

UP2DATE

CHIP CONTROL SPECIALIST

The new disc milling cutter
MaxiMill – Slot-SX top performer
in slot milling!

... AND FURTHER PRODUCTS

- ▲ MicroKom – hi.flex micro: The all-rounder for boring ranges of Ø 0.5 mm up to 60 mm
- ▲ Optimized centric vice ZSG 4 inspires with firm grip and easy handling

TEAM CUTTING TOOLS



CUTTING SOLUTIONS BY
CERATIZIT



KOMET



Klenk

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

Tooling the Future

www.ceratizit.com

Welcome!



It couldn't be easier

**Ordering via the
Online Shop**

<http://cuttingtools.ceratizit.com>



On-site technical support

**Your Local Technical
Sales Engineer**

Your customer number

MaxiMill – Slot-SX

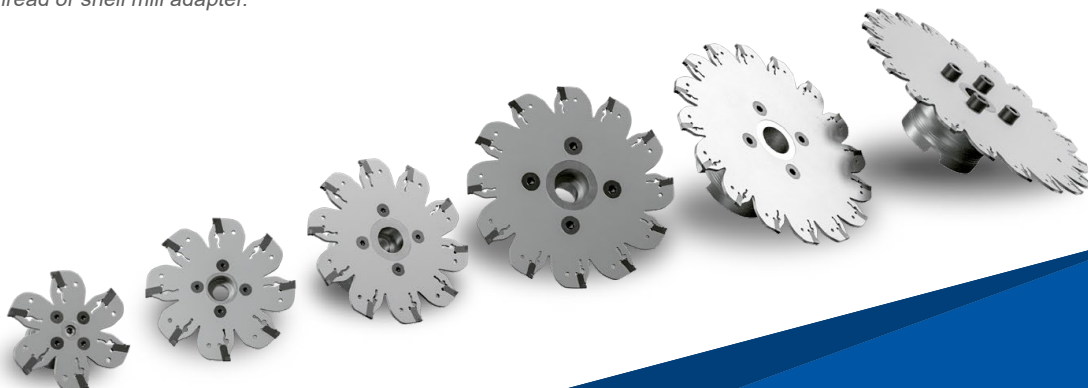
The new slot milling system



Our new side and face milling cutters from the MaxiMill series deliver maximum process security and optimum performance thanks to thro' coolant – even with diameters as large as 315 mm.

The MaxiMill – Slot-SX is closing a gap in the range of milling tools with indexable inserts with a single program for slot milling which can be used to machine slots and grooves and perform parting off processes reliably. The new series is based on existing grooving inserts from the SX system and therefore covers virtually the entire range of possibilities for ISO P/M/K/N/S.

*Diverse range of tool holders from Ø 63 mm up to Ø 315 mm
(up to Ø 250 mm with ICH) with various DIN connections,
via thread or shell mill adapter.*



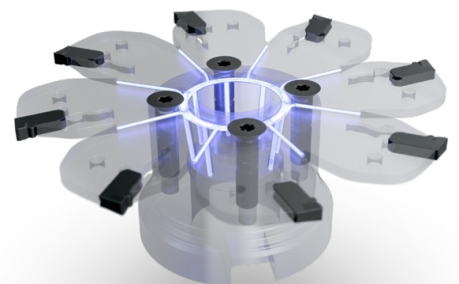


Diameter of up to 250 mm with internal coolant holes

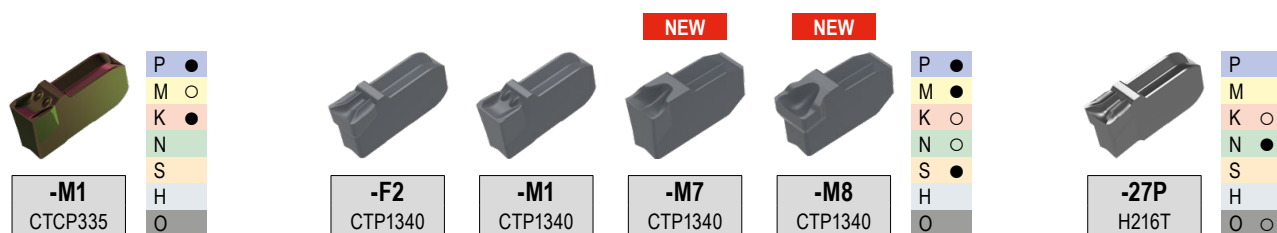
The internal coolant holes (ICH) on the MaxiMill – Slot-SX ensure optimum chip control during slot milling. Time-consuming removal of chips from grooves or chip jams and material deposits with negative consequences for the workpiece are eliminated thanks to an effective coolant supply – even with ICH diameters up to 250 mm on the new slot milling system. Improved surface qualities and heat regulation are the result, alongside a significant increase in service life for the tools.

Advantage/benefit

- ▲ **Thro' coolant up to Ø 250 mm**
Optimum chip control and surface quality
- ▲ **Chip-free slots**
No manual removal of chips
- ▲ **No chip jams**
Process security and long service life
- ▲ **No material deposits**
Reduction in built-up edges



Large selection of indexable inserts



Inserts changed safely

To keep things simple during handling, MaxiMill – Slot-SX makes use of the patented SX clamping key for changing inserts. Thanks to its lever, this key speeds up changing operations and always maintains the correct clamping force.

Features

- ▲ Reliable indexable insert programme with wide range of applications
- ▲ Indexable inserts from the SX grooving system + upgrade to -M7 and -M8 chip breakers
- ▲ Easy handling thanks to patented SX assembly key with eccentric lever system
 - No wear on the insert seat
 - Keeps the indexable insert in a precise and stable position
 - No overstretching of the gripping finger
 - Quick and user-friendly changing of indexable inserts



Further information can be found on → Page 50–67



MicroKom – hi.flex micro

The continuation of the hi.flex system success story



KOMET

The new hi.flex micro precision adjustment head is not only the continuation of the hi.flex system success story, but it also represents the ultimate milestone in terms of precision, flexibility and user-friendliness.

With a boring range of $\varnothing$ 0.5 mm – 60 mm, the hi.flex micro covers a very wide range of all upcoming spindle machining operations. The favourable mass relationship and the symmetrically balanced design enable maximum speeds of up to 30,000 rpm to be achieved, which is essential for generating very small diameters.



Performance and precision combined – the hi.flex micro is an absolute MUST HAVE for every well-equipped production facility.

CERATIZIT Product Manager Felix Auhorn

Adjustment
accuracy
0,002 mm

Maximum
speed
30.000 rev./min.
in slide centre position

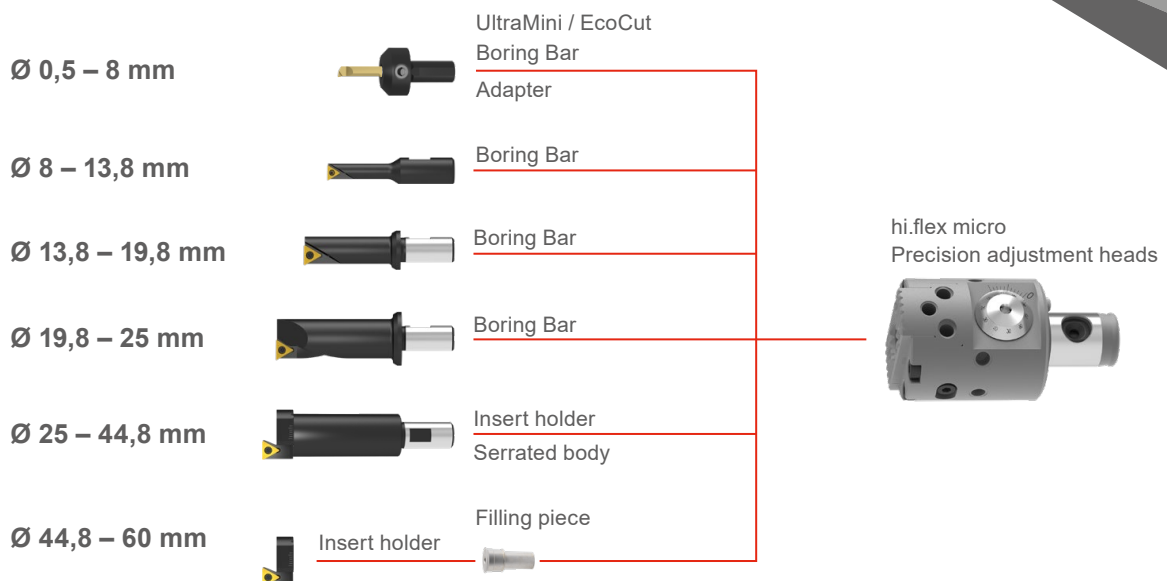
Adjustment
range
**-0,5 mm –
+5 mm**

Boring range
 $\varnothing$ 0,5 – 60 mm

Features

- ▲ Very large boring range (0.5 mm – 60 mm)
- ▲ Specially designed for small and very small diameters
- ▲ Very flexible due to extremely lightweight, modular design
- ▲ Very high speeds can be reached thanks to the favourable mass relationship and symmetrically balanced design
- ▲ Radially positioned balancing threads enable precision balancing to be carried out in the working position
- ▲ Specially designed boring bars tailored specifically to the respective application available as semi-standard
- ▲ Maximum user-friendliness thanks to easy handling
- ▲ Very attractive price
- ▲ Boring bar adapter for using UltraMini and EcoCut boring bars

Product programme



Further information can be found on → Page 16–21



CentriClamp – ZSG 4

The all-rounder clamping solution is now even better!



It's done it: optimised ZSG 4 all-rounder wins machine operators' hearts!

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 ZSG 4 centric vice from CERATIZIT. For example, its rust-protected base body guarantees a long useful life, and the encapsulated spindle practically eliminates all maintenance requirements. It's almost impossible for chips or other debris from the machining process to penetrate the inside of the ZSG 4, and any that do are easily removed.



Further information can be found on → Page 89–102

The new ZSG 4 centric vice – Added value update instead of a mere facelift



Design

Compact design with ideal accessibility

Durability

Protected spindle – closed system, high process security

Jaw change

Quick and easy with two screws

Scale

Laser marking of the base body and jaws, aid for positioning the system jaws and workpiece

QR code

With lots of helpful information

Quality

Sustainable model with nickel-plated base body ensures a long service life

Precision

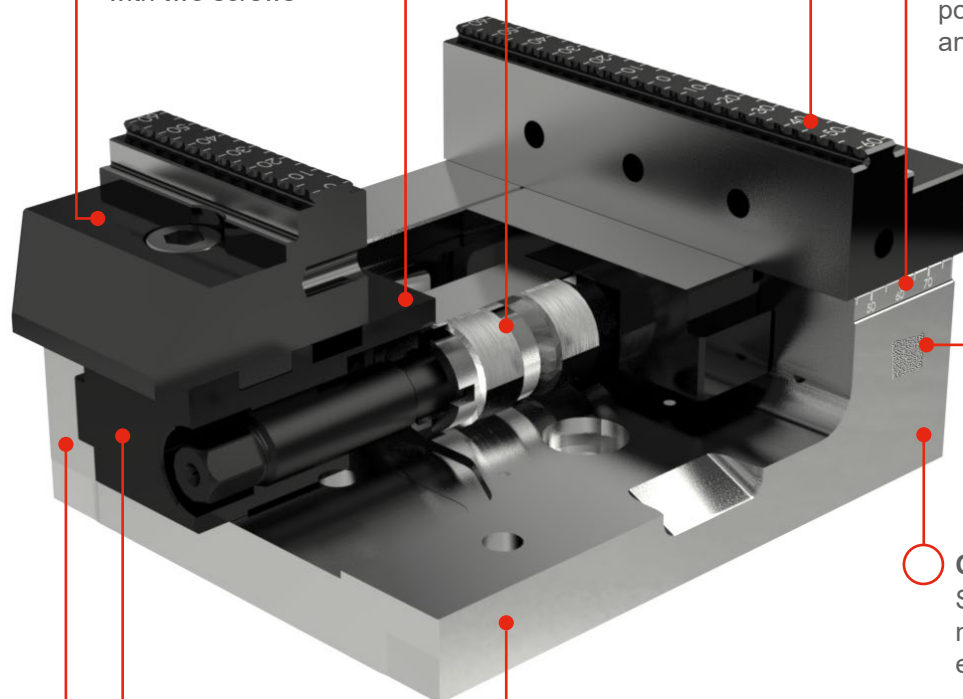
High precision thanks to backlash-free mounting

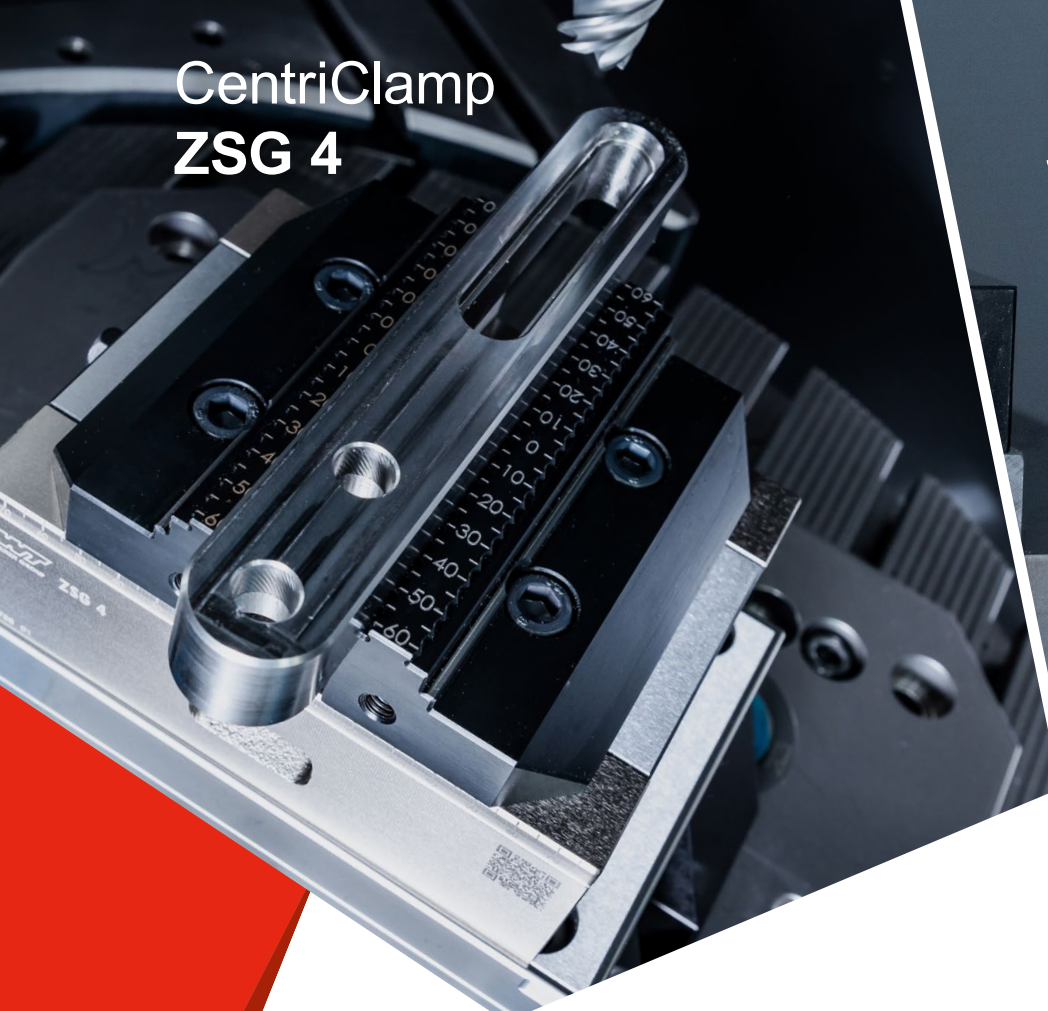
Compatibility

The same clamping ranges, significantly improved interference contour, comprehensive modular jaw range

