1/2	4	3/4	2		75020	
3/4	2 1/4	5	3/4	2			75030
1	2	6	1	2			99920
1	2 1/4	5	1	2		99923	
P					●	●	●
M					●	●	●
K					●	●	●
N					●	●	●
S					●	●	●
H							
O							

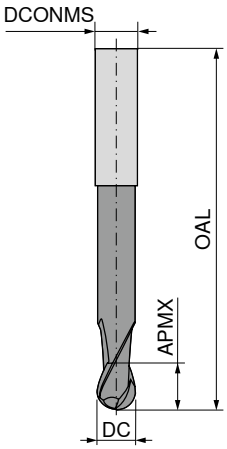
→ v_c/f_z Page 131

Ball Nosed Cutter

▲ DC tolerance:
≤ Ø 7/64 inch: +/- 0.0005
≥ Ø 1/8 inch: 0 /- 0.002
▲ Radius accuracy: +/- 0.001

S662 | UN | λ_s=38° γ_s=8°









DC inch	APMX inch	OAL inch	DCONMS -0.0001 / -0.0004 inch	ZEFP	59 077 ...	59 077 ...
1/16	3/16	1 1/2	1/8	2	06330	
1/8	3/4	2 1/2	1/8	2	12560	
1/8	1	3	1/8	2		12580
3/16	3/4	2 1/2	3/16	2	18840	
3/16	1 1/8	3	3/16	2		18860
1/4	1	4	1/4	2	25040	
1/4	1 1/2	4	1/4	2		25060
1/4	1 1/2	6	1/4	2		25160
5/16	1	4	5/16	2	31332	
5/16	1 1/2	6	5/16	2		31348
5/16	1 5/8	4	5/16	2		31352
3/8	1	4	3/8	2	37527	
3/8	1 1/8	3	3/8	2	37530	
3/8	1 3/4	4	3/8	2		37547
3/8	3	6	3/8	2		37580
1/2	1	4	1/2	2	50120	
1/2	2	4	1/2	2		50040
1/2	3	6	1/2	2		50060
5/8	2	6	5/8	2	62532	
5/8	3	6	5/8	2		62548
3/4	2	6	3/4	2	75027	
3/4	3	6	3/4	2		75040
1	1 3/4	4	1	2	99918	
1	3	6	1	2		99930

P	●	●
M	●	●
K	●	●
N	●	●
S	●	●
H		
O		

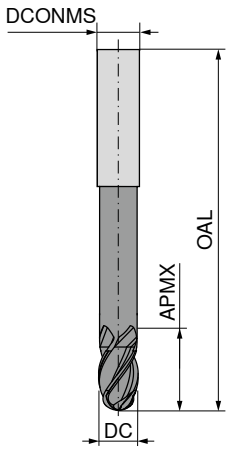
→ v_c/f_z Page 131

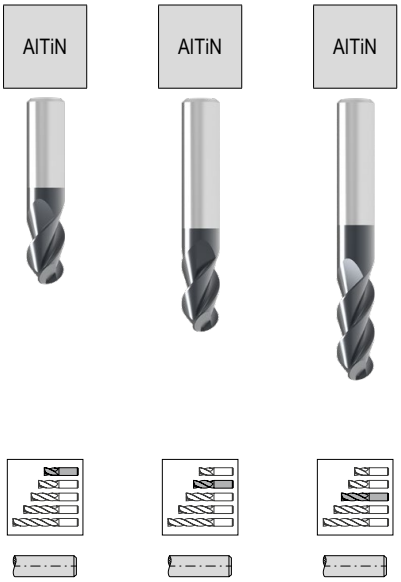
Ball Nosed Cutter

▲ Radius accuracy: +/- 0.001

S663 | UN | λ_s=38° γ_s=8°







DC +0.000/-0.002 inch	APMX inch	OAL inch	DCONMS -0.0001 / -0.0004 inch	ZEFP	59 079 ...	59 079 ...	59 079 ...
1/8	1/2	1 1/2	1/8	3		**12540**	
1/8	1/4	1 1/2	1/8	3	**12520**		
1/8	3/4	3	1/8	3			**12660**
3/16	5/8	2	3/16	3		**18833**	
3/16	3/8	2	3/16	3	**18820**		
3/16	1	2 1/2	3/16	3			**18853**
1/4	3/8	2	1/4	3	**25015**		
1/4	3/4	2 1/2	1/4	3		**25030**	
1/4	1	4	1/4	3			**25040**
5/16	3/4	2 1/2	5/16	3		**31324**	
3/8	5/8	2	3/8	3	**37517**		
3/8	7/8	2 1/2	3/8	3		**37523**	
3/8	1 1/8	3	3/8	3			**37530**
3/8	1 1/2	6	3/8	3			**37540**
1/2	5/8	2 1/2	1/2	3	**50013**		
1/2	1	3	1/2	3		**50020**	
1/2	1 1/2	6	1/2	3			**50030**
5/8	1 1/4	3 1/2	5/8	3		**62520**	
5/8	2 1/8	4 5/8	5/8	3			**62534**
3/4	1 1/2	4	3/4	3		**75020**	
3/4	2 1/4	5	3/4	3			**75030**
1	1 3/4	4	1	3		**99918**	
1	2 1/4	5	1	3			**99923**
P					●	●	●
M					●	●	●
K					●	●	●
N					●	●	●
S					●	●	●
H							
O							

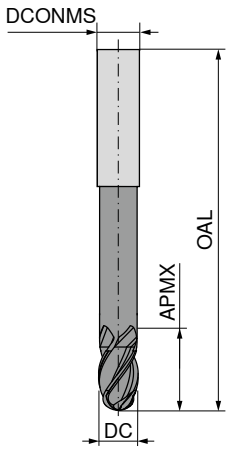
→ v_c/f_z Page 132

Ball Nosed Cutter

▲ Radius accuracy: +/- 0.001

S663 | UN | λ_s=38° γ_s=8°









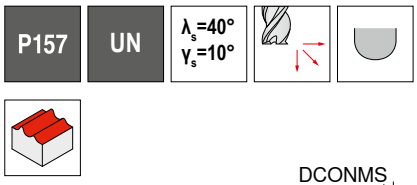
DC +0.000/-0.002 inch	APMX inch	OAL inch	DCONMS -0.0001 / -0.0004 inch	ZEFP	59 079 ...	59 079 ...
1/8	3/4	2 1/2	1/8	3	**12560**	
1/8	1	3	1/8	3		**12580**
3/16	3/4	2 1/2	3/16	3	**18840**	
3/16	1 1/8	3	3/16	3		**18860**
3/16	1	4	3/16	3		**18953**
1/4	1 1/8	3	1/4	3	**25045**	
1/4	1 1/2	4	1/4	3		**25060**
1/4	1 1/2	6	1/4	3		**25160**
5/16	1	4	5/16	3	**31332**	
5/16	1 1/2	6	5/16	3		**31348**
3/8	1 3/4	4	3/8	3		**37547**
3/8	1	4	3/8	3	**37527**	
3/8	3	6	3/8	3		**37580**
1/2	1	4	1/2	3	**50120**	
1/2	2	4	1/2	3		**50040**
1/2	3	6	1/2	3		**50060**
5/8	2	6	5/8	3	**62532**	
5/8	3	6	5/8	3		**62548**
3/4	3	6	3/4	3		**75040**
3/4	2	6	3/4	3	**75027**	
1	2	6	1	3	**99920**	
1	3	6	1	3		**99930**
P					●	●
M					●	●
K					●	●
N					●	●
S					●	●
H						
O						

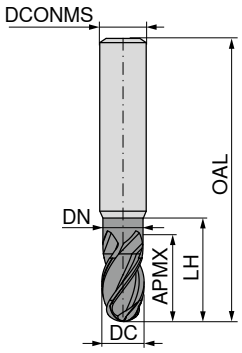
→ v_c/f_z Page 132

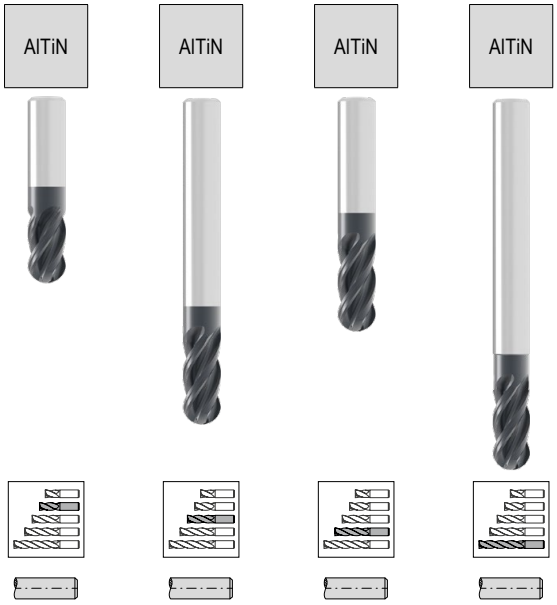
Ball Nosed Cutter

▲ Cutting edges with irregular pitch
▲ Radius accuracy: +/- 0.001"

P157 | UN | λ_s=40° γ_s=10°







DC +0.000/-0.002 inch	APMX inch	DN inch	LH inch	OAL inch	DCONMS -0.0001 / -0.0004 inch	ZEFP	59 055 ...		59 055 ...		59 055 ...		59 055 ...	
1/8	1/4			1 1/2	1/8	4	**12520**							
1/8	1/2			1 1/2	1/8	4						**12540**		
5/32	1/2			2	3/16	4	**15632**							
3/16	3/8			2	3/16	4	**18820**							
3/16	5/8			2	3/16	4						**18833**		
7/32	3/8			2	1/4	4	**21917**							
7/32	3/4			2 1/2	1/4	4						**21934**		
1/4	3/8			2	1/4	4	**25015**							
1/4	3/4			2 1/2	1/4	4						**25030**		
1/4	3/4	0.240	2 1/8	4	1/4	4								**25130**
5/16	3/4			2 1/2	5/16	4						**31324**		
5/16	1/2			2 1/2	5/16	4	**31316**							
3/8	5/8			2	3/8	4	**37517**							
3/8	7/8			2 1/2	3/8	4						**37523**		
3/8	7/8	0.360	2 3/8	4	3/8	4								**37623**
1/2	5/8			2 1/2	1/2	4	**50013**							
1/2	1			3	1/2	4						**50020**		
1/2	1	0.480	2 3/8	6	1/2	4			**50120**					
1/2	1	0.480	3 3/8	6	1/2	4								**50220**
9/16	1 1/4			3 1/2	9/16	4						**56322**		
5/8	1 1/4			3 1/2	5/8	4						**62520**		
5/8	1 1/4	0.600	3 3/8	6	5/8	4								**62620**
3/4	1 5/8			4	3/4	4						**75022**		
1	1 3/4			4	1	4						**99918**		
1	2 3/4			5	1	4			**99928**					
1	1 7/8	0.960	3 3/8	6	1	4								**99919**
P							●		●		●		●	
M							●		●		●		●	
K							●		●		●		●	
N							●		●		●		●	
S														
H														
O														

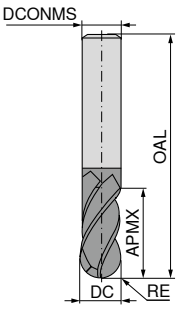
→ v_c/f_z Page 137

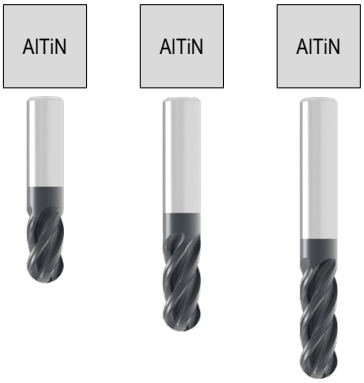
Ball Nosed Cutter

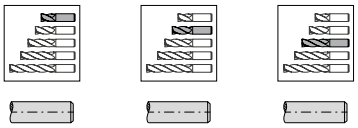
▲ DC tolerance:
≤ Ø 7/64 inch: +/- 0.0005
≥ Ø 1/8 inch: 0 /- 0.002
▲ Radius accuracy: +/- 0.001

S664 | UN | λ_s=38° γ_s=8°









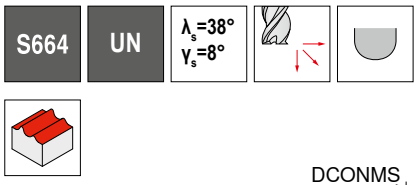
DC inch	APMX inch	OAL inch	DCONMS -0.0001 / -0.0004 inch	ZEFP	59 081 ...	59 081 ...	59 081 ...
1/32	3/32	1 1/2	1/8	4		03130	
3/64	9/64	1 1/2	1/8	4		04730	
1/16	1/8	1 1/2	1/8	4		06320	
3/32	3/16	1 1/2	1/8	4		09420	
1/8	1/4	1 1/2	1/8	4	12520		
1/8	1/2	1 1/2	1/8	4		12540	
1/8	3/4	3	1/8	4			12660
5/32	3/8	2	3/16	4		15624	
3/16	3/8	2	3/16	4	18820		
3/16	5/8	2	3/16	4		18833	
3/16	1	4	3/16	4			18853
1/4	3/8	2	1/4	4	25015		
1/4	3/4	2 1/2	1/4	4		25030	
1/4	1 1/8	3	1/4	4			25045
5/16	1/2	2	5/16	4	31316		
5/16	3/4	2 1/2	5/16	4		31324	
5/16	1 1/8	3	5/16	4			31336
3/8	5/8	2	3/8	4	37517		
3/8	7/8	2 1/2	3/8	4		37523	
3/8	1 1/8	3	3/8	4			37530
3/8	1 1/2	6	3/8	4			37540
1/2	5/8	2 1/2	1/2	4	50013		
1/2	1	3	1/2	4		50020	
1/2	1 1/2	6	1/2	4			50030
5/8	7/8	3	5/8	4	62514		
5/8	1 1/4	3 1/2	5/8	4		62520	
5/8	2 1/8	4 5/8	5/8	4			62534
3/4	1	3	3/4	4	75013		
3/4	1 1/2	4	3/4	4		75020	
3/4	2 1/4	5	3/4	4			75030
1	1 3/4	4	1	4		99918	
1	2 1/4	5	1	4			99923
P					●	●	●
M					●	●	●
K					●	●	●
N					●	●	●
S							
H							
O							

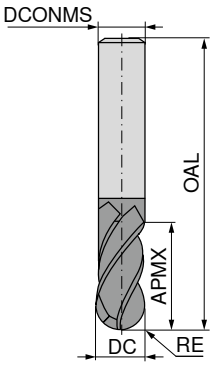
→ v_c/f_z Page 134

Ball Nosed Cutter

▲ DC tolerance:
≤ Ø 7/64 inch: +/- 0.0005
≥ Ø 1/8 inch: 0 /- 0.002
▲ Radius accuracy: +/- 0.001

S664 | UN | λ_s=38° γ_s=8°







DC inch	APMX inch	OAL inch	DCONMS -0.0001 / -0.0004 inch	ZEFP	59 081 ...	59 081 ...
1/16	3/16	1 1/2	1/8	4	06330	
3/32	9/32	1 1/2	1/8	4	09430	
1/8	3/4	2 1/2	1/8	4	12560	
1/8	1	3	1/8	4		12580
5/32	1/2	2	3/16	4	15632	
3/16	3/4	2 1/2	3/16	4	18840	
3/16	1 1/8	3	3/16	4		18860
1/4	1 1/2	4	1/4	4		25060
1/4	1	4	1/4	4	25040	
1/4	1 1/2	6	1/4	4		25160
5/16	1 5/8	4	5/16	4		31352
5/16	1	4	5/16	4	31332	
5/16	1 1/2	6	5/16	4		31348
3/8	1 3/4	4	3/8	4		37547
3/8	1	4	3/8	4	37527	
3/8	3	6	3/8	4		37580
1/2	2	4	1/2	4		50040
1/2	1	4	1/2	4	50120	
1/2	3	6	1/2	4		50060
5/8	3	6	5/8	4		62548
5/8	2	6	5/8	4	62532	
3/4	3	6	3/4	4		75040
3/4	2	6	3/4	4	75027	
1	3	6	1	4		99930
1	2	6	1	4	99920	

P	●	●
M	●	●
K	●	●
N	●	●
S		
H		
O		

→ v_c/f_z Page 134

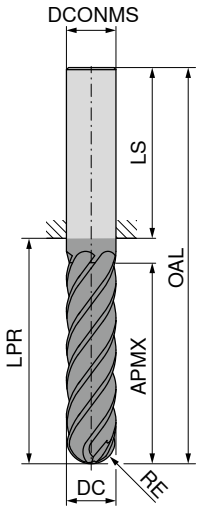
OptiLine – Ball Nosed Cutter

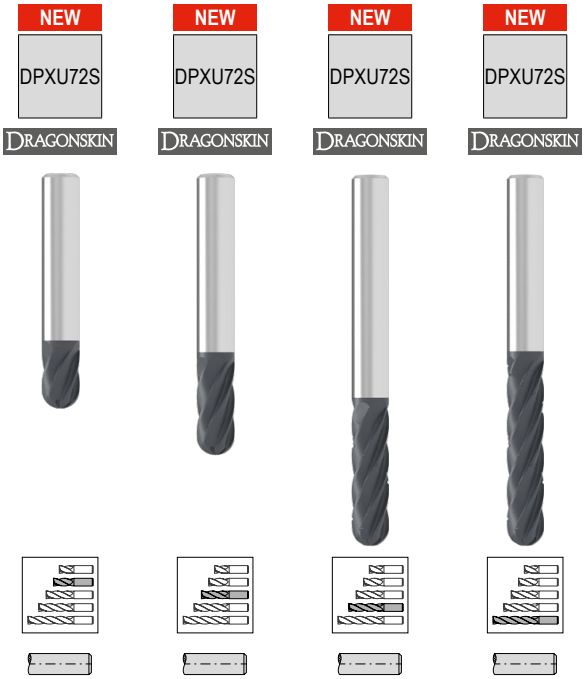
End mills that feature an ultra-high fracture toughness, ensuring durability and stability and are optimized for trochoidal milling and other machining strategies in heat-resistant super alloys or titanium alloys.

▲ Radius accuracy: + 0.000 / - 0.0004

P166 | UN | α β ≠ | λ_s var. | HPC







DC +.000/-.002 inch	APMX inch	OAL inch	DCONMS -.0001 / -.0004 inch	ZEFP	59 084 ...	59 084 ...	59 084 ...	59 084 ...
1/4	3/8	2	1/4	6	25015			
1/4	1/2	2 1/2	1/4	6		25020		
1/4	3/4	2 1/2	1/4	6			25030	
1/4	1 1/4	3	1/4	6				25050
5/16	3/4	2 1/2	5/16	6			31324	
5/16	1	3	5/16	6				31332
3/8	1/2	2	3/8	6	37513			
3/8	1	2 1/2	3/8	6		37527		
3/8	1 1/4	3	3/8	6			37533	
3/8	1 1/2	3 1/2	3/8	6				37540
1/2	5/8	2 1/2	1/2	6	50013			
1/2	1	3	1/2	6		50020		
1/2	1 1/4	3	1/2	6			50025	
1/2	1 1/2	4	1/2	6			50030	
1/2	2	4	1/2	6				50040
5/8	3/4	3	5/8	6	62512			
5/8	1 1/4	3 1/2	5/8	6		62520		
5/8	1 5/8	4	5/8	6			62526	
5/8	2	5	5/8	6				62532
3/4	1	3	3/4	6	75013			
3/4	1 1/4	4	3/4	6		75017		
3/4	1 5/8	5	3/4	6			75022	
3/4	2 1/4	5	3/4	6				75030
3/4	3 1/4	6	3/4	6				75043
1	2	4 1/2	1	6		99920		
1	2 1/2	5	1	6			99925	
1	3 1/4	6	1	6				99933
P					●	●	●	●
M					●	●	●	●
K					●	●	●	●
N								
S					●	●	●	●
H								
O								

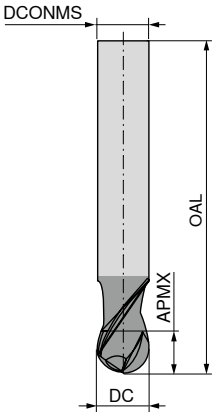
→ v_c/f_z Page 135

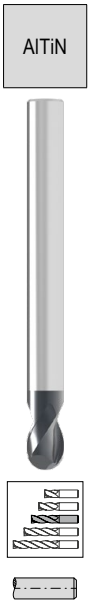
Ball Nosed Cutter

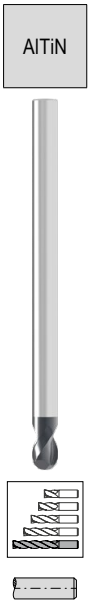
▲ Radius accuracy: + 0.000 / - 0.0004

P250 | ST | λ_s=30° γ_s= 8°









DC +0.000/-0.002 inch	APMX inch	OAL inch	DCONMS -0.0001 / -0.0004 inch	ZEFP	59 063 ...	59 063 ...
1/8	1/8	3	1/8	2		**12510**
3/16	3/16	3	3/16	2		**18810**
1/4	1/4	4	1/4	2		**25010**
3/8	3/8	4	3/8	2	**37510**	
3/8	3/8	6	3/8	2		**37610**
1/2	1/2	4	1/2	2	**50010**	
1/2	1/2	6	1/2	2		**50110**
P					●	●
M					●	●
K					●	●
N					●	●
S					●	●
H						
O						

→ v_c/f_z Page 136

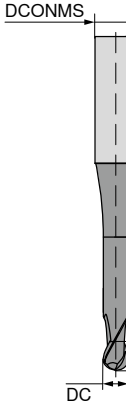
14

Ball Nosed Cutter

▲ Radius accuracy: + 0.000 / - 0.0004

P251 | UN | λ_s=30° γ_s= 8°





AlTiN







59 064 ...

DC +/-0.0005 inch	APMX inch	LH inch	OAL inch	DCONMS -0.0001 / -0.0004 inch	ZEFP	
0.031	0.031	5/8	4	1/4	2	**03110**
0.060	0.060	1 1/4	4	1/4	2	**06010**
0.080	0.080	1 5/8	4	1/4	2	**08010**
0.094	0.094	1 7/8	4	1/4	2	**09410**
0.125	0.125	2 1/2	4	1/4	2	**12510**
0.188	0.188	2.265	4	1/4	2	**18810**

P	●
M	●
K	●
N	●
S	●
H	
O	

→ v_c/f_z Page 137

Ball Nosed Cutter

▲ Radius accuracy: + 0.000 / - 0.0004

P252 | UN | λ_s=30° γ_s= 8°





AlTiN







59 065 ...

DC +/-0.0005 inch	APMX inch	LH inch	OAL inch	DCONMS -0.0001 / -0.0004 inch	ZEFP	
0.031	0.031	2.125	4	1/4	2	**03110**
0.060	0.060	1.875	4	1/4	2	**06010**
0.080	0.080	1.704	4	1/4	2	**08010**
0.094	0.094	1.584	4	1/4	2	**09410**
0.125	0.125	1.324	4	1/4	2	**12510**
0.188	0.188	0.785	4	1/4	2	**18810**

P	●
M	●
K	●
N	●
S	●
H	
O	

→ v_c/f_z Page 137

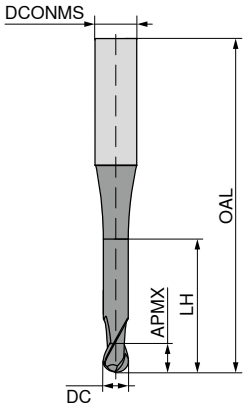
Ball Nosed Cutter

▲ Radius accuracy: + 0.000 / - 0.0004

P253 | UN | λ_s=30° γ_s= 8°







AlTiN







59 066 ...

DC +/-0.0005 inch	APMX inch	LH inch	OAL inch	DCONMS -0.0001 / -0.0004 inch	ZEFP	
0.031	0.031	1.282	4	1/4	2	**03110**
0.060	0.060	1.175	4	1/4	2	**06010**
0.080	0.080	1.084	4	1/4	2	**08010**
0.094	0.094	1.018	4	1/4	2	**09410**
0.125	0.125	0.897	4	1/4	2	**12510**
0.188	0.188	0.687	4	1/4	2	**18810**

P	●
M	●
K	●
N	●
S	●
H	
O	

→ v_c/f_z Page 137

Ball Nosed Cutter 8°

▲ Radius accuracy: + 0.000 / - 0.0004

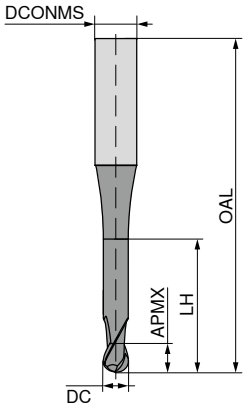
P254 | UN | λ_s=30° γ_s= 8°

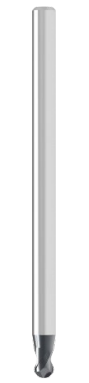






AlTiN









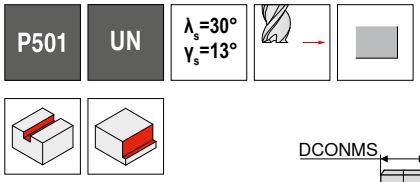
59 067 ...

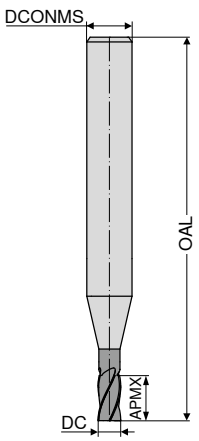
DC +/-0.0005 inch	APMX inch	LH inch	OAL inch	DCONMS -0.0001 / -0.0004 inch	ZEFP	
0.031	0.031	0.773	4	1/4	2	**03110**
0.060	0.060	0.726	4	1/4	2	**06010**
0.080	0.080	0.690	4	1/4	2	**08010**
0.094	0.094	0.750	4	1/4	2	**09410**
0.125	0.125	0.636	4	1/4	2	**12510**
0.188	0.188	0.454	4	1/4	2	**18810**

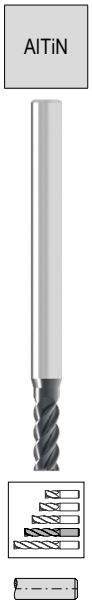
P	●
M	●
K	●
N	●
S	●
H	
O	

→ v_c/f_z Page 137

Micro end milling cutter







59 007 ...

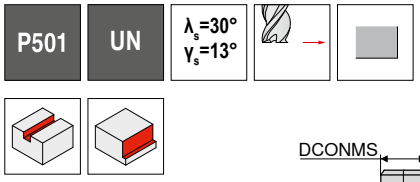
DC +/-0.0005 inch	APMX inch	OAL inch	DCONMS -0.0001 / -0.0004 inch	ZEFP	
0.005	0.015	1 1/2	1/8	4	**00530**
0.006	0.018	1 1/2	1/8	4	**00630**
0.007	0.021	1 1/2	1/8	4	**00730**
0.008	0.024	1 1/2	1/8	4	**00830**
0.009	0.027	1 1/2	1/8	4	**00930**
0.010	0.030	1 1/2	1/8	4	**01030**
0.011	0.033	1 1/2	1/8	4	**01130**
0.012	0.036	1 1/2	1/8	4	**01230**
0.013	0.039	1 1/2	1/8	4	**01330**
0.014	0.042	1 1/2	1/8	4	**01430**
0.015	0.045	1 1/2	1/8	4	**01530**
0.016	0.048	1 1/2	1/8	4	**01630**
0.017	0.051	1 1/2	1/8	4	**01730**
0.018	0.054	1 1/2	1/8	4	**01830**
0.019	0.057	1 1/2	1/8	4	**01930**
0.020	0.060	1 1/2	1/8	4	**02030**
0.021	0.063	1 1/2	1/8	4	**02130**
0.022	0.066	1 1/2	1/8	4	**02230**
0.023	0.069	1 1/2	1/8	4	**02330**
0.024	0.072	1 1/2	1/8	4	**02430**
0.025	0.075	1 1/2	1/8	4	**02530**
0.026	0.078	1 1/2	1/8	4	**02630**
0.027	0.081	1 1/2	1/8	4	**02730**
0.028	0.084	1 1/2	1/8	4	**02830**
0.029	0.087	1 1/2	1/8	4	**02930**
0.030	0.090	1 1/2	1/8	4	**03030**
0.031	0.093	1 1/2	1/8	4	**03130**
0.032	0.096	1 1/2	1/8	4	**03230**
0.033	0.099	1 1/2	1/8	4	**03330**
0.034	0.102	1 1/2	1/8	4	**03430**
0.035	0.105	1 1/2	1/8	4	**03530**
0.036	0.108	1 1/2	1/8	4	**03630**
0.037	0.111	1 1/2	1/8	4	**03730**
0.038	0.114	1 1/2	1/8	4	**03830**
0.039	0.117	1 1/2	1/8	4	**03930**
0.040	0.120	1 1/2	1/8	4	**04030**
0.041	0.123	1 1/2	1/8	4	**04130**
0.042	0.126	1 1/2	1/8	4	**04230**
0.043	0.129	1 1/2	1/8	4	**04330**
0.044	0.132	1 1/2	1/8	4	**04430**
0.045	0.135	1 1/2	1/8	4	**04530**

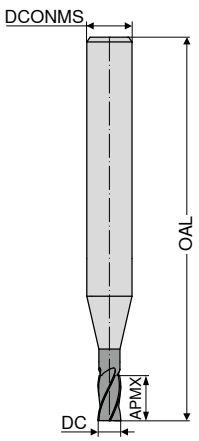
P	●
M	●
K	●
N	●
S	●
H	
O	

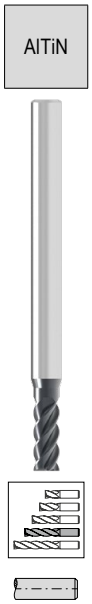
→ v_c/f_z Page 138+139

Continued on next page

Micro end milling cutter







59 007 ...

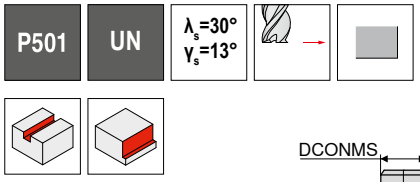
DC +/-0.0005 inch	APMX inch	OAL inch	DCONMS -0.0001 / -0.0004 inch	ZEFP	
0.046	0.138	1 1/2	1/8	4	**04630**
0.047	0.141	1 1/2	1/8	4	**04730**
0.048	0.144	1 1/2	1/8	4	**04830**
0.049	0.147	1 1/2	1/8	4	**04930**
0.050	0.150	1 1/2	1/8	4	**05030**
0.051	0.153	1 1/2	1/8	4	**05130**
0.052	0.156	1 1/2	1/8	4	**05230**
0.053	0.159	1 1/2	1/8	4	**05330**
0.054	0.162	1 1/2	1/8	4	**05430**
0.055	0.165	1 1/2	1/8	4	**05530**
0.056	0.168	1 1/2	1/8	4	**05630**
0.057	0.171	1 1/2	1/8	4	**05730**
0.058	0.174	1 1/2	1/8	4	**05830**
0.059	0.177	1 1/2	1/8	4	**05930**
0.060	0.180	1 1/2	1/8	4	**06030**
0.061	0.183	1 1/2	1/8	4	**06130**
0.062	0.186	1 1/2	1/8	4	**06230**
0.063	0.189	1 1/2	1/8	4	**06330**
0.064	0.192	1 1/2	1/8	4	**06430**
0.065	0.195	1 1/2	1/8	4	**06530**
0.066	0.198	1 1/2	1/8	4	**06630**
0.067	0.201	1 1/2	1/8	4	**06730**
0.068	0.204	1 1/2	1/8	4	**06830**
0.069	0.207	1 1/2	1/8	4	**06930**
0.070	0.210	1 1/2	1/8	4	**07030**
0.071	0.213	1 1/2	1/8	4	**07130**
0.072	0.216	1 1/2	1/8	4	**07230**
0.073	0.219	1 1/2	1/8	4	**07330**
0.074	0.222	1 1/2	1/8	4	**07430**
0.075	0.225	1 1/2	1/8	4	**07530**
0.076	0.228	1 1/2	1/8	4	**07630**
0.077	0.231	1 1/2	1/8	4	**07730**
0.078	0.234	1 1/2	1/8	4	**07830**
0.079	0.237	1 1/2	1/8	4	**07930**
0.080	0.240	1 1/2	1/8	4	**08030**
0.081	0.243	1 1/2	1/8	4	**08130**
0.082	0.246	1 1/2	1/8	4	**08230**
0.083	0.249	1 1/2	1/8	4	**08330**
0.084	0.252	1 1/2	1/8	4	**08430**
0.085	0.255	1 1/2	1/8	4	**08530**
0.086	0.258	1 1/2	1/8	4	**08630**

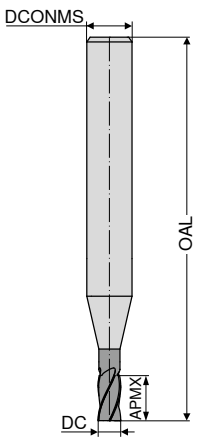
P	●
M	●
K	●
N	●
S	●
H	
O	

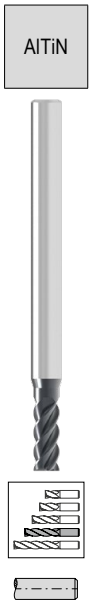
→ v_c/f_z Page 138+139

Continued on next page

Micro end milling cutter







59 007 ...

DC +/-0.0005 inch	APMX inch	OAL inch	DCONMS -0.0001 / -0.0004 inch	ZEFP	
0.087	0.261	1 1/2	1/8	4	**08730**
0.088	0.264	1 1/2	1/8	4	**08830**
0.089	0.267	1 1/2	1/8	4	**08930**
0.090	0.270	1 1/2	1/8	4	**09030**
0.091	0.273	1 1/2	1/8	4	**09130**
0.092	0.276	1 1/2	1/8	4	**09230**
0.093	0.279	1 1/2	1/8	4	**09330**
0.094	0.282	1 1/2	1/8	4	**09430**
0.095	0.285	1 1/2	1/8	4	**09530**
0.096	0.288	1 1/2	1/8	4	**09630**
0.097	0.291	1 1/2	1/8	4	**09730**
0.098	0.294	1 1/2	1/8	4	**09830**
0.099	0.297	1 1/2	1/8	4	**09930**
0.100	0.300	1 1/2	1/8	4	**10030**
0.101	0.303	1 1/2	1/8	4	**10130**
0.102	0.306	1 1/2	1/8	4	**10230**
0.103	0.309	1 1/2	1/8	4	**10330**
0.104	0.312	1 1/2	1/8	4	**10430**
0.105	0.315	1 1/2	1/8	4	**10530**
0.106	0.318	1 1/2	1/8	4	**10630**
0.107	0.321	1 1/2	1/8	4	**10730**
0.108	0.324	1 1/2	1/8	4	**10830**
0.109	0.327	1 1/2	1/8	4	**10930**
0.110	0.330	1 1/2	1/8	4	**11030**
0.111	0.333	1 1/2	1/8	4	**11130**
0.112	0.336	1 1/2	1/8	4	**11230**
0.113	0.339	1 1/2	1/8	4	**11330**
0.114	0.341	1 1/2	1/8	4	**11430**
0.115	0.345	1 1/2	1/8	4	**11530**
0.116	0.348	1 1/2	1/8	4	**11630**
0.117	0.351	1 1/2	1/8	4	**11730**
0.118	0.354	1 1/2	1/8	4	**11830**
0.119	0.357	1 1/2	1/8	4	**11930**
0.120	0.360	1 1/2	1/8	4	**12030**

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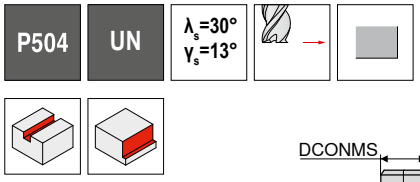
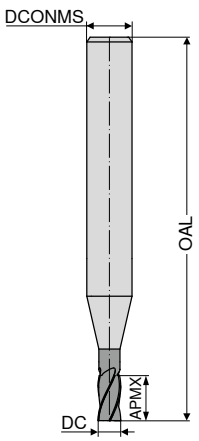
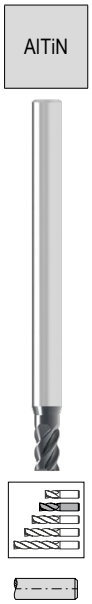
→ v_c/f_z Page 138+139

Micro end milling cutter







59 009 ...

DC +/-0.0005 inch	APMX inch	OAL inch	DCONMS -0.0001 / -0.0004 inch	ZEFP	
0.005	0.008	1 1/2	1/8	4	**00516**
0.006	0.009	1 1/2	1/8	4	**00615**
0.007	0.011	1 1/2	1/8	4	**00716**
0.008	0.012	1 1/2	1/8	4	**00815**
0.009	0.014	1 1/2	1/8	4	**00916**
0.010	0.015	1 1/2	1/8	4	**01015**
0.011	0.017	1 1/2	1/8	4	**01115**
0.012	0.018	1 1/2	1/8	4	**01215**
0.013	0.020	1 1/2	1/8	4	**01315**
0.014	0.021	1 1/2	1/8	4	**01415**
0.015	0.023	1 1/2	1/8	4	**01515**
0.016	0.024	1 1/2	1/8	4	**01615**
0.017	0.026	1 1/2	1/8	4	**01715**
0.018	0.027	1 1/2	1/8	4	**01815**
0.019	0.029	1 1/2	1/8	4	**01915**
0.020	0.030	1 1/2	1/8	4	**02015**
0.021	0.032	1 1/2	1/8	4	**02115**
0.022	0.033	1 1/2	1/8	4	**02215**
0.023	0.035	1 1/2	1/8	4	**02315**
0.024	0.036	1 1/2	1/8	4	**02415**
0.025	0.038	1 1/2	1/8	4	**02515**
0.026	0.039	1 1/2	1/8	4	**02615**
0.027	0.041	1 1/2	1/8	4	**02715**
0.028	0.042	1 1/2	1/8	4	**02815**
0.029	0.044	1 1/2	1/8	4	**02915**
0.030	0.045	1 1/2	1/8	4	**03015**
0.031	0.047	1 1/2	1/8	4	**03115**
0.032	0.048	1 1/2	1/8	4	**03215**
0.033	0.050	1 1/2	1/8	4	**03315**
0.034	0.051	1 1/2	1/8	4	**03415**
0.035	0.053	1 1/2	1/8	4	**03515**
0.036	0.054	1 1/2	1/8	4	**03615**
0.037	0.056	1 1/2	1/8	4	**03715**
0.038	0.057	1 1/2	1/8	4	**03815**
0.039	0.059	1 1/2	1/8	4	**03915**
0.040	0.060	1 1/2	1/8	4	**04015**
0.041	0.062	1 1/2	1/8	4	**04115**
0.042	0.063	1 1/2	1/8	4	**04215**
0.043	0.065	1 1/2	1/8	4	**04315**
0.044	0.066	1 1/2	1/8	4	**04415**
0.045	0.068	1 1/2	1/8	4	**04515**

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→ v_c/f_z Page 140

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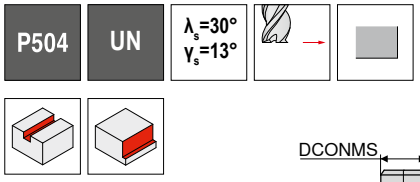
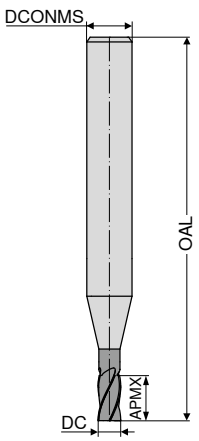
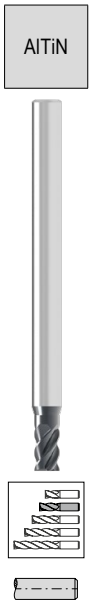
Micro end milling cutter







59 009 ...

DC +/-0.0005 inch	APMX inch	OAL inch	DCONMS -0.0001 / -0.0004 inch	ZEFP	
0.046	0.069	1 1/2	1/8	4	**04615**
0.047	0.071	1 1/2	1/8	4	**04715**
0.048	0.072	1 1/2	1/8	4	**04815**
0.049	0.074	1 1/2	1/8	4	**04915**
0.050	0.075	1 1/2	1/8	4	**05015**
0.051	0.077	1 1/2	1/8	4	**05115**
0.052	0.078	1 1/2	1/8	4	**05215**
0.053	0.080	1 1/2	1/8	4	**05315**
0.054	0.081	1 1/2	1/8	4	**05415**
0.055	0.083	1 1/2	1/8	4	**05515**
0.056	0.084	1 1/2	1/8	4	**05615**
0.057	0.086	1 1/2	1/8	4	**05715**
0.058	0.087	1 1/2	1/8	4	**05815**
0.059	0.089	1 1/2	1/8	4	**05915**
0.060	0.090	1 1/2	1/8	4	**06015**
0.061	0.092	1 1/2	1/8	4	**06115**
0.062	0.093	1 1/2	1/8	4	**06215**
0.063	0.095	1 1/2	1/8	4	**06315**
0.064	0.096	1 1/2	1/8	4	**06415**
0.065	0.098	1 1/2	1/8	4	**06515**
0.066	0.099	1 1/2	1/8	4	**06615**
0.067	0.101	1 1/2	1/8	4	**06715**
0.068	0.102	1 1/2	1/8	4	**06815**
0.069	0.104	1 1/2	1/8	4	**06915**
0.070	0.105	1 1/2	1/8	4	**07015**
0.071	0.107	1 1/2	1/8	4	**07115**
0.072	0.108	1 1/2	1/8	4	**07215**
0.073	0.110	1 1/2	1/8	4	**07315**
0.074	0.111	1 1/2	1/8	4	**07415**
0.075	0.113	1 1/2	1/8	4	**07515**
0.076	0.114	1 1/2	1/8	4	**07615**
0.077	0.116	1 1/2	1/8	4	**07715**
0.078	0.117	1 1/2	1/8	4	**07815**
0.079	0.119	1 1/2	1/8	4	**07915**
0.080	0.120	1 1/2	1/8	4	**08015**
0.081	0.122	1 1/2	1/8	4	**08115**
0.082	0.123	1 1/2	1/8	4	**08215**
0.083	0.125	1 1/2	1/8	4	**08315**
0.084	0.126	1 1/2	1/8	4	**08415**
0.085	0.128	1 1/2	1/8	4	**08515**
0.086	0.129	1 1/2	1/8	4	**08615**

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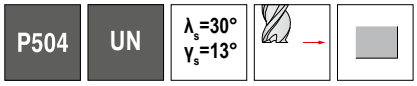
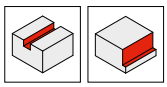
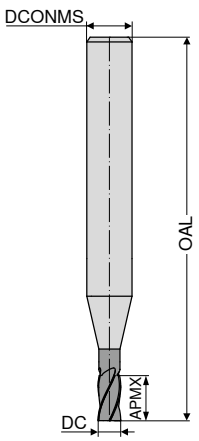
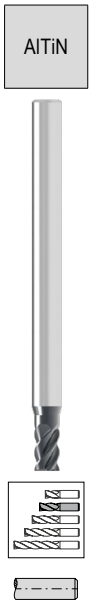
Micro end milling cutter









59 009 ...

DC +/-0.0005 inch	APMX inch	OAL inch	DCONMS -0.0001 / -0.0004 inch	ZEFP	
0.087	0.131	1 1/2	1/8	4	**08715**
0.088	0.132	1 1/2	1/8	4	**08815**
0.089	0.134	1 1/2	1/8	4	**08915**
0.090	0.135	1 1/2	1/8	4	**09015**
0.091	0.137	1 1/2	1/8	4	**09115**
0.092	0.138	1 1/2	1/8	4	**09215**
0.093	0.140	1 1/2	1/8	4	**09315**
0.094	0.141	1 1/2	1/8	4	**09415**
0.095	0.143	1 1/2	1/8	4	**09515**
0.096	0.144	1 1/2	1/8	4	**09615**
0.097	0.146	1 1/2	1/8	4	**09715**
0.098	0.147	1 1/2	1/8	4	**09815**
0.099	0.149	1 1/2	1/8	4	**09915**
0.100	0.150	1 1/2	1/8	4	**10015**
0.101	0.152	1 1/2	1/8	4	**10115**
0.102	0.153	1 1/2	1/8	4	**10215**
0.103	0.155	1 1/2	1/8	4	**10315**
0.104	0.156	1 1/2	1/8	4	**10415**
0.105	0.158	1 1/2	1/8	4	**10515**
0.106	0.159	1 1/2	1/8	4	**10615**
0.107	0.161	1 1/2	1/8	4	**10715**
0.108	0.162	1 1/2	1/8	4	**10815**
0.109	0.164	1 1/2	1/8	4	**10915**
0.110	0.165	1 1/2	1/8	4	**11015**
0.111	0.167	1 1/2	1/8	4	**11115**
0.112	0.168	1 1/2	1/8	4	**11215**
0.113	0.170	1 1/2	1/8	4	**11315**
0.114	0.171	1 1/2	1/8	4	**11415**
0.115	0.173	1 1/2	1/8	4	**11515**
0.116	0.174	1 1/2	1/8	4	**11615**
0.117	0.176	1 1/2	1/8	4	**11715**
0.118	0.177	1 1/2	1/8	4	**11815**
0.119	0.179	1 1/2	1/8	4	**11915**
0.120	0.180	1 1/2	1/8	4	**12015**

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→ v_c/f_z Page 140

Micro ball nosed cutter

▲ Radius accuracy: +/- 0.001 for Ø ≤ 0.060
+/- 0.0015 for Ø > 0.060

P503 | UN | λ_s=30° γ_s=13°







AlTiN







59 008 ...

DC +/-0.0005 inch	APMX inch	OAL inch	DCONMS -0.0001 / -0.0004 inch	ZEFP	
0.005	0.015	1 1/2	1/8	4	**00530**
0.006	0.018	1 1/2	1/8	4	**00630**
0.007	0.021	1 1/2	1/8	4	**00730**
0.008	0.024	1 1/2	1/8	4	**00830**
0.009	0.027	1 1/2	1/8	4	**00930**
0.010	0.030	1 1/2	1/8	4	**01030**
0.011	0.033	1 1/2	1/8	4	**01130**
0.012	0.036	1 1/2	1/8	4	**01230**
0.013	0.039	1 1/2	1/8	4	**01330**
0.014	0.042	1 1/2	1/8	4	**01430**
0.015	0.045	1 1/2	1/8	4	**01530**
0.016	0.048	1 1/2	1/8	4	**01630**
0.017	0.051	1 1/2	1/8	4	**01730**
0.018	0.054	1 1/2	1/8	4	**01830**
0.019	0.057	1 1/2	1/8	4	**01930**
0.020	0.060	1 1/2	1/8	4	**02030**
0.021	0.063	1 1/2	1/8	4	**02130**
0.022	0.066	1 1/2	1/8	4	**02230**
0.023	0.069	1 1/2	1/8	4	**02330**
0.024	0.072	1 1/2	1/8	4	**02430**
0.025	0.075	1 1/2	1/8	4	**02530**
0.026	0.078	1 1/2	1/8	4	**02630**
0.027	0.081	1 1/2	1/8	4	**02730**
0.028	0.084	1 1/2	1/8	4	**02830**
0.029	0.087	1 1/2	1/8	4	**02930**
0.030	0.090	1 1/2	1/8	4	**03030**
0.031	0.093	1 1/2	1/8	4	**03130**
0.032	0.096	1 1/2	1/8	4	**03230**
0.033	0.099	1 1/2	1/8	4	**03330**
0.034	0.102	1 1/2	1/8	4	**03430**
0.035	0.105	1 1/2	1/8	4	**03530**
0.036	0.108	1 1/2	1/8	4	**03630**
0.037	0.111	1 1/2	1/8	4	**03730**
0.038	0.114	1 1/2	1/8	4	**03830**
0.039	0.117	1 1/2	1/8	4	**03930**
0.040	0.120	1 1/2	1/8	4	**04030**
0.041	0.123	1 1/2	1/8	4	**04130**
0.042	0.126	1 1/2	1/8	4	**04230**
0.043	0.129	1 1/2	1/8	4	**04330**
0.044	0.132	1 1/2	1/8	4	**04430**
0.045	0.135	1 1/2	1/8	4	**04530**
0.046	0.138	1 1/2	1/8	4	**04630**
0.047	0.141	1 1/2	1/8	4	**04730**

P	●
M	●
K	●
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→ v_c/f_z Page 138

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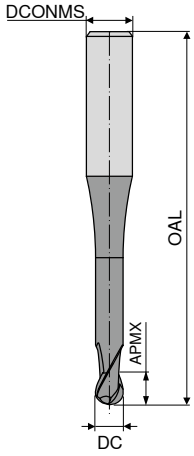
Micro ball nosed cutter

▲ Radius accuracy: +/- 0.001 for Ø ≤ 0.060
+/- 0.0015 for Ø > 0.060

P503 | UN | λ_s=30° γ_s=13°





AlTiN



59 008 ...

DC +/-0.0005 inch	APMX inch	OAL inch	DCONMS -0.0001 / -0.0004 inch	ZEFP	
0.048	0.144	1 1/2	1/8	4	**04830**
0.049	0.147	1 1/2	1/8	4	**04930**
0.050	0.150	1 1/2	1/8	4	**05030**
0.051	0.153	1 1/2	1/8	4	**05130**
0.052	0.156	1 1/2	1/8	4	**05230**
0.053	0.159	1 1/2	1/8	4	**05330**
0.054	0.162	1 1/2	1/8	4	**05430**
0.055	0.165	1 1/2	1/8	4	**05530**
0.056	0.168	1 1/2	1/8	4	**05630**
0.057	0.171	1 1/2	1/8	4	**05730**
0.058	0.174	1 1/2	1/8	4	**05830**
0.059	0.177	1 1/2	1/8	4	**05930**
0.060	0.180	1 1/2	1/8	4	**06030**
0.061	0.183	1 1/2	1/8	4	**06130**
0.062	0.186	1 1/2	1/8	4	**06230**
0.063	0.189	1 1/2	1/8	4	**06330**
0.064	0.192	1 1/2	1/8	4	**06430**
0.065	0.195	1 1/2	1/8	4	**06530**
0.066	0.198	1 1/2	1/8	4	**06630**
0.067	0.201	1 1/2	1/8	4	**06730**
0.068	0.204	1 1/2	1/8	4	**06830**
0.069	0.207	1 1/2	1/8	4	**06930**
0.070	0.210	1 1/2	1/8	4	**07030**
0.071	0.213	1 1/2	1/8	4	**07130**
0.072	0.216	1 1/2	1/8	4	**07230**
0.073	0.219	1 1/2	1/8	4	**07330**
0.074	0.222	1 1/2	1/8	4	**07430**
0.075	0.225	1 1/2	1/8	4	**07530**
0.076	0.228	1 1/2	1/8	4	**07630**
0.077	0.231	1 1/2	1/8	4	**07730**
0.078	0.234	1 1/2	1/8	4	**07830**
0.079	0.237	1 1/2	1/8	4	**07930**
0.080	0.240	1 1/2	1/8	4	**08030**
0.081	0.243	1 1/2	1/8	4	**08130**
0.082	0.246	1 1/2	1/8	4	**08230**
0.083	0.249	1 1/2	1/8	4	**08330**
0.084	0.252	1 1/2	1/8	4	**08430**
0.085	0.255	1 1/2	1/8	4	**08530**
0.086	0.258	1 1/2	1/8	4	**08630**
0.087	0.261	1 1/2	1/8	4	**08730**
0.088	0.264	1 1/2	1/8	4	**08830**
0.089	0.267	1 1/2	1/8	4	**08930**
0.090	0.270	1 1/2	1/8	4	**09030**

P	●
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→ v_c/f_z Page 138

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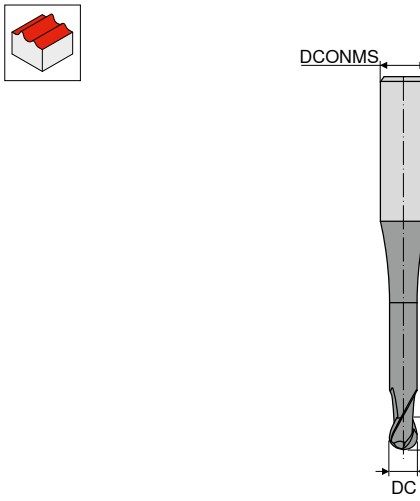
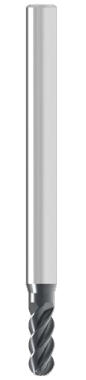
Micro ball nosed cutter

▲ Radius accuracy: +/- 0.001 for Ø ≤ 0.060
+/- 0.0015 for Ø > 0.060

P503 | UN | λ_s=30° γ_s=13°



AlTiN



59 008 ...

DC +/-0.0005 inch	APMX inch	OAL inch	DCONMS -0.0001 / -0.0004 inch	ZEFP	
0.091	0.273	1 1/2	1/8	4	**09130**
0.092	0.276	1 1/2	1/8	4	**09230**
0.093	0.279	1 1/2	1/8	4	**09330**
0.094	0.282	1 1/2	1/8	4	**09430**
0.095	0.285	1 1/2	1/8	4	**09530**
0.096	0.288	1 1/2	1/8	4	**09630**
0.097	0.291	1 1/2	1/8	4	**09730**
0.098	0.294	1 1/2	1/8	4	**09830**
0.099	0.297	1 1/2	1/8	4	**09930**
0.100	0.300	1 1/2	1/8	4	**10030**
0.101	0.303	1 1/2	1/8	4	**10130**
0.102	0.306	1 1/2	1/8	4	**10230**
0.103	0.309	1 1/2	1/8	4	**10330**
0.104	0.312	1 1/2	1/8	4	**10430**
0.105	0.315	1 1/2	1/8	4	**10530**
0.106	0.318	1 1/2	1/8	4	**10630**
0.107	0.321	1 1/2	1/8	4	**10730**
0.108	0.324	1 1/2	1/8	4	**10830**
0.109	0.327	1 1/2	1/8	4	**10930**
0.110	0.330	1 1/2	1/8	4	**11030**
0.111	0.333	1 1/2	1/8	4	**11130**
0.112	0.336	1 1/2	1/8	4	**11230**
0.113	0.339	1 1/2	1/8	4	**11330**
0.114	0.341	1 1/2	1/8	4	**11430**
0.115	0.345	1 1/2	1/8	4	**11530**
0.116	0.348	1 1/2	1/8	4	**11630**
0.117	0.351	1 1/2	1/8	4	**11730**
0.118	0.354	1 1/2	1/8	4	**11830**
0.119	0.357	1 1/2	1/8	4	**11930**
0.120	0.360	1 1/2	1/8	4	**12030**

P	●
M	●
K	●
N	●
S	●
H	
O	

→ v_c/f_z Page 138

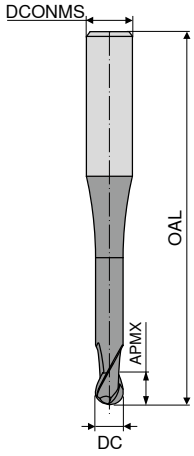
Micro ball nosed cutter

▲ Radius accuracy: +/- 0.001 for Ø ≤ 0.060
+/- 0.0015 for Ø > 0.060

P506 | UN | λ_s=30° γ_s=13°







AlTiN







59 010 ...

DC +/-0.0005 inch	APMX inch	OAL inch	DCONMS -0.0001 / -0.0004 inch	ZEFP	
0.005	0.008	1 1/2	1/8	4	**00516**
0.006	0.009	1 1/2	1/8	4	**00615**
0.007	0.011	1 1/2	1/8	4	**00716**
0.008	0.012	1 1/2	1/8	4	**00815**
0.009	0.014	1 1/2	1/8	4	**00916**
0.010	0.015	1 1/2	1/8	4	**01015**
0.011	0.017	1 1/2	1/8	4	**01115**
0.012	0.018	1 1/2	1/8	4	**01215**
0.013	0.020	1 1/2	1/8	4	**01315**
0.014	0.021	1 1/2	1/8	4	**01415**
0.015	0.023	1 1/2	1/8	4	**01515**
0.016	0.024	1 1/2	1/8	4	**01615**
0.017	0.026	1 1/2	1/8	4	**01715**
0.018	0.027	1 1/2	1/8	4	**01815**
0.019	0.029	1 1/2	1/8	4	**01915**
0.020	0.030	1 1/2	1/8	4	**02015**
0.021	0.032	1 1/2	1/8	4	**02115**
0.022	0.033	1 1/2	1/8	4	**02215**
0.023	0.035	1 1/2	1/8	4	**02315**
0.024	0.036	1 1/2	1/8	4	**02415**
0.025	0.038	1 1/2	1/8	4	**02515**
0.026	0.039	1 1/2	1/8	4	**02615**
0.027	0.041	1 1/2	1/8	4	**02715**
0.028	0.042	1 1/2	1/8	4	**02815**
0.029	0.044	1 1/2	1/8	4	**02915**
0.030	0.045	1 1/2	1/8	4	**03015**
0.031	0.047	1 1/2	1/8	4	**03115**
0.032	0.048	1 1/2	1/8	4	**03215**
0.033	0.050	1 1/2	1/8	4	**03315**
0.034	0.051	1 1/2	1/8	4	**03415**
0.035	0.053	1 1/2	1/8	4	**03515**
0.036	0.054	1 1/2	1/8	4	**03615**
0.037	0.056	1 1/2	1/8	4	**03715**
0.038	0.057	1 1/2	1/8	4	**03815**
0.039	0.059	1 1/2	1/8	4	**03915**
0.040	0.060	1 1/2	1/8	4	**04015**
0.041	0.062	1 1/2	1/8	4	**04115**
0.042	0.063	1 1/2	1/8	4	**04215**
0.043	0.065	1 1/2	1/8	4	**04315**
0.044	0.066	1 1/2	1/8	4	**04415**
0.045	0.068	1 1/2	1/8	4	**04515**
0.046	0.069	1 1/2	1/8	4	**04615**
0.047	0.071	1 1/2	1/8	4	**04715**

P	●
M	●
K	●
N	●
S	●
H	
O	

→ v_c/f_z Page 140

Continued on next page

Micro ball nosed cutter

▲ Radius accuracy: +/- 0.001 for Ø ≤ 0.060
+/- 0.0015 for Ø > 0.060

P506 | UN | λ_s=30° γ_s=13°





AlTiN





59 010 ...

DC +/-0.0005 inch	APMX inch	OAL inch	DCONMS -0.0001 / -0.0004 inch	ZEFP	
0.048	0.072	1 1/2	1/8	4	**04815**
0.049	0.074	1 1/2	1/8	4	**04915**
0.050	0.075	1 1/2	1/8	4	**05015**
0.051	0.077	1 1/2	1/8	4	**05115**
0.052	0.078	1 1/2	1/8	4	**05215**
0.053	0.080	1 1/2	1/8	4	**05315**
0.054	0.081	1 1/2	1/8	4	**05415**
0.055	0.083	1 1/2	1/8	4	**05515**
0.056	0.084	1 1/2	1/8	4	**05615**
0.057	0.086	1 1/2	1/8	4	**05715**
0.058	0.087	1 1/2	1/8	4	**05815**
0.059	0.089	1 1/2	1/8	4	**05915**
0.060	0.090	1 1/2	1/8	4	**06015**
0.061	0.092	1 1/2	1/8	4	**06115**
0.062	0.093	1 1/2	1/8	4	**06215**
0.063	0.095	1 1/2	1/8	4	**06315**
0.064	0.096	1 1/2	1/8	4	**06415**
0.065	0.098	1 1/2	1/8	4	**06515**
0.066	0.099	1 1/2	1/8	4	**06615**
0.067	0.101	1 1/2	1/8	4	**06715**
0.068	0.102	1 1/2	1/8	4	**06815**
0.069	0.104	1 1/2	1/8	4	**06915**
0.070	0.105	1 1/2	1/8	4	**07015**
0.071	0.107	1 1/2	1/8	4	**07115**
0.072	0.108	1 1/2	1/8	4	**07215**
0.073	0.110	1 1/2	1/8	4	**07315**
0.074	0.111	1 1/2	1/8	4	**07415**
0.075	0.113	1 1/2	1/8	4	**07515**
0.076	0.114	1 1/2	1/8	4	**07615**
0.077	0.116	1 1/2	1/8	4	**07715**
0.078	0.117	1 1/2	1/8	4	**07815**
0.079	0.119	1 1/2	1/8	4	**07915**
0.080	0.120	1 1/2	1/8	4	**08015**
0.081	0.122	1 1/2	1/8	4	**08115**
0.082	0.123	1 1/2	1/8	4	**08215**
0.083	0.125	1 1/2	1/8	4	**08315**
0.084	0.126	1 1/2	1/8	4	**08415**
0.085	0.128	1 1/2	1/8	4	**08515**
0.086	0.129	1 1/2	1/8	4	**08615**
0.087	0.131	1 1/2	1/8	4	**08715**
0.088	0.132	1 1/2	1/8	4	**08815**
0.089	0.134	1 1/2	1/8	4	**08915**
0.090	0.135	1 1/2	1/8	4	**09015**

P	●
M	●
K	●
N	●
S	●
H	
O	

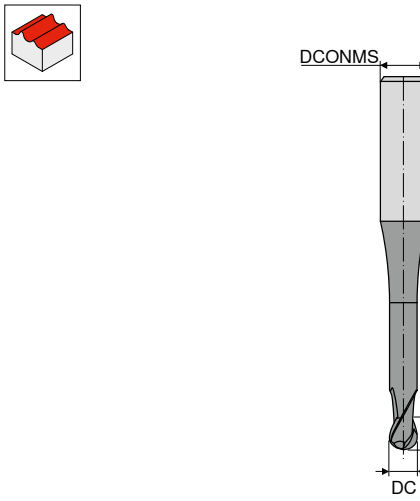
→ v_c/f_z Page 140

Continued on next page

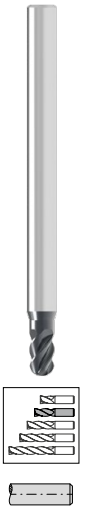
Micro ball nosed cutter

▲ Radius accuracy: +/- 0.001 for Ø ≤ 0.060
+/- 0.0015 for Ø > 0.060

P506 | UN | λ_s=30° γ_s=13°



AlTiN



59 010 ...

DC +/-0.0005 inch	APMX inch	OAL inch	DCONMS -0.0001 / -0.0004 inch	ZEFP	
0.091	0.137	1 1/2	1/8	4	**09115**
0.092	0.138	1 1/2	1/8	4	**09215**
0.093	0.140	1 1/2	1/8	4	**09315**
0.094	0.141	1 1/2	1/8	4	**09415**
0.095	0.143	1 1/2	1/8	4	**09515**
0.096	0.144	1 1/2	1/8	4	**09615**
0.097	0.146	1 1/2	1/8	4	**09715**
0.098	0.147	1 1/2	1/8	4	**09815**
0.099	0.149	1 1/2	1/8	4	**09915**
0.100	0.150	1 1/2	1/8	4	**10015**
0.101	0.152	1 1/2	1/8	4	**10115**
0.102	0.153	1 1/2	1/8	4	**10215**
0.103	0.155	1 1/2	1/8	4	**10315**
0.104	0.156	1 1/2	1/8	4	**10415**
0.105	0.158	1 1/2	1/8	4	**10515**
0.106	0.159	1 1/2	1/8	4	**10615**
0.107	0.161	1 1/2	1/8	4	**10715**
0.108	0.162	1 1/2	1/8	4	**10815**
0.109	0.164	1 1/2	1/8	4	**10915**
0.110	0.165	1 1/2	1/8	4	**11015**
0.111	0.167	1 1/2	1/8	4	**11115**
0.112	0.168	1 1/2	1/8	4	**11215**
0.113	0.170	1 1/2	1/8	4	**11315**
0.114	0.171	1 1/2	1/8	4	**11415**
0.115	0.173	1 1/2	1/8	4	**11515**
0.116	0.174	1 1/2	1/8	4	**11615**
0.117	0.176	1 1/2	1/8	4	**11715**
0.118	0.177	1 1/2	1/8	4	**11815**
0.119	0.179	1 1/2	1/8	4	**11915**
0.120	0.180	1 1/2	1/8	4	**12015**

P	●
M	●
K	●
N	●
S	●
H	
O	

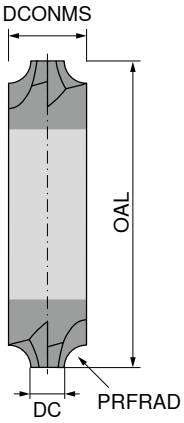
→ v_c/f_z Page 140

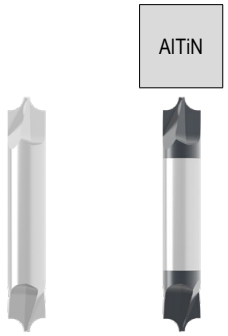
Profile end milling cutter

▲ PRFRAD ≤ 1.397 [Inch] Tol. = ± 0.01
▲ PRFRAD > 1.397 [Inch] Tol. = ± 0.015

P137 | UN | λ_s = 0° γ_s=-5°







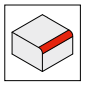
PRFRAD inch	DC +0.000/-0.002 inch	OAL inch	DCONMS -0.0001 / -0.0004 inch	ZEFP	59 049 ...	59 050 ...
0.010	0.105	1 1/2	1/8	2	12510	12510
0.015	0.095	1 1/2	1/8	2	12515	12515
0.020	0.085	1 1/2	1/8	2	12520	12520
0.025	0.075	1 1/2	1/8	2	12525	12525
0.031	0.063	1 1/2	1/8	2	12531	12531
0.035	0.055	1 1/2	1/8	2	12535	12535
0.040	0.045	1 1/2	1/8	2	12540	12540
0.046	0.095	1 1/2	1/8	2	12546	12546
0.050	0.087	2	3/16	2	18850	18850
0.055	0.077	2	3/16	2	18855	18855
0.062	0.058	2	3/16	2	18862	18862
0.072	0.106	2 1/2	1/4	2	25072	25072
0.078	0.094	2 1/2	1/4	2	25078	25078
0.085	0.080	2 1/2	1/4	2	25085	25085
0.094	0.062	2 1/2	1/4	2	25094	25094
0.100	0.050	2 1/2	1/4	2	25000	25000
0.109	0.094	2 1/2	1/4	2	25009	25009
0.118	0.076	2 1/2	5/16	2	31318	31318
0.125	0.063	2 1/2	5/16	2	31325	31325
0.140	0.095	2 1/2	3/8	2	37540	37540
0.156	0.063	2 1/2	3/8	2	37556	37556
P					●	●
M						
K					●	●
N						
S						
H						
O						

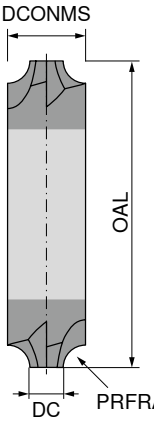
→ v_c/f_z Page 141

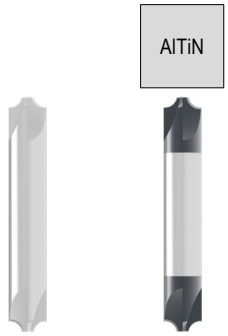
Profile end milling cutter

▲ PRFRAD ≤ 1.397 [Inch] Tol. = ± 0.01
▲ PRFRAD > 1.397 [Inch] Tol. = ± 0.015

P139 | UN | λ_s=0° γ_s=3,5°







PRFRAD inch	DC +0.000/-0.002 inch	APMX inch	OAL inch	DCONMS -0.0001 / -0.0004 inch	ZEFP	59 051 ...	59 052 ...
0.010	0.162	3/16	2	3/16	4	**18810**	**18810**
0.015	0.152	3/16	2	3/16	4	**18910**	**18910**
0.020	0.142	3/16	2	3/16	4	**19010**	**19010**
0.025	0.132	3/16	2	3/16	4	**19110**	**19110**
0.031	0.120	3/16	2	3/16	4	**19210**	**19210**
0.035	0.112	3/16	2	3/16	4	**19310**	**19310**
0.040	0.165	1/4	2 1/2	1/4	4	**25010**	**25010**
0.046	0.153	1/4	2 1/2	1/4	4	**25110**	**25110**
0.050	0.145	1/4	2 1/2	1/4	4	**25210**	**25210**
0.055	0.135	1/4	2 1/2	1/4	4	**25410**	**25410**
0.062	0.121	1/4	2 1/2	1/4	4	**25310**	**25310**
0.078	0.214	3/8	2 1/2	3/8	4	**37510**	**37510**
0.094	0.182	3/8	2 1/2	3/8	4	**37610**	**37610**
0.100	0.170	3/8	2 1/2	3/8	4	**37710**	**37710**
0.118	0.134	3/8	2 1/2	3/8	4	**37810**	**37810**
0.125	0.120	3/8	2 1/2	3/8	4	**37910**	**37910**
0.156	0.183	1/2	3	1/2	4	**50010**	**50010**
P						●	●
M							
K						●	●
N							
S							
H							
O							

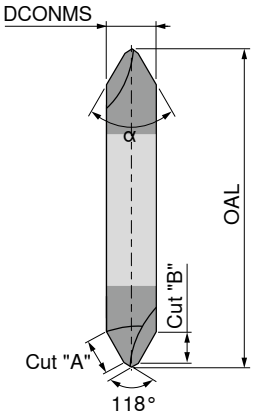
→ v_c/f_z Page 142

14

Chamfer milling cutter 60°

P132 | UN | λ_s=0° γ_s=0°





AlTiN





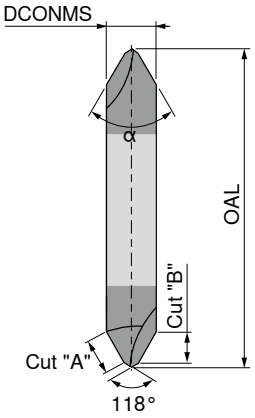
						α = 60°	α = 60°
						59 041 ...	59 042 ...
DC inch	Cut "A" inch	Cut "B" inch	OAL inch	DCONMS inch	ZEFP		
1/8	0.098	0.085	1 1/2	1/8	2	12506	12506
3/16	0.147	0.127	2	3/16	2	18806	18806
1/4	0.200	0.173	2 1/2	1/4	2	25006	25006
3/8	0.313	0.271	2 1/2	3/8	2	37506	37506
1/2	0.430	0.372	3	1/2	2	50006	50006
P						●	●
M							
K						●	●
N							
S							
H							
O							

→ v_c/f_z Page 143

Chamfer milling cutter 60°

P133 | UN | λ_s=0° γ_s=0°







AlTiN



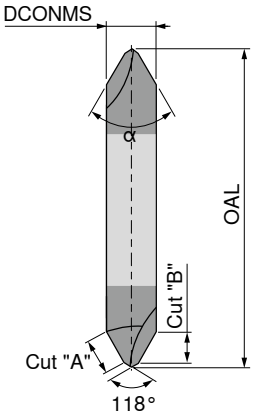
						α = 60°	α = 60°
						59 043 ...	59 044 ...
DC inch	Cut "A" inch	Cut "B" inch	OAL inch	DCONMS inch	ZEFP		
1/4	0.200	0.173	2 1/2	1/4	4	25006	25006
3/8	0.313	0.271	2 1/2	3/8	4	37506	37506
1/2	0.430	0.372	3	1/2	4	50006	50006
P						●	●
M							
K						●	●
N							
S							
H							
O							

→ v_c/f_z Page 145

Chamfer milling cutter 90°

P134 | UN | λ_s=0° γ_s=0°





AlTiN





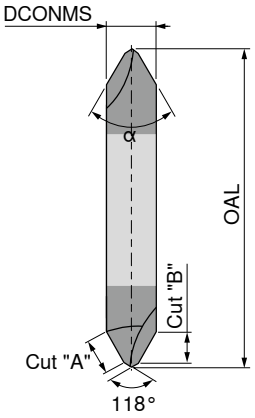
						α = 90°	α = 90°
						59 045 ...	59 046 ...
DC inch	Cut "A" inch	Cut "B" inch	OAL inch	DCONMS inch	ZEFP		
1/8	0.071	0.050	1 1/2	1/8	2	12509	12509
3/16	0.107	0.076	2	3/16	2	18809	18809
1/4	0.141	0.100	2 1/2	1/4	2	25009	25009
3/8	0.221	0.157	2 1/2	3/8	2	37509	37509
1/2	0.304	0.215	3	1/2	2	50009	50009
P						●	●
M							
K						●	●
N							
S							
H							
O							

→ v_c/f_z Page 143

Chamfer milling cutter 90°

P135 | UN | λ_s=0° γ_s=0°





AlTiN





	α = 90°	α = 90°
	59 047 ...	59 048 ...

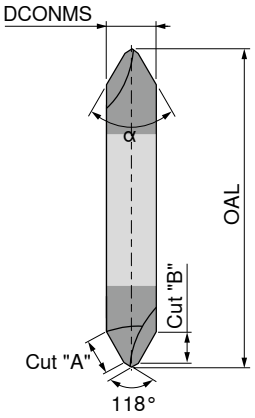
DC inch	Cut "A" inch	Cut "B" inch	OAL inch	DCONMS inch	ZEFP		
1/4	0.141	0.100	2 1/2	1/4	4	**25009**	**25009**
3/8	0.221	0.157	2 1/2	3/8	4	**37509**	**37509**
1/2	0.304	0.215	3	1/2	4	**50009**	**50009**

P	●	●
M		
K	●	●
N		
S		
H		
O		

→ v_c/f_z Page 146

Chamfer milling cutter 120°

P130 | UN | λ_s=0° γ_s=0°



AlTiN



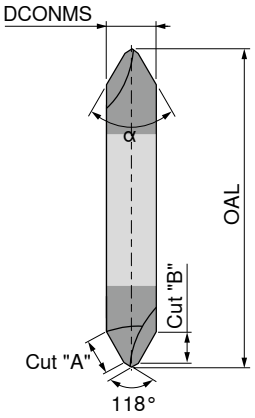
						α = 120°	α = 120°
						59 037 ...	59 038 ...
DC inch	Cut "A" inch	Cut "B" inch	OAL inch	DCONMS inch	ZEFP		
1/4	0.124	0.062	2 1/2	1/4	2	**25012**	**25012**
3/8	0.199	0.100	2 1/2	3/8	2	**37512**	**37512**
1/2	0.266	0.133	3	1/2	2	**50012**	**50012**
P						●	●
M							
K						●	●
N							
S							
H							
O							

→ v_c/f_z Page 144

Chamfer milling cutter 120°

P131 | UN | λ_s=0° γ_s=0°





AlTiN





						α = 120°	α = 120°
						59 039 ...	59 040 ...
DC inch	Cut "A" inch	Cut "B" inch	OAL inch	DCONMS inch	ZEFP		
1/4	0.144	0.072	2 1/2	1/4	4	25012	25012
3/8	0.217	0.108	2 1/2	3/8	4	37512	37512
1/2	0.289	0.144	3	1/2	4	50012	50012
P						●	●
M							
K						●	●
N							
S							
H							
O							

→ v_c/f_z Page 146

Material examples for cutting data tables

	Material sub-group	Index	Composition / Structure / Heat treatment		Tensile strength lbf/in²* / HB / HRC	Material number	Material designation	Material number	Material designation
P	Unalloyed steel	P.1.1	< 0.15 % C	Annealed	60900 lbf/in² / 125 HB	1.0401	1015	1.0301	1010
		P.1.2	< 0.45 % C	Annealed	92800 lbf/in² / 190 HB	1.1191	1045	1.0737	12L14
		P.1.3		Tempered	121800 lbf/in² / 250 HB	1.1191	1045	1.0503	1043
		P.1.4	< 0.75 % C	Annealed	132000 lbf/in² / 270 HB	1.1223	1060	1.0535	1055
		P.1.5		Tempered	146500 lbf/in² / 300 HB	1.1223	1060	1.1274	1095
	Low-alloy steel	P.2.1		Annealed	88500 lbf/in² / 180 HB	1.7131	5115	1.6523	8620
		P.2.2		Tempered	134900 lbf/in² / 275 HB	1.7131	5115	1.6582	4340
		P.2.3		Tempered	146500 lbf/in² / 300 HB	1.7225	4142	1.7131	5115
		P.2.4		Tempered	174000 lbf/in² / 375 HB	1.7225	4142	17223	4140
	High-alloy steel and high-alloy tool steel	P.3.1		Annealed	98600 lbf/in² / 200 HB	1.4021	420	1.2379	D2
		P.3.2		Hardened and tempered	159500 lbf/in² / 300 HB	1.2343	H11	1.3343	M2
		P.3.3		Hardened and tempered	188500 lbf/in² / 400 HB	1.2343	H11	1.2363	A2
	Stainless steel	P.4.1	Ferritic / martensitic	Annealed	98600 lbf/in² / 200 HB	1.4016	430	1.4125	440C
		P.4.2	Martensitic	Tempered	117500 lbf/in² / 250 HB	1.4112	S44003	1.4021	420
M	Stainless steel	M.1.1	Austenitic / austenitic-ferritic	Quenched	88500 lbf/in² / 200 HB	1.4301	304	1.4401	316
		M.2.1	Austenitic	Tempered	300 HB	1.4841	314	1.4568	17-7 PH
		M.3.1	Austenitic / ferritic (Duplex)		113100 lbf/in² / 230 HB	1.4462	S32205	1.4410	S32750
K	Grey cast iron	K.1.1	Pearlitic / ferritic		88500 lbf/in² / 180 HB	0.6010	A48-20B	0.6025	A48-40 B
		K.1.2	Pearlitic (martensitic)		127600 lbf/in² / 260 HB	0.6030	A48-45B	0.6040	A48-60 B
	Spherulitic graphite cast iron	K.2.1	Ferritic		78300 lbf/in² / 160 HB	0.7040	60-40-18	0.7050	65-45-12
		K.2.2	Pearlitic		122600 lbf/in² / 250 HB	0.7070	100-70-03	0.7660	A439 Type D2
	Malleable iron	K.3.1	Ferritic		63800 lbf/in² / 130 HB	0.8035	GTW-35-04		
		K.3.2	Pearlitic		113100 lbf/in² / 230 HB	0.8170	70003		
N	Aluminium wrought alloy	N.1.1	Non-hardenable		60 HB	3.0255	A91060	3.0255	A91060
		N.1.2	Hardenable		49300 lbf/in² / 100 HB	3.1355	2024	3.1355	2024
	Cast aluminium alloy	N.2.1	≤ 12 % Si, non-hardenable		36300 lbf/in² / 75 HB	3.2581	A04130 / A413-0	3.2581	A04130 / A413-0
		N.2.2	≤ 12 % Si, hardenable		43500 lbf/in² / 90 HB	3.2134	G-AlSi5Cu1Mg		
		N.2.3	> 12 % Si, non-hardenable		63800 lbf/in² / 130 HB		G-AlSi17Cu4Mg		
	Copper and copper alloys (bronze/brass)	N.3.1	Free-machining alloys, PB > 1 %		54400 lbf/in² / 110 HB	2.0380	CuZn39Pb2 (Ms58)	2.0380	C37700
		N.3.2	CuZn, CuSnZn		43500 lbf/in² / 90 HB	2.0331	CuZn15	2.0331	C34000
		N.3.3	CuSn, lead-free copper and electrolytic copper		49300 lbf/in² / 100 HB	2.0060	E-Cu57		
	Magnesium alloys	N.4.1	Magnesium and magnesium alloys		70 HB	3.5612	MgAl6Zn		
S	Heat-resistant alloys	S.1.1	Fe - basis	Annealed	98600 lbf/in² / 200 HB	1.4864	X12NiCrSi 36-16	1.4864	330
		S.1.2			137800 lbf/in² / 280 HB	1.4980	X6NiCrTiMoVB25-15-2	1.4980	S66286
		S.2.1	Ni or Co basis	Annealed	121800 lbf/in² / 250 HB	2.4856	Inconel 625	2.4812	Hastelloy C
		S.2.2			171100 lbf/in² / 350 HB	2.4952	Nimonic 80A	2.4668	Inconel 718
		S.2.3		Cast	156600 lbf/in² / 320 HB	2.4674	Nimocast PK24	2.4670	Nimocast 713
	Titanium alloys	S.3.1	Pure titanium		5800 lbf/in²	3.7025	Ti99,8		
		S.3.2	Alpha + beta alloys		152300 lbf/in²	3.7165	TiAl6V4		
		S.3.3	Beta alloys		203100 lbf/in² / 410 HB	Ti555.3	Ti-5Al-5V-5Mo-3Cr		
H	Hardened steel	H.1.1		Hardened and tempered	46-55 HRC				
		H.1.2		Hardened and tempered	56-60 HRC				
		H.1.3		Hardened and tempered	61-65 HRC				
		H.1.4		Hardened and tempered	66-70 HRC				
	Chilled iron	H.2.1		Cast	400 HB				
	Hardened cast iron	H.3.1		Hardened and tempered	55 HRC				
O	Non-metal materials	O.1.1	Plastics, duroplastic		≤ 21800 lbf/in²				
		O.1.2	Plastics, thermoplastic		≤ 14500 lbf/in²				
		O.2.1	Aramid fibre-reinforced		≤ 145000 lbf/in²				
		O.2.2	Glass/carbon-fibre reinforced		≤ 145000 lbf/in²				
		O.3.1	Graphite						

*** Tensile Strength at Rupture (Rm)**

Cutting Data – P220 – End Milling Cutter, short – long

			59 003 ...									
		Ø DC =	1/8"	3/16"	1/4–5/16"	3/8"	1/2"	5/8"	3/4"	● 1st choice		
										○ suitable		
			a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	Emulsion	Compressed air	MQL
Index	v_c ft/min	$a_{p\,max.}$ x DC	f_z inch	f_z inch	f_z inch	f_z inch	f_z inch	f_z inch	f_z inch			
P.1.1												
P.1.2												
P.1.3												
P.1.4												
P.1.5												
P.2.1												
P.2.2												
P.2.3												
P.2.4												
P.3.1												
P.3.2												
P.3.3												
P.4.1												
P.4.2												
M.1.1												
M.2.1												
M.3.1												
K.1.1												
K.1.2												
K.2.1												
K.2.2												
K.3.1												
K.3.2												
N.1.1	1970	1.0	0.0015	0.0019	0.0029	0.0036	0.0050	0.0053	0.0060	●	○	○
N.1.2	1970	1.0	0.0015	0.0019	0.0029	0.0036	0.0050	0.0053	0.0060	●	○	○
N.2.1	1180	1.0	0.0012	0.0015	0.0025	0.0031	0.0044	0.0047	0.0054	●	○	○
N.2.2	1180	1.0	0.0012	0.0015	0.0025	0.0031	0.0044	0.0047	0.0054	●	○	○
N.2.3	790	1.0	0.0012	0.0015	0.0025	0.0031	0.0044	0.0047	0.0054	●	○	○
N.3.1	790	1.0	0.0010	0.0013	0.0020	0.0026	0.0036	0.0039	0.0044	●	○	○
N.3.2	790	1.0	0.0010	0.0013	0.0020	0.0026	0.0036	0.0039	0.0044	●	○	○
N.3.3	560	1.0	0.0010	0.0013	0.0020	0.0026	0.0036	0.0039	0.0044	●	○	○
N.4.1	720	1.0	0.0012	0.0015	0.0025	0.0031	0.0044	0.0047	0.0054	●	○	○
S.1.1												
S.1.2												
S.2.1												
S.2.2												
S.2.3												
S.3.1												
S.3.2												
S.3.3												
H.1.1												
H.1.2												
H.1.3												
H.1.4												
H.2.1												
H.3.1												
O.1.1												
O.1.2												
O.2.1												
O.2.2												
O.3.1												

Cutting Data – S142 – End Milling Cutter, short – extra long

			59 053 ... / 59 054 ...										
		Ø DC =	5/32"	3/16"	1/4–5/16"	11/32–3/8"	1/2"	5/8"	3/4"	1"	● 1st choice		
											○ suitable		
			a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC			
Index	v_c ft/min	$a_{p\,max.}$ x DC	f_z inch	f_z inch	f_z inch	f_z inch	f_z inch	f_z inch	f_z inch	f_z inch	Emulsion	Compressed air	MQL
P.1.1													
P.1.2													
P.1.3													
P.1.4													
P.1.5													
P.2.1													
P.2.2													
P.2.3													
P.2.4													
P.3.1													
P.3.2													
P.3.3													
P.4.1													
P.4.2													
M.1.1													
M.2.1													
M.3.1													
K.1.1													
K.1.2													
K.2.1													
K.2.2													
K.3.1													
K.3.2													
N.1.1	980	1.0	0.0015	0.0019	0.0029	0.0036	0.0050	0.0053	0.0060	0.0069	●	○	○
N.1.2	980	1.0	0.0015	0.0019	0.0029	0.0036	0.0050	0.0053	0.0060	0.0069	●	○	○
N.2.1	590	1.0	0.0012	0.0015	0.0025	0.0031	0.0044	0.0047	0.0054	0.0062	●	○	○
N.2.2	590	1.0	0.0012	0.0015	0.0025	0.0031	0.0044	0.0047	0.0054	0.0062	●	○	○
N.2.3	390	1.0	0.0012	0.0015	0.0025	0.0031	0.0044	0.0047	0.0054	0.0062	●	○	○
N.3.1	390	1.0	0.0010	0.0013	0.0020	0.0026	0.0036	0.0039	0.0044	0.0050	●	○	○
N.3.2	390	1.0	0.0010	0.0013	0.0020	0.0026	0.0036	0.0039	0.0044	0.0050	●	○	○
N.3.3	280	1.0	0.0010	0.0013	0.0020	0.0026	0.0036	0.0039	0.0044	0.0050	●	○	○
N.4.1	360	1.0	0.0012	0.0015	0.0025	0.0031	0.0044	0.0047	0.0054	0.0062	●	○	○
S.1.1													
S.1.2													
S.2.1													
S.2.2													
S.2.3													
S.3.1													
S.3.2													
S.3.3													
H.1.1													
H.1.2													
H.1.3													
H.1.4													
H.2.1													
H.3.1													
O.1.1													
O.1.2													
O.2.1													
O.2.2													
O.3.1													

Cutting Data – P109 – End Milling Cutter, extra short – extra long

			59 027 ...												
		Ø DC =	1/8–5/32"	3/16"	7/32"	1/4–9/32–5/16"	3/8"	7/16"	1/2"	9/16–5/8"	3/4"	1"	● 1st choice		
													○ suitable		
			a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	Emulsion	Compressed air	MQL
Index	v_c ft/min	$a_{p\,max.}$ x DC	f_z inch	f_z inch	f_z inch	f_z inch	f_z inch	f_z inch	f_z inch	f_z inch	f_z inch	f_z inch			
P.1.1															
P.1.2															
P.1.3															
P.1.4															
P.1.5															
P.2.1															
P.2.2															
P.2.3															
P.2.4															
P.3.1															
P.3.2															
P.3.3															
P.4.1															
P.4.2															
M.1.1															
M.2.1															
M.3.1															
K.1.1															
K.1.2															
K.2.1															
K.2.2															
K.3.1															
K.3.2															
N.1.1	1380	1.0	0.0012	0.0015	0.0019	0.0025	0.0031	0.0038	0.0044	0.0047	0.0054	0.0062	●	○	○
N.1.2	1380	1.0	0.0012	0.0015	0.0019	0.0025	0.0031	0.0038	0.0044	0.0047	0.0054	0.0062	●	○	○
N.2.1	830	1.0	0.0011	0.0014	0.0017	0.0023	0.0029	0.0035	0.0040	0.0043	0.0049	0.0056	●	○	○
N.2.2	830	1.0	0.0011	0.0014	0.0017	0.0023	0.0029	0.0035	0.0040	0.0043	0.0049	0.0056	●	○	○
N.2.3	550	1.0	0.0011	0.0014	0.0017	0.0023	0.0029	0.0035	0.0040	0.0043	0.0049	0.0056	●	○	○
N.3.1	550	1.0	0.0008	0.0011	0.0013	0.0017	0.0022	0.0026	0.0031	0.0033	0.0037	0.0043	●	○	○
N.3.2	550	1.0	0.0008	0.0011	0.0013	0.0017	0.0022	0.0026	0.0031	0.0033	0.0037	0.0043	●	○	○
N.3.3	390	1.0	0.0008	0.0011	0.0013	0.0017	0.0022	0.0026	0.0031	0.0033	0.0037	0.0043	●	○	○
N.4.1	510	1.0	0.0011	0.0014	0.0017	0.0023	0.0029	0.0035	0.0040	0.0043	0.0049	0.0056	●	○	○
S.1.1															
S.1.2															
S.2.1															
S.2.2															
S.2.3															
S.3.1															
S.3.2															
S.3.3															
H.1.1															
H.1.2															
H.1.3															
H.1.4															
H.2.1															
H.3.1															
O.1.1															
O.1.2															
O.2.1															
O.2.2															
O.3.1															

Cutting Data – P362 – End Milling Cutter, short – extra long

			59 004 ...									
		Ø DC =	3/16"	1/4"	3/8"	1/2"	5/8"	3/4"	1"	● 1st choice		
										○ suitable		
			a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	Emulsion	Compressed air	MQL
Index	v_c ft/min	$a_{p\,max.}$ x DC	f_z inch	f_z inch	f_z inch	f_z inch	f_z inch	f_z inch	f_z inch			
P.1.1												
P.1.2												
P.1.3												
P.1.4												
P.1.5												
P.2.1												
P.2.2												
P.2.3												
P.2.4												
P.3.1												
P.3.2												
P.3.3												
P.4.1												
P.4.2												
M.1.1												
M.2.1												
M.3.1												
K.1.1												
K.1.2												
K.2.1												
K.2.2												
K.3.1												
K.3.2												
N.1.1	1970	1.0	0.0015	0.0025	0.0031	0.0044	0.0047	0.0054	0.0062	●	○	○
N.1.2	1970	1.0	0.0015	0.0025	0.0031	0.0044	0.0047	0.0054	0.0062	●	○	○
N.2.1	1180	1.0	0.0014	0.0023	0.0029	0.0040	0.0043	0.0049	0.0056	●	○	○
N.2.2	1180	1.0	0.0014	0.0023	0.0029	0.0040	0.0043	0.0049	0.0056	●	○	○
N.2.3	790	1.0	0.0014	0.0023	0.0029	0.0040	0.0043	0.0049	0.0056	●	○	○
N.3.1	790	1.0	0.0011	0.0017	0.0022	0.0031	0.0033	0.0037	0.0043	●	○	○
N.3.2	790	1.0	0.0011	0.0017	0.0022	0.0031	0.0033	0.0037	0.0043	●	○	○
N.3.3	560	1.0	0.0011	0.0017	0.0022	0.0031	0.0033	0.0037	0.0043	●	○	○
N.4.1	720	1.0	0.0014	0.0023	0.0029	0.0040	0.0043	0.0049	0.0056	●	○	○
S.1.1												
S.1.2												
S.2.1												
S.2.2												
S.2.3												
S.3.1												
S.3.2												
S.3.3												
H.1.1												
H.1.2												
H.1.3												
H.1.4												
H.2.1												
H.3.1												
O.1.1												
O.1.2												
O.2.1												
O.2.2												
O.3.1												

Cutting Data – P376 – End Milling Cutter, short – extra long

			59 005 ...								
		Ø DC =	1/4–5/16"	3/8"	1/2"	5/8"	3/4"	1"	● 1st choice		
									○ suitable		
			a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	Emulsion	Compressed air	MQL
Index	v_c ft/min	$a_{p\,max.}$ x DC	f_z inch	f_z inch	f_z inch	f_z inch	f_z inch	f_z inch			
P.1.1											
P.1.2											
P.1.3											
P.1.4											
P.1.5											
P.2.1											
P.2.2											
P.2.3											
P.2.4											
P.3.1											
P.3.2											
P.3.3											
P.4.1											
P.4.2											
M.1.1											
M.2.1											
M.3.1											
K.1.1											
K.1.2											
K.2.1											
K.2.2											
K.3.1											
K.3.2											
N.1.1	1640	1.0	0.0012	0.0015	0.0020	0.0022	0.0024	0.0028	●	○	○
N.1.2	1640	1.0	0.0012	0.0015	0.0020	0.0022	0.0024	0.0028	●	○	○
N.2.1	980	1.0	0.0009	0.0012	0.0017	0.0018	0.0020	0.0023	●	○	○
N.2.2	980	1.0	0.0009	0.0012	0.0017	0.0018	0.0020	0.0023	●	○	○
N.2.3	690	1.0	0.0009	0.0012	0.0017	0.0018	0.0020	0.0023	●	○	○
N.3.1	690	1.0	0.0009	0.0012	0.0017	0.0018	0.0020	0.0023	●	○	○
N.3.2	690	1.0	0.0009	0.0012	0.0017	0.0018	0.0020	0.0023	●	○	○
N.3.3	490	1.0	0.0009	0.0012	0.0017	0.0018	0.0020	0.0023	●	○	○
N.4.1	660	1.0	0.0009	0.0012	0.0017	0.0018	0.0020	0.0023	●	○	○
S.1.1											
S.1.2											
S.2.1											
S.2.2											
S.2.3											
S.3.1											
S.3.2											
S.3.3											
H.1.1											
H.1.2											
H.1.3											
H.1.4											
H.2.1											
H.3.1											
O.1.1											
O.1.2											
O.2.1											
O.2.2											
O.3.1											

Cutting Data – S642 – End Milling Cutter, extra short – extra long

			59 068... / 59 069 ...											● 1st choice		
		Ø DC =	1/16"	3/32"	1/8–5/32"	3/16"	7/32"	1/4–9/32–5/16"	3/8"	1/2"	5/8"	3/4"	1"	○ suitable		
			a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	Emulsion	Compressed air	MQL
Index	v_c ft/min	$a_{p\,max.}$ x DC	f_z inch	f_z inch	f_z inch	f_z inch	f_z inch	f_z inch	f_z inch	f_z inch	f_z inch	f_z inch	f_z inch			
P.1.1	220	1.0	0.0006	0.0007	0.0008	0.0010	0.0011	0.0014	0.0017	0.0023	0.0024	0.0027	0.0031	●	○	○
P.1.2	180	1.0	0.0004	0.0005	0.0007	0.0008	0.0009	0.0012	0.0015	0.0020	0.0022	0.0024	0.0028	●	○	○
P.1.3	180	1.0	0.0004	0.0005	0.0007	0.0008	0.0009	0.0012	0.0015	0.0020	0.0022	0.0024	0.0028	●	○	○
P.1.4	160	1.0	0.0004	0.0005	0.0007	0.0008	0.0009	0.0012	0.0015	0.0020	0.0022	0.0024	0.0028	●	○	○
P.1.5	160	1.0	0.0004	0.0005	0.0007	0.0008	0.0009	0.0012	0.0015	0.0020	0.0022	0.0024	0.0028	●	○	○
P.2.1	180	1.0	0.0004	0.0005	0.0007	0.0008	0.0009	0.0012	0.0015	0.0020	0.0022	0.0024	0.0028	●	○	○
P.2.2	140	1.0	0.0004	0.0005	0.0007	0.0008	0.0009	0.0012	0.0015	0.0020	0.0022	0.0024	0.0028	●	○	○
P.2.3	140	1.0	0.0004	0.0005	0.0007	0.0008	0.0009	0.0012	0.0015	0.0020	0.0022	0.0024	0.0028	●	○	○
P.2.4	110	1.0	0.0004	0.0005	0.0007	0.0008	0.0009	0.0012	0.0015	0.0020	0.0022	0.0024	0.0028	●	○	○
P.3.1																
P.3.2																
P.3.3																
P.4.1	98	1.0	0.0003	0.0004	0.0006	0.0007	0.0008	0.0011	0.0013	0.0018	0.0019	0.0022	0.0025	●		
P.4.2	79	1.0	0.0003	0.0004	0.0006	0.0007	0.0008	0.0011	0.0013	0.0018	0.0019	0.0022	0.0025	●		
M.1.1	79	1.0	0.0003	0.0004	0.0006	0.0007	0.0008	0.0011	0.0013	0.0018	0.0019	0.0022	0.0025	●		
M.2.1	98	1.0	0.0003	0.0004	0.0006	0.0007	0.0008	0.0011	0.0013	0.0018	0.0019	0.0022	0.0025	●		
M.3.1	98	1.0	0.0003	0.0004	0.0006	0.0007	0.0008	0.0011	0.0013	0.0018	0.0019	0.0022	0.0025	●		
K.1.1	260	1.0	0.0009	0.0011	0.0013	0.0016	0.0018	0.0023	0.0028	0.0037	0.0039	0.0044	0.0050	●	○	○
K.1.2	240	1.0	0.0009	0.0011	0.0013	0.0016	0.0018	0.0023	0.0028	0.0037	0.0039	0.0044	0.0050	●	○	○
K.2.1	260	1.0	0.0006	0.0008	0.0009	0.0011	0.0013	0.0016	0.0019	0.0025	0.0026	0.0030	0.0033	●	○	○
K.2.2	240	1.0	0.0006	0.0008	0.0009	0.0011	0.0013	0.0016	0.0019	0.0025	0.0026	0.0030	0.0033	●	○	○
K.3.1	260	1.0	0.0009	0.0011	0.0013	0.0016	0.0018	0.0023	0.0028	0.0037	0.0039	0.0044	0.0050	●	○	○
K.3.2	240	1.0	0.0009	0.0011	0.0013	0.0016	0.0018	0.0023	0.0028	0.0037	0.0039	0.0044	0.0050	●	○	○
N.1.1																
N.1.2																
N.2.1																
N.2.2																
N.2.3																
N.3.1	390	1.0	0.0006	0.0008	0.0010	0.0012	0.0014	0.0018	0.0022	0.0030	0.0031	0.0035	0.0040	●	○	○
N.3.2	390	1.0	0.0006	0.0008	0.0010	0.0012	0.0014	0.0018	0.0022	0.0030	0.0031	0.0035	0.0040	●	○	○
N.3.3	280	1.0	0.0006	0.0008	0.0010	0.0012	0.0014	0.0018	0.0022	0.0030	0.0031	0.0035	0.0040	●	○	○
N.4.1																
S.1.1	59	1.0	0.0002	0.0003	0.0004	0.0005	0.0006	0.0008	0.0010	0.0014	0.0015	0.0017	0.0019	●		
S.1.2	59	1.0	0.0002	0.0003	0.0004	0.0005	0.0006	0.0008	0.0010	0.0014	0.0015	0.0017	0.0019	●		
S.2.1	59	1.0	0.0002	0.0003	0.0004	0.0005	0.0006	0.0008	0.0010	0.0014	0.0015	0.0017	0.0019	●		
S.2.2	59	1.0	0.0002	0.0003	0.0004	0.0005	0.0006	0.0008	0.0010	0.0014	0.0015	0.0017	0.0019	●		
S.2.3	59	1.0	0.0002	0.0003	0.0004	0.0005	0.0006	0.0008	0.0010	0.0014	0.0015	0.0017	0.0019	●		
S.3.1	98	1.0	0.0003	0.0004	0.0006	0.0007	0.0008	0.0011	0.0013	0.0018	0.0019	0.0022	0.0025	●		
S.3.2	39	1.0	0.0003	0.0004	0.0006	0.0007	0.0008	0.0011	0.0013	0.0018	0.0019	0.0022	0.0025	●		
S.3.3																
H.1.1																
H.1.2																
H.1.3																
H.1.4																
H.2.1																
H.3.1																
O.1.1																
O.1.2																
O.2.1																
O.2.2																
O.3.1																

Cutting Data – S643 – End-Milling-Cutter, extra short – extra long

			59 070... / 59 071 ...													
		Ø DC =	1/16–5/64"	3/32"	1/8–5/32"	3/16"	7/32"	1/4–9/32–5/16"	3/8"	1/2"	5/8"	3/4"	1"	● 1st choice		
														○ suitable		
			a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC			
Index	v_c ft/min	$a_{p\,max.}$ x DC	f_z inch	f_z inch	f_z inch	f_z inch	f_z inch	f_z inch	f_z inch	f_z inch	f_z inch	f_z inch	f_z inch	Emulsion	Compressed air	MQL
P.1.1	220	1.0	0.0004	0.0005	0.0007	0.0008	0.0009	0.0012	0.0015	0.0020	0.0022	0.0024	0.0028	●	○	○
P.1.2	180	1.0	0.0003	0.0004	0.0006	0.0007	0.0008	0.0011	0.0013	0.0018	0.0019	0.0022	0.0025	●	○	○
P.1.3	180	1.0	0.0003	0.0004	0.0006	0.0007	0.0008	0.0011	0.0013	0.0018	0.0019	0.0022	0.0025	●	○	○
P.1.4	160	1.0	0.0003	0.0004	0.0006	0.0007	0.0008	0.0011	0.0013	0.0018	0.0019	0.0022	0.0025	●	○	○
P.1.5	160	1.0	0.0003	0.0004	0.0006	0.0007	0.0008	0.0011	0.0013	0.0018	0.0019	0.0022	0.0025	●	○	○
P.2.1	180	1.0	0.0003	0.0004	0.0006	0.0007	0.0008	0.0011	0.0013	0.0018	0.0019	0.0022	0.0025	●	○	○
P.2.2	140	1.0	0.0003	0.0004	0.0006	0.0007	0.0008	0.0011	0.0013	0.0018	0.0019	0.0022	0.0025	●	○	○
P.2.3	140	1.0	0.0003	0.0004	0.0006	0.0007	0.0008	0.0011	0.0013	0.0018	0.0019	0.0022	0.0025	●	○	○
P.2.4	110	1.0	0.0003	0.0004	0.0006	0.0007	0.0008	0.0011	0.0013	0.0018	0.0019	0.0022	0.0025	●	○	○
P.3.1																
P.3.2																
P.3.3																
P.4.1	100	1.0	0.0002	0.0003	0.0004	0.0005	0.0006	0.0008	0.0010	0.0014	0.0015	0.0017	0.0019	●		
P.4.2	80	1.0	0.0002	0.0003	0.0004	0.0005	0.0006	0.0008	0.0010	0.0014	0.0015	0.0017	0.0019	●		
M.1.1	79	1.0	0.0002	0.0003	0.0004	0.0005	0.0006	0.0008	0.0010	0.0014	0.0015	0.0017	0.0019	●		
M.2.1	98	1.0	0.0002	0.0003	0.0004	0.0005	0.0006	0.0008	0.0010	0.0014	0.0015	0.0017	0.0019	●		
M.3.1	98	1.0	0.0002	0.0003	0.0004	0.0005	0.0006	0.0008	0.0010	0.0014	0.0015	0.0017	0.0019	●		
K.1.1	260	1.0	0.0007	0.0009	0.0011	0.0013	0.0015	0.0020	0.0024	0.0033	0.0035	0.0039	0.0045	●	○	○
K.1.2	240	1.0	0.0007	0.0009	0.0011	0.0013	0.0015	0.0020	0.0024	0.0033	0.0035	0.0039	0.0045	●	○	○
K.2.1	260	1.0	0.0006	0.0007	0.0008	0.0010	0.0011	0.0014	0.0017	0.0023	0.0024	0.0027	0.0031	●	○	○
K.2.2	240	1.0	0.0006	0.0007	0.0008	0.0010	0.0011	0.0014	0.0017	0.0023	0.0024	0.0027	0.0031	●	○	○
K.3.1	260	1.0	0.0007	0.0009	0.0011	0.0013	0.0015	0.0020	0.0024	0.0033	0.0035	0.0039	0.0045	●	○	○
K.3.2	240	1.0	0.0007	0.0009	0.0011	0.0013	0.0015	0.0020	0.0024	0.0033	0.0035	0.0039	0.0045	●	○	○
N.1.1																
N.1.2																
N.2.1																
N.2.2																
N.2.3																
N.3.1	390	1.0	0.0004	0.0006	0.0007	0.0010	0.0012	0.0016	0.0020	0.0028	0.0030	0.0033	0.0039	●	○	○
N.3.2	390	1.0	0.0004	0.0006	0.0007	0.0010	0.0012	0.0016	0.0020	0.0028	0.0030	0.0033	0.0039	●	○	○
N.3.3	280	1.0	0.0004	0.0006	0.0007	0.0010	0.0012	0.0016	0.0020	0.0028	0.0030	0.0033	0.0039	●	○	○
N.4.1																
S.1.1	59	1.0	0.0002	0.0003	0.0004	0.0005	0.0006	0.0008	0.0010	0.0014	0.0015	0.0017	0.0019	●		
S.1.2	59	1.0	0.0002	0.0003	0.0004	0.0005	0.0006	0.0008	0.0010	0.0014	0.0015	0.0017	0.0019	●		
S.2.1	59	1.0	0.0002	0.0003	0.0004	0.0005	0.0006	0.0008	0.0010	0.0014	0.0015	0.0017	0.0019	●		
S.2.2	59	1.0	0.0002	0.0003	0.0004	0.0005	0.0006	0.0008	0.0010	0.0014	0.0015	0.0017	0.0019	●		
S.2.3	59	1.0	0.0002	0.0003	0.0004	0.0005	0.0006	0.0008	0.0010	0.0014	0.0015	0.0017	0.0019	●		
S.3.1	98	1.0	0.0002	0.0003	0.0004	0.0005	0.0006	0.0008	0.0010	0.0014	0.0015	0.0017	0.0019	●		
S.3.2	39	1.0	0.0002	0.0003	0.0004	0.0005	0.0006	0.0008	0.0010	0.0014	0.0015	0.0017	0.0019	●		
S.3.3																
H.1.1																
H.1.2																
H.1.3																
H.1.4																
H.2.1																
H.3.1																
O.1.1																
O.1.2																
O.2.1																
O.2.2																
O.3.1																

Cutting Data – S644 – End Milling Cutter, extra short – extra long

			59 043... / 59 044 ... / 59 072... / 59 073 ...													● 1st choice		
		Ø DC =	1/32"	3/64"	1/16–5/64"	3/32–7/64"	1/8–5/32"	3/16"	7/32"	1/4–9/32–5/16"	3/8"	1/2"	5/8"	3/4"	1"	○ suitable		
			a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	Emulsion	Compressed air	MQL
Index	v_c ft/min	$a_{p\,max.}$ x DC	f_z inch	f_z inch	f_z inch	f_z inch	f_z inch	f_z inch	f_z inch	f_z inch	f_z inch	f_z inch	f_z inch	f_z inch	f_z inch			
P.1.1	450	1.0	0.0003	0.0003	0.0005	0.0007	0.0009	0.0012	0.0014	0.0019	0.0023	0.0032	0.0034	0.0039	0.0044	●	○	○
P.1.2	430	1.0	0.0003	0.0003	0.0005	0.0007	0.0009	0.0012	0.0014	0.0019	0.0023	0.0032	0.0034	0.0039	0.0044	●	○	○
P.1.3	430	1.0	0.0003	0.0003	0.0005	0.0007	0.0009	0.0012	0.0014	0.0019	0.0023	0.0032	0.0034	0.0039	0.0044	●	○	○
P.1.4	410	1.0	0.0003	0.0003	0.0005	0.0007	0.0009	0.0012	0.0014	0.0019	0.0023	0.0032	0.0034	0.0039	0.0044	●	○	○
P.1.5	410	1.0	0.0003	0.0003	0.0005	0.0007	0.0009	0.0012	0.0014	0.0019	0.0023	0.0032	0.0034	0.0039	0.0044	●	○	○
P.2.1	430	1.0	0.0003	0.0003	0.0005	0.0007	0.0009	0.0012	0.0014	0.0019	0.0023	0.0032	0.0034	0.0039	0.0044	●	○	○
P.2.2	410	1.0	0.0002	0.0002	0.0004	0.0006	0.0007	0.0010	0.0012	0.0016	0.0020	0.0028	0.0030	0.0033	0.0039	●	○	○
P.2.3	390	1.0	0.0003	0.0003	0.0005	0.0007	0.0009	0.0012	0.0014	0.0019	0.0023	0.0032	0.0034	0.0039	0.0044	●	○	○
P.2.4	370	1.0	0.0002	0.0002	0.0004	0.0006	0.0007	0.0010	0.0012	0.0016	0.0020	0.0028	0.0030	0.0033	0.0039	●	○	○
P.3.1	390	1.0	0.0003	0.0003	0.0005	0.0007	0.0009	0.0012	0.0014	0.0019	0.0023	0.0032	0.0034	0.0039	0.0044	●	○	○
P.3.2	370	1.0	0.0003	0.0003	0.0005	0.0007	0.0009	0.0012	0.0014	0.0019	0.0023	0.0032	0.0034	0.0039	0.0044	●	○	○
P.3.3	310	1.0	0.0003	0.0003	0.0005	0.0007	0.0009	0.0012	0.0014	0.0019	0.0023	0.0032	0.0034	0.0039	0.0044	●	○	○
P.4.1	220	1.0	0.0000	0.0000	0.0002	0.0003	0.0005	0.0006	0.0007	0.0010	0.0013	0.0019	0.0020	0.0023	0.0026	●		
P.4.2	180	1.0	0.0000	0.0000	0.0002	0.0003	0.0005	0.0006	0.0007	0.0010	0.0013	0.0019	0.0020	0.0023	0.0026	●		
M.1.1	220	1.0	0.0000	0.0000	0.0002	0.0003	0.0005	0.0006	0.0007	0.0010	0.0013	0.0019	0.0020	0.0023	0.0026	●		
M.2.1	220	1.0	0.0000	0.0000	0.0002	0.0003	0.0005	0.0006	0.0007	0.0010	0.0013	0.0019	0.0020	0.0023	0.0026	●		
M.3.1	220	1.0	0.0000	0.0000	0.0002	0.0003	0.0005	0.0006	0.0007	0.0010	0.0013	0.0019	0.0020	0.0023	0.0026	●		
K.1.1	430	1.0	0.0003	0.0003	0.0006	0.0009	0.0012	0.0015	0.0019	0.0025	0.0031	0.0044	0.0047	0.0054	0.0062	●	○	○
K.1.2	390	1.0	0.0003	0.0003	0.0006	0.0009	0.0012	0.0015	0.0019	0.0025	0.0031	0.0044	0.0047	0.0054	0.0062	●	○	○
K.2.1	410	1.0	0.0003	0.0003	0.0005	0.0007	0.0009	0.0012	0.0014	0.0019	0.0023	0.0032	0.0034	0.0039	0.0044	●	○	○
K.2.2	370	1.0	0.0003	0.0003	0.0005	0.0007	0.0009	0.0012	0.0014	0.0019	0.0023	0.0032	0.0034	0.0039	0.0044	●	○	○
K.3.1	390	1.0	0.0003	0.0003	0.0005	0.0007	0.0009	0.0012	0.0014	0.0019	0.0023	0.0032	0.0034	0.0039	0.0044	●	○	○
K.3.2	350	1.0	0.0003	0.0003	0.0005	0.0007	0.0009	0.0012	0.0014	0.0019	0.0023	0.0032	0.0034	0.0039	0.0044	●	○	○
N.1.1																		
N.1.2																		
N.2.1																		
N.2.2																		
N.2.3																		
N.3.1	690	1.0	0.0003	0.0003	0.0006	0.0009	0.0012	0.0015	0.0019	0.0025	0.0031	0.0044	0.0047	0.0054	0.0062	●	○	○
N.3.2	690	1.0	0.0003	0.0003	0.0006	0.0009	0.0012	0.0015	0.0019	0.0025	0.0031	0.0044	0.0047	0.0054	0.0062	●	○	○
N.3.3	550	1.0	0.0003	0.0003	0.0006	0.0009	0.0012	0.0015	0.0019	0.0025	0.0031	0.0044	0.0047	0.0054	0.0062	●	○	○
N.4.1																		
S.1.1	59	1.0	0.0001	0.0001	0.0002	0.0003	0.0004	0.0005	0.0006	0.0008	0.0010	0.0014	0.0015	0.0017	0.0019	●		
S.1.2	59	1.0	0.0001	0.0001	0.0002	0.0003	0.0004	0.0005	0.0006	0.0008	0.0010	0.0014	0.0015	0.0017	0.0019	●		
S.2.1	59	1.0	0.0001	0.0001	0.0002	0.0003	0.0004	0.0005	0.0006	0.0008	0.0010	0.0014	0.0015	0.0017	0.0019	●		
S.2.2	59	1.0	0.0001	0.0001	0.0002	0.0003	0.0004	0.0005	0.0006	0.0008	0.0010	0.0014	0.0015	0.0017	0.0019	●		
S.2.3	59	1.0	0.0001	0.0001	0.0002	0.0003	0.0004	0.0005	0.0006	0.0008	0.0010	0.0014	0.0015	0.0017	0.0019	●		
S.3.1	180	1.0	0.0002	0.0002	0.0004	0.0006	0.0007	0.0010	0.0012	0.0016	0.0020	0.0028	0.0030	0.0033	0.0039	●		
S.3.2																		
S.3.3																		
H.1.1																		
H.1.2																		
H.1.3																		
H.1.4																		
H.2.1																		
H.3.1																		
O.1.1																		
O.1.2																		
O.2.1																		
O.2.2																		
O.3.1																		

Cutting Data – P645 – End Milling Cutter, short – extra long

			59 074 ... / 59 075 ...											
		Ø DC =	1/8–5/32"	3/16"	7/32"	1/4–5/16"	3/8"	1/2"	5/8"	3/4"	1"	● 1st choice		
												○ suitable		
			a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC			
Index	v_c ft/min	$a_{p\,max.}$ x DC	f_z inch	f_z inch	f_z inch	f_z inch	f_z inch	f_z inch	f_z inch	f_z inch	f_z inch	Emulsion	Compressed air	MQL
P.1.1	410	1.0	0.0007	0.0010	0.0012	0.0016	0.0020	0.0028	0.0030	0.0033	0.0039	●	○	○
P.1.2	390	1.0	0.0007	0.0010	0.0012	0.0016	0.0020	0.0028	0.0030	0.0033	0.0039	●	○	○
P.1.3	390	1.0	0.0007	0.0010	0.0012	0.0016	0.0020	0.0028	0.0030	0.0033	0.0039	●	○	○
P.1.4	370	1.0	0.0007	0.0010	0.0012	0.0016	0.0020	0.0028	0.0030	0.0033	0.0039	●	○	○
P.1.5	370	1.0	0.0007	0.0010	0.0012	0.0016	0.0020	0.0028	0.0030	0.0033	0.0039	●	○	○
P.2.1	390	1.0	0.0007	0.0010	0.0012	0.0016	0.0020	0.0028	0.0030	0.0033	0.0039	●	○	○
P.2.2	370	1.0	0.0006	0.0007	0.0009	0.0012	0.0015	0.0022	0.0023	0.0026	0.0030	●	○	○
P.2.3	350	1.0	0.0007	0.0010	0.0012	0.0016	0.0020	0.0028	0.0030	0.0033	0.0039	●	○	○
P.2.4	330	1.0	0.0006	0.0007	0.0009	0.0012	0.0015	0.0022	0.0023	0.0026	0.0030	●	○	○
P.3.1	350	1.0	0.0007	0.0010	0.0012	0.0016	0.0020	0.0028	0.0030	0.0033	0.0039	●	○	○
P.3.2	330	1.0	0.0007	0.0010	0.0012	0.0016	0.0020	0.0028	0.0030	0.0033	0.0039	●	○	○
P.3.3	280	1.0	0.0007	0.0010	0.0012	0.0016	0.0020	0.0028	0.0030	0.0033	0.0039	●	○	○
P.4.1	200	1.0	0.0005	0.0006	0.0007	0.0010	0.0013	0.0019	0.0020	0.0023	0.0026	●		
P.4.2	160	1.0	0.0005	0.0006	0.0007	0.0010	0.0013	0.0019	0.0020	0.0023	0.0026	●		
M.1.1	200	1.0	0.0005	0.0006	0.0007	0.0010	0.0013	0.0019	0.0020	0.0023	0.0026	●		
M.2.1	200	1.0	0.0005	0.0006	0.0007	0.0010	0.0013	0.0019	0.0020	0.0023	0.0026	●		
M.3.1	200	1.0	0.0005	0.0006	0.0007	0.0010	0.0013	0.0019	0.0020	0.0023	0.0026	●		
K.1.1	390	1.0	0.0009	0.0012	0.0014	0.0019	0.0023	0.0032	0.0034	0.0039	0.0044	●	○	○
K.1.2	350	1.0	0.0009	0.0012	0.0014	0.0019	0.0023	0.0032	0.0034	0.0039	0.0044	●	○	○
K.2.1	370	1.0	0.0007	0.0010	0.0012	0.0016	0.0020	0.0028	0.0030	0.0033	0.0039	●	○	○
K.2.2	330	1.0	0.0007	0.0010	0.0012	0.0016	0.0020	0.0028	0.0030	0.0033	0.0039	●	○	○
K.3.1	350	1.0	0.0007	0.0010	0.0012	0.0016	0.0020	0.0028	0.0030	0.0033	0.0039	●	○	○
K.3.2	310	1.0	0.0007	0.0010	0.0012	0.0016	0.0020	0.0028	0.0030	0.0033	0.0039	●	○	○
N.1.1														
N.1.2														
N.2.1														
N.2.2														
N.2.3														
N.3.1														
N.3.2														
N.3.3														
N.4.1														
S.1.1														
S.1.2														
S.2.1														
S.2.2														
S.2.3														
S.3.1														
S.3.2														
S.3.3														
H.1.1														
H.1.2														
H.1.3														
H.1.4														
H.2.1														
H.3.1														
O.1.1														
O.1.2														
O.2.1														
O.2.2														
O.3.1														

Cutting Data – P007 – High Performance End Milling Cutter, short – extra long

			59 002 ...										
		Ø DC =	1/8"	3/16"	1/4–5/16"	3/8"	1/2"	5/8"	3/4"	1"	● 1st choice		
											○ suitable		
			a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	Emulsion	Compressed air	MQL
Index	v_c ft/min	$a_{p\,max.}$ x DC	f_z inch	f_z inch	f_z inch	f_z inch	f_z inch	f_z inch	f_z inch	f_z inch			
P.1.1	750	1.0	0.0009	0.0012	0.0019	0.0023	0.0032	0.0034	0.0039	0.0044	●	○	○
P.1.2	720	1.0	0.0009	0.0012	0.0019	0.0023	0.0032	0.0034	0.0039	0.0044	●	○	○
P.1.3	720	1.0	0.0009	0.0012	0.0019	0.0023	0.0032	0.0034	0.0039	0.0044	●	○	○
P.1.4	690	1.0	0.0009	0.0012	0.0019	0.0023	0.0032	0.0034	0.0039	0.0044	●	○	○
P.1.5	690	1.0	0.0009	0.0012	0.0019	0.0023	0.0032	0.0034	0.0039	0.0044	●	○	○
P.2.1	720	1.0	0.0009	0.0012	0.0019	0.0023	0.0032	0.0034	0.0039	0.0044	●	○	○
P.2.2	690	1.0	0.0007	0.0010	0.0016	0.0020	0.0028	0.0030	0.0033	0.0039	●	○	○
P.2.3	660	1.0	0.0009	0.0012	0.0019	0.0023	0.0032	0.0034	0.0039	0.0044	●	○	○
P.2.4	620	1.0	0.0007	0.0010	0.0016	0.0020	0.0028	0.0030	0.0033	0.0039	●	○	○
P.3.1	660	1.0	0.0009	0.0012	0.0019	0.0023	0.0032	0.0034	0.0039	0.0044	●	○	○
P.3.2	620	1.0	0.0009	0.0012	0.0019	0.0023	0.0032	0.0034	0.0039	0.0044	●	○	○
P.3.3	520	1.0	0.0009	0.0012	0.0019	0.0023	0.0032	0.0034	0.0039	0.0044	●	○	○
P.4.1	360	1.0	0.0005	0.0006	0.0010	0.0013	0.0019	0.0020	0.0023	0.0026	●		
P.4.2	300	1.0	0.0005	0.0006	0.0010	0.0013	0.0019	0.0020	0.0023	0.0026	●		
M.1.1	360	1.0	0.0005	0.0006	0.0010	0.0013	0.0019	0.0020	0.0023	0.0026	●		
M.2.1	360	1.0	0.0005	0.0006	0.0010	0.0013	0.0019	0.0020	0.0023	0.0026	●		
M.3.1	360	1.0	0.0005	0.0006	0.0010	0.0013	0.0019	0.0020	0.0023	0.0026	●		
K.1.1	720	1.0	0.0012	0.0015	0.0025	0.0031	0.0044	0.0047	0.0054	0.0062	●	○	○
K.1.2	660	1.0	0.0012	0.0015	0.0025	0.0031	0.0044	0.0047	0.0054	0.0062	●	○	○
K.2.1	690	1.0	0.0009	0.0012	0.0019	0.0023	0.0032	0.0034	0.0039	0.0044	●	○	○
K.2.2	620	1.0	0.0009	0.0012	0.0019	0.0023	0.0032	0.0034	0.0039	0.0044	●	○	○
K.3.1	660	1.0	0.0009	0.0012	0.0019	0.0023	0.0032	0.0034	0.0039	0.0044	●	○	○
K.3.2	590	1.0	0.0009	0.0012	0.0019	0.0023	0.0032	0.0034	0.0039	0.0044	●	○	○
N.1.1													
N.1.2													
N.2.1													
N.2.2													
N.2.3													
N.3.1	1150	1.0	0.0012	0.0015	0.0025	0.0031	0.0044	0.0047	0.0054	0.0062	●	○	○
N.3.2	1150	1.0	0.0012	0.0015	0.0025	0.0031	0.0044	0.0047	0.0054	0.0062	●	○	○
N.3.3	920	1.0	0.0012	0.0015	0.0025	0.0031	0.0044	0.0047	0.0054	0.0062	●	○	○
N.4.1													
S.1.1	98	1.0	0.0004	0.0005	0.0008	0.0010	0.0014	0.0015	0.0017	0.0019	●		
S.1.2	98	1.0	0.0004	0.0005	0.0008	0.0010	0.0014	0.0015	0.0017	0.0019	●		
S.2.1	98	1.0	0.0004	0.0005	0.0008	0.0010	0.0014	0.0015	0.0017	0.0019	●		
S.2.2	98	1.0	0.0004	0.0005	0.0008	0.0010	0.0014	0.0015	0.0017	0.0019	●		
S.2.3	98	1.0	0.0004	0.0005	0.0008	0.0010	0.0014	0.0015	0.0017	0.0019	●		
S.3.1	300	1.0	0.0007	0.0010	0.0016	0.0020	0.0028	0.0030	0.0033	0.0039	●		
S.3.2													
S.3.3													
H.1.1													
H.1.2													
H.1.3													
H.1.4													
H.2.1													
H.3.1													
O.1.1													
O.1.2													
O.2.1													
O.2.2													
O.3.1													

Cutting Data – P556 – High Performance End milling cutter, short – extra long

			59 006 ...								
		Ø DC =	1/4"	3/8"	1/2"	5/8"	3/4"	1"	● 1st choice		
									○ suitable		
			a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC			
Index	v_c ft/min	$a_{p\,max.}$ x DC	f_z inch	f_z inch	f_z inch	f_z inch	f_z inch	f_z inch	Emulsion	Compressed air	MQL
P.1.1	690	1.0	0.0016	0.0020	0.0028	0.0030	0.0033	0.0039	●	○	○
P.1.2	660	1.0	0.0016	0.0020	0.0028	0.0030	0.0033	0.0039	●	○	○
P.1.3	660	1.0	0.0016	0.0020	0.0028	0.0030	0.0033	0.0039	●	○	○
P.1.4	620	1.0	0.0016	0.0020	0.0028	0.0030	0.0033	0.0039	●	○	○
P.1.5	620	1.0	0.0016	0.0020	0.0028	0.0030	0.0033	0.0039	●	○	○
P.2.1	660	1.0	0.0016	0.0020	0.0028	0.0030	0.0033	0.0039	●	○	○
P.2.2	620	1.0	0.0012	0.0015	0.0022	0.0023	0.0026	0.0030	●	○	○
P.2.3	590	1.0	0.0016	0.0020	0.0028	0.0030	0.0033	0.0039	●	○	○
P.2.4	560	1.0	0.0012	0.0015	0.0022	0.0023	0.0026	0.0030	●	○	○
P.3.1	590	1.0	0.0016	0.0020	0.0028	0.0030	0.0033	0.0039	●	○	○
P.3.2	560	1.0	0.0016	0.0020	0.0028	0.0030	0.0033	0.0039	●	○	○
P.3.3	460	1.0	0.0016	0.0020	0.0028	0.0030	0.0033	0.0039	●	○	○
P.4.1	330	1.0	0.0010	0.0013	0.0019	0.0020	0.0023	0.0026	●		
P.4.2	260	1.0	0.0010	0.0013	0.0019	0.0020	0.0023	0.0026	●		
M.1.1	330	1.0	0.0010	0.0013	0.0019	0.0020	0.0023	0.0026	●		
M.2.1	330	1.0	0.0010	0.0013	0.0019	0.0020	0.0023	0.0026	●		
M.3.1	330	1.0	0.0010	0.0013	0.0019	0.0020	0.0023	0.0026	●		
K.1.1	660	1.0	0.0019	0.0023	0.0032	0.0034	0.0039	0.0044	●	○	○
K.1.2	590	1.0	0.0019	0.0023	0.0032	0.0034	0.0039	0.0044	●	○	○
K.2.1	620	1.0	0.0016	0.0020	0.0028	0.0030	0.0033	0.0039	●	○	○
K.2.2	560	1.0	0.0016	0.0020	0.0028	0.0030	0.0033	0.0039	●	○	○
K.3.1	590	1.0	0.0016	0.0020	0.0028	0.0030	0.0033	0.0039	●	○	○
K.3.2	520	1.0	0.0016	0.0020	0.0028	0.0030	0.0033	0.0039	●	○	○
N.1.1											
N.1.2											
N.2.1											
N.2.2											
N.2.3											
N.3.1											
N.3.2											
N.3.3											
N.4.1											
S.1.1	180	1.0	0.0012	0.0015	0.0022	0.0023	0.0026	0.0030	●		
S.1.2	180	1.0	0.0012	0.0015	0.0022	0.0023	0.0026	0.0030	●		
S.2.1	180	1.0	0.0012	0.0015	0.0022	0.0023	0.0026	0.0030	●		
S.2.2	180	1.0	0.0012	0.0015	0.0022	0.0023	0.0026	0.0030	●		
S.2.3	180	1.0	0.0012	0.0015	0.0022	0.0023	0.0026	0.0030	●		
S.3.1	390	1.0	0.0019	0.0023	0.0032	0.0034	0.0039	0.0044	●		
S.3.2	260	1.0	0.0012	0.0015	0.0022	0.0023	0.0026	0.0030	●		
S.3.3											
H.1.1											
H.1.2											
H.1.3											
H.1.4											
H.2.1											
H.3.1											
O.1.1											
O.1.2											
O.2.1											
O.2.2											
O.3.1											

Cutting Data – P160 / P161 – Multi-flute milling cutter, short – extra long

			59 041 ... / 59 042 ...								
		Ø DC =	1/4"	3/8"	1/2"	5/8"	3/4"	1"	● 1st choice		
									○ suitable		
			a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC			
Index	v_c ft/min	$a_{p\,max.}$ x DC	f_z inch	f_z inch	f_z inch	f_z inch	f_z inch	f_z inch	Emulsion	Compressed air	MQL
P.1.1	850	0.5	0.0016	0.0020	0.0028	0.0030	0.0033	0.0039	●	○	○
P.1.2	820	0.5	0.0016	0.0020	0.0028	0.0030	0.0033	0.0039	●	○	○
P.1.3	820	0.5	0.0016	0.0020	0.0028	0.0030	0.0033	0.0039	●	○	○
P.1.4	750	0.5	0.0016	0.0020	0.0028	0.0030	0.0033	0.0039	●	○	○
P.1.5	750	0.5	0.0016	0.0020	0.0028	0.0030	0.0033	0.0039	●	○	○
P.2.1	820	0.5	0.0016	0.0020	0.0028	0.0030	0.0033	0.0039	●	○	○
P.2.2	750	0.5	0.0012	0.0015	0.0022	0.0023	0.0026	0.0030	●	○	○
P.2.3	720	0.5	0.0016	0.0020	0.0028	0.0030	0.0033	0.0039	●	○	○
P.2.4	690	0.5	0.0012	0.0015	0.0022	0.0023	0.0026	0.0030	●	○	○
P.3.1	720	0.5	0.0016	0.0020	0.0028	0.0030	0.0033	0.0039	●	○	○
P.3.2	690	0.5	0.0016	0.0020	0.0028	0.0030	0.0033	0.0039	●	○	○
P.3.3	570	0.5	0.0016	0.0020	0.0028	0.0030	0.0033	0.0039	●	○	○
P.4.1	390	0.5	0.0010	0.0013	0.0019	0.0020	0.0023	0.0026	●		
P.4.2	330	0.5	0.0010	0.0013	0.0019	0.0020	0.0023	0.0026	●		
M.1.1	390	0.5	0.0010	0.0013	0.0019	0.0020	0.0023	0.0026	●		
M.2.1	390	0.5	0.0010	0.0013	0.0019	0.0020	0.0023	0.0026	●		
M.3.1	390	0.5	0.0010	0.0013	0.0019	0.0020	0.0023	0.0026	●		
K.1.1	820	0.5	0.0019	0.0023	0.0032	0.0034	0.0039	0.0044	●	○	○
K.1.2	720	0.5	0.0019	0.0023	0.0032	0.0034	0.0039	0.0044	●	○	○
K.2.1	750	0.5	0.0016	0.0020	0.0028	0.0030	0.0033	0.0039	●	○	○
K.2.2	690	0.5	0.0016	0.0020	0.0028	0.0030	0.0033	0.0039	●	○	○
K.3.1	720	0.5	0.0016	0.0020	0.0028	0.0030	0.0033	0.0039	●	○	○
K.3.2	660	0.5	0.0016	0.0020	0.0028	0.0030	0.0033	0.0039	●	○	○
N.1.1											
N.1.2											
N.2.1											
N.2.2											
N.2.3											
N.3.1											
N.3.2											
N.3.3											
N.4.1											
S.1.1	130	1.0	0.0008	0.0010	0.0014	0.0015	0.0017	0.0019	●		
S.1.2	130	1.0	0.0008	0.0010	0.0014	0.0015	0.0017	0.0019	●		
S.2.1	130	1.0	0.0008	0.0010	0.0014	0.0015	0.0017	0.0019	●		
S.2.2	130	1.0	0.0008	0.0010	0.0014	0.0015	0.0017	0.0019	●		
S.2.3	130	1.0	0.0008	0.0010	0.0014	0.0015	0.0017	0.0019	●		
S.3.1	660	1.0	0.0016	0.0020	0.0028	0.0030	0.0033	0.0039	●		
S.3.2	410	1.0	0.0010	0.0013	0.0019	0.0020	0.0023	0.0026	●		
S.3.3											
H.1.1											
H.1.2											
H.1.3											
H.1.4											
H.2.1											
H.3.1											
O.1.1											
O.1.2											
O.2.1											
O.2.2											
O.3.1											

Cutting Data – P119 – Chamfer milling cutter

			59 029 ... / 59 030 ...												
		Ø DC =	1/8–5/32"	3/16"	7/32"	1/4–3/32 –5/16"	3/8"	7/16"	1/2"	3/16–5/8"	3/4"	1"	● 1st choice		
													○ suitable		
			a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	Emulsion	Compressed air	MQL
Index	v_c ft/min	$a_{p\,max.}$ x DC	f_z inch	f_z inch	f_z inch	f_z inch	f_z inch	f_z inch	f_z inch	f_z inch	f_z inch	f_z inch			
P.1.1															
P.1.2															
P.1.3															
P.1.4															
P.1.5															
P.2.1															
P.2.2															
P.2.3															
P.2.4															
P.3.1															
P.3.2															
P.3.3															
P.4.1															
P.4.2															
M.1.1															
M.2.1															
M.3.1															
K.1.1															
K.1.2															
K.2.1															
K.2.2															
K.3.1															
K.3.2															
N.1.1	1970	1.0	0.0012	0.0015	0.0019	0.0025	0.0031	0.0038	0.0044	0.0047	0.0054	0.0062	●	○	○
N.1.2	1970	1.0	0.0012	0.0015	0.0019	0.0025	0.0031	0.0038	0.0044	0.0047	0.0054	0.0062	●	○	○
N.2.1	1180	1.0	0.0011	0.0014	0.0017	0.0023	0.0029	0.0035	0.0040	0.0043	0.0049	0.0056	●	○	○
N.2.2	1180	1.0	0.0011	0.0014	0.0017	0.0023	0.0029	0.0035	0.0040	0.0043	0.0049	0.0056	●	○	○
N.2.3	790	1.0	0.0011	0.0014	0.0017	0.0023	0.0029	0.0035	0.0040	0.0043	0.0049	0.0056	●	○	○
N.3.1	790	1.0	0.0008	0.0011	0.0013	0.0017	0.0022	0.0026	0.0031	0.0033	0.0037	0.0043	●	○	○
N.3.2	790	1.0	0.0008	0.0011	0.0013	0.0017	0.0022	0.0026	0.0031	0.0033	0.0037	0.0043	●	○	○
N.3.3	560	1.0	0.0008	0.0011	0.0013	0.0017	0.0022	0.0026	0.0031	0.0033	0.0037	0.0043	●	○	○
N.4.1	720	1.0	0.0011	0.0014	0.0017	0.0023	0.0029	0.0035	0.0040	0.0043	0.0049	0.0056	●	○	○
S.1.1															
S.1.2															
S.2.1															
S.2.2															
S.2.3															
S.3.1															
S.3.2															
S.3.3															
H.1.1															
H.1.2															
H.1.3															
H.1.4															
H.2.1															
H.3.1															
O.1.1															
O.1.2															
O.2.1															
O.2.2															
O.3.1															

Cutting Data – P117 – Rough-Finishing Cutter with corner radius, short – long

			59 028 ...										
		Ø DC =	1/8"	3/16"	1/4–5/16"	3/8"	7/16"	1/2"	5/8"	3/4"	● 1st choice		
											○ suitable		
			a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	Emulsion	Compressed air	MQL
Index	v_c ft/min	$a_{p\,max.}$ x DC	f_z inch	f_z inch	f_z inch	f_z inch	f_z inch	f_z inch	f_z inch	f_z inch			
P.1.1	360	1.0	0.0007	0.0008	0.0012	0.0015	0.0018	0.0020	0.0022	0.0024	●	○	○
P.1.2	300	1.0	0.0006	0.0007	0.0011	0.0013	0.0016	0.0018	0.0019	0.0022	●	○	○
P.1.3	300	1.0	0.0006	0.0007	0.0011	0.0013	0.0016	0.0018	0.0019	0.0022	●	○	○
P.1.4	260	1.0	0.0006	0.0007	0.0011	0.0013	0.0016	0.0018	0.0019	0.0022	●	○	○
P.1.5	260	1.0	0.0006	0.0007	0.0011	0.0013	0.0016	0.0018	0.0019	0.0022	●	○	○
P.2.1	300	1.0	0.0006	0.0007	0.0011	0.0013	0.0016	0.0018	0.0019	0.0022	●	○	○
P.2.2	230	1.0	0.0006	0.0007	0.0011	0.0013	0.0016	0.0018	0.0019	0.0022	●	○	○
P.2.3	230	1.0	0.0006	0.0007	0.0011	0.0013	0.0016	0.0018	0.0019	0.0022	●	○	○
P.2.4	180	1.0	0.0006	0.0007	0.0011	0.0013	0.0016	0.0018	0.0019	0.0022	●	○	○
P.3.1													
P.3.2													
P.3.3													
P.4.1	160	1.0	0.0004	0.0005	0.0008	0.0010	0.0012	0.0014	0.0015	0.0017	●		
P.4.2	130	1.0	0.0004	0.0005	0.0008	0.0010	0.0012	0.0014	0.0015	0.0017	●		
M.1.1	130	1.0	0.0004	0.0005	0.0008	0.0010	0.0012	0.0014	0.0015	0.0017	●		
M.2.1	160	1.0	0.0004	0.0005	0.0008	0.0010	0.0012	0.0014	0.0015	0.0017	●		
M.3.1	160	1.0	0.0004	0.0005	0.0008	0.0010	0.0012	0.0014	0.0015	0.0017	●		
K.1.1	430	1.0	0.0011	0.0013	0.0020	0.0024	0.0028	0.0033	0.0035	0.0039	●	○	○
K.1.2	400	1.0	0.0011	0.0013	0.0020	0.0024	0.0028	0.0033	0.0035	0.0039	●	○	○
K.2.1	420	1.0	0.0008	0.0010	0.0014	0.0017	0.0020	0.0023	0.0024	0.0027	●	○	○
K.2.2	400	1.0	0.0008	0.0010	0.0014	0.0017	0.0020	0.0023	0.0024	0.0027	●	○	○
K.3.1	430	1.0	0.0011	0.0013	0.0020	0.0024	0.0028	0.0033	0.0035	0.0039	●	○	○
K.3.2	400	1.0	0.0011	0.0013	0.0020	0.0024	0.0028	0.0033	0.0035	0.0039	●	○	○
N.1.1													
N.1.2													
N.2.1													
N.2.2													
N.2.3													
N.3.1	660	1.0	0.0007	0.0010	0.0016	0.0020	0.0024	0.0028	0.0030	0.0033	●	○	○
N.3.2	660	1.0	0.0007	0.0010	0.0016	0.0020	0.0024	0.0028	0.0030	0.0033	●	○	○
N.3.3	460	1.0	0.0007	0.0010	0.0016	0.0020	0.0024	0.0028	0.0030	0.0033	●	○	○
N.4.1													
S.1.1	98	1.0	0.0004	0.0005	0.0008	0.0010	0.0012	0.0014	0.0015	0.0017	●		
S.1.2	98	1.0	0.0004	0.0005	0.0008	0.0010	0.0012	0.0014	0.0015	0.0017	●		
S.2.1	98	1.0	0.0004	0.0005	0.0008	0.0010	0.0012	0.0014	0.0015	0.0017	●		
S.2.2	98	1.0	0.0004	0.0005	0.0008	0.0010	0.0012	0.0014	0.0015	0.0017	●		
S.2.3	98	1.0	0.0004	0.0005	0.0008	0.0010	0.0012	0.0014	0.0015	0.0017	●		
S.3.1	160	1.0	0.0004	0.0005	0.0008	0.0010	0.0012	0.0014	0.0015	0.0017	●		
S.3.2	66	1.0	0.0004	0.0005	0.0008	0.0010	0.0012	0.0014	0.0015	0.0017	●		
S.3.3													
H.1.1													
H.1.2													
H.1.3													
H.1.4													
H.2.1													
H.3.1													
O.1.1													
O.1.2													
O.2.1													
O.2.2													
O.3.1													

Cutting Data – P120 – Roughing-Finishing cutter with corner radius, extra short – extra long

			59 031 ... / 59 032 ...												
		Ø DC =	1/8–5/32"	3/16"	7/32"	1/4–9/32", 5/16"	11/32–3/8"	7/16"	1/2"	9/16–5/8"	3/4"	1"	● 1st choice		
													○ suitable		
			a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	Emulsion	Compressed air	MQL
Index	v_c ft/min	$a_{p\,max.}$ x DC	f_z inch	f_z inch	f_z inch	f_z inch	f_z inch	f_z inch	f_z inch	f_z inch	f_z inch	f_z inch			
P.1.1	310	1.0	0.0007	0.0008	0.0009	0.0012	0.0015	0.0018	0.0020	0.0022	0.0024	0.0028	●	○	○
P.1.2	260	1.0	0.0006	0.0007	0.0008	0.0011	0.0013	0.0016	0.0018	0.0019	0.0022	0.0025	●	○	○
P.1.3	260	1.0	0.0006	0.0007	0.0008	0.0011	0.0013	0.0016	0.0018	0.0019	0.0022	0.0025	●	○	○
P.1.4	230	1.0	0.0006	0.0007	0.0008	0.0011	0.0013	0.0016	0.0018	0.0019	0.0022	0.0025	●	○	○
P.1.5	230	1.0	0.0006	0.0007	0.0008	0.0011	0.0013	0.0016	0.0018	0.0019	0.0022	0.0025	●	○	○
P.2.1	250	1.0	0.0006	0.0007	0.0008	0.0011	0.0013	0.0016	0.0018	0.0019	0.0022	0.0025	●	○	○
P.2.2	200	1.0	0.0006	0.0007	0.0008	0.0011	0.0013	0.0016	0.0018	0.0019	0.0022	0.0025	●	○	○
P.2.3	200	1.0	0.0006	0.0007	0.0008	0.0011	0.0013	0.0016	0.0018	0.0019	0.0022	0.0025	●	○	○
P.2.4	180	1.0	0.0006	0.0007	0.0008	0.0011	0.0013	0.0016	0.0018	0.0019	0.0022	0.0025	●	○	○
P.3.1															
P.3.2															
P.3.3															
P.4.1															
P.4.2															
M.1.1															
M.2.1															
M.3.1															
K.1.1	390	1.0	0.0011	0.0013	0.0015	0.0020	0.0024	0.0028	0.0033	0.0035	0.0039	0.0045	●	○	○
K.1.2	330	1.0	0.0011	0.0013	0.0015	0.0020	0.0024	0.0028	0.0033	0.0035	0.0039	0.0045	●	○	○
K.2.1	390	1.0	0.0008	0.0010	0.0011	0.0014	0.0017	0.0020	0.0023	0.0024	0.0027	0.0031	●	○	○
K.2.2	330	1.0	0.0008	0.0010	0.0011	0.0014	0.0017	0.0020	0.0023	0.0024	0.0027	0.0031	●	○	○
K.3.1	390	1.0	0.0011	0.0013	0.0015	0.0020	0.0024	0.0028	0.0033	0.0035	0.0039	0.0045	●	○	○
K.3.2	330	1.0	0.0011	0.0013	0.0015	0.0020	0.0024	0.0028	0.0033	0.0035	0.0039	0.0045	●	○	○
N.1.1															
N.1.2															
N.2.1															
N.2.2															
N.2.3															
N.3.1															
N.3.2															
N.3.3															
N.4.1															
S.1.1															
S.1.2															
S.2.1															
S.2.2															
S.2.3															
S.3.1															
S.3.2															
S.3.3															
H.1.1															
H.1.2															
H.1.3															
H.1.4															
H.2.1															
H.3.1															
O.1.1															
O.1.2															
O.2.1															
O.2.2															
O.3.1															

Cutting Data – P121 – Roughing-Finishing cutter with corner radius, short – extra long

			59 035 ...				
		Ø DC =	3/4"	1"	● 1st choice		
					○ suitable		
			a_e 1 x DC	a_e 1 x DC			
Index	v_c ft/min	$a_{p\,max.}$ x DC	f_z inch	f_z inch	Emulsion	Compressed air	MQL
P.1.1	480	1.0	0.0033	0.0039	●	○	○
P.1.2	460	1.0	0.0033	0.0039	●	○	○
P.1.3	460	1.0	0.0033	0.0039	●	○	○
P.1.4	440	1.0	0.0033	0.0039	●	○	○
P.1.5	440	1.0	0.0033	0.0039	●	○	○
P.2.1	460	1.0	0.0033	0.0039	●	○	○
P.2.2	440	1.0	0.0026	0.0030	●	○	○
P.2.3	410	1.0	0.0033	0.0039	●	○	○
P.2.4	390	1.0	0.0026	0.0030	●	○	○
P.3.1	410	1.0	0.0033	0.0039	●	○	○
P.3.2	390	1.0	0.0033	0.0039	●	○	○
P.3.3	320	1.0	0.0033	0.0039	●	○	○
P.4.1	230	1.0	0.0023	0.0026	●		
P.4.2	180	1.0	0.0023	0.0026	●		
M.1.1	230	1.0	0.0023	0.0026	●		
M.2.1	230	1.0	0.0023	0.0026	●		
M.3.1	230	1.0	0.0023	0.0026	●		
K.1.1	460	1.0	0.0039	0.0044	●	○	○
K.1.2	410	1.0	0.0039	0.0044	●	○	○
K.2.1	440	1.0	0.0033	0.0039	●	○	○
K.2.2	390	1.0	0.0033	0.0039	●	○	○
K.3.1	410	1.0	0.0033	0.0039	●	○	○
K.3.2	370	1.0	0.0033	0.0039	●	○	○
N.1.1							
N.1.2							
N.2.1							
N.2.2							
N.2.3							
N.3.1							
N.3.2							
N.3.3							
N.4.1							
S.1.1	130	1.0	0.0026	0.0030	●		
S.1.2	130	1.0	0.0026	0.0030	●		
S.2.1	130	1.0	0.0026	0.0030	●		
S.2.2	130	1.0	0.0026	0.0030	●		
S.2.3	130	1.0	0.0026	0.0030	●		
S.3.1	280	1.0	0.0039	0.0044	●		
S.3.2	180	1.0	0.0026	0.0030	●		
S.3.3							
H.1.1							
H.1.2							
H.1.3							
H.1.4							
H.2.1							
H.3.1							
O.1.1							
O.1.2							
O.2.1							
O.2.2							
O.3.1							

Cutting Data – P102 –Rough milling cutter with corner radius, short – extra long

			59 023 ... / 59 024 ... / 59 025 ... / 59 026 ...										
		Ø DC =	3/16"	1/4–5/16"	3/8"	7/16"	1/2"	3/16–5/8"	3/4"	1"	● 1st choice		
											○ suitable		
			a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	Emulsion	Compressed air	MQL
Index	v_c ft/min	$a_{p\,max.}$ x DC	f_z inch	f_z inch	f_z inch	f_z inch	f_z inch	f_z inch	f_z inch	f_z inch			
P.1.1													
P.1.2													
P.1.3													
P.1.4													
P.1.5													
P.2.1													
P.2.2													
P.2.3													
P.2.4													
P.3.1													
P.3.2													
P.3.3													
P.4.1													
P.4.2													
M.1.1													
M.2.1													
M.3.1													
K.1.1													
K.1.2													
K.2.1													
K.2.2													
K.3.1													
K.3.2													
N.1.1	1970	1.0	0.0015	0.0025	0.0031	0.0038	0.0044	0.0047	0.0054	0.0062	●	○	○
N.1.2	1970	1.0	0.0015	0.0025	0.0031	0.0038	0.0044	0.0047	0.0054	0.0062	●	○	○
N.2.1	1180	1.0	0.0014	0.0023	0.0029	0.0035	0.0040	0.0043	0.0049	0.0056	●	○	○
N.2.2	1180	1.0	0.0014	0.0023	0.0029	0.0035	0.0040	0.0043	0.0049	0.0056	●	○	○
N.2.3	790	1.0	0.0014	0.0023	0.0029	0.0035	0.0040	0.0043	0.0049	0.0056	●	○	○
N.3.1	790	1.0	0.0011	0.0017	0.0022	0.0026	0.0031	0.0033	0.0037	0.0043	●	○	○
N.3.2	790	1.0	0.0011	0.0017	0.0022	0.0026	0.0031	0.0033	0.0037	0.0043	●	○	○
N.3.3	560	1.0	0.0011	0.0017	0.0022	0.0026	0.0031	0.0033	0.0037	0.0043	●	○	○
N.4.1	720	1.0	0.0014	0.0023	0.0029	0.0035	0.0040	0.0043	0.0049	0.0056	●	○	○
S.1.1													
S.1.2													
S.2.1													
S.2.2													
S.2.3													
S.3.1													
S.3.2													
S.3.3													
H.1.1													
H.1.2													
H.1.3													
H.1.4													
H.2.1													
H.3.1													
O.1.1													
O.1.2													
O.2.1													
O.2.2													
O.3.1													

Cutting Data – P190 / P191 – Rough milling cutter, short – extra long

			59 059 ... / 59 061 ...									
		Ø DC =	3/16“	1/4–5/16"	3/8"	1/2"	5/8"	3/4"	1"	● 1st choice		
										○ suitable		
			a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC			
Index	v_c ft/min	$a_{p\,max.}$ x DC	f_z inch	f_z inch	f_z inch	f_z inch	f_z inch	f_z inch	f_z inch	Emulsion	Compressed air	MQL
P.1.1	310	1.0	0.0007	0.0012	0.0015	0.0020	0.0022	0.0024	0.0028	●	○	○
P.1.2	260	1.0	0.0006	0.0011	0.0013	0.0018	0.0019	0.0022	0.0025	●	○	○
P.1.3	260	1.0	0.0006	0.0011	0.0013	0.0018	0.0019	0.0022	0.0025	●	○	○
P.1.4	230	1.0	0.0006	0.0011	0.0013	0.0018	0.0019	0.0022	0.0025	●	○	○
P.1.5	230	1.0	0.0006	0.0011	0.0013	0.0018	0.0019	0.0022	0.0025	●	○	○
P.2.1	250	1.0	0.0006	0.0011	0.0013	0.0018	0.0019	0.0022	0.0025	●	○	○
P.2.2	200	1.0	0.0006	0.0011	0.0013	0.0018	0.0019	0.0022	0.0025	●	○	○
P.2.3	200	1.0	0.0006	0.0011	0.0013	0.0018	0.0019	0.0022	0.0025	●	○	○
P.2.4	180	1.0	0.0006	0.0011	0.0013	0.0018	0.0019	0.0022	0.0025	●	○	○
P.3.1												
P.3.2												
P.3.3												
P.4.1												
P.4.2												
M.1.1												
M.2.1												
M.3.1												
K.1.1	390	1.0	0.0011	0.0020	0.0024	0.0033	0.0035	0.0039	0.0045	●	○	○
K.1.2	330	1.0	0.0011	0.0020	0.0024	0.0033	0.0035	0.0039	0.0045	●	○	○
K.2.1	390	1.0	0.0008	0.0014	0.0017	0.0023	0.0024	0.0027	0.0031	●	○	○
K.2.2	330	1.0	0.0008	0.0014	0.0017	0.0023	0.0024	0.0027	0.0031	●	○	○
K.3.1	390	1.0	0.0011	0.0020	0.0024	0.0033	0.0035	0.0039	0.0045	●	○	○
K.3.2	330	1.0	0.0011	0.0020	0.0024	0.0033	0.0035	0.0039	0.0045	●	○	○
N.1.1												
N.1.2												
N.2.1												
N.2.2												
N.2.3												
N.3.1												
N.3.2												
N.3.3												
N.4.1												
S.1.1												
S.1.2												
S.2.1												
S.2.2												
S.2.3												
S.3.1												
S.3.2												
S.3.3												
H.1.1												
H.1.2												
H.1.3												
H.1.4												
H.2.1												
H.3.1												
O.1.1												
O.1.2												
O.2.1												
O.2.2												
O.3.1												

Cutting Data – P100 – Rough milling cutter with corner radius, short – extra long

			59 011 ... / 59 012 ... / 59 013 ... / 59 014 ...										
		Ø DC =	3/16"	1/4–5/16"	3/8"	7/16"	1/2"	9/16–5/8"	3/4"	1"	● 1st choice		
											○ suitable		
			a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	Emulsion	Compressed air	MQL
Index	v_c ft/min	$a_{p\,max.}$ x DC	f_z inch	f_z inch	f_z inch	f_z inch	f_z inch	f_z inch	f_z inch	f_z inch			
P.1.1	312	1.0	0.0008	0.0012	0.0015	0.0018	0.0020	0.0022	0.0024	0.0028	●	○	○
P.1.2	262	1.0	0.0007	0.0011	0.0013	0.0016	0.0018	0.0019	0.0022	0.0025	●	○	○
P.1.3	262	1.0	0.0007	0.0011	0.0013	0.0016	0.0018	0.0019	0.0022	0.0025	●	○	○
P.1.4	230	1.0	0.0007	0.0011	0.0013	0.0016	0.0018	0.0019	0.0022	0.0025	●	○	○
P.1.5	230	1.0	0.0007	0.0011	0.0013	0.0016	0.0018	0.0019	0.0022	0.0025	●	○	○
P.2.1	246	1.0	0.0007	0.0011	0.0013	0.0016	0.0018	0.0019	0.0022	0.0025	●	○	○
P.2.2	197	1.0	0.0007	0.0011	0.0013	0.0016	0.0018	0.0019	0.0022	0.0025	●	○	○
P.2.3	197	1.0	0.0007	0.0011	0.0013	0.0016	0.0018	0.0019	0.0022	0.0025	●	○	○
P.2.4	180	1.0	0.0007	0.0011	0.0013	0.0016	0.0018	0.0019	0.0022	0.0025	●	○	○
P.3.1													
P.3.2													
P.3.3													
P.4.1													
P.4.2													
M.1.1													
M.2.1													
M.3.1													
K.1.1	390	1.0	0.0013	0.0020	0.0024	0.0028	0.0033	0.0035	0.0039	0.0045	●	○	○
K.1.2	330	1.0	0.0013	0.0020	0.0024	0.0028	0.0033	0.0035	0.0039	0.0045	●	○	○
K.2.1	390	1.0	0.0010	0.0014	0.0017	0.0020	0.0023	0.0024	0.0027	0.0031	●	○	○
K.2.2	330	1.0	0.0010	0.0014	0.0017	0.0020	0.0023	0.0024	0.0027	0.0031	●	○	○
K.3.1	390	1.0	0.0013	0.0020	0.0024	0.0028	0.0033	0.0035	0.0039	0.0045	●	○	○
K.3.2	330	1.0	0.0013	0.0020	0.0024	0.0028	0.0033	0.0035	0.0039	0.0045	●	○	○
N.1.1													
N.1.2													
N.2.1													
N.2.2													
N.2.3													
N.3.1													
N.3.2													
N.3.3													
N.4.1													
S.1.1													
S.1.2													
S.2.1													
S.2.2													
S.2.3													
S.3.1													
S.3.2													
S.3.3													
H.1.1													
H.1.2													
H.1.3													
H.1.4													
H.2.1													
H.3.1													
O.1.1													
O.1.2													
O.2.1													
O.2.2													
O.3.1													

Cutting Data – P101 – Rough milling cutter with corner radius, short – extra long

			59 015 ... / 59 016 ... / 59 017 ... / 59 022 ...										
		Ø DC =	3/16"	1/4–5/16"	3/8"	7/16"	1/2"	9/16–5/8"	3/4"	1"	● 1st choice		
											○ suitable		
			a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	Emulsion	Compressed air	MQL
Index	v_c ft/min	$a_{p\,max.}$ x DC	f_z inch	f_z inch	f_z inch	f_z inch	f_z inch	f_z inch	f_z inch	f_z inch			
P.1.1	310	1.0	0.0008	0.0012	0.0015	0.0018	0.0020	0.0022	0.0024	0.0028	●	○	○
P.1.2	260	1.0	0.0007	0.0011	0.0013	0.0016	0.0018	0.0019	0.0022	0.0025	●	○	○
P.1.3	260	1.0	0.0007	0.0011	0.0013	0.0016	0.0018	0.0019	0.0022	0.0025	●	○	○
P.1.4	230	1.0	0.0007	0.0011	0.0013	0.0016	0.0018	0.0019	0.0022	0.0025	●	○	○
P.1.5	230	1.0	0.0007	0.0011	0.0013	0.0016	0.0018	0.0019	0.0022	0.0025	●	○	○
P.2.1	250	1.0	0.0007	0.0011	0.0013	0.0016	0.0018	0.0019	0.0022	0.0025	●	○	○
P.2.2	200	1.0	0.0007	0.0011	0.0013	0.0016	0.0018	0.0019	0.0022	0.0025	●	○	○
P.2.3	200	1.0	0.0007	0.0011	0.0013	0.0016	0.0018	0.0019	0.0022	0.0025	●	○	○
P.2.4	180	1.0	0.0007	0.0011	0.0013	0.0016	0.0018	0.0019	0.0022	0.0025	●	○	○
P.3.1													
P.3.2													
P.3.3													
P.4.1													
P.4.2													
M.1.1													
M.2.1													
M.3.1													
K.1.1	390	1.0	0.0013	0.0020	0.0024	0.0028	0.0033	0.0035	0.0039	0.0045	●	○	○
K.1.2	330	1.0	0.0013	0.0020	0.0024	0.0028	0.0033	0.0035	0.0039	0.0045	●	○	○
K.2.1	390	1.0	0.0010	0.0014	0.0017	0.0020	0.0023	0.0024	0.0027	0.0031	●	○	○
K.2.2	330	1.0	0.0010	0.0014	0.0017	0.0020	0.0023	0.0024	0.0027	0.0031	●	○	○
K.3.1	390	1.0	0.0013	0.0020	0.0024	0.0028	0.0033	0.0035	0.0039	0.0045	●	○	○
K.3.2	330	1.0	0.0013	0.0020	0.0024	0.0028	0.0033	0.0035	0.0039	0.0045	●	○	○
N.1.1													
N.1.2													
N.2.1													
N.2.2													
N.2.3													
N.3.1													
N.3.2													
N.3.3													
N.4.1													
S.1.1													
S.1.2													
S.2.1													
S.2.2													
S.2.3													
S.3.1													
S.3.2													
S.3.3													
H.1.1													
H.1.2													
H.1.3													
H.1.4													
H.2.1													
H.3.1													
O.1.1													
O.1.2													
O.2.1													
O.2.2													
O.3.1													

Cutting Data – P662 – Ball nosed Cutter, extra short – extra long

			59 074 ... / 59 075 ...											
		Ø DC =	1/16"	1/8"	3/16"	1/4–5/16"	3/8"	1/2"	5/8"	3/4"	1"	● 1st choice		
												○ suitable		
			a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC			
Index	v_c ft/min	$a_{p\,max.}$ x DC	f_z inch	f_z inch	f_z inch	f_z inch	f_z inch	f_z inch	f_z inch	f_z inch	f_z inch	Emulsion	Compressed air	MQL
P.1.1	350	1.0	0.0003	0.0006	0.0007	0.0011	0.0013	0.0018	0.0019	0.0022	0.0025	●	○	○
P.1.2	310	1.0	0.0003	0.0006	0.0007	0.0011	0.0013	0.0018	0.0019	0.0022	0.0025	●	○	○
P.1.3	310	1.0	0.0003	0.0006	0.0007	0.0011	0.0013	0.0018	0.0019	0.0022	0.0025	●	○	○
P.1.4	300	1.0	0.0003	0.0006	0.0007	0.0011	0.0013	0.0018	0.0019	0.0022	0.0025	●	○	○
P.1.5	300	1.0	0.0003	0.0006	0.0007	0.0011	0.0013	0.0018	0.0019	0.0022	0.0025	●	○	○
P.2.1	330	1.0	0.0003	0.0006	0.0007	0.0011	0.0013	0.0018	0.0019	0.0022	0.0025	●	○	○
P.2.2	280	1.0	0.0003	0.0006	0.0007	0.0011	0.0013	0.0018	0.0019	0.0022	0.0025	●	○	○
P.2.3	280	1.0	0.0003	0.0006	0.0007	0.0011	0.0013	0.0018	0.0019	0.0022	0.0025	●	○	○
P.2.4	260	1.0	0.0003	0.0006	0.0007	0.0011	0.0013	0.0018	0.0019	0.0022	0.0025	●	○	○
P.3.1														
P.3.2														
P.3.3														
P.4.1	200	1.0	0.0002	0.0004	0.0005	0.0008	0.0010	0.0014	0.0015	0.0017	0.0019	●		
P.4.2	80	1.0	0.0002	0.0004	0.0005	0.0008	0.0010	0.0014	0.0015	0.0017	0.0019	●		
M.1.1	98	1.0	0.0002	0.0004	0.0005	0.0008	0.0010	0.0014	0.0015	0.0017	0.0019	●		
M.2.1	98	1.0	0.0002	0.0004	0.0005	0.0008	0.0010	0.0014	0.0015	0.0017	0.0019	●		
M.3.1	98	1.0	0.0002	0.0004	0.0005	0.0008	0.0010	0.0014	0.0015	0.0017	0.0019	●		
K.1.1	240	1.0	0.0007	0.0011	0.0013	0.0020	0.0024	0.0033	0.0035	0.0039	0.0045	●	○	○
K.1.2	160	1.0	0.0007	0.0011	0.0013	0.0020	0.0024	0.0033	0.0035	0.0039	0.0045	●	○	○
K.2.1	240	1.0	0.0006	0.0008	0.0010	0.0014	0.0017	0.0023	0.0024	0.0027	0.0031	●	○	○
K.2.2	390	1.0	0.0006	0.0008	0.0010	0.0014	0.0017	0.0023	0.0024	0.0027	0.0031	●	○	○
K.3.1	240	1.0	0.0007	0.0011	0.0013	0.0020	0.0024	0.0033	0.0035	0.0039	0.0045	●	○	○
K.3.2	200	1.0	0.0007	0.0011	0.0013	0.0020	0.0024	0.0033	0.0035	0.0039	0.0045	●	○	○
N.1.1														
N.1.2														
N.2.1														
N.2.2														
N.2.3														
N.3.1	390	1.0	0.0004	0.0008	0.0011	0.0017	0.0022	0.0031	0.0033	0.0037	0.0043	●	○	○
N.3.2	390	1.0	0.0004	0.0008	0.0011	0.0017	0.0022	0.0031	0.0033	0.0037	0.0043	●	○	○
N.3.3	280	1.0	0.0004	0.0008	0.0011	0.0017	0.0022	0.0031	0.0033	0.0037	0.0043	●	○	○
N.4.1														
S.1.1	59	1.0	0.0002	0.0004	0.0005	0.0008	0.0010	0.0014	0.0015	0.0017	0.0019	●		
S.1.2	59	1.0	0.0002	0.0004	0.0005	0.0008	0.0010	0.0014	0.0015	0.0017	0.0019	●		
S.2.1	59	1.0	0.0002	0.0004	0.0005	0.0008	0.0010	0.0014	0.0015	0.0017	0.0019	●		
S.2.2	59	1.0	0.0002	0.0004	0.0005	0.0008	0.0010	0.0014	0.0015	0.0017	0.0019	●		
S.2.3	59	1.0	0.0002	0.0004	0.0005	0.0008	0.0010	0.0014	0.0015	0.0017	0.0019	●		
S.3.1	98	1.0	0.0002	0.0004	0.0005	0.0008	0.0010	0.0014	0.0015	0.0017	0.0019	●		
S.3.2	39	1.0	0.0002	0.0004	0.0005	0.0008	0.0010	0.0014	0.0015	0.0017	0.0019	●		
S.3.3														
H.1.1														
H.1.2														
H.1.3														
H.1.4														
H.2.1														
H.3.1														
O.1.1														
O.1.2														
O.2.1														
O.2.2														
O.3.1														

Cutting Data – S663 – Ball nosed Cutter, extra short – extra long

			59 078 ... / 59 079 ...										
		Ø DC =	1/8"	3/16"	1/4–5/16"	3/8"	1/2"	5/8"	3/4"	1"	● 1st choice		
											○ suitable		
			a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	Emulsion	Compressed air	MQL
Index	v_c ft/min	$a_{p\,max.}$ x DC	f_z inch	f_z inch	f_z inch	f_z inch	f_z inch	f_z inch	f_z inch	f_z inch			
P.1.1	590	1.0	0.0006	0.0007	0.0011	0.0013	0.0018	0.0019	0.0022	0.0025	●	○	○
P.1.2	520	1.0	0.0006	0.0007	0.0011	0.0013	0.0018	0.0019	0.0022	0.0025	●	○	○
P.1.3	520	1.0	0.0006	0.0007	0.0011	0.0013	0.0018	0.0019	0.0022	0.0025	●	○	○
P.1.4	490	1.0	0.0006	0.0007	0.0011	0.0013	0.0018	0.0019	0.0022	0.0025	●	○	○
P.1.5	490	1.0	0.0006	0.0007	0.0011	0.0013	0.0018	0.0019	0.0022	0.0025	●	○	○
P.2.1	560	1.0	0.0006	0.0007	0.0011	0.0013	0.0018	0.0019	0.0022	0.0025	●	○	○
P.2.2	460	1.0	0.0006	0.0007	0.0011	0.0013	0.0018	0.0019	0.0022	0.0025	●	○	○
P.2.3	460	1.0	0.0006	0.0007	0.0011	0.0013	0.0018	0.0019	0.0022	0.0025	●	○	○
P.2.4	430	1.0	0.0006	0.0007	0.0011	0.0013	0.0018	0.0019	0.0022	0.0025	●	○	○
P.3.1													
P.3.2													
P.3.3													
P.4.1	330	1.0	0.0004	0.0005	0.0008	0.0010	0.0014	0.0015	0.0017	0.0019	●		
P.4.2	130	1.0	0.0004	0.0005	0.0008	0.0010	0.0014	0.0015	0.0017	0.0019	●		
M.1.1	160	1.0	0.0004	0.0005	0.0008	0.0010	0.0014	0.0015	0.0017	0.0019	●		
M.2.1	160	1.0	0.0004	0.0005	0.0008	0.0010	0.0014	0.0015	0.0017	0.0019	●		
M.3.1	160	1.0	0.0004	0.0005	0.0008	0.0010	0.0014	0.0015	0.0017	0.0019	●		
K.1.1	390	1.0	0.0011	0.0013	0.0020	0.0024	0.0033	0.0035	0.0039	0.0045	●	○	○
K.1.2	260	1.0	0.0011	0.0013	0.0020	0.0024	0.0033	0.0035	0.0039	0.0045	●	○	○
K.2.1	390	1.0	0.0008	0.0010	0.0014	0.0017	0.0023	0.0024	0.0027	0.0031	●	○	○
K.2.2	660	1.0	0.0008	0.0010	0.0014	0.0017	0.0023	0.0024	0.0027	0.0031	●	○	○
K.3.1	390	1.0	0.0011	0.0013	0.0020	0.0024	0.0033	0.0035	0.0039	0.0045	●	○	○
K.3.2	330	1.0	0.0011	0.0013	0.0020	0.0024	0.0033	0.0035	0.0039	0.0045	●	○	○
N.1.1													
N.1.2													
N.2.1													
N.2.2													
N.2.3													
N.3.1	660	1.0	0.0008	0.0011	0.0017	0.0022	0.0031	0.0033	0.0037	0.0043	●	○	○
N.3.2	660	1.0	0.0008	0.0011	0.0017	0.0022	0.0031	0.0033	0.0037	0.0043	●	○	○
N.3.3	460	1.0	0.0008	0.0011	0.0017	0.0022	0.0031	0.0033	0.0037	0.0043	●	○	○
N.4.1													
S.1.1	98	1.0	0.0004	0.0005	0.0008	0.0010	0.0014	0.0015	0.0017	0.0019	●		
S.1.2	98	1.0	0.0004	0.0005	0.0008	0.0010	0.0014	0.0015	0.0017	0.0019	●		
S.2.1	98	1.0	0.0004	0.0005	0.0008	0.0010	0.0014	0.0015	0.0017	0.0019	●		
S.2.2	98	1.0	0.0004	0.0005	0.0008	0.0010	0.0014	0.0015	0.0017	0.0019	●		
S.2.3	98	1.0	0.0004	0.0005	0.0008	0.0010	0.0014	0.0015	0.0017	0.0019	●		
S.3.1	160	1.0	0.0004	0.0005	0.0008	0.0010	0.0014	0.0015	0.0017	0.0019	●		
S.3.2	66	1.0	0.0004	0.0005	0.0008	0.0010	0.0014	0.0015	0.0017	0.0019	●		
S.3.3													
H.1.1													
H.1.2													
H.1.3													
H.1.4													
H.2.1													
H.3.1													
O.1.1													
O.1.2													
O.2.1													
O.2.2													
O.3.1													

Cutting Data – P157 – Ball nosed cutter, short – extra long

			59 055 ...											
		Ø DC =	1/8–5/32"	3/16"	7/32"	1/4–5/16"	3/8"	1/2"	9/16"	3/4"	1"	● 1st choice		
												○ suitable		
			a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC			
Index	v_c ft/min	$a_{p\,max.}$ x DC	f_z inch	f_z inch	f_z inch	f_z inch	f_z inch	f_z inch	f_z inch	f_z inch	f_z inch	Emulsion	Compressed air	MQL
P.1.1	430	1.0	0.0007	0.0008	0.0009	0.0012	0.0015	0.0020	0.0022	0.0024	0.0028	●	○	○
P.1.2	360	1.0	0.0006	0.0007	0.0008	0.0011	0.0013	0.0018	0.0019	0.0022	0.0025	●	○	○
P.1.3	360	1.0	0.0006	0.0007	0.0008	0.0011	0.0013	0.0018	0.0019	0.0022	0.0025	●	○	○
P.1.4	310	1.0	0.0006	0.0007	0.0008	0.0011	0.0013	0.0018	0.0019	0.0022	0.0025	●	○	○
P.1.5	310	1.0	0.0006	0.0007	0.0008	0.0011	0.0013	0.0018	0.0019	0.0022	0.0025	●	○	○
P.2.1	360	1.0	0.0006	0.0007	0.0008	0.0011	0.0013	0.0018	0.0019	0.0022	0.0025	●	○	○
P.2.2	280	1.0	0.0006	0.0007	0.0008	0.0011	0.0013	0.0018	0.0019	0.0022	0.0025	●	○	○
P.2.3	280	1.0	0.0006	0.0007	0.0008	0.0011	0.0013	0.0018	0.0019	0.0022	0.0025	●	○	○
P.2.4	210	1.0	0.0006	0.0007	0.0008	0.0011	0.0013	0.0018	0.0019	0.0022	0.0025	●	○	○
P.3.1														
P.3.2														
P.3.3														
P.4.1	200	1.0	0.0004	0.0005	0.0006	0.0008	0.0010	0.0014	0.0015	0.0017	0.0019	●		
P.4.2	160	1.0	0.0004	0.0005	0.0006	0.0008	0.0010	0.0014	0.0015	0.0017	0.0019	●		
M.1.1	160	1.0	0.0004	0.0005	0.0006	0.0008	0.0010	0.0014	0.0015	0.0017	0.0019	●		
M.2.1	200	1.0	0.0004	0.0005	0.0006	0.0008	0.0010	0.0014	0.0015	0.0017	0.0019	●		
M.3.1	200	1.0	0.0004	0.0005	0.0006	0.0008	0.0010	0.0014	0.0015	0.0017	0.0019	●		
K.1.1	510	1.0	0.0011	0.0013	0.0015	0.0020	0.0024	0.0033	0.0035	0.0039	0.0045	●	○	○
K.1.2	480	1.0	0.0011	0.0013	0.0015	0.0020	0.0024	0.0033	0.0035	0.0039	0.0045	●	○	○
K.2.1	510	1.0	0.0008	0.0010	0.0011	0.0014	0.0017	0.0023	0.0024	0.0027	0.0031	●	○	○
K.2.2	480	1.0	0.0008	0.0010	0.0011	0.0014	0.0017	0.0023	0.0024	0.0027	0.0031	●	○	○
K.3.1	510	1.0	0.0011	0.0013	0.0015	0.0020	0.0024	0.0033	0.0035	0.0039	0.0045	●	○	○
K.3.2	480	1.0	0.0011	0.0013	0.0015	0.0020	0.0024	0.0033	0.0035	0.0039	0.0045	●	○	○
N.1.1														
N.1.2														
N.2.1														
N.2.2														
N.2.3														
N.3.1	790	1.0	0.0008	0.0011	0.0013	0.0017	0.0022	0.0031	0.0033	0.0037	0.0043	●	○	○
N.3.2	790	1.0	0.0008	0.0011	0.0013	0.0017	0.0022	0.0031	0.0033	0.0037	0.0043	●	○	○
N.3.3	560	1.0	0.0008	0.0011	0.0013	0.0017	0.0022	0.0031	0.0033	0.0037	0.0043	●	○	○
N.4.1														
S.1.1														
S.1.2														
S.2.1														
S.2.2														
S.2.3														
S.3.1														
S.3.2														
S.3.3														
H.1.1														
H.1.2														
H.1.3														
H.1.4														
H.2.1														
H.3.1														
O.1.1														
O.1.2														
O.2.1														
O.2.2														
O.3.1														

Cutting Data – S664 – Ball nosed Cutter, extra short – extra long

			59 080... / 59 081 ...												● 1st choice		
		Ø DC =	1/32"	3/64"	1/16"	3/32"	1/8–5/32"	3/16"	1/4–5/16"	3/8"	1/2"	5/8"	3/4"	1"	○ suitable		
			a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	Emulsion	Compressed air	MQL
Index	v_c ft/min	$a_{p\,max.}$ x DC	f_z inch	f_z inch	f_z inch	f_z inch	f_z inch	f_z inch	f_z inch	f_z inch	f_z inch	f_z inch	f_z inch	f_z inch			
P.1.1	260	1.0	0.0003	0.0003	0.0004	0.0005	0.0007	0.0008	0.0012	0.0015	0.0020	0.0022	0.0024	0.0028	●	○	○
P.1.2	220	1.0	0.0002	0.0002	0.0003	0.0004	0.0006	0.0007	0.0011	0.0013	0.0018	0.0019	0.0022	0.0025	●	○	○
P.1.3	220	1.0	0.0002	0.0002	0.0003	0.0004	0.0006	0.0007	0.0011	0.0013	0.0018	0.0019	0.0022	0.0025	●	○	○
P.1.4	190	1.0	0.0002	0.0002	0.0003	0.0004	0.0006	0.0007	0.0011	0.0013	0.0018	0.0019	0.0022	0.0025	●	○	○
P.1.5	190	1.0	0.0002	0.0002	0.0003	0.0004	0.0006	0.0007	0.0011	0.0013	0.0018	0.0019	0.0022	0.0025	●	○	○
P.2.1	220	1.0	0.0002	0.0002	0.0003	0.0004	0.0006	0.0007	0.0011	0.0013	0.0018	0.0019	0.0022	0.0025	●	○	○
P.2.2	170	1.0	0.0002	0.0002	0.0003	0.0004	0.0006	0.0007	0.0011	0.0013	0.0018	0.0019	0.0022	0.0025	●	○	○
P.2.3	170	1.0	0.0002	0.0002	0.0003	0.0004	0.0006	0.0007	0.0011	0.0013	0.0018	0.0019	0.0022	0.0025	●	○	○
P.2.4	130	1.0	0.0002	0.0002	0.0003	0.0004	0.0006	0.0007	0.0011	0.0013	0.0018	0.0019	0.0022	0.0025	●	○	○
P.3.1																	
P.3.2																	
P.3.3																	
P.4.1	120	1.0	0.0001	0.0001	0.0002	0.0003	0.0004	0.0005	0.0008	0.0010	0.0014	0.0015	0.0017	0.0019	●		
P.4.2	100	1.0	0.0001	0.0001	0.0002	0.0003	0.0004	0.0005	0.0008	0.0010	0.0014	0.0015	0.0017	0.0019	●		
M.1.1	98	1.0	0.0001	0.0001	0.0002	0.0003	0.0004	0.0005	0.0008	0.0010	0.0014	0.0015	0.0017	0.0019	●		
M.2.1	120	1.0	0.0001	0.0001	0.0002	0.0003	0.0004	0.0005	0.0008	0.0010	0.0014	0.0015	0.0017	0.0019	●		
M.3.1	120	1.0	0.0001	0.0001	0.0002	0.0003	0.0004	0.0005	0.0008	0.0010	0.0014	0.0015	0.0017	0.0019	●		
K.1.1	310	1.0	0.0004	0.0006	0.0007	0.0009	0.0011	0.0013	0.0020	0.0024	0.0033	0.0035	0.0039	0.0045	●	○	○
K.1.2	290	1.0	0.0004	0.0006	0.0007	0.0009	0.0011	0.0013	0.0020	0.0024	0.0033	0.0035	0.0039	0.0045	●	○	○
K.2.1	310	1.0	0.0004	0.0005	0.0006	0.0007	0.0008	0.0010	0.0014	0.0017	0.0023	0.0024	0.0027	0.0031	●	○	○
K.2.2	290	1.0	0.0004	0.0005	0.0006	0.0007	0.0008	0.0010	0.0014	0.0017	0.0023	0.0024	0.0027	0.0031	●	○	○
K.3.1	310	1.0	0.0004	0.0006	0.0007	0.0009	0.0011	0.0013	0.0020	0.0024	0.0033	0.0035	0.0039	0.0045	●	○	○
K.3.2	290	1.0	0.0004	0.0006	0.0007	0.0009	0.0011	0.0013	0.0020	0.0024	0.0033	0.0035	0.0039	0.0045	●	○	○
N.1.1																	
N.1.2																	
N.2.1																	
N.2.2																	
N.2.3																	
N.3.1	470	1.0	0.0002	0.0003	0.0004	0.0006	0.0008	0.0011	0.0017	0.0022	0.0031	0.0033	0.0037	0.0043	●	○	○
N.3.2	470	1.0	0.0002	0.0003	0.0004	0.0006	0.0008	0.0011	0.0017	0.0022	0.0031	0.0033	0.0037	0.0043	●	○	○
N.3.3	330	1.0	0.0002	0.0003	0.0004	0.0006	0.0008	0.0011	0.0017	0.0022	0.0031	0.0033	0.0037	0.0043	●	○	○
N.4.1																	
S.1.1																	
S.1.2																	
S.2.1																	
S.2.2																	
S.2.3																	
S.3.1																	
S.3.2																	
S.3.3																	
H.1.1																	
H.1.2																	
H.1.3																	
H.1.4																	
H.2.1																	
H.3.1																	
O.1.1																	
O.1.2																	
O.2.1																	
O.2.2																	
O.3.1																	

Cutting Data – P166 – Ball nosed and End milling cutter, short – extra long

			59 082 ... / 59 083 ... / 59 084 ...								
		Ø DC =	1/4"	3/8"	1/2"	5/8"	3/4"	1"	● 1st choice		
									○ suitable		
			a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	Emulsion	Compressed air	MQL
Index	v_c ft/min	$a_{p\,max.}$ x DC	f_z inch	f_z inch	f_z inch	f_z inch	f_z inch	f_z inch			
P.1.1	690	0.5	0.0016	0.0020	0.0028	0.0030	0.0033	0.0039	●	○	○
P.1.2	660	0.5	0.0016	0.0020	0.0028	0.0030	0.0033	0.0039	●	○	○
P.1.3	660	0.5	0.0016	0.0020	0.0028	0.0030	0.0033	0.0039	●	○	○
P.1.4	620	0.5	0.0016	0.0020	0.0028	0.0030	0.0033	0.0039	●	○	○
P.1.5	620	0.5	0.0016	0.0020	0.0028	0.0030	0.0033	0.0039	●	○	○
P.2.1	660	0.5	0.0016	0.0020	0.0028	0.0030	0.0033	0.0039	●	○	○
P.2.2	620	0.5	0.0012	0.0015	0.0022	0.0023	0.0026	0.0030	●	○	○
P.2.3	590	0.5	0.0016	0.0020	0.0028	0.0030	0.0033	0.0039	●	○	○
P.2.4	560	0.5	0.0012	0.0015	0.0022	0.0023	0.0026	0.0030	●	○	○
P.3.1	590	0.5	0.0016	0.0020	0.0028	0.0030	0.0033	0.0039			
P.3.2	560	0.5	0.0016	0.0020	0.0028	0.0030	0.0033	0.0039			
P.3.3	460	0.5	0.0016	0.0020	0.0028	0.0030	0.0033	0.0039			
P.4.1	330	0.5	0.0010	0.0013	0.0019	0.0020	0.0023	0.0026	●		
P.4.2	260	0.5	0.0010	0.0013	0.0019	0.0020	0.0023	0.0026	●		
M.1.1	330	0.5	0.0010	0.0013	0.0019	0.0020	0.0023	0.0026	●		
M.2.1	330	0.5	0.0010	0.0013	0.0019	0.0020	0.0023	0.0026	●		
M.3.1	330	0.5	0.0010	0.0013	0.0019	0.0020	0.0023	0.0026	●		
K.1.1	660	0.5	0.0019	0.0023	0.0032	0.0034	0.0039	0.0044	●	○	○
K.1.2	590	0.5	0.0019	0.0023	0.0032	0.0034	0.0039	0.0044	●	○	○
K.2.1	620	0.5	0.0016	0.0020	0.0028	0.0030	0.0033	0.0039	●	○	○
K.2.2	560	0.5	0.0016	0.0020	0.0028	0.0030	0.0033	0.0039	●	○	○
K.3.1	590	0.5	0.0016	0.0020	0.0028	0.0030	0.0033	0.0039	●	○	○
K.3.2	520	0.5	0.0016	0.0020	0.0028	0.0030	0.0033	0.0039	●	○	○
N.1.1											
N.1.2											
N.2.1											
N.2.2											
N.2.3											
N.3.1											
N.3.2											
N.3.3											
N.4.1											
S.1.1	120	1.0	0.0012	0.0015	0.0022	0.0023	0.0026	0.0030	●		
S.1.2	120	1.0	0.0012	0.0015	0.0022	0.0023	0.0026	0.0030	●		
S.2.1	80	1.0	0.0010	0.0012	0.0018	0.0020	0.0022	0.0024	●		
S.2.2	80	1.0	0.0010	0.0012	0.0018	0.0020	0.0022	0.0024	●		
S.2.3	80	1.0	0.0010	0.0012	0.0018	0.0020	0.0022	0.0024	●		
S.3.1	300	1.0	0.0019	0.0023	0.0032	0.0034	0.0039	0.0044	●		
S.3.2	180	1.0	0.0012	0.0015	0.0022	0.0023	0.0026	0.0030	●		
S.3.3	140	1.0	0.0012	0.0015	0.0022	0.0023	0.0026	0.0030	●		
H.1.1											
H.1.2											
H.1.3											
H.1.4											
H.2.1											
H.3.1											
O.1.1											
O.1.2											
O.2.1											
O.2.2											
O.3.1											

Cutting Data – P250 – Ball Nosed Cutter, medium long – extra long

		59 063 ...									
		Ø DC =	1/8"	3/16"	1/4"	3/8"	1/2"	● 1st choice			
								○ suitable			
			a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC				
Index	v_c ft/min	$a_{p\,max.}$ x DC	f_z inch	f_z inch	f_z inch	f_z inch	f_z inch	Emulsion	Compressed air	MQL
P.1.1	350	1.0	0.0006	0.0007	0.0011	0.0013	0.0018	●	○	○
P.1.2	310	1.0	0.0006	0.0007	0.0011	0.0013	0.0018	●	○	○
P.1.3	310	1.0	0.0006	0.0007	0.0011	0.0013	0.0018	●	○	○
P.1.4	300	1.0	0.0006	0.0007	0.0011	0.0013	0.0018	●	○	○
P.1.5	300	1.0	0.0006	0.0007	0.0011	0.0013	0.0018	●	○	○
P.2.1	330	1.0	0.0006	0.0007	0.0011	0.0013	0.0018	●	○	○
P.2.2	280	1.0	0.0006	0.0007	0.0011	0.0013	0.0018	●	○	○
P.2.3	280	1.0	0.0006	0.0007	0.0011	0.0013	0.0018	●	○	○
P.2.4	260	1.0	0.0006	0.0007	0.0011	0.0013	0.0018	●	○	○
P.3.1										
P.3.2										
P.3.3										
P.4.1	200	1.0	0.0004	0.0005	0.0008	0.0010	0.0014	●		
P.4.2	80	1.0	0.0004	0.0005	0.0008	0.0010	0.0014	●		
M.1.1	100	1.0	0.0004	0.0005	0.0008	0.0010	0.0014	●		
M.2.1	100	1.0	0.0004	0.0005	0.0008	0.0010	0.0014	●		
M.3.1	100	1.0	0.0004	0.0005	0.0008	0.0010	0.0014	●		
K.1.1	240	1.0	0.0011	0.0013	0.0020	0.0024	0.0033	●	○	○
K.1.2	160	1.0	0.0011	0.0013	0.0020	0.0024	0.0033	●	○	○
K.2.1	240	1.0	0.0008	0.0010	0.0014	0.0017	0.0023	●	○	○
K.2.2	390	1.0	0.0008	0.0010	0.0014	0.0017	0.0023	●	○	○
K.3.1	240	1.0	0.0011	0.0013	0.0020	0.0024	0.0033	●	○	○
K.3.2	200	1.0	0.0011	0.0013	0.0020	0.0024	0.0033	●	○	○
N.1.1										
N.1.2										
N.2.1										
N.2.2										
N.2.3										
N.3.1	390	1.0	0.0008	0.0011	0.0017	0.0022	0.0031	●	○	○
N.3.2	390	1.0	0.0008	0.0011	0.0017	0.0022	0.0031	●	○	○
N.3.3	280	1.0	0.0008	0.0011	0.0017	0.0022	0.0031	●	○	○
N.4.1										
S.1.1	59	1.0	0.0004	0.0005	0.0008	0.0010	0.0014	●		
S.1.2	59	1.0	0.0004	0.0005	0.0008	0.0010	0.0014	●		
S.2.1	59	1.0	0.0004	0.0005	0.0008	0.0010	0.0014	●		
S.2.2	59	1.0	0.0004	0.0005	0.0008	0.0010	0.0014	●		
S.2.3	59	1.0	0.0004	0.0005	0.0008	0.0010	0.0014	●		
S.3.1	98	1.0	0.0004	0.0005	0.0008	0.0010	0.0014	●		
S.3.2	39	1.0	0.0004	0.0005	0.0008	0.0010	0.0014	●		
S.3.3										
H.1.1										
H.1.2										
H.1.3										
H.1.4										
H.2.1										
H.3.1										
O.1.1										
O.1.2										
O.2.1										
O.2.2										
O.3.1										

Cutting Data – P251, P251, P253, P254 – Ball nosed cutter, extra long

			59 064 ... / 59 065 ... / 59 066 ... / 59 067 ...					● 1st choice		
		Ø DC =	1/32"	.060"	3/32"	1/8"	3/16"	○ suitable		
			a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC			
Index	v_c ft/min	$a_{p\,max.}$ x DC	f_z inch	f_z inch	f_z inch	f_z inch	f_z inch	Emulsion	Compressed air	MQL
P.1.1	300	1.0	0.0002	0.0003	0.0004	0.0006	0.0007	●	○	○
P.1.2	260	1.0	0.0002	0.0003	0.0004	0.0006	0.0007	●	○	○
P.1.3	260	1.0	0.0002	0.0003	0.0004	0.0006	0.0007	●	○	○
P.1.4	250	1.0	0.0002	0.0003	0.0004	0.0006	0.0007	●	○	○
P.1.5	250	1.0	0.0002	0.0003	0.0004	0.0006	0.0007	●	○	○
P.2.1	280	1.0	0.0002	0.0003	0.0004	0.0006	0.0007	●	○	○
P.2.2	230	1.0	0.0002	0.0003	0.0004	0.0006	0.0007	●	○	○
P.2.3	230	1.0	0.0002	0.0003	0.0004	0.0006	0.0007	●	○	○
P.2.4	210	1.0	0.0002	0.0003	0.0004	0.0006	0.0007	●	○	○
P.3.1										
P.3.2										
P.3.3										
P.4.1	160	1.0	0.0001	0.0002	0.0003	0.0004	0.0005	●		
P.4.2	70	1.0	0.0001	0.0002	0.0003	0.0004	0.0005	●		
M.1.1	82	1.0	0.0001	0.0002	0.0003	0.0004	0.0005	●		
M.2.1	82	1.0	0.0001	0.0002	0.0003	0.0004	0.0005	●		
M.3.1	82	1.0	0.0001	0.0002	0.0003	0.0004	0.0005	●		
K.1.1	200	1.0	0.0004	0.0007	0.0009	0.0011	0.0013	●	○	○
K.1.2	130	1.0	0.0004	0.0007	0.0009	0.0011	0.0013	●	○	○
K.2.1	200	1.0	0.0004	0.0006	0.0007	0.0008	0.0010	●	○	○
K.2.2	330	1.0	0.0004	0.0006	0.0007	0.0008	0.0010	●	○	○
K.3.1	200	1.0	0.0004	0.0007	0.0009	0.0011	0.0013	●	○	○
K.3.2	160	1.0	0.0004	0.0007	0.0009	0.0011	0.0013	●	○	○
N.1.1										
N.1.2										
N.2.1										
N.2.2										
N.2.3										
N.3.1	330	1.0	0.0002	0.0004	0.0006	0.0008	0.0011	●	○	○
N.3.2	330	1.0	0.0002	0.0004	0.0006	0.0008	0.0011	●	○	○
N.3.3	230	1.0	0.0002	0.0004	0.0006	0.0008	0.0011	●	○	○
N.4.1										
S.1.1	49	1.0	0.0001	0.0002	0.0003	0.0004	0.0005	●		
S.1.2	49	1.0	0.0001	0.0002	0.0003	0.0004	0.0005	●		
S.2.1	49	1.0	0.0001	0.0002	0.0003	0.0004	0.0005	●		
S.2.2	49	1.0	0.0001	0.0002	0.0003	0.0004	0.0005	●		
S.2.3	49	1.0	0.0001	0.0002	0.0003	0.0004	0.0005	●		
S.3.1	82	1.0	0.0001	0.0002	0.0003	0.0004	0.0005	●		
S.3.2	33	1.0	0.0001	0.0002	0.0003	0.0004	0.0005	●		
S.3.3										
H.1.1										
H.1.2										
H.1.3										
H.1.4										
H.2.1										
H.3.1										
O.1.1										
O.1.2										
O.2.1										
O.2.2										
O.3.1										

Cutting Data – P501, P503 – Micro End Milling Cutter, long

			59 007 ... / 59 008 ...									
		Ø DC =	0.005–015"		0.015–031"		0.031–047"		0.047–062"		0.062–078“	
			a_e 0.13 x DC	a_e 0.25 x DC	a_e 0.13 x DC	a_e 0.25 x DC	a_e 0.13 x DC	a_e 0.25 x DC	a_e 0.13 x DC	a_e 0.25 x DC	a_e .13 x DC	a_e 0.25 x DC
Index	v_c ft/min	$a_{p\,max.}$ x DC	f_z inch	f_z inch	f_z inch	f_z inch	f_z inch	f_z inch	f_z inch	f_z inch	f_z inch	f_z inch
P.1.1	600	3.0	0.00005		0.00010		0.00015			0.00170		0.00021
P.1.2	600	3.0	0.00005		0.00010		0.00015			0.00170		0.00021
P.1.3	200	3.0	0.00004		0.00009		0.00013			0.00020		0.00025
P.1.4	200	3.0	0.00004		0.00009		0.00013			0.00020		0.00025
P.1.5	200	3.0	0.00004		0.00009		0.00013			0.00020		0.00025
P.2.1	200	3.0	0.00004		0.00009		0.00013			0.00015		0.00019
P.2.2	200	3.0	0.00004		0.00009		0.00013			0.00015		0.00019
P.2.3	200	3.0	0.00004		0.00009		0.00013			0.00015		0.00019
P.2.4	100	3.0	0.00002		0.00004		0.00007			0.00008		0.00100
P.3.1	150	3.0	0.00003		0.00006		0.00008			0.00010		0.00012
P.3.2	150	3.0	0.00003		0.00006		0.00008			0.00010		0.00012
P.3.3	90	3.0	0.00001		0.00003		0.00004			0.00005		0.00006
P.4.1	450	3.0	0.00005		0.00010		0.00015			0.00017		0.00021
P.4.2	450	3.0	0.00005		0.00010		0.00015			0.00017		0.00021
M.1.1	200	3.0	0.00004		0.00009		0.00013			0.00015		0.00019
M.2.1	200	3.0	0.00002		0.00004		0.00007			0.00008		0.00100
M.3.1	100	3.0	0.00002		0.00004		0.00007			0.00008		0.00100
K.1.1	400	3.0	0.00005		0.00010		0.00015			0.00017		0.00021
K.1.2	400	3.0	0.00005		0.00010		0.00015			0.00017		0.00021
K.2.1	300	3.0	0.00005		0.00010		0.00015			0.00017		0.00021
K.2.2	300	3.0	0.00005		0.00010		0.00015			0.00017		0.00021
K.3.1	250	3.0	0.00005		0.00010		0.00015			0.00017		0.00021
K.3.2	250	3.0	0.00005		0.00010		0.00015			0.00017		0.00021
N.1.1	1000	3.0	0.00015		0.00031		0.00047			0.00055		0.00069
N.1.2	1000	3.0	0.00015		0.00031		0.00047			0.00055		0.00069
N.2.1	750	3.0	0.00015		0.00031		0.00047			0.00055		0.00069
N.2.2	750	3.0	0.00015		0.00031		0.00047			0.00055		0.00069
N.2.3												
N.3.1	500	3.0	0.00012		0.00025		0.00038		0.00044		0.00055	
N.3.2	800	3.0	0.00015		0.00031		0.00048		0.00055		0.00069	
N.3.3	400	3.0	0.00012		0.00025		0.00038		0.00044		0.00055	
N.4.1	1500	3.0	0.00015		0.00031		0.00048		0.00055		0.00069	
S.1.1	70	3.0	0.00003		0.00006		0.00009			0.00010		0.00012
S.1.2	50	3.0	0.00001		0.00003		0.00004			0.00005		0.00006
S.2.1	70	3.0	0.00003		0.00006		0.00009			0.00010		0.00012
S.2.2	50	3.0	0.00003		0.00006		0.00009			0.00010		0.00012
S.2.3	50	3.0	0.00001		0.00003		0.00004			0.00005		0.00006
S.3.1	200	3.0	0.00003		0.00006		0.00008			0.00010		0.00012
S.3.2	150	3.0	0.00003		0.00006		0.00008			0.00010		0.00012
S.3.3	75	3.0	0.00001		0.00003		0.00004			0.00005		0.00006
H.1.1												
H.1.2												
H.1.3												
H.1.4												
H.2.1												
H.3.1												
O.1.1												
O.1.2												
O.2.1												
O.2.2												
O.3.1												

	59 007 ... / 59 008 ...						
	0.078–093"		0.093–0120"		● 1st choice		
					○ suitable		
	a_e 0.13 x DC	a_e 0.25 x DC	a_e 0.13 x DC	a_e 0.25 x DC			
Index	f_z inch	f_z inch	f_z inch	f_z inch	Emulsion	Compressed air	MQL
P.1.1		0.00025		0.00034	●		
P.1.2		0.00025		0.00034	●		
P.1.3		0.00030		0.00040	●		
P.1.4		0.00030		0.00040	●		
P.1.5		0.00030		0.00040	●		
P.2.1		0.00023		0.00031	●		
P.2.2		0.00023		0.00031	●		
P.2.3		0.00023		0.00031	●		
P.2.4		0.00012		0.00016	●		
P.3.1		0.00014		0.00019	●		
P.3.2		0.00014		0.00019	●		
P.3.3		0.00007		0.00010	●		
P.4.1		0.00025		0.00034	●		
P.4.2		0.00025		0.00034	●		
M.1.1		0.00023		0.00031	●		
M.2.1		0.00012		0.00016	●		
M.3.1		0.00012		0.00016	●		
K.1.1		0.00025		0.00034	●		
K.1.2		0.00025		0.00034	●		
K.2.1		0.00025		0.00034	●		
K.2.2		0.00025		0.00034	●		
K.3.1		0.00025		0.00034	●		
K.3.2		0.00025		0.00034	●		
N.1.1		0.00082		0.00110	●		
N.1.2		0.00082		0.00110	●		
N.2.1		0.00082		0.00110	●		
N.2.2		0.00082		0.00110	●		
N.2.3							
N.3.1	0.00065		0.00088		●		
N.3.2	0.00082		0.00110		●		
N.3.3	0.00065		0.00088		●		
N.4.1	0.00082		0.00110		●		
S.1.1		0.00014		0.00019	●		
S.1.2		0.00007		0.00010	●		
S.2.1		0.00014		0.00019	●		
S.2.2		0.00014		0.00019	●		
S.2.3		0.00007		0.00010	●		
S.3.1		0.00014		0.00019	●		
S.3.2		0.00014		0.00019	●		
S.3.3		0.00007		0.00010	●		
H.1.1							
H.1.2							
H.1.3							
H.1.4							
H.2.1							
H.3.1							
O.1.1							
O.1.2							
O.2.1							
O.2.2							
O.3.1							

Cutting Data – P504, P506 – Micro end milling cutter, short

			59 009 ... / 59 010...									
		Ø DC =	0.005–015"	0.015–031"	0.031–047"	0.047–062"	0.062–078"	0.078–093"	0.093–0120"	● 1st choice		
										○ suitable		
			a_e 0.30 x DC	a_e 0.30 x DC	a_e 0.30 x DC	a_e 0.60 x DC	a_e 0.60 x DC	a_e 0.60 x DC	a_e 0.60 x DC			
Index	v_c ft/min	$a_{p\,max.}$ x DC	f_z inch	f_z inch	f_z inch	f_z inch	f_z inch	f_z inch	f_z inch	Emulsion	Compressed air	MQL
P.1.1	600	1.0	0.00007	0.00014	0.00021	0.00024	0.00031	0.00036	0.00049	●		
P.1.2	600	1.0	0.00007	0.00014	0.00021	0.00024	0.00031	0.00036	0.00049	●		
P.1.3	200	1.0	0.00006	0.00013	0.00019	0.00022	0.00028	0.00033	0.00045	●		
P.1.4	200	1.0	0.00006	0.00013	0.00019	0.00022	0.00028	0.00033	0.00045	●		
P.1.5	200	1.0	0.00006	0.00013	0.00019	0.00022	0.00028	0.00033	0.00045	●		
P.2.1	200	1.0	0.00006	0.00013	0.00019	0.00022	0.00028	0.00033	0.00045	●		
P.2.2	200	1.0	0.00006	0.00013	0.00019	0.00022	0.00028	0.00033	0.00045	●		
P.2.3	200	1.0	0.00006	0.00013	0.00019	0.00022	0.00028	0.00033	0.00045	●		
P.2.4	100	1.0	0.00003	0.00006	0.00010	0.00011	0.00014	0.00017	0.00022	●		
P.3.1	150	1.0	0.00004	0.00008	0.00012	0.00014	0.00017	0.00021	0.00028	●		
P.3.2	150	1.0	0.00004	0.00008	0.00012	0.00014	0.00017	0.00021	0.00028	●		
P.3.3	90	1.0	0.00002	0.00004	0.00006	0.00007	0.00009	0.00012	0.00018	●		
P.4.1	450	1.0	0.00007	0.00014	0.00021	0.00024	0.00031	0.00036	0.00049	●		
P.4.2	450	1.0	0.00007	0.00014	0.00021	0.00024	0.00031	0.00036	0.00049	●		
M.1.1	200	1.0	0.00006	0.00013	0.00019	0.00022	0.00028	0.00033	0.00045	●		
M.2.1	200	1.0	0.00003	0.00006	0.00010	0.00011	0.00014	0.00017	0.00022	●		
M.3.1	100	1.0	0.00003	0.00006	0.00010	0.00011	0.00014	0.00017	0.00022	●		
K.1.1	400	1.0	0.00007	0.00014	0.00021	0.00024	0.00031	0.00036	0.00049	●		
K.1.2	400	1.0	0.00007	0.00014	0.00021	0.00024	0.00031	0.00036	0.00049	●		
K.2.1	300	1.0	0.00007	0.00014	0.00021	0.00024	0.00031	0.00036	0.00049	●		
K.2.2	300	1.0	0.00007	0.00014	0.00021	0.00024	0.00031	0.00036	0.00049	●		
K.3.1	250	1.0	0.00007	0.00014	0.00021	0.00024	0.00031	0.00036	0.00049	●		
K.3.2	250	1.0	0.00007	0.00014	0.00021	0.00024	0.00031	0.00036	0.00049	●		
N.1.1	1000	1.0	0.00022	0.00045	0.00068	0.00780	0.00099	0.00118	0.00158	●		
N.1.2	1000	1.0	0.00022	0.00045	0.00068	0.00780	0.00099	0.00118	0.00158	●		
N.2.1	750	1.0	0.00022	0.00045	0.00068	0.00780	0.00099	0.00118	0.00158	●		
N.2.2	750	1.0	0.00022	0.00045	0.00068	0.00780	0.00099	0.00118	0.00158	●		
N.2.3												
N.3.1	500	1.0	0.00017	0.00036	0.00055	0.00063	0.00079	0.00094	0.00127	●		
N.3.2	800	1.0	0.00017	0.00036	0.00055	0.00063	0.00079	0.00094	0.00127	●		
N.3.3	400	1.0	0.00017	0.00036	0.00055	0.00063	0.00079	0.00094	0.00127	●		
N.4.1	1500	1.0	0.00022	0.00045	0.00068	0.00078	0.00099	0.00118	0.00158	●		
S.1.1	70	1.0	0.00004	0.00008	0.00012	0.00014	0.00017	0.00021	0.00028	●		
S.1.2	50	1.0	0.00002	0.00004	0.00006	0.00007	0.00009	0.00012	0.00018	●		
S.2.1	70	1.0	0.00004	0.00008	0.00012	0.00014	0.00017	0.00021	0.00028	●		
S.2.2	50	1.0	0.00002	0.00004	0.00006	0.00007	0.00009	0.00012	0.00018	●		
S.2.3	50	1.0	0.00002	0.00004	0.00006	0.00007	0.00009	0.00012	0.00018	●		
S.3.1	200	1.0	0.00004	0.00008	0.00012	0.00014	0.00017	0.00021	0.00028	●		
S.3.2	150	1.0	0.00004	0.00008	0.00012	0.00014	0.00017	0.00021	0.00028	●		
S.3.3	75	1.0	0.00002	0.00004	0.00006	0.00007	0.00009	0.00012	0.00018	●		
H.1.1												
H.1.2												
H.1.3												
H.1.4												
H.2.1												
H.3.1												
O.1.1												
O.1.2												
O.2.1												
O.2.2												
O.3.1												

Cutting Data – P137 – Profile milling cutter

			59 049 ... / 59 050 ...						
		Ø DC =	1/8"	3/16"	1/4–5/16"	3/8"	● 1st choice		
							○ suitable		
			a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	Emulsion	Compressed air	MQL
Index	v_c ft/min	$a_{p\,max.}$ x DC	f_z inch	f_z inch	f_z inch	f_z inch			
P.1.1	310	1.0	0.0006	0.0007	0.0011	0.0013	●	○	○
P.1.2	260	1.0	0.0006	0.0007	0.0011	0.0013	●	○	○
P.1.3	260	1.0	0.0006	0.0007	0.0011	0.0013	●	○	○
P.1.4	230	1.0	0.0006	0.0007	0.0011	0.0013	●	○	○
P.1.5	230	1.0	0.0006	0.0007	0.0011	0.0013	●	○	○
P.2.1	250	1.0	0.0006	0.0007	0.0011	0.0013	●	○	○
P.2.2	200	1.0	0.0006	0.0007	0.0011	0.0013	●	○	○
P.2.3	200	1.0	0.0006	0.0007	0.0011	0.0013	●	○	○
P.2.4	180	1.0	0.0006	0.0007	0.0011	0.0013	●	○	○
P.3.1									
P.3.2									
P.3.3									
P.4.1									
P.4.2									
M.1.1									
M.2.1									
M.3.1									
K.1.1	390	1.0	0.0011	0.0013	0.0020	0.0024	●	○	○
K.1.2	330	1.0	0.0011	0.0013	0.0020	0.0024	●	○	○
K.2.1	390	1.0	0.0008	0.0010	0.0014	0.0017	●	○	○
K.2.2	330	1.0	0.0008	0.0010	0.0014	0.0017	●	○	○
K.3.1	390	1.0	0.0011	0.0013	0.0020	0.0024	●	○	○
K.3.2	330	1.0	0.0011	0.0013	0.0020	0.0024	●	○	○
N.1.1									
N.1.2									
N.2.1									
N.2.2									
N.2.3									
N.3.1									
N.3.2									
N.3.3									
N.4.1									
S.1.1									
S.1.2									
S.2.1									
S.2.2									
S.2.3									
S.3.1									
S.3.2									
S.3.3									
H.1.1									
H.1.2									
H.1.3									
H.1.4									
H.2.1									
H.3.1									
O.1.1									
O.1.2									
O.2.1									
O.2.2									
O.3.1									

Cutting Data – P139 – Profile milling cutter

			59 051 ... / 59 052 ...						
		Ø DC =	3/16"	1/4"	3/8"	1/2"	● 1st choice		
							○ suitable		
			a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC			
Index	v_c ft/min	$a_{p\,max.}$ x DC	f_z inch	f_z inch	f_z inch	f_z inch	Emulsion	Compressed air	MQL
P.1.1	310	1.0	0.0007	0.0011	0.0013	0.0018	●	○	○
P.1.2	260	1.0	0.0007	0.0011	0.0013	0.0018	●	○	○
P.1.3	260	1.0	0.0007	0.0011	0.0013	0.0018	●	○	○
P.1.4	230	1.0	0.0007	0.0011	0.0013	0.0018	●	○	○
P.1.5	230	1.0	0.0007	0.0011	0.0013	0.0018	●	○	○
P.2.1	250	1.0	0.0007	0.0011	0.0013	0.0018	●	○	○
P.2.2	200	1.0	0.0007	0.0011	0.0013	0.0018	●	○	○
P.2.3	200	1.0	0.0007	0.0011	0.0013	0.0018	●	○	○
P.2.4	180	1.0	0.0007	0.0011	0.0013	0.0018	●	○	○
P.3.1									
P.3.2									
P.3.3									
P.4.1									
P.4.2									
M.1.1									
M.2.1									
M.3.1									
K.1.1	390	1.0	0.0013	0.0020	0.0024	0.0033	●	○	○
K.1.2	330	1.0	0.0013	0.0020	0.0024	0.0033	●	○	○
K.2.1	390	1.0	0.0010	0.0014	0.0017	0.0023	●	○	○
K.2.2	330	1.0	0.0010	0.0014	0.0017	0.0023	●	○	○
K.3.1	390	1.0	0.0013	0.0020	0.0024	0.0033	●	○	○
K.3.2	330	1.0	0.0013	0.0020	0.0024	0.0033	●	○	○
N.1.1									
N.1.2									
N.2.1									
N.2.2									
N.2.3									
N.3.1									
N.3.2									
N.3.3									
N.4.1									
S.1.1									
S.1.2									
S.2.1									
S.2.2									
S.2.3									
S.3.1									
S.3.2									
S.3.3									
H.1.1									
H.1.2									
H.1.3									
H.1.4									
H.2.1									
H.3.1									
O.1.1									
O.1.2									
O.2.1									
O.2.2									
O.3.1									

Cutting Data – P132/P134 – Chamfer milling cutter

			59 041 ... / 59 042 ... / 59 045 ... / 59 046 ...					● 1st choice		
		Ø DC =	1/8"	3/16"	1/4"	3/8"	1/2"	○ suitable		
			a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	a_e 1 x DC	Emulsion	Compressed air	MQL
Index	v_c ft/min	$a_{p\,max.}$ x DC	f_z inch	f_z inch	f_z inch	f_z inch	f_z inch			
P.1.1	310	1.0	0.0006	0.0007	0.0011	0.0013	0.0018	●	○	○
P.1.2	260	1.0	0.0006	0.0007	0.0011	0.0013	0.0018	●	○	○
P.1.3	260	1.0	0.0006	0.0007	0.0011	0.0013	0.0018	●	○	○
P.1.4	230	1.0	0.0006	0.0007	0.0011	0.0013	0.0018	●	○	○
P.1.5	230	1.0	0.0006	0.0007	0.0011	0.0013	0.0018	●	○	○
P.2.1	250	1.0	0.0006	0.0007	0.0011	0.0013	0.0018	●	○	○
P.2.2	200	1.0	0.0006	0.0007	0.0011	0.0013	0.0018	●	○	○
P.2.3	200	1.0	0.0006	0.0007	0.0011	0.0013	0.0018	●	○	○
P.2.4	180	1.0	0.0006	0.0007	0.0011	0.0013	0.0018	●	○	○
P.3.1										
P.3.2										
P.3.3										
P.4.1										
P.4.2										
M.1.1										
M.2.1										
M.3.1										
K.1.1	390	1.0	0.0011	0.0013	0.0020	0.0024	0.0033	●	○	○
K.1.2	330	1.0	0.0011	0.0013	0.0020	0.0024	0.0033	●	○	○
K.2.1	390	1.0	0.0008	0.0010	0.0014	0.0017	0.0023	●	○	○
K.2.2	330	1.0	0.0008	0.0010	0.0014	0.0017	0.0023	●	○	○
K.3.1	390	1.0	0.0011	0.0013	0.0020	0.0024	0.0033	●	○	○
K.3.2	330	1.0	0.0011	0.0013	0.0020	0.0024	0.0033	●	○	○
N.1.1										
N.1.2										
N.2.1										
N.2.2										
N.2.3										
N.3.1										
N.3.2										
N.3.3										
N.4.1										
S.1.1										
S.1.2										
S.2.1										
S.2.2										
S.2.3										
S.3.1										
S.3.2										
S.3.3										
H.1.1										
H.1.2										
H.1.3										
H.1.4										
H.2.1										
H.3.1										
O.1.1										
O.1.2										
O.2.1										
O.2.2										
O.3.1										

Cutting Data – P130 – Chamfer milling cutter

			59 037 ... / 59 038 ...					
		Ø DC =	1/4"	3/8"	1/2"	● 1st choice		
						○ suitable		
			a_e 1 x DC	a_e 1 x DC	a_e 1 x DC			
Index	v_c ft/min	$a_{p\,max.}$ x DC	f_z inch	f_z inch	f_z inch	Emulsion	Compressed air	MQL
P.1.1	310	1.0	0.0011	0.0013	0.0018	●	○	○
P.1.2	260	1.0	0.0011	0.0013	0.0018	●	○	○
P.1.3	260	1.0	0.0011	0.0013	0.0018	●	○	○
P.1.4	230	1.0	0.0011	0.0013	0.0018	●	○	○
P.1.5	230	1.0	0.0011	0.0013	0.0018	●	○	○
P.2.1	250	1.0	0.0011	0.0013	0.0018	●	○	○
P.2.2	200	1.0	0.0011	0.0013	0.0018	●	○	○
P.2.3	200	1.0	0.0011	0.0013	0.0018	●	○	○
P.2.4	180	1.0	0.0011	0.0013	0.0018	●	○	○
P.3.1								
P.3.2								
P.3.3								
P.4.1								
P.4.2								
M.1.1								
M.2.1								
M.3.1								
K.1.1	390	1.0	0.0020	0.0024	0.0033	●	○	○
K.1.2	330	1.0	0.0020	0.0024	0.0033	●	○	○
K.2.1	390	1.0	0.0014	0.0017	0.0023	●	○	○
K.2.2	330	1.0	0.0014	0.0017	0.0023	●	○	○
K.3.1	390	1.0	0.0020	0.0024	0.0033	●	○	○
K.3.2	330	1.0	0.0020	0.0024	0.0033	●	○	○
N.1.1								
N.1.2								
N.2.1								
N.2.2								
N.2.3								
N.3.1								
N.3.2								
N.3.3								
N.4.1								
S.1.1								
S.1.2								
S.2.1								
S.2.2								
S.2.3								
S.3.1								
S.3.2								
S.3.3								
H.1.1								
H.1.2								
H.1.3								
H.1.4								
H.2.1								
H.3.1								
O.1.1								
O.1.2								
O.2.1								
O.2.2								
O.3.1								

Cutting Data – P133 – Chamfer milling cutter

			59 043 ... / 59 044 ...					
		Ø DC =	1/8"	3/16"	1/4"	● 1st choice		
						○ suitable		
			a_e 1 x DC	a_e 1 x DC	a_e 1 x DC			
Index	v_c ft/min	$a_{p\,max.}$ x DC	f_z inch	f_z inch	f_z inch	Emulsion	Compressed air	MQL
P.1.1	310	1.0	0.0011	0.0013	0.0018	●	○	○
P.1.2	260	1.0	0.0011	0.0013	0.0018	●	○	○
P.1.3	260	1.0	0.0011	0.0013	0.0018	●	○	○
P.1.4	230	1.0	0.0011	0.0013	0.0018	●	○	○
P.1.5	230	1.0	0.0011	0.0013	0.0018	●	○	○
P.2.1	250	1.0	0.0011	0.0013	0.0018	●	○	○
P.2.2	200	1.0	0.0011	0.0013	0.0018	●	○	○
P.2.3	200	1.0	0.0011	0.0013	0.0018	●	○	○
P.2.4	180	1.0	0.0011	0.0013	0.0018	●	○	○
P.3.1								
P.3.2								
P.3.3								
P.4.1								
P.4.2								
M.1.1								
M.2.1								
M.3.1								
K.1.1	390	1.0	0.0020	0.0024	0.0033	●	○	○
K.1.2	330	1.0	0.0020	0.0024	0.0033	●	○	○
K.2.1	390	1.0	0.0014	0.0017	0.0023	●	○	○
K.2.2	330	1.0	0.0014	0.0017	0.0023	●	○	○
K.3.1	390	1.0	0.0020	0.0024	0.0033	●	○	○
K.3.2	330	1.0	0.0020	0.0024	0.0033	●	○	○
N.1.1								
N.1.2								
N.2.1								
N.2.2								
N.2.3								
N.3.1								
N.3.2								
N.3.3								
N.4.1								
S.1.1								
S.1.2								
S.2.1								
S.2.2								
S.2.3								
S.3.1								
S.3.2								
S.3.3								
H.1.1								
H.1.2								
H.1.3								
H.1.4								
H.2.1								
H.3.1								
O.1.1								
O.1.2								
O.2.1								
O.2.2								
O.3.1								

Cutting Data – P131/P135 – Chamfer milling cutter

			59 039 ... / 59 040 ... / 59 047 ... / 59 048 ...			● 1st choice		
		Ø DC =	1/4"	3/8"	1/2"	○ suitable		
			a_e 1 x DC	a_e 1 x DC	a_e 1 x DC			
Index	v_c ft/min	$a_{p\,max.}$ x DC	f_z inch	f_z inch	f_z inch	Emulsion	Compressed air	MQL
P.1.1	310	1.0	0.0011	0.0013	0.0018	●	○	○
P.1.2	260	1.0	0.0011	0.0013	0.0018	●	○	○
P.1.3	260	1.0	0.0011	0.0013	0.0018	●	○	○
P.1.4	230	1.0	0.0011	0.0013	0.0018	●	○	○
P.1.5	230	1.0	0.0011	0.0013	0.0018	●	○	○
P.2.1	250	1.0	0.0011	0.0013	0.0018	●	○	○
P.2.2	200	1.0	0.0011	0.0013	0.0018	●	○	○
P.2.3	200	1.0	0.0011	0.0013	0.0018	●	○	○
P.2.4	180	1.0	0.0011	0.0013	0.0018	●	○	○
P.3.1								
P.3.2								
P.3.3								
P.4.1								
P.4.2								
M.1.1								
M.2.1								
M.3.1								
K.1.1	390	1.0	0.0020	0.0024	0.0033	●	○	○
K.1.2	330	1.0	0.0020	0.0024	0.0033	●	○	○
K.2.1	390	1.0	0.0014	0.0017	0.0023	●	○	○
K.2.2	330	1.0	0.0014	0.0017	0.0023	●	○	○
K.3.1	390	1.0	0.0020	0.0024	0.0033	●	○	○
K.3.2	330	1.0	0.0020	0.0024	0.0033	●	○	○
N.1.1								
N.1.2								
N.2.1								
N.2.2								
N.2.3								
N.3.1								
N.3.2								
N.3.3								
N.4.1								
S.1.1								
S.1.2								
S.2.1								
S.2.2								
S.2.3								
S.3.1								
S.3.2								
S.3.3								
H.1.1								
H.1.2								
H.1.3								
H.1.4								
H.2.1								
H.3.1								
O.1.1								
O.1.2								
O.2.1								
O.2.2								
O.3.1								

Technical references

Feedrate Adjustment

If the rpm indicated in the tables cannot be obtained by the machine spindle, the feed rate is to be reduced proportionally to the max rpm.