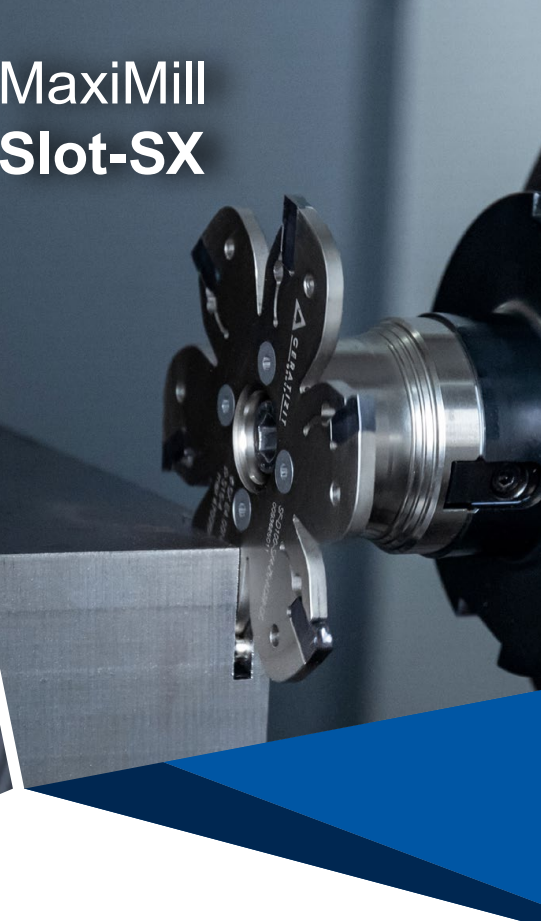
User-friendliness

Easy maintenance and accessibility, optimised for cleaning





CentriClamp
ZSG 4



MaxiMill
Slot-SX

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MicroKom hi.flex micro



Milling tools with indexable inserts

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Adapters and accessories

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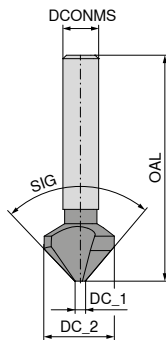
Workpiece clamping

- 84–88 SoloClamp – ESG 5
- 89–102 **CentriClamp – ZSG 4**
- 103+104 General additions for workpiece clamping

Countersink 90° with irregular pitch, DIN 335-C

- ▲ all sizes with 3 cutting edges and highly irregular pitch, resulting in smooth running, excellent roundness and chatter reduction giving the highest surface quality
- ▲ special HPC-TiN coating
- ▲ for very high tool life in almost all materials
- ▲ greatly reduced axial and radial forces
- ▲ for countersinking to DIN 7991

N



NEW

HPC-TiN

SIG 90°
Solid carbide

30 117 ...

DC_2 _{z9} mm	DC_1 mm	DCONMS _{h9} mm	OAL mm	DIN 7991	
6,3	1,5	5	45	M3	06300
8,3	2,0	6	50	M4	08300
10,4	2,5	6	50	M5	10400 ¹⁾
12,4	2,8	8	56	M6	12400
16,5	3,2	10	60	M8	16500 ¹⁾
20,5	3,5	10	60	M10	20500
25,0	3,8	10	67	M12	25000 ¹⁾
31,0	4,2	12	71	M16	31000

P	●
M	○
K	●
N	●
S	○
H	○
O	○

1) Included in the set

Countersink 90° with irregular pitch, DIN 335-C – Set

Scope of supply:

Countersinks Ø 10.4 / 16.5 / 25.0 mm in storage case

N

NEW

HPC-TiN



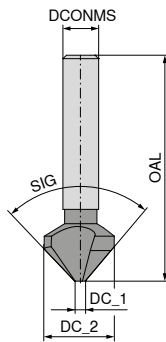
30 117 ...

99900

Countersink 90° with irregular pitch, DIN 335-C

- ▲ all sizes with 3 cutting edges and highly irregular pitch, resulting in smooth running, excellent roundness and chatter reduction giving the highest surface quality
- ▲ for very high tool life in almost all materials
- ▲ greatly reduced axial and radial forces
- ▲ for countersinking to DIN ISO 7721 and DIN 7991

N



NEW

TiN



HSS

30 141 ...

DC_2 _{z9}	DC_1	DCONMS _{h9}	OAL	DIN ISO 7721	DIN 7991	
4,3	1,3	4	40	M2		04300
6,0	1,5	5	45	M3		06000
6,3	1,5	5	45		M3	06300
8,0	2,0	6	50	M4		08000
8,3	2,0	6	50		M4	08300
10,0	2,5	6	50	M5		10000
10,4	2,5	6	50		M5	10400 ¹⁾
11,5	2,8	8	56	M6		11500
12,4	2,8	8	56		M6	12400
15,0	3,2	10	60	M8		15000
16,5	3,2	10	60		M8	16500 ¹⁾
19,0	3,5	10	63	M10		19000
20,5	3,5	10	63		M10	20500
23,0	3,8	10	67	M12		23000
25,0	3,8	10	67		M12	25000 ¹⁾
31,0	4,2	12	71		M16	31000

P	●
M	○
K	●
N	●
S	○
H	○
O	○

1) Included in the set

Countersink 90° with irregular pitch, DIN 335-C – Set

Scope of supply:

Countersinks Ø 10.4 / 16.5 / 25.0 mm in storage case

N

NEW

TiN



30 141 ...

99900

Material examples for cutting data tables

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

* Tensile strength

Cutting data standard values

Index	30 117 ...							30 141 ...						
	Solid carbide							HSS						
	N	Ø 4,3– 8,0	Ø 8,0– 12,4	Ø 12,4– 16,5	Ø 16,5– 20,5	Ø 20,5– 25,0	Ø 25,0– 31,0	N	Ø 4,3– 8,0	Ø 8,0– 12,4	Ø 12,4– 16,5	Ø 16,5– 20,5	Ø 20,5– 25,0	Ø 25,0– 31,0
	v _c (m/min)	f (mm/rev)						v _c (m/min)	f (mm/rev)					
P.1.1	58	0,08	0,10	0,12	0,14	0,18	0,22	38	0,08	0,10	0,12	0,14	0,18	0,22
P.1.2	58	0,08	0,10	0,12	0,14	0,18	0,22	38	0,08	0,10	0,12	0,14	0,18	0,22
P.1.3	50	0,06	0,08	0,10	0,10	0,14	0,18	30	0,06	0,08	0,10	0,1	0,14	0,18
P.1.4	50	0,06	0,08	0,10	0,12	0,14	0,18	30	0,06	0,08	0,10	0,12	0,14	0,18
P.1.5	50	0,06	0,05	0,06	0,08	0,10	0,12	30	0,06	0,05	0,06	0,08	0,10	0,12
P.2.1	50	0,06	0,08	0,10	0,12	0,14	0,18	30	0,06	0,08	0,10	0,12	0,14	0,18
P.2.2	50	0,06	0,05	0,06	0,08	0,10	0,12	12	0,06	0,05	0,06	0,08	0,10	0,12
P.2.3	40	0,04	0,05	0,06	0,08	0,10	0,12	12	0,04	0,05	0,06	0,08	0,10	0,12
P.2.4	40	0,04	0,05	0,06	0,08	0,10	0,12	12	0,04	0,05	0,06	0,08	0,10	0,12
P.3.1	50	0,06	0,05	0,06	0,08	0,10	0,12	30	0,06	0,05	0,06	0,08	0,10	0,12
P.3.2	40	0,04	0,05	0,06	0,08	0,10	0,12	12	0,04	0,05	0,06	0,08	0,10	0,12
P.3.3	40	0,04	0,05	0,06	0,08	0,10	0,12	12	0,04	0,05	0,06	0,08	0,10	0,12
P.4.1	30	0,05	0,06	0,07	0,08	0,09	0,12	15	0,05	0,06	0,07	0,08	0,09	0,12
P.4.2	30	0,05	0,06	0,07	0,08	0,09	0,12	15	0,05	0,06	0,07	0,08	0,09	0,12
M.1.1	30	0,05	0,06	0,07	0,08	0,09	0,12	15	0,05	0,06	0,07	0,08	0,09	0,12
M.2.1	30	0,05	0,06	0,07	0,08	0,09	0,12	15	0,05	0,06	0,07	0,08	0,09	0,12
M.3.1	25	0,05	0,06	0,07	0,08	0,09	0,12							
K.1.1	50	0,10	0,12	0,14	0,18	0,20	0,25	20	0,10	0,12	0,14	0,18	0,20	0,25
K.1.2	50	0,10	0,12	0,14	0,18	0,20	0,25	20	0,10	0,12	0,14	0,18	0,20	0,25
K.2.1	45	0,10	0,12	0,14	0,18	0,20	0,25	20	0,10	0,12	0,14	0,18	0,20	0,25
K.2.2	45	0,10	0,12	0,14	0,18	0,20	0,25	20	0,10	0,12	0,14	0,18	0,20	0,25
K.3.1	35	0,10	0,12	0,14	0,18	0,20	0,25	20	0,10	0,12	0,14	0,18	0,20	0,25
K.3.2	35	0,10	0,12	0,14	0,18	0,20	0,25	20	0,10	0,12	0,14	0,18	0,20	0,25
N.1.1	80	0,10	0,12	0,14	0,18	0,22	0,26	48	0,10	0,12	0,14	0,18	0,22	0,26
N.1.2	80	0,10	0,12	0,14	0,18	0,22	0,26	48	0,10	0,12	0,14	0,18	0,22	0,26
N.2.1	60	0,10	0,12	0,14	0,18	0,22	0,26	40	0,10	0,12	0,14	0,18	0,22	0,26
N.2.2	60	0,10	0,12	0,14	0,18	0,22	0,26	40	0,10	0,12	0,14	0,18	0,22	0,26
N.2.3	60	0,10	0,14	0,18	0,20	0,24	0,30	40	0,10	0,14	0,18	0,20	0,24	0,30
N.3.1	68	0,12	0,14	0,18	0,20	0,24	0,30	40	0,12	0,14	0,18	0,20	0,24	0,30
N.3.2	68	0,12	0,14	0,18	0,20	0,24	0,30	40	0,12	0,14	0,18	0,20	0,24	0,30
N.3.3	68	0,12	0,14	0,18	0,20	0,24	0,30	40	0,12	0,14	0,18	0,20	0,24	0,30
N.4.1														
S.1.1	15	0,05	0,06	0,07	0,08	0,09	0,10	10	0,05	0,06	0,07	0,08	0,09	0,10
S.1.2	15	0,05	0,06	0,07	0,08	0,09	0,10	10	0,05	0,06	0,07	0,08	0,09	0,10
S.2.1	15	0,05	0,06	0,07	0,08	0,09	0,10	10	0,05	0,06	0,07	0,08	0,09	0,10
S.2.2	15	0,05	0,06	0,07	0,08	0,09	0,10	10	0,05	0,06	0,07	0,08	0,09	0,10
S.2.3	15	0,05	0,06	0,07	0,08	0,09	0,10	10	0,05	0,06	0,07	0,08	0,09	0,10
S.3.1	15	0,05	0,06	0,07	0,08	0,09	0,10	10	0,05	0,06	0,07	0,08	0,09	0,10
S.3.2	15	0,05	0,06	0,07	0,08	0,09	0,10	10	0,05	0,06	0,07	0,08	0,09	0,10
S.3.3	15	0,05	0,06	0,07	0,08	0,09	0,10	10	0,05	0,06	0,07	0,08	0,09	0,10
H.1.1	12	0,05	0,06	0,07	0,07	0,08		6	0,05	0,06	0,07	0,07	0,08	
H.1.2	8	0,05	0,06	0,07	0,07	0,08								
H.1.3														
H.1.4														
H.2.1	12	0,05	0,06	0,07	0,07	0,08								
H.3.1														
O.1.1	68	0,12	0,14	0,18	0,20	0,24	0,30	38	0,12	0,14	0,18	0,20	0,24	0,30
O.1.2	68	0,12	0,14	0,18	0,20	0,24	0,30	38	0,12	0,14	0,18	0,20	0,24	0,30
O.2.1	25	0,10	0,12	0,14	0,18	0,20	0,25							
O.2.2	25	0,10	0,12	0,14	0,18	0,20	0,25							
O.3.1	25	0,10	0,12	0,14	0,18	0,20	0,25							

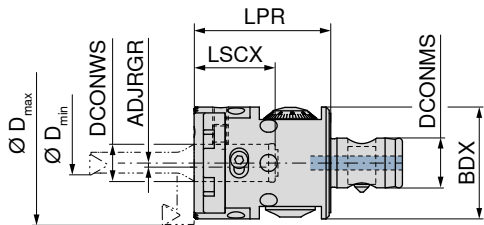


The cutting data is strongly influenced by external conditions, such as the stability of the tool and workpiece clamping, material and type of machine. The specified values represent guideline cutting data that can be adjusted by approx. ± 20 % according to the usage conditions.

MicroKom – hi.flex micro – precision adjustment head

- ▲ for MicroKom boring bars and serrated bodies with DCONMS = 12 mm
- ▲ with thro' coolant supply
- ▲ LSCX = Recess depth of boring bar
- ▲ max. speed 30,000 rpm with slide in centre position
- ▲ UltraMini / EcoCut boring bar adapter for diameters from 0.5 mm

ABS



NEW
Analogue

62 800 ...

D _{min} - D _{max} mm	KOMET no.	Adapter	DCONWS mm	DCONMS mm	BDX mm	LPR mm	LSCX mm	ADJRGR mm
0,5 - 60	M05 03000	ABS 32	12	16	36	44	26	5,5

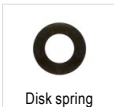
06089



Cylindrical screw

62 950 ...

00001



Disk spring

62 950 ...

53700



Grubscrew

62 950 ...

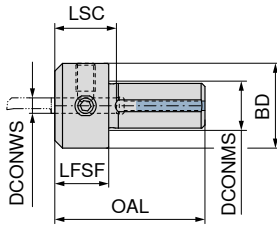
53500

Spare parts
for Article no.
62 800 06089

 Suitable ABS adapters can be found in → **Catalogue – Clamping technology, Chapter 16, Adaptors and Accessories.**

MicroKom – UltraMini / EcoCut boring bar adapter

- ▲ for hi.flex micro
- ▲ 4 clamping flats (offset by 90°) on Ø DCONMS
- ▲ with thro' 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 ...

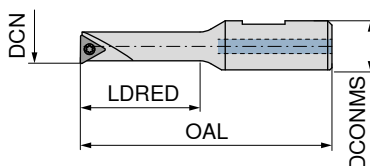
Spare parts DCONWS

4 - 5	867
6 - 8	123

1 Suitable UltraMini / EcoCut tools can be found in
→ Chapters 10 and 12 of the cutting tools catalogue.

MicroKom – Boring bar for hi.flex micro

- ▲ with thro' coolant



NEW

62 845 ...

DCN mm	KOMET no.	OAL mm	LDRED mm	DCONMS _{g6} mm	Insert	
8	B05 80080	58,88	28	12	TO.X 06T1..	00800
14	B05 80140	70,00	41	12	TO.X 0902..	01400
20	B05 80200	85,00	56	12	TO.X 0902..	02000



TORX® Screws

62 950 ...

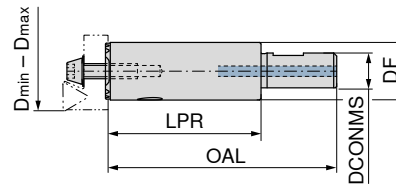
Spare parts Insert

TO.X 06T1..	12800
TO.X 0902..	12000

MicroKom – Serrated body for hi.flex micro

- ▲ with thro' 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



Cylindrical screw

62 950 ...



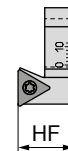
Disk spring

62 950 ...

Spare parts DCONMS

12	53600	19100
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MicroKom – Insert holder for hi.flex micro



NEW

62 863 ...

DCN mm	DCX mm	KOMET no.	HF mm	Insert	
25	44	M05 20110	14,48	TO.. 0902	14400



TORX® Screws

62 950 ...

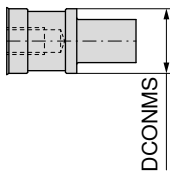
Spare parts Insert

TO.. 0902	09900
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1 Suitable indexable inserts can be found in → Chapter 5,
pages 60+61 of the cutting tools catalogue.

MicroKom – Filling piece for hi.flex micro

▲ For targeted redirecting of the thro' coolant to the cutting edge when using insert holders with diameters from 45 mm



NEW

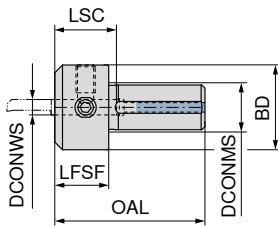
62 862 ...

DCONMS mm	KOMET no.
12	M05 90700

01200

MicroKom – UltraMini / EcoCut boring bar adapter

▲ for hi.flex and BluFlex 2
▲ 4 clamping flats (offset by 90°) on Ø DCONMS
▲ with thro' 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	
4 - 5	867
6 - 8	123

 Suitable UltraMini / EcoCut tools can be found in
→ Chapters 10 and 12 of the cutting tools catalogue.

Material examples for cutting data tables

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

* Tensile strength

Cutting data standard values for indexable inserts – MicroKom tools

Index	Indexable inserts for ...										UltraMini boring bars for ...					
	62 800 06089															
	hi.flex micro															
	BK8440	BK8425	BK2710	K10	BK60	BK6110	BK7615	CBN40	PKD5510 CTDPU20	CK3230	CK32	K10F	K10F- TiN	K10F- TiAlN	DPX 57S	TiAlN+
	v _c (m/min)										v _c (m/min)					
P.1.1	170	200	230		270	300				350	350		90	110	110	110
P.1.2	170	200	230		270	300				350	350		80	100	100	100
P.1.3	170	200	230		270	300				350	350		60	80	80	80
P.1.4	150	180	210		250	300				320	320		60	80	80	80
P.1.5	150	180	210		250	300				320	320		60	60	60	60
P.2.1	140	160	180		210	270				280	280		60	80	80	80
P.2.2	140	160	180		210	270				280	280		60	60	60	60
P.2.3	140	160	180		210	270				280	280		50	60	60	60
P.2.4	140	160	180		210	270				280	280		50	60	60	60
P.3.1	120	140	160		190	250				250	250		50	60	60	60
P.3.2	120	140	160		190	250				250	250		30	50	50	50
P.3.3	120	140	160		190	250				250	250		30	30	30	30
P.4.1	100	120	140		160	220				210	210		60	70	70	70
P.4.2	100	120	140		160	220				210	210		50	60	60	60
M.1.1	140	160	180		280	220				280	280		60	80	80	80
M.2.1	120	140	160		250	220				250	250		50	60	60	60
M.3.1	90	100	120		180	200				180	180		40	50	50	50
K.1.1	150	180	210		210	290	290						80	100	100	100
K.1.2	140	160	180		180	290	290						60	70	70	70
K.2.1	120	140	160		160	270	270						60	60	60	60
K.2.2	120	140	160		160	250	250						50	60	60	60
K.3.1	100	120	140		140	220	220						80	100	100	100
K.3.2	100	120	140		140	220	220						70	80	80	80
N.1.1				250					500			100	200	230	230	230
N.1.2				250					500			100	180	220	220	220
N.2.1				250					500			90	160	190	190	190
N.2.2				250					500			70	140	170	170	170
N.2.3				250					500			50	80	100	100	100
N.3.1				230					450			80	140	170	170	170
N.3.2				230					450			70	120	140	140	140
N.3.3				230					450			50	100	120	120	120
N.4.1				230					450			50	100	120	120	120
S.1.1		60		20									30	50	50	50
S.1.2		50		20									30	30	30	30
S.2.1		60		20									30	50	50	50
S.2.2		50		20									30	30	30	30
S.2.3		30		20										30	30	30
S.3.1		100		60									30	50	50	50
S.3.2		80		30									20	30	30	30
S.3.3		50		30										20	20	20
H.1.1	90	100				100		160					30	40	40	40
H.1.2	70	80				80		185						30	30	30
H.1.3	40	50				50		215							20	30
H.1.4								240								
H.2.1	90	100				100										
H.3.1	70	80				80							20	30	30	30
O.1.1				100					500			50	90	110	110	110
O.1.2				100					500			50	100	120	120	120
O.2.1									500				90	110	110	110
O.2.2				100					300				60	80	80	80
O.3.1				100					300			50	100	120	120	120



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. $\pm 20\%$ according to the usage conditions. It is essential to observe the v_c values of the type used, the maximum speeds of the system (hi.flex micro: 30,000 rpm with slider center position) and the reduction of these maximum speeds depending on the type used overhang length. These can be found in the technical appendix of Chapter 5 of our main catalogue.

Cutting data standard values for precision adjustment heads

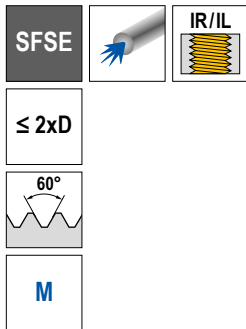
Index	62 800 06089			● 1st choice		
	hi.flex micro			○ suitable		
	Fine machining with depth of cut $a_p = 0.1 - 0.2$ mm			Emulsion	Compressed air	MMS
	Ø 0,5 – 8	Ø 8 – 12	Ø 12 – 60			
	f (mm/rev)					
P.1.1	0,02–0,05	0,05–0,07	0,07–0,10	●	○	
P.1.2	0,02–0,05	0,05–0,07	0,08–0,12	●	○	
P.1.3	0,02–0,05	0,04–0,06	0,08–0,12	●	○	
P.1.4	0,02–0,05	0,04–0,06	0,07–0,10	●	○	
P.1.5	0,02–0,05	0,05–0,07	0,08–0,12	●	○	
P.2.1	0,02–0,05	0,04–0,06	0,08–0,12	●	○	
P.2.2	0,02–0,05	0,04–0,06	0,07–0,10	●	○	
P.2.3	0,02–0,05	0,04–0,06	0,07–0,10	●	○	
P.2.4	0,02–0,05	0,03–0,04	0,06–0,08	●	○	
P.3.1	0,02–0,05	0,04–0,06	0,06–0,08	●	○	
P.3.2	0,02–0,05	0,03–0,04	0,06–0,08	●	○	
P.3.3	0,02–0,05	0,03–0,04	0,06–0,08	●	○	
P.4.1	0,02–0,05	0,04–0,05	0,07–0,10	●	○	
P.4.2	0,02–0,05	0,03–0,04	0,06–0,08	●	○	
M.1.1	0,02–0,05	0,04–0,05	0,07–0,10	●	○	
M.2.1	0,02–0,05	0,03–0,04	0,06–0,08	●	○	
M.3.1	0,02–0,05	0,03–0,04	0,06–0,08	●	○	
K.1.1	0,02–0,05	0,06–0,08	0,11–0,15	○	●	
K.1.2	0,02–0,05	0,06–0,08	0,11–0,15	○	●	
K.2.1	0,02–0,05	0,06–0,08	0,11–0,15	○	●	
K.2.2	0,02–0,05	0,05–0,07	0,08–0,12	○	●	
K.3.1	0,02–0,05	0,06–0,08	0,11–0,15	○	●	
K.3.2	0,02–0,05	0,05–0,07	0,08–0,12	○	●	
N.1.1	0,02–0,05	0,04–0,06	0,07–0,10	●	○	
N.1.2	0,02–0,05	0,04–0,06	0,07–0,10	●	○	
N.2.1	0,02–0,05	0,06–0,08	0,08–0,12	●	○	
N.2.2	0,02–0,05	0,06–0,08	0,08–0,12	●	○	
N.2.3	0,02–0,05	0,06–0,08	0,08–0,12	●	○	
N.3.1	0,02–0,05	0,03–0,04	0,06–0,08	●	○	
N.3.2	0,02–0,05	0,03–0,04	0,06–0,08	●	○	
N.3.3	0,02–0,05	0,06–0,08	0,11–0,15	●	○	
N.4.1	0,02–0,05	0,03–0,04	0,06–0,08	●	○	
S.1.1	0,02–0,08	0,03–0,04	0,06–0,08	●	○	
S.1.2	0,02–0,08	0,02–0,03	0,04–0,06	●	○	
S.2.1	0,02–0,08	0,03–0,04	0,06–0,08	●	○	
S.2.2	0,02–0,08	0,02–0,03	0,04–0,06	●	○	
S.2.3	0,02–0,08	0,06–0,08	0,04–0,06	●	○	
S.3.1	0,02–0,08	0,03–0,04	0,06–0,08	●	○	
S.3.2	0,02–0,08	0,03–0,04	0,06–0,08	●	○	
S.3.3	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		●	
H.1.2	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		●	
H.1.4						
H.2.1	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		●	
O.1.1	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	○	●	
O.2.1						
O.2.2	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		●	



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 vc values of the type used, the maximum speeds of the system (hi.flex micro: **30,000 rpm** with slider center position) and the reduction of these maximum speeds depending on the type used overhang length. These can be found in the technical appendix of Chapter 5 of our main catalogue.

Thread milling cutter with chamfer facet

- ▲ Profile-corrected
- ▲ Hard machining to $\varnothing$ DC = 4 mm possible
- ▲ Chamfer section at end of shank



NEW

Ti500



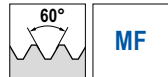
HB

Solid carbide

54 815 ...

DC mm	Thread	TP mm	APMX mm	DCONMS _{h6} mm	OAL mm	ZEFP	
4,00	M5	0,80	12,3	8	62	3	05000 ¹⁾
4,80	M6	1,00	14,4	8	62	3	06000 ¹⁾
6,50	M8	1,25	19,0	10	74	3	08000
7,95	M10	1,50	23,0	12	80	3	10000
9,90	M12	1,75	28,6	14	90	4	12000
11,60	M14	2,00	32,6	16	100	4	14000
11,95	M16	2,00	36,6	12	90	4	16000 ²⁾
13,95	M18	2,50	38,0	20	110	4	18000
15,95	M20	2,50	43,3	16	100	4	20000 ²⁾

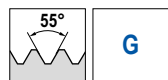
- 1) Without Through Coolant
- 2) Chamfer section at the front of the tool



54 816 ...

DC mm	Thread	TP mm	APMX mm	DCONMS _{h6} mm	OAL mm	ZEFP	
6,0	M8x1	1,00	19,2	10	74	3	08000
8,0	M10x1	1,00	22,2	12	80	3	10000
8,0	M10x1,25	1,25	22,8	12	80	3	10100
9,9	M12x1	1,00	27,2	14	90	4	12000
9,9	M12x1,25	1,25	27,8	14	90	4	12100
9,9	M12x1,5	1,50	27,5	14	90	4	12200
11,6	M14x1	1,00	31,0	16	100	4	14000
11,6	M14x1,5	1,50	32,0	16	100	4	14100
12,0	M16x1,5	1,50	35,0	12	90	4	16000 ¹⁾
14,0	M18x1,5	1,50	39,0	20	110	4	18000
16,0	M20x1,5	1,50	44,0	16	100	4	20000 ¹⁾

- 1) Chamfer section at the front of the tool



54 817 ...

DC mm	Thread	TP mm	APMX mm	DCONMS _{h6} mm	OAL mm	ZEFP	
6,00	G 1/16-28	0,907	16,5	10	74	3	11600
7,95	G 1/8-28	0,907	22,0	12	80	3	01800
9,90	G 1/4-19	1,337	28,0	16	100	4	01400
13,95	G 3/8-19	1,337	36,5	14	90	4	03800 ¹⁾
15,95	G 1/2-14	1,814	46,0	16	100	5	01200 ¹⁾
17,95	G 5/8-14	1,814	49,5	18	110	5	05800 ¹⁾

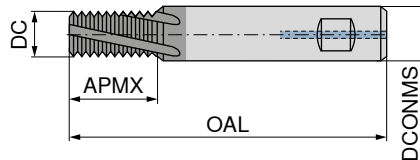
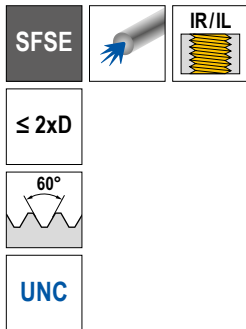
P	•
M	•
K	•
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H	•
O	•

- 1) Chamfer section at the front of the tool

→ v_c/f_z Page 28+29

Thread milling cutter with chamfer facet

- ▲ Profile-corrected
- ▲ Hard machining to $\varnothing$ DC = 4 mm possible
- ▲ Chamfer section at end of shank



NEW

Ti500



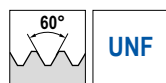
HB

Solid carbide

54 818 ...

DC mm	Thread	TP mm	APMX mm	DCONMS _{h6} mm	OAL mm	ZEFP	
4,80	UNC 1/4-20	1,270	14,4	8	62	3	01400 ¹⁾
5,95	UNC 5/16-18	1,411	20,2	10	74	3	51600
7,60	UNC 3/8-16	1,588	24,3	12	80	3	03800
7,95	UNC 7/16-14	1,814	24,0	14	90	3	71600
9,90	UNC 1/2-13	1,954	29,8	14	90	4	01200
11,80	UNC 9/16-12	2,117	34,5	16	100	4	91600
12,70	UNC 5/8-11	2,309	37,7	14	90	4	05800 ²⁾
15,20	UNC 3/4-10	2,540	41,2	20	110	5	03400

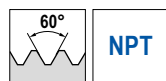
- 1) Without Through Coolant
- 2) Chamfer section at the front of the tool



54 819 ...