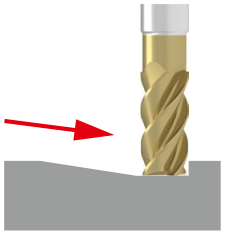
Example:
according to table = n 50000/min. and v_f 40 inch/min.,
maximum machine rpm = 40000/min.

Calculation of feed rate which can be applied:
40000 = 80 % of 50000/min. accordingly 80 % of 40 = 32 inch/min.

Feed rate which can be applied = **32 inch/min.**

Angled ramping with solid carbide cutters

Angled ramping with solid carbide cutters is possible at an angle of 3° to 6° depending on the cutter type.
A protective edge chamfer or corner radius is an advantage.



S.F.M./R.P.M. CONVERSION CHART

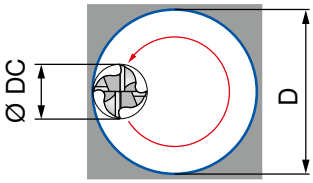
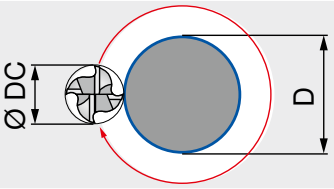
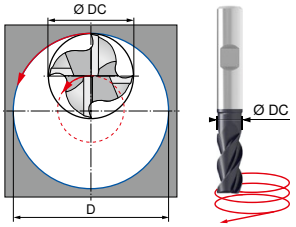
	DIAMETER															
S.F.M.	**1/16**	**3/32**	**1/8**	**5/32**	**3/16**	**7/32**	**1/4**	**5/16**	**3/8**	**7/16**	**1/2**	**5/8**	**3/4**	**7/8**	**1**
50	3.050	2.040	1.530	1.220	1.020	875	765	610	510	440	380	310	250	220	190
75	4.580	3.060	2.290	1.830	1.530	1.310	1.150	920	760	660	570	460	380	330	285
100	6.100	4.080	3.050	2.450	2.040	1.750	1.530	1.220	1.020	870	760	610	510	440	385
125	7.630	5.100	3.820	3.050	2.550	2.180	1.920	1.530	1.270	1.100	950	770	630	550	475
150	9.150	6.120	4.570	3.670	3.060	2.620	2.290	1.83	1.530	1.310	1.140	920	760	660	575
175	10.680	7.140	5.350	4.270	3.570	3.060	2.680	2.140	1.780	1.540	1.330	1.080	880	770	665
200	12.200	8.150	6.100	4.900	4.070	3.500	3.100	2.450	2.00	1.750	1.500	1.200	1.000	875	750
300	18.500	12.200	9.200	7.300	6.100	5.250	4.600	3.700	3.100	2.600	2.300	1.800	1.500	1.300	1.100
400	24.500	16.300	12.200	9.800	8.150	7.000	6.100	4.900	4.100	3.500	3.050	2.450	2.050	1.750	1.525
500	30.500	20.400	15.300	12.200	10.200	8.700	7.600	6.100	5.100	4.400	3.800	3.100	2.500	2.200	1.900
750	45.800	36.700	22.900	18.300	15.300	13.100	11.500	9.200	7.600	6.550	5.700	4.600	3.800	3.700	2.850
1.000	–	40.800	30.600	24.500	20.400	17.500	15.300	12.200	103200	8.750	7.650	6.100	5.100	4.400	3.800
1.500	–	–	45.900	36.700	30.600	26.200	22.900	18.300	15.300	13.150	11.300	9.200	7.600	6.500	5.700
2.000	–	–	–	49.000	40.800	35.000	30.600	24.400	20.400	17.500	15.300	12.200	10.200	8.700	7.600
3.000	–	–	–	–	–	52.500	45.900	36.600	30.600	26.250	22.900	18.300	15.300	13.100	11.400
4.000	–	–	–	–	–	–	–	48.800	40.800	35.000	30.600	24.400	20.400	17.500	15.200
5.000	–	–	–	–	–	–	–	–	–	43.700	38.200	30.600	25.500	21.800	19.000

General formula for calculating the cutting parameters

Designation	Abbreviation	Unit	Formula	Example	
Number of revolutions	**n**	**min^{-1}**	$n = \frac{v_c \times 12}{DC \times \pi}$	v_c = 80 ft/min DC = 0.75 inch	$n = \frac{80 \times 12}{0.75 \times \pi}$ = 408 min^{-1}
Cutting speed	**v_c**	**ft/min**	$v_c = \frac{DC \times \pi \times n}{12}$	n = 400 min^{-1} DC = 0.75 inch	$v_c = \frac{0.75 \times \pi \times 400}{12}$ = 78 ft/min
Feed per tooth	**f_z**	**inch**	$f_z = \frac{v_f}{ZEFP \times n}$	v_f = 12.8 inch/min n = 400 min^{-1} ZEFP = 4	$f_z = \frac{12.8}{4 \times 400}$ = 0.008 inch
Feed per revolution	**f**	**inch/rev**	$f = f_z \times ZEFP$	f_z = 0.008 inch ZEFP = 4	f = 0.008 x 4 = 0.032 inch/rev
Feed rate	**v_f**	**inch/min.**	$v_f = f_z \times ZEFP \times n$	f_z = 0.008 ZEFP = 4 n = 400 min^{-1}	v_f = 0.008 x 4 x 400 = 12.8 inch/min
Average chip thickness	**h_m**	**inch**	$h_m = f_z \times \sqrt{\frac{a_e}{DC}}$	f_z = 0.008 inch a_e = 0.012 inch DC = 0.75	$h_m = 0.008 \times \sqrt{\frac{0.012}{0.75}}$ = 0.001 inch

ZEFP = Number of flutes
a_e = cutting width

Calculation of the feed rate on the midpoint path of the milling cutter (v_{fM})

Designation	Abbreviation	Unit	Formula	Example
Internal contour	**v_{fM}**	**inch/min.**	$V_{fM} = \frac{v_f \times (D - DC)}{D}$	
Outside profile	**v_{fM}**	**inch/min.**	$V_{fM} = \frac{v_f \times (D + DC)}{D}$	
Helical ramping	**v_{fM}**	**inch/min.**	$V_{fM} = \frac{n \times f_z \times ZEFP \times (D - D_C)}{D}$	

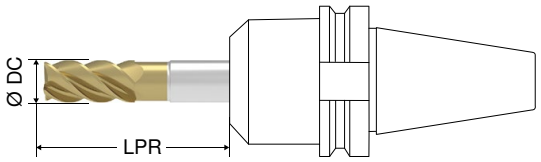
Tips for Tool Selection

Rake and helix angles combined with the coating are decisive factors for the operational area.

Characteristics	Benefits
Helix angle with slow spiral	
▲ For materials with high tensile strength	▲ High edge stability
▲ For high material removal rates	▲ Low tendency to edge chipping
▲ For slot milling, pocket milling, rough milling	
Helix angle with quick spiral	
▲ For soft steels, non ferrous metals, etc.	▲ Soft cut
▲ For low material removal rates	▲ Low cutting forces
▲ Typical for finishing processes	
Small rake angles are applied	
▲ For hard, brittle materials	▲ High edge stability
▲ For high material removal rates	▲ Low tendency to edge chipping
▲ For rough machining	
Large rake angles are applied	
▲ For soft materials	▲ Soft cut
▲ For low material removal rates	▲ Low cutting forces
▲ For finishing	▲ Favorable chip flow
	▲ Low tendency to stick

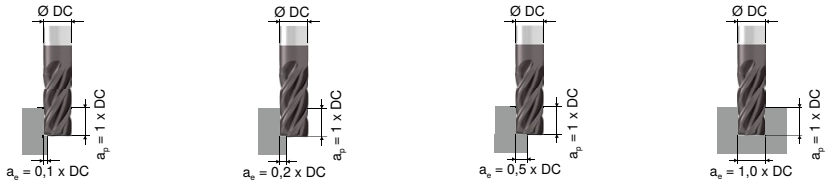
Correction factor for solid carbide milling cutters

Factors for cutting speed (v_c) and feed rate (f_z) in relation to the overhang length (LPR)



Length					
Overhang length (LPR)	1.5 x DC	4 x DC	8 x DC	12 x DC	> 12 x DC
Factor for v_c (Kf v_c)	1.0	1.0	0.9	0.85	0.7
Factor for f_z (Kf f_z)	1.2	1.0	0.8	0.7	0.5

Factors for cutting speed (v_c) and feed rate (f_z) in relation to the cutting depth (a_p) and cutting width (a_e)



Factor for v_c (Kf v_c)	1.3	1.1	1.0	0.85
Factor for f_z (Kf f_z)	1.5	1.3	1.0	0.8

Calculation aid for copy milling

Theoretical surface roughness (R_{th}) and step over (b_r)

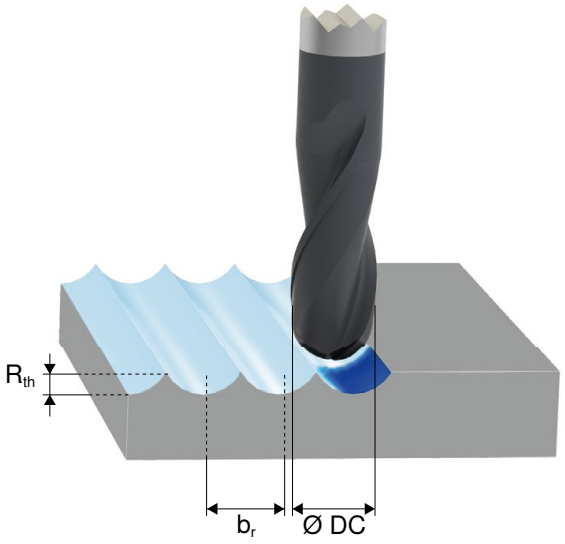
$$R_{th} = r - \sqrt{\frac{(r \times 2)^2 - b_r^2}{4}}$$

$$b_r = 2 \times \sqrt{R_{th} \times (r \times 2 - R_{th})}$$

$$R_{th} \simeq R_a / 0.1$$

$$R_a \simeq 0.1 \times R_{th}$$

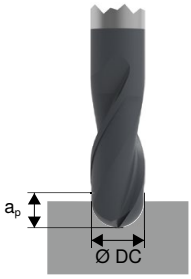
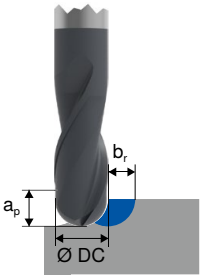
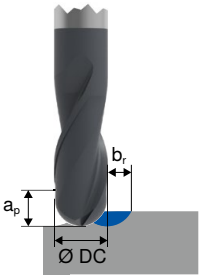
When copy milling, in order to achieve as smooth a surface as possible, the step over b_r should be adapted to the cutter diameter DC. The smaller the cutter diameter DC is, the smaller the step over b_r must be.



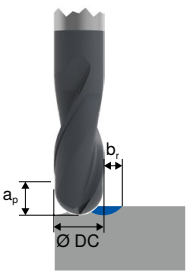
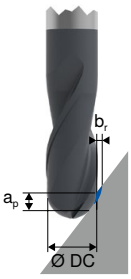
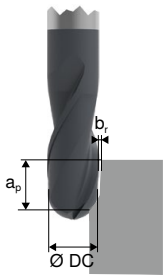
RPM correction factor (Kf n) for copy milling

$$n = \frac{v_c \times 12}{DC \times \pi} \times Kf\ n$$

Rough machining

	Peripheral and ball nose copy milling	Ball nose copy milling	
			
Axial milling depth a_p	0.5 x DC	> 0.5 x DC	0.2 x DC – 0.5 x DC
Step over b_r	1 x DC	0.2 x DC – 0.5 x DC	0.2 x DC – 0.5 x DC
Correction factor (Kf n)	1	1	1.1

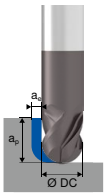
Finish milling

	Ball nose copy milling		
			
Axial milling depth a_p	< 0.2 x DC	0.2 x DC – 0.5 x DC	> 0.5 x DC
Step over b_r	< 0.2 x DC	< 0.2 x DC	< 0.2 x DC
Correction factor (Kf n)	2	1.3	1

Calculation aid for copy milling

For peripheral milling or ball nosed copy milling at cutting depths of $\mathbf{a_p} \geq 0.5 \times DC$ and $\mathbf{a_e}$ = **0.2 to 0.5 x DC** the rpm can be calculated with the following fomula:

$$n = \frac{v_C \times 12}{DC \times \pi}$$



When ball milling the effective milling diameter $\mathbf{d_{eff.}}$ must be determined using the following formula:

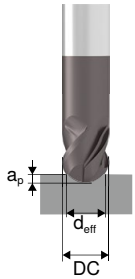
Ball nose milling cutters

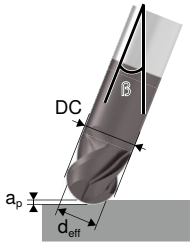
$$d_{eff.} = 2 \times \sqrt{a_p \times (DC - a_p)}$$

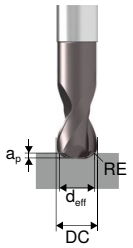
$$d_{eff.} = DC \times \sin\left(\beta \pm \arccos\left(\frac{DC - 2a_p}{DC}\right)\right)$$

Torus end milling cutters

$$d_{eff.} = (DC - 2RE) + 2 \times \sqrt{a_p \times (2RE - a_p)}$$



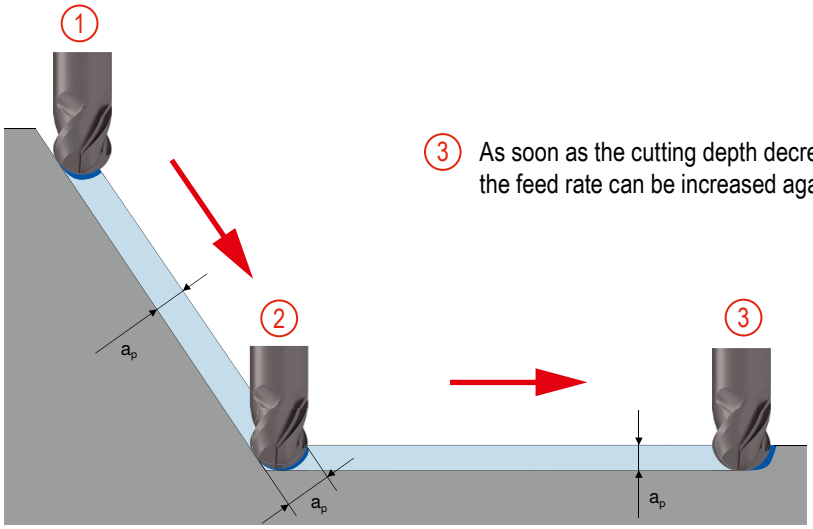




Information concerning plunge and draw milling

1. When machining the profile flanks relatively high feed rates are possible as the cutting depth is relatively low (area highlighted in blue).

2. A large increase in cutting depth occurs when the base of the profile is reached. Here the feed rate must be reduced as othwerwise tool breakage can occur due to vibrations, misalignment or chattering.



3. As soon as the cutting depth decreases during the machining of the profile base, the feed rate can be increased again.

Rule:
The steeper the angle, the lower the feed rate.
The shallower the angle, the larger the feed rate.

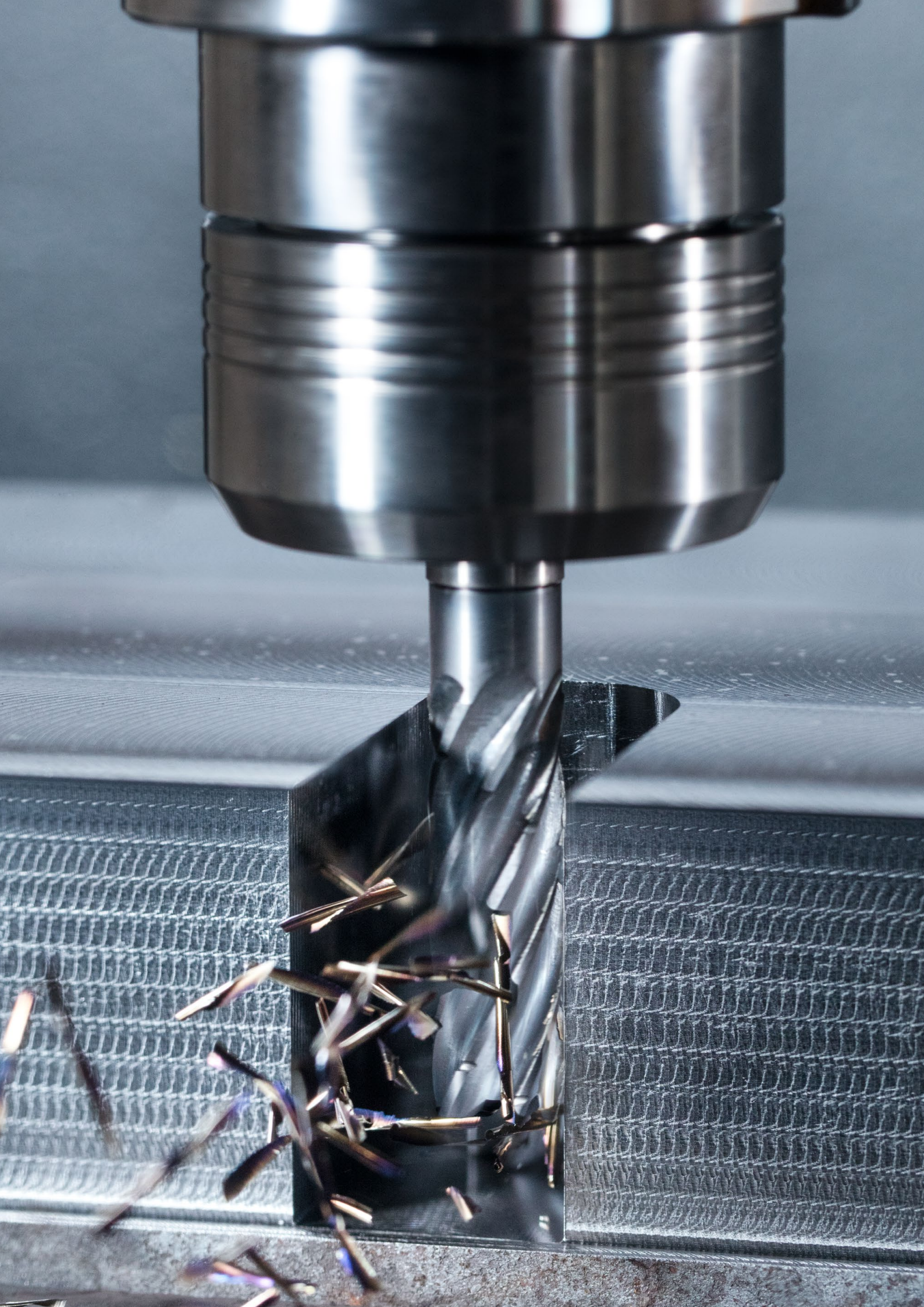
When plunge or draw milling dies, the feed rate has to be adapted to the various milling positions. Otherwise the cutting edge can be damaged due to overload (vibrations, misalignment or chattering).

Tool types

AL	Aluminium and Non-Ferrous Material
ST	Steel and Steel Alloys
UN	Universal

Coatings

ALTiN	▲ Monolayer coating ▲ HV0.05 = 3500 ▲ Coefficient of friction (against steel) = 0.30 ▲ Maximum application temperature: 1000°C
ZrN	▲ Monolayer coating ▲ HV0.05 = 2500 ▲ Coefficient of friction (against steel) = 0.30 ▲ Maximum application temperature: 650°C
DPAU72S DRAGONSKIN	▲ Monolayer coating ▲ HV0.05 = 3800 ▲ Coefficient of friction (against steel) = 0.35 ▲ Maximum application temperature: 1100°C
DPXU72S DRAGONSKIN	▲ ALCrN/SiN Nano Composite coating ▲ HV0.05 = 3700 ▲ Coefficient of friction (against steel) = 0.30 ▲ Maximum application temperature: 1100°C



New products for machining technicians

NEW

MaxiMill Slot-SX



New side and face milling system with SX inserts from SX grooving system

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NEW

MaxiMill 242



Update to chamfer milling cutter

NEW

MaxiMill 490



Update to adjustable single angle milling cutter

NEW

CTPX715



New multi-range grade

NEW

MaxiMill 273-08



NEW

MaxiMill 252





Solid drilling and bore machining	Metric Catalog	HSS drilling	1
	Metric Catalog	Solid carbide drilling	2
		Indexable drilling	3
		Reaming and Countersinking	4
		Indexable Boring	5
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	Metric Catalog	Circular and Thread Milling	7
	Metric Catalog	Thread turning	8
Turning		Indexable Turning	9
		Multifunction	10
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CERATIZIT \ Performance

Premium quality tools for high performance.

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

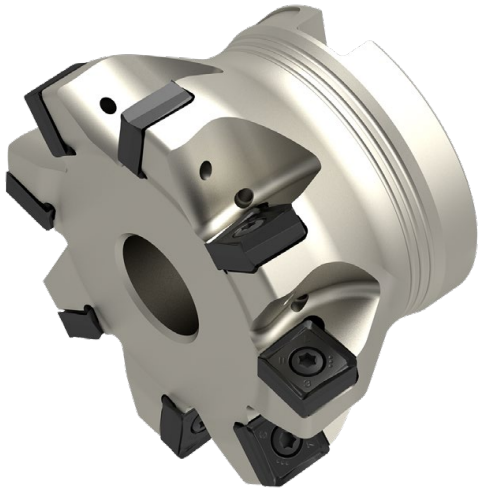
Symbol explanation


central internal coolant


lateral internal coolant



Cutting edge angle



ZNF = Number of flutes

● = **Main application**

○ = Extended application

Application symbols


Face milling


Angled ramping


Circular drill milling


plunge milling


Slot milling


Shoulder milling


Slot milling (45°)


Chamfer milling


Free form milling


T-slot milling



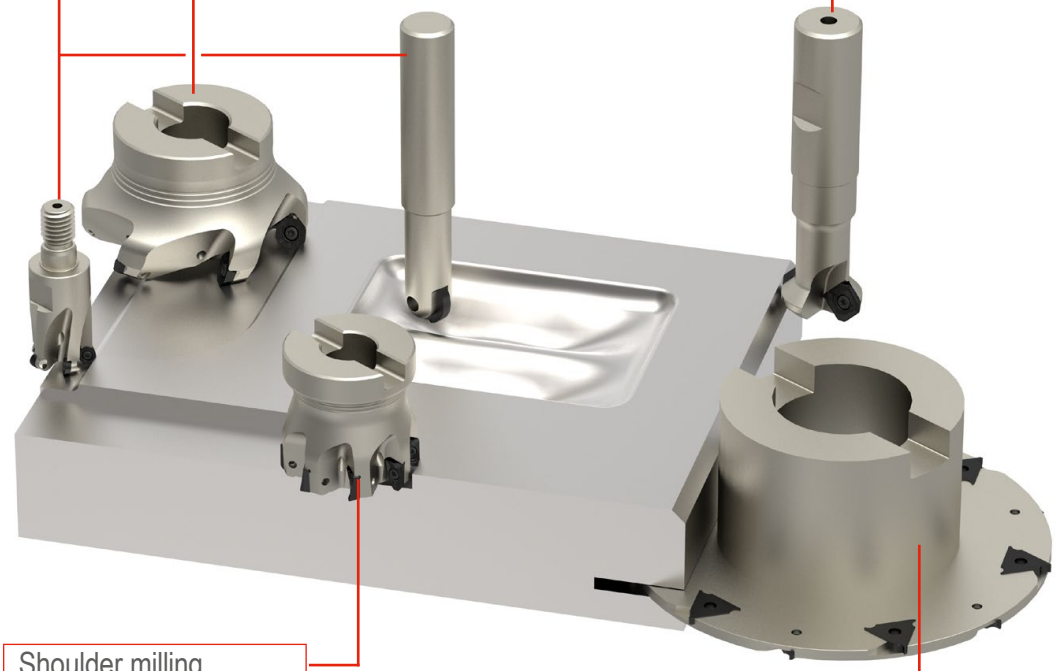
Additional metric items are available in our Online-Shop at cuttingtools.ceratizit.com and in the metric main catalog.

Toolfinder – Application Selection Guide

Form milling
→ System Selection:
10+11

Face milling
→ System Selection:
6+7

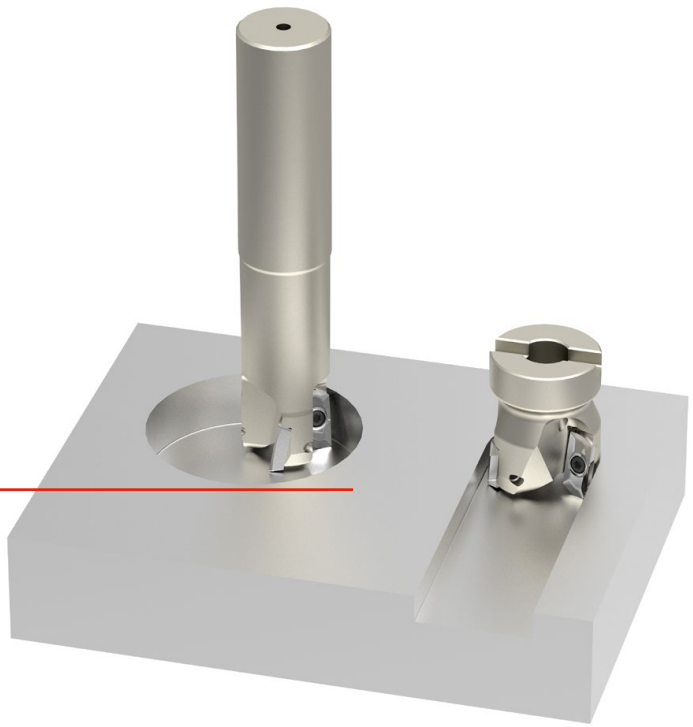
Chamfer/Angle milling cutters
→ System Selection:
12



Shoulder milling
→ System Selection:
8+9

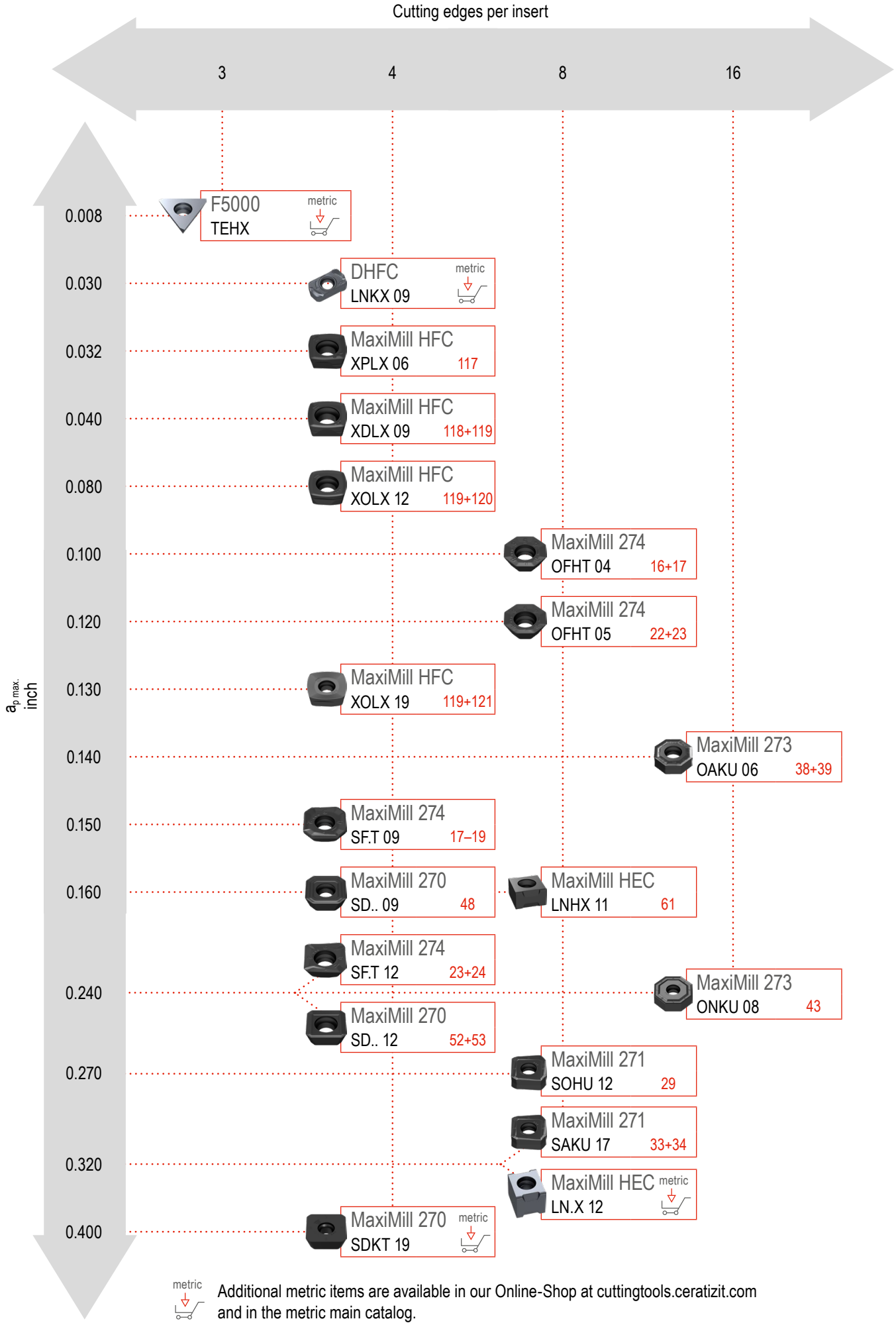


Slot milling and saws
metric



High Speed Cutting (HSC) / High Performance Cutting (HPC)
→ System Selection:
8+9

Toolfinder – Face Milling Cutters



metric Additional metric items are available in our Online-Shop at cuttingtools.ceratizit.com and in the metric main catalog.

Overview – Face Milling Cutters

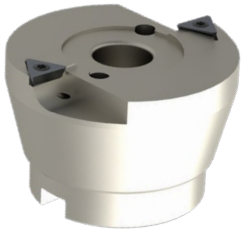
System	Inserts	Cutting edges per insert	$a_{p\,max.}$ inch	Ø-range inch		Steel	Stainless steel	Cast iron	Non-ferrous metals	Heat-resistant	Tempered steel	Non-metal materials	Page No.
MaxiMill 274	**OFH.** 04.. / 05.. | **SF.T** 09.. / 12..	8 | 4	0.100 – 0.240"	Ø 1.000–1.250"	Ø 1.500–6.000"	●	●	●	●	●		○	13–24
MaxiMill 271	**SOHU** 1204.. | **SAKU** 1706..	8	0.270 – 0.330"	Ø 1.250–1.500"	Ø 1.500–10.000"	●	●	●		●			25–34
MaxiMill 273	**OAKU** 0605.. | **ONKU** 0806..	16	0.137 – 0.197"	Ø 1.500–1.500"	Ø 2.000–10.000"	●	●	●		●			35–43
MaxiMill 270	**SD..** 0903.. / 1204.. / 19..	4	0.160 – 0.400"	Ø 0.500–1.500"	Ø 2.000–6.000"	●	●	●	●	●		○	44–57
MaxiMill HEC	**LNHX** 1106..	8	0.160 – 0.320"		Ø 2.000–8.000"	●		●			○		58–61
MaxiMill HFC	**X..X** 06.. / 09.. / 12.. / 19..	4	0.032 – 0.129"	Ø 0.625–1.250"	Ø 0.625–1.500" Ø 1.500–5.000"	●	●	●		●			113–121

Additional diameters are available upon request.



metric

Additional metric items are available in our Online-Shop at cuttingtools.ceratizit.com and in the metric main catalog.



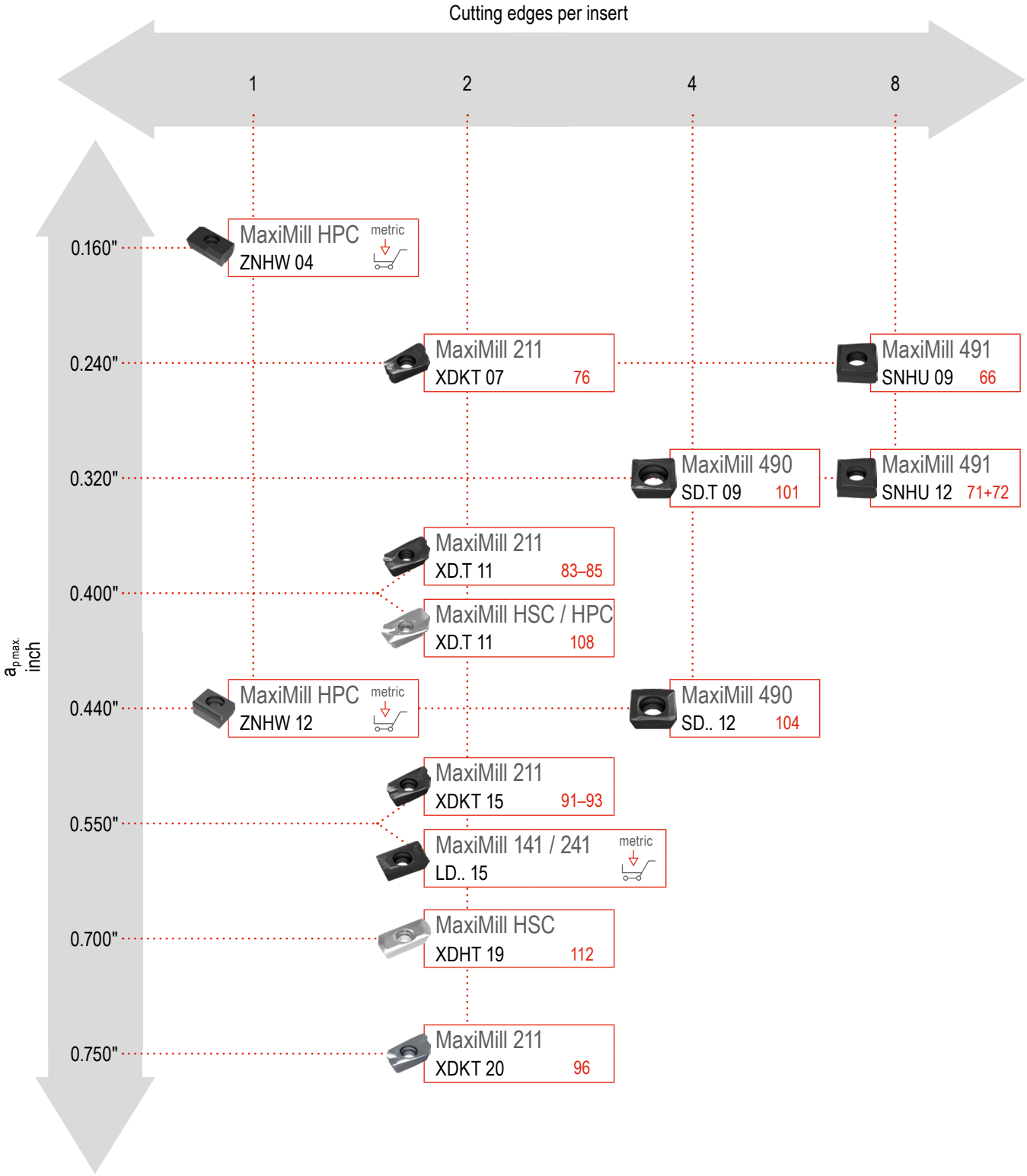
F 5000



DHFC

15

Toolfinder – shoulder milling

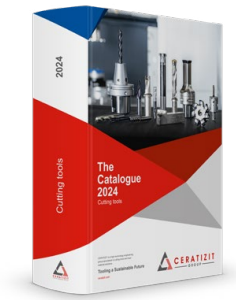


metric Additional metric items are available in our Online-Shop at cuttingtools.ceratizit.com and in the metric main catalog.

Overview – Shoulder Milling Cutters

System	Inserts	Cutting edges per insert	$a_{p\,max.}$ inch	Ø-range inch			Steel	Stainless steel	Cast iron	Non-ferrous metals	Heat-resistant	Tempered steel	Non-metal materials	Page No.
MaxiMill 491	**SNHU** 09T3.. / 1204..	8	0.240 – 0.320"		Ø 1.000–1.250"	Ø 1.500–6.000"	●	●	●	●	●		○	62–72
MaxiMill 211	**XD.T** 0703.. / 11T3.. / 1505.. / 2007..	2	0.240 – 0.750"	Ø 0.625–1.250"	Ø 0.375–1.500"	Ø 1.500–6.000"	●	●	●	●	●	○		74–96
MaxiMill 211KN	**XD.T** 11T3.. / 1505.. / 2007..	2	1.00 – 3.00"		Ø 1.000–1.500"	Ø 2.000–3.000"	●	●	●	●	●			82+90
MaxiMill 490	**SD..** 09T3.. / 1205..	4	0.320 – 0.430"	Ø 1.000–1.250"	Ø 1.000–1.250"	Ø 1.500–6.000"	●	●	●	●	●			97–104
MaxiMill HSC	**XD..** 11T3.. / 1904..	2	0.400 – 0.700"		Ø 0.625–1.500"	Ø 1.500–6.000"		○	●				○	105–112

Additional diameters are available upon request.



metric

Additional metric items are available in our Online-Shop at cuttingtools.ceratizit.com and in the metric main catalog.



MaxiMill 209 / 210



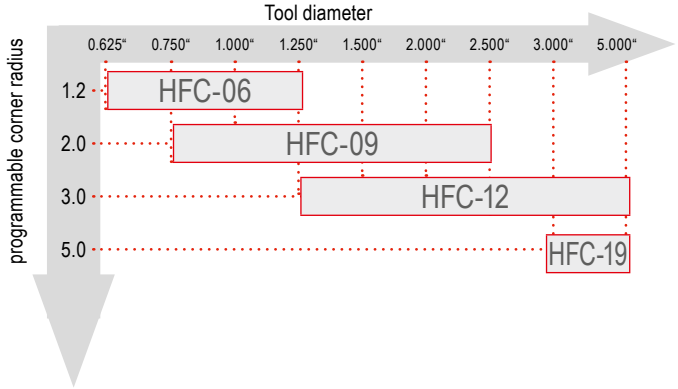
MaxiMill HPC

15

Toolfinder – form milling

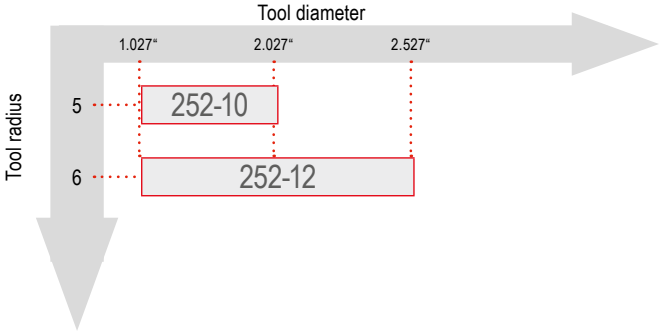
MaxiMill HFC

113–121



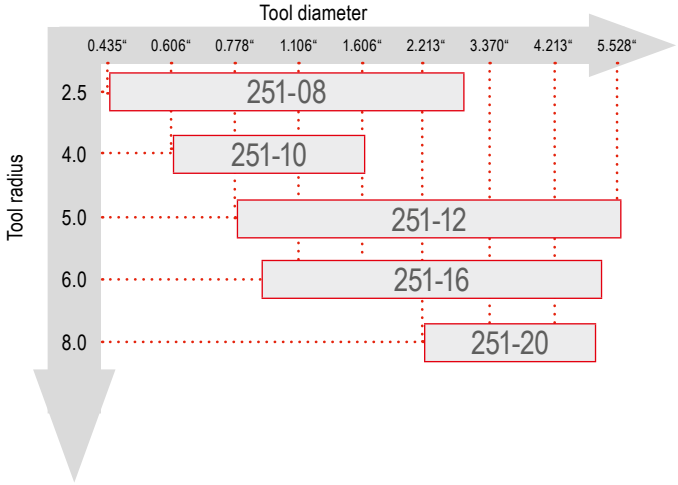
MaxiMill 252

133+135

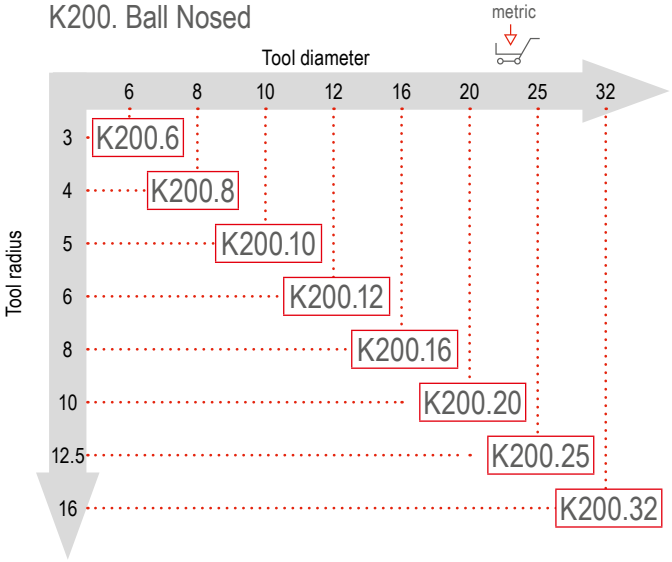


MaxiMill 251 RS

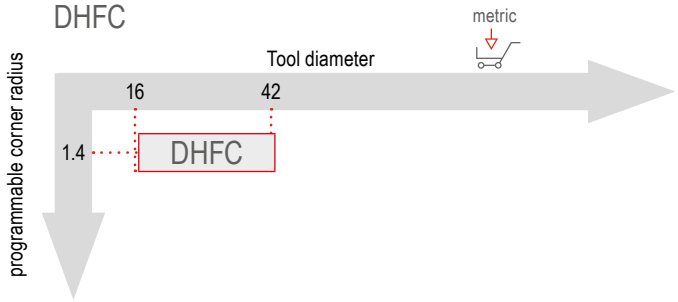
122–132



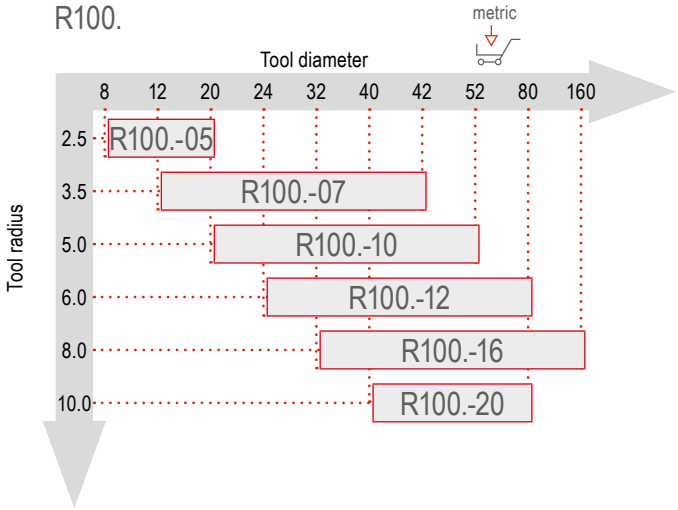
K200. Ball Nosed



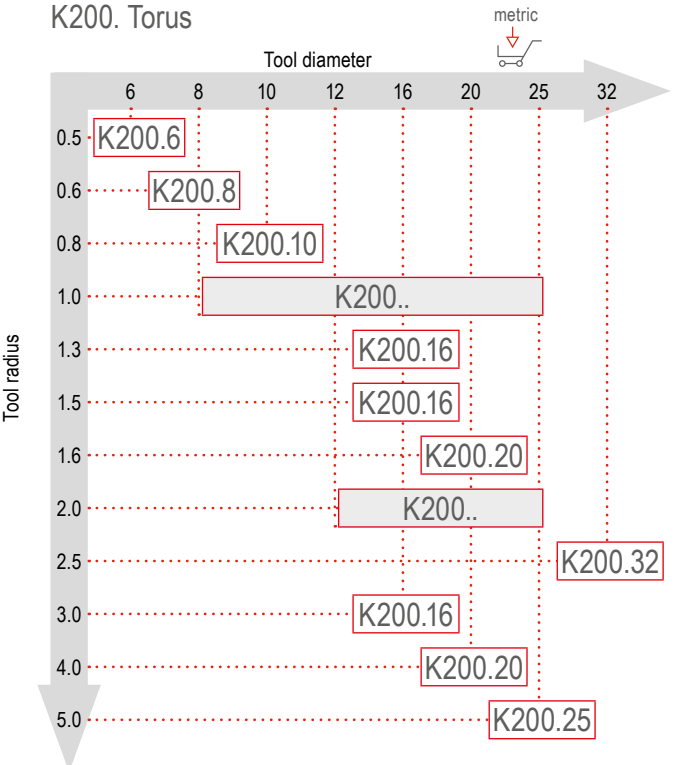
DHFC



R100.



K200. Torus



Application range

Tool diameter

metric

Additional metric items are available in our Online-Shop at cuttingtools.ceratizit.com and in the metric main catalog.

Overview – form milling

System	Inserts	Cutting edges per insert	$a_{p\,max.}$ inch	Ø-range inch			Steel	Stainless steel	Cast iron	Non-ferrous metals	Heat-resistant	Tempered steel	Non-metal materials	Page No.
														
MaxiMill HFC	**X.LX** 06.. / 09.. / 12.. / 19..	4	0.032–0.130"	Ø 0.625–1.250"	Ø 0.625–1.500"	Ø 1.500–5.000"	●	●	●		●			113–121
														
MaxiMill 251 RS	**R..X** 05.. / 08.. / 10.. / 12.. / 16.. / 20..	8	0.100–0.400"	Ø 0.606–1.106"	Ø 0.435–1.106"	Ø 1.185–5.213"	●	●	●	●	●	●	○	122–132
														
MaxiMill 252	**RNHU** 10.. / 12..	8	0.120"			Ø 1.027–2.527"	●	●	○		●			133+135

Additional diameters are available upon request.



metric

Additional metric items are available in our Online-Shop at cuttingtools.ceratizit.com and in the metric main catalog.



K200. Ball Nosed



R100.



DHFC



K200. Torus

15

Overview – Chamfer / Angle Milling Cutters

System	Inserts	Cutting edges per insert	$a_{p\ max.}$ inch	Ø-range inch	Steel	Stainless steel	Cast iron	Non-ferrous metals	Heat-resistant	Tempered steel	Non-metal materials	Page No.
MaxiMill 272	**SD..** 0903..	4	0.160"	Ø 0.500"	●	●	○	●	●			46–48
Insert countersink 90°	**TOHX** 090204 / 140305	2		Ø 0.748–1.457"	●	●	●	●	●	○	●	152+153

Additional diameters are available upon request.

Overview – Saw cutters

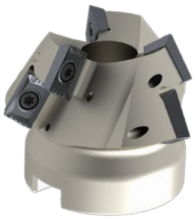
System	Inserts	Cutting edges per insert	ap max. mm	Ø-range mm		Steel	Stainless steel	Cast iron	Non-ferrous metals	Heat-resistant	Tempered steel	Non-metal materials	Page No.
MaxiMill Slot-SX	**SX** E...	1	115	Ø 63–100	Ø 80–315	●	●	●	●	●		○	136–151

Additional diameters are available upon request.

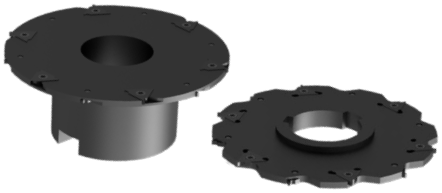


metric

Additional metric items are available in our Online-Shop at cuttingtools.ceratizit.com and in the metric main catalog.

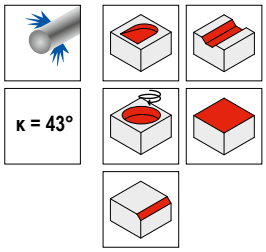


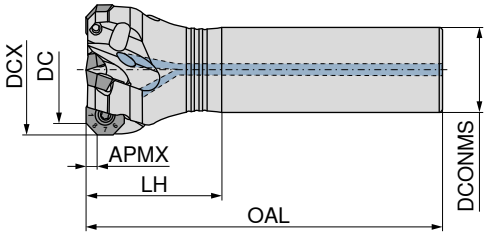
MaxiMill 242



TX

MaxiMill – 274-04/-09 End milling cutter

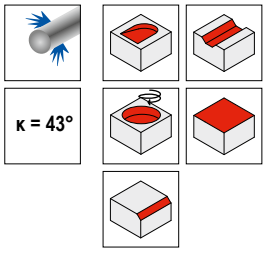


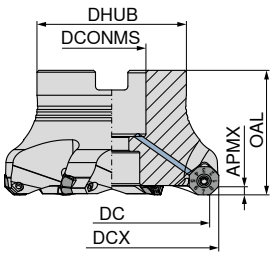




Designation	DC inch	DCX inch	ZNF	OAL inch	LH inch	DCONMS inch	torque moment Nm	Insert	58 743 ...	58 743 ...
C274.100.R.04-09-A075-125-EF	1.000	1.228	4	3.350	1.250	0.750	1.2	OF.. 0403 / SF.. 0903		10004
C274.100.R.04-09-B075-125-EF	1.000	1.228	4	3.350	1.250	0.750	1.2	OF.. 0403 / SF.. 0903	30004	
C274.125.R.05-09-A100-150-EF	1.250	1.479	5	3.900	1.500	1.000	1.2	OF.. 0403 / SF.. 0903		12505
C274.125.R.05-09-B100-150-EF	1.250	1.479	5	3.900	1.500	1.000	1.2	OF.. 0403 / SF.. 0903	32505	

MaxiMill – 274-04/-09 Shell mill







Designation	DC inch	DCX inch	ZNF	APMX inch	OAL inch	DHUB inch	DCONMS $_{H6}$ inch	RPMX 1/min.	torque moment Nm	Insert	58 744 ...
A274.150.R.05-09-A050-175-EF	1.500	1.740	5	0.098	1.420	1.420	0.500	29200	1.2	OF.. 0403 / SF.. 0903	15005
A274.200.R.07-09-A075-175-EF	2.000	2.230	7	0.098	1.750	1.750	0.750	25000	1.2	OF.. 0403 / SF.. 0903	20007
A274.300.R.09-09-A100-200-EF	3.000	3.230	9	0.098	2.250	2.250	1.000	20100	1.2	OF.. 0403 / SF.. 0903	30009
A274.400.R.11-09-B125-200-EF	4.000	4.230	11	0.098	2.750	2.750	1.250	17300	1.2	OF.. 0403 / SF.. 0903	40011


Screwdriver

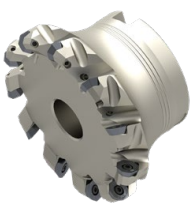

Molykote


Clamping screw

Spare parts DC	80 950 ...	70 950 ...	70 950 ...
1.000	039	303	133
1.250	039	303	133
1.500	039	303	133
2.000	039	303	133
3.000	039	303	133
4.000	039	303	133

Two insert types – ONE Cutter

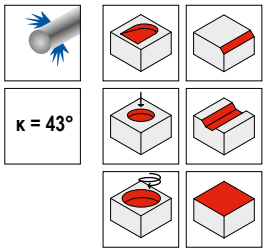


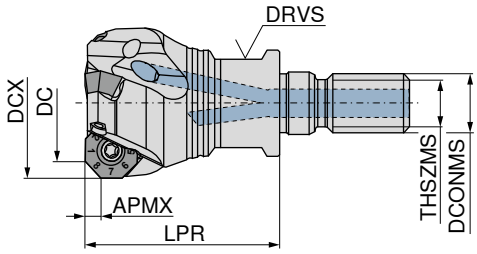




15

MaxiMill – 274-04/-09 Screw in cutter



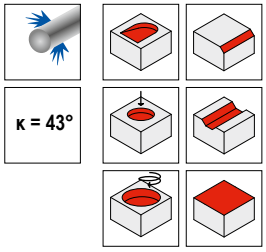


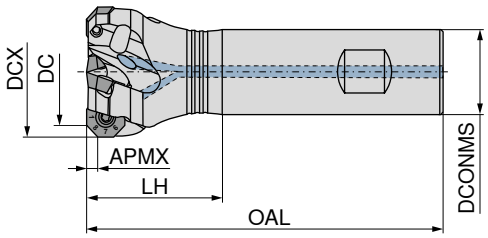


50 742 ...

Designation	DC mm	DCX mm	ZNF	APMX mm	LPR mm	THSZMS	DCONMS mm	DRVS mm	torque moment Nm	Insert	
G274.20.R.03-09	20	25.8	3	3.8	35	M12	12.5	17	1.2	OF.. 0403 / SF.. 0903	**020**
G274.25.R.04-09	25	30.8	4	3.8	35	M12	12.5	17	1.2	OF.. 0403 / SF.. 0903	**025**
G274.32.R.05-09	32	37.9	5	3.8	35	M16	17.0	24	1.2	OF.. 0403 / SF.. 0903	**032**

MaxiMill – 274-04/-09 End milling cutter



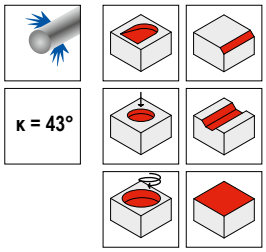


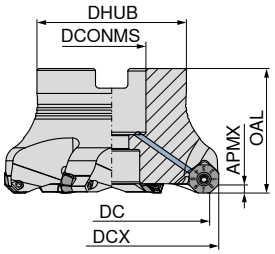


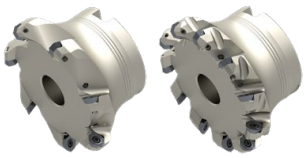
50 743 ... **50 743 ...**

Designation	DC mm	DCX mm	ZNF	APMX mm	OAL mm	LH mm	DCONMS mm	torque moment Nm	Insert		
C274.20.R.03-09-A/B20-25	20	25.8	3	3.8	77	25	20	1.2	OF.. 0403 / SF.. 0903	**020**	**120**
C274.25.R.04-09-A/B20-32	25	30.8	4	3.8	84	32	20	1.2	OF.. 0403 / SF.. 0903	**025**	**125**
C274.32.R.05-09-A/B25-40	32	37.9	5	3.8	98	40	25	1.2	OF.. 0403 / SF.. 0903	**032**	**132**

MaxiMill – 274-04/-09 Shell mill



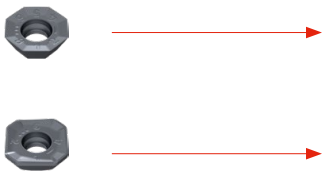




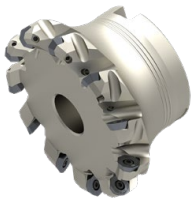
										50 744 ...		50 744 ...	
Designation	DC mm	DCX mm	ZNF	APMX mm	OAL mm	DHUB mm	DCONMS $_{H6}$ mm	torque moment Nm	Insert				
A274.32.R.05-09	32	37.9	5	3.8	40	38	16	1.6	OF.. 0403 / SF.. 0903				**032**
A274.40.R.04-09	40	46.0	4	3.8	40	38	16	1.6	OF.. 0403 / SF.. 0903		**040**		
A274.40.R.06-09	40	46.0	6	3.8	40	38	16	1.6	OF.. 0403 / SF.. 0903				**140**
A274.50.R.05-09	50	55.9	5	3.8	40	48	22	1.6	OF.. 0403 / SF.. 0903		**050**		
A274.50.R.07-09	50	55.9	7	3.8	40	48	22	1.6	OF.. 0403 / SF.. 0903				**150**
A274.63.R.06-09	63	68.9	6	3.8	40	48	22	1.6	OF.. 0403 / SF.. 0903		**063**		
A274.63.R.09-09	63	68.9	9	3.8	40	48	22	1.6	OF.. 0403 / SF.. 0903				**163**
A274.80.R.07-09	80	85.9	7	3.8	50	58	27	1.6	OF.. 0403 / SF.. 0903		**080**		
A274.80.R.11-09	80	85.9	11	3.8	50	58	27	1.6	OF.. 0403 / SF.. 0903				**180**
A274.100.R.09-09	100	105.9	9	3.8	50	78	32	1.6	OF.. 0403 / SF.. 0903		**100**		
A274.100.R.13-09	100	105.9	13	3.8	50	78	32	1.6	OF.. 0403 / SF.. 0903				**200**
A274.125.R.12-09	125	130.9	12	3.8	63	88	40	1.6	OF.. 0403 / SF.. 0903		**125**		

	TORX® blade	Clamping key – T	Screwdriver	Power Screw	Molykote	Clamping screw	Torque screwdriver
	80 950 ...	**80 397 ...**	**80 950 ...**	**70 950 ...**	**70 950 ...**	**70 950 ...**	**80 950 ...**
Spare parts							
DC							
20 - 32	**043**		**125**		**303**	**133**	**191**
32 - 40	**043**	**040**	**125**	**151**	**303**	**133**	**191**
50 - 125	**043**		**125**		**303**	**133**	**191**

Two insert types – ONE Cutter





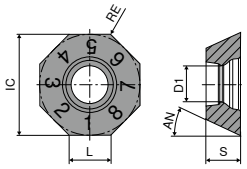




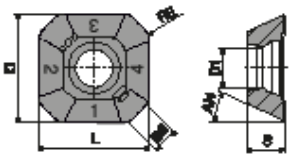
	TORX® blade	Clamping key – T	Screwdriver	Power Screw	Molykote	Clamping screw	Torque screwdriver
	80 950 ...	**80 397 ...**	**80 950 ...**	**70 950 ...**	**70 950 ...**	**70 950 ...**	**80 950 ...**
Spare parts							
DC							
20 - 32	**043**		**125**		**303**	**133**	**191**
32 - 40	**043**	**040**	**125**	**151**	**303**	**133**	**191**
50 - 125	**043**		**125**		**303**	**133**	**191**

OFHT / OFHW / SFHT / SFKT

Designation	IC inch	D1 inch	L inch	BS inch	S inch	AN °
OFH. 0403..	0.375	0.132	0.155	-	0.125	25
SF.T 0903..	0.386	0.132	0.354	0.089	0.138	25



OF..

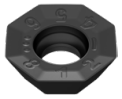
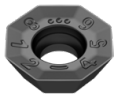


SF.T

OFHT

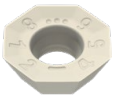
		-F50 CTCP230 DRAGONSKIN	-M50 CTCP230 DRAGONSKIN	-F50 CTPP235 DRAGONSKIN	-M50 CTPP235 DRAGONSKIN
					
		F OFHT	M OFHT	F OFHT	M OFHT
		51 002 ...	51 003 ...	51 002 ...	51 003 ...
ISO	RE inch				
040305SN	0.020	005	005	105	105
P		●	●	●	●
M				○	○
K		○	○	○	○
N					
S					
H					
O					

OFHT / OFHW

		-F50 CTCM235 DRAGONSKIN	-F50 CTPM240 DRAGONSKIN	-M50 CTPM240 DRAGONSKIN	-F50 CTPM245 DRAGONSKIN	CTPM245 DRAGONSKIN	-F50 CTCM245 DRAGONSKIN	CTCM245 DRAGONSKIN
								
		F OFHT	F OFHT	M OFHT	F OFHT	F OFHW	F OFHT	F OFHW
		51 002 ...	51 002 ...	51 003 ...	51 002 ...	51 105 ...	51 002 ...	51 105 ...
ISO	RE inch							
040302EN	0.008					452		90201
040305SN	0.020	305	405	405	455		90501	
P		●	○	○	●	●	●	●
M		●	●	●	●	●	●	●
K								
N								
S							○	○
H								
O								

OFHT / OFHW

NEW

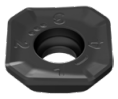
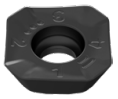
	-M50 CTCK215 DRAGONSKIN	-F10 CTPX715 DRAGONSKIN	-F10 CTWN215	-F50 CTC5240 DRAGONSKIN	CTC5240 DRAGONSKIN	-F50 CTCS245 DRAGONSKIN
						
	M	F	F	F	F	F
	OFHT	OFHT	OFHT	OFHT	OFHW	OFHT
	51 003 ...	51 122 ...	50 459 ...	51 002 ...	50 457 ...	51 002 ...
ISO / RE inch						
040302EN 0.008					504	
040305FN 0.020		00502	505			
040305SN 0.020	505			15500		555
P		○				
M		○				
K	●	●	○			
N		●	●			
S		○		●	●	●
H						
O		○	○			

SFHT / SFKT

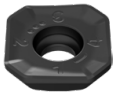
	-F50 CTPP225 DRAGONSKIN	-M50 CTPP225 DRAGONSKIN
		
	F	M
	SFHT	SFKT
	51 012 ...	51 013 ...
ISO / RE inch		
0903AFSR 0.039	070	070
P	●	●
M		
K		
N		
S		
H		
O		

15

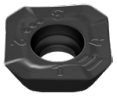
SFHT / SFKT

		-F50 CTCP230 DRAGONSKIN	-M50 CTCP230 DRAGONSKIN	-F50 CTPP235 DRAGONSKIN	-M50 CTPP235 DRAGONSKIN
					
		F	M	F	M
		SFHT	SFKT	SFHT	SFKT
		51 012 ...	51 013 ...	51 012 ...	51 013 ...
ISO	RE inch				
0903AFSR	0.039	020	020	120	120
P		●	●	●	●
M				○	○
K		○	○	○	○
N					
S					
H					
O					

SFHT / SFKT

		-F50 CTCM235 DRAGONSKIN	-F50 CTPM240 DRAGONSKIN	-M50 CTPM240 DRAGONSKIN	-F50 CTPM245 DRAGONSKIN	-F50 CTCM245 DRAGONSKIN
						
		F	F	M	F	F
		SFHT	SFHT	SFKT	SFHT	SFHT
		51 012 ...	51 012 ...	51 013 ...	51 012 ...	51 012 ...
ISO	RE inch					
0903AFSR	0.039	320	420	42000	470	92001
P		●	○	○	●	●
M		●	●	●	●	●
K						
N						
S						○
H						
O						

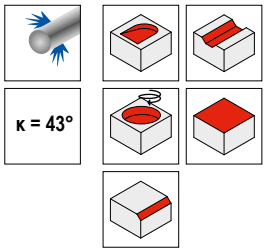
SFKT / SFHT

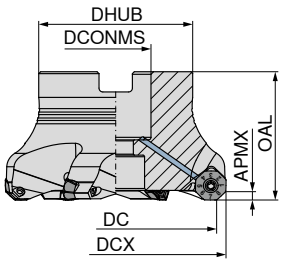
				NEW					
		-R50 CTCK215		-R50 CTPK220		-F10 CTPX715		-F10 CTWN215	-F40 CTC5240
		DRAGONSKIN		DRAGONSKIN		DRAGONSKIN			DRAGONSKIN
									
		R		R		F		F	F
		SFKT		SFKT		SFHT		SFHT	SFHT
		51 065 ...		51 065 ...		51 123 ...		50 514 ...	50 514 ...
ISO	RE inch								
0903AFFR	0.039						01502		
0903AFSR	0.039		520		620				504
P							○		
M							○		
K			●		●		●	○	
N							●	●	
S							○		●
H									
O							○	○	

Milling guide

Cutting data standard values	→ 154–157	Machining strategy	→ 158
Starting Parameter	→ 159	Technical Information	→ 191–197
Chip groove description and overview	→ 198–200	Grade description and overview	→ 202–207

MaxiMill – 274-05/-12 Shell mill







58 772 ...

Designation	DC inch	DCX inch	ZNF	APMX inch	OAL inch	DHUB inch	DCONMS $_{H6}$ inch	RPMX 1/min.	torque moment Nm	Insert	
A274.200.R.04-12-A075-175-EF	2.000	2.320	4	0.126	1.750	1.750	0.750	18900	3.2	OFHT 0504 / SFKT 1204	**20004**
A274.250.R.05-12-A100-200-EF	2.500	2.820	5	0.126	2.190	2.190	1.000	16700	3.2	OFHT 0504 / SFKT 1204	**25005**
A274.300.R.06-12-A100-200-EF	3.000	3.320	6	0.126	2.190	2.190	1.000	15200	3.2	OFHT 0504 / SFKT 1204	**30006**
A274.400.R.07-12-A125-200-EF	4.000	4.320	7	0.126	2.750	2.750	1.250	13000	3.2	OFHT 0504 / SFKT 1204	**40007**
A274.500.R.08-12-B150-200-EF	5.000	5.320	8	0.126	3.810	3.810	1.500	11600	3.2	OFHT 0504 / SFKT 1204	**50008**
A274.600.R.10-12-B200-200-EF	6.000	6.320	10	0.126	4.880	4.880	2.000	10500	3.2	OFHT 0504 / SFKT 1204	**60010**


Screwdriver

80 950 ...


Molykote

70 950 ...


Clamping screw

70 950 ...

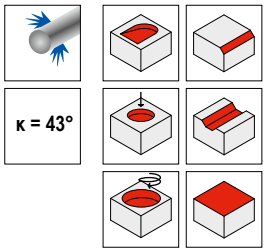
Spare parts DC			
2.000 - 6.000	**120**	**303**	**340**

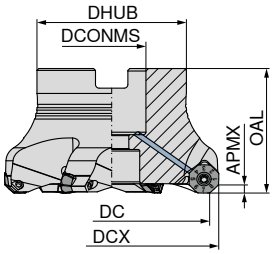
Two insert types – ONE Cutter





MaxiMill – 274-05/-12 Shell mill







Designation	DC mm	DCX mm	ZNF	APMX mm	OAL mm	DHUB mm	DCONMS $_{H6}$ mm	torque moment Nm	Insert	50 772 ...	50 772 ...
A274.40.R.03-12	40	48.0	3	6	40	38	16	3.2	OFHT 0504 / SFKT 1204	**24000**	
A274.40.R.04-12	40	48.0	4	6	40	38	16	3.2	OFHT 0504 / SFKT 1204		**04000**
A274.50.R.04-12	50	58.0	4	6	40	43	22	3.2	OFHT 0504 / SFKT 1204	**25000**	
A274.50.R.05-12	50	58.0	5	6	40	43	22	3.2	OFHT 0504 / SFKT 1204		**050**
A274.63.R.05-12	63	71.1	5	6	40	48	22	3.2	OFHT 0504 / SFKT 1204	**26300**	
A274.63.R.06-12	63	71.1	6	6	40	48	22	3.2	OFHT 0504 / SFKT 1204		**063**
A274.80.R.06-12	80	88.0	6	6	50	58	27	3.2	OFHT 0504 / SFKT 1204	**28000**	
A274.80.R.08-12	80	88.0	8	6	50	58	27	3.2	OFHT 0504 / SFKT 1204		**080**
A274.100.R.08-12	100	108.0	8	6	50	78	32	3.2	OFHT 0504 / SFKT 1204	**30000**	
A274.100.R.10-12	100	108.0	10	6	50	78	32	3.2	OFHT 0504 / SFKT 1204		**100**
A274.125.R.09-12	125	133.0	9	6	63	88	40	3.2	OFHT 0504 / SFKT 1204	**32500**	
A274.125.R.12-12	125	133.0	12	6	63	88	40	3.2	OFHT 0504 / SFKT 1204		**125**
A274.160.R.11-12	160	168.0	11	6	63	98	40	3.2	OFHT 0504 / SFKT 1204	**36000**[1)]	
A274.160.R.14-12	160	168.0	14	6	63	98	40	3.2	OFHT 0504 / SFKT 1204		**16000**[1)]

1) With threaded holes M12 on the front face, pitch circle diameter = 66.7 mm / Without Through Coolant

Spare parts DC	TORX® blade	Screwdriver	Molykote	Clamping screw	Torque screwdriver
	80 950 ...	**80 950 ...**	**70 950 ...**	**70 950 ...**	**80 950 ...**
40 - 160	**054**	**128**	**303**	**340**	**193**

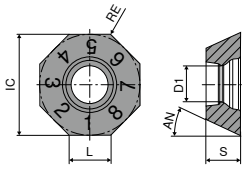
Two insert types – ONE Cutter



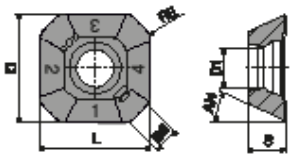


OFHT / SFHT / SFKT

Designation	IC inch	D1 inch	L inch	BS inch	S inch	AN °
OFHT 0504..	0.500	0.189	0.177	-	0.187	25
SF.T 1204..	0.500	0.189	0.500	0.056	0.187	25



OF..



SF.T

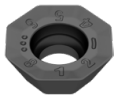
OFHT

	-F50 CTCP230	-M50 CTCP230	-F50 CTPP235	-M50 CTPP235
	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
				
	F	M	F	M
	OFHT	OFHT	OFHT	OFHT
	51 002 ...	51 003 ...	51 002 ...	51 003 ...
ISO / RE inch				
050410SN 0.039	010	01000	110	11000
P	●	●	●	●
M			○	○
K	○	○	○	○
N				
S				
H				
O				

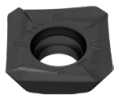
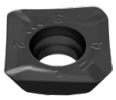
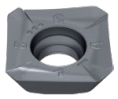
OFHT

	-F50 CTCM235	-F50 CTPM240	-M50 CTPM240	-F50 CTPM245
	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
				
	F	F	M	F
	OFHT	OFHT	OFHT	OFHT
	51 002 ...	51 002 ...	51 003 ...	51 002 ...
ISO / RE inch				
050410SN 0.039	310	410	41000	460
P	●	○	○	●
M	●	●	●	●
K				
N				
S				
H				
O				

OFHT

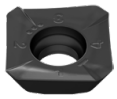
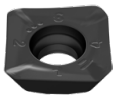
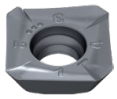
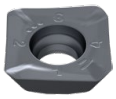
			NEW		
		-F50 CTCM245	-F10 CTPX715	-F10 CTWN215	-F50 CTC5240
		DRAGONSKIN	DRAGONSKIN		DRAGONSKIN
					
		F	F	F	F
		OFHT	OFHT	OFHT	OFHT
		51 002 ...	51 122 ...	51 122 ...	51 002 ...
ISO	RE inch				
050410FN	0.039		01002	36000	
050410SN	0.039	91001			16000
P		●	○		
M		●	○		
K			●	○	
N			●	●	
S		○	○		●
H					
O			○	○	

SFHT / SFKT

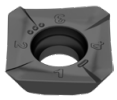
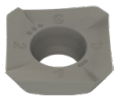
		-F50 CTCP230	-M50 CTCP230	-F50 CTPP235	-M50 CTPP235
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
					
		F	M	F	M
		SFHT	SFKT	SFHT	SFKT
		51 012 ...	51 013 ...	51 012 ...	51 013 ...
ISO	RE inch				
1204AFSR	0.039	02500	025	12500	125
P		●	●	●	●
M				○	○
K		○	○	○	○
N					
S					
H					
O					

15

SFHT / SFKT

	-F50 CTCM235	-M50 CTCM235	-F50 CTPM240	-M50 CTPM240
	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
				
	F	M	F	M
	SFHT	SFKT	SFHT	SFKT
ISO / RE inch	51 012 ...	51 013 ...	51 012 ...	51 013 ...
1204AFSR 0.039	325	325	42500	425
P	●	●	○	○
M	●	●	●	●
K				
N				
S				
H				
O				

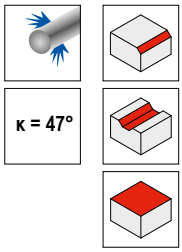
SFHT

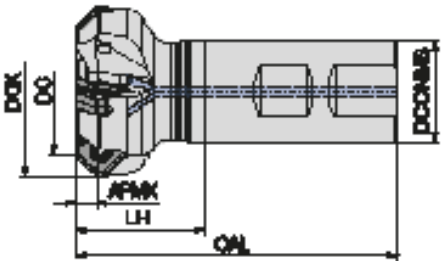
		NEW			
	-F50 CTPM245	-F50 CTCM245	-F10 CTPX715	-F10 CTWN215	-F40 CTC5240
	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN		DRAGONSKIN
					
	F	F	F	F	F
	SFHT	SFHT	SFHT	SFHT	SFHT
ISO / RE inch	51 012 ...	51 012 ...	51 123 ...	51 123 ...	50 514 ...
1204AFER 0.039					50900
1204AFFR 0.039			02502	37000	
1204AFSR 0.039	47500	92501			
P	●	●	○		
M	●	●	○		
K			●	○	
N			●	●	
S		○	○		●
H					
O			○	○	

Milling guide

Cutting data standard values	→ 154–157	Machining strategy	→ 160
Starting Parameter	→ 161	Technical Information	→ 191–197
Chip groove description and overview	→ 198–200	Grade description and overview	→ 202–207

MaxiMill – 271-12 End milling cutter







NEW



58 786 ...

Designation	DC inch	DCX inch	ZNF	APMX inch	OAL inch	LH inch	DCONMS $_{h6}$ inch	Insert	
C271.0125.R.03-12-B-150-EF	1.250	1.763	3	0.267	4.000	1.500	1.250	SOHU 1204.. / XOHU 1204..	**01203**
C271.0150.R.04-12-B125-150-EF	1.500	2.013	4	0.267	4.000	1.500	1.250	SOHU 1204.. / XOHU 1204..	**01504**



Screwdriver

80 950 ...



Molykote

70 950 ...



Clamping screw

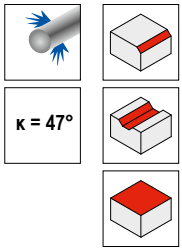
70 950 ...

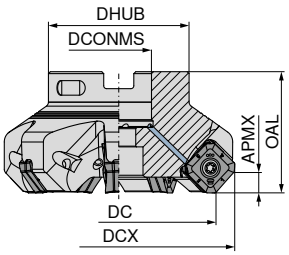
Spare parts DC			
1.250 - 1.500	**128**	**303**	**859**

15

MaxiMill – 271-12 Face mill

▲ 8 cutting edges per insert





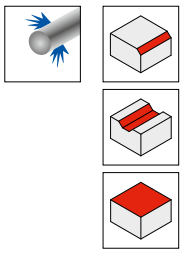


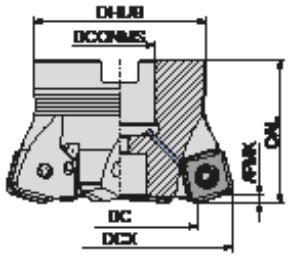
NEW NEW

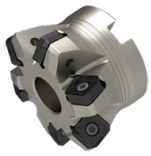
58 787 ... 58 787 ...

Designation	DC inch	DCX inch	ZNF	APMX inch	OAL inch	DHUB inch	DCONMS H6 inch	RPMX 1/min.	torque moment Nm	Insert			
A271.150.R.04-12-A050-175-EF	1.500	2.013	4	0.267	1.750	1.421	0.500	18500	3.2	SOHU 1204.. / XOHU 1204..			**15004**
A271.200.R.05-12-A075-175-EF	2.000	2.512	5	0.267	1.750	1.750	0.750	15100	3.2	SOHU 1204.. / XOHU 1204..			**20005**
A271.250.R.07-12-A100-200-EF	2.500	3.011	7	0.267	2.000	2.250	1.000	13000	3.2	SOHU 1204.. / XOHU 1204..			**25007**
A271.300.R.06-12-A100-200-EF	3.000	3.511	6	0.267	2.000	2.250	1.000	11600	3.2	SOHU 1204.. / XOHU 1204..	**30006**		
A271.300.R.08-12-A100-200-EF	3.000	3.511	8	0.267	2.000	2.250	1.000	9800	3.2	SOHU 1204.. / XOHU 1204..			**30008**
A271.400.R.07-12-A125-200-EF	4.000	4.510	7	0.267	2.000	2.750	1.250	9800	3.2	SOHU 1204.. / XOHU 1204..	**40007**		
A271.400.R.10-12-A125-200-EF	4.000	4.510	10	0.267	2.000	2.750	1.250	9800	3.2	SOHU 1204.. / XOHU 1204..			**40010**
A271.500.R.08-12-B150-200-EF	5.000	5.509	8	0.267	2.000	3.750	1.500	8700	3.2	SOHU 1204.. / XOHU 1204..	**50008**		
A271.500.R.12-12-B150-200-EF	5.000	5.509	12	0.267	2.000	3.750	1.500	8700	3.2	SOHU 1204.. / XOHU 1204..			**50012**
A271.600.R.09-12-B150-200-EF	6.000	6.509	9	0.267	2.000	3.750	1.500	7800	3.2	SOHU 1204.. / XOHU 1204..	**60009**		
A271.600.R.14-12-B150-200-EF	6.000	6.509	14	0.267	2.000	3.750	1.500	7800	3.2	SOHU 1204.. / XOHU 1204..			**60014**

MaxiMill – 271-12 HFC Face mill







NEW

58 787 ...

Designation	DC inch	DCX inch	ZNF	APMX inch	OAL inch	DHUB inch	DCONMS H6 inch	RPMX 1/min.	torque moment Nm	Insert	
A271.200.R.04-12-A075-175-HFC-EF	2.000	2.513	4	0.102	1.750	1.750	0.750	15100	3.2	SOHU 1204..	**20004**
A271.250.R.06-12-A100-200-HFC-EF	2.500	3.013	6	0.102	2.000	2.250	1.000	13000	3.2	SOHU 1204..	**25006**
A271.300.R.07-12-A100-200-HFC-EF	3.000	3.513	7	0.102	2.000	2.250	1.000	11600	3.2	SOHU 1204..	**30007**



Screwdriver

80 950 ...



Molykote

70 950 ...



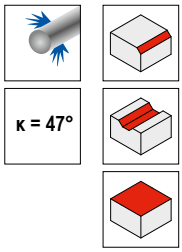
Clamping screw

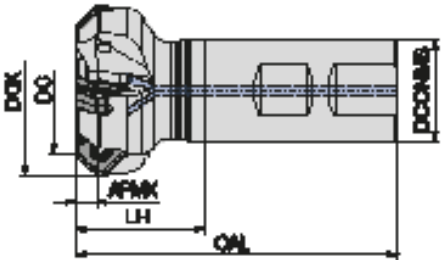
70 950 ...

Spare parts

DC			
1.500 - 6.000	**128**	**303**	**859**

MaxiMill – 271-12 End milling cutter



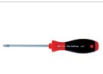






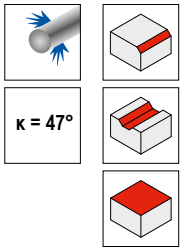
50 786 ...

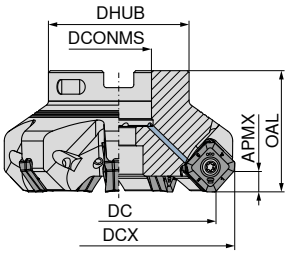
Designation	DC mm	DCX mm	ZNF	APMX mm	OAL mm	LH mm	DCONMS $_{h6}$ mm	RPMX 1/min.	torque moment Nm	Insert	
C271.32.R.03-12-B-40	32	45	3	6.8	100	40	32	18400	3.2	SOHU 1204.. / XOHU 1204..	**03203**
C271.40.R.04-12-B32-40	40	53	4	6.8	100	40	32	16800	3.2	SOHU 1204.. / XOHU 1204..	**04004**

	TORX® blade	 Screwdriver	 Molykote	 Clamping screw	 Torque screwdriver
	80 950 ...	**80 950 ...**	**70 950 ...**	**70 950 ...**	**80 950 ...**
Spare parts					
DC					
32 - 40	**054**	**120**	**303**	**859**	**193**

MaxiMill – 271-12 Face mill

▲ 8 cutting edges per insert



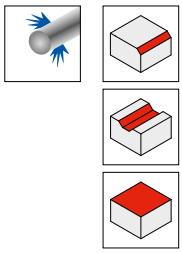


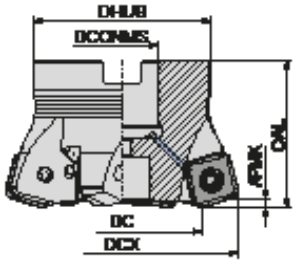


Designation	DC mm	DCX mm	ZNF	APMX mm	OAL mm	DHUB mm	DCONMS H6 mm	RPMX 1/min.	torque moment Nm	Insert	50 787 ...	50 787 ...
A271.40.R.04-12	40	53	4	6.8	40	38	16	17900	3.2	SOHU 1204.. / XOHU 1204..		**04004**
A271.50.R.05-12	50	63	5	6.8	40	43	22	15200	3.2	SOHU 1204.. / XOHU 1204..		**05005**
A271.63.R.07-12	63	76	7	6.8	40	48	22	13100	3.2	SOHU 1204.. / XOHU 1204..		**06307**
A271.80.R.06-12	80	93	6	6.8	50	58	27	11300	3.2	SOHU 1204.. / XOHU 1204..	**08006**	
A271.80.R.08-12	80	93	8	6.8	50	58	27	11300	3.2	SOHU 1204.. / XOHU 1204..		**08008**
A271.100.R.07-12	100	113	7	6.8	63	78	32	9900	3.2	SOHU 1204.. / XOHU 1204..	**10007**	
A271.100.R.10-12	100	113	10	6.8	63	78	32	9900	3.2	SOHU 1204.. / XOHU 1204..		**10010**
A271.125.R.08-12	125	138	8	6.8	63	88	40	8700	3.2	SOHU 1204.. / XOHU 1204..	**12508**	
A271.125.R.12-12	125	138	12	6.8	63	88	40	8700	3.2	SOHU 1204.. / XOHU 1204..		**12512**
A271.160.R.09-12	160	173	9	6.8	63	98	40	7600	3.2	SOHU 1204.. / XOHU 1204..	**16009**[1]	
A271.160.R.14-12	160	173	14	6.8	63	98	40	7600	3.2	SOHU 1204.. / XOHU 1204..		**16014**[1]
A271.200.R.11-12	200	213	11	6.8	63	132	60	6700	3.2	SOHU 1204.. / XOHU 1204..	**20011**[2]	
A271.200.R.17-12	200	213	17	6.8	63	132	60	6700	3.2	SOHU 1204.. / XOHU 1204..		**20017**[2]
A271.250.R.13-12	250	263	13	6.8	63	132	60	6000	3.2	SOHU 1204.. / XOHU 1204..	**25013**[2]	
A271.250.R.21-12	250	263	21	6.8	63	132	60	6000	3.2	SOHU 1204.. / XOHU 1204..		**25021**[2]

1) With threaded holes M12 on the front face, pitch circle diameter = 66.7 mm / Without Through Coolant
2) With threaded holes M16 on the front face, pitch circle diameter = 101.6 mm / Without Through Coolant

MaxiMill – 271-12 HFC Face mill





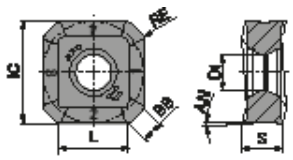


Designation	DC mm	DCX mm	ZNF	APMX mm	OAL mm	DHUB mm	DCONMS H6 mm	RPMX 1/min.	torque moment Nm	Insert	50 788 ...
A271.50.R.04-12-HFC	30	50	4	2.6	40	43	22	14600	3.2	SOHU 1204..	**05004**
A271.63.R.06-12-HFC	43	63	6	2.6	40	48	22	12500	3.2	SOHU 1204..	**06306**
A271.80.R.07-12-HFC	60	80	7	2.6	50	58	27	10800	3.2	SOHU 1204..	**08007**

Spare parts DC	TORX® blade		Clamping key – T		Screwdriver		Power Screw		Molykote		Clamping screw		Torque screwdriver		Torque screwdriver	
	80 950 ...		**80 397 ...**		**80 950 ...**		**70 950 ...**		**70 950 ...**		**70 950 ...**		**80 021 ...**		**80 950 ...**	
40 (5078704004)		**054**		**040**		**120**		**151**		**303**		**859**		**030**		**193**
50 - 250		**054**				**120**				**303**		**859**		**030**		**193**
50 - 250		**054**				**120**				**303**		**859**				**193**
50 (5078805004)		**054**		**050**		**120**		**154**		**303**		**859**		**030**		**193**

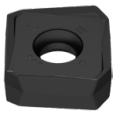
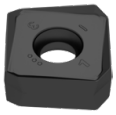
SOHU

Designation	IC inch	D1 inch	L inch	BS inch	S inch	AN °
SOHU 1204..	0.526	0.173	0.346	0.067	0.197	7.4

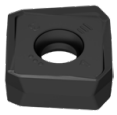
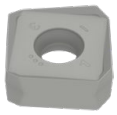


SOHU

SOHU

	-M50 CTCP230	-M50 CTPP235	-M50 CTCM235	-M50 CTPM240	-F50 CTPM245	-F50 CTCM245
	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
						
	SOHU	SOHU	SOHU	SOHU	SOHU	SOHU
	51 138 ...	51 138 ...	51 138 ...	51 138 ...	51 140 ...	51 140 ...
ISO / RE inch						
1204ABSR 0.031	02000	12000	32000	42000	47000	92001
P	●	●	●	○	●	●
M		○	●	●	●	●
K	○	○				
N						
S						○
H						
O						

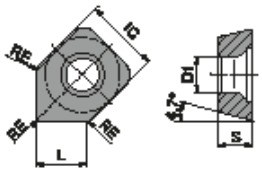
SOHU

	-R50 CTCK215	-R50 CTPK220	-F40 CTC5240	-F50 CTC5240
	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
				
	SOHU	SOHU	SOHU	SOHU
	51 139 ...	51 139 ...	51 148 ...	51 140 ...
ISO / RE inch				
1204ABSR 0.031	52000	62000	12001	17000
P				
M				
K	●	●		
N				
S			●	●
H				
O				

15

XOHU

Designation	IC inch	D1 inch	L inch	BS inch	S inch
XOHU 1204..	0.526	0.173	0.346	0.072	0.197



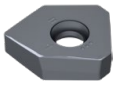
XOHU

XOHU

▲ Masterfinish indexable insert (wiper insert)

-M50
CTPP235

DRAGONSKIN


XOHU

51 141 ...

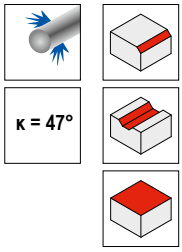
ISO	RE inch	
1204ABSR	0.031	**12000**
P		●
M		○
K		○
N		
S		
H		
O		

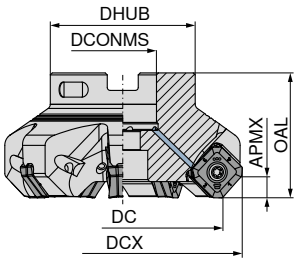
Milling guide

Cutting data standard values	→ 154–157	Starting Parameter	→ 162
Technical Information	→ 191–197	Chip groove description and overview	→ 198–200
Grade description and overview	→ 202–207		

MaxiMill – 271-17 Face mill

▲ 8 cutting edges per insert







58 767 ...

Designation	DC inch	DCX inch	ZNF	APMX inch	OAL inch	DCONMS inch	DHUB inch	RPMX 1/min.	torque moment Nm	Insert	
A271.200.R.04-17-A075-175-EF	2.000	2.660	4	0.330	1.750	0.750	1.750	14300	5	SAKU 1706	**20004**
A271.250.R.06-17-A100-200-EF	2.500	3.160	6	0.330	2.250	1.000	2.250	12700	5	SAKU 1706	**25006**
A271.300.R.07-17-A100-200-EF	3.000	3.660	7	0.330	2.250	1.000	2.250	11500	5	SAKU 1706	**30007**
A271.400.R.08-17-B125-200-EF	4.000	4.660	8	0.330	2.750	1.250	2.750	9800	5	SAKU 1706	**40008**
A271.500.R.10-17-B150-200-EF	5.000	5.660	10	0.330	3.750	1.500	3.750	8700	5	SAKU 1706	**50010**
A271-600.R.11-17-B200-250-EF	6.000	6.660	11	0.334	2.500	2.000	3.750	8100	5	SAKU 1706	**60011**
A271.650.R.12-17-C250-250-EF	6.500	7.160	12	0.330	5.120	2.500	5.120	7600	5	SAKU 1706	**65012**



Screwdriver

80 950 ...



Molykote

70 950 ...



Clamping screw

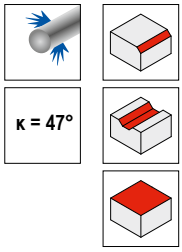
70 950 ...

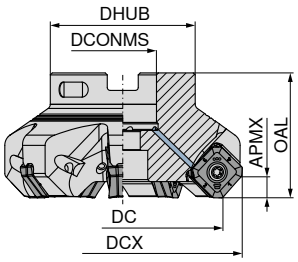
Spare parts DC			
2.000 - 6.500	**106**	**303**	**302**

15

MaxiMill – 271-17 Face mill

▲ 8 cutting edges per insert







50 767 ...

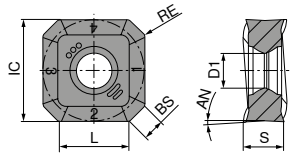
Designation	DC mm	DCX mm	ZNF	APMX mm	OAL mm	DCONMS mm	DHUB mm	torque moment Nm	Insert	
A271.50.R.04-17	50	66.1	4	8.4	40	22	43	5	SAKU 1706	**050**
A271.63.R.06-17	63	79.1	6	8.4	40	22	48	5	SAKU 1706	**063**
A271.80.R.07-17	80	96.1	7	8.4	50	27	58	5	SAKU 1706	**080**
A271.100.R.08-17	100	116.1	8	8.4	50	32	78	5	SAKU 1706	**100**
A271.125.R.10-17	125	141.1	10	8.4	63	40	88	5	SAKU 1706	**125**
A271.160.R.12-17	160	176.1	12	8.4	63	40	104	5	SAKU 1706	**16000**[1]
A271.200.R.13-17	200	216.1	13	8.4	63	60	134	5	SAKU 1706	**20000**[2]
A271.250.R.15-17	250	266.1	15	8.4	63	60	134	5	SAKU 1706	**25000**[2]

1) With threaded holes M12 on the front face, pitch circle diameter = 66.7 mm / Without Through Coolant
2) With threaded holes M16 on the front face, pitch circle diameter = 101.6 mm / Without Through Coolant

Spare parts DC		TORX® blade	Screwdriver	Molykote	Clamping screw	Torque screwdriver
		80 950 ...	**80 950 ...**	**70 950 ...**	**70 950 ...**	**80 950 ...**
50 - 250		**037**	**114**	**303**	**302**	**193**

SAKU

Designation	IC inch	D1 inch	L inch	BS inch	S inch	AN °
SAKU 1706..	0.669	0.228	0.467	0.146	0.250	3



SAKU

SAKU

		-F50 CTCP220	-M50 CTCP220	-F50 CTPP225	-M50 CTPP225
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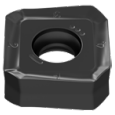
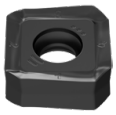
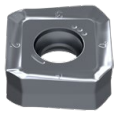
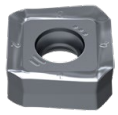
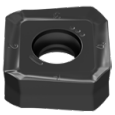
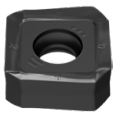
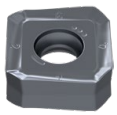
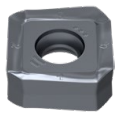
					
		SAKU	SAKU	SAKU	SAKU
		51 004 ...	51 005 ...	51 004 ...	51 005 ...
ISO	RE inch				
1706ABSR	0.031	270	270	070	070
P		●	●	●	●
M					
K					
N					
S					
H					
O					

SAKU

		-F50 CTCP230	-M50 CTCP230	-F50 CTPP235	-M50 CTPP235
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
					
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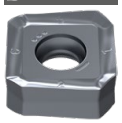
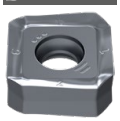
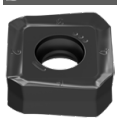
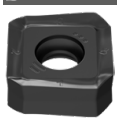
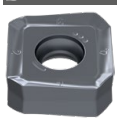
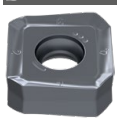
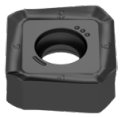
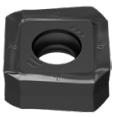
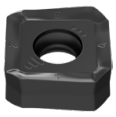
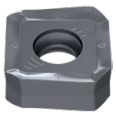
ISO	RE inch				
1706ABSR	0.031	020	020	120	120
P		●	●	●	●
M				○	○
K		○	○	○	○
N					
S					
H					
O					

15

SAKU

	-F50 CTPM225	-M50 CTPM225	-F50 CTCM235	-M50 CTCM235	-F50 CTPM240	-M50 CTPM240	-F50 CTPM245
	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
							
	SAKU	SAKU	SAKU	SAKU	SAKU	SAKU	SAKU
	51 004 ...	51 005 ...	51 004 ...	51 005 ...	51 004 ...	51 005 ...	51 004 ...
ISO / RE inch							
1706ABSR 0.031	220	220	320	320	420	420	470
P	●	●	●	●	○	○	●
M	●	●	●	●	●	●	●
K							
N							
S							
H							
O							

SAKU

	-F50 CTCM245	-M50 CTCK215	-R50 CTCK215	-M50 CTPK220	-R50 CTPK220	-F50 CTC5240	-F50 CTCS245
	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
							
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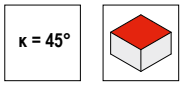
	51 004 ...	51 005 ...	51 058 ...	51 005 ...	51 058 ...	50 306 ...	51 004 ...
ISO / RE inch							
1706ABSR 0.031	92001	520	520	620	620	520	570
P	●						
M	●						
K		●	●	●	●		
N							
S	○					●	●
H							
O							

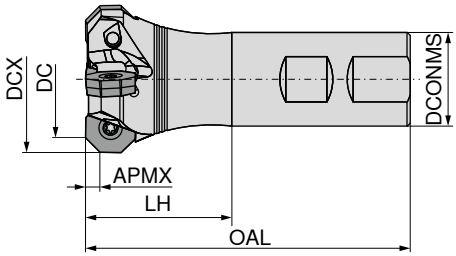
Milling guide

Cutting data standard values	→ 154–157	Starting Parameter	→ 162
Technical Information	→ 191–197	Chip groove description and overview	→ 198–200
Grade description and overview	→ 202–207		

MaxiMill – 273-06 End milling cutter

▲ 16 cutting edges per insert





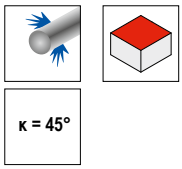


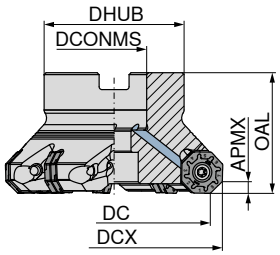


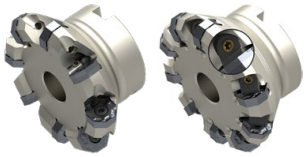
										58 762 ...
Designation	DC inch	DCX inch	ZNF	APMX inch	DCONMS $_{h6}$ inch	LH inch	OAL inch	torque moment Nm	Insert	
C273.150.R.04-06-B125-125-EF	1.500	1.911	4	0.138	1.250	1.250	3.600	5	OAKU / XAHT 0605	**15004**
C273.200.R.05-06-B150-125-EF	2.000	2.421	5	0.138	1.500	1.250	4.500	5	OAKU / XAHT 0605	**20005**

MaxiMill – 273-06 Shell mill

▲ 16 cutting edges per insert







										58 741 ...	58 741 ...
Designation	DC inch	ZNF	APMX inch	OAL inch	DCONMS $_{H6}$ inch	DHUB inch	RPMX 1/min.	torque moment Nm	Insert		
A273.200.R.05-06-A075-175-EF	2.000	5	0.138	1.750	0.750	1.750	14800	5	OAKU / XAHT 0605	**20005**	
A273.250.R.07-06-A100-200-EF	2.500	7	0.138	2.250	1.000	2.250	13000	5	OAKU / XAHT 0605	**25007**	
A273.300.R.08-06-A100-200-EF	3.000	8	0.138	2.250	1.000	2.250	11800	5	OAKU / XAHT 0605	**30008**	
A273.400.R.10-06-B125-200-EF - IC	4.000	10	0.138	2.750	1.250	2.750	10100	5	OAKU / XAHT 0605	**40010**	
A273.500.R.12-06-B150-200-EF	5.000	12	0.138	3.750	1.500	3.750	8900	5	OAKU / XAHT 0605	**50012**	
A273.600.R.13-06-B150-250-EF	6.000	13	0.138	3.750	1.500	3.750	7900	5	OAKU / XAHT 0605	**60013**	
A273.800.R.25-06-C250-250-EF	8.000	25	0.138	6.500	2.500	6.500	2900	5	OAKU / XAHT 0605		**80025**



Clamping wedge screw



Clamping wedge Face mill

Screwdriver



Molykote



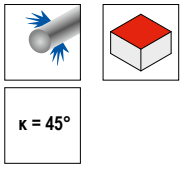
Clamping screw

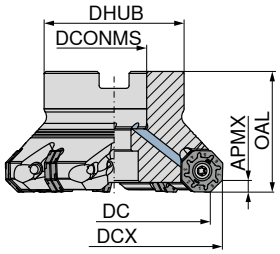
						70 950 ...	70 950 ...	80 950 ...	70 950 ...	70 950 ...
Spare parts										
DC										
1.500 - 6.000								106	303	302
8.000						844	845	105	303	

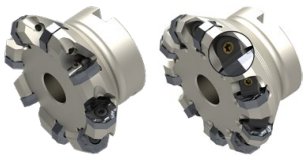
15

MaxiMill – 273-06 Shell mill

▲ 16 cutting edges per insert







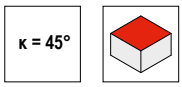
Designation	DC mm	DCX mm	ZNF	APMX mm	OAL mm	DCONMS mm	DHUB mm	torque moment Nm	Insert	50 741 ...	50 741 ...
A273.40.R.03-06	40	50.2	3	3.5	40	16	38	5	OAKU / XAHT 0605	**040**	
A273.40.R.04-06	40	50.2	4	3.5	40	16	38	5	OAKU / XAHT 0605	**140** 5)	
A273.50.R.05-06	50	60.2	5	3.5	40	22	43	5	OAKU / XAHT 0605	**050**	
A273.63.R.07-06	63	73.2	7	3.5	40	22	48	5	OAKU / XAHT 0605	**063**	
A273.80.R.08-06	80	90.2	8	3.5	50	27	58	5	OAKU / XAHT 0605	**080**	
A273.80.R.10-06	80	90.2	10	3.5	50	27	58	4	OAKU / XAHT 0605		**180** 1)
A273.100.R.10-06	100	110.2	10	3.5	50	32	78	5	OAKU / XAHT 0605	**100**	
A273.100.R.14-06	100	110.2	14	3.5	50	32	78	4	OAKU / XAHT 0605		**200** 1)
A273.125.R.12-06	125	135.2	12	3.5	63	40	88	5	OAKU / XAHT 0605	**125**	
A273.125.R.17-06	125	135.2	17	3.5	63	40	88	4	OAKU / XAHT 0605		**225** 1)
A273.160.R.14-06	160	170.2	14	3.5	63	40	104	5	OAKU / XAHT 0605	**160** 4)	
A273.160.R.20-06	160	170.2	20	3.5	63	40	104	4	OAKU / XAHT 0605		**260** 2)
A273.200.R.25-06	200	210.2	25	3.5	63	60	153	4	OAKU / XAHT 0605		**300** 3)
A273.250.R.31-06	250	260.2	31	3.5	63	60	153	4	OAKU / XAHT 0605		**25031** 3)

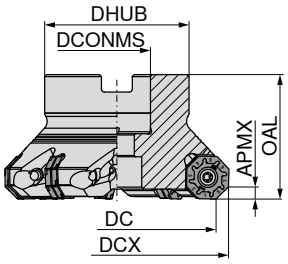
1) Version with Wedge, without internal coolant supply
2) Version with Wedge, without internal coolant supply / With threaded holes M12 on the front face, pitch circle diameter = 66.7 mm
3) Version with Wedge, without internal coolant supply / With threaded holes M16 on the front face, pitch circle diameter = 101.6 mm
4) With threaded holes M12 on the front face, pitch circle diameter = 66.7 mm / Without Through Coolant
5) Without Through Coolant

Spare parts DC	TORX® blade 80 950 ...	 Clamping key – T 80 397 ...	 Clamping wedge screw 70 950 ...	 Clamping wedge Face mill 70 950 ...	 Screwdriver 80 950 ...	 Power Screw 70 950 ...	 Clamping screw 70 950 ...	 Torque screwdriver 80 950 ...
40	**037**	**040**			**114**	**151**	**302**	**193**
50	**037**	**050**			**114**	**154**	**302**	**193**
63 - 80	**037**				**114**		**302**	**193**
80 - 100	**036**		**844**	**845**	**113**			**193**
100 - 125	**037**				**114**		**302**	**193**
125	**036**		**844**	**845**	**113**			**193**
160	**037**				**114**		**302**	**193**
160 - 250	**036**		**844**	**845**	**113**			**193**

MaxiMill – 273-06 Shell mill

▲ 16 cutting edges per indexable insert
▲ Axially adjustable







50 777 ...

Designation	DC mm	DCX mm	ZNF	APMX mm	OAL mm	DCONMS $_{H6}$ mm	DHUB mm	torque moment Nm	Insert	
A273.80.R.10A10-06	80	90.2	10	3.5	50	27	58	4	OAKU / XAHT 0605	**08010**[1)]
A273.100.R.14A14-06	100	110.2	14	3.5	50	32	78	4	OAKU / XAHT 0605	**10014**[1)]
A273.125.R.17A17-06	125	135.2	17	3.5	63	40	88	4	OAKU / XAHT 0605	**12517**[1)]
A273.160.R.20A20-06	160	170.2	20	3.5	63	40	104	4	OAKU / XAHT 0605	**16020**[2)]
A273.200.R.25A25-06	200	210.2	25	3.5	63	60	153	4	OAKU / XAHT 0605	**20025**[3)]
A273.250.R.31A31-06	250	260.2	31	3.5	63	60	153	4	OAKU / XAHT 0605	**25031**[3)]

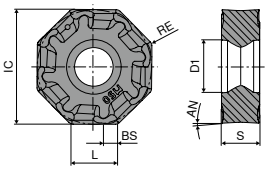
1) Version with Wedge
2) Version with Wedge / With threaded holes M12 on the front face, pitch circle diameter = 66.7 mm
3) Version with Wedge / With threaded holes M16 on the front face, pitch circle diameter = 101.6 mm

	TORX® blade	 Clamping wedge screw	 Clamping wedge Face mill	Screwdriver	 Molykote	 Wedge	 Torque screwdriver
	80 950 ...	**70 950 ...**	**70 950 ...**	**80 950 ...**	**70 950 ...**	**70 950 ...**	**80 950 ...**
Spare parts							
DC							
80 - 250	**036**	**844**	**845**	**113**	**303**	**199**	**193**

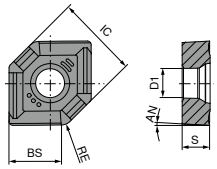
15

OAKU / XAHT

Designation	IC inch	D1 inch	L inch	BS inch	S inch	AN °
XAHT 0605..	0.672	0.236	-	0.470	0.219	3
OAKU 0605..	0.673	0.228	0.236	0.079	0.223	3



OAKU



XAHT

OAKU

		-F50 CTCP220	-M50 CTCP220	-F50 CTPP225	-M50 CTPP225
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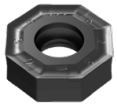
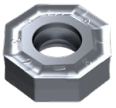
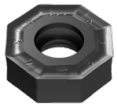
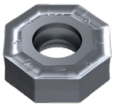
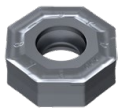
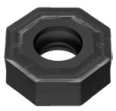
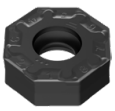
					
		OAKU	OAKU	OAKU	OAKU
		51 000 ...	51 001 ...	51 000 ...	51 001 ...
ISO	RE inch				
060508SR	0.031	**258**	**258**	**058**	**058**
P		●	●	●	●
M					
K					
N					
S					
H					
O					

OAKU

		-F50 CTCP230	-M50 CTCP230	-F50 CTPP235	-M50 CTPP235
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
					
		OAKU	OAKU	OAKU	OAKU
		51 000 ...	51 001 ...	51 000 ...	51 001 ...
ISO	RE inch				
060508SR	0.031	**008**	**008**	**108**	**108**
P		●	●	●	●
M				○	○
K		○	○	○	○
N					
S					
H					
O					

OAKU

	-F50 CTPM225	-M50 CTPM225	-F50 CTCM235	-M50 CTCM235	-F50 CTPM240	-M50 CTPM240	-F40 CTPM245
	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
							
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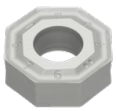
ISO / RE inch							
060508ER 0.031							458
060508SR 0.031	208	208	308	308	408	408	
P	●	●	●	●	○	○	●
M	●	●	●	●	●	●	●
K							
N							
S							
H							
O							

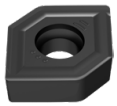
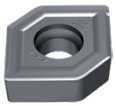
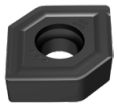
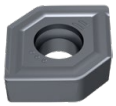
OAKU

	-F40 CTCM245	-M50 CTCK215	-R50 CTCK215	-M50 CTPK220	-R50 CTPK220	-F40 CTC5240	-F40 CTCS245
	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
							
	OAKU	OAKU	OAKU	OAKU	OAKU	OAKU	OAKU
	51 104 ...	51 001 ...	51 027 ...	51 001 ...	51 027 ...	50 446 ...	51 104 ...
ISO / RE inch							
060508ER 0.031	90801					550	50801
060508SR 0.031		508	508	608	608		
P	●						
M	●						
K		●	●	●	●		
N							
S	○					●	●
H							
O							

15

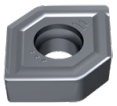
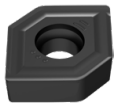
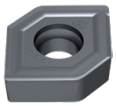
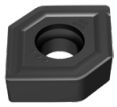
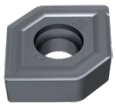
XAHT

▲ Masterfinish indexable insert (wiper insert)

	-M50 CTCP220 DRAGONSKIN	-M50 CTPP225 DRAGONSKIN	-M50 CTCP230 DRAGONSKIN	-M50 CTPP235 DRAGONSKIN
				
	XAHT	XAHT	XAHT	XAHT
	51 014 ...	51 014 ...	51 014 ...	51 014 ...
ISO / RE inch				
060525SR 0.098	275	075	025	125
P	●	●	●	●
M				○
K			○	○
N				
S				
H				
O				

XAHT

▲ Masterfinish indexable insert (wiper insert)

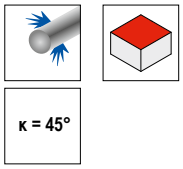
	-M50 CTPM225 DRAGONSKIN	-M50 CTCM235 DRAGONSKIN	-M50 CTPM240 DRAGONSKIN	-M50 CTCK215 DRAGONSKIN	-M50 CTPK220 DRAGONSKIN
					
	XAHT	XAHT	XAHT	XAHT	XAHT
	51 014 ...	51 014 ...	51 014 ...	51 014 ...	51 014 ...
ISO / RE inch					
060525SR 0.098	225	325	425	525	625
P	●	●	○		
M	●	●	●		
K				●	●
N					
S					
H					
O					

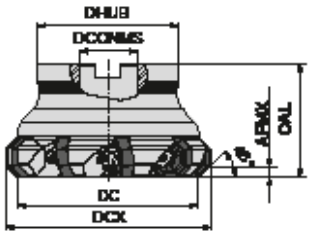
Milling guide

Cutting data standard values	→ 154–157	Starting Parameter	→ 163
Technical Information	→ 191–197	Chip groove description and overview	→ 198–200
Grade description and overview	→ 202–207		

MaxiMill – 273-08 Shell mill

▲ 16 cutting edges per insert







Designation	DC inch	DCX inch	ZNF	APMX inch	OAL inch	DCONMS H6 inch	DHUB inch	torque moment Nm	Insert	58 783 ...	58 783 ...
A273.250.R.05-08-A100-200-EF	2.500	3.039	5	0.197	2.000	1.000	2.250	5	ONKU 0806	**25005**	
A273.250.R.06-08-A100-200-EF	2.500	3.039	6	0.197	2.000	1.000	2.250	4	ONKU 0806		**25006**
A273.300.R.06-08-A100-200-EF	3.000	3.539	6	0.197	2.000	1.000	2.250	5	ONKU 0806	**30006**	
A273.300.R.08-08-A100-200-EF	3.000	3.539	8	0.197	2.000	1.000	2.250	4	ONKU 0806		**30008**
A273.400.R.07-08-A125-200-EF	4.000	4.539	7	0.197	2.500	1.250	2.750	5	ONKU 0806	**40007**	
A273.400.R.09-08-A125-200-EF	4.000	4.539	9	0.197	2.500	1.250	2.750	4	ONKU 0806		**40009**
A273.500.R.08-08-A150-250-EF	5.000	5.539	8	0.197	2.500	1.500	3.750	5	ONKU 0806	**50008**[1)]	
A273.500.R.11-08-A150-250-EF	5.000	5.539	11	0.197	2.500	1.500	3.750	4	ONKU 0806		**50011**[1)]
A273.600.R.10-08-A150-250-EF	6.000	6.539	10	0.197	2.500	1.500	3.750	5	ONKU 0806	**60010**	
A273.600.R.14-08-A150-250-EF	6.000	6.539	14	0.197	2.500	1.500	3.750	4	ONKU 0806		**60014**

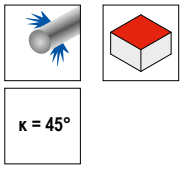
1) Not in stock

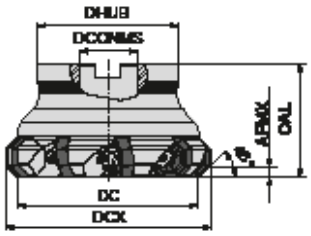
	TORX® blade	 Clamping wedge screw	 Clamping wedge Face mill	 Screwdriver	 Molykote	 Clamping screw	 Torque screwdriver
	80 950 ...	70 950 ...	70 950 ...	80 950 ...	70 950 ...	70 950 ...	80 950 ...
Spare parts for Article no.							
58 783 25005	**055**	**844**	**845**	**129**	**303**	**821**	**193**
58 783 25006	**036**			**113**			
58 783 30006	**055**	**844**	**845**	**129**	**303**	**821**	**193**
58 783 30008	**036**			**113**			
58 783 40007	**055**	**844**	**845**	**129**	**303**	**821**	**193**
58 783 40009	**036**			**113**			
58 783 50008	**055**	**844**	**845**	**129**	**303**	**821**	**193**
58 783 50011	**036**			**113**			
58 783 60010	**055**	**844**	**845**	**129**	**303**	**821**	**193**
58 783 60014	**036**			**113**			

15

MaxiMill – 273-08 Shell mill

▲ 16 cutting edges per insert







NEW NEW

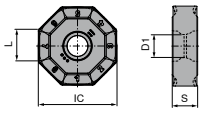
Designation	DC mm	DCX mm	ZNF	APMX mm	OAL mm	DCONMS $_{H6}$ mm	DHUB mm	torque moment Nm	Insert	50 779 ...	50 779 ...
A273.63.R.05-08	63	76.7	5	5	50	22	48	5	ONKU 0806	**06300**	
A273.63.R.06-08	63	76.7	6	5	50	22	48	5	ONKU 0806		**16300**[1]
A273.80.R.06-08	80	93.7	6	5	50	27	58	5	ONKU 0806	**08000**	
A273.80.R.08-08	80	93.7	8	5	50	27	58	4	ONKU 0806		**18000**[1]
A273.100.R.07-08	100	113.7	7	5	63	32	78	5	ONKU 0806	**10000**	
A273.100.R.09-08	100	113.7	9	5	63	32	78	4	ONKU 0806		**20000**[1]
A273.125.R.08-08	125	138.7	8	5	63	40	88	5	ONKU 0806	**12500**	
A273.125.R.11-08	125	138.7	11	5	63	40	88	4	ONKU 0806		**22500**[1]
A273.160.R.10-08	160	173.7	10	5	63	40	98	5	ONKU 0806	**16000**[3]	
A273.160.R.14-08	160	173.7	14	5	63	40	98	4	ONKU 0806		**26000**[2]

1) Version with Wedge
2) Version with Wedge, without internal coolant supply / With threaded holes M12 on the front face, pitch circle diameter = 66.7 mm
3) With threaded holes M12 on the front face, pitch circle diameter = 66.7 mm / Without Through Coolant

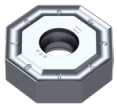
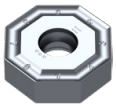
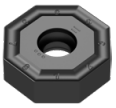
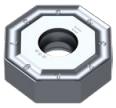
Spare parts for Article no.	TORX® blade 80 950 ...		 Clamping wedge screw 70 950 ...		 Clamping wedge Face mill 70 950 ...		 Screwdriver 80 950 ...		 Molykote 70 950 ...		 Clamping screw 70 950 ...		 Torque screwdriver 80 950 ...	
50 779 06300		**055**						**129**		**303**		**821**		**193**
50 779 16300		**036**		**844**		**845**		**113**		**303**				**193**
50 779 08000		**055**						**129**		**303**		**821**		**193**
50 779 18000		**036**		**844**		**845**		**113**		**303**				**193**
50 779 10000		**055**						**129**		**303**		**821**		**193**
50 779 20000		**036**		**844**		**845**		**113**		**303**				**193**
50 779 12500		**055**						**129**		**303**		**821**		**193**
50 779 22500		**036**		**844**		**845**		**113**		**303**				**193**
50 779 16000		**055**						**129**		**303**		**821**		**193**
50 779 26000		**036**		**844**		**845**		**113**		**303**				**193**

ONKU

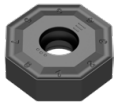
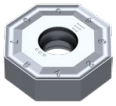
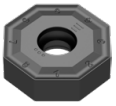
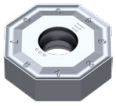
Designation	IC inch	D1 inch	L inch	S inch
ONKU 0806..	0.866	0.228	0.333	0.254



ONKU

		NEW	NEW	NEW	NEW	NEW
		-M50 CTCP230	-M50 CTPP235	-M50 CTPM240	-M50 CTCK215	-M50 CTPK220
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
						
		ONKU	ONKU	ONKU	ONKU	ONKU
		51 163 ...	51 163 ...	51 163 ...	51 163 ...	51 163 ...
ISO	RE inch					
080608SN	0.031	00800	10800	20800	50800	60800
P		●	●	○		
M			○	●		
K		○	○		●	●
N						
S						
H						
O						

ONKU

		NEW	NEW	NEW	NEW
		-R50 CTCP230	-R50 CTPP235	-R50 CTCK215	-R50 CTPK220
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
					
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		51 164 ...	51 164 ...	51 164 ...	51 164 ...
ISO	RE inch				
080608SN	0.031	00800	10800	50800	60800
P		●	●		
M			○		
K		○	○	●	●
N					
S					
H					
O					

Milling guide

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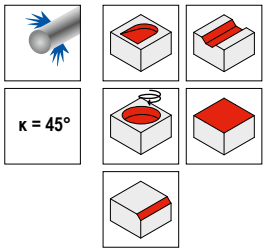
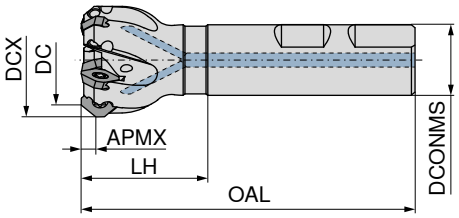
15

MaxiMill – 270-09 End milling cutter 45°







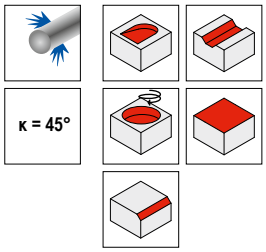


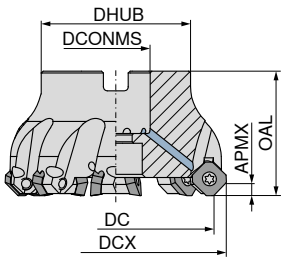
58 666 ...

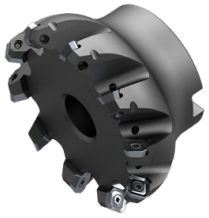
Designation	DC inch	DCX inch	ZNF	APMX inch	OAL inch	LH inch	DCONMS inch	torque moment Nm	Insert	
C270.0500.R.01-09-B0625-125-EF	0.500	0.830	1	0.157	3.250	1.250	0.625	1.2	SD.. 0903..	**05001**
C270.0500.R.01-09-B075-125-EF	0.500	0.830	1	0.157	3.250	1.250	0.750	1.2	SD.. 0903..	**05101**
C270.0750.R.03-09-B075-150-EF	0.750	1.080	3	0.157	3.500	1.500	0.750	1.8	SD.. 0903..	**07503**[1)]
C270.0750.R.03-09-B100-150-EF	0.750	1.080	3	0.157	3.500	1.500	1.000	1.8	SD.. 0903..	**07603**
C270.100.R.04-09-B075-150-EF	1.000	1.330	4	0.157	3.500	1.500	0.750	1.8	SD.. 0903..	**10004**
C270.100.R.04-09-B100-150-EF	1.000	1.330	4	0.157	3.500	1.500	1.000	1.8	SD.. 0903..	**10104**
C270.125.R.05-09-B075-175-EF	1.250	1.580	5	0.157	3.750	1.750	0.750	1.8	SD.. 0903..	**12505**
C270.125.R.05-09-B100-175-EF	1.250	1.580	5	0.157	3.750	1.750	1.000	1.8	SD.. 0903..	**12605**
C270.150.R.05-09-B075-200-EF	1.500	1.830	5	0.157	4.000	2.000	0.750	1.8	SD.. 0903..	**15005**
C270.150.R.05-09-B100-200-EF	1.500	1.830	5	0.157	4.000	2.000	1.000	1.8	SD.. 0903..	**15105**

1) Not in stock

MaxiMill – 270-09 Shell mill 45°







right

58 705 ...

Designation	DC inch	DCX inch	ZNF	APMX inch	OAL inch	DHUB inch	DCONMS $_{H6}$ inch	RPMX 1/min.	torque moment Nm	Insert	
A270.200.R.06-09-A075-175-EF	2.000	2.330	6	0.157	1.750	1.750	0.750	10700	1.8	SD.. 0903..	**20006**
A270.250.R.08-09-A100-200-EF	2.500	2.830	8	0.157	2.250	2.250	1.000	8500	1.8	SD.. 0903..	**25008**
A270.300.R.10-09-A100-200-EF	3.000	3.330	10	0.157	2.250	2.250	1.000	6700	1.8	SD.. 0903..	**30010**



Screwdriver

80 950 ...



Molykote

70 950 ...

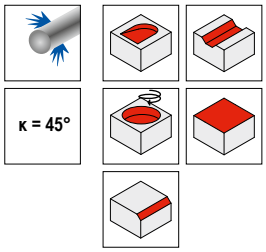


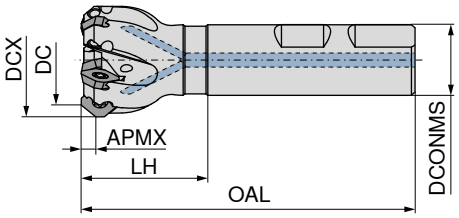
Clamping screw

70 950 ...

Spare parts **DC**			
0.500	**102**	**303**	**365**
0.750 - 3.000	**102**	**303**	**115**

MaxiMill – 270-09 End milling cutter



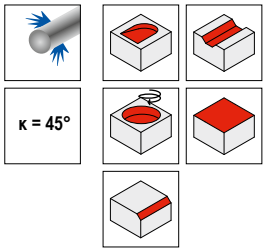


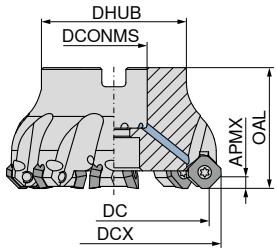




										50 666 ...
Designation	DC mm	DCX mm	ZNF	APMX mm	OAL mm	LH mm	DCONMS mm	torque moment Nm	Insert	
C270.06.R.01-09	6	14.4	1	4	80	32	16	1.2	SD.. 0903..	**006**
C270.12.R.01-09	12	20.4	1	4	80	32	16	1.2	SD.. 0903..	**012**
C270.16.R.02-09	16	24.4	2	4	90	40	20	1.8	SD.. 0903..	**016**
C270.20.R.03-09	20	28.4	3	4	90	40	20	1.8	SD.. 0903..	**020**
C270.25.R.04-09	25	33.4	4	4	100	44	25	1.8	SD.. 0903..	**025**
C270.32.R.05-09	32	40.4	5	4	95	36	25	1.8	SD.. 0903..	**032**

MaxiMill – 270-09 Shell mill







										50 705 ...	50 706 ...
Designation	DC mm	DCX mm	ZNF	APMX mm	OAL mm	DHUB mm	DCONMS $_{H6}$ mm	torque moment Nm	Insert		
A270.32.R.05-09	32	40.4	5	4	40	34	16	1.8	SD../XD.. 0903..		**532**
A270.40.R.04-09	40	48.4	4	4	40	38	16	1.8	SD../XD.. 0903..	**540**	
A270.40.R.06-09	40	48.4	6	4	40	38	16	1.8	SD../XD.. 0903..		**540**
A270.50.R.06-09	50	58.4	6	4	40	43	22	1.8	SD../XD.. 0903..	**550**	
A270.50.R.08-09	50	58.4	8	4	40	43	22	1.8	SD../XD.. 0903..		**550**
A270.63.R.08-09	63	71.4	8	4	40	48	22	1.8	SD../XD.. 0903..	**563**	
A270.63.R.10-09	63	71.4	10	4	40	48	22	1.8	SD../XD.. 0903..		**563**
A270.80.R.10-09	80	88.4	10	4	50	58	27	1.8	SD../XD.. 0903..	**580**	
A270.80.R.12-09	80	88.4	12	4	50	58	27	1.8	SD../XD.. 0903..		**580**
A270.100.R.12-09	100	108.4	12	4	50	78	32	1.8	SD../XD.. 0903..	**600**	
A270.100.R.14-09	100	108.4	14	4	50	78	32	1.8	SD../XD.. 0903..		**600**
A270.125.R.12-09	125	133.4	12	4	63	88	40	1.8	SD../XD.. 0903..	**625**	

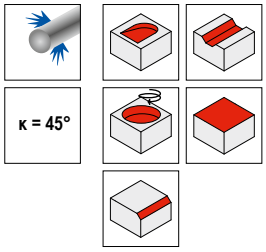
▲ 50 705 ... Normal pitch for a broad spectrum of use on aluminum alloys, non-ferrous metals, and soft steel materials
▲ 50 706 ... Fine pitch for highest feed rates, predominantly used on steel and cast materials

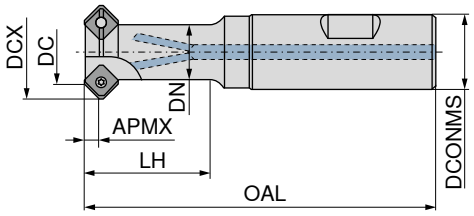
	 TORX® blade	 Screwdriver	 Molykote	 Clamping screw	 Torque screwdriver
	80 950 ...	**80 950 ...**	**70 950 ...**	**70 950 ...**	**80 950 ...**
Spare parts **DC**					
6 - 12	**033**	**110**	**303**	**365**	**191**
16 - 125	**033**	**110**	**303**	**115**	**191**

15

MaxiMill – 272-09 Chamfer milling cutter

▲ Usable on front and rear cutting edges









58 669 ...

Designation	DC inch	DCX inch	ZNF	APMX inch	OAL inch	LH inch	DCONMS inch	torque moment Nm	Insert	
C272.0500.R.01-09-B-100-EF	0.500	0.830	1	0.157	3.250	1.000	0.625	1.2	SD.. 0903..	**05001**

Screwdriver

80 950 ...



Molykote

70 950 ...



Clamping screw

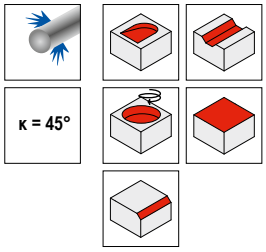
70 950 ...

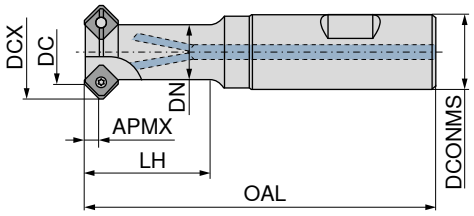
Spare parts

DC			
0.500	**102**	**303**	**365**

MaxiMill – 272-09 Chamfer milling cutter

▲ Usable on front and rear cutting edges









50 669 ...

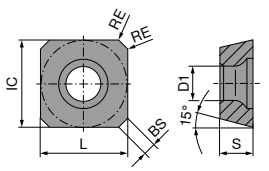
Designation	DC mm	DCX mm	ZNF	APMX mm	DN mm	OAL mm	LH mm	DCONMS mm	torque moment Nm	Insert	
C272.06.R.01-09	6	14.4	1	4	10	91	24.0	16	1.2	SD.. 0903..	**10600**
C272.08.R.01-09	8	16.4	1	4	10	91	25.5	16	1.2	SD.. 0903..	**008**
C272.12.R.01-09	12	20.4	1	4	12	91	26.0	16	1.2	SD.. 0903..	**012**
C272.16.R.02-09	16	24.4	2	4	15	97	30.0	20	1.8	SD.. 0903..	**016**
C272.18.R.02-09	18	26.4	2	4	16	97	30.0	20	1.8	SD.. 0903..	**018**
C272.25.R.03-09	25	33.4	3	4	21	109	35.0	25	1.8	SD.. 0903..	**025**

	TORX® blade	Screwdriver	 Molykote	 Clamping screw	 Torque screwdriver
	80 950 ...	**80 950 ...**	**70 950 ...**	**70 950 ...**	**80 950 ...**
Spare parts					
DC					
6 - 12	**033**	**110**	**303**	**365**	**191**
16 - 25	**033**	**110**	**303**	**115**	**191**

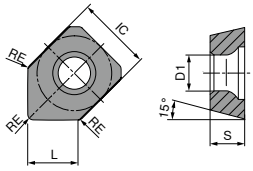
15

SDHW / SDNT / SDHT / XDHW

Designation	IC inch	D1 inch	L inch	BS inch	S inch
XDHW 0903..	0.375	0.134	0.217	0.066	0.125
SD.. 0903..	0.375	0.134	0.375	0.066	0.125

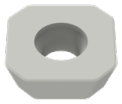
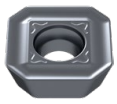
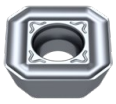
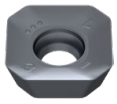


SD..



XDHW

SDHW / SDNT / SDHT

	TCM10	-29 CTCP230	-29 CTPP235	-33 CTPM240	-33P CTPM240	-F50 CTPM245	-F50 CTCM245
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
							
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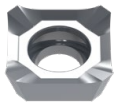
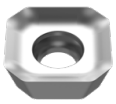
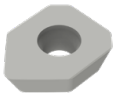
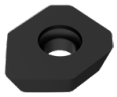
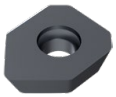
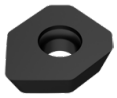
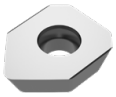
ISO / RE inch							
0903AESN 0.039	898	020	120	420	420	470	92001
P	●	●	●	○	○	●	●
M			○	●	●	●	●
K	○	○	○				
N							
S							○
H							
O							

SDNT / SDHT

		NEW				
	-31 CTCK215	-F10 CTPX715	-27P H216T	-M31 CTC5240	-F50 CTCS245
	DRAGONSKIN	DRAGONSKIN		DRAGONSKIN	DRAGONSKIN
					
	SDNT	SDHT	SDHT	SDHT	SDHT
	51 029 ...	51 160 ...	50 426 ...	50 421 ...	51 109 ...
ISO / RE inch					
0903AEFN 0.039		02002	548		
0903AESN 0.039	520			509	57100
P		○			
M		○			
K	●	●	○		
N		●	●		
S		○		●	●
H					
O		○	○		

XDHW

▲ Masterfinish indexable insert (wiper insert)

		TCM10	CTCP230 DRAGONSKIN	CTPP235 DRAGONSKIN	CTCK215 DRAGONSKIN	H216T
						
		CERMET				
		XDHW	XDHW	XDHW	XDHW	XDHW
		50 449 ...	51 015 ...	51 015 ...	51 015 ...	50 449 ...
ISO	RE inch					
0903AEEN	0.039				520	
0903AEFN	0.039					548
0903AESN	0.039	898	020	120		
P		●	●	●		
M				○		
K		○	○	○	●	○
N						●
S						
H						
O						○

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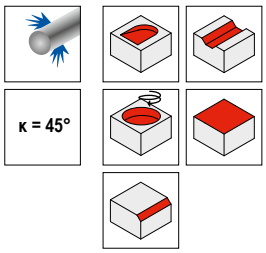
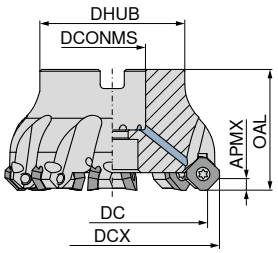
Grade description and overview	→ 202–207		

MaxiMill – 270-12 Shell mill 45°

▲ 50 705 ... Normal pitch for a broad spectrum of use on aluminum alloys, non-ferrous metals, up to soft steel materials
▲ 50 706 ... Predominantly fine pitch for highest feed rates, use on steel and cast materials







58 705 ...

Designation	DC inch	DCX inch	ZNF	APMX inch	DCONMS $_{H6}$ inch	OAL inch	DHUB inch	RPMX 1/min.	torque moment Nm	Insert	
A270.200.R.04-12-A075-175-EF	2.000	2.550	4	0.236	0.750	1.750	1.750	10700	5	SD.. 1204..	**20104**
A270.250.R.05-12-A100-200-EF	2.500	3.050	5	0.236	1.000	2.250	2.250	8500	5	SD.. 1204..	**25105**
A270.300.R.06-12-A100-200-EF	3.000	3.550	6	0.236	1.000	2.250	2.250	6700	5	SD.. 1204..	**30106**
A270.400.R.06-12-B125-200-EF	4.000	4.550	6	0.236	1.250	2.750	2.750	5400	5	SD.. 1204..	**40106**
A270.500.R.07-12-B150-200-EF	5.000	5.550	7	0.236	1.500	3.750	3.750	4300	5	SD.. 1204..	**50107**
A270.600.R.08-12-B150-200-EF	6.000	6.660	8	0.236	1.500	3.750	3.750	3500	5	SD.. 1204..	**60108**


Screwdriver


Molykote


Clamping screw

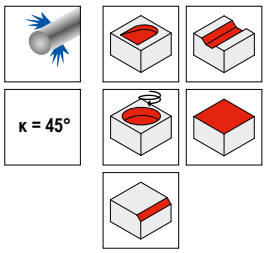
80 950 ... | **70 950 ...** | **70 950 ...**

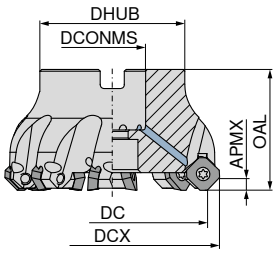
Spare parts

DC			
2.000 - 6.000	**106**	**303**	**01200**

MaxiMill – 270-12 Shell mill

▲ 50 705 ... Normal pitch for a broad spectrum of use on aluminum alloys, non-ferrous metals, up to soft steel materials
▲ 50 706 ... Predominantly fine pitch for highest feed rates, use on steel and cast materials







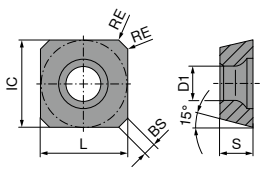
Designation	DC mm	DCX mm	ZNF	APMX mm	DCONMS $_{H6}$ mm	OAL mm	DHUB mm	torque moment Nm	Insert	50 705 ...	50 706 ...
A270.40.R.03-12	40	54	3	6	16	40	38	5	SD../XD.. 1204..	**040**	
A270.40.R.04-12	40	54	4	6	16	40	38	5	SD../XD.. 1204..		**040**
A270.50.R.04-12	50	64	4	6	22	40	43	5	SD../XD.. 1204..	**050**	
A270.50.R.05-12	50	64	5	6	22	40	43	5	SD../XD.. 1204..		**050**
A270.63.R.04-12	63	77	4	6	22	40	48	5	SD../XD.. 1204..	**063**	
A270.63.R.06-12	63	77	6	6	22	40	48	5	SD../XD.. 1204..		**063**
A270.80.R.05-12	80	94	5	6	27	50	58	5	SD../XD.. 1204..	**080**	
A270.80.R.08-12	80	94	8	6	27	50	58	5	SD../XD.. 1204..		**080**
A270.100.R.06-12	100	114	6	6	32	50	78	5	SD../XD.. 1204..	**100**	
A270.100.R.10-12	100	114	10	6	32	50	78	5	SD../XD.. 1204..		**100**
A270.125.R.07-12	125	139	7	6	40	63	88	5	SD../XD.. 1204..	**125**	
A270.125.R.12-12	125	139	12	6	40	63	88	5	SD../XD.. 1204..		**125**
A270.160.R.08-12	160	174	8	6	40	63	94	5	SD../XD.. 1204..	**160** [1]	

1) With threaded holes M12 on the front face, pitch circle diameter = 66.7 mm / Without Through Coolant

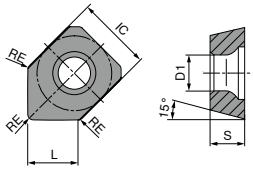
Spare parts DC	TORX® blade 80 950 ...	Clamping key – T 80 397 ...	Screwdriver 80 950 ...	Power Screw 70 950 ...	Molykote 70 950 ...	Clamping screw 70 950 ...	Torque screwdriver 80 950 ...
40	**037**	**040**	**114**	**151**	**303**	**01200**	**193**
50 - 160	**037**		**114**		**303**	**01200**	**193**

SDHT / SDHW / SDMT / XDHW

Designation	IC inch	D1 inch	L inch	BS inch	S inch
XDHW 1204..	0.500	0.217	0.295	0.069	0.187
SD.. 1204..	0.500	0.217	0.500	0.069	0.187



SD..

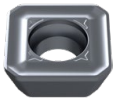


XDHW

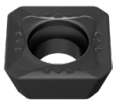
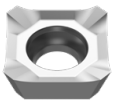
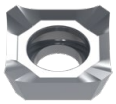
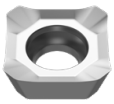
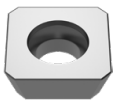
SDHT / SDHW / SDMT

	TCM10	-R TCM10	-29R CTCP230	-R CTCP230	CTCP230
			DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
					
	CERMET	CERMET			
	SDHT	SDHW	SDMT	SDHT	SDHW
	50 426 ...	50 428 ...	51 010 ...	51 006 ...	51 008 ...
ISO / RE inch					
1204AESN 0.008	900				
1204AESN 0.039		899	020	020	020
P	●	●	●	●	●
M					
K	○	○	○	○	○
N					
S					
H					
O					

SDMT / SDHT / SDHW

	-29R CTPP235	-R CTPP235	-R CTPP235	-33 CTPM240	-F50 CTPM245	-F50 CTCM245
	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
						
	SDMT	SDHT	SDHW	SDHT	SDHT	SDHT
	51 010 ...	51 006 ...	51 008 ...	51 028 ...	51 109 ...	51 109 ...
ISO / RE inch						
1204AESN 0.039	120	120	120	425	475	92501
P	●	●	●	○	●	●
M	○	○	○	●	●	●
K	○	○	○			
N						
S						○
H						
O						

SDMT / SDHW / SDHT

	-31 CTCK215	-R CTCK215	-27 H216T	NEW -F10 CTPX715	-27P H216T	H216T
	DRAGONSKIN	DRAGONSKIN		DRAGONSKIN		
						
	SDMT	SDHW	SDHT	SDHT	SDHT	SDHW
	51 059 ...	51 008 ...	50 426 ...	51 160 ...	50 426 ...	50 428 ...
ISO / RE inch						
1204AEEN 0.039	520	520				
1204AEFN 0.008			504	02502		
1204AEFN 0.039					554	
1204AESN 0.008						600
P				○		
M				○		
K	●	●	○	●	○	○
N			●	●	●	●
S				○		
H						
O			○	○	○	○

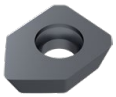
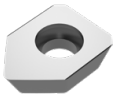
SDHT

	-M31 CTC5240	-F50 CTCS245
	DRAGONSKIN	DRAGONSKIN
		
	SDHT	SDHT
	50 421 ...	51 109 ...
ISO / RE inch		
1204AESN 0.039	512	57600
P		
M		
K		
N		
S	●	●
H		
O		

15

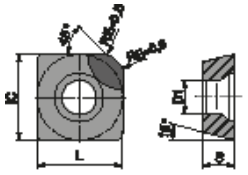
XDHW

▲ Masterfinish indexable insert (wiper insert)

		TCM10	CTCP230	CTPP235	CTCK215	H216T
			DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	
						
		CERMET				
		XDHW	XDHW	XDHW	XDHW	XDHW
		50 449 ...	**51 015 ...**	**51 015 ...**	**51 015 ...**	**50 449 ...**
ISO	RE inch					
1204AEEN	0.039				**525**	
1204AEFN	0.039					**600**
1204AESN	0.039	**900**	**025**	**125**		
P		●	●	●		
M				○		
K		○	○	○	●	○
N						●
S						
H						
O						○

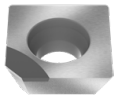
SDHW

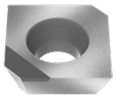
Designation	IC inch	D1 inch	L inch	S inch
SDHW 1204..	0.500	0.217	0.500	0.187



SDHW

SDHW


CTDPS30


CTBS10U

DIAMOND SDHW
51 900 ...

CBN SDHW
51 900 ...

ISO		
1204AEFN-2	100 [1]	
1204AEFN-3	102 [2]	
1204AETN-2		300 [1]
P		
M		
K		●
N	●	
S		
H		○
O		

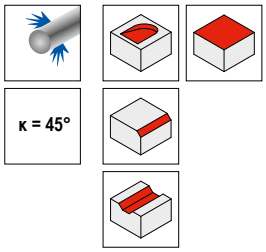
1) $a_{p\,max.}$ = 2.0 mm
2) $a_{p\,max.}$ = 3.5 mm

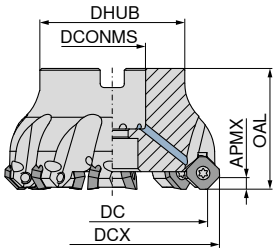
Milling guide

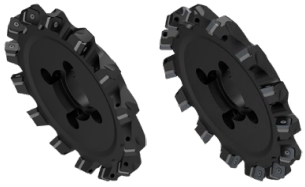
Cutting data standard values	→ 154–157	Machining strategy	→ 164
Technical Information	→ 191–197	Chip groove description and overview	→ 198–200
Grade description and overview	→ 202–207		

15

MaxiMill – 270-19 Shell mill







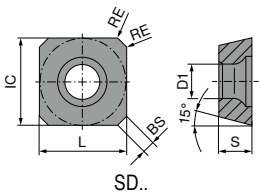
									Left-hand	Right-hand
									50 698 ...	**50 698 ...**
Designation	DC mm	DCX mm	ZNF	APMX mm	DCONMS $_{H6}$ mm	OAL mm	DHUB mm	torque moment Nm	Insert	
A270.125.R.07-19	125	146.4	7	10	40	63	88	5	SD.. 1907..	**12507**
A270.160.R.09-19	160	181.4	9	10	40	63	104	5	SD.. 1907..	**16009**[1)]
A270.200.R.11-19	200	221.1	11	10	60	63	134	5	SD.. 1907..	**20011**[2)]
A270.250.L.14-19	250	271.4	14	10	60	63	134	5	SD.. 1907..	**75014**[2)]
A270.250.R.14-19	250	271.4	14	10	60	63	134	5	SD.. 1907..	**25014**[2)]
A270.315.L.17-19	315	336.4	17	10	60	63	226	5	SD.. 1907..	**81517**[4)]
A270.315.R.17-19	315	336.4	17	10	60	63	226	5	SD.. 1907..	**31517**[3)]

1) With threaded holes M12 on the front face, pitch circle diameter = 66.7 mm / Without Through Coolant
2) With threaded holes M16 on the front face, pitch circle diameter = 101.6 mm / Without Through Coolant
3) With 4 threaded holes M16 on the front face, pitch circle diameter = 101.6 mm and with 4 threaded holes M20 on the front face, pitch circle diameter = 177.8 mm / Without Through Coolant
4) With 4 threaded holes M16 on the front face, pitch circle diameter = 101.6 mm and with 4 threaded holes M20 on the front face, pitch circle diameter = 177.8 mm

	TORX® blade	 Screwdriver	 Molykote	 Clamping screw	 Solid Carbide support S	 Threaded sleeve	 Torque screwdriver
	80 950 ...	**80 950 ...**	**70 950 ...**	**70 950 ...**	**70 950 ...**	**70 950 ...**	**80 950 ...**
Spare parts DC							
125 - 315	**037**	**114**	**303**	**302**	**01500**	**01400**	**193**

SDKT

Designation	IC inch	D1 inch	L inch	BS inch	S inch	AN °
SDKT 1907..	0.754	0.236	0.754	0.059	0.281	15



SDKT

		-M50 CTCP220	-R50 CTPP225	-R50 CTCP230	-M50 CTPP235	-R50 CTPP235	-R50 CTPM225	-R50 CTCK215
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
								
		SDKT	SDKT	SDKT	SDKT	SDKT	SDKT	SDKT
		51 131 ...	51 132 ...	51 132 ...	51 131 ...	51 132 ...	51 132 ...	51 132 ...
ISO	RE inch							
1907AESN	0.063	22001	07000	02100	12000	12300	22200	52000
P		●	●	●	●	●	●	
M					○	○	●	
K				○	○	○		●
N								
S								
H								
O								

Milling guide

Cutting data standard values	→ 154–157	Technical Information	→ 191–197
Chip groove description and overview	→ 198–200	Grade description and overview	→ 202–207

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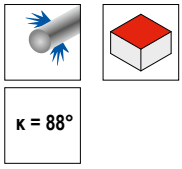
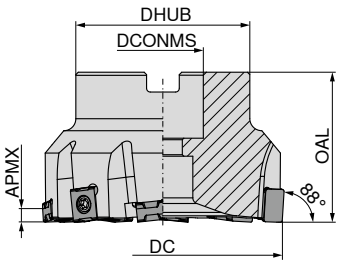
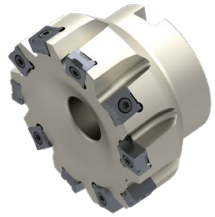
MaxiMill – HEC 11 Shell mill

▲ not adjustable





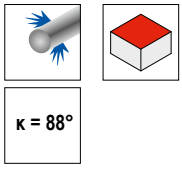


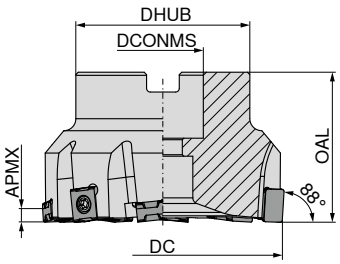
Designation	DC inch	ZNF	APMX inch	OAL inch	DHUB inch	DCONMS $_{H6}$ inch	RPMX 1/min.	torque moment Nm	58 725 ...
AHEC.200.R.06-11-A075-175-EF	2.000	6	0.157	1.750	1.750	0.750	12700	3.2	**20006**
AHEC.250.R.08-11-A100-175-EF	2.500	8	0.157	2.250	2.250	1.000	10100	3.2	**25008**
AHEC.300.R.10-11-A100-200-EF	3.000	10	0.157	2.250	2.250	1.000	8000	3.2	**30010**
AHEC.400.R.12-11-B150-200-EF	4.000	12	0.157	3.750	3.750	1.500	6400	3.2	**40012**
AHEC.500.R.16-11-B150-225-EF	5.000	16	0.157	3.750	3.750	1.500	5100	3.2	**50016**
AHEC.600.R.14-11-B150-250-EF	6.000	14	0.157	3.750	3.750	1.500	4000	3.2	**60014**
AHEC.600.R.20-11-A200-250-EF	6.000	20	0.157	2.500	4.882	2.000	4000	3.2	**60020**
AHEC.800.R.20-11-A250-250-EF	8.000	20	0.157	6.890	6.890	2.500	2600	3.2	**80020**

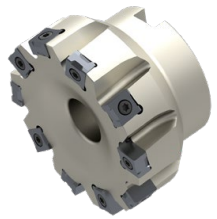
	TORX® blade	 Molykote	 Clamping screw	 Wedge	 Torque screwdriver
	80 950 ...	**70 950 ...**	**70 950 ...**	**70 950 ...**	**80 950 ...**
Spare parts					
DC					
2.000 - 8.000	**036**	**303**	**113**	**199**	**193**

MaxiMill – HEC 11 Shell mill

▲ not adjustable







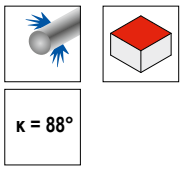
50 725 ...

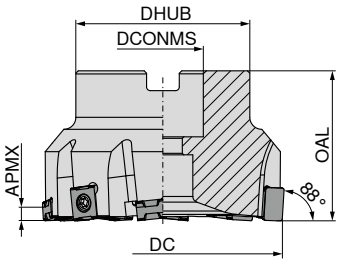
Designation	DC mm	ZNF	APMX mm	OAL mm	DHUB mm	DCONMS $_{H6}$ mm	RPMX 1/min.	torque moment Nm	Insert	
AHEC.50.R.06-11	50	6	6	40	48	22	12700	3.2	LNHX 1106	**050**
AHEC.63.R.08-11	63	8	6	40	48	22	10100	3.2	LNHX 1106	**063**
AHEC.80.R.10-11	80	10	6	50	58	27	8000	3.2	LNHX 1106	**080**
AHEC.100.R.12-11	100	12	6	50	78	32	6400	3.2	LNHX 1106	**100**
AHEC.125.R.12-11	125	12	6	63	88	40	5100	3.2	LNHX 1106	**125**
AHEC.125.R.16-11	125	16	6	63	88	40	5100	3.2	LNHX 1106	**12516**
AHEC.160.R.20-11	160	20	6	63	100	40	4000	3.2	LNHX 1106	**160** [1)]

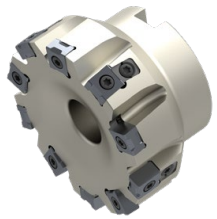
1) With threaded holes M12 on the front face, pitch circle diameter = 66.7 mm / Without Through Coolant

MaxiMill – HEC 11 Shell mill

▲ Axially adjustable with same tooth pitch







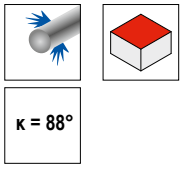
50 733 ...

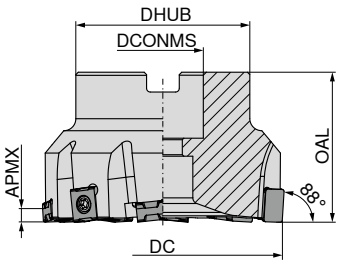
Designation	DC mm	ZNF	APMX mm	OAL mm	DHUB mm	DCONMS $_{H6}$ mm	RPMX 1/min.	torque moment Nm	Insert	
AHEC.50.R.06A03-11	50	6	6	40	48	22	12700	3.2	LNHX 1106	**050**
AHEC.63.R.08A04-11	63	8	6	40	48	22	10100	3.2	LNHX 1106	**063**
AHEC.80.R.10A05-11	80	10	6	50	58	27	8000	3.2	LNHX 1106	**080**
AHEC.100.R.12A06-11	100	12	6	50	78	32	6400	3.2	LNHX 1106	**100**
AHEC.125.R.16A08-11	125	16	6	63	88	40	5100	3.2	LNHX 1106	**125**
AHEC.160.R.20A10-11	160	20	6	63	100	40	4000	3.2	LNHX 1106	**160** [1)]

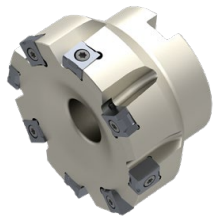
1) With threaded holes M12 on the front face, pitch circle diameter = 66.7 mm / Without Through Coolant

MaxiMill – HEC 11 Shell mill

▲ with irregular pitch, non adjustable







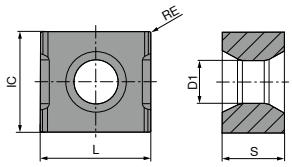
Designation	DC mm	ZNF	APMX mm	OAL mm	DHUB mm	DCONMS $_{H6}$ mm	RPMX 1/min.	torque moment Nm	Insert	50 733 ...
AHEC.50.R.04B-11	50	4	6	40	48	22	12700	3.2	LNHX 1106	**550**
AHEC.63.R.06B-11	63	6	6	40	48	22	10100	3.2	LNHX 1106	**563**
AHEC.80.R.08B-11	80	8	6	50	58	27	8000	3.2	LNHX 1106	**580**
AHEC.100.R.10B-11	100	10	6	50	78	32	6400	3.2	LNHX 1106	**600**
AHEC.125.R.12B-11	125	12	6	63	88	40	5100	3.2	LNHX 1106	**625**
AHEC.160.R.14B-11	160	14	6	63	100	40	4000	3.2	LNHX 1106	**660** [1]

1) With threaded holes M12 on the front face, pitch circle diameter = 66.7 mm / Without Through Coolant

	TORX® blade	Molykote	Coolant Disc	Clamping screw	Wedge	Torque screwdriver
	80 950 ...	**70 950 ...**	**70 950 ...**	**70 950 ...**	**70 950 ...**	**80 950 ...**
Spare parts for Article no.						
50 725 050 / 50 725 063	**036**	**303**	**852**	**113**		**193**
50 725 080	**036**	**303**	**853**	**113**		**193**
50 725 100 / 50 733 600	**036**	**303**	**854**	**113**		**193**
50 725 125 / 50 725 12516	**036**	**303**	**855**	**113**		**193**
50 725 160 / 50 733 660	**036**	**303**		**113**		**193**
50 733 080 / 50 733 580	**036**	**303**	**853**	**113**	**199**	**193**
50 733 160	**036**	**303**		**113**	**199**	**193**
50 733 063 / 50 733 050	**036**	**303**	**852**	**113**	**199**	**193**
50 733 100	**036**	**303**	**854**	**113**	**199**	**193**
50 733 125	**036**	**303**	**855**	**113**	**199**	**193**
50 733 550 / 50 733 563	**036**	**303**	**852**	**113**		**193**
50 733 625	**036**	**303**	**855**	**113**		**193**

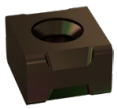
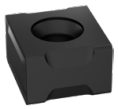
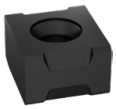
LNHX

Designation	IC inch	D1 inch	L inch	S inch
LNHX 1106..	0.394	0.168	0.433	0.250



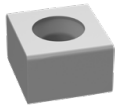
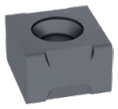
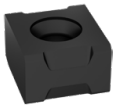
LNHX

LNHX

		CTEP210	CTCK215	-R50 CTCK215	-Q CTCK215
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
					
		CERMET			
		LNHX	LNHX	LNHX	LNHX
		51 046 ...	51 046 ...	51 024 ...	51 045 ...
ISO	RE inch				
1106PNER	0.020		520	520	
1106ZZER	0.020				520 [1]
1106PNER	0.031	820			
110616EN	0.063		51600		
P		●			
M					
K		●	●	●	●
N					
S					
H					
O					

1) -Q = trailing edge insert

LNHX

		CTPK220	-R50 CTPK220	CTN3105	CTL3215	-Q CTL3215
		DRAGONSKIN	DRAGONSKIN			
						
				CERAMIC	CBN	CBN
		LNHX	LNHX	LNHX	LNHX	LNHX
		51 046 ...	51 024 ...	50 500 ...	51 046 ...	51 045 ...
ISO	RE inch					
110608EN	0.031		608			
1106PNER	0.020	620	620			
1106PNSR	0.020			904	87200	
1106ZZER	0.020					87000[1]
P						
M						
K		●	●	●	●	●
N						
S						
H					○	○
O						

1) -Q = trailing edge insert

Milling guide

Cutting data standard values	→ 154–157	Assembly instructions	→ 165
Technical Information	→ 191–197	Chip groove description and overview	→ 198–200
Grade description and overview	→ 202–207		

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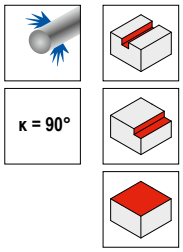
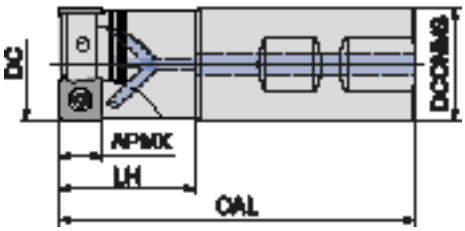
MaxiMill – 491-09 End milling cutter







Designation	DC inch	ZNF	APMX inch	OAL inch	LH inch	DCONMS h6 inch	RPMX 1/min.	torque moment Nm	Insert	58 774 ...	58 774 ...
C491.100.R.03-09-B-125-EF	1.000	3	0.236	3.600	1.250	1.000	17125	2	SNHU 09T3		**30003**
C491.100.R.03-09-A-200-EF-800	1.000	3	0.236	8.000	2.000	1.000	17125	2	SNHU 09T3	**10003**	
C491.125.R.03-09-B-150-EF	1.250	3	0.236	4.000	1.500	1.250	13700	2	SNHU 09T3		**32503**
C491.125.R.04-09-B-150-EF	1.250	4	0.236	4.000	1.500	1.250	13700	2	SNHU 09T3		**32504**
C491.125.R.03-09-A-250-EF-1000	1.250	3	0.236	10.000	2.500	1.250	13700	2	SNHU 09T3	**12503**	
C491.125.R.04-09-A-250-EF-1000	1.250	4	0.236	10.000	2.500	1.250	13700	2	SNHU 09T3	**12504**	

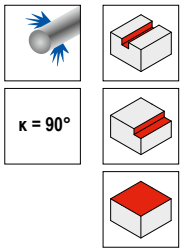

Screwdriver

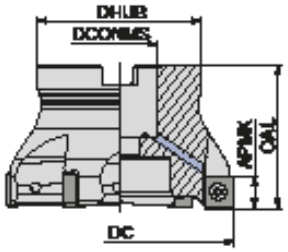

Molykote


Clamping screw

Spare parts DC	80 950 ...	70 950 ...	70 950 ...
1.000 - 1.250	**127**	**303**	**710**

MaxiMill – 491-09 Shell mill







										58 776 ...		58 775 ...	
Designation	DC inch	ZNF	APMX inch	OAL inch	DHUB inch	DCONMS $_{H6}$ inch	RPMX 1/min.	torque moment Nm	Insert				
A491.150.R.03-09-A050-175-EF	1.500	3	0.236	1.750	1.421	0.500	11900	2	SNHU 09T3		**15003**		
A491.150.R.05-09-A050-175-EF	1.500	5	0.236	1.750	1.421	0.500	11900	2	SNHU 09T3				**15005**
A491.200.R.04.09-A075-175-EF	2.000	4	0.236	1.750	1.750	0.750	9700	2	SNHU 09T3		**20004**		
A491.200.R.06-09-A075-175-EF	2.000	6	0.236	1.750	1.750	0.750	9700	2	SNHU 09T3				**20006**
A491.250.R.05-09-A100-200-EF	2.500	5	0.236	2.000	2.250	1.000	8500	2	SNHU 09T3		**25005**		
A491.250.R.08-09-A100-200-EF	2.500	8	0.236	2.000	2.250	1.000	8500	2	SNHU 09T3				**25008**
	3.000	6	0.236	2.000	2.250	1.000	7600	2	SNHU 09T3		**30006**		
A491.300.R.10-09-A100-200-EF	3.000	10	0.236	2.000	2.250	1.000	7600	2	SNHU 09T3				**30010**
A491.400.R.07-09-A125-200-EF	4.000	7	0.236	2.000	2.750	1.250	6400	2	SNHU 09T3		**40007**		
A491.400.R.12-09-A125-200-EF	4.000	12	0.236	2.000	2.750	1.250	6400	2	SNHU 09T3				**40012**
A491.500.R.08-09-B150-200-EF	5.000	8	0.236	2.000	3.750	1.500	5700	2	SNHU 09T3		**50008**		
A491.500.R.15-09-B150-200-EF	5.000	15	0.236	2.000	3.750	1.500	5700	2	SNHU 09T3				**50015**

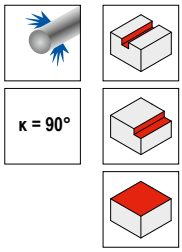

Screwdriver

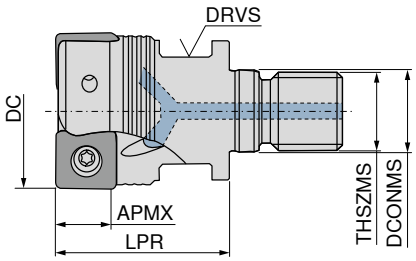

Molykote


Clamping screw

	80 950 ...		70 950 ...		70 950 ...	
Spare parts						
DC						
1.500 - 5.000		**119**		**303**		**710**

MaxiMill – 491-09 Screw in cutter

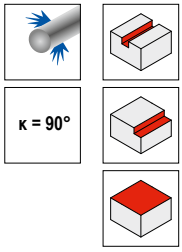


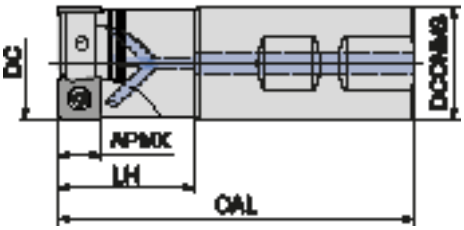




											50 773 ...
Designation	DC mm	ZNF	APMX mm	LPR mm	THSZMS	DCONMS mm	DRVS mm	RPMX 1/min.	torque moment Nm	Insert	
G491.25.R.03-09	25	3	6	35	M12	12.5	17	23500	2	SNHU 09T3	**125**
G491.32.R.03-09	32	3	6	35	M16	17.0	24	19600	2	SNHU 09T3	**132**
G491.32.R.04-09	32	4	6	35	M16	17.0	24	19600	2	SNHU 09T3	**232**

MaxiMill – 491-09 End milling cutter







											50 774 ...	50 774 ...
Designation	DC mm	ZNF	APMX mm	OAL mm	LH mm	DCONMS $_{h6}$ mm	RPMX 1/min.	torque moment Nm	Insert			
C491.25.R.03-09-B-32	25	3	6	89	32	25	23500	2	SNHU 09T3			**425**
C491.25.R.03-09-A-50-225	25	3	6	225	50	25	23500	2	SNHU 09T3		**325**	
C491.32.R.03-09-B-40	32	3	6	101	40	32	19600	2	SNHU 09T3			**632**
C491.32.R.04-09-B-40	32	4	6	101	40	32	19600	2	SNHU 09T3			**432**
C491.32.R.03-09-A-63-250	32	3	6	250	63	32	19600	2	SNHU 09T3		**532**	
C491.32.R.04-09-A-63-250	32	4	6	250	63	32	19600	2	SNHU 09T3		**332**	

TORX® blade


Screwdriver

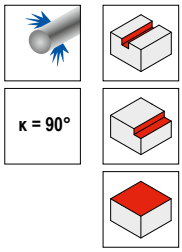

Molykote

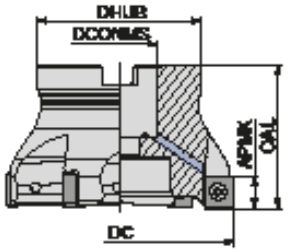

Clamping screw


Torque screwdriver

	80 950 ...	**80 950 ...**	**70 950 ...**	**70 950 ...**	**80 950 ...**
Spare parts **DC**					
25 - 32	**053**	**119**	**303**	**710**	**193**

MaxiMill – 491-09 Shell mill







Designation	DC mm	ZNF	APMX mm	OAL mm	DHUB mm	DCONMS $_{H6}$ mm	RPMX 1/min.	torque moment Nm	Insert	50 776 ...	50 775 ...
A491.40.R.03-09	40	3	6	40	38	16	16800	2	SNHU 09T3		**240**
A491.40.R.05-09	40	5	6	40	38	16	16800	2	SNHU 09T3	**240**	
A491.50.R.04-09	50	4	6	40	43	22	14600	2	SNHU 09T3		**250**
A491.50.R.06-09	50	6	6	40	43	22	14600	2	SNHU 09T3	**250**	
A491.63.R.05-09	63	5	6	40	48	22	12700	2	SNHU 09T3		**263**
A491.63.R.08-09	63	8	6	40	48	22	12700	2	SNHU 09T3	**263**	
A491.80.R.06-09	80	6	6	50	58	27	11100	2	SNHU 09T3		**280**
A491.80.R.10-09	80	10	6	50	58	27	11100	2	SNHU 09T3	**280**	
A491.100.R.07-09	100	7	6	50	78	32	9800	2	SNHU 09T3		**300**
A491.100.R.12-09	100	12	6	50	78	32	9800	2	SNHU 09T3	**300**	
A491.125.R.08-09	125	8	6	63	88	40	8700	2	SNHU 09T3		**325**
A491.125.R.15-09	125	15	6	63	88	40	8700	2	SNHU 09T3	**325**	

Spare parts DC	TORX® blade 80 950 ...	 Clamping key – T 80 397 ...	 Screwdriver 80 950 ...	 Power Screw 70 950 ...	 Molykote 70 950 ...	 Clamping screw 70 950 ...	 Torque screwdriver 80 950 ...
40	**053**	**040**	**119**	**151**	**303**	**710**	**193**
50 - 125	**053**		**119**		**303**	**710**	**193**

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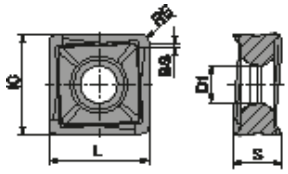
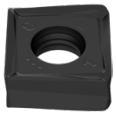
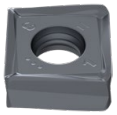
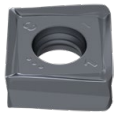
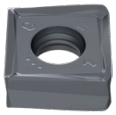
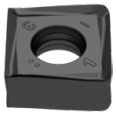
SNHU

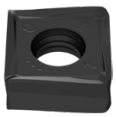
Designation	IC inch	L inch	S inch	D1 inch
SNHU 09T3..	0.360	0.360	0.146	0.152



SNHU

		-M50 CTCP230	-M50 CTPP235	-F50 CTPM240	-M50 CTPM240	-F40 CTPM245	-F40 CTCM245
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
							
		SNHU	SNHU	SNHU	SNHU	SNHU	SNHU
		51 120 ...	51 120 ...	51 119 ...	51 120 ...	51 126 ...	51 126 ...
ISO	RE inch						
09T308ER	0.031					45800	90801
09T308SR	0.031	008	108	408	408		
09T312SR	0.047	01200	11200	41200	41200		
09T316SR	0.063	01600	11600	41600	41600		
P		●	●	○	○	●	●
M			○	●	●	●	●
K		○	○				
N							
S							○
H							
O							

SNHU

				NEW			
		-R50 CTCK215	-R50 CTPK220	-F10 CTPX715	-F10 CTWN215	-F40 CTC5240	-F40 CTCS245
		DRAGONSKIN		DRAGONSKIN		DRAGONSKIN	DRAGONSKIN
							
		SNHU	SNHU	SNHU	SNHU	SNHU	SNHU
		51 121 ...	51 121 ...	51 118 ...	51 118 ...	51 126 ...	51 126 ...
ISO	RE inch						
09T308ER	0.031					15800	55800
09T308FR	0.031			00802	358		
09T308SR	0.031	508	60800				
09T312FR	0.047				36200		
09T312SR	0.047	51200					
09T316FR	0.063				36600		
09T316SR	0.063	51600					
P				○			
M				○			
K		●	●	●	○		
N				●	●		
S				○		●	●
H							
O				○	○		

Milling guide

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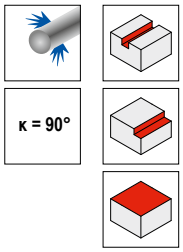
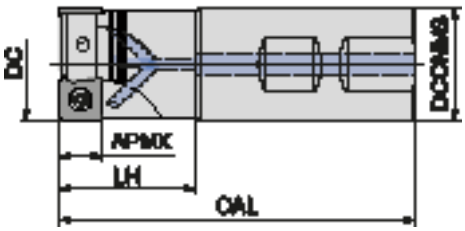
Grade description and overview	→ 202–207		

MaxiMill – 491-12 End milling cutter







										58 774 ...		58 774 ...	
Designation	DC inch	ZNF	APMX inch	OAL inch	LH inch	DCONMS $_{h6}$ inch	RPMX 1/min.	torque moment Nm	Insert				
C491.125.R.02-12-B-150-EF	1.250	2	0.315	4.000	1.500	1.250	13700	3.2	SNHU 1204				**52502**
C491.125.R.02-12-A-250-EF-1000	1.250	2	0.315	10.000	2.500	1.250	13700	3.2	SNHU 1204		**42502**		


Screwdriver

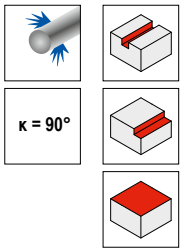

Molykote

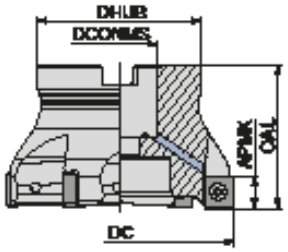

Clamping screw

	80 950 ...		70 950 ...		70 950 ...	
Spare parts DC						
1.250		**128**		**303**		**859**

15

MaxiMill – 491-12 Shell mill







										58 776 ...		58 775 ...	
Designation	DC inch	ZNF	APMX inch	OAL inch	DHUB inch	DCONMS $_{H6}$ inch	RPMX 1/min.	torque moment Nm	Insert				
A491.150.R.03-12-A050-175-EF	1.500	3	0.315	1.420	1.420	0.500	11900	3.2	SNHU 1204		**15103**		
A491.200.R.04-12-A075-175-EF	2.000	4	0.315	1.750	1.750	0.750	9700	3.2	SNHU 1204		**20104**		
A491.200.R.05-12-A075-175-EF	2.000	5	0.315	1.750	1.750	0.750	9700	3.2	SNHU 1204				**20105**
A491.250.R.05-12-A100-200-EF	2.500	5	0.315	2.250	2.250	1.000	8500	3.2	SNHU 1204		**25105**		
A491.250.R.06-12-A100-200-EF	2.500	6	0.315	2.250	2.250	1.000	8500	3.2	SNHU 1204				**25106**
A491.300.R.06-12-A100-200-EF	3.000	6	0.315	2.250	2.250	1.000	7600	3.2	SNHU 1204		**30106**		
A491.300.R.08-12-A100-200-EF	3.000	8	0.315	2.250	2.250	1.000	7600	3.2	SNHU 1204				**30108**
A491.400.R.07-12-A125-200-EF	4.000	7	0.315	2.750	2.750	1.250	6400	3.2	SNHU 1204		**40107**		
A491.400.R.10-12-A125-200-EF	4.000	10	0.315	2.750	2.750	1.250	6400	3.2	SNHU 1204				**40110**
A491.500.R.08-12-B150-200-EF	5.000	8	0.315	3.750	3.750	1.500	5700	3.2	SNHU 1204		**50108**		
A491.500.R.12-12-B150-200-EF	5.000	12	0.315	3.750	3.750	1.500	5700	3.2	SNHU 1204				**50112**
A491.600.R.09-12-B150-200-EF	6.000	9	0.315	3.750	3.750	1.500	5100	3.2	SNHU 1204		**60109**		
A491.600.R.13-12-B150-200-EF	6.000	13	0.315	3.750	3.750	1.500	5100	3.2	SNHU 1204				**60113**



Screwdriver



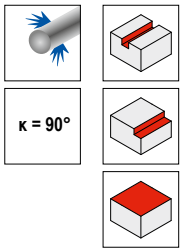
Molykote

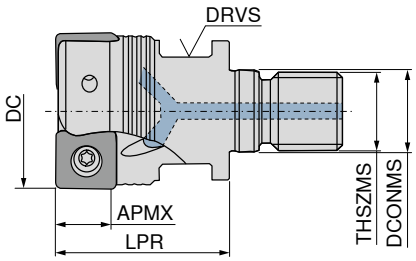


Clamping screw

	80 950 ...	70 950 ...	70 950 ...
Spare parts			
DC			
1.500 - 6.000	**128**	**303**	**859**

MaxiMill – 491-12 Screw in cutter

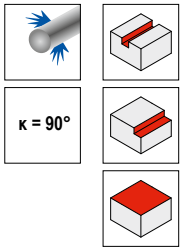


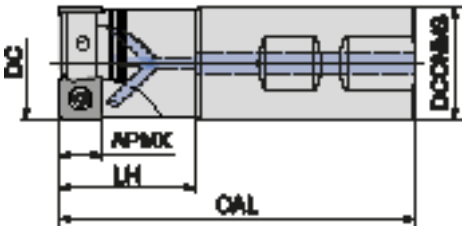




										50 773 ...	
Designation	DC mm	ZNF	APMX mm	LPR mm	THSZMS	DCONMS mm	DRVS mm	RPMX 1/min.	torque moment Nm	Insert	
G491.32.R.02-12	32	2	8	35	M16	17	24	13600	3.2	SNHU 1204	**032**

MaxiMill – 491-12 End milling cutter









										50 774 ...	50 774 ...
Designation	DC mm	ZNF	APMX mm	OAL mm	LH mm	DCONMS $_{h6}$ mm	RPMX 1/min.	torque moment Nm	Insert		
C491.32.R.02-12-B-40	32	2	8	102	40	32	13600	3.2	SNHU 1204		**032**
C491.32.R.02-12-A-63-250	32	2	8	250	63	32	10200	3.2	SNHU 1204	**232**	

TORX® blade

80 950 ...



Screwdriver

80 950 ...



Molykote

70 950 ...



Clamping screw

70 950 ...

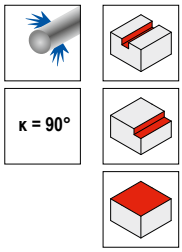


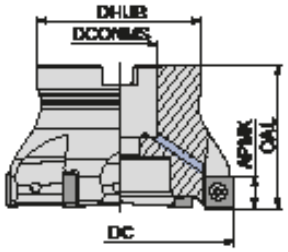
Torque screwdriver

80 950 ...

Spare parts				
DC				
32	**054**	**128**	**303**	**859**	**193**

MaxiMill – 491-12 Shell mill







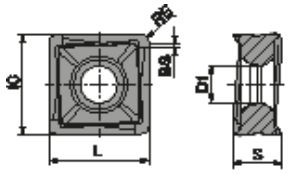
Designation	DC mm	ZNF	APMX mm	OAL mm	DHUB mm	DCONMS $_{H6}$ mm	RPMX 1/min.	torque moment Nm	Insert	50 776 ...	50 775 ...
A491.40.R.03-12	40	3	8	40	38	16	11500	3.2	SNHU 1204		**040**
A491.40.R.04-12	40	4	8	40	38	16	11500	3.2	SNHU 1204	**040**	
A491.50.R.04-12	50	4	8	40	43	22	9800	3.2	SNHU 1204		**050**
A491.50.R.05-12	50	5	8	40	43	22	9800	3.2	SNHU 1204	**050**	
A491.63.R.05-12	63	5	8	40	48	22	8500	3.2	SNHU 1204		**063**
A491.63.R.06-12	63	6	8	40	48	22	8500	3.2	SNHU 1204	**063**	
A491.80.R.06-12	80	6	8	50	58	27	7400	3.2	SNHU 1204		**080**
A491.80.R.08-12	80	8	8	50	58	27	7400	3.2	SNHU 1204	**080**	
A491.100.R.07-12	100	7	8	50	78	32	6500	3.2	SNHU 1204		**100**
A491.100.R.10-12	100	10	8	50	78	32	6500	3.2	SNHU 1204	**100**	
A491.125.R.08-12	125	8	8	63	88	40	5700	3.2	SNHU 1204		**125**
A491.125.R.12-12	125	12	8	63	88	40	5700	3.2	SNHU 1204	**125**	
A491.160.R.09-12	160	9	8	63	98	40	5000	3.2	SNHU 1204		**160** [1]
A491.160.R.14-12	160	14	8	63	98	40	5000	3.2	SNHU 1204	**160** [1]	

1) With threaded holes M12 on the front face, pitch circle diameter = 66.7 mm / Without Through Coolant

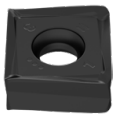
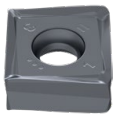
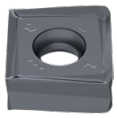
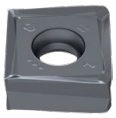
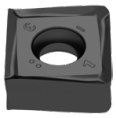
Spare parts DC	TORX® blade	 Clamping key – T	 Screwdriver	 Power Screw	 Molykote	 Clamping screw	 Torque screwdriver
	80 950 ...	**80 397 ...**	**80 950 ...**	**70 950 ...**	**70 950 ...**	**70 950 ...**	**80 950 ...**
40	**054**	**040**	**128**	**151**	**303**	**859**	**193**
50 - 160	**054**		**128**		**303**	**859**	**193**

SNHU

Designation	IC inch	L inch	S inch	D1 inch
SNHU 1204..	0.480	0.480	0.197	0.173

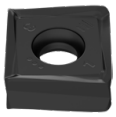
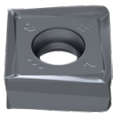
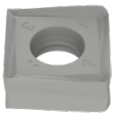
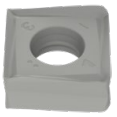


SNHU

		-M50 CTCP230	-M50 CTPP235	-F50 CTPM240	-M50 CTPM240	-F40 CTPM245	-F40 CTCM245
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
							
		SNHU	SNHU	SNHU	SNHU	SNHU	SNHU
		51 100 ...	51 100 ...	51 102 ...	51 100 ...	51 128 ...	51 128 ...
ISO	RE inch						
120408ER	0.031					45800	90801
120408SR	0.031	008	108	408	408		
120412SR	0.047		112	412			
120416SR	0.063		116	416			
120420SR	0.079		120	420			
P		●	●	○	○	●	●
M			○	●	●	●	●
K		○	○				
N							
S							○
H							
O							

15

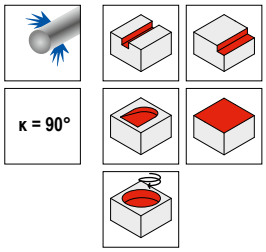
SNHU

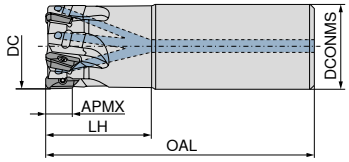
				NEW			
		-R50 CTCK215	-R50 CTPK220	-F10 CTPX715	-F10 CTWN215	-F40 CTC5240	-F40 CTCS245
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN		DRAGONSKIN	DRAGONSKIN
							
		SNHU	SNHU	SNHU	SNHU	SNHU	SNHU
		51 103 ...	51 103 ...	51 101 ...	51 101 ...	51 128 ...	51 128 ...
ISO	RE inch						
120408ER	0.031					15800	55800
120408FR	0.031			00802	358		
120408SR	0.031	508	608				
120412FR	0.047				362		
120412SR	0.047	512					
120416FR	0.063				366		
120416SR	0.063	516					
120420FR	0.079				370		
120420SR	0.079	520					
P				○			
M				○			
K		●	●	●	○		
N				●	●		
S				○		●	●
H							
O				○	○		

Milling guide

Cutting data standard values	→ 154–157	Starting Parameter	→ 167
Technical Information	→ 191–197	Chip groove description and overview	→ 198–200
Grade description and overview	→ 202–207		

MaxiMill – 211-07 End milling cutter



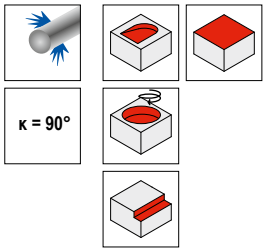


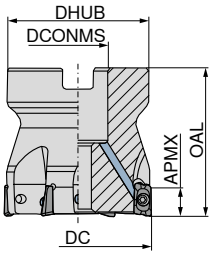


58 752 ...

Designation	DC inch	ZNF	APMX inch	OAL inch	LH inch	DCONMS inch	RPMX 1/min.	torque moment Nm	Insert	
C211.0375.R.01-07-A-0750-EF	0.375	1	0.236	3.000	0.750	0.375	68000	1	XD.T 0703	**03701**
C211.0500.R.02-07-A-0750-EF	0.500	2	0.236	3.000	0.750	0.500	66600	1	XD.T 0703	**05002**
C211.0625.R.03-07-A-125-EF-650	0.625	3	0.236	6.500	1.250	0.625	17760	1	XD.T 0703	**06203**
C211.0750.R.04-07-A-150-EF-800	0.750	4	0.236	8.000	1.500	0.750	12600	1	XD.T 0703	**07504**
C211.100.R.06-07-A0875-125-EF	1.000	6	0.236	3.500	1.250	0.875	39840	1	XD.T 0703	**10006**
C211.125.R.08-07-A100-150-EF	1.250	8	0.236	3.500	1.500	1.000	36240	1	XD.T 0703	**12508**

MaxiMill – 211-07 Shell mill







58 753 ...

Designation	DC inch	ZNF	APMX inch	OAL inch	DCONMS $_{H6}$ inch	DHUB inch	RPMX 1/min.	Insert	
A211.150.R.08-07-A050-175-EF	1.500	8	0.236	1.420	0.500	1.420	33240	XD.T 0703	**15008**
A211.200.R.10-07-A075-175-EF	2.000	10	0.236	1.750	0.750	1.750	30480	XD.T 0703	**20010**


Screwdriver


Molykote

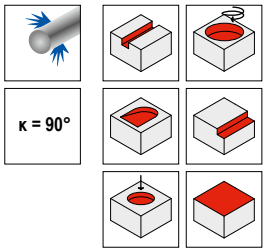

Clamping screw

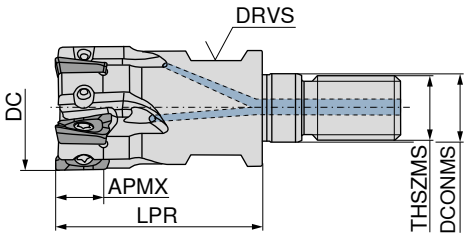
80 950 ... | **70 950 ...** | **70 950 ...**

Spare parts DC			
0.375 - 2.000	**117**	**303**	**137**

15

MaxiMill – 211-07 Screw in cutter



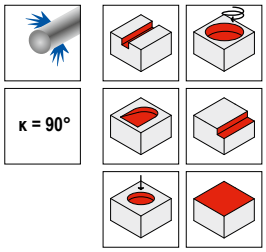


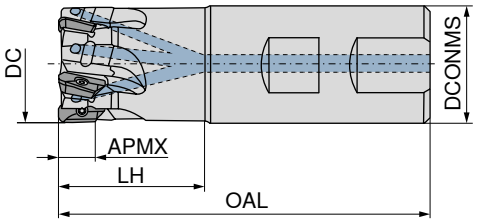


50 751 ...

Designation	DC mm	ZNF	APMX mm	LPR mm	DCONMS mm	THSZMS	DRVS mm	RPMX 1/min.	torque moment Nm	Insert	
G211.16.R.04-07	16	4	6	27	8.5	M8	10	50400	1	XD.T 0703	**016**
G211.20.R.05-07	20	5	6	33	10.5	M10	15	44280	1	XD.T 0703	**020**
G211.25.R.06-07	25	6	6	35	12.5	M12	17	39480	1	XD.T 0703	**025**
G211.32.R.08-07	32	8	6	35	17.0	M16	24	36240	1	XD.T 0703	**032**

MaxiMill – 211-07 End milling cutter









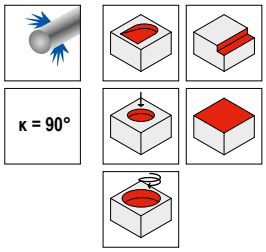


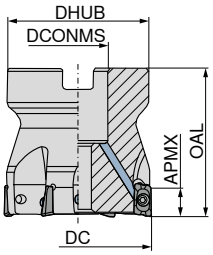


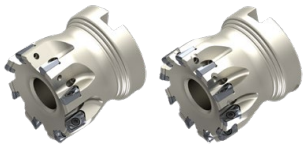
50 752 ... **50 752 ...**

Designation	DC mm	ZNF	APMX mm	OAL mm	LH mm	DCONMS mm	RPMX 1/min.	torque moment Nm	Insert		
C211.10.R.01-07-A-20	10	1	6	61.0	20	10	72000	1	XD.T 0703	**010**	
C211.12.R.02-07-A-20	12	2	6	66.5	20	12	66600	1	XD.T 0703	**012**	
C211.16.R.04-07-A/B-25	16	4	6	74.5	25	16	50400	1	XD.T 0703	**016**	**216**
C211.16.R.03-07-A-32-165	16	3	6	165.0	32	16	17760	1	XD.T 0703	**116**	
C211.20.R.05-07-A/B-25	20	5	6	77.0	25	20	44280	1	XD.T 0703	**020**	**220**
C211.20.R.04-07-A-40-200	20	4	6	200.0	40	20	12600	1	XD.T 0703	**120**	
C211.25.R.06-07-A/B20-32	25	6	6	84.0	32	20	39840	1	XD.T 0703	**025**	**225**
C211.25.R.05-07-A20-50-225	25	5	6	225.0	50	20	11280	1	XD.T 0703	**125**	
C211.32.R.08-07-A/B25-40	32	8	6	98.0	40	25	36240	1	XD.T 0703	**032**	**232**

MaxiMill – 211-07 Shell mill





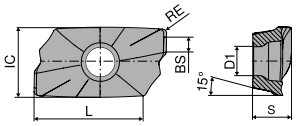


										50 753 ...		50 754 ...	
Designation	DC mm	ZNF	APMX mm	OAL mm	DCONMS $_{H6}$ mm	DHUB mm	RPMX 1/min.	torque moment Nm	Insert				
A211.32.R.06-07	32	6	6	40	16	38	36240	1	XD.T 0703		**032**		
A211.32.R.08-07	32	8	6	40	16	38	36240	1	XD.T 0703				**032**
A211.40.R.08-07	40	8	6	40	16	38	33240	1	XD.T 0703		**040**		
A211.40.R.10-07	40	10	6	40	16	38	33240	1	XD.T 0703				**040**
A211.50.R.10-07	50	10	6	40	22	43	30480	1	XD.T 0703		**050**		
A211.50.R.12-07	50	12	6	40	22	43	30480	1	XD.T 0703				**050**

	TORX® blade	Clamping key – T	Screwdriver	Power Screw	Molykote	Clamping screw	Torque screwdriver
	80 950 ...	**80 397 ...**	**80 950 ...**	**70 950 ...**	**70 950 ...**	**70 950 ...**	**80 950 ...**
Spare parts **DC**							
10 - 25	**051**		**124**		**303**	**137**	**191**
32	**051**	**040**	**124**	**151**	**303**	**137**	**191**
32 - 50	**051**		**124**		**303**	**137**	**191**

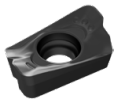
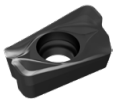
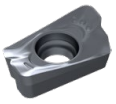
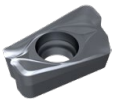
XDKT

Designation	IC inch	D1 inch	L inch	BS inch	S inch
XDKT 0703..	0.193	0.098	0.307	0.047	0.125



XDKT

XDKT

ISO	RE inch	-F50 CTCP230 DRAGONSKIN	-M50 CTCP230 DRAGONSKIN	-F50 CTPP235 DRAGONSKIN	-M50 CTPP235 DRAGONSKIN
					
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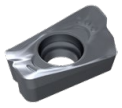
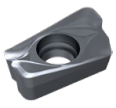
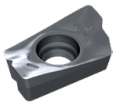
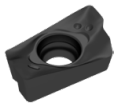
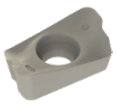
		51 033 ...	51 036 ...	51 033 ...	51 036 ...
070304SR	0.016	004	004	104	104
070308SR	0.031	008	008	108	108
P		●	●	●	●
M				○	○
K		○	○	○	○
N					
S					
H					
O					

XDKT

ISO	RE inch	-F50 CTPM240 DRAGONSKIN	-M50 CTPM240 DRAGONSKIN	-F40 CTPM245 DRAGONSKIN	-F40 CTCM245 DRAGONSKIN	-F20 CTWN215	-F40 CTC5240 DRAGONSKIN	-F40 CTCS245 DRAGONSKIN
								
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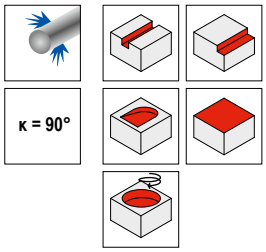
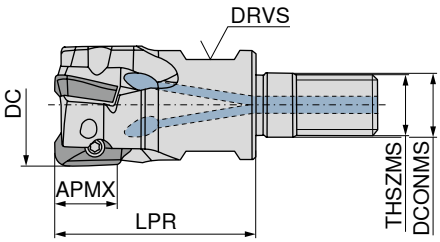
070304FR	0.016					504		
070304SR	0.016	404	404					
070308ER	0.031			458	90801		548	558
070308FR	0.031					508		
070308SR	0.031	408	408					
P		○	○	●	●			
M		●	●	●	●			
K						○		
N						●		
S					○		●	●
H								
O						○		

Milling guide

Cutting data standard values	→ 154–157	Machining strategy	→ 168
Starting Parameter	→ 168	Technical Information	→ 191–197
Chip groove description and overview	→ 198–200	Grade description and overview	→ 202–207

MaxiMill – 211-11 Screw in cutter





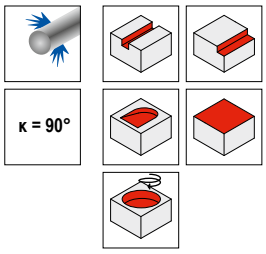


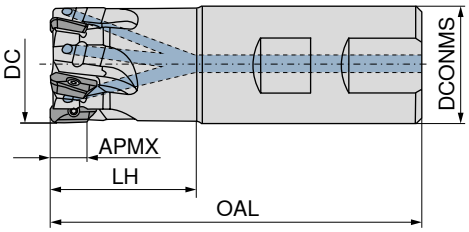
										58 736 ...
Designation	DC inch	ZNF	APMX inch	LPR inch	DCONMS inch	THSZMS	RPMX 1/min.	torque moment Nm	Insert	
G211.0625.R.02-11-125-F	0.625	2	0.394	1.250	0.335	M8	42000	1.6	XD.T 11T3	**06202**[1)]
G211.0750.R.03-11-118-F	0.750	3	0.394	1.118	0.492	M10	36900	1.6	XD.T 11T3	**07503**
G211.100.R.04-11-150-F	1.000	4	0.394	1.500	0.492	M12	33200	1.6	XD.T 11T3	**10004**
G211.125.R.05-11-150-F	1.250	5	0.394	1.500	0.669	M16	30200	1.6	XD.T 11T3	**12505**

1) Not in stock

MaxiMill – 211-11 End milling cutter

▲ Insert radius > 0.063": Modify cutter body





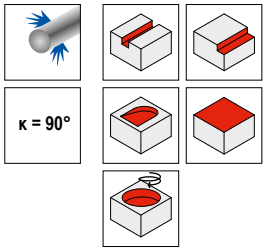


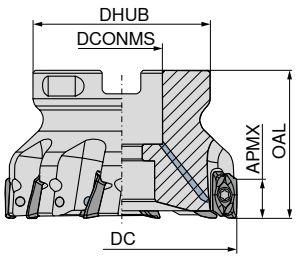
										58 737 ...	58 737 ...
Designation	DC inch	ZNF	APMX inch	OAL inch	LH inch	DCONMS $_{h6}$ inch	RPMX 1/min.	torque moment Nm	Insert		
C211.0625.R.02-11-B-100-EF	0.625	2	0.394	3.250	1.000	0.625	42000	1.6	XD.T 11T3		**26202**
C211.0625.R.02-11-A-125-EF-650	0.625	2	0.394	6.500	1.250	0.625	14800	1.6	XD.T 11T3	**06202**	
C211.0750.R.03-11-B-100-EF	0.750	3	0.394	3.500	1.000	0.750	36900	1.6	XD.T 11T3		**27503**
C211.0750.R.03-11-A-125-EF-650	0.750	3	0.394	6.500	1.250	0.750	15800	1.6	XD.T 11T3	**07503**	
C211.100.R.04-11-B-125-EF	1.000	4	0.394	3.500	1.250	1.000	33200	1.6	XD.T 11T3		**30004**
C211.100.R.04-11-A-150-EF-650	1.000	4	0.394	6.500	1.500	1.000	19900	1.6	XD.T 11T3	**10004**	
C211.125.R.05-11-B100-150-EF	1.250	5	0.394	3.750	1.500	1.000	30200	1.6	XD.T 11T3		**32505**
C211.125.R.05-11-A100-200-EF-650	1.250	5	0.394	6.500	2.000	1.000	20900	1.6	XD.T 11T3	**12505**	
C211.150.R.06-11-B-200-EF	1.500	6	0.394	4.000	2.000	1.250	27700	1.6	XD.T 11T3		**35006**

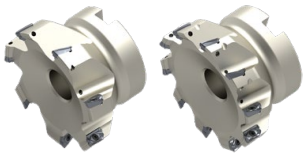
	 Screwdriver	 Molykote	 Clamping screw
	80 950 ...	**70 950 ...**	**70 950 ...**
Spare parts			
DC			
0.625 - 1.250	**039**	**303**	**128**
1.500	**039**	**303**	**131**

MaxiMill – 211-11 Shell mill

▲ Insert radius > 0.063": Modify cutter body







											58 738 ...		58 739 ...	
Designation	DC inch	ZNF	APMX inch	OAL inch	DCONMS H6 inch	DHUB inch	RPMX 1/min.	torque moment Nm	Insert					
A211.150.R.04-11-A050-175-EF	1.500	4	0.394	1.420	0.500	1.420	27700	1.6	XD.T 11T3		**15004**			
A211.150.R.06-11-A050-175-EF	1.500	6	0.394	1.420	0.500	1.420	27700	1.6	XD.T 11T3					**15006**
A211.200.R.05-11-A075-175-EF	2.000	5	0.394	1.750	0.750	1.750	25400	1.6	XD.T 11T3		**20005**			
A211.200.R.08-11-A075-175-EF	2.000	8	0.394	1.750	0.750	1.750	25400	1.6	XD.T 11T3					**20008**
A211.250.R.06-11-A100-200-EF	2.500	6	0.394	2.250	1.000	2.250	23300	1.6	XD.T 11T3		**25006**			
A211.250.R.10-11-A100-200-EF	2.500	10	0.394	2.250	1.000	2.250	23300	1.6	XD.T 11T3					**25010**
A211.300.R.07-11-A100-200-EF	3.000	7	0.394	2.250	1.000	2.250	21300	1.6	XD.T 11T3		**30007**			
A211.300.R.12-11-A100-200-EF	3.000	12	0.394	2.250	1.000	2.250	21300	1.6	XD.T 11T3					**30012**
A211.400.R.08-11-B125-200-EF	4.000	8	0.394	2.750	1.250	2.750	19600	1.6	XD.T 11T3		**40008**			
A211.400.R.14-11-B125-200-EF	4.000	14	0.394	2.750	1.250	2.750	19600	1.6	XD.T 11T3					**40014**
A211.500.R.10-11-B150-200-EF	5.000	10	0.394	3.750	1.500	3.750	17900	1.6	XD.T 11T3		**50010**			
A211.600.R.12-11-B150-200-EF	6.000	12	0.394	3.750	1.500	3.750	16500	1.6	XD.T 11T3		**60012**			



Screwdriver



Molykote



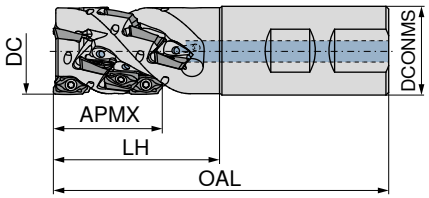
Clamping screw

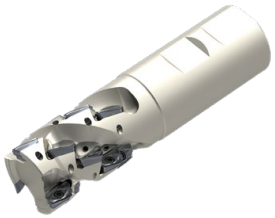
											80 950 ...		70 950 ...		70 950 ...	
Spare parts DC																
0.625 - 1.250											**039**		**303**		**128**	
1.500 - 6.000											**039**		**303**		**131**	

MaxiMill – 211-11K Extended flute cutter

▲ ZEFP = Number of inserts
▲ ZNP = Number of teeth









58 758 ...

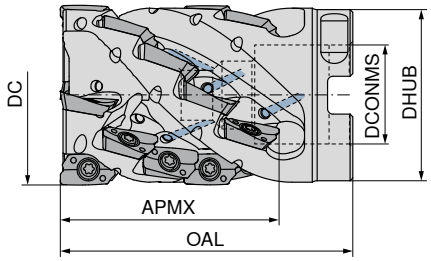
Designation	DC inch	ZNF	APMX inch	OAL inch	LH inch	DCONMS inch	ZEFP	ZNP	torque moment Nm	
C211.100.R.02K3-11-B-150-EF	1.000	2	1.060	3.750	1.500	1.000	6	3	1.6	10002
C211.125.R.02K4-11-B-200-EF	1.250	2	1.430	4.500	2.000	1.250	8	4	1.6	12502
C211.150.R.03K4-11-A-225-EF	1.500	3	1.420	5.100	2.250	1.500	12	4	1.6	15003[1)]

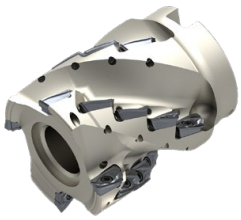
1) DIN 1835 A Shank

MaxiMill – 211-11K Extended flute cutter

▲ ZEFP = Number of inserts
▲ ZNP = Number of teeth







58 757 ...

Designation	DC inch	ZNF	APMX inch	ZEFP	ZNP	OAL inch	DCONMS H6 inch	DHUB inch	torque moment Nm	Insert	
A211.200.R.04K5-11-A075-EF	2.000	4	1.800	20	5	2.500	0.750	1.750	1.6	XD.T 11T3	20004
A211.250.R.05K7-11-A100-EF	2.500	5	2.500	35	7	3.250	1.000	2.250	1.6	XD.T 11T3	25005
A211.300.R.06K9-11-A125-EF	3.000	6	3.200	54	9	4.000	1.250	2.750	1.6	XD.T 11T3	30006


Cap screw


Screwdriver


Molykote

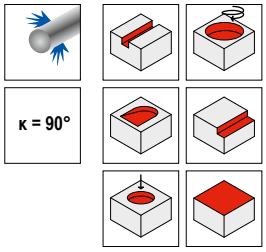

Clamping screw

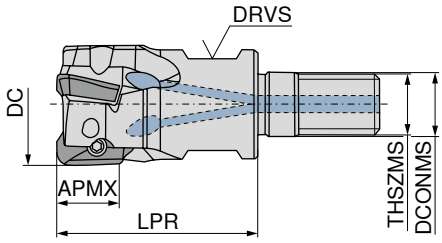
Spare parts DC	70 950 ...	80 950 ...	70 950 ...	70 950 ...
1.000 - 1.500		039	303	131
2.000	002	039	303	131
2.500	003	039	303	131
3.000	004	039	303	131

15

MaxiMill – 211-11 Screw in cutter

▲ Insert radius >1.6 mm: Modify cutter body



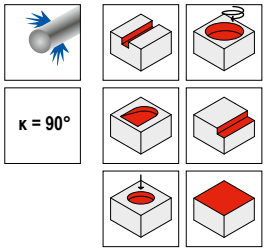


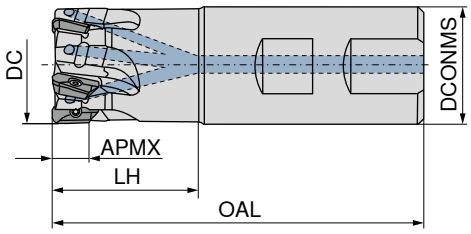


Designation	DC mm	ZNF	APMX mm	LPR mm	DCONMS mm	THSZMS	DRVS mm	RPMX 1/min.	torque moment Nm	Insert	50 736 ...
G211.16.R.02-11	16	2	10	27	8.5	M8	10	42000	1.6	XD.T 11T3	016
G211.20.R.03-11	20	3	10	33	10.5	M10	15	36900	1.6	XD.T 11T3	020
G211.25.R.03-11	25	3	10	35	12.5	M12	17	33200	1.6	XD.T 11T3	12500
G211.25.R.04-11	25	4	10	35	12.5	M12	17	33200	1.6	XD.T 11T3	025
G211.32.R.04-11	32	4	10	35	17.0	M16	24	30200	1.6	XD.T 11T3	13200
G211.32.R.05-11	32	5	10	35	17.0	M16	24	30200	1.6	XD.T 11T3	032
G211.40.R.06-11	40	6	10	35	17.0	M16	27	27700	1.6	XD.T 11T3	040

MaxiMill – 211-11 End milling cutter

▲ Insert radius >1.6 mm: Modify cutter body



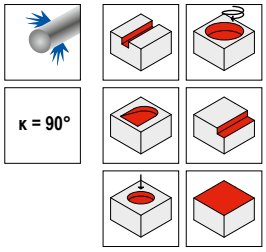


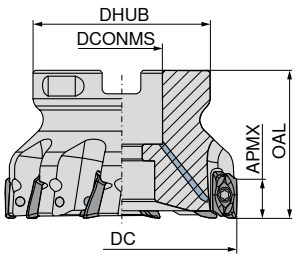


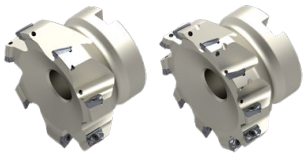
Designation	DC mm	ZNF	APMX mm	OAL mm	LH mm	DCONMS $_{h6}$ mm	RPMX 1/min.	torque moment Nm	Insert	50 737 ...	50 737 ...
C211.12.R.01-11-B-20	12	1	10	75	20	16	55000	1.6	XD.T 11T3		012
C211.16.R.02-11-A/B-25	16	2	10	75	25	16	42000	1.6	XD.T 11T3	116	016
C211.16.R.02-11-A15-32-165	16	2	10	165	32	15	14800	1.6	XD.T 11T3	316	
C211.16.R.02-11-A-32-165	16	2	10	165	32	16	14800	1.6	XD.T 11T3	216	
C211.20.R.03-11-A-25	20	3	10	77	25	20	36900	1.6	XD.T 11T3	120	
C211.20.R.03-11-B-25	20	3	10	77	25	20	36900	1.6	XD.T 11T3		020
C211.20.R.02-11-B-25	20	2	10	77	25	20	36900	1.6	XD.T 11T3		02002
C211.20.R.02-11-A-25	20	2	10	77	25	20	36900	1.6	XD.T 11T3	12002	
C211.20.R.03-11-A-32-165	20	3	10	165	32	20	15800	1.6	XD.T 11T3	320	
C211.20.R.02-11-A-40-200	20	2	10	200	40	20	10500	1.6	XD.T 11T3	420	
C211.20.R.02-11-A19-40-200	20	2	10	200	40	19	10500	1.6	XD.T 11T3	620	
C211.25.R.03-11-A/B-32	25	3	10	90	32	25	33200	1.6	XD.T 11T3	625	725
C211.25.R.04-11-A/B-32	25	4	10	90	32	25	33200	1.6	XD.T 11T3	125	025
C211.25.R.04-11-A-40-165	25	4	10	165	40	25	19900	1.6	XD.T 11T3	325	
C211.25.R.03-11-A-50-225	25	3	10	225	50	25	9400	1.6	XD.T 11T3	425	
C211.25.R.03-11-A24-50-225	25	3	10	225	50	24	9400	1.6	XD.T 11T3	825	
C211.25.R.02-11-A-50-225	25	2	10	225	50	25	9400	1.6	XD.T 11T3	02502	
C211.32.R.04-11-A-40	32	4	10	102	40	32	30200	1.6	XD.T 11T3	13204	
C211.32.R.05-11-A/B-40	32	5	10	102	40	32	30200	1.6	XD.T 11T3	132	032
C211.32.R.04-11-B-25	32	4	10	102	40	32	30200	1.6	XD.T 11T3		83200
C211.32.R.05-11-B25-40	32	5	10	102	40	25	30200	1.6	XD.T 11T3		73200
C211.32.R.04-11-A25-40	32	4	10	102	40	25	30200	1.6	XD.T 11T3	53204	
C211.32.R.05-11-A-50-165	32	5	10	165	50	32	20900	1.6	XD.T 11T3	332	
C211.32.R.04-11-A-64-250	32	4	10	250	64	32	8500	1.6	XD.T 11T3	432	
C211.40.R.06-11-B32-50	40	6	10	110	50	32	27700	1.6	XD.T 11T3		04000
C211.40.R.06-11-B-50	40	6	10	122	50	40	27700	1.6	XD.T 11T3		14000

MaxiMill – 211-11 Shell mill

▲ Insert radius >1.6 mm: Modify cutter body





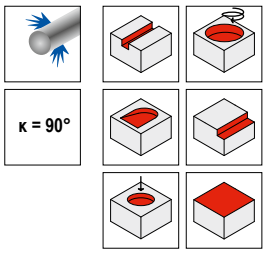


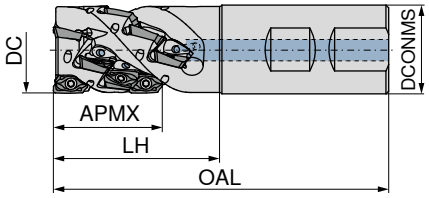
											50 738 ...		**50 739 ...**	
Designation	DC mm	ZNF	APMX mm	OAL mm	DCONMS $_{H6}$ mm	DHUB mm	RPMX 1/min.	torque moment Nm	Insert					
A211.40.R.04-11	40	4	10	40	16	38	27700	1.6	XD.T 11T3		**040**			
A211.40.R.06-11	40	6	10	40	16	38	27700	1.6	XD.T 11T3				**040**	
A211.50.R.05-11	50	5	10	40	22	43	25400	1.6	XD.T 11T3		**050**			
A211.50.R.08-11	50	8	10	40	22	43	25400	1.6	XD.T 11T3				**050**	
A211.63.R.06-11	63	6	10	40	22	48	23300	1.6	XD.T 11T3		**063**			
A211.63.R.10-11	63	10	10	40	22	48	23300	1.6	XD.T 11T3				**063**	
A211.80.R.07-11	80	7	10	50	27	58	21300	1.6	XD.T 11T3		**080**			
A211.80.R.10-11	80	10	10	50	27	58	21300	1.6	XD.T 11T3				**180**	
A211.80.R.12-11	80	12	10	50	27	58	21300	1.6	XD.T 11T3				**08012**	
A211.100.R.08-11	100	8	10	50	32	78	19600	1.6	XD.T 11T3		**10000**			
A211.100.R.14-11	100	14	10	50	32	78	19600	1.6	XD.T 11T3				**10014**	
A211.125.R.10-11	125	10	10	63	40	88	17900	1.6	XD.T 11T3		**12500**			

	TORX® blade		 Clamping key – T		 Screwdriver		 Power Screw		 Molykote		 Clamping screw		 Torque screwdriver	
	80 950 ...		**80 397 ...**		**80 950 ...**		**70 950 ...**		**70 950 ...**		**70 950 ...**		**80 950 ...**	
Spare parts **DC**														
12		**043**				**125**				**303**				**191**
16 - 32		**043**				**125**				**303**		**128**		**191**
40		**043**		**040**		**125**		**151**		**303**		**131**		**191**
50		**043**		**050**		**125**		**154**		**303**		**131**		**191**
63 - 125		**043**				**125**				**303**		**131**		**191**

MaxiMill – 211-11KN shell end mill shank

▲ ZEFP = Number of inserts
▲ ZNP = Number of teeth







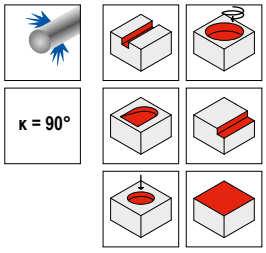


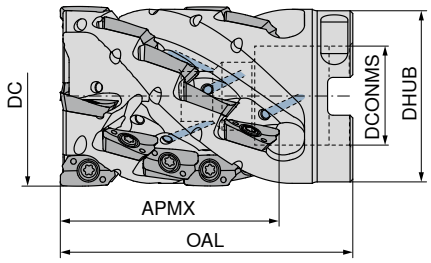
50 784 ...

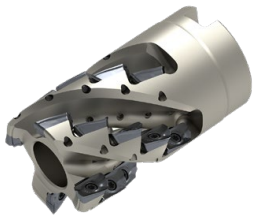
Designation	DC mm	ZNF	APMX mm	OAL mm	LH mm	DCONMS mm	ZEFP	ZNP	RPMX 1/min.	torque moment Nm	Insert	
C211.25.R.02KN3-11-B-40	25	2	28	97	40	25	6	3	19800	1.6	XD.T 11T3	**02523**
C211.25.R.02KN4-11-B-50	25	2	37	107	50	25	8	4	19800	1.6	XD.T 11T3	**02524**
C211.25.R.02KN5-11-B-60	25	2	46	117	60	25	10	5	19800	1.6	XD.T 11T3	**02525**
C211.32.R.02KN4-11-B-50	32	2	37	111	50	32	8	4	19200	1.6	XD.T 11T3	**03224**
C211.32.R.03KN5-11-B-60	32	3	46	121	60	32	15	5	19200	1.6	XD.T 11T3	**03235**
C211.40.R.03KN4-11-B32-50	40	3	37	111	50	32	12	4	18300	1.6	XD.T 11T3	**04034**
C211.40.R.04KN5-11-B32-60	40	4	46	121	60	32	20	5	18300	1.6	XD.T 11T3	**04045**

MaxiMill – 211-11KN shell end face mill

▲ ZEFP = Number of inserts
▲ ZNP = Number of teeth







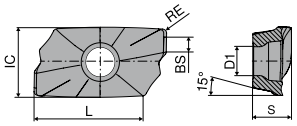
50 794 ...

Designation	DC mm	ZNF	APMX mm	ZEFP	ZNP	OAL mm	DCONMS $_{H6}$ mm	DHUB mm	RPMX 1/min.	torque moment Nm	Insert	
A211.40.R.03KN4-11	40	3	37	12	4	65	22	38	18300	1.6	XD.T 11T3	**04034**
A211.40.R.04KN4-11	40	4	37	16	4	65	22	38	18300	1.6	XD.T 11T3	**04044**
A211.40.R.04KN5-11	40	4	46	20	5	74	22	38	18300	1.6	XD.T 11T3	**04045**
A211.50.R.04KN5-11	50	4	46	20	5	75	27	48	17100	1.6	XD.T 11T3	**05045**
A211.50.R.05KN5-11	50	5	46	25	5	75	27	48	17100	1.6	XD.T 11T3	**05055**
A211.50.R.05KN6-11	50	5	55	30	6	85	27	48	17100	1.6	XD.T 11T3	**05056**

	 Cap screw	TORX® blade	Screwdriver	 Molykote	 Clamping screw	 Socket head screw	 Torque screwdriver
	70 950 ...	**80 950 ...**	**80 950 ...**	**70 950 ...**	**70 950 ...**	**70 950 ...**	**80 950 ...**
Spare parts Designation							
A211.40.R.03KN4-11		**043**	**125**	**303**	**20400**	**20900**	**191**
A211.40.R.04KN4-11		**043**	**125**	**303**	**20400**	**20900**	**191**
A211.40.R.04KN5-11		**043**	**125**	**303**	**20400**	**21000**	**191**
A211.50.R.04KN5-11	**002**	**043**	**125**	**303**	**20400**	**181**	**191**
A211.50.R.05KN5-11	**002**	**043**	**125**	**303**	**20400**	**181**	**191**
A211.50.R.05KN6-11	**002**	**043**	**125**	**303**	**20400**	**181**	**191**
C211.25.R.02KN3-11-B-40		**043**	**125**	**303**	**20700**		**191**
C211.25.R.02KN4-11-B-50		**043**	**125**	**303**	**20700**		**191**
C211.25.R.02KN5-11-B-60		**043**	**125**	**303**	**20700**		**191**
C211.32.R.02KN4-11-B-50		**043**	**125**	**303**	**20700**		**191**
C211.32.R.03KN5-11-B-60		**043**	**125**	**303**	**20700**		**191**
C211.40.R.03KN4-11-B32-50		**043**	**125**	**303**	**20400**		**191**
C211.40.R.04KN5-11-B32-60		**043**	**125**	**303**	**20400**		**191**

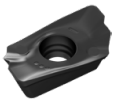
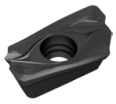
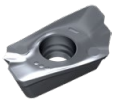
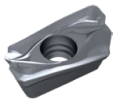
XDKT / XDHT

Designation	IC inch	D1 inch	L inch	BS inch	S inch
XD.T 11T302..	0.268	0.110	0.417	0.079	0.150
XD.T 11T304..	0.268	0.110	0.417	0.071	0.150
XD.T 11T308..	0.268	0.110	0.417	0.055	0.150
XD.T 11T312..	0.268	0.110	0.417	0.055	0.150
XD.T 11T316..	0.268	0.110	0.417	0.055	0.150
XD.T 11T320..	0.268	0.110	0.417	0.055	0.150
XD.T 11T325..	0.268	0.110	0.417	0.055	0.150
XD.T 11T332..	0.268	0.110	0.417	0.031	0.150
XD.T 11T340..	0.268	0.110	0.417	-	0.150
XDHT 11T350..	0.268	0.110	0.417	-	0.150
XDKT 11T332..	0.268	0.110	0.417	0.055	0.150

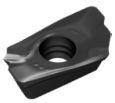
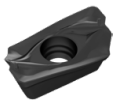
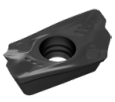
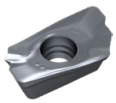
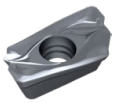
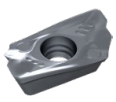


XDKT

XDKT

		-F50 CTCP220	-M50 CTCP220	-F50 CTPP225	-M50 CTPP225
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
					
		F	M	F	M
		XDKT	XDKT	XDKT	XDKT
		51 034 ...	51 037 ...	51 034 ...	51 037 ...
ISO	RE inch				
11T308SR	0.031	258	258	058	058
P		●	●	●	●
M					
K					
N					
S					
H					
O					

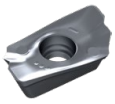
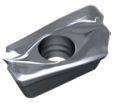
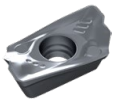
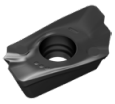
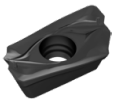
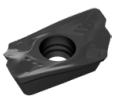
XDKT

		-F50 CTCP230	-M50 CTCP230	-R50 CTCP230	-F50 CTPP235	-M50 CTPP235	-R50 CTPP235
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
							
		F	M	R	F	M	R
		XDKT	XDKT	XDKT	XDKT	XDKT	XDKT
		51 034 ...	51 037 ...	51 039 ...	51 034 ...	51 037 ...	51 039 ...
ISO	RE inch						
11T304SR	0.016	004	004	004	104	104	104
11T308SR	0.031	008	008	008	108	108	108
11T312SR	0.047		012			112	
11T320SR	0.079	020 1)	020 1)	020 1)	120 1)	120 1)	120 1)
11T325SR	0.098	025 1)	025 1)	025 1)	125 1)	125 1)	125 1)
P		●	●	●	●	●	●
M					○	○	○
K		○	○	○	○	○	○
N							
S							
H							
O							

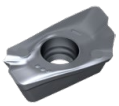
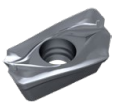
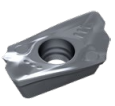
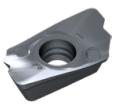
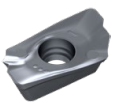
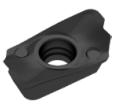
1) Insert radius > 0.063": Modify cutter body

15

XDKT

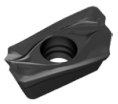
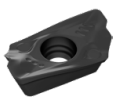
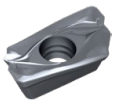
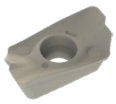
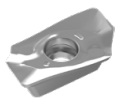
		-F50 CTPM225 DRAGONSKIN	-M50 CTPM225 DRAGONSKIN	-R50 CTPM225 DRAGONSKIN	-F50 CTCM235 DRAGONSKIN	-M50 CTCM235 DRAGONSKIN	-R50 CTCM235 DRAGONSKIN
							
		F XDKT	M XDKT	R XDKT	F XDKT	M XDKT	R XDKT
		51 034 ...	51 037 ...	51 039 ...	51 034 ...	51 037 ...	51 039 ...
ISO	RE inch						
11T308SR	0.031	208	208	208	308	308	308
P		●	●	●	●	●	●
M		●	●	●	●	●	●
K							
N							
S							
H							
O							

XDKT

		-F50 CTPM240 DRAGONSKIN	-M50 CTPM240 DRAGONSKIN	-R50 CTPM240 DRAGONSKIN	-F40 CTPM245 DRAGONSKIN	-F50 CTPM245 DRAGONSKIN	-F40 CTCM245 DRAGONSKIN	-F50 CTCM245 DRAGONSKIN
								
		F XDKT	M XDKT	R XDKT	F XDKT	F XDKT	F XDKT	F XDKT
		51 034 ...	51 037 ...	51 039 ...	51 113 ...	51 034 ...	51 113 ...	51 034 ...
ISO	RE inch							
11T304ER	0.016				454		90401	
11T304SR	0.016		404					
11T308ER	0.031				458		90801	
11T308SR	0.031	408	408	408		458		90801
11T312ER	0.047				462		91201	
11T312SR	0.047	412	412	412				
11T316ER	0.063				466		91601	
11T320ER	0.079				470 [1]		92001 [1]	
11T320SR	0.079	420 [1]	420 [1]	420 [1]				
11T325ER	0.098				475 [1]		92501 [1]	
11T332ER	0.126				482 [1]		93201 [1]	
11T332SR	0.126	432 [1]	432 [1]	432 [1]				
11T340ER	0.157				490 [1]		94001 [1]	
P		○	○	○	●	●	●	●
M		●	●	●	●	●	●	●
K								
N								
S							○	○
H								
O								

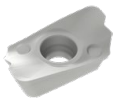
1) Insert radius > 0.063": Modify cutter body

XDKT / XDHT

		-M50 CTCK215 DRAGONSKIN	-R50 CTCK215 DRAGONSKIN	-M50 CTPK220 DRAGONSKIN	-F20 CTWN215	NEW -F10 CTPX715 DRAGONSKIN	-27P H216T
							
		M	R	M	F	F	F
		XDKT	XDKT	XDKT	XDKT	XDHT	XDHT
		51 037 ...	51 039 ...	51 037 ...	50 478 ...	51 155 ...	50 477 ...
ISO	RE inch						
11T302FR	0.008				502	00202	502
11T304FR	0.016				504	00402	504
11T304SR	0.016	504					
11T308FR	0.031				508	00802	508
11T308SR	0.031	508	508	608			
11T312FR	0.047					01202	512
11T316FR	0.063					01602	516
11T320FR	0.079				520 1)	02002 1)	520 1)
11T325FR	0.098				525 1)	02502 1)	525 1)
11T332FR	0.126					03202 1)	532 1)
11T340FR	0.157					04002 1)	540 1)
11T350FR	0.197					05002 1)	550 1)
P						○	
M						○	
K		●	●	●	○	●	○
N					●	●	●
S						○	
H							
O					○	○	○

1) Insert radius > 0.063": Modify cutter body

XDKT

		-F40 CTC5240 DRAGONSKIN	-F40 CTCS245 DRAGONSKIN	-R60 CTP6215
				
		F	F	R
		XDKT	XDKT	XDKT
		50 463 ...	51 113 ...	50 464 ...
ISO	RE inch			
11T304ER	0.016	504		
11T308ER	0.031	500	558	
11T308SR	0.031			300
11T312ER	0.047	512	562	
11T316ER	0.063	516	566	
11T320ER	0.079	520 1)	570 1)	
11T325ER	0.098	525 1)	57500 1)	
11T332ER	0.126	532 1)	582 1)	
11T340ER	0.157	540 1)	59000 1)	
P				
M				
K				●
N				
S		●	●	
H				●
O				

1) Insert radius > 0.063": Modify cutter body

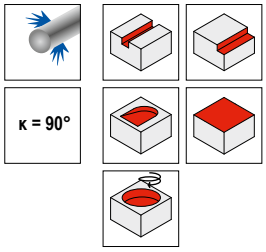
Milling guide

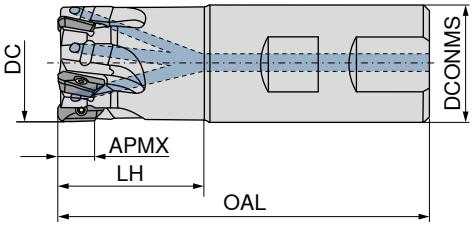
Cutting data standard values	→ 154–157	Machining strategy	→ 169
Starting parameters	→ 169	Technical Information	→ 191–197
Chip groove description and overview	→ 198–200	Grade description and overview	→ 202–207

15

MaxiMill – 211-15 End milling cutter

▲ Insert radius > 0.098": Modify cutter body



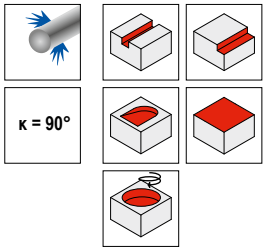


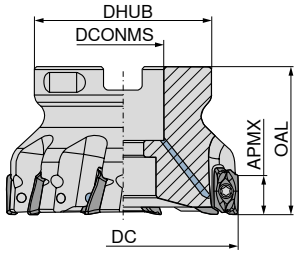


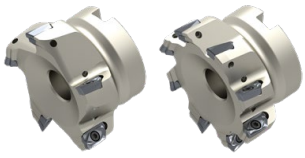
Designation	DC inch	ZNF	APMX inch	OAL inch	LH inch	DCONMS inch	RPMX 1/min.	torque moment Nm	Insert	58 747 ...	58 747 ...
C211.100.R.02-15-A-200-EF-800	1.000	2	0.551	8.000	2.000	1.000	7520	3.2	XD.T 1505	**10002**	
C211.125.R.03-15-B-150-EF-400	1.250	3	0.551	4.000	1.500	1.250	24160	3.2	XD.T 1505		**32503**
C211.125.R.03-15-A-250-EF-1000	1.250	3	0.551	10.000	2.500	1.250	6800	3.2	XD.T 1505	**12503**	
C211.150.R.03-15-B125-200-EF-450	1.500	3	0.551	4.500	2.000	1.250	22160	3.2	XD.T 1505		**35003**
C211.150.R.04-15-B125-200-EF-450	1.500	4	0.551	4.500	2.000	1.250	22160	3.2	XD.T 1505		**35004**
C211.150.R.03-15-A125-300-EF-1000	1.500	3	0.551	10.000	3.000	1.250	6120	3.2	XD.T 1505	**15003**	

MaxiMill – 211-15 Shell mill

▲ Insert radius > 0.098": Modify cutter body







Designation	DC inch	ZNF	APMX inch	OAL inch	DCONMS $_{H6}$ inch	DHUB inch	RPMX 1/min.	torque moment Nm	Insert	58 748 ...	58 749 ...
A211.150.R.03-15-A050-175-EF	1.500	3	0.551	1.420	0.500	1.420	22160	3.2	XD.T 1505	**15003**	
A211.200.R.05-15-A075-175-EF	2.000	5	0.551	1.750	0.750	1.750	20320	3.2	XD.T 1505	**20005**	
A211.250.R.06-15-A100-200-EF	2.500	6	0.551	2.250	1.000	2.250	18640	3.2	XD.T 1505	**25006**	
A211.300.R.05-15-A100-200-EF	3.000	5	0.551	2.250	1.000	2.250	17040	3.2	XD.T 1505	**30005**	
A211.300.R.08-15-A100-200-EF	3.000	8	0.551	2.250	1.000	2.250	17040	3.2	XD.T 1505		**30008**
A211.400.R.06-15-A125-200-EF	4.000	6	0.551	2.750	1.250	2.750	16000	3.2	XD.T 1505	**40006**	
A211.400.R.09-15-A125-200-EF	4.000	9	0.551	2.750	1.250	2.750	16000	3.2	XD.T 1505		**40009**
A211.500.R.10-15-B150-250-EF	5.000	10	0.551	3.750	1.500	3.750	14320	3.2	XD.T 1505	**50010**	
A211.600.R.08-15-B150-250-EF	6.000	8	0.551	2.500	1.500	3.750	13200	3.2	XD.T 1505	**60008**	
A211.600.R.10-15-B150-250-EF	6.000	10	0.551	3.750	1.500	3.750	13200	3.2	XD.T 1505		**60010**



Screwdriver



Molykote



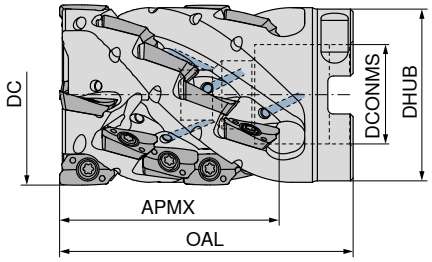
Clamping screw

Spare parts DC	80 950 ...	70 950 ...	70 950 ...
1.000 - 6.000	**120**	**303**	**839**

MaxiMill – 211-15K Extended flute cutter

▲ ZEFP = Number of Inserts
▲ ZNP = Number of rows







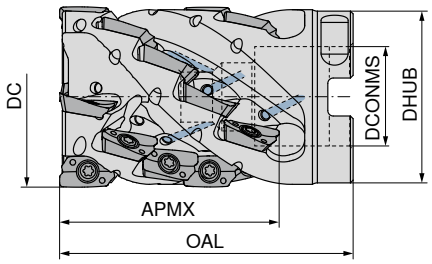
58 759 ...

Designation	DC inch	ZNF	APMX inch	ZEFP	ZNP	OAL inch	DCONMS $_{H6}$ inch	DHUB inch	RPMX 1/min.	torque moment Nm	Insert	
A211.200.R.03K4-15-A075-EF	2.000	3	2.000	12	4	3.000	0.750	1.750	13600	3.2	XD.T 1505	**20003**
A211.250.R.04K5-15-A100-EF	2.500	4	2.500	20	5	3.500	1.000	2.250	12500	3.2	XD.T 1505	**25004**
A211.300.R.04K6-15-A125-EF	3.000	4	3.000	24	6	4.000	1.250	2.750	11360	3.2	XD.T 1505	**30104**

MaxiMill – 211-15K Extended flute cutter

▲ ZEFP = Number of Inserts
▲ ZNP = Number of rows







58 759 ...

Designation	DC inch	ZNF	APMX inch	ZEFP	ZNP	OAL inch	DCONMS $_{H6}$ inch	DHUB inch	RPMX 1/min.	torque moment Nm	Insert	
A211.400.R.05KN6-15-A150-EF	4.000	5	3.091	30	6	4.250	1.500	3.750	10100	3.2	XD.T 1505	**40005**


Cap screw
70 950 ...

Screwdriver
80 950 ...


Molykote
70 950 ...

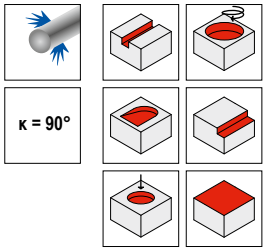

Clamping screw
70 950 ...

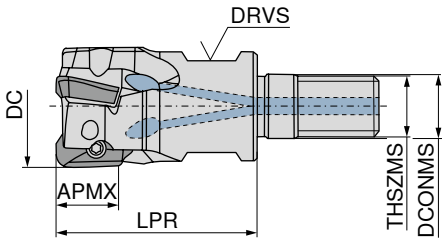
Spare parts DC				
2.000	**002**	**120**	**303**	**839**
2.500 - 3.000	**003**	**120**	**303**	**839**
4.000	**004**	**128**	**303**	**20500**

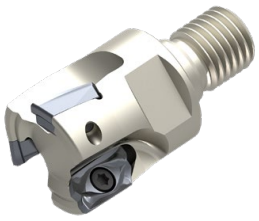
15

MaxiMill – 211-15 Screw in cutter

▲ Insert radius >2.5 mm: Modify cutter body



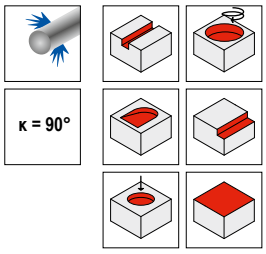


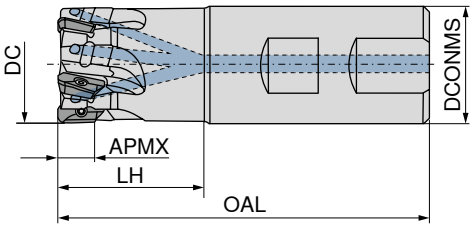


Designation	DC mm	ZNF	APMX mm	LPR mm	DCONMS mm	THSZMS	DRVS mm	RPMX 1/min.	torque moment Nm	Insert	50 746 ...
G211.25.R.02-15	25	2	14	35	12.5	M12	17	26560	3.2	XD.T 1505	**025**
G211.32.R.03-15	32	3	14	35	17.0	M16	24	30200	3.2	XD.T 1505	**032**
G211.40.R.04-15	40	4	14	40	17.0	M16	27	27700	3.2	XD.T 1505	**040**

MaxiMill – 211-15 End milling cutter

▲ Insert radius >2.5 mm: Modify cutter body



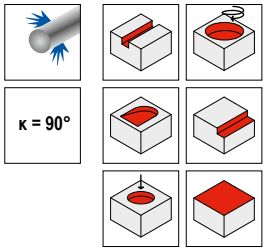


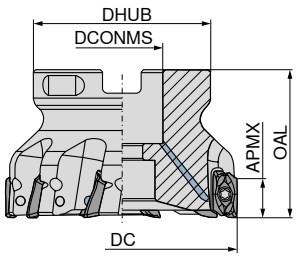


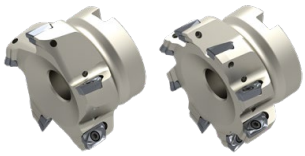
Designation	DC mm	ZNF	APMX mm	OAL mm	LH mm	DCONMS mm	RPMX 1/min.	torque moment Nm	Insert	50 747 ...	50 747 ...
C211.25.R.02-15-B20-32	25	2	14	83	32	20	26560	3.2	XD.T 1505		**125**
C211.25.R.02-15-B/A-32	25	2	14	90	32	25	26560	3.2	XD.T 1505	**225**	**025**
C211.25.R.02-15-A-50-225	25	2	14	225	50	25	7520	3.2	XD.T 1505	**325**	
C211.32.R.03-15-B25-40	32	3	14	96	40	25	22160	3.2	XD.T 1505		**132**
C211.32.R.03-15-A-40	32	3	14	103	40	32	24160	3.2	XD.T 1505	**232**	
C211.32.R.03-15-B-40	32	3	14	103	40	32	24160	3.2	XD.T 1505		**032**
C211.32.R.03-15-A-63-250	32	3	14	250	63	32	6800	3.2	XD.T 1505	**332**	
C211.40.R.04-15-A-50	40	4	14	110	50	32	22160	3.2	XD.T 1505	**240**	
C211.40.R.04-15-B32-50	40	4	14	110	50	32	22160	3.2	XD.T 1505		**040**
C211.40.R.03-15-A-50-275	40	3	14	275	50	32	6120	3.2	XD.T 1505	**340**	

MaxiMill – 211-15 Shell mill

▲ Insert radius >2.5 mm: Modify cutter body







Designation	DC mm	ZNF	APMX mm	OAL mm	DCONMS H6 mm	DHUB mm	RPMX 1/min.	torque moment Nm	Insert	50 748 ...	50 749 ...
A211.40.R.03-15	40	3	14	40	16	38	22160	3.2	XD.T 1505	**040**	
A211.40.R.04-15	40	4	14	40	16	38	22160	3.2	XD.T 1505		**040**
A211.50.R.03-15	50	3	14	40	22	43	20320	3.2	XD.T 1505	**050**	
A211.50.R.05-15	50	5	14	40	22	43	20320	3.2	XD.T 1505		**050**
A211.63.R.04-15	63	4	14	45	22	48	18640	3.2	XD.T 1505	**063**	
A211.63.R.06-15	63	6	14	45	22	48	18640	3.2	XD.T 1505		**063**
A211.80.R.05-15	80	5	14	50	27	58	17040	3.2	XD.T 1505	**080**	
A211.80.R.08-15	80	8	14	50	27	58	17040	3.2	XD.T 1505		**080**
A211.100.R.06-15	100	6	14	50	32	78	15680	3.2	XD.T 1505	**100**	
A211.100.R.10-15	100	10	14	50	32	78	15680	3.2	XD.T 1505		**100**
A211.125.R.07-15	125	7	14	63	40	88	14320	3.2	XD.T 1505	**125**	
A211.125.R.11-15	125	11	14	63	40	88	14320	3.2	XD.T 1505		**125**
A211.160.R.08-15	160	8	14	63	40	93	13200	3.2	XD.T 1505	**160** 1)	
A211.160.R.12-15	160	12	14	63	40	93	13200	3.2	XD.T 1505		**160** 1)

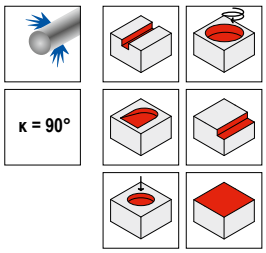
1) Without Through Coolant

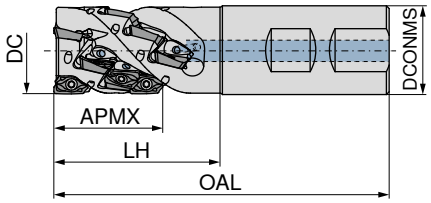
Spare parts DC	TORX® blade **80 950 ...**	 Clamping key – T **80 397 ...**	 Screwdriver **80 950 ...**	 Power Screw **70 950 ...**	 Molykote **70 950 ...**	 Clamping screw **70 950 ...**	 Torque screwdriver **80 950 ...**
25 - 32	**054**		**128**		**303**	**839**	**193**
40	**054**	**040**	**128**	**151**	**303**	**839**	**193**
50	**054**	**050**	**128**	**154**	**303**	**839**	**193**
63 - 160	**054**		**128**		**303**	**839**	**193**

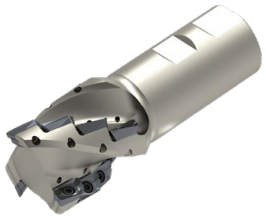
15

MaxiMill – 211-15KN shell end mill shank

▲ ZEFP = Number of Inserts
▲ ZNP = Number of rows







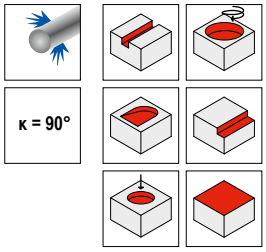


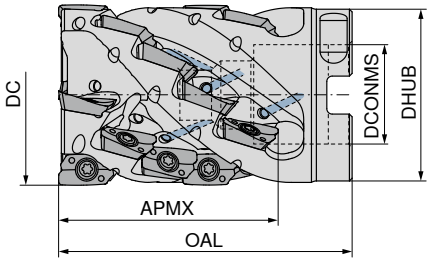
50 783 ...

Designation	DC mm	ZNF	APMX mm	OAL mm	LH mm	DCONMS mm	ZEFP	ZNP	RPMX 1/min.	torque moment Nm	Insert	
C211.40.R.03KN3-15-B32-60	40	3	39.6	121	60	32	9	3	14800	3.2	XD.T 1505	**04033**
C211.50.R.03KN4-15-B40-68	50	3	52.6	138	67	40	12	4	13600	3.2	XD.T 1505	**05034**

MaxiMill – 211-15KN shell end face mill

▲ ZEFP = Number of Inserts
▲ ZNP = Number of rows







50 781 ...

Designation	DC mm	ZNF	APMX mm	ZEFP	ZNP	OAL mm	DCONMS $_{H6}$ mm	DHUB mm	RPMX 1/min.	torque moment Nm	Insert	
A211.50.R.03KN4-15	50	3	52.6	12	4	87	27	48	13600	3.2	XD.T 1505	**05034**
A211.50.R.03KN5-15	50	3	65.8	15	5	100	27	48	13600	3.2	XD.T 1505	**05035**
A211.50.R.04KN5-15	50	4	65.8	20	5	100	27	48	13600	3.2	XD.T 1505	**05045**
A211.63.R.03KN4-15	63	3	52.6	12	4	76	27	58	12500	3.2	XD.T 1505	**06334**
A211.63.R.03KN5-15	63	3	65.8	15	5	90	27	58	12500	3.2	XD.T 1505	**06335**
A211.63.R.04KN6-15	63	4	78.5	24	6	102	27	58	12500	3.2	XD.T 1505	**06346**
A211.63.R.05KN5-15	63	5	65.8	25	5	90	27	58	12500	3.2	XD.T 1505	**06355**
A211.80.R.04KN5-15	80	4	65.8	20	5	90	32	78	11360	3.2	XD.T 1505	**08045**
A211.80.R.05KN6-15	80	5	78.5	30	6	102	32	78	11360	3.2	XD.T 1505	**08056**

	 Cap screw	TORX® blade	 Screwdriver	 Molykote	 Clamping screw	 Socket head screw	 Torque screwdriver
	70 950 ...	**80 950 ...**	**80 950 ...**	**70 950 ...**	**70 950 ...**	**70 950 ...**	**80 950 ...**
Spare parts Designation							
A211.50.R.03KN4-15	**002**	**054**	**128**	**303**	**20800**	**181**	**193**
A211.50.R.03KN5-15	**002**	**054**	**128**	**303**	**20800**	**181**	**193**
A211.50.R.04KN5-15	**002**	**054**	**128**	**303**	**20800**	**181**	**193**
A211.63.R.03KN4-15	**002**	**054**	**128**	**303**	**20500**	**181**	**193**
A211.63.R.03KN5-15	**002**	**054**	**128**	**303**	**20500**	**181**	**193**
A211.63.R.04KN6-15	**002**	**054**	**128**	**303**	**20500**	**181**	**193**
A211.63.R.05KN5-15	**002**	**054**	**128**	**303**	**20500**	**181**	**193**
A211.80.R.04KN5-15	**004**	**054**	**128**	**303**	**20500**	**234**	**193**
A211.80.R.05KN6-15	**004**	**054**	**128**	**303**	**20500**	**234**	**193**
C211.40.R.03KN3-15-B32-60		**054**	**128**	**303**	**20800**		**193**
C211.50.R.03KN4-15-B40-68		**054**	**128**	**303**	**20800**		**193**

XDKT

Designation	IC inch	D1 inch	L inch	BS inch	S inch
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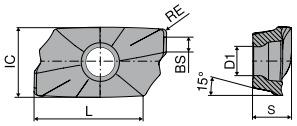
XDKT 150512..	0.366	0.173	0.583	0.063	0.219
XDKT 150516..	0.366	0.173	0.583	0.063	0.219
XDKT 150520..	0.366	0.173	0.583	0.063	0.219
XDKT 150525..	0.366	0.173	0.583	0.063	0.219
XDKT 150530..	0.366	0.173	0.583	0.063	0.219
XDKT 150532..	0.366	0.173	0.583	0.075	0.219
XDKT 150540..	0.366	0.173	0.583	0.047	0.219
XDKT 150560..	0.366	0.173	0.583	-	0.219



XDKT

XDKT

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		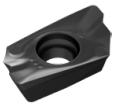	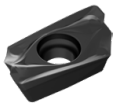	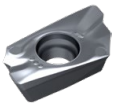	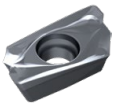
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K					
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XDKT

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		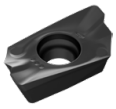	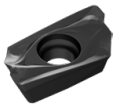	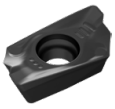	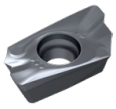	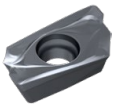	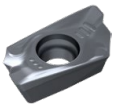
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150520SR	0.079			020		120	120
150530SR	0.118		030 1)			130 1)	
150540SR	0.157		040 1)			140 1)	
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M					○	○	○
K		○	○	○	○	○	○
N							
S							
H							
O							

1) Insert radius > 0.098": Modify cutter body

15

XDKT

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		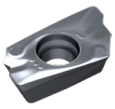	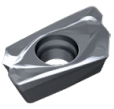	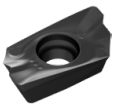	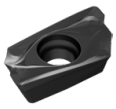
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K					
N					
S					
H					
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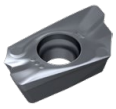
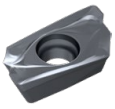
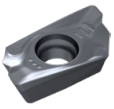
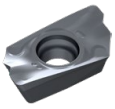
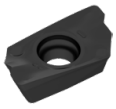
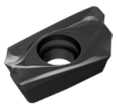
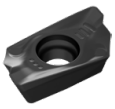
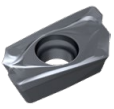
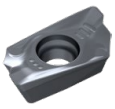
XDKT

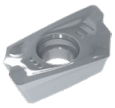
		-F50 CTPM240 DRAGONSKIN	-M50 CTPM240 DRAGONSKIN	-R50 CTPM240 DRAGONSKIN	-F40 CTPM245 DRAGONSKIN	-F40 CTCM245 DRAGONSKIN
						
		F XDKT	M XDKT	R XDKT	F XDKT	F XDKT
		51 035 ...	51 038 ...	51 040 ...	51 114 ...	51 114 ...
ISO	RE inch					
150508ER	0.031				458	90801
150508SR	0.031	408	408	408		
150512ER	0.047					91201
150512SR	0.047		412			
150516ER	0.063					91601
150516SR	0.063		416			
150520ER	0.079					92001
150525ER	0.098					92501
150530SR	0.118		430 1)			
150532ER	0.126				482 1)	93201 1)
150540ER	0.157				490 1)	94001 1)
150540SR	0.157		440 1)			
150560ER	0.236					96001 1)
P		○	○	○	●	●
M		●	●	●	●	●
K						
N						
S						○
H						
O						

1) Insert radius > 0.098": Modify cutter body

XDKT

	-M50 CTCK215	-R50 CTCK215	-M50 CTPK220	-R50 CTPK220	-F20 CTWN215
	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	
					
	M	R	M	R	F
	XDKT	XDKT	XDKT	XDKT	XDKT
	51 038 ...	51 040 ...	51 038 ...	51 040 ...	50 479 ...
ISO / RE inch					
150508FR 0.031					508
150508SR 0.031	508	508	608	608	
P					
M					
K	●	●	●	●	○
N					●
S					
H					
O					○

XDKT

	-F40 CTC5240	-F40 CTCS245	-R60 CTP6215
	DRAGONSKIN	DRAGONSKIN	
			
	F	F	R
	XDKT	XDKT	XDKT
	50 473 ...	51 114 ...	50 469 ...
ISO / RE inch			
150508ER 0.031	508	558	
150508SR 0.031			300
150532ER 0.126	532 [1]		
150540ER 0.157	540 [1]	59000[1]	
P			
M			
K			●
N			
S	●	●	
H			●
O			

1) Insert radius > 0.098": Modify cutter body

Milling guide

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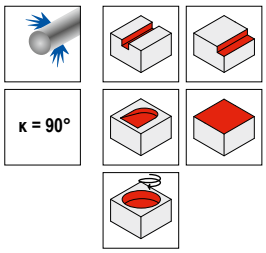
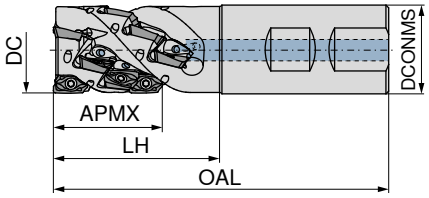
Chip groove description and overview	→ 198–200	Grade description and overview	→ 202–207

15

MaxiMill – 211-20K End milling cutter

▲ ZEFP = Number of Inserts
▲ ZNP = Number of rows







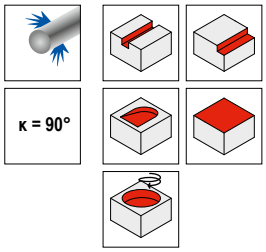


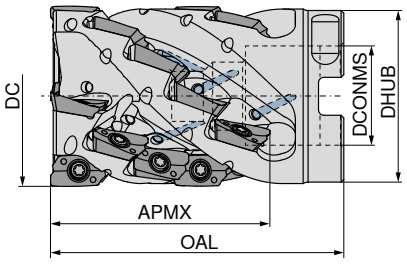
58 779 ...

Designation	DC inch	ZNF	APMX inch	ZNP	ZEFP	OAL inch	LH inch	DCONMS inch	torque moment Nm	Insert	
C211.200.R.03K10-20-B200-EF	2.000	3	6.500	10	30	11.000	6.690	2.000	5	XD.. 2007..	**20003**

MaxiMill – 211-20K Extended flute cutter

▲ ZEFP = Number of Inserts
▲ ZNP = Number of rows







NEW

58 780 ...

Designation	DC inch	ZNF	APMX inch	ZNP	ZEFP	OAL inch	DCONMS $_{H6}$ inch	DHUB inch	RPMX 1/min.	Insert	
A211.250.R.04K4-20-A100-EF	2.500	4	2.650	4	16	3.750	1.000	2.250	14300	XD.. 2007..	**25004**
A211.300.R.05K5-20-A125-EF	3.000	5	3.250	5	20	4.250	1.250	2.750	12800	XD.. 2007..	**30005**
A211.400.R.05K5-20-A150-EF	4.000	5	3.340	5	20	4.250	1.500	3.750	10100	XD.. 2007..	**40005**


Cap screw

Screwdriver

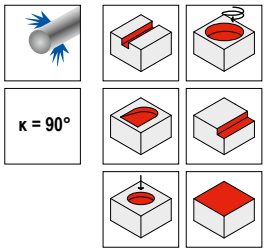

Molykote

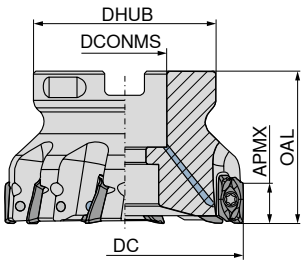

Clamping screw

70 950 ... | 80 950 ... | 70 950 ... | 70 950 ...

Spare parts DC				
2.000		**106**	**303**	**01200**
2.500	**003**	**106**	**303**	**01200**
3.000	**004**	**106**	**303**	**01200**
4.000	**004**	**106**	**303**	**01200**

MaxiMill – 211-20 Shell mill





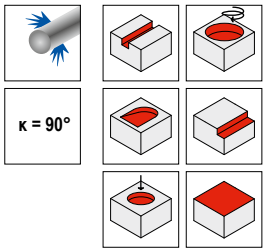


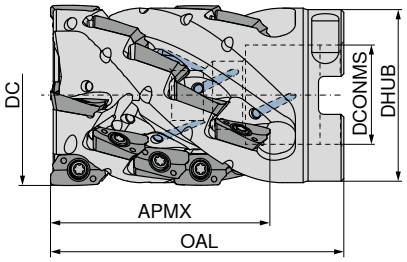
50 778 ...

Designation	DC mm	ZNF	APMX mm	OAL mm	DCONMS H6 mm	DHUB mm	RPMX 1/min.	torque moment Nm	Insert	
A211.63.R.05-20	63	5	19	45	22	48	14400	5	XD.. 2007..	**06305**
A211.80.R.06-20	80	6	19	50	27	58	12400	5	XD.. 2007..	**08006**
A211.100.R.07-20	100	7	19	50	32	78	10900	5	XD.. 2007..	**10007**

MaxiMill – 211-20K shell end face mill

▲ ZEFP = Number of Inserts
▲ ZNP = Number of rows







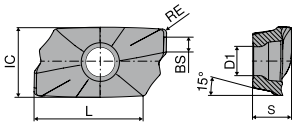
50 780 ...

Designation	DC mm	ZNF	APMX mm	ZEFP	ZNP	OAL mm	DCONMS H6 mm	DHUB mm	torque moment Nm	Insert	
A211.63.R.04K4-20	63	4	68	16	4	92	27	58	5	XD.. 2007..	**06304**
A211.80.R.05K4-20	80	5	68	20	4	92	32	76	5	XD.. 2007..	**08005**

Spare parts	 Cap screw **70 950 ...**	TORX® blade **80 950 ...**	Screwdriver **80 950 ...**	 Molykote **70 950 ...**	 Clamping screw **70 950 ...**	 Socket head screw **70 950 ...**	 Torque screwdriver **80 950 ...**
50 778 06305		**037**	**106**	**303**	**01200**	**180**	**193**
50 778 08006		**037**	**106**	**303**	**01200**	**181**	**193**
50 778 10007		**037**	**106**	**303**	**01200**		**193**
50 780 06304	**003**	**037**	**106**	**303**	**01200**	**181**	**193**
50 780 08005	**004**	**037**	**106**	**303**	**01200**	**234**	**193**

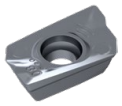
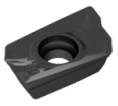
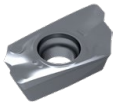
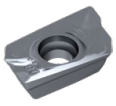
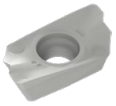
XDKT

Designation	IC inch	D1 inch	L inch	S inch
XDKT 200708..	0.492	0.217	0.740	0.273
XDKT 200716..	0.492	0.217	0.740	0.271
XDKT 200732..	0.492	0.217	0.740	0.269
XDKT 200740..	0.492	0.217	0.740	0.268
XDKT 200760..	0.492	0.217	0.740	0.268



XDKT

XDKT

		-M50 CTPP235	-M50 CTCP230	-F40 CTPM245	-F40 CTCM245	-M50 CTPK220	-F40 CTC5240	-F40 CTCS245
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
								
		M	M	F	F	M	F	F
		XDKT	XDKT	XDKT	XDKT	XDKT	XDKT	XDKT
		51 145 ...	51 145 ...	51 127 ...	51 127 ...	51 145 ...	51 127 ...	51 127 ...
ISO	RE inch							
200708ER	0.031	10800	00800	45800	90801	60800	15800	55800
200716ER	0.063	11600	01600	46600	91601	61600	16600	56600
200732ER	0.126			48200	93201		18200	58200
200740ER	0.157				94001		19000	
200760ER	0.236				96001		19200	
P		●	●	●	●			
M		○		●	●			
K		○	○			●		
N								
S					○		●	●
H								
O								

Milling guide

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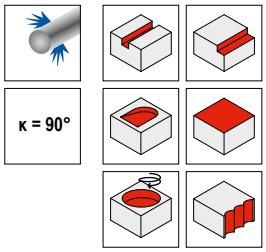
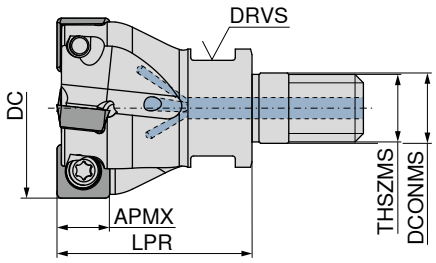
Chip groove description and overview	→ 198–200	Grade description and overview	→ 202–207

MaxiMill – 490-09 Screw in cutter



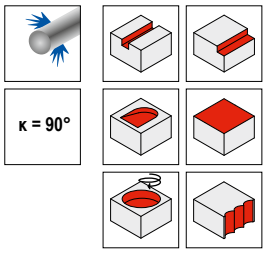


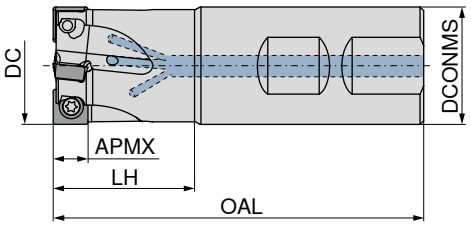


										58 726 ...
Designation	DC inch	ZNF	APMX inch	LPR inch	THSZMS	DCONMS inch	RPMX 1/min.	torque moment Nm	Insert	
G490.100.R.03-09-125-F	1.000	3	0.315	1.250	M12	0.492	23700	3.2	SD.. 09T3..	**10003**[1)]
G490.125.R.04-09-150-F	1.250	4	0.315	1.500	M16	0.669	19700	3.2	SD.. 09T3..	**12504**[1)]

1) Not in stock

MaxiMill – 490-09 End milling cutter







										58 727 ...	58 727 ...
Designation	DC inch	ZNF	APMX inch	DCONMS inch	OAL inch	LH inch	RPMX 1/min.	torque moment Nm	Insert		
C490.100.R.03-09-B-125-EF	1.000	3	0.315	1.000	3.500	1.250	23700	3.2	SD.. 09T3..		**30003**
C490.100.R.02-09-A-150-EF-800	1.000	2	0.315	1.000	8.000	1.500	19700	3.2	SD.. 09T3..	**10002**	
C490.125.R.04-09-B-150-EF	1.250	4	0.315	1.250	3.750	1.500	22000	3.2	SD.. 09T3..		**32504**
C490.125.R.03-09-A-200-EF-1000	1.250	3	0.315	1.250	10.000	2.000	14700	3.2	SD.. 09T3..	**12503**	

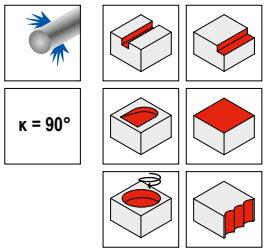

Screwdriver

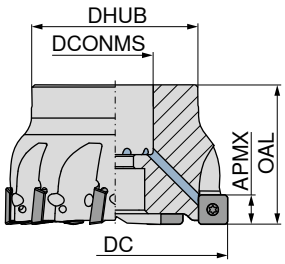

Molykote

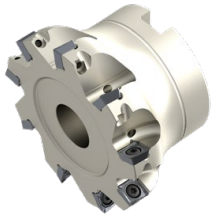

Clamping screw

	80 950 ...	70 950 ...	70 950 ...
Spare parts			
DC			
1.000 - 1.250	**105**	**303**	**110**

MaxiMill – 490-09 Shell mill







58 728 ...

Designation	DC inch	ZNF	APMX inch	DHUB inch	DCONMS $_{H6}$ inch	OAL inch	RPMX 1/min.	torque moment Nm	Insert	
A490.150.R.05-09-A050-175-EF	1.500	5	0.315	1.250	0.500	1.750	17000	3.2	SD.. 09T3..	**15005**
A490.200.R.06-09-A075-175-EF	2.000	6	0.315	1.750	0.750	1.750	14800	3.2	SD.. 09T3..	**20006**
A490.250.R.07-09-A100-200-EF	2.500	7	0.315	2.000	1.000	2.000	12850	3.2	SD.. 09T3..	**25007**
A490.300.R.09-09-A100-200-EF	3.000	9	0.315	2.130	1.000	2.000	11250	3.2	SD.. 09T3..	**30009**
A490.400.R.10-09-B125-200-EF	4.000	10	0.315	2.870	1.250	2.000	9900	3.2	SD.. 09T3..	**40010**
A490.500.R.11-09-B200-200-EF	5.000	11	0.315	3.750	2.000	2.000		3.2	SD.. 09T3..	**50011**
A490.600.R.12-09-B200-200-EF	6.000	12	0.315	3.750	2.000	2.000		3.2	SD.. 09T3..	**60012**



Screwdriver

80 950 ...



Molykote

70 950 ...

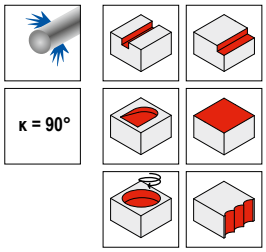


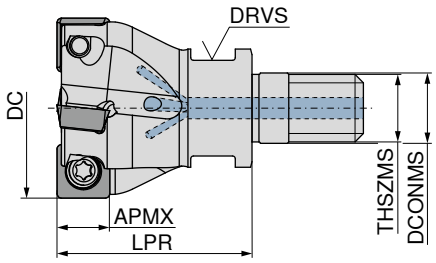
Clamping screw

70 950 ...

Spare parts **DC**			
1.500 - 6.000	**105**	**303**	**110**

MaxiMill – 490-09 Screw in cutter



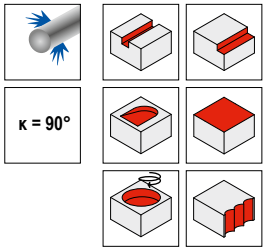


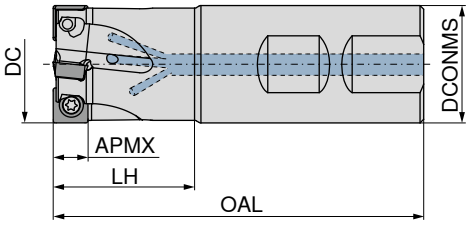


50 726 ...

Designation	DC mm	ZNF	APMX mm	LPR mm	THSZMS	DCONMS mm	DRVS mm	torque moment Nm	Insert	
G490.25.R.03-09	25	3	8	35	M12	12.5	17	3.2	SD.. 09T3..	025
G490.32.R.04-09	32	4	8	35	M16	17.0	24	3.2	SD.. 09T3..	032

MaxiMill – 490-09 End milling cutter



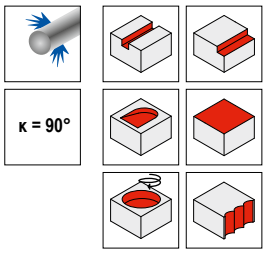


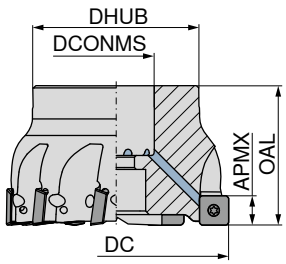


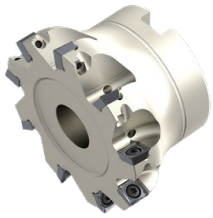
50 727 ... **50 727 ...**

Designation	DC mm	ZNF	APMX mm	DCONMS mm	OAL mm	LH mm	torque moment Nm	Insert		
C490.25.R.03-09-B-32	25	3	8	25	88	32	3.2	SD.. 09T3..		025
C490.25.R.02-09-A-20	25	2	8	20	165	40	3.2	SD.. 09T3..	225	
C490.25.R.02-09-A-40-165	25	2	8	25	165	40	3.2	SD.. 09T3..	125	
C490.32.R.04-09-B-25	32	4	8	25	100	40	3.2	SD.. 09T3..		132
C490.32.R.04-09-B-40	32	4	8	32	100	40	3.2	SD.. 09T3..		032

MaxiMill – 490-09 Shell mill





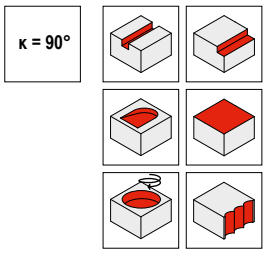


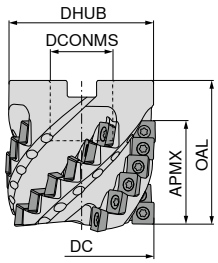
50 728 ...

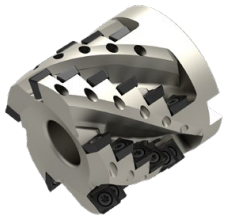
Designation	DC mm	ZNF	APMX mm	DHUB mm	DCONMS H6 mm	OAL mm	torque moment Nm	Insert	
A490.40.R.05-09	40	5	8	38	16	40	3.2	SD.. 09T3..	040
A490.42.R.06-09	42	6	8	38	16	40	3.2	SD.. 09T3..	042
A490.50.R.06-09	50	6	8	43	22	40	3.2	SD.. 09T3..	050
A490.52.R.07-09	52	7	8	43	22	40	3.2	SD.. 09T3..	052
A490.63.R.07-09	63	7	8	48	22	40	3.2	SD.. 09T3..	063
A490.66.R.08-09	66	8	8	48	22	40	3.2	SD.. 09T3..	066
A490.80.R.09-09	80	9	8	58	27	50	3.2	SD.. 09T3..	080
A490.100.R.10-09	100	10	8	78	32	50	3.2	SD.. 09T3..	100

MaxiMill – 490-09K shell end face mill

▲ ZEFP = Number of Inserts
▲ ZNP = Number of rows





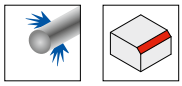


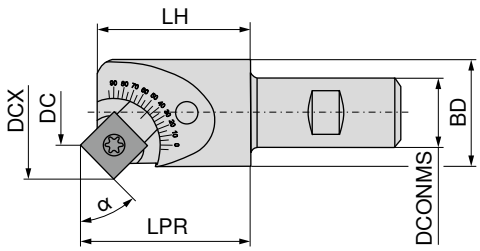
50 761 ...

Designation	DC mm	ZNF	APMX mm	ZEFP	ZNP	OAL mm	DCONMS H6 mm	DHUB mm	torque moment Nm	Insert	
A490.40.R.03K6-09	40	3	41	18	6	55	16	38	3.2	SD.. 09T3..	**040**
A490.50.R.04K6-09	50	4	41	24	6	55	22	48	3.2	SD.. 09T3..	**050**
A490.63.R.05K6-09	63	5	41	30	6	60	27	61	3.2	SD.. 09T3..	**063**

	TORX® blade	 Clamping key – T	 Screwdriver	 Power Screw	 Molykote	 Clamping screw	 Torque screwdriver
	80 950 ...	**80 397 ...**	**80 950 ...**	**70 950 ...**	**70 950 ...**	**70 950 ...**	**80 950 ...**
Spare parts DC							
25 - 32	**036**		**113**		**303**	**110**	**192**
40 - 42	**036**	**040**	**113**	**151**	**303**	**110**	**192**
50 - 100	**036**		**113**		**303**	**110**	**192**

MaxiMill – 490-09 Adjustable single angle milling cutter







NEW



50 690 ...

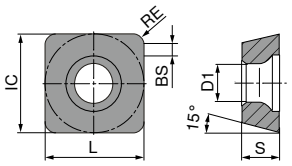
Designation	DC mm	DCX mm	LH mm	BD mm	LPR mm	ZNF	DCONMS mm	torque moment Nm	Insert	
C490.20.R.01	1.6 - 11.1	20.1 - 23.6	32	18.65	32.9 - 34.6	1	16	3.2	SD.. 09T3..	**01600**

	 Cylindrical screw	 Adjustment wedge	TORX® blade	 Screwdriver	 Molykote	 Clamping screw	 Torque screwdriver
	70 950 ...	**70 950 ...**	**80 950 ...**	**80 950 ...**	**70 950 ...**	**70 950 ...**	**80 950 ...**
Spare parts for Article no.							
50 690 01600	**87500**	**87200**	**036**	**113**	**303**	**110**	**192**

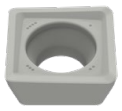
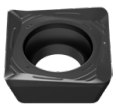
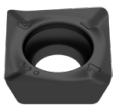
→ **Page 172**
Here you will find the angle-dependent dimensions.

SDHT / SDNT

Designation	IC inch	D1 inch	L inch	BS inch	S inch
SD.T 09T3..	0.375	0.173	0.375	0.098	0.156

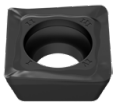
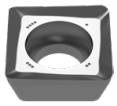


SDHT / SDNT

	TCM10	-29 CTCP230	CTPP235	-29 CTPP235	-33 CTPM240	-F50 CTPM245	-F50 CTCM245
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
							
	CERMET						
	SDHT	SDNT	SDNT	SDNT	SDNT	SDNT	SDNT
	50 424 ...	51 011 ...	51 082 ...	51 011 ...	51 030 ...	51 111 ...	51 111 ...
ISO / RE inch							
09T308ER 0.031			108			458	90801
09T308SR 0.031	900	008		108	408		
P	●	●	●	●	○	●	●
M			○	○	●	●	●
K	○	○	○	○			
N							
S							○
H							
O							

SDNT / SDHT

NEW

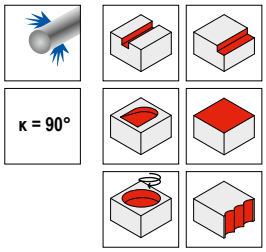
	-31 CTCK215	-F10 CTPX715	-27P H216T	-27 CTC5240	-M31 CTC5240	-F10 CTCS245
	DRAGONSKIN	DRAGONSKIN		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
						
	SDNT	SDHT	SDHT	SDHT	SDNT	SDHT
	51 029 ...	51 125 ...	50 424 ...	50 496 ...	50 425 ...	51 125 ...
ISO / RE inch						
09T308ER 0.031				508	508	55800
09T308FR 0.031		00802	550			
09T308SR 0.031	508					
P		○				
M		○				
K	●	●	○			
N		●	●			
S		○		●	●	●
H						
O		○	○			

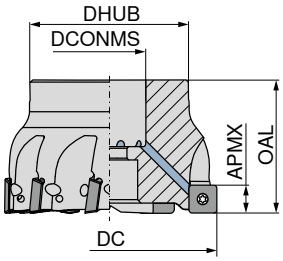
Milling guide

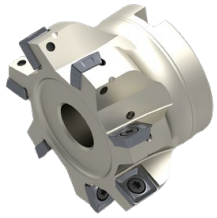
Cutting data standard values	→ 154–157	Starting Parameter	→ 172
Technical Information	→ 191–197	Chip groove description and overview	→ 198–200
Grade description and overview	→ 202–207		

15

MaxiMill – 490-12 Shell mill







58 703 ...

Designation	DC inch	ZNF	APMX inch	DHUB inch	DCONMS inch	OAL inch	torque moment Nm	Insert	
A490.200.R.05-12-A075-175-EF	2.000	5	0.393	1.750	0.750	1.750	5	SD.. 1205..	**20005**


Screwdriver

80 950 ...


Molykote

70 950 ...

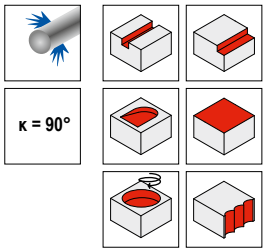

Clamping screw

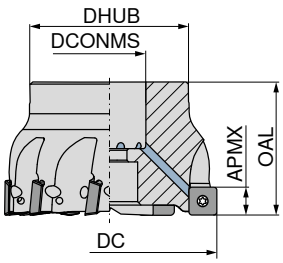
70 950 ...

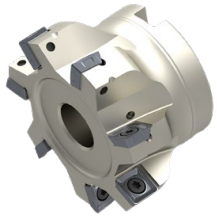
Spare parts

DC			
2.000	**106**	**303**	**01200**

MaxiMill – 490-12 Shell mill





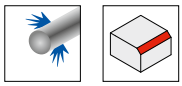


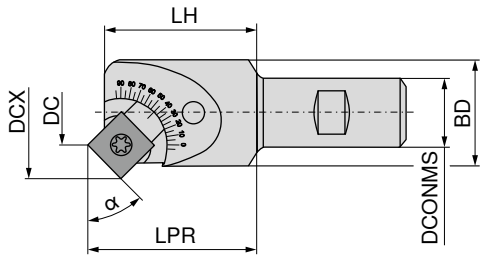
50 703 ...

Designation	DC mm	ZNF	APMX mm	DHUB mm	DCONMS mm	OAL mm	torque moment Nm	Insert	
A490.40.R.04-12	40	4	11	38	16	40	5	SD.. 1205..	**54000**
A490.50.R.05-12	50	5	11	43	22	40	5	SD.. 1205..	**550**
A490.63.R.06-12	63	6	11	48	22	40	5	SD.. 1205..	**563**
A490.80.R.07-12	80	7	11	58	27	50	5	SD.. 1205..	**580**
A490.100.R.08-12	100	8	11	75	32	50	5	SD.. 1205..	**600**
A490.125.R.10-12	125	10	11	88	40	63	5	SD.. 1205..	**625**

	TORX® blade	 Clamping key – T	 Screwdriver	 Power Screw	 Molykote	 Clamping screw	 Torque screwdriver
	80 950 ...	**80 397 ...**	**80 950 ...**	**70 950 ...**	**70 950 ...**	**70 950 ...**	**80 950 ...**
Spare parts							
DC							
40	**037**	**040**	**114**	**151**	**303**	**01200**	**193**
50	**037**	**040**	**114**	**154**	**303**	**01200**	**193**
63 - 125	**037**	**040**	**114**		**303**	**01200**	**193**

MaxiMill – 490-12 Adjustable single angle milling cutter







NEW



50 690 ...

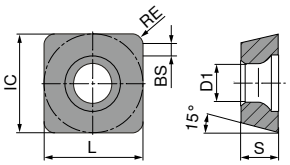
Designation	DC mm	DCX mm	LH mm	BD mm	LPR mm	ZNF	DCONMS mm	torque moment Nm	Insert	
C490.26.R.01	1.1 - 14.1	26.6 - 31.5	37	25	38.2 - 40.6	1	20	5	SD.. 1205..	**02000**

	 Cylindrical screw	 Adjustment wedge	TORX® blade	 Screwdriver	 Molykote	 Clamping screw	 Torque screwdriver
	70 950 ...	**70 950 ...**	**80 950 ...**	**80 950 ...**	**70 950 ...**	**70 950 ...**	**80 950 ...**
Spare parts							
50 690 02000	**87400**	**87300**	**037**	**114**	**303**	**01200**	**193**

→ **Page 173**
Here you will find the angle-dependent dimensions.

SDHW / SDMT / SDHT

Designation	IC inch	D1 inch	L inch	BS inch	S inch
SDH. 120508..	0.500	0.217	0.500	0.087	0.197
SDHT 120512..	0.500	0.217	0.500	0.071	0.197
SDHT 120520..	0.500	0.217	0.500	0.039	0.197
SDHT 120525..	0.500	0.217	0.500	0.059	0.197
SDMT 120508..	0.500	0.217	0.500	0.118	0.197
SDMT 1205ZZ..	0.500	0.217	0.500	0.035	0.197

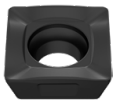
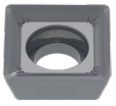
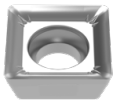
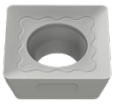


SDHW / SDMT / SDHT

	TCM10	-29 CTCP230	-29 CTPP235	-29 CTPM240	-33 CTPM240	-F50 CTPM245	-F50 CTCM245
		DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
							
	CERMET						
	SDHW	SDMT	SDMT	SDMT	SDHT	SDMT	SDMT
	50 428 ...	51 081 ...	51 081 ...	51 081 ...	51 028 ...	51 110 ...	51 110 ...
ISO / RE inch							
120508ER 0.031						458	90801
120508SR 0.031	901						
120512SR 0.047					412		
120520SR 0.079					421		
1205ZZSN 0.031		020	120	420			
P	●	●	●	○	○	●	●
M			○	●	●	●	●
K	○	○	○				
N							
S							○
H							
O							

SDMT / SDHT

NEW

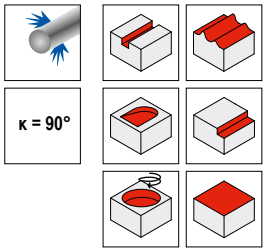
	-31 CTCK215	-F10 CTPX715	-27P H216T	-M31 CTC5240	-F50 CTCS245
	DRAGONSKIN	DRAGONSKIN		DRAGONSKIN	DRAGONSKIN
					
	SDMT	SDHT	SDHT	SDMT	SDMT
	51 059 ...	51 161 ...	50 426 ...	50 580 ...	51 110 ...
ISO / RE inch					
120508ER 0.031				508	55800
120508FR 0.031		00802	555		
120525FR 0.098			559		
1205ZZSN 0.031	521				
P		○			
M		○			
K	●	●	○		
N		●	●		
S		○		●	●
H					
O		○	○		

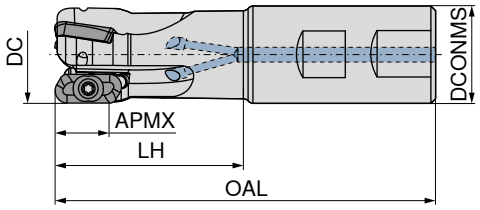
Milling guide

Cutting data standard values	→ 154–157	Starting Parameter	→ 173
Technical Information	→ 191–197	Chip groove description and overview	→ 198–200
Grade description and overview	→ 202–207		

MaxiMill – HSC-11 End milling cutter 90°

▲ Insert radius > 0.125": Modify cutter body
▲ High Speed Cutter (HSC)







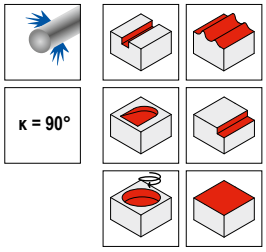


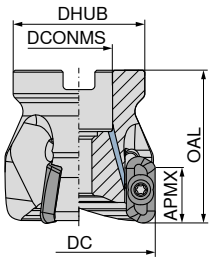
58 675 ...

Designation	DC inch	ZNF	APMX inch	DCONMS h6 inch	OAL inch	LH inch	torque moment Nm	Insert	
CHSC.0625.R.02-11-A-100-EF	0.625	2	0.393	0.625	3.000	1.000	1.8	XDHT 11T3..	**06202**
CHSC.0625.R.02-11-A-125-EF	0.625	2	0.393	0.625	3.250	1.250	1.8	XDHT 11T3..	**06302**
CHSC.0750.R.02-11-A-150-EF	0.750	2	0.393	0.750	3.600	1.500	1.8	XDHT 11T3..	**07502**
CHSC.100.R.03-11-A-200-EF	1.000	3	0.393	1.000	4.350	2.000	1.8	XDHT 11T3..	**10003**

MaxiMill – HSC-11 Shell mill 90°

▲ Insert radius > 0.125": Modify cutter body
▲ High Speed Cutter (HSC)







58 718 ...

Designation	DC inch	ZNF	APMX inch	DCONMS H6 inch	DHUB inch	OAL inch	torque moment Nm	Insert	
AHSC.150.R.04-11-A050-175-EF	1.500	4	0.393	0.500	1.421	1.750	1.8	XDHT 11T3..	**15004**
AHSC.200.R.04-11-A075-175-EF	2.000	4	0.393	0.750	1.750	1.750	1.8	XDHT 11T3..	**20004**
AHSC.250.R.05-11-A100-200-EF	2.500	5	0.393	1.000	2.250	2.000	1.8	XDHT 11T3..	**25005**
AHSC.300.R.05-11-A100-200-EF	3.000	5	0.393	1.000	2.250	2.000	1.8	XDHT 11T3..	**30005**



Screwdriver

80 950 ...



Molykote

70 950 ...



Clamping screw

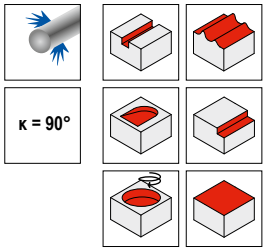
70 950 ...

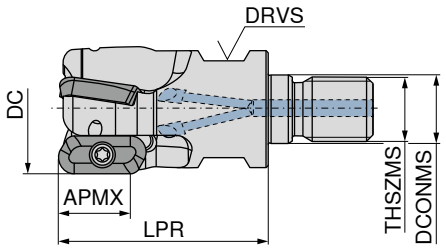
Spare parts DC			
0.625 - 1.000	**039**	**303**	**128**
1.500 - 3.000	**039**	**303**	**131**

15

MaxiMill – HSC-11 Screw in cutter

▲ Insert radius >3.2 mm: Modify cutter body



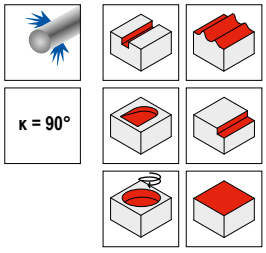


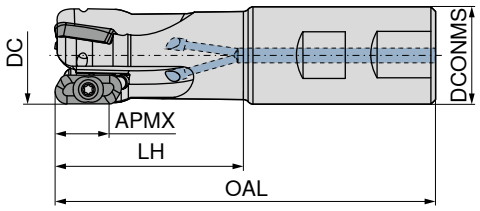


Designation	DC mm	ZNF	APMX mm	DCONMS mm	LPR mm	THSZMS	RPMX 1/min.	DRVS mm	torque moment Nm	Insert	55 107 ...
GHSC.16.R.02-11	16	2	10	8.5	27	M8	56000	10	1.8	XDHT 11T3..	**016**
GHSC.20.R.02-11	20	2	10	10.5	33	M10	50100	15	1.8	XDHT 11T3..	**020**
GHSC.25.R.03-11	25	3	10	12.5	35	M12	45000	17	1.8	XDHT 11T3..	**025**
GHSC.32.R.03-11	32	3	10	17.0	35	M16	39800	24	1.8	XDHT 11T3..	**032**
GHSC.40.R.03-11	40	3	10	17.0	35	M16	35500	24	1.8	XDHT 11T3..	**040**

MaxiMill – HSC-11 End milling cutter

▲ Insert radius >3.2 mm: Modify cutter body



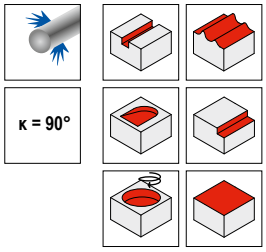


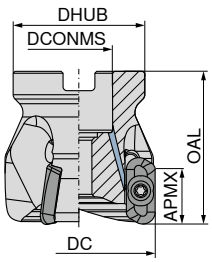


Designation	DC mm	ZNF	APMX mm	DCONMS $_{h6}$ mm	OAL mm	LH mm	RPMX 1/min.	torque moment Nm	Insert	50 675 ...	50 675 ...
CHSC.16.R.02-11-B/A-25	16	2	10	16	75	25	56200	1.8	XDHT 11T3..	**016**	**416**
CHSC.16.R.02-11-A-32	16	2	10	16	165	32	18800	1.8	XDHT 11T3..	**116**	
CHSC.20.R.02-11-A-32	20	2	10	20	84	32	50100	1.8	XDHT 11T3..	**020**	
CHSC.20.R.03-11-B-32	20	3	10	20	84	32	50100	1.8	XDHT 11T3..		**420**
CHSC.20.R.02-11-A-40	20	2	10	20	165	40	26700	1.8	XDHT 11T3..	**120**	
CHSC.25.R.03-11-A-40	25	3	10	25	98	40	45000	1.8	XDHT 11T3..	**225**	
CHSC.25.R.04-11-B-40	25	4	10	25	98	40	45000	1.8	XDHT 11T3..		**425**
CHSC.25.R.02-11-A-50	25	2	10	25	165	50	31700	1.8	XDHT 11T3..	**125**	
CHSC.25.R.03-11-A-50	25	3	10	25	165	50	31700	1.8	XDHT 11T3..	**325**	

MaxiMill – HSC-11 Shell mill

▲ Insert radius >3.2 mm: Modify cutter body







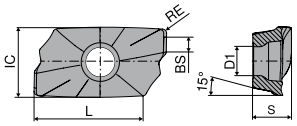
Designation	DC mm	ZNF	APMX mm	DCONMS $_{H6}$ mm	DHUB mm	OAL mm	RPMX 1/min.	torque moment Nm	Insert	50 718 ...
AHSC.40.R.04-11	40	4	10	16	38	50	35500	1.8	XDHT 11T3..	**040**
AHSC.50.R.04-11	50	4	10	22	43	50	31800	1.8	XDHT 11T3..	**050**
AHSC.63.R.05-11	63	5	10	22	43	50	28300	1.8	XDHT 11T3..	**063**
AHSC.80.R.05-11	80	5	10	27	58	50	25100	1.8	XDHT 11T3..	**080**
AHSC.100.R.05-11	100	5	10	32	78	50	22400	1.8	XDHT 11T3..	**100**

	TORX® blade	 Clamping key – T	 Screwdriver	 Power Screw	 Molykote	 Clamping screw	 Torque screwdriver
	80 950 ...	**80 397 ...**	**80 950 ...**	**70 950 ...**	**70 950 ...**	**70 950 ...**	**80 950 ...**
Spare parts							
DC							
16 - 25	**043**		**125**		**303**	**128**	**192**
32	**043**		**125**		**303**	**131**	**192**
40	**043**	**040**	**125**	**151**	**303**	**131**	**192**
50 - 63	**043**	**050**	**125**	**154**	**303**	**131**	**192**
80 - 100	**043**		**125**		**303**	**131**	**192**

15

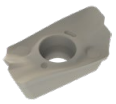
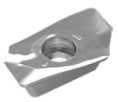
XDKT / XDHT

Designation	IC inch	D1 inch	L inch	BS inch	S inch
XD.T 11T302FR	0.268	0.110	0.417	0.079	0.150
XD.T 11T304FR	0.268	0.110	0.417	0.071	0.150
XD.T 11T308FR	0.268	0.110	0.417	0.055	0.150
XD.T 11T320FR	0.268	0.110	0.417	0.055	0.150
XD.T 11T325FR	0.268	0.110	0.417	0.055	0.150
XDHT 11T312FR	0.268	0.110	0.417	0.055	0.150
XDHT 11T316FR	0.268	0.110	0.417	0.055	0.150
XDHT 11T332FR	0.268	0.110	0.417	0.031	0.150
XDHT 11T340FR	0.268	0.110	0.417	-	0.150
XDHT 11T350FR	0.268	0.110	0.417	-	0.150



XDKT

XDKT / XDHT

	-F20 CTWN215	-27P H216T
		
	F	F
	XDKT	XDHT
	50 478 ...	50 477 ...

ISO	RE inch		
11T302FR	0.008	502	502
11T304FR	0.016	504	504
11T308FR	0.031	508	508
11T312FR	0.047		512
11T316FR	0.063		516
11T320FR	0.079	520 1)	520 1)
11T325FR	0.098	525 1)	525 1)
11T332FR	0.126		532 1)
11T340FR	0.157		540 1)
11T350FR	0.197		550 1)
P			
M			
K		○	○
N		●	●
S			
H			
O		○	○

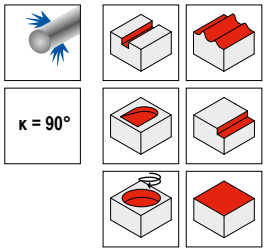
1) Insert radius > 0.063": Modify cutter body

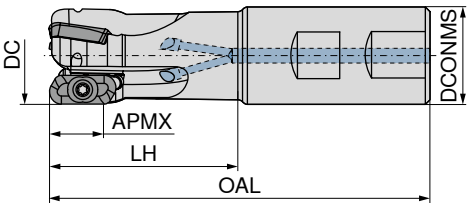
Milling guide

Safety advice	→ 174	Cutting data standard values	→ 175
Machining strategy	→ 176+177	Technical Information	→ 191–197
Chip groove description and overview	→ 198–200	Grade description and overview	→ 202–207

MaxiMill – HSC-19 End milling cutter 90°

▲ Insert radius > 0.157": Modify cutter body
▲ High Speed Cutter (HSC)







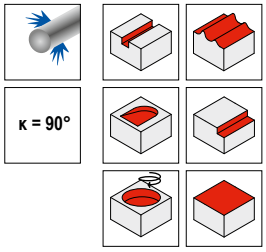


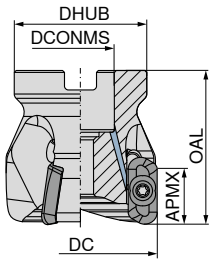
58 679 ...

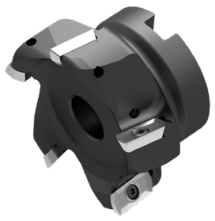
Designation	DC inch	ZNF	APMX inch	DCONMS h5 inch	OAL inch	LH inch	RPMX 1/min.	torque moment Nm	Insert	
CHSC.100.R.02-19-A-200-EF	1.000	2	0.709	1.000	4.500	2.000	35000	5	XDHT 1904..	**10002**
CHSC.100.R.02-19-A-250-EF	1.000	2	0.709	1.000	6.500	2.500	32800	5	XDHT 1904..	**10102**
CHSC.125.R.02-19-A-250-EF	1.250	2	0.709	1.250	5.000	2.500	29100	5	XDHT 1904..	**12502**
CHSC.125.R.02-19-A-325-EF	1.250	2	0.709	1.250	6.500	3.250	27200	5	XDHT 1904..	**12602**
CHSC.150.R.03-19-A125-325-EF	1.500	3	0.709	1.250	5.750	3.250	23800	5	XDHT 1904..	**15003**
CHSC.150.R.03-19-A125-400-EF	1.500	3	0.709	1.250	6.500	4.000	21900	5	XDHT 1904..	**15103**

MaxiMill – HSC-19 Shell mill 90°

▲ Insert radius > 0.157": Modify cutter body
▲ High Speed Cutter (HSC)







58 716 ...

Designation	DC inch	ZNF	APMX inch	DCONMS H6 inch	DHUB inch	OAL inch	RPMX 1/min.	torque moment Nm	Insert	
AHSC.200.R.03-19-A075-175-EF	2.000	3	0.709	0.750	1.750	1.750	21600	5	XDHT 1904..	**20003**
AHSC.250.R.03-19-A100-200-EF	2.500	3	0.709	1.000	2.250	2.250	18800	5	XDHT 1904..	**25003**
AHSC.250.R.04-19-A100-200-EF	2.500	4	0.709	1.000	2.250	2.250	18800	5	XDHT 1904..	**25004**
AHSC.300.R.03-19-A100-200-EF	3.000	3	0.709	1.000	2.250	2.250	16400	5	XDHT 1904..	**30003**
AHSC.300.R.04-19-A100-200-EF	3.000	4	0.709	1.000	2.250	2.250	16400	5	XDHT 1904..	**30004**
AHSC.400.R.04-19-B125-200-EF	4.000	4	0.709	1.250	2.750	2.750	14500	5	XDHT 1904..	**40004**
AHSC.500.R.05-19-B150-200-EF	5.000	5	0.709	1.500	3.750	3.750	12800	5	XDHT 1904..	**50005**
AHSC.600.R.05-19-B150-200-EF	6.000	5	0.709	1.500	3.750	3.750	11500	5	XDHT 1904..	**60005**


Screwdriver

80 950 ...


Molykote

70 950 ...

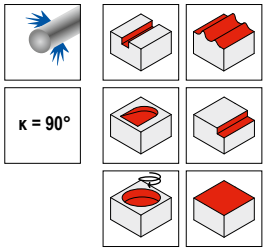

Clamping screw

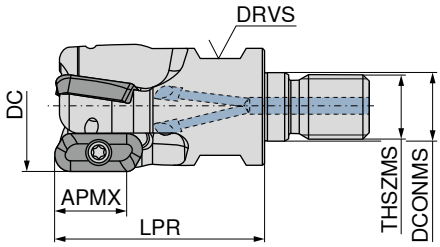
70 950 ...

Spare parts DC					
1.000	**105**		**303**		**172**
1.250	**039**		**303**		**128**
1.250 - 1.500	**105**		**303**		**173**
2.000 - 6.000	**105**		**303**		**174**

MaxiMill – HSC-19 Screw-in cutter

▲ Insert radius >4.0 mm: Modify cutter body



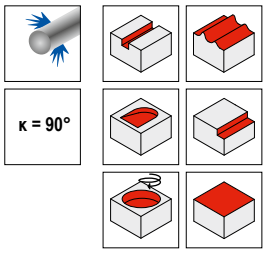


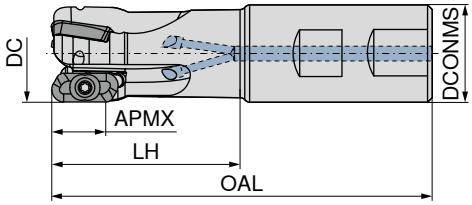


Designation	DC mm	ZNF	APMX mm	DCONMS mm	LPR mm	THSZMS	DRVS mm	RPMX 1/min.	torque moment Nm	Insert	55 108 ...
GHSC.25.R.02-19	25	2	18	12.5	45	M12	17	34400	5	XDHT 1904..	**025**
GHSC.32.R.03-19	32	3	18	17.0	52	M16	24	29100	5	XDHT 1904..	**032**
GHSC.40.R.03-19	40	3	18	17.0	52	M16	24	24900	5	XDHT 1904..	**040**

MaxiMill – HSC-19 End milling cutter

▲ Insert radius >4.0 mm: Modify cutter body





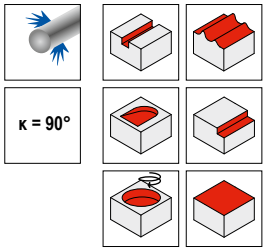


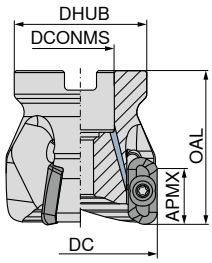


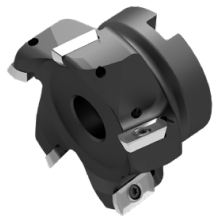
Designation	DC mm	ZNF	APMX mm	DCONMS $_{h5}$ mm	OAL mm	LH mm	RPMX 1/min.	torque moment Nm	Insert	50 679 ...	50 679 ...
CHSC.25.R.02-19-A-50	25	2	18	25	121	50	32400	5	XDHT 1904..	**225**	
CHSC.25.R.02-19	25	2	18	25	121	65	32400	5	XDHT 1904..		**025**
CHSC.25.R.02-19-A-63	25	2	18	25	165	63	24700	5	XDHT 1904..	**325**	
CHSC.32.R.02-19-A-63	32	2	18	32	125	63	28900	5	XDHT 1904..	**232**	
CHSC.32.R.03-19-A-63	32	3	18	32	125	63	28900	5	XDHT 1904..	**432**	
CHSC.32.R.03-19	32	3	18	32	125	65	28900	5	XDHT 1904..		**033**
CHSC.32.R.02-19	32	2	18	32	125	65	28900	5	XDHT 1904..		**032**
CHSC.32.R.02-19-A-80	32	2	18	32	165	80	24400	5	XDHT 1904..	**332**	
CHSC.32.R.03-19-A-80	32	3	18	32	165	80	24400	5	XDHT 1904..	**532**	

MaxiMill – HSC-19 Shell mill

▲ Insert radius >4.0 mm: Modify cutter body







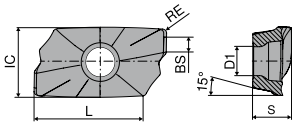
Designation	DC mm	ZNF	APMX mm	DCONMS $_{H6}$ mm	DHUB mm	OAL mm	RPMX 1/min.	torque moment Nm	Insert	50 716 ...
AHSC.40.R.03-19	40	3	18	16	38	50	24900	5	XDHT 1904..	**040**
AHSC.50.R.04-19	50	4	18	22	43	50	21600	5	XDHT 1904..	**050**
AHSC.63.R.04-19	63	4	18	22	48	50	18800	5	XDHT 1904..	**163**
AHSC.63.R.05-19	63	5	18	22	48	50	18800	5	XDHT 1904..	**063**
AHSC.80.R.04-19	80	4	18	27	58	50	16400	5	XDHT 1904..	**180**
AHSC.80.R.05-19	80	5	18	27	58	50	16400	5	XDHT 1904..	**080**
AHSC.100.R.04-19	100	4	18	32	78	50	14500	5	XDHT 1904..	**200**
AHSC.100.R.05-19	100	5	18	32	78	50	14500	5	XDHT 1904..	**100**
AHSC.125.R.05-19	125	5	18	40	88	63	12800	5	XDHT 1904..	**125**
AHSC.125.R.06-19	125	6	18	40	88	63	12800	5	XDHT 1904..	**225**

	TORX® blade	 Clamping key – T	 Screwdriver	 Power Screw	 Molykote	 Clamping screw	 Torque screwdriver
	80 950 ...	**80 397 ...**	**80 950 ...**	**70 950 ...**	**70 950 ...**	**70 950 ...**	**80 950 ...**
Spare parts							
DC							
25	**036**		**113**		**303**	**172**	**193**
32	**036**		**113**		**303**	**173**	**193**
40	**036**	**040**	**113**	**151**	**303**	**173**	**193**
50 - 63	**036**	**050**	**113**	**154**	**303**	**174**	**193**
80 - 125	**036**		**113**		**303**	**174**	**193**

15

XDHT

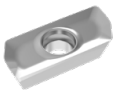
Designation	IC inch	D1 inch	L inch	BS inch	S inch
XDHT 190402..	0.375	0.183	0.748	0.079	0.187
XDHT 190404..	0.375	0.183	0.748	0.079	0.187
XDHT 190408..	0.375	0.183	0.748	0.079	0.187
XDHT 190412..	0.375	0.183	0.748	0.079	0.187
XDHT 190416..	0.375	0.183	0.748	0.079	0.187
XDHT 190420..	0.375	0.183	0.748	0.079	0.187
XDHT 190425..	0.375	0.183	0.748	0.055	0.187
XDHT 190432..	0.375	0.183	0.748	0.039	0.187
XDHT 190440..	0.375	0.183	0.748	0.039	0.187
XDHT 190450..	0.375	0.183	0.748	-	0.187



XDKT

XDHT

NEW

	-F10 CTPX715 DRAGONSKIN	-27P H216T
		
	F XDHT	F XDHT
ISO / RE inch	51 159 ...	50 487 ...
190402FR 0.008	00202	552
190404FR 0.016	00402	554
190408FR 0.031	00802	556
190412FR 0.047	01202	557
190416FR 0.063	01602	558
190420FR 0.079	02002	560
190425FR 0.098	02502	562
190432FR 0.126	03202	564
190440FR 0.157	04002	566
190450FR 0.197	05002 1)	568 1)
P	○	
M	○	
K	●	○
N	●	●
S	○	
H		
O	○	○

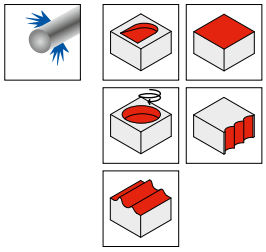
1) Insert radius > 0.157": Modify cutter body

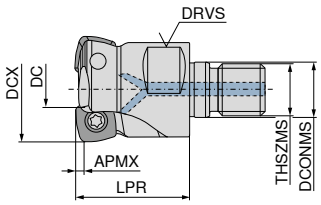
Milling guide

Cutting data standard values	→ 154–157	Safety advice	→ 174
Machining strategy	→ 178–180	Technical Information	→ 191–197
Chip groove description and overview	→ 198–200	Grade description and overview	→ 202–207

MaxiMill – HFC Screw in cutter

▲ High Feed Cutter (HFC)







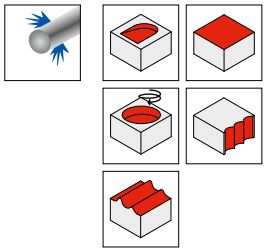
58 682 ...

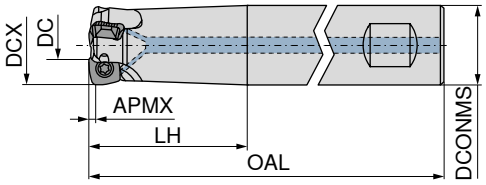
Designation	DC inch	DCX inch	ZNF	APMX inch	LPR inch	DCONMS inch	THSZMS	DRVS inch	RPMX 1/min.	torque moment Nm	Insert	
GHFC.0625.R.02-06-125-F	0.287	0.625	2	0.031	1.250	0.335	M8	0.394	17800	1.2	XPLX 0603..	**06202**[1)]
GHFC.0750.R.03-06-125-F	0.412	0.750	3	0.031	1.250	0.413	M10	0.591	21400	1.2	XPLX 0603..	**07503**[1)]
GHFC.100.R.04-06-150-F	0.662	1.000	4	0.031	1.500	0.492	M12	0.669	17000	1.2	XPLX 0603..	**10004**[1)]
GHFC.125.R.05-06-150-F	0.912	1.250	5	0.031	1.500	0.669	M16	0.945	20300	1.2	XPLX 0603..	**12505**[1)]

1) Not in stock

MaxiMill – HFC End milling cutter

▲ High Feed Cutter (HFC)





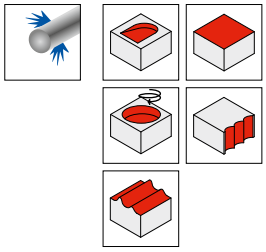


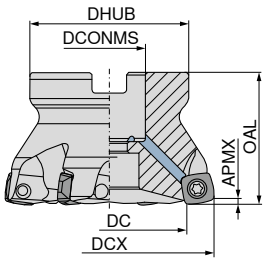


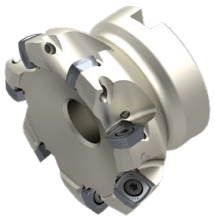

Designation	DC inch	DCX inch	ZNF	APMX inch	OAL inch	LH inch	DCONMS h6 inch	RPMX 1/min.	torque moment Nm	Insert	**58 681 ...**	**58 681 ...**
CHFC.0625.R.02-06-B-150-EF	0.287	0.625	2	0.031	3.500	1.500	0.625	18100	1.2	XPLX 0603..		**26202**
CHFC.0625.R.02-06-A-150-EF-800	0.287	0.625	2	0.031	8.000	1.500	0.625	18100	1.2	XPLX 0603..	**06202**	
CHFC.0750.R.03-06-B-200-EF	0.412	0.750	3	0.031	4.200	2.000	0.750	14100	1.2	XPLX 0603..		**27503**
CHFC.0750.R.03-06-A-200-EF-900	0.412	0.750	3	0.031	9.000	2.000	0.750	14100	1.2	XPLX 0603..	**07503**	
CHFC.100.R.04-06-B-200-EF	0.662	1.000	4	0.031	4.400	2.000	1.000	15400	1.2	XPLX 0603..		**30004**
CHFC.100.R.04-06-A-200-EF-900	0.662	1.000	4	0.031	9.000	2.000	1.000	15400	1.2	XPLX 0603..	**10004**	
CHFC.125.R.05-06-B100-250-EF	0.912	1.250	5	0.031	4.900	2.500	1.000	10700	1.2	XPLX 0603..		**32505**
CHFC.125.R.05-06-A100-250-EF-900	0.912	1.250	5	0.031	9.000	2.500	1.000	10700	1.2	XPLX 0603..	**12505**	
CHFC.100.R.03-09-B-200-EF	0.535	1.000	3	0.039	4.300	2.000	1.000	15400	3.2	XDLX 09T3..		**60003**
CHFC.100.R.03-09-A-200-EF-800	0.535	1.000	3	0.039	8.000	2.000	1.000	9000	3.2	XDLX 09T3..	**50003**	
CHFC.125.R.04-09-B100-250-EF	0.785	1.250	4	0.039	4.800	2.500	1.000	10700	3.2	XDLX 09T3..		**62504**
CHFC.125.R.03-09-A-250-EF-1000	0.785	1.250	3	0.039	10.000	2.500	1.250	8100	3.2	XDLX 09T3..	**52503**	
CHFC.125.R.02-12-A-250-EF-1000	0.596	1.250	2	0.079	10.000	2.500	1.250	6480	5	XOLX 1204..	**82502**	
CHFC.150.R.03-12-A125-250-EF-1000	0.846	1.500	3	0.079	10.000	2.500	1.250	6100	5	XOLX 1204..	**85003**	

MaxiMill – HFC Shell mill

▲ High Feed Cutter (HFC)







58 683 ...

Designation	DC inch	DCX inch	ZNF	APMX inch	OAL inch	DCONMS $_{H6}$ inch	DHUB inch	RPMX 1/min.	torque moment Nm	Insert	
AHFC.150.R.04-09-A050-175-EF	1.035	1.500	4	0.039	1.420	0.500	1.420	26400	3.2	XDLX 09T3..	**15004**
AHFC.200.R.05-09-A075-175-EF	1.535	2.000	5	0.039	1.750	0.750	1.750	23500	3.2	XDLX 09T3..	**20005**
AHFC.250.R.06-09-A075-200-EF	2.035	2.500	6	0.039	1.750	0.750	1.750	20500	3.2	XDLX 09T3..	**25006**
AHFC.200.R.04-12-A075-175-EF	1.346	2.000	4	0.079	1.750	0.750	1.750	18800	5	XOLX 1204..	**20104**
AHFC.250.R.05-12-A100-200-EF	1.846	2.500	5	0.079	2.250	1.000	2.250	16400	5	XOLX 1204..	**25105**
AHFC.300.R.07-12-A100-200-EF	2.346	3.000	7	0.079	2.250	1.000	2.250	14000	5	XOLX 1204..	**30107**
AHFC.400.R.08-12-A125-200-EF	3.346	4.000	8	0.079	2.750	1.250	2.750	12000	5	XOLX 1204..	**40108**
AHFC.500.R.10-12-B150-250-EF	4.346	5.000	10	0.079	3.750	1.500	3.750	9800	5	XOLX 1204..	**50110**
AHFC.300.R.06-19-A100-200-EF	1.970	3.000	6	0.130	2.250	1.000	2.250	4900	5	XOLX 1906..	**30206**
AHFC.400.R.08-19-A125-200-EF	2.970	4.000	8	0.130	2.750	1.250	2.750	4000	5	XOLX 1906..	**40208**
AHFC.500.R.10-19-B150-250-EF	3.970	5.000	10	0.130	3.750	1.500	3.750	3500	5	XOLX 1906..	**50210**



Screwdriver

80 950 ...



Molykote

70 950 ...

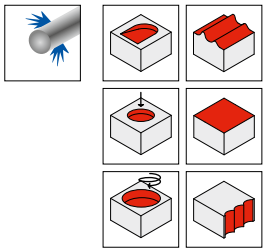


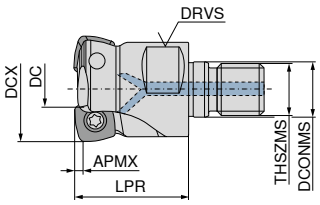
Clamping screw

70 950 ...

Spare parts **Insert**			
XDLX 09T3..	**105**	**303**	**304**
XDLX 09T3.. (Ø1.000)	**105**	**303**	**110**
XOLX 1204..	**106**	**303**	**01200**
XOLX 1906..	**106**	**303**	**302**
XPLX 0603..	**102**	**303**	**116**

MaxiMill – HFC high-feed screw-in cutter

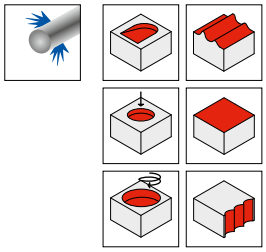


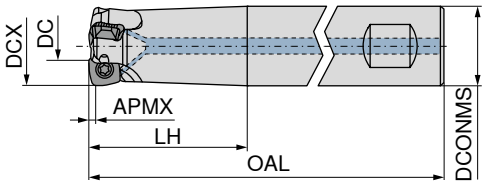




Designation	DC mm	DCX mm	ZNF	APMX mm	LPR mm	DCONMS mm	THSZMS	DRVS mm	RPMX 1/min.	torque moment Nm	Insert	50 682 ...
GHFC.16.R.02-06	7	16	2	0.8	27	8.5	M8	10	20800	1.2	XPLX 0603..	**616**
GHFC.20.R.03-06	11	20	3	0.8	33	10.5	M10	15	19800	1.2	XPLX 0603..	**620**
GHFC.25.R.04-06	16	25	4	0.8	35	12.5	M12	17	18700	1.2	XPLX 0603..	**625**
GHFC.32.R.05-06	23	32	5	0.8	35	17.0	M16	24	22000	1.2	XPLX 0603..	**632**
GHFC.42.R.07-06	33	42	7	0.8	35	17.0	M16	24	15000	1.2	XPLX 0603..	**04207**
GHFC.25.R.02-09	12	25	2	1.0	35	12.5	M12	17	30000	3.2	XDLX 09T3..	**025**
GHFC.25.R.03-09	12	25	3	1.0	35	12.5	M12	17	30000	3.2	XDLX 09T3..	**125**
GHFC.32.R.03-09	19	32	3	1.0	35	17.0	M16	24	27000	3.2	XDLX 09T3..	**032**
GHFC.42.R.05-09	19	42	5	1.0	35	17.0	M16	24	26100	3.2	XDLX 09T3..	**04205**
GHFC.32.R.02-12	15	32	2	2.0	35	17.0	M16	24	21600	5	XOLX 1204..	**132**
GHFC.35.R.03-12	18	35	3	2.0	35	17.0	M16	24	21360	5	XOLX 1204..	**035**
GHFC.42.R.04-12	25	42	4	2.0	35	17.0	M16	24	20800	5	XOLX 1204..	**04204**

MaxiMill – HFC high-feed end mill

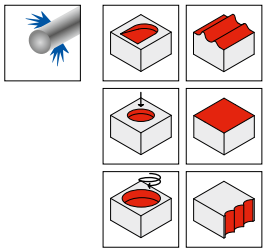


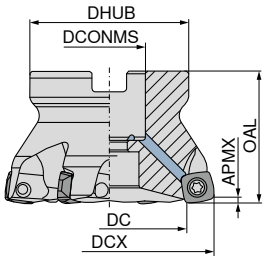


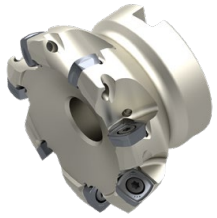


Designation	DC mm	DCX mm	ZNF	APMX mm	OAL mm	LH mm	DCONMS $_{h6}$ mm	RPMX 1/min.	torque moment Nm	Insert	50 681 ...	50 681 ...
CHFC.16.R.02-06-B-40	7.0	16	2	0.8	89	40	16	17300	1.2	XPLX 0603..		**616**
CHFC.16.R.02-06-A-40-200	7.0	16	2	0.8	200	40	16	4600	1.2	XPLX 0603..	**716**	
CHFC.20.R.03-06-B-50	11.0	20	3	0.8	101	50	20	14500	1.2	XPLX 0603..		**620**
CHFC.20.R.03-06-A-50-225	11.0	20	3	0.8	225	50	20	4200	1.2	XPLX 0603..	**720**	
CHFC.25.R.04-06-B-50	16.0	25	4	0.8	107	50	25	15600	1.2	XPLX 0603..		**625**
CHFC.25.R.04-06-A-50-225	16.0	25	4	0.8	225	50	25	4600	1.2	XPLX 0603..	**725**	
CHFC.32.R.05-06-B-25-60	23.0	32	5	0.8	117	60	25	11000	1.2	XPLX 0603..		**632**
CHFC.32.R.05-06-A-25-60-225	23.0	32	5	0.8	225	60	25	3900	1.2	XPLX 0603..	**732**	
CHFC.25.R.02-09-A-50-225	12.3	25	2	1.0	225	50	25	9000	3.2	XDLX 09T3..	**025**	
CHFC.25.R.03-09-A-50-225	12.3	25	3	1.0	225	50	25	9000	3.2	XDLX 09T3..	**125**	
CHFC.32.R.03-09-A-63-250	19.3	32	3	1.0	250	63	32	8100	3.2	XDLX 09T3..	**032**	
CHFC.32.R.02-12-A-63-250	14.8	32	2	2.0	250	63	32	6480	5	XOLX 1204..	**132**	
CHFC.35.R.03-12-A-63-250	17.8	35	3	2.0	250	63	32	6480	5	XOLX 1204..	**035**	

MaxiMill – HFC high-feed face mill







50 683 ...

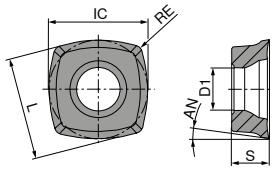
Designation	DC mm	DCX mm	ZNF	APMX mm	OAL mm	DCONMS $_{H6}$ mm	DHUB mm	RPMX 1/min.	torque moment Nm	Insert	
AHFC.32.R.03-09	19.3	32	3	1.0	40	16	38	27700	3.2	XDLX 09T3..	**032**
AHFC.35.R.04-09	19.3	35	4	1.0	40	16	38	26700	3.2	XDLX 09T3..	**035**
AHFC.40.R.04-09	27.3	40	4	1.0	40	16	38	26400	3.2	XDLX 09T3..	**140**
AHFC.42.R.05-09	29.3	42	5	1.0	40	16	38	26100	3.2	XDLX 09T3..	**142**
AHFC.50.R.05-09	37.3	50	5	1.0	40	22	43	23500	3.2	XDLX 09T3..	**150**
AHFC.52.R.06-09	39.3	52	6	1.0	40	22	43	23000	3.2	XDLX 09T3..	**152**
AHFC.63.R.06-09	50.3	63	6	1.0	40	22	48	20500	3.2	XDLX 09T3..	**163**
AHFC.66.R.07-09	53.3	66	7	1.0	40	22	48	20000	3.2	XDLX 09T3..	**16600**
AHFC.40.R.03-12	22.8	40	3	2.0	40	16	38	21120	5	XOLX 1204..	**040**
AHFC.42.R.04-12	24.8	42	4	2.0	40	16	38	20880	5	XOLX 1204..	**042**
AHFC.50.R.04-12	32.8	50	4	2.0	40	22	43	18800	5	XOLX 1204..	**050**
AHFC.52.R.05-12	34.8	52	5	2.0	40	22	43	18400	5	XOLX 1204..	**052**
AHFC.63.R.05-12	45.8	63	5	2.0	40	22	48	16400	5	XOLX 1204..	**063**
AHFC.66.R.06-12	48.8	66	6	2.0	40	22	48	16000	5	XOLX 1204..	**066**
AHFC.80.R.07-12	62.8	80	7	2.0	50	27	58	14000	5	XOLX 1204..	**080**
AHFC.100.R.08-12	82.8	100	8	2.0	50	32	78	12000	5	XOLX 1204..	**100**
AHFC.63.R.05-19	36.7	63	5	3.3	40	22	48	5500	5	XOLX 1906..	**263**
AHFC.80.R.06-19	53.7	80	6	3.3	50	27	58	4700	5	XOLX 1906..	**280**
AHFC.100.R.08-19	73.7	100	8	3.3	52	32	78	4100	5	XOLX 1906..	**300**
AHFC.125.R.10-19	98.7	125	10	3.3	63	40	88	3600	5	XOLX 1906..	**325**
AHFC.160.R.11-19	133.7	160	11	3.3	63	40	98	3100	5	XOLX 1906..	**360** [1]

1) With threaded holes M12 on the front face, pitch circle diameter = 66.7 mm / Without Through Coolant

	TORX® blade	 Clamping key – T	 Screwdriver	 Power Screw	 Molykote	 Clamping screw	 Torque screwdriver
	80 950 ...	**80 397 ...**	**80 950 ...**	**70 950 ...**	**70 950 ...**	**70 950 ...**	**80 950 ...**
Spare parts							
Insert							
XDLX 09T3..	**036**		**113**		**303**	**110**	**192**
XDLX 09T3.. (Ø32 – Ø42)	**036**	**040**	**113**	**151**	**303**	**304**	**192**
XOLX 1204..	**037**		**114**		**303**	**01200**	**193**
XOLX 1204.. (Ø40 – Ø42)	**037**	**040**	**114**	**151**	**303**	**01200**	**193**
XOLX 1906..	**037**		**114**		**303**	**302**	**193**
XPLX 0603..	**033**		**110**		**303**	**116**	**192**

XPLX / XDLX / XOLX

Designation	IC inch	D1 inch	L inch	BS inch	S inch	AN °
XPLX 0603..	0.250	0.110	0.236	0.039	0.108	11.000
XDLX 09T3..	0.375	0.173	0.354	0.075	0.156	15.000
XOLX 1204..	0.500	0.217	0.472	0.051	0.187	10.000
XOLX 1906..	0.754	0.236	0.748	-	0.250	10.000



XPLX

	-M50 CTCP220	-M50 CTPP225	-M50 CTPP235	-M50 CTPM225	-M50 CTPM240	-F40 CTPM245	-F40 CTCM245
	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
							
	XPLX	XPLX	XPLX	XPLX	XPLX	XPLX	XPLX
	51 019 ...	51 019 ...	51 019 ...	51 019 ...	51 019 ...	51 116 ...	51 116 ...
ISO / RE inch							
060305ER 0.020						455	90501
060305SR 0.020	255	055	105	205	405		
P	●	●	●	●	○	●	●
M			○	●	●	●	●
K			○				
N							
S							○
H							
O							

XPLX

	-M50 CTCK215	-F40 CTC5240	-F40 CTCS245
	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
			
	XPLX	XPLX	XPLX
	51 019 ...	50 518 ...	51 116 ...
ISO / RE inch			
060305ER 0.020		558	55500
060305SR 0.020	505		
P			
M			
K	●		
N			
S		●	●
H			
O			

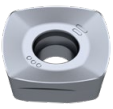
XDLX

		-M50 CTCP220 DRAGONSKIN	-M50 CTPP225 DRAGONSKIN	-M50 CTCP230 DRAGONSKIN	-M50 CTPP235 DRAGONSKIN
					
		XDLX	XDLX	XDLX	XDLX
		51 016 ...	51 016 ...	51 016 ...	51 016 ...
ISO	RE inch				
09T308SR	0.031	258	058	008	108
P		●	●	●	●
M					○
K				○	○
N					
S					
H					
O					

XDLX

		-M50 CTPM225 DRAGONSKIN	-M50 CTCM235 DRAGONSKIN	-M50 CTPM240 DRAGONSKIN	-F40 CTPM245 DRAGONSKIN	-M50 CTPM245 DRAGONSKIN	-M50 CTCM245 DRAGONSKIN
							
		XDLX	XDLX	XDLX	XDLX	XDLX	XDLX
		51 016 ...	51 016 ...	51 016 ...	51 115 ...	51 016 ...	51 016 ...
ISO	RE inch						
09T308ER	0.031				458		
09T308SR	0.031	208	308	408		458	90801
P		●	●	○	●	●	●
M		●	●	●	●	●	●
K							
N							
S							○
H							
O							

XDLX / XOLX

		-M50 CTCK215 DRAGONSKIN	-M50 CTPK220 DRAGONSKIN	-F40 CTC5240 DRAGONSKIN	-F40 CTCS245 DRAGONSKIN
					
		XDLX	XOLX	XDLX	XDLX
		51 016 ...	51 017 ...	50 503 ...	51 115 ...
ISO	RE inch				
09T308ER	0.031			558	558
09T308SR	0.031	508			
190615SR	0.059		61500		
P					
M					
K		●	●		
N					
S				●	●
H					
O					

XOLX

		-M50 CTCP220 DRAGONSKIN	-M50 CTPP225 DRAGONSKIN	-M50 CTCP230 DRAGONSKIN	-M50 CTPP235 DRAGONSKIN	-R50 CTPP235 DRAGONSKIN
						
		XOLX	XOLX	XOLX	XOLX	XOLX
		51 017 ...	51 017 ...	51 017 ...	51 017 ...	51 018 ...
ISO	RE inch					
120410SR	0.039	260	060	010	110	110
P		●	●	●	●	●
M					○	○
K				○	○	○
N						
S						
H						
O						

15

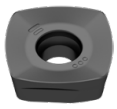
XOLX

	-M50 CTPM225	-M50 CTCM235	-M50 CTPM240	-F40 CTPM245	-M50 CTPM245	-F40 CTCM245	-M50 CTCM245
	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
							
	XOLX	XOLX	XOLX	XOLX	XOLX	XOLX	XOLX
	51 017 ...	51 017 ...	51 017 ...	51 022 ...	51 017 ...	51 022 ...	51 017 ...
ISO / RE inch							
120410ER 0.039				460		91001	
120410SR 0.039	210	310	410		460		91001
P	●	●	○	●	●	●	●
M	●	●	●	●	●	●	●
K							
N							
S						○	○
H							
O							

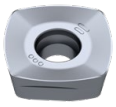
XOLX / XOHX

	-M50 CTCK215	-F40 CTC5240	-F50 CTC5240	-F40 CTCS245	-F50 CTCS245
	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
					
	XOLX	XOLX	XOHX	XOLX	XOHX
	51 017 ...	50 504 ...	51 124 ...	51 022 ...	51 124 ...
ISO / RE inch					
120410ER 0.039		558		560	
120410SR 0.039	510		16000		56000
P					
M					
K	●				
N					
S		●	●	●	●
H					
O					

XOLX

	-M50 CTCP230	-M50 CTPP235	-M50 CTPM240	-F40 CTPM245
	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
				
	XOLX	XOLX	XOLX	XOLX
	51 017 ...	51 017 ...	51 017 ...	51 022 ...
ISO / RE inch				
190615ER 0.059				465
190615SR 0.059	015	115	415	
P	●	●	○	●
M		○	●	●
K	○	○		
N				
S				
H				
O				

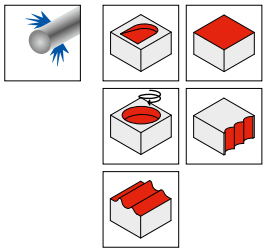
XOLX

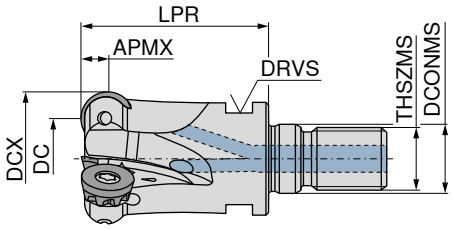
	-F40 CTCM245	-M50 CTCK215	-M50 CTPK220	-F40 CTC5240	-F40 CTCS245
	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
					
	XOLX	XOLX	XOLX	XOLX	XOLX
	51 022 ...	51 017 ...	51 017 ...	50 504 ...	51 022 ...
ISO / RE inch					
190615ER 0.059	91501			515	56500
190615SR 0.059		515	61500		
P	●				
M	●				
K		●	●		
N					
S	○			●	●
H					
O					

Milling guide

Cutting data standard values	→ 154–157	Machining strategy	→ 184–187
Starting Parameter	→ 184–187	Technical Information	→ 191–197
Chip groove description and overview	→ 198–200	Grade description and overview	→ 202–207

MaxiMill – 251 RS Screw in cutter



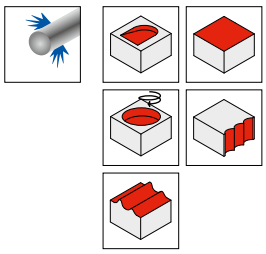


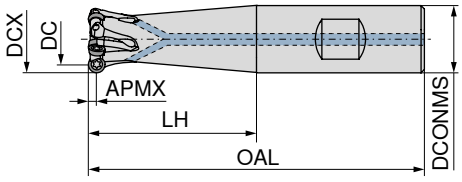


Designation	DC inch	DCX inch	ZNF	APMX inch	DCONMS inch	LPR inch	THSZMS	RPMX 1/min.	torque moment Nm	Insert	58 684 ...
G251.100.R.03-10-125-RS-F	0.606	1.000	3	0.197	0.492	1.250	M12	25450	2	RP.X 10T3..	10103
G251.125.R.04-10-125-RS-F	0.856	1.250	4	0.196	0.669	1.500	M16	25450	2	RP.X 10T3..	12604[1)]
G251.150.R.05-10-175-RS-F	1.106	1.500	5	0.197	0.669	1.750	M16	15150	2	RP.X 10T3..	15105[1)]
G251.125.R.03-12-125-RS-F	0.777	1.250	3	0.236	0.492	1.575	M12	25450	3.2	RP.X 1204..	22503[1)]

1) Not in stock

MaxiMill – 251 RS End milling cutter







Designation	DC inch	DCX inch	ZNF	APMX inch	OAL inch	LH inch	DCONMS inch	RPMX 1/min.	Insert	58 685 ...	58 685 ...
C251.0750.R.03-08-B-125-RS-EF	0.435	0.750	3	0.157	3.500	1.250	0.750	31800	RDHX 0802..		27503
C251.0750.R.03-08-A-200-RS-EF-800	0.435	0.750	3	0.157	8.000	2.000	0.750	22260	RDHX 0802..	07503	
C251.100.R.04-08-B-225-RS-EF	0.685	1.000	4	0.157	4.500	2.250	1.000	25450	RDHX 0802..		30004
C251.100.R.04-08-A-300-RS-EF-800	0.685	1.000	4	0.157	8.000	3.000	1.000	18000	RDHX 0802..	10004	
C251.125.R.05-08-B-275-RS-EF	0.935	1.250	5	0.157	5.250	2.750	1.250	19850	RDHX 0802..		32505
C251.125.R.05-08-A-325-RS-EF-1000	0.935	1.250	5	0.157	10.000	3.250	1.250	18000	RDHX 0802..	12505	
C251.100.R.03-10-B-225-RS-EF	0.606	1.000	3	0.197	4.500	2.250	1.000	25450	RP.X 10T3..		50003
C251.100.R.03-10-A-300-RS-EF-800	0.606	1.000	3	0.197	8.000	3.000	1.000	20000	RP.X 10T3..	40003	
C251.125.R.04-10-B-275-RS-EF	0.857	1.250	4	0.197	5.250	2.750	1.250	19850	RP.X 10T3..		52504
C251.125.R.04-10-A-325-RS-EF-1000	0.857	1.250	4	0.197	10.000	3.250	1.250	18000	RP.X 10T3..	42504	
C251.150.R.05-10-B125-325-RS-EF	1.106	1.500	5	0.197	6.000	3.250	1.250	15100	RP.X 10T3..		55005
C251.150.R.05-10-A125-375-RS-EF-1000	1.106	1.500	5	0.197	10.000	3.750	1.250	10700	RP.X 10T3..	45005	
C251.125.R.02-12-A-325-RS-EF-1000	0.778	1.250	2	0.236	10.000	3.250	1.250	8500	RP.X 1204..	62502	
C251.150.R.03-12-A125-375-RS-EF-1000	1.028	1.500	3	0.236	10.000	3.750	1.250	12500	RP.X 1204..	65003	
C251.150.R.02-16-A125-375-RS-EF-1000	0.870	1.500	2	0.315	10.000	3.750	1.250	10500	RP.X 1605..	75002	

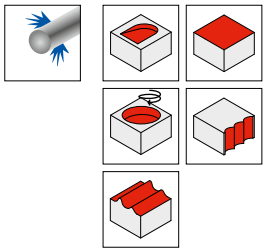

Screwdriver

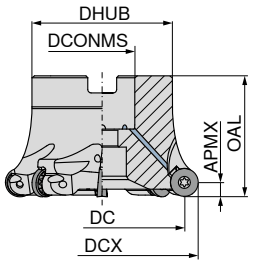

Molykote

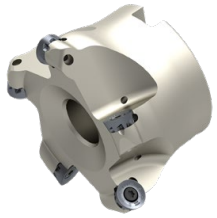

Clamping screw

Spare parts	80 950 ...	70 950 ...	70 950 ...
Insert			
RDHX 0802..	102	303	116
RP.X 10T3..	104	303	840
RP.X 10T3..		303	
RP.X 1204..	105	303	304
RP.X 1605..	106	303	01200

MaxiMill – 251 RS Shell mill







58 686 ...

Designation	DC inch	DCX inch	ZNF	APMX inch	OAL inch	DHUB inch	DCONMS H6 inch	RPMX 1/min.	torque moment Nm	Insert	
A251.150.R.06-08-A050-175-RS-EF	1.185	1.500	6	0.157	1.420	1.420	0.500	15150	1.2	RDHX 0802..	**15006**
A251.300.R.12-08-A100-200-RS-IN-EF	2.685	3.000	12	0.157	2.250	2.250	1.000	7950	1.2	RDHX 0802..	**30012**
A251.150.R.05-10-A050-175-RS-EF	1.106	1.500	5	0.197	1.420	1.420	0.500	15900	2	RP.X 10T3..	**15105**
A251.200.R.06-10-A075-175-RS-EF	1.606	2.000	6	0.197	1.750	1.750	0.750	12700	2	RP.X 10T3..	**20106**
A251.200.R.05-12-A075-175-RS-EF	1.528	2.000	5	0.236	1.750	1.750	0.750	12700	3.2	RP.X 1204..	**20205**
A251.200.R.06-12-A075-175-RS-EF	1.528	2.000	6	0.236	1.750	1.750	0.750	12700	3.2	RP.X 1204..	**20206**
A251.250.R.06-12-A100-200-RS-EF	2.028	2.500	6	0.236	2.250	2.250	1.000	10100	3.2	RP.X 1204..	**25206**
A251.300.R.07-12-RS-A100-200-EF	2.528	3.000	7	0.236	2.250	2.250	1.000	7950	3.2	RP.X 1204..	**30207**
A251.400.R.10-12-B125-200-RS-EF	3.528	4.000	10	0.236	2.750	2.750	1.250	6350	3.2	RP.X 1204..	**40210**
A251.600.R.12-12-B150-200-RS-EF	5.528	6.000	12	0.236	3.750	3.750	1.500	8300	3.2	RP.X 1204..	**60212**[1)]
A251.200.R.03-16-A075-175-RS-EF	1.370	2.000	3	0.315	1.750	1.750	0.750	12700	5	RP.X 1605..	**20303**
A251.250.R.05-16-A100-200-RS-EF	1.870	2.500	5	0.315	2.250	2.250	1.000	10100	5	RP.X 1605..	**25305**
A251.300.R.06-16-A100-200-RS-EF	2.370	3.000	6	0.315	2.250	2.250	1.000	7950	5	RP.X 1605..	**30306**
A251.400.R.07-16-B125-200-RS-EF	3.370	4.000	7	0.315	2.750	2.750	1.250	6350	5	RP.X 1605..	**40307**
A251.500.R.08-16-B150-200-RS-EF	4.370	5.000	8	0.315	3.750	3.750	1.500	5400	5	RP.X 1605..	**50308**
A251.600.R.10-16-B150-200-RS-EF	5.370	6.000	10	0.315	3.750	3.750	1.500	7200	5	RP.X 1605..	**60310**
A251.300.R.05-20-A100-200-RS-EF	2.213	3.000	5	0.394	2.250	2.250	1.000	8600	5	RP.X 2006..	**30405**
A251.400.R.06-20-A125-200-RS-EF	3.213	4.000	6	0.394	2.750	2.750	1.250	6350	5	RP.X 2006..	**40406**
A251.500.R.07-20-B150-200-RS-EF	4.213	5.000	7	0.394	3.750	3.750	1.500	5400	5	RP.X 2006..	**50407**
A251.600.R.08-20-B150-200-RS-EF	5.213	6.000	8	0.394	3.750	3.750	1.500	6500	1.2	RP.X 2006..	**60408**

1) Not in stock



Screwdriver



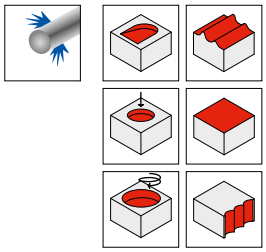
Molykote

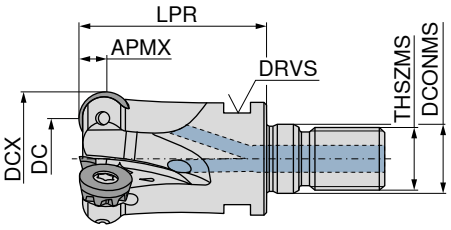


Clamping screw

	80 950 ...	**70 950 ...**	**70 950 ...**
Spare parts			
Insert			
RDHX 0802..	**102**	**303**	**116**
RP.X 10T3..	**104**	**303**	**840**
RP.X 1204..	**105**	**303**	**304**
RP.X 1605..	**106**	**303**	**01200**
RP.X 2006..	**106**	**303**	**302**

MaxiMill – 251 RS Screw in cutter





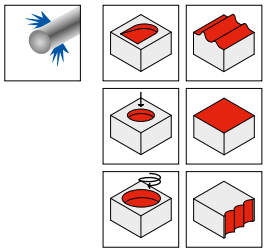


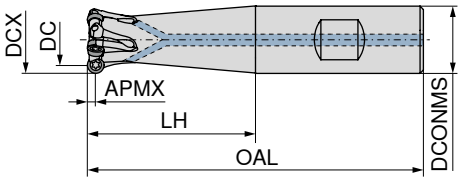
50 684 ...

Designation	DC mm	DCX mm	ZNF	APMX mm	DCONMS mm	LPR mm	THSZMS	DRVS mm	RPMX 1/min.	torque moment Nm	Insert	
G251.20.R.05-05-RS	15	20	5	2.5	10.5	33	M10	15	31800	0.7	RDHX 0501..	**220**
G251.25.R.06-05-RS	20	25	6	2.5	12.5	35	M12	17	24450	0.7	RDHX 0501..	**225**
G251.32.R.07-05-RS	27	32	7	2.5	17.0	35	M16	24	19850	0.7	RDHX 0501..	**232**
G251.20.R.03-08-RS	12	20	3	4.0	10.5	33	M10	15	25000	1.2	RDHX 0802..	**120**
G251.25.R.04-08-RS	17	25	4	4.0	12.5	35	M12	17	19000	1.2	RDHX 0802..	**125**
G251.32.R.05-08-35-RS	24	32	5	4.0	17.0	35	M16	24	19000	1.2	RDHX 0802..	**132**
G251.20.R.02-10-RS	10	20	2	5.0	10.5	33	M10	15	30000	2	RP.X 10T3..	**020**
G251.25.R.03-10-RS	15	25	3	5.0	12.5	35	M12	17	30000	2	RP.X 10T3..	**025**
G251.32.R.04-10-RS	22	32	4	5.0	17.0	35	M16	24	25000	2	RP.X 10T3..	**032**
G251.25.R.02-12-35-RS	13	25	2	6.0	12.5	35	M12	17	25000	3.2	RP.X 1204..	**525**
G251.32.R.03-12-35-RS	20	32	3	6.0	17.0	35	M16	24	19850	3.2	RP.X 1204..	**532**
G251.35.R.03-12-35-RS	23	35	3	6.0	17.0	35	M16	24	15900	3.2	RP.X 1204..	**535**
G251.42.R.04-12-42-RS	30	42	4	6.0	17.0	42	M16	24	15000	3.2	RP.X 1204..	**542**

	TORX® blade	 Screwdriver	 Molykote	 Clamping screw	 Torque screwdriver
	80 950 ...	**80 950 ...**	**70 950 ...**	**70 950 ...**	**80 950 ...**
Spare parts Insert					
RDHX 0501..	**031**	**108**	**303**	**149**	**191**
RDHX 0802..	**033**	**110**	**303**	**116**	**191**
RP.X 10T3..	**035**	**112**	**303**	**840**	**192**
RP.X 1204..	**036**	**113**	**303**	**304**	**192**

MaxiMill – 251 RS End milling cutter







Designation	DC mm	DCX mm	ZNF	APMX mm	OAL mm	LH mm	DCONMS mm	RPMX 1/min.	Insert	50 685 ...		50 685 ...	
C251.12.R-03-05-B-16-25-RS	7	12	3	2.5	75	25	16	40000	RDHX 0501..		012		
C251.12.R-03-05-A-32-165-RS	7	12	3	2.5	165	32	12	16000	RDHX 0501..	112			
C251.16.R-04-05-B-32-RS	11	16	4	2.5	81	32	16	40000	RDHX 0501..		316		
C251.16.R-04-05-A-40-165-RS	11	16	4	2.5	165	40	16	18000	RDHX 0501..	016			
C251.20.R-05-05-B-40-RS	15	20	5	2.5	91	40	20	31800	RDHX 0501..		620		
C251.20.R-05-05-A-50-165-RS	15	20	5	2.5	165	50	20	18000	RDHX 0501..	120			
C251.16.R-02-08-B-32-RS	8	16	2	4.0	81	32	16	40000	RDHX 0802..		116		
C251.16.R-02-08-A-40-165-RS	8	16	2	4.0	165	40	16	18000	RDHX 0802..	216			
C251.20.R-03-08-B-40-RS	12	20	3	4.0	91	40	20	31800	RDHX 0802..		220		
C251.20.R-03-08-A-60-RS	12	20	3	4.0	110	50	20	30000	RDHX 0802..	020			
C251.20.R-03-08-A-50-200-RS	12	20	3	4.0	200	50	20	25000	RDHX 0802..	320			
C251.25.R-04-08-B-50-RS	17	25	4	4.0	107	50	25	25500	RDHX 0802..		625		
C251.25.R-04-08-A-60-RS	17	25	4	4.0	116	60	25	19000	RDHX 0802..	125			
C251.25.R-04-08-A-60-225-RS	17	25	4	4.0	225	60	25	18000	RDHX 0802..	225			
C251.20.R-02-10-A-50-RS	10	20	2	5.0	102	50	20	25000	RP.X 10T3..	420			
C251.20.R-02-10-A-50-200-RS	10	20	2	5.0	200	50	20	25000	RP.X 10T3..	520			
C251.25.R.03-10-A-60-RS	15	25	3	5.0	116	60	25	25000	RP.X 10T3..	025			
C251.25.R-03-10-B-60-RS	15	25	3	5.0	116	60	25	20000	RP.X 10T3..		325		
C251.25.R-03-10-A-60-225-RS	15	25	3	5.0	225	60	25	18000	RP.X 10T3..	425			
C251.32.R.04-10-A-70-RS	22	32	4	5.0	130	70	32	25000	RP.X 10T3..	032			
C251.25.R-02-12-B-30-RS	13	25	2	6.0	86	30	25	25000	RP.X 1204..		525		
C251.32.R-03-12-A-RS	20	32	3	6.0	100	40	32	19000	RP.X 1204..	232			
C251.32.R-03-12-B-40-RS	20	32	3	6.0	100	40	32	19000	RP.X 1204..		132		

TORX® blade

Screwdriver


Molykote

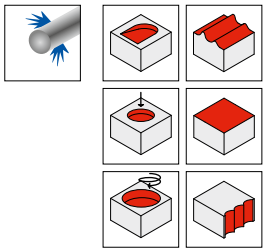

Clamping screw

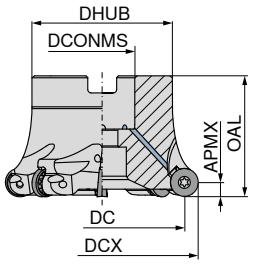

Torque screwdriver

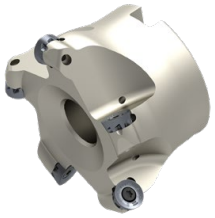
Spare parts Insert	80 950 ...		80 950 ...		70 950 ...		70 950 ...		80 950 ...	
RDHX 0501..		031		108		303		149		191
RDHX 0802..		033		110		303		116		191
RP.X 10T3..		035		112		303		840		192
RP.X 10T3..				112		303		840		
RP.X 1204..		036		113		303		304		192

15

MaxiMill – 251 RS Shell mill







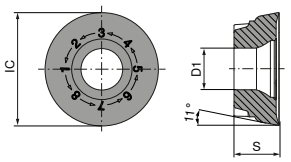
50 686 ...

Designation	DC mm	DCX mm	ZNF	APMX mm	OAL mm	DHUB mm	DCONMS $_{H6}$ mm	RPMX 1/min.	torque moment Nm	Insert	
A251.40.R.03-10-RS	30	40	3	5	40	38	16	15900	2	RP.X 10T3..	**240**
A251.40.R.05-10-RS	30	40	5	5	40	38	16	16000	2	RP.X 10T3..	**140**
A251.42.R.06-10-RS	32	42	6	5	40	38	16	16000	2	RP.X 10T3..	**142**
A251.50.R.04-10-RS	40	50	4	5	40	43	22	12700	2	RP.X 10T3..	**350**
A251.50.R.06-10-RS	40	50	6	5	40	43	22	12500	2	RP.X 10T3..	**150**
A251.52.R.06-10-RS	42	52	6	5	40	43	22	12500	2	RP.X 10T3..	**152**
A251.40.R.04-12-RS	28	40	4	6	40	38	16	15900	3.2	RP.X 1204..	**340**
A251.50.R.04-12-RS	38	50	4	6	40	43	22	12700	3.2	RP.X 1204..	**250**
A251.50.R.05-12-RS	38	50	5	6	40	43	22	12500	3.2	RP.X 1204..	**050**
A251.66.R.07-12-RS	54	66	7	6	40	48	22	9000	3.2	RP.X 1204..	**166**
A251.80.R.05-12-RS	68	80	5	6	50	58	27	7950	3.2	RP.X 1204..	**180**
A251.80.R.07-12-RS	68	80	7	6	50	58	27	8000	3.2	RP.X 1204..	**080**
A251.100.R.06-12-RS	88	100	6	6	50	78	32	6350	3.2	RP.X 1204..	**100**
A251.100.R.10-12-RS	88	100	10	6	50	78	32	6350	3.2	RP.X 1204..	**200**
A251.50.R.04-16-RS	34	50	4	8	40	48	22	12700	5	RP.X 1605..	**450**
A251.52.R.04-16-RS	36	52	4	8	40	48	22	10100	5	RP.X 1605..	**452**
A251.63.R.05-16-RS	47	63	5	8	40	48	22	10100	5	RP.X 1605..	**163**
A251.66.R.05-16-RS	50	66	5	8	40	48	22	7950	5	RP.X 1605..	**466**
A251.80.R.06-16-RS	64	80	6	8	50	58	27	7950	5	RP.X 1605..	**280**
A251.100.R.07-16-RS	84	100	7	8	50	78	32	6350	5	RP.X 1605..	**300**
A251.125.R.08-16-RS	109	125	8	8	63	88	40	5050	5	RP.X 1605..	**225**
A251.80.R.05-20-RS	60	80	5	10	50	58	27	7950	5	RP.X 2006..	**380**
A251.100.R.06-20-RS	80	100	6	10	50	78	32	6350	5	RP.X 2006..	**400**
A251.125.R.06-20-RS	105	125	6	10	63	88	40	5050	5	RP.X 2006..	**125**

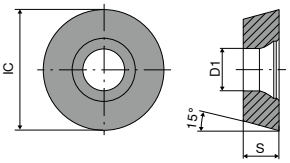
	TORX® blade	 Clamping key – T	 Screwdriver	 Power Screw	 Molykote	 Clamping screw	 Torque screwdriver
	80 950 ...	**80 397 ...**	**80 950 ...**	**70 950 ...**	**70 950 ...**	**70 950 ...**	**80 950 ...**
Spare parts							
Insert							
RP.X 10T3..	**035**	**040**	**112**	**151**	**303**	**840**	**192**
RP.X 1204..	**036**	**040**	**113**	**151**	**303**	**304**	**192**
RP.X 1605..	**037**	**050**	**114**	**154**	**303**	**01200**	**193**
RP.X 2006..	**037**		**114**		**303**	**302**	**193**

RDHX / RPHX / RPNX

Designation	IC inch	D1 inch	S inch
RDHX 0501..	0.197	0.098	0.063
RDHX 0802..	0.315	0.110	0.094
RP.X 10T3..	0.394	0.134	0.156
RP.X 1204..	0.472	0.173	0.187
RP.X 1605..	0.630	0.217	0.219
RP.X 2006..	0.787	0.236	0.250



RP.X 10T3.. / RP.X 1204.. / RP.X 1605.. / RPNX 2006..

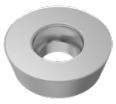


RDHX 0501.. / RDHX0802..

RDHX

	-SN CTCP230 DRAGONSKIN	-SN CTPP235 DRAGONSKIN	-F50 CTPM240 DRAGONSKIN	-F50 CTPM245 DRAGONSKIN	-F50 CTCM245 DRAGONSKIN
					
	RDHX	RDHX	RDHX	RDHX	RDHX
	51 048 ...	51 048 ...	51 083 ...	51 083 ...	51 083 ...
ISO					
0802M0SN	025	125	420	470	92001
0802M4SN				471	92101
P	●	●	○	●	●
M		○	●	●	●
K	○	○			
N					
S					○
H					
O					

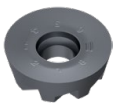
RDHX

	-FN H216T	-M31 CTC5240 DRAGONSKIN	-F50 CTCS245 DRAGONSKIN
			
	RDHX	RDHX	RDHX
	50 481 ...	50 481 ...	51 083 ...
ISO			
0802M0EN		500	
0802M0FN	602		
0802M0SN			570
0802M4EN		50100	
P			
M			
K	○		
N	●		
S		●	●
H			
O	○		

RPHX / RPNX

	-SN TCM10	-F50 CTCP230 DRAGONSKIN	-M50 CTCP230 DRAGONSKIN	-SN CTCP230 DRAGONSKIN	-SN CTCP230 DRAGONSKIN
					
	CERMET RPHX	RPNX	RPNX	RPHX	RPNX
	50 483 ...	51 055 ...	51 054 ...	51 052 ...	51 057 ...
ISO					
10T3M0SN	900				
10T3M8SN		020	020	020	
1204M0SN	902				
1204M8SN		025	025	025	025
1605M8SN			030	030	030
2006M8SN					035
P	●	●	●	●	●
M					
K	○	○	○	○	○
N					
S					
H					
O					

RPHX / RPNX

	-F50 CTPP235 DRAGONSKIN	-F50 CTPP235 DRAGONSKIN	-M30 CTPP235 DRAGONSKIN	-M30 CTPP235 DRAGONSKIN
				
	RPHX	RPNX	RPHX	RPNX
	51 051 ...	51 055 ...	51 049 ...	51 053 ...
ISO				
10T3M8EN			120	
10T3M8SN	12000	120		
1204M8SN	125	125		
1605M0SN		130		
2006M8EN				120
P	●	●	●	●
M	○	○	○	○
K	○	○	○	○
N				
S				
H				
O				

RPNX / RPHX

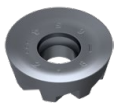
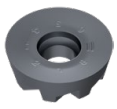
	-M50 CTPP235 DRAGONSKIN	-M50 CTPP235 DRAGONSKIN	-SN CTPP235 DRAGONSKIN	-SN CTPP235 DRAGONSKIN
				
	RPNX	RPHX	RPHX	RPNX
	51 054 ...	51 050 ...	51 052 ...	51 057 ...
ISO				
10T3M8SN	12000	12000	120	
1204M8SN	125		125	125
1605M8SN	130		130	130
2006M8SN				135
P	●	●	●	●
M	○	○	○	○
K	○	○	○	○
N				
S				
H				
O				

RPHX

	-F50 CTPM225 DRAGONSKIN	-M30 CTPM225 DRAGONSKIN	-SN CTPM225 DRAGONSKIN	-F50 CTCM235 DRAGONSKIN	-M30 CTCM235 DRAGONSKIN
					
	RPHX	RPHX	RPHX	RPHX	RPHX
	51 051 ...	51 049 ...	51 052 ...	51 051 ...	51 049 ...
ISO					
1204M8EN		225			325
1204M8SN	225		225	325	
P	●	●	●	●	●
M	●	●	●	●	●
K					
N					
S					
H					
O					

15

RPHX / RPNX

	-F50 CTPM240 DRAGONSKIN	-F50 CTPM240 DRAGONSKIN	-M30 CTPM240 DRAGONSKIN	-M30 CTPM240 DRAGONSKIN	-M50 CTPM240 DRAGONSKIN
					
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ISO					
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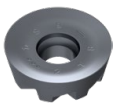
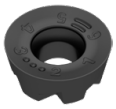
10T3M8SN	420				420
1204M8EN			425		
1204M8SN	425				425
1605M8EN			430		
1605M8SN	430				
2006M8EN				420	
2006M8SN		435			
P	○	○	○	○	○
M	●	●	●	●	●
K					
N					
S					
H					
O					

RPHX / RPNX

	CTPM245 DRAGONSKIN	-F50 CTPM245 DRAGONSKIN	-F50 CTPM245 DRAGONSKIN	-M32 CTPM245 DRAGONSKIN	-M50 CTPM245 DRAGONSKIN
					
	RPHX	RPHX	RPNX	RPHX	RPHX
	51 052 ...	51 051 ...	51 055 ...	51 108 ...	51 050 ...
ISO					
10T3M4SN		470 [1]	470 [1]		470 [1]
10T3M8SN		471	471		471
1204M4EN	475 [1]			475 [1]	
1204M4SN		475 [1]	475 [1]		475 [1]
1204M6SN		476			476
1204M8SN		477	476		477
1605M8SN		480			
2006M4SN		485 [1]			
2006M8SN			485		
P	●	●	●	●	●
M	●	●	●	●	●
K					
N					
S					
H					
O					

1) Insert with 4 indexes

RPNX / RPHX

	-F50 CTCM245 DRAGONSKIN	-M50 CTCM245 DRAGONSKIN	-F50 CTCM245 DRAGONSKIN	-M50 CTCM245 DRAGONSKIN
				
	RPNX	RPNX	RPHX	RPHX
	51 055 ...	51 054 ...	51 051 ...	51 050 ...
ISO				
10T3M4SN	92001[1)]		92001[1)]	92001[1)]
10T3M8SN	92101		92101	
1204M4SN	92501[1)]		92501[1)]	92501[1)]
1204M6SN		92601	92601	92601
1204M8SN	92601			92701
1605M8SN	93001		93001	
2006M8SN	93501	93501		
P	●	●	●	●
M	●	●	●	●
K				
N				
S	○	○	○	○
H				
O				

1) Insert with 4 indexes

RPHX / RPNX

		-SN CTCK215 DRAGONSKIN	-SN CTCK215 DRAGONSKIN	-SN CTPK220 DRAGONSKIN	NEW -F10 CTPX715 DRAGONSKIN	-27P H216T
						
		RPHX	RPNX	RPNX	RPHX	RPHX
		51 052 ...	51 057 ...	51 057 ...	51 156 ...	50 483 ...
ISO						
10T3M8FN					02002	600
10T3M8SN	520			620		
1204M8FN					02502	602
1204M8SN	525	525		625		
1605M8FN					03002	604
1605M8SN	530	530		630		
2006M8SN		535		635		
P					○	
M					○	
K	●	●	●		●	○
N					●	●
S					○	
H						
O					○	○

15

RPNX / RPHX

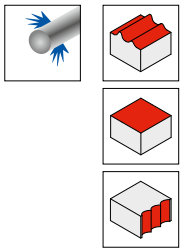
	-M31 CTC5240 DRAGONSKIN	-M31 CTC5240 DRAGONSKIN	-F50 CTCS245 DRAGONSKIN	-F50 CTCS245 DRAGONSKIN	-R60 CTP6215
					
	RPNX	RPHX	RPHX	RPNX	RPNX
ISO	51 149 ...	50 493 ...	51 051 ...	51 055 ...	50 508 ...
10T3M4EN		550 [1]			
10T3M4SN			570 [1]		
10T3M8EN		551			
10T3M8SN			571		
1204M4EN		552 [1]			
1204M4SN			575		
1204M6EN		56200			
1204M6SN			57800		
1204M8EN		582			300
1204M8SN			577		
1605M8EN		555	58100		
2006M8EN	12001				
2006M8SN				585	
P					
M					
K					●
N					
S	●	●	●	●	
H					●
O					

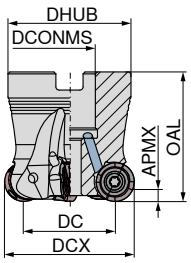
1) Insert with 4 indexes

Milling guide

Cutting data standard values	→ 154–157	Machining strategy	→ 188
Technical Information	→ 191–197	Chip groove description and overview	→ 198–200
Grade description and overview	→ 202–207		

MaxiMill – 252 Shell mill







58 689 ...

Designation	DC inch	DCX inch	ZNF	APMX inch	OAL inch	DHUB inch	DCONMS inch	RPMX 1/min.	torque moment Nm	Insert	
A252.150.R.04-12-A050-175-EF	1.027	1.500	4	0.118	1.500	1.500	0.500	15900	3.2	RNHU 1205..	**15004**
A252.200.R.05-12-A075-175-EF	1.527	2.000	5	0.118	1.750	1.750	0.750	12700	3.2	RNHU 1205..	**20005**
A252.250.R.06-12-A100-200-EF	2.027	2.500	6	0.118	2.250	2.250	1.000	10100	3.2	RNHU 1205..	**25006**
A252.300.R.07-12-A100-200-EF	2.527	3.000	7	0.118	2.250	2.250	1.000	7950	3.2	RNHU 1205..	**30007**



Screwdriver

80 950 ...



Molykote

70 950 ...



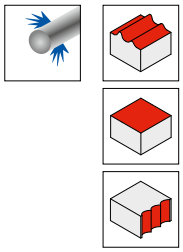
Clamping screw

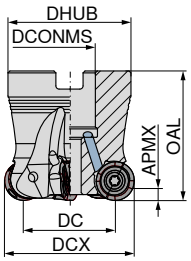
70 950 ...

Spare parts DCX			
1.500 - 3.000	**128**	**303**	**859**

15

MaxiMill – 252 Shell mill







NEW

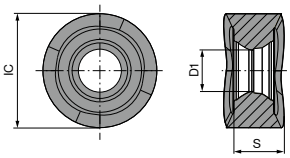
50 689 ...

Designation	DC mm	DCX mm	ZNF	APMX mm	OAL mm	DCONMS mm	DHUB mm	torque moment Nm	Insert	
A252.40.R.05-10	30	40	5	2.5	40	16	38	2	RNHU 1004..	**140**
A252.42.R.05-10	32	42	5	2.5	40	16	38	2	RNHU 1004..	**142**
A252.50.R.06-10	40	50	6	2.5	40	22	43	2	RNHU 1004..	**150**
A252.52.R.07-10	42	52	7	2.5	40	22	43	2	RNHU 1004..	**152**
A252.63.R.08-10	53	63	8	2.5	40	22	48	2	RNHU 1004..	**16300**
A252.80.R.10-10	70	80	10	2.5	50	27	58	2	RNHU 1004..	**18000**
A252.40.R.04-12	28	40	4	3.0	40	16	38	3.2	RNHU 1205..	**240**
A252.50.R.05-12	38	50	5	3.0	40	22	43	3.2	RNHU 1205..	**250**
A252.52.R.05-12	40	52	5	3.0	40	22	43	3.2	RNHU 1205..	**252**
A252.63.R.06-12	51	63	6	3.0	40	22	48	3.2	RNHU 1205..	**263**
A252.66.R.07-12	54	66	7	3.0	40	22	48	3.2	RNHU 1205..	**266**
A252.80.R.08-12	68	80	8	3.0	50	27	58	3.2	RNHU 1205..	**280**
A252.100.R.10-12	88	100	10	3.0	50	32	78	3.2	RNHU 1205..	**30000**
A252.125.R.12-12	113	125	12	3.0	63	40	88	3.2	RNHU 1205..	**32500**

	TORX® blade	 Clamping key – T	 Screwdriver	 Power Screw	 Molykote	 Clamping screw	 Torque screw-driver
	80 950 ...	**80 397 ...**	**80 950 ...**	**70 950 ...**	**70 950 ...**	**70 950 ...**	**80 950 ...**
Spare parts							
Insert							
RNHU 1004.. (Ø40 – Ø80)	**053**		**127**		**303**	**710**	**192**
RNHU 1205.. (Ø40)	**054**	**040**	**128**	**151**	**303**	**839**	**192**
RNHU 1205.. (Ø50 – Ø125)	**054**		**128**		**303**	**839**	**192**

RNHU

Designation	IC inch	D1 inch	S inch
RNHU 1004..	0.394	0.134	0.181
RNHU 1205..	0.472	0.173	0.209



RNHU

	NEW	NEW	NEW	NEW	NEW	NEW
	-M50 CTPP235	-F50 CTPM240	-M31 CTPM245	-M32 CTPM245	-M31 CTC5240	-M31 CTC5240
	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN	DRAGONSKIN
						
	RNHU	RNHU	RNHU	RNHU	RNHU	RNHU
	51 130 ...	51 129 ...	51 106 ...	51 107 ...	50 520 ...	50 521 ...
ISO						
1004M4ER	12000	42000	470	470	550	
1205M4ER		42500	475	475		552
1205M4SR	12500					
P	●	○	●	●		
M	○	●	●	●		
K	○					
N						
S					●	●
H						
O						

Milling guide

Cutting data standard values	→ 154–157	Machining strategy	→ 189
Technical Information	→ 191+197	Chip groove description and overview	→ 198–200
Grade description and overview	→ 202–207		

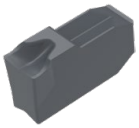
15

Application tips – **MaxiMill** – Slot-SX

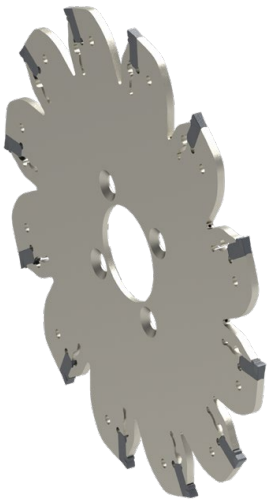
▲ The following components are required to complete the tool:



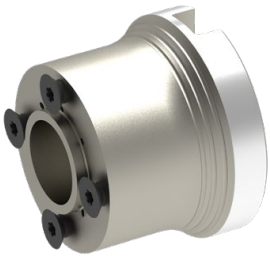
Spanner



Grooving insert



Saw cutters

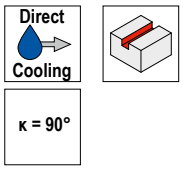


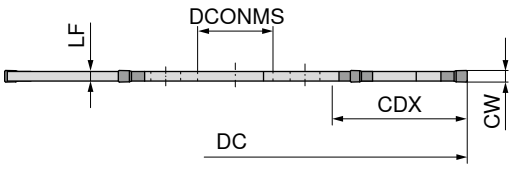
Multipurpose milling cutter adapter

MaxiMill – Slot-SX slot milling and parting off cutter

Scope of supply:

Slot milling and parting off cutters **without** assembly key, **without** clamping screws







NEW

Designation	DC mm	CW mm	CDX mm	DCONMS $_{H6}$ mm	LF mm	ZEFP	RPMX 1/min.	Insert	Adapter	50 383 ...
ASLOT.80.R.6.13.DC-SX2	80	2	23	13	1.65	6	5000	SX E2 ..	AD.SLOT.13...	**08002**
ASLOT.80.R.6.13.DC-SX3	80	3	23	13	2.50	6	6700	SX E3 ..	AD.SLOT.13...	**08003**
ASLOT.80.R.4.13.DC-SX4	80	4	23	13	3.50	4	5200	SX E4 ..	AD.SLOT.13...	**08004**
ASLOT.80.R.4.13.DC-SX5	80	5	23	13	4.50	4	5000	SX E5 ..	AD.SLOT.13...	**08005**



Clamping screw



Insert mounting key SX

Spare parts for Article no.	50 950 ...	70 950 ...
50 383 08002	**00100**	**836**
50 383 08003	**00100**	**836**
50 383 08004	**00100**	**837**
50 383 08005	**00100**	**837**

→ **Page 146**
Here you will find suitable multipurpose milling cutter adapters.

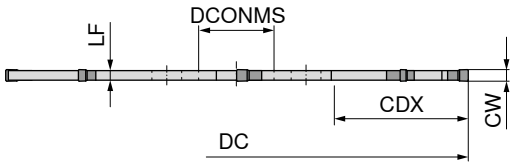
MaxiMill – Slot-SX slot milling and parting off cutter

Scope of supply:

Slot milling and parting off cutters **without** assembly key, **without** clamping screws

Direct Cooling

κ = 90°





NEW

Designation	DC mm	CW mm	CDX mm	DCONMS H6 mm	LF mm	ZEFP	RPMX 1/min.	Insert	Adapter	50 384 ...
ASLOT.100.R.8.22.DC-SX2	100	2	29	22	1.65	8	4500	SX E2 ..	AD.SLOT.22...	**10002**
ASLOT.100.R.8.22.DC-SX3	100	3	29	22	2.50	8	6000	SX E3 ..	AD.SLOT.22...	**10003**
ASLOT.100.R.6.22.DC-SX4	100	4	29	22	3.50	6	5700	SX E4 ..	AD.SLOT.22...	**10004**
ASLOT.100.R.6.22.DC-SX5	100	5	29	22	4.50	6	4500	SX E5 ..	AD.SLOT.22...	**10005**
ASLOT.100.R.4.22.DC-SX6	100	6	29	22	5.40	4	3900	SX E6 ..	AD.SLOT.22...	**10006**



Clamping screw

50 950 ...



Insert mounting key SX

70 950 ...

Spare parts for Article no.		
50 384 10002	**00100**	**836**
50 384 10003	**00100**	**836**
50 384 10004	**00100**	**837**
50 384 10005	**00100**	**837**
50 384 10006	**00100**	**837**

→ **Page 146**
Here you will find suitable multipurpose milling cutter adapters.

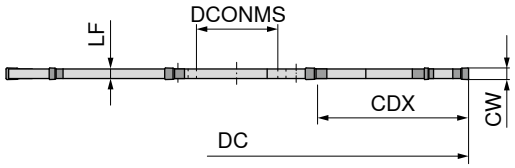
MaxiMill – Slot-SX slot milling and parting off cutter

Scope of supply:

Slot milling and parting off cutters **without** assembly key, **without** clamping screws

Direct Cooling

κ = 90°





NEW

Designation	DC mm	CW mm	CDX mm	DCONMS $_{H6}$ mm	LF mm	ZEFP	RPMX 1/min.	Insert	Adapter	50 385 ...
ASLOT.125.R.10.22.DC-SX2	125	2	42	22	1.65	10	4000	SX E2 ..	AD.SLOT.22...	**12502**
ASLOT.125.R.10.22.DC-SX3	125	3	42	22	2.50	10	5300	SX E3 ..	AD.SLOT.22...	**12503**



Clamping screw



Insert mounting key SX

Spare parts for Article no.	50 950 ...	70 950 ...
50 385 12502	**00100**	**836**
50 385 12503	**00100**	**836**

→ **Page 146**
Here you will find suitable multipurpose milling cutter adapters.

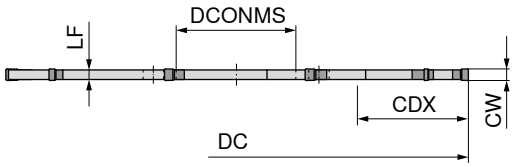
MaxiMill – Slot-SX slot milling and parting off cutter

Scope of supply:

Slot milling and parting off cutters **without** assembly key, **without** clamping screws

Direct Cooling

κ = 90°





NEW

Designation	DC mm	CW mm	CDX mm	DCONMS $_{H6}$ mm	LF mm	ZEFP	RPMX 1/min.	Insert	Adapter	50 386 ...
ASLOT.125.R.10.32.DC-SX2	125	2	30	32	1.65	10	4000	SX E2 ..	AD.SLOT.32...	**12502**
ASLOT.125.R.10.32.DC-SX3	125	3	30	32	2.50	10	5300	SX E3 ..	AD.SLOT.32...	**12503**
ASLOT.125.R.8.32.DC-SX4	125	4	30	32	3.50	8	4200	SX E4 ..	AD.SLOT.32...	**12504**
ASLOT.125.R.8.32.DC-SX5	125	5	30	32	4.50	8	4000	SX E5 ..	AD.SLOT.32...	**12505**
ASLOT.125.R.8.32.DC-SX6	125	6	30	32	5.40	8	3500	SX E6 ..	AD.SLOT.32...	**12506**



Clamping screw

50 950 ...



Insert mounting key SX

70 950 ...

Spare parts for Article no.		
50 386 12502	**00200**	**836**
50 386 12503	**00200**	**836**
50 386 12504	**00200**	**837**
50 386 12505	**00200**	**837**
50 386 12506	**00200**	**837**

→ **Page 146**
Here you will find suitable multipurpose milling cutter adapters.

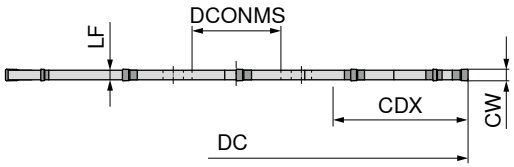
MaxiMill – Slot-SX slot milling and parting off cutter

Scope of supply:

Slot milling and parting off cutters **without** assembly key, **without** clamping screws

Direct Cooling

κ = 90°





NEW

Designation	DC mm	CW mm	CDX mm	DCONMS $_{H6}$ mm	LF mm	ZEFP	RPMX 1/min.	Insert	Adapter	50 387 ...
ASLOT.160.R.12.32.DC-SX2	160	2	48	32	1.65	12	3500	SX E2 ..	AD.SLOT.32...	**16002**
ASLOT.160.R.12.32.DC-SX3	160	3	48	32	2.50	12	4700	SX E3 ..	AD.SLOT.32...	**16003**



Clamping screw



Insert mounting key SX

Spare parts for Article no.	50 950 ...	70 950 ...
50 387 16002	**00200**	**836**
50 387 16003	**00200**	**836**

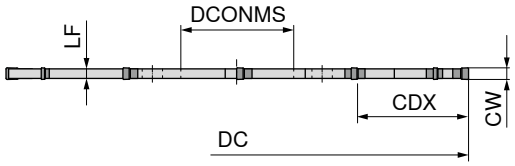
→ **Page 146**
Here you will find suitable multipurpose milling cutter adapters.

MaxiMill – Slot-SX slot milling and parting off cutter

Scope of supply:
Slot milling and parting off cutters **without** assembly key, **without** clamping screws

Direct Cooling

κ = 90°





NEW

Designation	DC mm	CW mm	CDX mm	DCONMS $_{H6}$ mm	LF mm	ZEFP	RPMX 1/min.	Insert	Adapter	50 388 ...
ASLOT.160.R.12.40.DC-SX2	160	2	39	40	1.65	12	3500	SX E2 ..	AD.SLOT.40...SK	**16002**
ASLOT.160.R.12.40.DC-SX3	160	3	39	40	2.50	12	4700	SX E3 ..	AD.SLOT.40...SK	**16003**
ASLOT.160.R.10.40.DC-SX4	160	4	39	40	3.50	10	3700	SX E4 ..	AD.SLOT.40...SK	**16004**
ASLOT.160.R.10.40.DC-SX5	160	5	39	40	4.50	10	3500	SX E5 ..	AD.SLOT.40...SK	**16005**
ASLOT.160.R.10.40.DC-SX6	160	6	39	40	5.40	10	3100	SX E6 ..	AD.SLOT.40...SK	**16006**



Clamping screw

50 950 ...



Insert mounting key SX

70 950 ...

Spare parts for Article no.		
50 388 16002	**00300**	**836**
50 388 16003	**00300**	**836**
50 388 16004	**00300**	**837**
50 388 16005	**00300**	**837**
50 388 16006	**00300**	**837**

→ **Page 146**
Here you will find suitable multipurpose milling cutter adapters.

MaxiMill – Slot-SX slot milling and parting off cutter

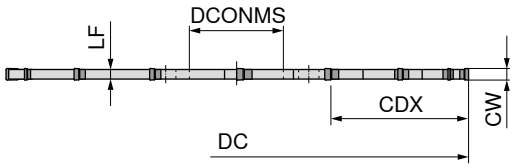
Scope of supply:

Slot milling and parting off cutters **without** assembly key, **without** clamping screws





κ = 90°





NEW

Designation	DC mm	CW mm	CDX mm	DCONMS $_{H6}$ mm	LF mm	ZEFP	RPMX 1/min.	Insert	Adapter	50 389 ...
ASLOT.200.R.16.40.DC-SX2	200	2	59	40	1.65	16	3200	SX E2 ..	AD.SLOT.40...SK	**20002**
ASLOT.200.R.16.40.DC-SX3	200	3	59	40	2.50	16	4200	SX E3 ..	AD.SLOT.40...SK	**20003**
ASLOT.200.R.14.40.DC-SX4	200	4	59	40	3.50	14	3300	SX E4 ..	AD.SLOT.40...SK	**20004**
ASLOT.200.R.14.40.DC-SX5	200	5	59	40	4.50	14	3100	SX E5 ..	AD.SLOT.40...SK	**20005**
ASLOT.200.R.14.40.DC-SX6	200	6	59	40	5.40	14	2800	SX E6 ..	AD.SLOT.40...SK	**20006**



Clamping screw

50 950 ...



Insert mounting key SX

70 950 ...

Spare parts for Article no.		
50 389 20002	**00300**	**836**
50 389 20003	**00300**	**836**
50 389 20004	**00300**	**837**
50 389 20005	**00300**	**837**
50 389 20006	**00300**	**837**

→ **Page 146**
Here you will find suitable multipurpose milling cutter adapters.

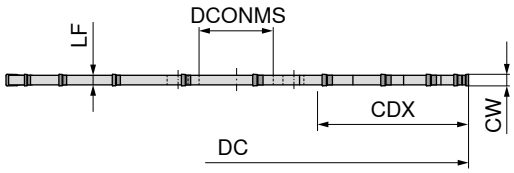
MaxiMill – Slot-SX slot milling and parting off cutter

Scope of supply:

Slot milling and parting off cutters **without** assembly key, **without** clamping screws

Direct Cooling

κ = 90°





NEW

Designation	DC mm	CW mm	CDX mm	DCONMS $_{H6}$ mm	LF mm	ZEFP	RPMX 1/min.	Insert	Adapter	50 380 ...
ASLOT.250.R.20.40.DC-SX3	250	3	84	40	2.5	20	3700	SX E3 ..	AD.SLOT.40...ZK	**25003**
ASLOT.250.R.18.40.DC-SX4	250	4	84	40	3.5	18	2900	SX E4 ..	AD.SLOT.40...ZK	**25004**
ASLOT.250.R.18.40.DC-SX5	250	5	84	40	4.5	18	2800	SX E5 ..	AD.SLOT.40...ZK	**25005**
ASLOT.250.R.18.40.DC-SX6	250	6	84	40	5.4	18	2500	SX E6 ..	AD.SLOT.40...ZK	**25006**[1)]

1) Not in stock



Clamping screw

50 950 ...



Insert mounting key SX

70 950 ...

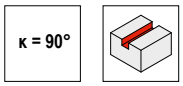
Spare parts for Article no.		
50 380 25003	**00400**	**836**
50 380 25004	**00400**	**837**
50 380 25005	**00400**	**837**
50 380 25006	**00400**	**837**

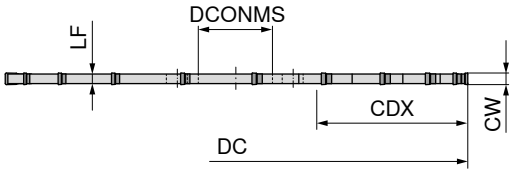
→ **Page 146**
Here you will find suitable multipurpose milling cutter adapters.

MaxiMill – Slot-SX slot milling and parting off cutter

Scope of supply:

Slot milling and parting off cutters **without** assembly key, **without** clamping screws







NEW

Designation	DC mm	CW mm	CDX mm	DCONMS $_{H6}$ mm	LF mm	ZEFP	RPMX 1/min.	Insert	Adapter	50 390 ...
ASLOT.250.R.20.40-SX3	250	3	84	40	2.5	20	3700	SX E3 ..	AD.SLOT.40...ZK	**25003**
ASLOT.250.R.18.40-SX4	250	4	84	40	3.5	18	2900	SX E4 ..	AD.SLOT.40...ZK	**25004**
ASLOT.250.R.18.40-SX5	250	5	84	40	4.5	18	2800	SX E5 ..	AD.SLOT.40...ZK	**25005**
ASLOT.250.R.18.40-SX6	250	6	84	40	5.4	18	2500	SX E6 ..	AD.SLOT.40...ZK	**25006**[1)]

1) Not in stock



Clamping screw

50 950 ...



Insert mounting key SX

70 950 ...

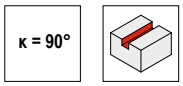
Spare parts for Article no.		
50 390 25003	**00400**	**836**
50 390 25004	**00400**	**837**
50 390 25005	**00400**	**837**
50 390 25006	**00400**	**837**

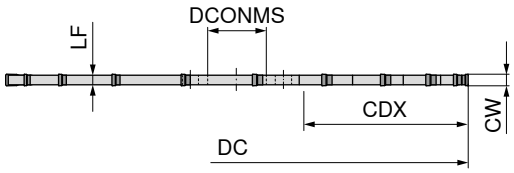
→ **Page 146**
Here you will find suitable multipurpose milling cutter adapters.

MaxiMill – Slot-SX slot milling and parting off cutter

Scope of supply:

Slot milling and parting off cutters **without** assembly key, **without** clamping screws







NEW

Designation	DC mm	CW mm	CDX mm	DCONMS $_{H6}$ mm	LF mm	ZEFP	RPMX 1/min.	Insert	Adapter	50 391 ...
ASLOT.315.R.22.40-SX4	315	4	115	40	3.5	22	2600	SX E4 ..	AD.SLOT.40...ZK	**31504**
ASLOT.315.R.22.40-SX5	315	5	115	40	4.5	22	2500	SX E5 ..	AD.SLOT.40...ZK	**31505**
ASLOT.315.R.22.40-SX6	315	6	115	40	5.4	22	2200	SX E6 ..	AD.SLOT.40...ZK	**31506**[1)]

1) Not in stock



Clamping screw



Insert mounting key SX

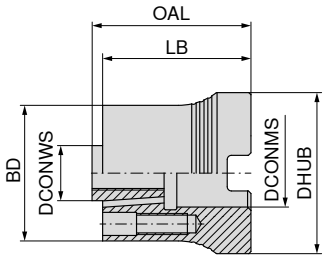
Spare parts for Article no.	50 950 ...	70 950 ...
50 391 31504	**00400**	**837**
50 391 31505	**00400**	**837**
50 391 31506	**00400**	**837**

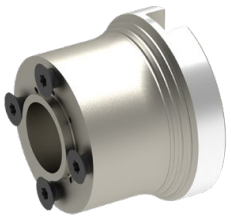
→ **Page 146**
Here you will find suitable multipurpose milling cutter adapters.

MaxiMill – Slot-SX multipurpose milling cutter adapter

Scope of supply:
Multipurpose milling cutter adapter including screws







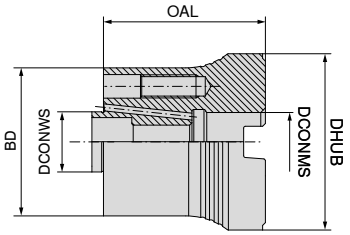
NEW

Designation	DCONMS mm	DCONWS h6 mm	DHUB mm	LB mm	OAL mm	BD mm	50 395 ...
AD.SLOT.13.32.A16	16	13	38	35	37.5	32	01300
AD.SLOT.22.40.A22	22	22	48	35	37.5	40	02200
AD.SLOT.32.63.A27	27	32	58	45	47.5	63	03200
AD.SLOT.40.80.A32.SK	32	40	78	55	57.5	80	04000
AD.SLOT.40.80.A32.ZK	32	40	78	55	57.5	80	04100

MaxiMill – Slot-SX multipurpose INCH milling cutter adapter

Scope of supply:
Multipurpose milling cutter adapter including screws







NEW

Designation	DCONMS inch	DCONWS h6 inch	DHUB inch	LB inch	OAL inch	BD inch	58 395 ...
AD.SLOT.13.32.A50-E	0.500	0.512	1.500	1.378	1.476	1.260	01300
AD.SLOT.22.40.A075-E	0.750	0.866	1.750	1.378	1.476	1.575	02200
AD.SLOT.32.63.A100-E	1.000	1.260	2.250	1.772	1.870	2.480	03200
AD.SLOT.40.80.A125.SK-E	1.250	1.575	2.750	2.165	2.264	3.150	04000
AD.SLOT.40.80.A125.ZK-E	1.250	1.575	2.750	2.165	2.264	3.150	04100

Spare parts for Article no.	 Clamping screw 50 950 ...	 Clamping screw 50 950 ...	 Clamping screw 50 950 ...	 Power Screw 70 950 ...
50 395 01300	00100			151
50 395 02200 / 58 395 01300	00100			
50 395 03200 / 58 395 03200	00200			
50 395 04000 / 58 395 04000			00300	
50 395 04100 / 58 395 04100		00400		
58 395 02200	00100			

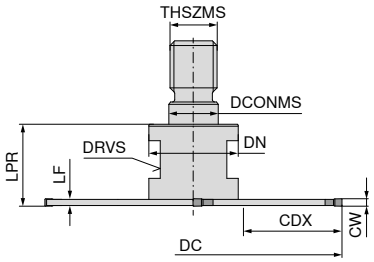
MaxiMill – Slot-SX screw-in multipurpose milling cutter

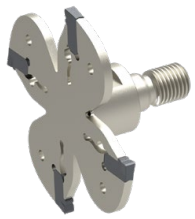
Scope of supply:

Screw-in multipurpose milling cutter **without** assembly key

Direct Cooling

κ = 90°





NEW

50 392 ...

Designation	DC mm	CW mm	CDX mm	DCONMS mm	THSZMS	LF mm	DN mm	LPR mm	DRVS mm	ZEFP	RPMX 1/min.	Insert	
GSLOT.63.R.4.M10.DC-SX2	63	2	21	10.5	M10	1.65	19	18	15	4	5700	SX E2 ..	**06302**
GSLOT.63.R.4.M10.DC-SX3	63	3	21	10.5	M10	2.50	19	18	15	4	7500	SX E3 ..	**06303**



Insert mounting key SX

70 950 ...

Spare parts for Article no.	
50 392 06302	**836**
50 392 06303	**836**

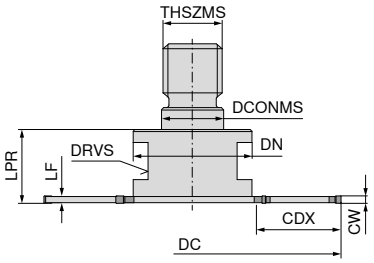
MaxiMill – Slot-SX screw-in multipurpose milling cutter

Scope of supply:

Screw-in multipurpose milling cutter **without** assembly key

Direct Cooling

κ = 90°





NEW

50 393 ...

Designation	DC mm	CW mm	CDX mm	DCONMS mm	THSZMS	LF mm	DN mm	LPR mm	DRVS mm	ZEFP	RPMX 1/min.	Insert	
GSLOT.80.R.6.M16.DC-SX2	80	2	23	17	M16	1.65	32	20	24	6	5000	SX E2 ..	**08002**
GSLOT.80.R.6.M16.DC-SX3	80	3	23	17	M16	2.50	32	20	24	6	6700	SX E3 ..	**08003**
GSLOT.80.R.4.M16.DC-SX4	80	4	23	17	M16	3.50	32	20	24	4	5200	SX E4 ..	**08004**



Insert mounting key SX

70 950 ...

Spare parts for Article no.	
50 393 08002	**836**
50 393 08003	**836**
50 393 08004	**837**

15

MaxiMill – Slot-SX screw-in multipurpose milling cutter

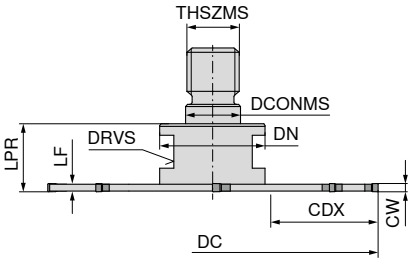
Scope of supply:

Screw-in multipurpose milling cutter **without** assembly key





κ = 90°





NEW

50 394 ...

Designation	DC mm	CW mm	CDX mm	DCONMS mm	THSZMS	LF mm	DN mm	LPR mm	DRVS mm	ZEFP	RPMX 1/min.	Insert	
GSLOT.100.R.8.M16.DC-SX2	100	2	33	17	M16	1.65	32	20	24	8	4500	SX E2 ..	**10002**
GSLOT.100.R.8.M16.DC-SX3	100	3	33	17	M16	2.50	32	20	24	8	6000	SX E3 ..	**10003**
GSLOT.100.R.6.M16.DC-SX4	100	4	33	17	M16	3.50	32	20	24	6	4700	SX E4 ..	**10004**



Insert mounting key SX

70 950 ...

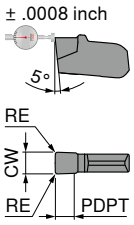
Spare parts for Article no.	
50 394 10002	**836**
50 394 10003	**836**
50 394 10004	**837**

Suitable adapters for screw-in cutters can be found in – Chapter 16 Adapters and accessories

Insert SX



F	M	R
		

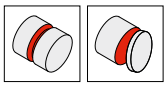


-F2
CTP1340
DRAGONSKIN

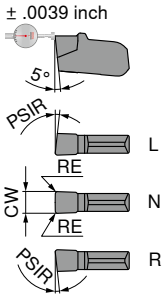


Designation	CW inch	RE inch	PDPT inch	for tool holder	70 346 ...
SX E2.00 N 0.20	0.079	0.008	0.059	-SX2	**622**
SX E3.00 N 0.30	0.118	0.012	0.079	-SX3	**623**
SX E4.00 N 0.40	0.157	0.016	0.098	-SX4	**624**
P					●
M					●
K					○
N					○
S					●
H					
O					

Insert SX



F	M	R
		



-M1
CTCP335
DRAGONSKIN

-M1
CTP1340
DRAGONSKIN





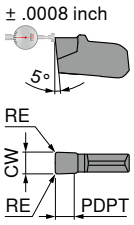
Designation	IH	CW inch	RE inch	for tool holder	70 342 ...	70 342 ...
SX E2.00 N 0.20	N	0.079	0.008	-SX2	**52200**	**622**
SX E3.00 N 0.20	N	0.118	0.008	-SX3	**523**	**623**
SX E4.00 N 0.30	N	0.157	0.012	-SX4	**524**	**624**
SX E5.00 N 0.30	N	0.197	0.012	-SX5	**52500**	**625**
SX E6.00 N 0.40	N	0.236	0.016	-SX6	**52600**	**626**
P					●	●
M					○	●
K					●	○
N						○
S						●
H						
O						

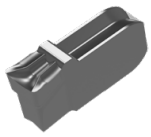
Insert SX



F	M	R
	●	

-27P
H216T



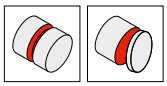


70 349 ...

Designation	CW inch	RE inch	PDPT inch	for tool holder	
SX E2.00 N 0.20	0.079	0.008	0.079	-SX2	**122**
SX E3.00 N 0.30	0.118	0.012	0.098	-SX3	**123**
SX E4.00 N 0.40	0.157	0.016	0.118	-SX4	**124**

P	
M	
K	○
N	●
S	
H	
O	○

Insert SX

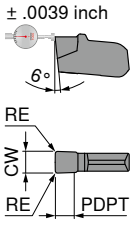


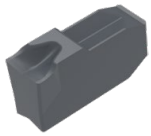
F	M	R
	●	

NEW

-M7
CTP1340

DRAGONSKIN



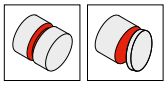


70 347 ...

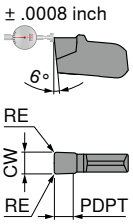
Designation	CW inch	RE inch	PDPT inch	for tool holder	
SX E2.00 N 0.20	0.079	0.008	0.059	-SX2	**62200**
SX E3.00 N 0.20	0.118	0.008	0.079	-SX3	**62300**
SX E4.00 N 0.25	0.157	0.010	0.098	-SX4	**62400**
SX E5.00 N 0.30	0.197	0.012	0.106	-SX5	**62500**
SX E6.00 N 0.35	0.236	0.014	0.118	-SX6	**62600**

P	●
M	●
K	○
N	○
S	●
H	
O	

Insert SX



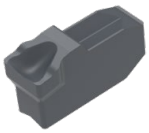
F	M	R



NEW

-M8
CTP1340

DRAGONSKIN



70 348 ...

Designation	CW inch	RE inch	PDPT inch	for tool holder	
SX E2.00 N 0.20	0.079	0.008	0.059	-SX2	**62200**
SX E3.00 N 0.20	0.118	0.008	0.079	-SX3	**62300**
SX E4.00 N 0.25	0.157	0.010	0.098	-SX4	**62400**
SX E5.00 N 0.30	0.197	0.012	0.106	-SX5	**62500**
SX E6.00 N 0.35	0.236	0.014	0.118	-SX6	**62600**

P	●
M	●
K	○
N	○
S	●
H	
O	

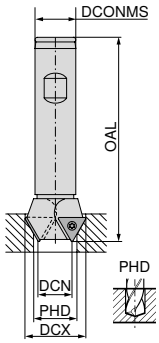
Milling guide

Cutting data standard values	→ 190	Technical Information	→ 191–197
Chip groove description and overview	→ 198–200	Grade description and overview	→ 202–207

Insert countersink 90°

Scope of supply:
Indexable insert countersink including clamping screws

WPS






SIG 90°

58 196 ...

DCX inch	DCN inch	PHD inch	ZEFP	ZNF	DCONMS inch	OAL inch	Insert	
0.748	0.276	0.374	2	2	0.625	3.940	TOHX 090204	**19000**
0.906	0.433	0.472	2	2	0.625	3.940	TOHX 090204	**23000**
1.024	0.433	0.472	1	2	0.625	3.940	TOHX 090204	**26000**
1.181	0.472	0.472	2	2	0.750	3.940	TOHX 140305	**30000**
1.339	0.630	0.669	2	2	0.750	3.940	TOHX 140305	**34000**
1.457	0.748	0.787	2	2	0.750	3.940	TOHX 140305	**37000**


TORX® Screws

62 950 ...

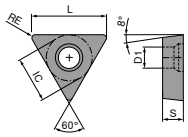

Screwdriver

80 950 ...

Spare parts DCX		
0.748 - 1.024	**09900**	**125**
1.181 - 1.457	**12600**	**127**

TOHX

Designation	L inch	S inch	D1 inch	IC inch
140305EN	0.536	0.118	0.150	0.323



TOHX

	-G06 BK8425	-U877 BK8425	-G12 BK8425
			
	F TOHX	F TOHX	F TOHX
ISO / RE inch	62 602 ...	62 604 ...	62 603 ...
090204EN 0.016		31400	31400
140305EN 0.020	33000		
P	●	●	●
M	●	●	●
K	●	●	●
N	○	○	○
S	●	●	●
H	○	○	○
O			

TOHX

	-U877 K10
	
	F TOHX
ISO / RE inch	62 604 ...
090204EN 0.016	51400
P	
M	
K	
N	●
S	●
H	
O	●

15

Material examples for cutting data tables

	Material sub-group	Index	Composition / Structure / Heat treatment		Tensile strength lbf/in²* / HB / HRC	Material number	Material designation	Material number	Material designation
P	Unalloyed steel	P.1.1	< 0.15 % C	Annealed	60900 lbf/in² / 125 HB	1.0401	1015	1.0301	1010
		P.1.2	< 0.45 % C	Annealed	92800 lbf/in² / 190 HB	1.1191	1045	1.0737	12L14
		P.1.3		Tempered	121800 lbf/in² / 250 HB	1.1191	1045	1.0503	1043
		P.1.4	< 0.75 % C	Annealed	132000 lbf/in² / 270 HB	1.1223	1060	1.0535	1055
		P.1.5		Tempered	146500 lbf/in² / 300 HB	1.1223	1060	1.1274	1095
	Low-alloy steel	P.2.1		Annealed	88500 lbf/in² / 180 HB	1.7131	5115	1.6523	8620
		P.2.2		Tempered	134900 lbf/in² / 275 HB	1.7131	5115	1.6582	4340
		P.2.3		Tempered	146500 lbf/in² / 300 HB	1.7225	4142	1.7131	5115
		P.2.4		Tempered	174000 lbf/in² / 375 HB	1.7225	4142	17223	4140
	High-alloy steel and high-alloy tool steel	P.3.1		Annealed	98600 lbf/in² / 200 HB	1.4021	420	1.2379	D2
		P.3.2		Hardened and tempered	159500 lbf/in² / 300 HB	1.2343	H11	1.3343	M2
		P.3.3		Hardened and tempered	188500 lbf/in² / 400 HB	1.2343	H11	1.2363	A2
	Stainless steel	P.4.1	Ferritic / martensitic	Annealed	98600 lbf/in² / 200 HB	1.4016	430	1.4125	440C
		P.4.2	Martensitic	Tempered	117500 lbf/in² / 250 HB	1.4112	S44003	1.4021	420
M	Stainless steel	M.1.1	Austenitic / austenitic-ferritic	Quenched	88500 lbf/in² / 200 HB	1.4301	304	1.4401	316
		M.2.1	Austenitic	Tempered	300 HB	1.4841	314	1.4568	17-7 PH
		M.3.1	Austenitic / ferritic (Duplex)		113100 lbf/in² / 230 HB	1.4462	S32205	1.4410	S32750
K	Grey cast iron	K.1.1	Pearlitic / ferritic		88500 lbf/in² / 180 HB	0.6010	A48-20B	0.6025	A48-40 B
		K.1.2	Pearlitic (martensitic)		127600 lbf/in² / 260 HB	0.6030	A48-45B	0.6040	A48-60 B
	Spherulitic graphite cast iron	K.2.1	Ferritic		78300 lbf/in² / 160 HB	0.7040	60-40-18	0.7050	65-45-12
		K.2.2	Pearlitic		122600 lbf/in² / 250 HB	0.7070	100-70-03	0.7660	A439 Type D2
	Malleable iron	K.3.1	Ferritic		63800 lbf/in² / 130 HB	0.8035	GTW-35-04		
		K.3.2	Pearlitic		113100 lbf/in² / 230 HB	0.8170	70003		
N	Aluminium wrought alloy	N.1.1	Non-hardenable		60 HB	3.0255	A91060	3.0255	A91060
		N.1.2	Hardenable		49300 lbf/in² / 100 HB	3.1355	2024	3.1355	2024
	Cast aluminium alloy	N.2.1	≤ 12 % Si, non-hardenable		36300 lbf/in² / 75 HB	3.2581	A04130 / A413-0	3.2581	A04130 / A413-0
		N.2.2	≤ 12 % Si, hardenable		43500 lbf/in² / 90 HB	3.2134	G-AlSi5Cu1Mg		
		N.2.3	> 12 % Si, non-hardenable		63800 lbf/in² / 130 HB		G-AlSi17Cu4Mg		
	Copper and copper alloys (bronze/brass)	N.3.1	Free-machining alloys, PB > 1 %		54400 lbf/in² / 110 HB	2.0380	CuZn39Pb2 (Ms58)	2.0380	C37700
		N.3.2	CuZn, CuSnZn		43500 lbf/in² / 90 HB	2.0331	CuZn15	2.0331	C34000
		N.3.3	CuSn, lead-free copper and electrolytic copper		49300 lbf/in² / 100 HB	2.0060	E-Cu57		
	Magnesium alloys	N.4.1	Magnesium and magnesium alloys		70 HB	3.5612	MgAl6Zn		
S	Heat-resistant alloys	S.1.1	Fe - basis	Annealed	98600 lbf/in² / 200 HB	1.4864	X12NiCrSi 36-16	1.4864	330
		S.1.2			137800 lbf/in² / 280 HB	1.4980	X6NiCrTiMoVB25-15-2	1.4980	S66286
		S.2.1	Ni or Co basis	Annealed	121800 lbf/in² / 250 HB	2.4856	Inconel 625	2.4812	Hastelloy C
		S.2.2			171100 lbf/in² / 350 HB	2.4952	Nimonic 80A	2.4668	Inconel 718
		S.2.3		Cast	156600 lbf/in² / 320 HB	2.4674	Nimocast PK24	2.4670	Nimocast 713
	Titanium alloys	S.3.1	Pure titanium		5800 lbf/in²	3.7025	Ti99,8		
		S.3.2	Alpha + beta alloys		152300 lbf/in²	3.7165	TiAl6V4		
		S.3.3	Beta alloys		203100 lbf/in² / 410 HB	Ti555.3	Ti-5Al-5V-5Mo-3Cr		
H	Hardened steel	H.1.1		Hardened and tempered	46-55 HRC				
		H.1.2		Hardened and tempered	56-60 HRC				
		H.1.3		Hardened and tempered	61-65 HRC				
		H.1.4		Hardened and tempered	66-70 HRC				
	Chilled iron	H.2.1		Cast	400 HB				
	Hardened cast iron	H.3.1		Hardened and tempered	55 HRC				
O	Non-metal materials	O.1.1	Plastics, duroplastic		≤ 21800 lbf/in²				
		O.1.2	Plastics, thermoplastic		≤ 14500 lbf/in²				
		O.2.1	Aramid fibre-reinforced		≤ 145000 lbf/in²				
		O.2.2	Glass/carbon-fibre reinforced		≤ 145000 lbf/in²				
		O.3.1	Graphite						

*** Tensile Strength at Rupture (Rm)**

Cutting data standard values

Index	CTEP210		TCM10		CTCP220		CTPP225		CTCP230		CTPP231		CTPP235		CTPP236	
	CERMET		CERMET													
					DRAGONSKIN								DRAGONSKIN			
	Cutting Material **hard** (v_c↑) → **tough** (v_c↓)															
	v_c (ft/min)															
P.1.1	1130		960		1120	560	870	520	940	500	660	330	810	450	990	590
P.1.2	1000		850		1020	510	770	470	800	440	560	300	690	400	890	530
P.1.3	870		740		920	460	680	430	670	390	460	260	570	350	740	430
P.1.4	820		710		890	450	650	410	620	370	560	300	530	330	890	530
P.1.5	760		650		840	420	610	390	560	350	530	300	470	310	790	460
P.2.1	1020		870		1030	520	790	480	820	450	560	300	700	410	890	530
P.2.2	810		700		880	440	650	410	610	370	430	230	520	330	660	400
P.2.3	760		650		840	420	610	390	560	350	560	300	470	310	890	530
P.2.4	600		520		730	360	500	340	390	280	400	200	320	250	590	360
P.3.1					460	230	430	210	460	290	560	300	400	320	890	530
P.3.2					310	170	330	170	300	180	460	260	360	270	590	460
P.3.3					170	100	230	120	130	70	400	230	320	230	500	400
P.4.1					460	230	430	210	460	290	460	260	400	320	590	460
P.4.2					390	200	380	190	380	230	430	230	380	300	560	430
M.1.1											560	300	400	320	890	530
M.2.1													360	270		
M.3.1													390	390		
K.1.1									1020	630	1190	300	530	360	500	360
K.1.2	990		790						530	330	1190	300	500	360	500	360
K.2.1	1160		920						660	400	760	560	500	360	500	360
K.2.2	990		790						430	260	530	360	500	360	500	360
K.3.1	990		790						630	380					690	500
K.3.2									530	330					690	500
N.1.1																
N.1.2																
N.2.1																
N.2.2																
N.2.3																
N.3.1																
N.3.2																
N.3.3																
N.4.1																
S.1.1																
S.1.2																
S.2.1																
S.2.2																
S.2.3																
S.3.1																
S.3.2																
S.3.3																
H.1.1																
H.1.2																
H.1.3																
H.1.4																
H.2.1																
H.3.1																
O.1.1																
O.1.2																
O.2.1																
O.2.2																
O.3.1																

The cutting data is strongly influenced by external conditions, such as the stability of the tool and workpiece clamping, material and type of machine.
The specified values represent guideline cutting data that can be adjusted by approx. **±20%** according to the usage conditions.

Cutting data standard values

Index	CTPM225		CTCM235		CTPM240		CTPM241		CTPM245		CTCM245		CTN3105		CTL3215	
													CERAMIC		CBN	
							DRAGONSKIN									
	Cutting Material **hard** (v_c↑) → **tough** (v_c↓)															
	v_c (ft/min)															
P.1.1	900	630	830	610	750	470	660	330	800	460	920	440				
P.1.2	760	540	690	500	620	420	560	300	680	410	800	390				
P.1.3	640	450	570	410	500	370	460	230	570	360	680	340				
P.1.4	600	430	530	370	460	350	560	300	530	340	650	330				
P.1.5	530	380	470	330	400	330	500	260	480	320	590	300				
P.2.1	780	550	710	520	640	420	560	300	700	420	820	400				
P.2.2	580	420	520	370	450	350	400	200	520	340	640	320				
P.2.3	530	380	470	330	400	330	560	300	480	320	590	300				
P.2.4	380	280	310	210	260	270	360	200	330	260	450	240				
P.3.1	490	400	450	380	410	350	690	330	510	350	580	400				
P.3.2	400	330	420	360	370	310	590	330	470	310	540	360				
P.3.3	310	270	400	350	320	280	530	300	430	260	500	310				
P.4.1	490	400	450	380	410	350	460	300	510	350	580	400				
P.4.2	440	370	440	370	390	330	430	260	490	330	560	380				
M.1.1	**490**	**400**	**450**	**380**	**410**	**350**	**690**	**330**	**510**	**350**	**580**	**400**				
M.2.1	**400**	**330**	**420**	**360**	**370**	**310**	**590**	**300**	**470**	**310**	**540**	**360**				
M.3.1	**460**	**380**	**440**	**380**	**400**	**340**	**690**	**330**	**500**	**340**	**570**	**390**				
K.1.1													**2640**		**2 640**	
K.1.2													**1980**		**1980**	
K.2.1																
K.2.2															**1490**	
K.3.1																
K.3.2																
N.1.1																
N.1.2																
N.2.1																
N.2.2																
N.2.3																
N.3.1																
N.3.2																
N.3.3																
N.4.1																
S.1.1								200				260				
S.1.2								200				230				
S.2.1								200				120				
S.2.2								200				80				
S.2.3								200				100				
S.3.1								200				270				
S.3.2								200				170				
S.3.3								200				130				
H.1.1																
H.1.2															500	
H.1.3																
H.1.4																
H.2.1															920	
H.3.1																
O.1.1																
O.1.2																
O.2.1																
O.2.2																
O.3.1																

The cutting data is strongly influenced by external conditions, such as the stability of the tool and workpiece clamping, material and type of machine.
The specified values represent guideline cutting data that can be adjusted by approx. **±20%** according to the usage conditions.

Cutting data standard values

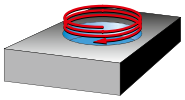
Index	CTCK215		CTPK220		CTPK221		AMZ		H216T		CTWN215		CTC5240		CTCS245		CTP6215	
	DRAGONSKIN		DRAGONSKIN										DRAGONSKIN					
	Cutting Material **hard** (v_c↑) → **tough** (v_c↓)																	
	v_c (ft/min)																	
P.1.1			630	400	630	400												
P.1.2			600	330	590	330												
P.1.3			500	270	500	260												
P.1.4			600	330	590	330												
P.1.5			560	300	560	300												
P.2.1			600	330	590	330												
P.2.2			460	270	460	260												
P.2.3			600	330	590	330												
P.2.4			430	270	430	260												
P.3.1			700	400	690	400												
P.3.2			530	300	530	300												
P.3.3			430	270	430	260												
P.4.1			700	400	690	400												
P.4.2			630	330	630	330												
M.1.1					400	330												
M.2.1					360	300												
M.3.1					400	330												
K.1.1	**1190**	**690**	**1060**	**630**	**890**	**660**	660	430	430	430	430	430					920	830
K.1.2	**730**	**430**	**560**	**330**	**890**	**660**	530	360	360	360	360	360					630	530
K.2.1	**760**	**460**	**690**	**430**	**830**	**590**	610	430	430	430	430	430					590	500
K.2.2	**530**	**330**	**460**	**300**	**590**	**400**	500	400	400	400	400	400					590	500
K.3.1	**830**	**500**	**660**	**400**	**730**	**560**	660	430	430	430	430	430					830	730
K.3.2	**690**	**430**	**560**	**330**	**730**	**560**	580	360	360	360	360	400					630	530
N.1.1								**4950**		**4950**		**4950**						
N.1.2								**3300**		**3300**		**3300**						
N.2.1								**3960**		**3630**		**3630**						
N.2.2								**3960**		**3300**		**3300**						
N.2.3								**990**		**920**		**920**						
N.3.1								**1160**		**1160**		**1160**						
N.3.2								**1160**		**1160**		**1160**						
N.3.3								**1060**		**1060**		**1060**						
N.4.1								**1060**		**1060**		**1060**						
S.1.1								200						**260**		**210**		
S.1.2								170						**230**		**180**		
S.2.1								100						**120**		**90**		
S.2.2								70						**80**		**70**		
S.2.3								70						**100**		**80**		
S.3.1								200						**260**		**210**		
S.3.2								130						**170**		**130**		
S.3.3								100						**130**		**110**		
H.1.1																	**170**	
H.1.2																	**130**	
H.1.3																		
H.1.4																		
H.2.1																		
H.3.1																		
O.1.1								530	530	530	530	530						
O.1.2																		
O.2.1								590	790	790	790	790						
O.2.2																		
O.3.1																		

The cutting data is strongly influenced by external conditions, such as the stability of the tool and workpiece clamping, material and type of machine.
The specified values represent guideline cutting data that can be adjusted by approx. **±20%** according to the usage conditions.

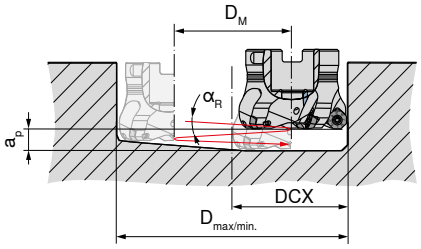
System MaxiMill 274-04/-09

Machining strategy

Helical plunge milling



$D_{max.}$ in inch = largest diameter for flat bottom hole
$D_{min.}$ in inch = smallest hole diameter for flat bottom surface
D_M = D_{max} – DCX and D_{min} – DCX



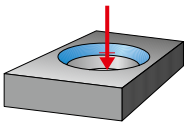
OF..04

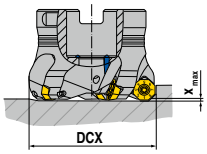
DCX inch	D_{max} inch	D_{min} inch	$\alpha_{R\,max}$ °
1.01	1.77	1.54	2.3
1.21	2.17	1.93	1.9
1.48	2.72	2.48	1.4
1.80	3.35	3.11	1.2
2.19	4.13	3.90	0.9
2.70	5.16	4.92	0.7
3.37	6.50	6.26	0.6
4.16	8.07	7.83	0.5
5.15	10.04	9.80	0.4

SF..09

DCX inch	D_{max} inch	D_{min} inch	$\alpha_{R\,max}$ °
1.08	1.77	1.65	1.9
1.28	2.17	2.05	1.5
1.54	2.72	2.60	1.1
1.87	3.35	3.23	0.9
2.27	4.13	4.02	0.7
2.78	5.16	5.04	0.5
3.44	6.50	6.38	0.4
4.23	8.07	7.95	0.3
5.22	10.04	9.92	0.3

Axial plunging





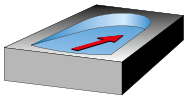
OF..04

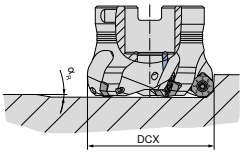
DCX inch	x_{max} inch
1.01	0.10
1.21	0.10
1.48	0.10
1.80	0.10
2.19	0.10
2.70	0.10
3.37	0.10
4.16	0.10
5.15	0.10

SF..09

DCX inch	x_{max} inch
1.08	0.15
1.28	0.14
1.54	0.13
1.87	0.12
2.27	0.12
2.78	0.12
3.44	0.11
4.23	0.11
5.22	0.11

Angled ramping





OF..04

DCX inch	$\alpha_{R\,max}$ °
1.01	14.2
1.21	9.5
1.48	6.5
1.80	4.7
2.19	3.5
2.70	2.7
3.37	2.0
4.16	1.6
5.15	1.2

SF..09

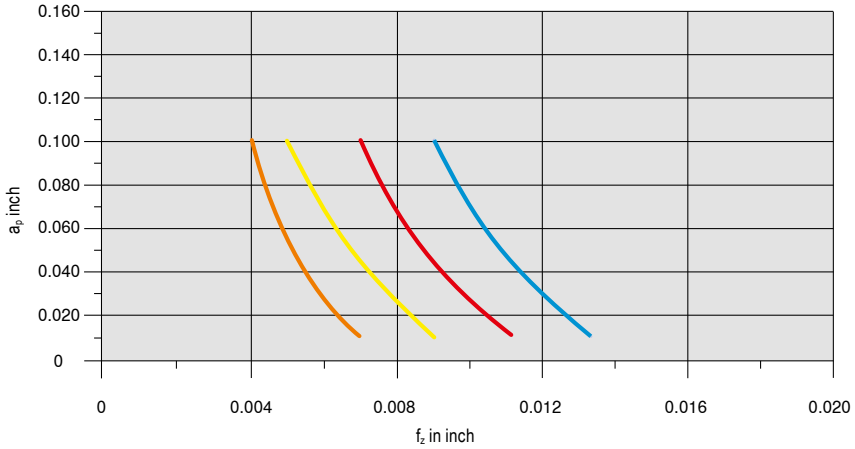
DCX inch	$\alpha_{R\,max}$ °
1.08	20.4
1.28	13.0
1.54	8.0
1.87	5.8
2.27	4.3
2.78	3.2
3.44	2.3
4.23	1.7
5.22	1.3

System MaxiMill 274-04

Starting Parameter



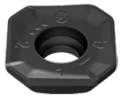
OF.. 04



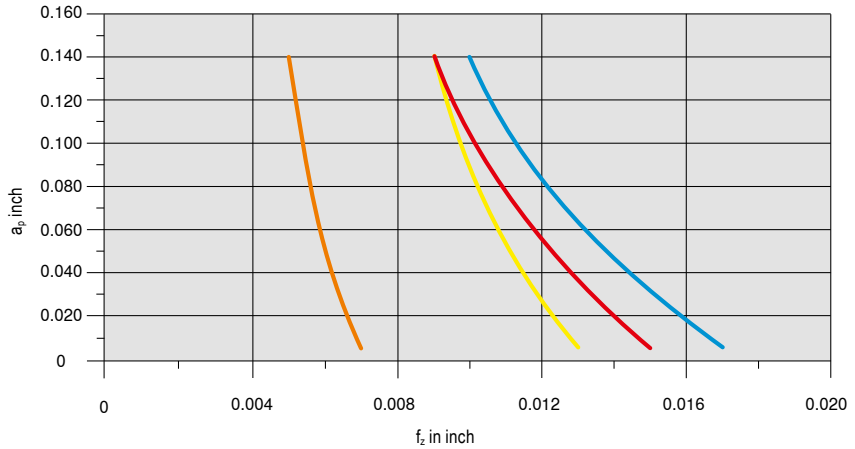
Material			Inserts		v_c in ft/min	Cooling
Steel	**P.4.1**	P20	**OFHT040305SN-M50**	**CTPP235**	660	Dry
Stainless steel	**M.2.1**	316Ti	**OFHT040305SN-F50**	**CTPM240**	320	Emulsion
Cast iron	**K.1.1**	GG25 Cast Iron	**OFHT040305SN-M50**	**CTCK215**	825	Dry
Heat-resistant	**S.2.2**	Inconel 718	**OFHT040305SN-F50**	**CTC5240**	115	Emulsion

System MaxiMill 274-09

Starting Parameter



SF.. 09



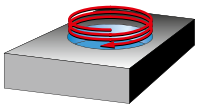
Material			Inserts		v_c in ft/min	Cooling
Steel	**P.4.1**	P20	**SFKT0903AFSR-M50**	**CTPP235**	660	Dry
Stainless steel	**M.2.1**	316Ti	**SFHT0903AFSR-F50**	**CTPM240**	320	Emulsion
Cast iron	**K.1.1**	GG25 Cast Iron	**SFKT0903AFSR-R50**	**CTCK215**	825	Dry
Heat-resistant	**S.2.2**	Inconel 718	**SFHT0903AFSR-F50**	**CTC5240**	115	Emulsion

→ **Page 155–157**
Here you will find detailed information on cutting speed.
From v_c > 1300 SFM, the tool must be balanced!

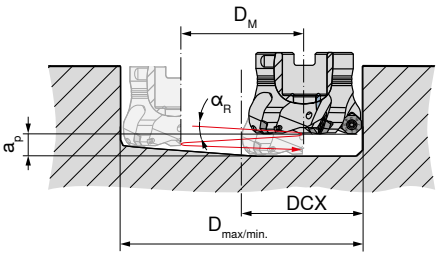
System MaxiMill 274-05/-12

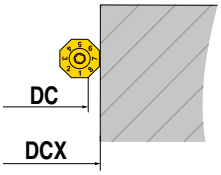
Machining strategy

Helical plunge milling



$D_{max.}$ in inch = largest diameter for flat bottom hole
$D_{min.}$ in inch = smallest hole diameter for flat bottom surface
D_M = D_{max} – DCX and D_{min} – DCX





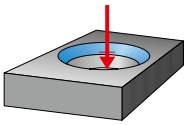
OF..05

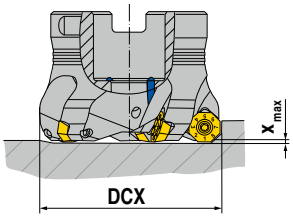
DC inch	DCX inch	D_{max} inch	D_{min} inch	$\alpha_{R\,max}$ °
1.97	**2.28**	4.21	3.90	1.1
2.48	**2.80**	5.24	4.92	0.9
3.15	**3.46**	6.57	6.26	0.7
3.94	**4.25**	8.15	7.83	0.5
4.92	**5.23**	10.12	9.80	0.4

SF..12

DC inch	DCX inch	D_{max} inch	D_{min} inch	$\alpha_{R\,max}$ °
1.85	**2.40**	4.21	4.13	0.5
2.36	**2.91**	5.24	5.16	0.4
3.03	**3.58**	6.57	6.50	0.3
3.81	**4.37**	8.15	8.07	0.25
4.80	**5.35**	10.12	10.04	0.2

Axial plunging





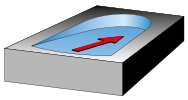
OF..05

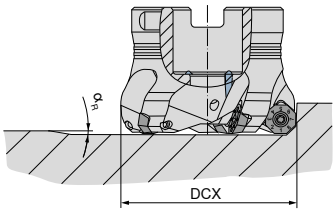
DC inch	DCX inch	X_{max} inch
1.97	**2.28**	0.09
2.48	**2.80**	0.07
3.15	**3.46**	0.07
3.94	**4.25**	0.04
4.92	**5.23**	0.06

SF..12

DC inch	DCX inch	X_{max} inch
1.85	**2.40**	0.13
2.36	**2.91**	0.13
3.03	**3.58**	0.12
3.81	**4.37**	0.10
4.80	**5.35**	0.10

Angled ramping





OF..05

DC inch	DCX inch	$\alpha_{R\,max}$ °
1.97	**2.28**	3.2
2.48	**2.80**	2.0
3.15	**3.46**	1.5
3.94	**4.25**	0.7
4.92	**5.23**	0.7

SF..12

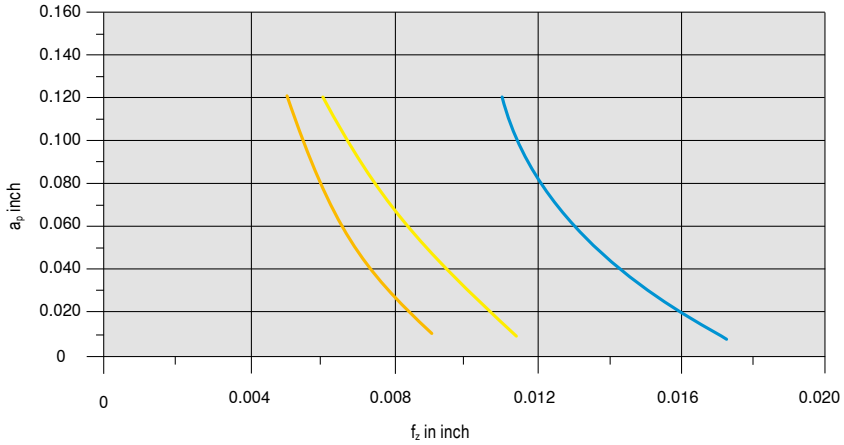
DC inch	DCX inch	$\alpha_{R\,max}$ °
1.85	**2.40**	4.9
2.36	**2.91**	3.4
3.03	**3.58**	2.4
3.81	**4.37**	1.6
4.80	**5.35**	1.3

System MaxiMill 274-05

Starting Parameter



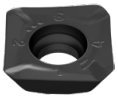
OF.. 05



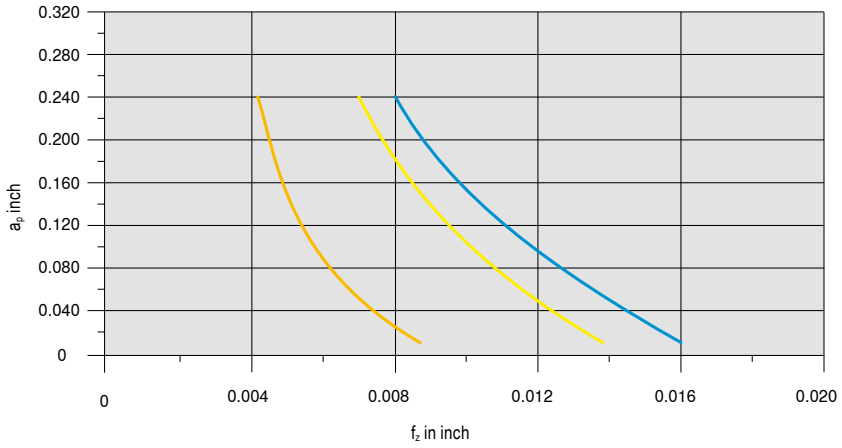
Material			Inserts		v_c in ft/min	Cooling
Steel	**P.4.1**	P20	**OFHT050410SN-M50**	**CTCP230**	660	Dry
Stainless steel	**M.2.1**	316Ti	**OFHT050410SN-F50**	**CTPM240**	320	Emulsion
Heat-resistant	**S.2.2**	Inconel 718	**OFHT050410SN-F50**	**CTC5240**	115	Emulsion

System MaxiMill 274-12

Starting Parameter



SF.. 12

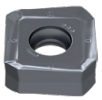


Material			Inserts		v_c in ft/min	Cooling
Steel	**P.4.1**	P20	**SFKT1204AFSR-M50**	**CTPP235**	660	Dry
Stainless steel	**M.2.1**	316Ti	**SFKT1204AFSR-M50**	**CTPM240**	320	Emulsion
Heat-resistant	**S.2.2**	Inconel 718	**SFHT1204AFER-F40**	**CTC5240**	115	Emulsion

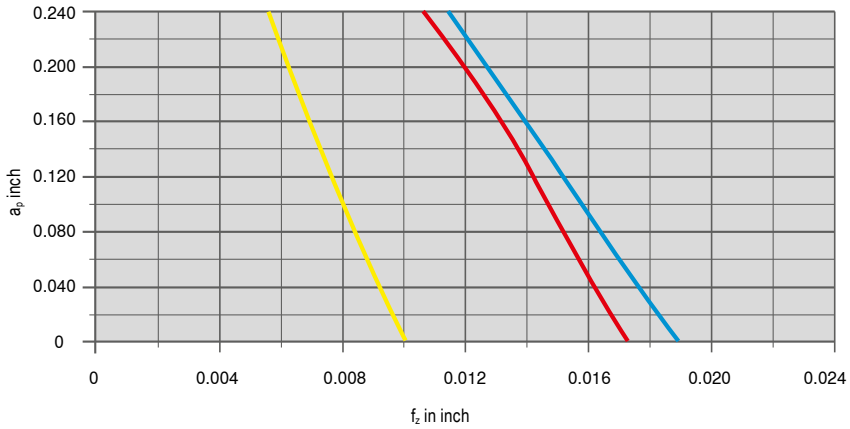
→ **Page 155–157**
Here you will find detailed information on cutting speed.
From v_c > 1300 SFM, the tool must be balanced!

System MaxiMill 271-12

Starting Parameter



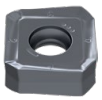
SOHU 12



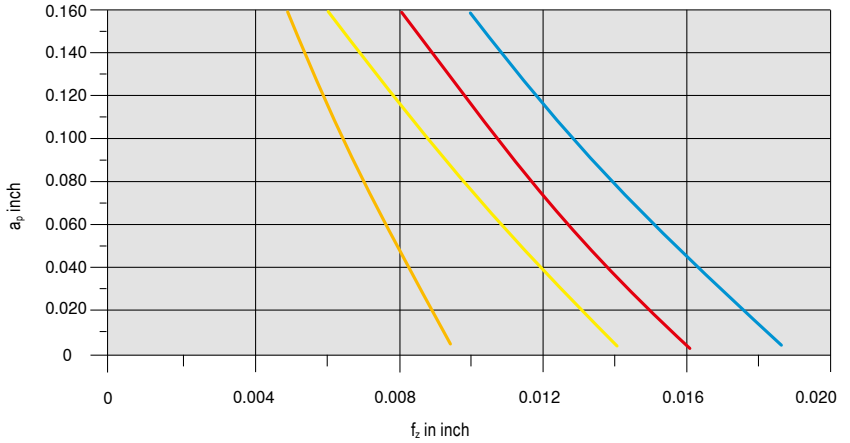
Material			Inserts		v_c in ft/min	Cooling
Steel	**P.4.1**	P20	**SOHU 1204ABSR-M50**	**CTPP230**	660	Dry
Stainless steel	**M.2.1**	316Ti	**SOHU 1204ABSR**	**CTPM240**	320	Emulsion
Cast iron	**K.1.1**	GG25 Cast Iron	**SOHU 1204ABSR-R50**	**CTCK215**	990	Dry
Heat-resistant	**S.2.2**	Inconel 718	**SOHU 1204ABSR-F50**	**CTC5240**	115	Emulsion

System MaxiMill 271-17

Starting Parameter



SAKU 17



Material			Inserts		v_c in ft/min	Cooling
Steel	**P.4.1**	P20	**SAKU 1706ABSR-M50**	**CTPP235**	660	Dry
Stainless steel	**M.2.1**	316Ti	**SAKU 1706ABSR-F50**	**CTPM240**	320	Emulsion
Cast iron	**K.1.1**	GG25 Cast Iron	**SAKU 1706ABSR-R50**	**CTCK215**	990	Dry
Heat-resistant	**S.2.2**	Inconel 718	**SAKU 1706ABSR-F50**	**CTC5240**	115	Emulsion

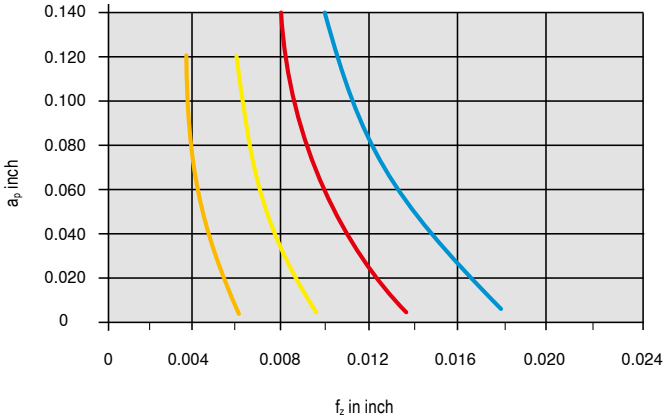
→ **Page 155–157**
Here you will find detailed information on cutting speed.
From v_c > 1300 SFM, the tool must be balanced!

System MaxiMill 273

Starting Parameter



OAKU

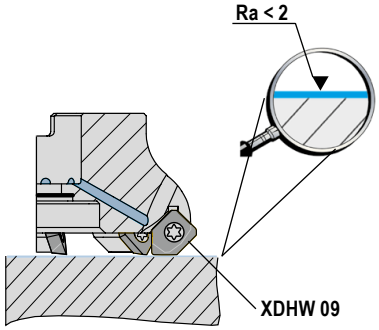


Material			Inserts		v_c in ft/min	Cooling
Steel	**P.4.1**	P20	**OAKU 060508SR-M50**	**CTPP235**	660	Dry
Stainless steel	**M.2.1**	316Ti	**OAKU 060508SR-F50**	**CTPM240**	320	Emulsion
Cast iron	**K.1.1**	GG25 Cast Iron	**OAKU 060508SR-R50**	**CTCK215**	990	Dry
Heat-resistant	**S.2.2**	Inconel 718	**OAKU 060508ER-F40**	**CTC5240**	115	Emulsion

→ **Page 155–157**
Here you will find detailed information on cutting speed.
From v_c > 1300 SFM, the tool must be balanced!

System MaxiMill 270

Machining strategy



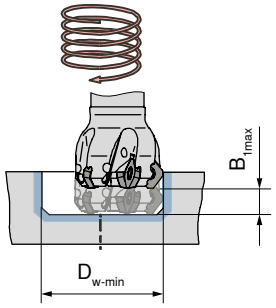
Finish milling with trailing edge inserts

Two wiper inserts are mounted in each 5.000" head



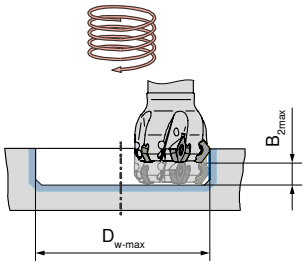

Steel	SDNT	0903AESN-29	CTPP235	+	XDHW	0903AESN CTPP235
	SDNT	0903AESN-29	CTCP230	+	XDHW	0903AESN CTCP230
	SDHT	0903AESN-33	CTCP230	+	XDHW	0903AESN CTCP230
	SDHW	0903AESN	TCM10	+	XDHW	0903AESN TCM10
Cast iron	SDNT	0903AESN-31	CTCK215	+	XDHW	0903AEEN CTCK215
Non-ferrous metals	SDHT	0903AEFN-ALP	-27P H216T	+	XDHW	0903AEFN -27P H216T

Helical plunge milling (without start hole)



C 270-09

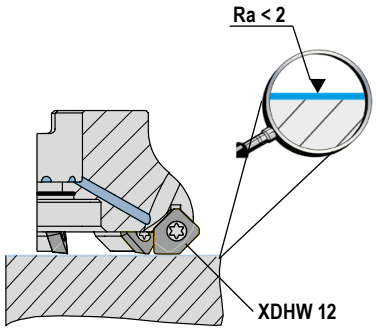
DC inch	$D_{w\text{-}min}$ inch	$B_{1\,max}$ inch	$D_{w\text{-}max}$ inch	$B_{2\,max}$ inch
0.25	0.57	0.06	0.75	0.06
0.50	1.12	0.06	1.22	0.06
0.63	1.44	0.06	1.54	0.06
0.75	1.75	0.06	1.85	0.06
1.00	2.15	0.06	2.24	0.06
1.25	2.70	0.06	2.80	0.06



A 270-09

DC inch	$D_{w\text{-}min}$ inch	$B_{1\,max}$ inch	$D_{w\text{-}max}$ inch	$B_{2\,max}$ inch
1.25	2.70	0.06	2.80	0.06
1.50	3.33	0.06	3.43	0.06
2.00	4.11	0.06	4.21	0.06
2.50	5.14	0.06	5.24	0.06
3.00	6.48	0.06	6.57	0.06
4.00	8.05	0.06	8.15	0.06
5.00	10.02	0.06	10.12	0.06
6.00	12.78	0.06	12.87	0.06

System MaxiMill 270-12



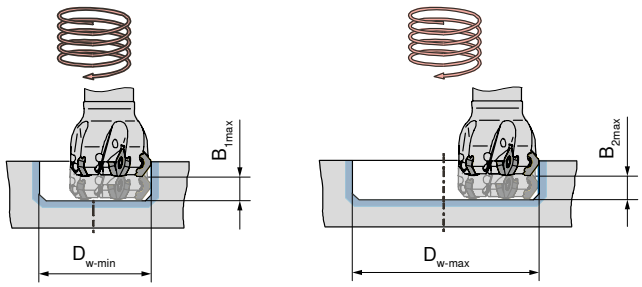
Finish milling with trailing edge inserts

Two wiper inserts are mounted in each 5.000" head




Steel	SDMT	1204AESN-29R	CTPP235	+	XDHW	1204AESN CTPP235
	SDMT	1204AESN-29R	CTCP230	+	XDHW	1204AESN CTCP230
	SDHW	1204AESN-R	TCM10	+	XDHW	1204AESN TCM10
	SDMT	1204AEEN-31	CTCK215	+	XDHW	1204AEEN CTCK215
Cast iron	SDHW	1204AESN-R	CTCK215	+	XDHW	1204AEEN CTCK215
Non-ferrous metals	SDHT	1204AEFN-ALP	-27P H216T	+	XDHW	1204AEFN -27P H216T

Helical plunge milling (without start hole)

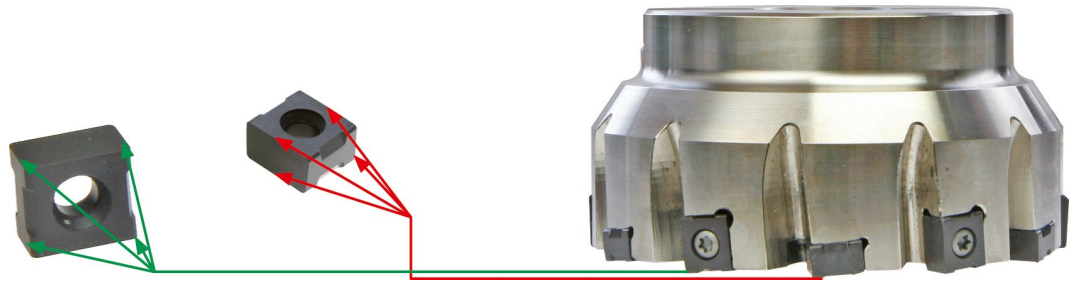


DC inch	$D_{w\text{-}min}$ inch	$B_{1\,max}$ inch	$D_{w\text{-}max}$ inch	$B_{2\,max}$ inch
1.25	2.93	0.06	3.07	0.06
1.50	3.56	0.06	3.70	0.06
2.00	4.35	0.06	4.49	0.06
2.50	5.37	0.06	5.51	0.06
3.00	6.71	0.06	6.85	0.06
4.00	8.29	0.06	8.43	0.06
5.00	10.26	0.06	10.39	0.06
6.00	13.01	0.06	13.15	0.06

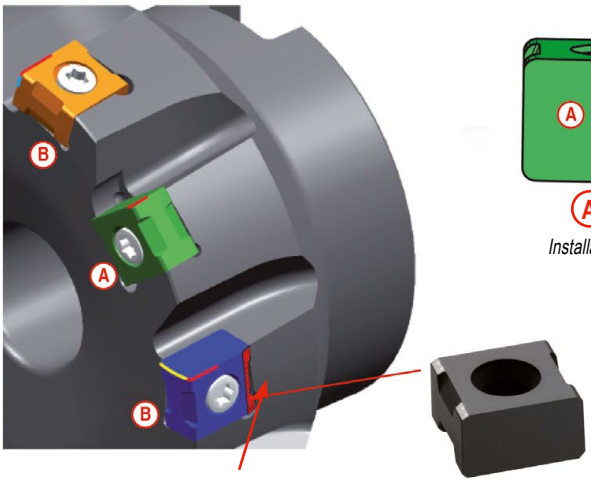
From v_c > 1300 SFM, the tool must be balanced!