DC mm	Thread	TP mm	APMX mm	DCONMS _{h6} mm	OAL mm	ZEFP	
4,80	UNF 1/4-28	0,907	14,7	8	62	3	01400 ¹⁾
5,95	UNF 5/16-24	1,058	19,3	10	74	3	51600
8,00	UNF 3/8-24	1,058	22,5	12	80	3	03800
7,95	UNF 7/16-20	1,270	23,0	14	90	3	71600
9,90	UNF 1/2-20	1,270	28,0	14	90	4	01200
12,00	UNF 9/16-18	1,411	31,4	16	100	4	91600
13,50	UNF 5/8-18	1,411	35,7	14	90	4	05800 ²⁾
17,00	UNF 3/4-16	1,588	40,2	20	110	5	03400

- 1) Without Through Coolant
- 2) Chamfer section at the front of the tool



54 820 ...

DC mm	Thread	TP mm	APMX mm	DCONMS _{h6} mm	OAL mm	ZEFP	
10,1	NPT 1/4-18	1,411	16,0	14	90	3	01400 ¹⁾
12,8	NPT 3/8-18	1,411	16,0	16	90	4	03800 ¹⁾
16,0	NPT 1/2-14	1,814	20,5	20	110	5	01200 ¹⁾
18,5	NPT 3/4-14	1,814	20,5	20	110	5	03400 ¹⁾

P	●
M	●
K	●
N	●
S	●
H	●
O	●

- 1) Chamfer section at the front of the tool

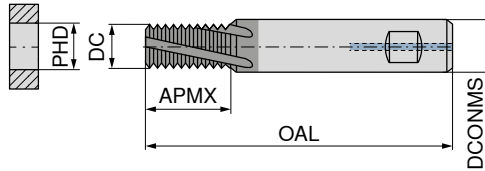
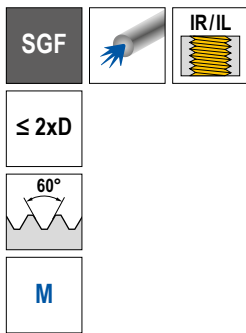
→ v_c/f_z Page 28+29

When calculating the feed for circular milling, check whether machining is taking place with the contour feed v_f or centre path feed v_{fm} . Details in
→ Chapter 7 of the cutting tools catalogue.

Thread milling cutter

▲ Profile corrected

▲ Hard machining to Ø DC = 4 mm possible



NEW

Ti500



HB

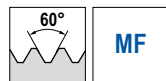
Solid carbide

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

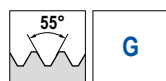
2) Without Through Coolant



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

1) DIN 6535 HA Shank / Without Through Coolant



54 823 ...

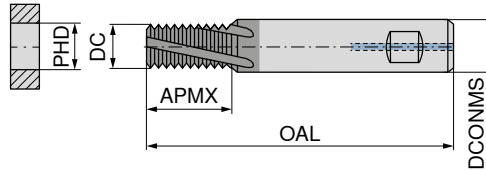
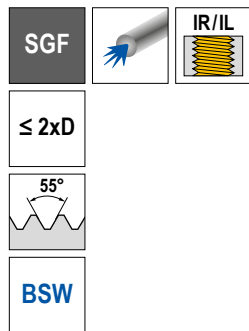
DC mm	Thread	TP mm	APMX mm	DCONMS _{h6} mm	OAL mm	ZEFP	PHD mm	
8,0	G 1/8-28	0,907	22,0	8	70	3	8,80	01800
9,9	G 1/4-19	1,337	28,5	10	75	4	11,80	01400
14,0	G 3/8-19	1,337	42,0	14	90	4	15,25	03800
16,0	G 1/2-14	1,814	44,0	16	90	4	19,00	01200

P	•
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O	•

→ v_c/f_z Page 28+29

Thread milling cutter

▲ Profile corrected



NEW

Ti500

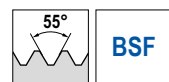


HB

Solid carbide

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



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

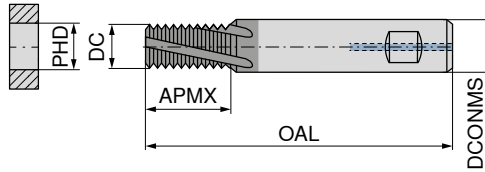
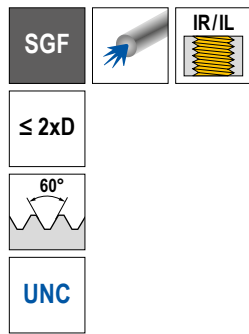
P	•
M	•
K	•
N	•
S	•
H	•
O	•

→ v_c/f_z Page 28+29

When calculating the feed for circular milling, check whether machining is taking place with the contour feed v_t or centre path feed v_{fm} . Details in
→ Chapter 7 of the cutting tools catalogue.

Thread milling cutter

▲ Profile corrected



NEW

Ti500



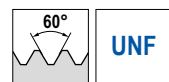
HB

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



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

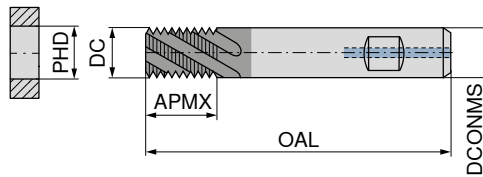
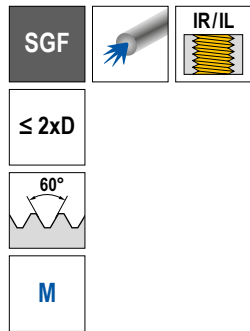
P	●
M	●
K	●
N	●
S	●
H	●
O	●

1) Without Through Coolant

→ v_c/f_z Page 28+29

When calculating the feed for circular milling, check whether machining is taking place with the contour feed v_f or centre path feed v_{fm} . Details in
→ Chapter 7 of the cutting tools catalogue.

Thread milling cutter



NEW

Ti500



HB

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_e/f_z Page 28+29

When calculating the feed for circular milling, check whether machining is taking place with the contour feed v_f or centre path feed v_{fm}. Details in
→ Chapter 7 of the cutting tools catalogue.

Material examples for cutting data tables

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

* Tensile strength

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 ...			
	SFSE	SGF	Ti500	
			Solid carbide	
			Ø 2,4 – 6,0	Ø 6,0 – 10,0
	v _c (m/min)	f _z (mm/tooth)		
P.1.1	150	0,01-0,04	0,04-0,06	0,08-0,15
P.1.2	120	0,01-0,04	0,04-0,06	0,08-0,15
P.1.3	120	0,007-0,03	0,03-0,05	0,05-0,10
P.1.4	120	0,007-0,03	0,03-0,05	0,05-0,10
P.1.5	100	0,006-0,02	0,02-0,04	0,04-0,06
P.2.1	120	0,007-0,04	0,04-0,06	0,08-0,15
P.2.2	100	0,007-0,03	0,03-0,05	0,05-0,10
P.2.3	80	0,006-0,02	0,02-0,04	0,04-0,06
P.2.4	70	0,006-0,02	0,02-0,04	0,04-0,06
P.3.1	80	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
P.3.3	60	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
P.4.2	60	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
M.2.1	100	0,008-0,03	0,03-0,05	0,05-0,10
M.3.1	100	0,008-0,03	0,03-0,05	0,05-0,10
K.1.1	120	0,01-0,04	0,04-0,06	0,08-0,15
K.1.2	100	0,007-0,03	0,03-0,05	0,05-0,10
K.2.1	120	0,01-0,04	0,04-0,06	0,08-0,15
K.2.2	100	0,007-0,03	0,03-0,05	0,05-0,10
K.3.1	130	0,01-0,04	0,04-0,06	0,08-0,15
K.3.2	100	0,007-0,03	0,03-0,05	0,05-0,10
N.1.1	400	0,03-0,06	0,08-0,12	0,14-0,20
N.1.2	400	0,03-0,06	0,08-0,12	0,14-0,20
N.2.1	300	0,03-0,06	0,08-0,12	0,14-0,20
N.2.2	300	0,03-0,06	0,08-0,12	0,14-0,20
N.2.3	200	0,03-0,06	0,08-0,12	0,14-0,20
N.3.1	160	0,03-0,06	0,08-0,12	0,14-0,20
N.3.2	160	0,03-0,06	0,08-0,12	0,14-0,20
N.3.3	160	0,03-0,06	0,08-0,12	0,14-0,20
N.4.1	300	0,03-0,06	0,08-0,12	0,14-0,20
S.1.1	80	0,008-0,03	0,03-0,05	0,05-0,10
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
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
O.1.2	100	0,02-0,06	0,06-0,10	0,12-0,20
O.2.1	80	0,01-0,04	0,04-0,06	0,08-0,15
O.2.2	80	0,01-0,04	0,04-0,06	0,08-0,15
O.3.1	200	0,01-0,04	0,04-0,06	0,08-0,15

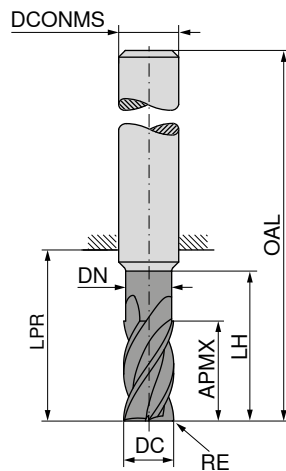


The cutting data is strongly influenced by external conditions, such as the stability of the tool and workpiece clamping, material and type of machine. The specified values represent guideline cutting data that can be adjusted by approx. $\pm 20\%$ according to the usage conditions.

CircularLine – End milling cutter with corner radius

▲ Chip breaker 0.9 x DC

▲ Cutting depth: 3 x DC



NEW

DPX22S

DRAGONSKIN



Factory standard

HB

53 643 ...

DC _{e8} mm	RE _{±0.05} mm	APMX mm	DN mm	LH mm	LPR mm	OAL mm	DCONMS _{h6} mm	ZEFP	
6,0	0,2	19	5,8	25	27	63	6	6	06202
6,0	1,0	19	5,8	25	27	63	6	6	06210
6,0	1,5	19	5,8	25	27	63	6	6	06215
8,0	0,2	25	7,7	33	35	71	8	6	08202
8,0	1,0	25	7,7	33	35	71	8	6	08210
8,0	1,5	25	7,7	33	35	71	8	6	08215
8,0	2,0	25	7,7	33	35	71	8	6	08220
10,0	0,2	31	9,7	41	43	83	10	6	10202
10,0	1,0	31	9,7	41	43	83	10	6	10210
10,0	1,5	31	9,7	41	43	83	10	6	10215
10,0	2,0	31	9,7	41	43	83	10	6	10220
12,0	0,2	37	11,6	47	49	94	12	6	12202
12,0	1,0	37	11,6	47	49	94	12	6	12210
12,0	1,5	37	11,6	47	49	94	12	6	12215
12,0	2,0	37	11,6	47	49	94	12	6	12220
12,0	3,0	37	11,6	47	49	94	12	6	12230
14,0	0,2	43	13,6	55	59	104	14	6	14202
14,0	1,0	43	13,6	55	59	104	14	6	14210
14,0	1,5	43	13,6	55	59	104	14	6	14215
14,0	2,0	43	13,6	55	59	104	14	6	14220
14,0	3,0	43	13,6	55	59	104	14	6	14230
16,0	0,2	49	15,5	61	63	111	16	6	16202
16,0	1,0	49	15,5	61	63	111	16	6	16210
16,0	1,5	49	15,5	61	63	111	16	6	16215
16,0	2,0	49	15,5	61	63	111	16	6	16220
16,0	3,0	49	15,5	61	63	111	16	6	16230
16,0	4,0	49	15,5	61	63	111	16	6	16240
18,0	0,2	55	17,5	69	73	121	18	6	18202
18,0	1,0	55	17,5	69	73	121	18	6	18210
18,0	1,5	55	17,5	69	73	121	18	6	18215
18,0	2,0	55	17,5	69	73	121	18	6	18220
18,0	3,0	55	17,5	69	73	121	18	6	18230
18,0	4,0	55	17,5	69	73	121	18	6	18240
20,0	0,2	61	19,5	75	77	127	20	6	20202
20,0	1,0	61	19,5	75	77	127	20	6	20210
20,0	1,5	61	19,5	75	77	127	20	6	20215
20,0	2,0	61	19,5	75	77	127	20	6	20220
20,0	3,0	61	19,5	75	77	127	20	6	20230
20,0	4,0	61	19,5	75	77	127	20	6	20040

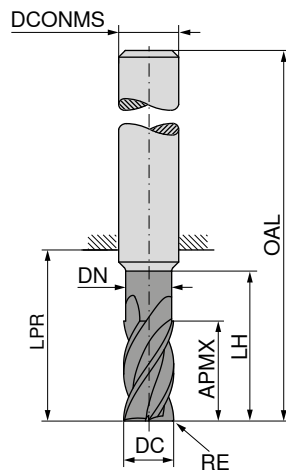
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CircularLine – End milling cutter with corner radius

▲ Chip breaker 0.9 x DC

▲ Cutting depth: 4 x DC



NEW

DPX22S

DRAGONSKIN



Factory standard

HB

53 644 ...

DC _{e8}	RE _{±0.05}	APMX	DN	LH	LPR	OAL	DCONMS _{h6}	ZEFP	
6,0	0,2	25	5,8	29	31	67	6	5	06002
6,0	1,0	25	5,8	29	31	67	6	5	06010
6,0	1,5	25	5,8	29	31	67	6	5	06015
8,0	0,2	33	7,7	38	40	76	8	5	08002
8,0	1,0	33	7,7	38	40	76	8	5	08010
8,0	1,5	33	7,7	38	40	76	8	5	08015
8,0	2,0	33	7,7	38	40	76	8	5	08020
10,0	0,2	41	9,7	47	49	89	10	5	10002
10,0	1,0	41	9,7	47	49	89	10	5	10010
10,0	1,5	41	9,7	47	49	89	10	5	10015
10,0	2,0	41	9,7	47	49	89	10	5	10020
12,0	0,2	49	11,6	55	57	102	12	5	12002
12,0	1,0	49	11,6	55	57	102	12	5	12010
12,0	1,5	49	11,6	55	57	102	12	5	12015
12,0	2,0	49	11,6	55	57	102	12	5	12020
12,0	3,0	49	11,6	55	57	102	12	5	12030
14,0	0,2	57	13,6	64	68	113	14	5	14002
14,0	1,0	57	13,6	64	68	113	14	5	14010
14,0	1,5	57	13,6	64	68	113	14	5	14015
14,0	2,0	57	13,6	64	68	113	14	5	14020
14,0	3,0	57	13,6	64	68	113	14	5	14030
16,0	0,2	65	15,5	73	75	123	16	5	16002
16,0	1,0	65	15,5	73	75	123	16	5	16010
16,0	1,5	65	15,5	73	75	123	16	5	16015
16,0	2,0	65	15,5	73	75	123	16	5	16020
16,0	3,0	65	15,5	73	75	123	16	5	16030
16,0	4,0	65	15,5	73	75	123	16	5	16040
18,0	0,2	73	17,5	82	86	134	18	5	18002
18,0	1,0	73	17,5	82	86	134	18	5	18010
18,0	1,5	73	17,5	82	86	134	18	5	18015
18,0	2,0	73	17,5	82	86	134	18	5	18020
18,0	3,0	73	17,5	82	86	134	18	5	18030
18,0	4,0	73	17,5	82	86	134	18	5	18040
20,0	0,2	82	19,5	91	93	143	20	5	20002
20,0	1,0	82	19,5	91	93	143	20	5	20010
20,0	1,5	82	19,5	91	93	143	20	5	20015
20,0	2,0	82	19,5	91	93	143	20	5	20020
20,0	3,0	82	19,5	91	93	143	20	5	20030
20,0	4,0	82	19,5	91	93	143	20	5	20040

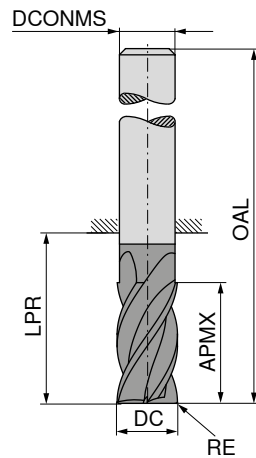
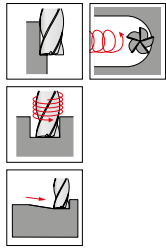
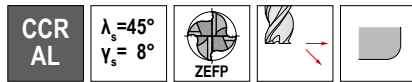
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CircularLine – End milling cutter with corner radius

▲ Chip breaker 1.8 x DC

▲ Cutting depth: 5 x DC



NEW

DLC

DRAGONSKIN



Factory standard

HB

53 641 ...

DC _{h8} mm	RE _{±0.05} mm	APMX mm	LPR mm	OAL mm	DCONMS _{h6} mm	ZEFP	
6,0	0,2	31	40	76	6	4	06002
6,0	1,0	31	40	76	6	4	06010
6,0	1,5	31	40	76	6	4	06015
8,0	0,2	41	50	86	8	4	08002
8,0	1,0	41	50	86	8	4	08010
8,0	1,5	41	50	86	8	4	08015
8,0	2,0	41	50	86	8	4	08020
10,0	0,2	51	61	101	10	4	10002
10,0	1,0	51	61	101	10	4	10010
10,0	1,5	51	61	101	10	4	10015
10,0	2,0	51	61	101	10	4	10020
12,0	0,2	61	71	116	12	4	12002
12,0	1,0	61	71	116	12	4	12010
12,0	1,5	61	71	116	12	4	12015
12,0	2,0	61	71	116	12	4	12020
14,0	0,2	71	82	127	14	4	14002
14,0	1,0	71	82	127	14	4	14010
14,0	1,5	71	82	127	14	4	14015
14,0	2,0	71	82	127	14	4	14020
16,0	0,2	81	93	141	16	4	16002
16,0	1,0	81	93	141	16	4	16010
16,0	1,5	81	93	141	16	4	16015
16,0	2,0	81	93	141	16	4	16020
18,0	0,2	91	103	151	18	4	18002
18,0	1,0	91	103	151	18	4	18010
18,0	1,5	91	103	151	18	4	18015
18,0	2,0	91	103	151	18	4	18020
20,0	0,2	102	114	164	20	4	20002
20,0	1,0	102	114	164	20	4	20010
20,0	1,5	102	114	164	20	4	20015
20,0	2,0	102	114	164	20	4	20020

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Material examples for cutting data tables

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

* Tensile strength

Cutting data standard values – CircularLine – CCR-VA, long 3xDC

Index	Type long		53 643 ...															
	v _c (m/min)	max. angle of engagement	Ø DC (mm) =															
			6				8				10				12			
			a _e 0,05 x DC	a _e 0,1 x DC	a _e 0,15 x DC	h _m	a _e 0,05 x DC	a _e 0,1 x DC	a _e 0,15 x DC	h _m	a _e 0,05 x DC	a _e 0,1 x DC	a _e 0,15 x DC	h _m	a _e 0,05 x DC	a _e 0,1 x DC	a _e 0,15 x DC	h _m
			f _z (mm)				f _z (mm)				f _z (mm)				f _z (mm)			
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	200	45°	0,09	0,07	0,05	0,021	0,11	0,08	0,07	0,026	0,14	0,10	0,08	0,031	0,16	0,11	0,09	0,035
P.4.2	180	45°	0,09	0,07	0,05	0,021	0,11	0,08	0,07	0,026	0,14	0,10	0,08	0,031	0,16	0,11	0,09	0,035
M.1.1	160	45°	0,09	0,07	0,05	0,021	0,11	0,08	0,07	0,026	0,14	0,10	0,08	0,031	0,16	0,11	0,09	0,035
M.2.1	160	45°	0,09	0,07	0,05	0,021	0,11	0,08	0,07	0,026	0,14	0,10	0,08	0,031	0,16	0,11	0,09	0,035
M.3.1	160	45°	0,09	0,07	0,05	0,021	0,11	0,08	0,07	0,026	0,14	0,10	0,08	0,031	0,16	0,11	0,09	0,035
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	85	40°	0,05	0,03	0,03	0,010	0,06	0,04	0,04	0,014	0,08	0,05	0,04	0,017	0,09	0,06	0,05	0,021
S.1.2	85	40°	0,05	0,03	0,03	0,010	0,06	0,04	0,04	0,014	0,08	0,05	0,04	0,017	0,09	0,06	0,05	0,021
S.2.1	65	40°	0,05	0,03	0,03	0,010	0,06	0,04	0,04	0,014	0,08	0,05	0,04	0,017	0,09	0,06	0,05	0,021
S.2.2	65	40°	0,05	0,03	0,03	0,010	0,06	0,04	0,04	0,014	0,08	0,05	0,04	0,017	0,09	0,06	0,05	0,021
S.2.3	65	40°	0,05	0,03	0,03	0,010	0,06	0,04	0,04	0,014	0,08	0,05	0,04	0,017	0,09	0,06	0,05	0,021
S.3.1	160	40°	0,06	0,04	0,04	0,014	0,08	0,06	0,05	0,018	0,10	0,07	0,06	0,023	0,12	0,09	0,07	0,028
S.3.2	120	40°	0,06	0,04	0,04	0,014	0,08	0,06	0,05	0,018	0,10	0,07	0,06	0,023	0,12	0,09	0,07	0,028
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																		



Depth of cut corresponds to the flute length

	Index	53 643 ...																● 1st choice ○ suitable		
		Ø DC (mm) =																Emulsion	Compressed air	MMS
		14				16				18				20						
		a _p x DC	a _p x DC	a _p x DC	h _m	a _p x DC	a _p x DC	a _p x DC	h _m	a _p x DC	a _p x DC	a _p x DC	h _m	a _p x DC	a _p x DC	a _p x DC	h _m			
f _z (mm)				f _z (mm)				f _z (mm)				f _z (mm)								
	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	0,18	0,13	0,10	0,040	0,19	0,13	0,11	0,042	0,20	0,14	0,12	0,045	0,21	0,15	0,12	0,047	●		
P.4.2	0,18	0,13	0,10	0,040	0,19	0,13	0,11	0,042	0,20	0,14	0,12	0,045	0,21	0,15	0,12	0,047	●			
	M.1.1	0,18	0,13	0,10	0,040	0,19	0,13	0,11	0,042	0,20	0,14	0,12	0,045	0,21	0,15	0,12	0,047	●		
	M.2.1	0,18	0,13	0,10	0,040	0,19	0,13	0,11	0,042	0,20	0,14	0,12	0,045	0,21	0,15	0,12	0,047	●		
	M.3.1	0,18	0,13	0,10	0,040	0,19	0,13	0,11	0,042	0,20	0,14	0,12	0,045	0,21	0,15	0,12	0,047	●		
	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	0,11	0,08	0,06	0,024	0,11	0,08	0,07	0,026	0,12	0,09	0,07	0,027	0,13	0,09	0,08	0,029	●		
	S.1.2	0,11	0,08	0,06	0,024	0,11	0,08	0,07	0,026	0,12	0,09	0,07	0,027	0,13	0,09	0,08	0,029	●		
	S.2.1	0,11	0,08	0,06	0,024	0,11	0,08	0,07	0,026	0,12	0,09	0,07	0,027	0,13	0,09	0,08	0,029	●		
	S.2.2	0,11	0,08	0,06	0,024	0,11	0,08	0,07	0,026	0,12	0,09	0,07	0,027	0,13	0,09	0,08	0,029	●		
	S.2.3	0,11	0,08	0,06	0,024	0,11	0,08	0,07	0,026	0,12	0,09	0,07	0,027	0,13	0,09	0,08	0,029	●		
	S.3.1	0,15	0,10	0,08	0,033	0,16	0,11	0,09	0,035	0,17	0,12	0,10	0,037	0,18	0,12	0,10	0,040	●		
	S.3.2	0,15	0,10	0,08	0,033	0,16	0,11	0,09	0,035	0,17	0,12	0,10	0,037	0,18	0,12	0,10	0,040	●		
	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 – CircularLine – CCR-VA, extra-long 4xDC

Index	Type extra long		53 644 ...														
	v _c (m/min)	max. angle of engagement	Ø DC (mm) =														
			6			8			10			12			14		
			a _e 0,05 x DC	a _e 0,1 x DC	h _m	a _e 0,05 x DC	a _e 0,1 x DC	h _m	a _e 0,05 x DC	a _e 0,1 x DC	h _m	a _e 0,05 x DC	a _e 0,1 x DC	h _m	a _e 0,05 x DC	a _e 0,1 x DC	h _m
			f _z (mm)			f _z (mm)			f _z (mm)			f _z (mm)			f _z (mm)		
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	170	45°	0,04	0,03	0,009	0,05	0,04	0,011	0,06	0,05	0,014	0,08	0,05	0,017	0,09	0,06	0,020
P.4.2	150	45°	0,04	0,03	0,009	0,05	0,04	0,011	0,06	0,05	0,014	0,08	0,05	0,017	0,09	0,06	0,020
M.1.1	125	45°	0,04	0,03	0,009	0,05	0,04	0,011	0,06	0,05	0,014	0,08	0,05	0,017	0,09	0,06	0,020
M.2.1	125	45°	0,04	0,03	0,009	0,05	0,04	0,011	0,06	0,05	0,014	0,08	0,05	0,017	0,09	0,06	0,020
M.3.1	125	45°	0,04	0,03	0,009	0,05	0,04	0,011	0,06	0,05	0,014	0,08	0,05	0,017	0,09	0,06	0,020
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	75	40°	0,03	0,02	0,007	0,04	0,03	0,009	0,05	0,04	0,011	0,06	0,04	0,014	0,07	0,05	0,016
S.1.2	75	40°	0,03	0,02	0,007	0,04	0,03	0,009	0,05	0,04	0,011	0,06	0,04	0,014	0,07	0,05	0,016
S.2.1	55	40°	0,03	0,02	0,007	0,04	0,03	0,009	0,05	0,04	0,011	0,06	0,04	0,014	0,07	0,05	0,016
S.2.2	55	40°	0,03	0,02	0,007	0,04	0,03	0,009	0,05	0,04	0,011	0,06	0,04	0,014	0,07	0,05	0,016
S.2.3	55	40°	0,03	0,02	0,007	0,04	0,03	0,009	0,05	0,04	0,011	0,06	0,04	0,014	0,07	0,05	0,016
S.3.1	140	40°	0,03	0,02	0,007	0,04	0,03	0,009	0,05	0,04	0,011	0,06	0,04	0,014	0,07	0,05	0,016
S.3.2	105	40°	0,03	0,02	0,007	0,04	0,03	0,009	0,05	0,04	0,011	0,06	0,04	0,014	0,07	0,05	0,016
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																	



Depth of cut corresponds to the flute length

	Index	53 644 ...									● 1st choice ○ suitable		
		Ø DC (mm) =									Emulsion	Compressed air	MMS
		16			18			20					
		a_s x DC 0,05 x DC	a_s 0,1 x DC	h_m	a_s x DC 0,05 x DC	a_s 0,1 x DC	h_m	a_s x DC 0,05 x DC	a_s 0,1 x DC	h_m			
		f_z (mm)		f_z (mm)		f_z (mm)							
	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	0,10	0,07	0,022	0,10	0,07	0,023	0,11	0,08	0,024	●		
	P.4.2	0,10	0,07	0,022	0,10	0,07	0,023	0,11	0,08	0,024	●		
	M.1.1	0,10	0,07	0,022	0,10	0,07	0,023	0,11	0,08	0,024	●		
	M.2.1	0,10	0,07	0,022	0,10	0,07	0,023	0,11	0,08	0,024	●		
	M.3.1	0,10	0,07	0,022	0,10	0,07	0,023	0,11	0,08	0,024	●		
	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												
	S.1.1	0,07	0,05	0,017	0,08	0,06	0,018	0,08	0,06	0,019	●		
	S.1.2	0,07	0,05	0,017	0,08	0,06	0,018	0,08	0,06	0,019	●		
	S.2.1	0,07	0,05	0,017	0,08	0,06	0,018	0,08	0,06	0,019	●		
	S.2.2	0,07	0,05	0,017	0,08	0,06	0,018	0,08	0,06	0,019	●		
	S.2.3	0,07	0,05	0,017	0,08	0,06	0,018	0,08	0,06	0,019	●		
	S.3.1	0,07	0,05	0,017	0,08	0,06	0,018	0,08	0,06	0,019	●		
	S.3.2	0,07	0,05	0,017	0,08	0,06	0,018	0,08	0,06	0,019	●		
	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 – CircularLine – CCR-AL, extra-long 5xDC

Index	Type extra long		53 641 ...															
	v _c (m/min)	max. angle of engagement	Ø DC (mm) =															
			6				8				10				12			
			a _e 0,1 x DC	a _e 0,2 x DC	a _e 0,3 x DC	h _m	a _e 0,1 x DC	a _e 0,2 x DC	a _e 0,3 x DC	h _m	a _e 0,1 x DC	a _e 0,2 x DC	a _e 0,3 x DC	h _m	a _e 0,1 x DC	a _e 0,2 x DC	a _e 0,3 x DC	h _m
			f _z (mm)				f _z (mm)				f _z (mm)				f _z (mm)			
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	300	60°	0,30	0,21	0,18	0,096	0,35	0,25	0,20	0,111	0,40	0,28	0,23	0,126	0,45	0,31	0,26	0,141
N.1.2	300	60°	0,30	0,21	0,18	0,096	0,35	0,25	0,20	0,111	0,40	0,28	0,23	0,126	0,45	0,31	0,26	0,141
N.2.1	300	60°	0,30	0,21	0,18	0,096	0,35	0,25	0,20	0,111	0,40	0,28	0,23	0,126	0,45	0,31	0,26	0,141
N.2.2	300	60°	0,30	0,21	0,18	0,096	0,35	0,25	0,20	0,111	0,40	0,28	0,23	0,126	0,45	0,31	0,26	0,141
N.2.3	265	60°	0,30	0,21	0,18	0,096	0,35	0,25	0,20	0,111	0,40	0,28	0,23	0,126	0,45	0,31	0,26	0,141
N.3.1	265	60°	0,30	0,21	0,18	0,096	0,35	0,25	0,20	0,111	0,40	0,28	0,23	0,126	0,45	0,31	0,26	0,141
N.3.2	265	60°	0,30	0,21	0,18	0,096	0,35	0,25	0,20	0,111	0,40	0,28	0,23	0,126	0,45	0,31	0,26	0,141
N.3.3	190	60°	0,30	0,21	0,18	0,096	0,35	0,25	0,20	0,111	0,40	0,28	0,23	0,126	0,45	0,31	0,26	0,141
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																		