System MaxiMill HEC 11 / HEC 12

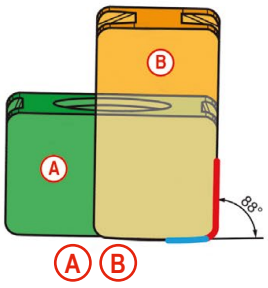
4 cutting edges per installation position



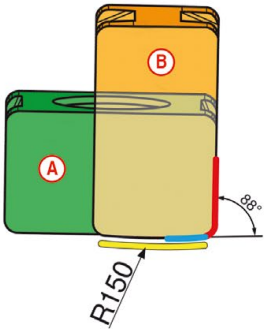
Correct assembly of standard and trailing edge inserts



Marking for the correct assembly



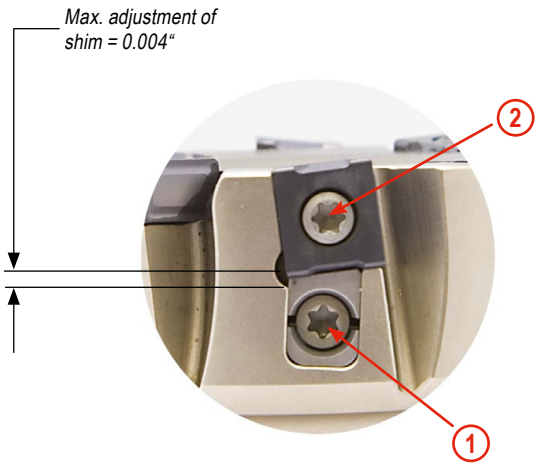
Installation position



Face machining insert — B
Insert main cutting edge — A B
Trailing edge facet — B

Adjust the tools in axial direction

- ▲ Install the wedge into the cutter body and lightly clamp the clamping screw so as not to clamp. — 1
- ▲ Install the inserts as shown and tighten to 1.0 Nm torque. — 2
- ▲ Using pre-setting equipment, mark the highest cutting edge. — 1
- ▲ With small adjustments of the setting screw set all cutting edges to the same height by 0.0002“ or better. — 1
- ▲ Clamp insert with 3.2 Nm torque. — 2



Average chip thickness [h_m] – the approach

Face milling

1 Select appropriate average chip thickness [h_m] for the steel from the table.

Material	Tensile strength N/mm²	h_m inch
for steel	...–800	0.008
for steel	800–1000	0.007
for steel	1000–1200	0.006
for steel	1200–...	0.006
for stainless steel	... –750	0.008
for stainless steel	750–900	0.007
for stainless steel	900–1150	0.007
for stainless steel	1150– ...	0.006

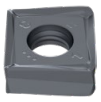
2 Select the corrected feed rate value from the table based on the appropriate chip thickness [h_m] and depth of cut [a_e].

h_m inch	Corrected feed value f_z for h_m			
0.008	0.016 **	0.016 **	0.013	0.011
0.007	0.016 **	0.016 **	0.011	0.010
0.006	0.016 **	0.014	0.010	0.009
0.006	0.014	0.012	0.009	0.008
0.008	0.016 **	0.016 **	0.013	0.012
0.007	0.016 **	0.016 **	0.012	0.011
0.007	0.016 **	0.015	0.011	0.009
0.006	0.015	0.013	0.009	0.008
a_e =	**0.012 x DC**	**0.016 x DC**	**0.030 x DC**	**0.040 x DC**

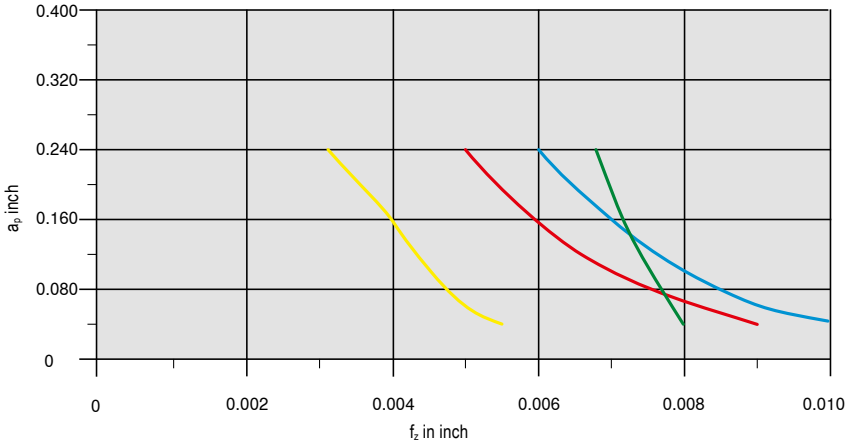
** f_z > 0.016": Danger of an open space contact

System MaxiMill 491-09

Starting Parameter



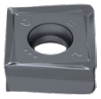
SNHU 09



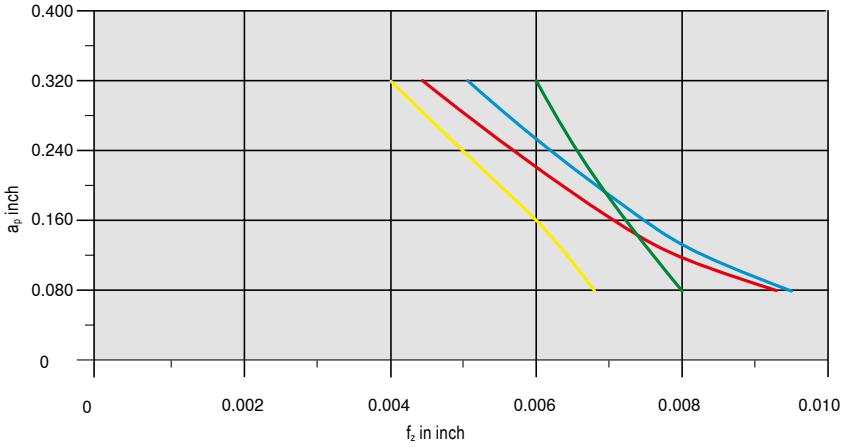
Material			Inserts		v_c in ft/min	Cooling
Steel	**P.4.1**	P20	**SNHU09T308SR-M50**	**CTPP235**	660	Dry
Stainless steel	**M.2.1**	316Ti	**SNHU09T308SR-F50**	**CTPM240**	320	Emulsion
Cast iron	**K.1.1**	GG25 Cast Iron	**SNHU09T308SR-R50**	**CTCK215**	825	Dry
Non-ferrous metals	**N.1.2**	Aluminum	**SNHU09T308FR-F10**	**CTWN215**	1650	Emulsion

System MaxiMill 491-12

Starting Parameter



SNHU 12



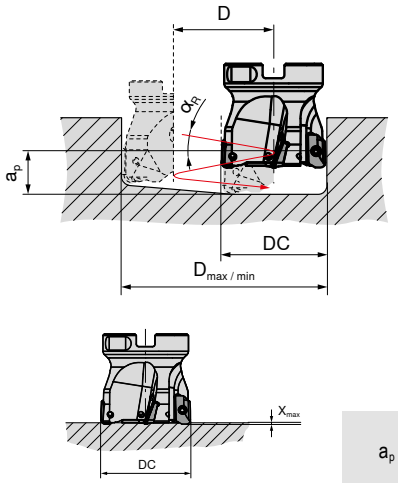
Material			Inserts		v_c in ft/min	Cooling
Steel	**P.4.1**	P20	**SNHU120408SR-M50**	**CTPP235**	660	Dry
Stainless steel	**M.2.1**	316Ti	**SNHU120408SR-F50**	**CTPM240**	320	Emulsion
Cast iron	**K.1.1**	GG25 Cast Iron	**SNHU120408SR-R50**	**CTCK215**	825	Dry
Non-ferrous metals	**N.1.2**	Aluminum	**SNHU120408FR-F10**	**CTC5240**	1650	Emulsion

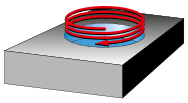
→ **Page 155–157**
Here you will find detailed information on cutting speed.
From v_c > 1300 SFM, the tool must be balanced!

System MaxiMill 211-07

Machining strategy

Helical plunge milling



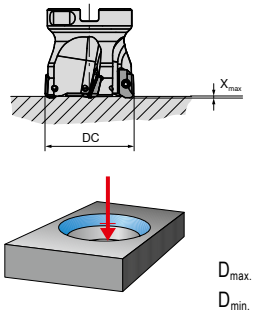


a_p inch = D * π * tan α_R

DC inch	D_{max} / RE 0.4 inch	D_{min} inch	$\alpha_{R\,max}$ °
0.39	0.75	0.51	5.5
0.50	0.91	0.67	6.0
0.63	1.22	0.98	3.0
0.75	1.54	1.30	2.0
1.00	1.93	1.69	1.5
1.25	2.48	2.24	1.2
1.50	3.11	2.87	0.8
2.00	3.90	3.66	0.7

DC inch	D inch	$\alpha_{R\,max\,360°}$ °
0.39	0.51	5.5
0.50	0.67	6.0
0.63	0.98	3.0
0.75	1.30	2.0
1.00	1.69	1.5
1.25	2.24	1.2
1.50	2.87	0.8
2.00	3.66	0.7

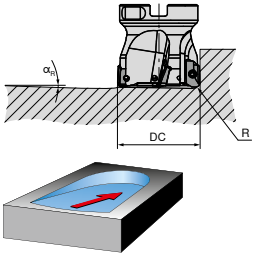
Axial plunging



DC inch	X_{max} inch
0.39	0.03
0.50	0.03
0.63	0.03
0.75	0.03
1.00	0.03
1.25	0.03
1.50	0.03
2.00	0.03

$D_{max.}$ in inch = largest diameter for flat bottom hole
$D_{min.}$ in inch = smallest hole diameter for flat bottom surface

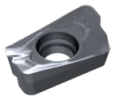
Angled ramping



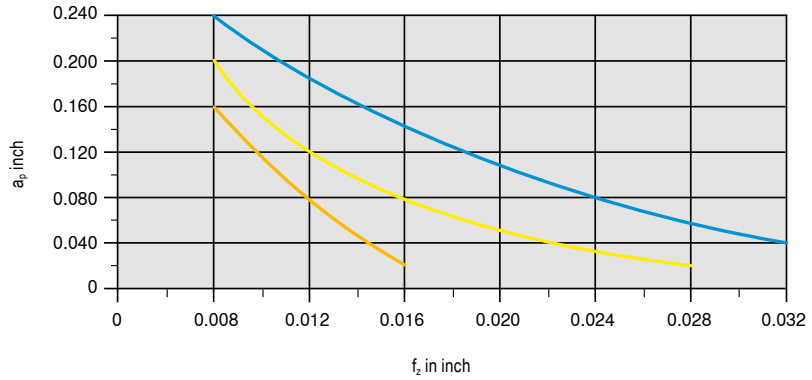
DC inch	α °
0.39	11.0
0.50	7.9
0.63	4.3
0.75	3.0
1.00	2.5
1.25	1.6
1.50	1.2
2.00	1.0

$D = D_{max} - DC / D_{min} - DC$

Starting Parameter



XDKT 07

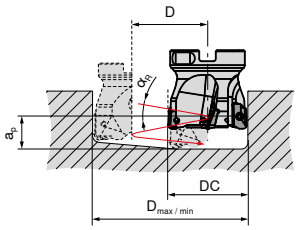


Material			Inserts		v_c in ft/min	Cooling
Steel	**P.4.1**	P20	**XDKT070308SR-M50**	**CTCP230**	660	Dry
Stainless steel	**M.2.1**	316Ti	**XDKT070308SR-F50**	**CTPM240**	320	Emulsion
Heat-resistant	**S.2.2**	Inconel 718	**XDKT070308ER-F50**	**CTC5240**	115	Emulsion

→ **Page 155–157**
Here you will find detailed information on cutting speed.
From v_c > 1300 SFM, the tool must be balanced!

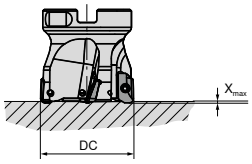
System MaxiMill 211-11

Machining strategy



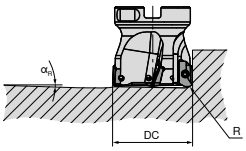
1 Helical plunge milling





2 Axial plunging





3 Angled ramping



DC inch		1 Helical plunge milling RE = 0.032"	2 Axial plunging X_{max}	3 Angled ramping α_R
0.50	α_R	16 °	0.056“	18 °
	$D_{max.}$	0.83“		
	$D_{min.}$	0.55“		
0.63	α_R	9.5 °	0.060“	10.8 °
	$D_{max.}$	1.14“		
	$D_{min.}$	0.83“		
0.75	α_R	7 °	0.080“	9.8 °
	$D_{max.}$	1.45“		
	$D_{min.}$	1.18“		
1.00	α_R	4.5 °	0.080“	7.5 °
	$D_{max.}$	1.85“		
	$D_{min.}$	1.57“		
1.25	α_R	3.2 °	0.040“	4.8 °
	$D_{max.}$	2.40“		
	$D_{min.}$	2.08“		
1.50	α_R	2.2 °	0.064“	2.9 °
	$D_{max.}$	3.03“		
	$D_{min.}$	2.83“		
2.00	α_R	1.7 °	0.064“	2.2 °
	$D_{max.}$	3.85“		
	$D_{min.}$	3.66“		
2.50	α_R	1.5 °	0.064“	1.8 °
	$D_{max.}$	4.84“		
	$D_{min.}$	4.57“		
3.00	α_R	1.0 °	0.064“	1.4 °
	$D_{max.}$	6.18“		
	$D_{min.}$	6.03“		
4.00	α_R	0.8 °	0.064“	1.1 °
	$D_{max.}$	4.21“		
	$D_{min.}$	3.97“		

$D_{max.}$ in inch = largest diameter for flat bottom hole

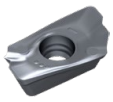
$D_{min.}$ in inch = Smallest diameter for flat bottom surface

a_p inch = D x π x tan (α_R) = Pitch

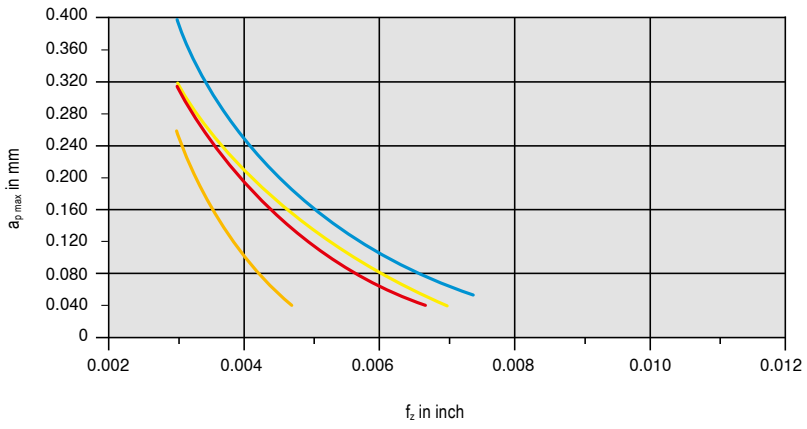
l_a in mm = Overhang length

DC inch	Maximum speed related to projection length n_{max} in min^{-1} l_a = 1–2 x Ø inch	l_a = 2.5 x Ø inch	l_a = 3 x Ø inch	l_a = 4 x Ø inch	l_a = 5 x Ø inch
0.50	55000	51500	47000	42000	37000
0.63	42000	38500	34100	28900	24200
0.75	36900	33000	28500	23900	19500
1.00	33200	29000	24400	19900	15400
1.25	30200	26000	20900	16600	11900
1.50	27700	23000	18000	13500	9000
2.00	25400	20400	15400	10800	6100
2.50	23300	18300	12900	8300	3700
3.00	21300	16100	10600	5800	
4.00	19600	14100	8400		

Starting Parameter



XDKT 11

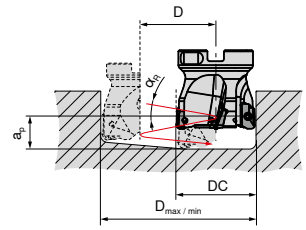


Material			Inserts		v_c in ft/min	Cooling
Steel	P.4.1	P20	XDKT11T308SR-M50	CTCP230	660	Dry
Stainless steel	M.2.1	316Ti	XDKT11T308SR-F50	CTPM240	320	Emulsion
Cast iron	K.1.1	GG25 Cast Iron	XDKT11T308SR-R50	CTCK215	825	Dry
Heat-resistant	S.2.2	Inconel 718	XDKT11T308ER-F50	CTC5240	115	Emulsion

→ **Page 155–157**
Here you will find detailed information on cutting speed.
From v_c > 1300 SFM, the tool must be balanced!

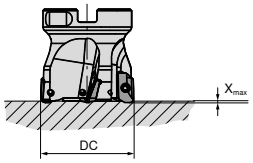
System MaxiMill 211-15

Machining strategy



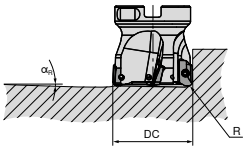
① Helical plunge milling





② Axial plunging





③ Angled ramping



DC inch		① Helical plunge milling RE = 0.032"	② Axial plunging X_{max}	③ Angled ramping α_R
1.00	α_R	7.5 °		
	$D_{max.}$	1.89"	0.108"	9.5 °
	$D_{min.}$	1.45"		
1.25	α_R	5 °		
	$D_{max.}$	2.44"	0.060"	6.8 °
	$D_{min.}$	1.85"		
1.50	α_R	3.2 °		
	$D_{max.}$	3.07"	0.060"	5.1 °
	$D_{min.}$	2.48"		
2.00	α_R	2.5 °		
	$D_{max.}$	3.86"	0.060"	2.5 °
	$D_{min.}$	3.38"		
2.50	α_R	1.5 °		
	$D_{max.}$	4.88"	0.060"	2.5 °
	$D_{min.}$	4.37"		
3.00	α_R	1.3 °		
	$D_{max.}$	6.22"	0.060"	2.0 °
	$D_{min.}$	5.78"		
4.00	α_R	1.1 °		
	$D_{max.}$	7.80"	0.060"	1.5 °
	$D_{min.}$	7.48"		
5.00	α_R	0.9 °		
	$D_{max.}$	9.76"	0.060"	0.9 °
	$D_{min.}$	9.45"		
6.00	α_R	0.6 °		
	$D_{max.}$	12.52"	0.060"	0.7 °
	$D_{min.}$	12.20"		

Maximum speed related to projection length n_{max} in min^{-1}			
DC inch	l_a = 2 x Ø inch	l_a = 3 x Ø inch	l_a = 5 x Ø inch
1.00	26560	19520	13320
1.25	24160	16720	9520
1.50	22160	14400	7200
2.00	20320	12320	4880
2.50	18640	10320	2960
3.00	17040	8480	
4.00	15680	6720	
5.00	14320		
6.00	13200		

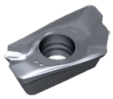
$D_{max.}$ in inch = largest diameter for flat bottom hole

$D_{min.}$ in inch = Smallest diameter for flat bottom surface

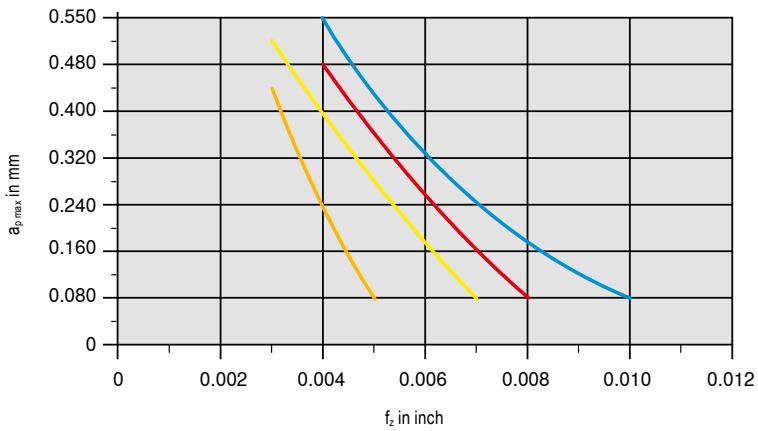
a_p inch = D x π x tan (α_R) = Pitch

l_a in mm = Overhang length

Starting Parameter



XDKT 15



Material			Inserts		v_c in ft/min	Cooling
Steel	P.4.1	P20	XDKT150508SR-M50	CTCP230	660	Dry
Stainless steel	M.2.1	316Ti	XDKT150508SR-F50	CTPM240	320	Emulsion
Cast iron	K.1.1	GG25 Cast Iron	XDKT150508SR-R50	CTCK215	825	Dry
Heat-resistant	S.2.2	Inconel 718	XDKT150508ER-F40	CTC5240	115	Emulsion

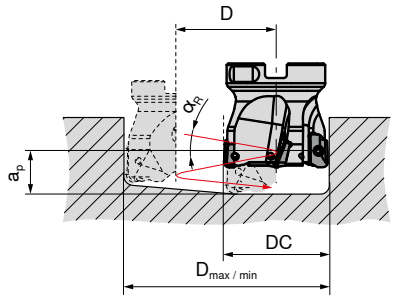
→ **Page 155–157**
Here you will find detailed information on cutting speed.
From v_c > 1300 SFM, the tool must be balanced!

System MaxiMill 211-20

Machining strategy

Helical plunge milling





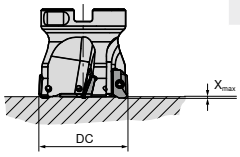
DC inch	D_{max} / RE 0.016 inch	D_{min} inch	$\alpha_{R\,max}$ °
2.50	4.882	4.213	2.2
3.00	6.220	5.630	1.7
4.00	7.795	7.205	1.3

a_p inch $= D * \pi * \tan \alpha_R$

Axial plunging



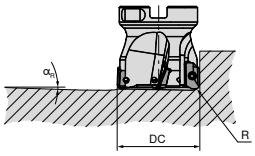
DC inch	X_{max} inch
2.50	0.80
3.00	0.80
4.00	0.80



Angled ramping



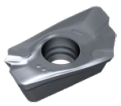
DC inch	α °
2.50	2.2
3.00	1.7
4.00	1.3



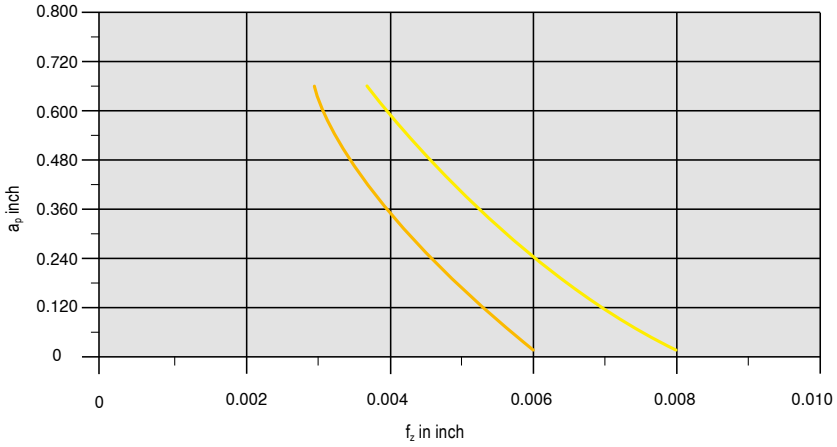
$D = D_{max} - DC / D_{min} - DC$

$D_{max.}$ in inch = largest diameter for flat bottom hole
$D_{min.}$ in inch = smallest hole diameter for flat bottom surface

Starting Parameter



XDKT 20



Material			Inserts		v_c in ft/min	Cooling
Stainless steel	**M.2.1**	316Ti	**XDKT200708ER-F40**	**CTPM240**	320	Emulsion
Heat-resistant	**S.2.2**	Inconel 718	**XDKT200708ER-F40**	**CTC5240**	115	Emulsion

→ **Page 155–157**
Here you will find detailed information on cutting speed.
From v_c > 1300 SFM, the tool must be balanced!

System MaxiMill 490-09

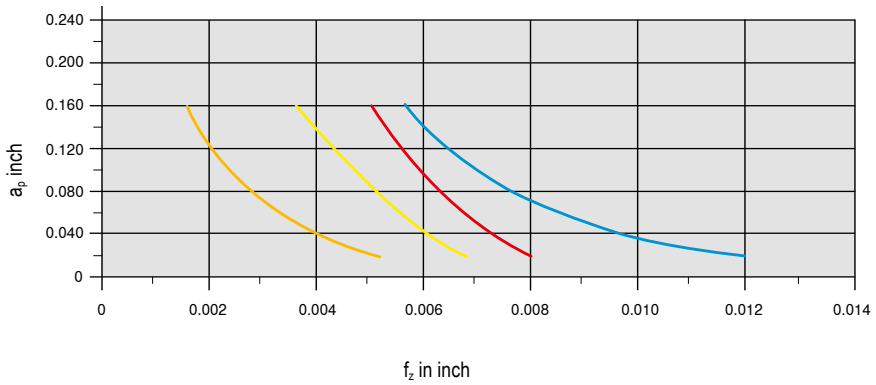
Machining strategy

System MaxiMill 490-09 is not suitable for plunging!

Starting Parameter



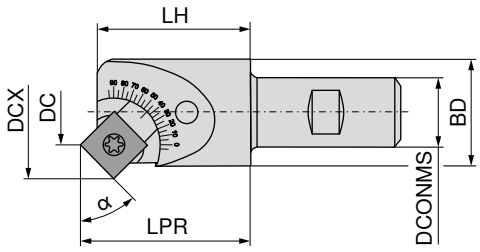
SDNT 09



Material			Inserts		v_c in ft/min	Cooling
Steel	**P.4.1**	P20	**SDNT09T308SR-29**	**CTCP230**	660	Dry
Stainless steel	**M.2.1**	316Ti	**SDNT09T308SR-33**	**CTPM240**	320	Emulsion
Cast iron	**K.1.1**	GG25 Cast Iron	**SDNT09T308SR-31**	**CTCK215**	825	Dry
Heat-resistant	**S.2.2**	Inconel 718	**SDNT09T308ER-M31**	**CTC5240**	115	Emulsion

→ **Page 155–157**
Here you will find detailed information on cutting speed.

MaxiMill 490-09 adjustable angle milling cutter – dimensions



Constant dimensions			Angle-dependent dimensions*			
BD	DCONMS	LH	α	DC*	DCX	LPR*
18.6	16	32	**0°**	**9.35/1.60****	**20.14**	**33.07**
			5°	3.81	20.82	33.40
			10°	4.59	21.44	33.69
			15°	**5.42**	**21.98**	**33.95**
			20°	6.30	22.45	34.17
			25°	7.23	22.85	34.35
			30°	**8.18**	**23.16**	**34.49**
			35°	9.15	23.39	34.58
			40°	10.14	23.53	34.64
			45°	**11.13**	**23.59**	**34.65**
			50°	12.12	23.56	34.61
			55°	13.09	23.44	34.54
			60°	**14.04**	**23.24**	**34.42**
			65°	14.96	22.96	34.26
			70°	15.84	22.60	34.06
			75°	**16.68**	**22.16**	**33.83**
			80°	17.46	21.65	33.56
			85°	18.19	21.07	33.25
			90°	**10.07/1.90****	**20.44**	**32.93**

* Tangential cutting point at deepest engagement point

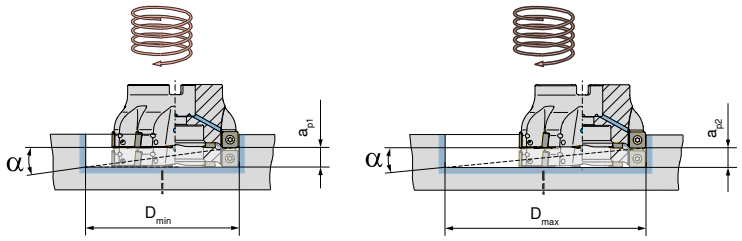
** Smallest diameter in centre

System MaxiMill 490-12

Machining strategy

Helical plunging (without pilot hole)





$$B = (D_W - DC) \times \pi \times \tan \alpha$$

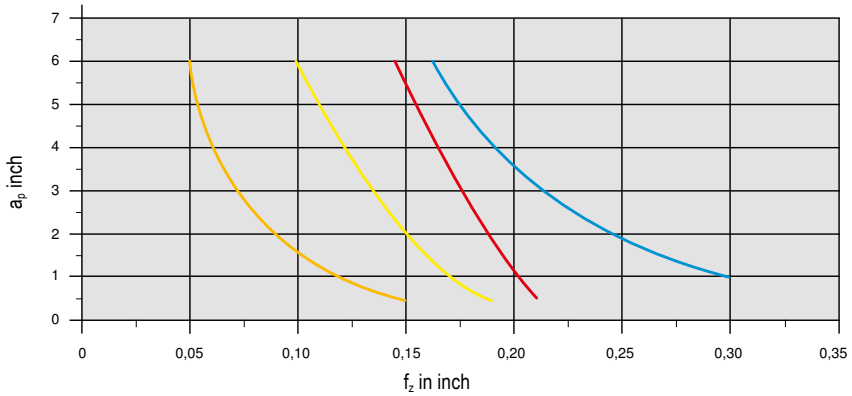
DC inch	$D_{w\text{-}min}$ inch	$B_{1\,max}$ inch	$D_{w\text{-}max}$ inch	$B_{2\,max}$ inch	α °
2.00	3.031	0.098	3.858	0.189	2.0

D_w = Diameter of the hole to be produced
DC = Nominal diameter of the milling tool
B = Axial feed to 360° circular movement

Starting Parameter



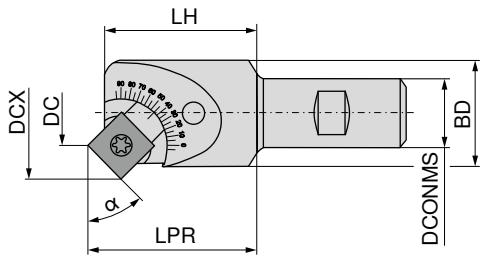
SDMT 12



Material			Inserts		v_c in ft/min	Cooling
Steel	**P.4.1**	P20	**SDMT1205ZZSN-29**	**CTCP230**	660	Dry
Stainless steel	**M.2.1**	316Ti	**SDMT120512SR-33**	**CTPM240**	320	Emulsion
Cast iron	**K.1.1**	GG25 Cast Iron	**SDMT1205ZZSN-31**	**CTCK215**	825	Dry
Heat-resistant	**S.2.2**	Inconel 718	**SDMT120508ER-M31**	**CTC5240**	115	Emulsion

→ **Page 155–157**
Here you will find detailed information on cutting speed.

MaxiMill 490-12 adjustable angle milling cutter – dimensions



Constant dimensions			Angle-dependent dimensions*			
BD	DCONMS	LH	α	DC*	DCX	LPR*
25	20	37	**0°**	**25.07/1.12****	**26.64**	**38.36**
			5°	3.72	27.61	38.79
			10°	4.84	28.48	39.21
			15°	**6.03**	**29.25**	**39.58**
			20°	7.27	29.92	39.90
			25°	8.57	30.48	40.16
			30°	**9.91**	**30.92**	**40.37**
			35°	11.28	31.25	40.51
			40°	12.67	31.45	40.60
			45°	**14.08**	**31.54**	**40.62**
			50°	15.48	31.50	40.58
			55°	16.86	31.34	40.48
			60°	**18.23**	**31.06**	**40.33**
			65°	19.56	30.66	40.11
			70°	20.85	30.15	39.83
			75°	**22.08**	**29.52**	**39.51**
			80°	23.26	28.79	39.12
			85°	24.35	27.95	38.69
			90°	**25.37/1.42****	**26.94**	**38.21**

* Tangential cutting point at deepest engagement point
** Smallest diameter in centre

HSC/HPC machining

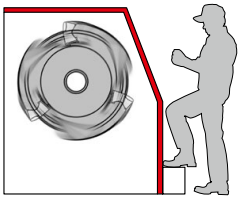
Safety advice

Suitability of the tool for HSC machining

HSC tools from CERATIZIT have been specially developed for this machining strategy and guarantee maximum operational reliability.

Observation of safety precautions of the machine manufacturer

Make sure that all safety precautions of the machine-manufacturer are observed (e.g.: closed machine guards).

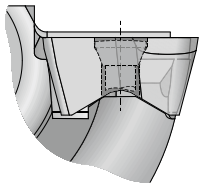


Suitability of the adapters for HSC machining

According to the milling situation, choose the optimum tool/clamping device combination. For high speed milling applications it is necessary to dynamically balance tool and tool adapter together (see ISO 1940 directives).

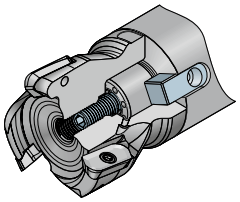
Mounting the indexable insert with centrifugal force protection

Insert clamping: EURO-patent EP 1083017A1
Make sure that the insert pocket is cleaned and the threading bore for the clamping screw is in good condition.
Check the axial and radial contact points of the insert in the pocket.
The clamping screws for positive insert clamping must be tightened with a torque of (XDHT11 = 1.8 Nm; XDH.19 = 6.0 Nm).



Optimum mounting of HSC milling cutters (DC = Ø 40–63) to milling arbors using power screw

The power screw guarantees a stable connection of tool and milling adapter and is easy to use.



Power Screw

Maximum admissible number of revolutions

Please note the maximum number of revolutions stated on the tool. This number is exclusively valid for the specific tool and must be adapted according to the selected tool adapter, total overhang length and the respective machining situation.



Optimum application range of the tool (a_e, a_p, f_z, n)

In order to guarantee productive milling, please observe the recommendations regarding the cutting parameters.

Failure to comply with these safety regulations automatically excludes CERATIZIT from any liability

System MaxiMill HSC-11

Cutting data standard values

	Workpiece material	Treatment / alloy		VDI 3323 Group	Hardness HB	H216T (CTWN215) v_c in ft/min	H216T (CTWN215) v_c in ft/min
N	Aluminum alloys	non hardenable		21	60		660–9840
		hardenable		22	100		660–6560
	Cast aluminum alloy	non hardenable	< 12% Si	23	80		660–6560
		hardenable	< 12% Si	24	90		660–5900
		non hardenable	> 12% Si	25	130		660–3280
	Copper and copper alloys (Bronze, Brass)		Free-cutting steel alloy (1% Pb)	26			660–1970
			brass, red bronze	27	90	820–3280	820–3280
			bronze	28	100		490–1310
			lead-free copper and electrolytic copper	29	100		980–2620
O	Non metal materials		Duroplastics	29		260–3280	260–3280
			Fibre-reinforced plastics	29		230–1640	230–1640
			hard rubber	30		260–1000	260–1000

= full lubricant = Minimum quantity lubrication = dry machining

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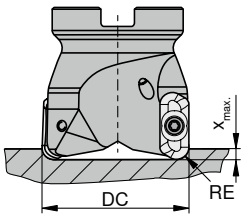
System MaxiMill HSC-11

Machining strategy

Axial ramping

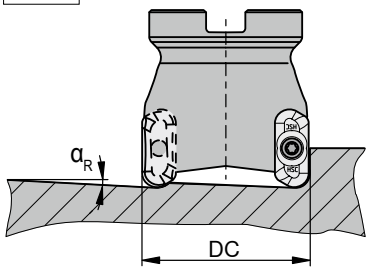




DC inch	11 RE 0.008–0.157 $x_{max.}$ inch
0.63	0.07
0.75	0.09
1.00	0.10
1.25	0.09
1.50	0.09
2.00	0.09
2.50	0.08
3.00	0.07
4.00	0.07
63	2.10
80	1.75
100	1.79

Linear ramping





DC inch	α_R °
0.63	18.8
0.75	15.3
1.00	10.3
1.25	6.8
1.50	4.8
2.00	3.5
2.50	2.5
3.00	1.8
4.00	1.3
63	2.5
80	1.8
100	1.3

Milling strategy for roughing and finishing

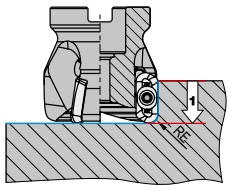
With maximum chip volume

Indexable Insert	RE inch	a_p inch	$a_{p\,max.}$ inch
XDHT 11T302FR-ALP	0.008	0.39	0.39
XDHT 11T304FR-ALP	0.016	0.39	0.38
XDHT 11T308FR-ALP	0.031	0.39	0.36
XDHT 11T312FR-ALP	0.047	0.39	0.35
XDHT 11T316FR-ALP	0.063	0.39	0.33
XDHT 11T320FR-ALP	0.079	0.39	0.31
XDHT 11T325FR-ALP	0.098	0.39	0.30
XDHT 11T332FR-ALP	0.126	0.39	0.27
XDHT 11T340FR-ALP	0.157	0.39	0.24
XDHT 11T350FR-ALP	0.197	0.39	0.20

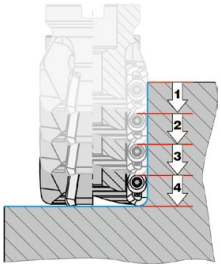
With maximum side wall quality

Indexable Insert	RE inch	$a_{p\,max.}$ inch
XDHT 11T302FR-ALP	0.008	0.31
XDHT 11T304FR-ALP	0.016	0.30
XDHT 11T308FR-ALP	0.031	0.28
XDHT 11T312FR-ALP	0.047	0.26
XDHT 11T316FR-ALP	0.063	0.27
XDHT 11T320FR-ALP	0.079	0.25
XDHT 11T325FR-ALP	0.098	0.22
XDHT 11T332FR-ALP	0.126	0.19
XDHT 11T340FR-ALP	0.157	0.16
XDHT 11T350FR-ALP	0.197	0.12

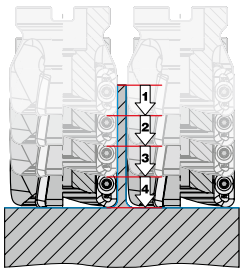
Shoulder milling



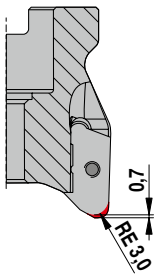
Pocket milling

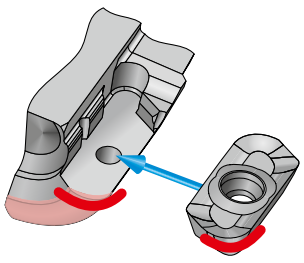


Pocket milling with thin walled components



Modification to front profile



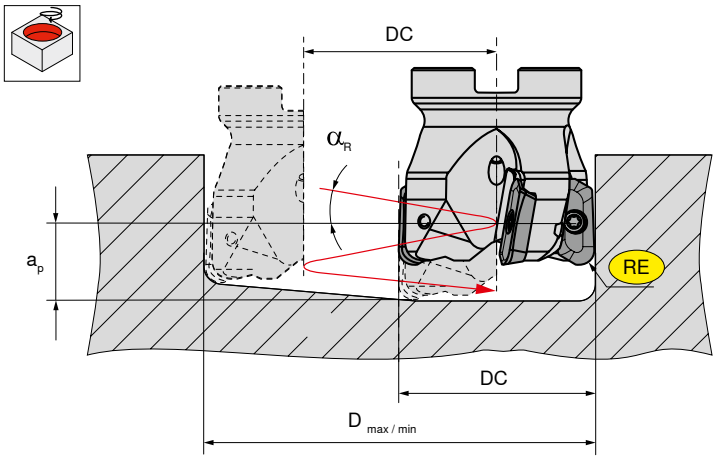


For inserts with a corner radius larger than 0.125" the basic body of the tool must be modified according to the drawing above.

System MaxiMill HSC-11

Machining strategy

Helical plunging



RE = Insert radius
α_R iinch = Maximum ramping angle (related to centre of tool)

a_p inch = pitch → D x π x tan (α_R)

D in inch = → D_{max} – DC and/or D_{min} – DC

For flat bottom hole

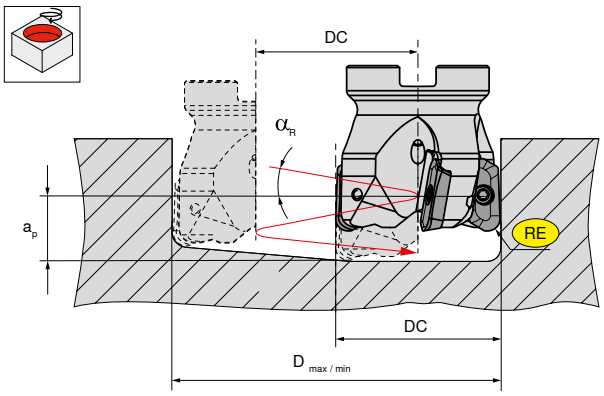
$D_{max.}$ in inch = largest drilling diameter
$D_{min.}$ in inch = smallest drilling diameter
$DN_{max.}$ inch = Maximum hole diameter for non flat bottom

DC inch		XDHT-11 (HSC-11)								
(DN_{max})		RE = 0.008	RE = 0.016	RE = 0.032	RE = 0.048	RE = 0.064	RE = 0.080	RE = 0.100	RE = 0.125	RE = 0.160
	α_R	9.7°	10.0°	9.9°	9.4°	8.9°	8.4°	7.9°	7.0°	6.1°
	$D_{max.}$	1.18	1.18	1.14	1.1	1.06	1.06	1.02	0.94	0.91
(1.22)	$D_{min.}$	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71
.708	α_R	9.4°	9.1°	8.7°	8.3°	7.9°	7.5°	6.9°	6.2°	5.3°
	$D_{max.}$	1.34	1.34	1.3	1.26	1.22	1.22	1.18	1.1	1.06
(1.38)	$D_{min.}$	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
.750	α_R	8.8°	8.6°	8.3°	7.9°	7.5°	7.5°	6.5°	5.9°	5.1°
	$D_{max.}$	1.42	1.42	1.38	1.34	1.3	1.3	1.26	1.18	1.14
(1.45)	$D_{min.}$	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
.787	α_R	8.4°	8.2°	7.8°	7.4°	7.7°	6.7°	6.2°	5.5°	4.8°
	$D_{max.}$	1.5	1.5	1.46	1.42	1.38	1.38	1.34	1.26	1.22
(1.53)	$D_{min.}$	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
.866	α_R	7.6°	1.65	7.4°	1.65	7.8°	1.61	6.7°	1.57	6.4°
	$D_{max.}$	1.65	1.65	1.61	1.57	1.53	1.53	1.49	1.41	1.37
(1.69)	$D_{min.}$	1.18	1.18	1.18	1.18	1.18	1.18	1.18	1.18	1.18
1.00	α_R	6.7°	6.5°	6.2°	5.9°	5.6°	5.3°	4.9°	4.4°	3.8°
	$D_{max.}$	1.89	1.89	1.85	1.81	1.77	1.77	1.73	1.65	1.61
(1.93)	$D_{min.}$	1.42	1.42	1.42	1.42	1.42	1.42	1.42	1.42	1.42
1.25	α_R	4.7°	2.44	4.7°	2.44	4.8°	2.40	4.6°	2.36	4.3°
	$D_{max.}$	2.44	2.44	2.4	2.36	2.32	2.32	2.28	2.2	2.17
(2.48)	$D_{min.}$	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.97	1.97
1.50	α_R	3.3°	3.3°	3.4°	3.4°	3.5°	3.3°	3.0°	2.7°	2.3°
	$D_{max.}$	3.07	3.07	3.03	2.99	2.95	2.95	2.91	2.83	2.8
(3.11)	$D_{min.}$	2.59	2.59	2.59	2.59	2.59	2.59	2.59	2.59	2.59
2.00	α_R	2.4°	3.86	2.5°	3.86	2.5°	3.82	2.5°	3.78	2.6°
	$D_{max.}$	3.86	3.86	3.82	3.78	3.74	3.74	3.7	3.62	3.58
(3.89)	$D_{min.}$	3.38	3.38	3.38	3.38	3.38	3.38	3.38	3.38	3.38
2.50	α_R	1.7°	1.7°	1.7°	1.8°	1.8°	1.8°	1.8°	1.7°	1.5°
	$D_{max.}$	4.88	4.88	4.84	4.8	4.76	4.76	4.72	4.65	4.61
(4.92)	$D_{min.}$	4.41	4.41	4.41	4.41	4.41	4.41	4.41	4.41	4.41
3.00	α_R	1.1°	1.1°	1.1°	1.1°	1.1°	1.1°	1.1°	1.2°	1.2°
	$D_{max.}$	6.22	6.22	6.18	6.14	6.1	6.1	6.06	5.98	5.94
(6.25)	$D_{min.}$	5.75	5.75	5.75	5.75	5.75	5.75	5.75	5.75	5.75
4.00	α_R	0.8°	0.8°	0.9°	0.9°	0.9°	0.9°	0.9°	0.9°	0.9°
	D_{max}	7.8	7.8	7.76	7.72	7.68	7.68	7.64	7.56	7.52
(7.83)	$D_{min.}$	7.32	7.32	7.32	7.32	7.32	7.32	7.32	7.32	7.32

System MaxiMill HSC/HPC-19

Machining strategy

Helical plunging



RE = Insert radius
α_R iinch = Maximum ramping angle (related to centre of tool)

a_p inch = pitch → D x π x tan (α_R)

D in inch = → D_{max} – DC and/or D_{min} – DC

For flat bottom hole

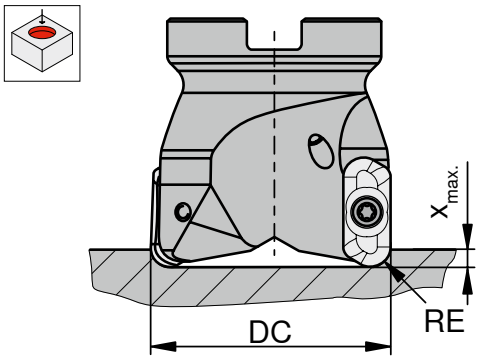
$D_{max.}$ in inch = largest drilling diameter
$D_{min.}$ in inch = smallest drilling diameter
$DN_{max.}$ inch = Maximum hole diameter for non flat bottom

	DC inch	DN_{max} inch	α_R °	D_{max} inch	D_{min} inch
RE = 0.008“	**1.00**	1.93	7°02‘	1.89	1.26
	1.25	2.48	4°34‘	2.44	1.81
	1.50	3.11	3°47‘	3.07	2.44
	2.00	3.90	3°01‘	3.82	3.19
	2.50	4.92	2°17‘	4.88	4.21
	3.00	6.26		6.22	5.55
	4.00	7.83		7.80	7.13
RE = 0.016“	**1.00**	0.98	7°08‘	1.89	1.26
	1.25	1.26	4°37‘	2.44	1.81
	1.50	1.57	3°49‘	3.07	2.44
	2.00	1.97	3°02‘	3.86	3.19
	2.50	2.48	2°18‘	4.88	4.21
	3.00	3.15		6.22	5.55
	4.00	3.94		7.80	7.13
RE = 0.032“	**1.00**	1.93	7°21‘	1.85	1.26
	1.25	2.48	4°44‘	2.40	1.81
	1.50	3.11	3°53‘	3.03	2.44
	2.00	3.90	3°05‘	3.82	3.19
	2.50	4.92	2°20‘	4.84	4.21
	3.00	6.26		6.18	5.55
	4.00	7.83		7.76	7.13
RE = 0.078“	**1.00**	0.98	8°40‘	1.77	1.26
	1.25	1.26	5°04‘	2.32	1.81
	1.50	1.57	4°06‘	2.95	2.44
	2.00	1.97	3°13‘	3.74	3.19
	2.50	2.48	2°25‘	4.76	4.21
	3.00	3.15		6.10	5.55
	4.00	3.94		7.68	7.13
RE = 0.098“	**1.00**	1.93	8°24‘	1.73	1.26
	1.25	2.48	5°13‘	2.28	1.81
	1.50	3.11	4°12‘	2.91	2.44
	2.00	3.90	3°17‘	3.70	3.19
	2.50	4.92	2°27‘	4.72	4.21
	3.00	6.26		6.06	5.55
	4.00	7.83		7.64	7.13
RE = 0.128“	**1.00**	0.98	8°54‘	1.65	1.26
	1.25	1.26	5°26‘	2.20	1.81
	1.50	1.57	4°20‘	2.83	2.44
	2.00	1.97	3°21‘	3.62	3.19
	2.50	2.48	2°30‘	4.65	4.21
	3.00	3.15		5.98	5.55
	4.00	3.94		7.56	7.13
RE = 0.157“	**1.00**	1.93	9°32‘	1.61	1.26
	1.25	2.48	5°42‘	2.17	1.81
	1.50	3.11	4°30‘	2.80	2.44
	2.00	3.90	3°28‘	3.58	3.19
	2.50	4.92	2°33‘	4.61	4.21
	3.00	6.26		5.94	5.55
	4.00	7.83		7.52	7.13
RE = 0.196“	**1.00**	0.98	6°49‘	1.54	1.26
	1.25	1.26	3°59‘	2.09	1.81
	1.50	1.57	3°20‘	2.72	2.44
	2.00	1.97	2°13‘	3.50	3.19
	2.50	2.48	1°52‘	4.53	4.21
	3.00	3.15		5.87	5.55
	4.00	3.94		7.44	7.13

System MaxiMill HSC/HPC-19

Machining strategy

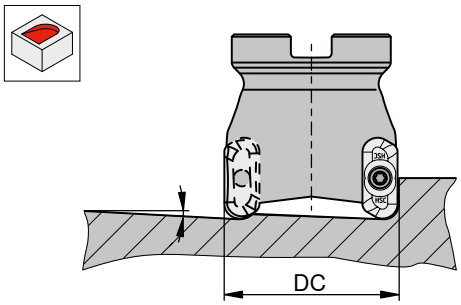
Axial ramping



HSC 19	DC mm	19 RE 0.008–0.157 $x_{max.}$ mm	19 RE 0.196 $x_{max.}$ mm
CHSC 19 / GHSC 19 / MHSC 19	1.00	0.196	0.157
CHSC 19 / GHSC 19 / MHSC 19	1.25–1.50	0.157	0.118
AHSC 19	1.50–4.00	0.157	0.118

HPC 19	DC mm	19 RE 0.008–0.157 $x_{max.}$ mm	19 RE 0.196 $x_{max.}$ mm
CHPC 19 / MHPC 19	1.00	0.196	0.157
CHPC 19 / MHPC 19	1.25–1.50	0.236	0.196
AHPC 19	1.50–2.50	0.236	0.196

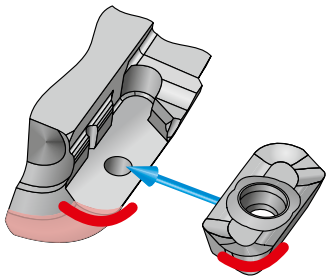
Linear ramping

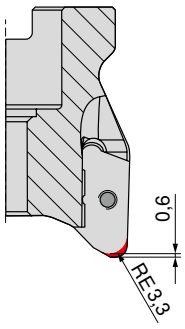


DC mm	α ideal HSC 19	HPC 19
1.00	11°	11°
1.25	7°	7°
1.50	5°	5°
2.00	4°	4°
2.50	3°	3°
3.00	2°	
4.00	2°	

Modification to basic body

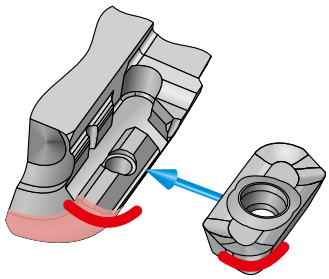
HSC 19





Modification to front profile

HPC 19

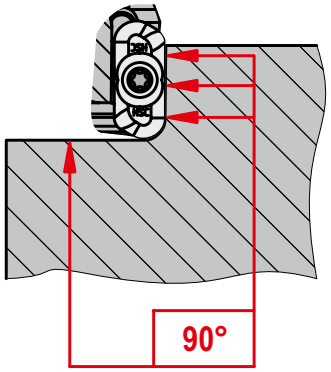


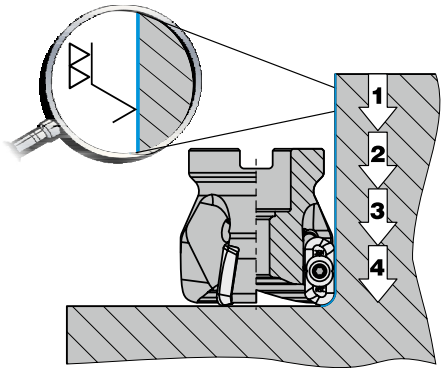
For inserts with a corner radius larger than 4.0 mm the basic body of the tool must be modified according to the drawing above.

System MaxiMill HSC/HPC-19

Machining strategy

Excellent side wall quality after roughing operation.
Additional finishing operations minimized or no longer required.





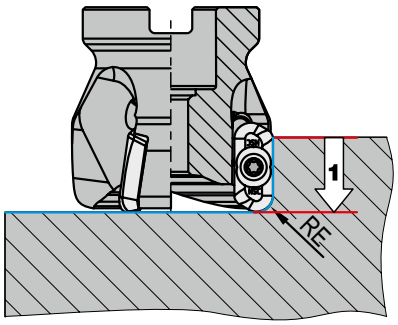
With maximum chip volume

Indexable Insert	RE inch	a_p inch	$a_{p\,max.}$ inch
XDH. 190402FR-ALP	0.008	0.71	0.70
XDH. 190404FR-ALP	0.016	0.71	0.69
XDH. 190408FR-ALP	0.032	0.71	0.68
XDH. 190420FR-ALP	0.078	0.71	0.63
XDH. 190425FR-ALP	0.098	0.71	0.59
XDH. 190432FR-ALP	0.128	0.71	0.58
XDH. 190440FR-ALP	0.157	0.71	0.55
XDH. 190450FR-ALP	0.196	0.67	0.51

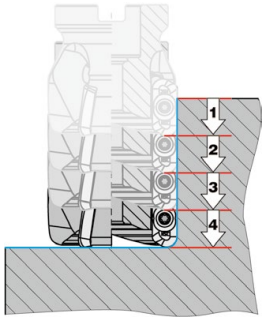
With maximum side wall quality

Indexable Insert	RE inch	$a_{p\,max.}$ inch
XDH. 190402FR-ALP	0.008	0.46
XDH. 190404FR-ALP	0.016	0.46
XDH. 190408FR-ALP	0.032	0.44
XDH. 190420FR-ALP	0.078	0.39
XDH. 190425FR-ALP	0.098	0.37
XDH. 190432FR-ALP	0.128	0.35
XDH. 190440FR-ALP	0.157	0.31
XDH. 190450FR-ALP	0.196	0.28

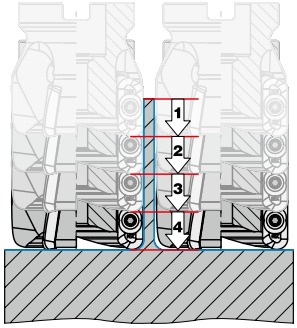
Shoulder milling



Pocket milling



Pocket milling with
thin walled components



This information applies to the inserts type XDHT 19 and XDHX 19.

System MaxiMill HPC-04/12

Machining strategy

What do you have to take into account?

- ▲ Machine stability.
- ▲ Stable work piece clamping and tool adapter.
- ▲ Use of coolant generally not necessary, however, this will facilitate the removal of the chips - also improved surface quality.
- ▲ Take into account thermal stress and critical temperature of 600°C! If required for material, work with coolant.
- ▲ Avoid vibration.
- ▲ Observe balancing quality class.
- ▲ Observe chemical reactions of diamond to carbide forming elements (Fe, Ti, Ta, Co, Ni)

Excellent suitability

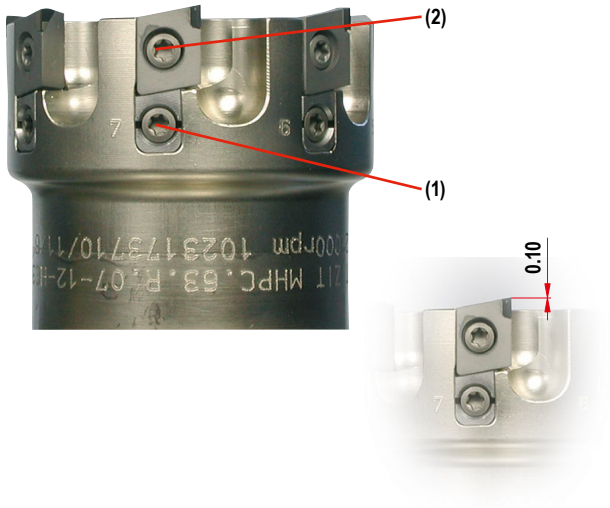
- ▲ for components made of light metals and non-ferrous metals, plastic, fibre composite materials, graphite ...
- ▲ when the simplest setting method saves cost for tool presetting.
- ▲ for high-volume production.
- ▲ for high surface quality of the work pieces.
- ▲ when long tool life is necessary to reduce tool changes and expensive machine downtime.
- ▲ when the tool is already on site (presetting, etc.)

Quality class check

After assembly, clamping of the inserts and adjustment of the axial run-out the balancing quality class of the tools should be checked. When applying shell milling cutters, after assembly with an adapter balancing is necessary.

Setting trailing edge inserts

As in the setting procedure described above the standard inserts are adjusted to a radial run-out of = 0.02 mm. The inserts with Masterfinish edge are then set to 0.02–0.03 mm above the highest cutting edge.



The adjustment procedure

1 Mount Adjustment wedgesin the tools (as delivered). Tighten adjustment screw (1) without deforming the wedges.

2 Mount the PCD inserts and tighten the clamping screws (2) with 1.0 Nm.

3 Mark " highest edge" with the help of pre-setting equipment.

4 Adjust the PCD insert by 0.02 mm turning the clamping screw (1) clockwise.

Pre-loading must be reached. Use the angled TORX screwdrivers

5 Set other cutting edges to this level, maximum deviation of 0.005 mm. Maximum length adjustment = 0.10 mm.

6 Tighten all insert tightening screws (2) to 5.0 Nm.

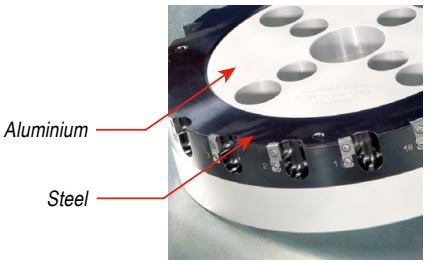
7 Check axial run-out of all inserts: Target = 0.005 mm.

Perfect precision – MaxiMill HPC-12

The adjustable high-performance tool for the finishing of aluminium components

Tool body made of steel

- For highest stability
- Maximum abrasion resistance
- Bimetallic version from diameter 160 mm easier handling and spindle protection with large tools



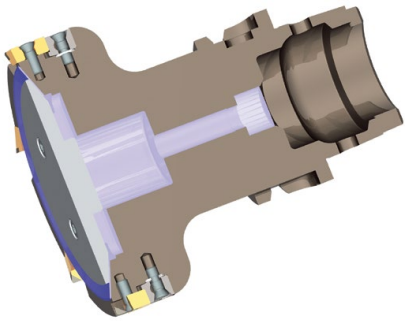
Picture shows bimetallic version

Available as shell milling cutters and monobloc type

- Direct HSK63 connection as monobloc type
- Monobloc tools balanced to G2.5 at n=20,000 min^{-1} (ISO1940)

Particularly for HSC applications with internal coolant supply

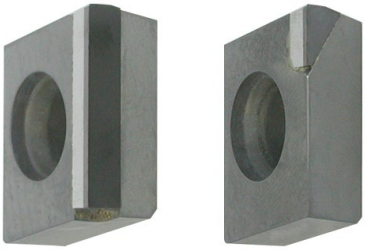
- Improved chip evacuation
- High surface quality
- Optimum application conditions
- Suitability for minimum quantity lubrication



Time is money – the system MaxiMill HPC-12 is simple and quick to adjust!

Highly positive rake angle of +25°

- Low cutting forces
- Increased parallelism of surfaces
- Minimised component deformation



Tangential concept

- Stable location for the PCD segment and maximum process security

Adapted PCD cutting edge

- High impact strength when milling!
- Maximum edge stability
- Reduced built-up edge on the work piece
- The machining of Al-Si alloys with over 12 % silicon is possible without problems

Inserts Selection

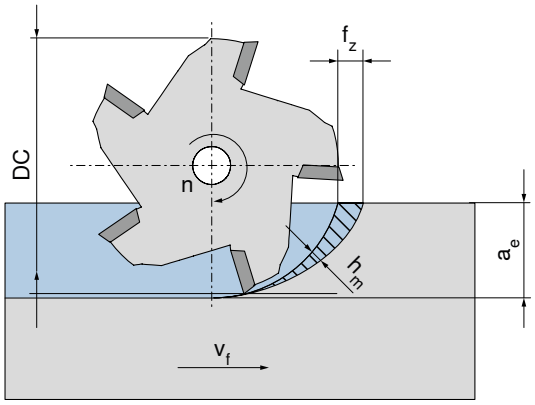
- Standard insert
- Insert with corner radius
- Insert with trailing edge

Average chip thickness [h_m] – the approach

Shoulder milling

1 Select appropriate average chip thickness [h_m] for the steel from the table.

Material	Tensile strength N/mm²	h_m mm
for steel	...–800	0.0063
for steel	800–1000	0.0055
for steel	1000–1200	0.0048
for steel	1200–...	0.0039
for stainless steel	...–750	0.0059
for stainless steel	750–900	0.0051
for stainless steel	900–1150	0.0043
for stainless steel	1150–...	0.0035*

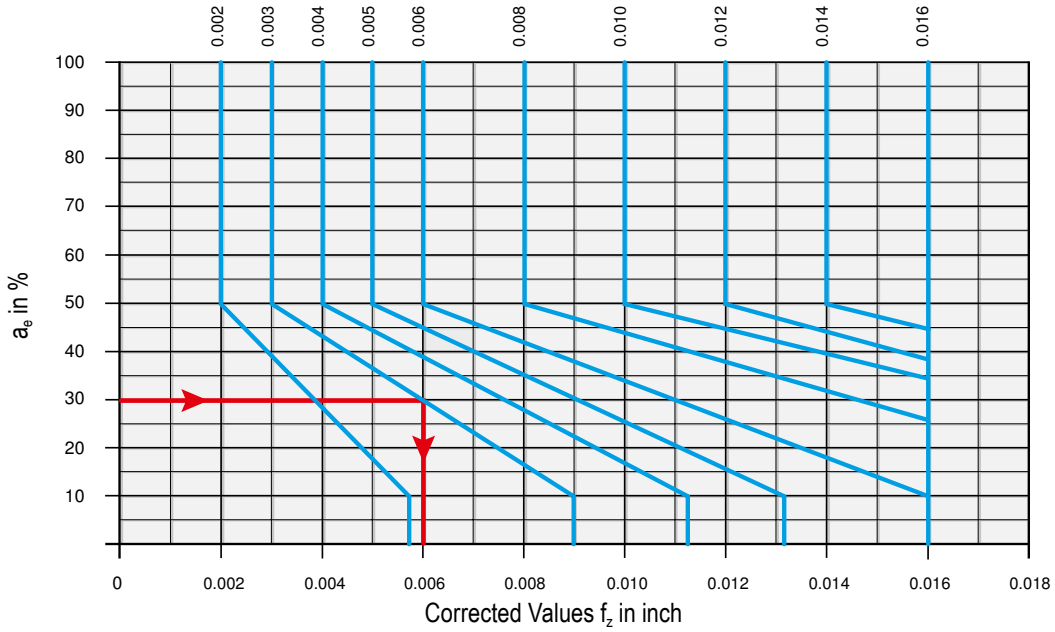


2 Select the corrected feed rate value from the table based on the appropriate chip thickness [h_m] and depth of cut [a_e].

h_m mm	Corrected feed value f_z for h_m				
0.0063	0.0142	0.0114	0.0098	0.0071	0.0063
0.0055	0.0122	0.0102	0.0087	0.0060	0.0055
0.0048	0.0106	0.0087	0.0075	0.0055	0.0047
0.0039	0.0087	0.0071	0.0063	0.0047	0.0039
0.0059	0.0134	0.0106	0.0094	0.0067	0.0059
0.0051	0.0114	0.0094	0.0083	0.0059	0.0051
0.0043	0.0098	0.0079	0.0067	0.0051	0.0043
0.0035*	0.0079	0.0063	0.0055	0.0039	0.0035
a_e =	**0.2 x DC**	**0.3 x DC**	**0.4 x DC**	**0.75 x DC**	**1 x DC**

* f_z < 0.032": Danger, as tool is not working and cutting

Start values f_z in inch from starting parameter diagram



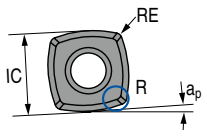
Example:
Start value (f_z) = 0.003"
a_e = 30 %
corrected value (f_z) = 0..006"

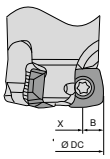
15

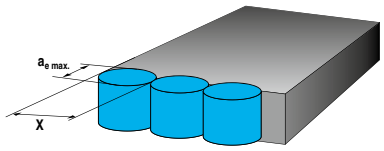
System MaxiMill HFC-06

Machining strategy

Programmed radius R = 0.047“







Cutting depth and remaining material			Cutting width for flat surfaces			Cutting depth when plunging				
IC in inch	RE in inch	$a_{p\ max.}$ in inch	DC in inch	X in inch	B in inch	$a_{e\ max.}$ in inch	f_z in inch			X
							initial	min.	max.	
0.25	0.020	0.032	0.625–1.25	DC–(2 x B)	0.169	0.209	0.004	0.003	0.006	<0.7 x DC

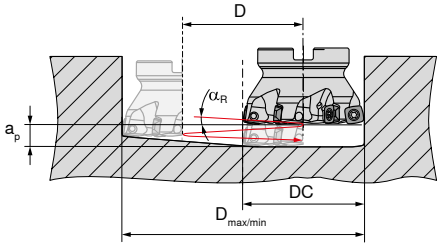


	circular		
	Helical plunging (helical plunging into solid material)		
DC inch	$D_{min.}$ inch	$D_{max.}$ inch	$\alpha_{R\ max.}$ °
0.625	0.866	1.22	4.5°
0.750	1.18	1.53	2.3°
1.00	1.57	1.93	1.3°
1.25	2.12	2.48	0.9°





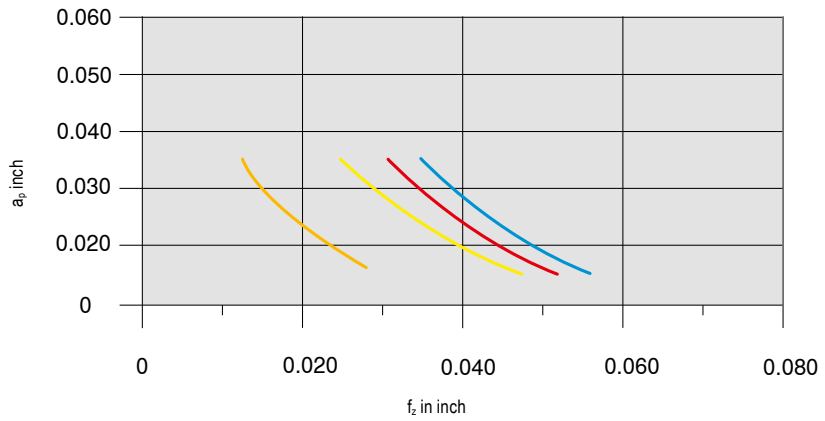
	axial	Angled
	Plunging	
DC inch	$X_{max.}$ inch	$\alpha_{R\ max.}$ °
0.625	0.020	5.9°
0.750		3.2°
1.00		2.0°
1.25		1.3°



Starting Parameter



XPLX 06



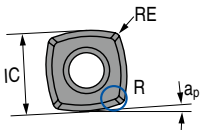
Material			Inserts		v_c in ft/min	Cooling
Steel	**P.4.1**	P20	**XPLX 060305SR-M50**	**CTPP235**	660	Dry
Stainless steel	**M.2.1**	316Ti	**XPLX 060305ER-M40**	**CTPM240**	320	Emulsion
Cast iron	**K.1.1**	GG25 Cast Iron	**XPLX 060305ER-M50**	**CTCK215**	825	Dry
Heat-resistant	**S.2.2**	Inconel 718	**XPLX 060305SR-F40**	**CTC5240**	115	Emulsion

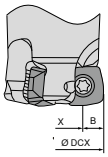
→ **Page 155–157**
Here you will find detailed information on cutting speed.
From v_c > 1300 SFM, the tool must be balanced!

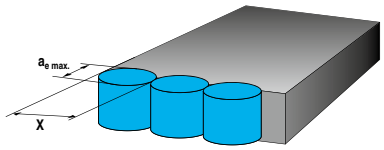
System MaxiMill HFC-09

Machining strategy

Programmed radius R = 0.078"







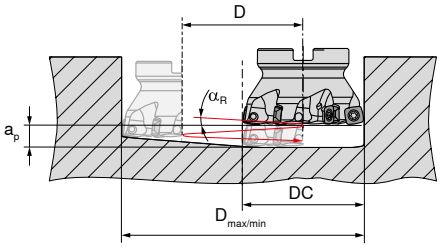
Cutting depth and remaining material			Cutting width for flat surfaces			Cutting depth when plunging				
IC in inch	RE in inch	$a_{p\,max.}$ in inch	DC in inch	X in inch	B in inch	$a_{e\,max.}$ in inch	f_z in inch			X
							initial	min.	max.	
0.354	0.032	0.040	1.00–2.50	DC–(2 x B)	0.232	0.295	0.004	0.003	0.006	<0.7 x DC







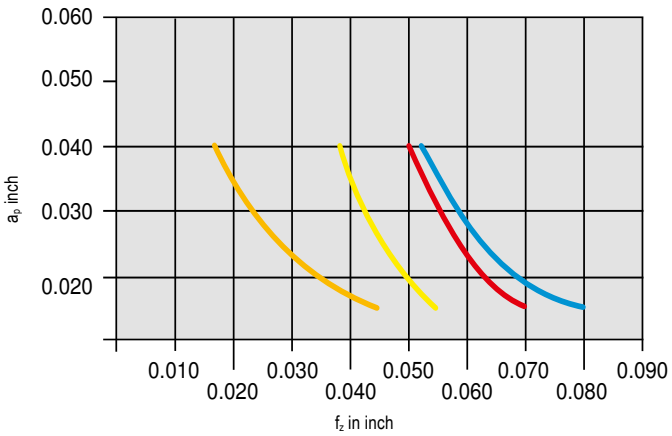
	circular			axial	Angled
	Helical plunging (helical plunging into solid material)			Plunging	
DC inch	$D_{min.}$ inch	$D_{max.}$ inch	$\alpha_{R\,max.}$ °	$X_{max.}$ inch	$\alpha_{R\,max.}$ °
1.00	1.37	1.89	3.1°		3.6°
1.25	1.93	2.44	1.7°		2.0°
1.37	2.16	2.67	1.4°		1.6°
1.50	2.56	3.07	1.0°		1.2°
1.62	2.71	4.01	0.9°	0.030	1.1°
2.00	3.34	3.85	0.8°		0.9°
2.12	3.50	4.01	0.7°		0.8°
2.50	4.37	4.88	0.7°		0.8°
2.62	4.60	5.11	0.6°		0.7°



Starting Parameter



XDLX 09



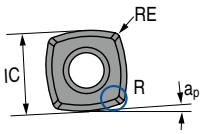
Material			Inserts		v_c in ft/min	Cooling
Steel	**P.4.1**	P20	**XDLX09T308SR-M50**	**CTPP235**	660	Dry
Stainless steel	**M.2.1**	316Ti	**XDLX09T308SR-M50**	**CTPM240**	320	Emulsion
Cast iron	**K.1.1**	GG25 Cast Iron	**XDLX09T308SR-M50**	**CTCK215**	825	Dry
Heat-resistant	**S.2.2**	Inconel 718	**XDLX09T308ER-F40**	**CTC5240**	115	Emulsion

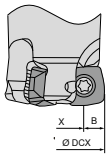
→ **Page 155–157**
Here you will find detailed information on cutting speed.
From v_c > 1300 SFM, the tool must be balanced!

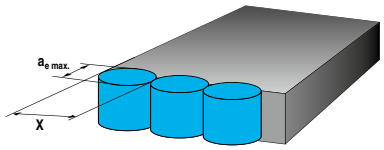
System MaxiMill HFC-12

Machining strategy

Programmed radius R = 0.118"







Cutting depth and remaining material			Cutting width for flat surfaces			Cutting depth when plunging				
IC in inch	RE in inch	$a_{p\ max.}$ in inch	DC in inch	X in inch	B in inch	$a_{e\ max.}$ in inch	f_z in inch			X
							initial	min.	max.	
0.472	0.040	0.080	1.25–4.00	DC–(2 x B)	0.326	0.393	0.006	0.004	0.008	<0.7 x DC

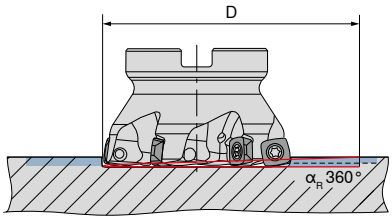






	circular		
	Helical plunging (helical plunging into solid material)		
DC inch	$D_{min.}$ inch	$D_{max.}$ inch	$\alpha_{R\ max.}$ °
1.00	1.73	2.45	6.1°
1.25	1.97	2.67	3.7°
1.50	2.56	3.07	2.5°
1.62	2.52	3.22	2.3°
2.00	3.15	3.86	1.3°
2.12	3.30	4.01	1.3°
2.50	4.17	4.88	0.9°
2.62	4.41	5.12	0.9°
3.00	5.51	6.22	1.1°
4.00	7.09	7.79	0.6°

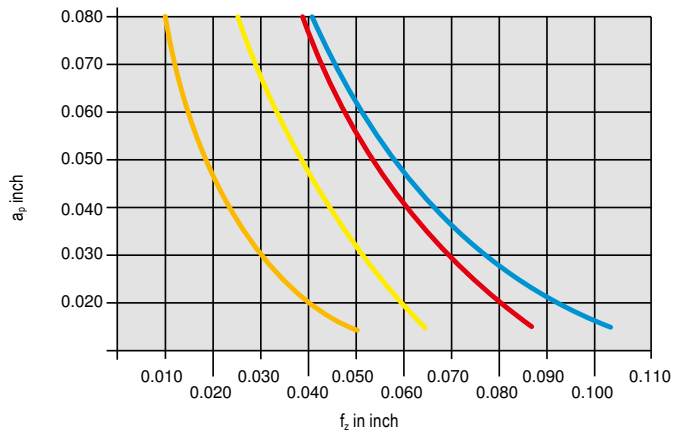
	axial	Angled
	Plunging	
DC inch	$X_{max.}$ inch	$\alpha_{R\ max.}$ °
1.25	0.045	7.2°
1.37		4.4°
1.50		2.9°
1.62		2.7°
2.00 + 2.12		1.5°
2.50 + 2.62		1.1°
3.00		1.3°
4.00		0.7°



Starting Parameter



XOLX 12



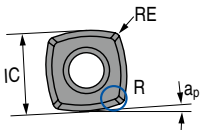
Material			Inserts		v_c in ft/min	Cooling
Steel	**P.4.1**	P20	**XOLX120410SR-M50**	**CTPP235**	660	Dry
Stainless steel	**M.2.1**	316Ti	**XOLX120410ER-M50**	**CTPM240**	320	Emulsion
Cast iron	**K.1.1**	GG25 Cast Iron	**XOLX120410ER-M50**	**CTCK215**	825	Dry
Heat-resistant	**S.2.2**	Inconel 718	**XOLX120410ER-F40**	**CTC5240**	115	Emulsion

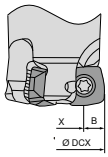
→ **Page 155–157**
Here you will find detailed information on cutting speed.
From v_c > 1300 SFM, the tool must be balanced!

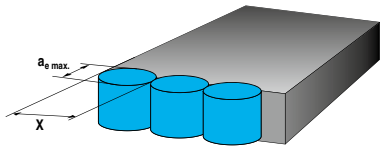
System MaxiMill HFC-19

Machining strategy

Programmed radius R = 0.196"







Cutting depth and remaining material			Cutting width for flat surfaces			Cutting depth when plunging				
IC in inch	RE in inch	$a_{p\ max.}$ in inch	DC in inch	X in inch	B in inch	$a_{e\ max.}$ in inch	f_z in inch			X
							initial	min.	max.	
0.753	0.060	0.129	2.50–6.00	DC–(2 x B)	0.516	0.472	0.008	0.004	0.010	<0.65 x DC

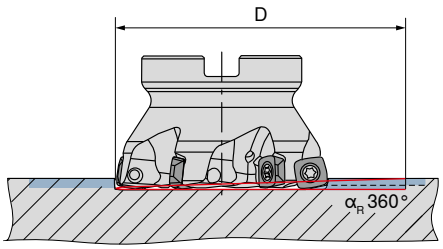


	circular		
	Helical plunging (helical plunging into solid material)		
DC inch	$D_{min.}$ inch	$D_{max.}$ inch	$\alpha_{R\ max.}$ °
2.50	3.82	4.84	2.5
3.00	5.15	6.18	1.4
4.00	6.73	7.75	1.0
5.00	8.70	9.72	0.7
6.00	11.45	12.48	0.5





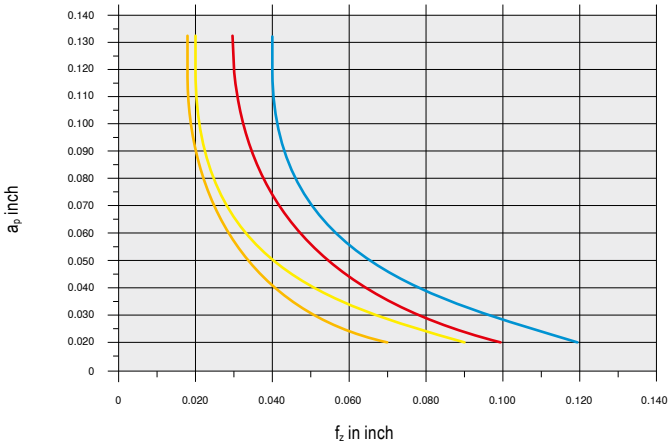
	axial	Angled	
		Plunging	
DC inch	$X_{max.}$ inch	$\alpha_{R\ max.}$ °	$a_{p\ max}$ inch
2.50		2.9	
3.00		1.8	
4.00	0.067	1.3	0.129
5.00		1.0	
6.00		0.7	



Starting Parameter



XOLX 19



Material			Inserts		v_c in ft/min	Cooling
Steel	**P.4.1**	P20	**XOLX190615SR-M50**	**CTPP235**	660	Dry
Stainless steel	**M.2.1**	316Ti	**XOLX190615SR-M50**	**CTPM240**	320	Emulsion
Cast iron	**K.1.1**	GG25 Cast Iron	**XOLX190615SR-M50**	**CTCK215**	825	Dry
Heat-resistant	**S.2.2**	Inconel 718	**XOLX190615ER-F40**	**CTC5240**	115	Emulsion

→ **Page 155–157**
Here you will find detailed information on cutting speed.
From v_c > 1300 SFM, the tool must be balanced!

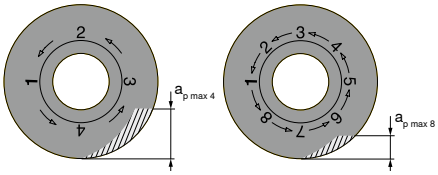
MaxiMill 251 RS system

Technical data

Recommended cutting depth

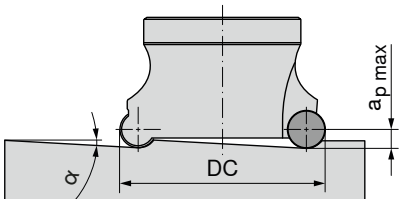
Ø inch	4-position $a_{p\,max.}$ inch	4-position $a_{p\,max}$ theoretical inch	8-face $a_{p\,max.}$ inch
0.196	0.040	0.080	0.028
0.314	0.060	0.140	0.043
0.393	0.100	0.180	0.055
0.472	0.120	0.220	0.067
0.629	0.160	0.300	0.090
0.787	0.160	0.380	0.114

Average depth for the 4/8 index use of the insert



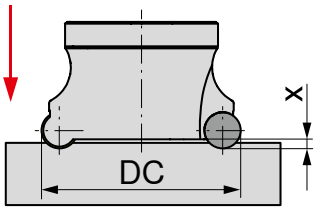
→ **Page 155–157**
Here you will find detailed information on cutting speed.

Linear ramping

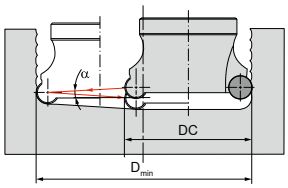


Ø DC inch	05 α °	08 α °	10 α °	12 α °	16 α °	20 α °
0.37	3.4					
0.50	16.0					
0.62	8.0	5.0				
0.75	5.5	20.0	1.3			
1.00	4.0	13.0	2.0	6.0		
1.25	3.0	8.0	3.0	4.0		
1.50			3.3	2.8		
1.62			3.1			
2.00			2.4	2.6	4.0	
2.12			2.2	2.3		
2.50				1.9	2.8	
2.62				1.6		
3.00				1.3	2.0	3.2
4.00				1.0	1.5	2.3
5.00						1.7

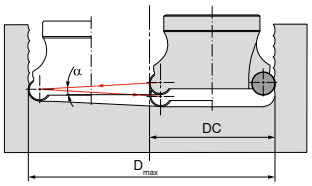
Axial ramping



Ø DC inch	05 $X_{max.}$ inch	08 $X_{max.}$ inch	10 $X_{max.}$ inch	12 $X_{max.}$ inch	16 $X_{max.}$ inch	20 $X_{max.}$ inch
0.37	0.020					
0.50	0.050					
0.62	0.050	0.020				
0.75	0.050	0.106	0.008			
1.00	0.050	0.106	0.016	0.040		
1.25	0.050	0.106	0.030	0.043		
1.50			0.060	0.047		
1.62			0.060	0.060		
2.00			0.060	0.060	0.080	
2.12			0.060	0.060	0.080	
2.50				0.060	0.080	
2.62				0.060	0.080	
3.00				0.060	0.080	0.120
4.00				0.060	0.080	0.120
5.00						0.120



$D_{min.}$ = smallest drilling diameter depending on the tool diameter



$D_{max.}$ = Maximum hole diameter Depending on the tool diameter

maximum possible hole diameter = 2 x DC – 0.040“

Ø DC inch	05 D_{min} inch	05 D_{max} inch	05 α_R °	08 D_{min} inch	08 D_{max} inch	08 α_R °	10 D_{min} inch	10 D_{max} inch	10 α_R °	12 D_{min} inch	12 D_{max} inch	12 α_R °	16 D_{min} inch	16 D_{max} inch	16 α_R °	20 D_{min} inch	20 D_{max} inch	20 α_R °
0.37	0.47	0.59	2.5															
0.50	0.63	0.75	2.1															
0.62	0.94	1.06	1.5	0.83	0.94	2.4												
0.75	1.26	1.38	1.2	1.06	1.26	1.9	1.02	1.18	1.3									
1.00	1.65	1.77	1.0	1.46	1.65	1.5	1.46	1.57	1.8	1.22	1.50	2.2						
1.25	2.20	2.32	0.7	2.01	2.20	1.2	1.97	2.13	1.5	1.81	2.05	1.7						
1.50							2.52	2.76	1.1	2.44	2.68	1.4						
1.62							2.68	2.91	1.1									
2.00							3.31	3.54	0.9	3.19	3.46	1.1	2.95	3.31	1.5			
2.12							3.46	3.70	0.9	3.39	3.62	1.0						
2.50										4.21	4.49	0.9	3.98	4.33	1.1			
2.62										4.45	4.72	0.8						
3.00										5.59	5.83	0.7	5.31	5.67	0.9	5.04	5.51	1.1
4.00										7.13	7.40	0.5	6.89	7.24	0.7	6.61	7.09	0.9
5.00																8.58	9.06	0.7

System MaxiMill 252

Machining strategy

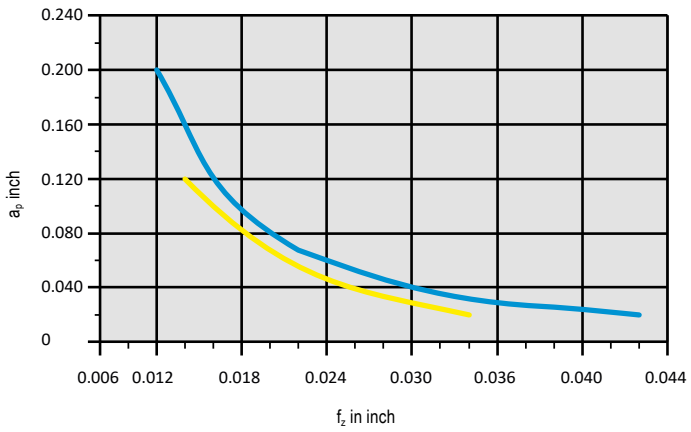
Recommended cutting depth

Ø inch	4-position $a_{p\,max}$ inch	inch
0.393	0.100	0.180
0.472	0.120	0.220

Starting Parameter



RNHU 10

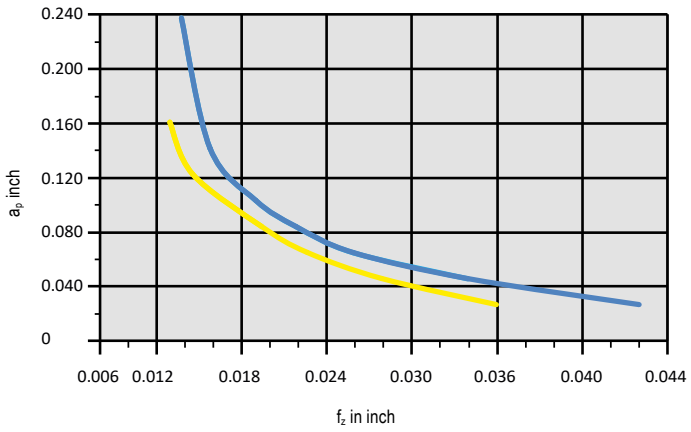


Material			Inserts		v_c in ft/min	Cooling
Steel	P.4.1	P20	XOLX120410SR-M50	CTPP235	600	Dry
Stainless steel	M.2.1	316Ti	XOLX120410ER-M50	CTPM240	320	Emulsion

Starting Parameter



RNHU 12



Material			Inserts		v_c in ft/min	Cooling
Steel	P.4.1	P20	XOLX120410SR-M50	CTPP235	600	Dry
Stainless steel	M.2.1	316Ti	XOLX120410ER-M50	CTPM240	320	Emulsion

→ **Page 155–157**
Here you will find detailed information on cutting speed.
From v_c > 1300 SFM, the tool must be balanced!

Cutting data standard values for MaxiMill Slot-SX saws

Index	CTCP335	CTP1340	H216T
	v_c in ft/min.		
P.1.1	240	190	
P.1.2	210	160	
P.1.3	180	140	
P.1.4	160	130	
P.1.5	140	120	
P.2.1	220	170	
P.2.2	160	130	
P.2.3	140	120	
P.2.4	100	80	
P.3.1	130	120	
P.3.2	110	100	
P.3.3	90	80	
P.4.1	140	120	
P.4.2	120	110	
M.1.1	110	130	
M.2.1	100	120	
M.3.1	80	100	
K.1.1	300	200	140
K.1.2	240	180	115
K.2.1	200	120	150
K.2.2	160	100	110
K.3.1	190	120	170
K.3.2	160	100	140
N.1.1		300	500
N.1.2		200	330
N.2.1		250	370
N.2.2		220	330
N.2.3		200	280
N.3.1		300	350
N.3.2		300	350
N.3.3		200	320
N.4.1		200	320
S.1.1		70	
S.1.2		60	
S.2.1		35	
S.2.2		25	
S.2.3		30	
S.3.1		60	
S.3.2		50	
S.3.3		40	
H.1.1			
H.1.2			
H.1.3			
H.1.4			
H.2.1			
H.3.1			
O.1.1			160
O.1.2			
O.2.1			240
O.2.2			
O.3.1			

average chip thickness

h_m in mm

$$h_m = f_z \sqrt{\frac{a_e}{DC}}$$

Feed per tooth

f_z in inch

$$f_z = h_m \sqrt{\frac{DC}{a_e}}$$

Feed rate

v_f in mm/min

$$v_f = f_z \times ZNF \times n$$

DC = Ø of the disc cutters

ZNF = Number of teeth of the cutter

	Reference tool 50 386 12504 – ASLOT.125.R.8.32.DC-SX4											
	SX4 -F2				SX4 -M1				SX4 -M7			
	a_e	10	20	30	a_e	10	20	30	a_e	10	20	30
	hm	f_z in inch			hm	f_z in inch			hm	f_z in inch		
P	**0.0031**	0.011	0.0079	0.0063	**0.0039**	0.0118	0.0098	0.0079	**0.0035**	0.0118	0.0091	0.0071
M	**0.002**	0.0071	0.0051	0.0039					**0.0024**	0.0083	0.0059	0.0047
K					**0.0047**	0.0118	0.0118	0.0094	**0.0035**	0.0118	0.0091	0.0071
N	**0.0031**	0.011	0.0079	0.0063								
S	**0.0016**	0.0055	0.0039	0.0031								
H												
O												

	Reference tool 50 386 12504 – ASLOT.125.R.8.32.DC-SX4							
	SX4 -M8				SX4 -27P			
	a_e	10	20	30	a_e	10	20	30
	hm	f_z in inch			hm	f_z in inch		
P	**0.0031**	0.011	0.0079	0.0063				
M	**0.002**	0.0071	0.0051	0.0039				
K					**0.0024**	0.0083	0.0059	0.0047
N	**0.0031**	0.011	0.0079	0.0063	**0.0035**	0.0118	0.0091	0.0071
S	**0.0016**	0.0055	0.0039	0.0031				
H								
O					**0.002**	0.0071	0.0051	0.0039

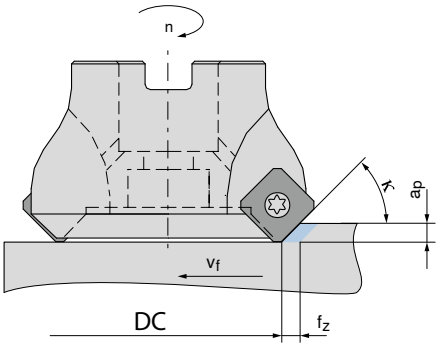
Caution: For narrower and wider indexable inserts, reduce or increase the feed per tooth accordingly!

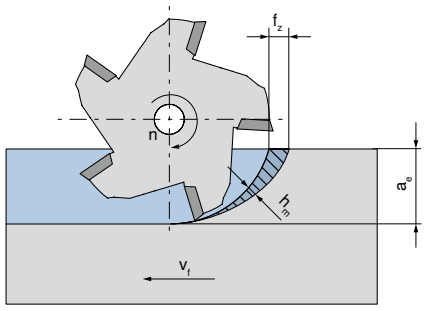
The cutting data is strongly influenced by external conditions, such as the stability of the tool and workpiece clamping, material and type of machine. The specified values represent guideline cutting data that can be adjusted by approx. **±20%** according to the usage conditions.

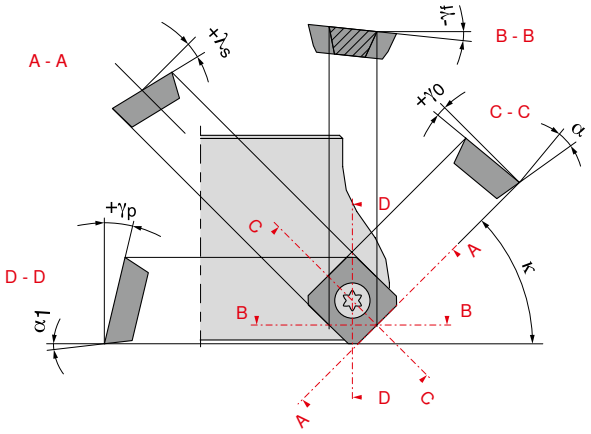
Abbreviations & dimensions

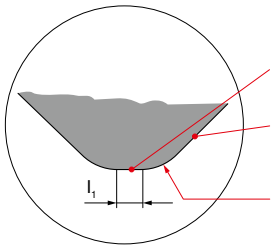
a_e	cutting width	inch
a_p	Cutting depth	inch
DC	Tool diameter	inch
D_w	Workpiece diameter	inch
f_z	Feed per tooth	inch
h_m	Average Chip Thickness	inch
k	Number of teeth	
k_c	Specific cutting force	N/inch²
$k_{c1.1}$	Specific cutting force for 1 mm ² chip area	N/inch²
BS	Length of trailing edge land	inch
m_c	Increase of specific cutting force	
n	rpm	rpm
Q	Chip volume	in³/min
v_c	Cutting speed	ft/min
v_f	Feed rate	in/min.
ZNF	Number of Effective Teeth	

γ_0	Effective cutting angle	degree
γ_f	Side clearance angle	degree
γ_p	Axial cutting angle	degree
κ	Cutting edge angle	degree
λ_s	Angle of inclination	degree
α	Clearance angle	degree
α_1	Side clearance angle	degree









Trailing edge land

Main cutting edge

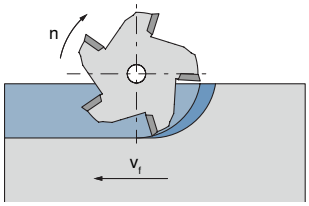
Corner radius

15

Engagement conditions

Recommended

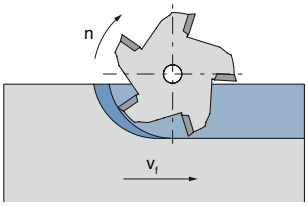
Climb milling



The feed direction of the workpiece is the same as the direction of rotation of the milling cutter in the cutting zone. The chips have maximum thickness at the beginning, chip thickness then decreases until it becomes zero at the end of the cut.

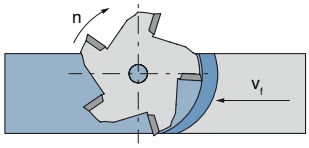
Unsuitable

Conventional milling

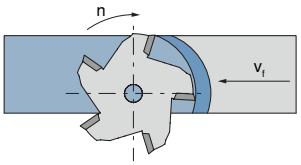


The feed direction of the workpiece is opposite to the direction of rotation of the milling cutter in the cutting zone. Chip thickness is zero at the beginning and increases until it reaches its maximum at the end of the cut.

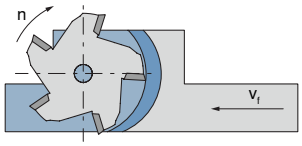
Cutter positioning



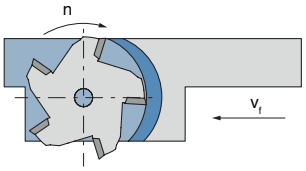
If possible the cutter should exit tangentially of the workpiece.



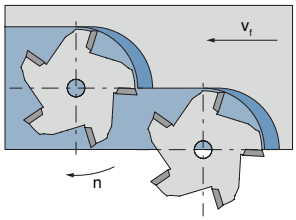
Workpiece situation



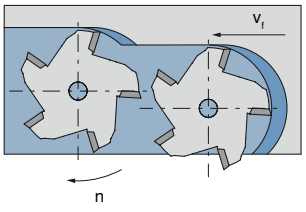
The workpiece should be clamped in such a way as to allow the cutter to emerge tangentially of the workpiece along the whole machining length.



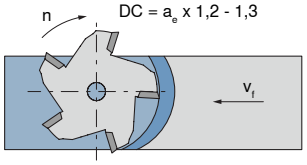
Overlapping



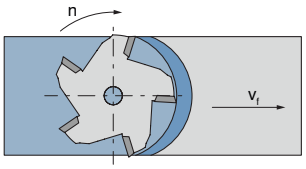
Either employ climb milling or ensure that the cutter comes out of the workpiece tangentially, as in the illustration on the left.



Cutter size



When face milling the diameter of the cutter should be 20–30 % larger than that of the workpiece.



ISO designation indexable milling inserts – inch

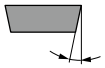
X	D	K	T	11	T3	08	S	R	-	F50
1	2	3	4	5	6	7	8	9		10

Z	N	H	W	12	05	PO	S	R	-	15	06	-	R
1	2	3	4	5	6	7	8	9		11	12		13

1 Insert shape

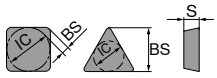
A	85°	
B	82°	
K	55°	
H	120°	
L	90°	
O	135°	
P	108°	
C	80°	
D	55°	
E	75°	
M	86°	
V	35°	
R		
S	90°	
T	60°	
W	80°	
X Z	Special version	

2 Clearance angle

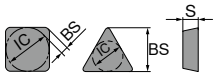


	α
A	3°
B	5°
C	7°
D	15°
E	20°
F	25°
G	30°
N	0°
P	11°
O	Special version

3 Tolerances

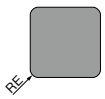


	IC ±inch	BS ±inch	S ±inch	IC = 1/4 / 3/8	IC = 1/2	IC = 5/8 / 3/4
A	0.0010	0.0002	0.0001	●	●	●
C	0.0010	0.0005	0.0001	●	●	●
E	0.0010	0.0010	0.0001	●	●	●
F	0.0005	0.0002	0.0001	●	●	●
G	0.0010	0.0010	0.0005	●	●	●
H	0.0005	0.0005	0.0010	●	●	●
J	0.0020	0.0002	0.0010	●		
	0.0031	0.0002	0.0010		●	
	0.0039	0.0002	0.0010			●
K	0.0020	0.0005	0.0010	●		
	0.0031	0.0005	0.0008		●	
	0.0039	0.0005	0.0008			●



	IC ±inch	BS ±inch	S ±inch	IC = 1/4 / 3/8	IC = 1/2	IC = 5/8 / 3/4
M	0.0020	0.0031	0.0051	●		
	0.0031	0.0051	0.0051		●	
	0.0039	0.0059	0.0051			●
N	0.0020	0.0031	0.0010	●		
	0.0031	0.0051	0.0010		●	
	0.0039	0.0059	0.0010			●
U	0.0031	0.0051	0.0051	●		
	0.0051	0.0079	0.0051		●	
	0.0071	0.0071	0.0051			●

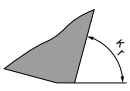
7 Trailing edge land / corner radius



Radius

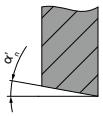
	RE in inch
M0*	
02	0.008
04	0.016
08	0.031
12	0.047

* Only with insert type "R"



1. Designation

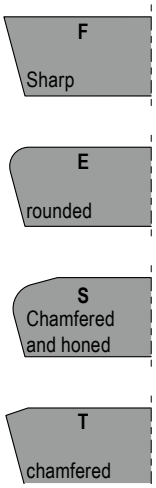
	K_r
A	45°
D	60°
E	75°
F	85°
P	90°
Z	Alternative



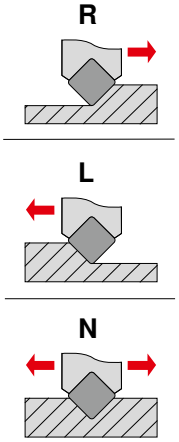
2. Designation

	α'_n
A	3°
B	5°
C	7°
D	15°
E	20°
F	25°
G	30°
N	0°
P	11°
Z O	Alternative

8 Cutting edge



9 Direction of cut

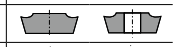
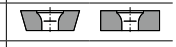


15

ISO designation indexable milling inserts – inch

4

Characteristics

A	
F	
G	
M	
N	
Q	
R	
T	
U	
W	
X	Special version

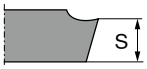
5

Cutting length

IC inch	A	T	C/S	H	L	R	V	W	O	X	Z
0.193										07	
0.196						05					
0.219			05		08			03			
0.236											
1 / 4		11	06		10			04		06	
0.262	10										
0.267										11	
0.275											04
0.313			07								
0.315						08					
0.354					12						
0.366										15	
3 / 8	16	16	09		15			06	04		
0.376	15										
0.378										09	
0.394			10		11	10					12
0.472						12					
0.492										20	
1 / 2		12/22	12		20		22	08		12	
0.622			15		22			10			
0.630						16					
0.638				09							
0.659			16								
0.670			17								
0.676									06		
0.716									07		
3 / 4			19					13			
0.787						20					

6

Insert thickness



	S inch
01	0.063
T1	0.078
02	0.094
03	0.125
T3	0.156
04	0.187
05	0.219
06	0.250
07	0.312
09	0.375

10

Chip groove

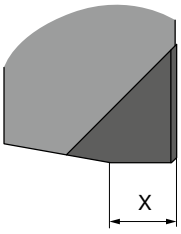
Chip breaker designation
F.. = fine
M.. = medium
R.. roughing

Additional characteristics:
R = transition radius main/ secondary cutting edge
Q = Masterfinish

11

Manufacturer specification

Length of the finishing cutting edge

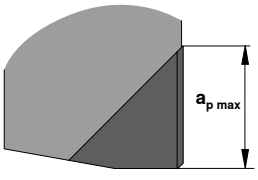


00 = 0.0 mm / 0.00 in
10 = 1.0 mm / 0.039 in
12 = 1.2 mm / 0.047 in
15 = 1.5 mm / 0.059 in
30 = 3.0 mm / 0.118 in
50 = 5.0 mm / 0.197 in

12

Manufacturer specification

$a_{p\ max}$



02 = 2.0 mm / 0.078 in
03 = 3.0 mm / 0.118 in
04 = 4.0 mm / 0.157 in
06 = 6.0 mm / 0.236 in
07 = 7.0 mm / 0.275 in
11 = 11.0 mm / 0.433 in

13

Manufacturer specification

F = Fine
M = Medium
R = Rough

ISO designation indexable milling inserts – metric

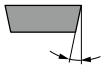
X	D	K	T	11	T3	08	S	R	-	F50
1	2	3	4	5	6	7	8	9		10

Z	N	H	W	12	05	PO	S	R	-	15	06	-	R
1	2	3	4	5	6	7	8	9		11	12		13

1 Insert shape

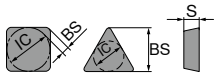
A	85°	
B	82°	
K	55°	
H	120°	
L	90°	
O	135°	
P	108°	
C	80°	
D	55°	
E	75°	
M	86°	
V	35°	
R		
S	90°	
T	60°	
W	80°	
X Z	Special version	

2 Clearance angle

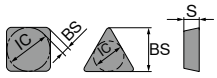


	α
A	3°
B	5°
C	7°
D	15°
E	20°
F	25°
G	30°
N	0°
P	11°
O	Special version

3 Tolerances

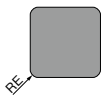


	IC ±mm	BS ±mm	S ±mm	IC = 6.35 / 9.52	IC = 12.7	IC = 15.8 / 19.05
A	0.025	0.005	0.025	●	●	●
C	0.025	0.013	0.025	●	●	●
E	0.025	0.025	0.025	●	●	●
F	0.013	0.005	0.025	●	●	●
G	0.025	0.025	0.13	●	●	●
H	0.013	0.013	0.025	●	●	●
J	0.05	0.005	0.025	●		
	0.08	0.005	0.025		●	
	0.10	0.005	0,025			●
K	0.05	0.013	0.025	●		
	0.08	0.013	0.02		●	
	0.10	0.013	0.02			●



	IC ±mm	BS ±mm	S ±mm	IC = 6.35 / 9.52	IC = 12.7	IC = 15.8 / 19.05
M	0.05	0.08	0.13	●		
	0.08	0.13	0.13		●	
	0.10	0.15	0.13			●
N	0.05	0.08	0.025	●		
	0.08	0.13	0.025		●	
	0.10	0.15	0.025			●
U	0.08	0.13	0.13	●		
	0.13	0.20	0.13		●	
	0.18	0.27	0.13			●

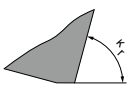
7 Trailing edge land / corner radius



Radius

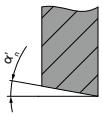
	RE in inch
M0*	
02	0.2
04	0.4
08	0.8
12	1.2

* Only with insert type "R"



1. Designation

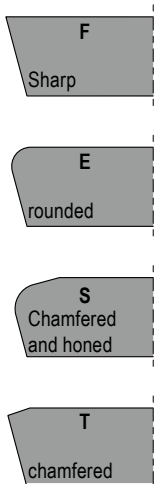
	K_r
A	45°
D	60°
E	75°
F	85°
P	90°
Z	Alternative



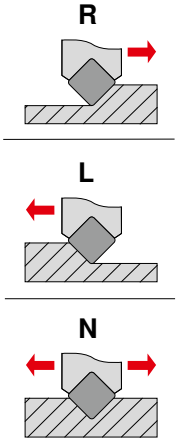
2. Designation

	α'_n
A	3°
B	5°
C	7°
D	15°
E	20°
F	25°
G	30°
N	0°
P	11°
Z O	Alternative

8 Cutting edge



9 Direction of cut

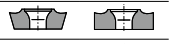


15

ISO designation indexable milling inserts – metric

4

Characteristics

A	
F	
G	
M	
N	
Q	
R	
T	
U	
W	
X	Special version

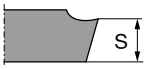
5

Cutting length

IC mm	A	T	C/S	H	L	R	V	W	O	X	Z
4.90										07	
5.00						05					
5.56			05		08			03			
6.00											
6.35		11	06		10			04		06	
6.65	10										
6.80										11	
7.00											04
7.94			07								
8.00						08					
9.00					12						
9.30										15	
9.52	16	16	09		15			06	04		
9.57	15										
9.60										09	
10.00			10		11	10					12
12.00						12					
12.50										20	
12.70		12/22	12		20		22	08		12	
15.81			15		22			10			
16.00						16					
16.20				09							
16.74			16								
17.00			17								
17.18									06		
18.18									07		
19.05			19					13			
20.00						20					

6

Insert thickness



	S mm
01	1.59
T1	1.98
02	2.38
03	3.18
T3	3.97
04	4.76
05	5.56
06	6.35
07	7.94
09	9.52

10

Chip groove

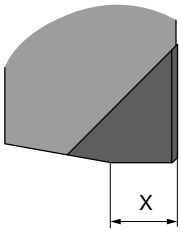
Chip breaker designation
F.. = fine
M.. = medium
R.. roughing

Additional characteristics:
R = transition radius main/ secondary cutting edge
Q = Smoothing edge

11

Manufacturer specification

Length of the finishing cutting edge

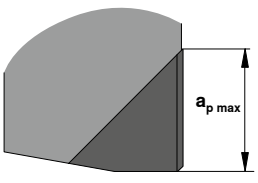


00 = 0.0 mm
10 = 1.0 mm
12 = 1.2 mm
15 = 1.5 mm
30 = 3.0 mm
50 = 5.0 mm

12

Manufacturer specification

$a_{p\,max}$



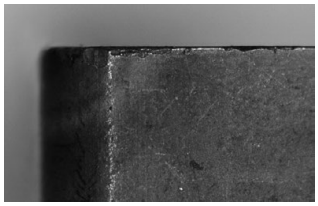
02 = 2.0 mm
03 = 3.0 mm
04 = 4.0 mm
06 = 6.0 mm
07 = 7.0 mm
11 = 11.0 mm

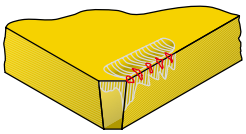
13

Manufacturer specification

F = Fine
M = Medium
R = Rough

Cutting demands when milling

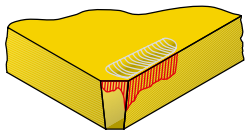




Edge chipping

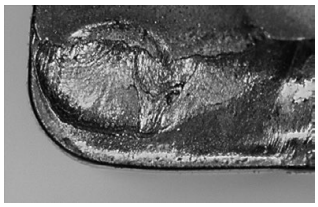
Cutting speed ↑
Feed per tooth ↓
Toughness of grade ↑
Cutting edge chamfer ↑

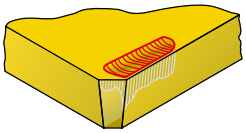




Wear on clearance face

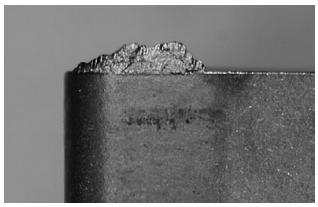
Cutting speed ↓
Feed per tooth ↑
Abrasion resistant grade ↑

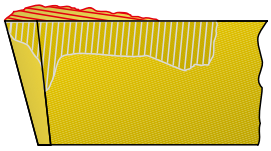




Cratering

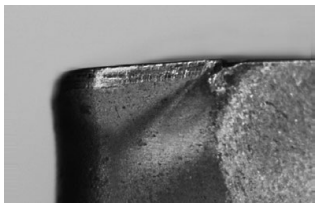
Cutting speed ↓
Feed per tooth ↓
Abrasion resistant grade ↑

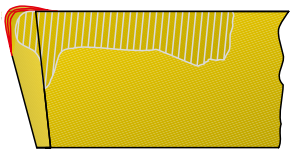




Built-up edge

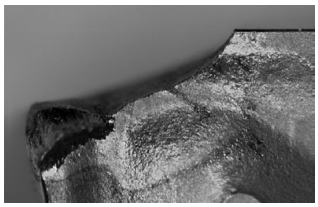
Cutting speed ↑
Feed per tooth ↑
Wear resistance ↑

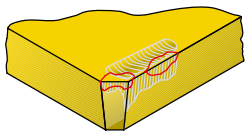




Cutting-edge deformation

Cutting speed ↓
Feed per tooth ↓
Abrasion resistant grade ↑



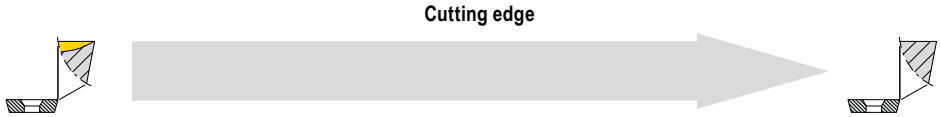


Cutting Edge Breakage

Cutting speed ↓
Toughness of grade ↑

15

Chip Breakers Overview



			Sharp		medium		stable	
			●		● ●		● ● ●	
			10	20	30	40	50	60
increasing wedge angle	fine	F	-F10 -27 -27P	-F20		-F40	-F50	-ER -FN -33P -33
	medium	M			-M31 -M30 -M32		-M50 -31	-EN -29
	rough	R			-R30		-R50	-SN -R60 -SR

Chip breaker code

			Cutting edge		
			Sharp	medium	stable
			10–20	30–40	50–60
Application type	light	F	●	● ●	● ● ●
	universal	M	●	● ●	● ● ●
	difficult	R	●	● ●	● ● ●

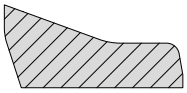
Example: Chip breaker -M50



Chip breaker description

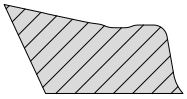
-27P

- Highly positive geometry
- Sharp cutting edges
- Reduced built up edge
- First choice for non-ferrous metals



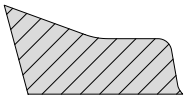
-F10

- Very positive geometry
- Sharp cutting edge
- Prevents sticking and edge build up
- First Choice for non-ferrous metal



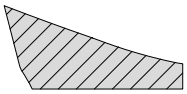
-27

- Highly positive geometry
- Sharp cutting edges
- First choice for non-ferrous metals



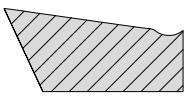
-F20

- Extremely positive geometry
- Lightly rounded cutting edge
- First choice for non-ferrous metals



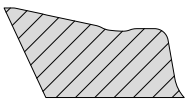
-F40

- Positive geometry
- Rounded cutting edge
- Finish and rough machining
- For unstable clamping situations
- For heat-resistant materials, titanium and super alloys



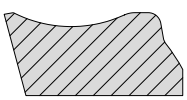
-F50

- Positive geometry with small positive protective chamfer
- Rounded cutting edge
- Low cutting force and good stability
- For unstable clamping situations
- Light rough machining
- First choice for stainless steels



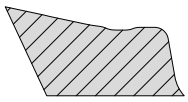
-33P

- Positive geometry with small neutral protective chamfer
- Low adhesion
- Rounded cutting edge
- Low cutting force and good stability
- For unstable clamping situations
- Light rough machining
- First choice for stainless steels



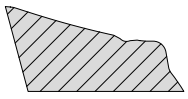
-M30

- Positive geometry
- Rounded cutting edge
- Medium rough machining
- First choice for martensitic stainless steels



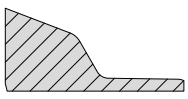
-M31

- Positive geometry
- Rounded cutting edge
- Finish and rough machining
- For unstable clamping situations
- For heat-resistant materials, titanium and super alloys



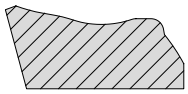
-M32

- Positive geometry
- Rounded cutting edge
- Low cutting force and good stability
- Medium rough machining
- First choice for martensitic stainless steels



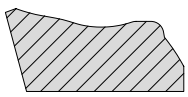
-M50

- Positive geometry with slightly negative protective chamfer
- Rounded cutting edge
- Low cutting force and good stability
- Light to medium rough machining
- First choice for general steels



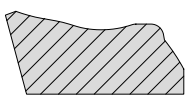
-31

- Positive geometry with neutral protective chamfer
- Rounded cutting edge
- Heavy rough machining
- Strongly interrupted cuts
- First choice for cast iron materials



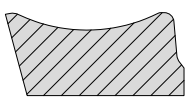
-29

- Positive geometry with slightly negative protective chamfer
- Rounded cutting edge
- Low cutting force and good stability
- Light to medium rough machining
- First choice for general steels



-33

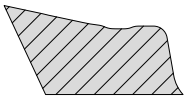
- Positive geometry with small neutral protective chamfer
- Rounded cutting edge
- Low cutting force and good stability
- For unstable clamping situations
- Light rough machining
- First choice for stainless steels



Chip breaker description

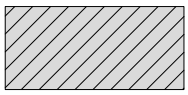
-29R

- Positive geometry with slightly negative protective chamfer
- Heavily rounded cutting edge
- Low cutting force and good stability
- Light to medium rough machining
- First choice for general steels



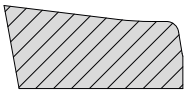
-ER

- Neutral Geometry
- Rounded cutting edge
- Universal application
- High surface quality due to face chamfer
- First choice for machining cast iron and non-ferrous metals



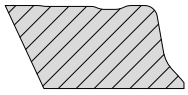
-R30

- Slightly positive geometry
- Rounded cutting edge
- Medium rough machining
- Strongly interrupted cuts
- First choice for cast iron materials



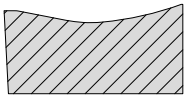
-EN

- Neutral geometry
- Rounded cutting edge
- High surface quality due to face chamfer (radial protective chamfer on indexable insert)
- First choice for machining cast iron and non-ferrous metals



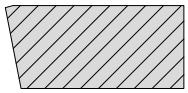
-R50

- Rugged geometry with protective chamfer
- Rounded cutting edge
- Rough machining
- Interrupted cuts
- Recommendation for cast iron materials



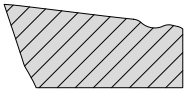
-SN

- Neutral geometry
- Rounded cutting edge
- High surface quality due to face chamfer (radial protective chamfer on indexable insert)
- Low cutting forces
- First choice for good flatness



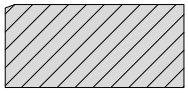
-R60

- Rugged geometry with protective chamfer
- Rounded cutting edge
- Rough machining
- For stable clamping situations
- Recommendation for high-strength steel materials



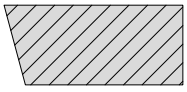
-SR

- Neutral geometry with negative protective chamfer
- Rounded cutting edge
- Robust indexable insert
- For poor machining conditions
- First choice for machining cast iron and steels



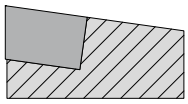
-FN

- Neutral and highly stable geometry
- Heavily rounded cutting edge
- For stable machining conditions
- First choice for hard machining up to approx. 50 HRC



-FR

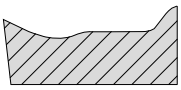
- Neutral Geometry
- Slightly rounded and stable cutting edge
- Associated with Ceramic and CBN cutting materials.
- For stable machining situations
- First choice for machining cast irons



Chip breaker description for MaxiMill Slot-SX

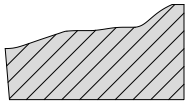
-27P

- Positive geometry
- Ground, sharp cutting edge
- Polished chip breaker
- Low cutting forces
- Fine to medium machining
- First choice for non-ferrous metals



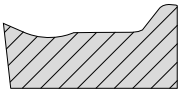
-M8

- Extremely positive geometry
- Ground cutting edge
- Low cutting forces
- Fine to medium machining
- First choice for difficult-to-machine and stainless materials
- Alternatively, can also be used for non-ferrous metals



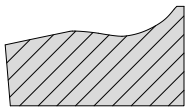
-F2

- Positive geometry
- Ground cutting edge
- Low cutting forces
- Fine to medium machining
- For stainless and steel materials



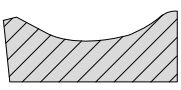
-M7

- Positive geometry
- Medium machining
- Universal application



-M1

- Stable cutting edge
- Medium to rough machining
- Best suited to steel materials



Grade description – Indexable insert countersink

BK8425

- Carbide, TiAlN/TiN-coated
- ISO | **P25** | **M25** | **K25**
- Universal grade with greater wear resistance thanks to innovative PVD multi-layer coating

K10

- Carbide, uncoated
- ISO | **K10**
- Uncoated carbide grade for machining grey cast iron or non-ferrous metals, depending on the cutting edge geometry

Chip breakers

-SM

- Rake angle 15°
- For universal use with medium machining
- Stable cutting edge

-U877

- Rake angle 6°
- circumferentially ground
- Three-ground chip breaker with second clearance angle for clearance with small tool diameters

-G06

- Rake angle 6°
- Preferred application in P / M / K
- Characterized by a particularly stable wedge angle

-G12

- Rake angle 12°
- Preferred application in P / N / S
- is characterized by a particularly high cutting performance

Grades Overview

Grade designation	Standard designation	ISO application range	Steel P	Stainless steel M	Cast iron K	Non-ferrous metals N	Heat-resistant S	Tempered steel H	Non-metal materials O
CTEP210	HE-P10	01 05 10 15 20 25 30 35 40 45 50	●		●				
	HE-K05								
TCM10	HT-P15		●		○				
	HT-K10								
WTN1205	HC-P10		●	○	●			●	
	HC-M15								
	HC-K05								
	HC-H10								
CTPP211	HC-P10		●	○	○	○	○	○	○
	HC-M15								
	HC-K10								
	HC-N10								
	HC-S15								
	HC-H10								
	HC-O10								
CTPP216	HC-P10		●	○	●	○	○	●	○
	HC-M20								
	HC-K15								
	HC-N15								
	HC-S20								
	HC-H15								
	HC-O15								
CTCP220	HC-P20		●		●				
	HC-K20								
CTPP225	HC-P25		●		●				
	HC-K25								
CTCP230	HC-P30		●		●				
	HC-K25								
CTPP231	HC-P30		●		○				
	HC-K25								
CTPP235	HC-P35		●	○	○				
	HC-M30								
	HC-K30								
CTPP236	HC-P35		●	○	○				
	HC-M35								
	HC-K30								
WAN1240	HC-P40		●	○	○				
	HC-M35								
	HC-K30								
WAX1240	HC-P30		●	○	○				
	HC-M25								
	HC-K25								
CTPM225	HC-P25		●	●					
	HC-M25								
WAN2225	HC-M25			●			●		
	HC-S30								
CTCM235	HC-P40		●	●					
	HC-M35								
CTPM240	HC-P40		○	●					
	HC-M40								
CWK10	HC-N10					●			○
	HC-O10								

● **Main Application**
○ Extended application

wear-resistant v_c+ ⟷ v_c– tough

Grades Overview

Grade designation	Standard designation	ISO application range	Steel P	Stainless steel M	Cast iron K	Non-ferrous metals N	Heat-resistant S	Tempered steel H	Non-metal materials O
CTPM241	HC-P40	01 05 10 15 20 25 30 35 40 45 50	●	●			○		
	HC-M40								
	HC-S40								
CTPM245	HC-P45		●	●					
	HC-M50								
CTCM245	HC-P45		●	●			○		
	HC-M50								
	HC-S35								
CTN3105	CN-K05				●				
CTL3215	BC-K10				●			○	
	BC-H10								
CTCK215	HC-K15				●				
CTPK220	HC-K20				●				
CTPK221	HC-P15		○		●				
	HC-K10								
CTPK226	HC-P15		●	●	●			○	
	HC-M20								
	HC-K15								
	HC-H15								
CTPK231	HC-P30		●	●	●	○	○	○	
	HC-M35								
	HC-K30								
	HC-N30								
	HC-S35								
	HC-H30								
CTD4205	DP-N05					●			○
	DP-O05								
CTPX715	HC-P15		○	○	●	●	○		○
	HC-M15								
	HC-K15								
	HC-N15								
	HC-S20								
	HC-O10								
WUN4210	HT-K10				○	●			
	HT-N15								
CTCN211	HC-N10					○			●
	HC-O10								
CTWN215	HC-K15				○	●			○
	HC-N10								
	HC-O10								
H216T	HW-K15				○	●			○
	HW-N15								
	HW-O15								
CTC5240	HC-S35						●		
CTCS245	HC-S45						●		
CTP6215	HC-K15				●			●	
	HC-H15								
CWX500	HC-P15		●	●	○	●	○		○
	HC-M15								
	HC-K15								
	HC-N15								
	HC-S15								
	HC-O15								

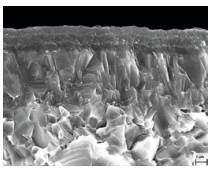
● **Main Application**
○ Extended application

wear-resistant v_c+ ⟷ v_c− tough

15

Grade description

CTEP210



P10 | **K05**

Specification:
Composition: Cermet Co/Ni 12.2%; mixed carbide 71.4%; others; WC balance | Fine grain size | Hardness: HV_{30} 1620 |
Layer system: CVD TiCN-Al_3O_3
Application:
Coated Cermet grade with reserves of toughness for finish machining at high cutting speeds

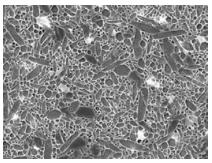
TCM10



P15 | K10

Specification:
Composition: Co/Ni 12.2%; WC 15; TaNbC10.0%; TiCn balance | Hardness: HV_{30} 1620 | Layer system: uncoated
Application:
Uncoated Cermet grade for the finishing of hardened steel

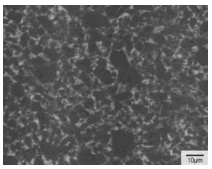
CTN3105



CN-K05

Specification:
Composition: ß – Si_3N_4 | Fine grain size | Hardness: HV_{30} 1620 | Layer system: uncoated
Application:
Universal silicon nitride for the machining of cast iron materials

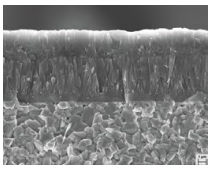
CTL3215



BC-K10 | BC-H10

Specification:
Composition: Cubic boron nitride (CBN) | 85 vol. + metallic binder phase | Cutting system: PVD
Application:
Coated cubic boron nitride with very good cutting toughness and good wear resistance for the machining of cast iron materials

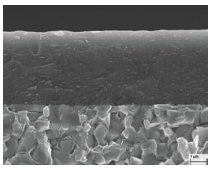
CTCP220



HC-P20 | **HC-K20**

Specification:
Composition: Co 8.0%; mixed carbide 2.0%; WC balance | Medium grain size 1-2µm | Hardness: HV_{30} 1500 |
Layer system: CVD TiCN-Al_3O_2
Application:
Dry machining, high cutting speed + more wear resistant grades to CTCP230
Material example:
Low material strength up to approx. 250 HB / 840 N/mm²

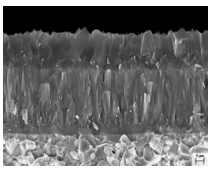
CTPP225



HC-P25 | **HC-K25**

Specification:
Composition: Co 8.0%; mixed carbide 2.0%; WC balance | Medium grain size 1-2µm | Hardness: HV_{30} 1500 | Layer system: PVD TiAlTaN
Application:
Dry or wet machining, face milling of steel materials, higher cutting speeds + more wear resistant grades to CTPP235
Material example:
Medium material strength up to approx. 300 HB / 1000 N/mm²

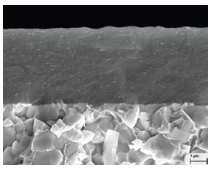
CTCP230



HC-P30 | HC-M25 | **HC-K25**

Specification:
Composition: Co 10.5%; mixed carbide 2.0%; WC balance | Medium grain size 1-2µm | Hardness: HV_{30} 1400 |
Layer system: CVD TiCN-Al_2O_3
Application:
Dry machining, universal grade for higher cutting speeds

CTPP235

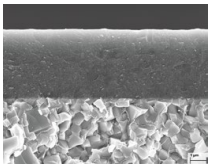


HC-P35 | HC-M30

Specification:
Composition: Co 10.5%; mixed carbide 2.0%; WC balance | Medium grain size 1-2µm | Hardness: HV_{30} 1400 | Layer system: PVD TiAlTaN
Application:
Wet machining, universal grade for medium cutting speeds

Grade description

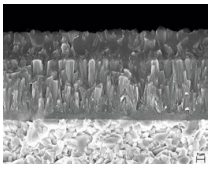
CTPM225



HC-P25 | **HC-M25**

Specification:
Composition: Co 9.0%; mixed carbide 0.75%; WC balance | Fine grain size 0.7-1µm | Hardness: HV_{30} 1590 | Layer system: PVD TiAlTaN
Application:
Dry or wet machining at medium cutting speeds
Material example:
Austenitic stainless steels

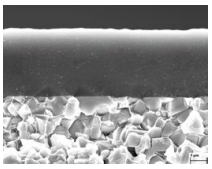
CTCM235



HC-P40 | **HC-M35**

Specification:
Composition: Co 12.5%; mixed carbide 2.0%; WC balance | Fine grain size 1µm | Hardness: HV_{30} 1380 | Layer system: CVD TiCN-Al_2O_3
Application:
Dry machining for medium cutting speeds
Material example:
Martensitic stainless steels

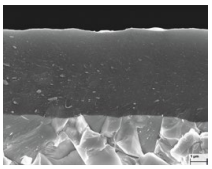
CTPM240



HC-P40 | **HC-M40**

Specification:
Composition: Co 12.0%; mixed carbide 2.0%; WC balance | Fine grain size 1µm | Hardness: HV_{30} 1380 | Layer system: PVD TiAlTaN
Application:
Wet machining, universal grade for higher cutting speeds
Material example:
Austenitic stainless steels

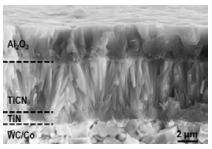
CTPM245



HC-P45 | **HC-M45**

Specification:
Composition: Co 10.0%; others 1.5%; WC balance | Medium grain size 1-2µm | Hardness: HV_{30} 1330 | Layer system: PVD TiAlTaN
Application:
Dry or wet machining
Material example:
High-alloy martensitic and austenitic stainless steel

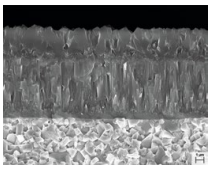
CTCM245



HC-P45 | **HC-M50** | HC-S35

Specification:
Composition: Co 10.0%; others 1.5%; WC balance | Medium grain size 1-2µm | Hardness: HV_{30} 1330 | Layer system: CVD TiCN-Al_2O_3
Application:
Dry machining
Material example:
High-alloy martensitic and austenitic stainless steel

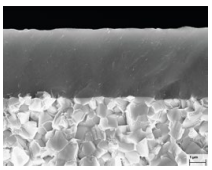
CTCK215



HC-K15

Specification:
Composition: Co 6.0%; mixed carbide 2.0%; WC balance | Fine grain size 1µm | Hardness: HV_{30} 1630 | Layer system: CVD TiCN-Al_2O_3
Application:
Special grade for the dry machining of cast iron materials at high cutting speeds
Material example:
Cast iron materials such as GG25 and GGG40

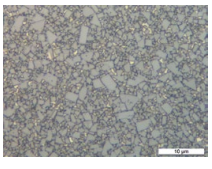
CTPK220



HC-K20

Specification:
Composition: Co 6.0%; mixed carbide 2.0%; WC balance | Fine grain size 1µm | Hardness: HV_{30} 1630 | Layer system: PVD TiAlTaN
Application:
Special grade for the wet machining of cast iron materials in demanding application ranges
Material example:
High-strength cast iron materials such as GGG50 and GGG70

CTWN215 (H216T)

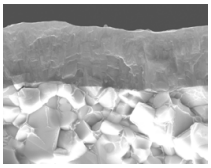


K15 | **N15** | O15

Specification:
Composition: Co 6.0%; WC balance | Fine grain size 1µm | Hardness: HV_{30} 1650 | Layer system: uncoated
Application:
Uncoated carbide for the machining of aluminium and non-ferrous metals
Material example:
Non-ferrous metals such as AlMgSi1

Grade description

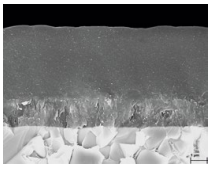
CTPX715



ISO | **P15** | **M15** | K15 | **N15** | **S20** | O10 ○ ○ ● ● ○ ○

Specification:
Composition: Co 6.0%; WC balance | Fine grain size 1µm | Hardness: HV_{30} 1650 | Layer system: PVD AlTiN
Application:
For the machining of aluminium and non-ferrous metals
Material example:
Non-ferrous metals such as AlMgSi1 or GGG30 cast iron

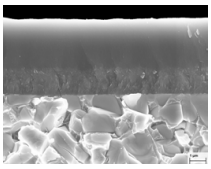
CTC5240



HC-S40

Specification:
Composition: Co 10.0%; WC balance | Medium grain size 2µm | Hardness: HV_{30} 1330 | Layer system: CVD TiN-TiB_2
Application:
Special wet machining grade for the machining of titanium materials
Material example:
Titanium Ti6Al4V

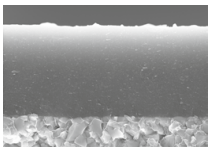
CTCS245



HC-S45

Specification:
Composition: Co 12.0%; mixed carbide 1.8%; WC balance | Medium grain size 1-2µm | Hardness: HV_{30} 1260 | Layer system: CVD TiN-TiB_2
Application:
Wet machining special grade for the machining of nickel-based alloys or the dry machining of austenitic stainless steels
Material example:
Heat-resistant materials such as Inconel, Rene, Nimonic, etc.

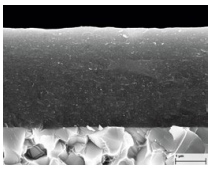
CTP6215



HC-H15 | **HC-K15**

Specification:
Composition: Co 12.0%; WC balance | Ultra-fine grain size 0.4µm | Hardness: HV_{30} 1630 | Layer system: PVD TiAlN
Application:
For the machining of high-strength martensitic tool steels 400HB / 1300 N/mm²
Material example:
Tool steel 1.2379, 1.2312

CTP1340

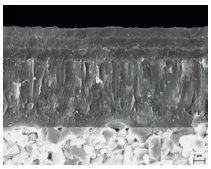


ISO | **P30** | **K30** | N30 | **S30** | O30 ● ● ○ ●

Specifications:
Composition: Co 9.0%; mixed carbide 0.75%; WC balance | grain size: 0.7–1 µm | Hardness: HV_{30} 1590 | Layer system: PVD TiAlTaN

Recommended use:
The universal high-performance grade for steels, austenitic steel, cast iron materials and heat-resistant alloys

CTCP335

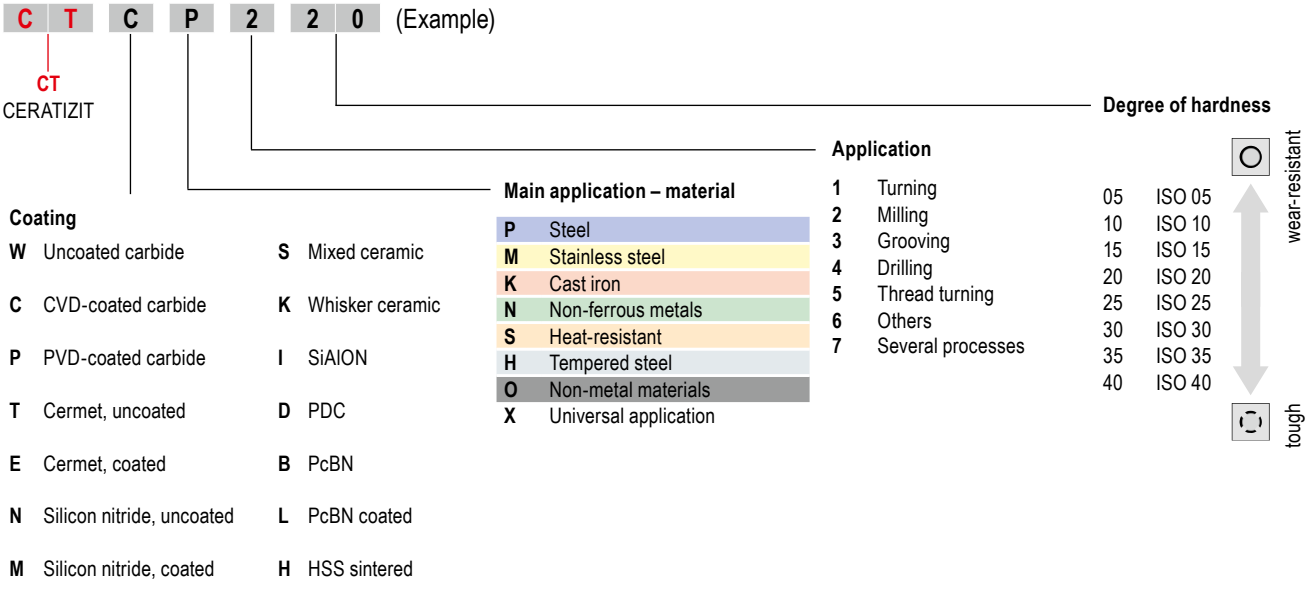


ISO | **P35** | M30 | **K35** ● ○ ●

Specifications:
Composition: Co 10.5%; mixed carbide 1.9%; WC balance | grain size: 1 µm | Hardness: HV_{30} 1370 |
Layer system: CVD TiCN-Al_2O_3 Multilayer

Recommended use:
The reliable choice for machining steel and cast iron materials.

Grade description



New products for machining technicians

NEW High pressure chuck



HyPower – Rough

- For highly dynamic milling operations
- Best results when using tools with a HA shank
- Maximum process security, even for high-quality components
- Developed for the requirements of a wide range of markets (including tool and die production, aerospace and the automotive sector)



HyPower – Access 4.5°

- For reaming and drilling applications as well as finishing during milling operations
- Maximum flexibility when machining components critical to contours
- Developed for the requirements of a wide range of markets (including tool and die production, aerospace and the automotive sector)

NEW PSC parting blade holders and square shank holders with DirectCooling



Our new DirectCooling turning and grooving tool holders in specially tailored PSC adapters. The DirectCooling interface is perfectly adapted and the holders have been specially developed for these tools.

NEW HyPower – Complus



We have expanded our line to include CAT taper high pressure hydraulic milling chucks.

NEW Cylindrical shank adapter (Weldon)



We have expanded our line to include CAT taper weldon shank adapters.

NEW Shell mill adapter



We have expanded our line to include CAT taper shell mill adapters.

NEW Torsional vibration dampers with ABS connection



The popular and very useful torsional vibration damper with ABS connection has been supplemented with the PSC interface. This extension is enhancing our complete range and we can now also clamp without an adapter directly on machines with the PSC interface.



Solid drilling and bore machining	Metric Catalog	HSS drilling	1
	Metric Catalog	Solid carbide drilling	2
		Indexable drilling	3
		Reaming and Countersinking	4
		Indexable Boring	5
Threading	Metric Catalog	Taps and thread formers	6
	Metric Catalog	Circular and Thread Milling	7
	Metric Catalog	Thread turning	8
Turning		Indexable Turning	9
		Multifunction	10
		Parting and Grooving	11
	Metric Catalog	Miniature turning tools	12
Milling	Metric Catalog	HSS Milling Cutters	13
		Solid Milling	14
		Indexable Milling	15
Clamping technology		Adaptors and Accessories	16
	Metric Catalog	Workpiece clamping	17
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Adapters, stationary
– HSK-T and PSC tool holders 8+9
– VDI adapters for star turrets 10
– VDI adapters for disc turrets 11
– BMT tool holders 12
Accessories 13

Product program

Adapters and accessories 14–204

Technical Information

Technical data – CAT ANSI/ASME B5.50-1994 / ISO 7388-2 / ISO 26623-1 205
Technical data – ISO 12164 206
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HyPower / HyTens 208–210
Static clamping moments / Centro-P and HDC ER precision collet chucks 211
Technical information – ABS 212
Compensation holder DAH 213

WNT \ Performance

Premium quality tools for high performance.

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

WNT \ Standard

Quality tools for standard applications.

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

Symbol explanation

Coolant supply version


without coolant supply (Form A)


Coolant supply central
Steep taper Form AD


Coolant supply either via the flange, or central (Form AD/B)


Coolant supply via the flange (Form B)


with eroded cooling ducts

TG
specially matched adapter for ThermoGrip® shrinking process


Coolant supply centrally or via the collar
with eroded cooling channels


Adapter with two additional coolant holes


Coolant supply centrally or via the collar
also additional coolant holes


Central coolant supply or via a coolant nozzle

Direct Cooling
DC = DirectCooling

ER-B 2 µm
Collet description
▲ Type version
▲ Radial run-out accuracy

Toolfinder – Machine interface

CAT – Steep taper holders

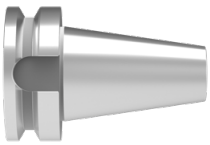


- ▲ CV 40
- ▲ CV 50
- ▲ CV-FC 40
- ▲ CV-FC-50

Toolfinder – Adapters, rotating 6+7
Product program 14–24

ISO 7388-2 – MAS-BT taper shank

MAS-BT / MAS-BT-FC with face contact

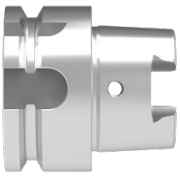


- ▲ BT 30
- ▲ BT 40
- ▲ BT 50
- ▲ BT-FC 30
- ▲ BT-FC 40
- ▲ BT-FC 50

Toolfinder – Adapters, rotating 6+7
MAS-BT product range 25–65 / 74+75
MAS-BT-FC product range 66–73

HSK hollow taper adapters with face contact

ISO 12164 – HSK-A / HSK-E



- ▲ HSK-A 40
- ▲ HSK-A 50
- ▲ HSK-A 63
- ▲ HSK-A 100
- ▲ HSK-E 25
- ▲ HSK-E 32
- ▲ HSK-E 40
- ▲ HSK-E 50

Toolfinder – Adapters, rotating 6+7
HSK-A product range 76–116 / 120
HSK-E product range 117–119

ISO 12164-3 – HSK-T

- ▲ HSK-T 63
- ▲ HSK-T 100

Toolfinder – Adapters, stationary 8+9
Product program 158–160

ISO 26623-1 – PSC polygon hollow adapters with face contact

PSC, rotating



- ▲ PSC 32
- ▲ PSC 40
- ▲ PSC 50
- ▲ PSC 63
- ▲ PSC 80

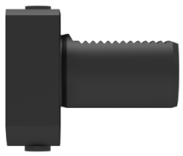
Toolfinder – Adapters, rotating 6+7
Product program 121–140

PSC, stationary

- ▲ PSC 32
- ▲ PSC 40
- ▲ PSC 50
- ▲ PSC 63
- ▲ PSC 80
- ▲ PSC 80X

Toolfinder – Adapters, stationary 8+9
Product program 161–169

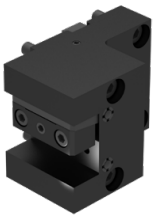
ISO 10889 – VDI tool holders with cylindrical shank



- ▲ VDI 16
- ▲ VDI 20
- ▲ VDI 25
- ▲ VDI 30
- ▲ VDI 40
- ▲ VDI 50

Toolfinder – Adapters, stationary 10+11
Product program
Driven Tools

BMT tool holders



- ▲ Doosan/Spinner – BMT 45
- ▲ Doosan – BMT 55
- ▲ EMAG – BMT 55
- ▲ HAAS/Doosan – BMT 65
- ▲ Mori/Seiki – BMT 40
- ▲ Mori/Seiki – BMT 60
- ▲ Mazak – BMT 68

Toolfinder – Adapters, stationary – BMT tool holders 12
Product program

Toolfinder – Adapters, rotating

Holder Type		CAT		ISO 7388-2		ISO 12164		ISO 26623-1	ABS	Morse taper	Cylindrical shank
		CV	CV-FC	MAS-BT	MAS-BT-FC	HSK-A	HSK-E	PSC			
Accuracy											
Maximum											
ER Precision Collet chuck											
▲ Centro-P				25–27	66	76–78	117+118	121			
▲ HDC				28	67	79					
HyPower – High Pressure Milling Chuck		14		29–32	69	80–83		122			
HyTens – Hydraulic chuck				33+34		84–86			141		172
Heat Shrink Adapter				35–39	68	87–94	119	123–125	142		171
Micro-Precision Collet Chuck											
High											
Cylindrical shank adapter											
▲ Weldon		21–22		40+42	70	95+96		126	143+144		
▲ Whistle Notch				43+44		97		127	145+146		
Indexable insert drill adapter				45		98		128			
Collet Chuck											
▲ Precision Collet chuck – PCC				46		99					
▲ ER Collet chuck				47	71	100+101		129+130	147		
Short drill chuck				48		102		131	148		
Quick change tapping chuck											
▲ With minimum length compensation				49+50		103		132	149		
▲ with length compensation				51		104		133	148		
ABS adapters		15–19	20	52–54	72	105+106		134+135	152–156		84 232 ... 87 232 ...
Compensation holder DAH		The DAH run-out compensation holders are available in our online shop. Here you will find further information. 213									

SK taper tools can be found in our Metric Catalog 2024, in the Metric eCatalog 2024 and in the online shop at cuttingtools.ceratizit.com!

Main Application	▽▽▽	Finishing	▽▽	Roughing - Finishing	▽ Roughing
Extended application	▽▽▽		▽▽		▽

Toolfinder – Adapters, rotating

Holder Type	CAT		ISO 7388-2		ISO 12164		ISO 26623-1	ABS	Morse taper	Cylindrical shank
	CV	CV-FC	MAS-BT	MAS-BT-FC	HSK-A	HSK-E	PSC			
Accuracy										
Medium										
Adapter for milling cutters with threaded end			55		107+108		136			
Face mill adapter										
▲ Combination shell mill adapter			56		109			151		
▲ Shell mill adapter	23+24		57–59	73	110–112		137	150		
▲ Large diameter facemill adapter			60							
Drill chuck adapter										
Taper adapter for Morse taper			61		113		138			
Adapter										
▲ CAT										
▲ MAS-BT			62							
▲ HSK-A			63		114					
▲ PSC			64		115		167+168			
Blank			65		116		139	157		
Test bar			65		116		140			

SK taper tools can be found in our Metric Catalog 2024, in the Metric eCatalog 2024 and in the online shop at cuttingtools.ceratizit.com!

Main Application		Finishing		Roughing - Finishing		Roughing
Extended application						

Toolfinder – Stationary adapters – HSK-T and PSC tool holders

Toolholders for negative turning inserts

	Type Machining	Article no.	Illustration
CN..	DCLN 95° Internal + External	74 503 + 74 504	
	DCMN 95° External	74 506	
	DCMN+ DDMN External	74 600	

All tool holders for negative rotary indexable inserts CN..
can be found in → **Section 9, Turning Tools**

DN..	DCMN+ DDMN External	74 600	
	DDUN 93° Internal + External	74 515 + 74 516	
	DDJN 93° Internal + External	74 511 + 74 512	
	DDHN 107.5° Internal + External	74 507 + 74 508	
	DDMN 48° External	74 519	

All tool holders for negative rotary indexable inserts DN..
can be found in → **Section 9, Turning Tools**

SN..	DSDN 45° External	74 522	
VN..	DVMN 50° External	74 525	
WN..	DWLN 95° Internal + External	74 528 + 74 529	

All tool holders for negative rotary indexable inserts SN.., VN.. and WN..
can be found in → **Section 9, Turning Tools**

Toolholders for positive turning inserts

	Type Machining	Article no.	Illustration
CC..	SCLC 95° Internal + External	74 540 + 74 541	
	SCMC 50° External	74 542	

All tool holders for positive rotary indexable inserts CC..
can be found in → **Section 9, Turning Tools**

DC..	SDJC 93° Internal + External	74 543 + 74 544	
	SDNC 62.5° Internal + External	74 677	
	SDMC 48° External	74 546	

All tool holders for positive rotary indexable inserts DC..
can be found in → **Section 9, Turning Tools**

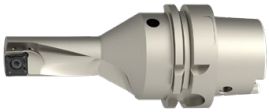
RC..	PRDC 0° External	74 548	
	PRSC Internal + External	74 551 + 74 552	

All tool holders for positive rotary indexable inserts RC..
can be found in → **Section 9, Turning Tools**

VC..	SVUC 93° Internal + External	74 557 + 74 558	
	SVJC 93° Internal + External	74 555 + 74 556	
	SVHC 107.5° Internal + External	74 553 + 74 554	
	SVMC 50° External	74 560	

All tool holders for positive rotary indexable inserts VC..
can be found in → **Section 9, Turning Tools**

You can find more information on the multifunction tool EcoCut in
→ **Section 10,** Multifunctional Tools – EcoCut and FreeTurn



2.5xD

Toolfinder – Stationary adapters – HSK-T and PSC tool holders

Holders for grooving and threading inserts

Type	Article no.	Illustration
0°	74 580 + 74 581	

All tool holders for grooving and threading inserts can be found in → **Section 11, Grooving tools**

Toolholders for threading inserts

Type	Article no.	Illustration
Internal thread	84 196 + 84 197	
External thread	84 190 + 84 191	

All tool holders for threading inserts can be found in → **Section 8, Thread turning**, in our Metric Catalog 2024, in the Metric eCatalog 2024 and in the online shop at cuttingtools.ceratizit.com

Boring bars for negative inserts

	Type	Article no.	Illustration
 CN..	DCLN 95°	74 528 + 74 529	
 DN..	DDUN 93°	74 532 + 74 533	
 WN..	DWLN 95°	74 536 + 74 537	

All boring bars for negative indexable inserts can be found in → **Section 9, Turning Tools**

Boring bars for positive inserts

	Type	Article no.	Illustration
 CC..	SCLC 95°	74 563 + 74 564	
 DC..	SDUC 93°	74 565 + 74 566	
 VC..	SVUC 93°	74 567 + 74 568	
	SVQC 107.5°	70 748 + 70 749	

All boring bars for positive indexable inserts can be found in → **Section 9,** Turning Tools

Basic holder

Type	Illustration		HSK-T ISO 12164	PSC ISO 26623
Square shank holder 0°		Direct Cooling	159	161
				163
Square shank holder 45°		Direct Cooling	159	162
				164
Square shank holder 90°		Direct Cooling	159	162
				163
Square shank holder 2 face 0°				164
Square shank holder 3 face 0°			160	164
Boring bar holder			160	165

Parting blade holders

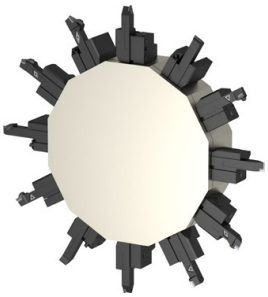
Type	Illustration		HSK-T ISO 12164	PSC ISO 26623
Parting blade holder 0°		Direct Cooling	158	161
Parting blade holder 90°		Direct Cooling	158	161
				163

Accessories

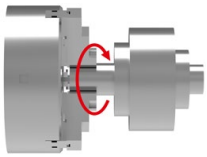
Protection plug		169
Hollow nose keys		169

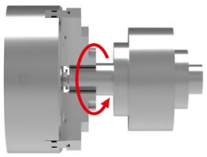
16

Toolfinder – Stationary adapters – VDI adapters for star turrets



Toolholders above





Upper turret		Spindle rotation clockwise	Spindle rotation counter clockwise
Square Shank Adapters	Direct Cooling	B2/B3/B6/B7/C1/C2/D1/D2	B2/B3/B6/B7/C3/C4/D1/D2
Parting blade holders	Direct Cooling	double	double – overhead
Adapter VDI to VDI		Left-hand	Left-hand
Boring bar holder		Left-hand	Left-hand

Lower turret		Spindle rotation clockwise	Spindle rotation counter clockwise
Square Shank Adapters	Direct Cooling	B2/B3/B6/B7/C3/C4/D1/D2	B2/B3/B6/B7/C1/C2/D1/D2
Parting blade holders	Direct Cooling	double – overhead	double
Adapter VDI to VDI		Right-hand	Right-hand
Boring bar holder		Right-hand	Right-hand

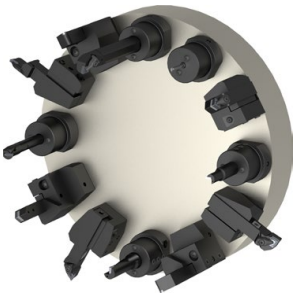
Toolholders below

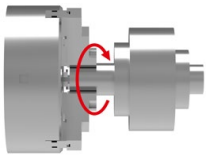
Upper turret		Spindle rotation clockwise	Spindle rotation counter clockwise
Square Shank Adapters	Direct Cooling	B2/B3/B6/B7/C3/C4/D1/D2	B2/B3/B6/B7/C1/C2/D1/D2
Parting blade holders	Direct Cooling	double	double – overhead
Adapter VDI to VDI		Right-hand	Right-hand
Boring bar holder		Right-hand	Right-hand

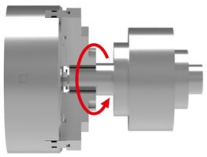
Lower turret		Spindle rotation clockwise	Spindle rotation counter clockwise
Square Shank Adapters	Direct Cooling	B2/B3/B6/B7/C1/C2/D1/D2	B2/B3/B6/B7/C3/C4/D1/D2
Parting blade holders	Direct Cooling	double – overhead	double
Adapter VDI to VDI		Left-hand	Left-hand
Boring bar holder		Left-hand	Left-hand

These articles can be found in our Metric Catalog 2024, in the Metric eCatalog 2024 and in the online shop at cuttingtools.ceratizit.com!

Toolfinder – Stationary adapters – VDI adapters for disc turrets







Upper turret			Spindle rotation clockwise	Spindle rotation counter clockwise
	Square Shank Adapters	Direct Cooling	B1/B5/C1/C2/D1	B3/B7/C3/C4/D2
	Part Off Holder	Direct Cooling	Right-hand	Overhead right

Lower turret			Spindle rotation clockwise	Spindle rotation counter clockwise
	Square Shank Adapters	Direct Cooling	B4/B8/C3/C4/D2	B2/B6/C1/C2/D1
	Part Off Holder	Direct Cooling	Overhead left	Left-hand

General VDI adapters	
Cylindrical Shank Adapters	E/E1/E2/E3/E4
Taper Adapters	F1
Short drill chuck	NC 2010
ER Collet chuck	
Hydraulic chuck	
VDI to PSC adapter	
VDI to HSK-T adapter	
VDI adapter with ABS-N connection	84 231 ...

Accessories
Test arbors
Tool holders
Bar pullers
Gripper accessories
Protection plug

These articles can be found in our Metric Catalog 2024, in the Metric eCatalog 2024 and in the online shop at cuttingtools.ceratizit.com!

Toolfinder – Adapters, stationary – BMT tool holders

Doosan/Spinner – BMT 45

	**Axial square section tool holder**	Left-hand
	**Square section adapter**	Left-hand
	**Square multiple tool holder**	
	**Combination tool holder**	with thru coolant

Mori/Seiki – BMT 40

	**Axial square section tool holder**	Left-hand
	**Square section adapter**	Left-hand
	**Square multiple tool holder**	
	**Combination tool holder**	with thru coolant

Doosan – BMT 55

	**Axial square section tool holder**	Left-hand
	**Square section adapter**	Left-hand
	**Square multiple tool holder**	
	**Boring bar holder**	with thru coolant

Mori/Seiki – BMT 60

	**Axial square section tool holder**	Left-hand
	**Square section adapter**	Left-hand
	**Square multiple tool holder**	
	**Combination tool holder**	with thru coolant

EMAG – BMT 55

	**Axial square section tool holder**	Left-hand
	**Square section adapter**	Left-hand
	**Boring bar holder**	with thru coolant

Mazak – BMT 68

	**Axial square section tool holder**	Left-hand
	**Square section adapter**	Left-hand
	**Square multiple tool holder**	
	**Combination tool holder**	with thru coolant

HAAS/Doosan – BMT 65

	**Axial square section tool holder**	Left-hand
	**Square section adapter**	Left-hand
	**Square multiple tool holder**	
	**Combination tool holder**	with thru coolant

These articles can be found in our Metric Catalog 2024, in the Metric eCatalog 2024 and in the online shop at cuttingtools.ceratizit.com!

Toolfinder – accessories

Type			Page No.
Pull stud	MAS-BT		74+75
	PSC		140
Coolant pipe/key	HSK-A		120
	PSC		140
Drill chuck with internal taper			
Tap clamping sleeve for Weldon adapters			170
Extension for Shell mill arbors			173
Milling adapter ring			174
Lock nuts ER-Standard and ER-Mini			194
Y clamping key and ER-Mini clamping key			194
Spare parts Centro-P			192
Roll key			193
ER collets			175–186
Sealing discs			187+188

Type		Page No.
Spare parts for VDI		
Spare parts driven tools		
Quick change applications		195–199
Reduction sleeve and reducing bushings		189+190
3D tester and zero setting device		
Cleaning propeller		
TORX® screwdrivers, TORX® interchangeable blades, TORX® bit holders and adapters		200–204
Assembly device for SK, HSK and PSC adapters		
MultiChange – Holder		
MultiChange key		
Cool-jet		
Taper wiper		

These articles can be found in our Metric Catalog 2024, in the Metric eCatalog 2024 and in the online shop at cuttingtools.ceratizit.com!

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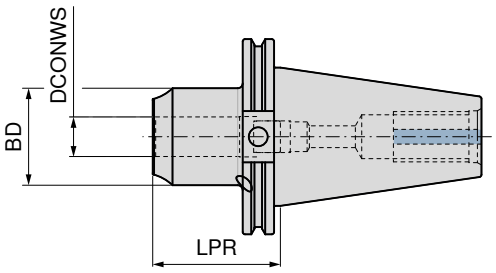
HyPower – Complus

▲ High pressure chuck, short and stable version
▲ for solid carbide and HSS shanks with h6 tolerance or better
▲ also available with Balluff chip **on request**







AD/B
G 2.5 n_{max} 25000

Adapter	DCONWS mm	LPR mm	BD mm	87 425 ...
CAT40	20	64.5	49.00	**02052**
CAT50	20	64.5	49.00	**02053**
CAT50	32	81.0	69.85	**03253**

→ Min. clamping depth, Page 210


Cylindrical screw


Clamping key – T


Pressure screw

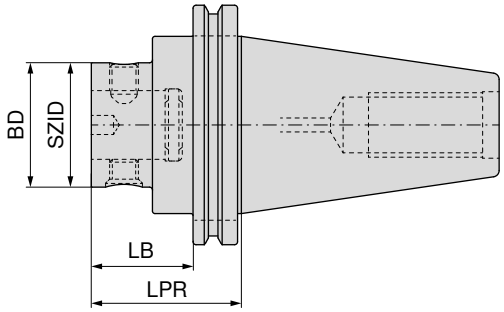

Stop screw IK

Spare parts DCONWS		83 950 ...		80 397 ...		83 950 ...		83 950 ...	
20	M5x5 - SW2.5	**157**	SW5	**050**	M10x1x14	**429**	M16x1x13.5 - SW8	**424**
32	M5x5 - SW2.5	**157**	SW5	**050**	M10x1x14	**429**	M16x1x13.5 - SW8	**424**


Reduction sleeve
189

Adapter with ABS Connection

ABS







AD

Adapter	SZID	LB inch	LPR inch	BD inch	KOMET no.	87 201 ...
CAT 40	ABS 25	1.610	2.362	0.984	A52 10120	**01352**
CAT 40	ABS 32	1.610	2.362	1.260	A52 10130	**01652**
CAT 40	ABS 40	1.610	2.362	1.575	A52 10140	**02052**
CAT 40	ABS 50	4.764	5.512	1.969	A52 10180	**12852**
CAT 40	ABS 50	2.205	2.953	1.969	A52 10150	**02852**
CAT 40	ABS 63	2.791	3.543	2.480	A52 10160	**03452**
CAT 50	ABS 100	4.169	4.921	3.937	A52 10380	**05653**
CAT 50	ABS 25	1.610	2.362	0.984	A52 10320	**01353**
CAT 50	ABS 32	1.610	2.362	1.260	A52 10330	**01653**
CAT 50	ABS 40	1.610	2.362	1.575	A52 10340	**02053**
CAT 50	ABS 50	1.610	2.362	1.969	A52 10350	**02853**
CAT 50	ABS 50	5.547	6.299	1.969	A52 10400	**12853**
CAT 50	ABS 63	2.402	3.150	2.480	A52 10360	**03453**
CAT 50	ABS 80	3.185	3.937	3.150	A52 10370	**04653**



Clamping screw



Clamping screw



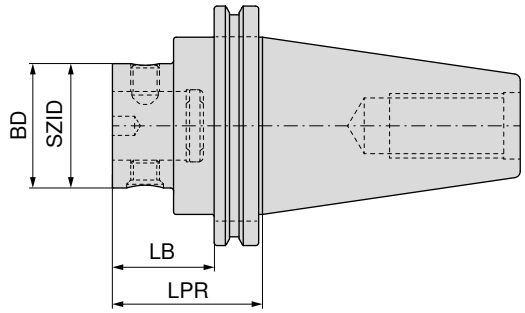
Taper screw

Spare parts SZID		62 950 ...	84 950 ...	84 950 ...
ABS 25			**26800**	**27000**
ABS 32	M8x1x12/SW4	**13989**		**27100**
ABS 40			**26900**	**27200**
ABS 50			**20300**	**20400**
ABS 63			**25500**	**27300**
ABS 80			**25600**	**25100**
ABS 100			**25700**	**25200**

16

Adapter with ABS Connection

ABS







B

87 002 ...

Adapter	SZID	LB inch	LPR inch	BD inch	KOMET no.	
CAT 40 / Mori Seiki	ABS 50	2.205	2.953	1.969	A52 50150	**02852**
CAT 40 / Mori Seiki	ABS 40	1.610	2.362	1.575	A52 50140	**02052**
CAT 50 / Mori Seiki	ABS 63	2.402	3.150	2.480	A52 50360	**03453**
CAT 50 / Mori Seiki	ABS 50	1.610	2.362	1.969	A52 50350	**02853**
CAT 50 / Mori Seiki	ABS 80	3.185	3.937	3.150	A52 50370	**04653**



Clamping screw

84 950 ...



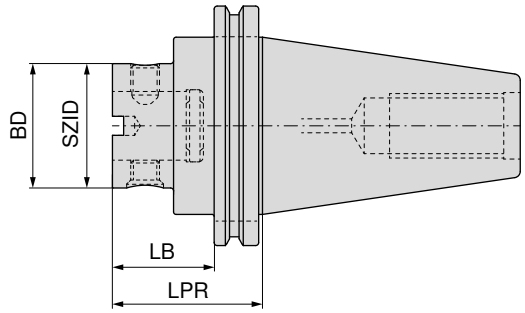
Taper screw

84 950 ...

Spare parts SZID		
ABS 40	**26900**	**27200**
ABS 50	**20300**	**20400**
ABS 63	**25500**	**27300**
ABS 80	**25600**	**25100**

Adapter with ABS-N connection

ABS N







AD/B
G 6.3 n_{max} 8000

87 234 ...

Adapter	SZID	LB inch	LPR inch	BD inch	
CAT 50	ABS 50 N	1.612	2.362	1.969	**12853**
CAT 50	ABS 63 N	2.400	3.150	2.480	**13453**
CAT 50	ABS 80 N	3.187	3.937	3.150	**14653**



Clamping screw

84 950 ...



Taper screw

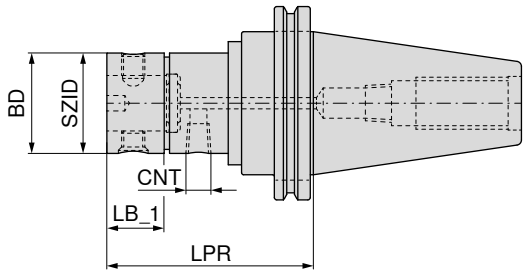
84 950 ...

Spare parts		
SZID		
ABS 50 N	**20300**	**20400**
ABS 63 N	**25500**	**27300**
ABS 80 N	**25600**	**25100**

Adapter with ABS connection for coolant ring

▲ Adjustment range ± 0.010“ on diameter

ABS







AD

Adapter	SZID	LB_1 inch	LPR inch	BD inch	CNT	KOMET no.	87 233 ...
CAT 40	ABS 50	0.906	3.740	1.969	NPT 1/8"	A52 10650	**02852**
CAT 50	ABS 50	1.102	3.937	1.969	NPT 1/8"	A52 10850	**02853**
CAT 50	ABS 63	1.476	4.331	2.480	NPT 1/8"	A52 10860	**03453**



Clamping screw



Taper screw

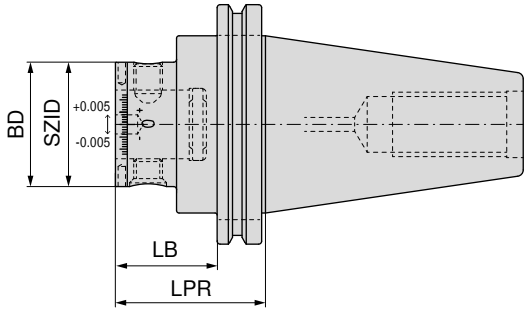
Spare parts SZID	84 950 ...	84 950 ...
ABS 50	**20300**	**20400**
ABS 63	**25500**	**27300**

Coolant rings must be ordered separately and can be found in our online shop at cuttingtools.ceratizit.com!

Eccentric adjuster with ABS Connection

▲ Adjustment range ± 0.010“ on diameter

ABS







AD/B

Adapter	SZID	LB inch	LPR inch	BD inch	KOMET no.	87 204 ...
CAT 40	ABS 50	1.890	2.953	1.969	A52 11151	**02852**
CAT 40	ABS 63	2.480	3.543	2.480	A52 11160	**03452**
CAT 50	ABS 50	0.866	2.362	1.969	A52 11351	**02853**
CAT 50	ABS 63	1.693	3.150	2.480	A52 11360	**03453**



Clamping screw



Taper screw

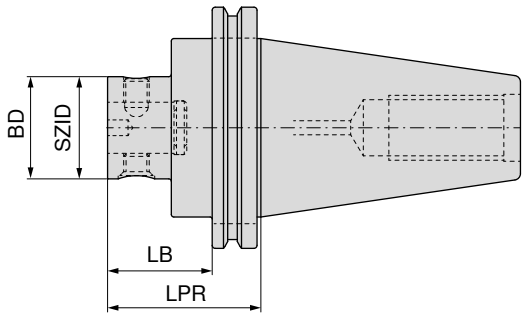
Spare parts SZID	84 950 ...	84 950 ...
ABS 50	**20300**	**20400**
ABS 63	**25500**	**27300**

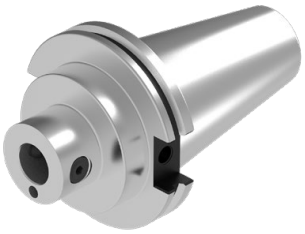
16

Adapter with ABS Connection – CAT-FC

▲ with face contact
▲ also available with Balluff chip **on request**

ABS







AD
G 6.3 n_{max} 8000

Adapter	SZID	LB inch	LPR inch	BD inch	87 213 ...
CAT-FC 40	ABS 50	2.203	2.953	1.969	**12861**
CAT-FC 40	ABS 63	2.793	3.543	2.480	**13461**
CAT-FC 50	ABS 40	1.612	2.362	1.575	**12062**
CAT-FC 50	ABS 50	1.612	2.362	1.969	**12862**
CAT-FC 50	ABS 63	2.400	3.150	2.480	**13462**
CAT-FC 50	ABS 80	3.187	3.937	3.150	**14662**
CAT-FC 50	ABS 100	4.171	4.921	3.937	**15662**



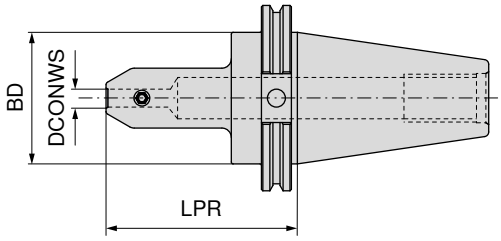
Clamping screw



Taper screw

Spare parts SZID	84 950 ...	84 950 ...
ABS 40	**26900**	**27200**
ABS 50	**20300**	**20400**
ABS 63	**25500**	**27300**
ABS 80	**25600**	**25100**
ABS 100	**25700**	**25200**

Cylindrical shank adapter (Weldon)







AD
G 2.5 n_{max} 25000

87 000 ...

Adapter	DCONWS $_{H6}$ inch	BD inch	LPR inch	
CAT 40	0.375	1.000	2.500	**10952**
CAT 40	0.437	1.380	2.500	**11152**
CAT 40	0.500	1.750	1.750	**11252**
CAT 40	0.563	1.620	3.000	**11452**
CAT 40	0.625	1.750	1.750	**11552**
CAT 40	0.750	1.750	1.750	**11952**
CAT 40	1.000	1.750	1.750	**12552**
CAT 40	1.250	1.750	2.000	**13152**
CAT 40	1.500	2.750	4.620	**23852**
CAT 50	0.375	1.000	4.000	**20953**
CAT 50	0.437	1.380	4.000	**21153**
CAT 50	0.500	1.380	4.000	**21253**
CAT 50	0.625	1.620	4.000	**21553**
CAT 50	0.653	1.620	4.000	**21653**
CAT 50	0.750	1.750	4.000	**21953**
CAT 50	1.000	2.250	4.000	**22553**
CAT 50	1.250	2.500	4.000	**23153**
CAT 50	1.500	2.750	4.000	**23853**

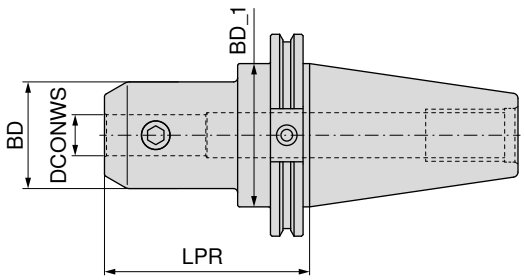


Set Screw

87 950 ...

Spare parts DCONWS		
0.375	3/8"-24 UNF	**00002**
0.437	7/16"-20 UNF	**00003**
0.500	7/16"-20 UNF	**00003**
0.563	9/16"-18 UNF	**00004**
0.625	9/16"-18 UNF	**00004**
0.653	9/16"-18 UNF	**00004**
0.750	5/8"-18 UNF	**00005**
1.000	5/8"-18 UNF	**00005**
1.000	3/4"-18 UNF	**00006**
1.250	5/8"-18 UNF	**00005**
1.250	3/4"-18 UNF	**00006**
1.500	3/4"-18 UNF	**00006**

Cylindrical shank adapter (Weldon)







AD
G 2.5 n_{max} 25000

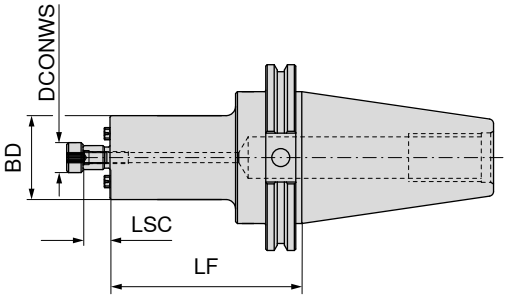
Adapter	DCONWS $_{H6}$ mm	BD mm	BD_1 mm	LPR mm	87 216 ...
CAT 40	6	25.00	44.45	60	**10652**
CAT 40	8	28.00	44.45	75	**10852**
CAT 40	10	35.00	44.45	75	**11052**
CAT 40	12	42.00	44.45	75	**11252**
CAT 40	16	44.45		45	**11652**
CAT 40	20	52.00	44.45	75	**12052**
CAT 40	25	60.00	44.45	80	**12552**
CAT 40	32	57.15	57.15	50	**13252**
CAT 50	6	25.00	69.85	65	**30653**
CAT 50	8	28.00	69.85	65	**30853**
CAT 50	10	35.00		50	**31053**
CAT 50	12	42.00	69.85	100	**71253**
CAT 50	16	48.00	69.85	100	**71653**
CAT 50	20	52.00	69.85	100	**72053**
CAT 50	25	65.00	69.85	100	**72553**
CAT 50	32	70.00		100	**73253**



Set Screw

Spare parts DCONWS		62 950 ...
6	M6x10	**006**
8	M8x10	**008**
10	M10x12	**010**
12	M12x16	**012**
16	M14x16	**016**
20	M16x16	**020**
25	M18x2x20	**025**
32	M20x2x20	**032**

Shell mill adapter







AD
G 2.5 n_{max} 25000

Adapter	DCONWS inch	LF inch	BD inch	87 001 ...
CAT 40	0.500	1.380	1.750	**11252**
CAT 40	0.750	1.770	1.750	**11952**
CAT 40	1.000	2.360	2.190	**12552**
CAT 40	1.250	2.360	2.750	**13152**
CAT 40	1.500	2.360	3.380	**13852**
CAT 50	0.500	4.000	1.750	**21253**
CAT 50	0.750	3.500	1.750	**21953**
CAT 50	1.000	2.000	2.190	**12553**
CAT 50	1.250	1.750	2.750	**13153**
CAT 50	1.500	2.500	3.940	**13853**
CAT 50	2.000	2.500	4.900	**15053**
CAT 50	2.500	2.500	4.900	**16353**

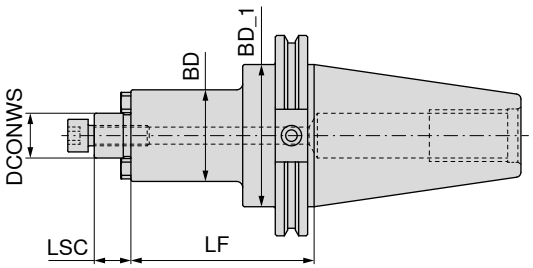

Flange Mount Screw


Arbor Screw - IC


Arbor Screw

Spare parts DCONWS		87 950 ...		87 950 ...		87 950 ...
0.500			1/4"-28 UNF	**00011**	1/4"-28 UNF	**00021**
0.750			3/8"-24 UNF	**00012**	3/8"-24 UNF	**00022**
0.750			3/8"-24 UNF	**00012**	3/8"-24 UNF	**00022**
1.000			1/2"-20 UNF	**00013**	1/2"-20 UNF	**00023**
1.250			5/8"-18 UNF	**00014**	5/8"-18 UNF	**00024**
1.500			3/4"-16 UNF	**00015**	3/4"-16 UNF	**00025**
2.000	5/8"-11 UNC	**00030**	1"-14 UNF	**00016**	1"-14 UNF	**00026**
2.500	5/8"-11 UNC	**00030**	1"-14 UNF	**00017**	1"-14 UNF	**00027**

Shell mill adapter







AD
G 2.5 n_{max} 25000

87 217 ...

Adapter	DCONWS mm	LF mm	BD mm	BD_1 mm	LSC mm	
CAT 40	16	35	34		15	**11652**
CAT 40	22	100	45		18	**42252**
CAT 40	22	50	45		18	**12252**
CAT 40	27	100	60	44.45	20	**42752**
CAT 40	27	50	60	44.45	20	**12752**
CAT 40	32	50	80	44.45	22	**13252**
CAT 50	22	90	45	69.85	18	**62253**
CAT 50	22	140	45	69.85	18	**92253**
CAT 50	27	100	70		20	**62753**
CAT 50	27	60	70		20	**32753**
CAT 50	32	60	80	69.85	22	**33253**
CAT 50	40	60	85	69.85	26	**34053**



Arbor Screw - IC

87 950 ...

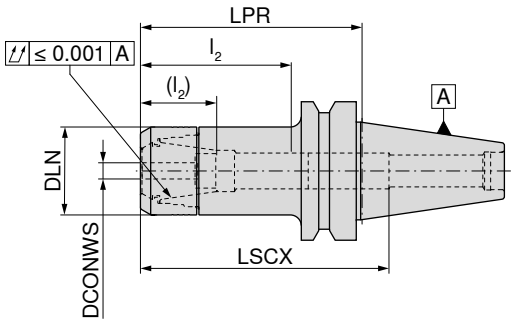
Spare parts DCONWS		
16	M8x25	**00036**
22	M10x18	**00037**
27	M12x22	**00038**
32	M16x26	**00039**
40	M20x30	**00040**

ER Precision Collet chuck – Centro-P

- ▲ for standard or sealed nuts
- ▲ maximum size collet to ISO tolerance field H10
- ▲ for clamping a roll key is required
- ▲ p_{max} = 80 bar
- ▲ also available with Balluff chip **on request**

Scope of supply:

Holder **without** nut, **without** backstop







AD

G 2.5 n_{max} 25000

84 524 ...

Adapter	DCONWS mm	LPR mm	DLN mm	LSCX mm	l_2 (l_2) mm	for collet	
BT 30	1 - 10	50	30	73	28 - 44 (16 - 31)	426E (ER16)	**001**
BT 30	1 - 10	75	30	97	28 - 45 (14 - 31)	426E (ER16)	**002**
BT 30	1 - 10	100	30	123	28 - 44 (16 - 31)	426E (ER16)	**003**
BT 30	1 - 10	120	30	112	28 - 45 (14 - 31)	426E (ER16)	**004**
BT 30	2 - 16	60	40	77	35 - 59 (30 - 42)	430E (ER25)	**160**
BT 30	2 - 16	75	40	72	38 - 56 (23 - 39)	430E (ER25)	**161**
BT 30	2 - 16	90	40	87	38 - 56 (23 - 39)	430E (ER25)	**162**
BT 30	2 - 16	120	40	115	38 - 56 (23 - 39)	430E (ER25)	**164**
BT 30	2 - 20	60	50	69	42 - 52	470E (ER32)	**207**
BT 30	2 - 20	75	50	84	42 - 62 (24 - 45)	470E (ER32)	**208**
BT 30	2 - 20	90	50	94	42 - 62 (24 - 45)	470E (ER32)	**209**
BT 40	1 - 10	75	30	90	38 - 53 (29 - 39)	426E (ER16)	**210**
BT 40	1 - 10	90	30	120	30 - 50 (29 - 36)	426E (ER16)	**310**
BT 40	1 - 10	120	30	140	29 - 45 (29 - 35)	426E (ER16)	**410**
BT 40	1 - 10	150	30	180	29 - 45 (29 - 32)	426E (ER16)	**510**
BT 40	1 - 10	200	30	220	29 - 50 (29 - 36)	426E (ER16)	**610**
BT 40	2 - 16	60	40	92	44 - 64 (36 - 46)	430E (ER25)	**116**
BT 40	2 - 16	75	40	100	42 - 59 (36 - 41)	430E (ER25)	**216**
BT 40	2 - 16	90	40	91	42 - 59 (36 - 41)	430E (ER25)	**316**
BT 40	2 - 16	105	40	100	35 - 60 (20 - 42)	430E (ER25)	**168**
BT 40	2 - 16	120	40	91	40 - 65 (36 - 47)	430E (ER25)	**416**
BT 40	2 - 16	150	40	100	40 - 64 (36 - 45)	430E (ER25)	**516**
BT 40	2 - 16	200	40	150	40 - 64 (36 - 45)	430E (ER25)	**616**
BT 40	2 - 20	60	50	55	45 - 64 (42 - 46)	470E (ER32)	**120**
BT 40	2 - 20	75	50	100	42 - 76 (42 - 52)	470E (ER32)	**220**
BT 40	2 - 20	90	50	100	42 - 76 (42 - 52)	470E (ER32)	**320**
BT 40	2 - 20	120	50	110	42 - 71 (42 - 53)	470E (ER32)	**420**
BT 40	2 - 20	150	50	110	42 - 71 (42 - 53)	470E (ER32)	**520**
BT 40	3 - 26	75	63	78	54 - 59	472E (ER40)	**226**
BT 40	3 - 26	105	63	93	55 - 71 (48 - 53)	472E (ER40)	**326**
BT 50	2 - 20	75	50	110	45 - 70 (42 - 53)	470E (ER32)	**720**
BT 50	2 - 20	105	50	140	45 - 63 (42 - 45)	470E (ER32)	**820**
BT 50	2 - 20	165	50	200	45 - 74 (42 - 56)	470E (ER32)	**920**
BT 50	3 - 26	75	63	100	48 - 58	472E (ER40)	**726**
BT 50	3 - 26	105	63	100	48 - 58	472E (ER40)	**826**

→ Transmittable torque moments, Page 211

LSCX = clamping depth without back stop screw for shanks
l_2 = with back stop screw 1, dimension in brackets (l_2) = with back stop screw 2
dimension LPR when using tightening nuts with seals 3 mm longer

Spare parts, ER precision collet chuck – Centro-P


Lock nut IK


Lock nut


Stop screw 2

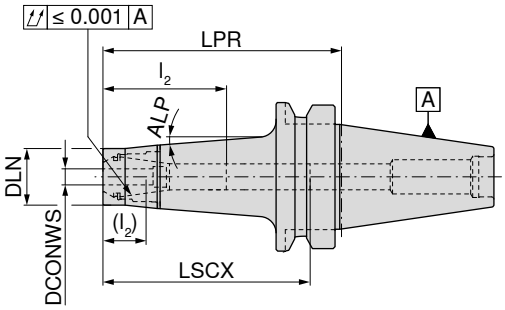

Stop screw 1

	84 950 ...		84 950 ...		83 950 ...		83 950 ...
Spare parts for collet							
426E (ER16)	**011**		**001**	M11x1 - SW6	**341**	M11x1 - SW6	**337**
430E (ER25)	**013**		**003**	M18x1.5 - SW6	**432**	M18x1.5 - SW6	**431**
470E (ER32)	**015**		**005**	M22x1.5 - SW6	**402**	M22x1.5 - SW6	**401**
472E (ER40)	**017**		**007**			M28x1.5 - SW6	**400**

ER Precision tapered collet chuck – Centro-P

- ▲ for special tapered nuts
- ▲ Maximum clamping range covered according to ISO tolerance field H10
- ▲ Roll key required for clamping
- ▲ p_{max} = 80 bar
- ▲ also available with Balluff chip **on request**

Scope of supply:
Holder **without** nut, **without** backstop






AD/B
G 2.5 n_{max} 25000

Adapter	DCONWS mm	LPR mm	DLN mm	LSCX mm	l_2 (l_2) mm	for collet	ALP	**84 517 ...**
BT 40	1 - 10	100	24	72	28 - 48 (20 - 35)	426E (ER16)	4.5°	**410**
BT 40	1 - 10	135	24	165	28 - 48 (20 - 35)	426E (ER16)	4.5°	**31000**
BT 40	1 - 10	160	24	180	28 - 48 (20 - 35)	426E (ER16)	4.5°	**510**

→ Transmittable torque moments, Page 211

LSCX = Clamping depth without back stop screw for shanks
l_2 = With back stop screw 1, Dimension in brackets (l_2) = With back stop screw 2
Dimension LPR when using tightening nuts with seals 4 mm longer


Tapered lock nut IK


Tapered lock nut


Stop screw 2


Stop screw 1

	84 950 ...		84 950 ...		83 950 ...		83 950 ...
Spare parts for collet							
426E (ER16)	**033**		**031**	M11x1 - SW6	**341**	M11x1 - SW6	**337**


ER collet
175–182, 186


Sealing ring
187


Roll key
193


Roll key device
193

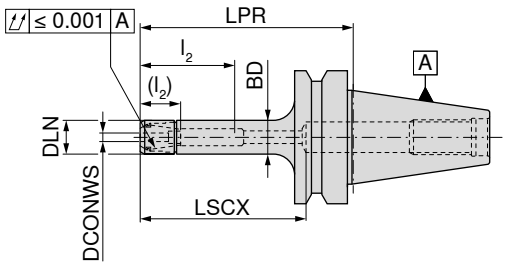

Pull studs
74–75


Others

ER Precision collet chuck, slim version – Centro-P

- ▲ for Mini Clamping Nuts
- ▲ Maximum clamping range covered according to ISO tolerance field H10
- ▲ Roll key required for clamping
- ▲ p_{max} 80 bar
- ▲ also available with Balluff chip **on request**

Scope of supply:
Holder **without** nut, **without** backstop






AD
G 2.5 n_{max} 25000
84 507 ...


AD/B
G 2.5 n_{max} 25000
84 508 ...

Adapter	DCONWS mm	LPR mm	DLN mm	BD mm	LSCX mm	l_2 (l_2) mm	for collet		
BT 30	1 - 7	50	16	16	68	18 - 32 (12 - 22)	4008E (ER11)	**007**	
BT 30	1 - 7	100	16	16	68	18 - 36 (12 - 26)	4008E (ER11)	**008**	
BT 40	1 - 7	75	16	16	100	15 - 30 (8 - 21)	4008E (ER11)		**307**
BT 40	1 - 7	90	16	16	68	18 - 36 (12 - 26)	4008E (ER11)		**40600**
BT 40	1 - 7	120	16	16	140	15 - 30 (8 - 21)	4008E (ER11)		**507**
BT 40	1 - 7	150	16	16	68	18 - 36 (12 - 26)	4008E (ER11)		**90600**
BT 40	1 - 10	75	22	22	100	27 - 49 (16 - 32)	426E (ER16)		**216**
BT 40	1 - 10	90	22	22	115	27 - 49 (16 - 32)	426E (ER16)		**316**
BT 40	1 - 10	120	22	22	145	27 - 49 (16 - 32)	426E (ER16)		**416**
BT 40	1 - 10	150	22	22	175	27 - 49 (16 - 32)	426E (ER16)		**516**

→ Transmittable torque moments, Page 211

LSCX = Clamping depth without back stop screw for shanks
l_2 = With back stop screw 1, Dimension in brackets (l_2) = With back stop screw 2
Dimension LPR when using tightening nuts with seals 4 mm longer


Mini lock nut IK
84 950 ...


Mini lock nut
84 950 ...


Stop screw 2
83 950 ...


Stop screw 1
83 950 ...

Spare parts for collet							
4008E (ER11)				M8x1 - SW4	**340**	M8x1 - SW4	**336**
426E (ER16)	**035**		**034**	M11x1 - SW6	**341**	M11x1 - SW6	**337**


ER collet
175–182, 186


Sealing ring
187


Device
192


Roll key
193


Roll key device
193


Pull studs
74–75

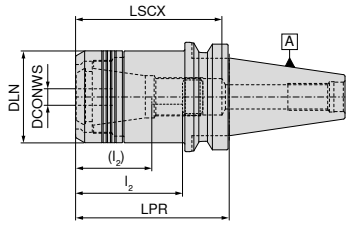

Others

ER precision collet chuck – HDC

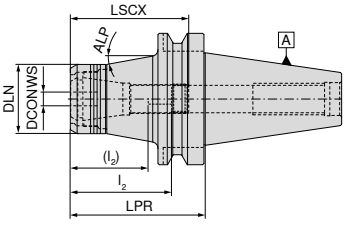
- ▲ HDC = Heavy Duty Chuck, an adapter specially designed for rough machining
- ▲ For heavy duty lock nut
- ▲ Maximum clamping range covered according to ISO tolerance field H10
- ▲ Roll key required for clamping
- ▲ p_{max} = 80 bar
- ▲ also available with Balluff chip **on request**

Scope of supply:

Base body **including** lock nut, **without** backstop screw



cylindrical



Conical





AD
G 6.3 n_{max} 18000



AD
G 6.3 n_{max} 18000

Adapter	DCONWS mm	LPR mm	DLN mm	LSCX mm	l_2 (l_2) mm	ALP °	for collet	cylindrical 84 400 ...	conical 84 400 ...
BT 40	2 - 20	60	53	80	41 - 63 (27 - 45)		470E (ER32)	**12069**	
BT 40	2 - 20	90	53	85	41 - 63 (27 - 45)		470E (ER32)	**22069**	
BT 50	2 - 20	75	53	114	41 - 80 (27 - 62)	10	470E (ER32)		**12068**
BT 50	2 - 20	105	53	140	41 - 80 (27 - 62)	10	470E (ER32)		**22068**

→ Transmittable torque moments, Page 211

LSCX = Clamping depth without backstop screw
l_2 = Clamping depth backstop screw 1, dimension in brackets (l_2) = Clamping depth backstop screw 2



Lock nut **84 950 ...**



Stop screw 2 **83 950 ...**



Stop screw 1 **83 950 ...**

Spare parts DCONWS	Lock nut 84 950 ...	Stop screw 2 83 950 ...		Stop screw 1 83 950 ...	
2 - 20	**30100**	M22x1.5 - SW6	**402**	M22x1.5 - SW6	**401**



ER collet
175–183, 185–186



Roll key
193



Roll key device
193



Pull studs
74–75

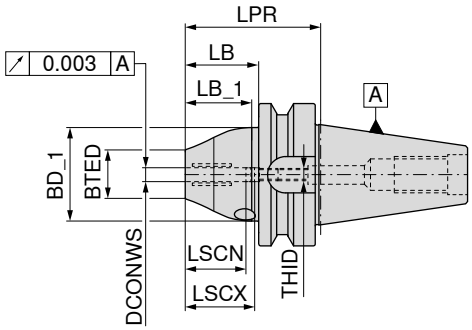


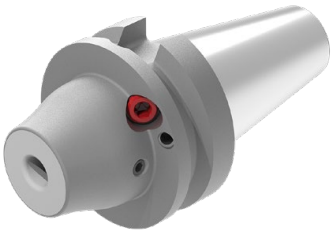
Others

HyPower – Rough

- ▲ High pressure chuck – especially for milling
- ▲ Ideal for HSC and HPC applications
- ▲ High temperature resistance
- ▲ **Also available** with Balluff chip on request

Scope of supply:
Base body with backstop screw and pressure screw





NEW



AD/B
G 2.5 n_{max} 25000

84 254 ...

Adapter	DCONWS mm	LPR mm	BTED mm	BD_1 mm	LB_1 mm	LB mm	LSCX mm	LSCN mm	THID	
BT 40	6	58.0	26	42	27.2	31.0	37	27	M5	**10669**
BT 40	8	58.0	28	42	27.2	31.0	37	27	M6	**10869**
BT 40	10	58.0	30	42	27.2	31.0	41	31	M8x1	**11069**
BT 40	12	58.0	32	49	27.2	31.0	46	36	M10x1	**11269**
BT 40	16	72.5	38	49	41.7	45.5	49	38	M12x1	**11669**
BT 40	20	72.5	38	49	41.7	45.5	51	41	M16x1	**12069**

→ Min. clamping depth, Page 210



Clamping key – T

80 397 ...



Pressure screw

83 950 ...



Stop screw IK

83 950 ...

Spare parts DCONWS							
6	SW5	**050**	M10x12	**55000**	M5x12.5 - SW2.5	**418**
8	SW5	**050**	M10x12	**55000**	M6x12.5 - SW3	**419**
10	SW5	**050**	M10x12	**55000**	M8x1x13.5 - SW3	**420**
12	SW5	**050**	M10x12	**55000**	M10x1x13.5 - SW5	**421**
16	SW5	**050**	M10x12	**55000**	M12x1x13.5 - SW5	**422**
20	SW5	**050**	M10x12	**55000**	M16x1x13.5 - SW8	**424**



Reduction sleeve
189



Pull studs
74–75

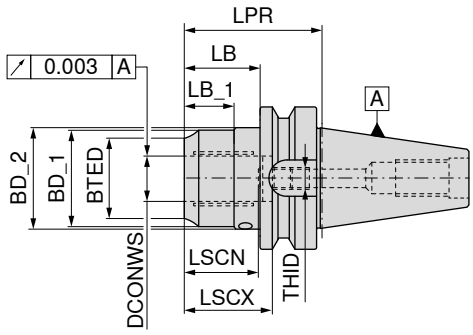


Others

HyPower – Complus

▲ High pressure chuck, short and stable version
▲ for solid carbide and HSS shanks with h6 tolerance or better
▲ also available with Balluff chip **on request**

Scope of supply:
Base body with backstop screw and pressure screw





NEW



AD/B
G 2.5 n_{max} 25000

83 513 ...

Adapter	DCONWS mm	LPR mm	BTED mm	BD_1 mm	BD_2 mm	LB mm	LB_1 mm	LSCX mm	LSCN mm	THID	
BT 40	20	72.5	38					51	40	M16x1x13.5	**120**
BT 40	32	90.0	54	63		63.0		61	51	M16x1x13.5	**13269**
BT 50	20	83.5	38	49		45.5		51	41	M16x1x13.5	**12068**
BT 50	32	90.0	57	68	72	52.0	35	61	51	M16x1x13.5	**13268**

→ Min. clamping depth, Page 210


Cylindrical screw


Clamping key – T


Pressure screw


Stop screw IK

Spare parts for Article no.								
	83 950 ...		**80 397 ...**		**83 950 ...**		**83 950 ...**	
83 513 13269	M5x5 - SW2.5	**157**	SW5	**050**	M10x1x14	**429**	M16x1x13.5 - SW8	**424**
83 513 12068	M5x5 - SW2.5	**157**	SW5	**050**	M10x1x14	**429**	M16x1x13.5 - SW8	**424**
83 513 13268	M5x5 - SW2.5	**157**	SW5	**050**	M10x1x14	**429**	M16x1x13.5 - SW8	**424**


Reduction sleeve
189

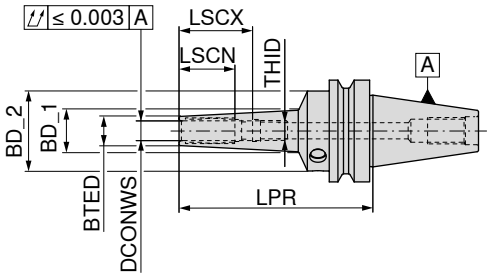

Pull studs
74–75


Others

HyPower – Access 3°

▲ High pressure chuck, slim 3°
▲ for solid carbide and HSS shanks to h6 tolerance or better
▲ also available with Balluff chip **on request**

Scope of supply:
Base body with backstop screw, pressure screw and screw plug







AD/B
G 2.5 n_{max} 25000

83 522 ...

	Adapter	DCONWS mm	LPR mm	BTED mm	BD_1 mm	BD_2 mm	LSCX mm	LSCN mm	THID	
medium length	BT40	3	120	9	16.55	49.5	28	12	M3	**103**
	BT40	4	120	10	17.55	49.5	28	16	M3	**104**
	BT40	5	120	11	18.55	49.5	28	20	M3	**105**
	BT40	6	120	12	19.55	49.5	37	27	M5	**106**
	BT40	8	120	14	21.55	49.5	37	27	M6	**108**
	BT40	10	120	16	23.65	49.5	41	31	M8x1	**110**
	BT40	12	120	18	25.76	49.5	46	36	M10x1	**112**
	BT40	16	120	24	31.45	49.5	49	39	M12x1	**116**
	BT40	20	120	28	35.55	49.5	51	41	M16x1	**120**
	BT40	6	160	16	33.53	49.5	37	27	M5	**206**
	BT40	8	160	18	34.60	49.5	37	27	M6	**208**
	BT40	10	160	20	36.27	49.5	41	31	M8x1	**210**
	BT40	12	160	22	37.88	49.5	46	36	M10x1	**212**
	BT40	6	200	16	37.88	49.5	37	27	M5	**306**
	BT40	8	200	18	38.90	49.5	37	27	M6	**308**
	BT40	10	200	20	40.57	49.5	41	31	M8x1	**310**
	BT40	12	200	22	42.18	49.5	46	36	M10x1	**312**

→ Min. clamping depth, Page 210


Cylindrical screw


Clamping key – T


Pressure screw

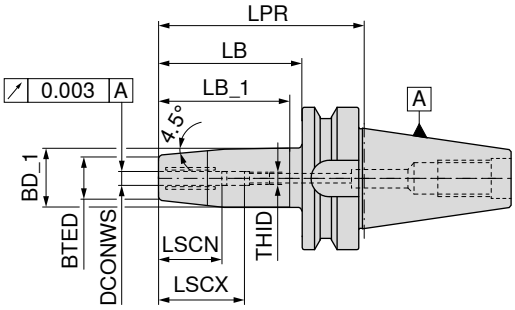

Stop screw IK

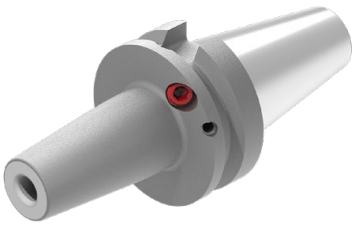
Spare parts for Article no.			83 950 ...		80 397 ...		83 950 ...		83 950 ...	
83 522 103	M5x5 - SW2.5	**157**	SW5	**050**	M10x1x10	**158**	M3x20 - SW1.5	**172**
83 522 104	M5x5 - SW2.5	**157**	SW5	**050**	M10x1x10	**158**	M3x20 - SW1.5	**172**
83 522 105	M5x5 - SW2.5	**157**	SW5	**050**	M10x1x10	**158**	M3x20 - SW1.5	**172**
83 522 106	M5x5 - SW2.5	**157**	SW5	**050**	M10x1x10	**158**	M5x12.5 - SW2.5	**418**
83 522 108	M5x5 - SW2.5	**157**	SW5	**050**	M10x1x10	**158**	M6x12.5 - SW3	**419**
83 522 110	M5x5 - SW2.5	**157**	SW5	**050**	M10x1x12	**159**	M8x1x13.5 - SW3	**420**
83 522 112	M5x5 - SW2.5	**157**	SW5	**050**	M10x1x12	**159**	M10x1x13.5 - SW5	**421**
83 522 116	M5x5 - SW2.5	**157**	SW5	**050**	M10x1x12	**159**	M12x1x13.5 - SW5	**422**
83 522 120	M5x5 - SW2.5	**157**	SW5	**050**	M10x1x12	**159**	M16x1x13.5 - SW8	**424**
83 522 206	M5x5 - SW2.5	**157**	SW5	**050**	M10x1x10	**158**	M5x12.5 - SW2.5	**418**
83 522 208	M5x5 - SW2.5	**157**	SW5	**050**	M10x1x10	**158**	M6x12.5 - SW3	**419**
83 522 210	M5x5 - SW2.5	**157**	SW5	**050**	M10x1x12	**159**	M8x1x13.5 - SW3	**420**
83 522 212	M5x5 - SW2.5	**157**	SW5	**050**	M10x1x12	**159**	M10x1x13.5 - SW5	**421**
83 522 306	M5x5 - SW2.5	**157**	SW5	**050**	M10x1x10	**158**	M5x12.5 - SW2.5	**418**
83 522 308	M5x5 - SW2.5	**157**	SW5	**050**	M10x1x10	**158**	M6x12.5 - SW3	**419**
83 522 310	M5x5 - SW2.5	**157**	SW5	**050**	M10x1x12	**159**	M8x1x13.5 - SW3	**420**
83 522 312	M5x5 - SW2.5	**157**	SW5	**050**	M10x1x12	**159**	M10x1x13.5 - SW5	**421**

HyPower – Access 4.5°

- ▲ High pressure chuck with slim contour, original dimensions of a 4.5° shrink contour
- ▲ Especially for reaming and drilling applications
- ▲ Ideal for tool and die production
- ▲ **Also available** with Balluff chip on request

Scope of supply:
Base body with backstop screw and pressure screw





NEW



AD/B
G 2.5 n_{max} 25000

84 255 ...

Adapter	DCONWS mm	LPR mm	BTED mm	BD_1 mm	LB_1 mm	LB mm	LSCX mm	LSCN mm	THID	
BT 40	6	90	21	27	57.7	63	37	27	M5	**10669**
BT 40	8	90	21	27	57.7	63	37	27	M6	**10869**
BT 40	10	90	24	32	57.7	63	41	31	M8x1	**11069**
BT 40	12	90	24	32	57.7	63	46	36	M10x1	**11269**
BT 40	16	90	27	34	57.2	63	49	39	M12x1	**11669**
BT 40	20	90	33	42	57.5	63	51	41	M16x1	**12069**

→ Min. clamping depth, Page 210



Clamping key – T

80 397 ...



Pressure screw

83 950 ...



Stop screw IK

83 950 ...

Spare parts DCONWS							
6	SW5	**050**	M10x12	**55000**	M5x12.5 - SW2.5	**418**
8	SW5	**050**	M10x12	**55000**	M6x12.5 - SW3	**419**
10	SW5	**050**	M10x12	**55000**	M8x1x13.5 - SW3	**420**
12	SW5	**050**	M10x12	**55000**	M10x1x13.5 - SW5	**421**
16	SW5	**050**	M10x12	**55000**	M12x1x13.5 - SW5	**422**
20	SW5	**050**	M10x12	**55000**	M16x1x13.5 - SW8	**424**



Reduction sleeve
189



Pull studs
74–75

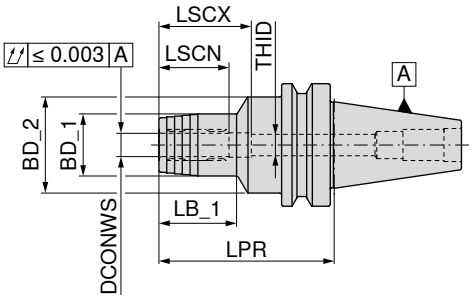


Others

HyTens – Fit

▲ Hydraulic chuck, short and slim version
▲ for solid carbide and HSS shanks to h6 tolerance or better
▲ also available with Balluff chip **on request**

Scope of supply:
Base body with backstop screw and pressure screw





AD/B
G 2.5 n_{max} 25000

Adapter	DCONWS mm	LPR mm	BD_1 mm	BD_2 mm	LSCX mm	LSCN mm	LB_1 mm	THID	83 521 ...
BT 40	6	90	26	49.5	37	27	29	M5	**106**
BT 40	8	90	28	49.5	37	27	30	M6	**108**
BT 40	10	90	30	49.5	41	31	35	M8x1	**110**
BT 40	12	90	32	49.5	46	36	40	M10x1	**112**
BT 40	16	90	38	49.5	49	39	45	M12x1	**116**
BT 40	20	90	42	49.5	51	41	47	M16x1	**120**
BT 40	25	90	55	52.0	57	47	50	M16x1	**125**
BT 40	32	90	63	62.0	61	51	48	M16x1	**132**
BT 50	6	90	26	49.5	37	27	29	M5	**306**
BT 50	8	90	28	49.5	37	27	30	M6	**308**
BT 50	10	90	30	49.5	41	31	34	M8x1	**310**
BT 50	12	90	32	49.5	46	36	34	M10x1	**312**
BT 50	16	90	38	49.5	49	39	35	M12x1	**316**
BT 50	20	90	42	49.5	51	41	35	M16x1	**320**
BT 50	25	110	55	63.0	57	47	48	M16x1	**325**
BT 50	32	110	63	70.0	61	51	50	M16x1	**332**

→ Min. clamping depth, Page 210

	Pressure screw	83 950 ...	Stop screw IK	83 950 ...	Stop screw IK	83 950 ...
Spare parts DCONWS						
6	M8x1x10	**439**			M5x12.5 - SW2.5	**418**
8	M8x1x10	**439**	M6x14 - SW2	**417**	M6x12.5 - SW3	**419**
10	M10x1x12	**440**			M8x1x13.5 - SW3	**420**
12	M10x1x12	**440**			M10x1x13.5 - SW5	**421**
16	M10x1x12	**440**			M12x1x13.5 - SW5	**422**
20 - 32	M10x1x12	**440**			M16x1x13.5 - SW8	**424**


Reduction sleeve
189


Pull studs
74–75

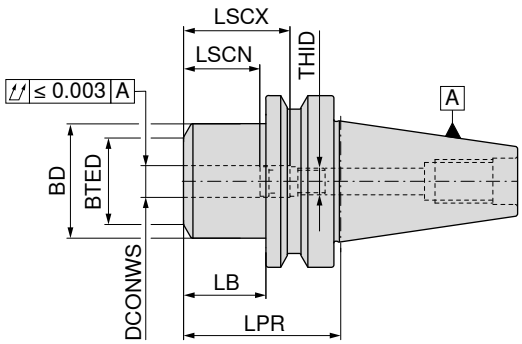

Others

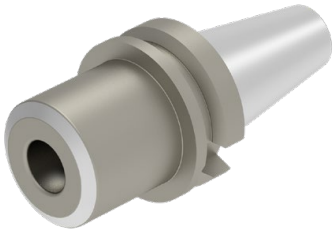
16

HyTens – Compact

▲ Hydraulic chuck, short and stable version
▲ for solid carbide and HSS shanks to h6 tolerance or better
▲ also available with Balluff chip **on request**

Scope of supply:
Base body with backstop screw and pressure screw







AD
G 2.5 n_{max} 25000

Adapter	DCONWS mm	LPR mm	BD mm	BTED mm	LB mm	LSCN mm	LSCX mm	THID	**83 430 ...**
BT 40	12	58.0	42	32	31.0	36	46	M8x1	**01269**
BT 40	20	72.5	49	38	45.5	41	51	M16x1	**02069**
BT 50	20	83.5	49	38	45.5	41	51	M16x1	**02068**

→ Min. clamping depth, Page 210


Clamping key – T
80 397 ...


Pressure screw
83 950 ...

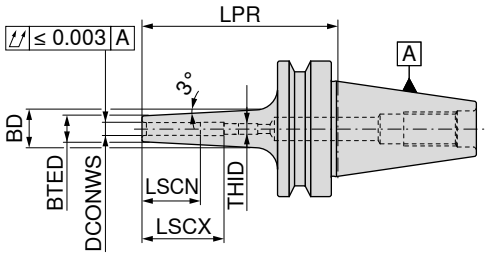

Stop screw IK
83 950 ...

Spare parts for Article no.			
83 430 01269	**050**	**440**	**420**
83 430 02069	**050**	**440**	**424**
83 430 02068	**050**	**440**	**424**

Shrink adapter, Slim 3°

▲ for solid carbide and HSS shanks with h6 tolerance or better
▲ also available with Balluff chip **on request**

TG







AD/B
G 2.5 n_{max} 25000

84 323 ...

	Adapter	DCONWS mm	LPR mm	BTED mm	BD mm	LSCX mm	LSCN mm	THID	
short	BT 40	3	90	9	15	28	12	M6	**103**
	BT 40	4	90	10	16	28	16	M6	**104**
	BT 40	5	90	11	17	30	20	M6	**105**
	BT 40	6	90	12	18	36	26	M5	**106**
	BT 40	8	90	14	20	36	26	M6	**108**
	BT 40	10	90	16	22	41	31	M8x1	**110**
	BT 40	12	90	18	24	47	37	M10x1	**112**
	BT 40	14	90	20	26	47	37	M10x1	**114**
	BT 40	16	90	22	28	50	40	M12x1	**116**
	BT 40	18	90	24	30	50	40	M12x1	**118**
	BT 40	20	90	26	32	52	42	M16x1	**120**
medium length	BT 40	3	120	9	16	12	12		**203**
	BT 40	4	120	10	17	16	16		**204**
	BT 40	5	120	11	18	20	20		**205**
	BT 40	6	120	12	21	36	26	M5	**206**
	BT 40	8	120	14	23	36	26	M6	**208**
	BT 40	10	120	16	25	41	31	M8x1	**210**
	BT 40	12	120	18	27	47	37	M10x1	**212**
	BT 40	14	120	20	29	47	37	M10x1	**214**
	BT 40	16	120	22	31	50	40	M12x1	**216**
	BT 40	18	120	24	33	50	40	M12x1	**218**
	BT 40	20	120	26	35	52	42	M16x1	**220**
extra-long	BT 40	3	160	9	19	12	12		**303**
	BT 40	4	160	10	20	16	16		**304**
	BT 40	5	160	11	21	20	20		**305**
	BT 40	6	160	12	24	36	26	M5	**306**
	BT 40	8	160	14	26	36	26	M6	**308**
	BT 40	10	160	16	28	41	31	M8x1	**310**
	BT 40	12	160	18	30	47	37	M10x1	**312**
	BT 40	14	160	20	32	47	37	M10x1	**314**
	BT 40	16	160	22	34	50	40	M12x1	**316**
	BT 40	18	160	24	36	50	40	M12x1	**318**
	BT 40	20	160	26	38	52	42	M16x1	**320**

→ Min. clamping depth, Page 210



Stop screw IK

83 950 ...



Stop screw IK

83 950 ...

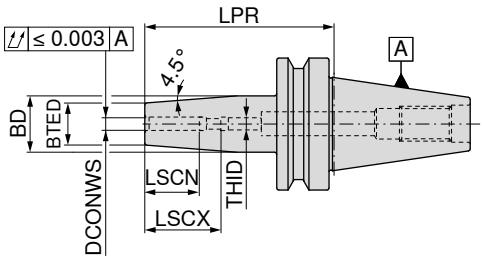
Spare parts

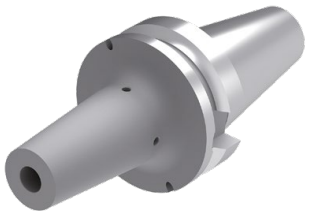
DCONWS				
3 - 5	M6x14 - SW2	**417**		
6			M5x12.5 - SW2.5	**418**
8			M6x12.5 - SW3	**419**
10			M8x1x13.5 - SW3	**420**
12 - 14			M10x1x13.5 - SW5	**421**
16 - 18			M12x1x13.5 - SW5	**422**
20			M16x1x13.5 - SW8	**424**

Shrink fit adapters 4.5°

▲ for solid carbide and HSS shanks with h6 tolerance or better
▲ also available with Balluff chip **on request**

TG







AD
G 2.5 n_{max} 25000



AD/B
G 2.5 n_{max} 25000

	Adapter	DCONWS mm	LPR mm	BTED mm	BD mm	LSCX mm	LSCN mm	THID	84 303 ...	84 303 ...
short	BT 30	3	85	10	17	28	12	M6	003	
	BT 30	4	85	15	22	28	16	M6	004	
	BT 30	5	85	15	22	30	20	M6	005	
	BT 30	6	85	21	27	36	26	M5	006	
	BT 30	8	85	21	27	36	26	M6	008	
	BT 30	10	85	24	32	41	31	M8x1	010	
	BT 30	12	85	24	32	47	37	M10x1	012	
	BT 30	14	85	27	34	47	37	M10x1	014	
	BT 30	16	85	27	34	50	40	M12x1	016	
	BT 30	18	85	33	42	50	40	M12x1	018	
	BT 30	20	85	33	42	52	42	M16x1	020	
	BT 40	3	90	10	17	28	12	M6		103
	BT 40	4	90	15	22	28	16	M6		104
	BT 40	5	90	15	22	30	20	M6		105
	BT 40	6	90	21	27	36	26	M5		106
	BT 40	8	90	21	27	36	26	M6		108
	BT 40	10	90	24	32	41	31	M8x1		110
	BT 40	12	90	24	32	47	37	M10x1		112
	BT 40	14	90	27	34	47	37	M10x1		114
	BT 40	16	90	27	34	50	40	M12x1		116
	BT 40	18	90	33	42	50	40	M12x1		118
	BT 40	20	90	33	42	52	42	M16x1		120
	BT 40	25	100	44	53	58	48	M16x1		125
medium length	BT 40	3	120	10	20	12	12			203
	BT 40	4	120	15	22	16	16			204
	BT 40	5	120	15	22	20	20			205
	BT 40	6	120	21	27	36	26	M5		206
	BT 40	8	120	21	27	36	26	M6		208
	BT 40	10	120	24	32	41	31	M8x1		210
	BT 40	12	120	24	32	47	37	M10x1		212
	BT 40	14	120	27	34	47	37	M10x1		214
	BT 40	16	120	27	34	50	40	M12x1		216
	BT 40	18	120	33	42	50	40	M12x1		218
	BT 40	20	120	33	42	52	42	M16x1		220
	BT 40	25	120	44	53	58	48	M16x1		225
extra-long	BT 40	3	160	10	20	12	12			303
	BT 40	4	160	15	22	16	16			304
	BT 40	5	160	15	22	20	20			305
	BT 40	6	160	21	27	36	26	M5		306
	BT 40	8	160	21	27	36	26	M6		308
	BT 40	10	160	24	32	41	31	M8x1		310
	BT 40	12	160	24	32	47	37	M10x1		312
	BT 40	14	160	27	34	47	37	M10x1		314
	BT 40	16	160	27	34	50	40	M12x1		316
	BT 40	18	160	33	42	50	40	M12x1		318
	BT 40	20	160	33	42	52	42	M16x1		320
	BT 40	25	160	44	53	58	48	M16x1		325

→ Min. clamping depth, Page 210

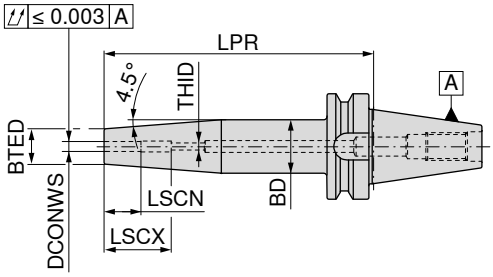
Spare parts heat shrink adapter 4.5°

		 Stop screw IK		 Stop screw IK	
		83 950 ...		**83 950 ...**	
Spare parts DCONWS					
3 - 5	M6x14 - SW2		**417**		
6				M5x12.5 - SW2.5	**418**
8				M6x12.5 - SW3	**419**
10				M8x1x13.5 - SW3	**420**
12 - 14				M10x1x13.5 - SW5	**421**
16 - 18				M12x1x13.5 - SW5	**422**
20 - 25				M16x1x13.5 - SW8	**424**

Shrink fit adapters 4.5°

▲ for solid carbide and HSS shanks to h6 tolerance or better
▲ also available with Balluff chip **on request**

TG







AD/B
G 2.5 n_{max} 25000

82 310 ...

	Adapter	DCONWS mm	LPR mm	BTED mm	BD mm	LSCX mm	LSCN mm	THID	
short	BT 40	3	90	11	15				**10369**
	BT 40	4	90	11	15				**10469**
	BT 40	5	90	11	15				**10569**
	BT 40	6	90	21	27	36	26	M5	**10669**
	BT 40	8	90	21	27	36	26	M6	**10869**
	BT 40	10	90	24	34	41	31	M8x1	**11069**
	BT 40	12	90	24	34	46	36	M10x1	**11269**
	BT 40	14	90	27	34	46	36	M10x1	**11469**
	BT 40	16	90	27	34	49	39	M12x1	**11669**
	BT 40	18	90	33	42	49	39	M12x1	**11869**
	BT 40	20	90	33	42	51	41	M16x1	**12069**
	BT 40	25	100	44	53	57	47	M16x1	**12569**
	BT 50	6	100	21	27	36	26	M5	**10668**
	BT 50	8	100	21	27	36	26	M6	**10868**
	BT 50	10	100	24	32	41	31	M8x1	**11068**
	BT 50	12	100	24	32	47	37	M10x1	**11268**
	BT 50	14	100	27	34	47	37	M10x1	**11468**
	BT 50	16	100	27	34	50	40	M12x1	**11668**
	BT 50	18	100	33	42	50	40	M12x1	**11868**
	BT 50	20	100	33	42	52	42	M16x1	**12068**
	BT 50	25	100	44	53	58	48	M16x1	**12568**
	BT 50	32	100	44	53	62	52	M16x1	**13268**
medium length	BT 50	6	120	21	27	36	26	M5	**20668**
	BT 50	8	120	21	27	36	26	M6	**20868**
	BT 50	10	120	24	32	41	31	M8x1	**21068**
	BT 50	12	120	24	32	47	37	M10x1	**21268**
	BT 50	14	120	27	34	47	37	M10x1	**21468**
	BT 50	16	120	27	34	50	40	M12x1	**21668**
	BT 50	18	120	33	42	50	40	M12x1	**21868**
	BT 50	20	120	33	42	52	42	M16x1	**22068**
	BT 50	25	120	44	53	58	48	M16x1	**22568**
	BT 50	32	120	44	53	62	52	M16x1	**23268**

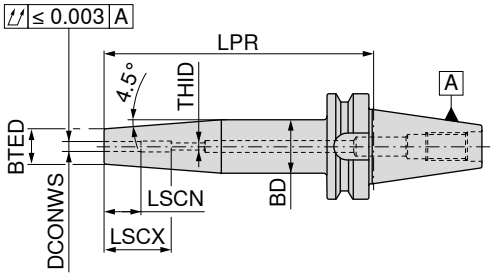
→ Min. clamping depth, Page 210

Continued on next page

Shrink fit adapters 4.5°

▲ for solid carbide and HSS shanks to h6 tolerance or better
▲ also available with Balluff chip **on request**

TG







AD/B
G 2.5 n_{max} 25000

82 310 ...