Depth of cut corresponds to the flute length

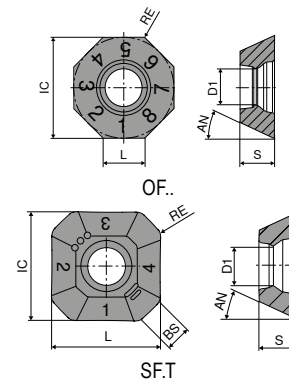


Plunging angle for ramping and helical milling: 4°

	Index	53 641 ...																● 1st choice		
		Ø DC (mm) =																○ suitable		
		14				16				18				20				Emulsion	Compressed air	MMS
		a _s 0,1 x DC	a _s 0,2 x DC	a _s 0,3 x DC	h _m	a _s 0,1 x DC	a _s 0,2 x DC	a _s 0,3 x DC	h _m	a _s 0,1 x DC	a _s 0,2 x DC	a _s 0,3 x DC	h _m	a _s 0,1 x DC	a _s 0,2 x DC	a _s 0,3 x DC	h _m			
f _z (mm)				f _z (mm)				f _z (mm)				f _z (mm)								
	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	0,49	0,35	0,29	0,156	0,52	0,37	0,30	0,164	0,54	0,38	0,31	0,171	0,57	0,40	0,33	0,179	●		○
	N.1.2	0,49	0,35	0,29	0,156	0,52	0,37	0,30	0,164	0,54	0,38	0,31	0,171	0,57	0,40	0,33	0,179	●		○
	N.2.1	0,49	0,35	0,29	0,156	0,52	0,37	0,30	0,164	0,54	0,38	0,31	0,171	0,57	0,40	0,33	0,179	●		○
	N.2.2	0,49	0,35	0,29	0,156	0,52	0,37	0,30	0,164	0,54	0,38	0,31	0,171	0,57	0,40	0,33	0,179	●		○
	N.2.3	0,49	0,35	0,29	0,156	0,52	0,37	0,30	0,164	0,54	0,38	0,31	0,171	0,57	0,40	0,33	0,179	●		○
	N.3.1	0,49	0,35	0,29	0,156	0,52	0,37	0,30	0,164	0,54	0,38	0,31	0,171	0,57	0,40	0,33	0,179	●		○
	N.3.2	0,49	0,35	0,29	0,156	0,52	0,37	0,30	0,164	0,54	0,38	0,31	0,171	0,57	0,40	0,33	0,179	●		○
	N.3.3	0,49	0,35	0,29	0,156	0,52	0,37	0,30	0,164	0,54	0,38	0,31	0,171	0,57	0,40	0,33	0,179	●		○
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																			

OFHT / SFHT

Designation	IC mm	D1 mm	L mm	BS mm	S mm	AN °
OFHT 0403..	9,52	3,35	3,94	-	3,18	25
SFHT 0903..	9,80	3,35	9,00	2,25	3,50	25
OFHT 0504..	12,70	4,80	4,50	-	4,76	25
SFHT 1204..	12,70	4,80	12,70	1,42	4,76	25

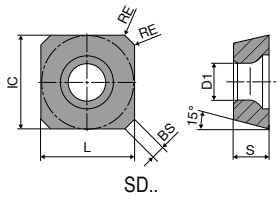


OFHT / SFHT

		NEW	
		-F10 CTPX715	-F10 CTPX715
		DRAGONSKIN	DRAGONSKIN
		OFHT	SFHT
		51 122 ...	51 123 ...
ISO	RE mm		
040305FN	0,5	00502	
050410FN	1,0	01002	
0903AFFR	1,0		01502
1204AFFR	1,0		02502
P		○	○
M		○	○
K		●	●
N		●	●
S		○	○
H			
O		○	○

SDHT

Designation	IC mm	D1 mm	L mm	BS mm	S mm
SDHT 0903..	9,52	3,4	9,52	1,68	3,18
SDHT 1204..	12,70	5,5	12,70	1,74	4,76



SDHT

NEW

-F10
CTPX715

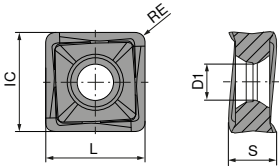
DRAGONSKIN

SDHT
51 160 ...

ISO	RE mm	
0903AEFN	1,0	02002
1204AEFN	0,2	02502
P		○
M		○
K		●
N		●
S		○
H		
O		○

SNHU

Designation	IC mm	L mm	S mm	D1 mm
SNHU 09T3..	9,15	9,15	3,70	3,85
SNHU 1204..	12,20	12,20	5,00	4,40



SNHU

ISO	RE mm			
09T308FR	0,8			
120408FR	0,8			
P				
M				
K				
N				
S				
H				
O				

NEW

-F10
CTPX715

DRAGONSKIN

SNHU

51 118 ...

00802

NEW

-F10
CTPX715

DRAGONSKIN

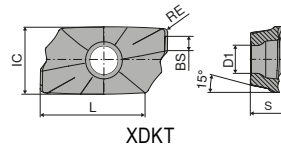
SNHU

51 101 ...

00802

XDHT

Designation	IC mm	D1 mm	L mm	BS mm	S mm
XDHT 11T302..	6,8	2,8	10,6	2	3,80
XDHT 11T304..	6,8	2,8	10,6	1,8	3,80
XDHT 11T308..	6,8	2,8	10,6	1,4	3,80
XDHT 11T312..	6,8	2,8	10,6	1,4	3,80
XDHT 11T316..	6,8	2,8	10,6	1,4	3,80
XDHT 11T320..	6,8	2,8	10,6	1,4	3,80
XDHT 11T325..	6,8	2,8	10,6	1,4	3,80
XDHT 11T332..	6,8	2,8	10,6	0,8	3,80
XDHT 11T340..	6,8	2,8	10,6	-	3,80
XDHT 11T350..	6,8	2,8	10,6	-	3,80



XDHT

NEW

-F10

CTPX715

DRAGONSKIN



XDHT

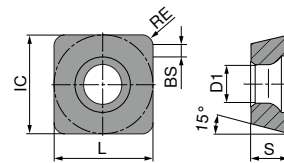
51 155 ...

ISO	RE mm	
11T302FR	0,2	00202
11T304FR	0,4	00402
11T308FR	0,8	00802
11T312FR	1,2	01202
11T316FR	1,6	01602
11T320FR	2,0	02002 ¹⁾
11T325FR	2,5	02502 ¹⁾
11T332FR	3,2	03202 ¹⁾
11T340FR	4,0	04002 ¹⁾
11T350FR	5,0	05002 ¹⁾
P		○
M		○
K		●
N		●
S		○
H		
O		○

1) Insert radius >1.6 mm: Modify cutter body

SDHT

Designation	IC mm	D1 mm	L mm	BS mm	S mm
SDHT 09T3..	9,52	4,4	9,52	2,5	3,97
SDHT 1205..	12,70	5,5	12,70	2,2	5,00



SDHT

NEW

-F10
CTPX715

DRAGONSKIN

SDHT
51 125 ...

00802

NEW

-F10
CTPX715

DRAGONSKIN

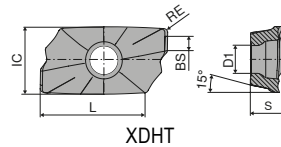
SDHT
51 161 ...

00802

ISO	RE mm		
09T308FR	0,8		
120508FR	0,8		
P		○	○
M		○	○
K		●	●
N		●	●
S		○	○
H			
O		○	○

XDHT

Designation	IC mm	D1 mm	L mm	BS mm	S mm
XDHT 190402..	9,52	4,65	19	2	4,76
XDHT 190404..	9,52	4,65	19	2	4,76
XDHT 190408..	9,52	4,65	19	2	4,76
XDHT 190412..	9,52	4,65	19	2	4,76
XDHT 190416..	9,52	4,65	19	2	4,76
XDHT 190420..	9,52	4,65	19	2	4,76
XDHT 190425..	9,52	4,65	19	1,4	4,76
XDHT 190432..	9,52	4,65	19	1	4,76
XDHT 190440..	9,52	4,65	19	1	4,76
XDHT 190450..	9,52	4,65	19	-	4,76



XDHT

NEW

-F10

CTPX715

DRAGONSKIN



XDHT

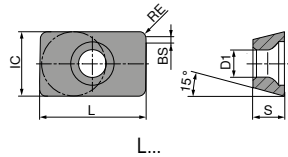
51 159 ...

ISO	RE mm	
190402FR	0,2	00202
190404FR	0,4	00402
190408FR	0,8	00802
190412FR	1,2	01202
190416FR	1,6	01602
190420FR	2,0	02002
190425FR	2,5	02502
190432FR	3,2	03202
190440FR	4,0	04002
190450FR	5,0	05002 ¹⁾
P		○
M		○
K		●
N		●
S		○
H		
O		○

1) Insert radius > 4.0 mm: Modify cutter body

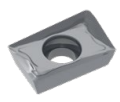
LDFT

Designation	IC mm	D1 mm	L mm	BS mm	S mm
LDFT 150408..	9,52	4,4	15	1,2	4,76



LDFT

NEW
-F10
CTPX715
DRAGONSKIN

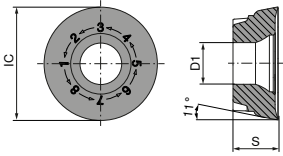


LDFT
51 157 ...

ISO	RE mm	
150408FR	0,8	00802
P		○
M		○
K		●
N		●
S		○
H		
O		○

RPHX

Designation	IC mm	D1 mm	S mm
RPHX 10T3..	10	3,4	3,97
RPHX 1204..	12	4,4	4,76
RPHX 1605..	16	5,5	5,56



RP.X 10T3.. / RP.X 1204.. / RP.X
1605.. / RPNX 2006..

RPHX

NEW

-F10
CTPX715

DRAGONSKIN



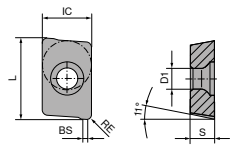
RPHX

51 156 ...

ISO	
10T3M8FN	02002
1204M8FN	02502
1605M8FN	03002
P	○
M	○
K	●
N	●
S	○
H	
O	○

APHT

Designation	IC mm	D1 mm	L mm	BS mm	S mm
APHT 1003..	6,65	2,8	10,8	1,7	3,50



APHT

NEW

-27P
CTPX715

DRAGONSKIN

APHT
51 158 ...
00202
00402

ISO	RE mm	
100302FR	0,2	
100304FR	0,4	
P		○
M		○
K		●
N		●
S		○
H		
O		○

Cutting data approximate values

	Material sub-group	Index	Tensile strength N/mm ² / HB / HRC	CTPX715	
					
P	Unalloyed steel	P.1.1	420 N/mm ² / 125 HB	240	130
		P.1.2	640 N/mm ² / 190 HB	200	120
		P.1.3	840 N/mm ² / 250 HB	170	100
		P.1.4	910 N/mm ² / 270 HB	160	100
		P.1.5	1010 N/mm ² / 300 HB	140	90
	Low-alloy steel	P.2.1	610 N/mm ² / 180 HB	210	120
		P.2.2	930 N/mm ² / 275 HB	150	100
		P.2.3	1010 N/mm ² / 300 HB	140	90
		P.2.4	1200 N/mm ² / 375 HB	100	70
	High-alloy steel and high-alloy tool steel	P.3.1	680 N/mm ² / 200 HB	120	90
		P.3.2	1100 N/mm ² / 300 HB	100	80
		P.3.3	1300 N/mm ² / 400 HB	90	70
	Stainless steel	P.4.1	680 N/mm ² / 200 HB	120	90
		P.4.2	1010 N/mm ² / 300 HB	110	90
M	Stainless steel	M.1.1	610 N/mm ² / 180 HB	120	100
		M.2.1	300 HB	110	90
		M.3.1	780 N/mm ² / 230 HB	120	100
K	Grey cast iron	K.1.1	350 N/mm ² / 180 HB	320	190
		K.1.2	500 N/mm ² / 260 HB	170	100
	Spherulitic graphite cast iron	K.2.1	540 N/mm ² / 160 HB	210	130
		K.2.2	845 N/mm ² / 250 HB	140	90
	Malleable iron	K.3.1	440 N/mm ² / 130 HB	200	120
		K.3.2	780 N/mm ² / 230 HB	170	100
N	Aluminium wrought alloy	N.1.1	60 HB		1500
		N.1.2	340 N/mm ² / 100 HB		1000
	Cast aluminium alloy	N.2.1	250 N/mm ² / 75 HB		1100
		N.2.2	300 N/mm ² / 90 HB		1000
		N.2.3	440 N/mm ² / 130 HB		280
	Copper and copper alloys (bronze/brass)	N.3.1	375 N/mm ² / 110 HB		350
		N.3.2	300 N/mm ² / 90 HB		350
		N.3.3	340 N/mm ² / 100 HB		320
	Magnesium alloys	N.4.1	70 HB		320
S	Heat-resistant alloys	S.1.1	680 N/mm ² / 200 HB		60
		S.1.2	950 N/mm ² / 280 HB		50
		S.2.1	840 N/mm ² / 250 HB		30
		S.2.2	1180 N/mm ² / 350 HB		20
		S.2.3	1080 N/mm ² / 320 HB		20
	Titanium alloys	S.3.1	400 N/mm ²		60
		S.3.2	1050 N/mm ² / 320 HB		40
		S.3.3	1400 N/mm ² / 410 HB		30
H	Hardened steel	H.1.1	46–55 HRC		
		H.1.2	56–60 HRC		
		H.1.3	61–65 HRC		
		H.1.4	66–70 HRC		
	Chilled iron	H.2.1	400 HB		
	Hardened cast iron	H.3.1	55 HRC		
O	Non-metal materials	O.1.1	≤ 150 N/mm ²	160	160
		O.1.2	≤ 100 N/mm ²		
		O.2.1	≤ 1000 N/mm ²	240	240
		O.2.2	≤ 1000 N/mm ²		
		O.3.1			

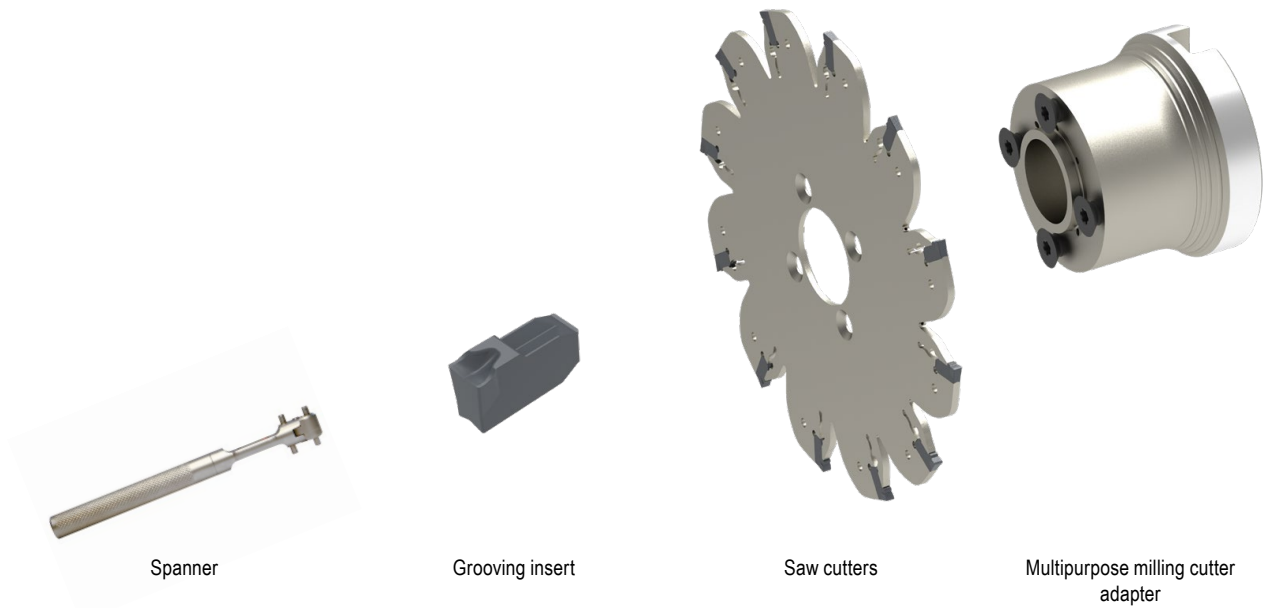
* Tensile strength



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. $\pm 20\%$ according to the usage conditions.