	Adapter	DCONWS mm	LPR mm	BTED mm	BD mm	LSCX mm	LSCN mm	THID	
extra-long	BT 40	6	160	21	27	36	26	M5	**30669**
	BT 40	8	160	21	27	36	26	M6	**30869**
	BT 40	10	160	24	34	41	31	M8x1	**31069**
	BT 40	12	160	24	34	46	36	M10x1	**31269**
	BT 40	14	160	27	34	46	36	M10x1	**31469**
	BT 40	16	160	27	34	49	39	M12x1	**31669**
	BT 40	18	160	33	42	49	39	M12x1	**31869**
	BT 40	20	160	33	42	51	41	M16x1	**32069**
	BT 40	25	160	44	53	57	47	M16x1	**32569**
	BT 50	6	160	21	27	36	26	M5	**30668**
	BT 50	8	160	21	27	36	26	M6	**30868**
	BT 50	10	160	24	32	41	31	M8x1	**31068**
	BT 50	12	160	24	32	47	37	M10x1	**31268**
	BT 50	14	160	27	34	47	37	M10x1	**31468**
	BT 50	16	160	27	34	50	40	M12x1	**31668**
	BT 50	18	160	33	42	50	40	M12x1	**31868**
	BT 50	20	160	33	42	52	42	M16x1	**32068**
	BT 50	25	160	44	53	58	48	M16x1	**32568**
	BT 50	32	160	44	53	62	52	M16x1	**33268**

→ Min. clamping depth, Page 210



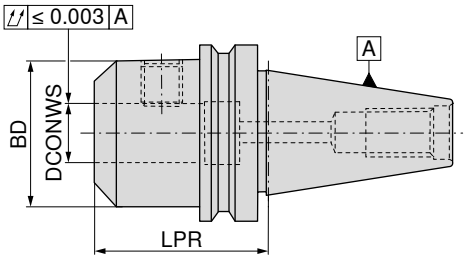
Stop screw IK

82 950 ...

Spare parts DCONWS		
6	M5x16 - SW2.5	**30000**
8	M6x16 - SW3	**30100**
10	M8x1x16 - SW4	**30200**
12 - 14	M10x1x14 - SW5	**30300**
20 - 32	M16x1x16 - SW8	**30500**

Cylindrical shank adapter (Weldon)

▲ For shanks according to DIN 6535 HB / 1835 B with lateral clamping flat
▲ also available with Balluff chip **on request**





NEW



AD
G 2.5 n_{max} 25000

	Adapter	DCONWS $_{H4}$ mm	LPR mm	BD mm	82 741 ...
short	BT 30	6	50	25	10670
	BT 30	8	50	28	10870
	BT 30	10	50	35	11070
	BT 30	12	55	42	11270
	BT 30	14	55	44	11470
	BT 30	16	63	48	11670
	BT 30	18	63	50	11870
	BT 30	20	63	52	12070
extra short	BT 40	16	35	48	01669
	BT 40	20	35	50	02069
	BT 40	25	40	50	02569[1)]
	BT 40	32	75	72	03269[1)]

1) Version with two grubscrews



Set Screw

Spare parts DCONWS		62 950 ...
6	M6x10	006
8	M8x10	008
10	M10x12	010
12 - 14	M12x16	012
16 - 18	M14x16	016
20	M16x16	020
25	M18x2x20	025
32	M20x2x20	032

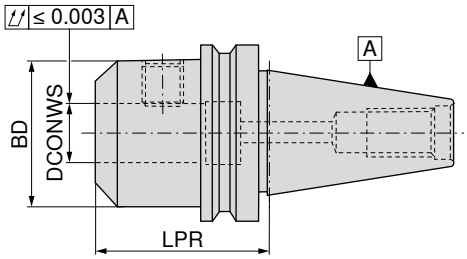


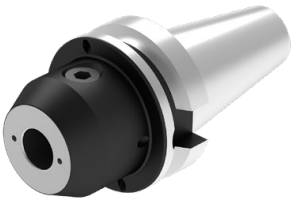


Pull studs 74–75
Others

Cylindrical shank adapter (Weldon)

▲ For shanks according to DIN 6535 HB / 1835 B with lateral clamping flat
▲ also available with Balluff chip **on request**





NEW



AD/B
G 2.5 n_{max} 25000

82 740 ...

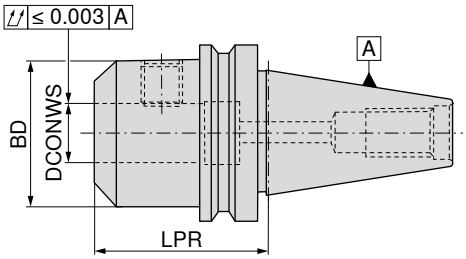
	Adapter	DCONWS $_{H4}$ mm	LPR mm	BD mm	
short	BT 40	6	50	25	**10669**
	BT 40	8	50	28	**10869**
	BT 40	10	63	35	**11069**
	BT 40	12	63	42	**11269**
	BT 40	14	63	44	**11469**
	BT 40	16	63	48	**11669**
	BT 40	18	63	50	**11869**
	BT 40	20	63	52	**12069**
	BT 40	25	100	65	**12569**
	BT 40	32	100	72	**13269**[1)]
	BT 40	40	120	80	**14069**[1)]
	BT 50	6	63	25	**10668**
	BT 50	8	63	28	**10868**
	BT 50	10	80	35	**11068**
	BT 50	12	80	42	**11268**
	BT 50	14	80	44	**11468**
	BT 50	16	80	48	**11668**
	BT 50	18	80	50	**11868**
	BT 50	20	80	52	**12068**
	BT 50	25	100	65	**12568**[1)]
	BT 50	32	105	72	**13268**[1)]
	BT 50	40	120	80	**14068**[1)]
medium length	BT 40	6	100	25	**20669**
	BT 40	8	100	28	**20869**
	BT 40	10	100	35	**21069**
	BT 40	12	100	42	**21269**
	BT 40	14	100	44	**21469**
	BT 40	16	100	48	**21669**
	BT 40	18	100	50	**21869**
	BT 40	20	100	52	**22069**
	BT 50	6	100	25	**20668**
	BT 50	8	100	28	**20868**
	BT 50	10	100	35	**21068**
	BT 50	12	100	42	**21268**
	BT 50	14	100	44	**21468**
	BT 50	16	100	48	**21668**
	BT 50	18	100	50	**21868**
	BT 50	20	100	52	**22068**
	BT 50	25	120	65	**22568**[1)]

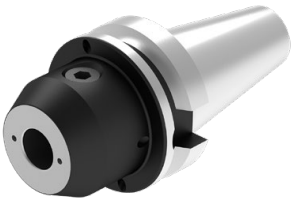
1) Version with two grubscrews

Continued on next page

Cylindrical shank adapter (Weldon)

▲ For shanks according to DIN 6535 HB / 1835 B with lateral clamping flat
▲ also available with Balluff chip **on request**





NEW



AD/B
G 2.5 n_{max} 25000

82 740 ...

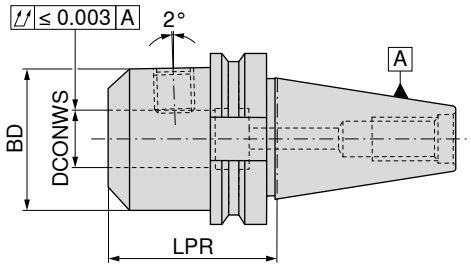
	Adapter	DCONWS $_{H4}$ mm	LPR mm	BD mm	
extra-long	BT 40	6	160	25	**40669**
	BT 40	8	160	28	**40869**
	BT 40	10	160	35	**41069**
	BT 40	12	160	42	**41269**
	BT 40	14	160	44	**41469**
	BT 40	16	160	48	**41669**
	BT 40	18	160	50	**41869**
	BT 40	20	160	52	**42069**
	BT 40	25	160	65	**42569**[1)]
	BT 50	6	160	25	**40668**
	BT 50	8	160	28	**40868**
	BT 50	10	160	35	**41068**
	BT 50	12	160	42	**41268**
	BT 50	14	160	44	**41468**
	BT 50	16	160	48	**41668**
	BT 50	18	160	50	**41868**
	BT 50	20	160	52	**42068**
	BT 50	25	160	65	**42568**[1)]
	BT 50	32	160	72	**43268**[1)]

1) Version with two grubscrews

The M3 screws with WAF 1.5 mm supplied can be used to seal the two additional coolant holes.

Cylindrical Shank Adapter (Whistle Notch)

▲ For shanks according to DIN 6535 HE / 1835 E with angled clamping flat
▲ The groove in the flat face is a characteristic feature of the Whistle Notch version
▲ also available with Balluff chip **on request**





NEW



AD/B
G 2.5 n_{max} 25000

82 742 ...

	Adapter	DCONWS $_{H4}$ mm	LPR mm	BD mm	
short	BT 40	6	50	25	**10669**
	BT 40	8	50	28	**10869**
	BT 40	10	63	35	**11069**
	BT 40	12	63	42	**11269**
	BT 40	14	63	44	**11469**
	BT 40	16	63	48	**11669**
	BT 40	18	63	50	**11869**
	BT 40	20	63	52	**12069**
	BT 40	25	100	65	**12569**[1)]
	BT 40	32	100	72	**13269**[1)]
	BT 40	40	120	80	**14069**[1)]
	BT 50	6	63	25	**10668**
	BT 50	8	63	28	**10868**
	BT 50	10	80	35	**11068**
	BT 50	12	80	42	**11268**
	BT 50	14	80	44	**11468**
	BT 50	16	80	48	**11668**
	BT 50	18	80	50	**11868**
	BT 50	20	80	52	**12068**
	BT 50	25	100	65	**12568**[1)]
	BT 50	32	105	72	**13268**[1)]
long	BT 40	6	130	25	**30669**
	BT 40	8	130	28	**30869**
	BT 40	10	130	35	**31069**
	BT 40	12	130	42	**31269**
	BT 40	16	130	48	**31669**
	BT 40	20	130	52	**32069**
	BT 40	25	130	65	**32569**[1)]
	BT 50	6	130	25	**30668**
	BT 50	8	130	28	**30868**
	BT 50	10	130	35	**31068**
	BT 50	12	130	42	**31268**
	BT 50	16	130	48	**31668**
	BT 50	20	130	52	**32068**
	BT 50	25	130	65	**32568**[1)]
	BT 50	32	130	72	**33268**[1)]

1) Version with two grubscrews

16

Spare parts
cylindrical shank adapters (Weldon and Whistle Notch)


Adjustment screw


Set Screw


Backstop screw

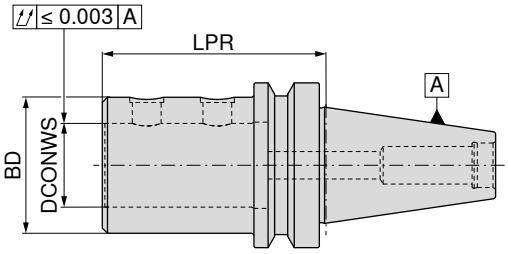
			10 950 ...			**84 950 ...**	
Spare parts DCONWS $_{H4}$							
6				M6x10	**006**		
8				M8x10	**008**	M6x20	**21500**
10				M10x12	**010**		
12 - 14	M10X20 DIN 913		**17500**	M12x16	**012**		
16 - 18				M14x16	**016**		
20				M16x16	**020**		
25				M18x2x20	**025**		
32 - 40				M20x2x20	**032**		




Pull studs 74–75
Others

Indexable insert drill adapter ISO 7388- 2 – MAS-BT

▲ also available with Balluff chip **on request**





NEW



AD/B
G 6.3 n_{max} 15000

Adapter	DCONWS mm	LPR mm	BD mm	82 748 ...
BT 40	20	75	40	**12069**
BT 40	25	80	45	**12569**
BT 40	32	85	52	**13269**
BT 50	20	85	40	**12068**
BT 50	25	90	45	**12568**
BT 50	32	95	52	**13268**
BT 50	40	105	65	**14068**
BT 50	50	113	75	**15068**

Suitable eccentric sleeves can be found in → **Chapter 3, Indexable insert drilling**, of the metric eCatalog 2024 and in the online shop at cuttingtools.ceratizit.com



Set Screw

Spare parts DCONWS		10 950 ...
20	M10x1x10	**001**
25 - 32	M12x1x10	**002**
40 - 50	M16x1x12	**003**





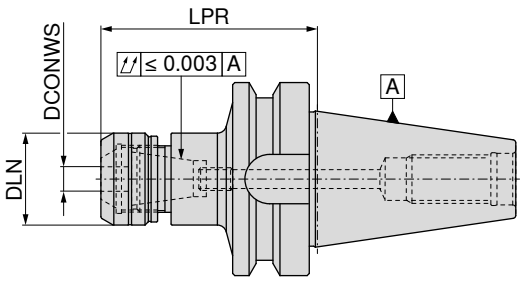
Pull studs 74–75
Others

ER Precision Collet chuck – PCC

- ▲ For standard or sealing disc lock nuts
- ▲ Maximum clamping range covered according to ISO tolerance field H10
- ▲ Roll key required for clamping
- ▲ p_{max} = 100 bar
- ▲ also available with Balluff chip **on request**

Scope of supply:

Base body with lock nut and backstop screw







AD/B
G 2.5 n_{max} 25000

82 700 ...

Adapter	DCONWS mm	LPR mm	DLN mm	for collet	Torque moment / Clamping force Nm	
BT 40	1 - 10	70	30	426E (ER16)	40 / 2-70	**11069**
BT 40	1 - 10	100	30	426E (ER16)	40 / 2-70	**21069**
BT 40	2 - 16	70	40	430E (ER25)	80 / 10-160	**11669**
BT 40	2 - 16	100	40	430E (ER25)	80 / 10-160	**21669**
BT 40	2 - 20	70	50	470E (ER32)	125 / 15-250	**12069**
BT 40	2 - 20	100	50	470E (ER32)	125 / 15-250	**22069**
BT 50	2 - 16	80	40	430E (ER25)	80 / 10-160	**11668**
BT 50	2 - 16	100	40	430E (ER25)	80 / 10-160	**21668**
BT 50	2 - 20	80	50	470E (ER32)	125 / 15-250	**12068**
BT 50	2 - 20	100	50	470E (ER32)	125 / 15-250	**22068**

Dimension LPR is 4.5 mm longer for ER16 and ER32 and 5.0 mm longer for ER25 when using thru coolant lock nut


Lock nut IK

82 950 ...


Lock nut

82 950 ...


Backstop screw PCC 2

82 950 ...


Backstop screw PCC 1

82 950 ...

Spare parts for collet						
426E (ER16)	**11000**	**01000**			M8X3.0	**00100**
430E (ER25)	**11600**	**01600**	M18x1.5	**00200**	M8x8	**00300**
470E (ER32)	**12000**	**02000**	M18x1.5	**00200**	M8x8	**00300**


ER collet
175–183, 185–186

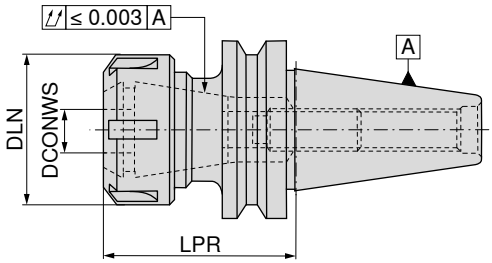

Sealing ring
188

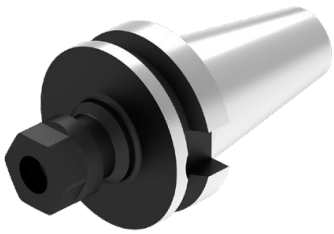

Roll key
193

ER-Collet chuck

▲ also available with Balluff chip **on request**

Scope of supply:
Holder with lock nut and adjustable back stop








	Adapter	DCONWS mm	LPR mm	DLN mm	TQX Nm	for collet	NEW AD G 2.5 n_{max} 25000 82 743 ...	NEW AD/B G 2.5 n_{max} 25000 82 743 ...
short	BT 30	1 - 10	70	28	56	426E (ER16)	11070[1]	
	BT 30	1 - 16	70	42	104	430E (ER25)	11670	
	BT 30	2 - 20	70	50	136	470E (ER32)	12070	
	BT 40	1 - 10	60	22	56	426E (ER16 mini)		11169
	BT 40	1 - 10	60	28	56	426E (ER16)		11069[1]
	BT 40	1 - 16	70	42	104	430E (ER25)		11669
	BT 40	2 - 20	70	50	136	470E (ER32)		12069
	BT 40	3 - 26	70	63	176	472E (ER40)		12669
	BT 50	1 - 10	75	28	56	426E (ER16)	11068[1]	
	BT 50	1 - 16	75	42	104	430E (ER25)	11668	
	BT 50	2 - 20	75	50	136	470E (ER32)	12068	
	BT 50	4 - 26	75	63	176	472E (ER40)	12668	
medium length	BT 30	1 - 10	100	28	56	426E (ER16)	21070[1]	
	BT 30	1 - 16	100	42	104	430E (ER25)	21670	
	BT 40	1 - 10	120	22	56	426E (ER16 mini)		21169
	BT 40	1 - 10	120	28	56	426E (ER16)		21069[1]
	BT 40	1 - 16	120	42	104	430E (ER25)		21669
	BT 40	2 - 20	120	50	136	470E (ER32)		22069
	BT 40	3 - 26	100	63	176	472E (ER40)		22669
	BT 50	1 - 10	100	28	56	426E (ER16)	21068[1]	
	BT 50	1 - 16	100	42	104	430E (ER25)	21668	
	BT 50	2 - 20	100	50	136	470E (ER32)	22068	
	BT 50	3 - 26	100	63	176	472E (ER40)	22668	
extra-long	BT 40	1 - 10	160	28	56	426E (ER16)		41069[1]
	BT 40	1 - 16	160	42	104	430E (ER25)		41669
	BT 40	2 - 20	160	50	136	470E (ER32)		42069
	BT 40	3 - 26	160	63	176	472E (ER40)		42669
	BT 50	1 - 16	160	42	104	430E (ER25)	41668	
	BT 50	2 - 20	160	50	136	470E (ER32)	42068	

1) with 6 position lock nut








	Lock nut 62 950 ...	Lock nut IK 83 950 ...	Lock nut 62 950 ...	Y clamping key 83 357 ...	Mini lock nut 62 950 ...	Mini IK 83 950 ...
Spare parts for collet						
426E (ER16 mini)					066	058
426E (ER16)	044					
430E (ER25)		055	055	125		
470E (ER32)		056		132		
472E (ER40)		057		140		

Dimension LPR is 5.0 mm longer for ER16, ER25 and ER32, and 5.5 mm for ER40 when using thru coolant lock nuts.

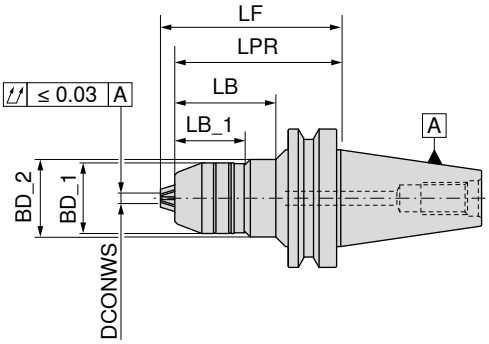
16

Short drill chuck – NC 2010

- ▲ Independent of direction of rotation
- ▲ Torque Moment = 12 Nm
- ▲ also available with Balluff chip **on request**

Scope of supply:

Toolholder including clamping key SW4







A
G 6.3 n_{max} 10000



AD
G 6.3 n_{max} 10000

Adapter	DCONWS mm	BD_1 mm	BD_2 mm	LB_1 mm	LB mm	LPR mm	LF mm	84 509 ...	84 510 ...
BT 40	0.5 - 13	48.5		50.9		80	89.0	**413**	**413**
BT 40	2.5 - 16	51.0		50.9		80	90.5	**416**	**416**
BT 50	2.5 - 16	51.0	56	50.9	73	120	130.5	**516**	**516**

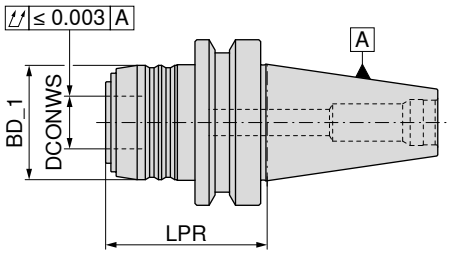


Others

Can be used with G 2.5 to 30,000 1/min by subsequent balancing!

Synchro tapping chuck with minimum length compensation

- ▲ For collets according to DIN 6499
- ▲ With length compensation under tension 1.0 mm and under compression 0.2 mm (LZD)
- ▲ p_{max} = 50 bar
- ▲ for synchro use
- ▲ also available with Balluff chip **on request**







AD

83 515 ...

Adapter	cutting range	SZID	LPR mm	BD_1 mm	DCONWS mm	LZD± mm	
BT 40	M3 - M12	1	61	43	20	1.0 / 0.2	**012**
BT 40	M6 - M20	2	82	60	32	1.0 / 0.2	**020**
BT 50	M3 - M12	1	72	43	20	1.0 / 0.2	**112**
BT 50	M6 - M20	2	93	60	32	1.0 / 0.2	**120**



Pull studs
74–75



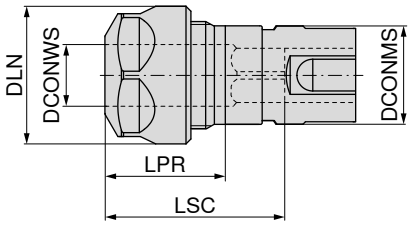
Others

16

Insert for synchro quick change tapping chuck with minimum length compensation

▲ SZID = for insert size

Scope of supply:
Includes lock nut





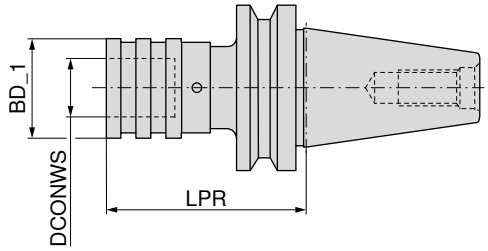
SZID	DCONWS mm	cutting range	LPR mm	DLN mm	LSC mm	for collet	DCONMS mm	83 608 ...
1	2 - 10	M3 - M12	24	28	42	426E (ER16)	20	012 [1]
2	2 - 16	M6 - M20	28	42	59	430E (ER25)	32	020

1) with 6 position lock nut

Spare parts for Article no.		Lock nut 62 950 ...		Lock nut IK 83 950 ...		Lock nut 62 950 ...		Y clamping key 83 357 ...
83 608 012	M22x1.5 - SW25	044	M22x1.5	054	M22x1.5	054		116
83 608 020			M32x1.5	055	M32x1.5	055		125

Quick change tap chuck with length compensation

▲ With length compensation under tension and compression (LZD)
▲ also available with Balluff chip **on request**






A

83 528 ...

Adapter	cutting range	SZID	LPR mm	BD_1 mm	DCONWS mm	LZD± mm	
BT 30	M3 - M12	01	63	38	19	9	**312**
BT 30	M6 - M20	02	96	55	31	15	**320**
BT 40	M3 - M12	01	68	38	19	9	**412**
BT 40	M6 - M20	02	93	55	31	15	**420**
BT 50	M3 - M12	01	80	38	19	9	**512**
BT 50	M6 - M20	02	102	55	31	15	**520**


Collet
195, 197–199


Pull studs
74–75


Others

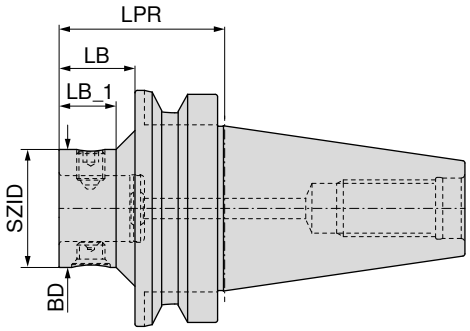
16

Adapter with ABS Connection

▲ also available with Balluff chip **on request**

Scope of supply:

Steep taper adapter (Form B) with conversion kit (Form AD) and sealing disc







AD



AD/B

Adapter	KOMET no.	SZID	BD inch	LPR inch	LB inch	LB_1 inch	84 202 ...	84 212 ...
BT 40	A55 00120	ABS 25	0.984	2.362	1.299	0.984	**04090**	
BT 40	A55 00130	ABS 32	1.260	2.362	1.299		**04089**	
BT 40	A55 00140	ABS 40	1.575	2.362	1.299		**04088**	
BT 40	A55 55150	ABS 50	1.969	2.362	1.299			**04097**
BT 40	A55 55160	ABS 63	2.480	2.756				**04096**
BT 50	A55 00330	ABS 32	1.260	2.756	1.260	0.945	**05089**	
BT 50	A55 00340	ABS 40	1.575	2.756	1.260	0.945	**05088**	
BT 50	A55 55350	ABS 50	1.969	2.756	1.260	0.945		**05097**
BT 50	A55 55360	ABS 63	2.480	3.150	1.654	1.457		**05096**
BT 50	A55 55370	ABS 80	3.150	3.937	2.441			**05092**
BT 50	A55 55380	ABS 100	3.937	4.331				**05091**

Conversion kit – Cooling agent supply



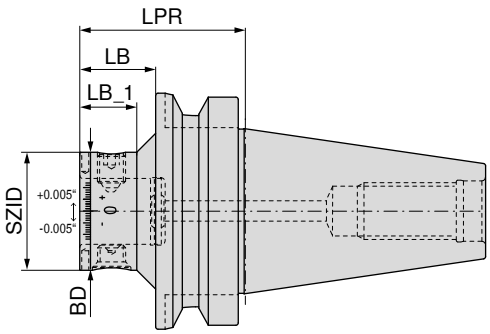
for	Adapter	84 950 ...
4 mm	SK 40 / BT 40	**23200**
6 mm	SK 50 / BT 50	**23400**

Eccentric adjuster with ABS Connection

▲ Adjustment ±0.010 inch on diameter
▲ also available with Balluff chip **on request**

Scope of supply:

Steep taper adapter (Form B) with conversion kit (Form AD) and sealing disc






AD


AD/B

Adapter	KOMET no.	SZID	BD inch	LPR inch	LB inch	LB_1 inch	84 205 ...	84 205 ...
BT 40	A55 56150	ABS 50	1.969	2.362	1.299			**04097**
BT 40	A55 56160	ABS 63	2.480	2.756			**04096**	
BT 50	A55 56350	ABS 50	1.969	2.756	1.260	0.945		**05097**
BT 50	A55 56360	ABS 63	2.480	3.150	1.654	1.457	**05096**	

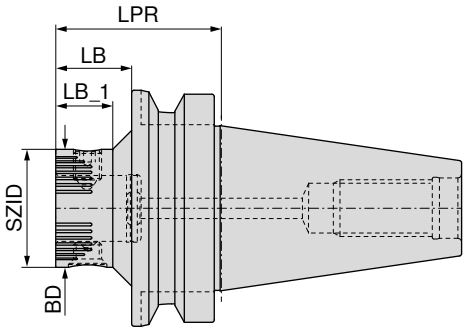
16

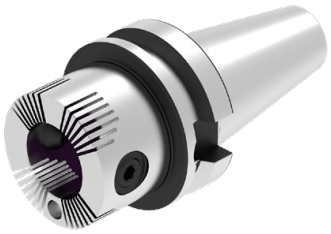
Torsional vibration dampers with ABS Connection

▲ also available with Balluff chip **on request**

Scope of supply:

Steep taper adapter (Form B) with conversion kit (Form AD) and sealing disc







AD/B

Adapter	KOMET no.	SZID	BD inch	LPR inch	LB inch	LB_1 inch	84 208 ...
BT 40	A55 02150	ABS 50	1.969	2.362	1.299		**04097**
BT 40	A55 02160	ABS 63	2.480	2.756			**04096**
BT 50	A55 02350	ABS 50	1.969	2.756	1.260	0.945	**05097**
BT 50	A55 02360	ABS 63	2.480	3.150	1.654	1.457	**05096**



Clamping screw



Taper screw

Spare parts SZID	84 950 ...	84 950 ...
ABS 50	**20300**	**20400**
ABS 63	**25500**	**27300**



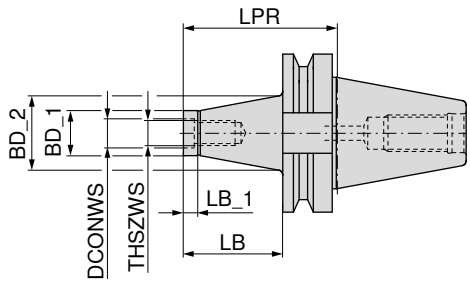




Pull studs 74–75
Extension 152
Others

Adapter for milling cutters with threaded end

▲ also available with Balluff chip **on request**







AD
G 6.3 n_{max} 18000

56 711 ...

Adapter	THSZWS	DCONWS inch	LB inch	BD_1 inch	BD_2 inch	LB_1 inch	LPR inch	
BT 40	M8	0.335	0.984	0.543	0.591	0.472	2.047	**081**
BT 40	M8	0.335	1.969	0.543	0.906	0.472	3.032	**082**
BT 40	M8	0.335	2.953	0.543	0.984	0.472	4.016	**083**
BT 40	M10	0.413	0.984	0.709	0.906	0.472	2.047	**101**
BT 40	M10	0.413	1.969	0.709	0.984	0.472	3.032	**102**
BT 40	M10	0.413	2.953	0.709	1.181	0.472	4.016	**103**
BT 40	M12	0.492	0.984	0.827	0.945	0.472	2.047	**121**
BT 40	M12	0.492	1.969	0.827	1.181	0.472	3.032	**122**
BT 40	M12	0.492	2.953	0.827	1.378	0.472	4.016	**123**
BT 40	M12	0.492	3.937	0.827	1.496	0.472	5.000	**124**
BT 40	M16	0.669	0.984	1.142	1.142	0.472	2.047	**161**
BT 40	M16	0.669	1.969	1.142	1.339	0.472	3.032	**162**
BT 40	M16	0.669	2.953	1.142	1.378	0.472	4.016	**163**
BT 40	M16	0.669	3.937	1.142	1.575	0.472	5.000	**164**



Extension-Reduction set



Pull studs
74–75

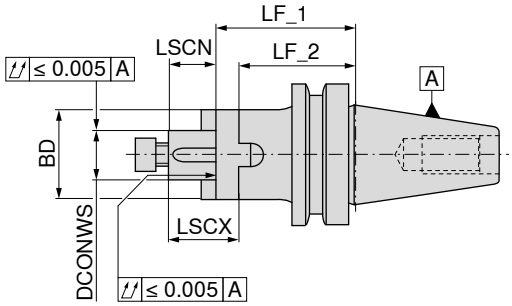


Others

Combination shell mill adapter

▲ For milling cutters with transverse or longitudinal groove according to DIN 6358
▲ also available with Balluff chip **on request**

Scope of supply:
Toolholder with clamping screw, driving ring and dowel spring





NEW



A
G 2.5 n_{max} 25000

	Adapter	DCONWS mm	LF_1 mm	BD mm	LSCX mm	LSCN mm	LF_2 mm	82 744 ...
short	BT 30	16	45	32	27	17	35	11670
	BT 30	22	47	40	31	19	35	12270
	BT 30	27	49	46	33	21	37	12770
	BT 40	16	55	32	27	17	45	11669
	BT 40	22	55	40	31	19	43	12269
	BT 40	27	55	48	33	21	43	12769
	BT 40	32	60	58	38	24	46	13269
	BT 40	40	60	70	41	27	46	14069[1)]
	BT 50	16	70	32	27	17	60	11668
	BT 50	22	70	40	31	19	58	12268
	BT 50	27	70	48	33	21	58	12768
	BT 50	32	70	58	38	24	56	13268
	BT 50	40	70	70	41	27	56	14068[1)]
medium length	BT 30	16	80	32	27	17	70	21670
	BT 30	22	80	40	31	19	68	22270
	BT 30	27	90	48	33	21	78	22770
	BT 40	16	100	32	27	17	90	21669
	BT 40	22	100	40	31	19	88	22269
	BT 40	27	100	48	33	21	88	22769
	BT 40	32	100	58	38	24	86	23269
	BT 40	40	100	70	41	27	86	24069[1)]

1) With cross screw


Parallel key


Drive ring


Cross nut key


Cross screw


clamping screw

Spare parts DCONWS		83 950 ...	83 370 ...	83 368 ...		83 367 ...		83 950 ...
16	4 x 4 x 20	284	116	116	M8	016	M8x25	113
22	6 x 6 x 25	285	122	122	M10	022	M10x25	124
27	7 x 7 x 25	286	127	127	M12	027	M12x30	125
32	8 x 7 x 28	287	132	132	M16	032	M16x35	126
40	10 x 8 x 32	288	140	140	M20	040	M20x40 - SW17	112



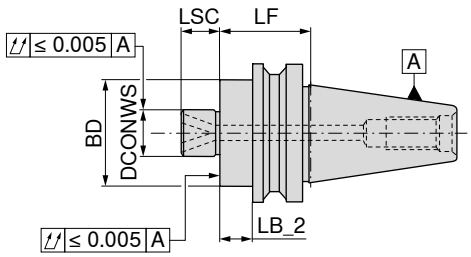


Pull studs 74–75
Milling Adapter Rings 174
Others

Shell mill adapter with reduced flange diameter

▲ Screwed drive dogs
▲ also available with Balluff chip **on request**

Scope of supply:
Base body with retaining screw and drive dog





NEW



AD
G 2.5 n_{max} 25000

	Adapter	DCONWS mm	BD mm	LB_2 mm	LF mm	LSC mm	82 315 ...
short	BT 40	22	38	33	60	19	**12269**
	BT 40	27	48	25	52	21	**12769**
	BT 50	22	38	22	60	19	**12268**
	BT 50	27	48	25	63	21	**12768**

These shell mill adapters have been specially developed for MaxiMill 211-KN porcupine cutters.
Now they can be clamped perfectly, thanks to the adapted flange diameters.

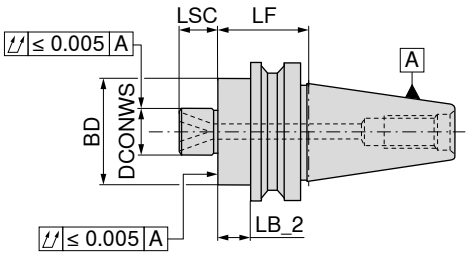
		 Screw for drivers		 Driver		 clamping screw	
		83 950 ...		83 950 ...		83 950 ...	
Spare parts DCONWS							
22	M4x8	**51700**	10x7x20.5	**51500**	M10x25	**124**
27	M5x8	**51800**	12x9x24.3	**51600**	M12x30	**125**

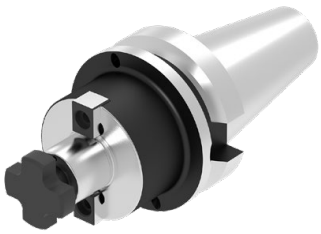
16

Shell mill adapter

▲ With fixed drive dogs and enlarged contact face for milling cutters with transverse groove
▲ also available with Balluff chip **on request**

Scope of supply:
Toolholder with clamping screw






NEW
AD
G 2.5 n_{max} 25000
82 745 ...


NEW
AD/B
G 2.5 n_{max} 25000
82 745 ...

	Adapter	DCONWS mm	LB_2 mm	LF mm	BD mm	LSC mm		
short	BT 30	16	18	40	38	17	**11670**	
	BT 30	22	18	40	48	19	**12270**	
	BT 30	27	18	50	58	21	**12770**	
	BT 30	32	28	50	78	24	**13270**	
	BT 40	16	25	52	38	17		**11669**
	BT 40	22	25	52	48	19		**12269**
	BT 40	27	25	52	58	21		**12769**
	BT 40	32	23	50	78	24		**13269**
	BT 40	40	23	50	88	27		**14069**[1)]
	BT 50	16	25	63	38	17	**11668**	
	BT 50	22	25	63	48	19	**12268**	
	BT 50	27	25	63	58	21	**12768**	
	BT 50	32	22	60	78	24	**13268**	
	BT 50	40	22	60	88	27	**14068**[1)]	
medium length	BT 40	16	73	100	38	17		**21669**
	BT 40	22	73	100	48	19		**22269**
	BT 40	27	73	100	58	21		**22769**
	BT 40	32	73	100	78	24		**23269**
	BT 40	40	73	100	88	27		**24069**[1)]
	BT 50	16	62	100	38	17	**21668**	
	BT 50	22	62	100	48	19	**22268**	
	BT 50	27	62	100	58	21	**22768**	
	BT 50	32	62	100	78	24	**23268**	
long	BT 40	16	103	130	38	17		**31669**
	BT 40	22	103	130	48	19		**32269**
	BT 40	27	103	130	58	21		**32769**
	BT 40	32	103	130	78	24		**33269**
	BT 40	40	103	130	88	27		**34069**[1)]
	BT 50	16	92	130	38	17	**31668**	
	BT 50	22	92	130	48	19	**32268**	
	BT 50	27	92	130	58	21	**32768**	
	BT 50	32	92	130	78	24	**33268**	
	BT 50	40	92	130	88	27	**34068**[1)]	
extra-long	BT 40	16	133	160	38	17		**41669**
	BT 40	22	133	160	48	19		**42269**
	BT 40	27	133	160	58	21		**42769**
	BT 40	32	133	160	78	24		**43269**
	BT 40	40	133	160	88	27		**44069**[1)]
	BT 50	16	122	160	38	17	**41668**	
	BT 50	22	122	160	48	19	**42268**	
	BT 50	27	122	160	58	21	**42768**	
	BT 50	32	122	160	78	24	**43268**	
	BT 50	40	122	160	88	27	**44068**[1)]	

1) with cross screw and 4 holes M12, Pitch Circle diameter = 66.7 mm, coolant outlet on the outer diameter of the spigot (DCONWS)!

Spare parts facemill adapters

Cross nut key



Cross screw



clamping screw

Spare parts DCONWS	83 368 ...		83 367 ...		83 950 ...
16	116	M8	016	M8x25	113
22	122	M10	022	M10x25	124
27	127	M12	027	M12x30	125
32	132	M16	032	M16x35	126
40	140	M20	040	M20x40 - SW17	112



Screw for drivers



Driver

Spare parts DCONWS		84 950 ...		84 950 ...	
16		M3x12	162		
22		M4x10	163		
27		M4x16	164		
32		M5x16	166	14x14x22.5	160
40		M5x16	166	16x16x23	161





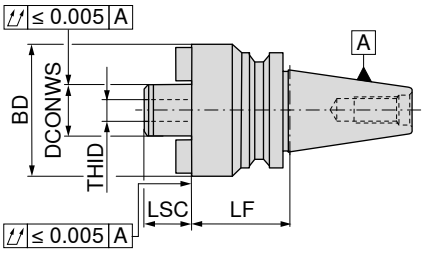


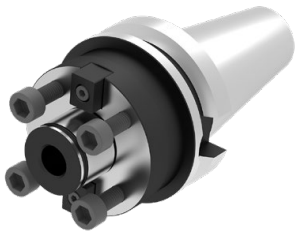
Pull studs 74–75
Extensions 173
Others

Large diameter facemill adapter

▲ For milling cutters with keyway or drive slot DIN 6357
▲ also available with Balluff chip **on request**

Scope of supply:
Holder with integrated drive dogs according to DIN 2079 and 4 fixation screws





NEW



A
G 6.3 n_{max} 8000

Adapter	DCONWS mm	LF mm	BD mm	LSC mm	THID	82 432 ...
BT 50	40	70	89	30	M20	**14068**
BT 50	60	80	129	40	M30	**16068**


Screw for drivers


Driver


clamping screw

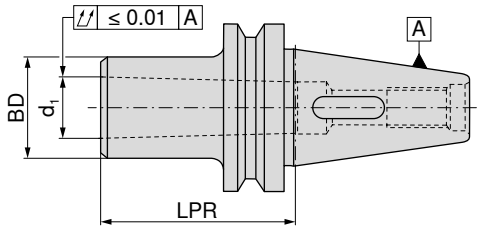
Spare parts DCONWS	84 950 ...		84 950 ...		83 950 ...	
40	M5x16	**166**	16x16x23	**161**	M12x50	**140**


Pull studs
74–75


Others

Taper sleeve adapter DIN6383 for DIN 228-2D Morse taper shanks

▲ also available with Balluff chip **on request**





NEW



AD

G 6.3 n_{max} 12000

82 746 ...

Adapter	d_1	LPR inch	BD inch	
BT 30	MK1	1.969	0.984	**11070**
BT 30	MK2	2.362	1.260	**12070**
BT 30	MK3	3.032	1.575	**13070**
BT 40	MK1	1.969	0.984	**11069**
BT 40	MK2	1.969	1.260	**12069**
BT 40	MK3	2.756	1.575	**13069**
BT 40	MK4	3.740	1.890	**14069**
BT 50	MK1	1.772	0.984	**11068**
BT 50	MK2	2.362	1.260	**12068**
BT 50	MK3	2.559	1.575	**13068**
BT 50	MK4	3.740	1.890	**14068**
BT 50	MK5	4.134	2.480	**15068**



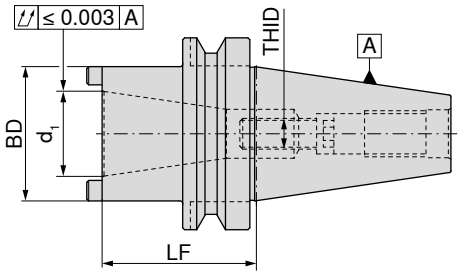


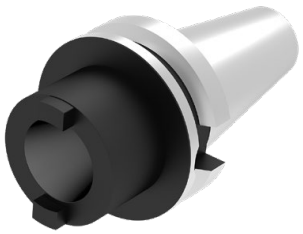
Morse taper adapter sleeve
Pull studs 74–75
Others

Milling adapter sleeve

▲ For mounting steep taper adapters according to DIN 2080
▲ With an extended retaining screw, adapters compliant with ISO 7388-1 – SK, ISO 7388-2 – MAS-BT and ANSI-CAT can also be clamped
▲ also available with Balluff chip **on request**

Scope of supply:
Holder with clamping screw for DIN 2080 adapters





NEW



A
G 6.3 n_{max} 8000
84 040 ...

Adapter	d_1	LF inch	BD inch	THID	
BT 40	SK 30	2.362	2.008	M12	**13069**
BT 40	SK 40	3.937	2.480	M16	**14069**
BT 50	SK 40	3.150	2.756	M16	**14068**


Clamping screw SK
83 950 ...


Hollow key with nose
83 359 ...


Threaded ring
84 950 ...


clamping screw
83 950 ...

Spare parts for Article no.							
84 040 13069			**017**		**127**		**125**
84 040 14068	**009**						

Screw length required when pulling in ISO 7388-1 – SK, ISO 7388-2 – MAS BT or DIN 2080 shanks

ISO 7388-2 Suitable for article no.	Taper Shank Ø d_1	Clamping screw length ISO 7388-1, ISO 7388-2 THID	Clamping screw length DIN 2080 THID
84 040 13069	SK 30 – BT 30		M12x30 – **83 950 125**
84 040 14069	SK 40 – BT 40	M16x70 – **83 950 264**	M16x45 – **84 950 43700**
84 040 14068	SK 40 – BT 40	M16x65 – **84 950 43600**	M16x40 – **83 950 009**

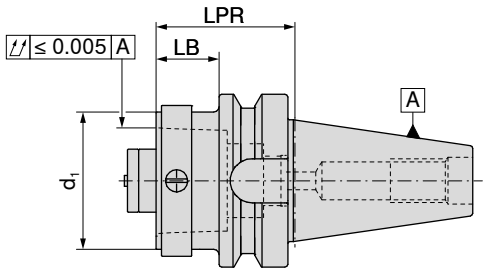



Pull studs 74–75
Others

BT/HSK-A adapter

▲ for mounting HSK-A adapters according to ISO 12164
▲ also available with Balluff chip **on request**

Scope of supply:
with clamping cartridge and cover ring







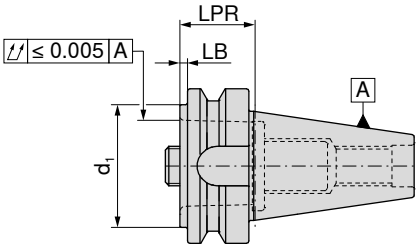
AD

Adapter	d_1	LB inch	LPR inch	84 016 ...
BT 40	HSK-A 32	0.512	1.575	**04060**
BT 40	HSK-A 40	0.512	1.575	**04059**
BT 40	HSK-A 50	0.906	1.969	**04058**
BT 40	HSK-A 63	1.693	2.756	**04057**
BT 50	HSK-A 32	0.472	1.969	**05060**
BT 50	HSK-A 40	0.472	1.969	**05059**
BT 50	HSK-A 50	0.866	2.362	**05058**
BT 50	HSK-A 63	0.866	2.362	**05057**
BT 50	HSK-A 100	2.047	3.543	**05055**

BT/PSC adapter

▲ for mounting PSC adapters according to ISO 26623-1
▲ also available with Balluff chip **on request**

Scope of supply:
with tightening screw






AD

Adapter	d_1	LB inch	LPR inch	84 017 ...
BT 40	PSC 32	0.118	1.181	**04087**
BT 40	PSC 40	0.118	1.181	**04095**
BT 40	PSC 50	0.118	1.181	**04094**
BT 40	PSC 63	2.283	3.346	**04093**
BT 50	PSC 32	0.079	1.575	**05087**
BT 50	PSC 40	0.079	1.575	**05095**
BT 50	PSC 50	0.079	1.575	**05094**
BT 50	PSC 63	0.079	1.575	**05093**
BT 50	PSC 80	1.260	2.756	**05086**

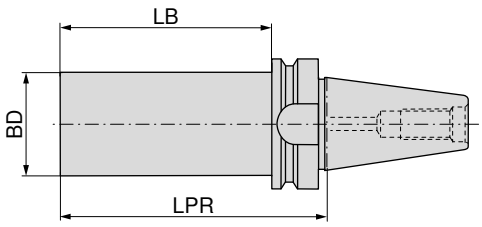

Threaded ring


tightening screw

Spare parts d_1	84 950 ...		84 950 ...
PSC 32	**127**	SW8	**122**
PSC 40	**128**	SW8	**123**
PSC 50	**129**	SW10	**124**
PSC 63	**130**	SW14	**126**
PSC 80	**130**	SW14	**126**

Blank

- ▲ Material: Steel 1.7131
- ▲ for production of special tools
- ▲ Diameter BD turned with 0.5 mm oversize
- ▲ Taper hardened and ground
- ▲ Special tool area in soft state
- ▲ also available with Balluff chip **on request**





NEW



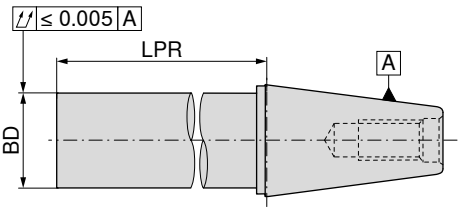
AD/B

82 747 ...

Adapter	BD inch	LPR inch	LB inch	
BT 40	2.480	9.843	8.780	**16369**
BT 50	2.500	11.811	10.315	**16368**

Test bar

- ▲ Without tool change groove
- ▲ Use for MAS BT 40 special pull studs with 3 mm shorter LF dimension, as standard





NEW



A

81 746 ...

Adapter	BD inch	LPR inch	
SK / BT 40	1.575	12.598	**14079**




Pull studs 74–75
Others

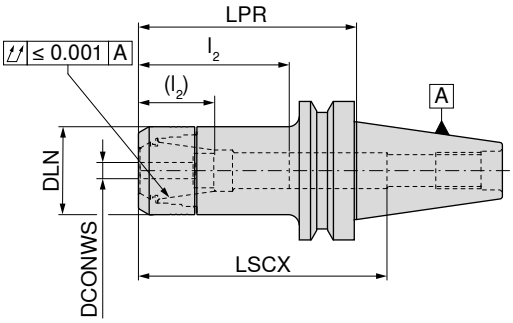


ER Precision Collet chuck – Centro-P – BT-FC

- ▲ with face contact
- ▲ for standard or sealed nuts
- ▲ maximum clamping range covered according to ISO tolerance field H10
- ▲ for clamping a roll key is required
- ▲ p_{max} = 80 bar
- ▲ also available with Balluff chip **on request**

Scope of supply:

Holder **without** nut, **without** backstop







AD

G 2.5 n_{max} 25000

84 525 ...

Adapter	DCONWS mm	LPR mm	DLN mm	LSCX mm	l_2 (l_2) mm	for collet	
BT-FC 30	1 - 10	75	30	97	28 - 45 (14 - 31)	426E (ER16)	**002**
BT-FC 30	1 - 10	90	30	105	29 - 41 (29 - 38)	426E (ER16)	**00400**
BT-FC 30	1 - 10	120	30	130	29 - 45 (29 - 32)	426E (ER16)	**00600**
BT-FC 30	2 - 16	75	40	72	38 - 56 (23 - 39)	430E (ER25)	**012**
BT-FC 30	2 - 20	75	50	84	42 - 62 (24 - 45)	470E (ER32)	**022**
BT-FC 40	1 - 10	75	30	90	38 - 53 (29 - 39)	426E (ER16)	**102**
BT-FC 40	1 - 10	90	30	115	38 - 53 (29 - 38)	426E (ER16)	**10400**
BT-FC 40	1 - 10	120	30	145	38 - 53 (29 - 38)	426E (ER16)	**10600**
BT-FC 40	1 - 16	90	40	84	41 - 64 (36 - 46)	430E (ER25)	**11400**
BT-FC 40	2 - 16	75	40	100	42 - 59 (36 - 41)	430E (ER25)	**112**
BT-FC 40	2 - 16	120	40	113	41 - 64 (36 - 46)	430E (ER25)	**11600**
BT-FC 40	2 - 20	75	50	100	42 - 76 (42 - 52)	470E (ER32)	**122**
BT-FC 40	2 - 20	90	50	95	41 - 72 (41 - 55)	470E (ER32)	**12400**
BT-FC 40	2 - 20	120	50	110	41 - 72 (41 - 55)	470E (ER32)	**12600**

→ Transmittable torque moments, Page 211

LSCX = Clamping depth without back stop screw for shanks
l_2 = With back stop screw 1, Dimension in brackets (l_2) = With back stop screw 2
Dimension LPR when using tightening nuts with seals 4 mm longer

Spare parts for Article no.	 Lock nut IK **84 950 ...**		 Lock nut **84 950 ...**		 Stop screw 2 **83 950 ...**		 Stop screw 1 **83 950 ...**	
84 525 002		**011**		**001**	M11x1 - SW6	**341**	M11x1 - SW6	**337**
84 525 012		**013**		**003**	M18x1.5 - SW6	**432**	M18x1.5 - SW6	**431**
84 525 022		**015**		**005**	M22x1.5 - SW6	**402**	M22x1.5 - SW6	**401**
84 525 102		**011**		**001**	M11x1 - SW6	**341**	M11x1 - SW6	**337**
84 525 112		**013**		**003**	M18x1.5 - SW6	**432**	M18x1.5 - SW6	**431**
84 525 122		**015**		**005**	M22x1.5 - SW6	**402**	M22x1.5 - SW6	**401**



ER collet

175–183, 185–186



Sealing ring

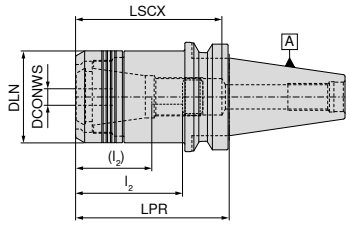
187

ER precision collet chuck – HDC – BT-FC

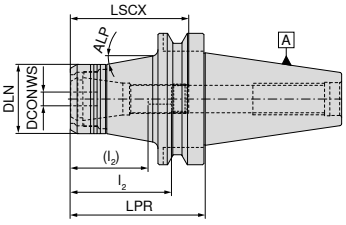
- ▲ HDC = Heavy Duty Chuck, an adapter specially designed for rough machining
- ▲ For heavy duty lock nut
- ▲ Maximum clamping range covered according to ISO tolerance field H10
- ▲ Roll key required for clamping
- ▲ p_{max} = 80 bar
- ▲ also available with Balluff chip **on request**

Scope of supply:

Base body **including** lock nut, **without** backstop screw



cylindrical



Conical





AD
G 6.3 n_{max} 18000

cylindrical



AD
G 6.3 n_{max} 18000

conical

Adapter	DCONWS mm	LPR mm	DLN mm	LSCX mm	l_2 (l_2) mm	ALP °	for collet	84 400 ...	84 400 ...
BT-FC 40	2 - 20	60	53	80	41 - 63 (27 - 45)		470E (ER32)	**12064**	
BT-FC 40	2 - 20	90	53	95	41 - 65 (27 - 47)		470E (ER32)	**22064**	
BT-FC 50	2 - 20	75	53	114	41 - 81 (27 - 63)	10	470E (ER32)		**12063**
BT-FC 50	2 - 20	105	53	144	41 - 81 (27 - 63)	10	470E (ER32)		**22063**

→ Transmittable torque moments, Page 211

LSCX = Clamping depth without backstop screw
l_2 = Clamping depth backstop screw 1, dimension in brackets (l_2) = Clamping depth backstop screw 2



Lock nut



Stop screw 2

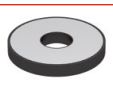


Stop screw 1

Spare parts DCONWS	84 950 ...	83 950 ...	83 950 ...
2 - 20	**30100**	**402**	**401**



ER collet
175–183, 185–186



Roll key
193



Roll key device
193



Pull studs
74–75



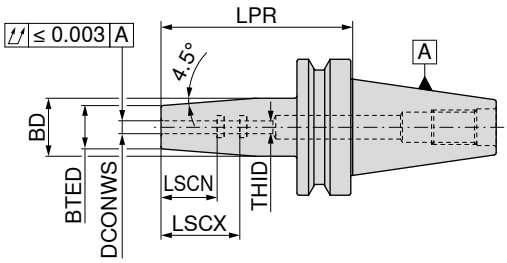
Others

16

Shrink fit adapters 4.5° – BT-FC

▲ with face contact
▲ for solid carbide and HSS shanks with h6 tolerance or better
▲ also available with Balluff chip **on request**

TG






AD
G 2.5 n_{max} 25000


AD/B
G 2.5 n_{max} 25000

	Adapter	DCONWS mm	LPR mm	BTED mm	BD mm	LSCX mm	LSCN mm	THID	84 325 ...	84 325 ...
short	BT-FC 30	3	85	10	17	28	12	M6	003	
	BT-FC 30	4	85	15	22	28	16	M6	004	
	BT-FC 30	5	85	15	22	30	20	M6	005	
	BT-FC 30	6	85	21	27	36	26	M5	006	
	BT-FC 30	8	85	21	27	36	26	M6	008	
	BT-FC 30	10	85	24	32	41	31	M8x1	010	
	BT-FC 30	12	85	24	32	47	37	M10x1	012	
	BT-FC 30	16	85	27	34	50	40	M12x1	016	
	BT-FC 30	20	85	33	42	52	42	M16x1	020	
	BT-FC 40	3	90	10	17	28	12	M6		103
	BT-FC 40	4	90	15	22	28	16	M6		104
	BT-FC 40	5	90	15	22	30	20	M6		105
	BT-FC 40	6	90	21	27	36	26	M5		106
	BT-FC 40	8	90	21	27	36	26	M6		108
	BT-FC 40	10	90	24	32	41	31	M8x1		110
	BT-FC 40	12	90	24	32	47	37	M10x1		112
	BT-FC 40	16	90	27	34	50	40	M12x1		116
	BT-FC 40	20	90	33	42	52	42	M16x1		120
	BT-FC 40	25	100	44	53	58	48	M16x1		125

→ Min. clamping depth, Page 210


Stop screw IK


Stop screw IK

Spare parts DCONWS		83 950 ...		83 950 ...
3 - 5	M6x14 - SW2	417		
6			M5x12.5 - SW2.5	418
8			M6x12.5 - SW3	419
10			M8x1x13.5 - SW3	420
12			M10x1x13.5 - SW5	421
16			M12x1x13.5 - SW5	422
20 - 25			M16x1x13.5 - SW8	424


Shrink fit extension
171

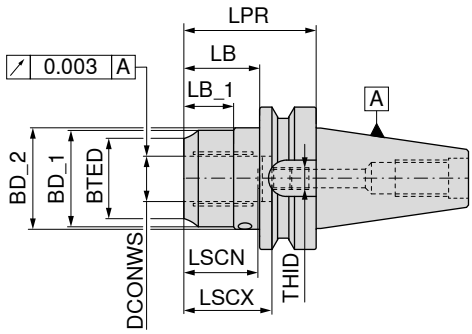

Pull studs
74–75


Others

HyPower – Complus

▲ High pressure chuck, short and stable version – BT-FC
▲ with face contact
▲ for solid carbide and HSS shanks with h6 tolerance or better
▲ also available with Balluff chip **on request**

Scope of supply:
Base body with backstop screw and pressure screw





NEW



AD
G 2.5 n_{max} 25000

83 527 ...

Adapter	DCONWS mm	LPR mm	BTED mm	BD_1 mm	BD_2 mm	LB mm	LB_1 mm	LSCX mm	LSCN mm	THID	
BT-FC 40	20	72.5	38					51	40	M16x1x13.5	**120**
BT-FC 40	32	90.0	54	63	62	64.0	48	61	51	M16x1x13.5	**13274**
BT-FC 50	20	83.5	38	49		47.0		51	41	M16x1x13.5	**12073**
BT-FC 50	32	90.0	57	68	72	53.5	35	61	51	M16x1x13.5	**13273**

→ Min. clamping depth, Page 210



Clamping key – T

80 397 ...



Pressure screw

83 950 ...



Stop screw IK

83 950 ...

Spare parts for Article no.							
83 527 120	SW5	**050**	M10x1x10	**158**	M8x1x13.5 - SW3	**420**
83 527 13274	SW5	**050**	M10x1x14	**429**	M16x1x13.5 - SW8	**424**
83 527 12073	SW5	**050**	M10x1x14	**429**	M16x1x13.5 - SW8	**424**
83 527 13273	SW5	**050**	M10x1x14	**429**	M16x1x13.5 - SW8	**424**



Reduction sleeve
189



Pull studs
74–75

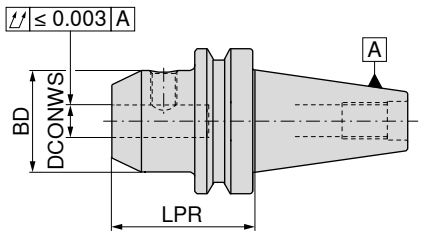


Others

16

Cylindrical shank adapter (Weldon) – BT-FC

▲ with face contact
▲ for shanks according to DIN 6535 / 1835 B with lateral clamping flat
▲ also available with Balluff chip **on request**







AD
G 2.5 n_{max} 25000

84 552 ...

	Adapter	DCONWS $_{H4}$ mm	LPR mm	BD mm	
short	BT-FC 30	6	50	25	**006**
	BT-FC 30	8	50	28	**008**
	BT-FC 30	10	50	35	**010**
	BT-FC 30	12	50	42	**012**
	BT-FC 30	16	63	48	**016**
	BT-FC 30	20	63	52	**020**
	BT-FC 40	6	50	25	**106**
	BT-FC 40	8	50	28	**108**
	BT-FC 40	10	63	35	**110**
	BT-FC 40	12	63	42	**112**
	BT-FC 40	16	63	48	**116**
	BT-FC 40	20	63	52	**120**
	BT-FC 40	25	90	65	**125** 1)
	BT-FC 40	32	100	72	**132** 1)
	BT-FC 50	6	63	25	**306**
	BT-FC 50	8	63	28	**308**
	BT-FC 50	10	63	35	**310**
	BT-FC 50	12	80	42	**312**
	BT-FC 50	16	80	48	**316**
	BT-FC 50	20	80	52	**320**
	BT-FC 50	25	100	65	**325** 1)
	BT-FC 50	32	105	72	**332** 1)

1) Version with two grubscrews



Set Screw

62 950 ...

Spare parts

DCONWS		
6	M6x10	**006**
8	M8x10	**008**
10	M10x12	**010**
12	M12x16	**012**
16	M14x16	**016**
20	M16x16	**020**
25	M18x2x20	**025**
32	M20x2x20	**032**



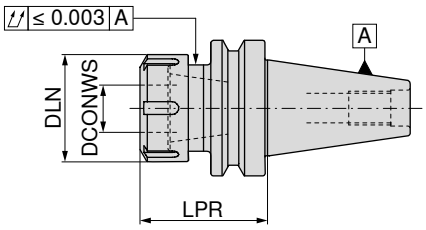


Pull studs 74–75
Others

ER Collet chuck – BT-FC

▲ with face contact
▲ also available with Balluff chip **on request**

Scope of supply:
Toolholder including nut





AD
G 2.5 n_{max} 20000

	Adapter	DCONWS mm	LPR mm	DLN mm	TQX Nm	for collet	84 557 ...
short	BT-FC 30	1 - 10	63	28	56	426E (ER16)	010 [1]
	BT-FC 30	1 - 16	60	42	104	430E (ER25)	016
	BT-FC 30	2 - 20	60	50	136	470E (ER32)	020
	BT-FC 40	1 - 10	63	28	56	426E (ER16)	110 [1]
	BT-FC 40	1 - 16	60	42	104	430E (ER25)	116
	BT-FC 40	2 - 20	60	50	136	470E (ER32)	120
	BT-FC 50	1 - 16	70	42	104	430E (ER25)	316
	BT-FC 50	2 - 20	70	50	136	470E (ER32)	320
medium length	BT-FC 50	1 - 10	100	28	56	426E (ER16)	310 [1]

1) with 6 position lock nut

		Lock nut	62 950 ...	Lock nut IK	83 950 ...	Lock nut	62 950 ...	Y clamping key	83 357 ...
Spare parts for collet									
426E (ER16) / BT30-BT50	M22x1.5 - SW25		**044**	M22x1.5	**054**				
430E (ER25) / BT30-BT50				M32x1.5	**055**	M32x1.5	**055**		**125**
470E (ER32) / BT30-BT50				M40x1.5	**056**				**132**

Dimension LPR is 5.0 mm longer for ER16, ER25 and ER32, and 5.5 mm for ER40 when using thru coolant lock nuts.

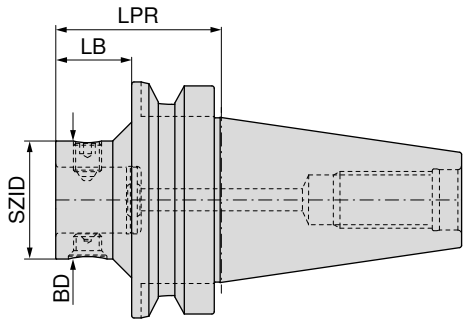




ER collet 175–183, 185–186
Pull studs 74–75
Others

Adapter with ABS Connection – BT-FC

▲ with face contact
▲ also available with Balluff chip **on request**






AD

84 264 ...

Adapter	SZID	BD inch	LPR inch	LB inch	
BT-FC 40	ABS 50	1.969	2.362	1.299	**05064**
BT-FC 40	ABS 63	2.480	2.756		**06364**
BT-FC 50	ABS 50	1.969	2.756	1.260	**05063**
BT-FC 50	ABS 63	2.480	3.150	1.654	**06363**
BT-FC 50	ABS 80	3.150	3.937	2.441	**08063**
BT-FC 50	ABS 100	3.937	4.331		**10063**


Clamping screw

84 950 ...

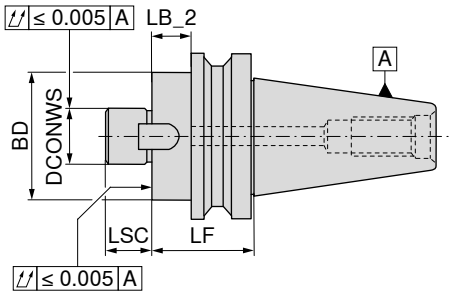

Taper screw

84 950 ...

Spare parts **SZID**		
ABS 50	**20300**	**20400**
ABS 63	**25500**	**27300**
ABS 80	**25600**	**25100**
ABS 100	**25700**	**25200**

Shell mill adapter – BT-FC

- ▲ with face contact
- ▲ with fixed drive dogs and enlarged contact face for milling cutters with transverse slot
- ▲ also available with Balluff chip **on request**







AD
G 6.3 n_{max} 15000

84 562 ...

	Adapter	DCONWS mm	LB_2 mm	LF mm	BD mm	LSC mm	
short	BT-FC 30	16	18	39.0	40	17	**016**
	BT-FC 30	22	18	39.0	50	19	**022**
	BT-FC 30	27	18	39.0	60	21	**027**
	BT-FC 30	32	28	49.0	80	24	**032**
	BT-FC 40	16	8	34.0	40	17	**116**
	BT-FC 40	22	8	34.0	50	19	**122**
	BT-FC 40	27	8	34.0	60	21	**127**
	BT-FC 40	32	23	49.0	80	24	**132**
	BT-FC 40	40	23	49.0	89	27	**140**
	BT-FC 50	22	12	48.5	50	19	**322**
	BT-FC 50	27	12	48.5	60	21	**327**
	BT-FC 50	32	12	48.5	80	24	**332**
	BT-FC 50	40	17	53.5	89	27	**340**



Screw for drivers

84 950 ...



Driver

84 950 ...



clamping screw

83 950 ...

Spare parts DCONWS							
16	M3x12	**162**	8x9x11	**157**	M8x25	**113**
22	M4x10	**163**	10x11.2x13	**158**	M10x25	**124**
27	M4x16	**164**	12x12.6x15	**159**	M12x30	**125**
32	M5x16	**165**	14x14x22.5	**160**	M16x35	**126**
40	M5x16	**166**	16x16x23	**161**	M20x40 - SW17	**112**

Accessories



Pull studs
74–75



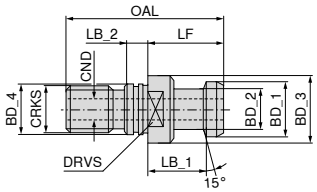
Others

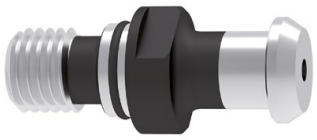
16

Pull stud for tool holders according to ISO 7388-2

▲ MAS-BT 15° Form A

Scope of supply:
including O-Ring



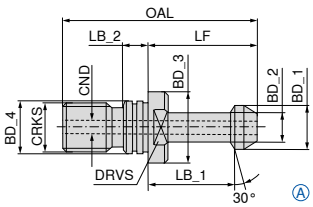


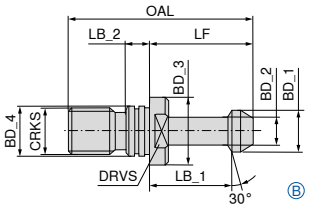
Adapter	BD_1 mm	BD_2 mm	BD_3 mm	BD_4 mm	CRKS	OAL mm	LF mm	LB_1 mm	LB_2 mm	CND mm	DRVS mm	TQX Nm	83 532 ...
BT 40	19	14	23	17	M16	54	29	23	5	5	19	50	**040**

Pull stud for tool holders according to ISO 7388-2

▲ MAS-BT 30° Form A and B

Scope of supply:
including O-Ring







Adapter	BD_1 mm	BD_2 mm	BD_3 mm	BD_4 mm	CRKS	OAL mm	LF mm	LB_1 mm	LB_2 mm	CND mm	DRVS mm	TQX Nm	form	82 533 ...	82 531 ...
BT 30	11	7	16.5	12.5	M12	43	23	18	4.0	2.2	13	20	A		**030**
BT 40	15	10	23.0	17.0	M16	60	35	28	5.5	4.0	19	50	A		**040**
BT 50	23	17	38.0	25.0	M24	85	45	35	8.0	6.0	30	150	A		**050**
BT 30	11	7	16.5	12.5	M12	43	23	18	4.0		13	20	B	**030**	
BT 40	15	10	23.0	17.0	M16	60	35	28	5.5		19	50	B	**040**	
BT 50	23	17	38.0	25.0	M24	85	45	35	8.0		30	150	B	**050**	



O-Ring

83 476 ...

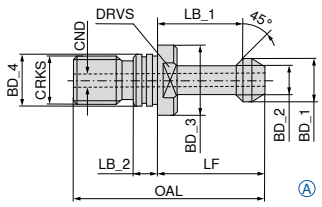
Spare parts

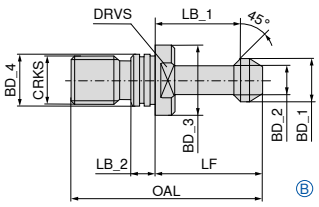
BD_4		
17	BT / SK 40	**040**

Pull stud for tool holders according to ISO 7388-2

▲ MAS-BT 45° Form A and B

Scope of supply:
including O-Ring





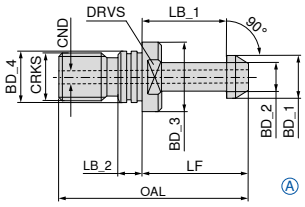


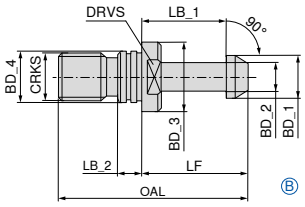
Adapter	BD_1 mm	BD_2 mm	BD_3 mm	BD_4 mm	CRKS	OAL mm	LF mm	LB_1 mm	LB_2 mm	CND mm	DRVS mm	TQX Nm	form	82 530 ...	82 534 ...
BT 30	11	7	16.5	12.5	M12	43	23	18	4.0	2.2	13	20	A		**030**
BT 40	15	10	23.0	17.0	M16	60	35	28	5.5	4.0	19	50	A		**040**
BT 50	23	17	38.0	25.0	M24	85	45	35	8.0	6.0	30	150	A		**050**
BT 30	11	7	16.5	12.5	M12	43	23	18	4.0		13	20	B	**030**	
BT 40	15	10	23.0	17.0	M16	60	35	28	5.5		19	50	B	**040**	
BT 50	23	17	38.0	25.0	M24	85	45	35	8.0		30	150	B	**050**	

Pull stud for tool holders according to ISO 7388-2

▲ MAS-BT 90° Form A and B

Scope of supply:
including O-Ring







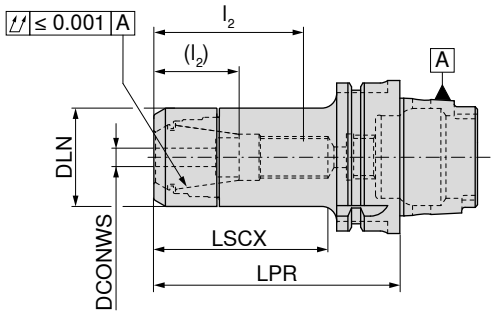
Adapter	BD_1 mm	BD_2 mm	BD_3 mm	BD_4 mm	CRKS	OAL mm	LF mm	LB_1 mm	LB_2 mm	CND mm	DRVS mm	TQX Nm	form	82 536 ...	82 537 ...
BT 40	15	10	23	17	M16	60	35	28	5.5	4	19	50	A		**040**
BT 50	23	17	38	25	M24	85	45	35	8.0	6	30	150	A		**050**
BT 40	15	10	23	17	M16	60	35	28	5.5		19	50	B	**040**	
BT 50	23	17	38	25	M24	85	45	35	8.0		30	150	B	**050**	

ER precision collet chuck – Centro-P

- ▲ for standard or sealed nuts
- ▲ maximum size collet to ISO tolerance field H10
- ▲ for clamping a roll key is required
- ▲ p_{max} = 80 bar
- ▲ also available with Balluff chip **on request**

Scope of supply:

Holder **without** nut, **without** backstop







G 2.5 n_{max} 25000

84 722 ...

Adapter	DCONWS mm	LPR mm	DLN mm	LSCX mm	l_2 (l_2) mm	for collet	
HSK-A 40	1 - 10	60	30	40	32 - 54	426E (ER16)	**401**
HSK-A 40	2 - 16	60	40	40		430E (ER25)	**404** 1)
HSK-A 40	2 - 20	61	50	45		470E (ER32)	**407** 1)
HSK-A 50	2 - 16	70	40	49	34 - 35	430E (ER25)	**505**
HSK-A 50	2 - 16	60	40	37		430E (ER25)	**504** 1)
HSK-A 63	1 - 10	55	30	32		426E (ER16)	**609** 1)
HSK-A 63	1 - 10	100	30	71	28 - 45 (16 - 31)	426E (ER16)	**610**
HSK-A 63	1 - 10	160	30	106	28 - 45 (16 - 31)	426E (ER16)	**611**
HSK-A 63	1 - 10	200	30	136	28 - 45 (16 - 31)	426E (ER16)	**612**
HSK-A 63	1 - 10	130	30	87	26 - 50 (17 - 38)	426E (ER16)	**613**
HSK-A 63	2 - 16	60	40	37		430E (ER25)	**615**
HSK-A 63	2 - 16	100	40	70	35 - 55 (24 - 37)	430E (ER25)	**616**
HSK-A 63	2 - 16	160	40	128	35 - 60 (24 - 42)	430E (ER25)	**617**
HSK-A 63	2 - 16	130	40	89	37 - 60 (12 - 42)	430E (ER25)	**619**
HSK-A 63	2 - 20	70	50	46		470E (ER32)	**620**
HSK-A 63	2 - 20	100	50	71	41 - 57 (26 - 39)	470E (ER32)	**621**
HSK-A 63	2 - 20	160	50	129	52 - 70 (26 - 60)	470E (ER32)	**622**
HSK-A 63	2 - 20	130	50	101	42 - 69 (18 - 41)	470E (ER32)	**625**
HSK-A 63	3 - 26	120	63	91		472E (ER40)	**62700**
HSK-A 63	3 - 26	80	63	56		472E (ER40)	**626** 2)
HSK-A 100	1 - 10	130	30	101	28 - 48 (16 - 35)	426E (ER16)	**11200**
HSK-A 100	1 - 10	100	30	70	28 - 48 (16 - 35)	426E (ER16)	**110**
HSK-A 100	1 - 10	160	30	130	28 - 48 (16 - 35)	426E (ER16)	**111**
HSK-A 100	1 - 16	100	40	98	40 - 60 (22 - 42)	430E (ER25)	**11800**
HSK-A 100	2 - 16	160	40	105	38 - 68 (20 - 50)	430E (ER25)	**117**
HSK-A 100	2 - 16	100	40	71	38 - 56 (20 - 40)	430E (ER25)	**116**
HSK-A 100	2 - 20	160	50	99	42 - 70 (24 - 52)	470E (ER32)	**122**
HSK-A 100	2 - 20	100	50	70	42 - 59 (24 - 40)	470E (ER32)	**121**
HSK-A 100	2 - 20	130	50	97	44 - 69 (41 - 51)	470E (ER32)	**12400**

1) Item cannot be combined with backstop screw

2) Non standard groove before tool change collar not according to DIN, not suitable for automatic tool change

→ Transmittable torque moments, Page 211

LSCX = Clamping depth without back stop screw for shanks
l_2 = With back stop screw 1, Dimension in brackets (l_2) = With back stop screw 2
Dimension LPR when using tightening nuts with seals 4 mm longer

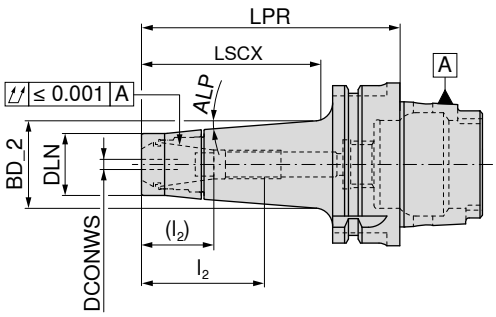
Spare parts ER precision collet chuck – Centro-P

	 Lock nut IK	 Lock nut		 Stop screw 2		 Stop screw 1
	84 950 ...	**84 950 ...**		**83 950 ...**		**83 950 ...**
Spare parts for collet						
426E (ER16)	**011**	**001**				
426E (ER16)	**011**	**001**	M11x1 - SW6	**341**	M11x1 - SW6	**337**
430E (ER25)	**013**	**003**	M18x1.5 - SW6	**432**	M18x1.5 - SW6	**431**
470E (ER32)	**015**	**005**	M22x1.5 - SW6	**402**	M22x1.5 - SW6	**401**
472E (ER40)	**017**	**007**			M28x1.5 - SW6	**400**

ER precision collet chuck, tapered – Centro-P

- ▲ for special tapered nuts
- ▲ Maximum clamping range covered according to ISO tolerance field H10
- ▲ Roll key required for clamping
- ▲ p_{max} = 80 bar
- ▲ also available with Balluff chip **on request**

Scope of supply:
Holder **without** nut, **without** backstop







G 2.5 n_{max} 25000

Adapter	DCONWS mm	LPR mm	DLN mm	BD_2 mm	LSCX mm	l_2 (l_2) mm	ALP	for collet	**84 721 ...**
HSK-A 40	1 - 10	100	24	30.8	67	26 - 47 (12 - 32)	2.0°	426E (ER16)	**310**
HSK-A 50	1 - 10	65	24	28.9	44	26 - 32	4.5°	426E (ER16)	**710**
HSK-A 50	1 - 10	100	24	34.4	77	26 - 47 (12 - 32)	4.5°	426E (ER16)	**810**
HSK-A 63	1 - 10	130	24	36.0	77	28 - 48 (20 - 35)	3.5°	426E (ER16)	**61200**
HSK-A 63	1 - 10	100	24	33.8	74	28 - 48 (20 - 35)	4.5°	426E (ER16)	**610**
HSK-A 63	1 - 10	160	24	36.0	106	28 - 48 (20 - 35)	2.5°	426E (ER16)	**611**

→ Transmittable torque moments, Page 211

LSCX = Clamping depth without back stop screw for shanks
l_2 = With back stop screw 1, Dimension in brackets (l_2) = With back stop screw 2
Dimension LPR when using tightening nuts with seals 4 mm longer

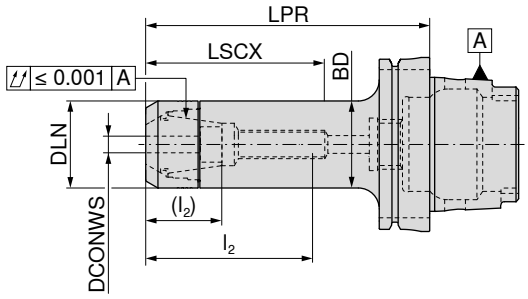
	 Tapered lock nut IK	 Tapered lock nut	 Stop screw 2	 Stop screw 1
	84 950 ...	**84 950 ...**	**83 950 ...**	**83 950 ...**
Spare parts for collet				
426E (ER16)	**033**	**031**	**341**	**337**

ER precision collet chuck, slim – Centro-P

- ▲ for Mini Clamping Nuts
- ▲ Maximum clamping range covered according to ISO tolerance field H10
- ▲ Roll key required for clamping
- ▲ p_{max} 80 bar
- ▲ also available with Balluff chip **on request**

Scope of supply:

Holder **without** nut, **without** backstop







G 2.5 n_{max} 25000

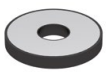
Adapter	DCONWS mm	LPR mm	BD mm	DLN mm	LSCX mm	l_2 (l_2) mm	for collet	84 719 ...
HSK-A 50	1 - 7	130	16	16	60	15 - 32 (7 - 22)	4008E (ER11)	**407**
HSK-A 63	1 - 7	70	16	16	48	15 - 32 (7 - 22)	4008E (ER11)	**507**
HSK-A 63	1 - 7	100	16	16	68	18 - 36 (12 - 26)	4008E (ER11)	**607**
HSK-A 63	1 - 7	130	16	16	108	15 - 32 (7 - 22)	4008E (ER11)	**707**
HSK-A 63	1 - 7	160	16	16	68	18 - 36 (12 - 26)	4008E (ER11)	**608**
HSK-A 63	1 - 10	70	22	22	46	27 - 34 (14 - 20)	426E (ER16)	**610**
HSK-A 63	1 - 10	100	22	22	62	27 - 44 (14 - 30)	426E (ER16)	**710**
HSK-A 63	1 - 10	130	22	22	87	27 - 52 (14 - 38)	426E (ER16)	**810**
HSK-A 63	1 - 10	160	22	22	97	27 - 52 (14 - 38)	426E (ER16)	**910**

→ Transmittable torque moments, Page 211

LSCX = Clamping depth without back stop screw for shanks
l_2 = With back stop screw 1, Dimension in brackets (l_2) = With back stop screw 2
Dimension LPR when using tightening nuts with seals 4 mm longer

Spare parts for collet	 Mini lock nut IK 84 950 ...		 Mini lock nut 84 950 ...		 Stop screw 2 83 950 ...		 Stop screw 1 83 950 ...	
4008E (ER11)					M8x1 - SW4	**340**	M8x1 - SW4	**336**
426E (ER16)		**035**		**034**	M11x1 - SW6	**341**	M11x1 - SW6	**337**


ER collet 175–182, 186


Sealing ring 187


Device 192


Roll key 193


Roll key device 193


Coolant transfer pipe 120

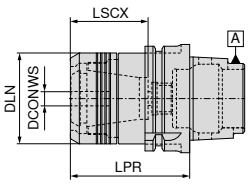

Others

ER precision collet chuck – HDC

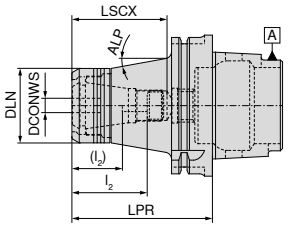
- ▲ HDC = Heavy Duty Chuck, an adapter specially designed for rough machining
- ▲ For heavy duty lock nut
- ▲ Maximum clamping range covered according to ISO tolerance field H10
- ▲ Roll key required for clamping
- ▲ p_{max} = 80 bar
- ▲ also available with Balluff chip **on request**

Scope of supply:

Base body **including** lock nut, **without** backstop screw



cylindrical



Conical







								G 6.3 n_{max} 18000 cylindrical	G 6.3 n_{max} 18000 conical
								84 400 ...	**84 400 ...**
Adapter	DCONWS mm	LPR mm	DLN mm	LSCX mm	l_2 (l_2) mm	ALP °	for collet		
HSK-A 63	2 - 20	70	53	45	41 - 57 (27 - 39)		470E (ER32)	**12057**	
HSK-A 63	2 - 20	100	53	72	41 - 57 (27 - 39)		470E (ER32)	**22057**	
HSK-A 100	2 - 20	100	53	68	41 - 54 (27 - 36)	10	470E (ER32)		**22055**

→ Transmittable torque moments, Page 211

LSCX = Clamping depth without backstop screw
l_2 = Clamping depth backstop screw 1, dimension in brackets (l_2) = Clamping depth backstop screw 2


Lock nut


Stop screw 2


Stop screw 1

Spare parts DCONWS					
	84 950 ...		**83 950 ...**		**83 950 ...**
2 - 20	**30100**	M22x1.5 - SW6	**402**	M22x1.5 - SW6	**401**


ER collet
175–183, 185–186


Roll key
193

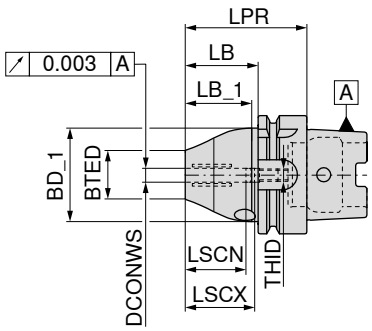

Roll key device
193


Others

HyPower – Rough

- ▲ High pressure chuck – especially for milling
- ▲ Ideal for HSC and HPC applications
- ▲ High temperature resistance
- ▲ **Also available** with Balluff chip on request

Scope of supply:
Base body with backstop screw and pressure screw





NEW



AD
G 2.5 n_{max} 25000

84 254 ...

Adapter	DCONWS mm	LPR mm	BTED mm	BD_1 mm	LB_1 mm	LB mm	LSCX mm	LSCN mm	THID	
HSK-A 63	6	65	26	50.0	35.2	39	37	27	M5	**10657**
HSK-A 63	8	65	28	50.0	35.2	39	37	27	M6	**10857**
HSK-A 63	10	75	30	50.0	45.2	49	41	31	M8x1	**11057**
HSK-A 63	12	75	32	52.5	45.2	49	46	36	M8x1	**11257**
HSK-A 63	16	79	38	52.5	49.2	53	49	39	M8x1	**11657**
HSK-A 63	20	79	38	52.5	49.2	53	51	41	M8x1	**12057**
HSK-A 100	6	73	26	50.0	40.2	44	37	27	M5	**10655**
HSK-A 100	8	73	28	50.0	40.2	44	37	27	M6	**10855**
HSK-A 100	10	83	30	50.0	50.2	54	41	31	M8x1	**11055**
HSK-A 100	12	83	32	52.5	50.2	54	46	36	M8x1	**11255**
HSK-A 100	16	87	38	52.5	54.2	58	49	39	M8x1	**11655**
HSK-A 100	20	87	38	52.5	54.2	58	51	41	M8x1	**12055**

→ Min. clamping depth, Page 210



Clamping key – T

80 397 ...



Pressure screw

83 950 ...



Stop screw IK

83 950 ...

Spare parts DCONWS							
6	SW5	**050**	M10x12	**55000**	M5x12.5 - SW2.5	**418**
8	SW5	**050**	M10x12	**55000**	M6x12.5 - SW3	**419**
10	SW5	**050**	M10x12	**55000**	M8x1x13.5 - SW3	**420**
12	SW5	**050**	M10x12	**55000**	M8x1x13.5 - SW3	**420**
16	SW5	**050**	M10x12	**55000**	M8x1x13.5 - SW3	**420**
20	SW5	**050**	M10x12	**55000**	M8x1x13.5 - SW3	**420**



Reduction sleeve
189



Coolant transfer pipe
120

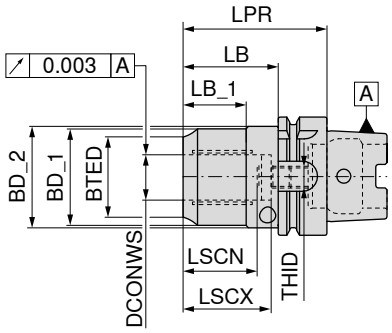


Others

HyPower – Complus

▲ High pressure chuck, short and stable version
▲ for solid carbide and HSS shanks with h6 tolerance or better
▲ also available with Balluff chip **on request**

Scope of supply:
Base body with backstop screw and pressure screw





NEW



AD
G 2.5 n_{max} 25000

83 722 ...

Adapter	DCONWS mm	LPR mm	BTED mm	BD_1 mm	BD_2 mm	LB_1 mm	LB mm	LSCX mm	LSCN mm	THID	
HSK-A 63	20	80	36	49	52.5	36	54	51	40	M8x1	**120**
HSK-A 63	32	105	54	63	52.5	55	79	61	51	M16x1	**13257**
HSK-A 100	20	85	38	49	52.5	36	56	51	41	M8x1	**12055**
HSK-A 100	32	100	57	68	72.0	42	71	61	51	M8x1	**13255**

→ Min. clamping depth, Page 210



Clamping key – T

80 397 ...



Pressure screw

83 950 ...



Stop screw IK

83 950 ...

Spare parts for Article no.							
83 722 120	SW5	**050**	M10x1x10	**158**	M8x1x13.5 - SW3	**420**
83 722 13257	SW5	**050**	M10x1x10	**158**	M16x1x13.5 - SW8	**424**
83 722 12055	SW5	**050**	M10x1x10	**158**	M8x1x13.5 - SW3	**420**
83 722 13255	SW5	**050**	M10x1x10	**158**	M8x1x13.5 - SW3	**420**



Reduction sleeve
189



Coolant transfer pipe
120



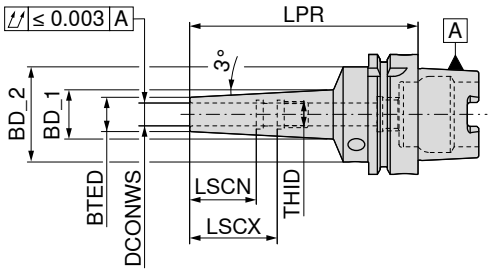
Others

16

HyPower – Access 3°

▲ High pressure chuck, slim 3°
▲ for solid carbide and HSS shanks to h6 tolerance or better
▲ also available with Balluff chip **on request**

Scope of supply:
Base body with backstop screw and pressure screw







G 2.5 n_{max} 25000

83 727 ...

	Adapter	DCONWS mm	LPR mm	BTED mm	BD_1 mm	BD_2 mm	LSCX mm	LSCN mm	THID	
medium length	HSK-A 63	3	120	9	16.65	50	28	12	M3	**603**
	HSK-A 63	4	120	10	17.65	50	28	16	M3	**604**
	HSK-A 63	5	120	11	18.65	50	28	20	M3	**605**
	HSK-A 63	6	120	12	19.75	50	37	27	M5	**606**
	HSK-A 63	8	120	14	21.75	50	37	27	M6	**608**
	HSK-A 63	10	120	16	23.75	50	41	31	M8x1	**610**
	HSK-A 63	12	120	18	25.86	50	46	36	M10x1	**612**
	HSK-A 63	16	120	24	31.50	50	49	39	M12x1	**616**
	HSK-A 63	20	120	28	35.55	50	51	41	M16x1	**620**
extra-long	HSK-A 63	6	160	16	33.53	50	37	27	M5	**706**
	HSK-A 63	8	160	18	34.55	50	37	27	M6	**708**
	HSK-A 63	10	160	20	36.27	50	41	31	M8x1	**710**
	HSK-A 63	12	160	22	37.78	50	46	36	M10x1	**712**
extra long	HSK-A 63	6	200	16	37.83	50	37	27	M5	**806**
	HSK-A 63	8	200	18	38.85	50	37	27	M6	**808**
	HSK-A 63	10	200	20	40.57	50	41	31	M8x1	**810**
	HSK-A 63	12	200	22	42.07	50	46	36	M10x1	**812**

→ Min. clamping depth, Page 210


Clamping key – T

80 397 ...


Pressure screw

83 950 ...


Stop screw IK

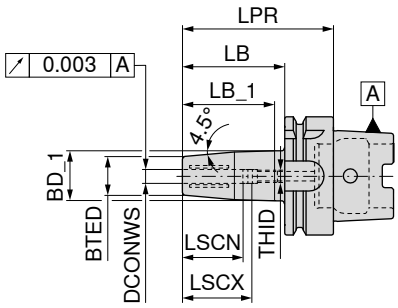
83 950 ...

Spare parts DCONWS							
3	SW5	**050**	M10x1x10	**158**	M3x20 - SW1.5	**172**
4	SW5	**050**	M10x1x10	**158**	M3x20 - SW1.5	**172**
5	SW5	**050**	M10x1x10	**158**	M3x20 - SW1.5	**172**
6	SW5	**050**	M10x1x10	**158**	M5x12.5 - SW2.5	**418**
6	SW5	**050**	M10x1x10	**158**	M6x12.5 - SW3	**419**
8	SW5	**050**	M10x1x10	**158**	M6x12.5 - SW3	**419**
10	SW5	**050**	M10x1x12	**159**	M8x1x13.5 - SW3	**420**
12	SW5	**050**	M10x1x12	**159**	M10x1x13.5 - SW5	**421**
16	SW5	**050**	M10x1x12	**159**	M12x1x13.5 - SW5	**422**
20	SW5	**050**	M10x1x12	**159**	M16x1x13.5 - SW8	**424**

HyPower – Access 4.5°

▲ High pressure chuck with slim contour, original dimensions of a 4.5° shrink contour
▲ Especially for reaming and drilling applications
▲ Ideal for tool and die production
▲ **Also available** with Balluff chip on request

Scope of supply:
Base body with backstop screw and pressure screw





NEW



AD
G 2.5 n_{max} 25000

84 255 ...

Adapter	DCONWS mm	LPR mm	BTED mm	BD_1 mm	LB_1 mm	LB mm	LSCX mm	LSCN mm	THID	
HSK-A 63	6	80	21	27	48.9	54	37	27	M5	**10657**
HSK-A 63	8	80	21	27	48.9	54	37	27	M6	**10857**
HSK-A 63	10	85	24	32	53.7	59	41	31	M8x1	**11057**
HSK-A 63	12	90	24	32	58.6	64	46	36	M10x1	**11257**
HSK-A 63	16	95	27	34	63.1	69	49	39	M12x1	**11657**
HSK-A 63	20	100	33	42	68.9	74	51	41	M16x1	**12057**
HSK-A 100	6	85	21	27	38.7	56	37	27	M5	**10655**
HSK-A 100	8	85	21	27	38.7	56	37	27	M6	**10855**
HSK-A 100	10	90	24	32	53.7	61	41	31	M8x1	**11055**
HSK-A 100	12	95	24	32	58.6	66	46	36	M10x1	**11255**
HSK-A 100	16	100	27	34	63.1	71	49	39	M12x1	**11655**
HSK-A 100	20	105	33	42	68.9	76	51	41	M16x1	**12055**

→ Min. clamping depth, Page 210


Clamping key – T


Pressure screw


Stop screw IK

Spare parts for Article no.		**80 397 ...**		**83 950 ...**		**83 950 ...**	
84 255 10657	SW5	**050**	M10x10	**55100**	M5x12.5 - SW2.5	**418**
84 255 10857	SW5	**050**	M10x10	**55100**	M6x12.5 - SW3	**419**
84 255 11057	SW5	**050**	M10x10	**55100**	M8x1x13.5 - SW3	**420**
84 255 11257	SW5	**050**	M10x10	**55100**	M10x1x13.5 - SW5	**421**
84 255 11657	SW5	**050**	M10x10	**55100**	M12x1x13.5 - SW5	**422**
84 255 12057	SW5	**050**	M10x10	**55100**	M16x1x13.5 - SW5	**423**
84 255 10655	SW5	**050**	M10x10	**55100**	M5x12.5 - SW2.5	**418**
84 255 10855	SW5	**050**	M10x12	**55000**	M6x12.5 - SW3	**419**
84 255 11055	SW5	**050**	M10x12	**55000**	M8x1x13.5 - SW3	**420**
84 255 11255	SW5	**050**	M10x12	**55000**	M10x1x13.5 - SW5	**421**
84 255 11655	SW5	**050**	M10x12	**55000**	M12x1x13.5 - SW5	**422**
84 255 12055	SW5	**050**	M10x12	**55000**	M16x1x13.5 - SW5	**423**


Reduction sleeve
189

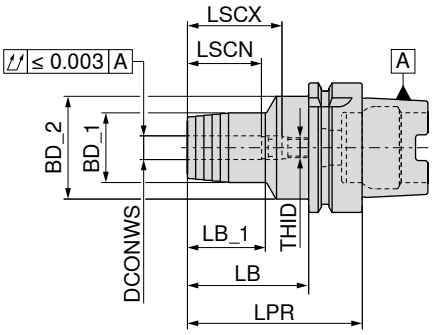

Coolant transfer pipe
120


Others

HyTens – Fit

▲ Hydraulic chuck, short and slim version
▲ for solid carbide and HSS shanks to h6 tolerance or better
▲ also available with Balluff chip **on request**

Scope of supply:
Base body with backstop screw and pressure screw





NEW



G 2.5 n_{max} 25000

83 726 ...

	Adapter	DCONWS mm	LPR mm	BD_1 mm	BD_2 mm	LB_1 mm	LB mm	LSCX mm	LSCN mm	THID	
short	HSK-A 63	6	70	26	49.5	24	44	37	27	M5	**606**
	HSK-A 63	8	70	28	49.5	24	44	37	27	M6	**608**
	HSK-A 63	10	80	30	49.5	32	54	41	31	M8x1	**610**
	HSK-A 63	12	85	32	49.5	40	59	46	36	M10x1	**612**
	HSK-A 63	16	90	38	49.5	46	64	49	39	M12x1	**616**
	HSK-A 63	20	90	42	49.5	48	64	51	41	M16x1	**620**
	HSK-A 63	25	120	57	52.0	63	94	57	47	M16x1	**625**
	HSK-A 63	32	125	63	53.0	61	99	61	51	M16x1	**632**
	HSK-A 100	6	75	26	50.0	26	46	37	27	M5	**10655**
	HSK-A 100	8	75	28	50.0	26	46	37	27	M6	**10855**
	HSK-A 100	10	90	30	50.0	42	61	41	31	M8x1	**11055**
	HSK-A 100	12	95	32	50.0	47	66	46	36	M10x1	**11255**
	HSK-A 100	16	100	38	50.0	53	71	49	39	M12x1	**11655**
	HSK-A 100	20	105	42	50.0	59	76	51	41	M16x1	**12055**
	HSK-A 100	25	110	57	63.0	62	81	57	47	M16x1	**12555**
	HSK-A 100	32	110	63	67.0	62	81	61	51	M16x1	**13255**

→ Min. clamping depth, Page 210

Version for MMS hydraulic chuck – 1 and 2-channel





83 432	HSK-63	1-channel
83 432	HSK-100	1-channel

This article can be found in our online shop at cuttingtools.ceratizit.com





83 433	HSK-63	2-channel
83 433	HSK-100	2-channel

This article can be found in our online shop at cuttingtools.ceratizit.com

Spare parts **HyTens** – Fit

		Pressure screw		Stop screw IK	
		83 950 ...		83 950 ...	
Spare parts for Article no.					
83 726 606	M10x1x12	**440**	M5x12.5 - SW2.5	**418**
83 726 608	M10x1x12	**440**	M6x12.5 - SW3	**419**
83 726 610	M10x1x12	**440**	M8x1x13.5 - SW3	**420**
83 726 612	M10x1x12	**440**	M10x1x13.5 - SW5	**421**
83 726 616	M10x1x12	**440**	M12x1x13.5 - SW5	**422**
83 726 620	M10x1x12	**440**	M16x1x13.5 - SW5	**423**
83 726 625	M10x1x12	**440**	M16x1x13.5 - SW5	**423**
83 726 632	M10x1x12	**440**	M16x1x13.5 - SW5	**423**
83 726 10655	M10x1x12	**440**	M5x12.5 - SW2.5	**418**
83 726 10855	M10x1x12	**440**	M6x12.5 - SW3	**419**
83 726 11055	M10x1x12	**440**	M8x1x13.5 - SW3	**420**
83 726 11255	M10x1x12	**440**	M10x1x13.5 - SW5	**421**
83 726 11655	M10x1x12	**440**	M12x1x13.5 - SW5	**422**
83 726 12055	M10x1x12	**440**	M16x1x13.5 - SW8	**424**
83 726 12555	M10x1x12	**440**	M16x1x13.5 - SW8	**424**
83 726 13255	M10x1x12	**440**	M16x1x13.5 - SW8	**424**



Reduction sleeve
189



Coolant transfer pipe
120



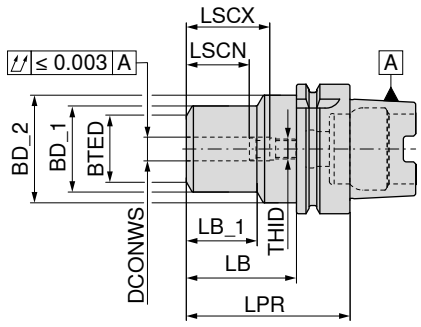
Others

16

HyTens – Compact

▲ Hydraulic chuck, short and stable version
▲ for solid carbide and HSS shanks to h6 tolerance or better
▲ also available with Balluff chip **on request**

Scope of supply:
Base body with backstop screw and pressure screw







G 2.5 n_{max} 25000

83 430 ...

Adapter	DCONWS mm	LPR mm	BD_1 mm	BD_2 mm	BTED mm	LB mm	LB_1 mm	LSCN mm	LSCX mm	THID	
HSK-A 63	12	80	42	52.5	32	54	34	36	46	M8x1	**01257**
HSK-A 63	20	80	49	52.5	38	54	36	41	51	M8x1	**02057**
HSK-A 100	12	85	42	52.5	32	51	34	36	46	M8x1	**01255**
HSK-A 100	20	85	49	52.5	38	51	36	41	51	M8x1	**02055**

→ Min. clamping depth, Page 210


Clamping key – T
80 397 ...


Pressure screw
83 950 ...


Stop screw IK
83 950 ...

Spare parts DCONWS							
12 - 20	SW5	**050**	M10x1x12	**440**	M8x1x13.5 - SW3	**420**


Reduction sleeve
189

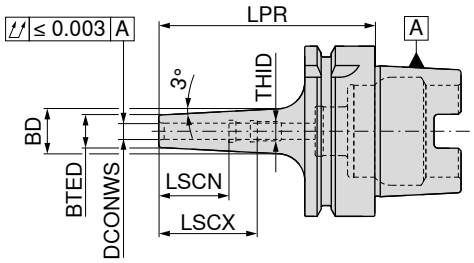

Coolant transfer pipe
120


Others

Shrink adapter, slim 3°

▲ for solid carbide and HSS shanks with h6 tolerance or better
▲ also available with Balluff chip **on request**

TG







G 2.5 n_{max} 25000

84 324 ...

	Adapter	DCONWS mm	LPR mm	BTED mm	BD mm	LSCX mm	LSCN mm	THID	
short	HSK-A 63	3	80	9	14	28	12	M6	**103**
	HSK-A 63	4	80	10	15	28	16	M6	**104**
	HSK-A 63	5	80	11	16	30	20	M6	**105**
	HSK-A 63	6	80	12	17	36	26	M5	**106**
	HSK-A 63	8	80	14	19	36	26	M6	**108**
	HSK-A 63	10	85	16	21	41	31	M8x1	**110**
	HSK-A 63	12	90	18	24	47	37	M10x1	**112**
	HSK-A 63	14	90	20	26	47	37	M10x1	**114**
	HSK-A 63	16	95	22	28	50	40	M12x1	**116**
	HSK-A 63	18	95	24	30	50	40	M12x1	**118**
	HSK-A 63	20	100	26	33	52	42	M16x1	**120**
medium length	HSK-A 63	3	120	9	16	12	12		**203**
	HSK-A 63	4	120	10	17	16	16		**204**
	HSK-A 63	5	120	11	18	20	20		**205**
	HSK-A 63	6	120	12	21	36	26	M5	**206**
	HSK-A 63	8	120	14	23	36	26	M6	**208**
	HSK-A 63	10	120	16	25	41	31	M8x1	**210**
	HSK-A 63	12	120	18	27	47	37	M10x1	**212**
	HSK-A 63	14	120	20	29	47	37	M10x1	**214**
	HSK-A 63	16	120	22	31	50	40	M12x1	**216**
	HSK-A 63	18	120	24	33	50	40	M12x1	**218**
	HSK-A 63	20	120	26	35	52	42	M16x1	**220**
extra-long	HSK-A 63	3	160	9	19	12	12		**303**
	HSK-A 63	4	160	10	20	16	16		**304**
	HSK-A 63	5	160	11	21	20	20		**305**
	HSK-A 63	6	160	12	24	36	26	M5	**306**
	HSK-A 63	8	160	14	26	36	26	M6	**308**
	HSK-A 63	10	160	16	28	41	31	M8x1	**310**
	HSK-A 63	12	160	18	30	47	37	M10x1	**312**
	HSK-A 63	14	160	20	32	47	37	M10x1	**314**
	HSK-A 63	16	160	22	34	50	40	M12x1	**316**
	HSK-A 63	18	160	24	36	50	40	M12x1	**318**
	HSK-A 63	20	160	26	38	52	42	M16x1	**320**

→ Min. clamping depth, Page 210


Stop screw IK

83 950 ...


Stop screw IK

83 950 ...

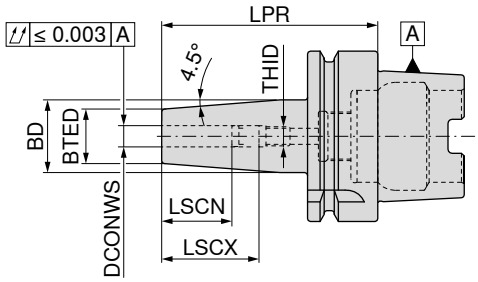
Spare parts

DCONWS				
3 - 5	M6x14 - SW2	**417**		
6			M5x12.5 - SW2.5	**418**
8			M6x12.5 - SW3	**419**
10			M8x1x13.5 - SW3	**420**
12 - 14			M10x1x13.5 - SW5	**421**
16 - 18			M12x1x13.5 - SW5	**422**
20			M16x1x13.5 - SW8	**424**

Shrink fit adapters 4.5°

▲ for solid carbide and HSS shanks with h6 tolerance or better
▲ also available with Balluff chip **on request**

TG







G 2.5 n_{max} 25000

84 304 ...

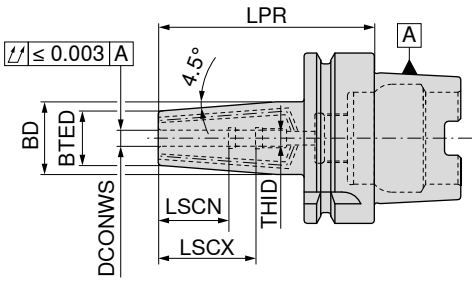
	Adapter	DCONWS mm	LPR mm	BTED mm	BD mm	LSCX mm	LSCN mm	THID	
short	HSK-A 63	3	80	10	15	22	12	M6	**103**
	HSK-A 63	4	80	15	22	26	16	M6	**104**
	HSK-A 63	5	80	15	22	30	20	M6	**105**
	HSK-A 63	6	80	21	27	36	26	M5	**106**
	HSK-A 63	8	80	21	27	36	26	M6	**108**
	HSK-A 63	10	85	24	32	41	31	M8x1	**110**
	HSK-A 63	12	90	24	32	47	37	M10x1	**112**
	HSK-A 63	14	90	27	34	47	37	M10x1	**114**
	HSK-A 63	16	95	27	34	50	40	M12x1	**116**
	HSK-A 63	18	95	33	42	50	40	M12x1	**118**
	HSK-A 63	20	100	33	42	52	42	M16x1	**120**
	HSK-A 63	25	115	44	53	58	48	M16x1	**125**
	HSK-A 63	32	120	44	53	62	52	M16x1	**132**
medium length	HSK-A 63	3	120	10	20	12	12		**203**
	HSK-A 63	4	120	15	22	16	16		**204**
	HSK-A 63	5	120	15	22	20	20		**205**
	HSK-A 63	6	120	21	27	36	26	M5	**206**
	HSK-A 63	8	120	21	27	36	26	M6	**208**
	HSK-A 63	10	120	24	32	41	31	M8x1	**210**
	HSK-A 63	12	120	24	32	47	37	M10x1	**212**
	HSK-A 63	14	120	27	34	47	37	M10x1	**214**
	HSK-A 63	16	120	27	34	50	40	M12x1	**216**
	HSK-A 63	18	120	33	42	50	40	M12x1	**218**
	HSK-A 63	20	120	33	42	52	42	M16x1	**220**
	HSK-A 63	25	120	44	53	58	48	M16x1	**225**
extra-long	HSK-A 63	3	160	10	20	12	12		**303**
	HSK-A 63	4	160	15	22	16	16		**304**
	HSK-A 63	5	160	15	22	20	20		**305**
	HSK-A 63	6	160	21	27	36	26	M5	**306**
	HSK-A 63	8	160	21	27	36	26	M6	**308**
	HSK-A 63	10	160	24	32	41	31	M8x1	**310**
	HSK-A 63	12	160	24	32	47	37	M10x1	**312**
	HSK-A 63	14	160	27	34	47	37	M10x1	**314**
	HSK-A 63	16	160	27	34	50	40	M12x1	**316**
	HSK-A 63	18	160	33	42	50	40	M12x1	**318**
	HSK-A 63	20	160	33	42	52	42	M16x1	**320**
	HSK-A 63	25	160	44	53	62	52	M16x1	**325**
extra long	HSK-A 63	6	200	21	27	36	26	M5	**406**
	HSK-A 63	8	200	21	27	36	26	M6	**408**
	HSK-A 63	10	200	24	32	41	31	M8x1	**410**
	HSK-A 63	12	200	24	32	47	37	M10x1	**412**
	HSK-A 63	14	200	27	34	47	37	M10x1	**414**
	HSK-A 63	16	200	27	34	50	40	M12x1	**416**
	HSK-A 63	18	200	33	42	50	40	M12x1	**418**
	HSK-A 63	20	200	33	42	52	42	M16x1	**420**
	HSK-A 63	25	200	44	53	62	52	M16x1	**425**
	HSK-A 63	32	200	44	53	62	52	M16x1	**432**

→ Min. clamping depth, Page 210

Shrink fit adapters 4.5°

▲ for solid carbide and HSS shanks with h6 tolerance or better
▲ also available with Balluff chip **on request**

TG







G 2.5 n_{max} 25000

84 316 ...

	Adapter	DCONWS mm	LPR mm	BTED mm	BD mm	LSCX mm	LSCN mm	THID	
short	HSK-A 63	3	80	10	15	28	12	M6	**103**
	HSK-A 63	4	80	15	22	28	16	M6	**104**
	HSK-A 63	5	80	15	22	30	20	M6	**105**
	HSK-A 63	6	80	21	27	36	26	M5	**106**
	HSK-A 63	8	80	21	27	36	26	M6	**108**
	HSK-A 63	10	85	24	32	41	31	M8x1	**110**
	HSK-A 63	12	90	24	32	47	37	M10x1	**112**
	HSK-A 63	14	90	27	34	47	37	M10x1	**114**
	HSK-A 63	16	95	27	34	50	40	M12x1	**116**
	HSK-A 63	18	95	33	42	50	40	M12x1	**118**
	HSK-A 63	20	100	33	42	52	42	M16x1	**120**
	HSK-A 63	25	115	44	53	58	48	M16x1	**125**
	HSK-A 63	32	120	44	53	62	52	M16x1	**132**

→ Min. clamping depth, Page 210



Stop screw IK

83 950 ...



Stop screw IK

83 950 ...



Sealing screw

83 950 ...

Spare parts DCONWS						
3 - 5	M6x14 - SW2	**417**			M2x6	**512**
6			M5x12.5 - SW2.5	**418**	M2x6	**512**
8			M6x12.5 - SW3	**419**	M2x6	**512**
10			M8x1x13.5 - SW3	**420**	M2x6	**512**
12 - 14			M10x1x13.5 - SW5	**421**	M2x6	**512**
16 - 18	M12x1 - SW5	**510**			M2x6	**512**
20 - 32	M16x1 - SW5	**511**			M2x6	**512**



Shrink fit extension
171



Coolant transfer pipe
120



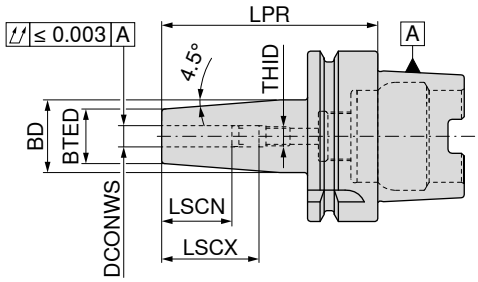
Others

16

Shrink fit adapters 4.5°

▲ for solid carbide and HSS shanks with h6 tolerance or better
▲ also available with Balluff chip **on request**

TG







G 2.5 n_{max} 25000

84 305 ...

	Adapter	DCONWS mm	LPR mm	BTED mm	BD mm	LSCX mm	LSCN mm	THID	
short	HSK-A 100	6	85	21	27	36	26	M5	**106**
	HSK-A 100	8	85	21	27	36	26	M6	**108**
	HSK-A 100	10	90	24	32	41	31	M8x1	**110**
	HSK-A 100	12	95	24	32	47	37	M10x1	**112**
	HSK-A 100	14	95	27	34	47	37	M10x1	**114**
	HSK-A 100	16	100	27	34	50	40	M12x1	**116**
	HSK-A 100	18	100	33	42	50	40	M12x1	**118**
	HSK-A 100	20	105	33	42	52	42	M16x1	**120**
	HSK-A 100	25	115	44	53	58	48	M16x1	**125**
	HSK-A 100	32	120	44	53	62	52	M16x1	**132**
medium length	HSK-A 100	6	120	21	27	36	26	M5	**206**
	HSK-A 100	8	120	21	27	36	26	M6	**208**
	HSK-A 100	10	120	24	32	41	31	M8x1	**210**
	HSK-A 100	12	120	24	32	47	37	M10x1	**212**
	HSK-A 100	14	120	27	34	47	37	M10x1	**214**
	HSK-A 100	16	120	27	34	50	40	M12x1	**216**
	HSK-A 100	18	120	33	42	50	40	M12x1	**218**
	HSK-A 100	20	120	33	42	52	42	M16x1	**220**
	HSK-A 100	25	120	44	53	58	48	M16x1	**225**
extra-long	HSK-A 100	6	160	21	27	36	26	M5	**306**
	HSK-A 100	8	160	21	27	36	26	M6	**308**
	HSK-A 100	10	160	24	32	41	31	M8x1	**310**
	HSK-A 100	12	160	24	32	47	37	M10x1	**312**
	HSK-A 100	14	160	27	34	47	37	M10x1	**314**
	HSK-A 100	16	160	27	34	50	40	M12x1	**316**
	HSK-A 100	18	160	33	42	50	40	M12x1	**318**
	HSK-A 100	20	160	33	42	52	42	M16x1	**320**
	HSK-A 100	25	160	44	53	58	48	M16x1	**325**
	HSK-A 100	32	160	44	53	62	52	M16x1	**332**

→ Min. clamping depth, Page 210

Version for MMS heat shrink adapter 4.5° – 1 and 2-channel





TG

84 318	HSK-63	1-channel
84 318	HSK-100	1-channel

This article can be found in our online shop at cuttingtools.ceratizit.com





TG

84 319	HSK-63	2-channel
84 319	HSK-100	2-channel

This article can be found in our online shop at cuttingtools.ceratizit.com

Spare parts heat shrink adapter 4.5°


Stop screw IK

Spare parts DCONWS		83 950 ...
6	M5x12.5 - SW2.5	418
8	M6x12.5 - SW3	419
10	M8x1x13.5 - SW3	420
12 - 14	M10x1x13.5 - SW5	421
16 - 18	M12x1x13.5 - SW5	422
20 - 32	M16x1x13.5 - SW8	424


Shrink fit extension 171


Coolant transfer pipe 120


Others

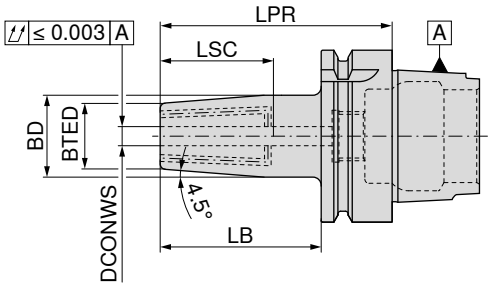
16

Shrink fit adapters 4.5°

▲ Version for high clamping force
▲ for solid carbide and HSS shanks with h6 tolerance or better
▲ also available with Balluff chip **on request**

Scope of supply:
Holder with adjustable back stop

TG







G 2.5 n_{max} 25000

	Adapter	DCONWS mm	LPR mm	BTED mm	BD mm	LB mm	LSC mm	84 717 ...
short	HSK-A 63	6	80	21	26	54	36.5	606
	HSK-A 63	8	80	21	26	54	36.5	608
	HSK-A 63	10	85	24	30	59	41.5	610
	HSK-A 63	12	90	24	30	64	46.5	612
	HSK-A 63	14	90	27	34	64	46.5	614
	HSK-A 63	16	95	27	34	69	49.5	616
	HSK-A 63	18	95	33	41	69	49.5	618
	HSK-A 63	20	100	33	41	74	51.5	620
	HSK-A 63	25	115	44	52	89	57.5	625
	HSK-A 63	32	120	44	52	94	61.5	632
	HSK-A 100	6	85	21	26	56	36.5	106
	HSK-A 100	8	85	21	26	56	36.5	108
	HSK-A 100	10	90	24	30	56	41.5	110
	HSK-A 100	12	95	24	30	66	46.5	112
	HSK-A 100	14	95	27	34	66	46.5	114
	HSK-A 100	16	100	27	34	71	49.5	116
	HSK-A 100	18	100	33	42	71	49.5	118
	HSK-A 100	20	105	33	42	76	51.5	120
	HSK-A 100	25	115	44	53	86	57.5	125
	HSK-A 100	32	120	44	53	91	61.5	132

→ Min. clamping depth, Page 210


Stop screw IK


Sealing screw

Spare parts DCONWS		62 950 ...		62 950 ...
6	M5x0.8x14	402	M3x6	411
8	M6x1x16	403	M3x6	411
10	M8x1x20	404	M3x6	411
12 - 18	M10x1x20	405	M3x6	411
20 - 32	M12x1x20	406	M4x8	412

Sealing screw for closing of two additional coolant holes.


Shrink fit extension 171


Coolant transfer pipe 120

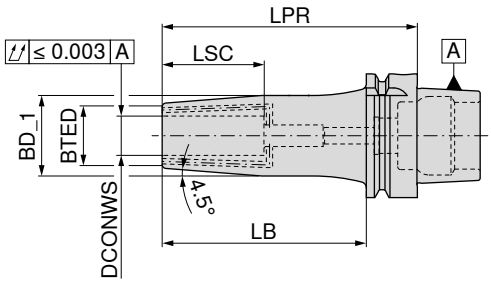

Others

Shrink fit adapters 4.5°

▲ Version for high clamping force
▲ for solid carbide and HSS shanks with h6 tolerance or better
▲ also available with Balluff chip **on request**

Scope of supply:
Holder with adjustable back stop

TG









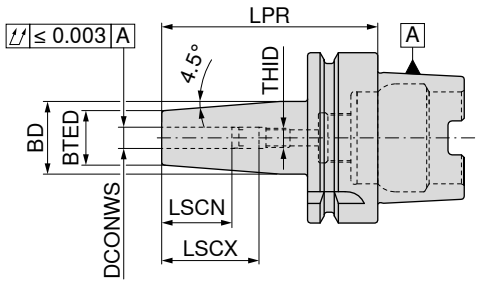
	Adapter	DCONWS mm	LPR mm	BTED mm	BD_1 mm	LB mm	LSC mm	G 2.5 n_{max} 25000 84 720 ...	G 2.5 n_{max} 25000 84 723 ...
long	HSK-A 63	6	130	21	27	104	36.5	606	
	HSK-A 63	8	130	21	27	104	36.5	608	
	HSK-A 63	10	130	24	32	104	41.5	610	
	HSK-A 63	12	130	24	32	104	46.5	612	
	HSK-A 63	14	130	27	34	104	46.5	614	
	HSK-A 63	16	130	27	34	104	49.5	616	
	HSK-A 63	18	130	33	41	104	49.5	618	
	HSK-A 63	20	130	33	41	104	51.5	620	
	HSK-A 100	6	130	21	27	101	36.5	106	
	HSK-A 100	8	130	21	27	101	36.5	108	
	HSK-A 100	10	130	24	32	101	41.5	110	
	HSK-A 100	12	130	24	32	101	46.5	112	
	HSK-A 100	14	130	27	34	101	46.5	114	
	HSK-A 100	16	130	27	34	101	49.5	116	
	HSK-A 100	18	130	33	41	101	49.5	118	
	HSK-A 100	20	130	33	41	101	51.5	120	
extra-long	HSK-A 63	6	160	21	27	134	36.5		606
	HSK-A 63	8	160	21	27	134	36.5		608
	HSK-A 63	10	160	24	32	134	41.5		610
	HSK-A 63	12	160	24	32	134	46.5		612
	HSK-A 63	14	160	27	34	134	46.5		614
	HSK-A 63	16	160	27	34	134	49.5		616
	HSK-A 63	18	160	33	41	134	49.5		618
	HSK-A 63	20	160	33	41	134	51.5		620
	HSK-A 63	25	160	44	52	134	57.5		625
	HSK-A 100	6	160	21	27	131	36.5		106
	HSK-A 100	8	160	21	27	131	36.5		108
	HSK-A 100	10	160	24	32	131	41.5		110
	HSK-A 100	12	160	24	32	131	46.5		112
	HSK-A 100	14	160	27	34	131	46.5		114
	HSK-A 100	16	160	27	34	131	49.5		116
	HSK-A 100	18	160	33	41	131	49.5		118
	HSK-A 100	20	160	33	41	131	51.5		120
	HSK-A 100	25	160	44	53	131	57.5		125
	HSK-A 100	32	160	44	53	131	61.5		132

→ Min. clamping depth, Page 210

Shrink fit adapters 4.5°

▲ for solid carbide and HSS shanks to h6 tolerance or better
▲ also available with Balluff chip **on request**

TG







G 2.5 n_{max} 25000

82 310 ...

	Adapter	DCONWS mm	LPR mm	BTED mm	BD mm	LSCX mm	LSCN mm	THID	
short	HSK-A 63	3	80	10	15	22	12		**10357**
	HSK-A 63	4	80	15	22	26	16		**10457**
	HSK-A 63	5	80	15	22	30	20		**10557**
	HSK-A 63	6	80	21	27	36	26	M5	**10657**
	HSK-A 63	8	80	21	27	36	26	M6	**10857**
	HSK-A 63	10	85	24	32	41	31	M8x1	**11057**
	HSK-A 63	12	90	24	32	47	37	M10x1	**11257**
	HSK-A 63	14	90	27	34	47	37	M10x1	**11457**
	HSK-A 63	16	95	27	34	50	40	M12x1	**11657**
	HSK-A 63	18	95	33	42	50	40	M12x1	**11857**
	HSK-A 63	20	100	33	42	52	42	M16x1	**12057**
	HSK-A 63	25	115	44	53	58	48	M16x1	**12557**
	HSK-A 63	32	120	44	53	62	52	M16x1	**13257**
medium length	HSK-A 63	3	120	10	20	12	12		**20357**
	HSK-A 63	4	120	15	22	16	16		**20457**
	HSK-A 63	5	120	15	22	20	20		**20557**
	HSK-A 63	6	120	21	27	36	26	M5	**20657**
	HSK-A 63	8	120	21	27	36	26	M6	**20857**
	HSK-A 63	10	120	24	32	41	31	M8x1	**21057**
	HSK-A 63	12	120	24	32	47	37	M10x1	**21257**
	HSK-A 63	14	120	27	34	47	37	M10x1	**21457**
	HSK-A 63	16	120	27	34	50	40	M12x1	**21657**
	HSK-A 63	18	120	33	42	50	40	M12x1	**21857**
	HSK-A 63	20	120	33	42	52	42	M16x1	**22057**
	HSK-A 63	25	120	44	53	58	48	M16x1	**22557**
extra-long	HSK-A 63	3	160	10	20	12	12		**30357**
	HSK-A 63	4	160	15	22	16	16		**30457**
	HSK-A 63	5	160	15	22	20	20		**30557**
	HSK-A 63	6	160	21	27	36	26	M5	**30657**
	HSK-A 63	8	160	21	27	36	26	M6	**30857**
	HSK-A 63	10	160	24	32	41	31	M8x1	**31057**
	HSK-A 63	12	160	24	32	47	37	M10x1	**31257**
	HSK-A 63	14	160	27	34	47	37	M10x1	**31457**
	HSK-A 63	16	160	27	34	50	40	M12x1	**31657**
	HSK-A 63	18	160	33	42	50	40	M12x1	**31857**
	HSK-A 63	20	160	33	42	52	42	M16x1	**32057**
	HSK-A 63	25	160	44	53	62	52	M16x1	**32557**

→ Min. clamping depth, Page 210



Stop screw IK

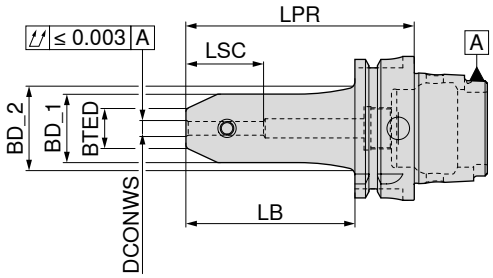
82 950 ...

Spare parts

DCONWS		
3 - 5	M6x16 - SW3	**30100**
6	M5x16 - SW2.5	**30000**
8	M6x16 - SW3	**30100**
10	M8x1x16 - SW4	**30200**
12 - 14	M10x1x14 - SW5	**30300**
20 - 32	M16x1x16 - SW8	**30500**

Cylindrical shank adapter (Weldon)

▲ For shanks according to DIN 6535 HB / 1835 B with lateral clamping flat
▲ also available with Balluff chip **on request**





NEW NEW



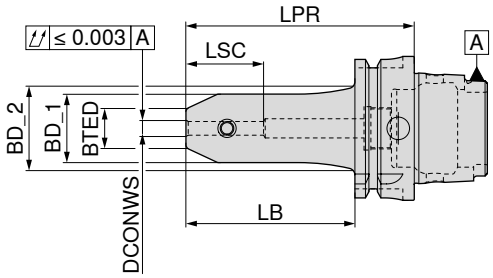

	Adapter	DCONWS $_{H5}$	LPR	BTED	BD_1	BD_2	LB	LSC	G 2.5 n_{max} 25000	G 2.5 n_{max} 25000
		mm	mm	mm	mm	mm	mm	mm	**82 740 ...**	**82 741 ...**
short	HSK-A 63	6	65	17	30		39	34	**10657**	**10657**
	HSK-A 63	8	65	20	32		39	34		**10857**
	HSK-A 63	8	65	20	32		39	34	**10857**	
	HSK-A 63	10	65	25	35		39	39	**11057**	**11057**
	HSK-A 63	12	80	30	42		54	44	**11257**	**11257**
	HSK-A 63	14	80	32	45		54	44	**11457**	**11457**
	HSK-A 63	16	80	36	48		54	47	**11657**	**11657**
	HSK-A 63	18	80	38	48		54	47	**11857**	**11857**
	HSK-A 63	20	80	40	52		54	49	**12057**	**12057**
	HSK-A 63	25	110	45	63		84	54	**12557**[1)]	**12557**[1)]
	HSK-A 63	32	110	52	72		84	58	**13257**[1)]	**13257**[1)]
	HSK-A 100	6	80	17	30		51	34	**10655**	**10655**
	HSK-A 100	8	80	20	32		51	34	**10855**	**10855**
	HSK-A 100	10	80	25	35		51	39	**11055**	**11055**
	HSK-A 100	12	80	30	42		51	44	**11255**	**11255**
	HSK-A 100	14	80	32	45		51	44	**11455**	**11455**
	HSK-A 100	16	100	36	48		71	47	**11655**	**11655**
	HSK-A 100	18	100	38	48		71	47	**11855**	**11855**
	HSK-A 100	20	100	40	52		71	49	**12055**	**12055**
	HSK-A 100	25	100	45	65		71	54	**12555**[1)]	**12555**[1)]
	HSK-A 100	32	100	52	72		71	58	**13255**[1)]	**13255**[1)]
	HSK-A 100	40	110	60	80		81	68	**14055**[1)]	**14055**[1)]
medium length	HSK-A 63	6	100	17	30	36.2	74	34	**20657**	**20657**
	HSK-A 63	8	100	20	32	38.2	74	34	**20857**	**20857**
	HSK-A 63	10	100	25	35	41.2	74	39	**21057**	**21057**
	HSK-A 63	12	100	30	42		74	44	**21257**	**21257**
	HSK-A 63	14	100	32	45		74	44	**21457**	**21457**
	HSK-A 63	16	100	36	48		74	47	**21657**	**21657**
	HSK-A 63	18	100	38	48		74	47	**21857**	**21857**
	HSK-A 63	20	100	40	52		74	49	**22057**	**22057**
long	HSK-A 63	6	130	17	30	36.2	104	34	**30657**	**30657**
	HSK-A 63	8	130	20	32	38.2	104	34	**30857**	**30857**
	HSK-A 63	10	130	25	35	41.2	104	39	**31057**	**31057**
	HSK-A 63	12	130	30	42	48.2	104	44	**31257**	**31257**
	HSK-A 63	14	130	32	45	50.5	104	44	**31457**	**31457**
	HSK-A 63	16	130	36	48	50.1	104	47	**31657**	**31657**
	HSK-A 63	18	130	38	48	50.1	104	47	**31857**	**31857**
	HSK-A 63	20	130	40	52		104	49	**32057**	**32057**
	HSK-A 63	25	130	45	63		104	54	**32557**[1)]	**32557**[1)]
	HSK-A 63	32	130	52	72		104	58	**33257**[1)]	**33257**[1)]

1) Version with two grubscrews

Continued on next page

Cylindrical shank adapter (Weldon)

▲ For shanks according to DIN 6535 HB / 1835 B with lateral clamping flat
▲ also available with Balluff chip **on request**





NEW NEW

	Adapter	DCONWS $_{H5}$ mm	LPR mm	BTED mm	BD_1 mm	BD_2 mm	LB mm	LSC mm	G 2.5 n_{max} 25000 **82 740 ...**	G 2.5 n_{max} 25000 **82 741 ...**
extra-long	HSK-A 63	6	160	17	30	36.2	134	34	**40657**	**40657**
	HSK-A 63	8	160	20	32	38.2	134	34	**40857**	**40857**
	HSK-A 63	10	160	25	35	41.2	134	39	**41057**	**41057**
	HSK-A 63	12	160	30	42	48.2	134	44	**41257**	**41257**
	HSK-A 63	14	160	32	45	50.5	134	44	**41457**	**41457**
	HSK-A 63	16	160	36	48	50.1	134	47	**41657**	**41657**
	HSK-A 63	18	160	38	48	50.1	134	47	**41857**	**41857**
	HSK-A 63	20	160	40	52		134	49	**42057**	**42057**
	HSK-A 63	25	160	45	63		134	54	**42557**[1)]	**42557**[1)]
	HSK-A 100	6	160	17	30	38.2	131	34	**40655**	**40655**
	HSK-A 100	8	160	20	32	40.2	131	34	**40855**	**40855**
	HSK-A 100	10	160	25	35	43.2	131	39	**41055**	**41055**
	HSK-A 100	12	160	30	42	50.2	131	44	**41255**	**41255**
	HSK-A 100	14	160	32	45	53.2	131	44	**41455**	**41455**
	HSK-A 100	16	160	36	48	56.2	131	47	**41655**	**41655**
	HSK-A 100	18	160	38	48	56.2	131	47	**41855**	**41855**
	HSK-A 100	20	160	40	52	60.2	131	49	**42055**	**42055**
	HSK-A 100	25	160	45	65	73.2	131	54	**42555**[1)]	**42555**[1)]
	HSK-A 100	32	160	52	72	79.5	134	58	**43255**[1)]	**43255**[1)]

1) Version with two grubscrews

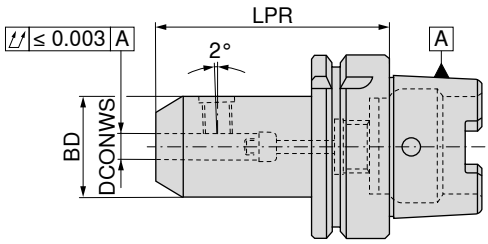
The M3 screws with WAF 1.5 mm supplied can be used to seal the two additional coolant holes.




Coolant transfer pipe 120 | Others

Cylindrical Shank Adapter (Whistle Notch)

▲ For shanks according to DIN 6535 HE / 1835 E with angled clamping flat
▲ also available with Balluff chip **on request**





NEW



G 2.5 n_{max} 25000

82 742 ...

	Adapter	DCONWS $_{H4}$ mm	LPR mm	BD mm	
short	HSK-A 63	6	80	25	**10657**
	HSK-A 63	8	80	28	**10857**
	HSK-A 63	10	80	35	**11057**
	HSK-A 63	12	90	42	**11257**
	HSK-A 63	14	90	44	**11457**
	HSK-A 63	16	100	48	**11657**
	HSK-A 63	18	100	50	**11857**
	HSK-A 63	20	100	52	**12057**
	HSK-A 63	25	110	65	**12557**[1)]
	HSK-A 63	32	110	72	**13257**[1)]
	HSK-A 100	6	90	25	**10655**
	HSK-A 100	8	90	28	**10855**
	HSK-A 100	10	90	35	**11055**
	HSK-A 100	12	100	42	**11255**
	HSK-A 100	14	100	44	**11455**
	HSK-A 100	16	100	48	**11655**
	HSK-A 100	18	100	50	**11855**
	HSK-A 100	20	110	52	**12055**
	HSK-A 100	25	120	65	**12555**[1)]
	HSK-A 100	32	120	72	**13255**[1)]
	HSK-A 100	40	120	80	**14055**[1)]

1) Version with two grubscrews



Set Screw

62 950 ...

Spare parts DCONWS		
6	M6x10	**006**
8	M8x10	**008**
10	M10x12	**010**
12 - 14	M12x16	**012**
16 - 18	M14x16	**016**
20	M16x16	**020**
25	M18x2x20	**025**
32 - 40	M20x2x20	**032**



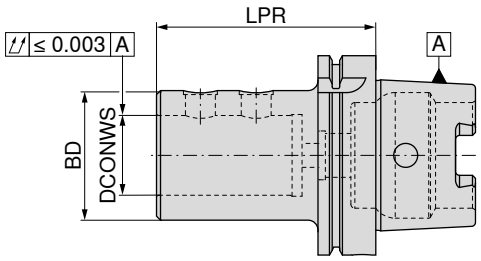
Coolant transfer pipe
120



Others

Indexable insert drill adapter ISO 12164 HSK Form A

▲ also available with Balluff chip **on request**







G 6.3 n_{max} 15000

10 842 ...

Adapter	DCONWS mm	LPR mm	BD mm	
HSK-A 63	20	80	40	**320**
HSK-A 63	25	90	45	**325**
HSK-A 63	32	90	52	**332**
HSK-A 63	40	110	65	**340**
HSK-A 100	20	90	40	**420**
HSK-A 100	25	100	45	**425**
HSK-A 100	32	100	52	**432**
HSK-A 100	40	110	65	**440**
HSK-A 100	50	120	75	**450**

Suitable eccentric sleeves can be found in → **Chapter 3, Indexable insert drilling**, of the metric eCatalog 2024 and in the online shop at cuttingtools.ceratizit.com



Set Screw

10 950 ...

Spare parts DCONWS		
20	M10x1x10	**001**
25 - 32	M12x1x10	**002**
40 - 50	M16x1x12	**003**

Accessories





Coolant transfer pipe 120

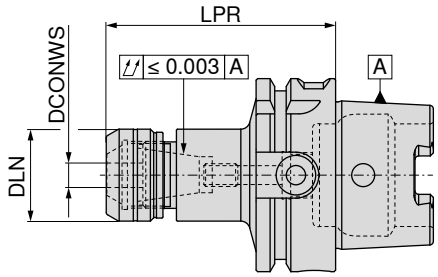
Others

ER Precision Collet chuck – PCC

- ▲ For standard or sealing disc lock nuts
- ▲ Maximum clamping range covered according to ISO tolerance field H10
- ▲ Roll key required for clamping
- ▲ p_{max} = 100 bar
- ▲ also available with Balluff chip **on request**

Scope of supply:

Base body with lock nut and backstop screw







G 2.5 n_{max} 25000

82 700 ...

Adapter	DCONWS mm	LPR mm	DLN mm	for collet	Torque moment / Clamping force Nm	
HSK-A 63	1 - 10	75	30	426E (ER16)	40 / 2-70	**11057**
HSK-A 63	1 - 10	100	30	426E (ER16)	40 / 2-70	**21057**
HSK-A 63	2 - 16	75	40	430E (ER25)	80 / 10-160	**11657**
HSK-A 63	2 - 16	100	40	430E (ER25)	80 / 10-160	**21657**
HSK-A 63	2 - 20	75	50	470E (ER32)	125 / 15-250	**12057**
HSK-A 63	2 - 20	100	50	470E (ER32)	125 / 15-250	**22057**
HSK-A 100	2 - 16	100	40	430E (ER25)	80 / 10-160	**21655**
HSK-A 100	2 - 16	160	40	430E (ER25)	80 / 10-160	**41655**
HSK-A 100	2 - 20	100	50	470E (ER32)	125 / 15-250	**22055**
HSK-A 100	2 - 20	160	50	470E (ER32)	125 / 15-250	**42055**

Dimension LPR is 4.5 mm longer for ER16 and ER32 and 5.0 mm longer for ER25 when using thru coolant lock nut

Spare parts for collet	 Lock nut IK	 Lock nut		 Backstop screw PCC 2		 Backstop screw PCC 1
	82 950 ...	**82 950 ...**		**82 950 ...**		**82 950 ...**
426E (ER16)	**11000**	**01000**			M8X3.0	**00100**
430E (ER25)	**11600**	**01600**	M18x1.5	**00200**	M8x8	**00300**
470E (ER32)	**12000**	**02000**	M18x1.5	**00200**	M8x8	**00300**

Accessories





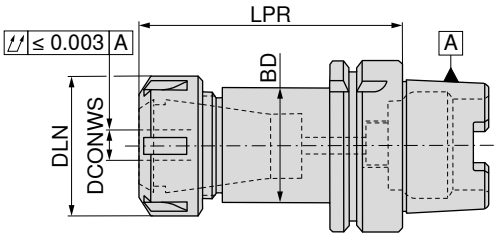
ER collet	Sealing ring	Roll key
175–183, 185–186	188	193

16

ER Collet chuck

▲ also available with Balluff chip **on request**

Scope of supply:
Toolholder including nut





NEW



G 2.5 n_{max} 25000

82 743 ...

	Adapter	DCONWS mm	LPR mm	DLN mm	TQX Nm	for collet	
medium length	HSK-A 63	1 - 10	100	22	8 - 56	426E (ER16 mini)	**21157**
	HSK-A 63	1 - 10	100	32	8 - 56	426E (ER16)	**21057**
	HSK-A 63	1 - 16	100	42	24 - 104	430E (ER25)	**21657**
	HSK-A 63	2 - 20	100	50	24 - 136	470E (ER32)	**22057**
	HSK-A 63	3 - 26	100	63	176	472E (ER40)	**22657**
long	HSK-A 100	1 - 10	100	32	8 - 56	426E (ER16)	**21055**
	HSK-A 100	1 - 16	100	42	24 - 104	430E (ER25)	**21655**
	HSK-A 100	2 - 20	100	50	24 - 136	470E (ER32)	**22055**
	HSK-A 100	3 - 26	100	63	176	472E (ER40)	**22655**
extra-long	HSK-A 63	1 - 10	160	22	8 - 56	426E (ER16 mini)	**41157**
	HSK-A 63	1 - 10	160	32	8 - 56	426E (ER16)	**41057**
	HSK-A 63	1 - 16	160	42	24 - 104	430E (ER25)	**41657**
	HSK-A 63	2 - 20	160	50	24 - 136	470E (ER32)	**42057**
	HSK-A 63	3 - 26	160	63	176	472E (ER40)	**42657**
	HSK-A 100	1 - 10	160	32	8 - 56	426E (ER16)	**41055**
	HSK-A 100	1 - 16	160	42	24 - 104	430E (ER25)	**41655**
	HSK-A 100	2 - 20	160	50	24 - 136	470E (ER32)	**42055**
	HSK-A 100	3 - 26	160	63	176	472E (ER40)	**42655**
extra long	HSK-A 100	1 - 10	200	32	8 - 56	426E (ER16)	**51055**
	HSK-A 100	1 - 16	200	42	24 - 104	430E (ER25)	**51655**
	HSK-A 100	2 - 20	200	50	24 - 136	470E (ER32)	**52055**
	HSK-A 100	3 - 26	200	63	176	472E (ER40)	**52655**

Dimension LPR is 5.0 mm longer for ER16, ER25 and ER32, and 5.5 mm for ER40 when using thru coolant lock nuts.

Spare parts ER collet chucks

	 Lock nut IK	 Lock nut	 Y clamping key	 Mini lock nut	 Mini IK	 Stop screw IK
	83 950 ...	**62 950 ...**	**83 357 ...**	**62 950 ...**	**83 950 ...**	**82 950 ...**
Spare parts for collet						
426E (ER16 mini)				**066**	**058**	**30000**
426E (ER16)	**054**	**054**	**116**			
430E (ER25)	**055**	**055**	**125**			
470E (ER32)	**056**		**132**			
472E (ER40)	**057**		**140**			



ER collet
175–183, 186



Coolant transfer pipe
120



Others

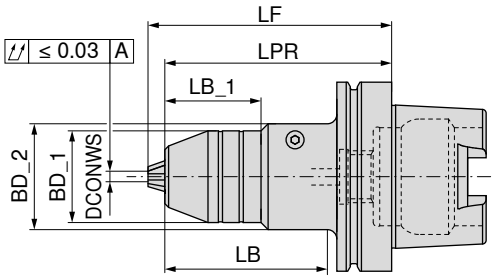
16

Short drill chuck – NC 2010

- ▲ Independent of direction of rotation
- ▲ Torque Moment = 12 Nm
- ▲ also available with Balluff chip **on request**

Scope of supply:

Toolholder including clamping key SW4







G 6.3 n_{max} 10000

84 716 ...

Adapter	DCONWS mm	BD_1 mm	BD_2 mm	LB_1 mm	LB mm	LPR mm	LF mm	
HSK-A 63	0.5 - 13	48.5	56	50.9		126.0	116.9	**613**
HSK-A 63	2.5 - 16	51.0	56	50.9		127.5	116.9	**616**
HSK-A 100	0.5 - 13	48.5	56	50.9	86	129.0	120.0	**113**
HSK-A 100	2.5 - 16	51.0	56	50.9	86	130.5	120.0	**116**

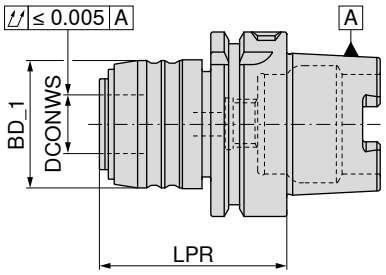
Can be used with G 2.5 to 30,000 1/min by subsequent balancing!

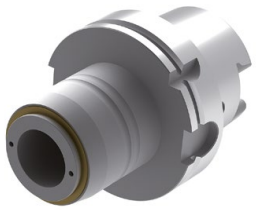


Others

Synchro tapping chuck with minimum length compensation

▲ For collets according to DIN 6499
▲ With length compensation under tension and under compression (LZD)
▲ $p_{max.}$ = 50 bar
▲ also available with Balluff chip **on request**







83 724 ...

Adapter	cutting range	SZID	DCONWS mm	LPR mm	BD_1 mm	LZD± mm	
HSK-A 63	M3 - M12	1	20	64	43	1.0 / 0.2	**612**
HSK-A 63	M6 - M20	2	32	97	60	1.0 / 0.2	**620**
HSK-A 100	M3 - M12	1	20	70	43	1.0 / 0.2	**112**
HSK-A 100	M6 - M20	2	32	91	60	1.0 / 0.2	**120**

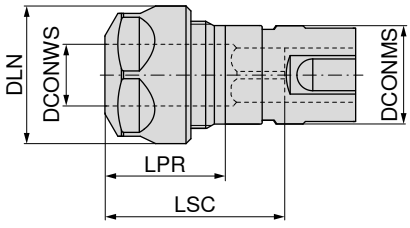

Coolant transfer pipe
120


Others

Insert for synchro quick change tapping chuck with minimum length compensation

▲ SZID = for insert size

Scope of supply:
Includes lock nut







83 608 ...

SZID	DCONWS mm	cutting range	LPR mm	DLN mm	LSC mm	for collet	DCONMS mm	
1	2 - 10	M3 - M12	24	28	42	426E (ER16)	20	**012** [1]
2	2 - 16	M6 - M20	28	42	59	430E (ER25)	32	**020**

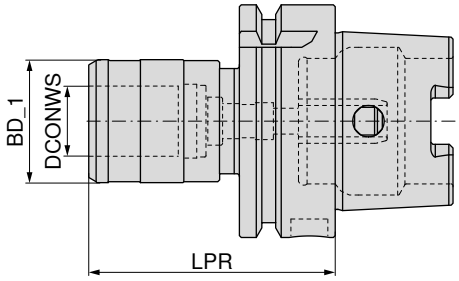
1) with 6 position lock nut

Spare parts for synchronous tapping chucks

		 Lock nut		 Lock nut IK		 Lock nut		 Y clamping key	
		62 950 ...		**83 950 ...**		**62 950 ...**		**83 357 ...**	
Spare parts for Article no.									
83 608 012	M22x1.5 - SW25	**044**		M22x1.5	**054**	M22x1.5	**054**		**116**
83 608 020				M32x1.5	**055**	M32x1.5	**055**		**125**

Quick change tap chuck with length compensation

▲ With length compensation under tension and compression (LZD)
▲ also available with Balluff chip **on request**







Adapter	SZID	LPR mm	BD_1 mm	DCONWS mm	LZD± mm	**83 712 ...**
HSK-A 63	01	72	41	19	7.5	**612**
HSK-A 63	02	110	60	31	10	**620**
HSK-A 100	01	80	41	19	7.5	**112**
HSK-A 100	02	100	60	31	10	**120**

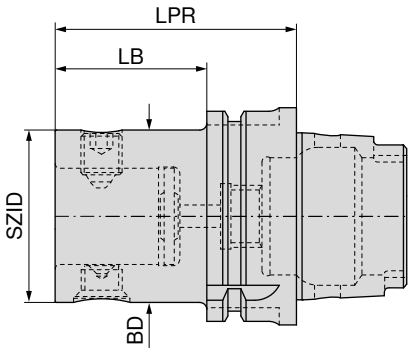
 Collet 195, 197–199

 Coolant transfer pipe 120

 Others

Adapter with ABS Connection

▲ also available with Balluff chip **on request**







G 6.3 n_{max} 10000

84 200 ...

Adapter	KOMET no.	SZID	BD inch	LPR inch	LB inch	
HSK-A 63	A06 30120	ABS 25	0.984	1.969	0.945	**06390**
HSK-A 63	A06 30130	ABS 32	1.260	1.969	0.945	**06389**
HSK-A 63	A06 30140	ABS 40	1.575	2.362	1.339	**06388**
HSK-A 63	A06 30150	ABS 50	1.969	2.756	1.732	**06397**
HSK-A 63	A06 30160	ABS 63	2.480	3.150	2.126	**06396**
HSK-A 63	A06 30170	ABS 80	3.150	3.937	2.913	**06392**
HSK-A 100	A06 50120	ABS 25	0.984	2.362	1.220	**10090**
HSK-A 100	A06 50130	ABS 32	1.260	2.362	1.220	**10089**
HSK-A 100	A06 50140	ABS 40	1.575	3.150	2.008	**10088**
HSK-A 100	A06 50150	ABS 50	1.969	3.150	2.008	**10097**
HSK-A 100	A06 50160	ABS 63	2.480	3.150	2.008	**10096**
HSK-A 100	A06 50170	ABS 80	3.150	3.543	2.402	**10092**
HSK-A 100	A06 50180	ABS 100	3.937	3.937	2.795	**10091**

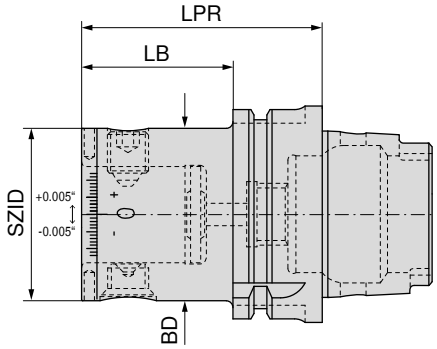
Eccentric adjuster with ABS Connection

▲ Adjustment ±0.010 inch on diameter

▲ also available with Balluff chip **on request**

Scope of supply:

Eccentric adjuster with adjuster key Ø 2.8 mm







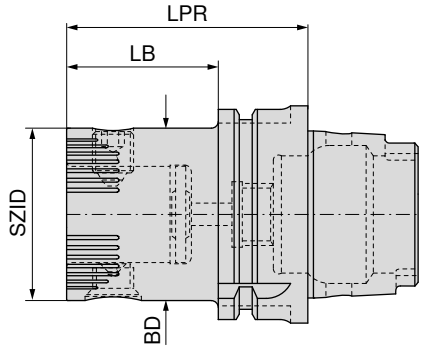
84 203 ...

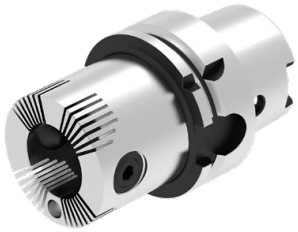
Adapter	KOMET no.	SZID	BD inch	LPR inch	LB inch	
HSK-A 63	A06 36730	ABS 50	1.969	2.756	1.555	**06397**
HSK-A 100	A06 56730	ABS 50	1.969	2.972	1.831	**10097**
HSK-A 100	A06 56740	ABS 63	2.480	3.150	2.008	**10096**

16

Torsional vibration dampers with ABS Connection

▲ also available with Balluff chip **on request**







Adapter	KOMET no.	SZID	BD inch	LPR inch	LB inch	84 206 ...
HSK-A 63	A06 30251	ABS 50	1.969	2.756	1.732	**06397**
HSK-A 63	A06 30261	ABS 63	2.480	3.150	2.126	**06396**
HSK-A 63	A06 30270	ABS 80	3.150	3.937	2.913	**06392**
HSK-A 100	A06 50251	ABS 50	1.969	3.150	2.008	**10097**
HSK-A 100	A06 50261	ABS 63	2.480	3.150	2.008	**10096**
HSK-A 100	A06 50270	ABS 80	3.150	3.543	2.402	**10092**


Clamping screw


Taper screw

Spare parts SZID	84 950 ...	84 950 ...
ABS 50	**20300**	**20400**
ABS 63	**25500**	**27300**
ABS 80	**25600**	**25100**

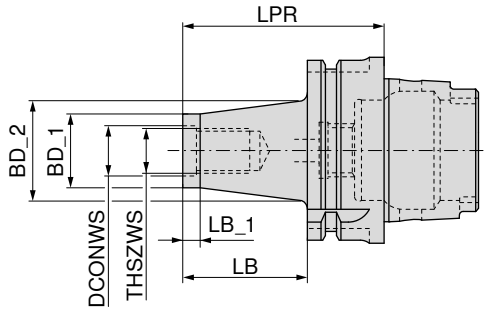

Coolant transfer pipe 120


Extension 152


Others

Adapter for milling cutters with threaded end

▲ also available with Balluff chip **on request**







G 2.5 n_{max} 30000

56 714 ...

Adapter	THSZWS	DCONWS mm	LB mm	BD_1 mm	BD_2 mm	LB_1 mm	LPR mm	
HSK-A 63	M8	8.5	25	13.8	15	12	51	**081**
HSK-A 63	M8	8.5	50	13.8	23	12	76	**082**
HSK-A 63	M8	8.5	75	13.8	25	12	101	**083**
HSK-A 63	M8	8.5	100	13.8	30	12	126	**084**
HSK-A 63	M10	10.5	25	18.0	23	12	51	**101**
HSK-A 63	M10	10.5	50	18.0	25	12	76	**102**
HSK-A 63	M10	10.5	75	18.0	30	12	101	**103**
HSK-A 63	M10	10.5	100	18.0	35	12	126	**104**
HSK-A 63	M12	12.5	25	21.0	24	12	51	**121**
HSK-A 63	M12	12.5	50	21.0	30	12	76	**122**
HSK-A 63	M12	12.5	75	21.0	35	12	101	**123**
HSK-A 63	M12	12.5	100	21.0	38	12	126	**124**
HSK-A 63	M12	12.5	125	21.0	43	12	151	**125**
HSK-A 63	M12	12.5	150	21.0	45	12	176	**126**
HSK-A 63	M16	17.0	25	29.0	29	12	51	**161**
HSK-A 63	M16	17.0	50	29.0	34	12	76	**162**
HSK-A 63	M16	17.0	75	29.0	35	12	101	**163**
HSK-A 63	M16	17.0	100	29.0	40	12	126	**164**
HSK-A 63	M16	17.0	125	29.0	44	12	151	**165**
HSK-A 63	M16	17.0	150	29.0	48	12	176	**166**



Extension-Reduction set



Coolant transfer pipe

120



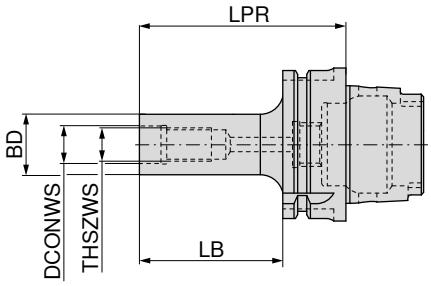
Others



16

Adapter for milling cutters with threaded end

▲ also available with Balluff chip **on request**







G 2.5 n_{max} 25000

56 719 ...

Adapter	THSZWS	DCONWS mm	BD mm	LB mm	LPR mm	
HSK-A 63	M8	8.5	13.8	50	76	**082**
HSK-A 63	M10	10.5	18.0	50	76	**102**
HSK-A 63	M10	10.5	18.0	100	126	**104**
HSK-A 63	M12	12.5	21.0	50	76	**122**
HSK-A 63	M12	12.5	21.0	100	126	**124**
HSK-A 63	M16	17.0	29.0	50	76	**162**
HSK-A 63	M16	17.0	29.0	100	126	**164**



Extension-Reduction set



Coolant transfer pipe

120

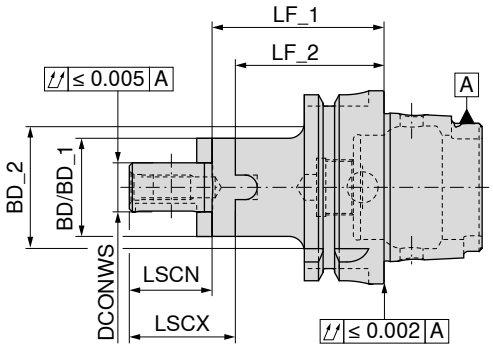


Others

Combination shell mill adapter

▲ For milling cutters with transverse or longitudinal groove according to DIN 6358
▲ also available with Balluff chip **on request**

Scope of supply:
Toolholder with clamping screw, driving ring and dowel spring





NEW



G 2.5 n_{max} 25000

82 744 ...

	Adapter	DCONWS mm	LF_1 mm	LF_2 mm	BD mm	BD_1 mm	BD_2 mm	LSCX mm	LSCN mm	BHTA	
short	HSK-A 63	16	60	50	32			27	17		**11657**
	HSK-A 63	22	60	48	40			31	19		**12257**
	HSK-A 63	27	60	48	48			33	21		**12757**
	HSK-A 63	32	60	46	58			38	24		**13257**
	HSK-A 63	40	70	56	70			41	27		**14057**
	HSK-A 100	16	60	50	32			27	17		**11655**
	HSK-A 100	22	60	48	40			31	19		**12255**
	HSK-A 100	27	60	48	48			33	21		**12755**
	HSK-A 100	32	60	46	58			38	24		**13255**
	HSK-A 100	40	70	56	70			41	27		**14055**
medium length	HSK-A 63	16	100	90	32			27	17		**21657**
	HSK-A 63	22	100	88	40			31	19		**22257**
	HSK-A 63	27	100	88	48			33	21		**22757**
	HSK-A 63	32	100	86	58			38	24		**23257**
	HSK-A 63	40	100	86	70			41	27		**24057**
extra-long	HSK-A 63	16	160	150		32	43.21	27	17	4.5°	**41657**
	HSK-A 63	22	160	148		40	47.25	31	19	3.0°	**42257**
	HSK-A 63	27	160	148	48			33	21		**42757**
	HSK-A 63	32	160	146	58			38	24		**43257**
	HSK-A 63	40	160	146	70			41	27		**44057**


Parallel key


Drive ring


clamping screw

		83 950 ...		**83 370 ...**		**83 950 ...**
Spare parts DCONWS						
16	4 x 4 x 20	**284**		**116**	M8x25	**113**
22	6 x 6 x 25	**285**		**122**	M10x25	**124**
27	7 x 7 x 25	**286**		**127**	M12x30	**125**
32	8 x 7 x 28	**287**		**132**	M16x35	**126**
40	10 x 8 x 32	**288**		**140**	M20x40 - SW17	**112**


Milling Adapter Rings 174

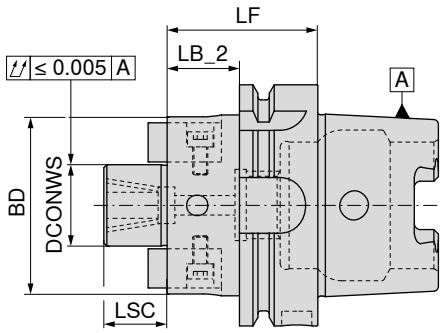

Coolant transfer pipe 120

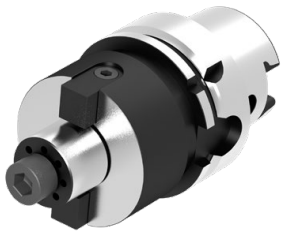

Others

Shell mill adapter with reduced flange diameter

▲ Screwed drive dogs
▲ also available with Balluff chip **on request**

Scope of supply:
Base body with retaining screw and drive dog





NEW



G 2.5 n_{max} 25000

	Adapter	DCONWS mm	LB_2 mm	LF mm	BD mm	LSC mm	82 315 ...
short	HSK-A 63	22	34	60	38	19	**12257**
	HSK-A 63	27	34	60	48	21	**12757**
	HSK-A 100	22	31	60	38	19	**12255**
	HSK-A 100	27	31	60	48	21	**12755**

These shell mill adapters have been specially developed for MaxiMill 211-KN porcupine cutters.
Now they can be clamped perfectly, thanks to the adapted flange diameters.


Screw for drivers


Driver

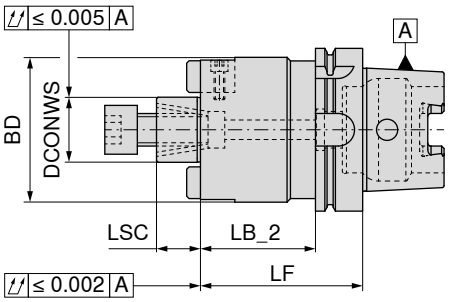

clamping screw

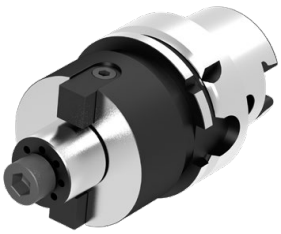
Spare parts DCONWS		83 950 ...		83 950 ...		83 950 ...
22	M4x8	**51700**	10x7x20.5	**51500**	M10x25	**124**
27	M5x8	**51800**	12x9x24.3	**51600**	M12x30	**125**

Shell mill adapter

▲ for face mills with transverse groove ISO 3937
▲ also available with Balluff chip **on request**

Scope of supply:
Toolholder with retaining screw and drive dogs





NEW



G 2.5 n_{max} 25000

82 745 ...

	Adapter	DCONWS mm	LB_2 mm	LF mm	BD mm	BD_1 mm	BD_2 mm	LSC mm	
short	HSK-A 63	16	34	60	38			17	**11657**
	HSK-A 63	22	34	60	48			19	**12257**
	HSK-A 63	27	34	60	58			21	**12757**
	HSK-A 63	32	34	60	78			24	**13257**
	HSK-A 63	40	34	70	88			27	**14057**[1)]
	HSK-A 100	16	31	60	38			17	**11655**
	HSK-A 100	22	31	60	48			19	**12255**
	HSK-A 100	27	31	60	58			21	**12755**
	HSK-A 100	32	31	60	78			24	**13255**
	HSK-A 100	40	41	70	88			27	**14055**[1)]
medium length	HSK-A 63	16	74	100		38	44.3	17	**21657**
	HSK-A 63	22	74	100		48	50.3	19	**22257**
	HSK-A 63	27	74	100	58			21	**22757**
	HSK-A 63	32	74	100	78			24	**23257**
	HSK-A 63	40	74	100	88			27	**24057**[1)]
	HSK-A 100	16	71	100		38	46.3	17	**21655**
	HSK-A 100	22	71	100		48	56.3	19	**22255**
	HSK-A 100	27	71	100		58	66.3	21	**22755**
	HSK-A 100	32	71	100		78	80.3	24	**23255**
	HSK-A 100	40	71	100	88			27	**24055**[1)]
long	HSK-A 63	16	104	130		38	44.3	17	**31657**
	HSK-A 63	22	104	130		48	50.3	19	**32257**
	HSK-A 63	27	104	130	58			21	**32757**
	HSK-A 63	32	104	130	78			24	**33257**
	HSK-A 63	40	104	130	88			27	**34057**[1)]
	HSK-A 100	16	101	130		38	46.3	17	**31655**
	HSK-A 100	22	101	130		48	56.3	19	**32255**
	HSK-A 100	27	101	130		58	66.3	21	**32755**
	HSK-A 100	32	101	130		78	80.3	24	**33255**
	HSK-A 100	40	101	130	88			27	**34055**[1)]
extra-long	HSK-A 63	16	134	160		38	44.3	17	**41657**
	HSK-A 63	22	134	160		48	50.3	19	**42257**
	HSK-A 63	27	134	160	58			21	**42757**
	HSK-A 63	32	134	160	78			24	**43257**
	HSK-A 63	40	134	160	88			27	**44057**[1)]
	HSK-A 100	16	131	160		38	46.3	17	**41655**
	HSK-A 100	22	131	160		48	56.3	19	**42255**
	HSK-A 100	27	131	160		58	66.3	21	**42755**
	HSK-A 100	32	131	160		78	80.3	24	**43255**
	HSK-A 100	40	131	160	88			27	**44055**[1)]

1) with cross screw and 4 holes M12, Pitch Circle diameter = 66.7 mm, coolant outlet on the outer diameter of the spigot (DCONWS)!

Spare parts facemill adapters



Cross nut key



Cross screw



clamping screw

Spare parts DCONWS	83 368 ...		83 367 ...		83 950 ...
16	**116**	M8	**016**	M8x25	**113**
22	**122**	M10	**022**	M10x25	**124**
27	**127**	M12	**027**	M12x30	**125**
32	**132**	M16	**032**	M16x35	**126**
40	**140**	M20	**040**	M20x40 - SW17	**112**



Screw for drivers

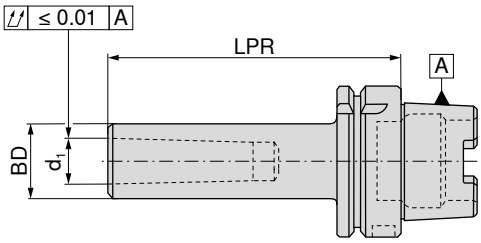


Driver

Spare parts DCONWS		83 950 ...		83 950 ...	
16		M3x8	**296**	8x9x17.5	**120**
22		M4x12	**297**	10x11x20.5	**121**
27		M5x12	**136**	12x13x24.3	**122**
32		M5x20	**137**	14x21x21.2	**123**
40		M6x16	**138**	15.9x16.3x19.5	**295**

Milling sleeve adapter for Morse taper shanks to DIN 228-2 D

▲ also available with Balluff chip **on request**





NEW



G 6.3 n_{max} 8000

82 746 ...

Adapter	d_1	LPR inch	BD inch	
HSK-A 63	MK1	3.937	0.984	**01057**
HSK-A 63	MK2	4.724	1.260	**02057**
HSK-A 63	MK3	5.512	1.575	**03057**
HSK-A 63	MK4	6.299	1.890	**04057**
HSK-A 100	MK2	4.724	1.260	**02055**
HSK-A 100	MK3	5.906	1.575	**03055**
HSK-A 100	MK4	6.693	1.890	**04055**



Morse taper adapter sleeve



Coolant transfer pipe

120

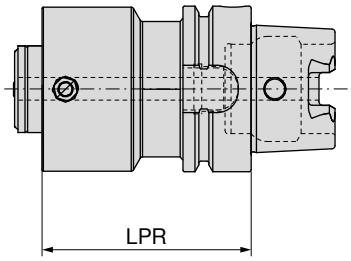


Others



HSK-T extension

▲ for mounting HSK-T adapters according to ISO 12164-3
▲ also suitable for HSK-A and HSK-C
▲ also available with Balluff chip **on request**







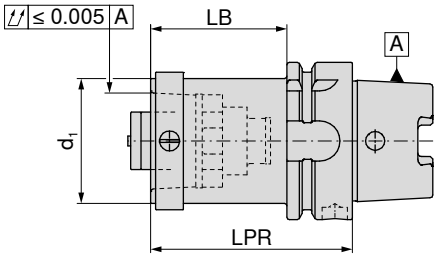
84 621 ...

Adapter	LPR inch	
HSK-T 63	3.150	**08037**
HSK-T 63	4.724	**12037**
HSK-T 100	4.921	**12535**
HSK-T 100	6.299	**16035**
HSK-T 100	7.874	**20035**

HSK-A reduction

▲ for mounting HSK-A adapters according to ISO 12164
▲ also available with Balluff chip **on request**

Scope of supply:
with clamping cartridge and cover ring







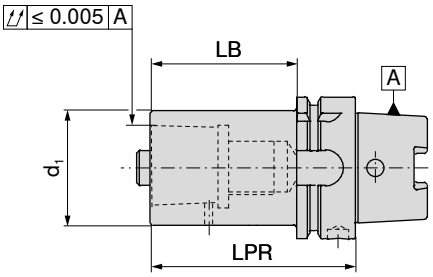
84 040 ...

Adapter	d_1	LB inch	LPR inch	
HSK-A 63	HSK-A 40	2.126	3.150	**06359**
HSK-A 63	HSK-A 50	2.126	3.150	**06358**
HSK-A 100	HSK-A 50	2.008	3.150	**10058**
HSK-A 100	HSK-A 63	2.795	3.937	**10057**

HSK-A/PSC adapter

▲ for mounting PSC adapters according to ISO 26623-1
▲ also available with Balluff chip **on request**

Scope of supply:
with tightening screw







Adapter	d_1	LB inch	LPR inch	84 013 ...
HSK-A 63	PSC 32	1.929	2.953	**06387**
HSK-A 63	PSC 40	2.126	3.150	**06395**
HSK-A 63	PSC 50	2.520	3.543	**06394**
HSK-A 100	PSC 32	2.008	3.150	**10087**
HSK-A 100	PSC 40	2.402	3.543	**10095**
HSK-A 100	PSC 50	2.795	3.937	**10094**
HSK-A 100	PSC 63	3.189	4.331	**10093**
HSK-A 100	PSC 80	3.583	4.724	**10086**


Threaded ring

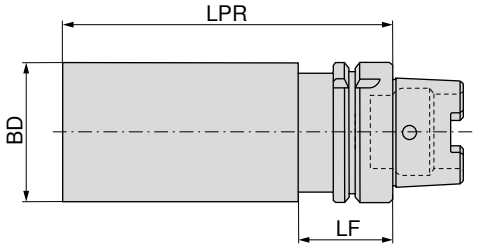

tightening screw

Spare parts d_1	84 950 ...		84 950 ...
PSC 32	**127**	SW8	**122**
PSC 40	**128**	SW8	**123**
PSC 50	**129**	SW10	**124**
PSC 63	**130**	SW14	**126**
PSC 80	**130**	SW14	**126**

16

Blank

- ▲ Material: 1.7131
- ▲ for production of special tools
- ▲ Taper hardened and ground
- ▲ Tool 27$^{\pm 1}$ HRC
- ▲ also available with Balluff chip **on request**





NEW

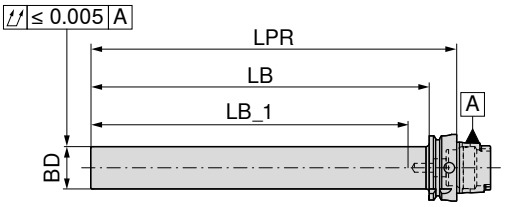


82 747 ...

Adapter	BD inch	LPR inch	LF inch	
HSK-A 63	2.480	7.874	1.654	**16357**
HSK-A 63	3.150	9.843	1.654	**18057**
HSK-A 100	2.480	7.874		**16355**
HSK-A 100	3.150	9.843		**18055**
HSK-A 100	3.839	9.843	1.772	**19755**

Test arbor

Scope of supply:
in wooden box







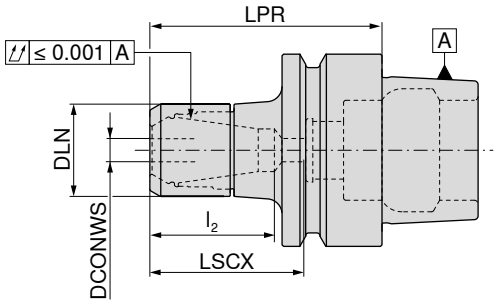
81 746 ...

Adapter	BD inch	LPR inch	LB_1 inch	LB inch	
HSK-A 63	1.575	13.622	11.811	12.598	**063**
HSK-A 100	1.575	13.740	11.811	12.598	**100**

ER precision collet chuck – Centro-P

- ▲ for standard or sealed nuts
- ▲ maximum size collet to ISO tolerance field H10
- ▲ for clamping a roll key is required
- ▲ p_{max} = 80 bar

Scope of supply:
Holder **without** nut, **without** backstop







G 2.5 n_{max} 30000

84 776 ...

Adapter	DCONWS mm	LPR mm	DLN mm	LSCX mm	l_2 mm	for collet	
HSK-E 40	2 - 16	60	40	39		430E (ER25)	**417**
HSK-E 50	2 - 16	70	40	49	30 - 39	430E (ER25)	**516**

→ Transmittable torque moments, Page 211

LSCX = Clamping depth without back stop screw for shanks
l_2 = With back stop screw 1
Dimension LPR when using tightening nuts with seals 4 mm longer


Lock nut IK

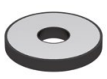
84 950 ...


Lock nut

84 950 ...

Spare parts for collet		
430E (ER25)	**013**	**003**


ER collet
175–183, 186


Sealing ring
187


Roll key
193


Roll key device
193

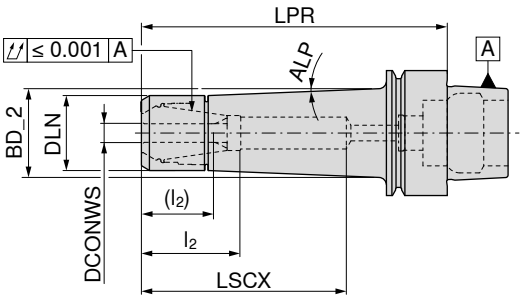

Coolant transfer pipe
120


Others

ER precision collet chuck, tapered – Centro-P

- ▲ for Mini Clamping Nuts
- ▲ Maximum clamping range covered according to ISO tolerance field H10
- ▲ Roll key required for clamping
- ▲ p_{max} = 80 bar

Scope of supply:
Holder **without** nut, **without** backstop





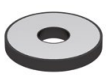
G 2.5 n_{max} 30000

	Adapter	DCONWS mm	LPR mm	DLN mm	BD_2 mm	LSCX mm	l_2 (l_2) mm	ALP	for collet	84 774 ...
short	HSK-E 25	1 - 7	35	16		22			4008E (ER11 mini)	07200
	HSK-E 32	1 - 7	50	16	17.5	31	18 - 20	4.5°	4008E (ER11 mini)	307
	HSK-E 40	1 - 7	50	16	17.5	31	18 - 20	4.5°	4008E (ER11 mini)	407
	HSK-E 25	1 - 10	45	22		30			426E (ER16 mini)	101
	HSK-E 32	1 - 10	55	22	25.8	40	28 - 32 (12 - 22)	4.5°	426E (ER16 mini)	310
	HSK-E 40	1 - 10	55	22	25.8	38	28 - 30 (12 - 20)	4.5°	426E (ER16 mini)	410
	HSK-E 50	1 - 10	60	22	25.4	39	28 - 31 (12 - 21)	4.5°	426E (ER16 mini)	510
medium length	HSK-E 40	1 - 7	100	16	25.4	64	18 - 36 (12 - 26)	4.5°	4008E (ER11 mini)	408
	HSK-E 40	1 - 10	100	22	29.0	66	28 - 48 (12 - 38)	2.5°	426E (ER16 mini)	411
	HSK-E 50	1 - 10	100	22	28.2	72	28 - 48 (12 - 38)	2.5°	426E (ER16 mini)	511

→ Transmittable torque moments, Page 211

LSCX = Clamping depth without back stop screw for shanks
l_2 = With back stop screw 1, Dimension in brackets (l_2) = With back stop screw 2
Dimension LPR when using tightening nuts with seals 4 mm longer

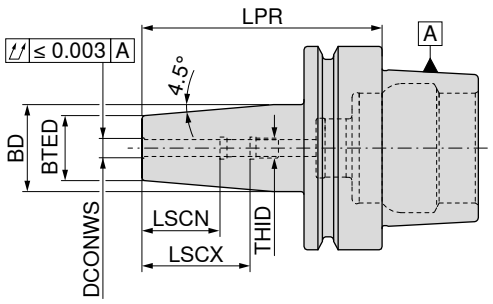
Spare parts for collet	 Mini lock nut IK	 Mini lock nut	 Stop screw 2	 Stop screw 1
	84 950 ...	84 950 ...	83 950 ...	83 950 ...
4008E (ER11 mini)			340	336
426E (ER16 mini)	035	034	341	337

 ER collet 175–182, 186
 Sealing ring 187
 Device 192
 Roll key 193
 Roll key device 193
 Coolant transfer pipe 120
 Others

Shrink fit adapters

▲ for solid carbide and HSS shanks to h6 tolerance or better

TG









	Adapter	DCONWS mm	LPR mm	BTED mm	BD mm	LSCX mm	LSCN mm	THID	G 2.5 n_{max} 25000 84 308 ...	G 2.5 n_{max} 25000 84 309 ...
short	HSK-E 40	3	60	10	15	28	12	M6	103	
	HSK-E 40	4	60	10	15	28	16	M6	104	
	HSK-E 40	5	60	10	15	30	20	M6	105	
	HSK-E 40	6	80	21	27	36	26	M5	106	
	HSK-E 40	8	80	21	27	36	26	M6	108	
	HSK-E 40	10	80	24	32	41	31	M8x1	110	
	HSK-E 40	12	90	24	32	47	37	M10x1	112	
	HSK-E 40	14	90	27	34	47	37	M10x1	114	
	HSK-E 40	16	90	27	34	50	40	M12x1	116	
	HSK-E 50	3	80	10	15	22	12	M6		103
	HSK-E 50	4	80	15	22	26	16	M6		104
	HSK-E 50	5	80	15	22	30	20	M6		105
	HSK-E 50	6	80	21	27	36	26	M5		106
	HSK-E 50	8	80	21	27	36	26	M6		108
	HSK-E 50	10	85	24	32	41	31	M8x1		110
	HSK-E 50	12	90	24	32	47	37	M10x1		112
	HSK-E 50	14	90	27	34	47	37	M10x1		114
	HSK-E 50	16	95	27	34	50	40	M12x1		116
	HSK-E 50	18	95	33	42	50	40	M12x1		118
	HSK-E 50	20	100	33	42	52	42	M16x1		120

→ Min. clamping depth, Page 210



Stop screw IK



Thru coolant back stop screw



Stop screw IK

Spare parts DCONWS		83 950 ...		83 950 ...		83 950 ...
3 - 5	M6x14 - SW2	417	M5x14 - SW2	411		
6					M5x12.5 - SW2.5	418
8					M6x12.5 - SW3	419
10					M8x1x13.5 - SW3	420
12 - 14					M10x1x13.5 - SW5	421
16 - 18					M12x1x13.5 - SW5	422
20					M16x1x13.5 - SW5	423

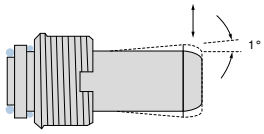
Spare part 83 950 411 only for HSK-E 32. Spare part 83 950 417 for HSK-E 40/HSK-E 50.

16

Coolant pipe – HSK

▲ use up to 100 bar

Scope of supply:
complete, including seals





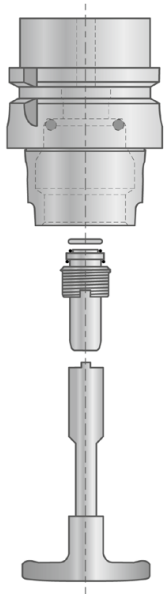
Adapter	THOD	83 760 ...
HSK 32	M10 x 1	032
HSK 40	M12 x 1	040
HSK 50	M16 x 1	050
HSK 63	M18 x 1	063
HSK 80	M20 x 1.5	080
HSK 100	M24 x 1.5	100

Key – HSK



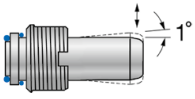
Adapter	83 758 ...
HSK 32	032
HSK 40	040
HSK 50	050
HSK 63	063
HSK 80	080
HSK 100	100

Coolant pipe for HSK tools



The coolant pipe is ideally mounted in vertical direction – from the bottom to the top. In this manner the sealing ring is prevented from being compressed during locating which would cause the loss of its sealing function. After mounting, the coolant pipe can be moved only to a minimum degree according to DIN (± 1°).

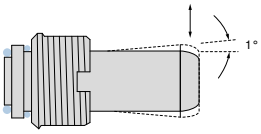
Flexibility



Coolant transfer pipe with strainer – HSK

▲ 75 µ filter screen, usable up to 80 bar

Scope of supply:
Complete, including sealing rings and filter screen





NEW

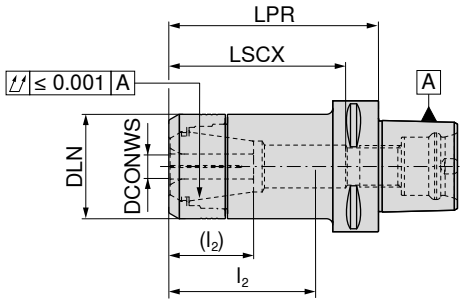
Adapter	THOD	83 760 ...
HSK 63	M18 x 1	16300
HSK 100	M24 x 1.5	20000

For usage with micro tools with thru coolant, improved tool life due to reduced contamination of the coolant hole.

ER precision collet chuck – Centro-P

- ▲ for standard or sealed nuts
- ▲ maximum size collet to ISO tolerance field H10
- ▲ for clamping a roll key is required
- ▲ p_{max} = 80 bar
- ▲ also available with Balluff chip **on request**

Scope of supply:
Holder **without** nut, **without** backstop







G 2.5 n_{max} 25000

Adapter	DCONWS mm	LPR mm	DLN mm	LSCX mm	l_2 (l_2) mm	for collet	**84 112 ...**
PSC 40	1 - 10	55	30	47	29 - 38	426E (ER16)	**402**
PSC 50	1 - 10	60	30	47	29 - 38	426E (ER16)	**501**
PSC 50	1 - 10	100	30	87	29 - 51 (29 - 37)	426E (ER16)	**502**
PSC 50	1 - 16	60	40	48		430E (ER25)	**505**
PSC 50	2 - 20	60	50	49		470E (ER32)	**507**
PSC 63	1 - 10	60	30	44		426E (ER16)	**601**
PSC 63	1 - 10	100	30	83	29 - 53 (25 - 39)	426E (ER16)	**602**
PSC 63	1 - 16	60	40	38		430E (ER25)	**605**
PSC 63	1 - 16	100	40	78	36 - 62 (30 - 45)	430E (ER25)	**606**
PSC 63	1 - 16	130	40	99	34 - 70 (30 - 50)	430E (ER25)	**607**
PSC 63	1 - 16	160	40	118	34 - 70 (30 - 50)	430E (ER25)	**608**
PSC 63	2 - 20	60	50	42		470E (ER32)	**609**
PSC 63	2 - 20	100	50	79	45 - 63 (25 - 45)	470E (ER32)	**610**
PSC 63	2 - 20	130	50	99	45 - 63 (25 - 53)	470E (ER32)	**611**
PSC 63	3 - 26	65	63	51		472E (ER40)	**612**

→ Transmittable torque moments, Page 211

LSCX = Clamping depth without back stop screw for shanks
l_2 = With back stop screw 1, Dimension in brackets (l_2) = With back stop screw 2
Dimension LPR when using tightening nuts with seals 4 mm longer

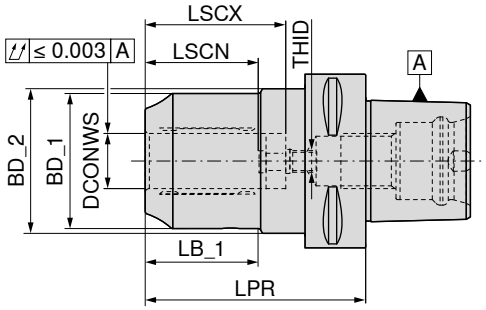
	Lock nut IK	Lock nut	Stop screw 2		Stop screw 1	
	84 950 ...	**84 950 ...**	**83 950 ...**		**83 950 ...**	
Spare parts for collet						
426E (ER16)	**011**	**001**	M11x1 - SW6	**341**	M11x1 - SW6	**337**
430E (ER25)	**013**	**003**	M18x1.5 - SW6	**432**	M18x1.5 - SW6	**431**
470E (ER32)	**015**	**005**	M22x1.5 - SW6	**402**	M22x1.5 - SW6	**401**
472E (ER40)	**017**	**007**			M28x1.5 - SW6	**400**

16

HyPower – Complus

▲ High pressure chuck, short and stable version
▲ for solid carbide and HSS shanks with h6 tolerance or better
▲ also available with Balluff chip **on request**

Scope of supply:
Base body with backstop screw and pressure screw







G 2.5 n_{max} 25000

84 108 ...

Adapter	DCONWS mm	LPR mm	LB_1 mm	BD_1 mm	BD_2 mm	LSCX mm	LSCN mm	THID	
PSC 63	20	80	41	49	52.5	51	41	M8x1	**62000**

→ Min. clamping depth, Page 210


Cylindrical screw
83 950 ...


Clamping key – T
80 397 ...


Pressure screw
83 950 ...


Stop screw IK
83 950 ...

Spare parts for Article no.							
84 108 62000	M5x5 - SW2.5	**157**	SW5	**050**	M10x1x14	**429**	M16x1x13.5 - SW8	**424**


Reduction sleeve
189–190


Coolant transfer pipe
140

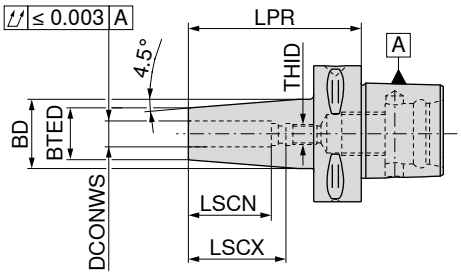

Others

Shrink adapters

▲ for solid carbide and HSS shanks with h6 tolerance or better
▲ also available with Balluff chip **on request**

Scope of supply:
Holder **without** IK back stop screw

TG







G 6.3 n_{max} 15000

84 104 ...

	Adapter	LPR mm	DCONWS mm	BTED mm	BD mm	LSCX mm	LSCN mm	THID	
short	PSC 32	65	6	21	27	36	26	M5	**306**
	PSC 32	65	8	21	27	36	26	M6	**308**
	PSC 32	70	10	24	32	41	31	M8x1	**310**
	PSC 32	75	12	24	32	47	37	M10x1	**312**
	PSC 40	75	6	21	27	36	26	M5	**406**
	PSC 40	75	8	21	27	36	26	M6	**408**
	PSC 40	75	10	24	32	41	31	M8x1	**410**
	PSC 40	75	12	24	32	47	37	M10x1	**412**
	PSC 40	80	14	27	34	47	37	M10x1	**414**
	PSC 40	80	16	27	34	50	40	M12x1	**416**
	PSC 40	80	18	33	42	50	40	M12x1	**418**
	PSC 40	85	20	33	42	52	42	M16x1	**420**
	PSC 50	65	3	12	17				**503**
	PSC 50	65	4	12	17				**504**
	PSC 50	65	5	12	17				**505**
	PSC 50	75	6	21	30	36	26	M5	**506**
	PSC 50	75	8	21	30	36	26	M6	**508**
	PSC 50	75	10	24	33	41	31	M8x1	**510**
	PSC 50	75	12	24	33	47	37	M10x1	**512**
	PSC 50	80	14	27	34	47	37	M10x1	**514**
	PSC 50	80	16	27	34	50	40	M12x1	**516**
	PSC 50	80	18	33	42	50	40	M12x1	**518**
	PSC 50	85	20	33	42	52	42	M16x1	**520**
	PSC 50	90	25	44	53	58	48	M16x1	**525**
	PSC 63	80	3	12	17				**603**
	PSC 63	80	4	12	17				**604**
	PSC 63	80	5	12	17				**605**
	PSC 63	80	6	21	27	36	26	M5	**606**
	PSC 63	80	8	21	27	36	26	M6	**608**
	PSC 63	80	10	24	32	41	31	M8x1	**610**
	PSC 63	80	12	24	32	47	37	M10x1	**612**
	PSC 63	85	14	27	34	47	37	M10x1	**614**
	PSC 63	85	16	27	34	50	40	M12x1	**616**
	PSC 63	85	18	33	42	50	40	M12x1	**618**
	PSC 63	85	20	33	42	52	42	M16x1	**620**
	PSC 63	90	25	44	53	58	48	M16x1	**625**
	PSC 63	95	32	44	53	61	51	M16x1	**632**
	PSC 80	85	6	21	27	36	26	M5	**806**
	PSC 80	85	8	21	27	36	26	M6	**808**
	PSC 80	85	10	24	32	41	31	M8x1	**810**
	PSC 80	85	12	24	32	47	37	M10x1	**812**
	PSC 80	90	14	27	34	47	37	M10x1	**814**
	PSC 80	90	16	27	34	50	40	M12x1	**816**
	PSC 80	90	18	33	42	50	40	M12x1	**818**
	PSC 80	90	20	33	42	52	42	M16x1	**820**
	PSC 80	95	25	44	53	58	48	M16x1	**825**
	PSC 80	100	32	44	53	61	51	M16x1	**832**

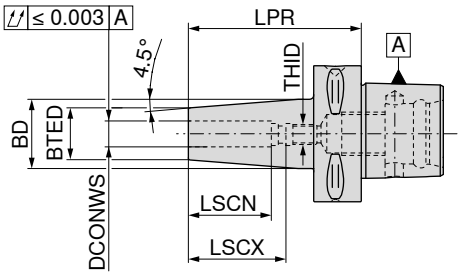
→ Min. clamping depth, Page 210

Shrink adapters

▲ for solid carbide and HSS shanks with h6 tolerance or better
▲ also available with Balluff chip **on request**

Scope of supply:
Holder **without** IK back stop screw

TG









	Adapter	LPR mm	DCONWS mm	BTED mm	BD mm	LSCX mm	LSCN mm	THID	G 6.3 n_{max} 15000 **84 105 ...**	G 6.3 n_{max} 15000 **84 106 ...**
medium length	PSC 50	120	6	21	32	36	26	M5	**506**	
	PSC 50	120	8	21	32	36	26	M6	**508**	
	PSC 50	120	10	24	34	41	31	M8x1	**510**	
	PSC 50	120	12	24	34	47	37	M10x1	**512**	
	PSC 50	120	14	27	36	47	37	M10x1	**514**	
	PSC 50	120	16	27	36	50	40	M12x1	**516**	
	PSC 50	120	18	33	42	50	40	M12x1	**518**	
	PSC 50	120	20	33	42	52	42	M16x1	**520**	
	PSC 50	120	25	44	53	58	48	M16x1	**525**	
	PSC 63	120	6	21	32	36	26	M5	**606**	
	PSC 63	120	8	21	32	36	26	M6	**608**	
	PSC 63	120	10	24	32	41	31	M8x1	**610**	
	PSC 63	120	12	24	32	47	37	M10x1	**612**	
	PSC 63	120	14	27	36	47	37	M10x1	**614**	
	PSC 63	120	16	27	36	50	40	M12x1	**616**	
	PSC 63	120	18	33	44	50	40	M12x1	**618**	
	PSC 63	120	20	33	44	52	42	M16x1	**620**	
	PSC 63	120	25	44	53	58	48	M16x1	**625**	
	PSC 63	120	32	44	53	61	51	M16x1	**632**	
	PSC 80	120	6	21	32	36	26	M5	**806**	
	PSC 80	120	8	21	32	36	26	M6	**808**	
	PSC 80	120	10	24	34	41	31	M8x1	**810**	
	PSC 80	120	12	24	34	47	37	M10x1	**812**	
	PSC 80	120	14	27	36	47	37	M10x1	**814**	
	PSC 80	120	16	27	36	50	40	M12x1	**816**	
	PSC 80	120	18	33	44	50	40	M12x1	**818**	
	PSC 80	120	20	33	44	52	42	M16x1	**820**	
	PSC 80	120	25	44	53	58	48	M16x1	**825**	
	PSC 80	120	32	44	53	61	51	M16x1	**832**	
extra-long	PSC 63	160	6	21	32	36	26	M5		**606**
	PSC 63	160	8	21	32	36	26	M6		**608**
	PSC 63	160	10	24	34	41	31	M8x1		**610**
	PSC 63	160	12	24	34	47	37	M10x1		**612**
	PSC 63	160	14	27	36	47	37	M10x1		**614**
	PSC 63	160	16	27	36	50	40	M12x1		**616**
	PSC 63	160	18	33	44	50	40	M12x1		**618**
	PSC 63	160	20	33	44	52	42	M16x1		**620**
	PSC 63	160	25	44	53	58	48	M16x1		**625**
	PSC 63	160	32	44	53	61	51	M16x1		**632**

→ Min. clamping depth, Page 210

Spare parts heat shrink adapter



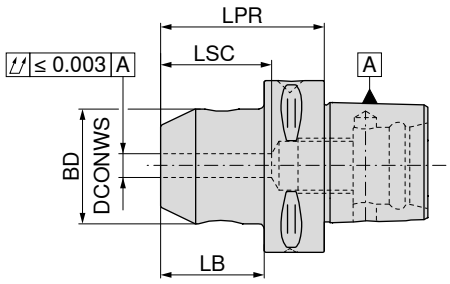
Backstop screw IK

84 950 ...

Spare parts DCONWS	
6	**140**
8	**141**
10	**142**
12 - 14	**143**
16 - 18	**144**
20 - 32	**145**

Cylindrical shank adapter (Weldon)

▲ For shanks according to DIN 6535 HB / 1835 B with lateral clamping flat
▲ also available with Balluff chip **on request**







G 6.3 n_{max} 15000

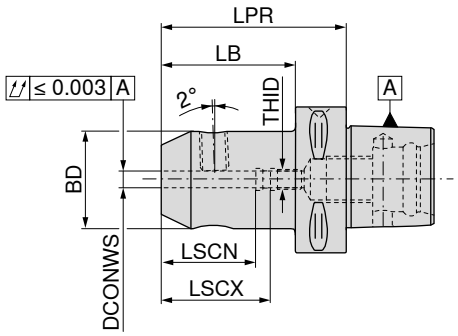
84 100 ...

Adapter	DCONWS mm	LPR mm	BD mm	LB mm	LSC mm	
PSC 32	6	45	25	30	35	**306**
PSC 32	8	45	28	30	35	**308**
PSC 32	10	50	35	35	39	**310**
PSC 32	12	55	42	40	44	**312**
PSC 40	6	50	25	30	35	**406**
PSC 40	8	50	28	30	35	**408**
PSC 40	10	50	35	30	39	**410**
PSC 40	12	55	42	35	44	**412**
PSC 40	14	55	44	35	44	**414**
PSC 40	16	55	48	35	47	**416**
PSC 50	6	50	25	30	35	**506**
PSC 50	8	50	28	30	35	**508**
PSC 50	10	55	35	35	39	**510**
PSC 50	12	60	42	40	44	**512**
PSC 50	14	60	44	40	44	**514**
PSC 50	16	60	48	40	47	**516**
PSC 50	18	60	50	40	47	**518**
PSC 50	20	60	52	40	47	**520**
PSC 50	25	80	65	60	54	**525** 1)
PSC 63	6	55	25	33	35	**606**
PSC 63	8	55	28	33	35	**608**
PSC 63	10	60	35	38	39	**610**
PSC 63	12	60	42	38	44	**612**
PSC 63	14	60	44	38	44	**614**
PSC 63	16	65	48	43	47	**616**
PSC 63	18	65	50	43	47	**618**
PSC 63	20	65	52	43	49	**620**
PSC 63	25	80	65	58	54	**625** 1)
PSC 63	32	90	72	68	58	**632** 1)
PSC 63	40	100	80	78	75	**640** 1)
PSC 80	6	70	25	40	35	**806**
PSC 80	8	70	28	40	35	**808**
PSC 80	10	70	35	40	39	**810**
PSC 80	12	70	42	40	44	**812**
PSC 80	14	70	44	40	44	**814**
PSC 80	16	70	48	50	47	**816**
PSC 80	18	70	50	40	47	**818**
PSC 80	20	70	52	40	49	**820**
PSC 80	25	80	65	50	54	**825** 1)
PSC 80	32	80	72	50	58	**832** 1)
PSC 80	40	110	80	80	75	**840** 1)
PSC 80	50	120	100	90	83	**850** 1)

1) Version with two grubscrews

Cylindrical Shank Adapter (Whistle Notch)

▲ For shanks according to DIN 6535 HE / 1835 E with angled clamping flat
▲ also available with Balluff chip **on request**







G 6.3 n_{max} 15000

Adapter	DCONWS mm	LPR mm	BD mm	LB mm	LSCX mm	LSCN mm	THID	84 102 ...
PSC 32	6	70	25	55	38	28	M5	**306**
PSC 32	8	70	28	55	38	28	M6	**308**
PSC 32	10	70	35	55	41	31	M8	**310**
PSC 32	12	75	42	60	47	37	M10	**312**
PSC 40	6	70	25	50	38	28	M5	**406**
PSC 40	8	70	28	50	38	28	M6	**408**
PSC 40	10	70	35	50	41	31	M8	**410**
PSC 40	12	75	42	55	47	37	M10	**412**
PSC 40	14	75	44	55	47	37	M10	**414**
PSC 50	6	70	25	50	38	28	M5	**506**
PSC 50	8	70	28	50	38	28	M6	**508**
PSC 50	10	70	35	50	41	31	M8	**510**
PSC 50	12	75	42	55	47	37	M10	**512**
PSC 50	14	75	44	55	47	37	M10	**514**
PSC 50	16	80	48	60	50	40	M12	**516**
PSC 50	18	80	50	60	50	40	M12	**518**
PSC 50	20	85	52	65	52	42	M16	**520**
PSC 63	6	75	25	53	38	28	M5	**606**
PSC 63	8	75	28	53	38	28	M6	**608**
PSC 63	10	75	35	53	41	31	M8	**610**
PSC 63	12	80	42	58	47	37	M10	**612**
PSC 63	14	80	44	58	47	37	M10	**614**
PSC 63	16	80	48	58	50	40	M12	**616**
PSC 63	18	80	50	58	50	40	M12	**618**
PSC 63	20	85	52	63	52	42	M16	**620**
PSC 63	25	90	65	68	58	48	M16	**625** 1)
PSC 63	32	95	72	73	61	51	M16	**632** 1)
PSC 80	6	65	25	35	38	28	M5	**806**
PSC 80	8	65	28	35	38	28	M6	**808**
PSC 80	10	65	35	35	41	31	M8	**810**
PSC 80	12	70	42	40	47	37	M10	**812**
PSC 80	14	70	44	40	47	37	M10	**814**
PSC 80	16	75	48	45	50	40	M12	**816**
PSC 80	18	75	50	45	50	40	M12	**818**
PSC 80	20	80	52	50	52	42	M16	**820**
PSC 80	25	90	65	60	58	48	M16	**825** 1)
PSC 80	32	95	72	65	61	51	M16	**832** 1)

1) Version with two grubscrews


Set Screw

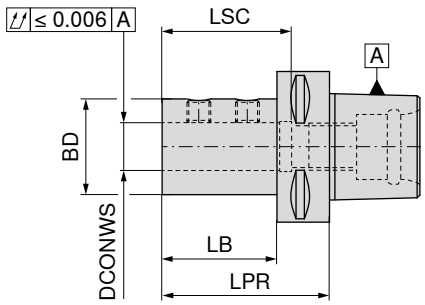

Backstop screw IK

Spare parts DCONWS	62 950 ...		84 950 ...	
6	M6x10	**006**	M5	**146**
8	M8x10	**008**	M6	**147**
10	M10x12	**010**	M8	**148**
12 - 14	M12x16	**012**	M10	**149**
16 - 18	M14x16	**016**	M12	**150**
20	M16x16	**020**	M16	**151**
25	M18x2x20	**025**	M16	**151**
32	M20x2x20	**032**	M16	**151**

16

Indexable insert drill adapter ISO 26623-1 PSC

- ▲ Run-out ≤ 0.005 mm
- ▲ max. speed 5,000 rpm
- ▲ Also available with Balluff chip **on request**







84 128 ...

Adapter	DCONWS mm	LPR mm	BD mm	LB mm	LSC mm	
PSC 32	16	60	36	45	49	**316**
PSC 32	20	60	40	45	54	**320**
PSC 40	16	60	36	40	49	**416**
PSC 40	20	60	40	40	54	**420**
PSC 40	25	70	45	50	59	**425**
PSC 50	16	65	36	45	49	**516**
PSC 50	20	65	40	45	54	**520**
PSC 50	25	70	45	50	59	**525**
PSC 50	32	75	52	55	63	**532**
PSC 63	16	70	36	48	49	**616**
PSC 63	20	70	40	48	54	**620**
PSC 63	25	75	45	53	59	**625**
PSC 63	32	75	52	53	63	**632**
PSC 63	40	85	65	63	73	**640**
PSC 63	50	115	75	93	83	**650**
PSC 80	16	80	36	50	49	**816**
PSC 80	20	80	40	50	54	**820**
PSC 80	25	85	45	55	59	**825**
PSC 80	32	90	52	60	63	**832**
PSC 80	40	95	65	65	73	**840**
PSC 80	50	100	75	70	83	**850**



Set Screw

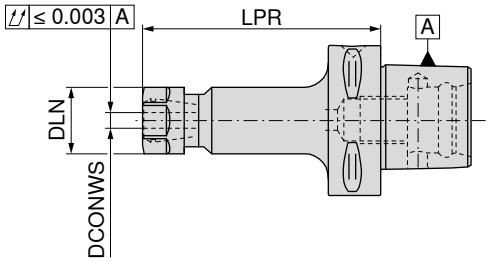
83 950 ...

Spare parts

DCONWS		
16 - 20	M10x1x10	**180**

ER Collet chuck

▲ also available with Balluff chip **on request**







G 6.3 n_{max} 15000

84 114 ...

Adapter	DCONWS mm	LPR mm	DLN mm	TQX Nm	for collet	
PSC 32	1 - 10	45	28	8 - 56	426E (ER16)	**304**
PSC 40	1 - 10	55	28	8 - 56	426E (ER16)	**404**
PSC 50	1 - 10	60	28	8 - 56	426E (ER16)	**504**
PSC 50	1 - 10	100	28	8 - 56	426E (ER16)	**506**
PSC 63	1 - 10	60	28	8 - 56	426E (ER16)	**604**
PSC 63	1 - 10	100	28	8 - 56	426E (ER16)	**606**
PSC 80	1 - 10	100	28	8 - 56	426E (ER16)	**806**
PSC 80	1 - 10	60	28	8 - 56	426E (ER16)	**804**



Lock nut

62 950 ...

Spare parts for collet		
426E (ER16)	M22x1.5 - SW25	**044**



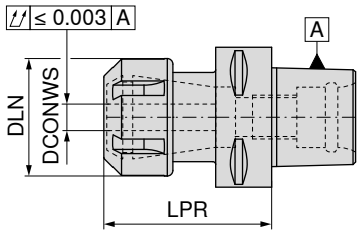
ER collet

175–182, 186

16

ER Collet chuck

▲ also available with Balluff chip **on request**







G 6.3 n_{max} 15000

84 115 ...

Adapter	DCONWS mm	LPR mm	DLN mm	TQX Nm	for collet	
PSC 32	1 - 13	45	34	16 - 80	428E (ER20)	**306** [1]
PSC 40	1 - 13	55	34	16 - 80	428E (ER20)	**404** [1]
PSC 40	1 - 16	55	42	24 - 104	430E (ER25)	**406**
PSC 40	2 - 20	55	50	24 - 136	470E (ER32)	**408**
PSC 50	1 - 13	60	34	16 - 80	428E (ER20)	**502** [1]
PSC 50	1 - 13	100	34	16 - 80	428E (ER20)	**504** [1]
PSC 50	1 - 16	60	42	24 - 104	430E (ER25)	**506**
PSC 50	1 - 16	100	42	24 - 104	430E (ER25)	**508**
PSC 50	2 - 20	60	50	24 - 136	470E (ER32)	**510**
PSC 50	2 - 20	100	50	24 - 136	470E (ER32)	**512**
PSC 50	3 - 26	65	63	176	472E (ER40)	**514**
PSC 50	3 - 26	100	63	176	472E (ER40)	**516**
PSC 63	1 - 13	60	34	16 - 80	428E (ER20)	**602** [1]
PSC 63	1 - 13	100	34	16 - 80	428E (ER20)	**604** [1]
PSC 63	1 - 16	60	42	24 - 104	430E (ER25)	**606**
PSC 63	1 - 16	100	42	24 - 104	430E (ER25)	**608**
PSC 63	2 - 20	60	50	24 - 136	470E (ER32)	**610**
PSC 63	2 - 20	100	50	24 - 136	470E (ER32)	**612**
PSC 63	3 - 26	65	63	176	472E (ER40)	**614**
PSC 63	3 - 26	100	63	176	472E (ER40)	**616**
PSC 80	1 - 13	65	34	16 - 80	428E (ER20)	**802** [1]
PSC 80	1 - 13	100	34	16 - 80	428E (ER20)	**804** [1]
PSC 80	1 - 16	70	42	24 - 104	430E (ER25)	**806**
PSC 80	1 - 16	100	42	24 - 104	430E (ER25)	**808**
PSC 80	2 - 20	70	50	24 - 136	470E (ER32)	**810**
PSC 80	2 - 20	100	50	24 - 136	470E (ER32)	**812**
PSC 80	3 - 26	80	63	176	472E (ER40)	**814**
PSC 80	3 - 26	100	63	176	472E (ER40)	**816**

1) with 6 position lock nut

Dimension LPR is 5.0 mm longer for ER16, ER25 and ER32, and 5.5 mm for ER40 when using thru coolant lock nuts.


Lock nut

62 950 ...


Lock nut IK

83 950 ...


Lock nut

62 950 ...


Y clamping key

83 357 ...

Spare parts for collet								
428E (ER20)	M25x1.5 - SW30	**045**	M25x1.5	**053**				**12000**
430E (ER25)			M32x1.5	**055**	M32x1.5	**055**		**125**
470E (ER32)			M40x1.5	**056**				**132**
472E (ER40)			M50x1.5	**057**				**140**


ER collet

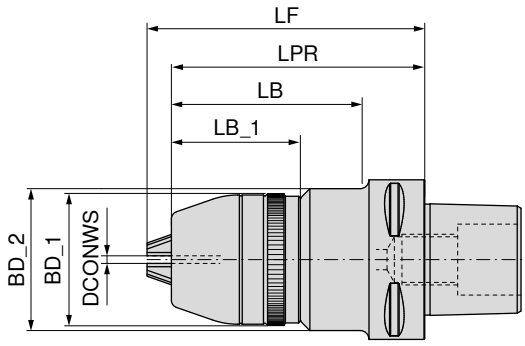
175–183, 185–186

Short drill chuck – NC 2010

- ▲ Independent of direction of rotation
- ▲ Torque Moment = 12 Nm
- ▲ also available with Balluff chip **on request**

Scope of supply:

Toolholder including clamping key SW4







G 2.5 n_{max} 12000

84 111 ...

Adapter	DCONWS mm	BD_1 mm	BD_2 mm	LB_1 mm	LB mm	LPR mm	LF mm	
PSC 40	0.5 - 13	48.5	56	50.90	78.0	100	109.0	**01395**
PSC 40	2.5 - 16	51.0	56	52.15	78.0	100	110.5	**01695**
PSC 50	0.5 - 13	48.5	56	50.90	77.0	100	109.0	**01394**
PSC 50	2.5 - 16	51.0	56	52.15	77.0	100	110.5	**01694**
PSC 63	0.5 - 13	48.5	56	50.90	74.5	100	109.0	**01393**
PSC 63	2.5 - 16	51.0	56	52.15	74.5	100	110.5	**01693**

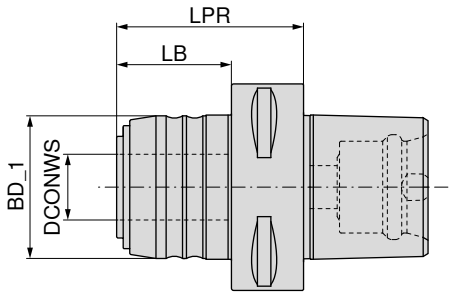
Can be used with G 2.5 to 30,000 1/min by subsequent balancing!



Others

Synchronised quick change tap chuck with minimal length compensation

▲ For collets according to DIN 6499
▲ With length compensation under tension and under compression (LZD)
▲ $p_{max.}$ = 50 bar
▲ also available with Balluff chip **on request**





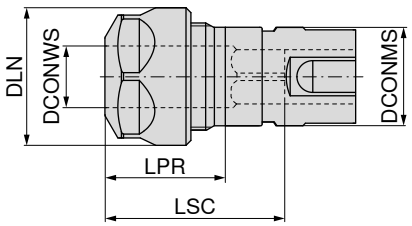
84 140 ...

Adapter	cutting range	SZID	LPR mm	BD_1 mm	DCONWS mm	LB mm	LZD± mm	
PSC 63	M3 - M12	1	57	43	20	35	1.0 / 0.2	**612**
PSC 63	M6 - M20	2	77	60	32	55	1.0 / 0.2	**620**

Insert for synchro quick change tapping chuck with minimum length compensation

▲ SZID = for insert size

Scope of supply:
Includes lock nut





83 608 ...

SZID	DCONWS mm	cutting range	LPR mm	DLN mm	LSC mm	for collet	DCONMS mm	
1	2 - 10	M3 - M12	24	28	42	426E (ER16)	20	**012** [1)]
2	2 - 16	M6 - M20	28	42	59	430E (ER25)	32	**020**

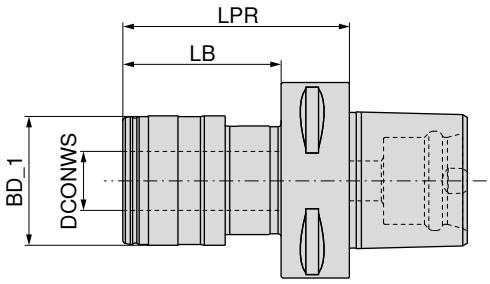
1) with 6 position lock nut

Spare parts insert for synchro quick change tapping chuck with minimum length compensation

		 Lock nut		 Lock nut IK		 Lock nut		 Y clamping key	
		62 950 ...		**83 950 ...**		**62 950 ...**		**83 357 ...**	
Spare parts for Article no.									
83 608 012	M22x1.5 - SW25		**044**	M22x1.5	**054**	M22x1.5	**054**		**116**
83 608 020				M32x1.5	**055**	M32x1.5	**055**		**125**

Quick change tap chuck with length compensation

▲ With length compensation under tension and compression (LZD)
▲ also available with Balluff chip **on request**







84 142 ...

Adapter	cutting range	SZID	LPR mm	BD_1 mm	DCONWS mm	LB mm	LZD± mm	
PSC 63	M3 - M12	01	73	41	19	51	7.5	**612**
PSC 63	M6 - M20	02	97	60	31	75	10	**620**

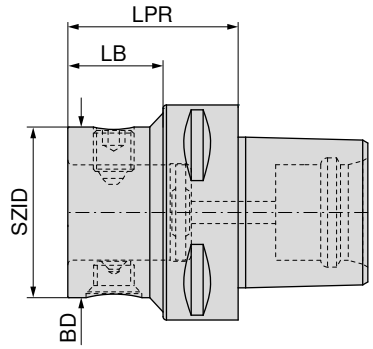


Collet

195–199

Adapter with ABS Connection

▲ also available with Balluff chip **on request**







Adapter	KOMET no.	SZID	BD inch	LPR inch	LB inch	84 215 ...
PSC 40	A69 04050	ABS 50	1.969	1.969	1.181	**04097**
PSC 50	A69 05050	ABS 50	1.969	1.969	1.181	**05097**
PSC 63	A69 06050	ABS 50	1.969	1.969	1.102	**06397**
PSC 63	A69 06060	ABS 63	2.480	2.362	1.417	**06396**
PSC 80	A69 08050	ABS 50	1.969	1.969	0.906	**08097**
PSC 80	A69 08060	ABS 63	2.480	2.362	1.181	**08096**
PSC 80	A69 08070	ABS 80	3.150	3.150	1.969	**08092**

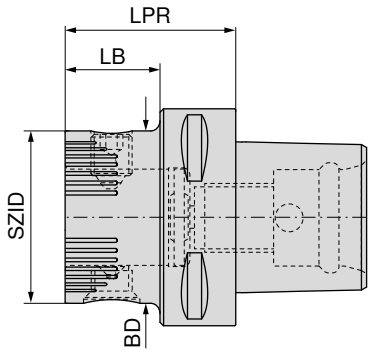

Clamping screw


Taper screw

Spare parts SZID	84 950 ...	84 950 ...
ABS 50	**20300**	**20400**
ABS 63	**25500**	**27300**
ABS 80	**25600**	**25100**

Torsional vibration damper with ABS connection

▲ also available with Balluff chip **on request**





NEW



Adapter	KOMET no.	SZID	BD inch	LPR inch	LB inch	84 206 ...
PSC 50	A69 05060	ABS 50	1.969	1.969	1.181	**05094**
PSC 63	A69 06070	ABS 50	1.969	1.969	1.102	**05093**
PSC 63	A69 06080	ABS 63	2.480	2.362	1.496	**06393**
PSC 80	A69 08090	ABS 50	1.969	1.969	0.906	**05086**
PSC 80	A69 08100	ABS 63	2.480	2.362	1.181	**06386**
PSC 80	A69 08110	ABS 80	3.150	3.150	1.969	**08086**


Clamping screw


Taper screw

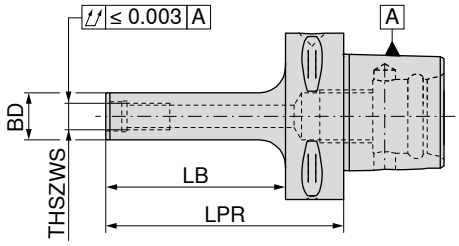
Spare parts SZID	84 950 ...	84 950 ...
ABS 50	**20300**	**20400**
ABS 63	**25500**	**27300**
ABS 80	**25600**	**25100**


Coolant transfer pipe
140


Others

Adapter for screw-in milling cutter

▲ also available with Balluff chip **on request**







G 2.5 n_{max} 20000

84 110 ...

Adapter	THSZWS	LPR mm	BD mm	LB mm	
PSC 32	M8	60	13	45	**302**
PSC 32	M10	70	18	55	**306**
PSC 40	M8	70	13	50	**402**
PSC 40	M10	80	18	60	**405**
PSC 40	M12	80	21	60	**408**
PSC 50	M8	70	13	50	**502**
PSC 50	M10	80	18	60	**505**
PSC 50	M12	80	21	60	**508**
PSC 50	M16	80	29	60	**512**
PSC 63	M8	70	13	48	**602**
PSC 63	M10	90	18	68	**605**
PSC 63	M12	100	21	78	**608**
PSC 63	M16	100	29	78	**612**



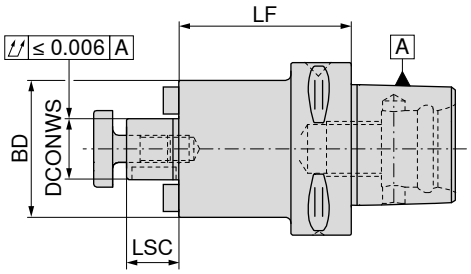
Coolant transfer pipe

140

Shell mill adapters

▲ for cutters with longitudinal or transverse groove
▲ also available with Balluff chip **on request**

Scope of supply:
Holder with clamping screw and drive key







G 6.3 n_{max} 15000

Adapter	DCONWS mm	LF mm	BD mm	LSC mm	84 122 ...
PSC 40	16	28	40	17	**401**
PSC 40	16	63	40	17	**402**
PSC 40	22	40	50	19	**411**
PSC 40	22	63	50	19	**412**
PSC 50	16	28	40	17	**501**
PSC 50	16	63	40	17	**502**
PSC 50	22	28	50	19	**511**
PSC 50	22	63	50	19	**512**
PSC 50	27	32	50	21	**521**
PSC 50	27	63	50	21	**522**
PSC 50	32	40	63	24	**531**
PSC 50	32	63	63	24	**532**
PSC 63	16	63	40	17	**602**
PSC 63	22	28	63	19	**611**
PSC 63	22	63	50	19	**612**
PSC 63	27	28	58	21	**621**
PSC 63	27	63	58	21	**622**
PSC 63	32	22	63	24	**631**
PSC 63	32	86	63	24	**632**
PSC 63	40	40	70	27	**641**
PSC 80	16	63	40	17	**802**
PSC 80	22	30	50	19	**811**
PSC 80	22	63	50	19	**812**
PSC 80	27	30	58	21	**821**
PSC 80	27	63	58	21	**822**
PSC 80	32	30	63	24	**831**
PSC 80	32	86	63	24	**832**
PSC 80	40	40	70	27	**841**


drive key


drive dog


Cross nut key


Cross screw

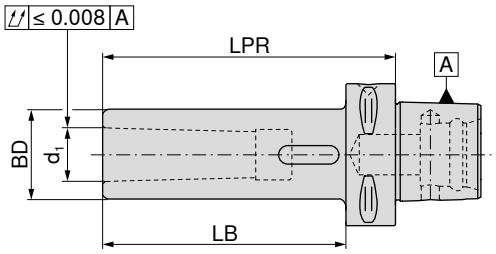

clamping screw

Spare parts DCONWS	84 950 ...	84 950 ...	83 368 ...	83 367 ...		83 950 ...	
16	**108**	**113**	**116**	M8	**016**	M8x25	**113**
22	**109**	**114**	**122**	M10	**022**	M10x25	**124**
27	**110**	**115**	**127**	M12	**027**	M12x30	**125**
32	**111**	**116**	**132**	M16	**032**	M16x35	**126**
40	**112**	**117**	**140**	M20	**040**	M20x40 - SW17	**112**

16

Taper sleeve DIN 6383 for DIN 228-2D Morse taper shanks

▲ also available with Balluff chip **on request**





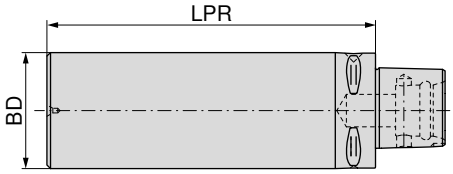


84 126 ...

Adapter	d_1	LPR inch	BD inch	LB inch	
PSC 40	MK2	4.331	1.260	3.543	**402**
PSC 40	MK3	5.118	1.575	4.685	**403**
PSC 50	MK2	4.331	1.260	3.543	**502**
PSC 50	MK3	5.118	1.575	4.331	**503**
PSC 50	MK4	5.906	1.890	5.197	**504**
PSC 63	MK2	4.331	1.260	3.465	**602**
PSC 63	MK3	5.118	1.575	4.252	**603**
PSC 63	MK4	5.906	1.890	5.039	**604**
PSC 80	MK2	4.724	1.260	3.543	**802**
PSC 80	MK3	5.512	1.575	4.331	**803**
PSC 80	MK4	6.299	1.890	5.118	**804**

Blank

- ▲ Material: 1.7218
- ▲ for production of special tools
- ▲ Taper hardened and ground
- ▲ Special tool area in soft state
- ▲ also available with Balluff chip **on request**





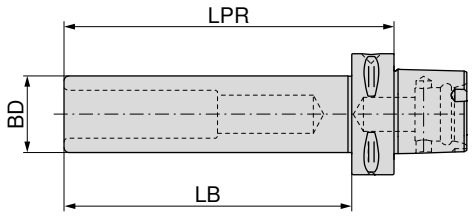


84 134 ...

Adapter	BD inch	LPR inch	
PSC 40	1.575	3.740	**402**
PSC 40	1.575	4.724	**403**
PSC 40	2.362	6.496	**404**
PSC 40	3.150	2.953	**405**
PSC 40	3.150	4.724	**406**
PSC 40	3.937	3.346	**408**
PSC 50	1.969	4.921	**502**
PSC 50	1.969	5.906	**503**
PSC 50	2.953	6.890	**504**
PSC 50	3.543	3.150	**506**
PSC 50	3.740	5.906	**508**
PSC 50	4.331	3.543	**510**
PSC 63	2.480	7.087	**602**
PSC 63	2.953	7.677	**604**
PSC 63	4.331	3.346	**606**
PSC 63	4.724	7.087	**608**
PSC 63	5.118	3.740	**610**
PSC 80	3.150	7.874	**802**
PSC 80	4.724	6.299	**804**
PSC 80	5.118	3.543	**806**
PSC 80	5.709	7.874	**808**

Test bar

▲ also available with Balluff chip **on request**







Adapter	LPR inch	BD inch	LB inch	84 136 ...
PSC 32	6.890	0.984	6.299	030
PSC 40	7.087	0.984	6.299	040
PSC 50	9.252	1.260	8.465	050
PSC 63	12.677	1.575	11.811	060
PSC 80	12.992	1.575	11.811	080

Coolant pipe – PSC

Scope of supply:
complete, including seals



Adapter	THOD	84 116 ...
PSC 40	M14 x 1.5	04000
PSC 50	M16 x 1.5	05000
PSC 63	M20 x 2.0	06300
PSC 80	M20 x 2.0	08000

Key – PSC

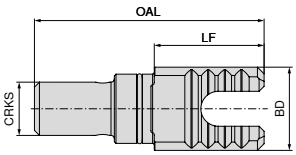


Adapter	84 117 ...
PSC 40	04000
PSC 50	05000
PSC 63	06300
PSC 80	08000

Pull stud for PSC adapter

▲ for front clamping

Scope of supply:
including O-Ring





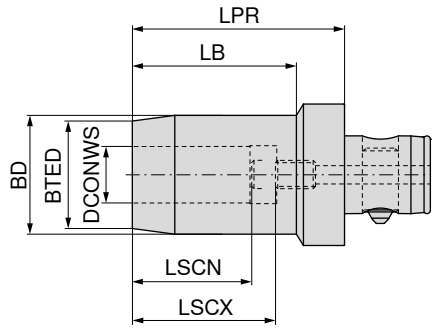
NEW

Adapter	LF mm	OAL mm	BD mm	CRKS	83 235 ...
PSC 40	26.3	56	20	M14x1.5	04000
PSC 50	33.0	69	25	M16x1.5	05000
PSC 63	33.0	79	31	M20x2	06300

HyTens – Fit

▲ Hydraulic chuck with ABS connection
▲ for solid carbide and HSS shanks to h6 tolerance or better

Scope of supply:
Base body including backstop screw





NEW



84 253 ...

Adapter	DCONWS mm	BTED mm	BD mm	LPR mm	LB mm	LSCX mm	LSCN mm	
ABS 40	6	22	26	55	36.5	37	27	**00688**
ABS 40	8	24	28	60	42.0	37	27	**00888**
ABS 40	10	26	30	65	47.5	41	31	**01088**
ABS 40	12	28	32	65	48.0	46	36	**01288**
ABS 50	6	22	26	55	33.5	37	27	**00697**
ABS 50	8	24	28	55	34.0	37	27	**00897**
ABS 50	10	26	30	65	45.0	41	31	**01097**
ABS 50	12	28	32	65	45.5	46	36	**01297**
ABS 50	14	30	34	65	46.0	46	36	**01497**
ABS 50	16	34	38	70	52.0	49	39	**01697**
ABS 50	18	36	40	70	52.5	49	39	**01897**
ABS 50	20	38	42	75	58.0	51	41	**02097**
ABS 63	20	38	42	78	56.0	51	41	**02096**
ABS 63	25	53	57	85	60.0	57	47	**02596**
ABS 63	32	60	64	90	61.0	61	51	**03296**



Stop screw IK

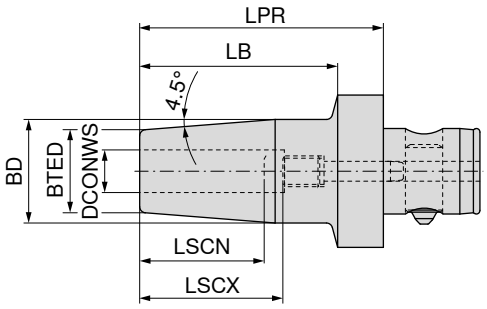
83 950 ...

Spare parts DCONWS		
6	M5x12.5 - SW2.5	**418**
8	M6x12.5 - SW3	**419**
10	M8x1x13.5 - SW3	**420**
12	M10x1x13.5 - SW5	**421**
14	M10x1x13.5 - SW5	**421**
16	M10x1x13.5 - SW5	**421**
18	M10x1x13.5 - SW5	**421**
20	M16x1x13.5 - SW5	**423**
25	M16x1x13.5 - SW5	**423**
32	M16x1x13.5 - SW5	**423**

For an overview of the ABS spare parts, take a look at **page 212**.

Heat shrink adapter 4.5° with ABS connection

▲ for solid carbide and HSS shanks to h6 tolerance or better







G 6.3 n_{max} 15000

84 222 ...

Adapter	KOMET no.	DCONWS mm	LPR mm	BD mm	BTED mm	LB mm	LSCX mm	LSCN mm	
ABS 32	A32 26040	6	70	27	21	56	36	26	**00689**
ABS 32	A32 26050	8	70	27	21	56	36	26	**00889**
ABS 32	A32 26061	10	70	32	24	56	42	32	**01089**
ABS 32	A32 26071	12	80	32	24	66	47	37	**01289**
ABS 40	A32 36050	8	70	27	21	56	36	26	**00888**
ABS 40	A32 36061	10	70	32	24	56	42	32	**01088**
ABS 40	A32 36071	12	80	32	24	66	47	37	**01288**
ABS 40	A32 36091	16	90	34	27	76	50	40	**01688**
ABS 50	A32 46040	6	75	27	21	56	36	26	**00697**
ABS 50	A32 46050	8	75	27	21	56	36	26	**00897**
ABS 50	A32 46061	10	80	32	24	61	42	32	**01097**
ABS 50	A32 46071	12	80	32	24	61	47	37	**01297**
ABS 50	A32 46081	14	80	34	27	61	47	37	**01497**
ABS 50	A32 46091	16	85	34	27	66	50	40	**01697**
ABS 50	A32 46101	18	85	42	33	66	50	40	**01897**
ABS 50	A32 46111	20	90	42	33	71	52	42	**02097**
ABS 63	A32 56111	20	90	42	33	71	52	42	**02096**
ABS 63	A32 56121	25	95	53	44	76	58	48	**02596**
ABS 63	A32 56131	32	95	53	44	76	58	48	**03296**



Backstop screw

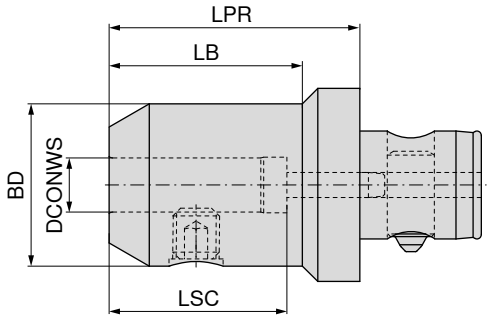
84 950 ...

Spare parts DCONWS		
6	M5x18	**21400**
8	M6x20	**21500**
10	M8x1x20	**21600**
12	M10x1x20	**21700**
14	M10x1x20	**21700**
16	M12x1x20	**21800**
18	M12x1x20	**21800**
20	M8x1x20	**21900**
25	M8x1x20	**21900**
32	M8x1x20	**21900**

For an overview of the ABS spare parts, take a look at **page** 212.

Cylindrical shank adapter (Weldon) with ABS connection

▲ For shanks according to DIN 6535 HB / 1835 B with lateral clamping flat







Adapter	KOMET no.	DCONWS mm	LPR mm	BD mm	LB mm	LSC mm	84 221 ...
ABS 50	A32 40010	6	45	25.0	27	40	**00697**
ABS 50	A32 40020	8	45	28.0	27	40	**00897**
ABS 50	A32 40030	10	55	35.0	37	44	**01097**
ABS 50	A32 40040	12	65	42.0	50	49	**01297**
ABS 50	A32 40080	14	65	44.0	50	49	**01497**
ABS 50	A32 40050	16	65	48.0	50	52	**01697**
ABS 50	A32 40090	18	65	49.9	50	52	**01897**
ABS 50	A32 40060	20	65	52.0	50	54	**02097**
ABS 50	A32 40070	25	75	65.0	60	60	**02597**[1)]
ABS 63	A32 50040	12	65	42.0	50	49	**01296**
ABS 63	A32 50100	14	65	44.0	50	49	**01496**
ABS 63	A32 50050	16	65	48.0	50	52	**01696**
ABS 63	A32 50110	18	65	50.0	50	52	**01896**
ABS 63	A32 50060	20	65	52.0	45	54	**02096**
ABS 63	A32 50070	25	75	65.0	60	60	**02596**[1)]
ABS 63	A32 50080	32	80	72.0	65	64	**03296**[1)]
ABS 80	A32 60060	20	65	52.0	45	54	**02092**
ABS 80	A32 60070	25	75	65.0	55	60	**02592**[1)]
ABS 80	A32 60080	32	80	72.0	66	64	**03292**[1)]

1) Version with two grubscrews



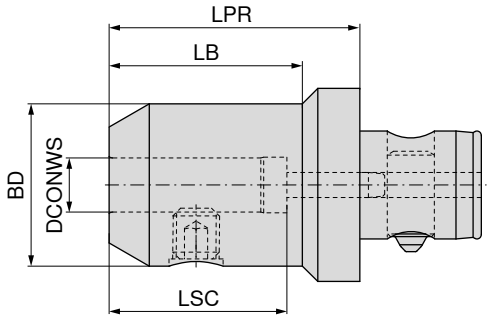
Set Screw

Spare parts DCONWS		62 950 ...
6	M6x10	**006**
8	M8x10	**008**
10	M10x12	**010**
12	M12x16	**012**
14	M12x16	**012**
16	M14x16	**016**
18	M14x16	**016**
20	M16x16	**020**
25	M18x2x20	**025**
32	M20x2x20	**032**

For an overview of the ABS spare parts, take a look at **page 212**.

Cylindrical shank adapter (Weldon) with ABS connection

▲ For shanks according to DIN 6535 HB / 1835 B with lateral clamping flat







Adapter	DCONWS inch	LPR inch	BD inch	LB inch	LSC inch	87 221 ...
ABS 50	0.375	2.000	1.130	1.250	1.810	**10997**
ABS 50	0.500	2.000	1.130	1.486	1.900	**11297**
ABS 50	0.625	2.630	1.970		2.190	**11597**
ABS 50	0.750	2.630	1.970		2.310	**11997**
ABS 50	0.875	2.630	1.970		2.310	**12297**
ABS 63	1.000	3.000	2.480		2.560	**12596**
ABS 63	1.250	3.000	2.480		2.560	**13196**
ABS 80	1.500	3.600	2.480	2.581	2.900	**13892**



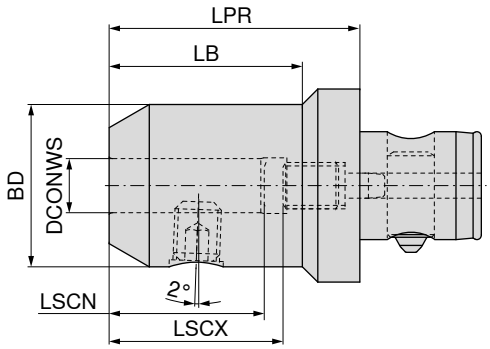
Set Screw

DCONWS		87 950 ...
0.375	3/8"-16 UNC	**00031**
0.500	7/16"-14 UNC	**00032**
0.625	9/16"-12 UNC	**00033**
0.750	5/8"-11 UNC	**00034**
0.875	5/8"-11 UNC	**00034**
1.000	3/4"-10 UNC	**00035**
1.250	3/4"-10 UNC	**00035**
1.500	3/4"-10 UNC	**00035**

For an overview of the ABS spare parts, take a look at **page 212**.

Cylindrical shank adapter (Whistle Notch) with ABS connection

▲ For shanks according to DIN 6535 HE / 1835 E with angled clamping flat







84 220 ...

Adapter	KOMET no.	DCONWS mm	LPR mm	LB mm	BD mm	LSCX mm	LSCN mm	
ABS 25	A30 10601	6	55	40	24.9	36	26	**00690**
ABS 25	A30 10801	8	55	40	28.0	36	26	**00890**
ABS 25	A30 11001	10	60	45	35.0	40	30	**01090**
ABS 32	A30 20601	6	55	40	25.0	36	26	**00689**
ABS 32	A30 20801	8	55	40	28.0	36	26	**00889**
ABS 32	A30 20901	9	55	40	28.0	36	26	**00989**
ABS 32	A30 21001	10	60	45	35.0	40	30	**01089**
ABS 32	A30 21201	12	65	50	42.0	45	35	**01289**
ABS 32	A30 21401	14	65		42.0	45	35	**01489**
ABS 40	A30 30601	6	55	35	25.0	36	26	**00688**
ABS 40	A30 30801	8	55	35	28.0	36	26	**00888**
ABS 40	A30 31001	10	60	45	35.0	40	30	**01088**
ABS 40	A30 31201	12	65	50	42.0	45	35	**01288**
ABS 40	A30 31401	14	65	50	42.0	45	35	**01488**
ABS 40	A30 31601	16	70	55	48.0	48	38	**01688**
ABS 40	A30 31801	18	70	55	48.0	48	38	**01888**
ABS 50	A30 40601	6	55	30	25.0	36	26	**00697**
ABS 50	A30 40801	8	55	30	28.0	36	26	**00897**
ABS 50	A30 41001	10	60	40	35.0	40	30	**01097**
ABS 50	A30 41201	12	65	50	42.0	45	35	**01297**
ABS 50	A30 41301	13	65	50	42.0	45	35	**01397**
ABS 50	A30 41401	14	65	50	42.0	45	35	**01497**
ABS 50	A30 41601	16	70	55	48.0	48	38	**01697**
ABS 50	A30 41801	18	70	55	48.0	48	38	**01897**
ABS 50	A30 42002	20	75	60	52.0	50	40	**02097**
ABS 50	A30 42202	22	75	60	52.0	50	40	**02297**
ABS 50	A30 42502	25	75	60	52.0	50	40	**02597**[1)]
ABS 63	A30 51001	10	60	35	35.0	40	30	**01096**
ABS 63	A30 51201	12	65	45	42.0	45	35	**01296**
ABS 63	A30 51401	14	65	45	42.0	45	35	**01496**
ABS 63	A30 51601	16	70	50	48.0	48	38	**01696**
ABS 63	A30 51801	18	70	50	48.0	48	38	**01896**
ABS 63	A30 52001	20	75	55	52.0	50	40	**02096**
ABS 63	A30 52501	25	80	65	65.0	56	46	**02596**[1)]
ABS 63	A30 52801	28	80	65	65.0	56	46	**02896**[1)]
ABS 80	A30 62501	25	80	60	65.0	56	46	**02592**[1)]
ABS 80	A30 63201	32	90	70	72.0	60	50	**03292**[1)]

1) Version with two grubscrews

Spare parts cylindrical shank adapter (Whistle Notch) with ABS connection



Set Screw



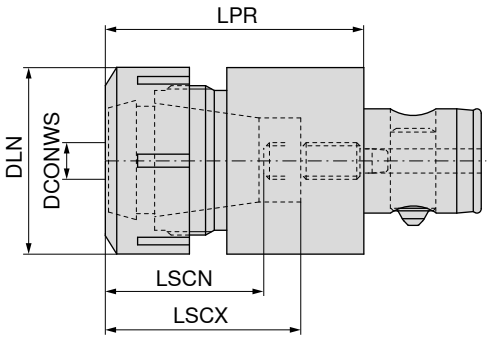
Backstop screw

		62 950 ...		84 950 ...
Spare parts DCONWS				
6	M6x10	**006**	M5x16	**20500**
8	M8x10	**008**	M6x16 - SW2.5	**20600**
9	M8x10	**008**	M8x1x16 - SW3	**20800**
10	M10x12	**010**	M8x1x16 - SW2.5	**20700**
12	M12x16	**012**	M10x1x18 - SW3	**20900**
13	M12x16	**012**	M12x1x17 - SW3	**21000**
14	M12x16	**012**	M12x1x17 - SW3	**21000**
16	M14x16	**016**	M14x1x19 - SW4	**21100**
18	M14x16	**016**	M14x1x19 - SW4	**21100**
20	M16x16	**020**	M16x1x21 - SW5	**21200**
22	M16x16	**020**	M16x1x21 - SW5	**21200**
25	M16x16	**020**	M16x1x21 - SW5	**21200**
28	M18x2x20	**025**	M16x1x21 - SW5	**21200**
32	M20x2x20	**032**	M20x1x27 - SW8	**21300**

For an overview of the ABS spare parts, take a look at **page 212**.

ER collet chuck with ABS connection

Scope of supply:
Holder with lock nut and adjustable back stop







Adapter	KOMET no.	for collet	DCONWS mm	LPR mm	DLN mm	LSCX mm	LSCN mm	84 224 ...
ABS 25	A33 11120	426E (ER16)	1 - 10	40.1	28	31	28	**01690**[1)]
ABS 32	A33 12130	428E (ER20)	1 - 13	52.5	34	39	35	**02089**[1)]
ABS 40	A33 13141	430E (ER25)	1 - 16	62.0	42	46	43	**02588**
ABS 50	A33 14151	470E (ER32)	2 - 20	69.3	50	51	48	**03297**
ABS 63	A33 15161	472E (ER40)	3 - 26	78.3	63	55	52	**04096**

1) with 6 position lock nut


Lock nut


Lock nut IK


Lock nut

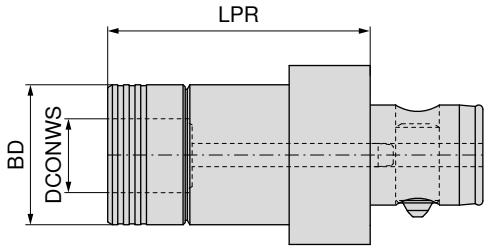

Backstop screw

Spare parts for collet	62 950 ...		83 950 ...		62 950 ...		84 950 ...	
426E (ER16)	M22x1.5 - SW25	**044**	M22x1.5	**054**			M5x8 - SW2	**22500**
428E (ER20)	M25x1.5 - SW30	**045**	M25x1.5	**053**			M6x12 - SW2.5	**22000**
430E (ER25)			M32x1.5	**055**	M32x1.5	**055**	M8x1x14 - SW4	**22600**
470E (ER32)			M40x1.5	**056**			M10x1x14 - SW5	**22700**
472E (ER40)			M50x1.5	**057**			M12x1x18 - SW8	**22800**

For an overview of the ABS spare parts, take a look at **page 212**.

Quick change tapping chuck with length compensation

▲ With length compensation under tension and compression (LZD)



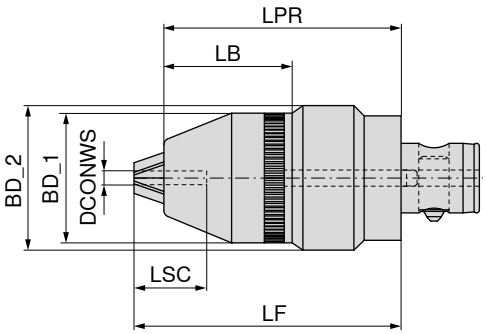


84 225 ...

Adapter	KOMET no.	DCONWS mm	BD mm	LPR mm	SZID	
ABS 32	A34 32060	19	39	69	01	**01989**
ABS 40	A34 33060	19	39	73	01	**01988**
ABS 50	A34 34060	19	39	72	01	**01997**
ABS 50	A34 34070	31	60	98	02	**03197**
ABS 63	A34 35070	31	60	111	02	**03196**

Short drill chuck

Scope of supply:
Toolholder including clamping key SW4





G 6.3 n_{max} 10000

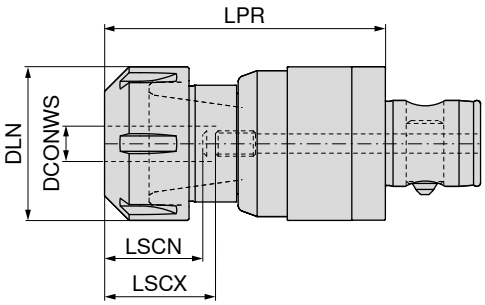
84 247 ...

Adapter	DCONWS mm	BD_1 mm	BD_2 mm	LPR mm	LSC mm	LF mm	LB mm	
ABS 50	0.5 - 13	49	57.5	95	29	104.0	51.5	**01397**
ABS 50	2.5 - 16	52	57.5	95	29	105.5	52.0	**01697**




Collet
195–199
Others

Synchro tapping chuck with ABS connection







84 226 ...

Adapter	KOMET no.	for collet	DCONWS mm	LPR mm	DLN mm	LSCX mm	LSCN mm	
ABS 32	50795131002000	ER 20	1 - 13	78.0	34	42	29	**02089**
ABS 50	50795135002000	ER 20	1 - 13	85.0	34	42	29	**02097**
ABS 50	50795135003200	ER 32	2 - 20	90.5	50	45	31	**03297**

For an overview of the ABS spare parts, take a look at **page** 212.

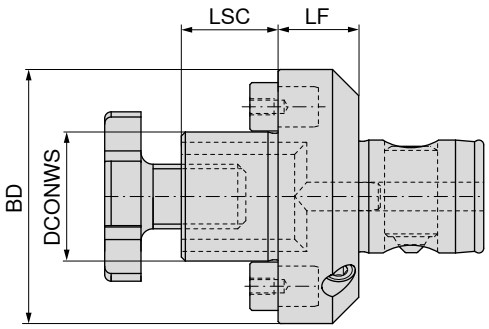


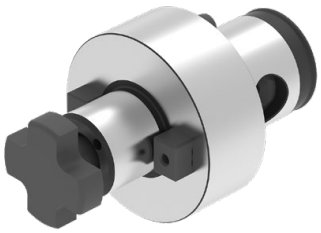
ER collet

175–183, 185–186

Shell mill adapter with ABS connection

Scope of supply:
Base body including drive dogs and retaining screw









Adapter	KOMET no.	DCONWS mm	LSC mm	LF mm	BD mm	84 228 ...	84 228 ...
ABS 50	A40 24023	16	17	20	50		**01697**
ABS 50	A40 24034	22	19	20	50		**02297**
ABS 50	A40 24043	27	21	20	50		**02797**
ABS 50	A40 24053	32	24	20	63		**03297**
ABS 63	A40 25032	22	19	22	63		**02296**
ABS 63	A40 25042	27	21	22	63		**02796**
ABS 63	A40 25052	32	24	22	63		**03296**
ABS 63	A40 25062	40	27	22	80		**04096**
ABS 80	A40 26042	27	21	25	80		**02792**
ABS 80	A40 26052	32	24	25	80		**03292**
ABS 80	A40 26062	40	27	25	80		**04092**
ABS 80	A40 16062	40	30	43	88	**14092**	
ABS 100	A40 27052	32	24	25	100		**03291**
ABS 100	A40 17062	40	30	38	88	**14091**	
ABS 100	A40 27062	40	27	25	100		**04091**
ABS 100	A40 17072	60	40	56	130	**06091**	


Drive dog


Driver


Cross screw

Spare parts DCONWS	84 950 ...	83 950 ...	83 367 ...
16			**016**
22	**22900**		**022**
27	**23000**		**027**
32	**23100**		**032**
40			**040**
40		**295**	
60		**298**	

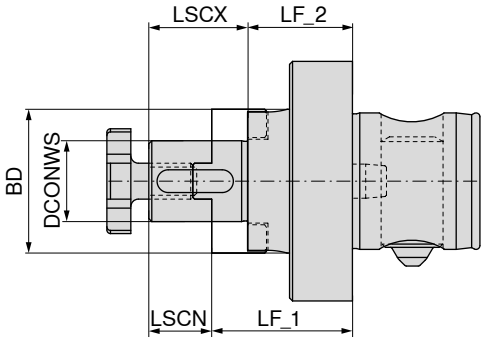
For an overview of the ABS spare parts, take a look at **page 212**.

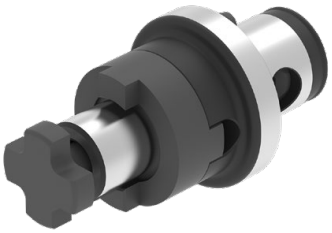
Combination shell mill adapter with ABS connection

▲ For milling cutters with transverse or longitudinal groove according to DIN 6358

Scope of supply:

Base body including retaining screw, drive ring and drive key







Adapter	KOMET no.	DCONWS mm	BD mm	LF_1 mm	LF_2 mm	LSCX mm	LSCN mm	84 229 ...
ABS 50	A40 04022	16	32	32	22	27	17	**01697**
ABS 50	A40 04032	22	40	34	22	31	19	**02297**
ABS 63	A40 05021	16	32	36	26	27	17	**01696**
ABS 63	A40 05031	22	40	38	26	31	19	**02296**
ABS 63	A40 05041	27	48	38	26	33	21	**02796**
ABS 80	A40 06031	22	40	45	33	31	19	**02292**
ABS 80	A40 06041	27	48	45	33	33	21	**02792**
ABS 80	A40 06051	32	58	47	33	38	24	**03292**
ABS 80	A40 06061	40	70	47	33	41	27	**04092**


Parallel key

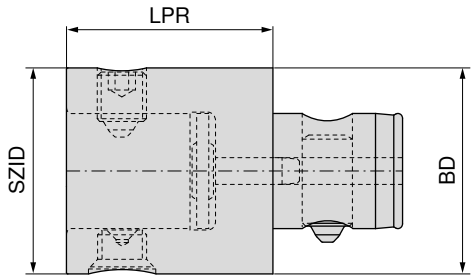

Drive ring


Cross screw

Spare parts DCONWS		83 950 ...	83 370 ...		83 367 ...
16	4 x 4 x 20	**284**	**116**	M8	**016**
22	6 x 6 x 25	**285**	**122**	M10	**022**
27	7 x 7 x 25	**286**	**127**	M12	**027**
32	8 x 7 x 28	**287**	**132**	M16	**032**
40	10 x 8 x 32	**288**	**140**	M20	**040**

For an overview of the ABS spare parts, take a look at **page 212**.

Extension with ABS Connection







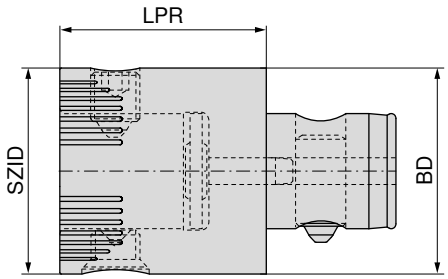
Adapter	KOMET no.	SZID	BD inch	LPR inch	84 209 ...
ABS 25	A20 00020	ABS 25	0.984	1.772	**04590**
ABS 25	A20 00220	ABS 25	0.984	2.362	**06090**
ABS 32	A20 00530	ABS 32	1.260	1.378	**03589**
ABS 32	A20 00030	ABS 32	1.260	1.969	**05089**
ABS 32	A20 00230	ABS 32	1.260	2.756	**07089**
ABS 40	A20 00540	ABS 40	1.575	1.575	**04088**
ABS 40	A20 00040	ABS 40	1.575	2.362	**06088**
ABS 40	A20 00240	ABS 40	1.575	3.543	**09088**
ABS 50	A20 00550	ABS 50	1.969	1.969	**05097**
ABS 50	A20 00050	ABS 50	1.969	2.559	**06597**
ABS 50	A20 00250	ABS 50	1.969	3.937	**10097**
ABS 50	A20 00150	ABS 50	1.969	5.906	**15097**
ABS 63	A20 00560	ABS 63	2.480	2.362	**06096**
ABS 63	A20 00060	ABS 63	2.480	3.346	**08596**
ABS 63	A20 00260	ABS 63	2.480	4.921	**12596**
ABS 63	A20 00160	ABS 63	2.480	7.480	**19096**
ABS 80	A20 00570	ABS 80	3.150	2.756	**07092**
ABS 80	A20 00070	ABS 80	3.150	3.346	**08592**
ABS 80	A20 00270	ABS 80	3.150	4.921	**12592**
ABS 80	A20 00170	ABS 80	3.150	9.449	**24092**
ABS 100	A20 00580	ABS 100	3.937	3.346	**08591**
ABS 100	A20 00080	ABS 100	3.937	4.921	**12591**
ABS 100	A20 00280	ABS 100	3.937	6.299	**16091**
ABS 125	A20 00090	ABS 125	4.921	6.299	**16085**
ABS 125	A20 00290	ABS 125	4.921	7.874	**20085**

Spare parts Adapter	 Clamping screw **62 950 ...**	 Clamping screw **84 950 ...**	 Positioning pin **84 950 ...**	 Pendulum bolt **84 950 ...**	 Coolant pipe **84 950 ...**	 Taper screw **84 950 ...**
ABS 25		**26800**	**23600**	**26000**	**24400**	**27000**
ABS 32	**13989**		**23700**	**26100**	**24500**	**27100**
ABS 40		**26900**	**23800**	**26200**	**24600**	**27200**
ABS 50		**20300**	**20200**	**20000**	**20100**	**20400**
ABS 63		**25500**	**23900**	**26300**	**24700**	**27300**
ABS 80		**25600**	**24000**	**26400**	**24800**	**25100**
ABS 100		**25700**	**24100**	**26500**	**24900**	**25200**
ABS 125		**25800**	**24200**	**26600**	**25000**	**25300**

For an overview of the ABS spare parts, take a look at **page 212**.

Torsional vibration dampers with ABS Connection

Scope of supply:
Base body with sealing disc







Adapter	KOMET no.	SZID	BD inch	LPR inch	84 216 ...
ABS 50	A20 00651	ABS 50	1.969	1.969	**05097**
ABS 63	A20 00661	ABS 63	2.480	2.362	**06096**
ABS 80	A20 00670	ABS 80	3.150	2.756	**07092**


Clamping screw


Taper screw

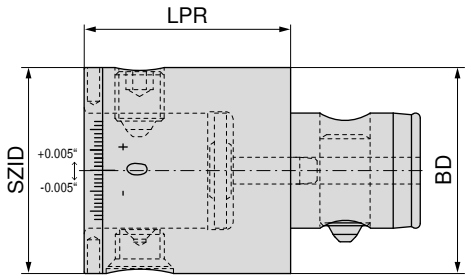
Spare parts Adapter	84 950 ...	84 950 ...
ABS 50	**20300**	**20400**
ABS 63	**25500**	**27300**
ABS 80	**25600**	**25100**

For an overview of the ABS spare parts, take a look at **page 212**.

Eccentric adjuster with ABS Connection

▲ Adjustment ±0.010 inch on diameter

Scope of supply:
Eccentric adjuster with adjuster key Ø 2.8 mm







Adapter	KOMET no.	SZID	BD inch	LPR inch	84 217 ...
ABS 50	A20 00620	ABS 50	1.969	1.969	**05097**
ABS 63	A20 00630	ABS 63	2.480	2.362	**06096**


Clamping screw

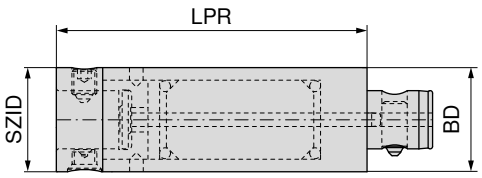

Taper screw

Spare parts Adapter	84 950 ...	84 950 ...
ABS 50	**20300**	**20400**
ABS 63	**25500**	**27300**

For an overview of the ABS spare parts, take a look at **page** 212.

Damping element with ABS connection

- ▲ The specially mounted damping core enables perfect machining results even with longer tool overhangs
- ▲ Reduction in machining times due to optimum machining parameters
- ▲ Damped machining and therefore perfect surface qualities
- ▲ Protection of the machine spindle and increased tool service life







Adapter	KOMET no.	SZID	BD inch	LPR inch	RPMX 1/min.	84 218 ...
ABS 40	A20 01240	ABS 40	1.575	4.724	8000	**12088**
ABS 50	A20 01250	ABS 50	1.969	5.906	6300	**15097**
ABS 63	A20 01260	ABS 63	2.480	7.480	5000	**19096**
ABS 80	A20 01270	ABS 80	3.150	9.449	4000	**24092**

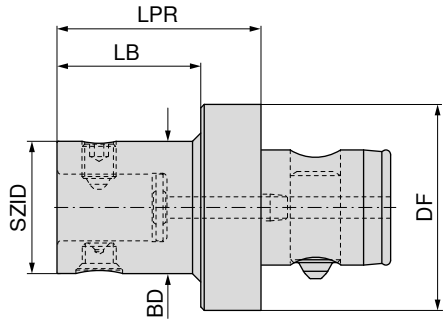

Clamping screw

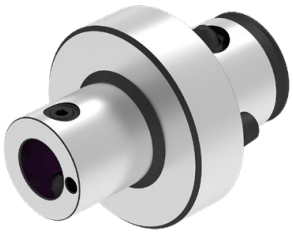

Taper screw

Spare parts Adapter	84 950 ...	84 950 ...
ABS 40	**26900**	**27200**
ABS 50	**20300**	**20400**
ABS 63	**25500**	**27300**
ABS 80	**25600**	**25100**

For an overview of the ABS spare parts, take a look at **page 212**.

Reduction with ABS connection







Adapter	KOMET no.	SZID	BD inch	DF inch	LPR inch	LB inch	84 219 ...
ABS 32	A20 10120	ABS 25	0.984	1.260	1.575	1.181	**03290**
ABS 40	A20 10220	ABS 25	0.984	1.575	1.575	1.102	**04090**
ABS 40	A20 10230	ABS 32	1.260	1.575	1.575	1.102	**04089**
ABS 50	A20 10320	ABS 25	0.984	1.969	1.969	1.378	**05090**
ABS 50	A20 10330	ABS 32	1.260	1.969	1.969	1.378	**05089**
ABS 50	A20 10340	ABS 40	1.575	1.969	1.969	1.378	**05088**
ABS 63	A20 10420	ABS 25	0.984	2.480	2.362	1.575	**06390**
ABS 63	A20 10430	ABS 32	1.260	2.480	2.362	1.575	**06389**
ABS 63	A20 10440	ABS 40	1.575	2.480	2.362	1.575	**06388**
ABS 63	A20 10450	ABS 50	1.969	2.480	2.362	1.575	**06397**
ABS 80	A20 10530	ABS 32	1.260	3.150	2.362	1.378	**08089**
ABS 80	A20 10540	ABS 40	1.575	3.150	2.362	1.378	**08088**
ABS 80	A20 10550	ABS 50	1.969	3.150	2.362	1.378	**08097**
ABS 80	A20 10560	ABS 63	2.480	3.150	2.362	1.378	**08096**
ABS 100	A20 10650	ABS 50	1.969	3.937	3.150	1.969	**10097**
ABS 100	A20 10660	ABS 63	2.480	3.937	3.150	1.969	**10096**
ABS 100	A20 10670	ABS 80	3.150	3.937	3.150	1.969	**10092**
ABS 125	A20 10770	ABS 80	3.150	4.921	3.937	1.969	**12592**
ABS 125	A20 10780	ABS 100	3.937	4.921	3.937	1.969	**12591**


Clamping screw


Clamping screw

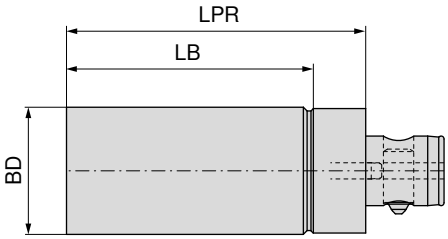

Taper screw

Spare parts SZID	62 950 ...	84 950 ...	84 950 ...
ABS 25		**26800**	**27000**
ABS 32	**13989**		**27100**
ABS 40		**26900**	**27200**
ABS 50		**20300**	**20400**
ABS 63		**25500**	**27300**
ABS 80		**25600**	**25100**
ABS 100		**25700**	**25200**

For an overview of the ABS spare parts, take a look at **page 212**.

Blank with ABS connection

▲ Connection area hardened and ground
▲ Dimension BD x dimension LB = unhardened area for further processing





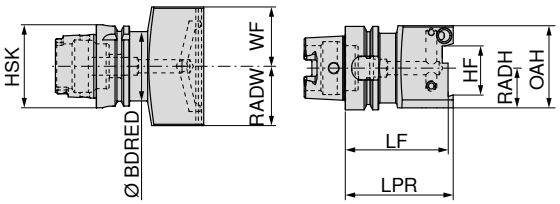


84 230 ...

Adapter	KOMET no.	LPR inch	BD inch	LB inch	
ABS 25	B10 01011	2.756	1.024	2.165	**02690**
ABS 32	B10 02011	3.150	1.299	2.559	**03389**
ABS 40	B10 03011	3.937	1.614	3.228	**04188**
ABS 50	B10 04011	4.724	2.008	3.898	**05197**
ABS 63	B10 05011	5.906	2.520	4.882	**06496**
ABS 80	B10 06011	7.087	3.189	5.709	**08192**
ABS 100	B10 07011	7.874	3.976	6.220	**10191**

For an overview of the ABS spare parts, take a look at **page 212**.

MonoClamp – HSK-T parting blade holder GX/LX/FX/SX with DirectCooling





NEW

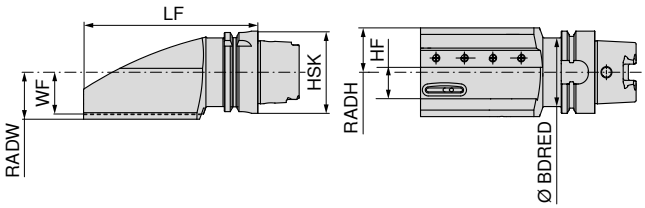
Direct Cooling

radial

74 586 ...

Adapter	LPR mm	LF mm	BDRED mm	WF mm	HF mm	OAH mm	RADW mm	RADH mm	for parting blades	
HSK-T 63	84.0	80	52.6	45	26	62	45	30	XLCF N 26...	**02637**
HSK-T 63	85.5	80	52.6	45	32	68	45	34	XLCF N 32...	**03237**

MonoClamp – HSK-T parting blade holder GX/LX/FX/SX with DirectCooling



Illustrations show right-hand versions



NEW

Direct Cooling

Left-hand

74 585 ...

NEW

Direct Cooling

Right-hand

74 584 ...

Adapter	LF mm	BDRED mm	WF mm	HF mm	RADW mm	RADH mm	for parting blades		
HSK-T 63	155	52.6	32	26	36.0	34	XLCF R/L 26...	**02637**	**02637**
HSK-T 63	155	52.6	32	32	37.5	35	XLCF R/L 32...	**03237**	**03237**



O-Ring

70 950 ...



O-Ring

70 950 ...



Clamping wedge

70 950 ...



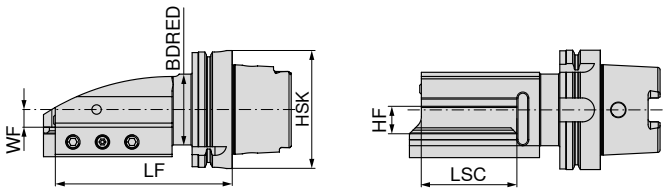
clamping screw

70 950 ...

Spare parts for parting blades								
XLCF R/L 26...	19x2.5	**293**	23x2.5	**292**		**860**	M6x12	**861**
XLCF R/L 32...	19x2.5	**293**	23x2.5	**292**		**860**	M6x12	**861**

HSK-T square shank holder 0° with DirectCooling

▲ Suitable for stationary tool holder HF = 20 / 25 / 32 mm
▲ These HF values can be achieved by removing the mounting adapter and clamping block





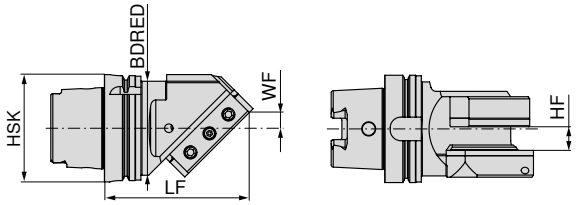
Illustrations show right-hand versions

NEW Direct Cooling — Left-hand — 74 571 ...
NEW Direct Cooling — Right-hand — 74 570 ...

Adapter	LF mm	BDRED mm	WF mm	LSC mm	HF mm	74 571 ...	74 570 ...
HSK-T 63	145	52.6	15	80	20 / 25 / 32	02537	02537
HSK-T 100	150	60.0	15	80	20 / 25 / 32	02535	02535

HSK-T square shank holder 45° with DirectCooling

▲ Suitable for stationary tool holder HF = 20 / 25 / 32 mm
▲ These HF values can be achieved by removing the mounting adapter and clamping block





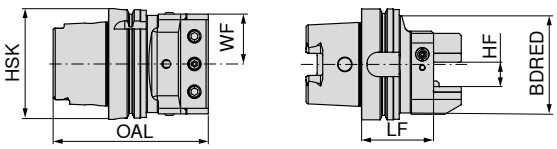
Illustrations show right-hand versions

NEW Direct Cooling — Left-hand — 74 573 ...
NEW Direct Cooling — Right-hand — 74 572 ...

Adapter	LF mm	BDRED mm	WF mm	HF mm	74 573 ...	74 572 ...
HSK-T 63	130	52.6	14.6	20 / 25 / 32	02537	02537
HSK-T 100	135	87.6	14.6	20 / 25 / 32	02535	02535

HSK-T square shank holder 90° with DirectCooling

▲ Suitable for stationary tool holder HF = 20 / 25 / 32 mm
▲ These HF values can be achieved by removing the mounting adapter and clamping block





NEW Direct Cooling — Neutral — 74 575 ...

Adapter	LF mm	BDRED mm	WF mm	OAL mm	HF mm	74 575 ...
HSK-T 63	60	52.6	45	117	20 / 25 / 32	02537
HSK-T 100	65	87.6	45	140	20 / 25 / 32	02535

16

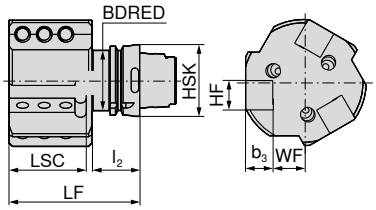
Spare parts HSK-T square shank holders with DirectCooling


Cylindrical screw


Clamping screw

		83 950 ...		62 950 ...
Spare parts				
Adapter				
HSK-T 63	M5x5 - SW2.5	**157**	M12x16 - SW6	**51100**
HSK-T 100	M5x5 - SW2.5	**157**	M12x16 - SW6	**51100**

HSK-T square shank adapter 3-face 0°




Left-hand

74 576 ...

Designation	Adapter	LF mm	l_2 mm	BDRED mm	WF mm	LSC mm	b_3 mm	HF mm	
HSK T63 SH3 L 00 2525	HSK-T 63	115	42	53	28	68	25	25	**525**
HSK T100 SH3 L 00 2525	HSK-T 100	120	45	88	33	70	25	25	**725**


Protection plugs

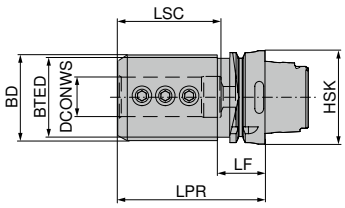

Nozzle


Hollow key with nose


Set Screw

		70 950 ...		70 950 ...	70 950 ...		70 950 ...
Spare parts							
Adapter							
HSK-T 63	UNJF 7/16"-20	**05600**	UNJF 7/16"-20	**05500**	**05700**	M12x1.75x25	**851**
HSK-T 100	UNJF 7/16"-20	**05600**	UNJF 7/16"-20	**05500**	**05700**	M12x1.75x25	**851**

HSK-T Boring bar holder

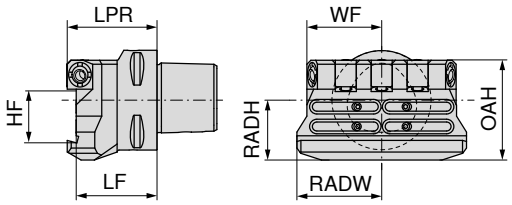




74 577 ...

Designation	Adapter	LPR mm	DCONWS mm	BD mm	LSC mm	LF mm	BTED mm	
HSK T63 BH08 80	HSK-T 63	80	8	32	41			**508**
HSK T63 BH10 80	HSK-T 63	80	10	40	41			**510**
HSK T63 BH12 80	HSK-T 63	80	12	40	41			**512**
HSK T63 BH16 80	HSK-T 63	80	16	40	51			**516**
HSK T63 BH20 80	HSK-T 63	80	20	50	51			**520**
HSK T63 BH25 90	HSK-T 63	90	25	53	61			**525**
HSK T63 BH32 95	HSK-T 63	95	32	68	61	42	53	**532**
HSK T100 BH20 90	HSK-T 100	90	20	55	56			**720**
HSK T100 BH25 95	HSK-T 100	95	25	55	61			**725**
HSK T100 BH32 110	HSK-T 100	110	32	68	61			**732**
HSK T100 BH40 120	HSK-T 100	120	40	83	81			**740**
HSK T100 BH50 125	HSK-T 100	125	50	98	91	45	88	**750**

MonoClamp – PSC parting blade holder GX/LX/FX/SX with DirectCooling





NEW

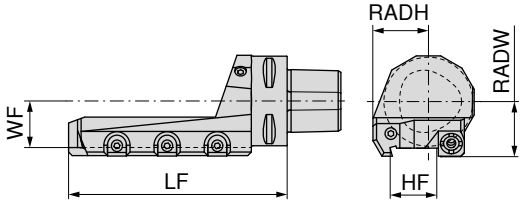
Direct Cooling

radial

84 617 ...

Adapter	LF mm	LPR mm	WF mm	HF mm	OAH mm	RADW mm	RADH mm	for parting blades	
PSC 40	40.5	45	37.5	26	50	42.5	30	XLCF N 26...	**62695**
PSC 50	40.5	45	37.5	26	50	42.5	30	XLCF N 26...	**62694**
PSC 63	45.5	50	40.0	32	57	45.0	35	XLCF N 32...	**63293**

MonoClamp – PSC parting blade holder GX/LX/FX/SX with DirectCooling



Diagrams show right hand versions



NEW

Direct Cooling

Left-hand

84 617 ...

NEW

Direct Cooling

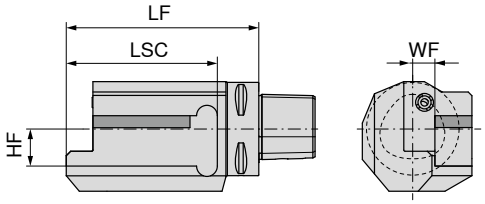
Right-hand

84 617 ...

Adapter	LF mm	WF mm	HF mm	RADW mm	RADH mm	for parting blades		
PSC 40	122	21	26	25.5	31	XLCF N 26...	**32695**	**22695**
PSC 50	122	26	26	30.5	31	XLCF N 26...	**32694**	**22694**
PSC 63	160	32	32	36.5	37	XLCF N 32...	**33293**	**23293**

PSC square shank holder 0° with DirectCooling

▲ Suitable for tool holders with PSC 63 – HF = 20 / 25 mm / PSC 80 – HF = 25 mm
▲ These HF values can be achieved by removing the clamping block



Diagrams show right hand versions



NEW

Direct Cooling

Left-hand

84 616 ...

NEW

Direct Cooling

Right-hand

84 616 ...

Adapter	LF mm	WF mm	LSC mm	HF mm		
PSC 63	130	15	102	20 / 25	**32593**	**22593**
PSC 80	130	20	102	25	**32586**	**22586**

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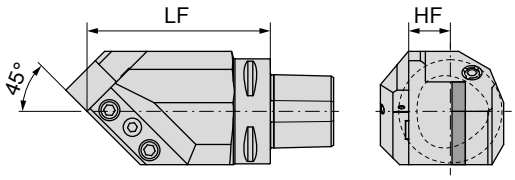
PSC square shank holder 45° with DirectCooling

▲ Suitable for tool holders with PSC 50 – HF = 20 mm / PSC 63 – HF = 20 / 25 mm
▲ These HF values can be achieved by removing the clamping block



Diagrams show right hand versions

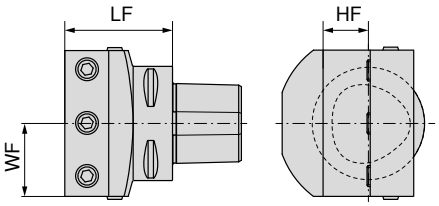


NEW Direct Cooling Left-hand
NEW Direct Cooling Right-hand

Adapter	LF mm	HF mm	84 616 ...	84 616 ...
PSC 50	85	20	12094	02094
PSC 63	110	20 / 25	12593	02593

PSC square shank holder 90° with DirectCooling

▲ Suitable for tool holders with PSC 40 – HF = 20 mm / PSC 63 HF = 20 / 25 mm
▲ These HF values can be achieved by removing the clamping block

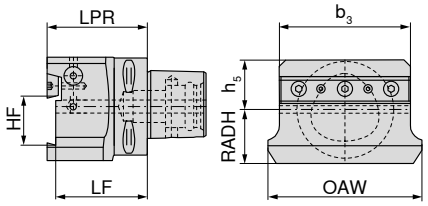




NEW Direct Cooling Neutral

Adapter	LF mm	WF mm	HF mm	84 616 ...
PSC 40	55	40	20	62095
PSC 63	71	40	20 / 25	62593

Radial parting blade holder, right / left



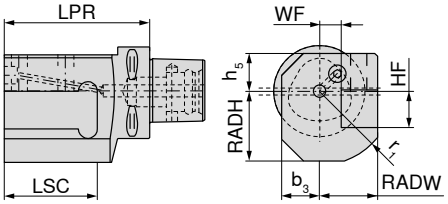


Neutral

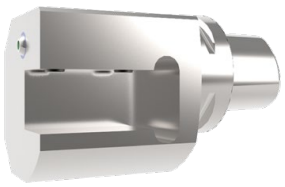
84 132 ...

Adapter	HF	LPR	OAW	b_3	h_5	RADH	LF	
	mm	mm	mm	mm	mm	mm	mm	
PSC 63	26	65	91	75	30	30	60	**626**
PSC 63	32	65	100	85	32	35	60	**632**

Square section adapter, single face



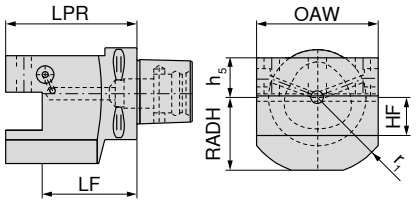
Illustrations show right-hand versions

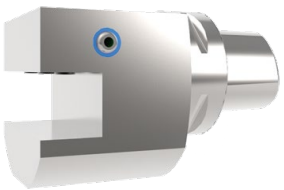


Left-hand **84 611 ...** Right-hand **84 610 ...**

Adapter	HF	LPR	b_3	RADW	r_1	WF	h_5	RADH	LSC		
	mm	mm	mm	mm	mm	mm	mm	mm	mm		
PSC 50	20	80	26	35	45	15	26	43	53	**520**	**520**
PSC 50	25	90	26	40	51	15	26	48	64	**525**	**525**
PSC 50	32	115	26	47	61	15	26	55	90	**532**	**532**
PSC 63	20	90	26	35	45	15	26	43	53	**620**	**620**
PSC 63	25	100	26	40	51	15	26	48	64	**625**	**625**
PSC 63	32	125	26	47	61	15	26	55	90	**632**	**632**
PSC 80	20	90	26	35	45	15	26	43	53	**820**	**820**
PSC 80	25	100	26	40	51	15	26	48	64	**825**	**825**
PSC 80	32	125	26	47	61	15	26	55	90	**832**	**832**

Radial square section tool holders 90°



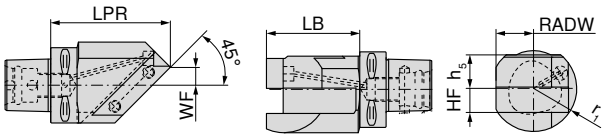


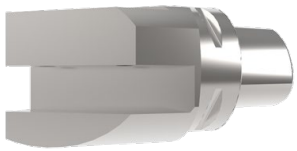
Neutral

84 602 ...

Adapter	HF	LPR	OAW	r_1	RADH	h_5	LF	
	mm	mm	mm	mm	mm	mm	mm	
PSC 50	20	70	70	45	43	26	50	**520**
PSC 50	25	80	80	51	48	26	55	**525**
PSC 50	32	90	90	61	55	26	58	**532**
PSC 63	20	80	70	45	43	26	60	**620**
PSC 63	25	90	80	51	48	26	65	**625**
PSC 63	32	100	90	61	55	26	68	**632**
PSC 80	20	80	70	45	43	26	60	**820**
PSC 80	25	90	80	51	48	26	65	**825**
PSC 80	32	100	90	61	55	26	68	**832**

Square section adapter 45°

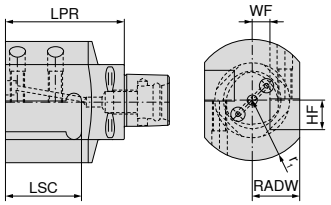


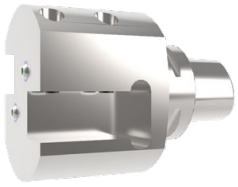


Illustrations show right-hand versions

Adapter	HF	LPR	RADW	r_1	WF	h_5	LB	Left-hand 84 605 ...	Right-hand 84 604 ...
	mm	mm	mm	mm	mm	mm	mm		
PSC 50	20	100	31	36	15	26	80	**520**	**520**
PSC 63	20	100	32	36	15	28	78	**620**	**620**
PSC 80	32	135	45	70	17	40	105	**832**	**832**

Square section adapter, double face

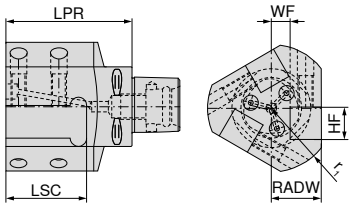


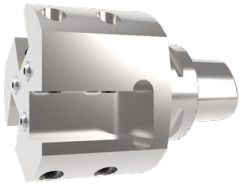


Illustrations show right-hand versions

Adapter	HF	LPR	RADW	r_1	WF	LSC	Left-hand 84 613 ...	Right-hand 84 612 ...
	mm	mm	mm	mm	mm	mm		
PSC 50	20	80	35	45	15	53	**520**	**520**
PSC 50	25	90	40	51	15	64	**525**	**525**
PSC 50	32	115	47	61	15	90	**532**	**532**
PSC 63	20	90	35	45	15	53	**620**	**620**
PSC 63	25	100	40	51	15	64	**625**	**625**
PSC 63	32	125	47	61	15	90	**632**	**632**
PSC 80	20	90	35	45	15	53	**820**	**820**
PSC 80	25	100	40	51	15	64	**825**	**825**
PSC 80	32	125	47	61	15	90	**832**	**832**

Square section adapter, triple face

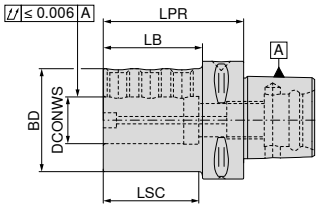




Illustrations show right-hand versions

Adapter	HF	LPR	RADW	r_1	WF	LSC	Left-hand 84 615 ...	Right-hand 84 614 ...
	mm	mm	mm	mm	mm	mm		
PSC 50	20	80	35	45	15	53	**520**	**520**
PSC 50	25	90	40	51	15	64	**525**	**525**
PSC 50	32	115	47	61	15	90	**532**	**532**
PSC 63	20	90	35	45	15	53	**620**	**620**
PSC 63	25	100	40	51	15	64	**625**	**625**
PSC 63	32	125	47	61	15	90	**632**	**632**
PSC 80	20	90	35	45	15	53	**820**	**820**
PSC 80	25	100	40	51	15	64	**825**	**825**
PSC 80	32	125	47	61	15	90	**832**	**832**

Boring bar holder







Adapter	DCONWS mm	LPR mm	BD mm	LB mm	LSC mm	84 130 ...
PSC 50	6	70	40	50	40	**506**
PSC 50	8	70	44	50	40	**508**
PSC 50	10	70	44	50	45	**510**
PSC 50	12	70	44	50	45	**512**
PSC 50	16	75	44	55	45	**516**
PSC 50	20	75	50	75	51	**520**
PSC 50	25	80	55	50	51	**525**
PSC 50	32	90	63	70	60	**532**
PSC 63	6	75	40	53	40	**606**
PSC 63	8	75	44	53	40	**608**
PSC 63	10	75	44	53	45	**610**
PSC 63	12	75	44	53	45	**612**
PSC 63	16	75	44	53	45	**616**
PSC 63	20	75	50	53	51	**620**
PSC 63	25	75	55	53	51	**625**
PSC 63	32	75	72	52	60	**632**
PSC 63	40	105	70	82	90	**640**



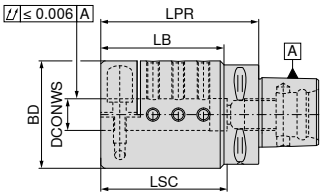
Set Screw

Spare parts DCONWS		84 950 ...
6	M6x16	**153**
8	M8x16	**154**
10	M10x16	**155**
12 - 40	M12x14	**156**

16

Boring bar adapter, split version

▲ vibration-damped
▲ ideally suited for large overhangs





Adapter	DCONWS mm	LPR mm	BD mm	LB mm	LSC mm	84 131 ...
PSC 63	6	80	40	58	60	**606**
PSC 63	8	85	45	63	65	**608**
PSC 63	10	85	50	63	65	**610**
PSC 63	12	100	63	78	80	**612**
PSC 63	16	100	63	78	80	**616**
PSC 63	20	100	68	78	80	**620**
PSC 63	25	100	68	78	80	**625**
PSC 63	32	100	72	78	80	**632**

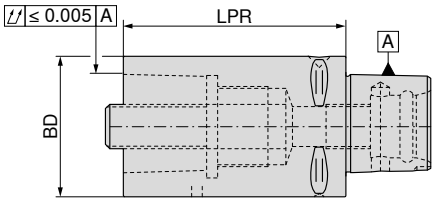

Set Screw


Set Screw

Spare parts DCONWS		83 950 ...		84 950 ...
10			M6x16	**153**
12 - 20	M8x20	**468**		
25	M8x25	**467**		

Extension, axial clamping

▲ Run-out ≤ 0.002 mm
▲ max. speed 8,000 rpm





Adapter	BD mm	LPR mm	84 620 ...
PSC 32	32	60	**301**
PSC 32	32	80	**302**
PSC 40	40	60	**401**
PSC 40	40	80	**402**
PSC 50	50	80	**501**
PSC 50	50	100	**502**
PSC 63	63	100	**601**
PSC 63	63	140	**602**
PSC 80	80	100	**801**
PSC 80	80	125	**802**


Threaded ring


tightening screw

Spare parts Adapter	84 950 ...		84 950 ...
PSC 32	**127**	SW8	**122**
PSC 40	**128**	SW8	**123**
PSC 50	**129**	SW10	**124**
PSC 63	**130**	SW14	**126**
PSC 80	**130**	SW14	**126**

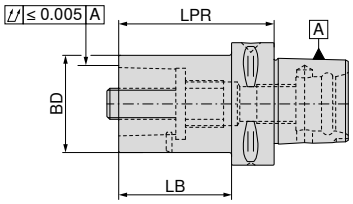
Accessories



Hollow nose keys
169

Cylindrical reduction

▲ Run-out ≤ 0.002 mm
▲ max. speed 8,000 rpm





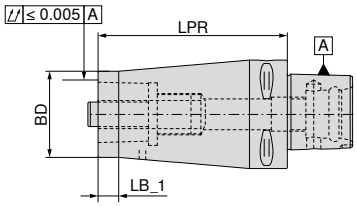
84 624 ...

Adapter	BD mm	LPR mm	LB mm	
PSC 40	32	55	35	**403**
PSC 50	32	60	40	**503**
PSC 50	40	65	45	**504**
PSC 63	32	70	48	**603**
PSC 63	40	80	58	**604**
PSC 63	50	80	58	**605**
PSC 80	32	60	30	**803**
PSC 80	40	70	40	**804**
PSC 80	50	80	50	**805**
PSC 80	63	80	50	**806**
PSC 80X	63	80	48	**816** [1]
PSC 80X	80	100	68	**818** [1]

1) PSC 80X = variant with enlarged flange diameter of 100 mm / standard flange diameter PSC 80 = 80 mm

Tapered reduction

▲ Run-out ≤ 0.002 mm
▲ max. speed 8,000 rpm





84 625 ...

Adapter	BD mm	LPR mm	LB_1 mm	
PSC 40	32	70	12	**403**
PSC 50	40	85	12	**504**
PSC 63	50	110	12	**605**
PSC 80	63	120	12	**806**
PSC 80X	80	150	12	**818** [1]

1) PSC 80X = variant with enlarged flange diameter of 100 mm / standard flange diameter PSC 80 = 80 mm


Threaded ring

84 950 ...


tightening screw

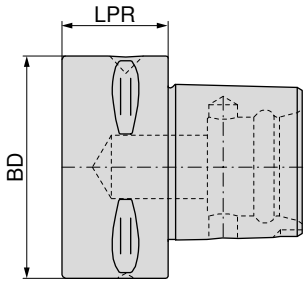
84 950 ...

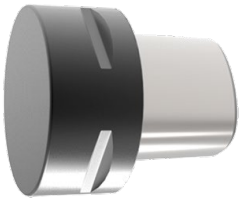
Spare parts Adapter			
PSC 40	**128**	SW8	**123**
PSC 50	**129**	SW10	**124**
PSC 63	**130**	SW14	**126**
PSC 80	**130**	SW14	**126**
PSC 80X	**130**	SW14	**126**

Accessories


Hollow nose keys
169

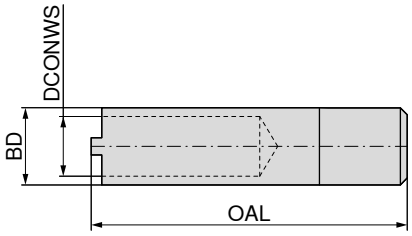
Sealing plugs





Adapter	BD mm	LPR mm	84 135 ...
PSC 40	40	28	040
PSC 50	50	28	050
PSC 63	63	30	060
PSC 80	80	38	080

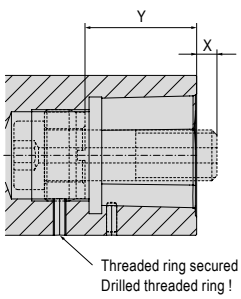
Hollow nose key for clamping screw for PSC extensions and reductions





Adapter	BD mm	OAL mm	DCONWS mm	84 651 ...
PSC 32	16	80	12.5	032
PSC 40	20	80	15.0	040
PSC 50	22	90	17.0	050
PSC 63/80/80X	34	110	21.0	063

Installation instructions: clamping screw for PSC extensions and reductions



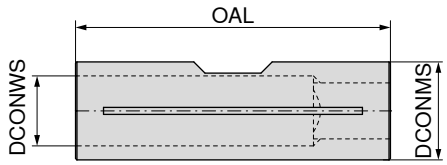
X = Screw leading edge
Y = Threaded ring insertion depth

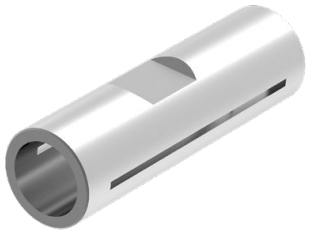
Adapter	X mm	Y mm
PSC 32	5	24
PSC 40	5	29
PSC 50	6	36
PSC 63	8	44
PSC 80	0	53
PSC 80X	0	53

16

Clamping sleeve for taps in Weldon chucks

▲ For machines with rigid tapping
▲ For safe clamping of taps



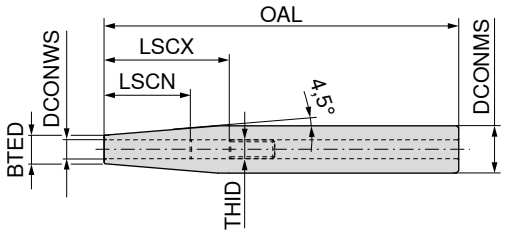


DCONWS h7 mm	DCONMS f6 mm	OAL mm	80 699 ...
3.5	6	26	**03500**
4.0	8	32	**04000**
4.5	8	26	**04500**
6.0	10	30	**06000**
7.0	10	31	**07000**
8.0	12	38	**08000**
9.0	12	38	**09000**
10.0	14	42	**10000**
11.0	14	42	**11000**
12.0	16	44	**12000**
14.0	18	45	**14000**
16.0	20	46	**16000**

Shrink fit extension

▲ For solid carbide and HSS shanks with h6 tolerance or better
▲ DRVS = Key size of the adjustment screw

TG





84 310 ...

DCONMS h6 mm	DCONWS mm	BTED mm	OAL mm	LSCX mm	LSCN mm	THID	DRVS mm	
12	3	8	150					**003**
12	4	8	150					**004**
12	5	10	150					**005**
12	6	10	150	36	26	M5	2.5	**006**
16	3	10	150					**103**
16	4	10	150					**104**
16	5	10	150					**105**
16	6	10	150	36	26	M5	2.5	**106**
16	8	12	150	36	26	M6	3.0	**108**
20	3	10	150					**203**
20	4	10	150					**204**
20	5	10	150					**205**
20	6	10	150	36	26	M5	2.5	**206**
20	8	12	150	36	26	M6	3.0	**208**
20	10	14	150	42	32	M8x1	3.0	**210**
20	12	16	150	47	37	M10x1	5.0	**212**
25	3	10	150					**303**
25	4	10	150					**304**
25	5	15	150					**305**
25	6	20	150	36	26	M5	2.5	**306**
25	8	20	150	36	26	M6	3.0	**308**
25	10	20	150	42	32	M8x1	3.0	**310**
25	12	20	150	47	37	M10x1	5.0	**312**
25	14	20	150	47	37	M10x1	5.0	**314**
25	16	22	150	50	40	M10x1	5.0	**316**
32	6	20	150	36	26	M5	2.5	**406**
32	8	20	150	36	26	M6	3.0	**408**
32	10	24	150	42	32	M8x1	3.0	**410**
32	12	24	150	47	37	M10x1	5.0	**412**
32	14	27	150	47	37	M10x1	5.0	**414**
32	16	27	150	50	40	M10x1	5.0	**416**
32	18	27	150	50	40	M10x1	5.0	**418**
32	20	27	150	52	42	M10x1	5.0	**420**

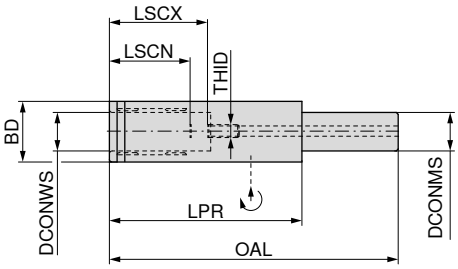
Observe the minimum clamping depth on → **Page 210**.

Hydraulic expansion extension especially for Hydraulic Chucks

▲ For solid carbide and HSS shanks with h6 tolerance or better

Scope of supply:

Base body with backstop screw and pressure screw







G 2.5 n_{max} 25000

DCONMS mm	DCONWS mm	BD mm	LPR mm	OAL mm	LSCX mm	LSCN mm	THID	84 313 ...
20	12	25.0	100	150	46	36	M6	**112**
20	20	31.5	100	150	51	41	M10x1	**120**
32	20	31.5	90	150	51	41	M10x1	**132**
32	20	31.5	90	200	51	41	M10x1	**232**

Observe the minimum clamping depth on → **Page 210**.



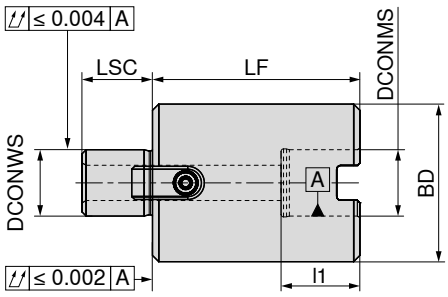
Stop screw IK

Spare parts for Article no.		83 950 ...
84 313 112	M6x12.5 - SW3	**419**
84 313 120	M10x1x13.5 - SW5	**421**
84 313 132	M10x1x13.5 - SW5	**421**
84 313 232	M10x1x13.5 - SW5	**421**

Extension for Shell mill arbors

▲ Variable applications through usage of one or two extensions (max. 2 x 50 mm possible)

Scope of supply:
Holder without clamping screw





DCONWS $_{h5}$ mm	DCONMS $_{H5}$ mm	LF mm	BD mm	LSC mm	l_1 mm	82 648 ...
16	16	50	38	17	19	**050**
16	16	75	38	17	19	**075**
22	22	50	48	19	21	**150**
22	22	75	48	19	21	**175**
27	27	50	58	21	23	**250**
27	27	75	58	21	23	**275**
32	32	50	78	24	26	**350**
32	32	75	78	24	26	**375**
40	40	50	88	27	29	**450**
40	40	75	88	27	29	**475**


Screw for drivers


Driver

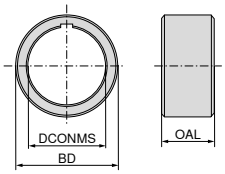

Cross screw


Cross screw

Spare parts for Article no.		83 950 ...		83 950 ...		82 649 ...		82 649 ...	
82 648 050	M3x8	**296**	8x9x17.5	**120**	M8x125	**001**	M8x80	**050**
82 648 075	M3x8	**296**	8x9x17.5	**120**			M8x100	**075**
82 648 150	M4x12	**297**	10x11x20.5	**121**	M10x125	**100**	M10x80	**150**
82 648 175	M4x12	**297**	10x11x20.5	**121**			M10x100	**175**
82 648 250	M5x12	**136**	12x13x24.3	**122**	M12x125	**200**	M12x80	**250**
82 648 275	M5x12	**136**	12x13x24.3	**122**			M12x100	**275**
82 648 350	M5x20	**137**	14x21x21.2	**123**	M16x125	**300**	M16x80	**350**
82 648 375	M5x20	**137**	14x21x21.2	**123**			M16x100	**375**
82 648 450	M6x16	**138**	15.9x16.3x19.5	**295**				
82 648 475	M6x16	**138**	15.9x16.3x19.5	**295**				

When using two extension pieces (max. 2 x 50 mm) please use a tightening bolt with a length of 125 mm.

Milling Adapter Rings DIN 2084 Form B



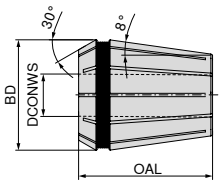


DCONMS mm	BD mm	OAL mm	83 385 ...
13	22	2	013
	22	3	113
	22	4	213
	22	5	313
	22	6	413
	22	10	513
16	26	2	016
	26	3	116
	26	4	216
	26	5	316
	26	6	416
	26	10	516
	26	20	616
	26	30	716
22	34	2	022
	34	3	122
	34	4	222
	34	5	322
	34	6	422
	34	10	522
	34	20	622
	34	30	722
27	41	2	027
	41	3	127
	41	4	227
	41	5	327
	41	6	427
	41	10	527
	41	20	627
	41	30	727
32	47	2	032
	47	3	132
	47	4	232
	47	5	332
	47	6	432
	47	10	532
	47	20	632
	47	30	732
40	55	2	040
	55	3	140
	55	4	240
	55	5	340
	55	6	440
	55	10	540
	55	20	640
	55	30	740

ER precision collet for precision collet chucks – Centro-P

- ▲ DIN ISO 15488-B (old DIN 6499-B)
- ▲ 12 times slotted
- ▲ Double taper collet
- ▲ Coloured ring as identification of precision collet
- ▲ ER08: 5 µm runout and repeatability
- ▲ Coated precision collet

ER-B
2 µm





	BD = 8.5 OAL = 13.6 4004 E / ER08	BD = 11.5 OAL = 18 4008 E / ER11	BD = 17 OAL = 27.5 426 E / ER16	BD = 26 OAL = 34 430 E / ER25	BD = 33 OAL = 40 470 E / ER32	BD = 41 OAL = 46 472 E / ER40
	84 577 ...	**84 585 ...**	**84 596 ...**	**84 597 ...**	**84 598 ...**	**84 599 ...**
DCONWS mm						
1.0	**010**	**010**	**010**			
1.1			**011**			
1.2			**012**			
1.4			**014**			
1.5	**015**	**015**	**015**			
1.6			**016**			
1.8			**018**			
2.0	**020**	**020**	**020**	**020**	**020**	
2.2			**022**			
2.4			**024**			
2.5	**025**	**025**	**025**	**025**		
2.6			**026**			
2.8			**028**			
3.0	**030**	**030**	**030** [1]	**030**	**030**	**030**
3.2			**032**			
3.4			**034**			
3.5	**035**	**035**	**035**	**035**		
3.6			**036**			
3.8			**038**			
4.0	**040**	**040**	**040** [1]	**040**	**040** [1]	**040**
4.5	**045**	**045**	**045**	**045**		
5.0	**050**	**050**	**050** [1]	**050**	**050**	**050**
5.5		**055**	**055**	**055**		
5.6			**056**			
6.0		**060**	**060** [1]	**060** [1]	**060** [1]	**060**
6.3			**063**			
6.5		**065**	**065**	**065**		
7.0		**070**	**070**	**070**	**070**	**070**
7.1			**071**			
7.5			**075**	**075**		
8.0			**080** [1]	**080** [1]	**080** [1]	**080**
8.5			**085**	**085**		
9.0			**090**	**090**	**090**	**090**
9.5			**095**	**095**		
10.0			**100** [1]	**100** [1]	**100** [1]	**100**
10.5				**105**		
11.0				**110**	**110**	**110**
11.5				**115**		
12.0				**120** [1]	**120** [1]	**120**
12.5				**125**		
13.0				**130**	**130**	**130**
13.5				**135**		
14.0				**140** [1]	**140** [1]	**140**
14.5				**145**		
15.0				**150**	**150**	**150**
15.5				**155**		
16.0				**160** [1]	**160** [1]	**160**
17.0					**170**	**170**
18.0					**180**	**180**
19.0					**190**	**190**
20.0					**200** [1]	**200**
21.0						**210**
22.0						**220**
23.0						**230**
24.0						**240**
25.0						**250**
26.0						**260**
Set in wooden box			**999**	**999**	**999**	

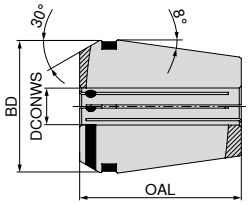
1) Included in the set

Clamping range covered: H10 corresponding to shank Ø DCONWS

ER precision collet, sealed, for precision collet chucks – Centro-P

- ▲ Similar to DIN ISO 15488-A
- ▲ 8 times slotted
- ▲ Coloured ring as identification of precision collet
- ▲ $p_{max.}$ = 60 bar
- ▲ Coated precision collet

ER-B
2 µm



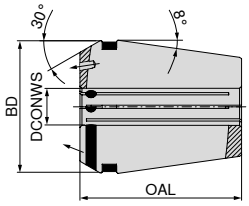


DCONWS mm	BD = 11.3 OAL = 18 425 E / ER11	BD = 16.7 OAL = 27.5 425 E / ER16	BD = 25.7 OAL = 34 429 E / ER25	BD = 32.7 OAL = 40 469 E / ER32	BD = 40.7 OAL = 46 471 E / ER40
	84 536 ...	**84 537 ...**	**84 538 ...**	**84 539 ...**	**84 540 ...**
3	030	030	030	030	
4	040	040	040	040	
5	050	050	050	050	
6	060	060	060	060	060
7		070	070	070	
8		080	080	080	080
9		090	090	090	
10		100	100	100	100
11			110	110	
12			120	120	120
13			130	130	
14			140	140	140
15			150	150	
16			160	160	160
17				170	
18				180	180
19				190	
20				200	200
22					220
25					250

ER precision collet, sealed with coolant holes, for precision collet chucks – Centro-P

- ▲ Similar to DIN ISO 15488-A
- ▲ 8 times slotted
- ▲ Coloured ring as identification of precision collet
- ▲ Coated precision collet

ER-A
2 µm





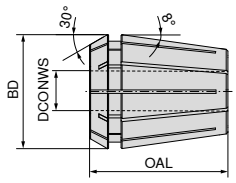
DCONWS mm	BD = 11.3 OAL = 18 4012 E / ER11	BD = 16.7 OAL = 27.5 425 E / ER16	BD = 25.7 OAL = 34 429 E / ER25	BD = 32.7 OAL = 40 469 E / ER32	BD = 40.7 OAL = 46 471 E / ER40
	84 547 ...	**84 548 ...**	**84 549 ...**	**84 550 ...**	**84 551 ...**
3	03000	03000			
4	04000	040	040	040	
6	06000	060	060	060	06000
8		080	080	080	08000
10		10000	100	100	100
12			120	120	120
14			140	140	
16			16000	160	160
18				180	
20				200	200
25					250

16

ER precision collet

- ▲ DIN ISO 15488-B (old DIN 6499-B)
- ▲ 12 times slotted
- ▲ Double taper collet
- ▲ Coated collet

ER-B
5 µm





DCONWS mm	BD = 11.5 OAL = 18 4008 E / ER11	BD = 17 OAL = 27.5 426 E / ER16	BD = 21 OAL = 31.5 428 E / ER20	BD = 26 OAL = 34 430 E / ER25	BD = 33 OAL = 40 470 E / ER32	BD = 41 OAL = 46 472 E / ER40
	84 576 ...	**84 578 ...**	**84 579 ...**	**84 580 ...**	**84 581 ...**	**84 582 ...**
1.0	010	010	010 [1]	010 [1]		
1.5	015	015 [1]	015 [1]	015 [1]		
2.0	020	020	020	020	020 [1]	
2.5	025	025 [1]	025 [1]	025 [1]	025 [1]	
3.0	030	030	030	030	030	030 [1]
3.5	035					
4.0	040	040	040	040	040	040
4.5	045					
5.0	050	050	050	050	050	050
5.5	055					
6.0	060	060	060	060	060	060
6.5	065					
7.0	070	070	070	070	070	070
8.0		080	080	080	080	080
9.0		090	090	090	090	090
10.0		100	100	100	100	100
11.0			110	110	110	110
12.0			120	120	120	120
13.0			130	130	130	130
14.0				140	140	140
15.0				150	150	150
16.0				160	160	160
17.0					170	170
18.0					180	180
19.0					190	190
20.0					200	200
21.0						210
22.0						220
23.0						230
24.0						240
25.0						250
26.0						260
Set in wooden box	999	999	999	999	999	999

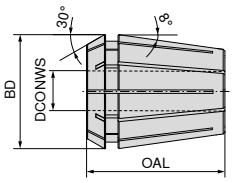
1) not included in the set

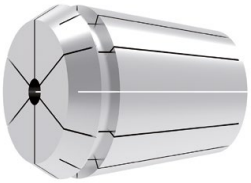
Clamping range covered: up to Ø 2 mm = 0.5 mm, from Ø 2.5 mm = 1 mm

ER collet

- ▲ DIN ISO 15488-B (alt DIN 6499-B)
- ▲ 16 times slotted
- ▲ Double taper clamping

ER-B
10 µm





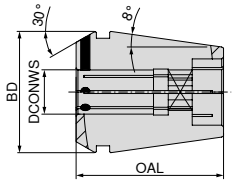
	NEW	NEW	NEW	NEW
	BD = 8.5 OAL = 13.6 4004 E / ER08	BD = 17 OAL = 27.5 426 E / ER16	BD = 26 OAL = 34 430 E / ER25	BD = 33 OAL = 40 470 E / ER32
	82 683 ...	**82 684 ...**	**82 685 ...**	**82 686 ...**
DCONWS mm				
1.0	**01000**	**01000**		
1.5	**01500**			
2.0	**02000**	**02000**	**02000**	
2.5	**02500**			
3.0	**03000**	**03000**	**03000**	**03000**
3.5	**03500**			
4.0	**04000**	**04000**	**04000**	**04000**
4.5	**04500**			
5.0	**05000**	**05000**	**05000**	**05000**
6.0		**06000**	**06000**	**06000**
7.0		**07000**	**07000**	**07000**
8.0		**08000**	**08000**	**08000**
9.0		**09000**	**09000**	**09000**
10.0		**10000**	**10000**	**10000**
11.0			**11000**	**11000**
12.0			**12000**	**12000**
13.0			**13000**	**13000**
14.0			**14000**	**14000**
15.0			**15000**	**15000**
16.0			**16000**	**16000**
17.0				**17000**
18.0				**18000**
19.0				**19000**
20.0				**20000**
Set in plastic case	**99900**	**99900**	**99900**	**99900**

Clamping range covered: up to Ø 3 mm = 0.5 mm, from Ø 4 mm = 1 mm

ER precision tap collet

- ▲ Similar to DIN ISO 15488-A
- ▲ 8 times slotted
- ▲ For Centro-P and standard chucks
- ▲ $p_{max.}$ = 60 bar
- ▲ Coated collet

ER-A
10 µm



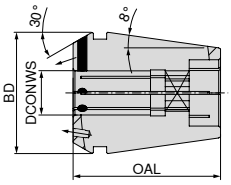


	BD = 16.7 OAL = 27.5 4031 E / ER16	BD = 25.7 OAL = 34 4282 E / ER25	BD = 32.7 OAL = 40 4537 E / ER32
	84 531 ...	**84 533 ...**	**84 534 ...**
DCONWS mm			
2.8	**028**		
3.5	**035**	**035**	
4.0	**040**	**040**	**040**
4.5	**045**	**045**	**045**
6.0	**060**	**060**	**060**
7.0	**070**	**070**	**070**
8.0	**080**	**080**	**080**
9.0	**090**	**090**	**090**
10.0		**100**	**100**
11.0		**110**	**110**
12.0		**120**	**120**
14.0		**140**	**140**
16.0		**160**	**160**
18.0			**180**
20.0			**200**

ER precision collet, sealed with coolant channels

- ▲ Similar to DIN ISO 15488-A
- ▲ 8 times slotted
- ▲ For Centro-P and standard chucks
- ▲ Coated collet

ER-A
10 µm



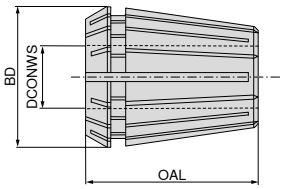


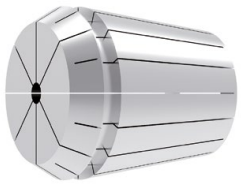
	BD = 16.7 OAL = 27.5 4537 E / ER16	BD = 25.7 OAL = 34 4537 E / ER25	BD = 32.7 OAL = 40 4537 E / ER32
	84 567 ...	**84 568 ...**	**84 569 ...**
DCONWS mm			
3.5	**035**		
4.5	**045**	**045**	**045**
6.0	**060**	**060**	**060**
7.0	**070**	**070**	**070**
8.0	**080**	**080**	**080**
9.0	**09000**	**090**	**090**
10.0		**100**	**100**
11.0		**110**	**110**
12.0		**120**	**120**
14.0		**140**	**140**
16.0		**16000**	**160**
18.0			**180**
20.0			**200**

ER precision collet

- ▲ DIN ISO 15488-B (old DIN 6499-B)
- ▲ Double taper collet
- ▲ 16 times slotted

ER-B
20 µm





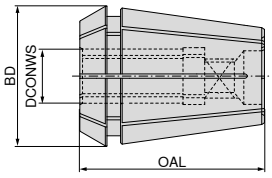
	NEW	NEW	NEW	NEW	NEW
	BD = 17 OAL = 27.5 426 E / ER16	BD = 21 OAL = 31.5 428 E / ER20	BD = 26 OAL = 34 430 E / ER25	BD = 33 OAL = 40 470 E / ER32	BD = 41 OAL = 46 472 E / ER40
	82 687 ...	**82 688 ...**	**82 689 ...**	**82 690 ...**	**82 691 ...**
DCONWS mm					
1	**01000**	**01000**			
2	**02000**	**02000**	**02000**		
3	**03000**	**03000**	**03000**	**03000**	**03000**
4	**04000**	**04000**	**04000**	**04000**	**04000**
5	**05000**	**05000**	**05000**	**05000**	**05000**
6	**06000**	**06000**	**06000**	**06000**	**06000**
7	**07000**	**07000**	**07000**	**07000**	**07000**
8	**08000**	**08000**	**08000**	**08000**	**08000**
9	**09000**	**09000**	**09000**	**09000**	**09000**
10	**10000**	**10000**	**10000**	**10000**	**10000**
11		**11000**	**11000**	**11000**	**11000**
12		**12000**	**12000**	**12000**	**12000**
13		**13000**	**13000**	**13000**	**13000**
14			**14000**	**14000**	**14000**
15			**15000**	**15000**	**15000**
16			**16000**	**16000**	**16000**
17				**17000**	**17000**
18				**18000**	**18000**
19				**19000**	**19000**
20				**20000**	**20000**
21					**21000**
22					**22000**
23					**23000**
24					**24000**
25					**25000**
26					**26000**
Set in plastic case	**99900**	**99900**	**99900**	**99900**	**99900**

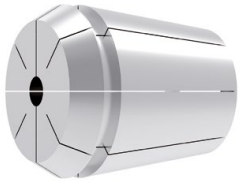
Clamping range covered: up to Ø 2 mm = 0.5 mm, from Ø 2.5 mm = 1 mm

ER collet with internal square

- ▲ Similar DIN ISO 15488-A (old DIN 6499-A)
- ▲ 8 times slotted
- ▲ Double taper collets for holding taps on synchronized spindle machines, without compensating lengths

ER-A
15 µm





	NEW	NEW	NEW
	BD = 25.7 OAL = 34 430 E / ER25	BD = 32.7 OAL = 40 470 E / ER32	BD = 40.7 OAL = 46 472 E / ER40
	82 692 ...	**82 693 ...**	**82 694 ...**
DCONWS mm			
4.5	**04500**	**04500**	
5.5	**05500**	**05500**	
6.0	**06000**	**06000**	
7.0	**07000**	**07000**	**07000**
8.0	**08000**	**08000**	**08000**
9.0	**09000**	**09000**	**09000**
10.0	**10000**	**10000**	**10000**
11.0	**11000**	**11000**	**11000**
12.0	**12000**	**12000**	**12000**
14.0		**14000**	**14000**
16.0		**16000**	**16000**
18.0			**18000**
20.0			**20000**

Wooden boxes for collets

▲ For collets form A+B

Scope of supply:
empty wooden box

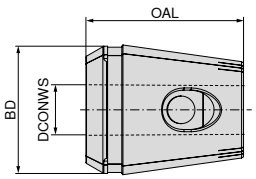


for collet	capacity	83 689 ...
4004E (ER08)	9	008
426E (ER16)	10	116
428E (ER20)	11	020
4008E (ER11)	13	011
430E (ER25)	14	025
470E (ER32)	18	032
472E (ER40)	24	040

ER wedge collet with pull out protection, for precision collet chucks – Centro-P – HDC

▲ Similar to DIN ISO 15488-A
▲ Slotted
▲ Double taper collet

ER
5 µm





BD = 32.7
OAL = 40
ER 32

83 629 ...

DCONWS mm	
12	120
16	160



Conical spring

83 950 ...

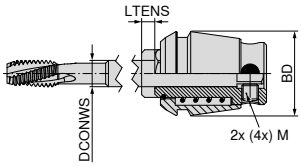
Spare parts DCONWS		
12	CP 32	455
16	CP 32	455

16

Tapping Collet Form ET (ER) with length compensation

- ▲ DIN ISO 15488 (old DIN 6499)
- ▲ With pull out length compensation (LTENS)
- ▲ The spring force is adapted to the thread size
- ▲ Anti-rotation by 2 and/or 4 clamping screws on the shank square drive

ER
10 µm



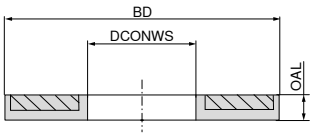


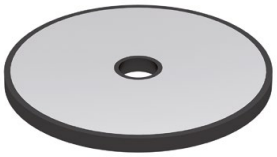
DCONWS mm	BD = 17 LTENS = 7 426 E / ER16	BD = 21 LTENS = 7 428 E / ER20	BD = 26 LTENS = 8 430 E / ER25	BD = 33 LTENS = 10 470 E / ER32	BD = 41 LTENS = 13 472 E / ER40
	80 661 ...	**80 662 ...**	**80 663 ...**	**80 664 ...**	**80 665 ...**
2.2	022	022			
2.5	025	025	025		
2.8	028	028	028		
3.0	030	030	030		
3.5	035	035	035		
4.0	040	040	040		
4.5	045	045	045	045	
5.0				050	
5.5	055	055	055	055	
6.0	060	060	060	060	060
7.0		070	070	070	070
8.0			080	080	080
9.0			090	090	090
10.0			100	100	100
11.0				110	110
12.0				120	120
14.0					140
16.0					160

When using CNC machines apply canned cycles with a feed rate or pitch of only 95 % with small threads and up to 99 % with large threads. In this way when reversing the rotation of the spindle an optimum length compensation in both directions is guaranteed.

Sealing discs for precision collet chucks – Centro-P, ER-Standard and ER-Mini with thru coolant

- ▲ For sealing when using tools with internal cooling
- ▲ Sealing range: nominal diameter -0.1 mm / +0.4 mm
- ▲ Can be applied up to 80 bar

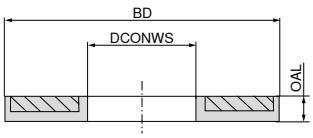




DCONWS mm	BD = 12.6 OAL = 2 426E (ER16) 83 690 ...	BD = 15.8 OAL = 2 428E (ER20) 83 694 ...	BD = 20.2 OAL = 2 430E (ER25) 83 691 ...	BD = 26.2 OAL = 2 444E / OZ (ER32) 83 692 ...	BD = 34.2 OAL = 2 472E (ER40) 83 693 ...
1.0	010				
1.5	015				
2.0	020	020	020	020	
2.5	025	025	025	025	
3.0	030	030	030	030	030
3.5	035	035	035	035	035
4.0	040	040	040	040	040
4.5	045	045	045	045	045
5.0	050	050	050	050	050
5.5	055	055	055	055	055
6.0	060	060	060	060	060
6.5	065	065	065	065	065
7.0	070	070	070	070	070
7.5	075	075	075	075	075
8.0	080	080	080	080	080
8.5	085	085	085	085	085
9.0	090	090	090	090	090
9.5	095	095	095	095	095
10.0	100	100	100	100	100
10.5		105	105	105	105
11.0		110	110	110	110
11.5		115	115	115	115
12.0		120	120	120	120
12.5		125	125	125	125
13.0		130	130	130	130
13.5			135	135	135
14.0			140	140	140
14.5			145	145	145
15.0			150	150	150
15.5			155	155	155
16.0			160	160	160
16.5				165	165
17.0				170	170
17.5				175	175
18.0				180	180
18.5				185	185
19.0				190	190
19.5				195	195
20.0				200	200
20.5					205
21.0					210
21.5					215
22.0					220
22.5					225
23.0					230
23.5					235
24.0					240
24.5					245
25.0					250
25.5					255
26.0					260

Sealing rings for precision collet chucks – PCC

▲ For sealing when using tools with internal cooling
▲ Sealing range: nominal diameter -0.1 mm / +0.4 mm
▲ Can be applied up to 100 bar





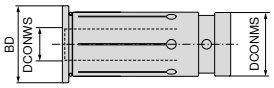
	BD = 13 OAL = 4 426E (ER16)	BD = 21 OAL = 4 430E (ER25)	BD = 27 OAL = 4 470E (ER32)
	82 630 ...	**82 631 ...**	**82 632 ...**
DCONWS mm			
3.0	03000	03000	03000
3.5	03500	03500	03500
4.0	04000	04000	04000
4.5	04500	04500	04500
5.0	05000	05000	05000
5.5	05500	05500	05500
6.0	06000	06000	06000
6.5	06500	06500	06500
7.0	07000	07000	07000
7.5	07500	07500	07500
8.0	08000	08000	08000
8.5	08500	08500	08500
9.0	09000	09000	09000
9.5	09500	09500	09500
10.0	10000	10000	10000
10.5		10500	10500
11.0		11000	11000
11.5		11500	11500
12.0		12000	12000
12.5		12500	12500
13.0		13000	13000
13.5		13500	13500
14.0		14000	14000
14.5		14500	14500
15.0		15000	15000
15.5		15500	15500
16.0		16000	16000
16.5			16500
17.0			17000
17.5			17500
18.0			18000
18.5			18500
19.0			19000
19.5			19500
20.0			20000

Reducing sleeves for hydraulic and high pressure chucks – Metric to Inch

▲ Thru coolant to 69 bar (1.000 psi)

Scope of supply:

Reduction Collets are supplied with Rubber and Aluminum Coolant seals that are removable but not desired



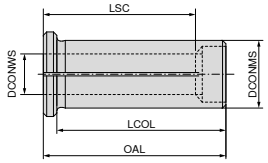


87 609 ...

DCONMS inch	DCONMS mm	DCONWS inch	OAL inch	LCOL inch	LSC inch	
0.787	20	0.125	2.065	1.988	0.720	**12500**
0.787	20	0.187	2.065	1.988	0.980	**18700**
0.787	20	0.250	2.065	1.988	1.180	**25000**
0.787	20	0.312	2.065	1.988	1.420	**31200**
0.787	20	0.364	2.065	1.988	1.420	**37500**
0.787	20	0.437	2.065	1.988	1.420	**43700**
0.787	20	0.500	2.065	1.988	1.420	**50000**
0.787	20	0.562	2.065	1.988	1.420	**56200**
0.787	20	0.625	2.065	1.988	1.420	**62500**
1.260	32	0.875	2.510	2.382	1.870	**87500**
1.260	32	1.000	2.510	2.382	1.870	**99900**

Reducing sleeves for hydraulic and high pressure chucks

▲ Thru coolant to 80 bar

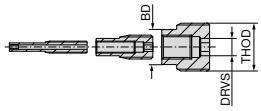




83 609 ...

DCONMS mm	DCONWS mm	OAL mm	LCOL mm	LSC mm	
12	3	40	36	29	**103**
12	4	40	36	29	**104**
12	5	40	36	29	**105**
12	6	40	36	36	**106**
12	8	40	36	37	**108**
20	3	54	50	28	**203**
20	4	54	50	28	**204**
20	5	54	50	28	**205**
20	6	54	50	36	**206**
20	8	54	50	37	**208**
20	10	54	50	40	**210**
20	12	54	50	45	**212**
20	14	54	50	45	**214**
20	16	54	50	48	**216**
25	6	60	56	37	**256**
25	8	60	56	37	**258**
25	10	60	56	40	**260**
25	12	60	56	46	**262**
25	14	60	56	47	**264**
25	16	60	56	48	**266**
25	18	60	56	48	**268**
25	20	60	56	50	**270**
32	6	64	60	36	**306**
32	8	64	60	36	**308**
32	10	64	60	40	**310**
32	12	64	60	45	**312**
32	14	64	60	46	**314**
32	16	64	60	48	**316**
32	18	64	60	49	**318**
32	20	64	60	50	**320**
32	25	64	60	56	**325**

Stop screw for use with reducing sleeves in hydraulic chuck





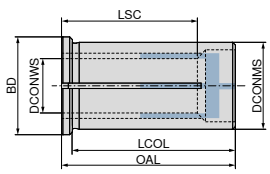
83 950 ...

THOD	BD mm	DRVS mm	
M4x0.5x26	2.8	2	**425**
M8x1x19	5.8	2.5	**428**
M10x1x16	5.8	3	**426**
M16x1x16	11.7	5	**427**

16

Reduction sleeves with coolant hole for hydraulic and high pressure chucks

▲ with coolant holes, for flexible diameter application





83 611 ...

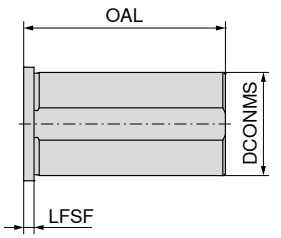
DCONMS mm	DCONWS mm	BD mm	OAL mm	LCOL mm	LSC mm	
12	3	16	44	40	29	**10300**
12	4	16	44	40	29	**10400**
12	5	16	44	40	29	**10500**
12	6	16	44	40	36	**10600**
12	8	16	44	40	37	**10800**
20	3	25	54	50	28	**20300**
20	4	25	54	50	28	**20400**
20	5	25	54	50	28	**20500**
20	6	25	54	50	36	**20600**
20	8	25	54	50	37	**20800**
20	10	25	54	50	40	**21000**
20	12	25	54	50	45	**21200**
20	14	25	54	50	45	**21400**
20	16	25	54	50	48	**21600**
32	6	36	64	60	36	**30600**
32	8	36	64	60	36	**30800**
32	10	36	64	60	40	**31000**
32	12	36	64	60	45	**31200**
32	14	36	64	60	46	**31400**
32	16	36	64	60	48	**31600**
32	18	36	64	60	49	**31800**
32	20	36	64	60	50	**32000**
32	25	36	64	60	56	**32500**

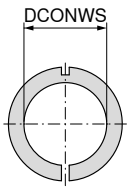
Adaptation for the use of stop screws for reducing sleeves

DCONMS in mm			
12		**83 950 425**	**83 950 426**
20	**83 950 425**	**83 950 428**	**83 950 427**
25	**83 950 425**	**83 950 428**	**83 950 427**
32		**83 950 428**	**83 950 427**

Slotted reduction sleeves

▲ For cylindrical and other tool holders
▲ For tools with cylindrical shank





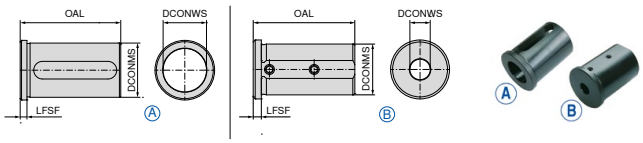


83 271 ...

DCONMS mm	DCONWS mm	OAL mm	LFSF mm	
20	6	30	4	**206**
20	8	30	4	**208**
20	10	30	4	**210**
20	12	30	4	**212**
20	15	30	4	**215**
20	16	30	4	**216**
25	6	40	4	**256**
25	8	40	4	**258**
25	10	40	4	**260**
25	12	40	4	**262**
25	15	40	4	**265**
25	16	40	4	**266**
25	20	40	4	**270**
32	6	50	4	**326**
32	8	50	4	**328**
32	10	50	4	**330**
32	12	50	4	**332**
32	15	50	4	**335**
32	16	50	4	**336**
32	20	50	4	**340**
40	10	78	4	**410**
40	12	78	4	**412**
40	15	78	4	**415**
40	16	78	4	**416**
40	20	78	4	**420**
40	25	78	4	**425**
40	32	78	4	**432**
50	20	88	4	**520**
50	25	88	4	**525**
50	32	88	4	**532**
50	40	88	4	**540**

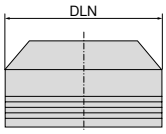
Reduction sleeves for direct clamping

▲ For tools with cylindrical shank



					83 272 ...
DCONMS mm	DCONWS mm	OAL mm	LFSF mm	Fig.	
25	6	50	4	B	**256**
25	8	50	4	B	**258**
25	10	50	4	B	**260**
25	12	50	4	B	**262**
25	14	50	4	A	**264**
25	16	50	4	A	**266**
25	20	50	4	A	**270**
32	6	58	5	B	**326**
32	8	58	5	B	**328**
32	10	58	5	B	**330**
32	12	58	5	B	**332**
32	16	58	5	A	**336**
32	20	58	5	A	**340**
32	25	58	5	A	**345**
40	8	58	5	B	**408**
40	10	58	5	B	**410**
40	12	58	5	B	**412**
40	16	58	5	A	**416**
40	20	58	5	A	**420**
40	25	58	5	A	**425**
40	32	58	5	A	**432**
50	12	75	5	B	**512**
50	16	75	5	A	**516**
50	20	75	5	A	**520**
50	25	75	5	A	**525**
50	32	75	5	A	**532**
50	40	75	5	A	**540**

ER standard lock nut for precision collet chucks – Centro-P

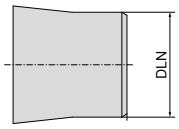






				for seals	
				84 950 ...	84 950 ...
for collet	DCONWS mm	DLN mm	TQX Nm		
426E (ER16)	1 - 10	30	80	001	011
430E (ER25)	2 - 16	40	90	003	013
470E (ER32)	2 - 20	50	180	005	015
472E (ER40)	3 - 26	63	200	007	017

Tapered lock nut for precision collet chucks – Centro-P

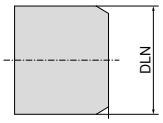






				for seals	
				84 950 ...	84 950 ...
for collet	DCONWS mm	DLN mm	TQX Nm		
426E (ER16)	1 - 10	24	80	031	033

Mini lock nut for precision collet chucks – Centro-P







				for seals	
				84 950 ...	84 950 ...
for collet	DCONWS mm	DLN mm	TQX Nm		
4008E (ER11)	Ø 3.0	16	10	042 [1]	
4008E (ER11)	Ø 4.0	16	10	043 [1]	
4008E (ER11)	Ø 5.0	16	10	044 [1]	
4008E (ER11)	Ø 6.0	16	10	045 [1]	
4008E (ER11)	Ø 7.0	16	10	046 [1]	
426E (ER16)	1 - 10	22	30	034	
426E (ER16)	1 - 10	22	28		035

1) directly sealed

Collet removal aid for Mini lock nuts for precision collet chucks – Centro-P



for collet	84 950 ...
4004E (ER08)	070
4008E (ER11)	072

Roll key

▲ Version CP = for Centro-P lock nuts
▲ Version STD = for standard lock nuts
▲ Version HDC = for HDC lock nuts



for lock nut	DLN mm	84 950 ...
4004E / ER08 CP mini	10	050 1)
4008E / ER 11 CP mini	16	080 1)
426E / ER 16 CP / ER 16 mini	22	026 1)
426E / ER 16 CP Conical	24	082 2)
426E / ER 16 CP	30	027
426E / ER 16 STD	32	028
430E / ER 25 CP	40	054
470E / ER 32 CP + STD	50	056
470E / ER 32 HDC	53	30200
472E / ER 40 CP + STD	63	057

1) Special key for mini lock nuts
2) Key for tapered lock nuts

Torque key



TQX Nm	Square mm	84 435 ...
5 - 30	9 x 12	030
10 - 80	9 x 12	080
20 - 200	14 x 18	200

Additional roll key device for torque key

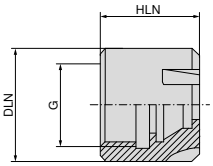
▲ Version CP = for Centro-P lock nuts
▲ Version STD = for standard lock nuts
▲ Version HDC = for HDC lock nuts



for lock nut	DLN mm	TQX Nm	Square mm	84 950 ...
4008E / ER 11 CP mini	16	5 - 30	9 x 12	060 1)
426E / ER 16 CP / ER 16 mini	22	5 - 30	9 x 12	170 1)
426E / ER 16 CP Conical	24	10 - 80	9 x 12	061 2)
426E / ER 16 CP	30	20 - 200	14 x 18	171
426E / ER 16 STD	32	20 - 200	14 x 18	172
430E / ER 25 CP	40	20 - 200	14 x 18	065
470E / ER 32 CP + STD	50	20 - 200	14 x 18	067
470E / ER 32 HDC	53	20 - 200	14 x 18	30300
472E / ER 40 CP + STD	63	20 - 200	14 x 18	068

1) For mini lock nuts
2) For tapered lock nuts

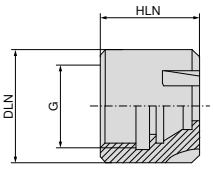
Mini ER lock nut





for collet	THSZMS	DLN mm	HLN mm	TQX Nm	62 950 ...
426E (ER16)	M19x1	22	18	28	066

Mini ER lock nut for sealing rings





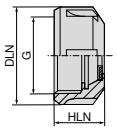
for collet	THSZMS	DLN mm	HLN mm	TQX Nm	for seals 83 950 ...
426E (ER16-DS)	M19x1	22	22.0	28	058
428E (ER20-DS)	M24x1	28	23.2	35	059
430E (ER25-DS)	M30x1	35	24.7	40	060

ER Mini clamping key



for collet	83 950 ...
430E (ER25)	103

ER Lock nut







for seals

for collet	THSZMS	DLN mm	HLN mm	62 950 ...	83 950 ...
426E (ER16)	M22x1.5	32	17.0	054	
426E (ER16)	M22x1.5	32	22.0		054
428E (ER20)	M25x1.5	35	23.2		053
430E (ER25)	M32x1.5	42	20.0	055	
430E (ER25)	M32x1.5	42	24.7		055
470E (ER32)	M40x1.5	50	27.0		056
472E (ER40)	M50x1.5	63	30.7		057

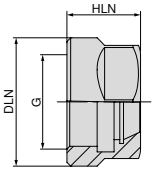
Y clamping key



for lock nut	83 357 ...
ER 16	116
ER 20	12000
ER 25	125
ER 32	132
ER 40	140

ER Lock nut

▲ DRVS = Drive size

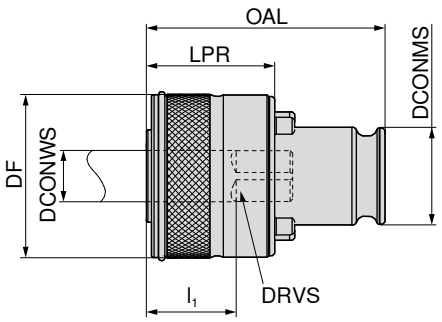




for collet	THSZMS	DRVS mm	DLN mm	HLN mm	62 950 ...
426E (ER16)	M22x1.5	25	28	18.0	044
428E (ER20)	M25x1.5	30	34	19.5	045

Quick change tap adapter with overload clutch

▲ Adapter with adjustable overload clutch
▲ for use with taps





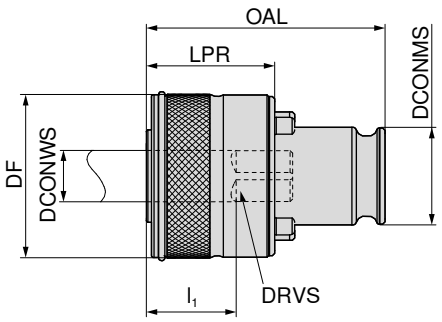


83 612 ...

SZID	DCONWS mm	DRVS mm	DIN 371	DIN 374 / 376	DF mm	DCONMS mm	OAL mm	l_1 mm	LPR mm	
01	2.8	2.1	M2		33	19	46.5	17	25	**100**
01	2.8	2.1	M2.5		33	19	46.5	17	25	**101**
01	3.5	2.7	M3		33	19	46.5	17	25	**102**
01	4.0	3.0	M3.5		33	19	46.5	17	25	**103**
01	4.5	3.4	M4		33	19	46.5	17	25	**104**
01	6.0	4.9	M4.5		33	19	46.5	17	25	**105**
01	6.0	4.9	M5		33	19	46.5	17	25	**106**
01	4.5	3.4		M6	33	19	46.5	17	25	**107**
01	6.0	4.9	M6		33	19	46.5	17	25	**108**
01	5.5	4.3		M7	33	19	46.5	17	25	**109**
01	7.0	5.5	M7		33	19	46.5	17	25	**110**
01	6.0	4.9		M8	33	19	46.5	17	25	**111**
01	8.0	6.2	M8		33	19	46.5	17	25	**112**
01	9.0	7.0	M9		33	19	46.5	17	25	**113**
01	7.0	5.5		M10	33	19	46.5	17	25	**114**
01	10.0	8.0	M10		33	19	46.5	17	25	**115**
01	8.0	6.2		M11	33	19	46.5	17	25	**116**
01	9.0	7.0		M12	33	19	46.5	17	25	**117**
02	6.0	4.9	M4.5 - M6		50	31	69.0	30	34	**200**
02	6.0	4.9	M7 (DIN 352)		50	31	69.0	30	34	**201**
02	7.0	5.5	M7		50	31	69.0	30	34	**202**
02	6.0	4.9		M8	50	31	69.0	30	34	**203**
02	8.0	6.2	M8		50	31	69.0	30	34	**204**
02	9.0	7.0	M9		50	31	69.0	30	34	**205**
02	7.0	5.5		M10	50	31	69.0	30	34	**206**
02	10.0	8.0	M10		50	31	69.0	30	34	**207**
02	8.0	6.2		M11	50	31	69.0	30	34	**208**
02	9.0	7.0		M12	50	31	69.0	30	34	**209**
02	11.0	9.0		M14	50	31	69.0	30	34	**210**
02	12.0	9.0		M16	50	31	69.0	30	34	**211**
02	14.0	11.0		M18	50	31	69.0	30	34	**212**
02	16.0	12.0		M20	50	31	69.0	30	34	**213**

Quick change tap adapter with overload clutch, with through coolant

▲ Adapter with adjustable overload clutch
▲ for use with taps





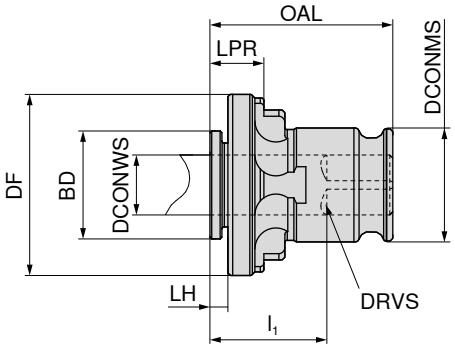


83 616 ...

SZID	DCONWS mm	DRVS mm	DIN 371	DIN 374 / 376	DF mm	DCONMS mm	OAL mm	l_1 mm	LPR mm	
01	3.5	2.7	M3	M4.5 - M5	33	19	46.5	17	25	**100**
01	4.5	3.4	M4	M6	33	19	46.5	17	25	**102**
01	5.5	4.3		M7	33	19	46.5	17	25	**104**
01	6.0	4.9	M4.5 - M6	M8	33	19	46.5	17	25	**106**
01	7.0	5.5	M7	M10	33	19	46.5	17	25	**108**
01	8.0	6.2	M8	M11	33	19	46.5	17	25	**110**
01	9.0	7.0	M9	M12	33	19	46.5	17	25	**112**
01	10.0	8.0	M10		33	19	46.5	17	25	**114**
01	11.0	9.0		M14	33	19	46.5	17	25	**116**
02	6.0	4.9	M4.5 - M6	M8	50	31	69.0	30	34	**200**
02	7.0	5.5	M7	M10	50	31	69.0	30	34	**202**
02	8.0	6.2	M8	M11	50	31	69.0	30	34	**204**
02	9.0	7.0	M9	M12	50	31	69.0	30	34	**206**
02	10.0	8.0	M10		50	31	69.0	30	34	**208**
02	11.0	9.0		M14	50	31	69.0	30	34	**210**
02	12.0	9.0	M12	M16	50	31	69.0	30	34	**212**
02	14.0	11.0		M18	50	31	69.0	30	34	**214**
02	16.0	12.0		M20	50	31	69.0	30	34	**216**

Quick change tap adapter

▲ Normal version without overload clutch
▲ For mounting taps
▲ For right-hand and left-hand threads





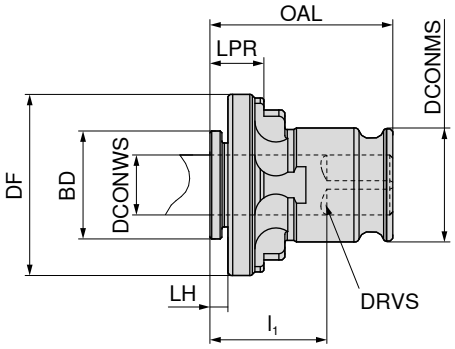


83 610 ...

SZID	DCONWS mm	BD mm	DRVS mm	DIN 371	DIN 374 / 376	DF mm	DCONMS mm	OAL mm	LH mm	l_1 mm	LPR mm	
01	3.5	18	2.7	M3		30.2	19	31	3.5	17	9.5	**100**
01	4.5	18	3.4	M4		30.2	19	31	3.5	17	9.5	**101**
01	4.0	18	3.0	M3.5		30.2	19	31	3.5	17	9.5	**102**
01	2.8	18	2.1	M2 - M2.6		30.2	19	31	3.5	17	9.5	**103**
01	5.5	18	4.3		M7	30.2	19	31	3.5	17	9.5	**104**
01	6.0	18	4.9	M4.5 - M6	M8	30.2	19	31	3.5	17	9.5	**105**
01	7.0	18	5.5	M7	M10	30.2	19	31	3.5	17	9.5	**106**
01	8.0	18	6.2	M8	M11	30.2	19	31	3.5	17	9.5	**107**
01	9.0	18	7.0	M9	M12	30.2	19	31	3.5	17	9.5	**108**
01	10.0	18	8.0	M10		30.2	19	31	3.5	17	9.5	**109**
01	11.0	18	9.0		M14	30.2	19	31	3.5	17	9.5	**110**
02	6.0	26	4.9	M4.5 - M6		46.3	31	46	2.5	30	11.0	**200**
02	7.0	26	5.5	M7		46.3	31	46	2.5	30	11.0	**201**
02	8.0	26	6.2	M8		46.3	31	46	2.5	30	11.0	**202**
02	9.0	26	7.0	M9		46.3	31	46	2.5	30	11.0	**203**
02	10.0	26	8.0	M10		46.3	31	46	2.5	30	11.0	**204**
02	11.0	26	9.0		M14	46.3	31	46	2.5	30	11.0	**205**
02	12.0	26	9.0		M16	46.3	31	46	2.5	30	11.0	**206**
02	14.0	26	11.0		M18	46.3	31	46	2.5	30	11.0	**207**
02	16.0	26	12.0		M20	46.3	31	46	2.5	30	11.0	**208**
02	18.0	26	14.5		M22 - M24	46.3	31	46	2.5	30	11.0	**209**

Quick change tap adapter, with through coolant

▲ Normal version without overload clutch
▲ For mounting taps
▲ For right-hand and left-hand threads





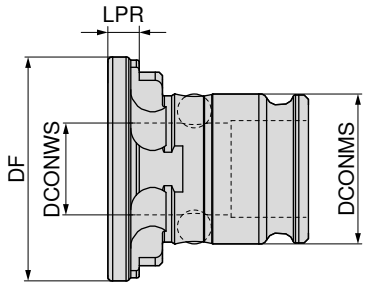


83 614 ...

SZID	DCONWS mm	BD mm	DRVS mm	DIN 371	DIN 374 / 376	DF mm	DCONMS mm	OAL mm	LH mm	l_1 mm	LPR mm	
01	3.5	18	2.7		M4.5 - M5	30.2	19	31	3.5	17	9.5	**100**
01	4.5	18	3.4	M4	M6	30.2	19	31	3.5	17	9.5	**102**
01	5.5	18	4.3		M7	30.2	19	31	3.5	17	9.5	**104**
01	6.0	18	4.9	M4.5 - M6	M8	30.2	19	31	3.5	17	9.5	**106**
01	7.0	18	5.5	M7	M10	30.2	19	31	3.5	17	9.5	**108**
01	8.0	18	6.2	M8	M11	30.2	19	31	3.5	17	9.5	**110**
01	9.0	18	7.0	M9	M12	30.2	19	31	3.5	17	9.5	**112**
01	10.0	18	8.0	M10		30.2	19	31	3.5	17	9.5	**114**
02	6.0	26	4.9	M4.5 - M6	M8	46.3	31	46	2.5	30	11.0	**200**
02	7.0	26	5.5	M7	M10	46.3	31	46	2.5	30	11.0	**202**
02	8.0	26	6.2	M8	M11	46.3	31	46	2.5	30	11.0	**204**
02	9.0	26	7.0	M9	M12	46.3	31	46	2.5	30	11.0	**206**
02	10.0	26	8.0	M10		46.3	31	46	2.5	30	11.0	**208**
02	11.0	26	9.0		M14	46.3	31	46	2.5	30	11.0	**210**
02	12.0	26	9.0	M12	M16	46.3	31	46	2.5	30	11.0	**212**
02	14.0	26	11.0		M18	46.3	31	46	2.5	30	11.0	**214**
02	16.0	26	12.0		M20	46.3	31	46	2.5	30	11.0	**216**

Reducing adapter for quick change adapters

▲ Reducing adapter for reducing size 02 to 01. In this way the clamping ranges can be extended to smaller sizes.





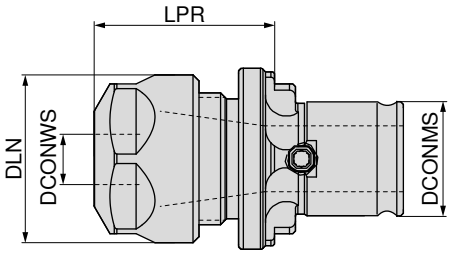


83 624 ...

SZID	DF mm	DCONMS mm	DCONWS mm	LPR mm	
02	46	31	19	8.5	**200**

Quick change tap adapters

▲ Adapters for collets ER 16 / ER 25





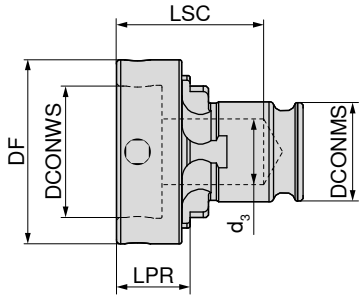


SZID	DCONWS mm	DLN mm	DCONMS mm	LPR mm	for collet	83 618 ...
01	1 - 10	28	19	29.5	ER 16	010 [1]
02	2 - 16	42	31	38.5	ER 25	016

1) with 6 position lock nut

Quick change adapter for dies

▲ For mounting dies according to DIN 223





SZID	for size	DF mm	DCONMS mm	DCONWS mm	LPR mm	d_3 mm	LSC mm	83 622 ...
01	16 x 5	25	19	16	9	12.5	23	116
01	20 x 5	30	19	20	9	12.5	23	120
01	20 x 7	30	19	20	11	12.5	25	121
01	25 x 9	35	19	25	14	12.5	28	125
01	38 x 10	48	19	38	15	14.2	29	138
01	30 x 11	40	19	30	16	12.5	30	130
01	38 x 14	48	19	38	19	14.2	33	139
02	20 x 5	30	31	20	22	15.0	57	220
02	20 x 7	30	31	20	22	15.0	57	221
02	25 x 9	35	31	35	22	15.0	57	225
02	38 x 10	48	31	38	22	22.0	57	238
02	30 x 11	40	31	30	22	22.0	57	230
02	38 x 14	48	31	38	25	22.0	60	239
02	45 x 14	57	31	45	29	22.0	64	245
02	45 x 18	57	31	45	29	22.0	64	246

TORX® Screwdriver



Size	LB mm	TQX Nm	80 950 ...
T05	35	0.5	082
T06	35	0.9	083
T07	35	1.7	084
T08	40	2.6	085
T09	40	3.4	086
T10	40	4.5	087
T15	45	7.7	088
T20	45	12.7	089

TORX® Screwdriver sets



Size	80 950 ...
T06, T07, T08, T09, T10, T15, T20	090

TORX PLUS® Screwdriver



Size	LB mm	TQX Nm	80 950 ...
T05-IP	35	0.5	057
T06-IP	35	0.9	058
T07-IP	35	1.7	059
T08-IP	40	2.6	060
T09-IP	40	3.4	061
T10-IP	40	4.5	062
T15-IP	45	7.7	063
T20-IP	45	12.7	064

TORX PLUS® Screwdriver sets



Size	80 950 ...
T06IP, T07IP, T08IP, T09IP, T10IP, T15IP, T20IP	091

Allen key with cross handle



DRVS mm	TQX Nm	80 397 ...
2	1.9	020
2.5	3.8	025
3	6.6	030
4	16	040
5	30	050
6	52	060
8	120	080
10	220	100

Allen keys with cross handle – set

▲ 7-piece Allen key set in workbench stand



Size	80 397 ...
SW2, SW2,5, SW3, SW4, SW5, SW6, SW8	99900

TORX® Screwdriver



Size	LB mm	80 950 ...
T06	60	100
T07	60	101
T08	60	102
T09	60	103
T10	80	104
T15	80	105
T20	100	106
T25	100	107
T30	115	092

TORX PLUS® Screwdriver



Size	LB mm	80 950 ...
T06-IP	60	116
T07-IP	60	117
T08-IP	60	039
T09-IP	60	118
T10-IP	80	119
T15-IP	80	120
T20-IP	100	121
T25-IP	100	122

TORX® MagicSpring®



Size	LB mm	80 950 ...
MS T06	60	108
MS T07	60	109
MS T08	60	110
MS T09	60	111
MS T10	80	112
MS T15	80	113
MS T20	100	114
MS T25	100	115
MS T30	100	131

TORX PLUS® MagicSpring®



Size	LB mm	80 950 ...
MS T06-IP	60	123
MS T07-IP	60	124
MS T08-IP	60	125
MS T09-IP	60	126
MS T10-IP	80	127
MS T15-IP	80	128
MS T20-IP	100	129



A stainless steel spring holds MagicSpring® Torx® and Torx Plus® screws in place.





TorqueFix® Handle

- ▲ with fixed torque moment
- ▲ Standard: EN ISO 6798, BS EN 26789, ASME B107.14M
- ▲ Accuracy: ± 6 %, based on national standards
- ▲ Bits to be clamped in the universal holder only



TQX Nm	80 021 ...
0.4	00400
0.5	00500
0.6	006
0.7	007
0.8	008
0.9	00900
1	010
1.1	01100
1.2	012
1.5	01500
1.6	016
2	020
2.5	02500
3	030
3.2	032
3.8	03800
4	040
5	050
5.5	055
6	060
7.2	07200

TorqueFix® key

- ▲ With fixed torque
- ▲ Ergonomic key handle, extremely easy to use thanks to compact design
- ▲ Specially designed for difficult to access screws and constricted openings
- ▲ Click signal when the set torque value is reached
- ▲ Standards: DIN EN ISO 6789
- ▲ Accuracy: ± 6%, traceable to national standards

Scope of supply:
incl. Plastic box and inspection report



TQX Nm	DRVS mm	80 392 ...
0.5	4	00500
0.6	4	00600
0.9	4	00900
1.1	4	01100
1.2	4	01200
1.4	4	01400
2.0	4	02000
2.5	4	02500
3.0	4	03000
3.8	4	03800
4.0	4	04000

easyTorque® Handle

- ▲ with a fixed torque
- ▲ Accuracy: ± 10%
- ▲ Bits can only be clamped in the universal holder



NEW

TQX Nm	DRVS mm	BD mm	OAL mm	WT kg	80 024 ...
0.5	4	34	130	0.950	00500
0.6	4	34	130	0.950	00600
0.9	4	34	130	0.940	00900
1.1	4	34	130	0.101	01100
1.2	4	34	130	0.990	01200
1.4	4	34	130	0.101	01400
2.0	4	34	130	0.101	02000
2.5	4	34	130	0.106	02500
3.0	4	34	130	0.104	03000
3.8	4	34	130	0.105	03800
4.0	4	34	130	0.105	04000
4.5	4	34	130	0.105	04500
5.0	4	34	130	0.105	05000

TorqueVario®-S

- ▲ Patented handle

Scope of supply:
incl. Torque-Setter setting tool



TQX Nm	80 950 ...
0.4 - 1.0	046
0.5 - 2.0	191
0.8 - 5.0	192
2.0 - 7.0	193

Universal holder for Bits

- ▲ 162 mm long



for	80 950 ...
DIN3126-C/E 6.3-1/4"	014

Interchangeable blade for hex drive



Size	TQX Nm	short 75 mm 80 393 ...	long 175 mm 80 950 ...
SW1.5	0.9	01500	151
SW2	1.8	02000	
SW2.5	3.8	02500	153
SW3	5.5	03000	154
SW4	8.0	04000	155

Replaceable Blade for TORX®



Size	TQX Nm	short 75 mm 80 394 ...	long 175 mm 80 950 ...
T05	0.4		048
T06	0.6	00600	031
T07	0.9	00700	032
T08	1.3	00800	033
T09	2.5	00900	034
T10	3.8	01000	035
T15	5.5	01500	036
T20	8.0	02000	037
T25	8.0	02500	038

Replaceable Blade for TORX PLUS®



Size	TQX Nm	long 175 mm 80 950 ...
T05-IP	0.5	049
T06-IP	0.8	050
T07-IP	1.3	051
T08-IP	2.0	043
T09-IP	3.0	052
T10-IP	4.5	053
T15-IP	6.6	054
T20-IP	8.0	055
T25-IP	8.0	056

Interchangeable blade, short 75 mm, suitable for TorqueFix® Key article number 80 392 ...→ **Page 202**.

Interchangeable blade, long 175 mm, suitable for TorqueFix® Grip article number 80 021 ... and TorqueVario®-S article number 80 950 ... → **Page 202**.

TORX® short bit (25 mm)

▲ DIN3126-C 6.3 – 1/4“



Size	TQX Nm	80 950 ...
T06	0.9	015
T07	1.7	016
T08	2.6	017
T09	3.4	018
T10	4.5	019
T15	7.7	020
T20	12.7	021
T25	19	022
T30	37.4	093

TORX® long bit (50 mm)

▲ DIN3126-E 6.3 – 1/4“



Size	TQX Nm	80 950 ...
T06	0.9	023
T07	1.7	024
T08	2.6	025
T09	3.4	026
T10	4.5	027
T15	7.7	028
T20	12.7	029
T25	19	030
T30	37.4	094

TORX PLUS® short bit (25 mm)

▲ DIN3126-C 6.3 – 1/4“



Size	TQX Nm	80 950 ...
T08-IP	2.6	068
T09-IP	3.4	069
T10-IP	4.5	070
T15-IP	7.7	071
T20-IP	12.7	072
T25-IP	19	073

TORX PLUS® long bit (50 mm)

▲ DIN3126-E 6.3 – 1/4“



Size	TQX Nm	80 950 ...
T08-IP	2.6	040
T09-IP	3.4	077
T10-IP	4.5	078
T15-IP	7.7	079
T20-IP	12.7	080
T25-IP	19	081

Bit – hexagonal (50 mm)

▲ DIN3126-E 6.3 – 1/4“



Size	80 398 ...
SW1.5	01500
SW2	02000
SW2.5	02500
SW3	03000
SW3.5	03500
SW4	04000
SW4.5	04500
SW5	05000
SW6	06000
SW8	08000

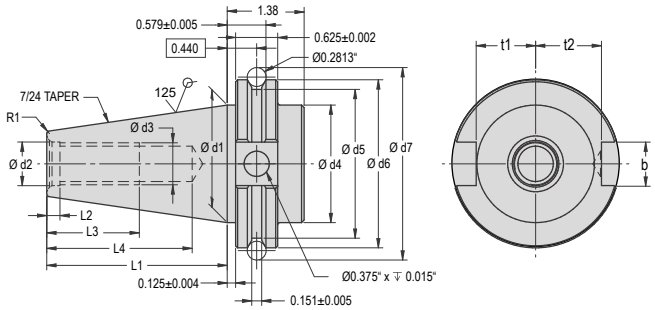
TORX PLUS® Allen key



Size	OAL mm	80 951 ...
T07-IP	44	00700
T08-IP	47	00800
T09-IP	51	00900
T10-IP	54	01000
T15-IP	58	01500
T20-IP	62	02000
T25-IP	67	02500
T27-IP	73	02700
T30-IP	79	03000
T40-IP	88	04000

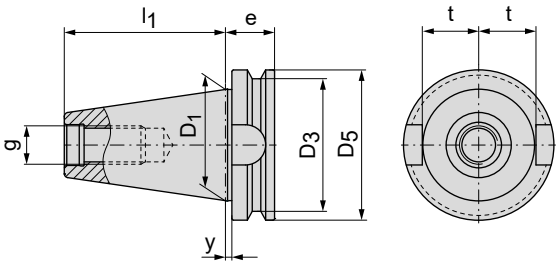
Technical data for steep taper tools

CAT ANSI/ASME B5.50-1994 Shank Details



	Ø d1 -0.005"	L1 ± 0.005"	L2 ± 0.010"	L3 min."	Ø d2 +0.0.15"	Ø d3 UNC-2B	Ø d4 max.	Ø d5	Ø d6	Ø d7 ±0.002"	t1 -0.015"	t2 -0.015"	b ±0.015"	R1 ± 0.010"
	inch	inch	inch	inch	inch	inch	inch	inch	inch	inch	inch	inch	inch	inch
CAT 30	1.250	1.875	0.188	1.00	0.516	0.500-13	1.812	1.531	1.812	2.176	0.640	0.735	0.645	0.020
CAT 40	1.750	2.687	0.188	1.12	0.641	0.625-11	2.500	2.219	2.500	2.863	0.890	0.985	0.645	0.040
CAT 50	2.750	4.000	0.250	1.75	1.031	1.000-8	3.875	3.594	3.875	4.238	1.390	1.485	1.020	0.040

ISO 7388-2



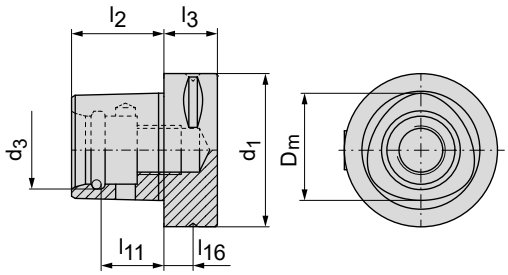
Maximum recommended rpm for steep taper toolholders:

CAT / BT 30 to 20,000 $^{1}/_{min.}$
CAT / BT 40 to 20,000 $^{1}/_{min.}$
CAT / BT 50 to 16,000 $^{1}/_{min.}$

	D_1 mm	D_3 mm	D_5 mm	l_1 mm	g	e mm	t mm	y mm	b mm
BT 30	31.75	38	46	48.4	M 12	22	16.3	2	16.1
BT 40	44.45	53	63	65.4	M 16	27	22.5	2	16.1
BT 50	69.85	85	100	101.8	M 24	38	35.3	3.2	25.7

Technical Data for Polygon shank adapters

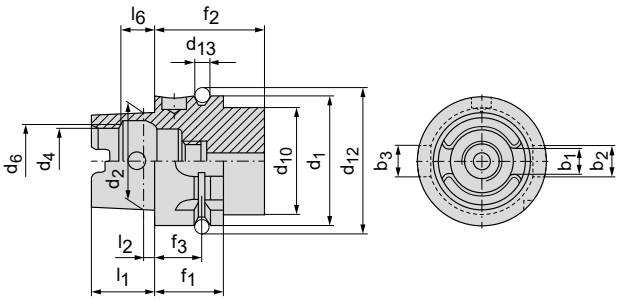
ISO 26623-1



	d_1 mm	d_3 ±0.05 mm	l_2 ±0.1 mm	l_3 mm	l_{11} ±0.1 mm	l_{16} mm	D_m mm
PSC 32	32	16.5	19	15	13.5	9	22
PSC 40	40	20	24	20	17.5	12	28
PSC 50	50	24	30	20	22	12	35
PSC 63	63	32	38	22	26	12	44
PSC 80	80	38	48	30	34	12	55

Technical Data for HSK Adapters

ISO 12164 – HSK-A / HSK-C



Maximum rpm recommended for HSK adapters:

HSK-A 32 to 50,000 rpm
HSK-A 40 to 42,000 rpm
HSK-A 50 to 30,000 rpm
HSK-A 63 to 25,000 rpm
HSK-A 100 to 16,000 rpm

	b_1 mm	b_2 mm	b_3 mm	d_1 mm	d_2 mm	d_4 mm	d_6 mm	d_{10} mm	d_{12} mm	d_{13} mm	f_1 mm	f_2 mm	f_3 mm	l_1 mm	l_2 mm	l_6 mm
HSK 32	7.05	7	9	32	24	17	19	26	37	4	20	35	16	16	3.2	8.92
HSK 40	8.05	9	11	40	30	21	23	34	45	4	20	35	16	20	4	11.42
HSK 50	10.54	12	14	50	38	26	29	42	59.3	7	26	42	18	25	5	14.13
HSK 63	12.54	16	18	63	48	34	37	53	72.3	7	26	42	18	32	6.3	18.13
HSK 100	20.02	20	22	100	75	53	58	88	109.75	7	29	45	20	50	10	28.56

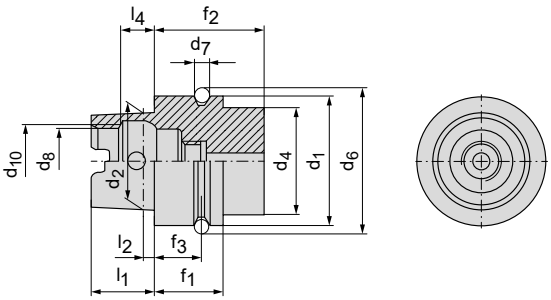
ISO 12164 – HSK-A

- Applied for machining centers, milling and special machines with automatic tool change
- **Central axial coolant supply via the coolant pipe**
- Torque transmission via 2 driving grooves at the taper end
- 2 grooves on the flange for the tool magazine, positioning notch, bore for data storage medium DIN 69873 in the flange

ISO 12164 – HSK-C

- Applied for machine spindles without automatic tool change as well as tool extensions and reducers
- **Central axial coolant supply via the coolant pipe**
- Torque transmission via 2 driving grooves at the taper end

ISO 12164 – HSK-E



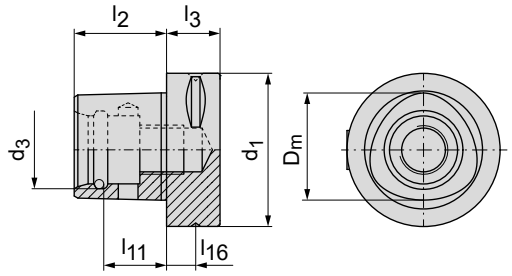
	d_1 mm	d_2 mm	d_4 mm	d_6 mm	d_7 mm	d_8 mm	d_{10} mm	f_1 mm	f_2 mm	f_3 mm	l_1 mm	l_2 mm	l_4 mm
HSK 40	40	30	34	45	4	21	23	20	35	16	20	4	11.42
HSK 50	50	38	42	59.3	7	26	29	26	42	18	25	5	14.13
HSK 63	63	48	53	72.3	7	34	37	26	42	18	32	6.3	18.13

ISO 12164 – HSK-E

- Applied for high rpm (HSC) for high speed spindles with automatic tool change
- Rotation symmetrical, without driving grooves
- Torque transmission through friction
- **Possibility of central coolant supply via coolant pipe**

Technical Information for Polygon Shank Adapters

ISO 26623-1



	d_1	$d_{3\pm0.05}$	$l_{2\pm0.1}$	l_3	$l_{11\pm0.1}$	l_{16}	D_m
PSC 32	32	16.5	19	15	13.5	9	22
PSC 40	40	20	24	20	17.5	12	28
PSC 50	50	24	30	20	22	12	35
PSC 63	63	32	38	22	26	12	44
PSC 80	80	38	48	30	34	12	55

Advantages of the PSC interface

The repeatability of the PSC shank is ± 2 microns



The tapered polygon in conjunction with the tight tolerance provides backlash-free centering also acts as pull back. The PSC cone has very high rigidity and bending strength. The main advantages of this interface are the transmittable torque stability, the resistance against radial forces acting on the tool and the exact center height. This means high feed rates can be achieved on large material cross sections. The PSC interface is ideally suited for all machining operations such as drilling, turning and milling.

HyPower / HyTens

The right hydraulic chuck for so many different machining scenarios!

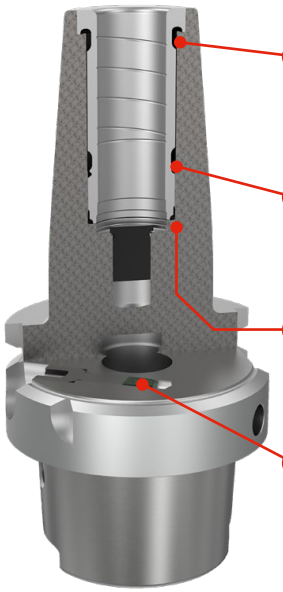
Are you looking for higher cutting speeds to enhance productivity and facilitate handling? The entire range of **HyPower** high pressure chucks and the range of **HyTens** hydraulic chucks from CERATIZIT guarantee easy, process-secure tool clamping for every application.

HyPower –	High pressure chuck	Application range
Rough	Milling with strong forces > roughing	▽▽▽ ▽▽ ▽
Complus	First choice – general purpose	▽▽▽ ▽▽ ▽
Access 3°	Optimum accessibility	▽▽▽
Access 4.5°	Optimum accessibility thanks to same interference contour as heat shrink adapter, latest technology	▽▽▽ ▽▽

HyTens –	Hydraulic chuck	Application range
Fit	First choice – general purpose	▽▽▽ ▽▽
Turn	Perfect for turning operations	▽▽▽ ▽▽
Compact	affordable all-round alternative	▽▽▽ ▽▽

Main Application	▽▽▽	▽▽	▽
Extended application	▽▽ ▽	▽ ▽▽▽	▽▽
	Finishing	Roughing - Finishing	Roughing

Maximum performance and productivity



New chamber design makes it possible to reverse the force at critical solder joints (from tensile to compression load), enabling significantly higher radial loads during machining.

New chamber design significantly reduces the technology's susceptibility to temperature (up to 80°C even during milling operations lasting up to 240 minutes)

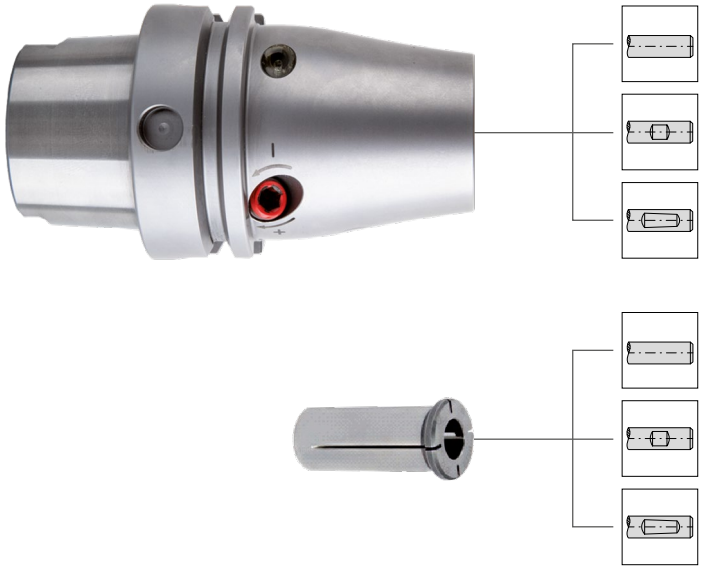
If there are multiple instances of unintended shrinking, the soldering system includes an emergency outlet to prevent potential injuries.

Double-lip sealing system dramatically increases the service life of the hydraulic chuck (over 10,000 clamping cycles under laboratory conditions)

HyPower / HyTens

Clamping of shanks with flats possible with or without reduction sleeve

HSS shank DIN1835 and
Solid Carbide shank DIN6535



The main applications for Milling Chuck

- ▲ HPC Milling
- ▲ HSC Milling
- ▲ Hard Machining
- ▲ Drilling
- ▲ Reaming

Clamping Force Comparison with Different Systems

This comparison shows the higher retention forces of the Milling Chuck **(HyPower)**. Especially with larger diameters high holding force is important when HPC machining so that the tool is not pulled out of the holder. **HyPower** now offers this process reliability.

Key Benefits

- ▲ Increased Process Security
- ▲ Longer Tool Life
- ▲ Improved Surface Quality
- ▲ Extended spindle life

Shank type & size	16	18	20	25	32	mm
	Maximum transmissible torque with shank tolerance h6					
HyTens – Hydraulic chuck	170	240	330	400	650	Nm
HyPower – High pressure chuck	350	430	520	650–750	800–890	Nm
Heat Shrink Adapter	200	290	450	530	700	Nm

Symbol explanation


Plain cylindrical shank


Cylindrical shank with lateral driving face „Weldon“


Cylindrical shank with angled clamping flat „Whistle Notch“

Clamping Torque Values (Md) and minimum shank clamping depths for hydraulic- and high pressure chucks





Minimum shank clamping depths

	Shank type & size	6	8	10	12	14	16	18	20	25	32	mm
HyTens	Minimum clamping depth	27	27	31	36	36	39	39	41	47	51	mm
HyPower	Minimum clamping depth						39	39	41	47	51	mm

Clamping Torque Values (Md) for direct clamping

	Clamping diameter (d1 h6)	6	8	10	12	14	16	18	20	25	32	mm
HyTens	Md with shank at minimum size	20	30	47	80	100	160	200	330	400	650	Nm
HyTens	Md with shank at maximum size	30	45	85	140	160	230	270	400	470	730	Nm
HyPower	Md with shank at minimum size						280	360	550	650	800	Nm
HyPower	Md with shank at maximum size						380	450	650	750	890	Nm

Clamping Torque Values (Md) for clamping with reduction sleeve Ø 32 mm

	Clamping diameter (d1 h6)	6	8	10	12	14	16	18	20	25	mm
HyTens	Md with shank at minimum size	30	45	60	120	120	180	220	250	330	Nm
HyTens	Md with shank at maximum size	45	65	110	170	170	230	300	320	440	Nm

Clamping Torque Values (Md) for clamping with reduction sleeve Ø 20 mm

	Clamping diameter (d1 h6)	3	4	5	6	8	10	12	14	16	mm
HyTens	Md with shank at minimum size	6	9	16	30	55	90	120	135	190	Nm
HyTens	Md with shank at maximum size	10	12	22	40	75	120	150	170	260	Nm

Clamping Torque Values (Md) for clamping with reduction sleeve Ø 12 mm

	Clamping diameter (d1 h6)	3	4	5	6	8	mm
HyTens	Md with shank at minimum size	3	4	7	12	18	Nm
HyTens	Md with shank at maximum size	4	8	12	20	26	Nm

For Shrink Fit Adapter

Shank type & size	3	4	5	6	8	10	12	14	16	18	20	25	32	mm
Minimum clamping depth	12	16	20	26	26	31	37	37	40	40	42	48	52	mm
permissible torque moment	4	11	17	24	45	82	145	190	200	290	450	530	700	Nm

Static clamping moments

Static clamping moments of the Centro-P and HDC ER precision collet chucks with different tightening torques measured at the lock nut.

Centro-P

Clamping diameter (d1 h6)	2	3	3.5	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	mm
ER 16 torque moment 30 Nm	2	3.5	5																						Nm
ER 16 torque moment 50 Nm				12	20	30	45	60	72	80															Nm
ER 25 torque moment 40 Nm				10	20	40																			Nm
ER 25 torque moment 75 Nm							62	75	85	95															Nm
ER 25 torque moment 90 Nm											122	145	160	175	190	200									Nm
ER 32 torque moment 60 Nm				20	30	40																			Nm
ER 32 torque moment 120 Nm							75	90	110	120	135	150	160	180	190										Nm
ER 32 torque moment 140 Nm																220	240	260	280	300					Nm
ER 40 torque moment 70 Nm				60	75	90	100																		Nm
ER 40 torque moment 110 Nm								110	125	140	150														Nm
ER 40 torque moment 150 Nm												200	220	240	260	300	350								Nm
ER 40 torque moment 200 Nm																			420	440	460	480	515	530	Nm

HDC – Heavy Duty Chuck

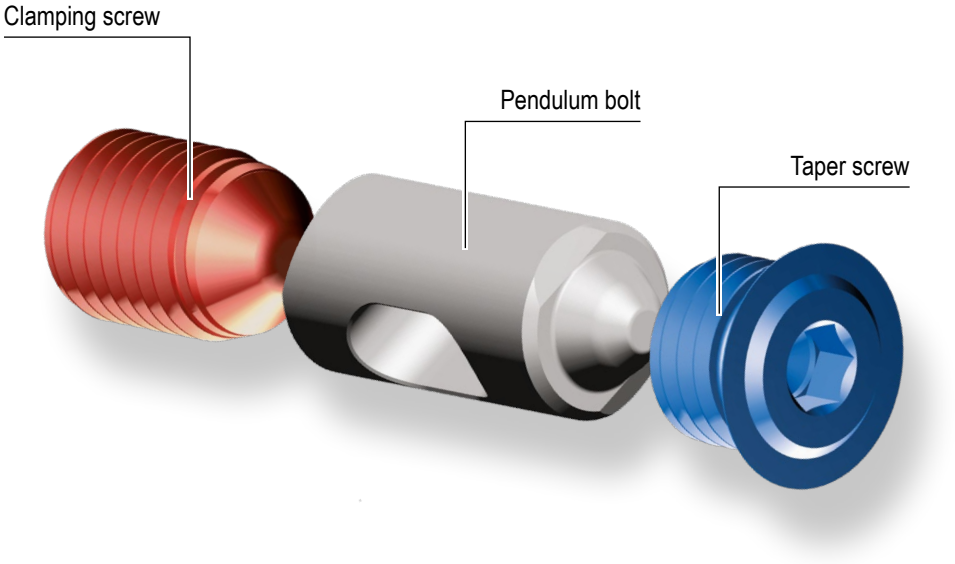
Clamping diameter (d1 h6)	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	mm
ER 32 tightening torque 40 Nm			25	37	50															Nm
ER 32 torque moment 120 Nm						93	112	137	150	168	187	200	225	237						Nm
ER 32 torque moment 140 Nm															275	300	325	350		Nm
ER 32 tightening torque 180 Nm																			375	Nm

Measurement of the specified clamping forces was performed exclusively statically. The actual clamping forces that arise during machining may deviate due to various influences (vibrations, oscillations, machining situation).

Technical information – ABS

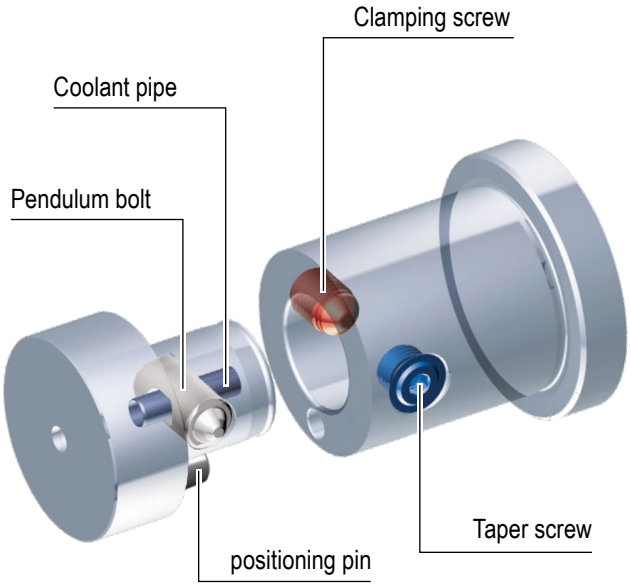
Even better connected

The extension of the proven ABS system complements the existing portfolio and continues to meet the high demands on accuracy. The adapter is an important element in tooling systems between the cutting tool and the machine. It must be able to reliably transmit the cutting forces that are produced. Adapters also have a considerable impact on the quality of the machining result. They also contribute to the cost-effectiveness of the machining process.



Advantages

- ▲ Improved force transmission
- ▲ Optimum machining result
- ▲ Higher cutting values possible
- ▲ Less noise pollution in production
- ▲ System fully compatible upwards and downwards
- ▲ Suitable for ABS, ABS N and ABS T



Spare parts ABS	 Taper screw	 Pendulum bolt	 Clamping screw	 Range 1	 Coolant pipe	 positioning pin	 Range 2	 Sealing ring
25	84 950 27000	84 950 26000	84 950 26800	84 950 99700	84 950 24400	84 950 23600	84 950 98900	84 950 30400
32	84 950 27100	84 950 26100	62 950 13989	84 950 99600	84 950 24500	84 950 23700	84 950 98800	84 950 30500
40	84 950 27200	84 950 26200	84 950 26900	84 950 99500	84 950 24600	84 950 23800	84 950 98700	84 950 30600
50	84 950 20400	84 950 20000	84 950 20300	84 950 99800	84 950 20100	84 950 20200	84 950 99900	84 950 30700
63	84 950 27300	84 950 26300	84 950 25500	84 950 99400	84 950 24700	84 950 23900	84 950 98600	84 950 30800
80	84 950 25100	84 950 26400	84 950 25600	84 950 99300	84 950 24800	84 950 24000	84 950 98500	84 950 30900
100	84 950 25200	84 950 26500	84 950 25700	84 950 99200	84 950 24900	84 950 24100	84 950 98400	84 950 31000
125	84 950 25300	84 950 26600	84 950 25800	84 950 99100	84 950 25000	84 950 24200	84 950 98300	
160	84 950 25400	84 950 26700	84 950 25900		84 950 23500	84 950 24300		

DAH compensation holders

- Compensation systems for µ-precision run-out
- Simple correction of run-out and axis errors
- Optimized for high rpm
- Designed for internal coolant supply
- Rotary tools provide long tool life

84 327 ...

DAH adapter for tools with ABS adapter



DAH hydraulic expansion adapter for tools with cylindrical shank



84 329 ...

With HSK interface
ISO 12164



With ABS interface



87 329 ...

CAT Taper



BT steep taper per
ISO 7388-2



DAH 50 HS compensation holder for high-speed machining

- Tried and tested hydraulic expansion clamping technology
- Maximum run-out and repeatability precision < 1 µ ensures consistent cutting action
- Very simple run-out adjustment
- Compact design
- Unbeatable vibration damping, meaning outstanding surface quality
- Flexible clamping range with reduction sleeves
- Speeds of up to 25,000 rpm
- Suitable for minimum quantity lubrication (MMS)

84 326 ...

With HSK interface
ISO 12164



87 326 ...

CAT Taper



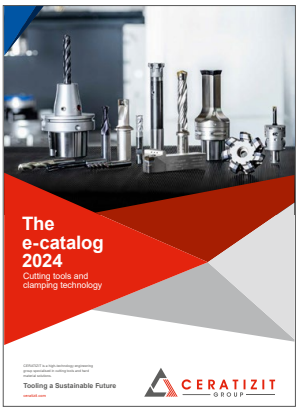
BT steep taper per
ISO 7388-2



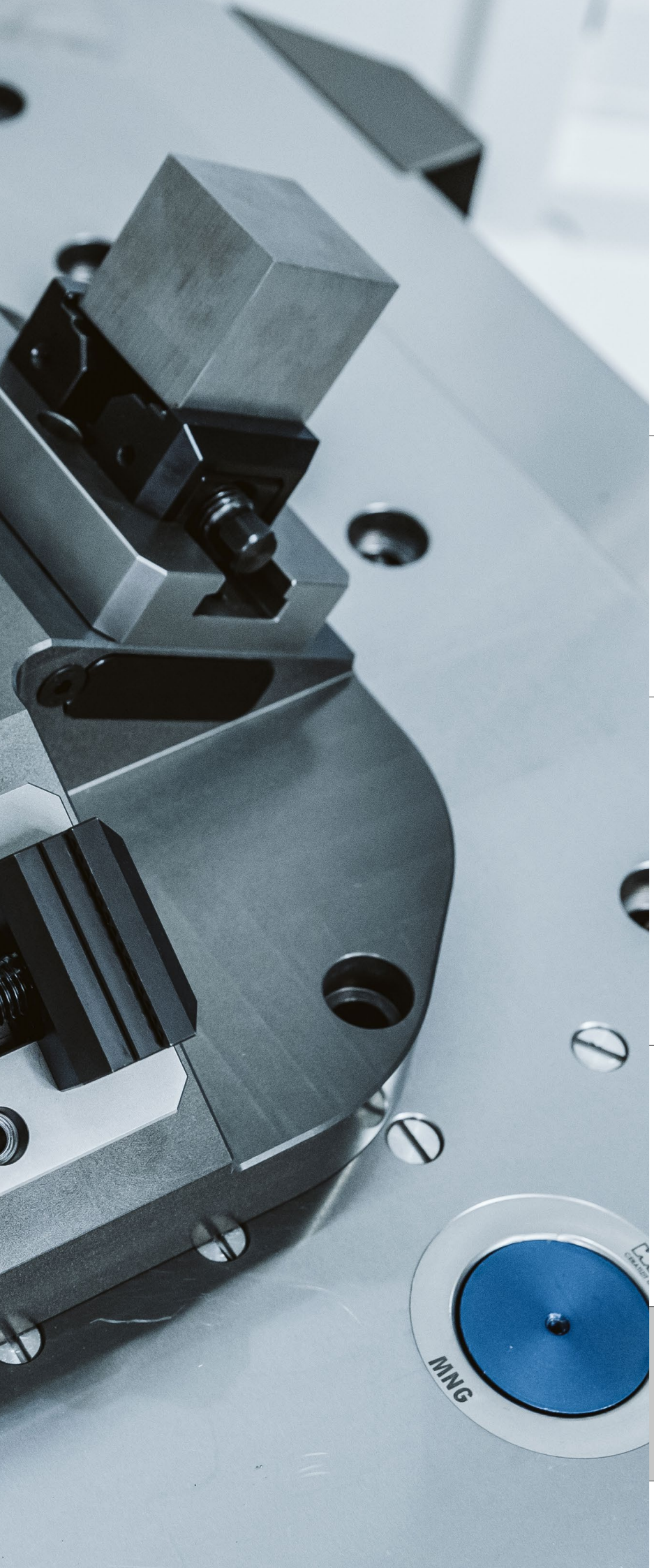
A detailed operating manual is available for download in the online shop next to the product.

Metric Products

The entire content of this chapter can be found
in the Metric Catalog.
Use the QR code or the link shown below.



https://cutting.tools/us/en/digitalcatalogmetric



Solid drilling and bore machining	Metric Catalog	HSS drilling	1
	Metric Catalog	Solid carbide drilling	2
		Indexable drilling	3
		Reaming and Countersinking	4
		Indexable Boring	5
Threading	Metric Catalog	Taps and thread formers	6
	Metric Catalog	Circular and Thread Milling	7
	Metric Catalog	Thread turning	8
Turning		Indexable Turning	9
		Multifunction	10
		Parting and Grooving	11
	Metric Catalog	Miniature turning tools	12
Milling	Metric Catalog	HSS Milling Cutters	13
		Solid Milling	14
		Indexable Milling	15
Clamping technology		Adaptors and Accessories	16
	Metric Catalog	Workpiece clamping	17
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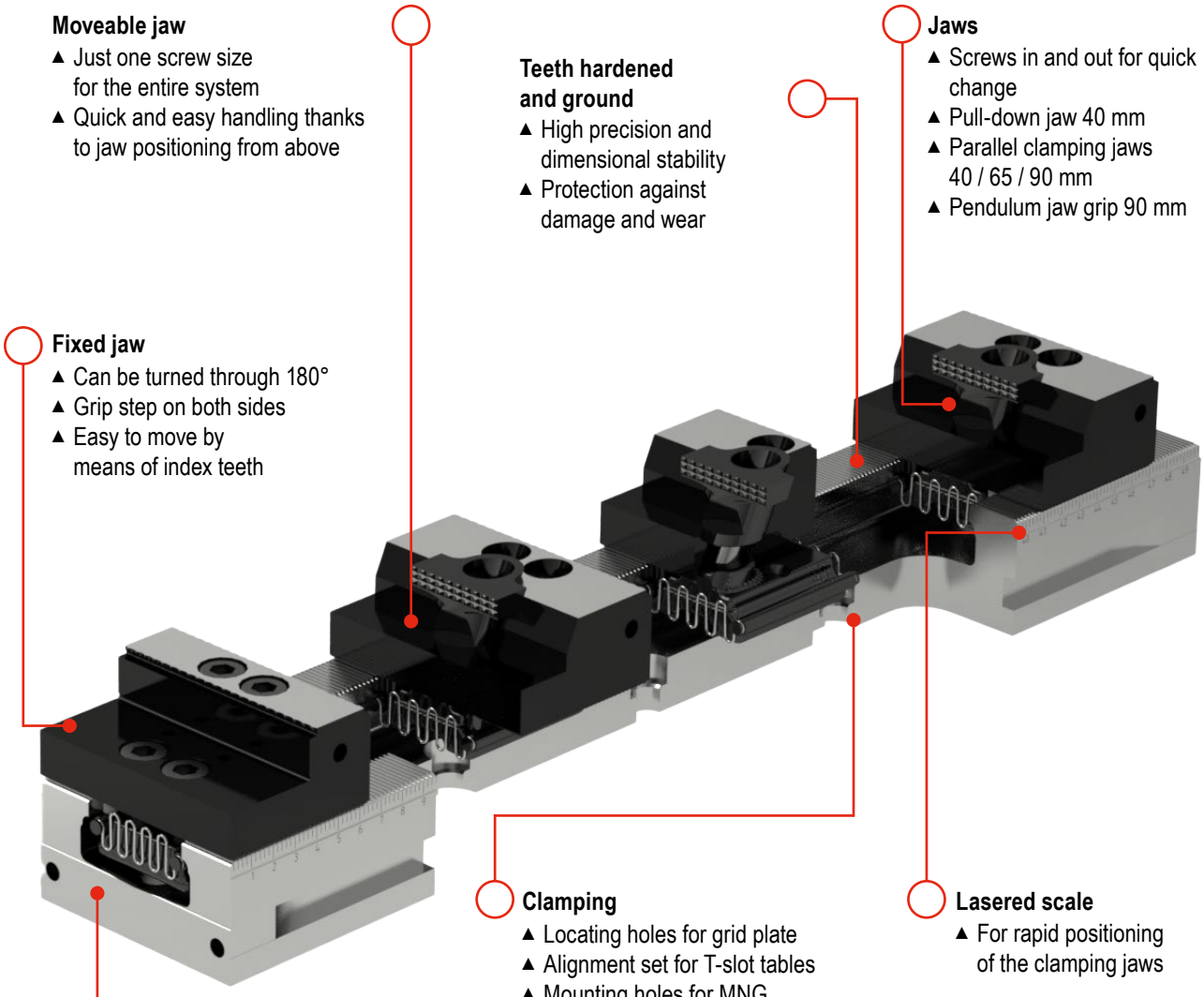
General top jaws overview	164–173
Workpiece supports overview	174–177
Accessories General Overview	178+179
Clamping levers overview	180+181
Screws Overview	182+183

WNT \ Performance

Premium quality tools for high performance.

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

PolyClamp – Verso



Clamping systems overview

SoloClamp – Single clamping vice

- Power-assisted systems NCG, HDG 2 and H5G
- Fixed jaws as reference
- High repeatability
- Very good angular accuracy



High precision and force amplification

CentriClamp – Centric vice

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



High process security with encapsulated system

PolyClamp – Multiple vice

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



Increased machine uptime

Stationary three-jaw chuck – SBF 3

- Suitable for 3/5-axis machining of round components
- Compatible with PNG and MNG zero point clamping systems
- Wedge bar drive
- Hardened and stiff base body
- Optimised lubrication system



Ø 200 mm



Ø 315 mm

The perfect clamping situation for round components

Clamping variants

- Zero point clamping systems
- Zero point clamping system grid plates
- MNG – Mechanical zero point clamping system
- PNG – Pneumatic zero point clamping system



Reduction in setup times

Clamping Towers

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

A variety of clamping towers can be found in our online shop at cuttingtools.ceratizit.com



Automation made easy

Toolfinder clamping systems

	Type		Description	3 axis	4 axis	5 axis
SoloClamp – Single clamping vice	NCG		▲ 160° quick clamping ▲ rapid installation and removal of the spindle assembly ▲ quick span adjustment	✓	✓	
	NCG 5A		▲ 160° quick clamping ▲ for 5 axis machining ▲ quick span adjustment	✓		✓
	H5G		▲ fast handle clamping ▲ 5 axis high power vice ▲ 100% encapsulated	✓		✓
	H5G -Z		▲ Fast handle clamping ▲ 5-axis high power vice ▲ 100% encapsulated ▲ With movable fixed jaw	✓		✓
	X5G -Z		▲ 100 % encapsulated ▲ Optimum accessibility ▲ 5- and 6-sided machining possible ▲ Fast jaw changeover without tools	✓		✓
	ESG 4		▲ 100 % encapsulated ▲ Precision base body ▲ High clamping force ▲ Large clamping range	✓	✓	✓
	ESG 5		▲ New version of the sealed centric vice ZSG 4 as single vice ▲ Identical dimensions and function as the ZSG 4	✓	✓	✓
	HDG 2		▲ mechanical power transmission ▲ clamping force with only one turn of the handle ▲ infinitely variable clamping force setting	✓		
CentriClamp – Centric vice	ZSG 4		▲ ball bearing, backlash free spindle ▲ high precision, clamping force and process security ▲ repeatability ±0.01 mm	✓	✓	✓
	ZSG mini		▲ Fast jaw changeover without tools ▲ compact and precise ▲ optimum accessibility from all sides ▲ stainless, hardened base body	✓	✓	✓

Jaw width in mm	Body length in mm	max. clamping range in mm	cubic workpieces	assymetrical workpieces	round workpieces	max. clamping force in kN	Page No.
100 125 160	305 390 530	245 343 506	✓	✓	✓	30 40 40	10–21
100 125	305 390	199 269	✓		✓	18 24	13–21
125	300	249	✓	✓	✓	40	22–36
125	330 430 500 630	396 466 578	✓	✓	✓	40	26–36
125	330 430 500 630 800	80-210 80-310 80-380 80-510 80-688	✓	✓	✓	40	37
80 125 160	214 362 480	192 308 434	✓	✓	✓	25 40 50	49–58
80 125 160	130+190 160+235+300 280+480	63-171 84-281 125-448	✓	✓	✓	35 35 50	59–66
100 125 160	342 400 544	278 338 470	✓		✓	30 40 60	68–71
80 125 160	130+190 160+235+300 280+480	121–185 163–303 134–462	✓	✓	✓	25 40 50	72–90
45 70	80 100	7–77	✓	✓	✓	16	92–100

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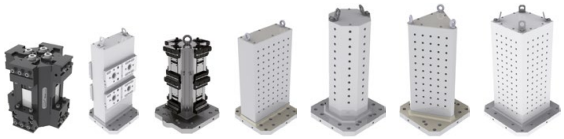
Toolfinder clamping systems

	Type		Description	3 axis	4 axis	5 axis
PolyClamp – Multiple vice	DSG 4		▲ Quick assembly and disassembly ▲ Flexible clamping system ▲ Can be converted into single vice	✓	✓	✓
	Verso		▲ Variable clamping system ▲ Clamp several small and large components ▲ Innovative multiple vice system	✓	✓	✓
Stationary three-jaw chuck	SBF 3		▲ Suitable for 3/5-axis machining of round components ▲ Compatible with PNG and MNG zero point clamping systems	✓		✓
			▲ Suitable for 3/5-axis machining of round components ▲ Compatible with PNG and MNG zero point clamping systems	✓		✓

		Type		Description
Zero point clamping systems	mechanical	MNG		▲ All round plate for all machine tables
		MNG mini		▲ For workpiece clamping in the smaller dimension range
	pneumatic	PNG		▲ Process security thanks to self-locking mechanism
Clamping Towers				▲ Increased machine uptime

Manual machine vice

Drilling machine vice	HSG		▲ fast jaw adjustment, compact and precise

Jaw width in mm	Body length in mm	max. clamping range in mm	cubic workpieces	assymetrical workpieces	round workpieces	max. clamping force in kN	Page No.
80 125	300 320+390+460 530+600+670+740	102 114+149+184 219+254+289+324	✓	✓	✓	25 40	101–110
40 65 90	260 -650	524	✓	✓	✓	30	111–124
	Ø 200	SB-H jaws 6–180			✓	100	125–130
	Ø 315	SB-H jaws 12–420			✓	180	

mechanical	pneumatic	Comments	Page No.
✓			134–148
✓			149–151
	✓		152–163
✓		This article can be found in our online shop at cuttingtools.ceratizit.com	
✓			131–133

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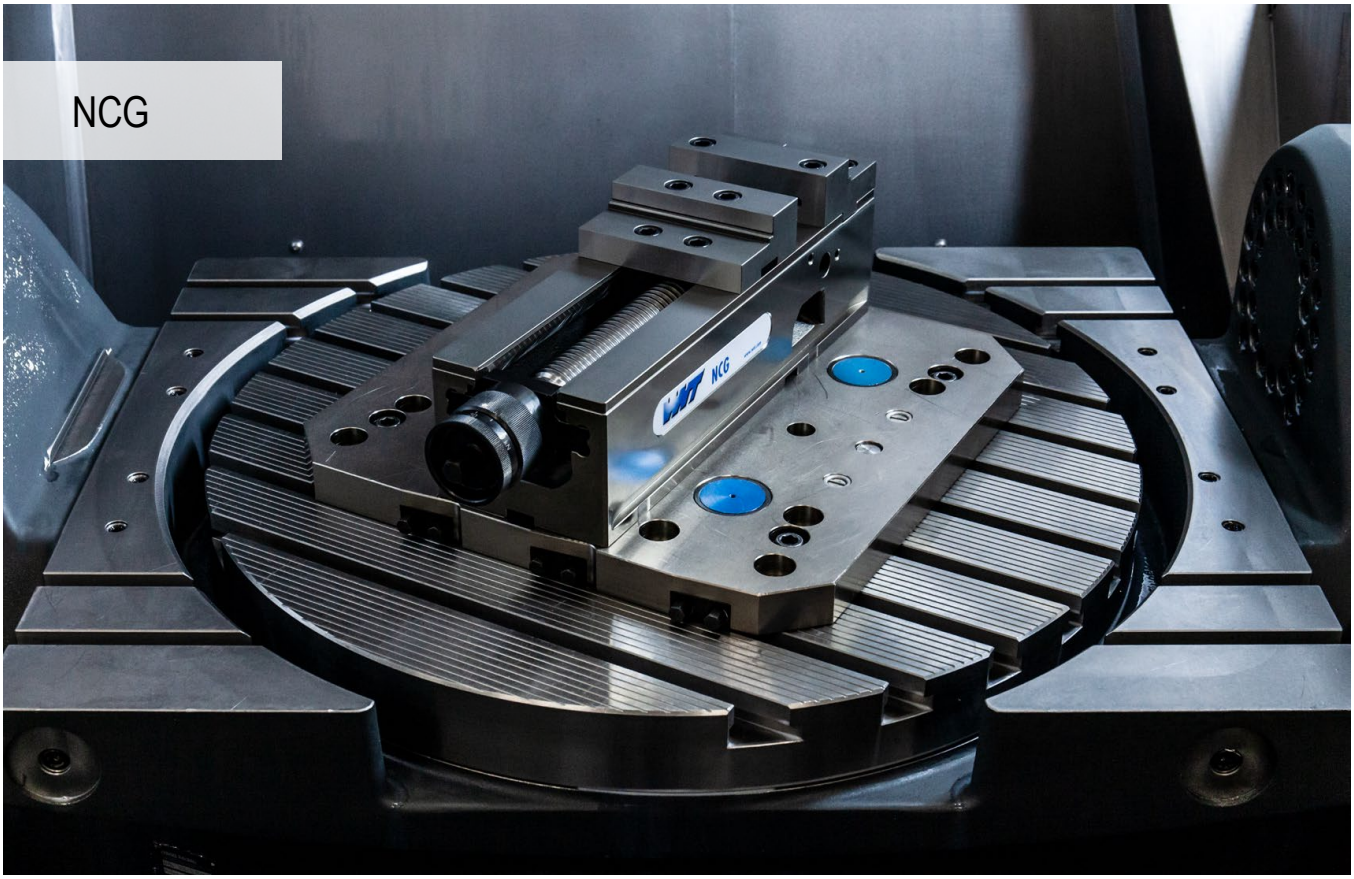


Systematic clamping

Modular machine vice as system with clamping under tension.
Unique, patented fast handle clamping with mechanical power assist and minimum setup times.

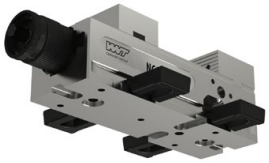
Your benefits:

- ▲ Quick adjustment using a crank handle
- ▲ Quick positioning with MNG on the machine table without an intermediate pallet
- ▲ Clamping force can be continuously adjusted 4 – 40 kN
- ▲ 160° quick clamping
- ▲ Quick and easy jaw change with 4 screws
- ▲ Easy cleaning thanks to rapid disassembly of the entire spindle unit
- ▲ Extensive modular jaw range

Clamping/aligning:



Clamping with two dowel screws dia. 12_{f7} / M12 (NCG 100) **Article no. 80 890 313** or dia. 16_{g5} / M16 (NCG 125 / 160) **Article no. 80 890 314**



Alignment through 20^{H7} precision slot nuts in the base body and clamping with clamping claws



Alignment and clamping with MNG zero point clamping system (2-3 mounting bolts)

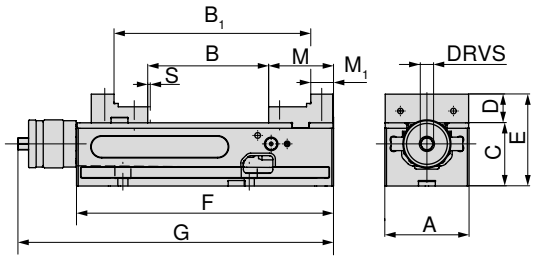
SoloClamp – NCG

▲ NC-quick clamping vice with combi reversible jaw plus
▲ thanks to additional threads, top jaws with heights of 18 mm and 40 mm can be used

Scope of supply:

NC-quick vice, including 4 clamping claws, 2 combi reversible jaw plus, clamping lever

NCG | **MNG**





80 890 ...

A mm	B mm	B_1 mm	C -0.02 mm	D mm	E mm	F mm	G mm	M mm	M_1 mm	S mm	DRVS mm	MXC kN	WT kg	
125	0 - 212	96 - 307	100	39	139	390	457	89	39	3	14	4 - 40	34	**12500**

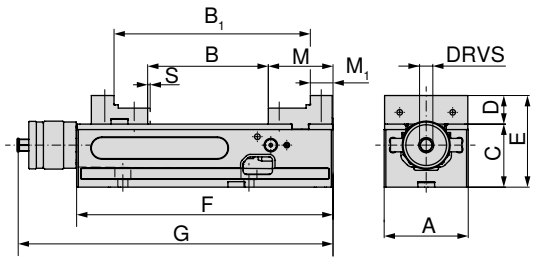
SoloClamp – NCG

▲ NC-quick clamping vice with combination jaw
▲ Fast 160° handle clamping
▲ Rapid installation and removal of the spindle assembly
▲ S = powerstroke

Scope of supply:

NC-quick vice, including 4 clamping claws, 2 combi reversible jaws (one side stepped, one side smooth), clamping lever

NCG | **MNG**





80 890 ...

A mm	B mm	B_1 mm	C -0.02 mm	D mm	E mm	F mm	G mm	M mm	M_1 mm	S mm	DRVS mm	MXC kN	WT kg	
100	0 - 155	91 - 245	75	34	109	305	374	77	27	2,5	14	4 - 30	19	**602**
125	0 - 212	96 - 307	100	39	139	390	457	89	39	3	14	4 - 40	34	**627**
160	0 - 314	113 - 426	115	49	164	530	600	108	52	3	14	4 - 40	68	**662**

Vice guide

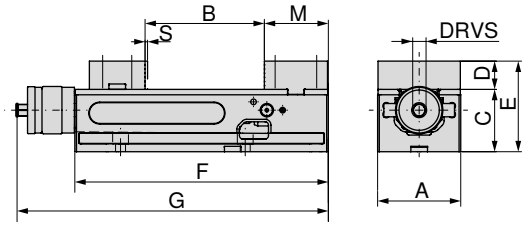
Underside Dimensions	14	System accessories	16–21
MNG-/PNG zero point clamping system	134–163	General accessories	164–183

SoloClamp – NCG

▲ NC-quick clamping vice with standard jaw
▲ Fast 160° handle clamping
▲ Rapid installation and removal of the spindle assembly
▲ S = powerstroke

Scope of supply:
NC-quick vice, including 4 clamping claws, 2 standard reversible jaws (one side smooth, one side serrated), clamping lever

NCG **MNG**





80 890 ...

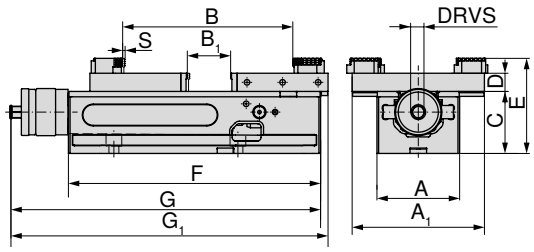
A mm	B mm	C -0.02 mm	D mm	E mm	F mm	G mm	M mm	S mm	DRVS mm	MXC kN	WT kg	
100	0 - 155	75	34	109	305	374	77	2,5	14	4 - 30	19,5	**600**
125	0 - 212	100	39	139	390	457	89	3	14	4 - 40	35,0	**625**
160	0 - 314	115	49	164	530	600	108	3	14	4 - 40	70,0	**660**

SoloClamp – NCG

▲ NC-quick clamping vice with adapter and pendulum jaws
▲ fast 160° lever clamping
▲ rapid installation and removal of the spindle assembly
▲ S = powerstroke
▲ simple raw part clamping
▲ free positioning of the 6-face reversible jaw which can be found in the accessories

Scope of supply:
NC-quick vice (type NCG base body) with 1 fixed adapter plate and 1 pendulum jaw, clamping lever, 4 clamping claws, without 6-face indexable jaws

NCG **MNG**





80 890 ...

A mm	A_1 mm	B mm	B_1 mm	C -0.02 mm	D mm	E mm	F mm	G mm	G_1 mm	S mm	DRVS mm	MXC kN	WT kg	
100	160	10 - 230	0 - 77	75	22	115	305	374	383	2,5	14	4 - 30	19	**636**
125	192	16 - 343	0 - 152	100	22	140	390	457	478	3	14	4 - 40	34	**637**
160	256	15 - 506	0 - 237	115	22	155	530	600	631	3	14	4 - 40	68	**638**

Vice guide

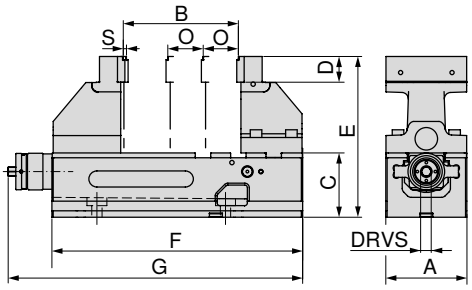
Underside Dimensions	14	System accessories	16–21
MNG-/PNG zero point clamping system	134–163	General accessories	164–183

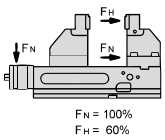
SoloClamp – NCG 5A

- ▲ NC quick vice 5A with high support jaws
- ▲ Fast 160° handle clamping
- ▲ Rapid installation and removal of the spindle assembly
- ▲ S = powerstroke
- ▲ Ideally suited to 5-axis machining due to optimum accessibility
- ▲ Reversible jaws for clamping range extension
- ▲ 100 mm base body has 2 slots for moving the fixed jaw
- ▲ 125 mm base body has 3 slots for moving the fixed jaw

Scope of supply:
NC quick clamping vice incl. 2 high base jaws, 2 ‘grip‘ stepped jaws 5 mm, 1 clamping lever, 4 clamping claws

NCG 5A | **MNG**







80 890 ...

A	B	C	D	E	F	G	O	S	DRVS	MXC	WT	
mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	kN	kg	
100	6 - 127	75	35	200	305	374	50	2,5	14	4 - 18 (30)	21,5	**605**
125	6 - 179	100	40	250	390	457	55	3	14	4 - 24 (40)	42,0	**635**

Vice guide

Underside Dimensions	14	Structural dimension tables for the different jaws	15
System accessories	16–21	MNG-/PNG zero point clamping system	134–163
General accessories	164–183		

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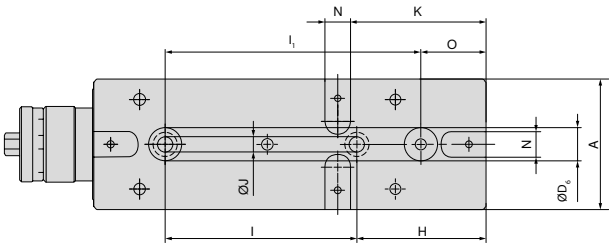
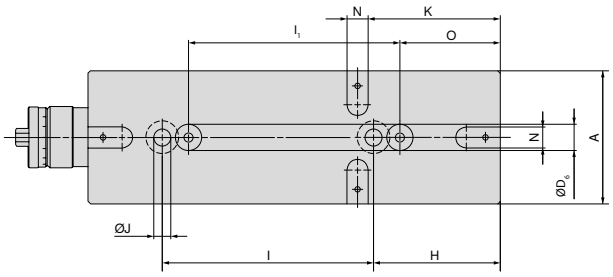
NCG underside dimensions

Base width 100 mm



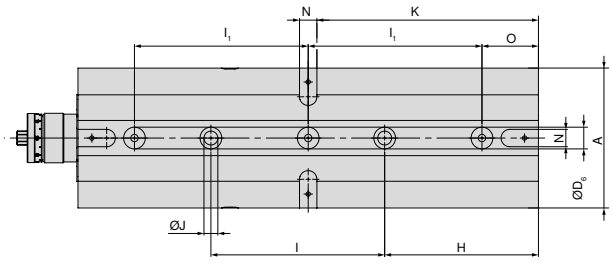
A mm	H mm	$l_{\pm 0,015}$ mm	J_{F7} mm	K mm	N_{H7} mm	O mm	$l_{1\ \pm 0,015}$ mm	$D_{6\ H7}$ mm
100	100	150	12	105	20	50	200	25

Base width 125 mm



A mm	H mm	$l_{\pm 0,015}$ mm	J_{F7} mm	K mm	N_{H7} mm	O mm	$l_{1\ \pm 0,015}$ mm	$D_{6\ H7}$ mm
125	120	200	16	125	20	95	200	25

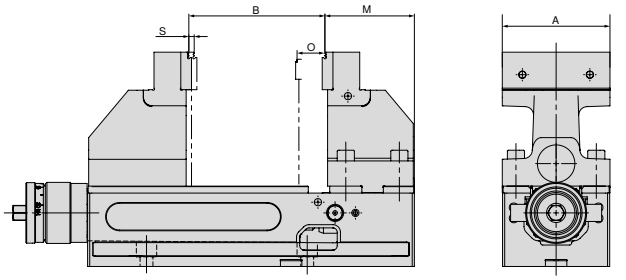
Base width 160 mm



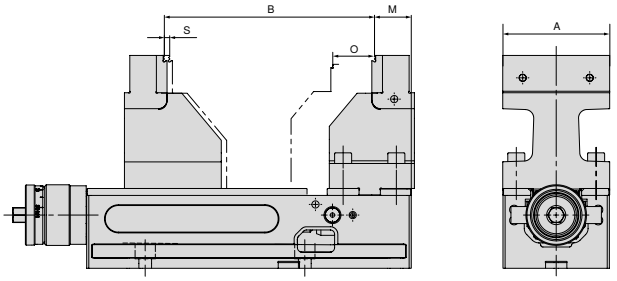
A mm	H mm	$l_{\pm 0,015}$ mm	J_{F7} mm	K mm	N_{H7} mm	O mm	$l_{1\ \pm 0,015}$ mm	$D_{6\ H7}$ mm
160	177	200	16	255	20	65	200	25

NCG 5A structural dimension table for different jaw positions

NCG 5A 100 mm

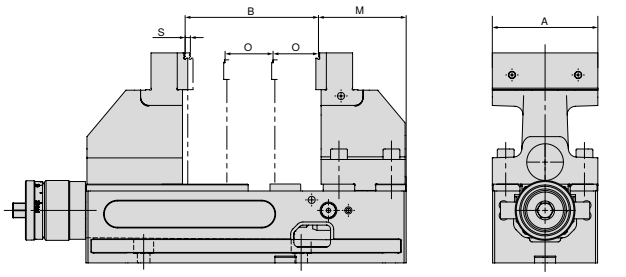


A mm	B mm	M mm	O mm	S mm
100	6 - 127	84,5	50	2,5

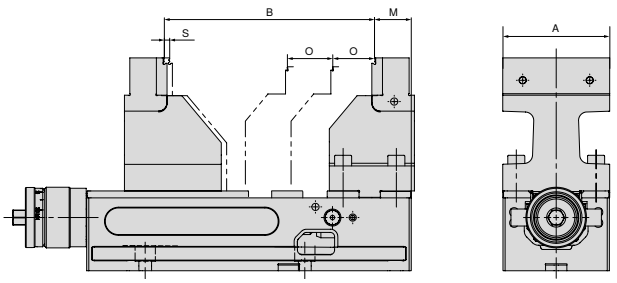


A mm	B mm	M mm	O mm	S mm
100	97 - 199	34,5	50	2,5

NCG 5A 125 mm



A mm	B mm	M mm	O mm	S mm
125	6 - 182	91	55	3

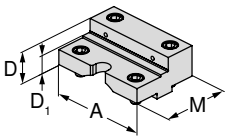


A mm	B mm	M mm	O mm	S mm
125	117 - 269	36	55	3

System jaws overview

Combi reversible jaw plus, fixed

- For the extension of the clamping range
- Jaws hardened
- includes fixing bolts
- price per piece

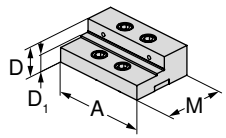


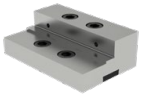


For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
125	125		39,8	22			88			**80 890 35100**	●										

Combi reversible jaw plus, movable

- For the extension of the clamping range
- Jaws hardened
- includes fixing bolts
- price per piece

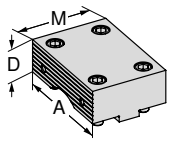




For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
125	125		39,8	22			82			**80 890 35200**	●										

Standard reversible jaw, fixed

- 1 side smooth, 1 side grooved
- includes fixing bolts
- price per piece

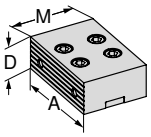




For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
100	100		34				76			**80 890 323**	●										
125	125		39				88			**80 890 324**	●										
160	160		49				108			**80 890 325**	●										

Standard reversible jaw, movable

- 1 side smooth, 1 side grooved
- includes fixing bolts
- price per piece



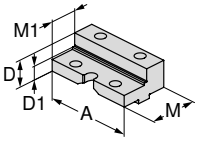


For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
100	100		34				67			**80 890 327**	●										
125	125		39				82			**80 890 328**	●										
160	160		49				108			**80 890 329**	●										

System jaws overview

Combi reversible jaw, fixed

- For the extension of the clamping range
- Jaws hardened
- includes fixing bolts
- price per piece

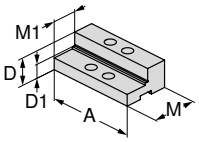


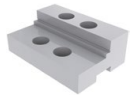


For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
100	100		34	23			76	50		**80 890 343**	●										
125	125		39	25			88	50		**80 890 344**	●										
160	160		49	28			108	56		**80 890 342**	●										

Combi reversible jaw, movable

- For the extension of the clamping range
- Jaws hardened
- includes fixing bolts
- price per piece

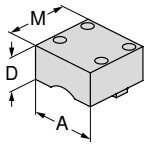




For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
100	100		34	23			67	40		**80 890 347**	●										
125	125		39	25			82	45		**80 890 348**	●										
160	160		49	28			108	56		**80 890 346**	●										

Soft jaw, steel, fixed

- Material: 16MnCr5
- For producing shaped jaws (hardenable)
- Without fixing screws
- Price per piece

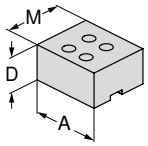




For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
100	100		50				95			**80 890 763**	●										
125	125		50				110			**80 890 764**	●										

Soft jaw, steel, movable

- Material: 16MnCr5
- For producing shaped jaws (hardenable)
- Without fixing screws
- Price per piece



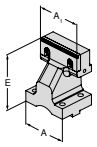


For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
100	100		50				85			**80 890 767**	●										
125	125		50				100			**80 890 768**	●										

System jaws overview

5A carrier jaw, fixed

▲ Price per piece
▲ With stepped grip jaw, 5 mm

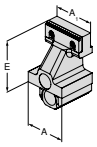




For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
100	100	100				125				**80 890 364**	●										
125	125	125				150				**80 890 366**	●										

5A carrier jaw, movable

▲ Price per piece
▲ With stepped grip jaw, 5 mm

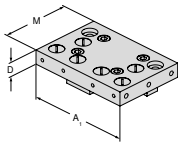




For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
100	100	100				125				**80 890 365**	●										
125	125	125				150				**80 890 367**	●										

Fixed adaptor jaw

▲ for holding 6-way reversible jaws
▲ price per piece
▲ incl. 6 cover screws

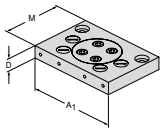




For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
100	100	160	22				110			**80 890 321**	●										
125	125	192	22				130			**80 890 337**	●										
160	160	256	22				170			**80 890 339**	●										

Pendulum jaw, movable

▲ for holding 6-way reversible jaws
▲ price per piece
▲ incl. 6 cover screws (with A = 100 mm, 4 pieces)



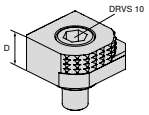


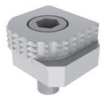
For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
100	100	160	22				110			**80 890 322**	●										
125	125	192	22				130			**80 890 338**	●										
160	160	256	22				170			**80 890 340**	●										

System jaws overview

6 function indexable jaw

- ▲ 1 = Smooth, carbide coated
- ▲ 2 = Grip with 3 mm step
- ▲ 3 = Grip with 8 mm step
- ▲ 4 = Grip with 18 mm step
- ▲ 5 = Rough grip with 8 mm step
- ▲ 6 = Round grip
- ▲ M_{max} = 60 Nm
- ▲ Including fixation screws

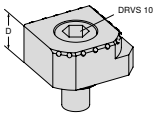


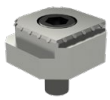


For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
			18							80 892 246	●	●	●	●			●		●	●	

6x indexable jaw, carbide grip

- ▲ 1 = Smooth
- ▲ 2 = Carbide grip
- ▲ 3 = Carbide grip with 3 mm step
- ▲ 4 = Carbide grip with 8 mm step
- ▲ 5 = Round carbide grip with 8 mm step
- ▲ 6 = Round carbide grip
- ▲ Incl. fixing screws





For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
			18							80 890 35300	●	●	●	●			●		●	●	

System accessories overview

Spindle body

▲ For the conversion of the NCG 5AC into an NCG vice

NCG | NCG 5A



for width mm	80 890 ...
100	385
125	387
160	389

Carrying handle

▲ for simple and safe transporting

Scope of supply:
1 piece Hand grip including fixing bolts

NCG | NCG 5AC



for width mm	80 890 ...
100/125	685

Drawbar extension

▲ For connecting 2 NCG vices

NCG | NCG 5A

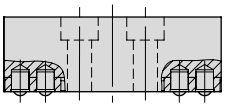


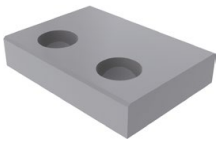
for width mm	B mm	80 890 ...
100	305 - 460	460
125	390 - 602	470

Protection plate

▲ For standard moving and combi reversible jaw

NCG

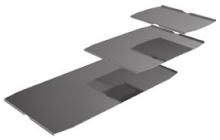




for width mm	80 890 ...
100	010
125	012
160	013

Cover plate set

NCG | NCG 5AC



for width mm	80 890 ...
100	442
125	443
160	444

Spring Loaded Locator

NCG



for width mm	80 890 ...
100/125	008
160	014

System accessories overview

Clamping lever

▲ including control accessories

NCG | NCG 5A | H5G



for width mm	DRVS mm	80 890 ...
100/125/160	14	501

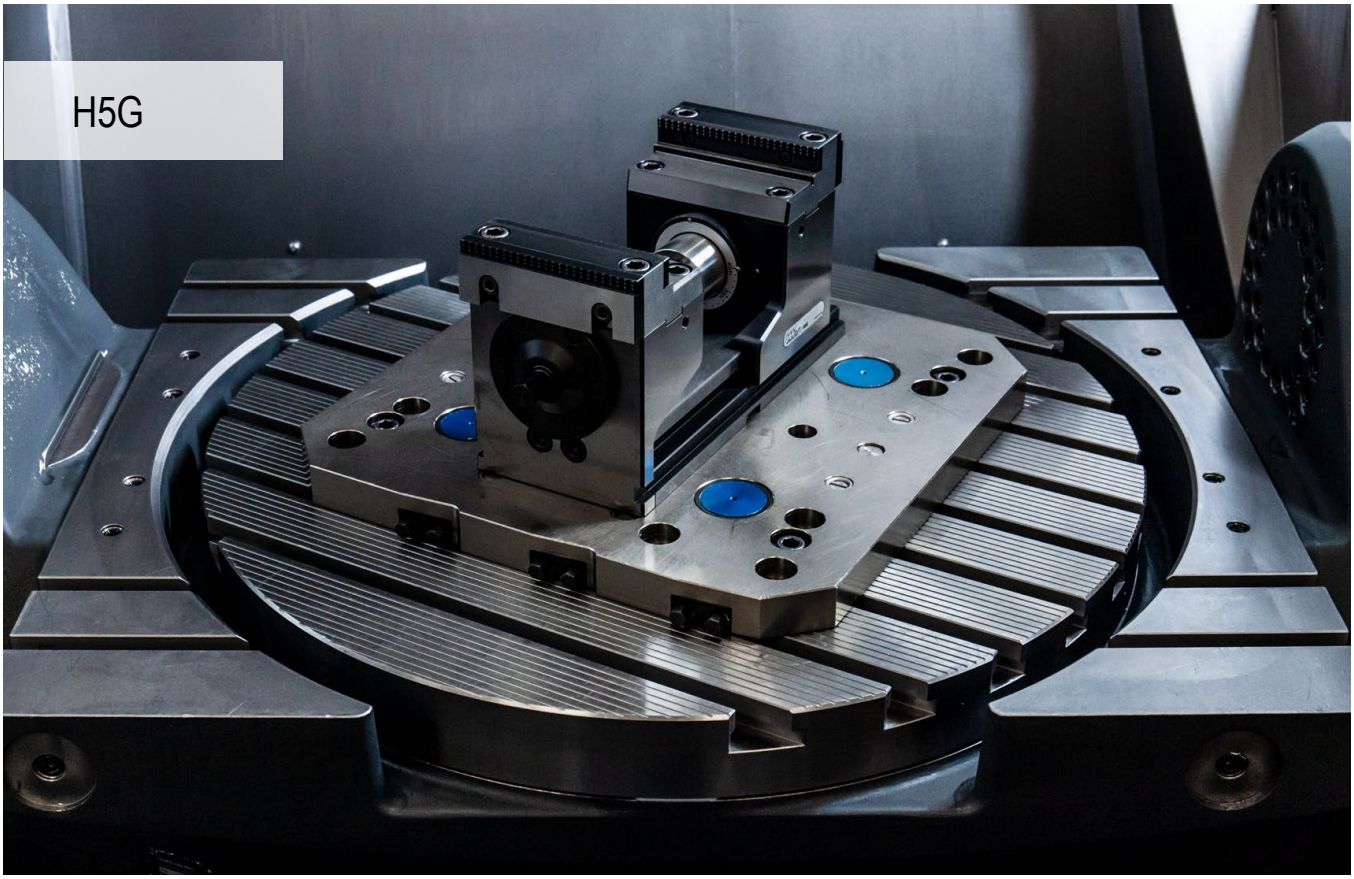
High-speed operation device

▲ For faster span adjustment with removable grip

NCG | NCG 5AC



for width mm	80 890 ...
100	550
125/160	551



5-axis-optimised clamping system

The power-assisted clamping system for ‘real’ 5-axis complete and simultaneous machining.
1 and 2-sided machining with clamping under tension and 40 kN directly on the workpiece.

Your benefits:

- ▲ Quick conversion – adjustment of entire clamping range in just a few seconds
- ▲ Quick positioning with MNG on the machine table without an intermediate plate
- ▲ Clamping force can be continuously adjusted 4 – 40 kN
- ▲ 160° quick clamping
- ▲ Rotate jaws – quick and easy jaw change with 4 screws
- ▲ Easy cleaning, spindle fully protected
- ▲ Extensive modular jaw range

Clamping/aligning:



Clamping with two dowel screws dia. 12_{f7} / M12
Article no. 80 895 019



Alignment through 20^{H7} precision slot nuts in the base body (H5G) and alignment sets 14 / 16 / 18 in the machine table's T-slot. Clamping with clamping claws.



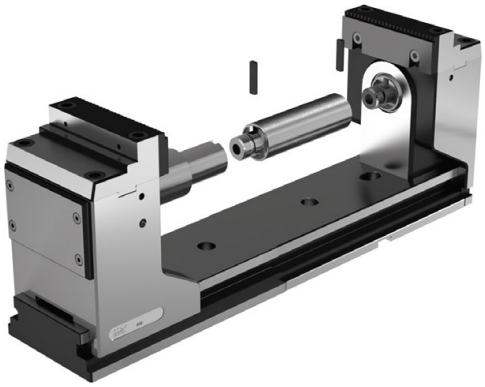
Alignment and clamping with MNG zero point clamping system (2-3 mounting bolts).
Optional: Positioning and fixing holes at the customer's request.

Alignment of extension base body:



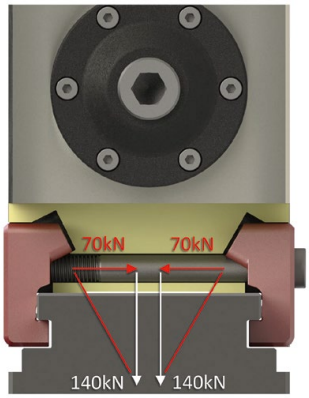
- ▲ Loosely mount the extension base body
- ▲ Distance to basic base body 0.2 – 10 mm
- ▲ Slide movable supporting jaw overlapping onto both base bodies
- ▲ Align the extension base body so it is parallel with the basic base body
- ▲ Secure the extension base body

Fitting the drawbar extension:



- ▲ Fit the extension base body (see alignment above)
- ▲ Screw the drawbar extension onto the spindle
- ▲ Insert the first anti-twist protection
- ▲ Slide the movable supporting jaw onto the extension base body
- ▲ Connect the extended drawbar to the fixed supporting jaw
- ▲ Insert the second anti-twist protection

Movable fixed jaw functional principle:



Double-acting screw = double the force
angled surfaces = double the force

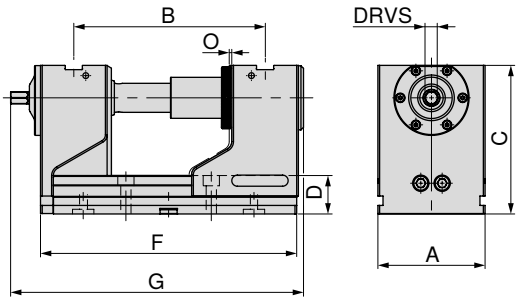
In the case of the H5G-Z and H5G-Z-S, both supporting jaws can be moved as desired. The movable fixed jaw can be clamped on any position on the base body via 1 or 2 screws (1 = H5G-Z / 2 = H5G-Z-S) (tighten screw with 90 Nm). The clamping force of the fixed jaw is almost identical to that of the H5G which is secured with four screws.

SoloClamp – H5G

▲ 5-axis vice with quick adjustment, 174 mm height
▲ Crank handle quick clamping
▲ Vice with quick span adjustment
▲ 100 % encapsulated
▲ Vice with longitudinal and transverse grooves 20 H7 and alignment holes Ø 12 F7

Scope of supply:
Vice incl. 4 clamping claws, hand crank and clamping wrench

H5G **MNG**





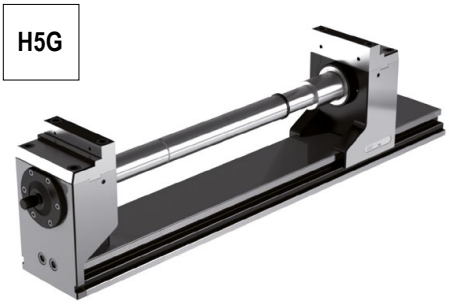
80 898 ...

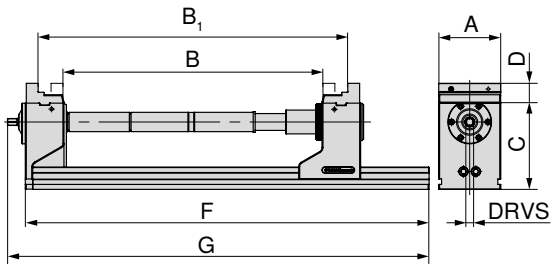
A mm	B mm	C mm	D mm	F mm	G mm	O mm	DRVS mm	MXC kN	WT kg	
125	97 - 223	174	45	300	336,5	1	14	40	30,2	**125**

SoloClamp – H5G

▲ 5 axis high power vice, long version, 174 mm height

H5G





A mm	C mm	D mm	F mm	G mm	DRVS mm	Clamping force kN
125	174	40	815	851	14	40

B	B1	Article no.
0 – 126	123 – 251	**80 898 125**
125 – 252	248 – 374	**80 898 125** + **80 898 826** + **80 898 725**
250 – 376	372 – 499	**80 898 125** + **80 898 827** + **80 898 725**
375 – 501	498 – 624	**80 898 125** + **80 898 826** + **80 898 827** + **80 898 725**
500 – 626	622 – 749	**80 898 125** + 2 x **80 898 827** + **80 898 725**

The H5G 125 mm can be extended by a maximum of 250 mm with 2 extensions. The extension results in approximately 10% loss of clamping force.
Base plate available in long version with the desired hole pattern **on request**.

Vice guide

Underside Dimensions	27	Structural dimension tables for the different jaws	28–32
System accessories	33–36	MNG-/PNG zero point clamping system	134–163
General accessories	164–183		

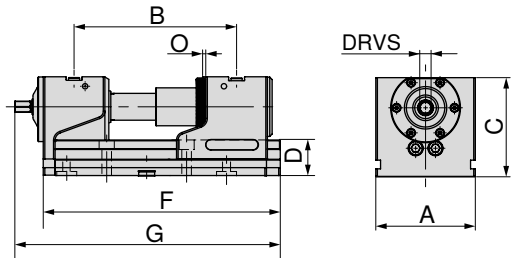
SoloClamp – H5G-S

- ▲ 5-Axis vice with quick adjustment, 125 mm height
- ▲ Crank handle quick clamping
- ▲ Vice with quick span adjustment
- ▲ 100 % encapsulated
- ▲ Length F = 300 mm with Ø 25 H7 centering
- ▲ Length F = 265 mm with Ø 32 H6
- ▲ Vice with longitudinal and transverse grooves 20 H7 and alignment holes Ø 12 F7

Scope of supply:

Vice incl. 4 clamping claws, hand crank and clamping wrench

H5G -S | **MNG**





80 898 ...

A mm	B mm	C mm	D mm	F mm	G mm	O mm	DRVS mm	MXC kN	WT kg	
125	97 - 186	125	45	265	301,5	1	14	40	21,0	**123** [1]
125	97 - 223	125	45	300	336,5	1	14	40	22,6	**124**

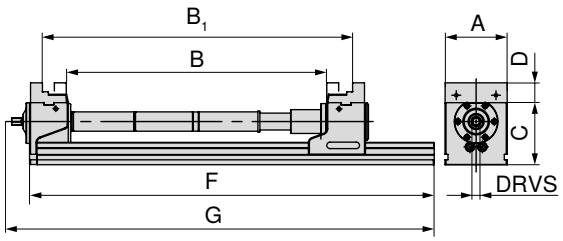
1) not standardised

SoloClamp – H5G-S

- ▲ 5 axis high power vice, long version, 125 mm height

H5G -S





A mm	C mm	D mm	F mm	G mm	DRVS mm	Clamping force kN
125	125	40	815	851	14	40

B	B_1	Article no.
0 – 126	123 – 250	**80 898 124**
125 – 251	248 – 374	**80 898 124** + **80 898 826** + **80 898 725**
250 – 376	372 – 499	**80 898 124** + **80 898 827** + **80 898 725**
375 – 501	498 – 624	**80 898 124** + **80 898 826** + **80 898 827** + **80 898 725**
500 – 626	622 – 749	**80 898 124** + 2 x **80 898 827** + **80 898 725**

The H5G-S 125 mm can be extended by a maximum of 250 mm with 2 extensions. The extension results in approximately 10% loss of clamping force.
Base plate available in long version with the desired hole pattern **on request**.

Vice guide

Underside Dimensions	27	Structural dimension tables for the different jaws	28–32
System accessories	33–36	MNG-/PNG zero point clamping system	134–163
General accessories	164–183		

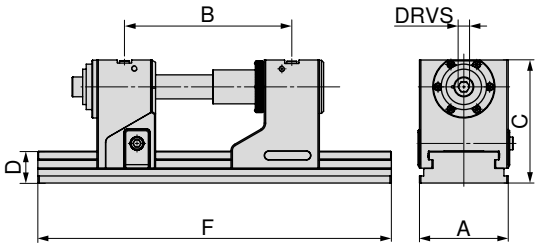
SoloClamp – H5G-Z

- ▲ 5-Axis vice with movable fixed jaw, 174 mm height
- ▲ Crank handle quick clamping
- ▲ Vice with quick span adjustment
- ▲ 100 % encapsulated
- ▲ Clamping on the machine table is possible with MNG/PNG, or directly through the base body

Scope of supply:

Incl. clamping key with hexagonal pin insert

H5G -Z	MNG





80 907 ...

A mm	B ±0,015 mm	C mm	D mm	F mm	DRVS mm	MXC kN	WT kg	
125	131 - 246	174	45	330	14	40	32,5	**12800**
125	131 - 352	174	45	430	14	40	36,0	**125**
125	131 - 422	174	45	500	14	40	38,5	**126**
125	131 - 552	174	45	630	14	40	43,0	**127**

→ **Page 36**
Here you will find the additional drawbar extensions that must be used to reach the maximum clamping ranges.

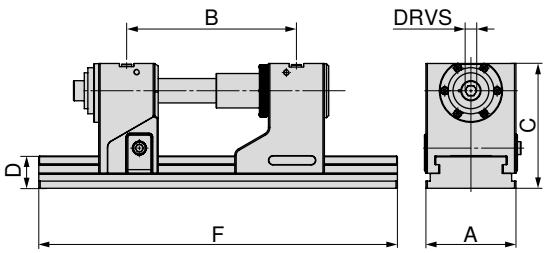
SoloClamp – H5G-Z-S

- ▲ 5-Axis vice with movable fixed jaw, 125 mm height
- ▲ Crank handle quick clamping
- ▲ Vice with quick span adjustment
- ▲ 100 % encapsulated
- ▲ Clamping on the machine table is possible with MNG/PNG, or directly through the base body

Scope of supply:

Incl. clamping key with hexagonal pin insert

H5G -Z-S	MNG



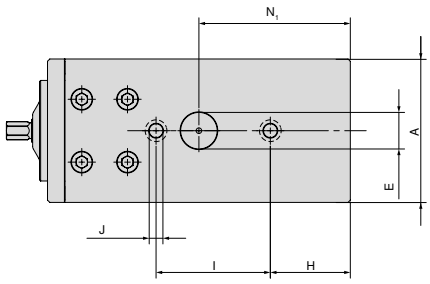


80 907 ...