Application tips – MaxiMill – Slot-SX

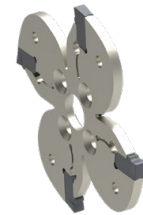
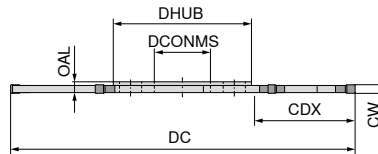
▲ The following components are required to complete the tool:



MaxiMill – Slot-SX side and face milling cutter

Scope of supply:

Side and face milling cutters **without** assembly key, **without** clamping screws



NEW

50 383 ...

Designation	DC mm	CW mm	CDX mm	DCONMS _{H6} mm	DHUB mm	OAL mm	ZEFP	Insert	Adapter	
ASLOT.80.R.6.13.DC-SX2	80	2	23	13	32	1,65	6	SX E2 ..	AD.SLOT.13...	08002
ASLOT.80.R.6.13.DC-SX3	80	3	23	13	32	2,50	6	SX E3 ..	AD.SLOT.13...	08003
ASLOT.80.R.4.13.DC-SX4	80	4	23	13	32	3,50	4	SX E4 ..	AD.SLOT.13...	08004
ASLOT.80.R.4.13.DC-SX5	80	5	23	13	32	4,50	4	SX E5 ..	AD.SLOT.13...	08005

Spare parts
for Article no.

50 383 08002	00100	836
50 383 08003	00100	836
50 383 08004	00100	837
50 383 08005	00100	837



50 950 ...



70 950 ...

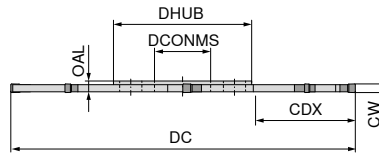
MaxiMill – Slot-SX side and face milling cutter

Scope of supply:

Side and face milling cutters **without** assembly key, **without** clamping screws



$\kappa = 90^\circ$



NEW

50 384 ...

Designation	DC mm	CW mm	CDX mm	DCONMS _{H6} mm	DHUB mm	OAL mm	ZEFP	Insert	Adapter	
ASLOT.100.R.8.22.DC-SX2	100	2	29	22	40	1,65	8	SX E2 ..	AD.SLOT.22...	10002
ASLOT.100.R.8.22.DC-SX3	100	3	29	22	40	2,50	8	SX E3 ..	AD.SLOT.22...	10003
ASLOT.100.R.6.22.DC-SX4	100	4	29	22	40	3,50	6	SX E4 ..	AD.SLOT.22...	10004
ASLOT.100.R.6.22.DC-SX5	100	5	29	22	40	4,50	6	SX E5 ..	AD.SLOT.22...	10005
ASLOT.100.R.4.22.DC-SX6	100	6	29	22	40	5,40	4	SX E6 ..	AD.SLOT.22...	10006



Clamping screw

50 950 ...



Ejector 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

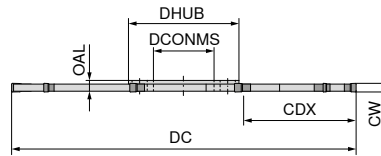


Suitable multipurpose milling cutter adapters can be found on Page 60

MaxiMill – Slot-SX side and face milling cutter

Scope of supply:

Side and face milling cutters **without** assembly key, **without** clamping screws



NEW

50 385 ...

Designation	DC mm	CW mm	CDX mm	DCONMS _{H6} mm	DHUB mm	OAL mm	ZEFP	Insert	Adapter	
ASLOT.125.R.10.22.DC-SX2	125	2	30	22	40	1,65	10	SX E2 ..	AD.SLOT.22...	12502
ASLOT.125.R.10.22.DC-SX3	125	3	30	22	40	2,50	10	SX E3 ..	AD.SLOT.22...	12503



Clamping screw



Ejector SX

50 950 ...

70 950 ...

Spare parts for Article no.

50 385 12502	00100	836
50 385 12503	00100	836



Suitable multipurpose milling cutter adapters can be found on Page 60

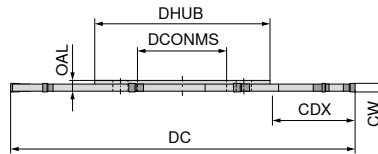
MaxiMill – Slot-SX side and face milling cutter

Scope of supply:

Side and face milling cutters **without** assembly key, **without** clamping screws



$\kappa = 90^\circ$



NEW

50 386 ...

Designation	DC mm	CW mm	CDX mm	DCONMS _{H6} mm	DHUB mm	OAL mm	ZEFP	Insert	Adapter	
ASLOT.125.R.10.32.DC-SX2	125	2	30	32	63	1,65	10	SX E2 ..	AD.SLOT.32...	12502
ASLOT.125.R.10.32.DC-SX3	125	3	30	32	63	2,50	10	SX E3 ..	AD.SLOT.32...	12503
ASLOT.125.R.8.32.DC-SX4	125	4	30	32	63	3,50	8	SX E4 ..	AD.SLOT.32...	12504
ASLOT.125.R.8.32.DC-SX5	125	5	30	32	63	4,50	8	SX E5 ..	AD.SLOT.32...	12505
ASLOT.125.R.8.32.DC-SX6	125	6	30	32	63	5,40	8	SX E6 ..	AD.SLOT.32...	12506



Clamping screw

50 950 ...



Ejector 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

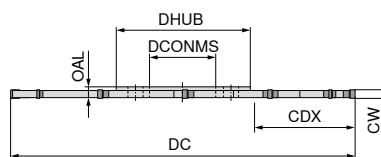


Suitable multipurpose milling cutter adapters can be found on Page 60

MaxiMill – Slot-SX side and face milling cutter

Scope of supply:

Side and face milling cutters **without** assembly key, **without** clamping screws



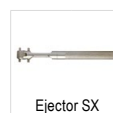
NEW

50 387 ...

Designation	DC mm	CW mm	CDX mm	DCONMS _{H6} mm	DHUB mm	OAL mm	ZEFP	Insert	Adapter	
ASLOT.160.R.12.32.DC-SX2	160	2	39	32	63	1,65	12	SX E2 ..	AD.SLOT.32...	16002
ASLOT.160.R.12.32.DC-SX3	160	3	39	32	63	2,50	12	SX E3 ..	AD.SLOT.32...	16003



Clamping screw



Ejector SX

50 950 ...

70 950 ...

Spare parts for Article no.

50 387 16002	00200	836
50 387 16003	00200	836



Suitable multipurpose milling cutter adapters can be found on Page 60

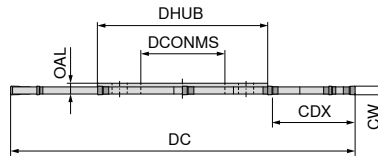
MaxiMill – Slot-SX side and face milling cutter

Scope of supply:

Side and face milling cutters **without** assembly key, **without** clamping screws



$\kappa = 90^\circ$



NEW

50 388 ...

Designation	DC mm	CW mm	CDX mm	DCONMS _{H6} mm	DHUB mm	OAL mm	ZEFP	Insert	Adapter	
ASLOT.160.R.12.40.DC-SX2	160	2	39	40	80	1,65	12	SX E2 ..	AD.SLOT.40...SK	16002
ASLOT.160.R.12.40.DC-SX3	160	3	39	40	80	2,50	12	SX E3 ..	AD.SLOT.40...SK	16003
ASLOT.160.R.10.40.DC-SX4	160	4	39	40	80	3,50	10	SX E4 ..	AD.SLOT.40...SK	16004
ASLOT.160.R.10.40.DC-SX5	160	5	39	40	80	4,50	10	SX E5 ..	AD.SLOT.40...SK	16005
ASLOT.160.R.10.40.DC-SX6	160	6	39	40	80	5,40	10	SX E6 ..	AD.SLOT.40...SK	16006



Clamping screw

50 950 ...



Ejector 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



Suitable multipurpose milling cutter adapters can be found on Page 60

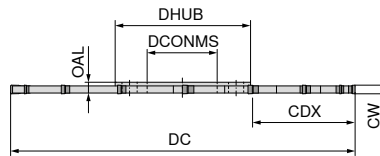
MaxiMill – Slot-SX side and face milling cutter

Scope of supply:

Side and face milling cutters **without** assembly key, **without** clamping screws



$\kappa = 90^\circ$



NEW

50 389 ...

Designation	DC mm	CW mm	CDX mm	DCONMS _{H6} mm	DHUB mm	OAL mm	ZEFP	Insert	Adapter	
ASLOT.200.R.16.40.DC-SX2	200	2	59	40	80	1,65	16	SX E2 ..	AD.SLOT.40...SK	20002
ASLOT.200.R.16.40.DC-SX3	200	3	59	40	80	2,50	16	SX E3 ..	AD.SLOT.40...SK	20003
ASLOT.200.R.14.40.DC-SX4	200	4	59	40	80	3,50	14	SX E4 ..	AD.SLOT.40...SK	20004
ASLOT.200.R.14.40.DC-SX5	200	5	59	40	80	4,50	14	SX E5 ..	AD.SLOT.40...SK	20005
ASLOT.200.R.14.40.DC-SX6	200	6	59	40	80	5,40	14	SX E6 ..	AD.SLOT.40...SK	20006



Clamping screw

50 950 ...



Ejector 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



Suitable multipurpose milling cutter adapters can be found on Page 60

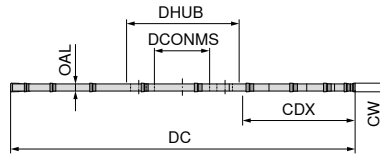
MaxiMill – Slot-SX side and face milling cutter

Scope of supply:

Side and face milling cutters **without** assembly key, **without** clamping screws



$\kappa = 90^\circ$



NEW

50 380 ...

Designation	DC mm	CW mm	CDX mm	DCONMS _{H6} mm	DHUB mm	OAL mm	ZEFP	Insert	Adapter	
ASLOT.250.R.20.40.DC-SX3	250	3	84	40	80	2,5	20	SX E3 ..	AD.SLOT.40...ZK	25003
ASLOT.250.R.18.40.DC-SX4	250	4	84	40	80	3,5	18	SX E4 ..	AD.SLOT.40...ZK	25004
ASLOT.250.R.18.40.DC-SX5	250	5	84	40	80	4,5	18	SX E5 ..	AD.SLOT.40...ZK	25005
ASLOT.250.R.18.40.DC-SX6	250	6	84	40	80	5,4	18	SX E6 ..	AD.SLOT.40...ZK	25006 ¹⁾

1) Not ex-stock



Clamping screw



Ejector SX

50 950 ...

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

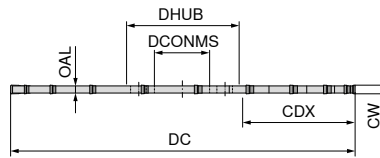
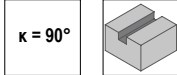


Suitable multipurpose milling cutter adapters can be found on Page 60

MaxiMill – Slot-SX side and face milling cutter

Scope of supply:

Side and face milling cutters **without** assembly key, **without** clamping screws



NEW

50 390 ...

Designation	DC mm	CW mm	CDX mm	DCONMS _{H6} mm	DHUB mm	OAL mm	ZEFP	Insert	Adapter	
ASLOT.250.R.20.40-SX3	250	3	84	40	80	2,5	20	SX E3 ..	AD.SLOT.40...ZK	25003
ASLOT.250.R.18.40-SX4	250	4	84	40	80	3,5	18	SX E4 ..	AD.SLOT.40...ZK	25004
ASLOT.250.R.18.40-SX5	250	5	84	40	80	4,5	18	SX E5 ..	AD.SLOT.40...ZK	25005
ASLOT.250.R.18.40-SX6	250	6	84	40	80	5,4	18	SX E6 ..	AD.SLOT.40...ZK	25006 ¹⁾

1) Not ex-stock



50 950 ...

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

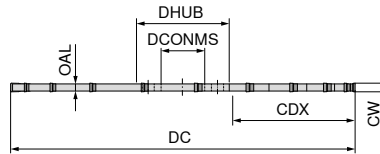
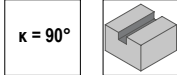


Suitable multipurpose milling cutter adapters can be found on Page 60

MaxiMill – Slot-SX side and face milling cutter

Scope of supply:

Side and face milling cutters **without** assembly key, **without** clamping screws



NEW

50 391 ...

Designation	DC mm	CW mm	CDX mm	DCONMS _{H6} mm	DHUB mm	OAL mm	ZEFP	Insert	Adapter	
ASLOT.315.R.22.40-SX4	315	4	115	40	80	3,5	22	SX E4 ..	AD.SLOT.40...ZK	31504
ASLOT.315.R.22.40-SX5	315	5	115	40	80	4,5	22	SX E5 ..	AD.SLOT.40...ZK	31505
ASLOT.315.R.22.40-SX6	315	6	115	40	80	5,4	22	SX E6 ..	AD.SLOT.40...ZK	31506 ¹⁾

1) Not ex-stock



Clamping screw

50 950 ...



Ejector SX

70 950 ...

Spare parts for Article no.

50 391 31504	00400	837
50 391 31505	00400	837
50 391 31506	00400	837

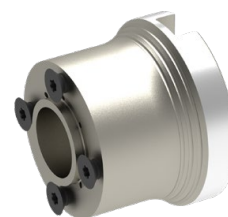
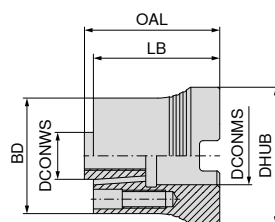


Suitable multipurpose milling cutter adapters can be found on Page 60

MaxiMill – Slot-SX multipurpose milling cutter adapter

Scope of supply:

Multipurpose milling cutter adapter including screws



NEW

50 395 ...