A mm	B ±0,015 mm	C mm	D mm	F mm	DRVS mm	MXC kN	WT kg	
125	131 - 246	125	45	330	14	40	24,5	**22500**
125	131 - 352	125	45	430	14	40	28,5	**22600**
125	131 - 422	125	45	500	14	40	30,5	**22700**
125	131 - 552	125	45	630	14	40	35,5	**22800**

H5G/H5G-Z underside dimensions

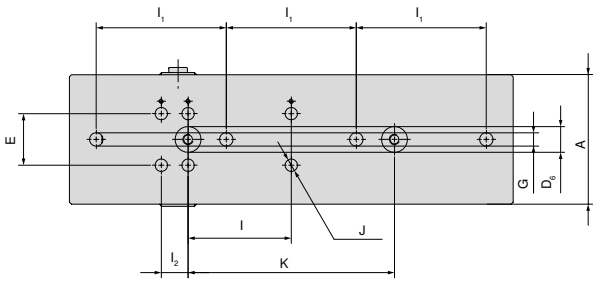
Base width 125 mm and 265 mm length



A mm	E H6 mm	H mm	I ±0,015 mm	J F7 mm	N1 mm
125	32	70	100	12	132,5

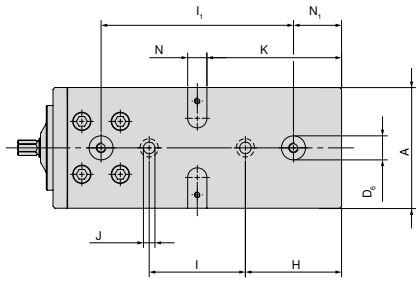
H5G with 265 mm length is not compatible with MNG

Base width 125 mm and 430 mm length



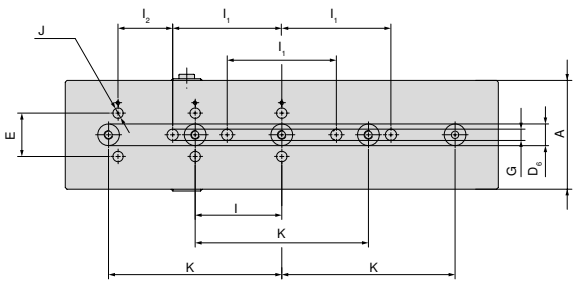
A mm	E ±0,01 mm	I1 ±0,3 mm	I2 mm	I ±0,015 mm	K ±0,015 mm	J H7 mm	G mm	D6 H6 mm
125	50	126	26	100	200	12	13	25

Base width 125 mm and length 300 mm



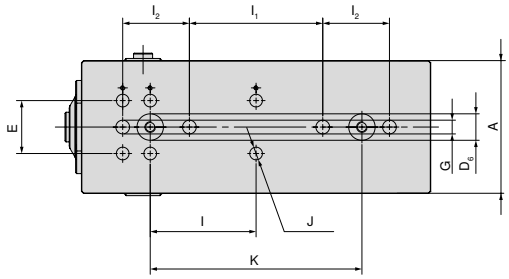
A mm	D6 H7 mm	H mm	I ±0,015 mm	J F7 mm	K mm	N H7 mm	I1 ±0,015 mm	N1 mm
125	25	100	100	12	140	20	200	50

Base width 125 mm and 500 mm length



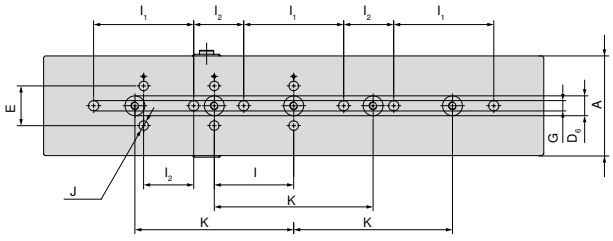
A mm	E ±0,01 mm	I1 ±0,3 mm	I ±0,015 mm	K ±0,015 mm	I2 mm	G mm	D6 H6 mm	J H7 mm
125	50	126	100	200	63	13	25	12

Base width 125 mm and 330 mm length



A mm	E ±0,01 mm	I ±0,015 mm	I2 mm	I1 ±0,3 mm	D6 H6 mm	J H7 mm	K ±0,015 mm	G mm
125	50	100	26	126	25	12	200	13

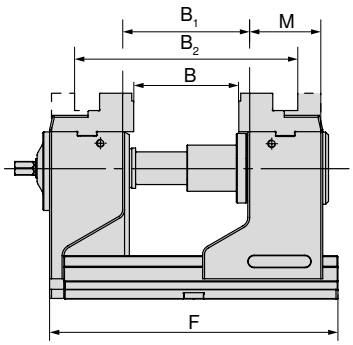
Base width 125 mm and 630 mm length



A mm	E ±0,01 mm	I1 ±0,3 mm	I2 mm	I ±0,015 mm	K ±0,015 mm	G mm	D6 H6 mm	J H7 mm
125	50	126	63	100	200	13	25	12

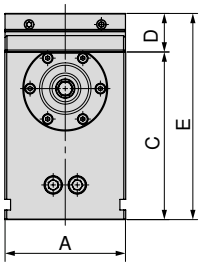
H5G/H5G-S – Structural dimension table for the different jaws

With combi jaws



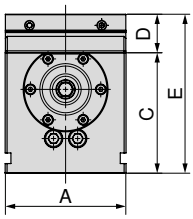
F mm	B mm	B_1 mm	B_2 mm	M mm	Article no. System jaws
265	0 - 89	22 - 112	123 - 212	76	**80 898 225**
300	0 - 126	22 - 149	123 - 249	76	**80 898 225**

H5G



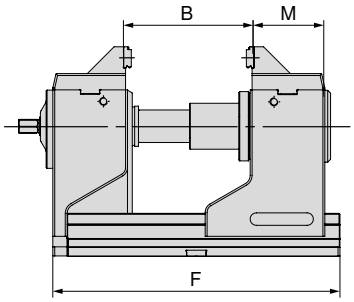
A mm	C mm	D mm	E mm
–	–	–	–
125	174	40	214

H5G-S



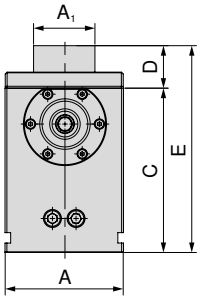
A mm	C mm	D mm	E mm
125	125	40	165
125	125	40	165

With 5A top jaws, jaw width 65 mm



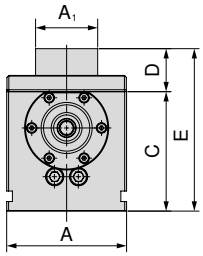
F mm	B mm	M mm	Article no. System jaws
265	16 - 105	79,5	**80 898 325**
300	16 - 142	79,5	**80 898 325**

H5G



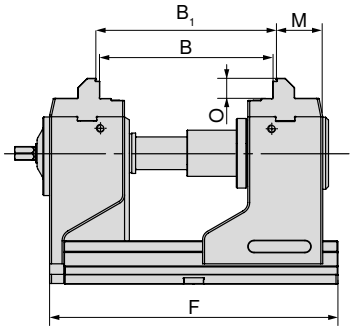
A mm	A_1 mm	C mm	D mm	E mm
–	–	–	–	–
125	65	174	45	219

H5G-S



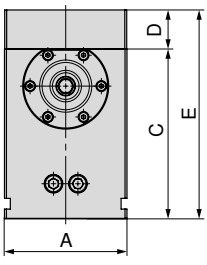
A mm	A_1 mm	C mm	D mm	E mm
125	65	125	45	170
125	65	125	45	170

With 5A top jaws, jaw width 125 mm



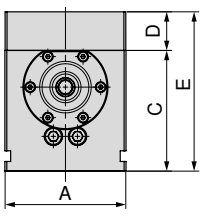
F mm	B mm	B_1 mm	O mm	M mm	Article no. System jaws
265	74 - 162	80 - 168	21	49	**80 907 300**
300	74 - 199	80 - 205	21	49	**80 907 300**

H5G



A mm	C mm	D mm	E mm
–	–	–	–
125	174	40	214

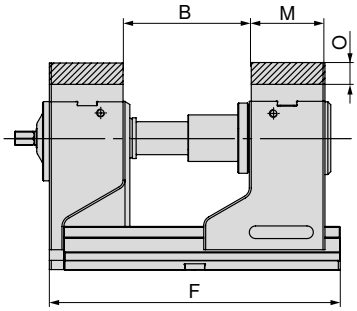
H5G-S



A mm	C mm	D mm	E mm
125	125	40	165
125	125	40	165

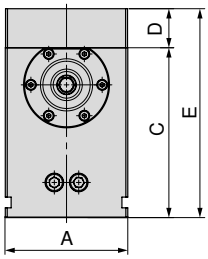
H5G/H5G-S – Structural dimension table for the different jaws

with soft jaws



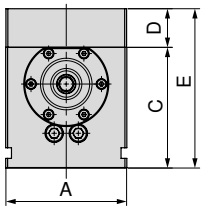
F mm	B mm	O mm	M mm	Article no. System jaws
265	23 - 112	22	76	**80 898 625**
300	23 - 149	22	76	**80 898 625**

H5G



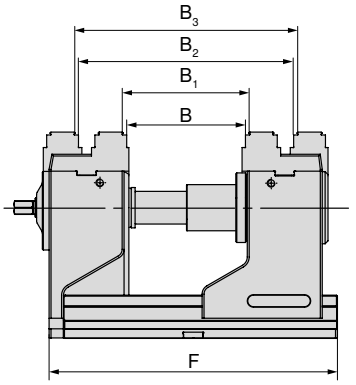
A mm	C mm	D mm	E mm
–	–	–	–
125	174	40	214

H5G-S



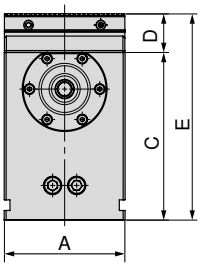
A mm	C mm	D mm	E mm
125	125	40	165
125	125	40	165

With indexable jaws, grip 3 mm



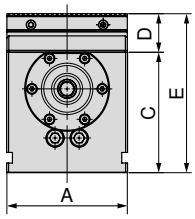
F mm	B mm	B_1 mm	B_2 mm	B_3 mm	Article no. System jaws
265	17 - 106	23 - 112	117 - 206	123 - 212	**80 898 35000**
300	17 - 140	23 - 146	117 - 240	123 - 246	**80 898 35000**

H5G



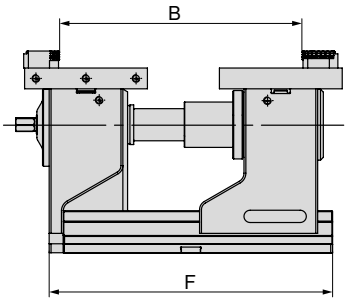
A mm	C mm	D mm	E mm
–	–	–	–
125	174	40	214

H5G-S



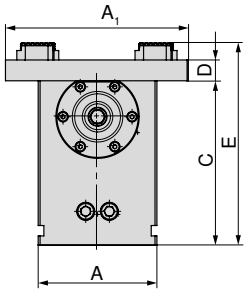
A mm	C mm	D mm	E mm
125	125	40	165
125	125	40	165

With pendulum and adapter plate



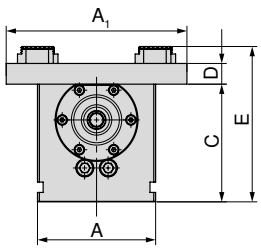
F mm	B mm	Article no. System jaws
265	17 - 236	**80 898 525 + 80 898 425**
300	17 - 274	**80 898 525 + 80 898 425**

H5G



A mm	A_1 mm	C mm	D mm	E mm
–	–	–	–	–
125	192	174	22	214

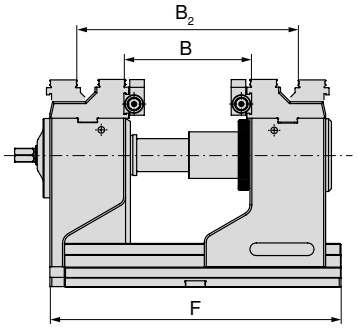
H5G-S



A mm	A_1 mm	C mm	D mm	E mm
125	192	125	22	165
125	192	125	22	165

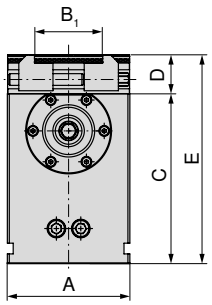
H5G/H5G-S – Structural dimension table for the different jaws

With 6-face jaw system



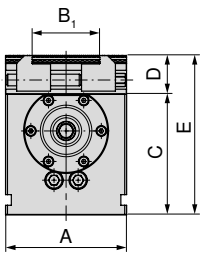
F mm	B mm	B_2 mm	O mm	M mm	Article no. System jaws
265	39 - 115	119 - 191	22	76	**80 898 230**
300	39 - 152	119 - 228	22	76	**80 898 230**

H5G



A mm	B_1 mm	C mm	D mm	E mm
–	–	–	–	–
125	37 - 101	174	40	214

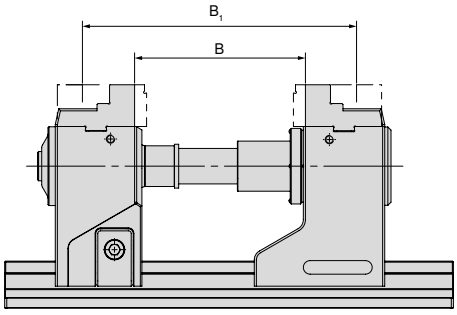
H5G-S



A mm	B_1 mm	C mm	D mm	E mm
125	37 - 101	125	40	165
125	37 - 101	125	40	165

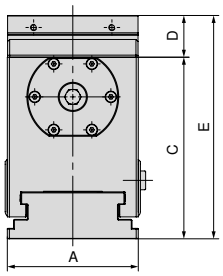
H5G-Z/-S structural dimension table for the different jaws

With combi jaws



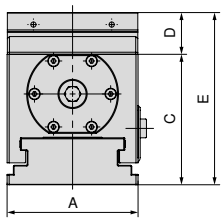
Variant	B mm	B_1 mm	Article no. System jaws
H5G-Z	57 - 182	157 - 282	**80 898 225**
H5G-Z-S	47 - 172	147 - 272	**80 898 225**

H5G-Z



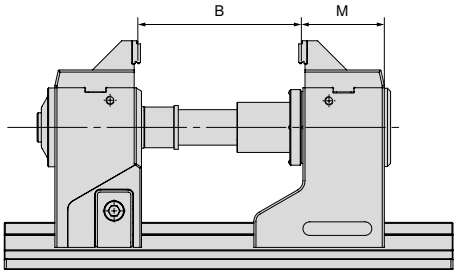
A mm	C mm	D mm	E mm
125	174	40	214
–	–	–	–

H5G-Z-S



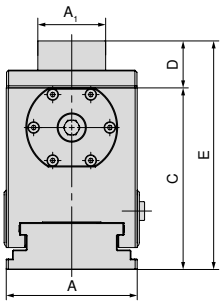
A mm	C mm	D mm	E mm
–	–	–	–
125	125	40	165

With 5A stepped top jaws



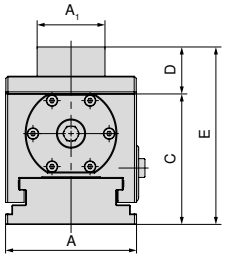
Variant	B mm	M mm	Article no. System jaws
H5G-Z	50 - 175	74	**80 898 325**
H5G-Z-S	40 - 165	74	**80 898 325**

H5G-Z



A mm	A_1 mm	C mm	D mm	E mm
125	65	174	45	214
–	–	–	–	–

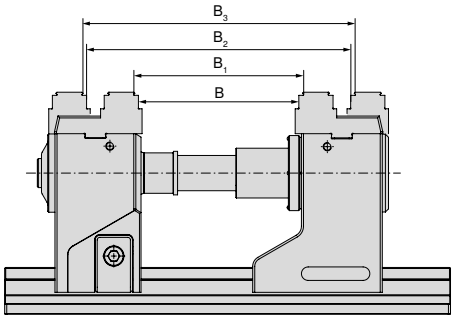
H5G-Z-S



A mm	A_1 mm	C mm	D mm	E mm
–	–	–	–	–
125	65	125	45	165

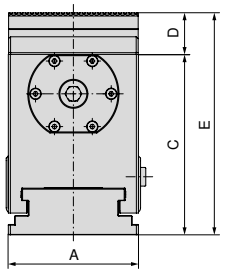
H5G-Z/-S structural dimension table for the different jaws

With indexable jaw grip 3 mm and 16 mm smooth step



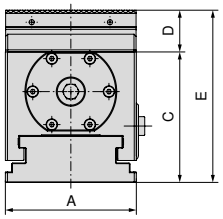
Variant	B mm	B1 mm	B2 mm	B3 mm	Article no. System jaws
H5G-Z	48 - 173	54 - 179	148 - 273	154 - 279	2 x **80 898 35000**
H5G-Z-S	38 - 173	44 - 169	138 - 263	144 - 269	2 x **80 898 35000**

H5G-Z



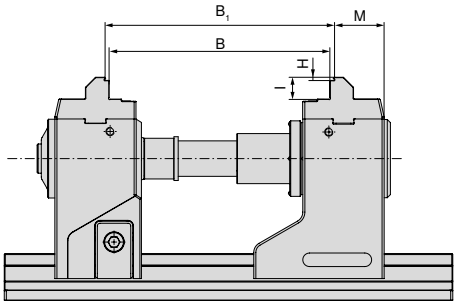
A mm	C mm	D mm	E mm
125	174	40	214
–	–	–	–

H5G-Z-S



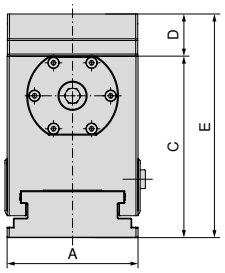
A mm	C mm	D mm	E mm
–	–	–	–
125	125	40	165

With 5A top jaw, jaw width 125 mm



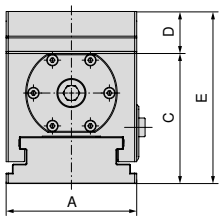
Variant	B mm	B1 mm	H mm	I mm	M mm	Article no. System jaws
H5G-Z	105 - 230	111 - 236	3	21	48,7	2 x **80 907 300**
H5G-Z-S	95 - 220	101 - 226	3	21	48,7	2 x **80 907 300**

H5G-Z



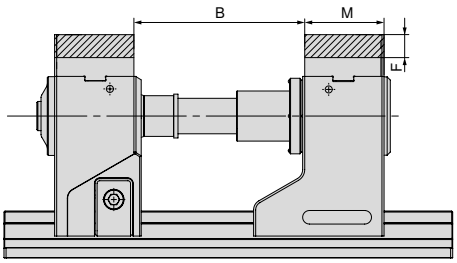
A mm	C mm	D mm	E mm
125	174	40	214
–	–	–	–

H5G-Z-S



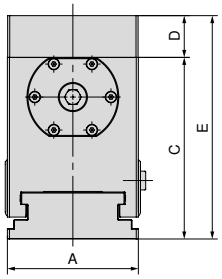
A mm	C mm	D mm	E mm
–	–	–	–
125	125	40	165

with soft jaws



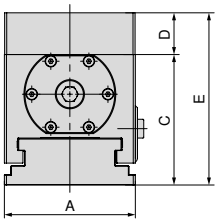
Variant	B mm	F mm	M mm	Article no. System jaws
H5G-Z	57 - 182	22	76	**80 898 625**
H5G-Z-S	47 - 172	22	76	**80 898 625**

H5G-Z



A mm	C mm	D mm	E mm
125	174	40	214
–	–	–	–

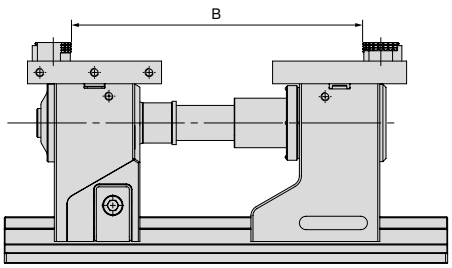
H5G-Z-S



A mm	C mm	D mm	E mm
–	–	–	–
125	125	40	165

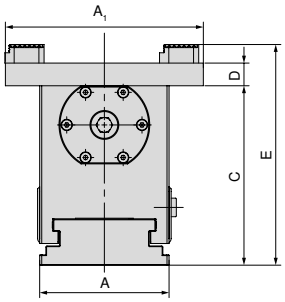
H5G-Z/-S structural dimension table for the different jaws

With pendulum and adapter plate



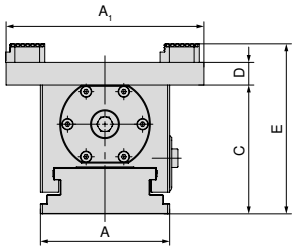
Variant	B mm	Article no. System jaws
H5G-Z	11 - 300	**80 898 525 + 80 898 425**
H5G-Z-S	11 - 290	**80 898 525 + 80 898 425**

H5G-Z



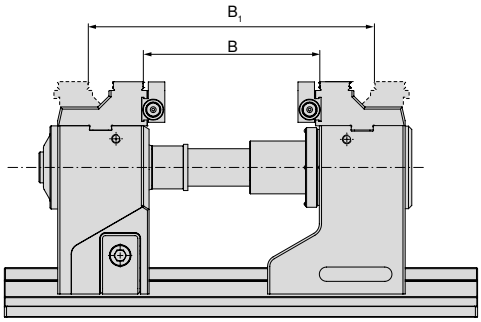
A mm	A_1 mm	C mm	D mm	E mm
125	192	174	40	214
–	–	–	–	–

H5G-Z-S



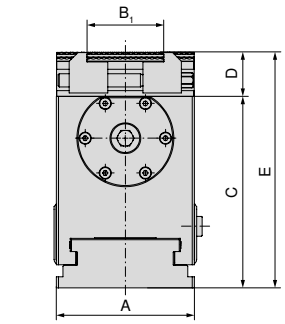
A mm	A_1 mm	C mm	D mm	E mm
–	–	–	–	–
125	192	125	40	165

With 6-face jaw system



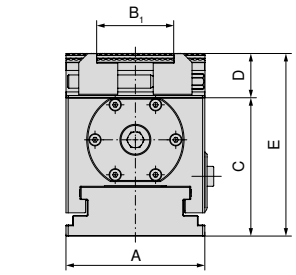
Variant	B mm	B_2 mm	Article no. System jaws
H5G-Z	52 - 177	152 - 277	**80 898 230**
H5G-Z-S	42 - 167	142 - 267	**80 898 230**

H5G-Z



A mm	B_1 mm	C mm	D mm	E mm
125	37 - 101	174	40	214
–	–	–	–	–

H5G-Z-S



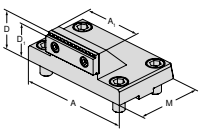
A mm	B_1 mm	C mm	D mm	E mm
–	–	–	–	–
125	37 - 101	125	40	165

Clamping ranges also apply to 500 mm and 630 mm base bodies. Extended clamping ranges with drawbar extension possible.
The specified clamping ranges can sometimes only be achieved using top jaws.

System jaws overview

5A stepped top jaw

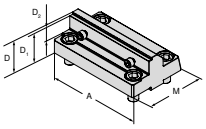
▲ including 125/65 mm attachment and 3 mm grip step
▲ price per piece




For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
125	125	65	45	42			76			**80 898 325**		●									

5A – Top jaw

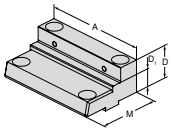
▲ Improved accessibility through tapered rear section
▲ Price per piece




For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
125	125		40	37	18		78			**80 907 300**		●									

Combi reversable jaw

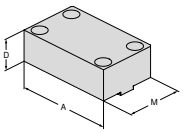
▲ to extend the clamping range
▲ Price per piece




For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
125	125		40	22			76			**80 898 225**		●									

Soft Alu-jaw

▲ for producing shaped jaws
▲ Price per piece

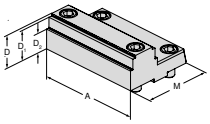



For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
125	125		40				76			**80 898 625**		●									

System jaws overview

Indexable jaw, grip 3 mm, 16 mm smooth step, on both sides

▲ Price per piece

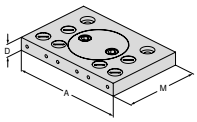




For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
125	125		40	37	24		82,5			**80 898 35000**		●									

Pendulum jaw, movable

▲ to accommodate 6-way reversible jaws
▲ Price per piece

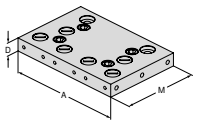




For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
125	192		22				130			**80 898 525**		●									

Adapter plate

▲ to accommodate 6-way reversible jaws
▲ Price per piece

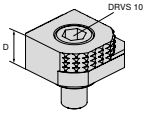


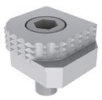


For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
125	192		22				130			**80 898 425**		●									

6 function indexable jaw

▲ 1 = Smooth, carbide coated
▲ 2 = Grip with 3 mm step
▲ 3 = Grip with 8 mm step
▲ 4 = Grip with 18 mm step
▲ 5 = Rough grip with 8 mm step
▲ 6 = Round grip
▲ M_{max} = 60 Nm
▲ Including fixation screws



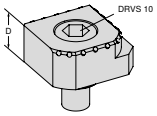


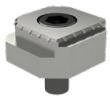
For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
			18							**80 892 246**	●	●	●	●			●		●	●	

System jaws overview

6x indexable jaw, carbide grip

- ▲ 1 = Smooth
- ▲ 2 = Carbide grip
- ▲ 3 = Carbide grip with 3 mm step
- ▲ 4 = Carbide grip with 8 mm step
- ▲ 5 = Round carbide grip with 8 mm step
- ▲ 6 = Round carbide grip
- ▲ Incl. fixing screws





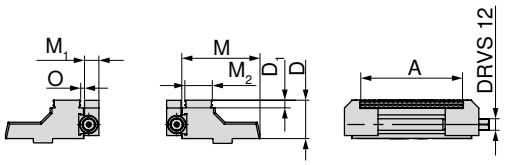
For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2
			18						

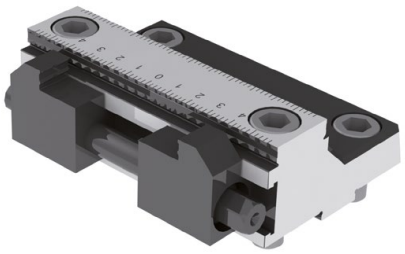
	NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
80 890 35300	●	●	●	●			●		●	●	

6 face jaw system for 125 mm jaw width

Scope of supply:
2 System jaws with 2 pairs of transverse jaws in T-slot guidance incl. fixing screws

H5G -S





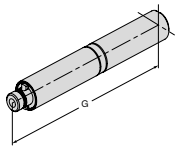
for width	A	D	D_1	M	M_1	M_2	O	WT	**80 898 ...**
mm	mm	mm	mm	mm	mm	mm	mm	kg	
125	37 - 101	40	8	81,5	15	28,7	3,2	4,5	**230**

System accessories overview

Drawbar

▲ Incl. anti-rotation

H5G | H5G -S | H5G -Z

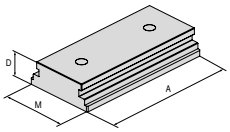


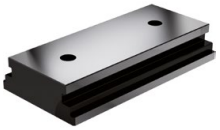


G mm	80 898 ...
125	826
250	827

Base plate to extend

H5G

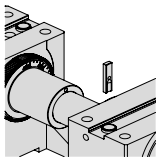




A mm	D mm	M mm	80 898 ...
250	45	125,5	725

Anti-twist plate

H5G | H5G -S | H5G -Z | H5G -Z-S





80 898 ...
024

Hand crank

▲ for fast adjustment



DRVS mm	H5G-Z X5G-Z 80 907 ...	H5G-S H5G-Z-S 80 898 ...	H5G 80 898 ...
14	500	026	025

Protection plugs

▲ Price per piece

H5G -Z



D_1 mm	80 907 ...
19	501

Clamping lever

▲ including control accessories

NCG | NCG 5A | H5G



DRVS mm	80 890 ...
14	501

Clamping Handle with Joint

▲ without socket

H5G -Z | H5G -Z-S | ESG 4 | ESG mini | ZSG 4



Square	80 891 ...
1/2"	600

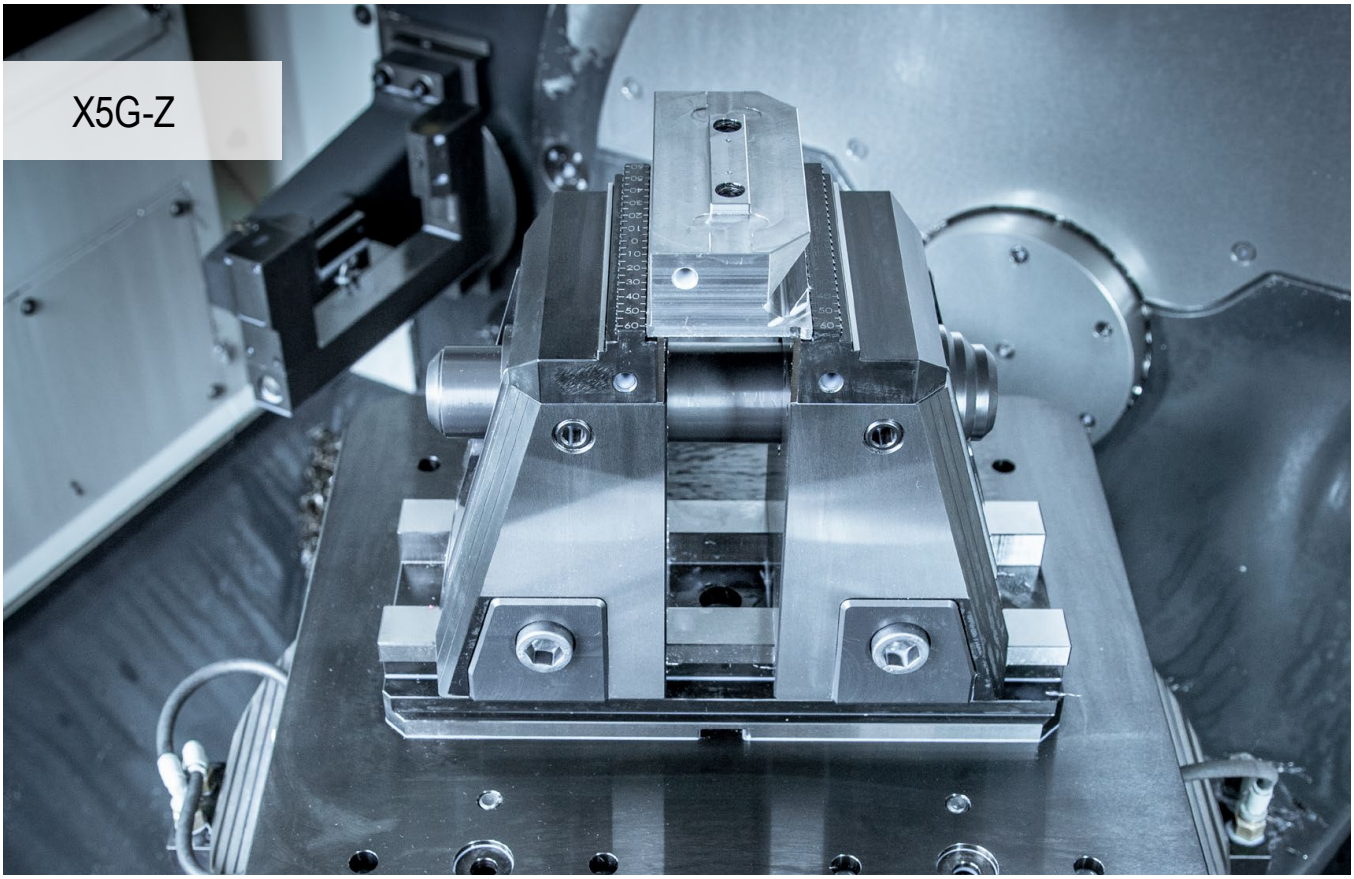
Socket

▲ Suitable for 1/2" or 3/8" square drive

H5G -Z | ESG mini | MSG 2 | Verso | MNG



Square	DRVS mm	80 877 ...
1/2"	14	214



5-axis machining to perfection

Maximum ease of handling and integrated pull-down action for 6-sided machining. X5G-Z is the new 5-axis vice from CERATIZIT. All the advantages that ensure optimum and simple 5- and 6-sided machining combined in a single clamping device.

Your benefits:

- ▲ Either 5 and 6-axis machining thanks to clamping of one or both supporting jaws
- ▲ Fast jaw changeover without tools
- ▲ Optimum accessibility from all sides and large base clamping stroke of 130 mm
- ▲ Fully encapsulated, mechanical spindle
- ▲ Integrated, internal elastomer damping to minimise vibrations
- ▲ Extensive modular jaw range

Clamping/aligning:



Clamping with two dowel screws dia. 12_{f7} / M12 and clamping screws **Article no. 80 895 019**



Alignment through 20^{H7} precision slot nuts in the base body in the machine table's T-slot. Clamping with clamping claws.



Alignment and clamping with MNG zero point clamping system (2-3 mounting bolts). **Optional:** Positioning and fixing holes at the customer's request.

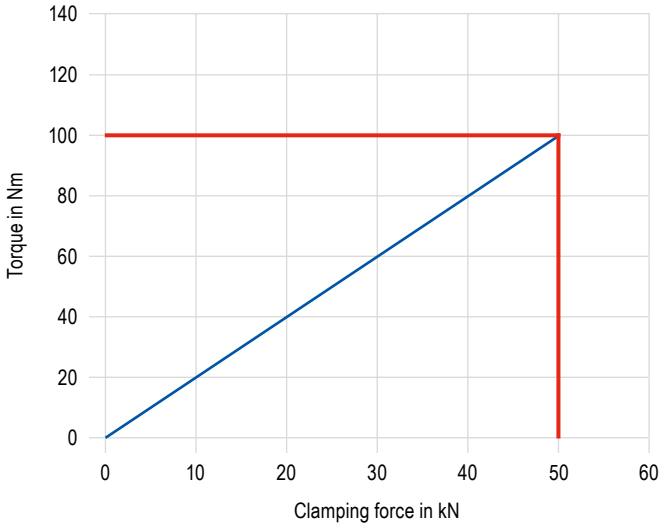
17

Clamping force:

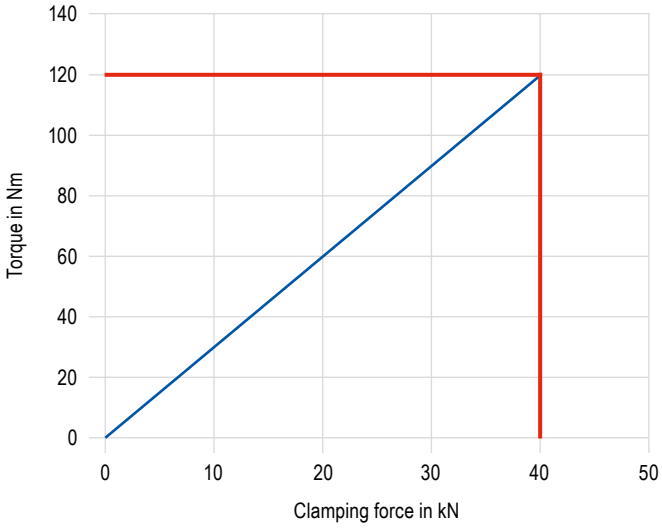
Size		Max. tightening torque in Nm	max. clamping force in kN
X5G-Z	Blank clamping	100	50
X5G-Z	Precision clamping	120	40
X5G-Z-S	Blank clamping	100	50
X5G-Z-S	Precision clamping	120	34

X5G-Z tightening torque/clamping force

Blank clamping

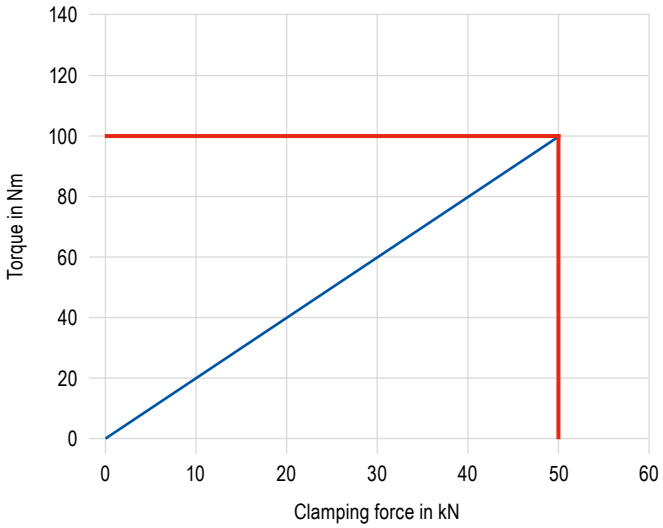


Precision clamping

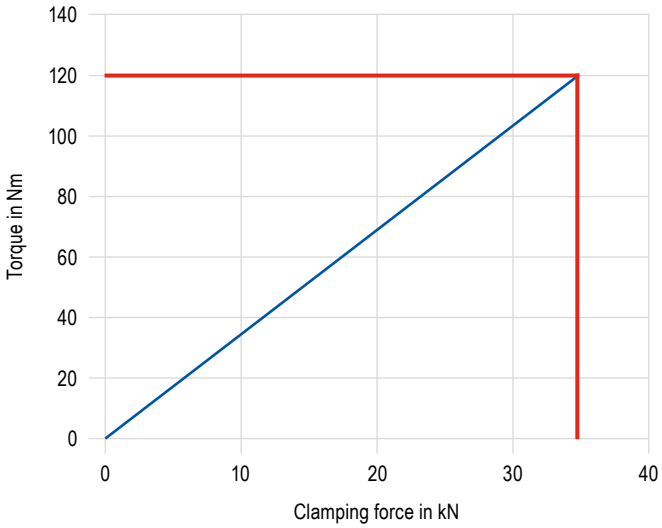


X5G-Z-S tightening torque/clamping force

Blank clamping



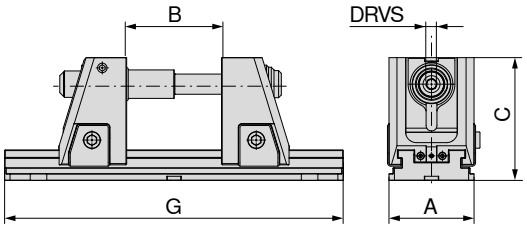
Precision clamping



SoloClamp – X5G-Z

- ▲ Mechanical 5-axis vice with movable fixed jaws, 181 mm height
- ▲ Without system jaws
- ▲ Optimum accessibility
- ▲ 5- and 6-sided machining possible
- ▲ Fast jaw changeover
- ▲ Clamping on the machine table is possible with MNG/PNG, or directly through the base body

X5G -Z





A mm	B mm	C mm	G mm	DRVS mm	MXC kN	WT kg	80 908 ...
125	4 - 134	181	330	14	40	33,2	**52500**
125	4 - 234	181	430	14	40	36,1	**52600**
125	4 - 304	181	500	14	40	38,1	**52700**
125	4 - 434	181	630	14	40	41,8	**52800**
125	4 - 604	181	800	14	40	46,6	**52900**

Basic clamping stroke 130 mm

→ **Page 48**
Here you will find the additional drawbar extensions that must be used to reach the maximum clamping ranges.

→ **Page 42–44**
Here you will fin the structural dimension tables for the different jaws.

Vice guide

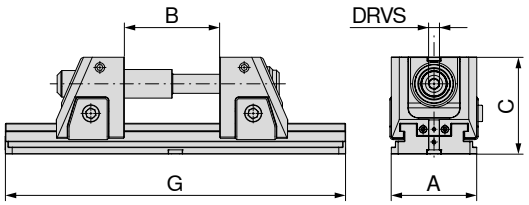
Underside Dimensions	41	System accessories	45
MNG-/PNG zero point clamping system	134–163	General accessories	164–183

17

SoloClamp – X5G-Z-S

- ▲ Mechanical 5-axis vice with movable fixed jaws, 142 mm height
- ▲ Without system jaws
- ▲ Optimum accessibility
- ▲ 5- and 6-sided machining possible
- ▲ Fast jaw changeover
- ▲ Clamping on the machine table is possible with MNG/PNG, or directly through the base body

X5G -Z-S





80 908 ...

A mm	B mm	C mm	G mm	DRVS mm	MXC kN	WT kg	
125	4 - 134	142	330	14	40	27,3	**42500**
125	4 - 234	142	430	14	40	30,2	**42600**
125	4 - 304	142	500	14	40	32,2	**42700**
125	4 - 434	142	630	14	40	35,9	**42800**
125	4 - 604	142	800	14	40	40,7	**42900**

Basic clamping stroke 130 mm

→ **Page 48**
Here you will find the additional drawbar extensions that must be used to reach the maximum clamping ranges.

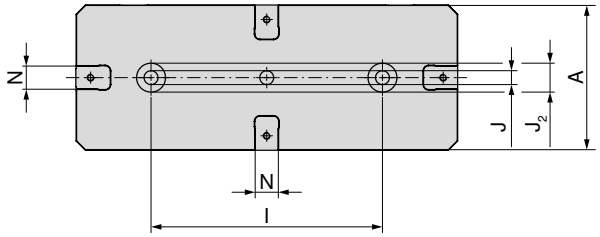
→ **Page 42–44**
Here you will fin the structural dimension tables for the different jaws.

Vice guide

Underside Dimensions	41	System accessories	45
MNG-/PNG zero point clamping system	134–163	General accessories	164–183

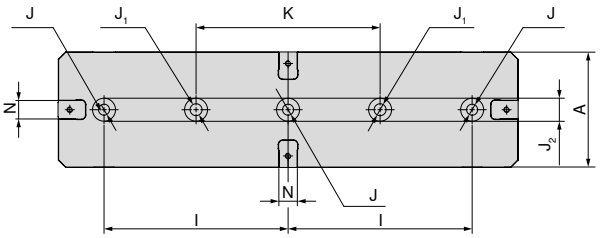
X5G-Z/-S underside dimensions

Base width 125 mm and 330 mm length



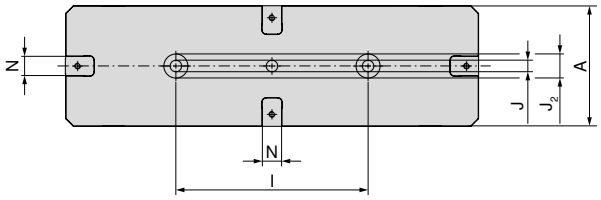
A mm	l ±0,02 mm	J H7 mm	J2 H6 mm	N H7 mm
125	200	12	25	20

Base width 125 mm and 630 mm length



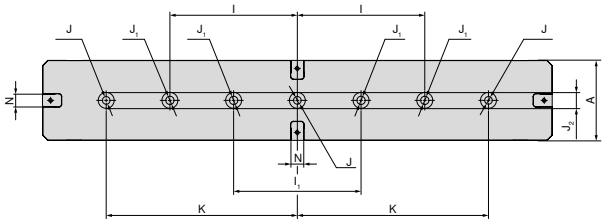
A mm	l ±0,02 mm	J H7 mm	J1 mm	J2 H6 mm	K ±0,02 mm	N H7 mm
125	200	12	13	25	200	20

Base width 125 mm and 430 mm length



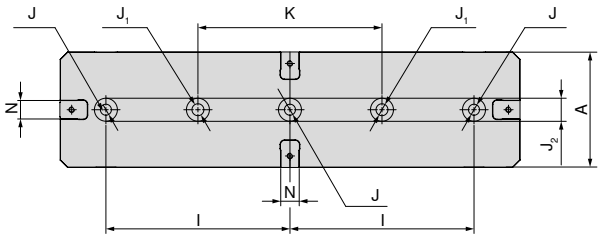
A mm	l ±0,02 mm	J H7 mm	J2 H6 mm	N H7 mm
125	200	12	25	20

Base width 125 mm and 800 mm length



A mm	l ±0,02 mm	l1 ±0,02 mm	J H7 mm	J1 mm	J2 H6 mm	K ±0,02 mm	N H7 mm
125	200	200	12	13	25	300	20

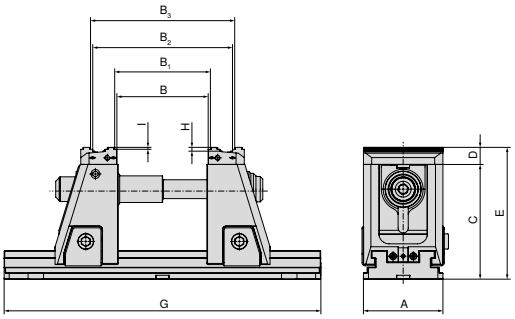
Base width 125 mm and 500 mm length



A mm	l ±0,02 mm	J H7 mm	J1 mm	J2 H6 mm
125	200	12	13	25

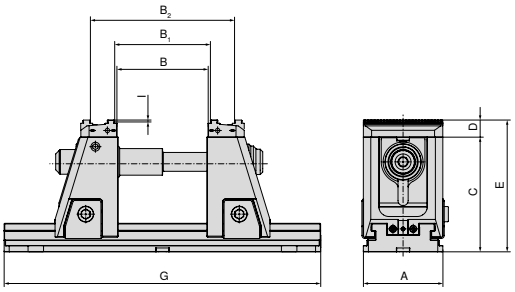
X5G-Z/-S structural dimension table for the different jaws

With indexable jaws, grip 3 mm



Type	Drawbar 430 mm 80 908 80000	Drawbar 500 mm 80 908 80100	Drawbar 630 mm 80 908 80200	Drawbar 800 mm 80 908 80300	A	B	B_1	B_2	B_3	C	D	E	G	H	I
80 908 52500					125	5–134	12–141	80–210	88–217	181	27	208	330	6	3
80 908 42500					125	5–134	12–141	80–210	88–217	142	27	169	330	6	3
80 908 52600	1 x				125	5–234	12–241	80–310	88–317	181	27	208	430	6	3
80 908 42600	1 x				125	5–234	12–241	80–310	88–317	142	27	169	430	6	3
80 908 52700	1 x	1 x			125	5–304	12–311	80–380	88–387	181	27	208	500	6	3
80 908 42700	1 x	1 x			125	5–304	12–311	80–380	88–387	142	27	169	500	6	3
80 908 52800	1 x	1 x	1 x		125	5–434	12–441	80–510	88–517	181	27	208	630	6	3
80 908 42800	1 x	1 x	1 x		125	5–434	12–441	80–510	88–517	142	27	169	630	6	3
80 908 52900	1 x	1 x	1 x	1 x	125	5–604	12–611	80–680	88–687	181	27	208	800	6	3
80 908 42900	1 x	1 x	1 x	1 x	125	5–604	12–611	80–680	88–687	142	27	169	800	6	3

With indexable jaws, grip 5 mm

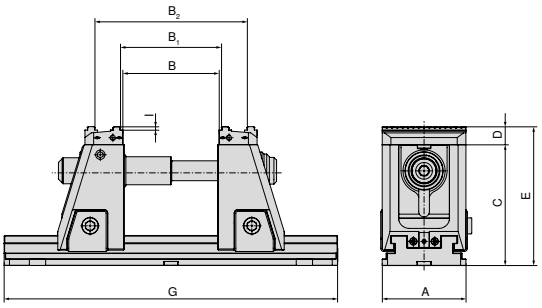


Type	Drawbar 430 mm 80 908 80000	Drawbar 500 mm 80 908 80100	Drawbar 630 mm 80 908 80200	Drawbar 800 mm 80 908 80300	A	B	B_1	B_2	C	D	E	G	I
80 908 52500					125	5–134	12–141	88–217	181	27	208	330	5
80 908 42500					125	5–134	12–141	88–217	142	27	169	330	5
80 908 52600	1 x				125	5–234	12–241	88–317	181	27	208	430	5
80 908 42600	1 x				125	5–234	12–241	88–317	142	27	169	430	5
80 908 52700	1 x	1 x			125	5–304	12–311	88–387	181	27	208	500	5
80 908 42700	1 x	1 x			125	5–304	12–311	88–387	142	27	169	500	5
80 908 52800	1 x	1 x	1 x		125	5–434	12–441	88–517	181	27	208	630	5
80 908 42800	1 x	1 x	1 x		125	5–434	12–441	88–517	142	27	169	630	5
80 908 52900	1 x	1 x	1 x	1 x	125	5–604	12–611	88–687	181	27	208	800	5
80 908 42900	1 x	1 x	1 x	1 x	125	5–604	12–611	88–687	142	27	169	800	5

→ **Page 48**
Here you will find the suitable drawbar extensions.

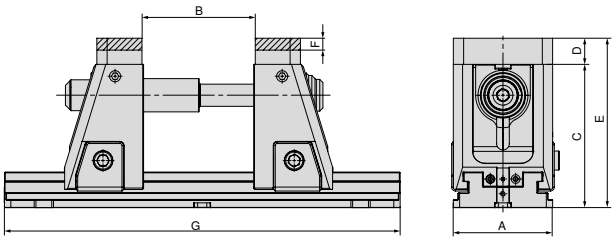
X5G-Z/-S structural dimension table for the different jaws

With stepped jaws, carbide grip 5 mm



Type	Drawbar 430 mm 80 908 80000	Drawbar 500 mm 80 908 80100	Drawbar 630 mm 80 908 80200	Drawbar 800 mm 80 908 80300	A	B	B_1	B_2	C	D	E	G	I
80 908 52500					125	5–134	12–141	88–217	181	27	208	330	5
80 908 42500					125	5–134	12–141	88–217	142	27	169	330	5
80 908 52600	1 x				125	5–234	12–241	88–317	181	27	208	430	5
80 908 42600	1 x				125	5–234	12–241	88–317	142	27	169	430	5
80 908 52700	1 x	1 x			125	5–304	12–311	88–387	181	27	208	500	5
80 908 42700	1 x	1 x			125	5–304	12–311	88–387	142	27	169	500	5
80 908 52800	1 x	1 x	1 x		125	5–434	12–441	88–517	181	27	208	630	5
80 908 42800	1 x	1 x	1 x		125	5–434	12–441	88–517	142	27	169	630	5
80 908 52900	1 x	1 x	1 x	1 x	125	5–604	12–611	88–687	181	27	208	800	5
80 908 42900	1 x	1 x	1 x	1 x	125	5–604	12–611	88–687	142	27	169	800	5

With soft jaws, steel



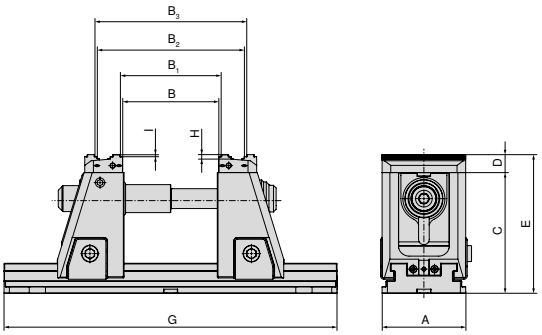
Article no. System jaws
2 x 80 909 31200

Type	Drawbar 430 mm 80 908 80000	Drawbar 500 mm 80 908 80100	Drawbar 630 mm 80 908 80200	Drawbar 800 mm 80 908 80300	A	B	C	D	E	F	G
80 908 52500					125	4–134	181	33	214	15	330
80 908 42500					125	4–134	142	33	175	15	330
80 908 52600	1 x				125	4–234	181	33	214	15	430
80 908 42600	1 x				125	4–234	142	33	175	15	430
80 908 52700	1 x	1 x			125	4–304	181	33	214	15	500
80 908 42700	1 x	1 x			125	4–304	142	33	175	15	500
80 908 52800	1 x	1 x	1 x		125	4–434	181	33	214	15	630
80 908 42800	1 x	1 x	1 x		125	4–434	142	33	175	15	630
80 908 52900	1 x	1 x	1 x	1 x	125	4–604	181	33	214	15	800
80 908 42900	1 x	1 x	1 x	1 x	125	4–604	142	33	175	15	800

→ Page 48
Here you will find the suitable drawbar extensions.

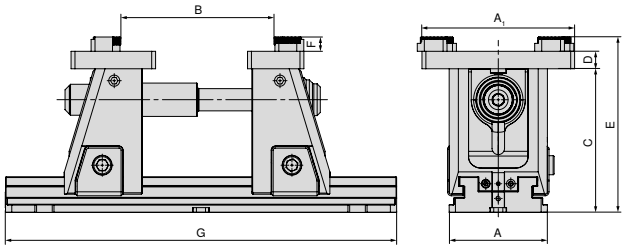
X5G-Z/-S structural dimension table for the different jaws

With indexable jaws embossed profile



Article no. System jaws															
															2 x 80 908 31200
Type	Drawbar 430 mm **80 908 80000**	Drawbar 500 mm **80 908 80100**	Drawbar 630 mm **80 908 80200**	Drawbar 800 mm **80 908 80300**	**A**	**B**	**B_1**	**B_2**	**B_3**	**C**	**D**	**E**	**G**	**H**	**I**
80 908 52500					125	5–134	12–141	82–210	89–217	181	27	208	330	6	3
80 908 42500					125	5–134	12–141	82–210	89–217	142	27	169	330	6	3
80 908 52600	1 x				125	5–234	12–241	82–310	89–317	181	27	208	430	6	3
80 908 42600	1 x				125	5–234	12–241	82–310	89–317	142	27	169	430	6	3
80 908 52700	1 x	1 x			125	5–304	12–311	82–380	89–387	181	27	208	500	6	3
80 908 42700	1 x	1 x			125	5–304	12–311	82–380	89–387	142	27	169	500	6	3
80 908 52800	1 x	1 x	1 x		125	5–434	12–441	82–510	89–517	181	27	208	630	6	3
80 908 42800	1 x	1 x	1 x		125	5–434	12–441	82–510	89–517	142	27	169	630	6	3
80 908 52900	1 x	1 x	1 x	1 x	125	5–604	12–611	82–680	89–687	181	27	208	800	6	3
80 908 42900	1 x	1 x	1 x	1 x	125	5–604	12–611	82–680	89–687	142	27	169	800	6	3

With pendulum and adapter plate



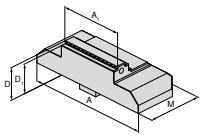
Article no. System jaws												
												80 909 31500 + 80 909 31300
Type	Drawbar 430 mm **80 908 80000**	Drawbar 500 mm **80 908 80100**	Drawbar 630 mm **80 908 80200**	Drawbar 800 mm **80 908 80300**	**A**	**B**	**C**	**D**	**E**	**F**	**G**
80 908 52500					125	42–210	181	22	221	18	330
80 908 42500					125	42–210	142	22	182	18	330
80 908 52600	1 x				125	42–310	181	22	221	18	430
80 908 42600	1 x				125	42–310	142	22	182	18	430
80 908 52700	1 x	1 x			125	42–380	181	22	221	18	500
80 908 42700	1 x	1 x			125	42–380	142	22	182	18	500
80 908 52800	1 x	1 x	1 x		125	42–510	181	22	221	18	630
80 908 42800	1 x	1 x	1 x		125	42–510	142	22	182	18	630
80 908 52900	1 x	1 x	1 x	1 x	125	42–680	181	22	221	18	800
80 908 42900	1 x	1 x	1 x	1 x	125	42–680	142	22	182	18	800

→ **Page 48**
Here you will find the suitable drawbar extensions.

System jaws overview

Indexable grip jaw, 3 mm

▲ Price per piece

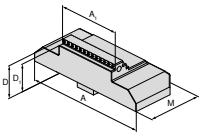




For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
125	125	40	27	24			57			**80 908 30300**			●								
125	125	65	27	24			57			**80 908 30200**			●								
125	125	80	27	24			57			**80 908 30100**			●								
125	125	125	27	24			57			**80 908 30000**			●								

Indexable grip jaw, 5 mm

▲ Price per piece

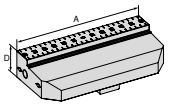




For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
125	125	40	27	22			57			**80 908 30700**			●								
125	125	65	27	22			57			**80 908 30600**			●								
125	125	80	27	22			57			**80 908 30500**			●								
125	125	125	27	22			57			**80 908 30400**			●								

Indexable smooth jaw

▲ Price per piece

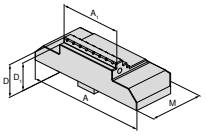




For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
125	125		27							**80 908 31400**			●								

Stepped jaw, carbide grip 5 mm

▲ Price per piece



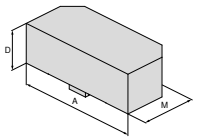
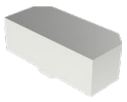


For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
125	125	40	27	22			57			**80 908 31100**			●								
125	125	65	27	22			57			**80 908 31000**			●								
125	125	80	27	22			57			**80 908 30900**			●								
125	125	125	27	22			57			**80 908 30800**			●								

System jaws overview

Soft jaw, steel

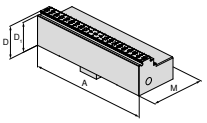
▲ Material: 16MnCr5
▲ Price per piece

For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
125	125		33				57			**80 909 31200**			●								

Indexable jaw embossed profile

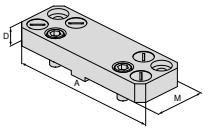
▲ Price per piece
▲ suitable for LANG embossed profile




For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
125	125		27	24			57			**80 908 31200**			●								

Adapter plate

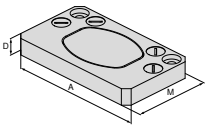
▲ for holding 6-function indexable jaws
▲ Price per piece
▲ incl. cover screws




For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
125	180		22				104			**80 909 31500**			●								

Floating jaw

▲ for holding 6-function indexable jaws
▲ Price per piece
▲ incl. cover screws

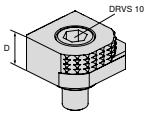


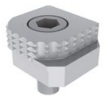

For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
125	180		22				62			**80 909 31300**			●								

System jaws overview

6 function indexable jaw

▲ 1 = Smooth, carbide coated
▲ 2 = Grip with 3 mm step
▲ 3 = Grip with 8 mm step
▲ 4 = Grip with 18 mm step
▲ 5 = Rough grip with 8 mm step
▲ 6 = Round grip
▲ M_{max} = 60 Nm
▲ Including fixation screws

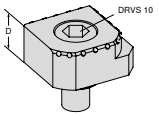


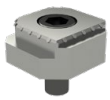


For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
			18							80 892 246	●	●	●	●			●		●	●	

6x indexable jaw, carbide grip

▲ 1 = Smooth
▲ 2 = Carbide grip
▲ 3 = Carbide grip with 3 mm step
▲ 4 = Carbide grip with 8 mm step
▲ 5 = Round carbide grip with 8 mm step
▲ 6 = Round carbide grip
▲ Incl. fixing screws

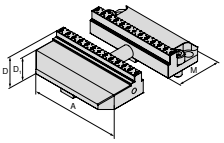




For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
			18							80 890 35300	●	●	●	●			●		●	●	

Precision jaw

▲ Price per set



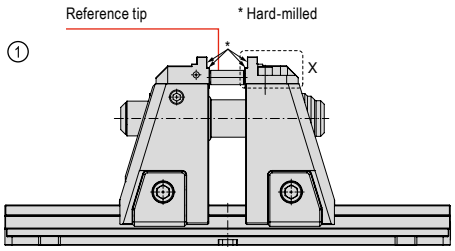


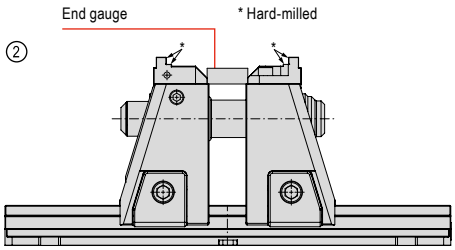
For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
125	125		27	24			57			80 908 31300			●								

Procedure for hardened precision jaw set

The X5G-Z impresses with its extreme accuracy. All the components have been ground or hard-milled to a high level of precision. Despite this, there are still applications whereby the precision requirements cannot be satisfied in full due to the tolerance chain of the indexable grip jaws. For these situations we offer a hardened precision jaw set (article no. **80 908 31300**) that can be hard-milled by the customer on the clamping flat (both sides).

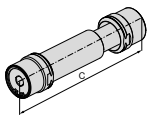
Hard machining is carried out in the precision vice (both screws on the supporting jaws tightened to 140 Nm). The precision jaws must be hard-milled as per the views shown (1+2). The reference tip supplied is used for clamping in the standard position (1). An end gauge can be used for clamping in the increased clamping range position (2).





System accessories overview

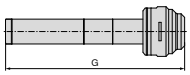
Spindle unit X5G-Z





C mm	WT kg	80 908 ...
227,5	2,5	50100

Drawbar





for width mm	G mm	80 908 ...
125	430	80000
125	500	80100
125	630	80200
125	800	80300

Torque Wrench

▲ without socket



Square	TQX Nm	80 884 ...
1/2"	10 - 100	502

Hand crank

▲ Version with external hex
▲ For quick adjustment



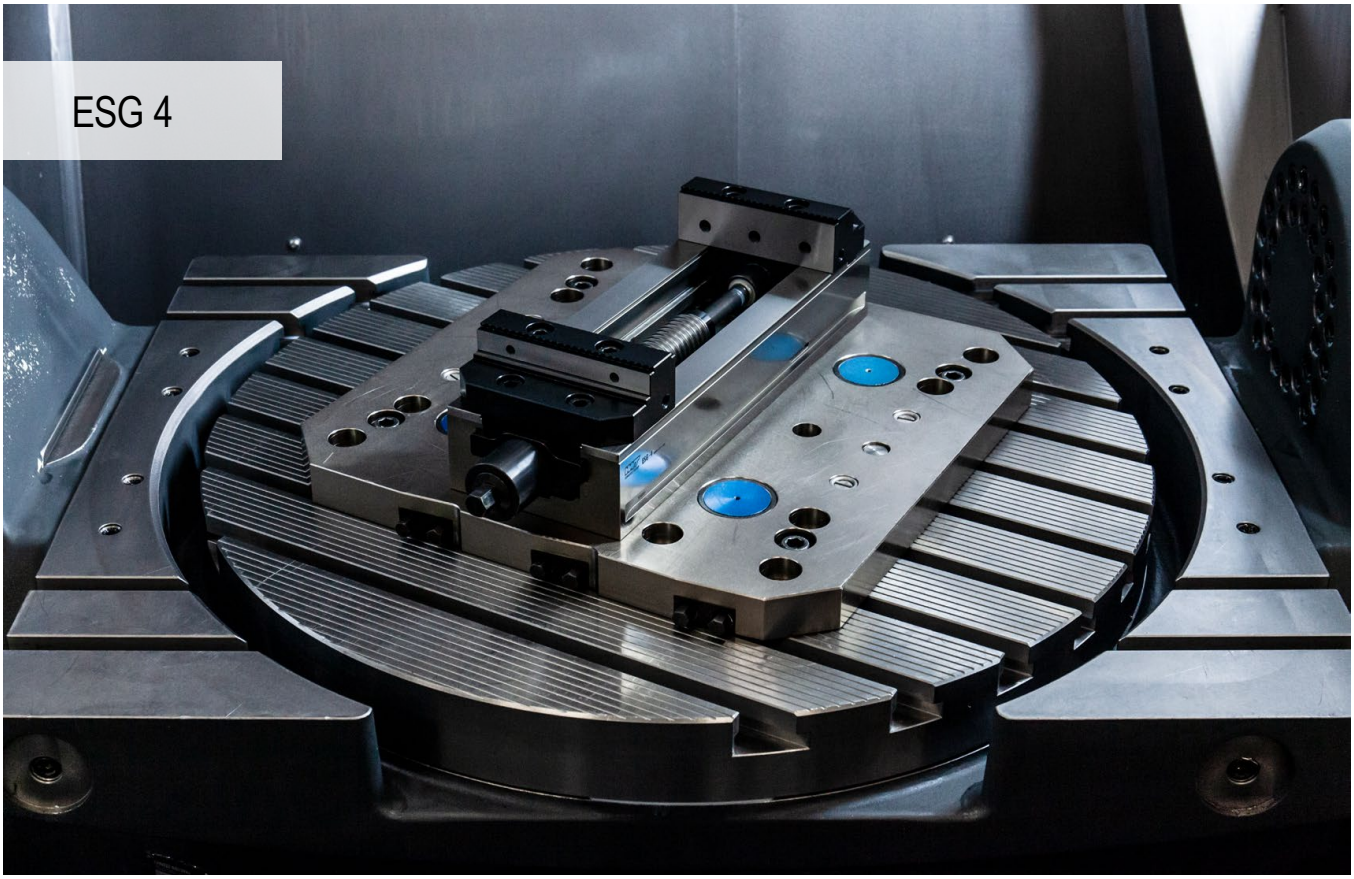
H5G-Z
X5G-Z

for width mm	DRVS mm	80 907 ...
125	14	500

Socket



Square	DRVS mm	80 877 ...
1/2"	14	214



Highly-efficient all-rounder for machining unfinished and finished parts

The ESG 4 single vice impresses with fast handle clamping, quick setting of the clamping range, a flat design and low weight.

Your benefits:

- ▲ Several cooling lubricant flows for problem-free working and controlled outflow
- ▲ Quick and easy positioning on the MNG zero point clamping system
- ▲ High clamping force between 5 – 50 kN with low tightening torque
- ▲ Quick and easy jaw change with 2 screws
- ▲ Quick, simple disassembly of the spindle unit
- ▲ Extensive modular jaw range

Clamping/aligning:



ESG 4 – 80 mm = mounting with M8 screws through the base body
ESG 4 – 125 mm / 160 mm = mounting with M12 screws and dowel screws through the base body



Mounting with 4 clamping claws
Article no. 80 890 315

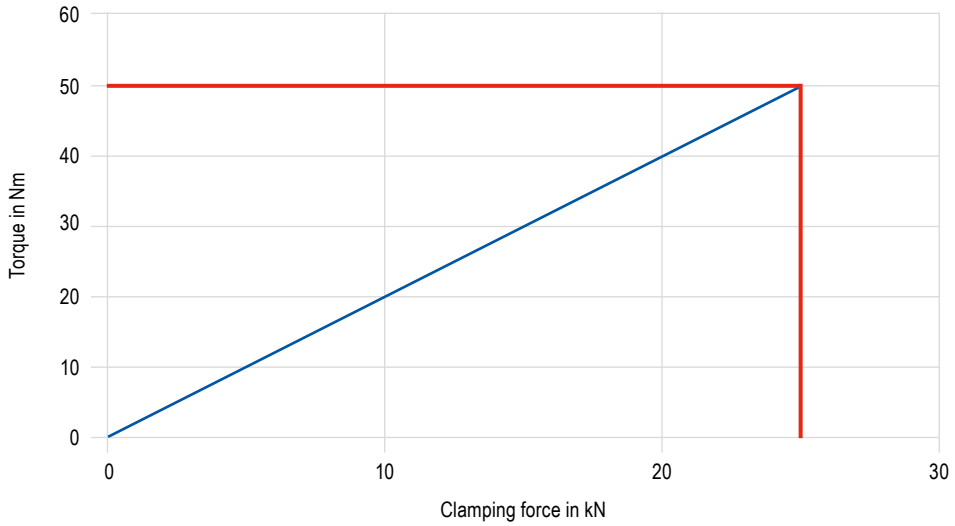


Mounting with zero point clamping systems
ESG 4 – 80 mm = 1 mounting bolt + anti-twist protection
ESG 4 – 125 / 160 mm = 2 mounting bolts, centre distance 200 mm

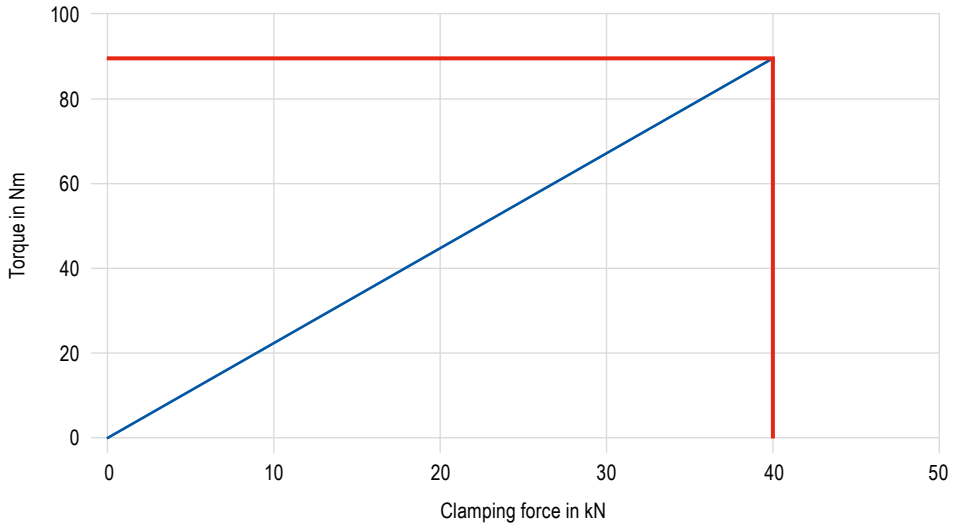
17

Clamping force:

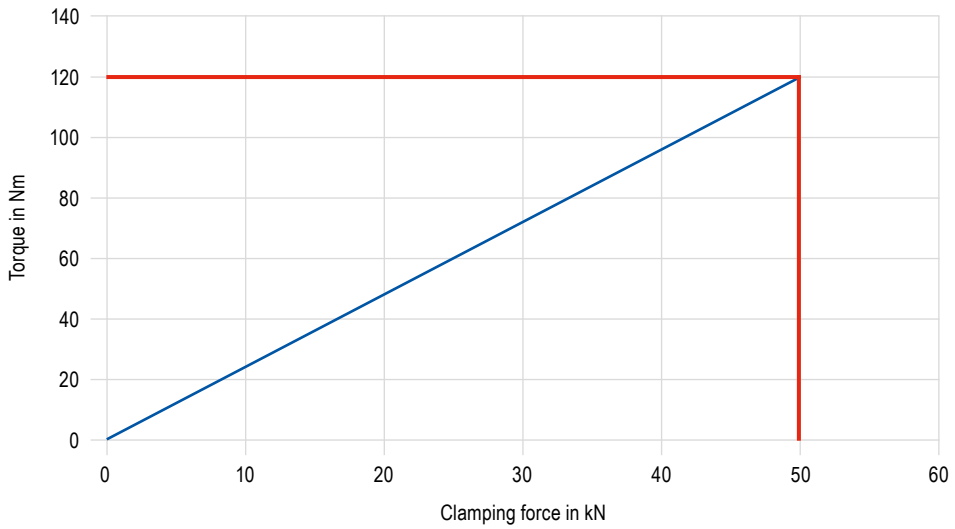
ESG 4 – 80 mm tightening torque / clamping force



ESG 4 – 125 mm tightening torque/clamping force



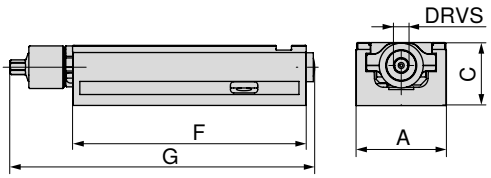
ESG 4 – 160 mm tightening torque / clamping force



SoloClamp – ESG 4

- ▲ Single vice without system jaws
- ▲ Fast 160° handle clamping with torque key
- ▲ Rapid installation and removal of the spindle assembly
- ▲ ±0.01 mm repeatability (±0.015 mm when A = 160 mm)

ESG 4 | **MNG**





80 901 ...

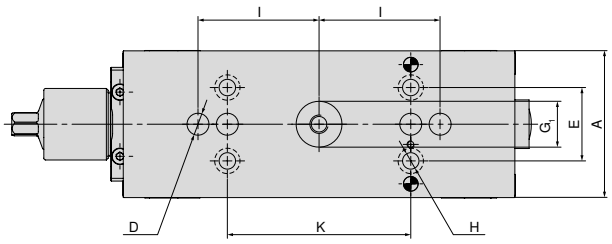
A mm	C -0.02 mm	F mm	G mm	DRVS mm	MXC kN	WT kg	clamping range mm	
80	55	214	284	12	25	5,0	0-192	**080**
125	60	362	433	14	40	15,0	0-308	**125**
160	70	480	559	14	50	28,5	0-434	**160**

Vice guide

Underside Dimensions	52	Structural dimension tables for the different jaws	53+54
System accessories	55–58	MNG-/PNG zero point clamping system	134–163
General accessories	164–183		

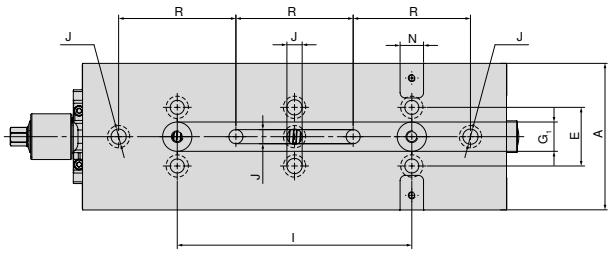
ESG 4 underside dimensions

Base width 80 mm and length 214 mm



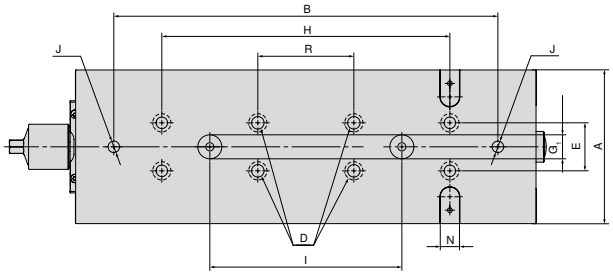
A	D	E	G_1	H	I	K
mm	mm	mm	mm	mm	mm	mm
80	12	40	25	9	66	100

Base width 125 mm and length 362 mm



A	E	G_1	I	J	N_{H7}	R
mm	mm	mm	mm	mm	mm	mm
125	50	25	200	13	20	100

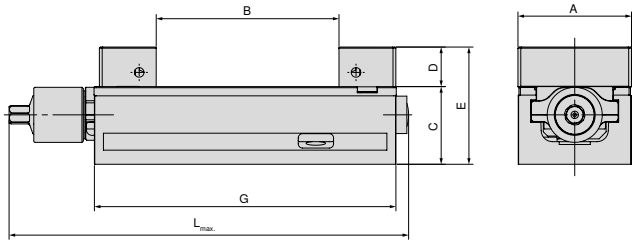
Base width 160 mm and length 480 mm



A	B	D	E	G_1	H	I	J	N_{H7}	R
mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
160	400	13	50	25	300	200	12	20	100

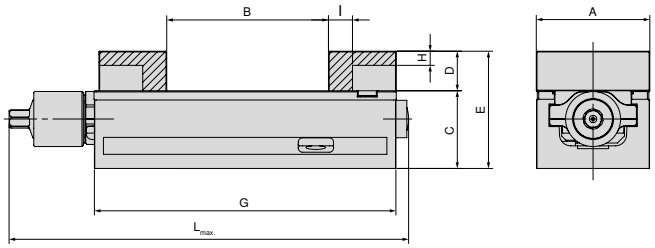
ESG 4 structural dimension table for the different jaws

With block jaws



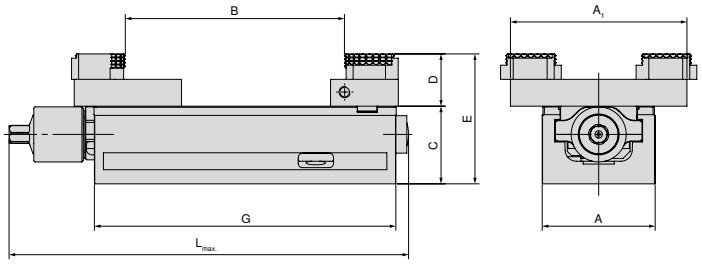
A mm	B mm	C mm	D mm	E mm	G mm	$L_{max.}$ mm	Article no. System jaws
80	0 - 130	55	28	83	214	308	**80 901 31200** + **80 901 31300**
125	0 - 231	60	40	100	362	432	**80 901 31400** + **80 901 31500**
160	0 - 312	70	50	120	480	559	**80 901 31600** + **80 901 31700**

With soft alu jaws



A mm	B mm	C mm	D mm	E mm	G mm	H mm	I mm	$L_{max.}$ mm	Article no. System jaws
80	0 - 115	55	28	83	214	10	17	284	**80 901 307** + **80 878 850**
125	0 - 219	60	40	100	362	23	27	432	**80 901 304** + **80 878 550**
160	0 - 309	70	50	120	480	23	30	559	**80 901 301** + **80 878 305**

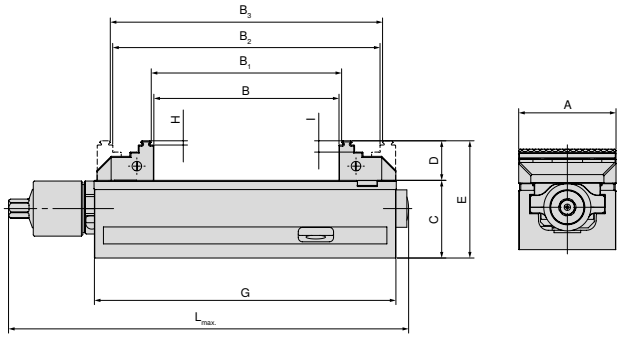
With pendulum and adapter plate



A mm	A_1 mm	B mm	C mm	D mm	E mm	G mm	$L_{max.}$ mm	Article no. System jaws
80	125	5 - 155	55	19	92	214	284	**80 878 870** + **80 901 501**
125	180	4 - 306	60	22	100	362	432	**80 878 570** + **80 901 502**
160	256	11 - 463	70	22	110	480	559	**80 878 670** + **80 901 503**

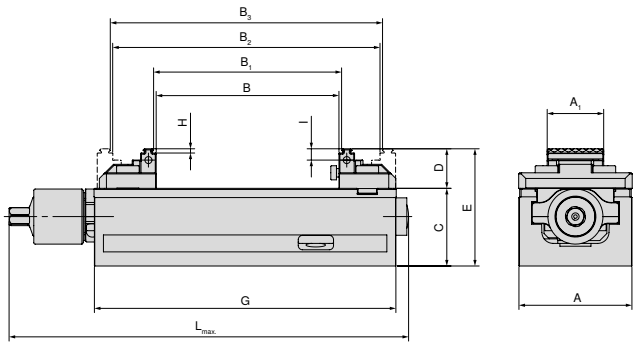
ESG 4 structural dimension table for the different jaws

With indexable jaws, grip 3 mm



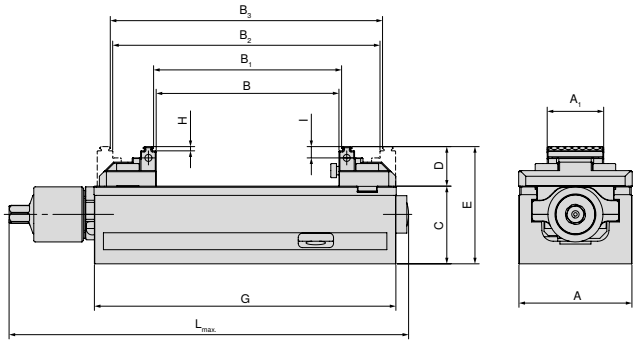
A mm	B mm	B_1 mm	B_2 mm	B_3 mm	C mm	D mm	E mm	G mm	H mm	I mm	$L_{max.}$ mm	Article no. System jaws
80	0 - 130	4 - 134	59 - 188	63 - 192	55	28	83	214	3	8	284	**80 901 306** + **80 878 810**
125	0 - 231	8 - 238	71 - 301	78 - 308	60	40	100	362	3	18	433	**80 901 302** + **80 901 303**
160	0 - 310	8 - 317	117 - 427	125 - 434	70	50	120	480	3	10	559	**80 901 300** + **80 878 610**

With indexable jaws, grip 3 mm, width 40 mm



A mm	A_1 mm	B mm	B_1 mm	B_2 mm	B_3 mm	C mm	D mm	E mm	G mm	H mm	I mm	$L_{max.}$ mm	Article no. System jaws
80	40	0 - 130	4 - 134	59 - 188	63 - 192	55	28	83	214	3	8	284	**80 901 308** + **80 878 81900**

With indexable jaws, grip 3 mm, height 65 mm

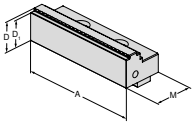


A mm	A_1 mm	B mm	B_1 mm	B_2 mm	B_3 mm	C mm	D mm	E mm	G mm	H mm	I mm	$L_{max.}$ mm	Article no. System jaws
125	65	0 - 240	8 - 247	77 - 317	84 - 324	60	33	93	362	3	9	432	**80 901 305** + **80 878 51900**

System jaws overview

Indexable jaw, grip 3 mm, fixed

▲ Price per piece

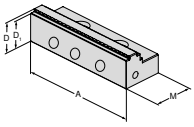




For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
80	80		28	25			40			**80 901 306**				●	●						
125	125		40	37			66			**80 901 302**				●	●				●		
160	160		50	47			81			**80 901 300**				●	●						

Indexable jaw, grip 3 mm, movable

▲ Price per piece

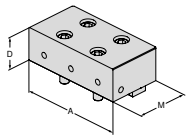


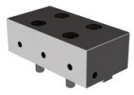


For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
80	80		28	25			40			**80 878 810**				●	●		●		●		
125	125		40	37			66			**80 901 303**				●	●				●		
160	160		50	47			81			**80 878 610**				●	●		●				

Block jaw, fixed

▲ Price per piece

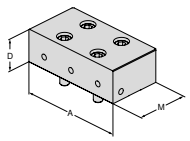


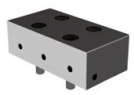


For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
80	80		28				40			**80 901 31200**				●	●						
125	125		40				66			**80 901 31400**				●							
160	160		50				81			**80 901 31600**				●	●						

Block jaw, movable

▲ Price per piece



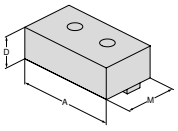
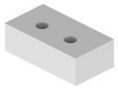


For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
80	80		28				40			**80 901 31300**				●	●		●		●		
125	125		40				66			**80 901 31500**				●					●		
160	160		50				81			**80 901 31700**				●	●		●				

System jaws overview

Alu jaw, fixed

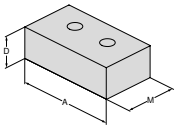
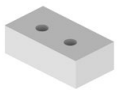
▲ for producing shaped jaws
▲ Price per piece

For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
80	80		28				48			**80 901 307**				●	●						
125	125		40				68			**80 901 304**				●							
160	160		50				85			**80 901 301**				●	●						

Alu jaw, movable

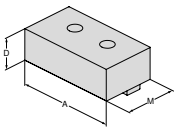
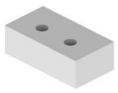
▲ for producing shaped jaws
▲ Price per piece

For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
80	80		28				48			**80 878 850**				●	●		●		●		
125	125		40				68			**80 878 550**				●					●		
160	160		50				85			**80 878 305**				●	●		●				

Soft jaw, steel, fixed

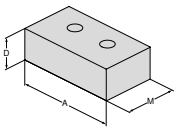
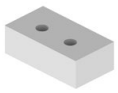
▲ Material: 16MnCr5
▲ for producing shaped jaws
▲ Price per piece

For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
80	80		28				48			**80 901 31800**				●	●						
125	125		40				68			**80 901 31900**				●	●						

Soft jaw, steel, movable

▲ Material: 16MnCr5
▲ for producing shaped jaws
▲ Price per piece

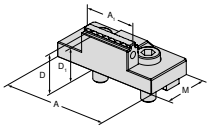



For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
80	80		28				48			**80 878 32000**				●	●		●				
125	125		40				68			**80 878 32100**				●	●		●				

System jaws overview

Reversible grip jaw, width 40 mm, fixed

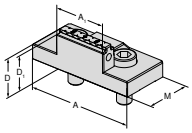
▲ Price per piece
▲ Double-sided grip step




For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
80	80	40	28	25			40			**80 901 308**				●							

Indexable grip jaw 3 mm, width 40 mm, movable

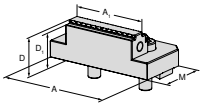
▲ Price per piece




For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
80	80	40	28	25			40			**80 878 81900**				●			●				

5-axis reversible grip jaw, width 65 mm, fixed

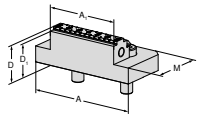
▲ price per piece
▲ double sided grip step




For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
125	95	65	33	30			57			**80 901 305**				●							

5-axis indexable jaw, grip 3 mm, width 65 mm, movable

▲ double sided grip step
▲ price per piece

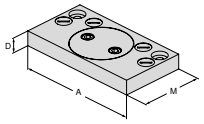



For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
125	95	65	33	30			57			**80 878 51900**							●				

System jaws overview

Pendulum jaw, movable

▲ to accommodate 6-way reversible jaws
▲ Price per piece

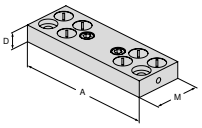




For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
80	125		19				76			**80 878 870**				●			●		●		
125	180		22				95			**80 878 570**				●			●		●		
160	256		22				170			**80 878 670**				●			●				

Adapter jaw

▲ to accommodate 6-way reversible jaws
▲ Price per piece

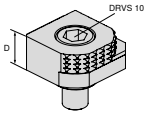


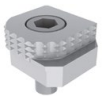


For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
80	125		19				48			**80 901 501**				●							
125	180		22				62			**80 901 502**				●							
160	256		22				125			**80 901 503**				●							

6 function indexable jaw

▲ 1 = Smooth, carbide coated
▲ 2 = Grip with 3 mm step
▲ 3 = Grip with 8 mm step
▲ 4 = Grip with 18 mm step
▲ 5 = Rough grip with 8 mm step
▲ 6 = Round grip
▲ M_{max} = 60 Nm
▲ Including fixation screws

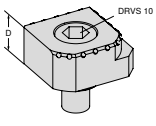


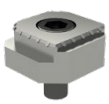


For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
			18							**80 892 246**	●	●	●	●			●		●	●	

6x indexable jaw, carbide grip

▲ 1 = Smooth
▲ 2 = Carbide grip
▲ 3 = Carbide grip with 3 mm step
▲ 4 = Carbide grip with 8 mm step
▲ 5 = Round carbide grip with 8 mm step
▲ 6 = Round carbide grip
▲ Incl. fixing screws





For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
			18							**80 890 35300**	●	●	●	●			●		●	●	



The optimised ESG 5 – Maximum precision and process security

The new ESG 5 retains all the cherished characteristics of its predecessor and raises the bar significantly with regard to user-friendliness and durability. Optimised handling and improved durability were top of the list in the update for the single vice.

Your benefits:

- ▲ Specially designed for second side machining through high angular accuracy
- ▲ Compact design with ideal accessibility
- ▲ Jaw change Quick and easy with two screws
- ▲ The same clamping ranges, significantly improved interference contour, comprehensive modular jaw range
- ▲ Sustainable model with nickel-plated base body ensures a long service life

Clamping/aligning:



Mounting with zero point clamping system
ESG 5 – 80 mm L-130 mm + L-190 mm
ESG 5 – 125 mm L-160 mm + L-235 mm

1 mounting bolt + MNG-indexing bolt



Mounting with zero point clamping system
ESG 5 – 125 mm + L-300 mm
ESG 5 – 160 mm + L-280 mm + L-480 mm

2 mounting bolts



Dia. 12^{JS} precision holes are present in all variants for positioning the ESG 5 with precision. All variants can be mounted with screws from above through the base body.

Clamping/aligning:

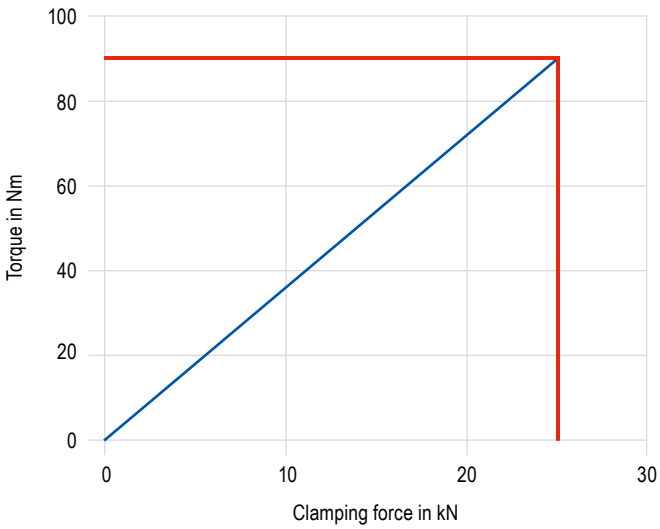


ESG 5 – 125 mm L-235 mm + L-300 mm
ESG 5 – 160 mm L-280 mm + L-480 mm

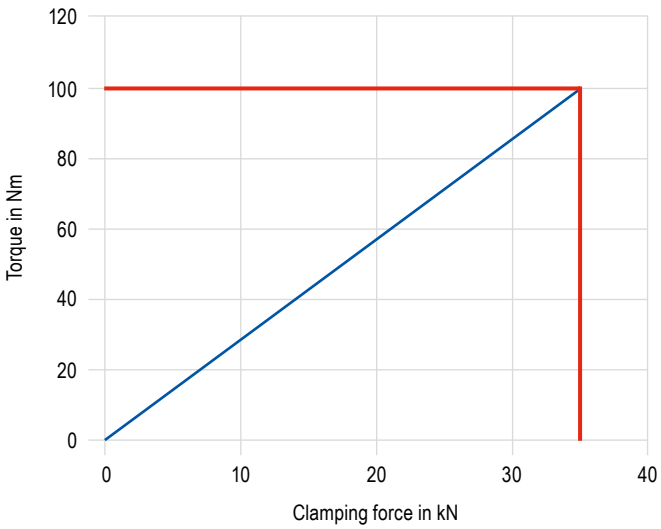
These 4 variants can also be clamped with clamping claws as an alternative.

Clamping force:

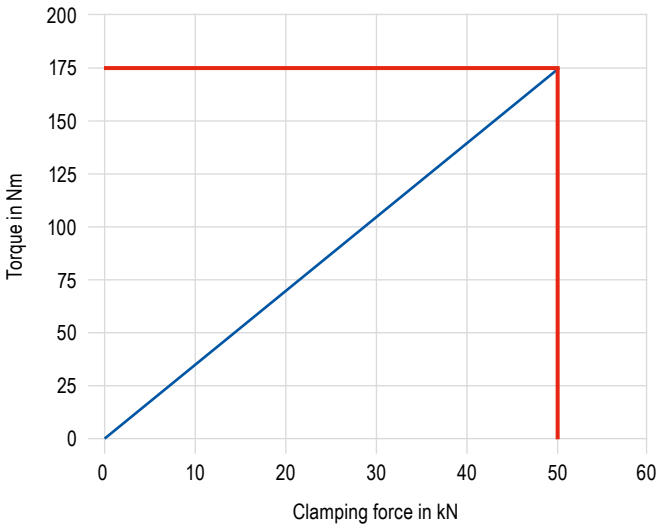
ESG 5 – 80 mm tightening torque / clamping force



ESG 5 – 125 mm tightening torque / clamping force



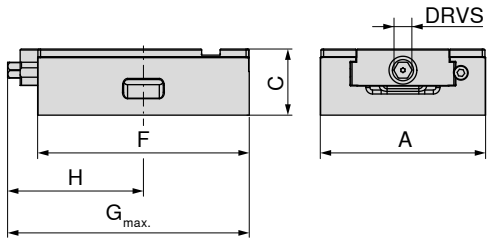
ESG 5 – 160 mm tightening torque / clamping force



SoloClamp – ESG 5

- ▲ Single vice without system jaws
- ▲ Specially designed for second side machining through high angular accuracy
- ▲ ±0.01 mm repeatability between the clamping processes
- ▲ Suitable for PNG and MNG

ESG 5 | **MNG**





A mm	C ±0,01 mm	F mm	G max. mm	H mm	DRVS mm	MXC kN	WT kg	80 857 ...
80	50	130	155,0	82	12	25	2,9	**08500**
80	50	190	203,0	102	12	25	4,4	**08600**
125	50	160	169,0	103	12	35	6,0	**15000**
125	50	235	235,0	132	12	35	8,4	**15100**
125	50	300	300,0	170	12	35	10,5	**15200**
160	70	280	309,0	169	14	50	25,0	**26100**
160	70	480	512,5	267	14	50	30,0	**26200**

Suitable for zero point clamping system								
Article no.	Type	Width in mm	Height in mm	MNG	MNG mini	PNG	LANG Quick Point 96 x 96	LANG Quick Point 52 x 52
80 857 08500	ESG 5	80	130	✓	✓	✗	✗	✓
80 857 08600		80	190	✓	✗	✓	✗	✓
80 857 15000		125	160	✓	✗	✓	✓	✓
80 857 15100		125	235	✓	✗	✓	✓	✗
80 857 15200		125	300	✓	✗	✓	✓	✗
80 857 26100		160	280	✓	✗	✓	✓	✗
80 857 26200		160	480	✓	✗	✓	✗	✗

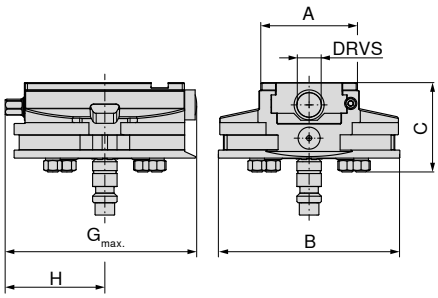
Vice guide

Underside Dimensions	63+64	Structural dimension tables for the different jaws	65
System accessories	66	MNG-/PNG zero point clamping system	134–163
General accessories	164–183		

SoloClamp – ESG 5

- ▲ Sealed single vice for Erowa ITS 148
- ▲ Without system jaws
- ▲ Specially designed for second side machining through high angular accuracy
- ▲ ±0.01 mm repeatability between the clamping processes

ESG 5





80 857 ...

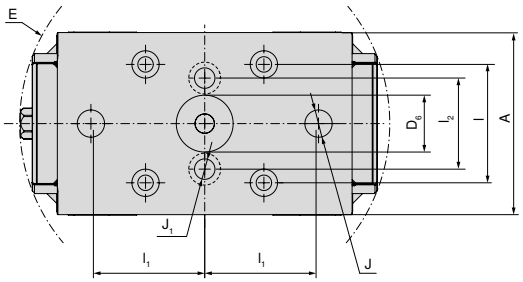
A	B	C	$G_{max.}$	H	DRVS	MXC	WT	
mm	mm	mm	mm	mm	mm	kN	kg	
80	148	73	157	81	12	25	5,6	**08900**

Vice guide

Underside Dimensions	63+64	Structural dimension tables for the different jaws	65
System accessories	66	MNG-/PNG zero point clamping system	134–163
General accessories	164–183		

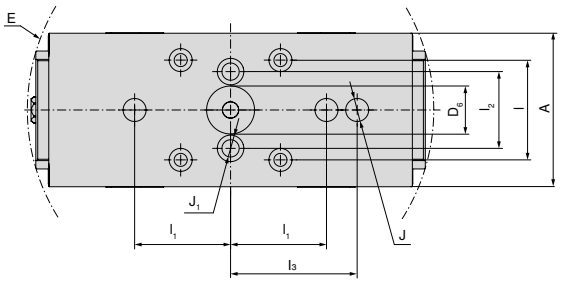
ESG 5 underside dimensions

Base width 80 mm and length 130 mm



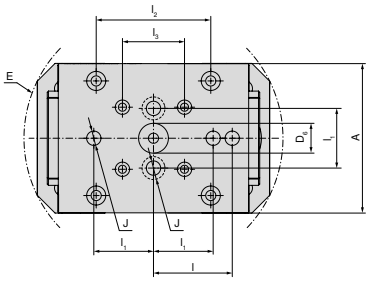
A mm	$D_{6\ H6}$ mm	E mm	$l_{\pm0,015}$ mm	$l_{1\ \pm0,015}$ mm	l_2 mm	J_{H7} mm	J_1 mm
80	25	163	52	50	40	12	9

Base width 80 mm and length 190 mm



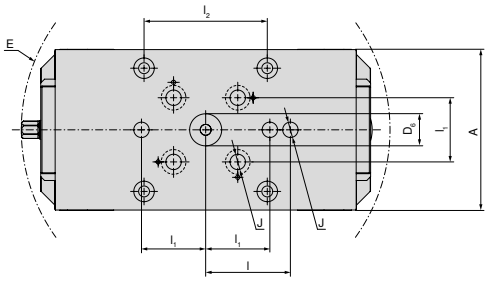
A mm	$D_{6\ H6}$ mm	E mm	$l_{\pm0,015}$ mm	$l_{1\ \pm0,015}$ mm	l_2 mm	$l_{3\ \pm0,015}$ mm	J_{H7} mm	J_1 mm
80	25	213	52	50	40	66	12	9

Base width 125 mm and length 160 mm



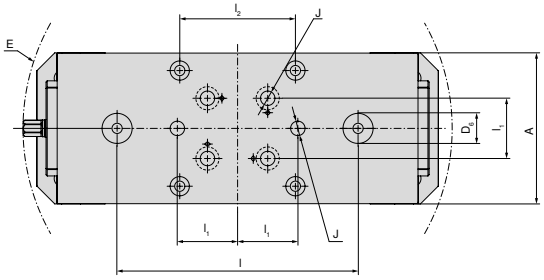
A mm	$D_{6\ H6}$ mm	E mm	$l_{\pm0,015}$ mm	$l_{1\ \pm0,015}$ mm	l_2 mm	$l_{3\ \pm0,015}$ mm	J_{H7} mm
125	25	218	66	50	96	52	12

Base width 125 mm and length 235 mm



A mm	$D_{6\ H6}$ mm	E mm	$l_{\pm0,015}$ mm	$l_{1\ \pm0,015}$ mm	l_2 mm	J_{H7} mm
125	25	288	66	50	96	12

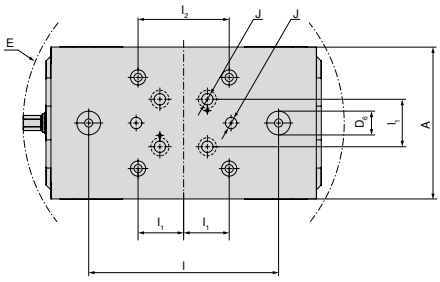
Base width 125 mm and length 300 mm



A mm	$D_{6\ H6}$ mm	E mm	$l_{\pm0,015}$ mm	$l_{1\ \pm0,015}$ mm	l_2 mm	J_{H7} mm
125	25	357	200	50	96	12

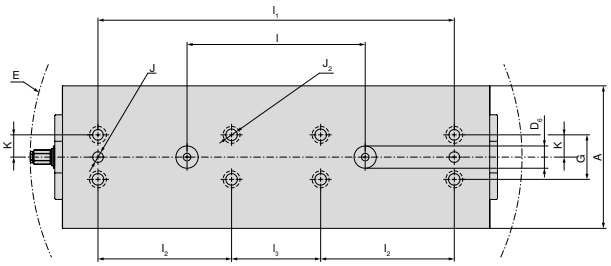
ESG 5 underside dimensions

Base width 160 mm and length 280 mm



A mm	$D_{6\ H6}$ mm	E mm	$l_{\pm0,015}$ mm	$l_{1\ \pm0,015}$ mm	l_2 mm	J_{H7} mm
160	25	339	200	50	96	12

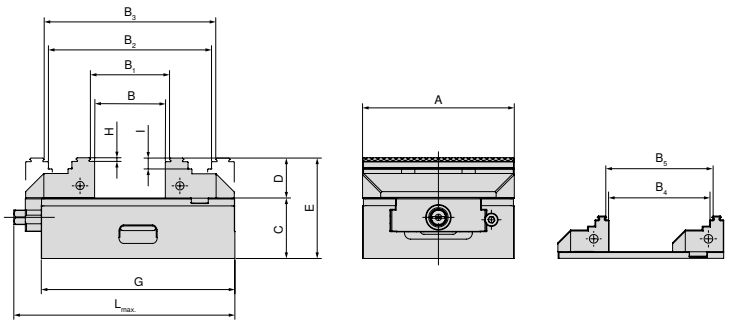
Base width 160 mm and length 480 mm



A mm	$D_{6\ H6}$ mm	E mm	$l_{\pm0,015}$ mm	$l_{1\ \pm0,015}$ mm	l_2 mm	$l_{3\ \pm0,015}$ mm	J_{H7} mm	$J_{2\ F7}$ mm	$K_{\pm0,02}$ mm	G mm
160	25	553	200	400	150	100	12	12	25	50

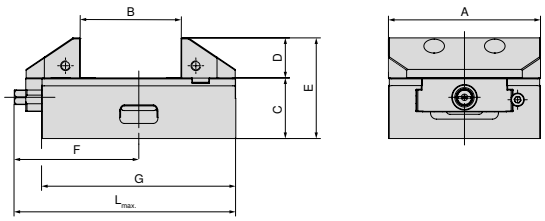
ESG 5 structural dimension table for the different jaws

With indexable jaw grip 3 mm, fixed and movable



A mm	B mm	B_1 mm	B_2 mm	B_3 mm	B_4 mm	B_5 mm	C mm	D mm	E mm	G mm	H mm	I mm	$L_{max.}$ mm	Article no. System jaws
80	0-49	4-53	59-107	63-111	30-78	34-82	50	28	78	130	3	8	155	**80 901 306** + **80 878 810**
80	0-109	4-113	59-167	63-171	29-134	35-136	50	28	78	190	3	8	206	**80 901 306** + **80 878 810**
125	0-57	8-64	77-134	84-141	40-95	47-102	50	33	83	160	3	9	183	**80 857 30000** + **80 878 510**
125	0-127	8-134	77-204	84-211	40-165	47-172	50	33	83	235	3	9	250	**80 857 30000** + **80 878 510**
125	0-197	8-204	77-274	84-281	40-235	47-242	50	33	83	300	3	9	320	**80 857 30000** + **80 878 510**
160	0-121	8-128	118-238	125-245	–	–	70	50	120	280	3	10	328	**80 901 300** + **80 878 610**
160	0-324	8-331	118-441	125-448	–	–	70	50	120	480	3	10	506	**80 901 300** + **80 878 610**

With 5-axis jaws

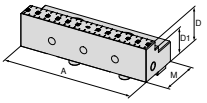


A mm	B mm	C mm	D mm	E mm	F mm	G mm	$L_{max.}$ mm	Article no. System jaws
125	25-82	50	33	83	103	160	183	**80 857 30200** + **80 857 30100**
125	25-152	50	33	83	132	235	250	**80 857 30200** + **80 857 30100**
125	25-222	50	33	83	170	300	320	**80 857 30200** + **80 857 30100**

System jaws overview

Indexable jaw, smooth, fixed

▲ Price per piece

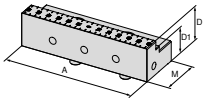




For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
80	80		28	20			40			**80 857 30400**					●						
125	125		33	25			57			**80 857 30300**					●						

Indexable jaw, smooth, movable

▲ Price per piece

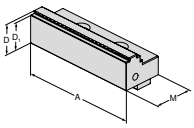




For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
80	80		28	20			40			**80 878 34700**					●		●				
125	125		33	25			57			**80 878 34600**					●		●				

Indexable jaw, grip 3 mm, fixed

▲ Price per piece

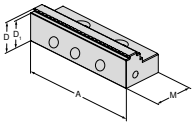




For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
80	80		28	25			40			**80 901 306**				●	●						
125	125		33	30			57			**80 857 30000**					●						
160	160		50	47			81			**80 901 300**				●	●						

Indexable jaw, grip 3 mm, movable

▲ Price per piece



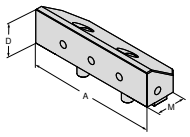
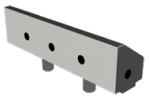


For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
80	80		28	25			40			**80 878 810**				●	●		●		●		
125	125		33	30			57			**80 878 510**					●		●				
160	160		50	47			81			**80 878 610**				●	●		●				

System jaws overview

5-axis indexable jaw, fixed

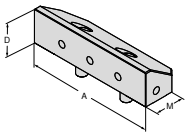
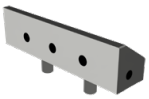
▲ Price per piece

For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
125	125		33				44,5			**80 857 30100**					●						

5-axis indexable jaw, movable

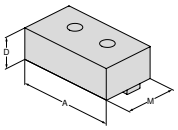
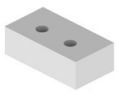
▲ Price per piece

For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
125	125		33				44,5			**80 857 30200**					●						

Soft jaw, steel, fixed

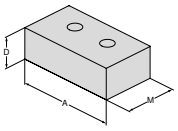
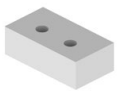
▲ Material: 16MnCr5
▲ for producing shaped jaws
▲ Price per piece

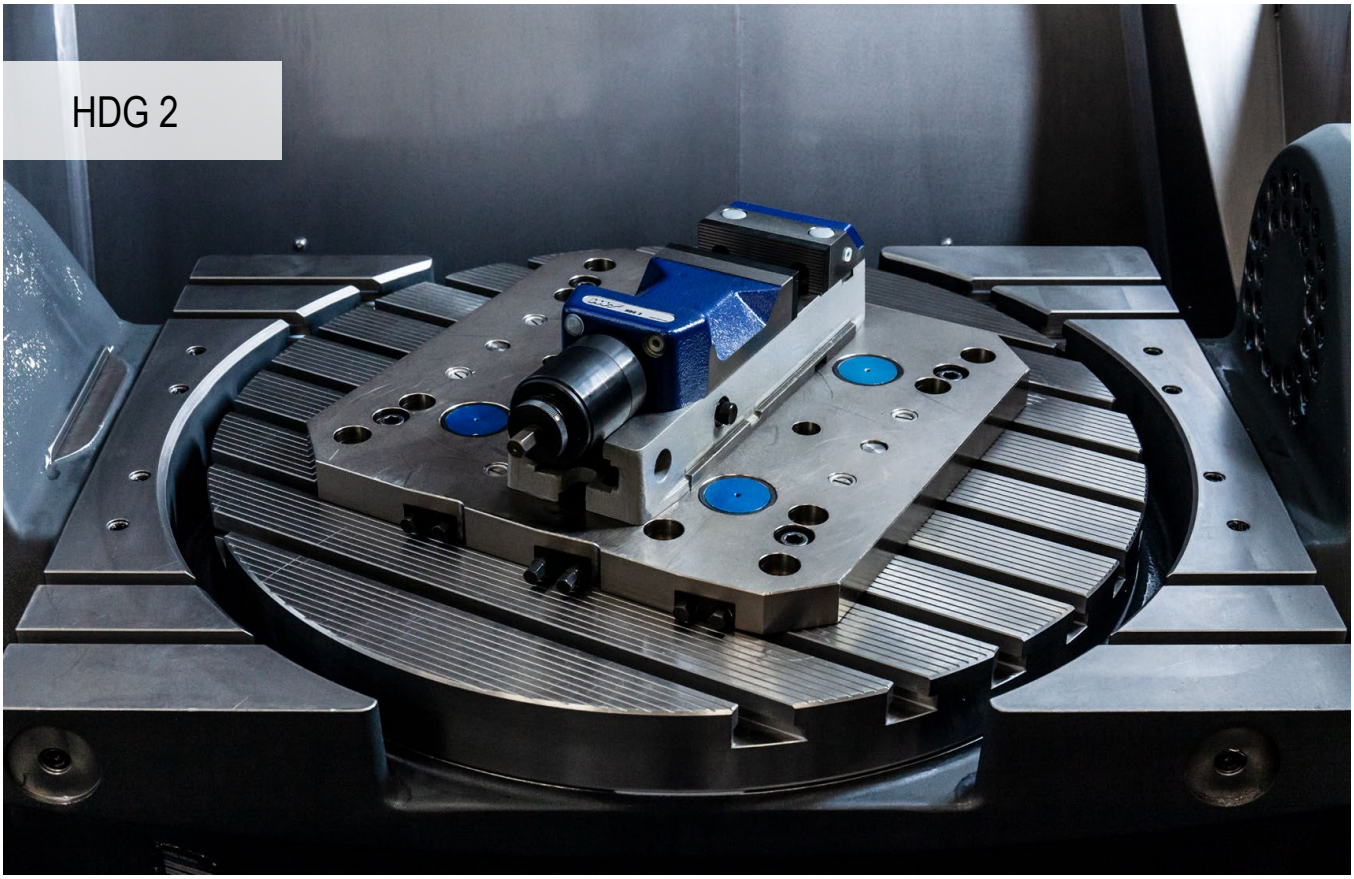
For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
80	80		28				48			**80 901 31800**				●	●						
125	125		40				68			**80 901 31900**				●	●						

Soft jaw, steel, movable

▲ Material: 16MnCr5
▲ for producing shaped jaws
▲ Price per piece

For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
80	80		28				48			**80 878 32000**				●	●		●				
125	125		40				68			**80 878 32100**				●	●		●				



Tried-and-tested high pressure clamping system

Mechanical machine vice with continuous force adjustment from 10% to 100% of the clamping force with just one crank turn and always the same final crank position. Quick clamping range adjustment via locking pins.

Your benefits:

- ▲ Save time and effort – just one crank turn
- ▲ Clamping time of less than one second
- ▲ Easy handling
- ▲ Can be continuously adjusted without tools
- ▲ High machining precision

Clamping/aligning:



Alignment through precision slot nuts on the slot table with 20^{H7} longitudinal/transverse slot in the base body



Clamp with screws through the base body or laterally with clamping claws

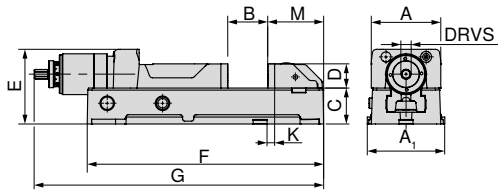
SoloClamp – HDG 2

- ▲ high pressure vice
- ▲ stepless power adjustment
- ▲ mechanical power transmission
- ▲ clamping force with only a single turn of the handle
- ▲ flexible Jaws, pre-machined to accommodate jaws for clamping range extension

Scope of supply:

High pressure vice incl. 4 clamping jaws, hand crank, 2 top jaws profiled and hardened

HDG 2





80 892 ...

A mm	A_1 mm	B mm	$C_{+0/-0,02}$ mm	D mm	E mm	F mm	$G_{max.}$ mm	$K_{\pm 0,015}$ mm	M mm	DRVS mm	MXC kN	WT kg	
100	112	0 - 159	52	35	108	342	521	11	81	12	4 - 30	20	**100**
125	140	0 - 201	62	40	118	400	584	28	85	12	4 - 40	27	**125**
160	176	0 - 300	78	50	149	544	784	40	112	12	5 - 60	55	**160**

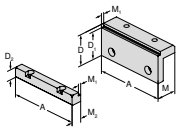
Vice guide

Underside Dimensions	71	System accessories	69–71
General accessories	164–183		

System jaws overview

Jaws for clamping range extension

▲ Price per set (1 fixed and 1 movable jaw)





For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
	100		56	50	22		37	5	19	**80 892 225**						●					
	125		56	50	22		37	5	19	**80 892 226**						●					
	160		71	65	23		47	5	23,5	**80 892 227**						●					

Illustration with extended clamping range

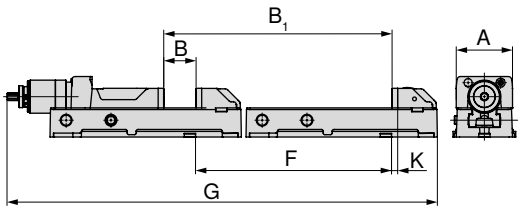


A	B	D	Vice Article Number	Jaw Article Number
100	118 - 278	56	**80 892 100**	**80 892 225**
125	137 - 338	56	**80 892 125**	**80 892 226**
160	169 - 470	71	**80 892 160**	**80 892 227**

SoloClamp – HDG 2

▲ Base body extension

HDG 2





A mm	B mm	B_1 mm	F mm	G mm	K mm	**80 892 ...**
100	0-159	350-509	450	871,3	11	**51000**
125	0-201	410-611	410	994,1	28	**51100**
160	0-300	550-850	550	1334,15	40	**51200**

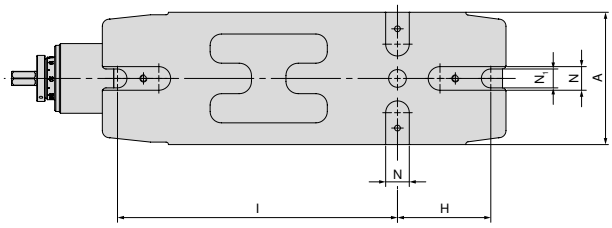
Shown with base body extension



A	B	D	Vice Article Number	Extension article number
100	350 - 509	35	**80 892 100**	**80 892 51000**
125	410 - 611	40	**80 892 125**	**80 892 51100**
160	550 - 850	50	**80 892 160**	**80 892 51200**

HDG 2 underside dimensions

Base width 100 mm, 125 mm, 160 mm



A mm	H mm	I mm	N_{H7} mm	N_1 mm
100	80	240	20	15
125	100	280	20	18
160	130	380	20	22

System accessories overview

Angular drive

HDG 2



for width mm	80 892 ...
100/125	**314**
160	**315**

Hand crank

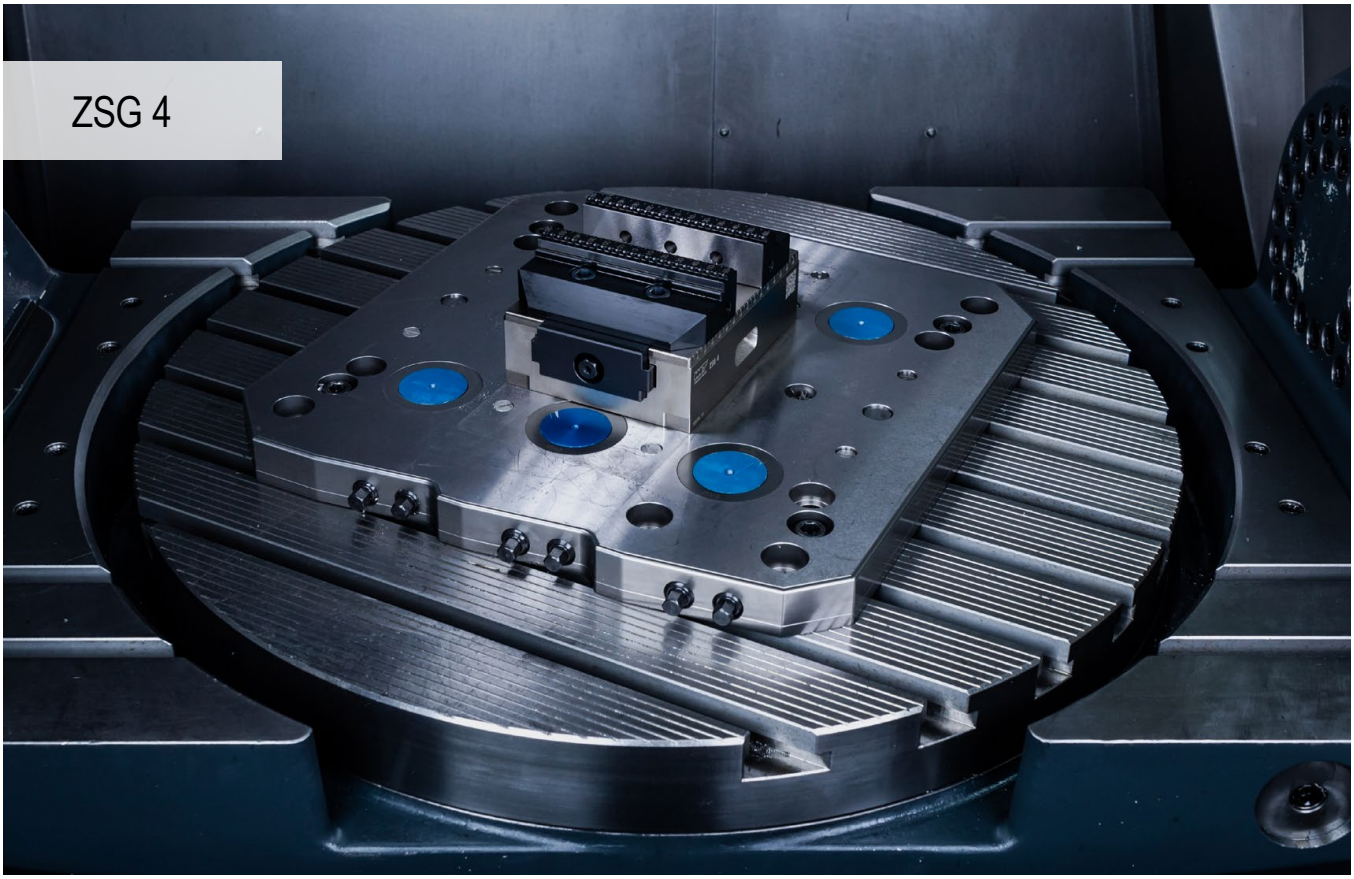
▲ for fast adjustment

HDG 2



for width mm	DRVS mm	80 892 ...
100/125	12	**124**
160	12	**164**

17



The optimised ZSG 4 – Maximum precision and process security

The new ZSG 4 retains all the cherished characteristics of its predecessor and raises the bar significantly with regard to user-friendliness and durability. Optimised handling and improved durability were top of the list in the update for the popular centric vice.

Your benefits:

- ▲ Specially designed for second side machining through high angular accuracy
- ▲ Compact design with ideal accessibility
- ▲ Jaw change Quick and easy with two screws
- ▲ The same clamping ranges, significantly improved interference contour, comprehensive modular jaw range
- ▲ Sustainable model with nickel-plated base body ensures a long service life

Clamping/aligning:



Mounting with zero point clamping system
ZSG 4 – 80 mm L-130 mm + L-190 mm
ZSG 4 – 125 mm L-160 mm + L-235 mm

1 mounting bolt + MNG-indexing bolt



Mounting with zero point clamping system
ZSG 4 – 125 mm + L-300 mm
ZSG 4 – 160 mm + L-280 mm + L-480 mm

2 mounting bolts



Dia. 12^{JS} precision holes are present in all variants for positioning the ZSG 4 with precision. All variants can be mounted with screws from above through the base body.

Clamping/aligning:



ZSG 4 – 125 mm L-235 mm + L-300 mm
ZSG 4 – 160 mm L-280 mm + L-480 mm

These 4 variants can also be clamped with clamping claws as an alternative.

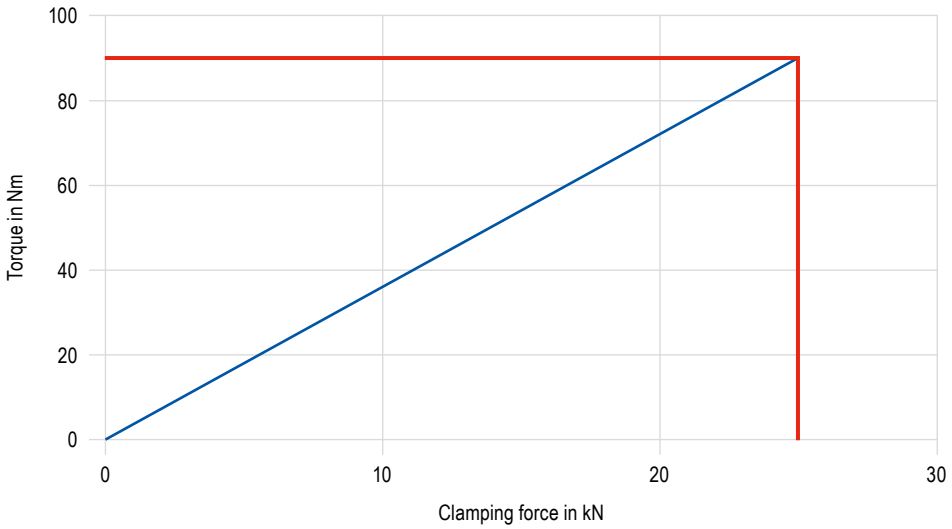


ZSG 4 – 80 mm L-130 mm + L-190 mm
ZSG 4 – 125 mm L-160 mm + L-235 mm + L-300 mm
ZSG 4 – 160 mm L-280 mm

All 5 variants are also available with mounting holes for the LANG zero point clamping system.

Clamping force:

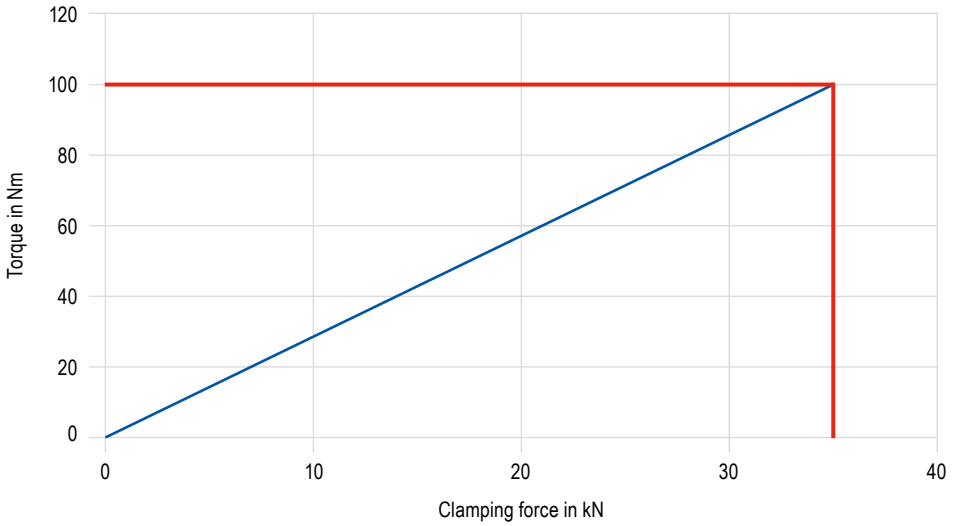
ZSG 4 – 80 mm tightening torque/clamping force



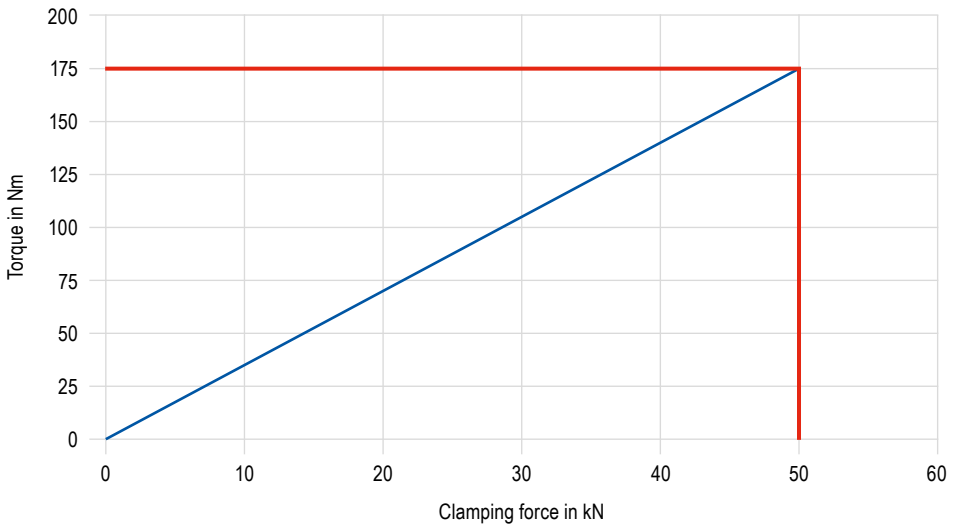
17

Clamping force:

ZSG 4 – 125 mm tightening torque / clamping force



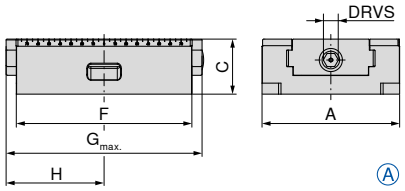
ZSG 4 – 160 mm tightening torque / clamping force



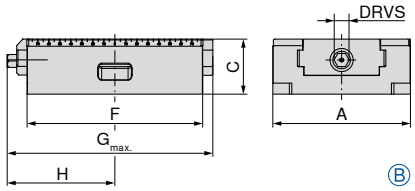
CentriClamp – ZSG 4

- ▲ Sealed centric vice
- ▲ Without system jaws
- ▲ Ball bearing mounted spindle
- ▲ ±0.01 mm repeatability between the clamping processes
- ▲ Suitable for PNG and MNG

ZSG 4 | **MNG**



Internal actuating spindle



External actuating spindle



A mm	C ±0,01 mm	F mm	$G_{max.}$ mm	H mm	DRVS mm	MXC kN	WT kg	Designation	80 878 ...
80	50	130	157	81	12	25	3,1	A	**08500**
80	50	190	206	104	12	25	4,5	B	**08600**
125	50	160	200	111,5	12	35	6,3	A	**15000**
125	50	235	272	143,5	12	35	9,5	B	**15100**
125	50	300	340	181	12	35	12,5	B	**15200**
160	70	280	315	172	14	50	25,0	A	**26100**
160	70	480	524	276	14	50	35,0	B	**26200**

Suitable for zero point clamping system							LANG Quick Point	LANG Quick Point
Article no.	Type	Width in mm	Length in mm	MNG	MNG mini	PNG	96 x 96	52 x 52
80 878 08500	ZSG 4	80	130	✓	✓	✗	✗	✓
80 878 08600		80	190	✓	✗	✓	✗	✓
80 878 15000		125	160	✓	✗	✓	✓	✓
80 878 15100		125	235	✓	✗	✓	✓	✗
80 878 15200		125	300	✓	✗	✓	✓	✗
80 878 26100		160	280	✓	✗	✓	✓	✗
80 878 26200		160	480	✓	✗	✓	✗	✗

Vice guide

Underside Dimensions	78+79	Structural dimension tables for the different jaws	80–83
System accessories	85–90	MNG-/PNG zero point clamping system	134–163
General accessories	164–183		

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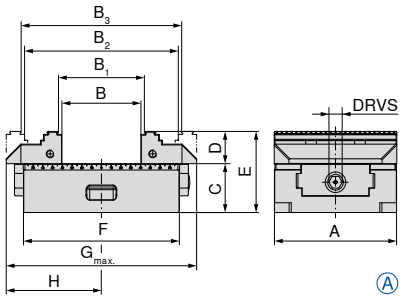
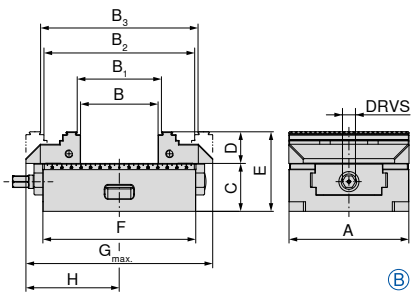
CentriClamp – ZSG 4

- ▲ Sealed centric vice
- ▲ With grip jaws, 3 mm
- ▲ Ball bearing mounted spindle
- ▲ ±0.01 mm repeatability between the clamping processes
- ▲ Suitable for PNG and MNG

ZSG 4 | **MNG**



Internal actuating spindle



External actuating spindle



80 878 ...

A mm	B mm	B_1 mm	B_2 mm	B_3 mm	C ±0,01 mm	D mm	E mm	F mm	$G_{max.}$ mm	H mm	DRVS mm	MXC kN	WT kg	Designation	
80	0 - 59	4 - 63	59 - 117	63 - 121	50	28	78	130	157	81	12	25	3,9	A	**08700**
80	0 - 123	4 - 127	59 - 181	63 - 185	50	28	78	190	206	104	12	25	5,5	B	**08800**
125	0 - 80	8 - 87	77 - 156	84 - 163	50	33	83	160	208	111,5	12	35	8,7	A	**15300**
125	0 - 155	8 - 162	77 - 218	84 - 225	50	33	83	235	272	143,5	12	35	12,0	B	**15400**
125	0 - 220	8 - 227	77 - 296	84 - 303	50	33	83	300	348	181	12	35	14,0	B	**15500**

It is not possible to fit top jaws with a height of 40 mm, if this height is required, please use the reversible jaws with D = 40 mm (Article No. **80 878 520**).

Suitable for zero point clamping system								
Article no.	Type	Width in mm	Length in mm	MNG	MNG mini	PNG	LANG Quick Point 96 x 96	LANG Quick Point 52 x 52
80 878 08700	ZSG 4	80	130	✓	✓	✗	✗	✓
80 878 08800		80	190	✓	✗	✓	✗	✓
80 878 15300		125	160	✓	✗	✓	✓	✓
80 878 15400		125	235	✓	✗	✓	✓	✗
80 878 15500		125	300	✓	✗	✓	✓	✗

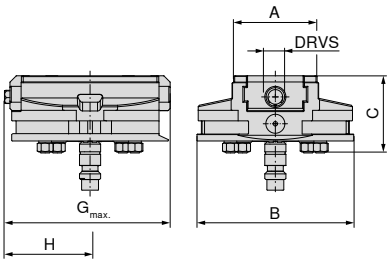
Vice guide

Underside Dimensions	78+79	Structural dimension tables for the different jaws	80–83
System accessories	85–90	MNG-/PNG zero point clamping system	134–163
General accessories	164–183		

CentriClamp – ZSG 4

- ▲ Sealed centric vice for Erowa ITS 148
- ▲ Without system jaws
- ▲ Ball bearing mounted spindle
- ▲ ±0.01 mm repeatability between the clamping processes

ZSG 4 | **MNG**





80 878 ...

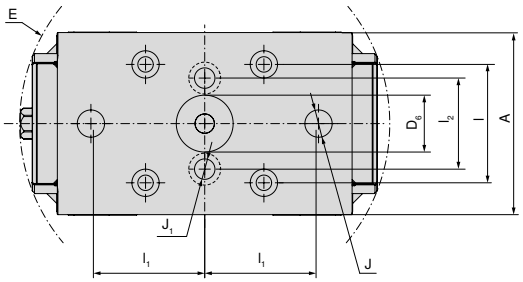
A	B	C	$G_{max.}$	H	DRVS	MXC	WT	
mm	mm	mm	mm	mm	mm	kN	kg	
80	148	73	157	81	12	25	5,6	**08900**

Vice guide

Underside Dimensions	78+79	Structural dimension tables for the different jaws	80–83
System accessories	85–90	MNG-/PNG zero point clamping system	134–163
General accessories	164–183		

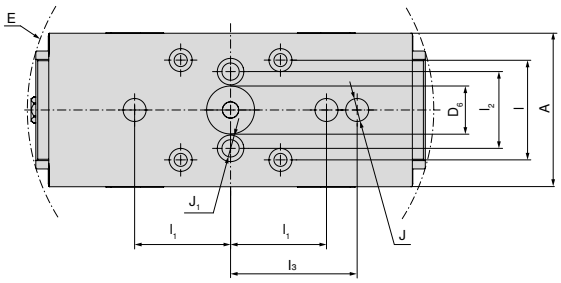
ZSG 4 underside dimensions

Base width 80 mm and length 130 mm



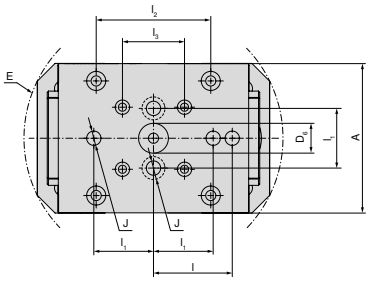
A mm	$D_{6\ H6}$ mm	E mm	$l_{\pm0,015}$ mm	$l_{1\ \pm0,015}$ mm	l_2 mm	J_{H7} mm	J_1 mm
80	25	163	52	50	40	12	9

Base width 80 mm and length 190 mm



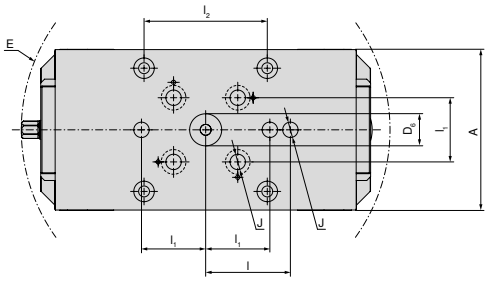
A mm	$D_{6\ H6}$ mm	E mm	$l_{\pm0,015}$ mm	$l_{1\ \pm0,015}$ mm	l_2 mm	$l_{3\ \pm0,015}$ mm	J_{H7} mm	J_1 mm
80	25	213	52	50	40	66	12	9

Base width 125 mm and length 160 mm



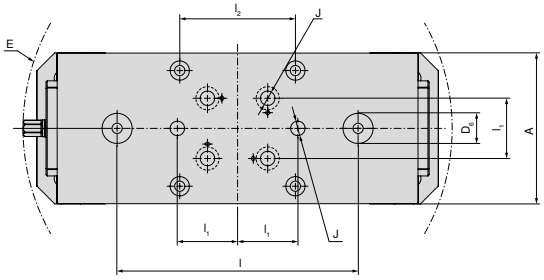
A mm	$D_{6\ H6}$ mm	E mm	$l_{\pm0,015}$ mm	$l_{1\ \pm0,015}$ mm	l_2 mm	$l_{3\ \pm0,015}$ mm	J_{H7} mm
125	25	218	66	50	96	52	12

Base width 125 mm and length 235 mm



A mm	$D_{6\ H6}$ mm	E mm	$l_{\pm0,015}$ mm	$l_{1\ \pm0,015}$ mm	l_2 mm	J_{H7} mm
125	25	288	66	50	96	12

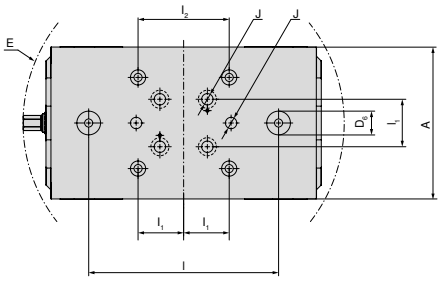
Base width 125 mm and length 300 mm



A mm	$D_{6\ H6}$ mm	E mm	$l_{\pm0,015}$ mm	$l_{1\ \pm0,015}$ mm	l_2 mm	J_{H7} mm
125	25	357	200	50	96	12

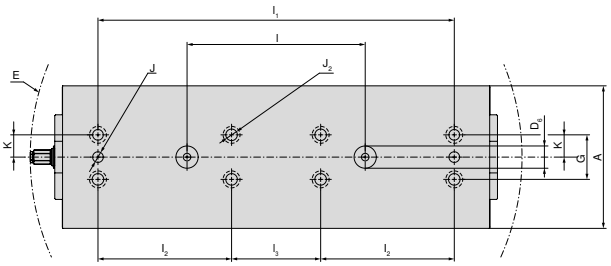
ZSG 4 underside dimensions

Base width 160 mm and length 280 mm



A mm	$D_{6\ H6}$ mm	E mm	$l_{\pm0,015}$ mm	$l_{1\ \pm0,015}$ mm	l_2 mm	J_{H7} mm
160	25	339	200	50	96	12

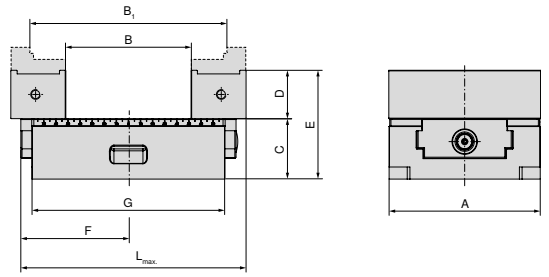
Base width 160 mm and length 480 mm



A mm	$D_{6\ H6}$ mm	E mm	$l_{\pm0,015}$ mm	$l_{1\ \pm0,015}$ mm	l_2 mm	$l_{3\ \pm0,015}$ mm	J_{H7} mm	$J_{2\ F7}$ mm	$K_{\pm0,02}$ mm	G mm
160	25	553	200	400	150	100	12	12	25	50

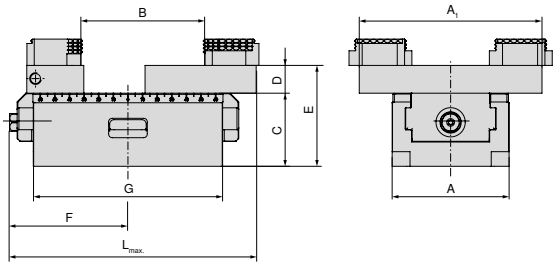
ZSG 4 structural dimension table for the different jaws

With combi jaws



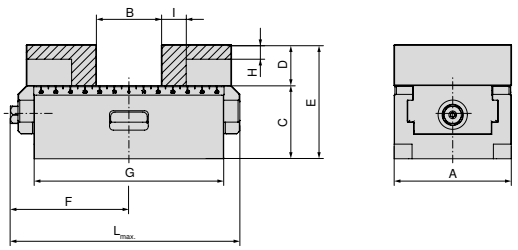
A mm	B mm	B1 mm	C mm	D mm	E mm	F mm	G mm	Lmax. mm	Article no. System jaws
125	23 - 103	82 - 161	50	40	90	111,5	160	208	2 x **80 878 530**
125	23 - 165	82 - 223	50	40	90	143,5	235	272	2 x **80 878 530**
125	23 - 241	82 - 300	50	40	90	181	300	348	2 x **80 878 530**

With pendulum and adapter plate



A mm	A1 mm	B mm	C mm	D mm	E mm	F mm	G mm	Lmax. mm	Article no. System jaws
80	125	3 - 84	50	28	78	81	130	157	**80 878 890** + **80 878 870**
80	125	3 - 145	50	28	78	104	190	206	**80 878 890** + **80 878 870**
125	180	7 - 126	50	22	90	111,5	160	212	**80 878 590** + **80 878 570**
125	180	7 - 207	50	22	90	143,5	235	272	**80 878 590** + **80 878 570**
125	180	7 - 250	50	22	90	181	300	352	**80 878 590** + **80 878 570**
160	256	16 - 292	70	22	110	170	280	315	**80 878 690** + **80 878 670**
160	256	16 - 406	70	22	110	276	480	524	**80 878 690** + **80 878 670**

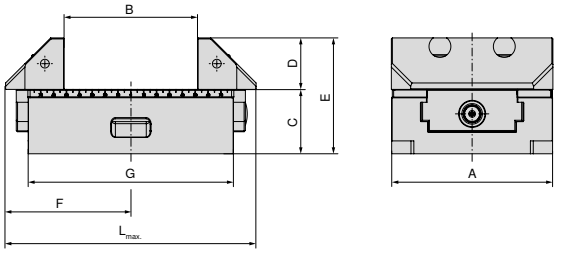
With aluminium jaws



A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	I mm	Lmax. mm	Article no. System jaws
80	0 - 44	50	28	78	81	130	10	17	157	2 x **80 878 850**
80	0 - 108	50	28	78	104	190	10	17	206	2 x **80 878 850**
125	0 - 58	50	40	90	111,5	160	17	27	208	2 x **80 878 550**
125	0 - 133	50	40	90	143,5	235	17	27	272	2 x **80 878 550**
125	0 - 198	50	40	90	181	300	17	27	348	2 x **80 878 550**
160	0 - 123	70	50	120	170	280	26	25	315	2 x **80 878 305**
160	10 - 336	70	50	120	276	480	26	25	524	2 x **80 878 305**

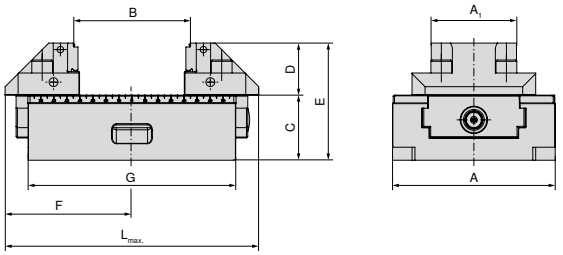
ZSG 4 structural dimension table for the different jaws

With 5-axis jaws



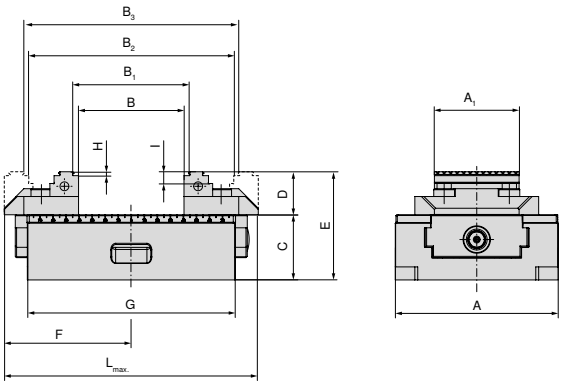
A mm	B mm	C mm	D mm	E mm	F mm	G mm	$L_{max.}$ mm	Article no. System jaws
125	22 - 102	50	40	90	115,5	160	208	2 x **80 878 625**
125	22 - 165	50	40	90	143,5	235	272	2 x **80 878 625**
125	22 - 242	50	40	90	181	300	348	2 x **80 878 625**
160	15 - 140	70	50	120	170	280	315	2 x **80 878 660**
160	28 - 354	70	50	120	276	480	524	2 x **80 878 660**

With 5 axis jaws, grip 3 mm, width 65 mm



A mm	A_1 mm	B mm	C mm	D mm	E mm	F mm	G mm	$L_{max.}$ mm	Article no. System jaws
125	65	8 - 87	50	40	90	115,5	160	208	2 x **80 878 665**
125	65	8 - 162	50	40	90	143,5	235	272	2 x **80 878 665**
125	65	8 - 227	50	40	90	181	300	348	2 x **80 878 665**

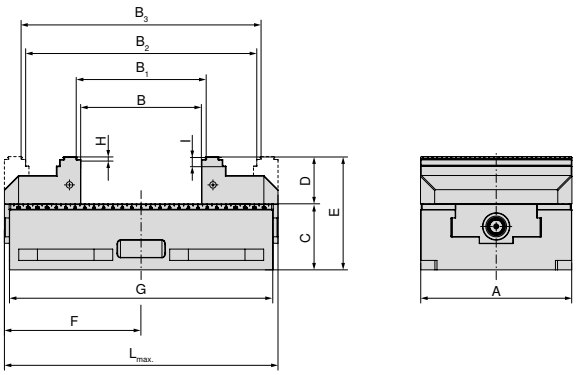
With indexable jaws, grip 3 mm, height 65 mm



A mm	A_1 mm	B mm	B_1 mm	B_2 mm	B_3 mm	C mm	D mm	E mm	F mm	G mm	H mm	I mm	$L_{max.}$ mm	Article no. System jaws
125	65	0 - 80	8 - 87	77 - 156	84 - 163	50	33	83	111,5	160	3	9	208	2 x **80 878 51900**
125	65	0 - 142	8 - 149	77 - 218	84 - 225	50	33	83	143,5	235	3	9	272	2 x **80 878 51900**
125	65	0 - 220	8 - 227	77 - 296	84 - 303	50	33	83	181	300	3	9	348	2 x **80 878 51900**

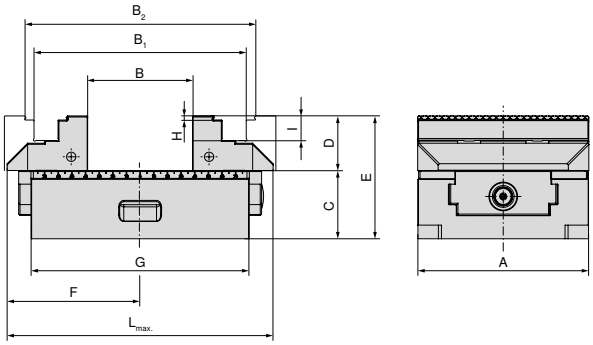
ZSG 4 structural dimension table for the different jaws

With indexable jaws, grip 3 mm



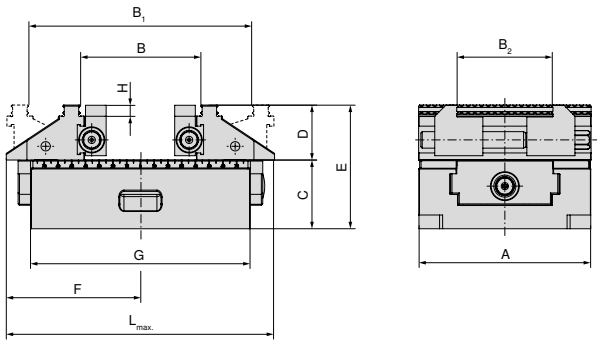
A mm	B mm	B_1 mm	B_2 mm	B_3 mm	C mm	D mm	E mm	F mm	G mm	H mm	I mm	$L_{max.}$ mm	Article no. System jaws
160	0 - 127	8 - 134	118 - 244	125 - 251	70	50	120	170	280	3	10	315	2 x **80 878 610**
160	15 - 341	22 - 348	132 - 458	139 - 465	70	50	120	276	480	3	10	524	2 x **80 878 610**

With indexable jaws, grip, height 40 mm



A mm	B mm	B_1 mm	B_2 mm	C mm	D mm	E mm	F mm	G mm	H mm	I mm	$L_{max.}$ mm	Article no. System jaws
125	0 - 75	75 - 154	88 - 166	50	40	90	111,5	160	3	9	208	2 x **80 878 520**
125	0 - 138	75 - 217	88 - 229	50	40	90	143,5	235	3	9	272	2 x **80 878 520**
125	0 - 215	75 - 294	88 - 306	50	40	90	181	300	3	9	348	2 x **80 878 520**

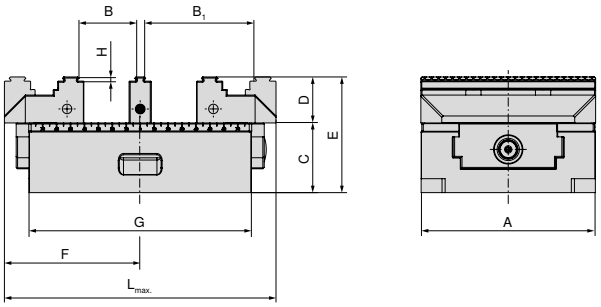
With 6 face jaw system for 125 mm jaw width



A mm	B mm	B_1 mm	B_2 mm	C mm	D mm	E mm	F mm	G mm	H mm	$L_{max.}$ mm	Article no. System jaws
125	39 - 86	83 - 161	37 - 101	50	40	90	111,5	160	8	209	**80 878 525**
125	39 - 149	83 - 224	37 - 101	50	40	90	143,5	235	8	272	**80 878 525**
125	39 - 226	83 - 301	37 - 101	50	40	90	181	300	8	349	**80 878 525**

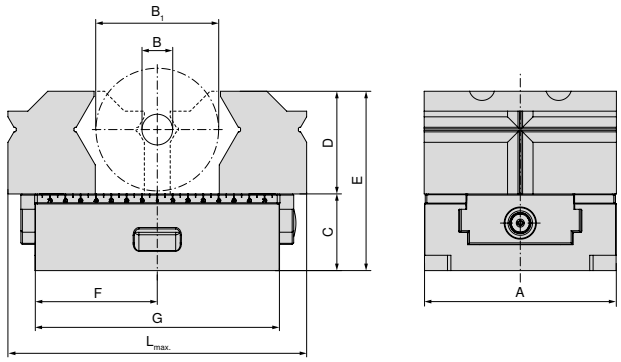
ZSG 4 structural dimension table for the different jaws

With middle jaw, grip 3 mm (height 28 mm / 33 mm) for jaw width 125 mm



A mm	B mm	B1 mm	C mm	D mm	E mm	F mm	G mm	H mm	Lmax. mm	Article no. System jaws
80	8 - 28	37 - 57	50	28	78	81	130	3	157	2 x **80 878 810** + **80 878 31200**
80	14 - 22	31 - 51	50	28	78	81	130	3	157	2 x **80 878 810** + **80 878 33400**
80	8 - 58	37 - 87	50	28	78	104	190	3	206	2 x **80 878 810** + **80 878 31200**
80	14 - 52	31 - 81	50	28	78	104	190	3	206	2 x **80 878 810** + **80 878 33400**
125	9 - 40	47 - 78	50	33	83	111,5	160	3	208	2 x **80 878 510** + **80 878 31300**
125	15 - 34	41 - 72	50	33	83	111,5	160	3	208	2 x **80 878 510** + **80 878 33500**
125	9 - 72	47 - 110	50	33	83	143,5	235	3	272	2 x **80 878 510** + **80 878 31300**
125	15 - 66	41 - 104	50	33	83	143,5	235	3	272	2 x **80 878 510** + **80 878 33500**
125	9 - 110	47 - 148	50	33	83	181	300	3	348	2 x **80 878 510** + **80 878 31300**
125	15 - 104	41 - 142	50	33	83	181	300	3	348	2 x **80 878 510** + **80 878 33500**

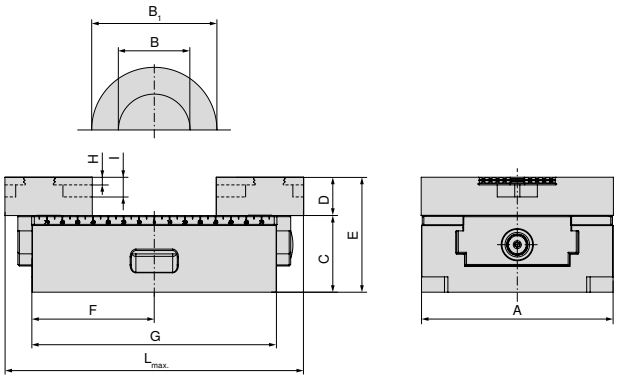
With prism jaw, movable – horizontal and vertical prism



A mm	B mm	B1 mm	C mm	D mm	E mm	F mm	G mm	Lmax. mm	Article no. System jaws
80	10 - 28	20 - 60	50	52	102	81	130	157	2 x **80 878 31800**
80	10 - 28	20 - 60	50	52	102	104	190	206	2 x **80 878 31800**
125	10 - 28	26 - 80	50	67	117	111,5	160	200	2 x **80 878 31900**
125	10 - 28	26 - 80	50	67	117	143,5	235	272	2 x **80 878 31900**
125	10 - 28	26 - 80	50	67	117	181	300	348	2 x **80 878 31900**

ZSG 4 structural dimension table for the different jaws

With prism jaw, movable – horizontal prism

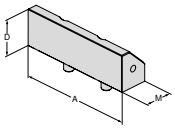


A mm	B mm	B1 mm	C mm	D mm	E mm	F mm	G mm	H mm	I mm	Lmax. mm	Article no. System jaws
80	8 - 55	15 - 76	50	25	75	81	130	5	13	157	2 x **80 878 34000**
80	8 - 55	15 - 76	50	25	75	104	190	5	13	206	2 x **80 878 34000**
125	14 - 102	25 - 112	50	25	75	111,5	160	5	13	200	2 x **80 878 34100**
125	14 - 124	25 - 165	50	25	75	143,5	235	5	13	272	2 x **80 878 34100**
125	14 - 124	25 - 165	50	25	75	181	300	5	13	348	2 x **80 878 34100**
160	22 - 158	32 - 170	70	30	100	145	280	5	13	290	2 x **80 878 34200**
160	22 - 158	32 - 170	70	30	100	273	480	5	13	521	2 x **80 878 34200**

System jaws overview

5-axis jaw, movable

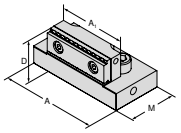
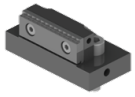
▲ Price per piece




For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
125	125		40				45,5			**80 878 625**							●				
160	160		50				73			**80 878 660**							●				

5-axis jaw, grip 3 mm, width 65 mm, movable

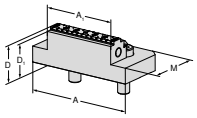
▲ Price per piece

For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
125	95	65,5	40				57			**80 878 665**							●				

5-axis indexable jaw, grip 3 mm, width 65 mm, movable

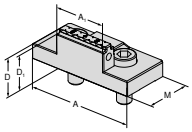
▲ double sided grip step
▲ price per piece




For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
125	95	65	33	30			57			**80 878 51900**							●				

Indexable grip jaw 3 mm, width 40 mm, movable

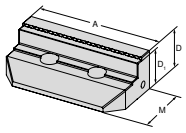
▲ Price per piece




For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
80	80	40	28	25			40			**80 878 81900**				●			●				

Indexable jaw, grip 3 mm, height 40 mm, movable

▲ Price per piece

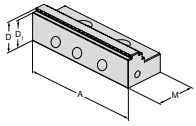



For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
125	125		40	37			59			**80 878 520**							●				

System jaws overview

Indexable jaw, grip 3 mm, movable

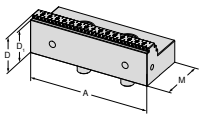
▲ Price per piece




For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
80	80		28	25			40			**80 878 810**				●	●		●		●		
125	125		33	30			57			**80 878 510**					●		●				
160	160		50	47			81			**80 878 610**				●	●		●				

Indexable jaw, grip 5 mm, movable

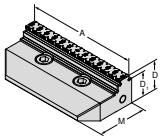
▲ Price per piece




For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
80	80		28	23			41			**80 878 81400**				●			●		●		
125	125		33	28			57			**80 878 51400**							●				
160	160		50	45			81			**80 878 34300**				●			●				

Indexable grip jaw, for aluminium and plastic

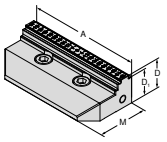
▲ Price per piece




For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
80	80		28	23			40			**80 878 81500**							●				
125	125		33	28			57			**80 878 51500**							●				

Indexable jaw with embossed profile, movable

▲ Price per piece
▲ suitable for LANG embossed profile

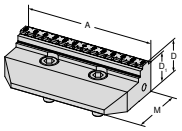



For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
80	80		28	25			40			**80 878 81800**							●				
125	125		33	30			57			**80 878 51800**							●				

System jaws overview

Indexable jaw, carbide, grip 3 mm, movable

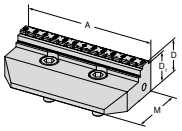
▲ Price per piece




For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
80	80		28	25			40			**80 878 81600**							●				
125	125		33	30			57			**80 878 51600**							●				
160	160		50	47			81			**80 878 31700**							●				

Indexable jaw, carbide, grip 5 mm, movable

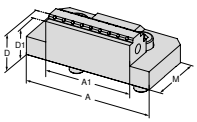
▲ Price per piece




For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
80	80		28	23			40			**80 878 81700**							●				
125	125		33	28			57			**80 878 51700**							●				

Indexable jaw, carbide grip 3 mm, width 40 mm, movable

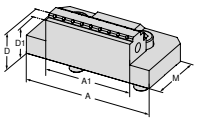
▲ Price per piece




For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
80	80	40	28	25			40			**80 878 33200**							●				

Indexable jaw, carbide grip 3 mm, width 65 mm, movable

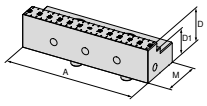
▲ Price per piece




For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
125	125	65	33	30			57			**80 878 33300**							●				

Indexable jaw, smooth, movable

▲ Price per piece




For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
80	80		28	20			40			**80 878 34700**					●		●				
125	125		33	25			57			**80 878 34600**					●		●				

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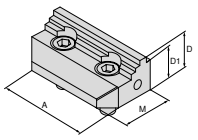
System jaws overview

Stepped jaw, smooth, movable

▲ Price per piece

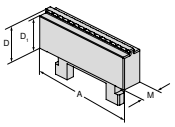




For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
80	80		28	24			40			**80 878 34400**							●				
125	125		33	27			57			**80 878 34500**							●				

Centre jaw, grip 3 mm, narrow

▲ Price per piece

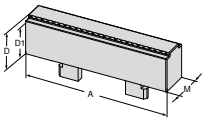




For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
80	80		28	25			16			**80 878 31200**							●				
125	125		33	30			16			**80 878 31300**							●				

Centre jaw, grip 3 mm, wide

▲ Price per piece

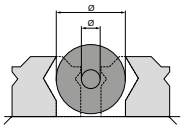


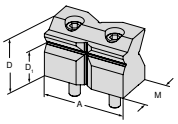


For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
80	80		28	25			24			**80 878 33400**							●				
125	125		33	30			26			**80 878 33500**							●				

Prism jaw, movable

▲ With horizontal and vertical prism
▲ Price per piece





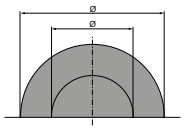
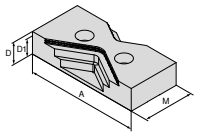


Ø For clamping diameter	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
10 - 60	80		52	32			38,5			**80 878 31800**							●				
10 - 80	125		67	42			57			**80 878 31900**							●				

System jaws overview

Prism jaw, movable

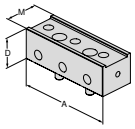
▲ With horizontal prism
▲ Price per piece


Ø For clamping diameter	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
15 - 75	80		25	20			40			**80 878 34000**							●				
25 - 110	125		25	20			57			**80 878 34100**							●				
30 - 170	160		30	25			81			**80 878 34200**							●				

Combi jaw, movable

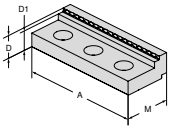
▲ Price per piece




For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
125	125		40				45,5			**80 878 530**							●				

Jaw, grip, VS

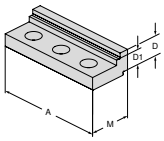
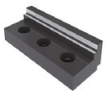
▲ Price per piece
▲ VS = Larger clamping range




For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
125	125		22	17			45			**80 892 245**							●				

Jaw, smooth VS, carbide coated

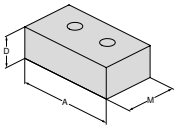
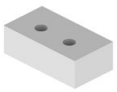
▲ Increased clamping range for finish machining and 2nd operation
▲ Price per piece

For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
	125		19	14			45			**80 892 240**							●				

Alu jaw, movable

▲ for producing shaped jaws
▲ Price per piece

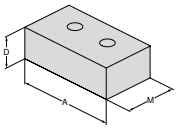



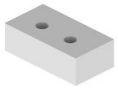
For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
80	80		28				48			**80 878 850**				●	●		●		●		
125	125		40				68			**80 878 550**				●					●		
160	160		50				85			**80 878 305**				●	●		●				

System jaws overview

Soft jaw, steel, movable

▲ Material: 16MnCr5
▲ for producing shaped jaws
▲ Price per piece

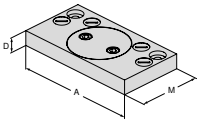




For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
80	80		28				48			**80 878 32000**				●	●		●				
125	125		40				68			**80 878 32100**				●	●		●				

Pendulum jaw, movable

▲ to accommodate 6-way reversible jaws
▲ Price per piece

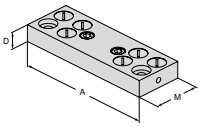




For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
80	125		19				76			**80 878 870**				●			●		●		
125	180		22				95			**80 878 570**				●			●		●		
160	256		22				170			**80 878 670**				●			●				

Adapter Jaw

▲ to accommodate 6-way reversible jaws
▲ Price per piece

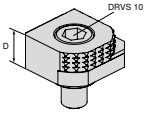


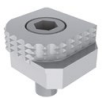


For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
80	125		19				39			**80 878 890**							●				
125	180		22				62			**80 878 590**							●				
160	256		22				125			**80 878 690**							●				

6 function indexable jaw

▲ 1 = Smooth, carbide coated
▲ 2 = Grip with 3 mm step
▲ 3 = Grip with 8 mm step
▲ 4 = Grip with 18 mm step
▲ 5 = Rough grip with 8 mm step
▲ 6 = Round grip
▲ M_{max} = 60 Nm
▲ Including fixation screws



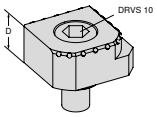


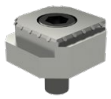
For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
			18							**80 892 246**	●	●	●	●			●		●	●	

System jaws overview

6x indexable jaw, carbide grip

- ▲ 1 = Smooth
- ▲ 2 = Carbide grip
- ▲ 3 = Carbide grip with 3 mm step
- ▲ 4 = Carbide grip with 8 mm step
- ▲ 5 = Round carbide grip with 8 mm step
- ▲ 6 = Round carbide grip
- ▲ Incl. fixing screws





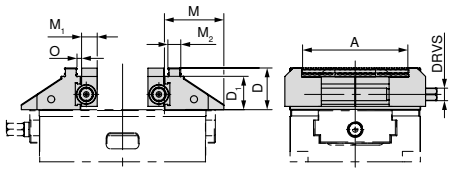
For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
			18							80 890 35300	●	●	●	●			●		●	●	

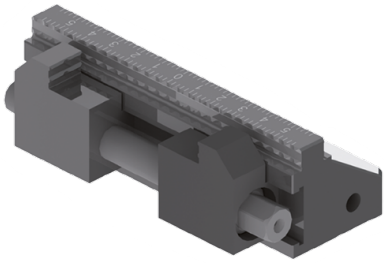
6 face jaw system for 125 mm jaw width

Scope of supply:

2 System jaws with 2 pairs of transverse jaws in T-slot guidance incl. fixing screws

ZSG 4





for width	A	D	D_1	M	M_1	M_2	O	DRVS	WT	80 878 ...
mm	mm	mm	mm	mm	mm	mm	mm	mm	kg	
125	37 - 101	40	32	57	15	12,4	3,3	12	3,8	**525**

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Centric vice for small parts

ZSG mini in mechanical version with high clamping force and quick change jaws.
Ideal for blank and finished part machining, multi-clamping and automation.

Your benefits:

- ▲ Fast jaw changeover without tools
- ▲ Compact and precise
- ▲ Optimum accessibility from all sides
- ▲ Exchangeable jaw widths (45 mm and 70 mm)
- ▲ High clamping force and large clamping range
- ▲ Clamping system for automation
- ▲ Stainless, hardened base body

Clamping/aligning:



Clamping with two M6 screws
from above through the base body.



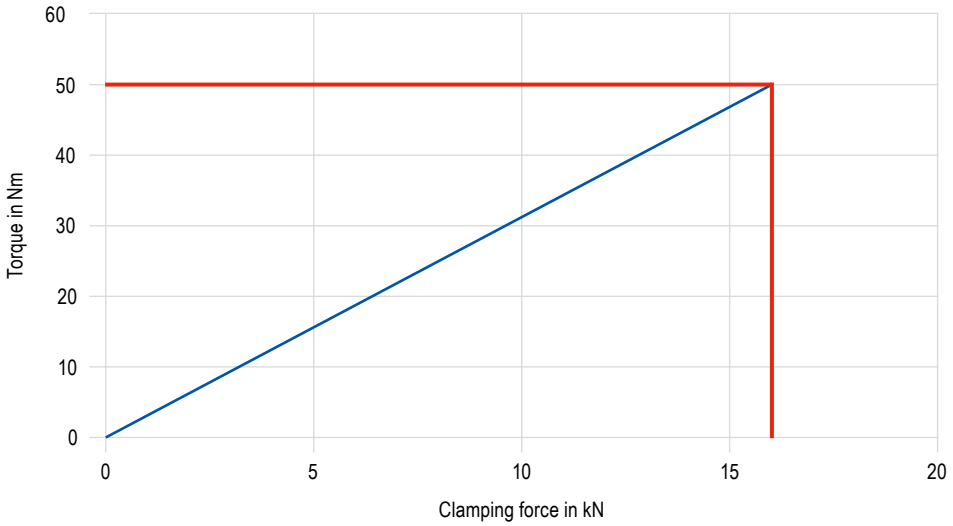
Clamping with two M6 screws from above through the base body. Alignment can be performed using Ø 12^{H7} precision holes.



Both versions come with mounting holes for the LANG zero point clamping system, Quick Point 52 x 52.

Clamping force:

ZSG mini tightening torque/clamping force



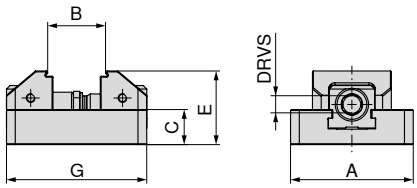
CentriClamp – ZSG mini

- ▲ Centric vice for small parts
- ▲ Without system jaws
- ▲ Fast jaw changeover without tools
- ▲ Compact and precise
- ▲ Optimum accessibility from all sides
- ▲ Exchangeable jaw widths (45 mm and 70 mm)
- ▲ Stainless, hardened base body

Scope of supply:

ZSG mini base body with spindle

ZSG mini | **MNG mini**





NEW

80 912 ...

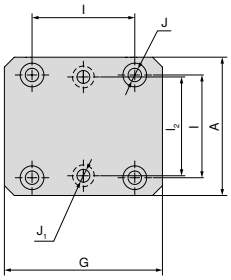
A mm	B mm	C mm	E mm	G mm	MXC kN	DRVS mm	WT kg	
70	7 - 57	20	42	80	16	11	0,9	**07000**
70	7 - 77	20	42	100	16	11	1,1	**07100**

Vice guide

Underside Dimensions	94	Structural dimension tables for the different jaws	95–97
System accessories	98–100	MNG-/PNG zero point clamping system	134–163
General accessories	164–183		

ZSG mini underside dimensions

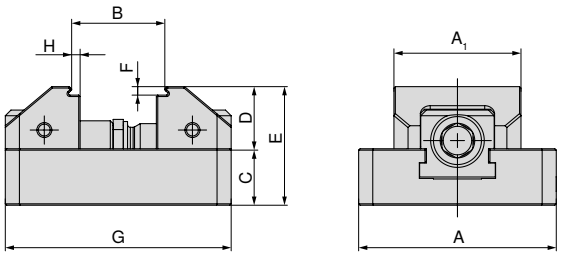
Base width 70 mm



A mm	J_1 mm	J_{H7} mm	$I_{2\ \pm0,01}$ mm	$I_{\pm0,01}$ mm	G mm
70	6,5	12	50	52	80
70	6,5	12	50	52	100

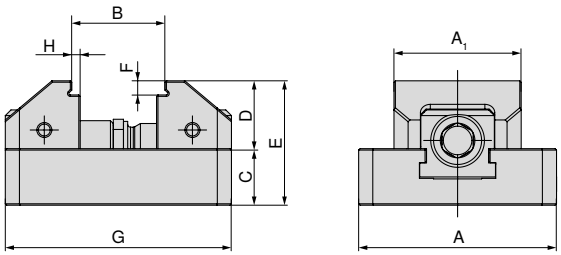
ZSG Mini – structural dimension table for the different jaws

With quick change jaw, grip 3 mm



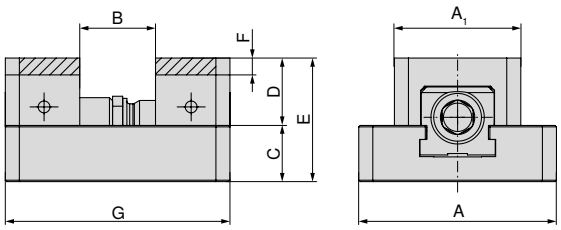
A mm	A_1 mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	Article no. System jaws
70	45	7 - 33	20	22	42	3	80	3	2 x **80 912 30100**
70	70	7 - 33	20	22	42	3	80	3	2 x **80 912 30200**
70	45	7 - 53	20	22	42	3	100	3	2 x **80 912 30100**
70	70	7 - 53	20	22	42	3	100	3	2 x **80 912 30200**

With quick change jaw, smooth step 5 mm



A mm	A_1 mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	Article no. System jaws
70	45	7 - 33	20	24	44	5	80	3	2 x **80 912 30300**
70	70	7 - 33	20	24	44	5	80	3	2 x **80 912 30400**
70	45	7 - 53	20	24	44	5	100	3	2 x **80 912 30300**
70	70	7 - 53	20	24	44	5	100	3	2 x **80 912 30400**

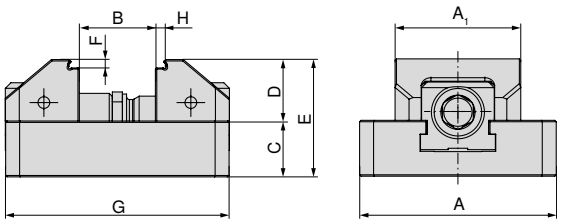
With quick change jaw, soft, steel



A mm	A_1 mm	B mm	C mm	D mm	E mm	F mm	G mm	Article no. System jaws
70	45	0 - 26	20	24	44	6	80	2 x **80 912 31000**
70	70	0 - 26	20	24	44	6	80	2 x **80 912 31100**
70	45	0 - 46	20	24	44	6	80	2 x **80 912 31000**
70	70	0 - 46	20	24	44	6	80	2 x **80 912 31100**

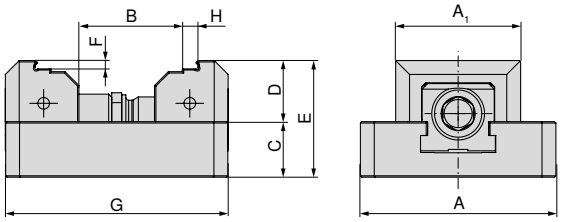
ZSG Mini – structural dimension table for the different jaws

With quick change jaw embossed profile



A mm	A_1 mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	Article no. System jaws
70	45	7 - 32	20	22	44	3	80	3	2 x **80 912 31200**
70	70	7 - 32	20	22	44	3	80	3	2 x **80 912 31300**
70	45	7 - 52	20	22	44	3	100	3	2 x **80 912 31200**
70	70	7 - 52	20	22	44	3	100	3	2 x **80 912 31300**

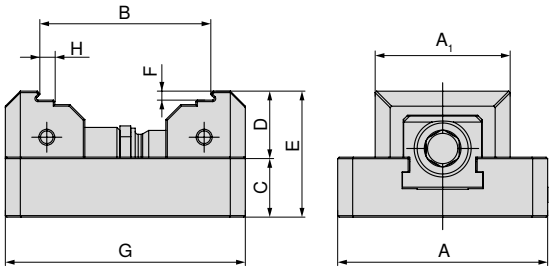
With quick change jaw embossed profile, VS



A mm	A_1 mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	Article no. System jaws
70	45	31 - 56	20	22	44	3	80	5	2 x **80 912 31400**
70	70	31 - 56	20	22	44	3	80	5	2 x **80 912 31500**
70	45	31 - 76	20	22	44	3	100	5	2 x **80 912 31400**
70	70	31 - 76	20	22	44	3	100	5	2 x **80 912 31500**

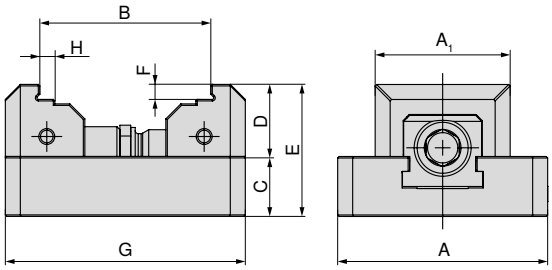
ZSG Mini – structural dimension table for the different jaws

With quick change jaw, VS, grip 3 mm



A mm	A_1 mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	Article no. System jaws
70	45	31 - 57	20	22	42	3	80	5	2 x **80 912 30500**
70	70	31 - 57	20	22	42	3	80	5	2 x **80 912 30600**
70	45	31 - 77	20	22	42	3	100	5	2 x **80 912 30500**
70	70	31 - 77	20	22	42	3	100	5	2 x **80 912 30600**

With quick change jaw, VS, smooth 5 mm

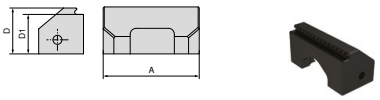


A mm	A_1 mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	Article no. System jaws
70	45	31 - 56	20	24	44	5	80	5	2 x **80 912 30700**
70	70	31 - 56	20	24	44	5	80	5	2 x **80 912 30800**
70	45	31 - 76	20	24	44	5	100	5	2 x **80 912 30700**
70	70	31 - 76	20	24	44	5	100	5	2 x **80 912 30800**

System jaws overview

Quick change jaw, grip 3 mm

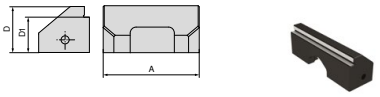
▲ Price per piece



For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
70	45		22	19						**80 912 30100**								●			
70	70		22	19						**80 912 30200**								●			

Quick change jaw, smooth step 5 mm

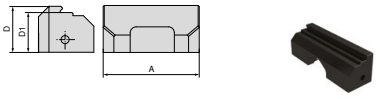
▲ Price per piece



For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
70	45		24	19						**80 912 30300**								●			
70	70		24	19						**80 912 30400**								●			

Quick change jaw, VS, grip 3 mm

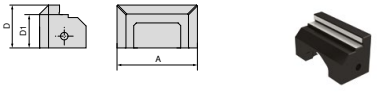
▲ Price per piece
▲ VS = Larger clamping range



For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
70	45		22	19						**80 912 30500**								●			
70	70		22	19						**80 912 30600**								●			

Quick change jaw, VS, smooth 5 mm

▲ Price per piece
▲ VS = Larger clamping range

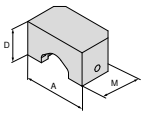


For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
70	45		24	19						**80 912 30700**								●			
70	70		24	19						**80 912 30800**								●			

System jaws overview

Quick change jaw, soft, steel

▲ Material: 15NiCr13
▲ Price per piece

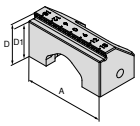




For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
70	45		24				26,5			**80 912 31000**								●			
70	70		24				26,5			**80 912 31100**								●			

Quick change jaw embossed profile

▲ Price per piece
▲ suitable for LANG embossed profile

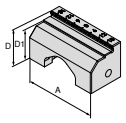




For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
70	45		22	19						**80 912 31200**								●			
70	70		22	19						**80 912 31300**								●			

Quick change jaw embossed profile, VS

▲ Price per piece
▲ Suitable for LANG embossed profile
▲ VS = Larger clamping range





For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
70	45		22	19						**80 912 31400**								●			
70	70		22	19						**80 912 31500**								●			

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System accessories overview

Socket

▲ Suitable for 3/8" square drive

ESG 4 | ZSG 4 | ZSG mini | DSG 4 | MSG 2



Square	DRVS mm	80 875 ...
3/8"	11	11100

→ **Page 176+180**
Here you will find the suitable „magnetic workpiece stop“ and „torque key“ (article numbers **80 892 23800** and **80 884 402**).

Allen cap screw

▲ Price per piece

ZSG mini

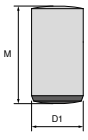


G	80 912 ...
M6x25	50100

Cylindrical pin

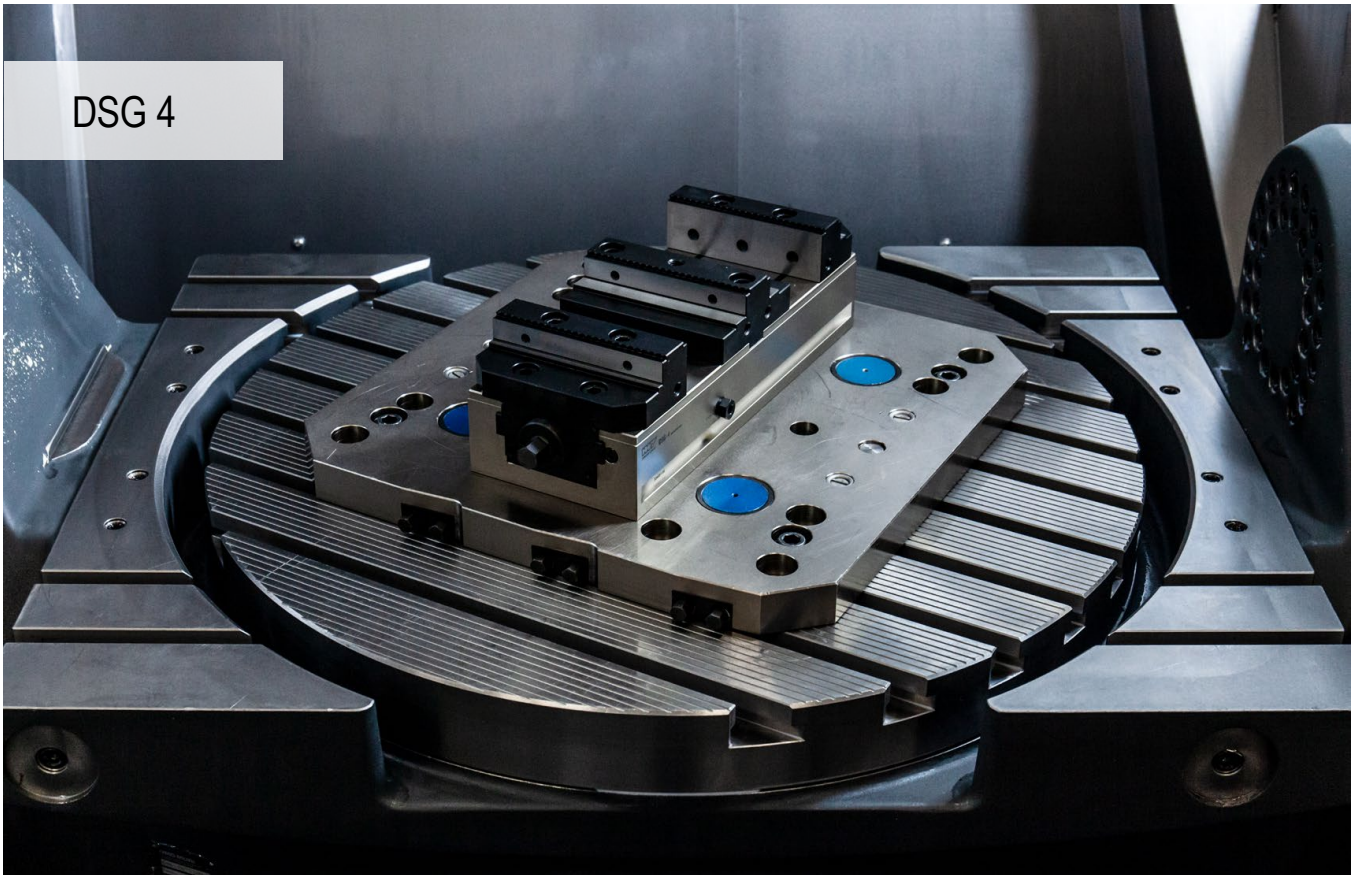
▲ Price per piece

ZSG mini





$D_{1\ m6}$ mm	M mm	80 912 ...
12	18	50200



High accuracy and efficiency

The user-friendly DSG 4 clamping system guarantees consistently high precision and a wide application range.

Your benefits:

- ▲ Straightforward, stable third-hand function
- ▲ Quick and easy positioning on the MNG zero point clamping system
- ▲ High clamping force between 5 – 40 kN with low tightening torque
- ▲ Quick and easy jaw change with 2 screws
- ▲ Extensive modular jaw range

Clamping/aligning:



Mounting with MNG zero point clamping system (2-3 mounting bolts)



Mounting through the base body with four M8 screws



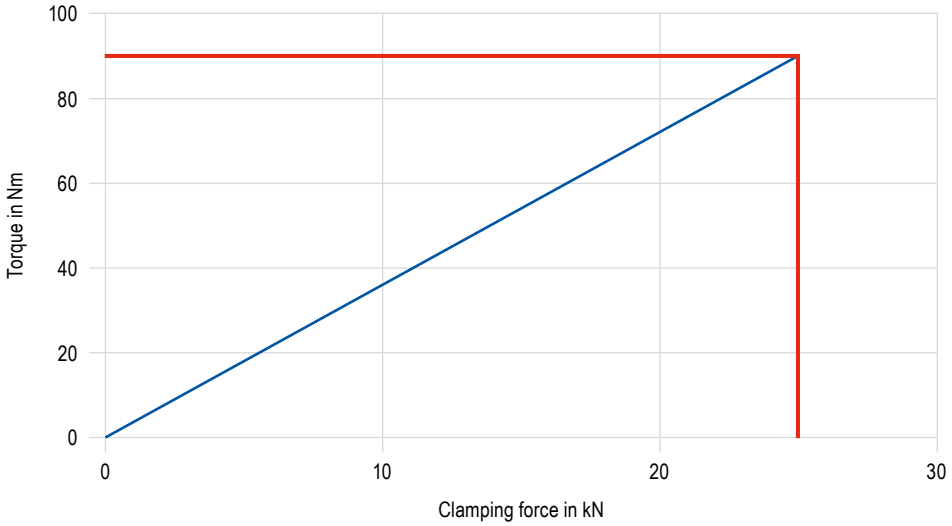
Mounting through the base body with two dowel screws **Article no. 80 895 019**



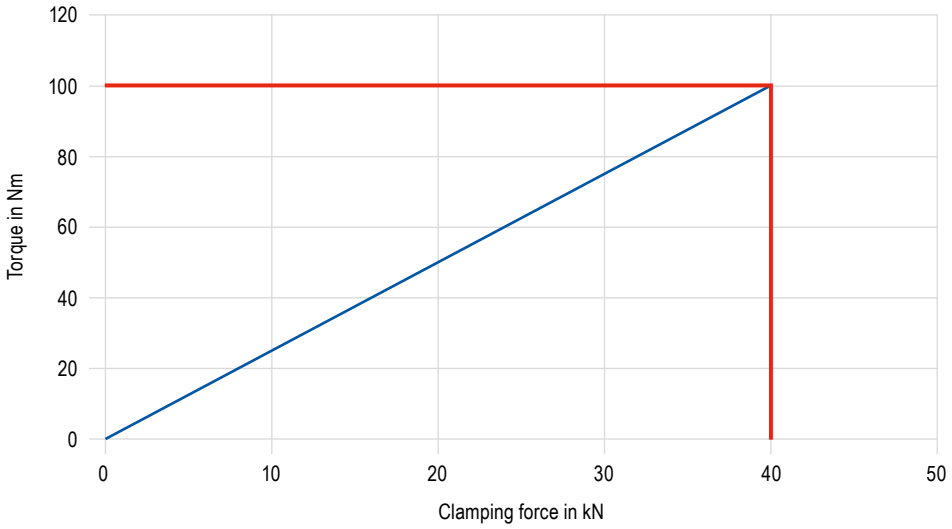
Mounting with 4-6 clamping claws **Article no. 80 890 315**

Clamping force:

DSG 4 – 80 mm tightening torque / clamping force



DSG 4 – 125 mm tightening torque / clamping force



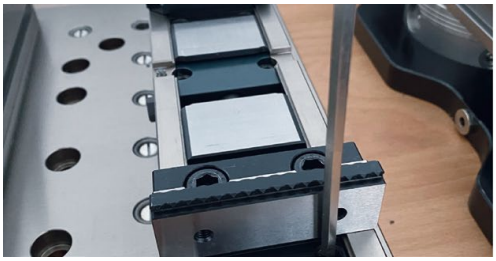
'Third hand' operation

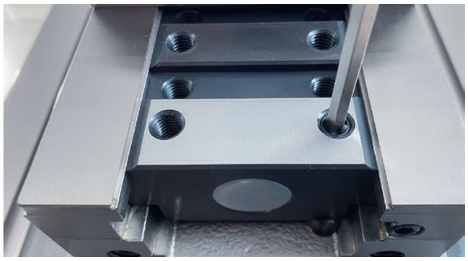
The third-hand operation function on the DSG 4 is ensured by pre-loading the rear slide with compression springs.



The lateral clamping screw A is not tightened, instead it is open approx. 1/2 turn. When the vice is fully open, the movable jaws B and C are to be placed in the appropriate slots of slides D and E and secured according to the workpiece size. Two workpieces of different sizes can also be clamped.

Conversion to single vice



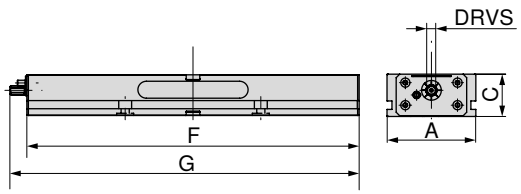


The rear slide is blocked via the hexagon socket grub screw and the DSG 4 can also be used as a single vice. **Important note:** Not suitable for using several vices as single vice next to one another. In this case, we advise modification with additional transverse slot in the base body and suitable fixed jaw.

PolyClamp – DSG 4

▲ double vice without jaws
▲ 100 % encapsulated
▲ fast assembly and disassembly
▲ flexible clamping system

DSG 4 | **MNG**





A mm	C mm	F mm	G mm	TQX Nm	DRVS mm	MXC kN	WT kg	80 906 ...
80	55	300	308	90	12	0 - 25	8	**080**
125	60	320	347	100	14	0 - 40	14	**125**
125	60	390	417	100	14	0 - 40	17	**12700**
125	60	460	487	100	14	0 - 40	20	**12800**
125	60	530	557	100	14	0 - 40	24	**12900**
125	60	600	627	100	14	0 - 40	27	**13000**
125	60	670	697	100	14	0 - 40	30	**13100**
125	60	740	767	100	14	0 - 40	34	**126**

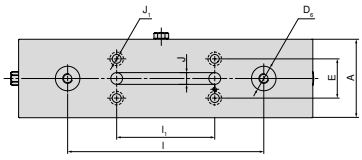
Vice guide

Structural dimension tables for the different jaws	105–107	System accessories	108+110
'Third hand' operation	102	Conversion to single vice	103
MNG-/PNG zero point clamping system	134–163	General accessories	164–183

17

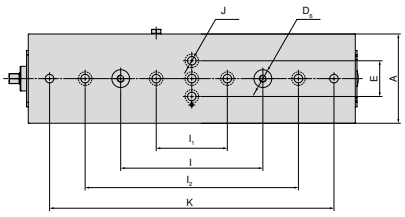
DSG 4 underside dimensions

Base width 80 mm and length 300 mm



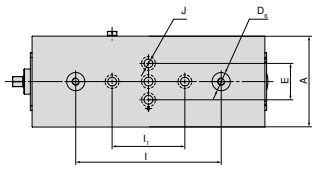
A mm	D_6 H6 mm	E ±0,015 mm	I ±0,01 mm	I_1 ±0,01 mm	J H7 mm	J_1 mm
80	25	40	200	100	12	9

Base width 125 mm and length 460 mm, 530 mm



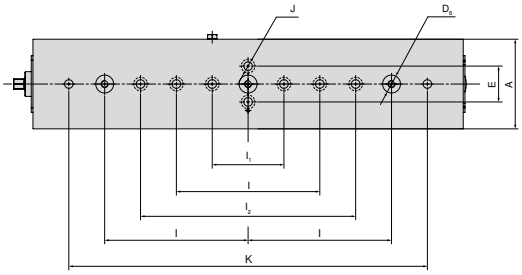
A mm	D_6 H6 mm	E ±0,015 mm	I ±0,01 mm	I_1 ±0,01 mm	I_2 ±0,002 mm	J H7 mm	K ±0,002 mm
125	25	50	200	100	300	12	400
125	25	50	200	100	300	12	500

Base width 125 mm and length 320 mm



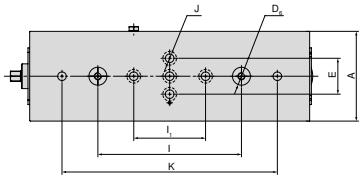
A mm	D_6 H6 mm	E ±0,015 mm	I ±0,01 mm	I_1 ±0,01 mm	J H7 mm
125	25	50	200	100	12

Base width 125 mm and length 600 mm



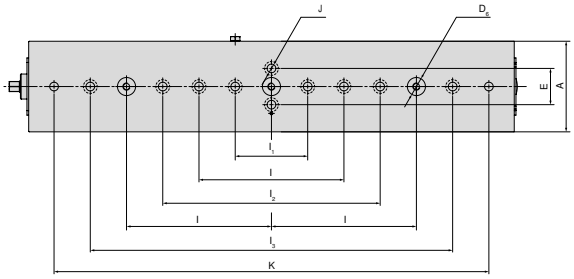
A mm	D_6 H6 mm	E ±0,015 mm	I ±0,01 mm	I_1 ±0,01 mm	I_2 ±0,002 mm	J H7 mm	K ±0,002 mm
125	25	50	200	100	300	12	500

Base width 125 mm and length 390 mm



A mm	D_6 H6 mm	E ±0,015 mm	I ±0,01 mm	I_1 ±0,01 mm	J H7 mm	K ±0,002 mm
125	25	50	200	100	12	300

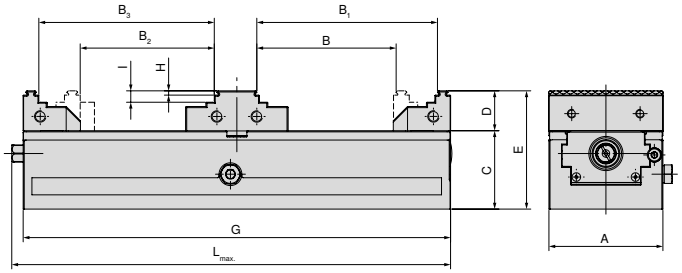
Base width 125 mm and length 670 mm, 740 mm



A mm	D_6 H6 mm	E ±0,015 mm	I ±0,01 mm	I_1 ±0,01 mm	I_2 ±0,002 mm	I_3 ±0,025 mm	J H7 mm	K ±0,002 mm
125	25	50	200	100	300	500	12	600
125	25	50	200	100	300	500	12	700

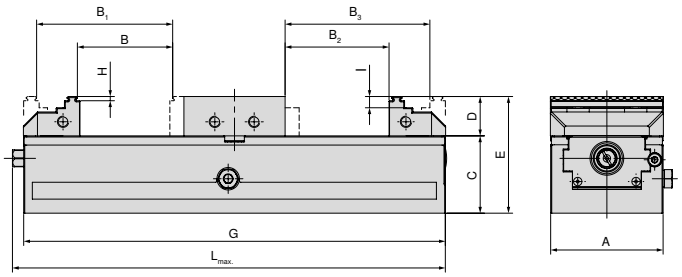
DSG 4 structural dimension table for the different jaws

With indexable jaws, grip and centre jaw, grip



A mm	B mm	B_1 mm	B_2 mm	B_3	C mm	D mm	E mm	G mm	H mm	I mm	$L_{max.}$ mm	Article no. System jaws
80	25 - 97	54 - 126	31 - 93	51 - 122	55	28	83	300	3	8	308	2 x **80 878 810** + **80 906 300**
125	40 - 86	75 - 121	42 - 79	68 - 114	60	40	100	320	3	18	347	2 x **80 901 303** + **80 906 304**
125	40 - 121	75 - 156	42 - 114	68 - 149	60	40	100	390	3	18	417	2 x **80 901 303** + **80 906 304**
125	40 - 156	75 - 191	42 - 149	68 - 184	60	40	100	460	3	18	487	2 x **80 901 303** + **80 906 304**
125	40 - 191	75 - 226	42 - 184	68 - 219	60	40	100	530	3	18	557	2 x **80 901 303** + **80 906 304**
125	40 - 226	75 - 261	42 - 219	68 - 254	60	40	100	600	3	18	627	2 x **80 901 303** + **80 906 304**
125	40 - 261	75 - 296	42 - 254	68 - 289	60	40	100	670	3	18	697	2 x **80 901 303** + **80 906 304**
125	40 - 296	75 - 331	42 - 289	68 - 324	60	40	100	740	3	18	767	2 x **80 901 303** + **80 906 304**

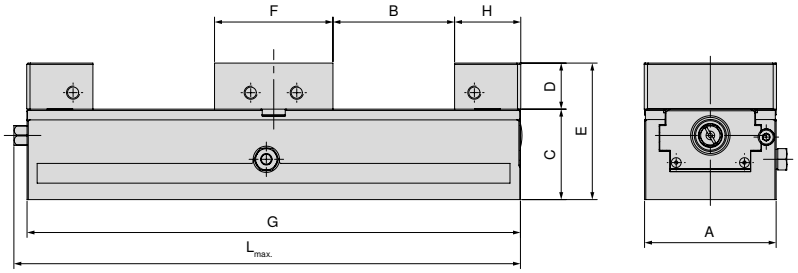
With indexable jaws, grip and centre jaw, smooth



A mm	B mm	B_1 mm	B_2 mm	B_3	C mm	D mm	E mm	G mm	H mm	I mm	$L_{max.}$ mm	Article no. System jaws
80	5 - 67	34 - 96	0 - 73	40 - 102	55	28	83	300	3	8	308	2 x **80 878 810** + **80 906 301**
125	7 - 44	42 - 77	0 - 47	46 - 82	60	40	100	320	3	18	347	2 x **80 901 303** + **80 906 305**
125	7 - 79	42 - 112	0 - 82	46 - 117	60	40	100	390	3	18	417	2 x **80 901 303** + **80 906 305**
125	7 - 114	42 - 149	0 - 117	46 - 152	60	40	100	460	3	18	487	2 x **80 901 303** + **80 906 305**
125	7 - 147	42 - 182	0 - 152	46 - 187	60	40	100	530	3	18	557	2 x **80 901 303** + **80 906 305**
125	7 - 184	42 - 217	0 - 187	46 - 222	60	40	100	600	3	18	627	2 x **80 901 303** + **80 906 305**
125	7 - 219	42 - 252	0 - 222	46 - 257	60	40	100	670	3	18	697	2 x **80 901 303** + **80 906 305**
125	7 - 254	42 - 287	0 - 257	46 - 292	60	40	100	740	3	18	767	2 x **80 901 303** + **80 906 305**

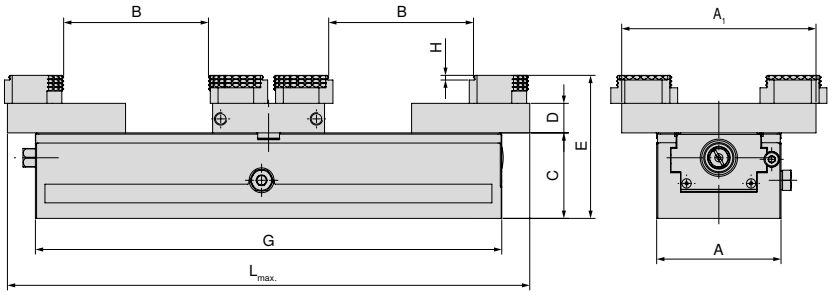
DSG 4 structural dimension table for the different jaws

With block jaws and centre jaw smooth



A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	$L_{max.}$ mm	Article no. System jaws
80	0 - 73	55	28	83	72	300	40	308	2 x **80 901 31300** + **80 906 301**
125	0 - 46	60	40	100	98	320	66	347	2 x **80 901 31500** + **80 906 305**
125	0 - 81	60	40	100	98	390	66	417	2 x **80 901 31500** + **80 906 305**
125	0 - 116	60	40	100	98	460	66	487	2 x **80 901 31500** + **80 906 305**
125	0 - 151	60	40	100	98	530	66	557	2 x **80 901 31500** + **80 906 305**
125	0 - 186	60	40	100	98	600	66	627	2 x **80 901 31500** + **80 906 305**
125	0 - 221	60	40	100	98	670	66	697	2 x **80 901 31500** + **80 906 305**
125	0 - 256	60	40	100	98	740	66	767	2 x **80 901 31500** + **80 906 305**

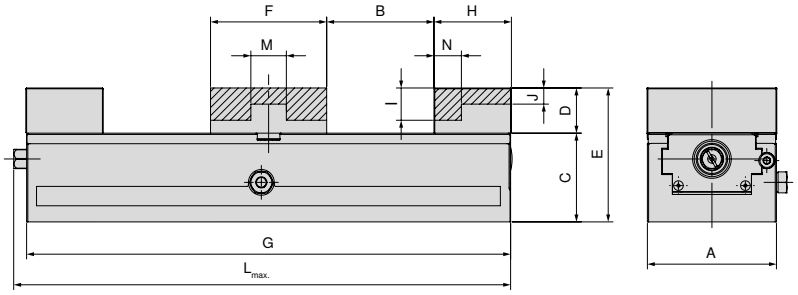
With pendulum and adapter plate



A mm	A_1 mm	B mm	C mm	D mm	E mm	G mm	H mm	$L_{max.}$ mm	Article no. System jaws
80	125	0 - 92	55	19	92	300	3	308	2 x **80 878 870** + **80 906 303**
125	180	7 - 92	60	22	100	320	3	365	2 x **80 878 570** + **80 906 307**
125	180	7 - 133	60	22	100	390	3	435	2 x **80 878 570** + **80 906 307**
125	180	7 - 168	60	22	100	460	3	505	2 x **80 878 570** + **80 906 307**
125	180	7 - 203	60	22	100	530	3	575	2 x **80 878 570** + **80 906 307**
125	180	7 - 238	60	22	100	600	3	645	2 x **80 878 570** + **80 906 307**
125	180	7 - 273	60	22	100	670	3	715	2 x **80 878 570** + **80 906 307**
125	180	7 - 308	60	22	100	740	3	785	2 x **80 878 570** + **80 906 307**

DSG 4 structural dimension table for the different jaws

With aluminium jaws and aluminium centre jaw

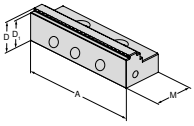


A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	I mm	J mm	$L_{max.}$ mm	M mm	N mm	Article no. System jaws
80	0 - 66	55	28	83	72	300	40	20	10	308	22	17	2 x **80 878 850** + **80 906 302**
125	0 - 42	60	40	100	98	320	68		17	347	38	28	2 x **80 878 550** + **80 906 306**
125	0 - 77	60	40	100	98	390	68		17	417	38	28	2 x **80 878 550** + **80 906 306**
125	0 - 112	60	40	100	98	460	68		17	487	38	28	2 x **80 878 550** + **80 906 306**
125	0 - 147	60	40	100	98	530	68		17	557	38	28	2 x **80 878 550** + **80 906 306**
125	0 - 182	60	40	100	98	600	68		17	627	38	28	2 x **80 878 550** + **80 906 306**
125	0 - 217	60	40	100	98	670	68		17	697	38	28	2 x **80 878 550** + **80 906 306**
125	0 - 252	60	40	100	98	740	68		17	767	38	28	2 x **80 878 550** + **80 906 306**

System jaws overview

Indexable jaw, grip 3 mm, movable

▲ Price per piece

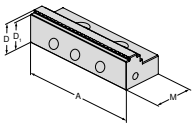




For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
125	125		40	37			66			**80 901 303**				●	●				●		

Indexable jaw, grip 3 mm, movable

▲ Price per piece

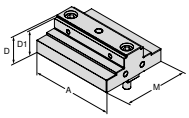




For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
80	80		28	25			40			**80 878 810**				●	●		●		●		

Centre jaw, grip

▲ Price per piece

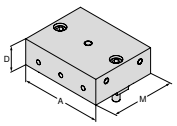




For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
80	80		28	25			72			**80 906 300**									●		
125	125		40	37			98			**80 906 304**									●		

Centre jaw, smooth

▲ Price per piece



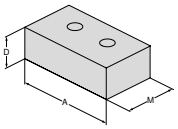
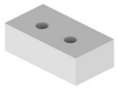


For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
80	80		28				72			**80 906 301**									●		
125	125		40				98			**80 906 305**									●		

System jaws overview

Alu jaw, movable

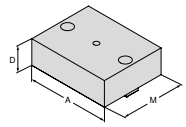
▲ for producing shaped jaws
▲ Price per piece

For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
80	80		28				48			**80 878 850**				●	●		●		●		
125	125		40				68			**80 878 550**				●					●		

Centre jaw, Alu

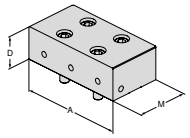
▲ for producing shaped jaws
▲ Price per piece




For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
80	80		28				72			**80 906 302**									●		
125	125		40				98			**80 906 306**									●		

Block jaw, movable

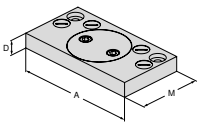
▲ Price per piece




For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
80	80		28				40			**80 901 31300**				●	●		●		●		
125	125		40				66			**80 901 31500**				●					●		

Pendulum jaw, movable

▲ to accommodate 6-way reversible jaws
▲ Price per piece

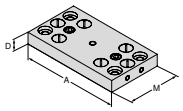



For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
80	125		19				76			**80 878 870**				●			●		●		
125	180		22				95			**80 878 570**				●			●		●		

System jaws overview

Centre jaw adapter plate, fixed

- ▲ to accommodate 6-way reversible jaws
- ▲ Price per piece

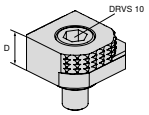


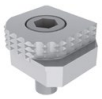


For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
80	125		19				72			**80 906 303**									●		
125	180		22				98			**80 906 307**									●		

6 function indexable jaw

- ▲ 1 = Smooth, carbide coated
- ▲ 2 = Grip with 3 mm step
- ▲ 3 = Grip with 8 mm step
- ▲ 4 = Grip with 18 mm step
- ▲ 5 = Rough grip with 8 mm step
- ▲ 6 = Round grip
- ▲ M_{max} = 60 Nm
- ▲ Including fixation screws

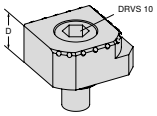


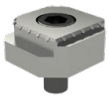


For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
			18							**80 892 246**	●	●	●	●			●		●	●	

6x indexable jaw, carbide grip

- ▲ 1 = Smooth
- ▲ 2 = Carbide grip
- ▲ 3 = Carbide grip with 3 mm step
- ▲ 4 = Carbide grip with 8 mm step
- ▲ 5 = Round carbide grip with 8 mm step
- ▲ 6 = Round carbide grip
- ▲ Incl. fixing screws





For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
			18							**80 890 35300**	●	●	●	●			●		●	●	

System accessories overview

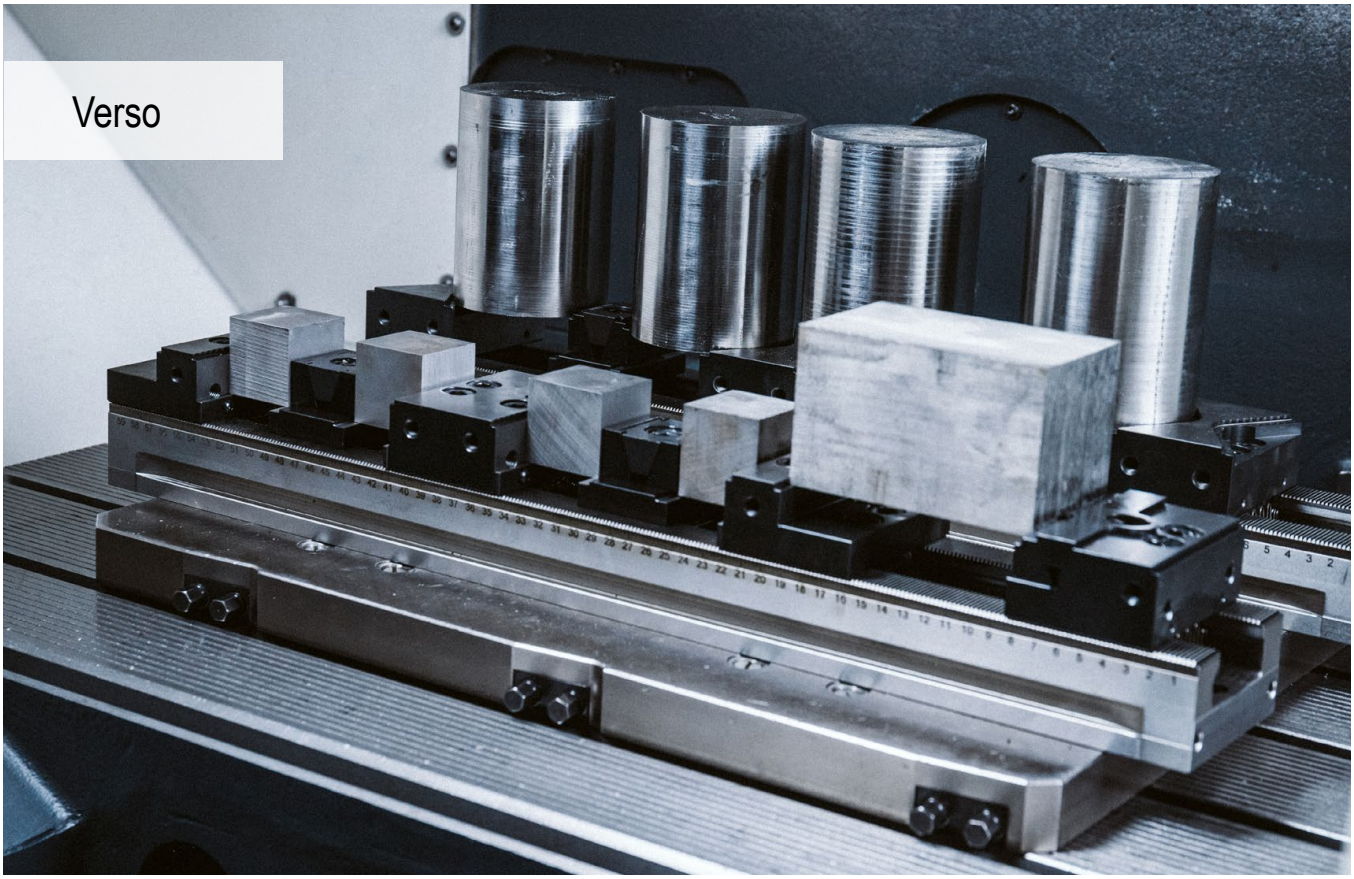
Plastic protection plugs

DSG 4



80 906 ...

G	
M10x12	**500**



The all-rounder for workpiece clamping

The new multiple vice enables you to easily clamp many small and large workpieces on a 3-, 4-, or 5-axis machine. Even slimmer jaws have further increased the part thickness.

Your benefits:

- ▲ Hardened and ground teeth ensure the highest level of precision and dimensional stability
- ▲ Fast jaw changeover system for fixed and adjustable jaws
- ▲ Full modular range for all types of machining centres
- ▲ Multi-clamping with wedge grip elements
- ▲ Extensive modular system jaw range
- ▲ Simple clamping bar extension with connecting element

Clamping/aligning:



Using T-slots or screws
Alignment in the T-slot (14, 16, 18 mm) with the matching alignment set for T-slots.
For 12 mm T-slot: use two Ø 12 cylinder pins.



Using clamping claws
Alignment set and clamping using clamping claws attached at the side.



Using grid holes
Position and fasten the workpieces using two Ø12f7 / M12 dowel screws in the first and last holes of the clamping bar.
Additional fastening using M12 cylindrical screws in the remaining holes.

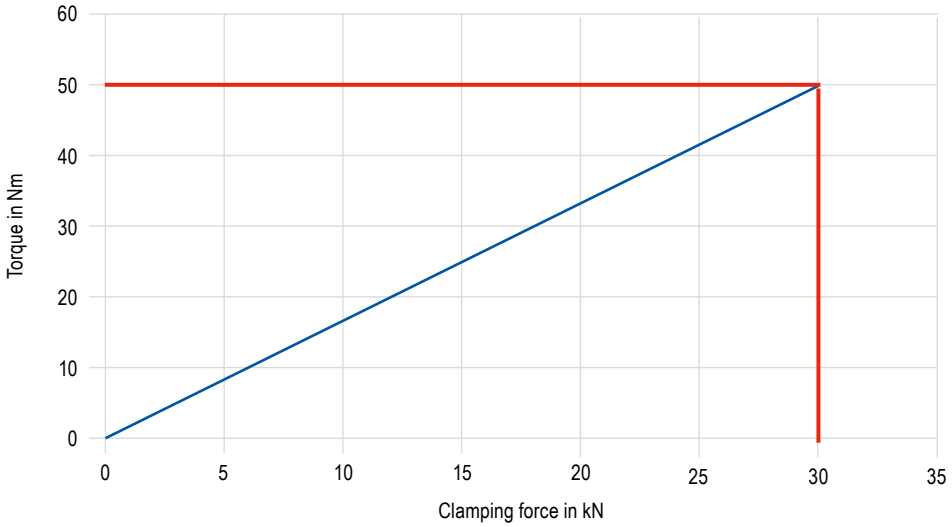
Clamping/aligning:



With a zero point clamping system
The clamping bar is equipped with MNG interfaces that enable MNG clamping bolts to be attached
(up to a base body length of 500 mm = 2 clamping bolts / from 600 mm upwards = 3 clamping bolts).

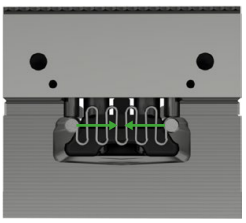
Clamping force:

Verso tightening torque/clamping force



Quick jaw change for fixed and adjustable jaws

The Verso multiple vice is equipped with a quick jaw change system as standard. Simply use the two screws to release, remove or reposition the fixed and adjustable jaw. The jaws are removed in an upwards direction, allowing each jaw to be removed individually, without taking out any others. This reduces the set-up time significantly.



Release position



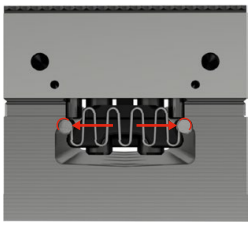
Undo screws



Take off and insert



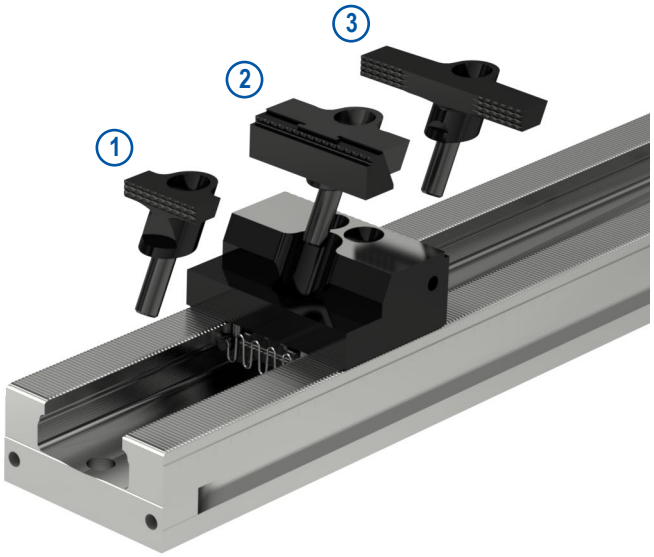
Tighten screws



Clamping position

Quick jaw change

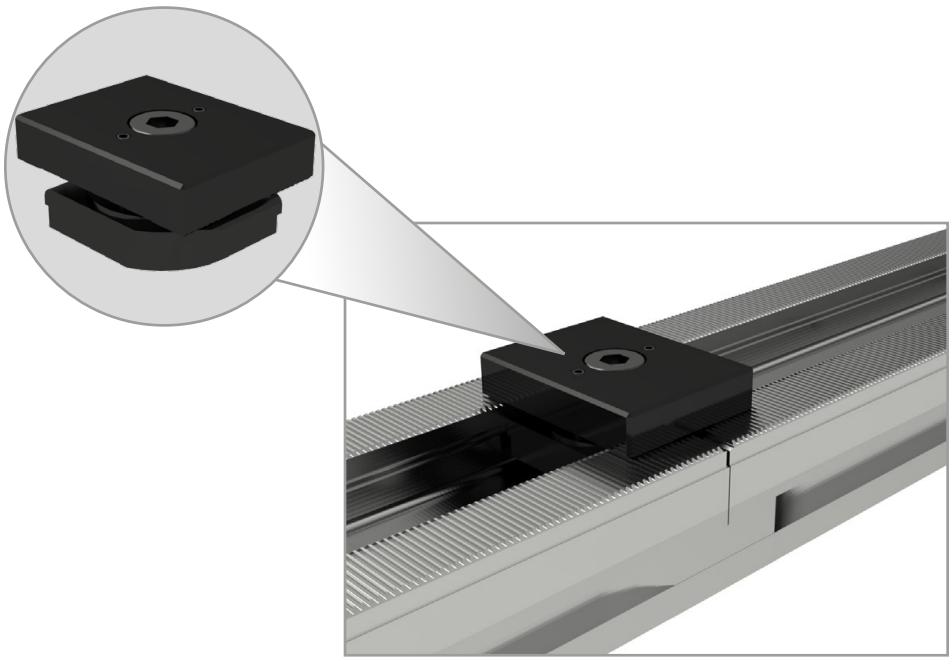
The fixed and adjustable jaws of the Verso multiple vice system are equipped with a quick jaw change system as standard. Two screws can be used to release and change the jaw, making jaw changes extremely quick.



1. Pull-down jaw, grip
2. Parallel clamping jaw
3. Pendulum jaw grip with pull-down action

Connecting the clamping bars

A connecting element allows two or more Verso clamping bars to be combined with one another or extended.

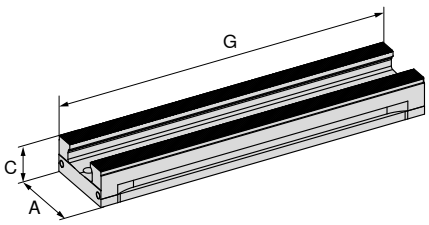


PolyClamp – Verso

- ▲ For single and multi-clamping
- ▲ Multi-clamping with wedge grip elements
- ▲ Workpieces can be clamped on 3-, 4- or 5-axis machine
- ▲ Adapter plates for MNG available

Scope of supply:
Body without jaws

Verso | **MMG**



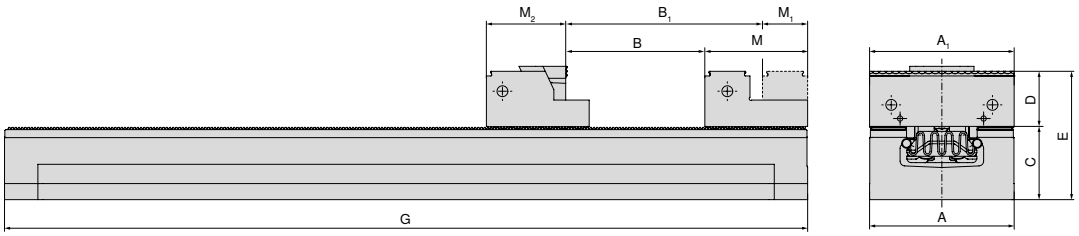


NEW

A mm	C mm	G mm	MXC kN	WT kg	80 914 ...
90	45	260	0 - 50	5,0	**09000**
90	45	400	0 - 50	7,7	**09100**
90	45	500	0 - 50	9,6	**09200**
90	45	600	0 - 50	11,5	**09300**
90	45	650	0 - 50	12,5	**09400**

Verso – Structural dimension table

Clamping rail



A mm	A_1 mm	B mm	B_1 mm	C mm	D mm	E mm	G mm	M mm	M_1 mm	M_2
90	40 / 65 / 90	145	181	45	35	80	260	64	28	53,5
90	40 / 65 / 90	285	321	45	35	80	400	64	28	53,5
90	40 / 65 / 90	385	421	45	35	80	500	64	28	53,5
90	40 / 65 / 90	485	521	45	35	80	600	64	28	53,5
90	40 / 65 / 90	535	571	45	35	80	650	64	28	53,5

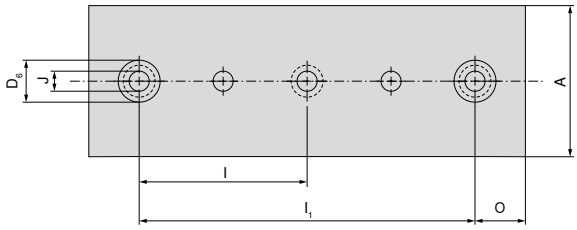
When using the 90 mm pendulum jaw grip and parallel clamping jaws, dimensions B, B_1 and M_2 will differ.

Vice guide

Underside Dimensions	115	Overview of clamping ranges	116
System accessories	117–124	General accessories	164–183

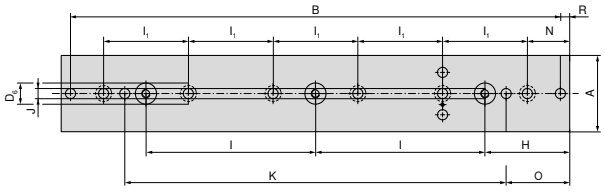
Verso underside dimensions

Base width 90 mm and length 260 mm



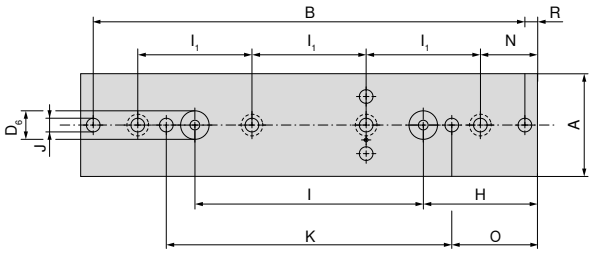
A mm	D6 H7 mm	I ±0,015 mm	I1 ±0,015 mm	J F7 mm	O ±0,015 mm
90	25	100	200	12	30

Base width 90 mm and length 600 mm



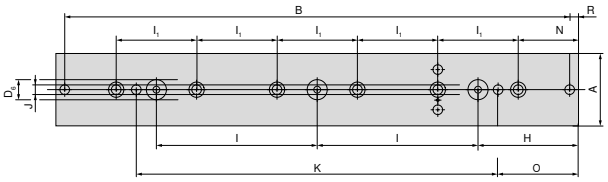
A mm	B mm	D6 H7 mm	H ±0,015 mm	I ±0,015 mm	I1 ±0,015 mm	J F7 mm	K ±0,015 mm	N mm	O ±0,015 mm	R mm
90	578	25	100	200	100	12	450	50	75	11

Base width 90 mm and length 400 mm



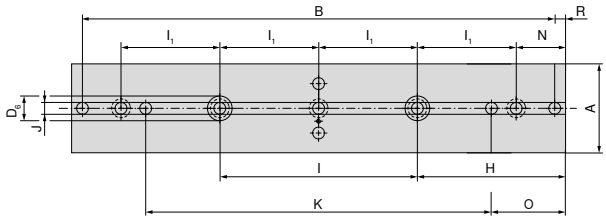
A mm	B mm	D6 H7 mm	H ±0,015 mm	I ±0,015 mm	I1 ±0,015 mm	J F7 mm	K ±0,015 mm	N mm	O ±0,015 mm	R mm
90	378	25	100	200	100	12	250	50	75	11

Base width 90 mm and length 650 mm



A mm	B mm	D6 H7 mm	H ±0,015 mm	I ±0,015 mm	I1 ±0,015 mm	J F7 mm	K ±0,015 mm	N mm	O ±0,015 mm	R mm
90	628	25	125	200	100	12	450	75	100	11

Base width 90 mm and length 500 mm

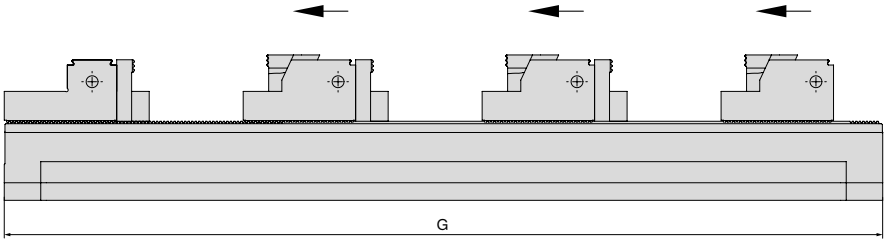


A mm	B mm	D6 H7 mm	H ±0,015 mm	I ±0,015 mm	I1 ±0,015 mm	J F7 mm	K ±0,015 mm	N mm	O ±0,015 mm	R mm
90	478	25	150	200	100	12	350	50	75	11

Verso – Overview of clamping ranges

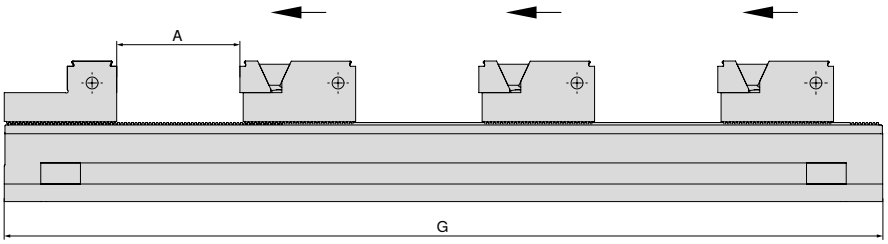
The clamping range shows the max. workpiece size depending on the number of clamping points for the individual clamping bar lengths.

Adjustable jaws with 40 mm pull-down jaw grip



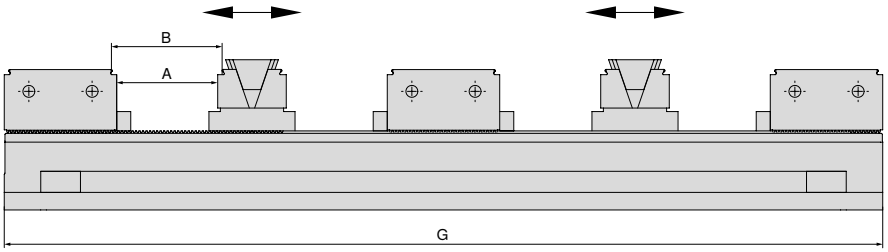
G mm	Number of workpieces 1	2	3	4	5	6	7	Article no. Vices
260	134	36	–	–	–	–	–	**80 914 09000**
400	274	106	50	22	–	–	–	**80 914 09100**
500	374	156	82	45	24	–	–	**80 914 09200**
600	474	206	116	72	44	26	–	**80 914 09300**
650	524	230	135	84	54	34	20	**80 914 09400**

Adjustable jaws with parallel clamping jaws



G mm	Number of workpieces 1 A	2 A	3 A	4 A	5 A	6 A	7 A	8 A	9 A	Article no. Vices
260	175	59	–	–	–	–	–	–	–	**80 914 09000**
400	315	129	67	27	10	–	–	–	–	**80 914 09100**
500	415	179	100	61	30	15	–	–	–	**80 914 09200**
600	515	229	133	86	57	32	19	10	–	**80 914 09300**
650	565	254	150	98	67	46	26	16	8	**80 914 09400**

With wedge grip elements

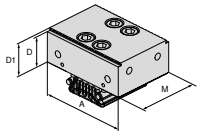


G mm	Number of workpieces 2 A	2 B	4 A	4 B	6 A	6 B	8 A	8 B	Article no. Vices
260	45	50	–	–	–	–	–	–	**80 914 09000**
400	115	120	31	36	–	–	–	–	**80 914 09100**
500	165	170	56	61	19	24	–	–	**80 914 09200**
600	215	220	81	86	36	41	14	19	**80 914 09300**
650	240	245	93	98	44	49	20	25	**80 914 09400**

System jaws overview

Stop jaw, fixed, grip 2,9 mm

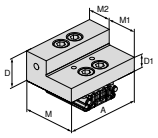
▲ Price per piece




For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2	NEW	NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
90	90		32	34,9			64			**80 914 31800**										●	

Indexable jaw, fixed, smooth

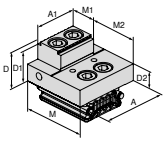
▲ Price per piece




For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2	NEW	NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
90	90		34,9	17			64	35,9	28,1	**80 914 32000**										●	

Stop jaw, fixed, grip 2,9 mm

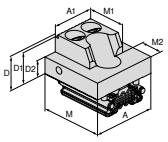
▲ Price per piece




For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2	NEW	NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
90	65		34,9	32	17		64	28,1	35,9	**80 914 31100**										●	
90	65	40	34,9	32	17		64	28,1	35,9	**80 914 31000**										●	
90	90		34,9	32	17		64	28,1	35,9	**80 914 31200**										●	

Reversible adjustable jaw profiled, grip 2,9 mm

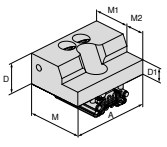
▲ Price per piece




For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2	NEW	NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
90	65		34,9	32	17		64	42	22	**80 914 31400**										●	
90	65	40	34,9	32	17		64	42	22	**80 914 31300**										●	
90	90		34,9	32	17		64	42	22	**80 914 31500**										●	

Reversible adjustable jaw, smooth

▲ Price per piece

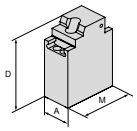



For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2	NEW	NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
90	90		34,9	17			64	42	22	**80 914 31600**										●	

System jaws overview

Reversible adjustable jaw, high

▲ Price per piece

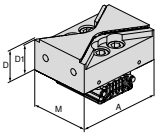




For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2	NEW		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
90	65		165				124				**80 914 31700**										●	

Prismatic jaw, smooth, grip 2,9 mm

▲ Price per piece

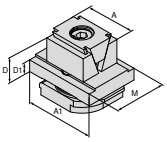




For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2	NEW		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
90	90		34,9	32			64				**80 914 31900**										●	

Wedge jaw

▲ Price per piece

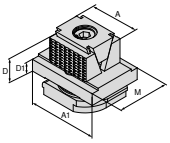




For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2	NEW		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
90	40	65	35	11			49				**80 914 32100**										●	
90	40	65	39	11			49				**80 914 32400**										●	

Wedge grip jaw

▲ Price per piece

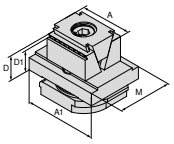




For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2	NEW		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
90	40	65	35	11			49				**80 914 32200**										●	
90	40	65	39	11			49				**80 914 32500**										●	

Wedge grip jaw, 3 mm

▲ Price per piece



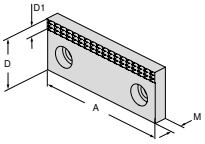


For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2	NEW		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
90	40	65	35	32			49				**80 914 32300**										●	

System jaws overview

Jaw, grip

▲ Price per piece

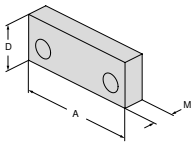




For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2	NEW	NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
65	65		35	7			10			**80 889 656**										●	
65	40		35	7			10			**80 889 406**										●	
90	90		35	7			10			**80 889 906**										●	

Jaw, soft

▲ Material: 16MnCr5
▲ Price per piece

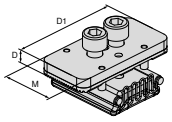




For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2	NEW	NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
65	65		35				16			**80 889 657**										●	
65	40		35				16			**80 889 407**										●	
90	90		35				16			**80 889 907**										●	

Base jaw

▲ Price per piece
▲ For Alu jaw Article no. **80 914 34200**

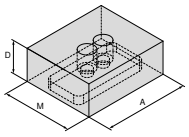




For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2	NEW	NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
90			9,1	80			40			**80 914 34100**										●	

Soft Alu-jaw

▲ Price per piece
▲ For Base jaw Article no. **80 914 34100**

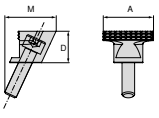




For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2	NEW	NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
90	90		34,9				75			**80 914 34200**										●	

Pull-down jaw, grip

▲ Price per piece



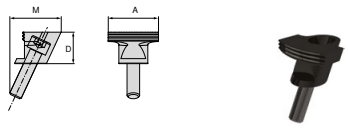


For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2	NEW	NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG2	ZSG 4	ZSG mini	DSG4	Verso	HSG
90	40		25				41			**80 914 32600**										●	

System jaws overview

Pull-down jaw, grip – round

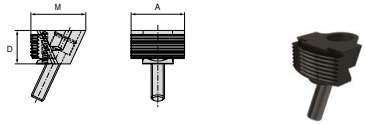
▲ Price per piece



For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NEW	NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
90	40		25				41			80 914 32700											●	

Parallel clamping jaw, grip – round

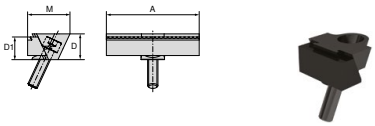
▲ Price per piece



For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NEW	NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
90	40		25				41			80 914 32800											●	

Parallel clamping jaw

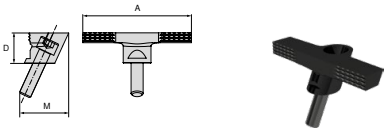
▲ Price per piece



For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NEW	NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
90	40		25	22			41			80 914 32900											●	
90	65		25	22			41			80 914 33000											●	
90	90		25	22			41			80 914 33100											●	

Pendulum jaw, grip

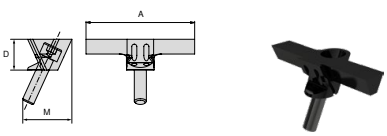
▲ Price per piece



For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NEW	NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
90	90		25				41			80 914 33200											●	

Clamping Wedge

▲ Price per piece

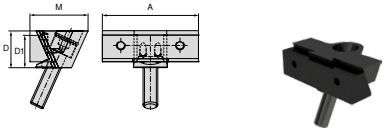


For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NEW	NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
90	90		25				41			80 914 33300											●	

System jaws overview

Parallel clamping jaw, smooth

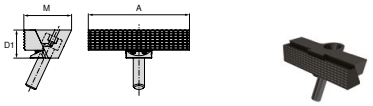
▲ Price per piece



For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NEW NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
90	40		25	22			41			80 914 33400										●	
90	65		25	22			41			80 914 33500										●	
90	90		25	22			41			80 914 33600										●	

Parallel clamping jaw, grip

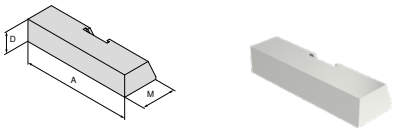
▲ Price per piece



For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NEW NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
90	90			25			42,5			80 914 33700										●	

Jaw, steel

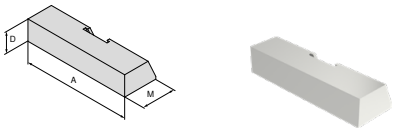
▲ Material: 16MnCr5
▲ Price per piece



For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NEW NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
90	90		18				30			80 914 33800										●	

Jaw, alu

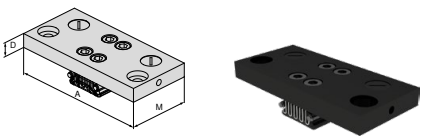
▲ Price per piece



For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NEW NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
90	90		18				30			80 914 33900										●	

Fixed adaptor jaw

▲ to accommodate 6-way reversible jaws
▲ Price per piece



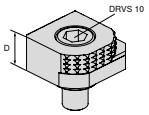
For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NEW NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
90	160		17				74			80 914 34000										●	

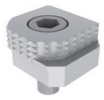
17

System jaws overview

6 function indexable jaw

- ▲ 1 = Smooth, carbide coated
- ▲ 2 = Grip with 3 mm step
- ▲ 3 = Grip with 8 mm step
- ▲ 4 = Grip with 18 mm step
- ▲ 5 = Rough grip with 8 mm step
- ▲ 6 = Round grip
- ▲ M_{max} = 60 Nm
- ▲ Including fixation screws

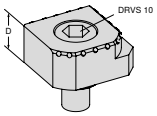


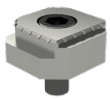


For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
			18							**80 892 246**	●	●	●	●			●		●	●	

6x indexable jaw, carbide grip

- ▲ 1 = Smooth
- ▲ 2 = Carbide grip
- ▲ 3 = Carbide grip with 3 mm step
- ▲ 4 = Carbide grip with 8 mm step
- ▲ 5 = Round carbide grip with 8 mm step
- ▲ 6 = Round carbide grip
- ▲ Incl. fixing screws



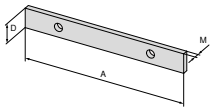


For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
			18							**80 890 35300**	●	●	●	●			●		●	●	

Workpiece supports overview

Workpiece support

▲ Price for 2 pieces

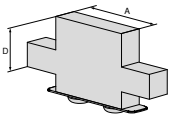


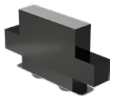


For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NEW	NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
90	90		11				3			**80 914 73100**											●	

Workpiece supports, offset

▲ Price for 2 pieces

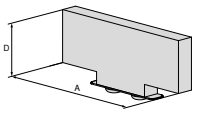


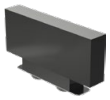


For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NEW	NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
90	40		30							**80 914 70200**											●	
90	40		25							**80 914 70100**											●	

Workpiece supports, offset

▲ Price for 2 pieces

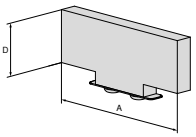


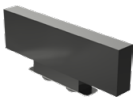


For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NEW	NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
90	65		11							**80 914 71100**											●	
90	65		17							**80 914 71200**											●	
90	65		25							**80 914 71300**											●	
90	65		30							**80 914 71400**											●	

Workpiece supports, offset

▲ Price for 2 pieces





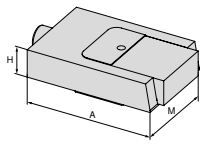
For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NEW	NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
90	90		11							**80 914 72100**											●	
90	90		17							**80 914 72200**											●	
90	90		25							**80 914 72300**											●	
90	90		30							**80 914 72400**											●	

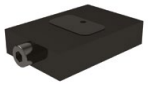
System accessories overview

Adjustable stop with basic body

▲ for vibration damping
▲ height adjustable 16 – 17 mm

Verso





NEW

H mm	A mm	M mm	80 914 ...
16	72	50	50100

Clamping Screw Set for T-slot for MNG

Scope of supply:
Clamping screw and T-Nuts

Verso



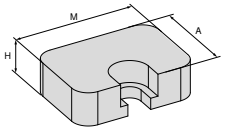
NEW

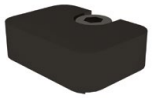
for slot width mm	G	80 914 ...
20	M12	50500
22	M12	50600
24	M12	50700

Support

▲ for vibration damping: Article no. **80 914 50100**

Verso





NEW

H mm	A mm	M mm	80 914 ...
8	20	28	50200
13	20	28	50300

Alignment Pin

Verso



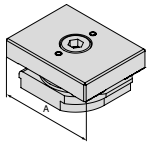
NEW

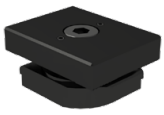
D_1 mm	D_2 mm	80 914 ...
12	14	81400
12	16	81600
12	18	81800

Joint

▲ to connect 2 basic bodies

Verso



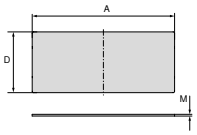


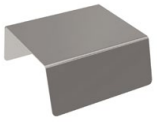
NEW

A mm	80 914 ...
90	50400

Cover

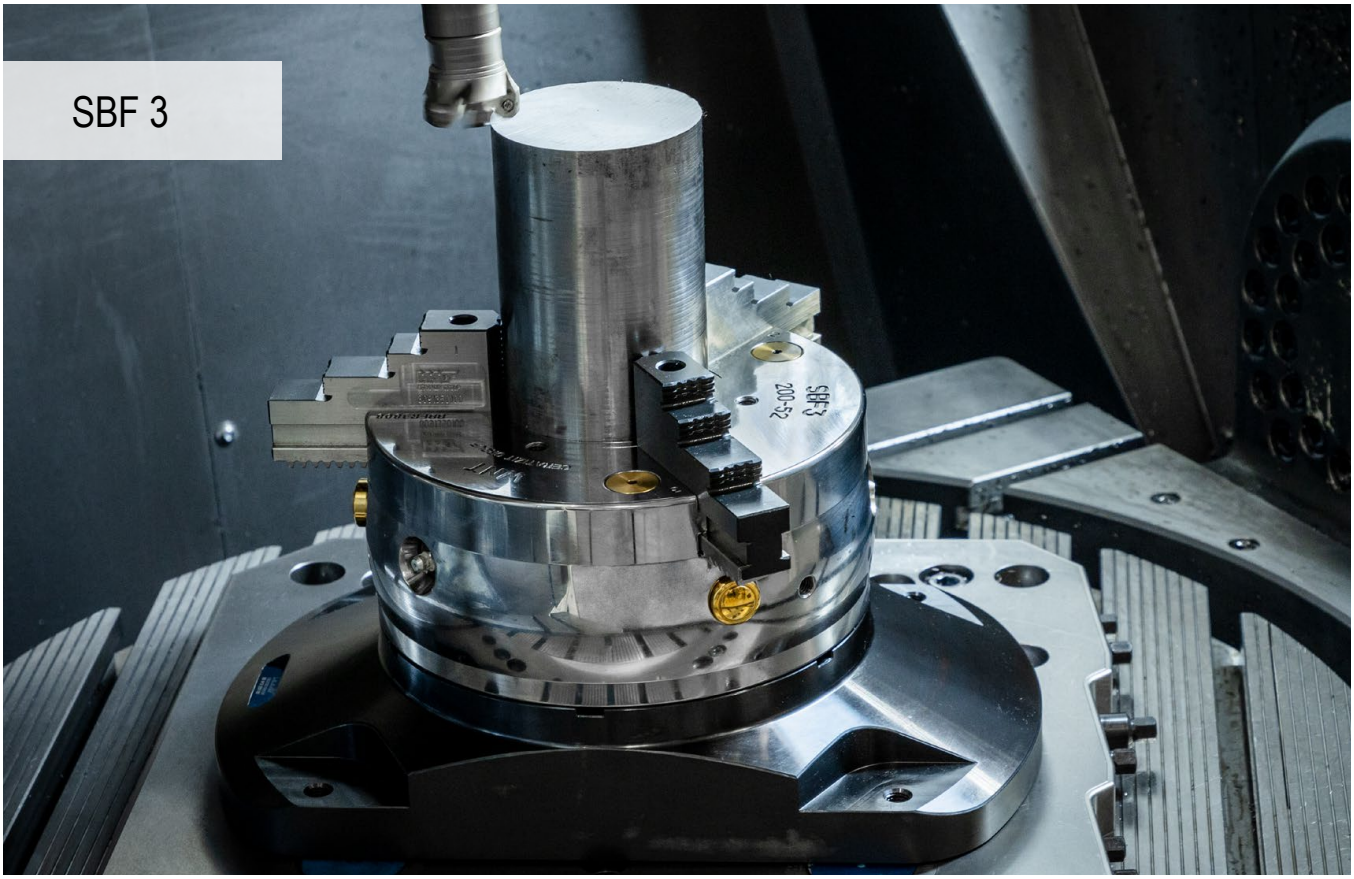
Verso





NEW

A mm	D mm	M mm	80 914 ...
50	84	0,5	51000
50	86	0,5	50800
200	86	0,5	50900



Hotly anticipated – now also for round components

Machining round components has become daily routine for many companies. We now have a solution in the portfolio in the form of the SBF 3 stationary three-jaw chuck – fully compatible with the in-house MNG and PNG zero point clamping systems for rapid, uncomplicated handling.

Your benefits:

- ▲ Suitable for 3/5-axis machining of round components
- ▲ Compatible with PNG and MNG zero point clamping systems
- ▲ Quick change jaw system with single release of jaws
- ▲ Spindle with hex connection

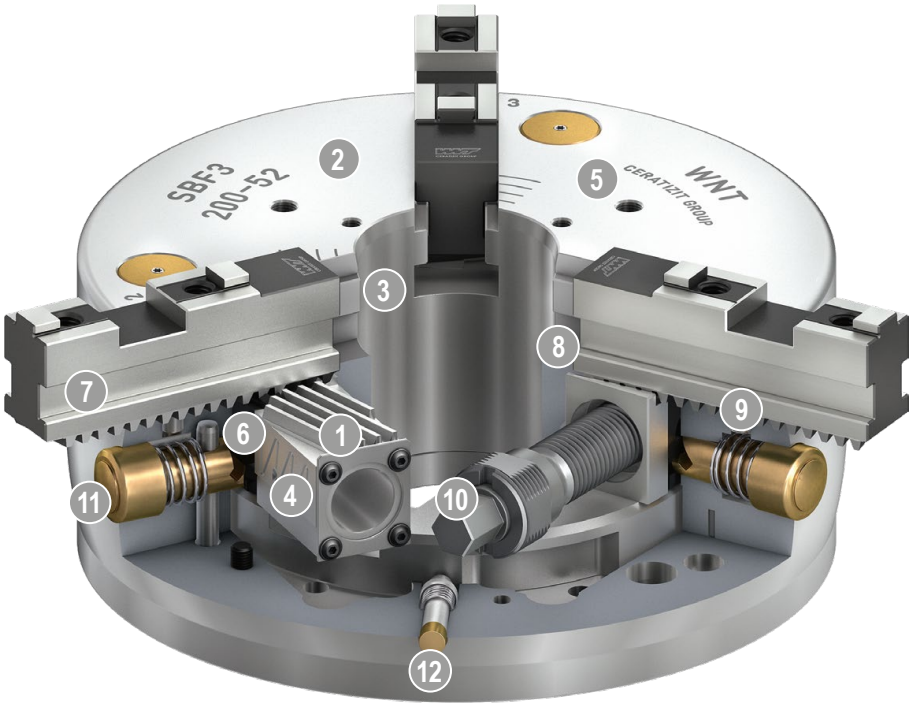


SBF 3 Ø 200 mm



SBF 3 Ø 315 mm

Technical information – cross-section diagram



1	**Wedge bar drive** Allows for excellent machining results	7	**Base jaws with angled teeth (SFG)**
2	**Hardened and extremely stiff base body** Longer service life with maximum precision as a result – even at the highest clamping force	8	**Locking mechanism** Guarantees secure engagement of the base jaw teeth with the wedge bar teeth
3	**Large through hole** For machining all common bar material diameters (optional: enlargement of through hole)	9	**Engagement pin** For pre-positioning the base jaw
4	**Optimised lubrication system** For high degree of efficiency	10	**Actuation via hex connection** Easier operation as a result
5	**Mounting threads** For workpiece stops or cover plates	11	**Pushbutton for jaw change** For extremely short setup times
6	**Quick jaw change system** Single release of jaws, meaning extremely short setup times	12	**Indicator pin** For visual stroke monitoring of the manual clamping chuck

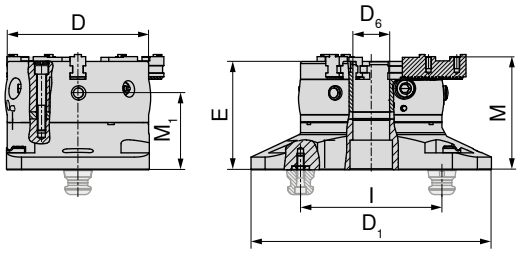
SBF 3 three-jaw chuck (Ø 200 mm) with console

- ▲ Suitable for 3/5-axis machining of round components
- ▲ Compatible with PNG and MNG zero point clamping systems (zero point clamping bolts must be ordered separately)
- ▲ Quick change jaw system with single release of jaws
- ▲ Spindle with hex connection

Scope of supply:

SBF 3 three-jaw chuck (Ø 200 mm) including console (PNG- and MNG-compatible)
1 set GBA base jaws
1 set SB-H stepped jaws
6 fixing screws and clamping key

SBF 3





80 913 ...

D	D1	D6	E	I	M	M1	MXC	TQX	DRVS	Stroke / jaw	Tooth pitch	WT	
mm	mm	mm	mm	mm	mm	mm	kN	Nm	mm	mm	mm	kg	
200	340	52	153,3	200	160,1	108,8	100	120	12	7	4,8	49,5	**20000**

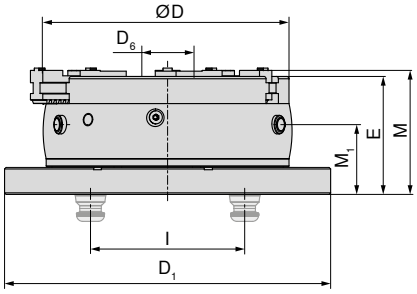
SBF 3 three-jaw chuck (Ø 315 mm) with console

- ▲ Suitable for 3/5-axis machining of round components
- ▲ Compatible with PNG and MNG zero point clamping systems (zero point clamping bolts must be ordered separately)
- ▲ Quick change jaw system with single release of jaws
- ▲ Spindle with hex connection

Scope of supply:

SBF 3 three-jaw chuck (Ø 315 mm) including console (PNG- and MNG-compatible)
1 set GBA base jaws
1 set SB-H stepped jaws
6 fixing screws and clamping key

SBF 3





80 913 ...

D	D1	D6	E	I	M	M1	MXC	TQX	DRVS	Stroke / jaw	Tooth pitch	WT	
mm	mm	mm	mm	mm	mm	mm	kN	Nm	mm	mm	mm	kg	
315	423	92	153	200	160,86	90,5	180	220	16	9,9	7	95	**31500**

The chuck is designed exclusively for stationary use – do not use while rotating!

System jaws overview

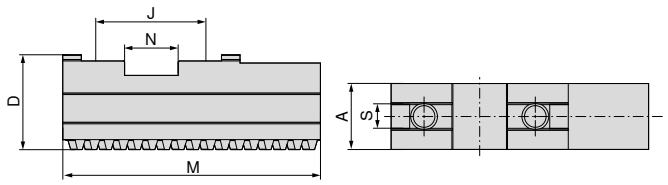
Base jaws (GBA) – set

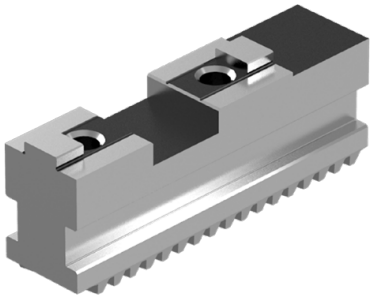
▲ Base jaws with angled teeth
▲ Price per set of 3 pieces

Scope of supply:

3 base jaws with angled teeth
Including cylindrical screws

SBF 3





80 913 ...

for	A mm	D mm	J mm	M mm	N mm	S mm	G	WT kg	
SBF-3.200	22	32	40	90	20	10	M8x1	1,2	**50300**
SBF-3.315	32	43	54	125	26	12	M12x1,5	3,1	**60300**

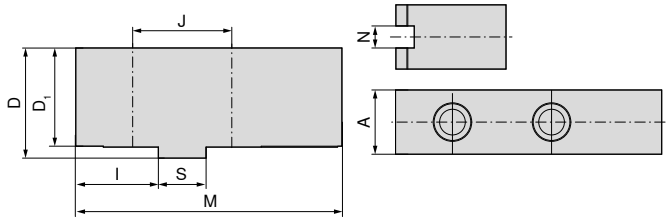
Soft top jaws (AB-W) – set

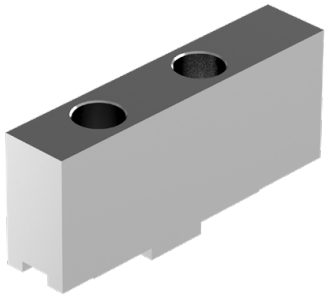
▲ Price per set of 3 pieces
▲ Material: 16MnCr5

Scope of supply:

3 soft top jaws

SBF 3





80 913 ...

for	A mm	D mm	D_1 mm	I mm	J mm	M mm	N mm	S mm	Hole for	WT kg	
SBF-3.200	22	47	43	35	40	105	10	20	M8	2,0	**50400**
SBF-3.315	35	60	54	45	54	145	12	26	M12	5,6	**60400**

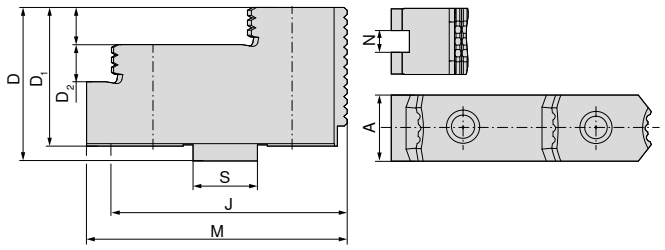
System jaws overview

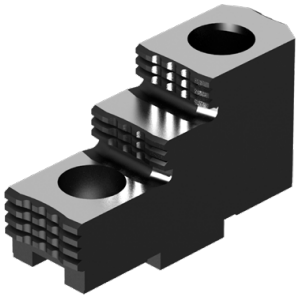
Hard stepped top jaws (AB-H) – set

▲ Price per set of 3 pieces

Scope of supply:
3 hard stepped top jaws

SBF 3

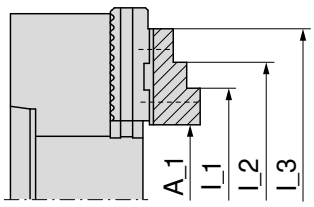




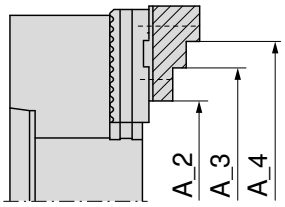
80 913 ...

for	A mm	D mm	D_1 mm	D_2 mm	J mm	M mm	N mm	S mm	Hole for	WT kg	
SBF-3.200	22	42	38	10	40	71,7	10	20	M8	2,4	**50200**
SBF-3.315	36	62	56	15	54	105	12	26	M12	3,3	**60200**

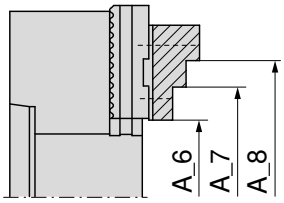
Dimension table – Hard stepped top jaws (AB-H)



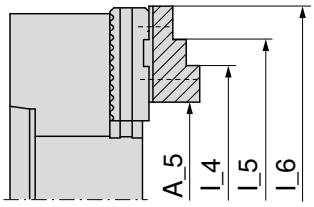
Basic jaw position 2



Basic jaw position 1



Basic jaw position 2



Basic jaw position 1

			Externall clamping range							
3-jaw chuck		System jaw	A_1	A_2	A_3	A_4	A_5	A_6	A_7	A_8
SBF-3.200	**80 913 50200**	SBF-3.AB-H.200.71,7.22.10	7–76	57–125	108–177	135–204	55–125	14–77	66–129	93–156
SBF-3.315	**80 913 60200**	SBF-3.AB-H.315.105.36.15	14–125	93–224	202–333	–	87–219	44–130	153–239	–

			Internal clamping range					
3-jaw chuck		System jaw	l_1	l_2	l_3	l_4	l_5	l_6
SBF-3.200	**80 913 50200**	SBF-3.AB-H.200.71,7.22.10	72–141	99–168	151–220	120–189	147–216	199–268
SBF-3.315	**80 913 60200**	SBF-3.AB-H.315.105.36.15	93–204	202–313	–	167–298	276–407	–

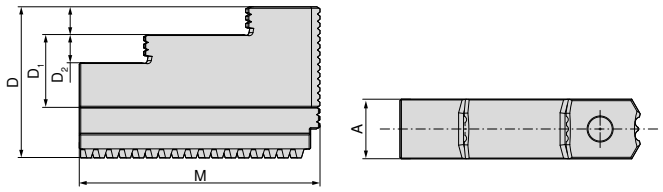
System jaws overview

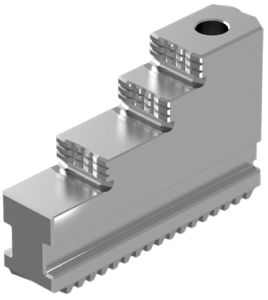
Hard stepped top jaws (SB-H) – set

▲ Stepped block jaws with angled teeth
▲ Price per set of 3 pieces

Scope of supply:
3 hard stepped block jaws

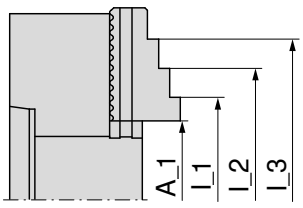
SBF 3



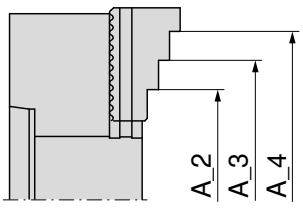


for	A mm	D mm	D_1 mm	D_2 mm	M mm	WT kg	80 913 ...
SBF-3.200	22	60	35	10	94	1,9	**50100**
SBF-3.315	32	81	46	15	129	5,5	**60100**

Dimension table – Hard stepped top jaws (SB-H)



Hard stepped top jaws
steel 16MnCr5, case-hardened



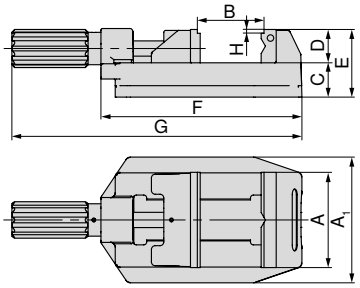
Hard stepped top jaws
steel 16MnCr5, case-hardened

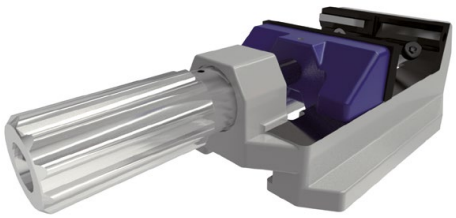
			Externall clamping range				Internal clamping range		
3-jaw chuck	System jaw		A_1	A_2	A_3	A_4	I_1	I_2	I_3
SBF-3.200	**80 913 50100**	SBF-3.SB-H.200.94.22.10	6–74	59–128	111–180	138–207	70–138	97–165	149–217
SBF-3.315	**80 913 60100**	SBF-3.SB-H.315.129.32.15	12–124	89–210	189–420	–	91–203	199–311	–

Manual machine vice

- ▲ handy, universal vice with large clamping range
- ▲ Stepped jaws with horizontal and vertical 120° prism
- ▲ Optional material stop can be used on both sides

HSG





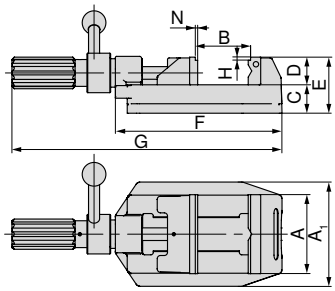
80 893 ...

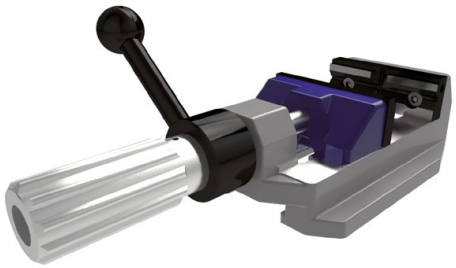
A	A1	B	C	D	E	F	G	H	WT	
mm	mm	mm	mm	mm	mm	mm	mm	mm	kg	
80	112	0 - 81	36	35	71	194	286,5	4	4,5	**080**
100	132	0 - 100	36	35	71	211	304,5	4	5,6	**100**
125	156	0 - 131	40	40	84	274	386	4	11,2	**125**

Manual machine vice with clamping aid

- ▲ Quick and accurate workpiece clamping using the clamping aid
- ▲ handy, universal vice with large clamping range
- ▲ Stepped jaws with horizontal and vertical 120° prism
- ▲ Optional material stop can be used on both sides
- ▲ N = Stroke with handle clamping

HSG





80 893 ...

A	A1	B	C	D	E	F	G	H	N	WT	
mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	kg	
100	132	0 - 100	36	35	71	211	342	4	1,5	6,1	**101**
125	156	0 - 133	44	40	84	274	405	4	1,5	11,7	**126**

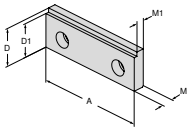
Vice guide

System accessories 132+133
General accessories 164–183

Top jaws overview

Stepped jaw, smooth

▲ Price per piece

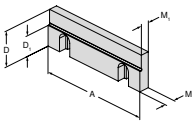




For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
	80		35	31			10,2	7,2		**80 893 082**											●
	100		35	31			10,2	7,2		**80 893 102**											●
	125		40	36			11,8	8,8		**80 893 127**											●

Stepped jaw, 17 mm

▲ Price per piece

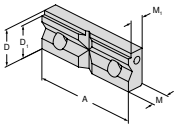




For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
	125		40	23			11,5	9,5		**80 892 244**											●

Prismatic jaw

▲ Prism jaw with horizontal and vertical prism
▲ price per piece





For clamping diameter	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
9 - 31	80		35	31			15,8	12,8		**80 893 083**											●
9 - 31	100		35	31			15,8	12,8		**80 893 103**											●
11 - 41	125		40	36			17,8	14,8		**80 893 128**											●

→ **Page 164–173**
Here you will find other matching top jaws.

System accessories overview

Workpiece stop

▲ Fixed to the top section, either on the left, the right, or at both ends. The length adjustment can be performed quickly and accurately using a clamping screw.

HSG

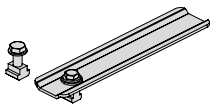


for width mm	80 893 ...
80/100/125	265

Guide rail

▲ Helps prevent accidents
▲ Prevents unwanted movement, lifting and dragging

HSG





for width mm	80 893 ...
80/100/125	260

Clamping set

▲ A movable support with an eccentric swivel plate allows any clamping position to be adopted on machine tables with different T-slot arrangements. The inside slot of the vice body provides an additional fixing option, just as with the **80 893 260** guide rail.
▲ Price per Set

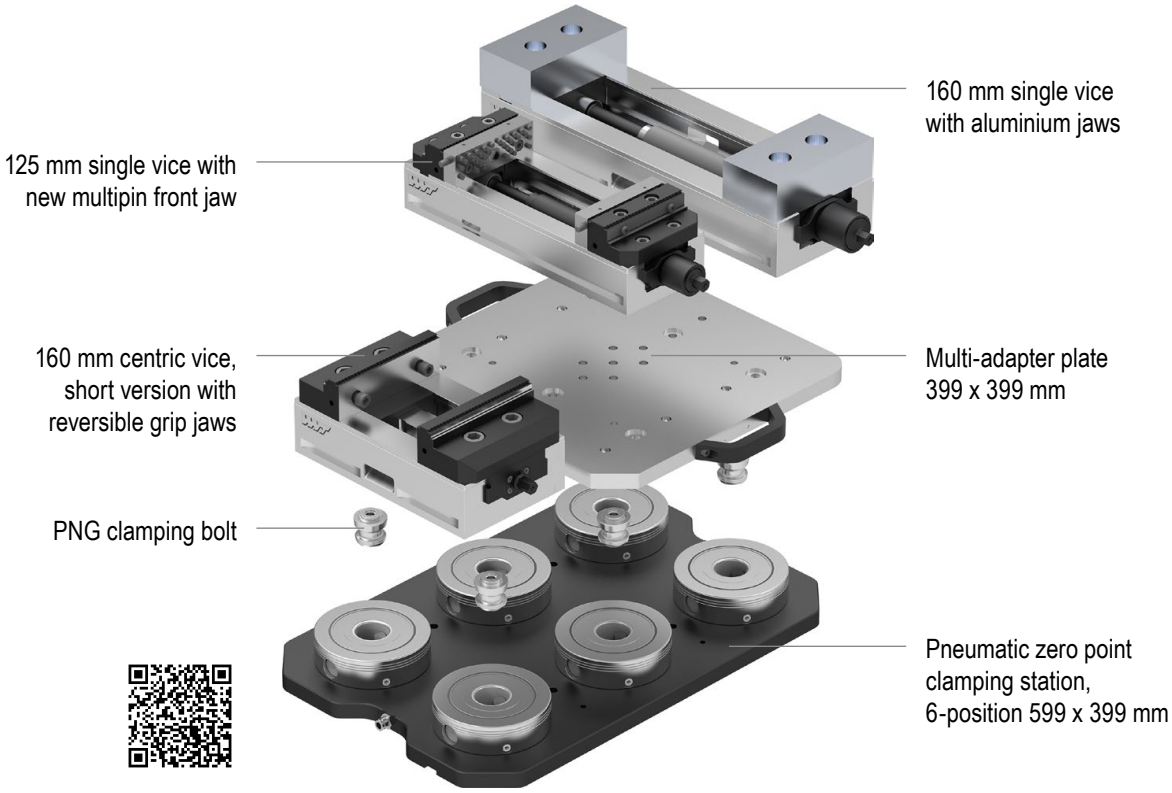
Scope of supply:
2 positioning clamps incl. clamping accessories.

HSG



for width mm	for slot width mm	80 893 ...
80/100/125	12/14	250

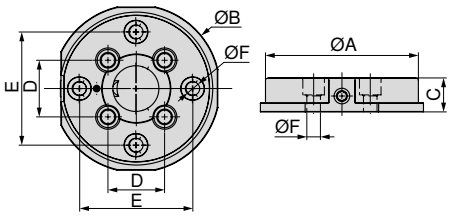
Overview of MNG and PNG zero point clamping system



MNG – Base plate, round

- ▲ MNG – Mechanical Zero-point Clamping System
- ▲ hardened and ground
- ▲ Repeatability ≤ 0.01 mm
- ▲ Insertion force 20 kN
- ▲ Torque 30 Nm

MNG





80 899 ...

A mm	B mm	C ±0,005 mm	D mm	E mm	F H7 mm	WT kg	
135	148	30	50	100	12	3,5	**125**

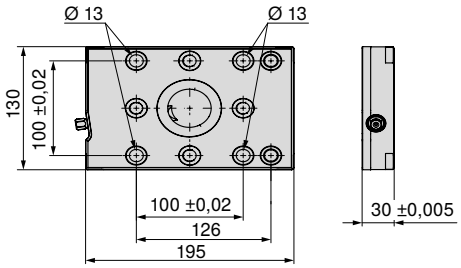
Vice guide

System accessories 144+145 General accessories 164–183

MNG – Base plate, rectangular

- MNG – Mechanical Zero-point Clamping System
- Insertion force 20 kN on the clamping bolt
- Stainless and vacuum-hardened
- Repeatability ≤ 0.01 mm
- Tightening torque 30 Nm

MNG





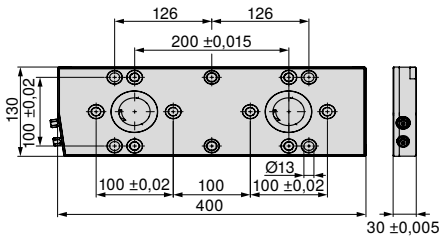
80 899 ...

Size	WT kg	
195x130 mm	5,2	**65000**

MNG – Base plate, rectangular 2-location

- MNG – Mechanical Zero-point Clamping System
- Insertion force 20 kN on the clamping bolt
- Stainless and vacuum-hardened
- Repeatability ≤ 0.01 mm
- Tightening torque 30 Nm

MNG





80 899 ...

Size	WT kg	
400x130 mm	11	**65100**

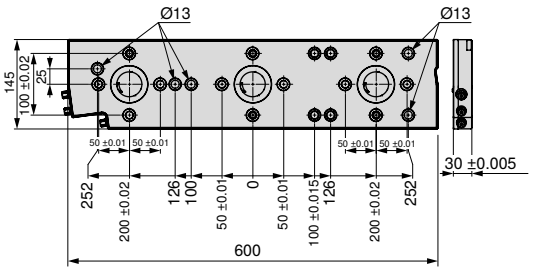
Vice guide

System accessories	144+145	General accessories	164–183
MNG clamping options	146–148		

MNG – Base plate, rectangular 3-location

- ▲ MNG – Mechanical Zero-point Clamping System
- ▲ Insertion force 20 kN on the clamping bolt
- ▲ Stainless and vacuum-hardened
- ▲ Repeatability ≤ 0.01 mm
- ▲ Tightening torque 30 Nm

MNG





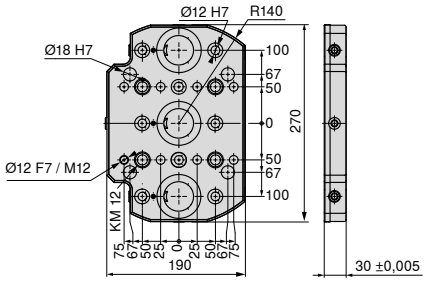
80 899 ...

Size	WT kg	
600x145 mm	18	**65200**

MNG – 3 location base plate, 270 x 190 mm

- ▲ MNG – Mechanical Zero-point Clamping System
- ▲ Clamping force 20 kN on each location bolt
- ▲ 4 x M12 mounting holes for T-slot nuts 50 mm spread
- ▲ 8 x dowel bushes Ø12 F7 / M12
- ▲ 4 x dowel holes Ø18 H7 for positioning

MNG





80 899 ...

Size	WT kg	
270x190 mm	9	**230**

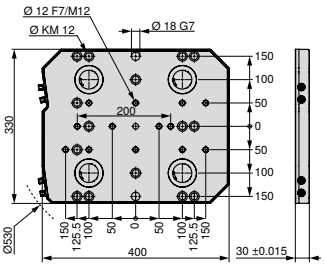
Vice guide

System accessories	144+145	General accessories	164–183
MNG clamping options	146–148		

MNG – 4 location base plate, 330 x 400 mm

- ▲ MNG – Mechanical Zero-point Clamping System
- ▲ Stainless and vacuum-hardened
- ▲ Insertion force 20 kN on the clamping bolt
- ▲ 15 x mounting holes for M12, for T-slot spacing 50, 63, 100, 125 mm
- ▲ 13 x mating holes Ø12 F7/M12
- ▲ 2 x mating holes Ø18 G7 for positioning
- ▲ 1 x mating holes Ø12 F7 for positioning

MNG





80 899 ...

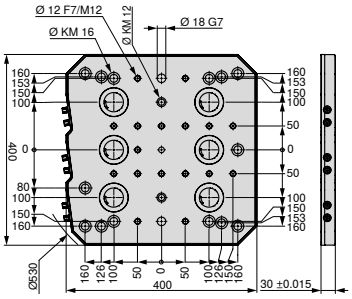
Size	WT kg	
330x400 mm	28	**63000**[1)]

1) Not ex-stock

MNG – 6 location base plate, 400 x 400 mm

- ▲ MNG – Mechanical Zero-point Clamping System
- ▲ Stainless and vacuum-hardened
- ▲ Insertion force 20 kN on the clamping bolt
- ▲ 14 x mounting holes for M16, for T-slot spacing 63, 80, 100, 125 mm
- ▲ 2 x mounting holes for M12
- ▲ 17 x mating holes Ø12 F7/M12
- ▲ 2 x mating holes Ø18 G7 for positioning
- ▲ 1 x mating holes Ø12 F7 for positioning

MNG





80 899 ...

Size	WT kg	
400x400 mm	33	**63100**[1)]

1) Not ex-stock

Vice guide

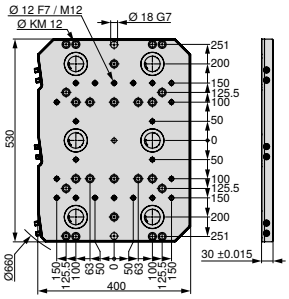
System accessories 144+145 General accessories 164–183

17

MNG – 6 location base plate, 400 x 530 mm

- ▲ MNG – Mechanical Zero-point Clamping System
- ▲ Stainless and vacuum-hardened
- ▲ Insertion force 20 kN on the clamping bolt
- ▲ 24 x mounting holes for M12, for T-slot spacing 63, 100, 125 mm
- ▲ 21 x mating holes Ø12 F7/M12
- ▲ 2 x mating holes Ø18 G7 for positioning
- ▲ 1 x mating holes Ø12 F7 for positioning

MNG





80 899 ...

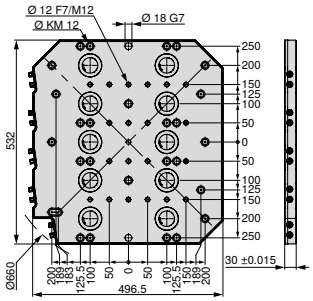
Size	WT kg	
400x530 mm	45	**63200**[1)]

1) Not ex-stock

MNG – 10 location base plate, 496.5 x 532 mm

- ▲ MNG – Mechanical Zero-point Clamping System
- ▲ Stainless and vacuum-hardened
- ▲ Insertion force 20 kN on the clamping bolt
- ▲ 27 x mounting holes M12 for T-slot spacing 50, 63, 100, 125 mm and star slots 45°
- ▲ 20 x mating holes Ø12 F7/M12
- ▲ 2 x mating holes Ø18 G7 for positioning
- ▲ 1 x mating holes Ø12 F7 for positioning

MNG





80 899 ...

Size	WT kg	
497x532 mm	54	**63300**[1)]

1) Not ex-stock

Vice guide

System accessories 144+145 General accessories 164–183

MNG – Centering Pin

▲ MNG – Mechanical Zero-point Clamping System

MNG



$D_{1\ n6}$ mm	$D_{2\ h6}$ mm	80 899 ...
12	30	**61700**
12	32	**61800**
12	50	**61900**

MNG – Alignment Pin

▲ MNG – Mechanical Zero-point Clamping System

MNG



$D_{1\ n6}$ mm	$D_{2\ h6}$ mm	80 899 ...
18	14	**607**
18	18	**608**
18	20	**609**
18	22	**610**

MNG – Clamping Screw Set for T-slot

▲ MNG – Mechanical Zero-point Clamping System

Scope of supply:
Clamping screw and T-Nuts

MNG



for slot width mm	G	80 899 ...
12	M8	**63800**
12	M10	**63400**
14	M8	**63900**
14	M12	**63500**[1)]
16	M8	**64000**
16	M12	**63600**[1)]
18	M8	**64100**
18	M12	**63700**[1)]

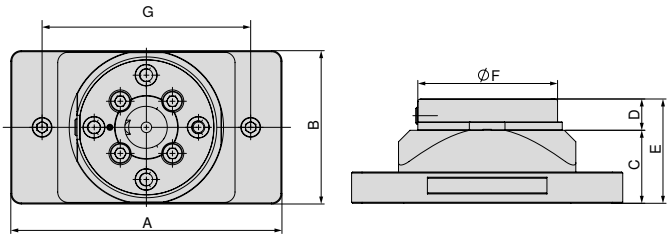
1) With low head screws

MNG – Console with zero point clamping module

▲ MNG – Mechanical Zero-point Clamping System
▲ universal application on all machine tables
▲ Clamping force 20 kN

Scope of supply:
Plate incl. MNG round clamping module

MNG



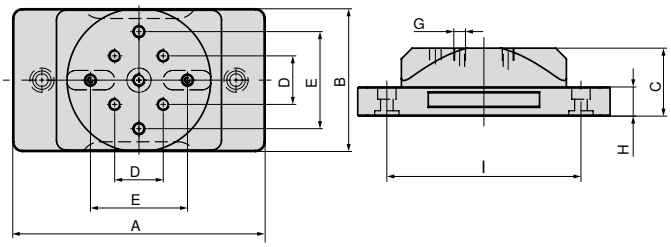


80 899 ...

A	B	C	D	E	F	G	WT	
mm	mm	mm	mm	mm	mm	mm	kg	
260	147	70	30	100	135	200	8,9	**425**

MNG – Console

▲ MNG – Mechanical Zero-point Clamping System
▲ universal application on all machine tables
▲ Material: Aluminum, hard anodized





80 899 ...

A	B	C	D	E ±0,02	G	H	I	WT	
mm	mm	mm	mm	mm		mm	mm	kg	
260	147	70	50	100	M12	30	200	5,5	**420**

Vice guide

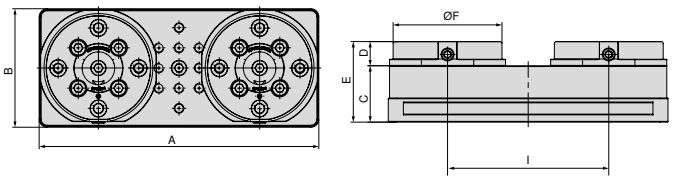
System accessories 144+145 General accessories 164–183

MNG – Double console with zero point clamping module

▲ MNG – Mechanical Zero-point Clamping System
▲ universally applicable on all machine tables
▲ Material: Aluminium Hard Anodised

Scope of supply:
Console including MNG round clamping module

MNG



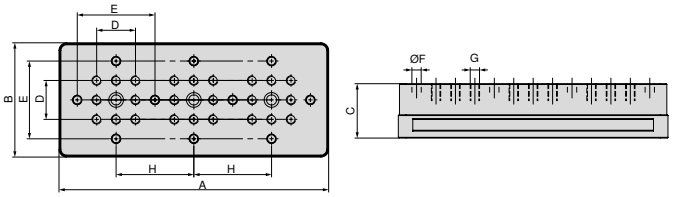


80 899 ...

A	B	C	D	E	F	I	WT	
mm	mm	mm	mm	mm	mm	mm	kg	
347	147	70	30	100	135	200	16,5	**435**

MNG – Double console

▲ MNG – Mechanical Zero-point Clamping System
▲ universally applicable on all machine tables
▲ Material: Aluminium Hard Anodised





80 899 ...

A	B	C	D	E ±0,02	F F7	G	H	WT	
mm	mm	mm	mm	mm	mm		mm	kg	
347	147	70	50	100	12	M12	100	9,3	**430**

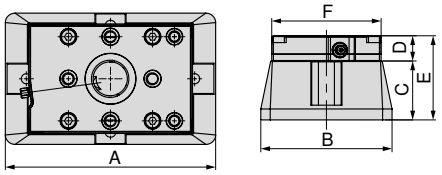
Vice guide

System accessories 144+145
General accessories 164–183

MNG – Console with zero point clamping module

▲ MNG – Mechanical Zero-point Clamping System

MNG



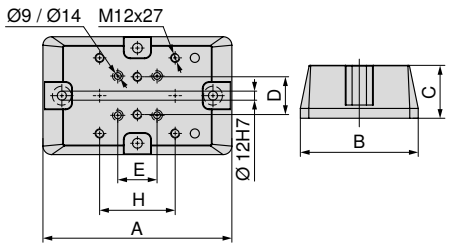


A	B	C	D	E	F	80 878 ...
mm	mm	mm	mm	mm	mm	
250	156	70	30	100	130	**54000**

Console

▲ MNG – Mechanical Zero-point Clamping System

ZSG 4





A	B	C	D	E	H	for	80 878 ...
mm	mm	mm	mm	mm	mm		
250	156	70	50	52	100	ZSG 4 - 80 L = 130 mm + 190 mm / ZSG 4 - 125 L = 160 mm	**54100**
320	197	100	50	50	100	ZSG 4 - 160 L = 280 mm	**54400**
340	162	100	50	50	100	ZSG 4 - 125 L = 235 mm / 300 mm	**54300**

MNG – Assembly set for console

▲ MNG – Mechanical Zero-point Clamping System



for	80 878 ...
ZSG-4.125/160.L235-L280	**54500**
ZSG-4.80.L130-L190	**54200**

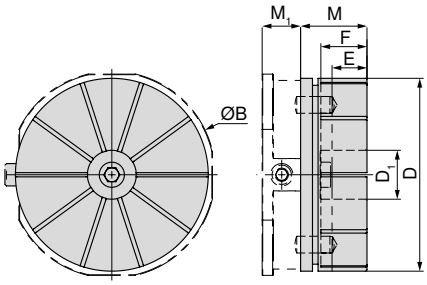
Vice guide

System accessories 144+145 General accessories 164–183

MNG – Aluminum form chuck

▲ MNG – Mechanical Zero-point Clamping System
▲ for incorporation of forms for 2nd op machining

Scope of supply:
Collet with positioning pins, without locating bolts





80 899 ...

B	D	D_1	E	F	M	M_1	
mm	mm	mm	mm	mm	mm	mm	
148	138	35	22	33	47,5	27,5	**500**



Machineable Alu chuck to suit round MNG



Machineable Alu chuck to suit round MNG with clamped workpiece

Available on request



Grid plate



Blank plate

The maximum cutting depth E is 22 mm

Adjustable ring for MNG form collet

MNG



80 899 ...

510

Vice guide

System accessories 144+145
General accessories 164–183

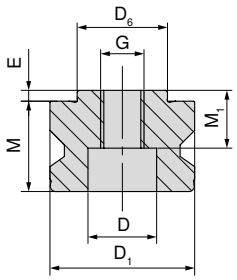
17

MNG – Pull studs

▲ MNG – Mechanical Zero-point Clamping System

Scope of supply:
with clamping screws

MNG





80 899 ...

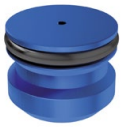
$D_{6\ h6}$ mm	$D_{1\ h6}$ mm	M mm	M_1 mm	E mm	D mm	G
25	40	27	17	3	19	M12

025

MNG – Bungs

▲ MNG – Mechanical Zero-point Clamping System

MNG



80 899 ...

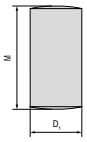
D_1 mm
40

040

MNG – Dowel Set

▲ MNG – Mechanical Zero-point Clamping System
▲ for ESG mini 4V tower and direct workpiece clamping
▲ Price per 2 Pieces

MNG





80 899 ...

$D_{1\ m6}$ mm	M mm
12	24

120

MNG – Sealing plug with O-ring

▲ MNG – Mechanical Zero-point Clamping System

MNG



80 899 ...

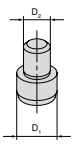
G
M12

126

MNG – positioning pin set

▲ MNG – Mechanical Zero-point Clamping System
▲ for ESG mini and direct workpiece clamping
▲ Price per 2 Pieces

MNG





80 899 ...

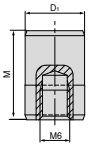
for width mm	D_1 mm	D_2 mm
65	12	8

128

MNG – indexing bolt

▲ MNG – Mechanical Zero-point Clamping System

MNG





D_1 mm	M mm	80 899 ...
12	18	51500

MNG – Clamping Screw Set for T-slot

▲ MNG – Mechanical Zero-point Clamping System

Scope of supply:
Clamping screw and T-Nuts

MNG



for slot width mm	G	80 899 ...
12	M8	63800
12	M10	63400
14	M8	63900
14	M12	63500 [1]
16	M8	64000
16	M12	63600 [1]
18	M8	64100
18	M12	63700 [1]

1) With low head screws

MNG – Clamping set for 14 mm T-slot

▲ MNG – Mechanical Zero-point Clamping System
▲ T-nuts are modified for 63 mm slot pitch
▲ Price per 2 Pieces

MNG



for slot width mm	A mm	80 899 ...
14	63	614

MNG – Alignment/centering set for T-slots

▲ MNG – Mechanical Zero-point Clamping System
▲ A = groove spacing

Scope of supply:
1 Terminal block, 2 T-nuts, 2 screws, 2 washers for width 12 mm, without clamping strip!

MNG



A mm	for slot width mm	80 899 ...
50	12	012 [1]
50	14	014
50	16	016
50	18	018
100	12	81200
100	14	81400
100	16	81600
100	18	81800

1) For 12 mm width excluding clamping strip

MNG – Round claw

▲ MNG – Mechanical Zero-point Clamping System
▲ Two pieces contained in set
▲ Price per 2 pieces

MNG



80 899 ...
300

MNG – Replacement clamping unit

▲ MNG – Mechanical Zero-point Clamping System
▲ Three-part set
▲ for MNG round

MNG



80 899 ...
MNG 026

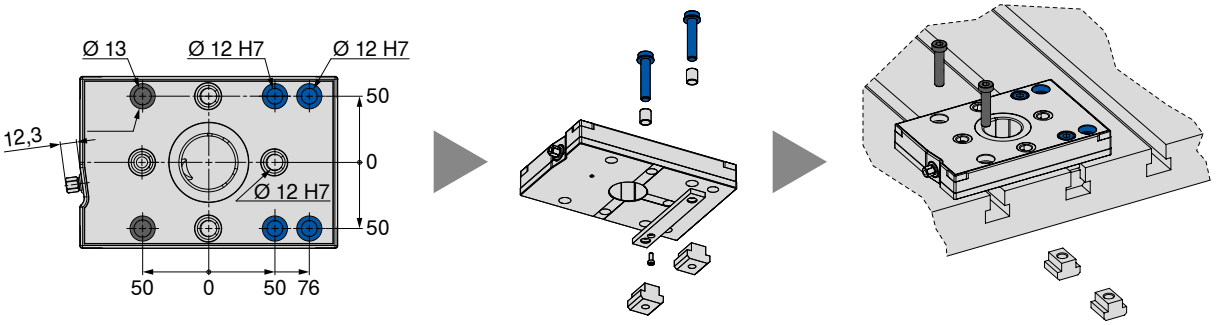
MNG clamping options

MNG – Base plate, rectangular

Mounting:

- 2 x M12 low head screws
- 1 x Alignment and centring set

→ **Page 148**
Here you will find the suitable screws.

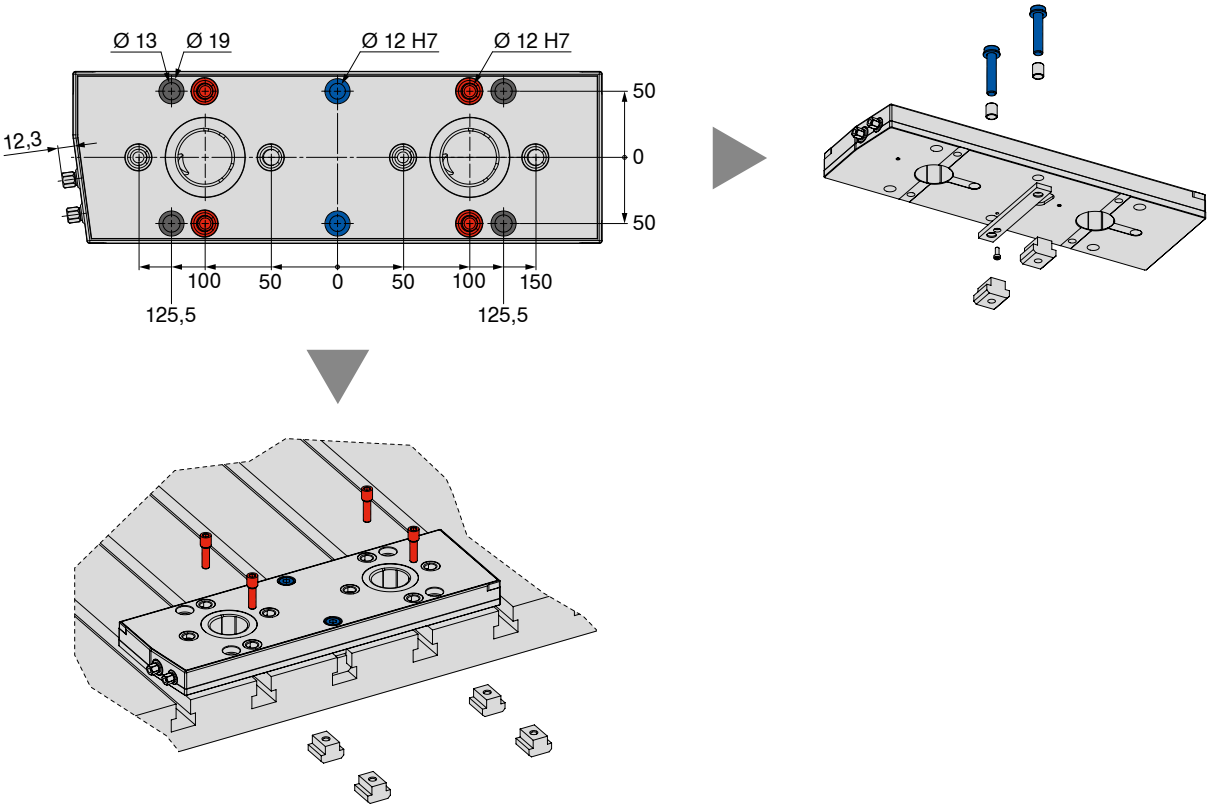


MNG – Base plate, rectangular 2-location

Mounting:

- 4 x M12 low head screws
- 1 x Alignment and centring set
- 4 x M8 MNG special screws

→ **Page 148**
Here you will find the suitable screws.



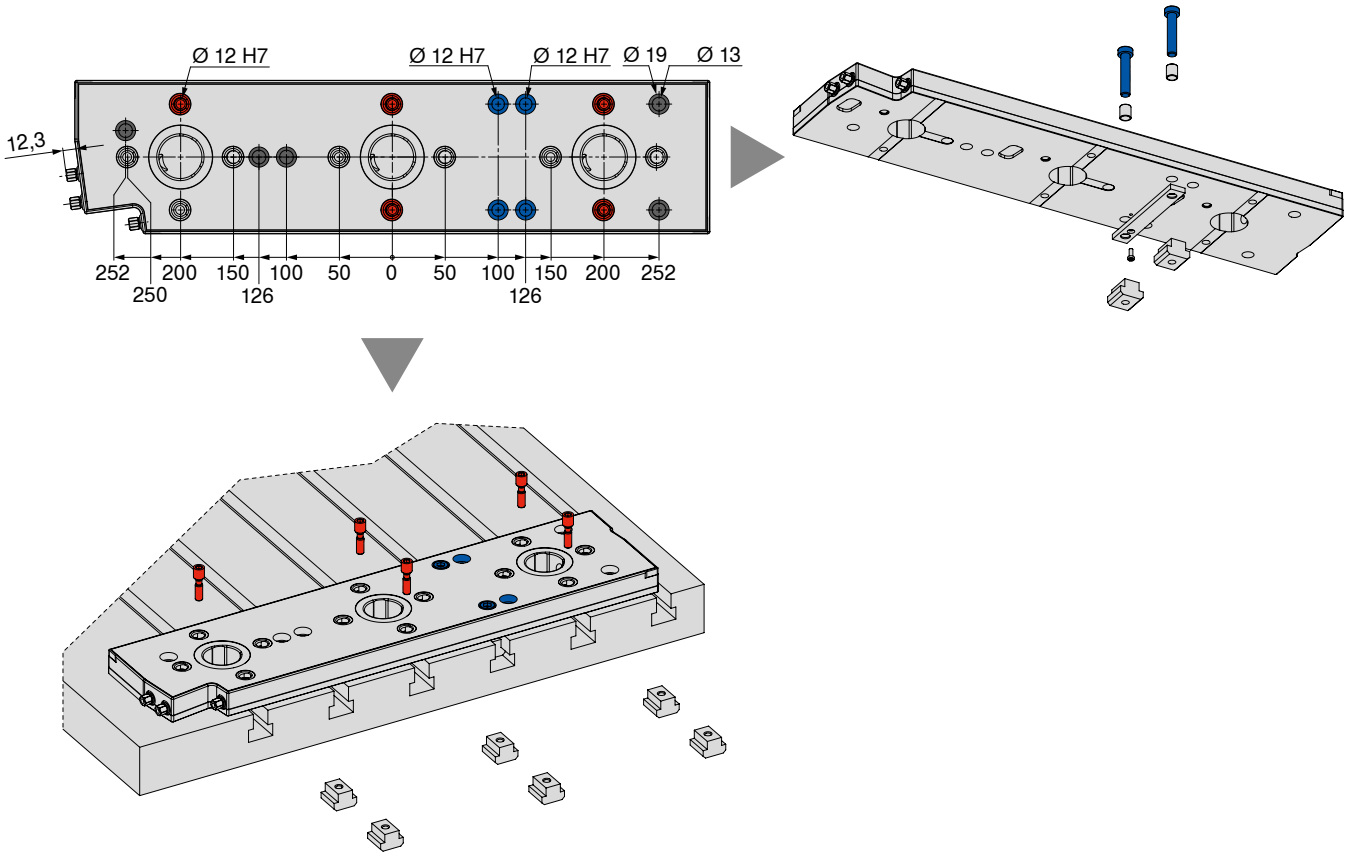
MNG clamping options

MNG – Base plate, rectangular 3-location

Mounting:

- 5 x M12 low head screws
- 1 x Alignment and centring set
- 5 x M8 MNG special screws

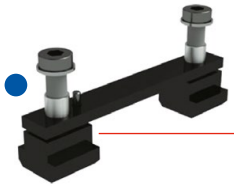
→ **Page 148**
Here you will find the suitable screws.



MNG clamping options

	T-slot table – spacing of 126 mm / 63 mm											
	12 mm			14 mm			16 mm			18 mm		
	● Alignment and centring set spacing 100 mm 80 899 81200	● Clamping set with M10 low head screws 80 899 63400	● Clamping set with M8 MNG special screws 80 899 63800	● Alignment and centring set spacing 100 mm 80 899 81400	● Clamping set with M12 low head screws 80 899 63500	● Clamping set with M8 MNG special screws 80 899 63900	● Alignment and centring set spacing 100 mm 80 899 81600	● Clamping set with M12 low head screws 80 899 63600	● Clamping set with M8 MNG special screws 80 899 64000	● Alignment and centring set spacing 100 mm 80 899 81800	● Clamping set with M12 low head screws 80 899 63700	● Clamping set with M8 MNG special screws 80 899 64100
MNG – Base plate, rectangular	1 x	2 x	––	1 x	2 x	––	1 x	2 x	––	1 x	2 x	––
MNG – Base plate, rectangular 2-location	1 x	4 x	––	1 x	4 x	––	1 x	4 x	––	1 x	4 x	––
MNG – Base plate, rectangular 3-location	1 x	4 x	2 x	1 x	4 x	2 x	1 x	4 x	2 x	1 x	4 x	2 x

	T-slot table – spacing of 100 mm / 50 mm											
	12 mm			14 mm			16 mm			18 mm		
	● Alignment and centring set spacing 100 mm 80 899 81200	● Clamping set with M10 low head screws 80 899 63400	● Clamping set with M8 MNG special screws 80 899 63800	● Alignment and centring set spacing 100 mm 80 899 81400	● Clamping set with M12 low head screws 80 899 63500	● Clamping set with M8 MNG special screws 80 899 63900	● Alignment and centring set spacing 100 mm 80 899 81600	● Clamping set with M12 low head screws 80 899 63600	● Clamping set with M8 MNG special screws 80 899 64000	● Alignment and centring set spacing 100 mm 80 899 81800	● Clamping set with M12 low head screws 80 899 63700	● Clamping set with M8 MNG special screws 80 899 64100
MNG – Base plate, rectangular	1 x	2 x	––	1 x	2 x	––	1 x	2 x	––	1 x	2 x	––
MNG – Base plate, rectangular 2-location	1 x	––	4 x	1 x	––	4 x	1 x	––	4 x	1 x	––	4 x
MNG – Base plate, rectangular 3-location	1 x	1 x	5 x	1 x	1 x	5 x	1 x	1 x	5 x	1 x	1 x	5 x



Alignment and centring set spacing 100 mm



Clamping set with M8 MNG special screws



Clamping set with M10 or M12 low head screws



M16 cylinder low head screw only base plate 6-face, 400 x 400 mm



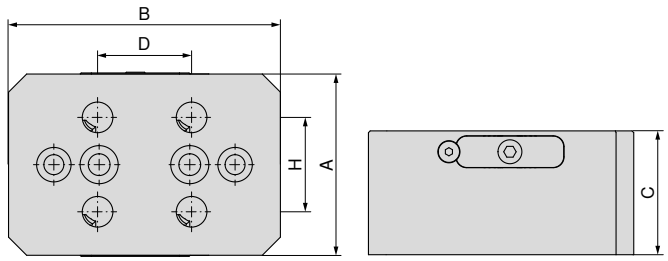
Cylinder head screw for M12 grid holes

→ **Page 145**
→ **Page 182+183**
Here you will find the articles shown above.

MNG mini – Console

- With integrated MNG mini zero point clamping system
- Order mounting bolts separately
- Material: hard-anodised aluminium

MNG mini





NEW

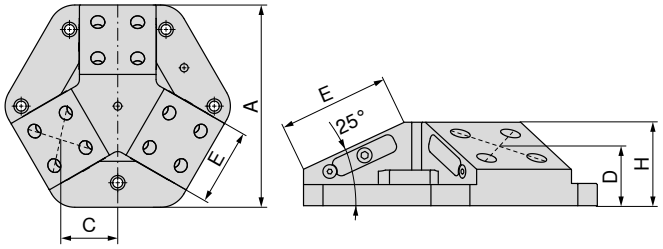
80 915 ...

A mm	B mm	C mm	D mm	H mm	
100	150	70	52	52	**57000**

MNG mini – Three-sided pyramid

- Incl. 3 x MNG mini zero point clamping systems
- Order mounting bolts separately
- Material: hard-anodised aluminium

MNG mini





NEW

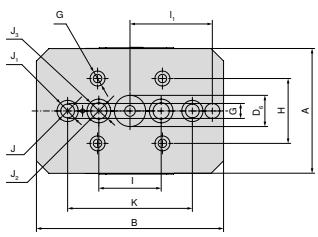
80 915 ...

A mm	C mm	D mm	E mm	H mm	
264	86,68	53,87	100	75	**58000**

Suitable for: ESG 5 – 80 L-130 / ZSG 4 – 80 L-130 / ZSG mini – 70 L-80 / ZSG mini – 70 L-100

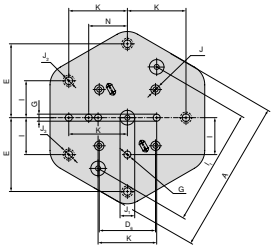
MNG mini underside dimensions

Console



A mm	B mm	$D_{6\ H7}$ mm	G_{H7} mm	H mm	I mm	$I_{1\ \pm0.015}$ mm	J mm	J_1 mm	J_2 mm	J_3 mm	$K_{\pm0.015}$ mm
100	150	25	12	52	50	66	11	17	13	19	100

Three-sided pyramid

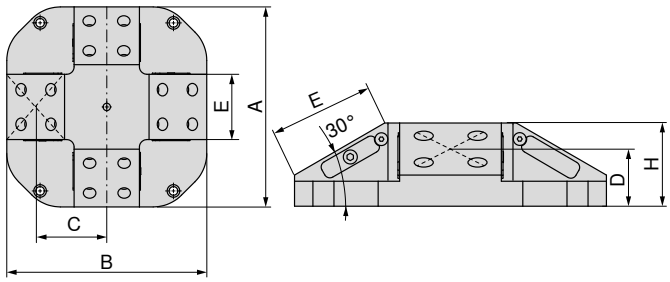


A mm	$D_{6\ \pm0.015}$ mm	E mm	G_{H7} mm	I mm	$I_{1\ \pm0.015}$ mm	J_{H7} mm	$J_{1\ H7}$ mm	J_2 mm	J_3 mm	K mm	$N_{\pm0.015}$ mm
264	96	126	12	63	200	16	25	13	19	100	66

MNG mini – Four-sided pyramid

- Incl. 4 x MNG mini zero point clamping systems
- Order mounting bolts separately
- Material: hard-anodised aluminium

MNG mini





NEW

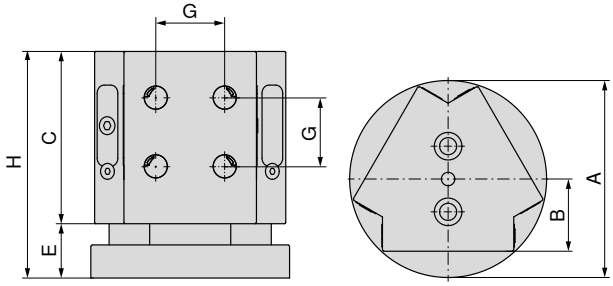
80 915 ...

A	B	C	D	E	H	
mm	mm	mm	mm	mm	mm	
300	300	106,7	55	100	80	**57500**

MNG mini – Triangular tombstone

- Incl. 3 x MNG mini zero point clamping systems
- Order mounting bolts separately
- Material: hard-anodised aluminium

MNG mini





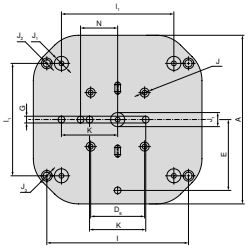
NEW

80 915 ...

A	B	C	E	G	H	
mm	mm	mm	mm	mm	mm	
148	55	130	41	52	171	**51700**

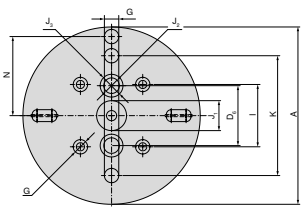
Suitable for: ESG 5 – 80 L-130 / ZSG 4 – 80 L-130 / ZSG mini – 70 L-80 / ZSG mini – 70 L-100

MNG mini underside dimensions



Four-sided pyramid

A	$D_{6\ \pm0.015}$	E	G_{H7}	I	$I_{1\ \pm0.015}$	J_{H7}	$J_{1\ H7}$	J_2	J_3	$K_{\pm0.015}$	$N_{\pm0.015}$
mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
300	96	126	12	252	200	16	25	13	19	100	66



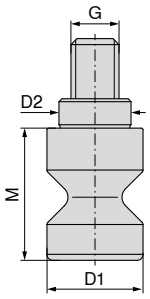
Triangular tombstone

A	D_6	G_{H7}	$I_{\pm0.015}$	$J_{1\ H7}$	J_2	J_3	$K_{\pm0.015}$	$N_{\pm0.015}$
mm	mm	mm	mm	mm	mm	mm	mm	mm
148	50	12	52	25	13	19	100	66

MNG mini mounting bolt set

Scope of supply:
Set contains four mounting bolts

MNG mini





NEW

$D_{1\ h6}$ mm	$D_{2\ h6}$ mm	M mm	G mm	TQX Nm	Clamping force kN	80 915 ...
16	12	22	M8	18	15	**51600**

Clamping Screw Set for T-slot for MNG mini

Scope of supply:
Clamping screw and T-Nuts

MNG mini



NEW

for slot width mm	G	80 915 ...
12	M10	**61200**
14	M12	**61400**
16	M12	**61600**
18	M12	**61800**

Alignment/centering set for T-slots

▲ MNG – Mechanical Zero-point Clamping System
▲ A = groove spacing

Scope of supply:
1 Terminal block, 2 T-nuts, 2 screws, 2 washers for width 12 mm, without clamping strip!

MNG mini



NEW

A mm	for slot width mm	80 915 ...
100	12	**81200**
100	14	**81400**
100	16	**81600**
100	18	**81800**

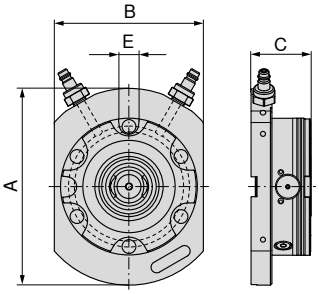
1-position clamping station

- ▲ PNG – Pneumatic zero point clamping system
- ▲ Insertion force 8 kN
- ▲ Insertion force with turbo 28 kN
- ▲ Unlocking pressure 6 bar
- ▲ Air connection G 1/8

Scope of supply:

Clamping station, fixing clamps, sealing nipple, pneumatic plug connections, dust covers, operating instructions; without clamping bolt, without indexing bolt

PNG





80 809 ...

A	B	C	E_{H7}	WT
mm	mm	mm	mm	kg
198	150	60	20	7

01100

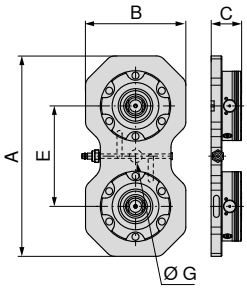
2-position clamping station, 399 x 199 mm

- ▲ PNG – Pneumatic zero point clamping system
- ▲ Insertion force 16 kN
- ▲ Unlocking pressure 6 bar
- ▲ Air connection G 1/8

Scope of supply:

Clamping station, fixing clamps, sealing nipple, pneumatic plug connections, dust covers, operating instructions; without clamping bolt, without indexing bolt

PNG





80 809 ...

A	B	C	E	G_{H7}	WT
mm	mm	mm	mm	mm	kg
399	199	60	200	25	16,9

02100

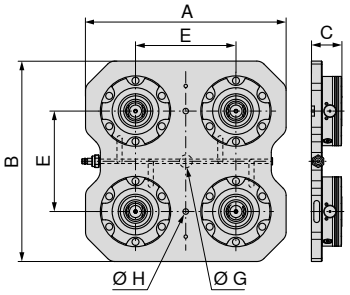
4-position clamping station, 399 x 399 mm

- ▲ PNG – Pneumatic zero point clamping system
- ▲ Insertion force 32 kN
- ▲ Unlocking pressure 6 bar
- ▲ Air connection G 1/8

Scope of supply:

Clamping station, fixing clamps, sealing nipple, pneumatic plug connections, dust covers, operating instructions; without clamping bolt, without indexing bolt

PNG





80 809 ...

A	B	C	E	G_{H7}	H	WT
mm	mm	mm	mm	mm	mm	kg
399	399	60	200	25	11	35,7

04100

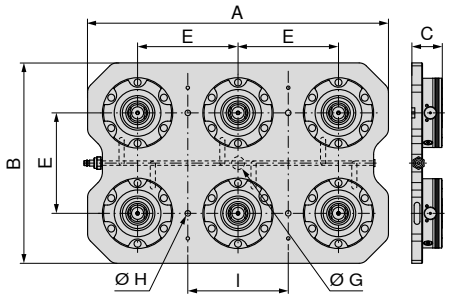
6-position clamping station, 599 x 399 mm

- ▲ PNG – Pneumatic zero point clamping system
- ▲ Insertion force 48 kN
- ▲ Unlocking pressure 6 bar
- ▲ Air connection G 1/8

Scope of supply:

Clamping station, fixing clamps, sealing nipple, pneumatic plug connections, dust covers, operating instructions; without clamping bolt, without indexing bolt

PNG





80 809 ...

A	B	C	E	G_{H7}	H	I	WT
mm	mm	mm	mm	mm	mm	mm	kg
599	399	60	200	25	11	200	54,4

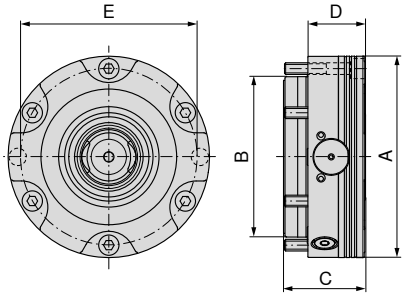
06100

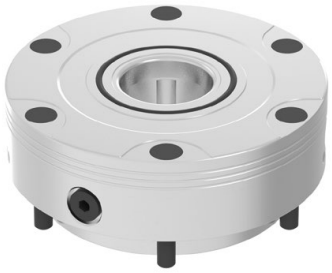
PNG – Zero point clamping module PNG.SM.138

- ▲ PNG – Pneumatic zero point clamping system
- ▲ Insertion force 8 kN
- ▲ Insertion force with turbo 28 kN
- ▲ Unlocking pressure 6 bar
- ▲ Air connection G 1/8
- ▲ Repeatability 0.005

Scope of supply:
Clamping module, fixing screws, O-rings, cover caps, operating instructions; without clamping bolts

PNG





80 809 ...

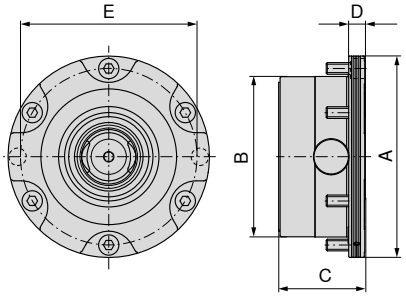
A mm	B mm	C mm	D mm	E mm	G	WT kg	
138	110	55,7	39	121	G1/8"	4,4	**10100**

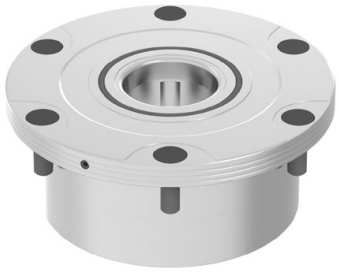
PNG – Zero point clamping system PNG.SM.T.138

- ▲ PNG – Pneumatic zero point clamping system
- ▲ Insertion force 7 kN
- ▲ Insertion force with turbo 24 kN
- ▲ Unlocking pressure 6 bar
- ▲ Air connection G 1/8
- ▲ Repeatability 0.005

Scope of supply:
Clamping module, fixing screws, O-rings, cover caps, operating instructions; without clamping bolts

PNG





80 809 ...

A mm	B mm	C mm	D mm	E mm	G	WT kg	
138	110	59	11	121	G1/8"	3,5	**12100**

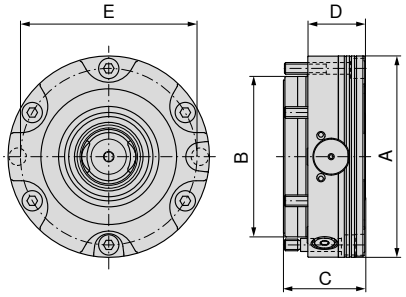
PNG – Zero point clamping module PNG.SM.V.138

- ▲ PNG – Pneumatic zero point clamping system
- ▲ Insertion force 8 kN
- ▲ Insertion force with turbo 28 kN
- ▲ Unlocking pressure 6 bar
- ▲ Air connection G 1/8
- ▲ Repeatability 0.005

Scope of supply:

Clamping module, fixing screws, dowel screw, O-rings, cover caps, operating instructions; without clamping bolts, without indexing bolt

PNG





80 809 ...

A mm	B mm	C mm	D mm	E mm	G	WT kg	
138	110	55,7	39	121	G1/8"	4,4	**11100**

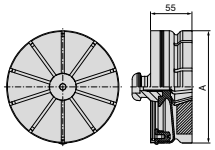
PNG – Aluminium form collet

- ▲ PNG – Pneumatic zero point clamping system
- ▲ Max. clamping force 50 kN
- ▲ Repeatability 0.005
- ▲ Clamping stroke 0.5 mm
- ▲ Aluminium

Scope of supply:

Aluminium form collet, adjustment ring, clamping bolt, indexing bolt, operating instructions

PNG





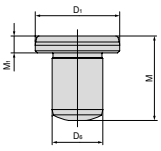
80 809 ...

A mm	WT kg	
149	1,5	**07600**

PNG – indexing bolt

- ▲ PNG – Pneumatic zero point clamping system

PNG



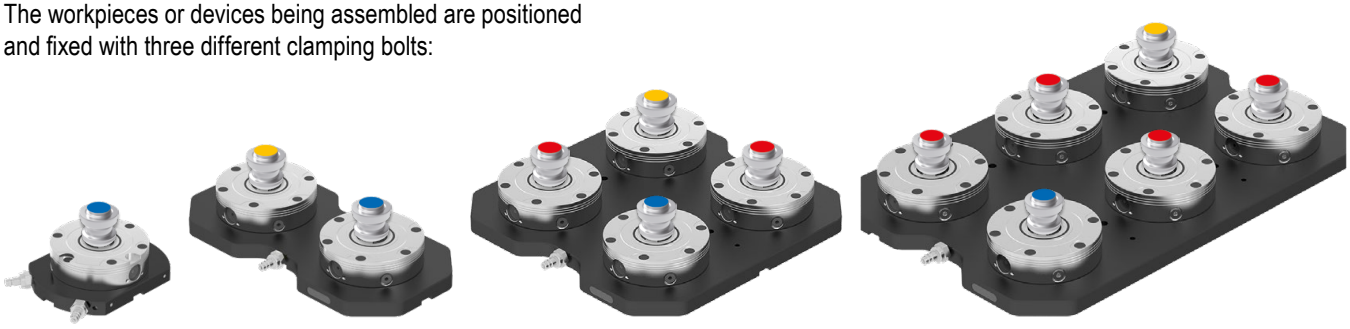


80 809 ...

$D_{1\ h5}$ mm	M mm	M_1 mm	$D_{6\ m6}$ mm	
20	20	4	12	**073**

Assembly – Clamping bolts

The workpieces or devices being assembled are positioned and fixed with three different clamping bolts:





Centring bolt
Precision-ground, used to precisely position the clamping device.



Positioning bolt
This bolt, which is also known as a diamond bolt, is only ground in an axial direction so that the system is not overloaded.



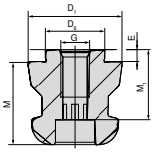
Locking bolt
Ensures that the pallets lie flat on the clamping system. Ground smaller to short taper.

PNG – clamping bolt

- ▲ PNG – Pneumatic zero point clamping system
- ▲ Three bolt types – ZB (centring bolt), PB (positioning bolt), HB (clamping bolt)
- ▲ Precision location bolts ensuring accuracy and repeatability
- ▲ Clamping force 50 kN

Scope of supply:
Incl. M10 fixing screw

PNG



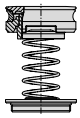


Type	$D_{6\ H6}$ mm	$D_{1\ h6}$ mm	M mm	M_1 mm	E mm	G	80 809 ...
ZB	25	40	35	27	5	M12	070
PB	25	40	35	27	5	M12	071
HB	25	40	35	27	5	M12	072

PNG – Cone seal

- ▲ PNG – Pneumatic zero point clamping system
- ▲ Protective cover for the interchangeable interface

PNG



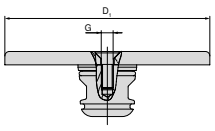


WT kg	80 809 ...
0,11	07500

PNG – protective cover

- ▲ PNG – Pneumatic zero point clamping system
- ▲ Protective cover for the interchangeable interface

PNG



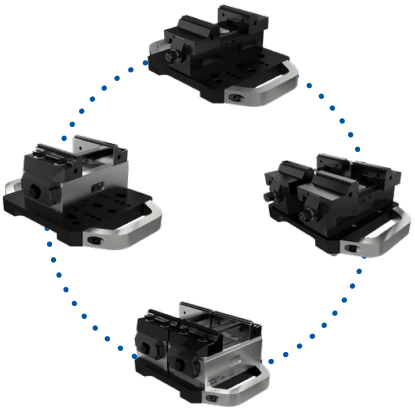


D_1 mm	G	80 809 ...
138	M8	074

Overview of multi-adapter pallets



Multi-adapter pallet 159 x 159 mm

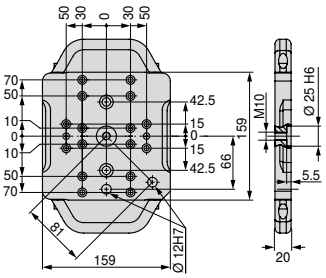


Application examples

Multi-adapter pallet 159 x 159 mm

▲ Multi-adapter pallet for mounting PNG and MNG

Scope of supply:
Incl. clamping bolts and screws
without pull studs





Size	WT kg	80 809 ...
159x159 mm	4	500

Mounting set – multi-adapter pallet, 159 x 159 mm

▲ price per set



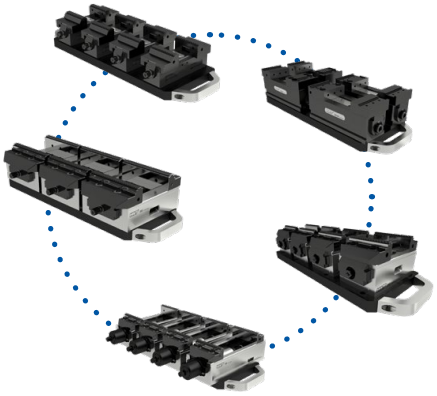
for	80 878 ...
ZSG-4.80	503

17

Overview of multi-adapter pallets



Multi-adapter pallet 399 x 159 mm



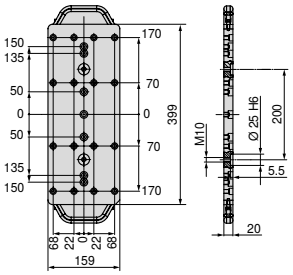
Application examples

Multi-adapter pallet 399 x 159 mm

▲ Multi-adapter pallet for mounting PNG and MNG

Scope of supply:

Incl. clamping bolts and screws
without pull studs





Size	WT kg	80 809 ...
399x159 mm	10	**501**

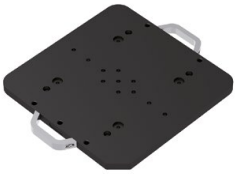
Mounting set – multi-adapter pallet 399 x 159 mm

▲ price per set

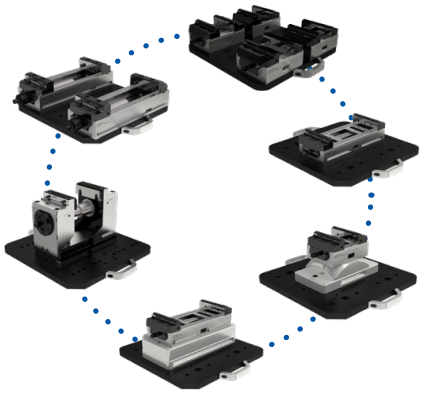


for	80 884 ...
ZSG-3.65/ZSG-4.80/125L160/ESG-4.80	**503**

Overview of multi-adapter pallets



Multi-adapter pallet 399 x 399 mm

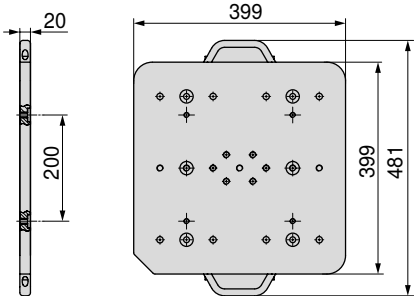


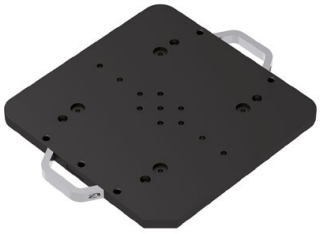
Application examples

Multi-adapter pallet 399 x 399 mm

▲ Multi-adapter pallet for mounting PNG and MNG

Scope of supply:
Incl. clamping bolts and screws
without pull studs





Size	WT kg	80 809 ...
399x399 mm	25	502

Mounting set – multi-adapter pallet 399 x 399 mm

▲ price per set



for	80 901 ...	80 898 ...	80 878 ...
ESG4.125	500		
H5G.125		500	
ZSG-4.125.L160			500
ZSG-4.125.L160.K			502
ZSG-4.125.L300			501
ZSG-4.125.L300-DK			504

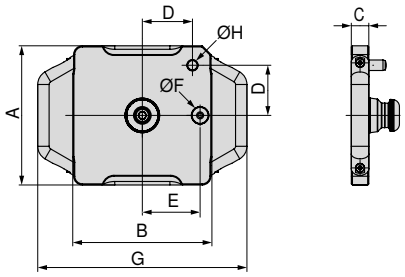
17

Steel clamping pallet, 159 x 159 mm

▲ Clamping pallet for mounting PNG
▲ Without hole pattern

Scope of supply:

Unmachined clamping pallet, PNG clamping bolt and positioning pin





80 809 ...

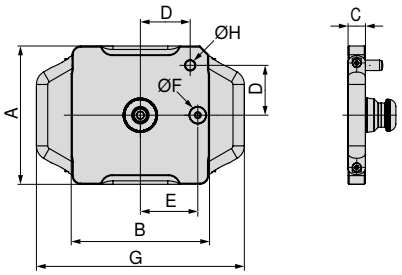
Size	A mm	B mm	C mm	D mm	E mm	F h5 mm	G mm	H m6 mm	WT kg	
159x159 mm	159	159	20	58	66	20	239	12	4,2	**080**

Aluminium clamping pallet, 159 x 159 mm

▲ Clamping pallet for mounting PNG
▲ Without hole pattern

Scope of supply:

Unmachined clamping pallet, PNG clamping bolt and positioning pin





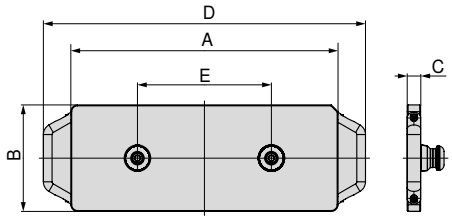
80 809 ...

Size	A mm	B mm	C mm	D mm	E mm	F h5 mm	G mm	H m6 mm	WT kg	
159x159 mm	159	159	25	58	66	20	239	12	2,2	**081**

Steel clamping pallet, 399 x 159 mm

▲ Clamping pallet for mounting PNG and MNG
▲ Without hole pattern

Scope of supply:
Unmachined clamping pallet, PNG clamping bolt and positioning pin





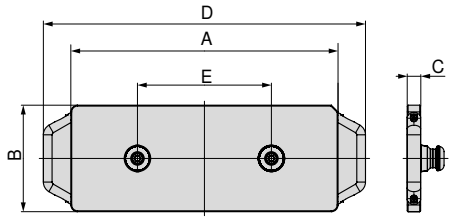
80 809 ...

Size	A	B	C	D	E	WT	
	mm	mm	mm	mm	mm	kg	
399x159 mm	399	159	20	481	200	10,6	**082**

Aluminium clamping pallet, 399 x 159 mm

▲ Clamping pallet for mounting PNG and MNG
▲ Without hole pattern

Scope of supply:
Unmachined clamping pallet, PNG clamping bolt and positioning pin





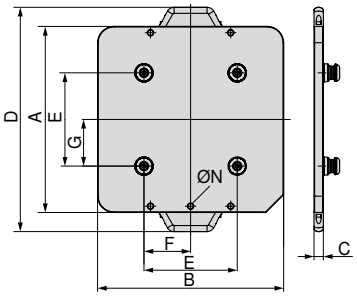
80 809 ...

Size	A	B	C	D	E	WT	
	mm	mm	mm	mm	mm	kg	
399x159 mm	399	159	25	481	200	5,1	**083**

Steel clamping pallet, 399 x 399 mm

▲ Clamping pallet for mounting PNG and MNG
▲ Without hole pattern

Scope of supply:
Unmachined clamping pallet, PNG clamping bolt and positioning pin





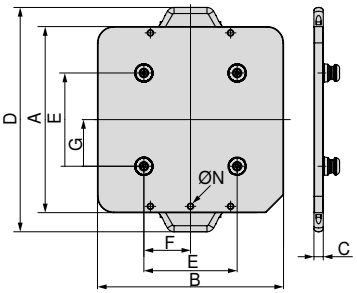
80 809 ...

Size	A	B	C	D	E	F	G	N	WT	
	mm	mm	mm	mm	mm	mm	mm		kg	
399x399 mm	399	399	20	481	200	100	100	M10	28	**084**

Aluminium clamping pallet, 399 x 399 mm

▲ Clamping pallet for mounting PNG and MNG
▲ Without hole pattern

Scope of supply:
Unmachined clamping pallet, PNG clamping bolt and positioning pin





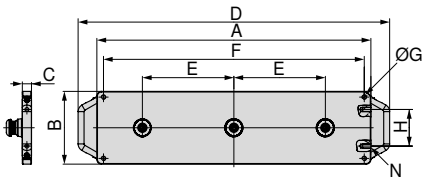
80 809 ...

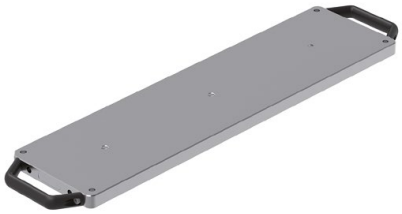
Size	A	B	C	D	E	F	G	N	WT	
	mm	mm	mm	mm	mm	mm	mm		kg	
399x399 mm	399	399	25	481	200	100	100	M10	12	**085**

Steel clamping pallet, 599 x 159 mm

▲ Clamping pallet for mounting PNG and MNG
▲ Without hole pattern

Scope of supply:
Unmachined clamping pallet, PNG clamping bolt and positioning pin





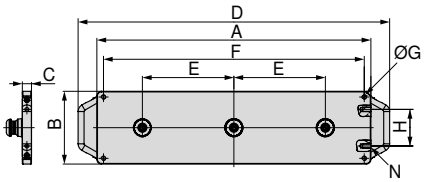
80 809 ...

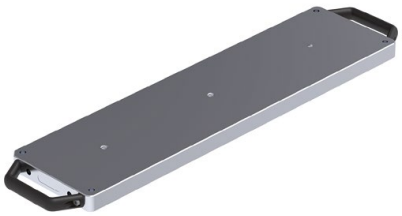
Size	A mm	B mm	C mm	D mm	E mm	F mm	G	H mm	N	WT kg	
599x159 mm	599	159	20	681	200	570	M10	80	M10	15,6	**086**

Aluminium clamping pallet, 599 x 159 mm

▲ Clamping pallet for mounting PNG and MNG
▲ Without hole pattern

Scope of supply:
Unmachined clamping pallet, PNG clamping bolt and positioning pin





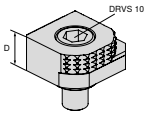
80 809 ...

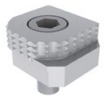
Size	A mm	B mm	C mm	D mm	E mm	F mm	G	H mm	N	WT kg	
599x159 mm	599	159	25	681	200	570	M10	80	M10	7,4	**087**

General top jaws overview

6 function indexable jaw

- ▲ 1 = Smooth, carbide coated
- ▲ 2 = Grip with 3 mm step
- ▲ 3 = Grip with 8 mm step
- ▲ 4 = Grip with 18 mm step
- ▲ 5 = Rough grip with 8 mm step
- ▲ 6 = Round grip
- ▲ M_{max} = 60 Nm
- ▲ Including fixation screws

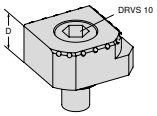


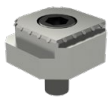


For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
			18							80 892 246	●	●	●	●			●		●	●	

6x indexable jaw, carbide grip

- ▲ 1 = Smooth
- ▲ 2 = Carbide grip
- ▲ 3 = Carbide grip with 3 mm step
- ▲ 4 = Carbide grip with 8 mm step
- ▲ 5 = Round carbide grip with 8 mm step
- ▲ 6 = Round carbide grip
- ▲ Incl. fixing screws

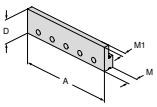




For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
			18							80 890 35300	●	●	●	●		●		●	●		

Positioning bar

- ▲ for stepped jaw with T-slot
- ▲ different clamping depths achievable through milling
- ▲ by milling the bar can be used as stop strip
- ▲ Material 1.7131 can be hardened if required
- ▲ Price per piece



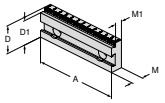


For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
	100		32				13,5	7		80 892 338	●					●					●
	125		32				13,5	7		80 892 339	●	●		●		●	●		●		●
	160		32				13,5	7		80 892 340	●			●		●	●				

General top jaws overview

Stepped jaw, grip with T-slot

- ▲ T-slot for accommodating a positioning bar
- ▲ with 6.5 mm wide contact surface suitable for workpieces with rough edges
- ▲ laser etched graduation marks (2 mm) as a positioning aid
- ▲ Price per piece

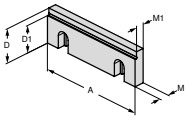




For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
	100		35	32			17,5	11,5		**80 892 341**	●					●					●
	100		35	30			17,5	11,5		**80 892 342**	●					●					●
	100		35	27			17,5	11,5		**80 892 343**	●					●					●
	125		40	37			17,5	11,5		**80 892 344**	●	●		●		●	●		●		●
	125		40	35			17,5	11,5		**80 892 345**	●	●		●		●	●		●		●
	125		40	32			17,5	11,5		**80 892 346**	●	●		●		●	●		●		●
	160		50	45			20	13,5		**80 892 348**	●			●		●	●				
	160		50	42			20	13,5		**80 892 349**	●			●		●	●				

Stepped jaw, smooth

- ▲ Price per piece

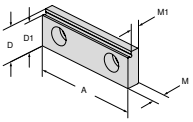




For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
	100		35	30			10	7,5		**80 892 21400**	●					●					●
	125		40	32			11,5	9,5		**80 892 21500**	●	●		●		●	●		●		●
	160		50	42			13,5	10,5		**80 892 21600**	●			●		●	●				

Stepped jaw, smooth

- ▲ Can be used as smooth or stepped jaw
- ▲ Jaw hardened and ground
- ▲ price per piece

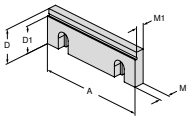




For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
	65		22	19			8	5,5		**80 895 332**		●									

Stepped jaw, coated 5 mm

- ▲ Price per piece





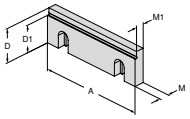
For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
	80		28	23			10	7,5		**80 878 31400**				●			●		●		

17

General top jaws overview

Stepped jaw, coated 5 mm

▲ Price per piece

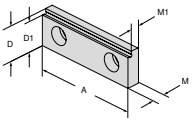




For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
	100		35	30			10	7,5		**80 892 36300**	●					●					
	125		40	35			11,5	9,5		**80 892 250**	●	●		●		●	●		●		●
	160		50	45			13,5	10,5		**80 892 36400**	●			●		●	●				

Stepped jaw, 5 mm

▲ Price per piece

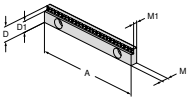




For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
	80		28	23			10	7,5		**80 878 830**				●			●		●		

Stepped jaw, Grip

▲ Price per piece

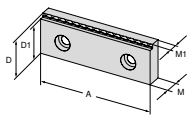




For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
	125		18	13			8	5,5		**80 898 252**		●		●					●		
	125		18	15			8	5,5		**80 898 250**		●		●					●		

Stepped jaw, grip, 3 mm

▲ Price per piece



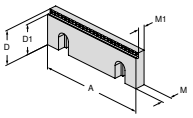


For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
	80		28	25			10	7		**80 906 30900**				●			●		●		

General top jaws overview

Stepped jaw, grip 3, 5 and 8 mm

▲ Price per piece

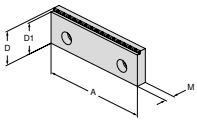




For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
	100		35	27			10	7,5		80 892 29200	●					●					●
	100		35	30			10	7,5		80 892 29000	●					●					●
	100		35	32			10	7,5		80 892 29400	●					●					●
	125		40	32			11,5	9		80 892 29300	●	●		●		●	●		●		●
	125		40	35			11,5	9		80 892 29100	●	●		●		●	●		●		●
	125		40	37			11,5	9		80 892 29500	●	●		●		●	●		●		●
	160		50	42			13,5	11		80 892 29900	●			●		●	●				
	160		50	45			13,5	11		80 892 29800	●			●		●	●				
	160		50	47			13,5	11		80 892 29700	●			●		●	●				

Stepped jaw, carbide grip 3 mm

▲ Price per piece

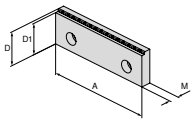




For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
	100		35	32			7,5			80 892 37600	●	●		●		●	●		●		
	125		40	37			11,5			80 892 36500	●	●		●		●	●		●		
	160		50	47			13,5			80 892 37400	●	●		●		●	●		●		

Stepped jaw, carbide grip 5 mm

▲ Price per piece

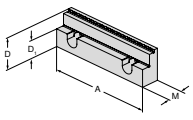




For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
	100		35	30			12			80 892 37700	●	●		●		●	●		●		
	125		40	35			13,5			80 892 37500	●	●		●		●	●		●		
	160		50	45			15,5			80 892 37300	●	●		●		●	●		●		

Stepped jaw, 18 mm with 3 mm Grip Step

▲ Price per piece



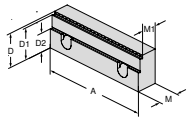


For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
	125		40	22			21,5			80 892 288	●	●		●		●	●		●		●

General top jaws overview

Stepped jaw, 18 mm with 3 mm grip step

▲ Price per piece

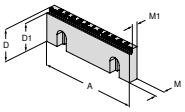




For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
	125		40	37	22		24	19		**80 907 302**	●	●		●		●	●		●		●

Stepped jaw, grip 5 mm for aluminium and plastic

▲ Price per piece

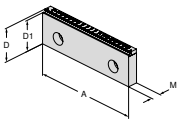


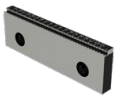


For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
	125		40	35			11,5	8		**80 892 36100**	●	●		●		●	●		●		

Stepped jaw embossed profile

▲ Price per piece
▲ suitable for LANG embossed profile





For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
	125		40	37			11,5			**80 892 36200**	●	●		●		●	●		●		

Jaw, grip

▲ Price per piece

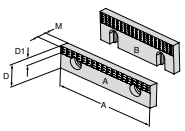


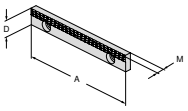


Illustration	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
A	40		22	7			7,8			**80 892 279**										●	
A	65		22	7			7,8			**80 892 280**										●	
A	90		22	7			7,8			**80 892 284**										●	
B	100		35	12			10			**80 892 21700**	●					●					●
B	125		40	14,5			11,5			**80 892 21800**	●			●		●			●		●
B	160		50	14,5			13,5			**80 892 21900**	●			●		●	●				

General top jaws overview

Top jaw, grip

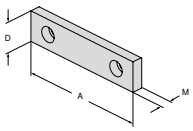
▲ Price per piece




For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
	125		18				7,8			**80 898 253**	●	●		●					●		

Ground top jaw

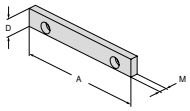
▲ Price per piece




For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
	40		22				7,7			**80 889 401**										●	
	40		35				10			**80 889 405**										●	
	65		22				7,7			**80 889 651**										●	
	65		35				10			**80 889 655**										●	
	90		22				7,7			**80 889 901**										●	
	90		35				10			**80 889 905**										●	

Ground top jaw

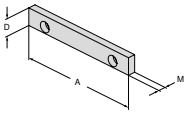
▲ Price per piece




For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
	125		18				7,6			**80 898 251**	●	●		●					●		

Top jaw, carbide coated

▲ with carbide coating
▲ Price per piece

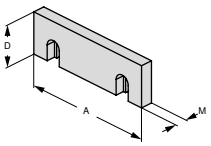



For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
	125		18				7,6			**80 898 254**	●	●		●					●		

General top jaws overview

Smooth jaw

▲ Price per piece

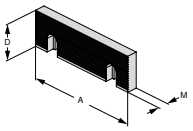




For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
	100		35				10			**80 892 20400**	●					●					●
	125		40				11,5			**80 892 20500**	●			●		●	●		●		●
	160		50				13,5			**80 892 20600**	●			●		●	●				

Jaw, profiled

▲ Price per piece

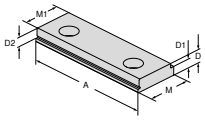




For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
	100		35				10			**80 892 20700**	●					●					●
	125		40				11,5			**80 892 20800**	●			●		●	●		●		●
	160		50				13,5			**80 892 20900**	●			●		●	●				

Grip jaw, indexable

▲ For vertical and horizontal application
▲ Price per piece

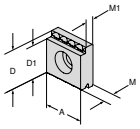




For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
	65		8	5,5	5		22	19		**80 895 340**		●					●				
	100		10,5	8	5		35	32		**80 895 343**	●					●					●

Grip jaw, indexable

▲ For vertical and horizontal application
▲ 3 point clamping
▲ Price per piece



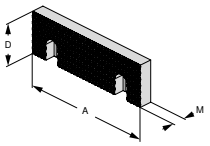


For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
65	22		22	19			8	5,5		**80 895 335**		●					●				
100	35		35	32			10,5	8		**80 895 345**	●					●					

General top jaws overview

Jaw, cut

▲ Price per piece

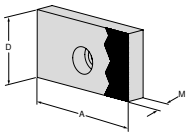




For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
	100		35				11			80 892 20100	●					●					●
	125		40				12,5			80 892 20200	●			●		●	●		●		●
	160		50				14,5			80 892 20300	●			●		●	●				

Jaw, cut

▲ Price per piece

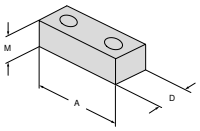




For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
	40		35				11			80 889 408										●	
	40		22				8			80 889 404										●	
	65		35				11			80 889 658										●	
	65		22				8			80 889 654										●	
	90		35				11			80 889 908										●	
	90		22				8			80 889 904										●	

Soft jaw, steel

▲ Material: 16MnCr5
▲ Only for vertical application
▲ Price per piece

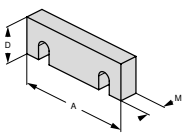




For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
	40		22				20			80 895 244										●	
	65		22				20			80 895 245		●		●			●			●	
	90		22				20			80 895 246										●	

Soft jaw, steel

▲ Material: 14NiCr14
▲ for the preparation of formed jaws
▲ Price per piece



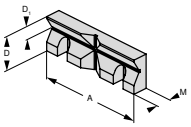


For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
	100		35				16			80 892 24700	●					●					●
	125		40				20			80 892 24800	●	●		●		●	●		●		●
	160		50				20			80 892 24900	●			●		●	●				

General top jaws overview

Prismatic jaw

▲ with horizontal and vertical prism
▲ prism horizontally and vertically ground for parallelism
▲ Price per piece

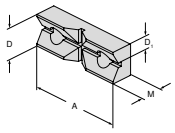




For clamping diameter	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
11 - 41	100		35	13			15,5			**80 892 26100**	●					●					●
14 - 48	125		40	16			17,5			**80 892 26200**	●	●		●		●	●		●		●
16 - 60	160		50	20			19,5			**80 892 26300**	●			●		●	●				

Prismatic jaw

▲ with horizontal and vertical prism
▲ price per piece

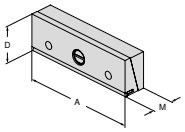




For clamping diameter	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
11 - 22	65		22	11			15			**80 895 337**		●					●				

Precision pull down jaw

▲ Pull down jaw is only for use on the movable jaw
▲ Price per piece

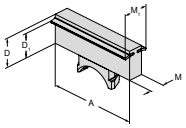




For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
	100		35				25			**80 892 370**	●										●
	125		40				25			**80 892 371**	●	●		●		●	●		●		●
	160		50				27,5			**80 892 372**	●			●		●	●				

Adapter jaws with pull down

▲ for the types NCG, NCG2, and HDG2
▲ with reciprocal pull down feather/spring jaws
▲ price per piece





For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
	100		35	28			28	45		**80 892 258**	●										
	125		40	32,5			20	35		**80 892 259**	●					●					
	160		50	42			20	35		**80 892 260**	●					●					

General top jaws overview

Multipin front jaw

▲ Price per piece

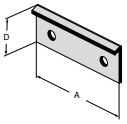
NCG | HDG 2



A mm	D mm	80 890 ...
125	40	30200

Pull down jaw with spring plate

▲ for finish machining
▲ Price per piece

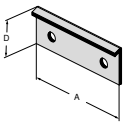




For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
	80		24							80 901 309				●			●		●		
	125		35							80 901 310				●			●		●		
	160		45							80 901 311				●			●				

Pull down jaw with spring plate

▲ for finish machining
▲ Price per piece

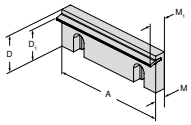




For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
	65		23							80 898 923											
	100		36							80 898 924	●					●					●
	125		41							80 898 925	●					●					●
	160		51							80 898 926	●					●					

Spring leaf pull down jaw

▲ Price per piece





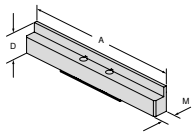
For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
	100		35	28			10	18,5		80 892 22800	●					●					●
	125		40	32,5			11,5	19		80 892 22900	●			●		●	●		●		●
	160		50	42			13,5	21		80 892 23000	●			●		●	●				

17

Workpiece supports overview

Workpiece supports, offset

▲ hardened and ground
▲ held by means of spring wedge in the baseplate
▲ Price for 2 pieces





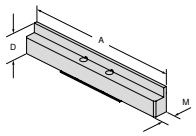
For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
	100		16				10,5			**80 890 401**	●										
	100		11				10,5			**80 890 400**	●										
	100		23				10,5			**80 890 409**	●										
	100		25,5				10,5			**80 890 411**	●										
	100		29,5				10,5			**80 890 421**	●										
	125		32,5				10,5			**80 890 395**	●										
	125		11				10,5			**80 890 390**	●										
	125		16				10,5			**80 890 391**	●										
	125		21				10,5			**80 890 392**	●										
	125		26				10,5			**80 890 393**	●										
	125		29				10,5			**80 890 394**	●										
	125		36				10,5			**80 890 396**	●										
	125		25				10,5			**80 890 422**	●										
	160		39				10,5			**80 890 454**	●										
	160		26				10,5			**80 890 452**	●										
	160		42,5				10,5			**80 890 456**	●										

For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
	125						10,5			**80 890 399**	●										

80 890 399: Set of 7 workpiece supports of 2 pieces in a wooden box (exclusive **80 890 422**)

Workpiece supports, offset

▲ Hardened and ground
▲ Held by means of clamping springs in the base plate
▲ 2 pieces contained in set
▲ Price per set

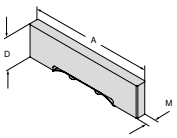




For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
	125		11				10,5			**80 901 703**				●							
	125		21				10,5			**80 901 704**				●							
	125		25				10,5			**80 901 705**				●							
	160		26				10,5			**80 901 700**				●							
	125		32,5				10,5			**80 901 706**				●							
	160		39				10,5			**80 901 701**				●							
	160		42,5				10,5			**80 901 702**				●							

Workpiece supports, offset

▲ Hardened and ground
▲ Held by means of clamping springs in the base plate
▲ Two pieces contained in set
▲ Price per set



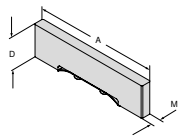


For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
	80		15				10,5			**80 901 707**				●							
	80		20				10,5			**80 901 708**				●							

Workpiece supports overview

Workpiece supports, offset

- ▲ Hardened and ground
- ▲ Held by means of clamping springs in the base plate
- ▲ Two pieces contained in set
- ▲ Price per set

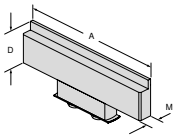




For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
	125		15				10,5			**80 906 715**									●		
	125		22				10,5			**80 906 722**									●		
	125		25				10,5			**80 906 725**									●		
	125		32,5				10,5			**80 906 732**									●		

Workpiece supports

- ▲ hardened and ground
- ▲ held by spring clips in the baseplate
- ▲ Price for 2 pieces





For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
	100		16				10,5			**80 892 401**						●					
	100		25,5				10,5			**80 892 411**						●					
	100		29,5				10,5			**80 892 421**						●					
	125		11				10,5			**80 892 390**						●					
	125		16				10,5			**80 892 391**						●					
	125		21				10,5			**80 892 392**						●					
	125		26				10,5			**80 892 393**						●					
	125		29				10,5			**80 892 394**						●					
	125		32,5				10,5			**80 892 395**						●					
	125		36				10,5			**80 892 396**						●					
	160		26				10,5			**80 892 403**						●					
	160		39				10,5			**80 892 413**						●					
	160		42,5				10,5			**80 892 423**						●					

For vice width	A	A_1	D	D_1	D_2	E	M	M_1	M_2		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
	125						10,5			**80 892 399**						●					

80 892 399: Set of 7 workpiece supports of 2 pieces in a wooden box

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Magnet workpiece supports, set



- With clearance on the underside
- Flexible and rational clamping
- Height accuracy +/- 0.01 mm
- Quick and easy to install thanks to magnetic adhesion

Workpiece supports overview

Magnet workpiece supports, set

- Stainless spring steel
- Pressed magnets
- Delivered in set: 5 pairs of 2 pieces
- Price per set



A	D	M		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
80	5 / 10 / 15 / 20 / 22	2,5	**80 878 79800**			●	●			●		●		
125	8 / 12 / 15 / 20 / 22	2,5	**80 878 79700**	●		●	●		●	●		●		
125	8 / 12 / 20 / 25 / 27	2,5	**80 878 79900**	●		●	●		●	●		●		

Magnet workpiece supports, set

- Stainless spring steel
- Pressed magnets
- Delivered in set: 5 pairs of 2 pieces
- Price per set



A	D	M		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
100	12 / 20 / 25 / 30 / 32	2,5	**80 892 79700**	●		●			●	●				
125	12 / 25 / 30 / 35 / 37	2,5	**80 892 79800**	●		●			●	●		●		
160	15 / 30 / 40 / 45 / 47	2,5	**80 892 79900**	●		●	●		●	●				

Magnet workpiece supports, set

- Stainless spring steel
- Pressed magnets
- Delivered in set: 5 pairs of 2 pieces
- Price per set

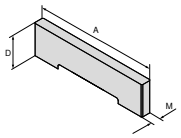


A	D	M		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
125	9 / 22 / 27 / 32 / 34	2,5	**80 901 79900**	●		●			●	●		●		

Workpiece supports overview

Magnet workpiece supports

▲ Price per pair





A	D	M		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG
80	5	2,5	80 892 79600			●	●			●		●		
80	10	2,5	80 892 79500	●		●	●		●	●		●		
80	15	2,5	80 892 79400			●	●			●		●		
80	20	2,5	80 892 79300			●	●		●	●		●		
80	22	2,5	80 892 79200			●	●			●		●		
100	12	2,5	80 892 79100	●		●			●	●				
100	20	2,5	80 892 79000	●		●			●	●				
100	25	2,5	80 892 78900	●		●			●	●				
100	27	2,5	80 892 78800	●		●			●	●				
100	29	2,5	80 892 78700	●		●			●	●				
100	30	2,5	80 892 78600	●		●			●	●				
100	31	2,5	80 892 78500	●		●			●	●				
100	32	2,5	80 892 78400	●		●			●	●				
125	8	2,5	80 892 78300	●		●			●	●		●		
125	9	2,5	80 892 78200	●		●			●	●		●		
125	10	2,5	80 892 78100	●		●			●	●		●		
125	12	2,5	80 892 78000	●		●			●	●		●		
125	15	2,5	80 892 77900	●		●			●	●		●		
125	20	2,5	80 892 77800	●		●			●	●		●		
125	22	2,5	80 892 77700	●		●			●	●		●		
125	23	2,5	80 892 77600	●		●			●	●		●		
125	25	2,5	80 892 77500	●		●			●	●		●		
125	27	2,5	80 892 77400	●		●			●	●		●		
125	30	2,5	80 892 77300	●		●			●	●		●		
125	31	2,5	80 892 77200	●		●			●	●		●		
125	32	2,5	80 892 77100	●		●			●	●		●		
125	33	2,5	80 892 77000	●		●			●	●		●		
125	34	2,5	80 892 76900	●		●			●	●		●		
125	35	2,5	80 892 76800	●		●			●	●		●		
125	36	2,5	80 892 76700	●		●			●	●		●		
125	37	2,5	80 892 76600	●		●			●	●		●		
160	15	2,5	80 892 76500	●		●			●	●				
160	22	2,5	80 892 76400	●		●			●	●				
160	30	2,5	80 892 76300	●		●			●	●				
160	37	2,5	80 892 76200	●		●			●	●				
160	40	2,5	80 892 76100	●		●			●	●				
160	41	2,5	80 892 76000	●		●			●	●				
160	42	2,5	80 892 75900	●		●			●	●				
160	43	2,5	80 892 75800	●		●			●	●				
160	44	2,5	80 892 75700	●		●			●	●				
160	45	2,5	80 892 75600	●		●			●	●				
160	46	2,5	80 892 75500	●		●			●	●				
160	47	2,5	80 892 75400	●		●			●	●				

Workpiece support, magnetic

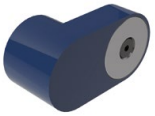
Scope of supply:
Including stop pin 50 mm/100 mm





for width mm	Size	80 892 ...
80/100/125/160	60x15	23800
80/100/125/160	115x15	23900

Extension for workpiece support, magnetic



for width mm	Size	80 892 ...
80/100/125/160	68x30 mm	25400

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Accessories General Overview

Alignment and centering kit for T-slots

▲ Price per piece

H5G -Z | ESG 4 | DSG 4



l mm	for slot width mm	80 897 ...
100	14	114
100	16	116
100	18	118

Alignment and centring set

▲ Price per piece

ESG 4 | DSG 4



l mm	for slot width mm	80 906 ...
80	12	812
80	14	814
80	16	816
80	18	818

Clamping Screw Set for T-slot for MNG

▲ Price for 2 pieces

ESG 4 | ZSG 4 | DSG 4



for width mm	G	80 899 ...
12	M10	312
14	M12	314
16	M12	316
18	M12	318

Workpiece stop

NCG | H5G | HDG 2 | DSG 4 | ESG 4 | ZSG 4



80 892 ... 400

Workpiece stop

ESG 4 | ZSG 4 | DSG 4



80 895 ... 010

Workpiece stop

ESG 4 | ZSG 4

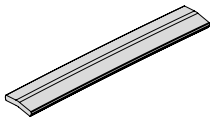


80 884 ... 400

Accessories General Overview

Replacement spring plates

▲ price per piece
▲ for pull down and intermediate jaws

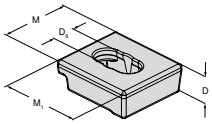




for width mm	80 892 ...
100	430
125	431
160	432

Clamping claws

▲ Price for 2 pieces





D mm	D6 mm	M mm	M1 mm	80 890 ...
20	16	50	57	315

Clamping levers overview

Clamping Handle with Joint

▲ without socket



Torque in Nm	Square drive	DRVS		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG	MNG	MNG mini
	1/2"		**80 891 600**				●			●						

Torque Wrench

▲ without socket



Torque in Nm	Square drive	DRVS		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG	MNG	MNG mini
10 - 100	1/2"		**80 884 502**				●		●	●	●	●				
20 - 200	1/2"		**80 884 504**			●	●		●	●	●					

Torque key

▲ without socket



Torque in Nm	Square drive	DRVS		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG	MNG	MNG mini
5 - 50	3/8"		**80 884 402**								●		●		●	

Control set

▲ Torque key incl. socket, screwdriver A/F10 and 1/2" extension



Torque in Nm	Square drive	DRVS		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG	MNG	MNG mini
8 - 50	3/8"	10	**80 899 410**												●	

Clamping levers overview

Socket

▲ Suitable for 1/2" or 3/8" square drive



Torque in Nm	Square drive	DRVS		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG	MNG	MNG mini
	3/8"	5	**80 877 105**													
	3/8"	6	**80 877 10600**													●
	3/8"	8	**80 877 108**										●		●	
	1/2"	8	**80 877 208**													
	1/2"	10	**80 877 210**													
	1/2"	14	**80 877 214**			●										

Socket

▲ Suitable for 1/2" or 3/8" square drive



Torque in Nm	Square drive	DRVS		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG	MNG	MNG mini
	3/8"	7	**80 875 107**													
	3/8"	11	**80 875 11100**								●					
	3/8"	12	**80 875 112**				●			●		●				
	1/2"	12	**80 875 212**				●			●		●				
	1/2"	14	**80 875 214**				●			●		●				

Screws Overview

Clamping screw for top jaws

▲ DIN EN ISO 4762 (1998-02)



For vice width	G	J_{17}		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG	MNG	MNG mini
	M8x12		80 892 296	●	●				●	●						
	M6x8		80 895 013								●		●			

Clamping screw with shallow head for top jaws

▲ see DIN7984 (1985-05)



For vice width	G	J_{17}		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG	MNG	MNG mini
	M8x10		80 889 950	●	●				●	●						

Clamping screw for system jaws

▲ Price per piece



For vice width	G	J_{17}		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG	MNG	MNG mini
	M12x20		80 890 630	●	●											
	M12x40		80 890 632	●	●											

Allen cap screw

▲ DIN 912



For vice width	G	J_{17}		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG	MNG	MNG mini
	M12x45		80 899 124												●	

Dowel screws

▲ Price for 2 pieces



For vice width	G	J_{17}		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG	MNG	MNG mini
100	M12x38	12	80 890 313	●			●									
125 / 160	M16x55	16	80 890 314	●												

Screws Overview

Dowel screw

▲ Price for 2 pieces



For vice width	G	J_{17}		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG	MNG	MNG mini
125	M12x45	12	**80 895 019**		●	●	●			●		●			●	

Clamping screw and T-Nuts

▲ For mounting the clamping claw
▲ Price per 2 pieces



For slot width	G	J_{17}		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG	MNG	MNG mini
12	M10		**80 890 308**	●	●		●		●	●		●	●			
14	M12		**80 890 309**	●	●		●		●	●		●	●			
16	M14		**80 890 310**	●	●		●		●	●		●	●			
18	M16		**80 890 311**	●	●		●		●	●		●	●			

Clamping screws for round clamps, T-Nut

▲ incl. nut and washer
▲ Price per 2 Pieces



For slot width	G	J_{17}		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG 2	ZSG 4	ZSG mini	DSG 4	Verso	HSG	MNG	MNG mini
12	M10		**80 899 112**										●		●	
14	M12		**80 899 114**										●		●	
16	M12		**80 899 116**										●		●	
18	M12		**80 899 118**										●		●	

Tenon incl. screw

▲ Price per 2 pieces



For slot width	G	J_{17}		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	HDG2	ZSG 4	ZSG mini	DSG4	Verso	HSG	MNG	MNG mini
12	M6		**80 898 412**	●	●		●		●			●				
14	M6		**80 898 414**	●	●		●		●			●				
16	M6		**80 898 416**	●	●		●		●			●				
18	M6		**80 898 418**	●	●		●		●			●				





Solid drilling and bore machining	Metric Catalog	HSS drilling	1
	Metric Catalog	Solid carbide drilling	2
		Indexable drilling	3
		Reaming and Countersinking	4
		Indexable Boring	5
Threading	Metric Catalog	Taps and thread formers	6
	Metric Catalog	Circular and Thread Milling	7
	Metric Catalog	Thread turning	8
Turning		Indexable Turning	9
		Multifunction	10
		Parting and Grooving	11
	Metric Catalog	Miniature turning tools	12
Milling	Metric Catalog	HSS Milling Cutters	13
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Clamping technology		Adaptors and Accessories	16
	Metric Catalog	Workpiece clamping	17
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Extended Material Examples for the Cutting Data Tables

	Material sub-group	Index	Composition / Structure / Heat treatment		Tensile strength lbf/in²* / HB / HRC
P	Unalloyed steel	P.1.1	< 0.15 % C	Annealed	60900 lbf/in² / 125 HB
		P.1.2	< 0.45 % C	Annealed	92800 lbf/in² / 190 HB
		P.1.3		Tempered	121800 lbf/in² / 250 HB
		P.1.4	< 0.75 % C	Annealed	132000 lbf/in² / 270 HB
		P.1.5		Tempered	146500 lbf/in² / 300 HB
	Low-alloy steel	P.2.1		Annealed	88500 lbf/in² / 180 HB
		P.2.2		Tempered	134900 lbf/in² / 275 HB
		P.2.3		Tempered	146500 lbf/in² / 300 HB
		P.2.4		Tempered	174000 lbf/in² / 375 HB
	High-alloy steel and high-alloy tool steel	P.3.1		Annealed	98600 lbf/in² / 200 HB
		P.3.2		Hardened and tempered	159500 lbf/in² / 300 HB
		P.3.3		Hardened and tempered	188500 lbf/in² / 400 HB
	Stainless steel	P.4.1	Ferritic / martensitic	Annealed	98600 lbf/in² / 200 HB
		P.4.2	Martensitic	Tempered	117500 lbf/in² / 250 HB
M	Stainless steel	M.1.1	Austenitic / austenitic-ferritic	Quenched	88500 lbf/in² / 200 HB
		M.2.1	Austenitic	Tempered	300 HB
		M.3.1	Austenitic / ferritic (Duplex)		113100 lbf/in² / 230 HB
K	Grey cast iron	K.1.1	Pearlitic / ferritic		88500 lbf/in² / 180 HB
		K.1.2	Pearlitic (martensitic)		127600 lbf/in² / 260 HB
	Spherulitic graphite cast iron	K.2.1	Ferritic		78300 lbf/in² / 160 HB
		K.2.2	Pearlitic		122600 lbf/in² / 250 HB
	Malleable iron	K.3.1	Ferritic		63800 lbf/in² / 130 HB
		K.3.2	Pearlitic		113100 lbf/in² / 230 HB
N	Aluminium wrought alloy	N.1.1	Non-hardenable		60 HB
		N.1.2	Hardenable		49300 lbf/in² / 100 HB
	Cast aluminium alloy	N.2.1	≤ 12 % Si, non-hardenable		36300 lbf/in² / 75 HB
		N.2.2	≤ 12 % Si, hardenable		43500 lbf/in² / 90 HB
		N.2.3	> 12 % Si, non-hardenable		63800 lbf/in² / 130 HB
	Copper and copper alloys (bronze/brass)	N.3.1	Free-machining alloys, PB > 1 %		54400 lbf/in² / 110 HB
		N.3.2	CuZn, CuSnZn		43500 lbf/in² / 90 HB
		N.3.3	CuSn, lead-free copper and electrolytic copper		49300 lbf/in² / 100 HB
	Magnesium alloys	N.4.1	Magnesium and magnesium alloys		70 HB
S	Heat-resistant alloys	S.1.1	Fe - basis	Annealed	98600 lbf/in² / 200 HB
		S.1.2			137800 lbf/in² / 280 HB
		S.2.1	Ni or Co basis	Annealed	121800 lbf/in² / 250 HB
		S.2.2			171100 lbf/in² / 350 HB
		S.2.3		Cast	156600 lbf/in² / 320 HB
	Titanium alloys	S.3.1	Pure titanium		5800 lbf/in²
		S.3.2	Alpha + beta alloys		152300 lbf/in²
		S.3.3	Beta alloys		203100 lbf/in² / 410 HB
H	Hardened steel	H.1.1		Hardened and tempered	46-55 HRC
		H.1.2		Hardened and tempered	56-60 HRC
		H.1.3		Hardened and tempered	61-65 HRC
		H.1.4		Hardened and tempered	66-70 HRC
	Chilled iron	H.2.1		Cast	400 HB
	Hardened cast iron	H.3.1		Hardened and tempered	55 HRC
O	Non-metal materials	O.1.1	Plastics, duroplastic		≤ 21800 lbf/in²
		O.1.2	Plastics, thermoplastic		≤ 14500 lbf/in²
		O.2.1	Aramid fibre-reinforced		≤ 145000 lbf/in²
		O.2.2	Glass/carbon-fibre reinforced		≤ 145000 lbf/in²
		O.3.1	Graphite		

*** Tensile Strength at Rupture (Rm)**

On the following 16 pages you will find an extension of the material examples to our usual indexes with additional international standards.

Overview of standards:

USA

Under **USA** several American standards are summarized

DIN

Deutsche **I**ndustrie **N**orm (German Standard)

AFNOR

Association **F**rancaise de **N**ormalisation (French Standard)

UNI

Unificazione **I**taliana (Italian Standard)

ČSN

Czechoslovakian Standard

BS

British **S**tandards

SIS

Standardiseringen **i** **S**verige (Swedish Standard)

UNE

Spanish Standard

JIS

Japanese **I**ndustrial **S**tandard

ГОСТ

Soviet Standard

UNS

Unified **N**umbering **S**ystem

	Index	Material number	USA	DIN	AFNOR	UNI	ČSN	BS	SIS	UNE	JIS	ГОСТ	UNS
P	P.1.1	1.5423	4520	16 Mo 5		16 Mo 5		1503-245-420					G 45200
		1.0037		St 37-2	E 24-2		11 343				STKM 12 C		
		1.0044	A 570 Gr. 40	St 44-2	E 28-2	Fe 430 B FN	11 443	4360-43 B	1412		SM 41 B		
		1.0116	A 573 Gr. 58	St 37-3	E 24-3; E 24-4	Fe 360 D FF	11 378	4360-40 C	1312; 1313			St 3 kp; ps; sp	
		1.0144	A 573 Gr. 70	St 44-3	E 28-3; E 28-4	Fe 430 D FF		4360-43 C	1412; 1414		SM 41 C	St 4 kp; ps; sp	
		1.0301	1010	C 10	AF 34 C 10; XC 10	C 10	12 010	045 M 10			S 10 C	10	G 10100
		1.0401	1015	C 15	AF3 7 C 12; XC 18	C 15; C 16	12 020	080 M 15	1350	F-111			G 10170
		1.0402	1020	C 22	AF 42 C 20	C 20; C 21	12 024	050 A 20	1450	F-112		20	G 10200
		1.0406	1025	C 25	AF 50 C 30	C 25	12 030	070 M 26					
		1.0570		St 52-3	E 36-3; E 36-4	Fe 510 B; C; D	11 523	4360-50 B	2132		SM 50 YA	17 GS	
		1.1121	1010	Ck 10	XC 10	C 10	12 010	045 M 10	1265	F-1510	S 10 C; S 9 CK	08; 10	G 10100
		1.1133	1022; 1518	20 Mn 5	20 M 5	G 22 Mn 3		120 M 19			SMnC 420		G 10220
		1.1141	1015	Ck 15	XC 15; XC 18	C 15; C 16	12 020	080 M 15	1370	F-1511	S 15 C; S 15 CK	15	G 10170
		1.1151	1023	Ck 22	XC 25; XC 18	C 20		050 A 20			S 20 C; S 20 CK	20	
		1.1158	1025	Ck 25	XC 25	C 25	12 030	070 M 26			S 25 C	25	G 10250
	P.1.2	1.0050	A 570 Gr. 50	St 50-2	A 50-2	Fe 490	11 500	4360-50 B	2172		SS 50	BSt 5 ps; sp	
		1.0060		St 60-2	A 60-2	Fe 590; Fe 60-2	11 600	4360-SSE; SSC			SM 58	St 6 ps; sp	
		1.0406	1025	C 25	AF 50 C 30	C 25	12 030	070 M 26					
		1.0420		GS-38									
		1.0446		GS-45									
		1.0481		17 Mn 4			11 748						
		1.0501	1035	C 35	AF 55 C 35	C 35	12 040	060 A 35	1550	F-113		35	G 10350
		1.0503	1045	C 45	AF 65 C 45	C 45	12 050	080 M 46	1650	F-114		45	G 10430
		1.0511	1040	C 40	AF 60 C 40	C 40	12 041						
		1.0528		C 30			12 031						
		1.0540		C 50									
		1.0552		GS-52									
		1.0558		GS-60									
		1.0619		GS-C 25									
		1.0711	1212	9 S 20		CF 9 S 22		220 M 07	220 M 07		SUM 21	SUM 21	G 12120
		1.0715	1213	9 SMn 28	S 250	CF 9 SMn 28	11 109	230 M 07	1912	F-211 / F-2111	SUM 22		G 12130
		1.0718	12 L 13	9 SMnPb 28	S 250 Pb	CF 9 SMnPb 28			1914	F-212 / F-2112	SUM 22 L		G 12134
		1.0721	1108	10 S 20	10 F 1	CF 10 S 20	10 110	210 M 15		F-2121			
		1.0722	11 L 08	10 SPb 20	10 PbF 2	CF 10 SPb 20				F-2122			
		1.0723		15 S 20				210 A 15	1922		SUM 32		
		1.0736	1215	9 SMn 36	S 300	CF 9 SMn 36		240 M 07		F-2113			G 12150
		1.0737	12 L 14	9 SMnPb 36	S 300 Pb	CF 9 SMnPb 36			1926	F-2114			G 12144
		1.1118		GS-24 Mn 6			42 2714						
		1.1120		GS-20 Mn 5									
		1.1131		GS-16 Mn 5									
		1.1138		GS-21 Mn 5									
		1.1142		GS-Ck 16									
		1.1151	1023	Ck 22	XC 25; XC 18	C 20		050 A 20			S 20 C; S 20 CK	20	
		1.1155		GS-Ck 25									
		1.1158	1025	Ck 25	XC 25	C 25	12 030	070 M 26			S 25 C	25	G 10250
		1.1178		Ck 30									
		1.1181	1035	Ck 35	XC 38 H1:XC 32	C 35		080 M 36	1572		S 35 C	35	G 10340
		1.1186	1040	Ck 40	XC 42 H1	C 40		080 M 40			S 40 C	40	
		1.1191	1045	Ck 45	XC 42	C 45		080 M 46	1672		S 45 C	45	G 10420
		1.1206	1050	Ck 50	XC 48 H1			080 M 50				50	
		1.1730		C 45 W	Y3 42								

	Index	Material number	USA	DIN	AFNOR	UNI	ČSN	BS	SIS	UNE	JIS	ГОСТ	UNS
P	P.1.3	1.0501	1035	C 35	AF 55 C 35	C 35	12 040	060 A 35	1550	F-113		35	G 10350
		1.0503	1045	C 45	AF 65 C 45	C 45	12 050	080 M 46	1650	F-114		45	G 10430
		1.0511	1040	C 40	AF 60 C 40	C 40	12 041						
		1.0528		C 30			12 031						
		1.0540		C 50									
		1.0726	1140	35 S 20	35 MF 4		11 140	212 M 36	1957	F-210.G			G 11400
		1.0727	1146	45 S 20	45 MF 4			212 M 44	1973				G 11460
		1.0728		60 S 20	60 MF 4								
		1.1178		Ck 30									
		1.1181	1035	Ck 35	XC 38 H1:XC 32	C 35		080 M 36	1572		S 35 C	35	G 10340
		1.1186	1040	Ck 40	XC 42 H1	C 40		080 M 40			S 40 C	40	
		1.1191	1045	Ck 45	XC 42	C 45		080 M 46	1672		S 45 C	45	G 10420
		1.1206	1050	Ck 50	XC 48 H1			080 M 50				50	
	P.1.4	1.0535	1055	C 55	AF 70 C55	C 55	12 060	070 M 55	1655			55	
		1.0601	1060	C 60	CC 55	C 60		080 A 62				60	G 10600
		1.0757		46 SPb 20									
		1.1203	1055	Ck 55	XC 55	C50		070 M 55			S 55 C	55	
		1.1221	1060	Ck 60	XC 60	C60		080 A 62	1665; 1678		S 58 C	60; 60G	G 10640
		1.1248	1078; 1080	Ck 75	XC 75	C 75	12 081	060 A 78	1774; 1778			75	G 10780
		1.1274	1095	Ck 101	XC 100			060 A 96	1870		SUP 4		G 10950
		1.1520		C 70 W1									
		1.1525	W 108	C 80 W1	Y1 90; Y1 80	C 80 KU						U8A	T 72301
		1.1545+G502	W 110	C 105 W1	Y1 105	C 100 KU			1880			U10A	T 72301
		1.1620		C 70 W2									
		1.1625	W 1	C 80 W2		C 80 KU		BW 1 B			SKC 3; SK 5; SK 6	U8; 80	T 72301
		1.1645		C 105 W2	Y2 105	C 100 KU					SK 3	U10	T 72301
		1.1663	W 112	C 125 W	Y2 120	C 120 KU					SK 2	U13	T 72301
		1.1673		C 135 W	Y2 140	C 140 KU					SK 1		
		1.1740		C 60 W	Y3 55						SK 7		
		1.1750	W 1	C 75 W				BW 1A				75	
		1.1820		C 55 W									
		1.1830		C 85 W	Y3 90						SK 5		
	P.1.5	1.0535	1055	C 55	AF 70 C55	C 55	12 060	070 M 55	1655			55	
		1.0601	1060	C 60	CC 55	C 60		080 A 62				60	G 10600
		1.1203	1055	Ck 55	XC 55	C50		070 M 55			S 55 C	55	
		1.1221	1060	Ck 60	XC 60	C60		080 A 62	1665; 1678		S 58 C	60; 60G	G 10640
		1.1231	1070	Ck 67	XC 68	C 70	12 071	060 A 67	1770			70	G 10700
		1.1274	1095	Ck 101	XC 100			060 A 96	1870		SUP 4		G 10950
		1.1520		C 70 W1									
	P.2.1	1.2162		21 MnCr 5	20 NC 5		19 487				SCR 420 H		
		1.2210	L 2	115 CrV 3	100 C 3	107 CrV 3 KU	19 421						T 61202
		1.2323		GS-48 CrMoV 6 7									
		1.2341		X 6 CrMo 4									
		1.2369		81 CrMov 42 16									
		1.2516		120 WV 4	110 WC 20	110 W 4 KU	19 711	BF 1					
		1.2542	S 1	45 WCrV 7		45 WCrV 8 KU	19 732	BS 1	2710				T 41901
		1.2550		60 WCrV 7	55 WC 20	55 WCrV 8 KU	19 735						
		1.2711		54 NiCrMoV 6	55 NCDV 6		19 662						
		1.2735		15 NiCr 14	10 NC 12		16 240				SNC 22		T 51606
		1.2762		75 CrMoNiW 6 7									
		1.2842	O 2	90 MnCrV 8	90 MV 8	90 MnVCr 8 KU	19 314	BO 2					T 31502

	Index	Material number	USA	DIN	AFNOR	UNI	ČSN	BS	SIS	UNE	JIS	ГОСТ	UNS
P	P.2.1	1.5015		GS-8 Mn 7									
		1.5122		37 MnSi 4			13 240						
		1.5415	A 204 Gr. A	15 Mo 3	15 D 3	16 Mo 3		1501-240	2912				
		1.5419		GS-22 Mo 4									
		1.5621		GS-10 Ni 6									
		1.5622	A 350-LF 5	14 Ni 6	16 N 6	14 Ni 6							
		1.5633		GS-24 Ni 8									
		1.5638		GS-10 Ni 14									
		1.5732	3415	14 NiCr 10	14 NC 11	16 NiCr 11				F-1540	SNC 415 (H)		
		1.5752	3310; 9314	14 NiCr 14	12 NC 15		16 240	655 M 13		F-1540	SNC 815 (H)		G 33106
		1.5919		15 CrNi 6	16 NC 6	16 CrNi 4	16 220	S 107					
		1.5920		18 CrNi 8	20 NC 6		13 231						
		1.6221		GS-13 MnNi 6 4									
		1.6523	8620	21 NiCrMo 2	20 NCD 2	20 NiCrMo 2		805 M 20	2506	F-1522	SNCM 220 (H)		G 86170
		1.6587		17 CrNiMo 6	18 NCD 6	18 NiCrMo 7		820 A 16					
		1.6750		GS-20 NiCrMo 3 7									
		1.7003		38 Cr 2	38 C 2	38 Cr 2							
		1.7006	5045	46 Cr 2	42 C 2	45 Cr 2							
		1.7012		13 Cr 2									
		1.7015	5015	15 Cr 3	12 C 3		14 120	523 M 15			SCr 415 (H)	15Ch	G 50150
		1.7020		32 Cr 2									
		1.7030	5130	28 Cr 4				530 A 30				30Ch	
		1.7033	5132	34 Cr 4	32 C 4	34 Cr 4 (KB)		530 A 32			SCr 430 (H)	35Ch	G 51320
		1.7131	5115	16 MnCr 5	16 MC 5	16 MnCr 5	14 220	527 M 17	2511	F-1516 / F-1517	SCR 415	18ChG	G 51170
		1.7139		16 MnCrS 5						F-150D			
		1.7147	5120	20 MnCr 5	20 MC 5	20 MnCr 5	14 221				SMnC 420 (H)	18ChG	G 51200
		1.7149		20 MnCrS 5						F-1551			
		1.7218	4130	25 CrMo 4	25 CD 4 S	25 CrMo 4 (KB)	15 130	1717 CDS 110	2225		SCM 420; SCM 430	30ChM	G 41300
		1.7219		GS-26 CrMo 4									
		1.7220	4135; 4137	34 CrMo 4	35 CD 4	35 CrMo 4	15 131	708 A 37	2234		SCM 432; SCCrM 3	AS38ChGM	G 41350
		1.7262		15 CrMo 5	12 CD 4	12 CrMo 4					SCM 415 (H)		
		1.7264		20 CrMo 5	18 CD 4						SCM 421		
		1.7271		23 CrMoB 3 3									
		1.7311		20 CrMo 2						F-1523			
		1.7321		20 MoCr 4	20 CD 4								
		1.7335	A 182-F11; F12	13 CrMo 4 4	15 CD 3.5	14 CrMo 4 5		1501-620 Gr. 27	2216			12ChM; 15ChM	
		1.7337	A 387 Gr. 12 Cl. 2	16 CrMo 4 4	15 CD 4.5	14 CrMo 4 5		1501-620 Gr. 27	2216			15ChM	
		1.7357		GS-17 CrMo 5 5									
		1.7363		GS-12 CrMo 19 5									
		1.7377		GS-17 CrMo 9 10									
		1.7379		GS-18 CrMo 9 10									
		1.7380	A 182-F22	10 CrMo 9 10	10 CD 9.10	12 CrMo 9 10		1501-622 Gr. 31; 45	2218				J 21890
		1.7715		14 MoV 6 3				1503-660-440					
		1.7725		GS-30 CrMoV 6 4									
		1.8504		34 CrAl 6			14 340						
		1.8506		34 CrAlS 5									K 23745
		1.8521		15 CrMoV 5 9									
		1.0904	9255	55 Si 7	55 S 7	55 Si 8		250 A 53	2085; 2090			55S2	
	P.2.2	1.2067	L 3	100 Cr 6	Y 100 C 6			BL 3					T 61203
		1.2101		62 SiMnCr 4									
		1.2103		58 SiCr 8			19 452						

	Index	Material number	USA	DIN	AFNOR	UNI	ČSN	BS	SIS	UNE	JIS	ГОСТ	UNS
P	P.2.2	1.2108		90 CrSi 5P									
		1.2162		21 MnCr 5	20 NC 5		19 487				SCR 420 H		
		1.2210	L 2	115 CrV 3	100 C 3	107 CrV 3 KU	19 421						T 61202
		1.2311		40 CrMnMo 7			19 520						
		1.2312		40 CrMnMoS 8 6	40 CMD 8 + S								
		1.2323		GS-48 CrMoV 6 7									
		1.2330	4135	35 CrMo 4	34 CD 4	35 CrMo 4		708 A 37	2234			35 HM	T 51620
		1.2332	4142	47 CrMo 4	42 CD 4	40 CrMo 4		708 M 40	2244				
		1.2419		105 WCr 6	105 WC 13	107 WCr 5 KU					SKS 31	ChWG	
		1.2510	O 1	100 MnCrW 4	90 MWCV 5	95 MnWCr 5 KU	19 314	BO 1	2140	F-5220	SKS 3		T 31501
		1.2542	S 1	45 WCrV 7		45 WCrV 8 KU	19 732	BS 1	2710				T 41901
		1.2550		60 WCrV 7	55 WC 20	55 WCrV 8 KU	19 735						
		1.2711		54 NiCrMoV 6	55 NCDV 6		19 662						
		1.2713	L 6	55 NiCrMoV 6	55 NCDV 7		19 662			F-520.S	SKT 4	5ChNM	T 61206
		1.2721		50 NiCr 13									
		1.2738		40 CrMnNiMo 8						F-5303			
		1.2826		60 MnSiCr 4									
		1.2833	W 210	100 V 1	Y1 105 V	102 V 2 KU	19 356	BW 2			SKS 43		T 72302
		1.2842	O 2	90 MnCrV 8	90 MV 8	90 MnVCr 8 KU	19 314	BO 2					T 31502
		1.3505	52100	100 Cr 6	100 C 6	100 Cr 6	14 100	534 A 99	2258	F-131 / F-1310	SUJ 2	SchCh 15	G 52986
		1.3520		100 CrMn 6			14 209						
		1.3561		44 Cr 2									
		1.3563		43 CrMo 4									
		1.5120		38 MnSi 4									
		1.5121		46 MnSi 4									
		1.5122		37 MnSi 5			13 240						
		1.5131		50 MnSi 4									
		1.5141		53 MnSi 4									
		1.5223		42 MnV 7			13 242						
		1.5710	3135	36 NiCr 6	35 NC 6		16 240	640 A 35			SNC 236		
		1.5736	3435	36 NiCr 10	30 NC 11	35 NiCr 9					SNC 631 (H)		
		1.5755		31 NiCr 14	18 NC 13			653 M 31			SNC 836		
		1.6511	9840	36 CrNiMo 4	40 NCD 3	38 NiCrMo 4 (KB)	16 341	816 M 40				40 ChN2MA	G 98400
		1.6513		28 NiCrMo 4									
		1.6546	8740	40 NiCrMo 2 2	40 NCD 2	40 NiCrMo 2 (KB)		311-Type 7			SNCM 240	38ChGNM	G 87400
		1.6565	4340	40 NiCrMo 6				311-Type 6			SNCM 439	40Ch2N2MA	
		1.6570		GS-30 NiCrMo 8 5									
		1.6580		30 CrNiMo 8	30 CND 8	30 NiCrMo 8		823 M 30		F-1272	SNCM 431		
		1.6582	4340	34 CrNiMo 6	35 NCD 6	35 NiCrMo 6 (KW)	16 342	817 M 40	2541	F-128 / F-1270	SNCM 447	38Ch2N2MA	
		1.6746		32 NiCrMo 14 5	35 NCD 14			830 M 31					
		1.6781		GS-18 NiCrMo 12 6									
		1.7003		38 Cr 2	38 C 2	38 Cr 2							
		1.7006	5045	46 Cr 2	42 C 2	45 Cr 2							
		1.7030	5130	28 Cr 4				530 A 30				30Ch	
		1.7033	5132	34 Cr 4	32 C 4	34 Cr 4 (KB)		530 A 32			SCr 430 (H)	35Ch	G 51320
		1.7034	5135	37 Cr 4	38 C 4	38 Cr 4	14 140	530 A 36			SCr 435 H	40Ch	
		1.7035	5140	41 Cr 4	42 C 4	41 Cr 4		530 M 40			SCr 440 (H)	40Ch	G 51400
		1.7045	5140	42 Cr 4	42 C 4 TS	41 Cr 4		530 A 40	2245		SCr 440	40Ch	
		1.7103		67 SiCr 5									
		1.7131	5115	16 MnCr 5	16 MC 5	16 MnCr 5	14 220	527 M 17	2511	F-1516 / F-1517	SCR 415	18ChG	G 51170
		1.7139		16 MnCrS 5						F-150D			

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P	P.2.2	1.7147	5120	20 MnCr 5	20 MC 5	20 MnCr 5	14 221				SMnC 420 (H)	18ChG	G 51200
		1.7149		20 MnCrS 5						F-1551			
		1.7176	5155	55 Cr 3	55 C 3	55 Cr 3		527 A 60	2253	F-1431	SUP 9 (A)	50ChGA	G 51550
		1.7218	4130	25 CrMo 4	25 CD 4 S	25 CrMo 4 (KB)	15 130	1717 CDS 110	2225		SCM 420; SCM 430	30ChM	G 41300
		1.7220	4135; 4137	34 CrMo 4	35 CD 4	35 CrMo 4	15 131	708 A 37	2234		SCM 432; SCCrM 3	AS38ChGM	G 41350
		1.7223	4142; 4140	41 CrMo 4	42 CD 4 TS	41 CrMo 4		708 M 40	2244		SCM 440	40 ChFA	G 41420
		1.7225	4142; 4140	42 CrMo 4	42 CD 4	42 CrMo 4	15 142	708 M 40	2244		SCM 440 (H)		G 41400
		1.7228	4150	50 CrMo 4	50 CR MO4			708 A 47			SCM 445 (H)	50ChFA	G 41470
		1.7323		20 MoCrS 4	20 CD 4 S								
		1.7325		25 MoCr 4	25 CD 4								
		1.7326		25 MoCrS 4	25 CD 4 S								
		1.7361		32 CrMo 12	30 CD 12	32 CrMo 12	15 230	722 M 24	2240	F-124A			
		1.7707		30 CrMoV 9			15 330						
		1.7709		21 CrMoV 5 7									
		1.7725		GS-30 CrMoV 6 4									
		1.7735		14 CrMoV 6 9	15 CDV 6								
		1.8159	6150	50 CrV 4	50 CV 4	51 CrV 4	15 260	735 A 50	2230	F-143 / F-1430	SUP 10	50ChGFA	G 61500
		1.8161		58 CrV 4			15 261						
		1.8507	A 355 Cl. D	34 CrAlMo 5	30 CAD 6.12	34 CrAlMo 7		905 M 31		F-1741			K 23545
		1.8509	A 355 Cl. A	41 CrAlMo 7	40 CAD 6.12	41 CrAlMo 7	15 340	905 M 39	2940	F-1740	SACM 645	38ChMJuA	K 24065
		1.8515		31 CrMo 12	30 CD 12	31 CrMo 12		722 M 24	2240	F-1712			
		1.8519		31 CrMoV 9						F-1721			
		1.8523		39 CrMoV 13 9		36 CrMoV 13 9		897 M 39					
		1.8550		34 CrAlNi 7									K 52440
		1.0904	9255	55 Si 7	55 S 7	55 Si 8		250 A 53	2085; 2090			55S2	
		1.1157	1039	40 Mn 4	35 M 5			150 M 36				40G	G 10390
		1.1165	1330	30 Mn 5	35 M 5			120 M 36			SMn 433 H; SCMn 2	30GSL	
		1.1167	1335	36 Mn 5	40 M 5		42 2715	150 M 36	2120		SMn 438 (H); SCMn 3	35G2; 35GL	G 13350
		1.1170	1330	28 Mn 6	20 M 5	C 28 Mn		150 M 28			SCMn 1	30G	
	P.2.3	1.2744		57 NiCrMoV 7 7									
		1.7131	5115	16 MnCr 5	16 MC 5	16 MnCr 5	14 220	527 M 17		F-1516 / F-1517	SCR 415	18ChG	G 51170
		1.7755		GS-35 CrMoV 10 4									
	P.2.4	1.2714		56 NiCrMoV 7									
		1.3505	52100	100 Cr 6	100 C 6	100 Cr 6	14 100	534 A 99	2258	F-131 / F-1310	SUJ 2	SchCh 15	G 52986
		1.7225	4142; 4140	42 CrMo 4	42 CD 4	42 CrMo 4	15 142	708 M 40	2244		SCM 440 (H)		G 41400
	P.3.1	1.2080	D 3	X 210 Cr 12	Z 200 C 12	X 210 Cr 13 KU	19 436	BD 3			SKD 1	Ch12	T 30403
		1.2201		G-X 165 CrV 12									
		1.2343	H 11	X 38 CrMoV 5 1	Z 38 CDV 5	X 37 CrMoV 5 1 KU	19 552	BH 11		F-5317	SKD 6	4Ch5MFS	T 28811
		1.2363	A 2	X 100 CrMoV 5 1	Z 100 CDV 5	X 100 CrMoV 5 1 KU	19 571	BA 2	2260	F-5227	SKD 12		T 30102
		1.2365	H 10	X 32 CrMoV 3 3	32 DCV 28	30 CrMoV 12 27 KU	19 541	BH 10			SKD 7	3Ch3M3F	T 20810
		1.2367		X 38 CrMoV 5 3									
		1.2379	D 2	X 155 CrVMo 12 1	Z 160 CDV 12	X 155 CrVMo 12 1 KU	19 573	BD 2		F-5211	SKD 11		T 30402
		1.2436		X 210 CrW 12	Z 200 CW 12	X 215 CrW 12 1 KU	19 437		2312	F-5213	SKD 2		
		1.2567		X 30 WCrV 5 3	Z 32 WCV 5	X 30 WCrV 5 3 KU	19 720				SKD 4		
		1.2581	H 21	X 30 WCrV 9 3	Z 30 WCV 9	X 30 WCrV 9 3 KU	19 721	BH 21			SKD 5	3Ch2W8F	T 20821
		1.2601		X 165 CrMoV 12		X 165 CrMoW 12 KU	19 572		2310				
		1.2606		G-X 37 CrMoW 5 1									
		1.2764		X 19 NiCrMo 4									
		1.2767		X 45 NiCrMo 4	Y 35 NCD 16	42 NiCrMo 15 7	19 655						
		1.2880		G-X 165 CrCoMo 12									
		1.2885		X 32 CrMoCoV 3 3 3	30 DCKV 28								

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P	P.3.1	1.3302		S 12-1-4			19 810						
		1.3318		S 12-1-2			19 802						
		1.3333		S 3-3-2		HS 3-3-2	19 820						
		1.3343	M 2	S 6-5-2	Z 85 WDCV 06-05-04-0	HS 6-5-2	19 830	BM 2	2722	F-5603	SKH 9; SKH 51	R6AM5	T 11302
		1.3346	H 41; M 1	S 2-9-1	Z 85 DCWV 08-04-02-0	HS 1-8-1		BM 1				H41	T 11301
		1.4943		X 4 NiCrTi 25 15	Z 6 NCTDV 25.15 B			HR 251; HR 52; HR 51			SUH 660		
		1.5662		G-X 8 Ni 9									
		1.5680	2515	12 Ni 19	Z 18 N 5								
	P.3.2	1.2080	D 3	X 210 Cr 12	Z 200 C 12	X 210 Cr 13 KU	19 436	BD 3			SKD 1	Ch12	T 30403
		1.2343	H 11	X 38 CrMoV 5 1	Z 38 CDV 5	X 37 CrMoV 5 1 KU	19 552	BH 11		F-5317	SKD 6	4Ch5MFS	T 28811
		1.2344	H 13	X 40 CrMoV 5 1	Z 40 CDV 5	X 40 CrMo 5 1 1 KU	19 554	BH 13	2242	F-5318	SKD 61	4Ch5MF1S	T 20813
		1.2363	A 2	X 100 CrMoV 5 1	Z 100 CDV 5	X 100 CrMoV 5 1 KU	19 571	BA 2	2260	F-5227	SKD 12		T 30102
		1.2365	H 10	X 32 CrMoV 3 3	32 DCV 28	30 CrMoV 12 27 KU	19 541	BH 10			SKD 7	3Ch3M3F	T 20810
		1.2367		X 38 CrMoV 5 3									
		1.2379	D 2	X 155 CrVMo 12 1	Z 160 CDV 12	X 155 CrVMo 12 1 KU	19 573	BD 2		F-5211	SKD 11		T 30402
		1.2567		X 30 WCrV 5 3	Z 32 WCV 5	X 30 WCrV 5 3 KU	19 720				SKD 4		
		1.2581	H 21	X 30 WCrV 9 3	Z 30 WCV 9	X 30 WCrV 9 3 KU	19 721	BH 21			SKD 5	3Ch2W8F	T 20821
		1.2606		G-X 37 CrMoW 5 1									
		1.2709		X 2 NiCoMoTi 18 9 5									
		1.2764		X 19 NiCrMo 4									
		1.2767		X 45 NiCrMo 4	Y 35 NCD 16	42 NiCrMo 15 7	19 655						
		1.2885		X 32 CrMoCoV 3 3 3	30 DCKV 28								
		1.3207		S 10-4-3-10	Z 130 WKCDV 10-10-04	HS 10-4-3-10	19 861	BT 42		F-5553	SKH 57		
		1.3243		S 6-5-2-5	Z 85 WDKCV 06-05-05	HS 6-5-2-5	19 852		2723	F-5613	SKH 55	R6M5K5	
		1.3246	M 41	S 7-4-2-5	Z 110 WKCDV 07-05-04	HS 7-4-2-5	19 851						T 11341
		1.3247	M 42	S 2-10-1-8	Z 110 DKCWV 09-08-04	HS 2-9-1-8		BM 42			SKH 51		T 11342
		1.3249	M 33; M 34	S 2-9-2-8				BM 34					T 11333
		1.3255	T 4	S 18-1-2-5	Z 80 WKCV 18-05-04-0	HS 18-1-1-5	19 855	BT 4			SKH 3		T 12004
		1.3265	T 5	S 18-1-2-10		HS 18-0-1-10	19 860	BT 5			SKH 4 A		T 12005
		1.3344	M 3 Cl. 2	S 6-5-3	Z 120 WDCV 06-05-04	HS 6-5-3		BM 4			SKH 52; SKH 53		T 11323
		1.3348	M 7	S 2-9-2	Z 100 DCWV 09-04-02	HS 2-9-2			2782				T 11307
		1.3401	A 128 (A)	G-X 120 Mn 12	Z 120 M 12	XG 120 Mn 12		Z 120 M 12			SCMnH 1	110G13L	
		1.5860		14 NiCr 18			16 523						
		1.5864		35 NiCr 18			16 640			F-122			
	P.3.3	1.6359		X 2 NiCrMo 18 8 5	Maraging 250								K 92890
	P.4.1	1.2083		X 42 Cr 13	Z 40 C 14	X 41 Cr 13 KU	19 435			F-5263	SUS 420 J 2		
		1.2316		X 36 CrMo 17	Z 38 CD 17	X 38 CrMo 16 1 KU							
		1.3543		X 102 CrMo 17	Z 100 CD 17								
		1.4001		G-X 7 Cr 13	Z 8 C 13 FF		17 020			F-8401			
		1.4002	405	X 6 CrAl 13	Z 6 CA 13	X 6 CrAl 13		405 S 17	2302	F-3111	SUS 405		S 40500
		1.4005	416	X 12 CrS 13	Z 12 CF 13	X 12 CrS 13		416 S 21	2380		SUS 416		S 41600
		1.4006	410; CA-15	X 10 Cr 13	Z 12 C 13	X 12 Cr 13	17 021	410 S 21	2302	F-3401	SUS 410	12Ch13	S 41000
		1.4008		G-X 8 CrNi 13	Z 12 CN 13 M		42 2904						
		1.4016	430	X 6 Cr 17	Z 8 C 17	X 8 Cr 17	17 040	430 S 15	2320	F-3113	SUS 430	12Ch17	S 43000
		1.4021	420	X 20 Cr 13	Z 20 C 13	X 20 Cr 13	17 022	420 S 37	2303	F-3402	SUS 420 J 1	20Ch13	S 42000
		1.4024		X 15 Cr 13	Z 13 C 13		17 021	420 S 29			SUS 410 J 1		
		1.4027		G-X 20 Cr 14	Z 20 C 13 M		42 2906	420 C 29			SCS 2	20Ch13L	
		1.4028		X 30 Cr 13	Z 30 C 13	X 30 Cr 13	17 023	420 S 45	2304		SUS 420 J 2	30Ch13	
		1.4031		X 38 Cr 13	Z 40 C 14	X 40 Cr 14	17 024		2304	F-3404	SUS 420 J 2	40Ch13	
		1.4034		X 46 Cr 13	Z 40 C 14	X 40 Cr 14	17 029	420 S 45		F-3405		40Ch13	
		1.4085		G-X 70 Cr 29									

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P	P.4.1	1.4104	430 F	X 12 CrMoS 17	Z 10 CF 17	X 10 CrS 17	17 140		2383	F-3403	SUS 430 F		S 43020
		1.4105		X 4 CrMoS 18						F-3114			
		1.4106		X 2 CrMoSiS 18 2 1									
		1.4107		G-X 8 CrNi 12			42 2904						
		1.4109		X 65 CrMo 14									
		1.4112		X 90 CrMoV 18									S 44003
		1.4113	434	X 6 CrMo 17	Z 8 CD 17.01	X 8 CrMo 17		434 S 17	2325	F-3116	SUS 434		S 43400
		1.4116		X 45 CrMoV 15						F-3422			
		1.4122		G-X 35 CrMo 17			17 137						
		1.4125	440 C	X 105 CrMo 17	Z 100 CD 17	X 105 CrMo 17					SUS 440 C		S 44004
		1.4136		G-X 70 CrMo 29 2									
		1.4405		G-X 5 CrNiMo 16 5									
		1.4407		G-X 5 CrNiMo 13 4									
		1.4510	XM 8; 430 Ti	X 6 CrTi 17	Z 8 CT 17	X 6 CrTi 17					SUS 430 LX	08Ch17T	S 43036
		1.4511		X 8 CrNb 17	Z 8 CNb 17	X 6 CrNb 17				F-3122	SUS 430 LX		
		1.4512	409	X 5 CrTi 12	Z 6 CT 12	X 6 CrTi 12		409 S 19		F-3121	SUH 409		S 40900
		1.4528		X 105 CrCoMo 18 2									
		1.4540		G-X 4 CrNiCuNb 16 4									
		1.4724		X 10 CrAl 13	Z 10 C 13	X 10 CrAl 12	17 125	403 S 17		F-3152		10Ch13SJu	
		1.4742	430	X 10 CrAl 18	Z 10 CAS 18	X 8 Cr 17		430 S 15		F-3153	SUS 430; SUH21		
		1.4761		G-X 120 CrSi 23									
		1.4762	446	X 10 CrAl 24	Z 10 CAS 24	X 16 Cr 26	17 153			F-3154			S 44600
		1.4931		G-X 22 CrMoV 12 1									
		1.4962		X 12 CrNiWTi 16 3									
		1.6982		G-X 3 CrNi 13 4									
	P.4.2	1.2316		X 36 CrMo 17	Z 38 CD 17	X 38 CrMo 16 1 KU							
		1.4000	403	X 6 Cr 13	Z 6 C 13	X 6 Cr 13	17 020	403 S 17	2301		SUS 403	08Ch13	S 40300
		1.4021	420	X 20 Cr 13	Z 20 C 13	X 20 Cr 13	17 022	420 S 37	2303	F-3402	SUS 420 J 1	20Ch13	S 42000
		1.4024		X 15 Cr 13	Z 13 C 13		17 021	420 S 29			SUS 410 J 1		
		1.4028		X 30 Cr 13	Z 30 C 13	X 30 Cr 13	17 023	420 S 45	2304		SUS 420 J 2	30Ch13	
		1.4031		X 38 Cr 13	Z 40 C 14	X 40 Cr 14	17 024		2304	F-3404	SUS 420 J 2	40Ch13	
		1.4034		X 46 Cr 13	Z 40 C 14	X 40 Cr 14	17 029	420 S 45		F-3405		40Ch13	
		1.4057	431	X 20 CrNi 17 2	Z 15 CN 16.02	X 16 CrNi 16	17 145	431 S 29	2321	F-3427	SUS 431	20Ch17N2	S 43100
		1.4059		G-X 22 CrNi 17									
		1.4086		G-X 120 Cr 29									
		1.4108		X 100 CrMo 13									
		1.4112		X 90 CrMoV 18									S 44003
		1.4116		X 45 CrMoV 15						F-3422			
		1.4120		G-X 20 CrMo 13									
		1.4122		G-X 35 CrMo 17			17 137						
		1.4138		G-X 120 CrMo 29 2									
		1.4313	CA 6-NM	X 5 CrNi 13 4	Z 5 CN 13.4	X 6 CrNi 13 04		425 C 11	2385		SCS 5		
		1.4340		G-X 40 CrNi 27 4									
		1.4464		G-X 40 CrNiMo 27 5									
		1.4542	630	X 7 CrNiCu 16 4 4	Z7 CNU 17 04 04 (17-4PH)						SCS 24; SUS 630		S 17400
		1.4545		X 5 CrNiCu 15-5	E-Z5 CNU 15 05 (15-5PH)								
		1.4710		G-X 30 CrSi 6									
		1.4718	HNV 3	X 45 CrSi 9 3	Z 45 CS 9	X 45 CrSi 8	17 115	401 S 45		F-3220	SUH 1	40Ch9S2	S 65007
		1.4729		G-X 40 CrSi 13									
		1.4740		G-X 40 CrSi 17									
		1.4743		G-X 160 CrSi 18									

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P	P.4.2	1.4745		G-X 40 CrSi 23									
		1.4747	HNV 6	X 80 CrNiSi 20	Z 80 CSN 20.02	X 80 CrSiNi 20		443 S 65			SUH 4		S 65006
		1.4776		G-X 40 CrSi 29									
		1.4823		G-X 40 CrNiSi 27 4									
		1.4923		X 22 CrMoV 12 1			17 134	762					
		1.4928		G-X 12 CrNiMoCoVN 12									
		1.4935		X 20 CrMoWV 12 1									S 42200
M	M.1.1	1.3941		G-X 4 CrNi 18 13									
		1.3944		G-X 5 CrNi 18 11									
		1.3952		G-X 4 CrNiMoN 18 14									
		1.3953		G-X 2 CrNiMo 18 15									
		1.3955		G-X 12 CrNi 18 11									
		1.3959		G-X 10 CrNiNb 16 13									
		1.4301	304; 304 H	X 5 CrNi 18 10	Z6 CN 18-09	X 5 CrNi 18 10	17 240	304 S 15	2332; 2333	F-3504	SUS 304	08Ch18N10	S 30400
		1.4303	308; 305	X 5 CrNi 18 12	Z 8 CN 18.12	X 8 CrNi 19 10		305 S 19			SUS 305	06Ch18N11	S 30500
		1.4305	303	X 10 CrNiS 18 9	Z8 CNF 18-03	X 10 CrNi 18 09	17 243	303 S 21	2346		SUS 303		S 30300
		1.4306	304 L	X 2 CrNi 19 11	Z3 CN 18-10	X 2 CrNi 18 11	17 249	304 S 12	2352; 2333	F-3503	SCS 19	03Ch18N11	S 30403
		1.4308	CF-8	G-X 6 CrNi 18 9	Z 6 CN 18.10 M		42 2930	304 C 15	2333	F-8411	SCS 13	07Ch18N9L	
		1.4311	304 LN	X 2 CrNiN 18 10	Z 2 CN 18 .10	X 2 CrNiN 18 11	17 249	304 S 62	2371		SUS 304 LN		S 30453
		1.4312		G-X 10 CrNi 18 8			42 2931						
		1.4401	316	X 5 CrNiMo 18 10	Z6 CND 17 12 02	X 5 CrNiMo 17 12	17 346	316 S 16	2347	F-3543	SUS 316		S 31600
		1.4404	316 L	X 2 CrNiMo 17 13 2	Z3 CND 17 12 02	X 2 CrNiMo 17 12	17 349	316 S 11	2348	F-3533	SUS 316 L		S 31603
		1.4406	316 LN	X 2 CrNiMoN 17 12 2	Z 2 CND 17.12 Az	X 2 CrNiMoN 17 12		316 S 61			SUS 316 LN		S 31653
		1.4408		G-X 6 CrNiMo 18 10			42 2940			F-8414			
		1.4413		G-X 4 CrNiMo 13-4									
		1.4429	316 LN	X 2 CrNiMoN 17 13 3	Z3 CND 17 11 03 Az	X 2 CrNiMoN 17 13		316 S 62	2375		SUS 316 LN		S 31653
		1.4435	316 L	X 2 CrNiMo 18 14 3	Z 2 CND 17.13	X 2 CrNiMo 17 13		316 S 12	2353		SCS 16; SUS 316 L	03Ch17N 14M2	S 31603
		1.4436	316	X 5 CrNiMo 17 13 3	Z 6 CND 17.12	X 5 CrNiMo 17 13		316 S 16	2343		SUS 316		S 31600
		1.4437		G-X 6 CrNiMo 18 12			42 2940						
		1.4438	317 L	X 2 CrNiMo 18 16 4	Z 2 CND 19.15	X 2 CrNiMo 18 15		317 S 12	2367		SUS 317 L		S 31703
		1.4439		G-X 3 CrNiMo 17 13 5						F-3544			
		1.4446		G-X 2 CrNiMo 17 13 4									
		1.4448		G-X 6 CrNiMo 17 13									
		1.4449		X 3 CrNiMo 18 12 3									
		1.4507	F61	X 2 CrNiMOCuN 25 6 3	Z3 CNDU 25 07 Az (Uranus 52 N)								S 32750
		1.4541	321	X 6 CrNiTi 18 10	Z 6 CNT 18.10	X 6 CrNiTi 18 11	17 248	321 S 12	2337		SUS 321	12Ch18N 10T	S 32100
		1.4546	348	X 5 CrNiNb 18 10		X 6 CrNiNb 18 11		347 S 18					S 34800
		1.4550	347	X 6 CrNiNb 18 10	Z10 CNNb 18-10	X 6 CrNiNb 18 11	17 245	347 S 17	2338	F-3552 / F-3524	SUS 347	08Ch18N 12B	S 34700
		1.4552		G-X 5 CrNiNb 18 9			42 2933			F-8413			
		1.4571	316 Ti	X 6 CrNiMoTi 17 12 2	Z 6 CNT 17.12	X 6 CrNiMoTi 17 12	17 348	320 S 31	2350	F-3535		10Ch17N 13M2T	S 31635
		1.4573	316 Ti	X 10 CrNiMoTi 18 12		X 6 CrNiMoTi 17 13		320 S 33				10Ch17N 13M3T	S 31635
		1.4580	316 Cb	X 6 CrNiMoNb 17 12 2	Z 6 CNDNb 17.12	X 6 CrNiMoNb 17 12		318 S 17		F-3536		08Ch16N 13M2B	S 31640
		1.4581		G-X 5 CrNiMoNb 18 10	Z 4 CNDNb 18.12 M	GX 6 CrMoNb 20 11	42 2941	318 C 17			SCS 22		
		1.4583	318	X 10 CrNiMoNb 18 12		X 6 CrNiMoNb 17 13							
		1.4821		X 15 CrNiSi 25-4	Z20 CNS 25 04								
		1.4825		G-X 25 CrNiSi 18 9			42 2932						
		1.4826		G-X 40 CrNiSi 22 9			42 2934						
		1.4828	309	X 15 CrNiSi 20 12	Z 15 CNS 20.12		17 251	309 S 24		F-3312	SUH 309	20Ch20N 14S2	S 30900
		1.4832		G-X 25 CrNiSi 20 14									
		1.4876	B 163	X 10 NiCrAlTi 32 20	Z10 NCAT 32-21 (Incoloy 800)		17 358	NA 15 (H)		F-3314	NCF 800		
		1.4878	321	X 12 CrNiTi 18 9	Z 6 CNT 18.12 (B)	X 6 CrNiTi 18 11	17 246	321 S 20	2337		SUS 321	12Ch18N 10T	

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M	M.1.1	1.4968		G-X 7 CrNiNb 16 13									
		1.4988		G-X 8 CrNiMoVNb 16 1									
		1.6901		G-X 8 CrNi 18 10									
		1.6902		G-X 6 CrNi 18 10									
		1.6905		G-X 5 CrNiNb 18 10									
	M.2.1	1.3964		G-X 4 CrNiMnMoN 19 1									
		1.4310	301	X 12 CrNi 17 7	Z 12 CN 17.07	X 12 CrNi 17 07		301 S 21			SUS 301		S 30100
		1.4465		G-X 2 CrNiMoN 25 25									
		1.4536		G-X 2 NiCrMoCuN 25 2									
		1.4539	904L	X 1 NiCrMoCu 25 20 5	Z2 NCDU 25 20 (Uranus B6)								N 08904
		1.4547	F44	X 1 CrNiMoCuN 20 18 17	Z1 CNDU 20 18 06 Az (254 SMO)								
		1.4568	17-7 PH	X 7 CrNiAl 17 7									
		1.4837		G-X 40 CrNiSi 25 12			42 2936						
		1.4840		G-X 15 CrNi 25 20									
		1.4841	314; 310	X 15 CrNiSi 25 20	Z 15 CNS 25.20	X 16 CrNiSi 25 20	17 255			F-3310	SUH 310	20Ch25N 20S2	S 31000
		1.4845	310 S	X 12 CrNi 25 21	Z 12 CN 25.20	X 6 CrNi 26 20	17 255	310 S24	2361		SUH 310;		S 31008
		1.4848		G-X 40 CrNiSi 25 20		GX 40 CrNi 26 20	42 2952						
		1.4849		G-X 40 NiCrSiNb 38 1									
		1.4852		G-X 40 NiCrNb 35 25									
		1.4855		G-X 30 CrNiSiNb 24 2									
		1.4857		G-X 40 NiCrSi 35 25									
		1.4864	330	X 12 NiCrSi 36 16	Z 12 NCS 37.18		17 253	NA 17		F-3313	SUH 330		N 08330
		1.4865		G-X 40 NiCrSi 38 18		GX 50 NiCr 39 19		330 C 40			SCH 15; SCH 16		
		1.4871	EV 8	X 53 CrMnNiN 21 9	Z 52 CMN 21.09	X 53 CrMnNiN 21 9		349 S 54		F-3217	SUH 35; SUH 36	55Ch20G 9AN4	S 63008
		1.4873		X 45 CrNiW 18 9	Z 35 CNWS 20.09	X 45 CrNiW 18 9		331 S 40			SUH 31		
	M.3.1	1.4339		G-X 32 CrNi 28 10									
		1.4347		G-X 8 CrNi 26 7									
		1.4410	F53	X 2 CrNiMoN 25 7 4	Z2 CND 25 07 04 Az					F-3552			
		1.4460	329 LN	X 8 CrNiMo 27 5	Z5 CND 25 05 AZ				2324		SUS 329 J 1		S 32900
		1.4462	329 A (F51)	X 2 CrNiMoN 22 5 3	Z2 CND 22 05 03 AZ (Uranus 45 N)		17 381			F-3308			S 31803
		1.4463		G-X 6 CrNiMo 24 8 2									
		1.4501	F55	X 2 CrNiMoCuWN 25 7 4	Z2 CNDUW 25 07 04 Az (Zeron 100)								S 32760
		1.4815		G-X 8 CrNi 19 10									
		1.4822		G-X 40 CrNi 24 5									
K	K.1.1	0.6010	A48-20 B	GG-10	Ft 10 D	G 10	42 2410		01 10-00		FC 10	Sc 10	
		0.6015	A48-25 B	GG-15	Ft 15 D	G 15	42 2415	Grade 150	01 15-00	FG-15	FC 15	Sc 15	
		0.6020	A48-30 B	GG-20	Ft 20 D	G 20	42 2420	Grade 220	01 20-00	FG-20	FC 20	Sc 20	
		0.6025	A48-40 B	GG-25	Ft 25 D	G 25	42 2425	Grade 260	01 25-00	FG-25	FC 25	Sc 25	
	K.1.2	0.6030	A48-45 B	GG-30	Ft 30 D	G 30	42 2430	Grade 300	01 30-00	FG-30	FC 30	Sc 30	
		0.6035	A48-50 B	GG-35	Ft 35 D	G 35	42 2435	Grade 350	01 35-00	FG-35	FC 35	Sc 35	
		0.6040	A48-60 B	GG-40	Ft 40 D		42 2440	Grade 400	01 40-00			Sc 40	
		0.6652		GGL-NiMn 13 7	L- NM 13 7			L-NiMn 13 7					
		0.6655	A 436 Type 1	GGL-NiCuCr 15 6 2	L-NUC 15 6 2			L-NiCuCr 15 6 2					
		0.6656	A 436 Type 1b	GGL-NiCuCr 15 6 3	L-NUC 15 6 3			L-NiCuCr 15 6 3					
		0.6660	A 436 Type 2	GGL-NiCr 20 2	L-NC 20 2			L-NiCr 20 2	05 23-00				
		0.6661	A 436 Type 2b	GGL-NiCr 20 3	L-NC 20 3			L-NiCr 20 3					
		0.6667		GGL-NiSiCr 20 5 3	L-NSC 20 5 3			L-NiSiCr 20 5 3					
		0.6676	A 436 Type 3	GGL-NiCr 30 3	L-NC 30 3			L-NiCr 30 3					
		0.6680	A 436 Type 4	GGL-NiSiCr 30 5 5	L-NSC 30 5 5			L-NiSiCr 30 5 5					
	K.2.1	0.7033		GGG-35.3			42 2303						
		0.7040	60 40 18	GGG-40	FGS 400-12	GS 400-12	42 2304	SNG 420/12	0717-02	FGE 38-17	FCD 40	VC 42-12	

	Index	Material number	USA	DIN	AFNOR	UNI	ČSN	BS	SIS	UNE	JIS	ГОСТ	UNS
K	K.2.1	0.7043		GGG-40.3	FGS 370-17	GSO 42/17	42 2314	SNG 370/17	0717-15			VC 42-12	
		0.7050	65-45-12	GGG-50	FGS 500-7	GS 500/7	42 2305	SNG 500/7	0727-02	FGE 50-7	FCD 50	VC 50-2	
		0.7060	80-55-06	GGG-60	FGS 600-3	GS 600/3	42 2306	SNG 600/3	0732-03		FCD 60	VC 60-2	
	K.2.2	0.7070	100-70-03	GGG-70	FGS 700-2	GS 700-2	42 2307	SNG 700/2	0737-01	FGS 70-2	FCD 70	VC 70-2	
		0.7080	120-90-02	GGG-80	FGS 800-2	GS 800-2	42 2308	SNG 800/2				VC 80-2	
		0.7652		GGG-NiMn 13 7	S-NM 13 7			S-NiMn 13 7					
		0.7660	A 439 Type D-2	GGG-NiCr 20 2	S-NC 20 2			S-NiCr 20 2					
		0.7661	A 439 Type D-2B	GGG-NiCr 20 3	S-NC 20 3			S-NiCr 20 3					
		0.7665		GGG-NiSiCr 20 5 2	S-NSC 20 5 2			S-NiSiCr 20 5 2					
		0.7670	A 439 Type D-2C	GGG-Ni 22	S-N 22			S-Ni 22					
		0.7673	A 439 Type D-2M	GGG-NiMn 23 4	S-NM 23 4			S-NiMn 23 4					
		0.7676	A 439 Type D-3	GGG-NiCr 30 3	S-NC 30 3			S-NiCr 30 3					
		0.7677	A 439 Type D-3A	GGG-NiCr 30 1	S-NC 30 1			S-NiCr 30 1					
		0.7680	A 439 Type D-4	GGG-NiSiCr 30 5 5	S-NSC 30 5 5			S-NiSiCr 30 5 5					
		0.7683	A 439 Type D-5	GGG-Ni 35	S-N 35			S-Ni 35					
		0.7685	A 439 Type D-5B	GGG-NiCr 35 3	S-NC 35 3			S-NiCr 35 3					
		0.8065		GTW-65									
	K.3.1	0.8035		GTW-35-04			42 2536			GTW 35			
		0.8040		GTW-40-05			42 2540						
		0.8045		GTW-45-07									
		0.8055		GTW-55									
		0.8135		GTS-35-10	MN 35-10		42 2533	B 340/12		GTS 35			
		0.8145		GTS-45-06			42 2545	P 440/7		GTS 45			
		0.8155		GTS-55-04	MP 50-5		42 2555	P 510/4		GTS 55			
		0.8165		GTS-65-02	MP 60-3			P 570/3		GTS 65			
	K.3.2	0.8170		GTS-70-02	IP 70-2			P 690/2		GTS 70			
N	N.1.1	3.3307		Al99.85Mg0.5									
		3.3308		Al99,9Mg0,5									
		3.3315		AlMg1	5005 (AlMg1)					L-3350			
		3.3316		AlMg1.5									
		3.3317		Al99.85Mg1									
		3.3318		Al99.9Mg1									
		3.3326		AlMg1.8									
		3.3523		AlMg2.5									
		3.3525		AlMg2Mn0.3									
		3.3527		AlMg2Mn0.8									
		3.3535		AlMg3	5754								
		3.3537		AlMg2.7Mn									
		3.3555		AlMg5	5056 A								
		3.3561		G-AlMg5									
		3.3591		G-AlMg10									
		3.0205		Al99	1200 (A4)	9001/1	42 4009			L-3001			
		3.0255		Al99.5	1050 A	9001/2	42 4004			L-3051			
		3.0275		Al99.7	1070 A		42 4003			L-3071			
		3.0285		Al99.8	1080 A (A8)		42 4002			L-3081			
		3.0305		Al99.9									
		3.0505		AlMn0.5Mg0.5									
		3.0506		AlMn0.6									
		3.0515		AlMn1			42 4432			L-3810			
		3.0517		AlMnCu									
		3.0525		AlMn1Mg0.5	3005								

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N	N.1.1	3.0526		AlMn1Mg1									
		3.0615		AlMgSiPb									
		3.0915		AlFeSi									
	N.1.2	3.2307		Al99.85MgSi									
		3.2315	6082	AlMgSi1	6082	9006/4	42 4400						
		3.3206	6063	AlMgSi0,5	6060 (AGS)		42 4401			L-3441			
		3.3208		Al99.9MgSi									
		3.3210		AlMgSi0.7	6005 A								
		3.3211		AlMg1SiCu	6061								
		3.3345		AlMg4.5									
		3.3545	5083	AlMg4Mn	5086 (AG4MC)	9005/5				L-3322			
		3.3547	A95083	AlMg4,5Mn0,7	5083 (AlMg5Mn0,7)			N8		L-3321	A 5083		
		3.3549		AlMg5Mn									
		3.4335	7020	AlZn4,5Mg1	7020 (AZ5G)	9007/1	42 4441			L-3741			
		3.4337		Al99.8ZnMg									
		3.4345		AlZnMgCu0.5									
		3.4365	7075	AlZnMgCu1.5	7075 (AZ5GU)		42 4222			L-3710			
		2.1086		G-CuSn10Zn									
		3.1255	2014	AlCuSiMn	2014	9002/3							
		3.1305		AlCu2.5Mg0.5									
		3.1325	2017 A	AlCuMg1	2017 A (AU4G)					L-3120			
		3.1355	2024	AlCuMg2	2024 (AU4G1)	9002/4	42 4203			L-3140			
		3.1645		AlCuMgPb	2030 (AU4PB)		42 4254			L-3121			
		3.1655	2011	AlCuBiPb	2011 (AU5PbBi)	9002/5				L-3192			
		MFK											
	N.2.1	3.2581		G-AlSi12			42 4330						
		3.2583		G-AlSi12(Cu)			42 4330						
		3.3261		G-AlMg5Si			42 4515						
		3.3292		GD-AlMg9			42 4519						
		3.3541		G-AlMg3									
		3.3543		G-AlMg3(Cu)									
	N.2.2	3.2134		G-AlSi5Cu1Mg									
		3.2151		G-AlSi6Cu4			42 4357						
		3.2161		G-AlSi8Cu3									
		3.2341		G-AlSi5Mg									
		3.2371		G-AlSi7Mg			42 4334						
		3.2373		G-AlSi9Mg			42 4331						
		3.2381		G-AlSi10Mg			42 4331						
		3.2383		G-AlSi10Mg(Cu)			42 4331						
		3.3241		G-AlMg3Si									
		3.1371		G-AlCu4TiMg									
		3.1841		G-AlCu4Ti									
	N.3.1	2.0040		OF-Cu			42 3000						
		2.0060		E-Cu57			42 3001						
		2.0065		E-Cu58			42 3001						
		2.0070		SE-Cu									
		2.0076		SW-Cu									
		2.0090		SF-Cu			42 3003						
		2.0220		CuZn5			42 3200						
		2.0230		CuZn10			42 3201						
		2.0240		CuZn15			42 3202						

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N	N.3.1	2.0250		CuZn20			42 3203						
		2.0261		CuZn28									
		2.0265		CuZn30			42 3210						
		2.0280		CuZn33			42 3212						
		2.0321		CuZn37		C2700	42 3213						
		2.0335		CuZn36									
		2.0360		CuZn40			42 3220						
		2.0460		CuZn20Al2									
		2.0470		CuZn28Sn1									
		2.0510		CuZn37Al1			42 3231						
		2.0530		CuZn38Sn1			42 3237						
		2.0730		CuNi12Zn24									
		2.0740		CuNi18Zn20									
		2.0830		CuNi25									
		2.0842		CuNi44Mn1									
		2.0853		CuNi1.5Si									
		2.0855		CuNi2Si			42 3054						
		2.0857		CuNi3Si									
		2.0872		CuNi10Fe1Mn									
		2.0875		CuNi9Sn2									
		2.0882		CuNi30Mn1Fe									
		2.0883		CuNi30Fe2Mn2									
		2.0918		CuAl5As									
		2.0920		CuAl8									
		2.0932		CuAl8Fe3									
		2.0936		CuAl10Fe3Mn2									
		2.0960		CuAl9Mn2									
		2.0966		CuAl10Ni5Fe4									
		2.0971		CuAl9Ni3Fe2									
		2.1016		CuSn4									
		2.1020		CuSn6									
		2.1030		CuSn8									
		2.1080		CuSn6Zn6									
		2.1191		CuAg0.1P									
		2.1203		CuAg0.1									
		2.1245		CuBe1.7									
		2.1247		CuBe2									
		2.1293		CuCrZr			42 3039						
		2.1310		CuFe2P									
		2.1522		CuSi2Mn									
		2.1525		CuSi3Mn									
		Ampco 16		CuAl10Fe3									
		Ampco 18		CuAl10.5Fe3.5									
		Ampco 8		CuAl6.5Fe2.5Sn									
				Ampco 8-16									
	N.3.2	2.0331		CuZn36Pb1.5			42 3214						
		2.0332		CuZn37Pb0.5									
		2.0372		CuZn39Pb0.5			42 3221						
		2.0540		CuZn35Ni2									
		2.0550		CuZn40Al2									
		2.0561		CuZn40Al1			42 3231						

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N	N.3.2	2.0572		CuZn40Mn1			42 3234						
		2.0580		CuZn40Mn1Pb									
		2.0780		CuNi12Zn30Pb1									
		2.0790		CuNi18Zn19Pb1									
		2.1498		CuSP									
		2.1504		NiAlBz									
		2.1546		CuTeP									
		Ampco 12		CuAl9Fe3									
		Ampco 20		CuAl11Fe4									
	N.3.3	2.0371		CuZn38Pb1.5			42 3222						
		2.0375		CuZn36Pb3									
		2.0380		CuZn39Pb2			42 3223						
		2.0401		CuZn39Pb3									
		2.0402		CuZn40Pb2			42 3223						
		2.0410		CuZn44Pb2									
		2.0490		CuZn31Si1									
		2.0500		CuZn23Al6Mn4Fe3									
		2.0771		CuNi7Zn39Mn5Pb3									
		2.0978		CuAl11Ni6Fe5									
		2.1093		G-CuSn6ZnNi									
		2.1096		G-CuSn5ZnPb									
		2.1285		CuCo2Be									
		Ampco 21		CuAl13Fe4.5									
		Ampco 22		CuAl14Fe5									
		Ampco 25											
		Ampco 26											
				Ampco 18-26									
	N.4.1	3.5101		G-MgZn4SE1Zr1									
		3.5102		G-MgZn5Th2Zr1									
		3.5103		G-MgSE3Zn2Zr1									
		3.5105		G-MgTh3Zn2Zr1									
		3.5106		G-MgAg3Se2Zr1									
		3.5200		MgMn2									
		3.5312		MgAl3Zn									
		3.5470		GD-MgAl4Si1									
		3.5612		GD-MgAl6Zn1									
		3.5662		G-MgAl6									
		3.5812		G-MgAl8Zn1			42 4911						
		3.5912		GD-MgAl9Zn1			42 4911						
S	S.1.2	1.4980		X 5 NiCrTi 26 15									S66286
	S.2.1	1.3924		Ni54									
		1.3926		RNi12			42 3484						
		1.3927		RNi8			42 3484						
		2.4360		NiCu30Fe	Monel 400		42 3431						
		2.4610		NiMo16Cr16Ti	Hastelloy C-4								
		2.4617		NiMo28	Hastelloy B-2								
		2.4630		NiCr20Ti	Nimonic 75			HR 5					
		2.4668		NiCr19Fe18Nb5Mg	Inconel 718								
		2.4812		NiCr17Mo17FeW	Hastelloy C								
		2.4819		NiMo16Cr15W	Hastelloy C-276								
		2.4851		NiCr23Fe, Inconel 601	Inconel 601								

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S	S.2.1	2.4856		NiCr22Mo9Nb	Inconel 625								
		2.4858		NiCr21Mo				NA 16			NCF 825		N 08825
		2.4951		NiCr20Ti	Nimonic 75			HR 5					
		2.4964		CoCr20W15Ni									
		2.4989		CoCr20NiW									
	S.2.2	2.4375		NiCu30Al	Monel K 500								
		2.4631		NiCr20TiAl	Nimonic 80 A			HR 401; 601			NCF 80 A		N 07080
		2.4634		NiCo20Cr15MoAlTi	Nimonic 105								
		2.4640		NiCr15Fe	Inconel 600								
		2.4654			Waspaloy								
		2.4662		NiCr13Mo6Ti3	Nimonic 901								
		2.4668		NiCr19Fe18Nb5Mg	Inconel 718								
		2.4816		NiCr15Fe	Inconel 600			NA 14			NCF 600		N 06600
		2.4952		NiCr20TiAl	Nimonic 80 A								
		2.4973		NiCr19Co11MoTi									
		2.4983		NiCr18Co18MoAlTi	Udimet 500								
	S.2.3	2.4670		G-NiCr13Al6MoNb	Nimocast 713								
		2.4674		NiCo15Cr10MoAlTi	Nimocast PK 24								
		2.4979		CoCr28MoNi									
	S.3.1	3.7024		Ti99,5									
		3.7025		Ti99,8									
		3.7034		Ti99,7									
		3.7055		Ti99,4									
		3.7064		Ti99,2									
		3.7124		TiCu2									
	S.3.2	3.7114		TiAl5Sn2									
		3.7144		TiAl6Sn2Zr4Mo2									
		3.7154		TiAl6Zr5									
		3.7165		TiAl6V4	T-A 6 V			TA 10 – TA 13					R 56400
		3.7174		TiAl6V6Sn2									
		3.7184		TiAl4Mo4Sn2				TA 45 – TA 51					
H	H.1.1	1.2311		40 CrMnMo 7			19 520						
		1.2312		40 CrMnMoS 8 6	40 CMD 8 + S								
		1.2316		X 36 CrMo 17	Z 38 CD 17	X 38 CrMo 16 1 KU							
		1.2365	H 10	X 32 CrMoV 3 3	32 DCV 28	30 CrMoV 12 27 KU	19 541	BH 10			SKD 7	3Ch3M3F	T 20810
		1.2567		X 30 WCrV 5 3	Z 32 WCV 5	X 30 WCrV 5 3 KU	19 720				SKD 4		
		1.2581	H 21	X 30 WCrV 9 3	Z 30 WCV 9	X 30 WCrV 9 3 KU	19 721	BH 21			SKD 5	3Ch2W8F	T 20821
		1.2738		40 CrMnNiMo 8						F-5303			
		1.2885		X 32 CrMoCoV 3 3 3	30 DCKV 28								
		1.4028		X 30 Cr 13	Z 30 C 13	X 30 Cr 13	17 023	420 S 45	2304		SUS 420 J 2	30Ch13	
		1.4031		X 38 Cr 13	Z 40 C 14	X 40 Cr 14	17 024		2304	F-3404	SUS 420 J 2	40Ch13	
		1.4034		X 46 Cr 13	Z 40 C 14	X 40 Cr 14	17 029	420 S 45		F-3405		40Ch13	
		1.4112		X 90 CrMoV 18									S 44003
		1.5122		37 MnSi 4			13 240						
		1.6358		X 2 NiCoMoTi 18 9 5									
		1.6582	4340	34 CrNiMo 6	35 NCD 6	35 NiCrMo 6 (KW)	16 342	817 M 40	2541	F-128 / F-1270	SNCM 447	38Ch2N2MA	
		1.7003		38 Cr 2	38 C 2	38 Cr 2							
		1.7006	5045	46 Cr 2	42 C 2	45 Cr 2							
		1.7030	5130	28 Cr 4				530 A 30				30Ch	
		1.7176	5155	55 Cr 3	55 C 3	55 Cr 3		527 A 60	2253	F-1431	SUP 9 (A)	50ChGA	G 51550
		1.0961	9262	60 SiCr 7	60 SC 7	60 SiCr 8					SUP 7		

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H	H.1.1	1.1248	1078; 1080	Ck 75	XC 75	C 75	12 081	060 A 78	1774; 1778			75	G 10780
		1.1273		90 Mn 4									
	H.1.2	1.2083		X 42 Cr 13	Z 40 C 14	X 41 Cr 13 KU	19 435			F-5263	SUS 420 J 2		
		1.2323		GS-48 CrMoV 6 7									
		1.2343	H 11	X 38 CrMoV 5 1	Z 38 CDV 5	X 37 CrMoV 5 1 KU	19 552	BH 11		F-5317	SKD 6	4Ch5MFS	T 28811
		1.2367		X 38 CrMoV 5 3									
		1.2510	O 1	100 MnCrW 4	90 MWCV 5	95 MnWCr 5 KU	19 314	BO 1	2140	F-5220	SKS 3		T 31501
		1.2542	S 1	45 WCrV 7		45 WCrV 8 KU	19 732	BS 1	2710				T 41901
		1.2550		60 WCrV 7	55 WC 20	55 WCrV 8 KU	19 735						
		1.2606		G-X 37 CrMoW 5 1									
		1.2711		54 NiCrMoV 6	55 NCDV 6		19 662						
		1.2713	L 6	55 NiCrMoV 6	55 NCDV 7		19 662			F-520.S	SKT 4	5ChNM	T 61206
		1.2764		X 19 NiCrMo 4									
		1.2767		X 45 NiCrMo 4	Y 35 NCD 16	42 NiCrMo 15 7	19 655						
		1.4109		X 65 CrMo 14									
		1.4112		X 90 CrMoV 18									S 44003
		1.1157	1039	40 Mn 4	35 M 5			150 M 36				40G	G 10390
		1.1231	1070	Ck 67	XC 68	C 70	12 071	060 A 67	1770			70	G 10700
		1.1274	1095	Ck 101	XC 100			060 A 96	1870		SUP 4		G 10950
	H.1.3	1.2080	D 3	X 210 Cr 12	Z 200 C 12	X 210 Cr 13 KU	19 436	BD 3			SKD 1	Ch12	T 30403
		1.2101		62 SiMnCr 4									
		1.2162		21 MnCr 5	20 NC 5		19 487				SCR 420 H		
		1.2201		G-X 165 CrV 12									
		1.2210	L 2	115 CrV 3	100 C 3	107 CrV 3 KU	19 421						T 61202
		1.2341		X 6 CrMo 4									
		1.2379	D 2	X 155 CrVMo 12 1	Z 160 CDV 12	X 155 CrVMo 12 1 KU	19 573	BD 2		F-5211	SKD 11		T 30402
		1.2419		105 WCr 6	105 WC 13	107 WCr 5 KU					SKS 31	ChWG	
		1.2601		X 165 CrMoV 12		X 165 CrMoW 12 KU	19 572		2310				
		1.2721		50 NiCr 13									
		1.2735		15 NiCr 14	10 NC 12		16 240				SNC 22		T 51606
		1.2833	W 210	100 V 1	Y1 105 V	102 V 2 KU	19 356	BW 2			SKS 43		T 72302
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ISO designation system

ISO attribute	Feature Description
A	
ADJRG	Adjustment range
ADJRGR	Adjustment range radial
ALP	Clearance angle axial
AN	Clearance angle major
APMX	Depth of cut maximum
B	
B	Shank width
BD	Body diameter
BD_1	Body diameter, 1st cutting step
BD_2	Body diameter, 2nd cutting step
BD_3	Body diameter, 3rd cutting step
BD_4	Body diameter, 4th cutting step
BDRED	Body diameter, reduced
BDX	Body diameter maximum
BHTA	Body half taper angle
BLQ	Balance quality code
BN	Face land width
BS	Trailing edge length
BTED	Body taper end diameter
C	
CDX	Cutting depth maximum
CF	Central flat
CHW	Corner chamfer width
CHWTL	Flank chamfer width left hand
CLDIS_1	centre line distance 1
CLDIS_2	centre line distance 2
CLDIS_3	centre line distance 3
CND	Coolant entry diameter
CNT	Coolant entry, thread size
CODX	Parting off diameter, max.
CRE	Spot radius
CRKS	Pull stud thread size
CW	Cutting width
CXD	Coolant exit diameter
D	
D1	Fixing hole diameter
DAXN	Axial groove outside diameter minimum
DAXX	Axial groove outside diameter maximum
DC	Cutting diameter
DC_1	Cutting diameter, 1st cutting step
DC_2	Cutting diameter, 2nd cutting step
DCD	Cutting diameter drilling part
DCINTF	Interference cutting diameter
DCN	Cutting diameter minimum
DCONMS	Mounting spigot diameter
DCONWS	Connection diameter workpiece side
DCONWS_1	Connection diameter workpiece side – 1
DCONWS_2	Connection diameter workpiece side – 2
DCSKX	Countersunk diameter, max
DCX	Cutting diameter maximum
DF	Flange diameter
DFC	Functional diameter
DHUB	Hub diameter
DLN	Diameter lock nut
DMIN	Minimum bore diameter
DN	Neck Diameter
DRVS	Drive size

ISO attribute	Feature Description
G	
GAN	Insert rake angle
GB	Face land angle
H	
H	Shank height
HDD	Head diameter
HDW	head width
HF	Functional height
HLN	Lock nut height
HSUP	Support height
I	
IC	Inscribed circle diameter
IDNR	Identifying order number
IH	Insert hand
INSL	Insert length
K	
KAPR	Tool cutting edge angle
KCH	Corner chamfer angle
L	
L	Cutting edge length
L_1	Cutting edge length 1
L_2	Cutting edge length 2
L_3	Cutting edge length 3
LB	Body length
LB_1	Body length 1
LB_2	Body length 2
LCF	Length chip flute
LCOL	Collet length
LDRED	Reduced body diameter length
LE	Cutting edge effective length
LF	Functional length
LF_1	Functional length 1
LF_2	Functional length 2
LF_3	Functional length 3
LFSF	Distance to face
LH	Head length
LPCON	Connection protruding length
LPR	Protruding length
LS	Shank length
LSC	Clamping length machine side
LSCN	Clamping length minimum machine side
LSCX	Clamping length maximum machine side
LTA	length tool assembly
LU	Usable length
M	
MXC	Clamping force maximum
N	
NOF	Flute count
NT	Tooth count
O	
OAH	Overall height
OAL	Overall length
OAW	Overall width

Continued on next page

ISO designation system

ISO attribute	Feature Description
P	
PDPT	Profile depth insert
PDX	Profile distance ex
PDY	Profile distance ey
PHD	Premachined hole diameter
PL	Point length
PLGL	Plug length
PNA	Profile included angle
PRFA	Profile angle
PRFRAD	Profile radius
PRFRAD1	Profile radius 1
PRFRAD2	Profile radius 2
PRFRAD3	Profile radius 3
PSIR	Tool lead angle
R	
RA	Relief angle
RADH	Radial height
RADW	Radial width
RADWOF	Radial offset width
RAL	Relief angle lh
RAR	Relief angle rh
RCSK	Radius countersunk
RE	Corner radius
RE_1	Corner radius 1
RE_2	Corner radius 2
RE_3	Corner radius 3
REL	Corner radius left hand
RETL	Flank radius left hand
RETR	Flank radius right hand
RHCDL	Radial height chamfer distance lower
RHCDU	Radial height chamfer distance upper
RPMX	Rotational speed maximum
S	
S	Insert thickness
S1	Insert thickness total
SD	Step distance
SDL	Step diameter length
SDL_1	Step diameter length 1
SDL_2	Step diameter length 2
SZID	nominal size
T	
TD	Thread diameter
TDIN	Thread diameter, inch measure
THID	Thread designation inside
THL	Thread cutting part length
THOD	Thread designation outside
THSZMS	Connection thread nominal size
THSZWS	Connection thread nominal size workpiece side
TP	Thread pitch
TPI	Threads per inch
TQX	Torque maximum

ISO attribute	Feature Description
W	
W1	Insert width
WF	Functional width
WF2	Functional width 2
WT	Weight of item
Z	
ZEFF	Face effective cutting edge count
ZEFP	Peripheral effective cutting edge count
ZNF	Face mounted insert count
ZNP	Peripheral mounted insert count

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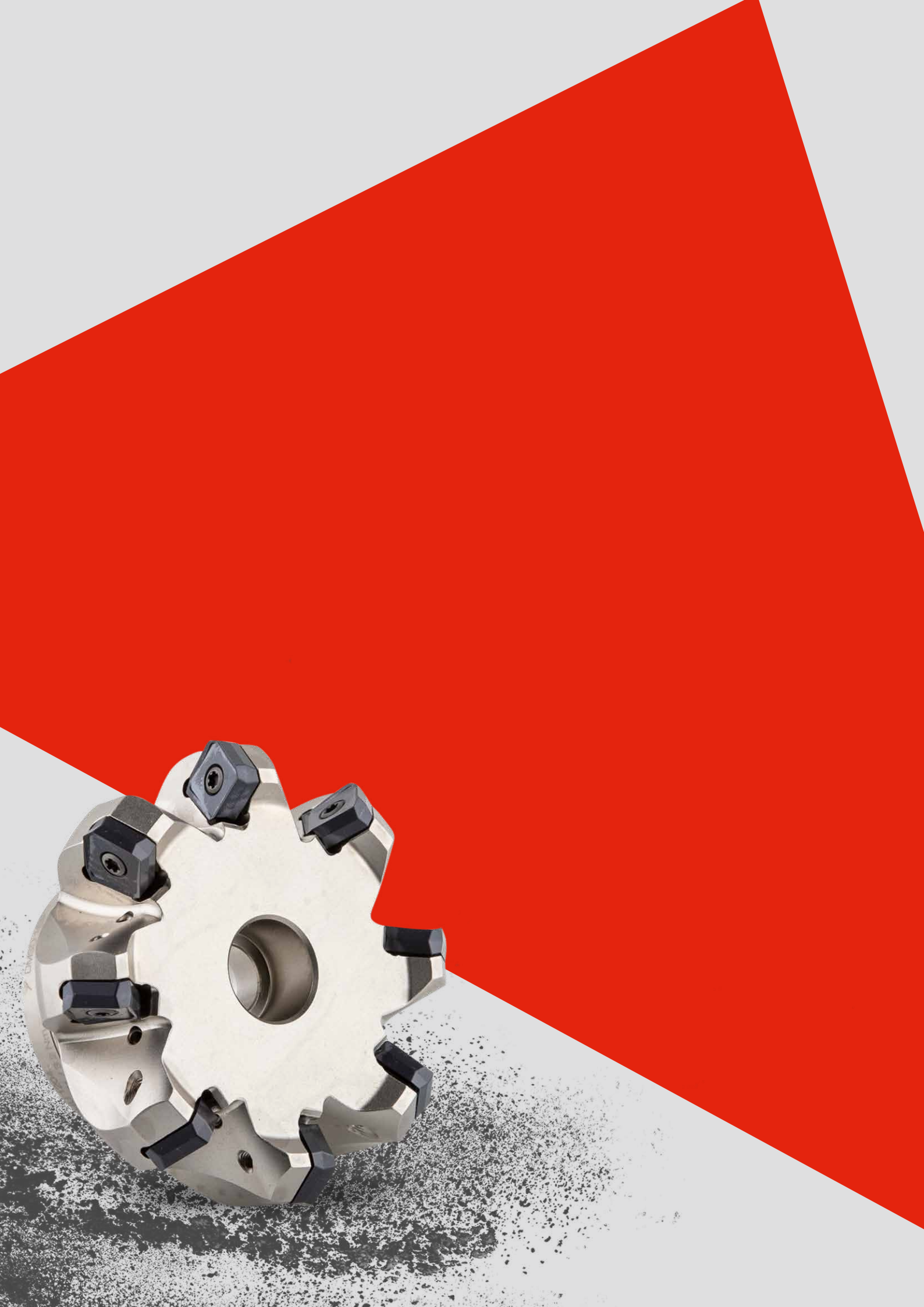



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