Designation	DCONMS mm	DCONWS _{h6} mm	DHUB mm	LB mm	OAL mm	BD mm	
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

Spare parts for Article no.

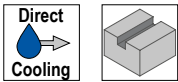
50 395 01300	00100			151
50 395 02200	00100			
50 395 03200	00200			
50 395 04000		00300		
50 395 04100		00400		

			
Clamping screw	Clamping screw	Clamping screw	Power Screw
50 950 ...	50 950 ...	50 950 ...	70 950 ...

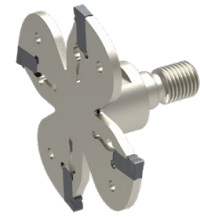
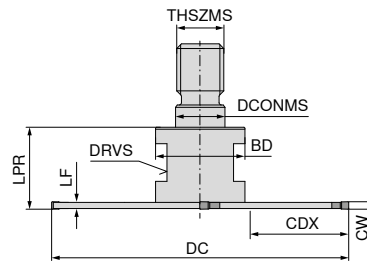
MaxiMill – Slot-SX screw-in multipurpose milling cutter

Scope of supply:

Screw-in multipurpose milling cutter **without** assembly key



$\kappa = 90^\circ$



NEW

50 392 ...

Designation	DC mm	CW mm	CDX mm	DCONMS mm	THSZMS	LF mm	BD mm	LPR mm	DRVS mm	ZEFP	Insert	
GSLOT.63.R.4.M10.DC-SX2	63	2	21	10,5	M10	1,65	19	18	15	4	SX E2 ..	06302
GSLOT.63.R.4.M10.DC-SX3	63	3	21	10,5	M10	2,50	19	18	15	4	SX E3 ..	06303

Spare parts for Article no.

50 392 06302
50 392 06303



Ejector SX

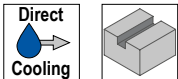
70 950 ...

836
836

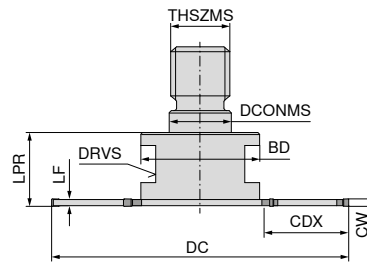
MaxiMill – Slot-SX screw-in multipurpose milling cutter

Scope of supply:

Screw-in multipurpose milling cutter **without** assembly key



$\kappa = 90^\circ$



NEW

50 393 ...

Designation	DC mm	CW mm	CDX mm	DCONMS mm	THSZMS	LF mm	BD mm	LPR mm	DRVS mm	ZEFP	Insert	
GSLOT.80.R.6.M16.DC-SX2	80	2	23	17	M16	1,65	32	20	24	6	SX E2 ..	08002
GSLOT.80.R.6.M16.DC-SX3	80	3	23	17	M16	2,50	32	20	24	6	SX E3 ..	08003
GSLOT.80.R.4.M16.DC-SX4	80	4	23	17	M16	3,50	32	20	24	4	SX E4 ..	08004

Spare parts for Article no.

50 393 08002
50 393 08003
50 393 08004



Ejector SX

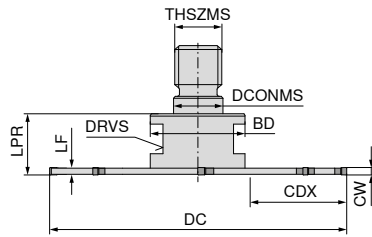
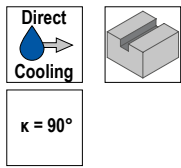
70 950 ...

836
836
837

MaxiMill – Slot-SX screw-in multipurpose milling cutter

Scope of supply:

Screw-in multipurpose milling cutter **without** assembly key



NEW

50 394 ...

Designation	DC mm	CW mm	CDX mm	DCONMS mm	THSZMS	LF mm	BD mm	LPR mm	DRVS mm	ZEFP	Insert	
GSLOT.100.R.8.M16.DC-SX2	100	2	33	17	M16	1,65	32	20	24	8	SX E2 ..	10002
GSLOT.100.R.8.M16.DC-SX3	100	3	33	17	M16	2,50	32	20	24	8	SX E3 ..	10003
GSLOT.100.R.6.M16.DC-SX4	100	4	33	17	M16	3,50	32	20	24	6	SX E4 ..	10004



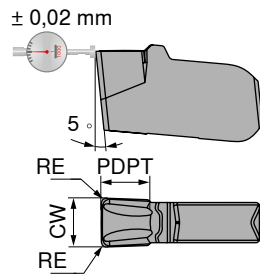
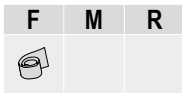
70 950 ...

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 the clamping technology catalogue – Chapter 16 Adapters and accessories

Insert SX

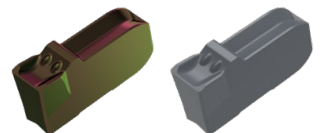
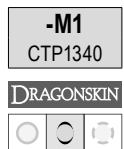
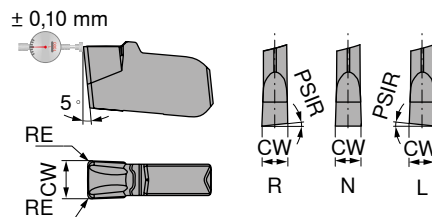
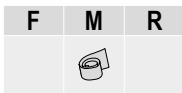


Designation	CW $\pm 0,02$ mm	RE $\pm 0,05$ mm	PDPT mm	for tool holder
SX E2.00 N 0.20	2	0,2	1,5	-SX2
SX E3.00 N 0.30	3	0,3	2,0	-SX3
SX E4.00 N 0.40	4	0,4	2,5	-SX4

70 346 ...

P	•
M	•
K	○
N	○
S	•
H	
O	

Insert SX



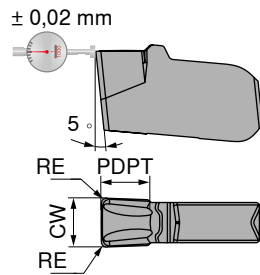
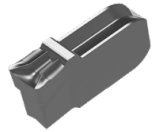
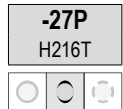
Designation	IH	CW $\pm 0,05$ mm	RE $\pm 0,05$ mm	for tool holder
SX E2.00 N 0.20	N	2	0,2	-SX2
SX E3.00 N 0.20	N	3	0,2	-SX3
SX E4.00 N 0.30	N	4	0,3	-SX4
SX E5.00 N 0.30	N	5	0,3	-SX5
SX E6.00 N 0.40	N	6	0,4	-SX6

70 342 ...

70 342 ...

P	•	•
M	○	•
K	•	○
N		○
S		•
H		
O		

Insert SX

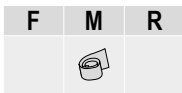


70 349 ...

Designation	CW $\pm 0,02$ mm	RE $\pm 0,05$ mm	PDPT mm	for tool holder	
SX E2.00 N 0.20	2	0,2	2,0	-SX2	122
SX E3.00 N 0.30	3	0,3	2,5	-SX3	123
SX E4.00 N 0.40	4	0,4	3,0	-SX4	124

P	
M	
K	○
N	●
S	
H	
O	○

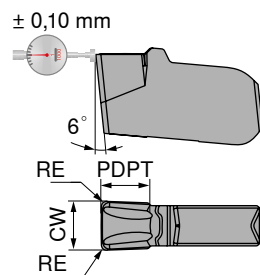
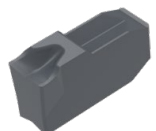
Insert SX



NEW

-M7
CTP1340

DRAGONSKIN

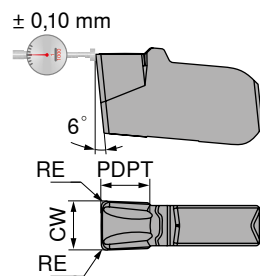


70 347 ...

Designation	CW $\pm 0,05$ mm	RE $\pm 0,05$ mm	PDPT mm	for tool holder	
SX E2.00 N 0.20	2	0,2	1,5	-SX2	62200
SX E3.00 N 0.20	3	0,2	2,0	-SX3	62300
SX E4.00 N 0.30	4	0,3	2,5	-SX4	62400
SX E5.00 N 0.30	5	0,3	2,7	-SX5	62500
SX E6.00 N 0.40	6	0,4	3,0	-SX6	62600

P	●
M	●
K	○
N	○
S	●
H	
O	

Insert SX



NEW

-M8
CTP1340

DRAGONSKIN



70 348 ...

Designation	CW +/-0,05 mm	RE +/-0,05 mm	PDPT mm	for tool holder	
SX E2.00 N 0.20	2	0,2	1,5	-SX2	62200
SX E3.00 N 0.20	3	0,2	2,0	-SX3	62300
SX E4.00 N 0.30	4	0,3	2,5	-SX4	62400
SX E5.00 N 0.30	5	0,3	2,7	-SX5	62500
SX E6.00 N 0.40	6	0,4	3,0	-SX6	62600
P					●
M					●
K					○
N					○
S					●
H					
O					

Cutting data approximate values

	Material sub-group	Index	Tensile strength N/mm ² / HB / HRC	CTCP335	CTP1340	H216T
				v _c in m/min.		
P	Unalloyed steel	P.1.1	420 N/mm ² / 125 HB	240	190	
		P.1.2	640 N/mm ² / 190 HB	210	160	
		P.1.3	840 N/mm ² / 250 HB	180	140	
		P.1.4	910 N/mm ² / 270 HB	160	130	
		P.1.5	1010 N/mm ² / 300 HB	140	120	
	Low-alloy steel	P.2.1	610 N/mm ² / 180 HB	220	170	
		P.2.2	930 N/mm ² / 275 HB	160	130	
		P.2.3	1010 N/mm ² / 300 HB	140	120	
		P.2.4	1200 N/mm ² / 375 HB	100	80	
	High-alloy steel and high-alloy tool steel	P.3.1	680 N/mm ² / 200 HB	130	120	
		P.3.2	1100 N/mm ² / 300 HB	110	100	
		P.3.3	1300 N/mm ² / 400 HB	90	80	
	Stainless steel	P.4.1	680 N/mm ² / 200 HB	140	120	
		P.4.2	1010 N/mm ² / 300 HB	120	110	
M	Stainless steel	M.1.1	610 N/mm ² / 180 HB	110	130	
		M.2.1	300 HB	100	120	
		M.3.1	780 N/mm ² / 230 HB	80	100	
K	Grey cast iron	K.1.1	350 N/mm ² / 180 HB	300	200	140
		K.1.2	500 N/mm ² / 260 HB	240	180	115
	Spherulitic graphite cast iron	K.2.1	540 N/mm ² / 160 HB	200	120	150
		K.2.2	845 N/mm ² / 250 HB	160	100	110
	Malleable iron	K.3.1	440 N/mm ² / 130 HB	190	120	170
		K.3.2	780 N/mm ² / 230 HB	160	100	140
N	Aluminium wrought alloy	N.1.1	60 HB		300	500
		N.1.2	340 N/mm ² / 100 HB		200	330
	Cast aluminium alloy	N.2.1	250 N/mm ² / 75 HB		250	370
		N.2.2	300 N/mm ² / 90 HB		220	330
		N.2.3	440 N/mm ² / 130 HB		200	280
	Copper and copper alloys (bronze/brass)	N.3.1	375 N/mm ² / 110 HB		300	350
		N.3.2	300 N/mm ² / 90 HB		300	350
		N.3.3	340 N/mm ² / 100 HB		200	320
	Magnesium alloys	N.4.1	70 HB		200	320
S	Heat-resistant alloys	S.1.1	680 N/mm ² / 200 HB		70	
		S.1.2	950 N/mm ² / 280 HB		60	
		S.2.1	840 N/mm ² / 250 HB		35	
		S.2.2	1180 N/mm ² / 350 HB		25	
		S.2.3	1080 N/mm ² / 320 HB		30	
	Titanium alloys	S.3.1	400 N/mm ²		60	
		S.3.2	1050 N/mm ² / 320 HB		50	
		S.3.3	1400 N/mm ² / 410 HB		40	
H	Hardened steel	H.1.1	46–55 HRC			
		H.1.2	56–60 HRC			
		H.1.3	61–65 HRC			
		H.1.4	66–70 HRC			
	Chilled iron	H.2.1	400 HB			
	Hardened cast iron	H.3.1	55 HRC			
O	Non-metal materials	O.1.1	≤ 150 N/mm ²			160
		O.1.2	≤ 100 N/mm ²			
		O.2.1	≤ 1000 N/mm ²			240
		O.2.2	≤ 1000 N/mm ²			
		O.3.1				

* Tensile strength



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. $\pm 20\%$ according to the usage conditions.

Chip groove description

-27P

- ▲ Positive geometry
- ▲ Ground, sharp cutting edge
- ▲ Polished chip breaker
- ▲ Low cutting forces
- ▲ Fine to medium machining
- ▲ First choice for non-ferrous metals

-M7

- ▲ Positive geometry
- ▲ Medium machining
- ▲ Universal application

-F2

- ▲ Positive geometry
- ▲ Ground cutting edge
- ▲ Low cutting forces
- ▲ Fine to medium machining
- ▲ For stainless and steel materials

-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

-M1

- ▲ Stable cutting edge
- ▲ Medium to rough machining
- ▲ Best suited to steel materials

Grade description

CTCP335

- ▲ Carbide, CVD TiCN-Al₂O₃ Multilayer
- ▲ ISO | P35 | M30 | K35
- ▲ The reliable choice for machining steel and cast iron materials

CTP1340

- ▲ Carbide, PVD TiAlTaN
- ▲ ISO | P30 | M25 | K30 | N30 | S30
- ▲ Wet machining, universal high-performance grade for steel materials, austenitic stainless steels and heat-resistant materials

H216T

- ▲ Carbide
- ▲ ISO | K15 | N15 | O5
- ▲ Uncoated carbide for machining aluminium and non-ferrous metals such as AlMgSi1

Reference tool 50 386 12504 – ASLOT.125.R.8.32.DC-SX4

	SX4 -F2				SX4 -M1				SX4 -M7				SX4 -M8				SX4 -27P			
	a _e	10	20	30	a _e	10	20	30	a _e	10	20	30	a _e	10	20	30	a _e	10	20	30
	hm	f _z in mm			hm	f _z in mm			hm	f _z in mm			hm	f _z in mm			hm	f _z in mm		
P	0,08	0,28	0,20	0,16	0,1	0,30	0,25	0,20	0,09	0,30	0,23	0,18	0,08	0,28	0,20	0,16				
M	0,05	0,18	0,13	0,10					0,06	0,21	0,15	0,12	0,05	0,18	0,13	0,10				
K					0,12	0,30	0,30	0,24	0,09	0,30	0,23	0,18					0,06	0,21	0,15	0,12
N	0,08	0,28	0,20	0,16									0,08	0,28	0,20	0,16	0,09	0,30	0,23	0,18
S	0,04	0,14	0,10	0,08									0,04	0,14	0,10	0,08				
H																				
O																	0,05	0,18	0,13	0,10



Caution: For narrower and wider indexable inserts, reduce or increase the feed per tooth accordingly!

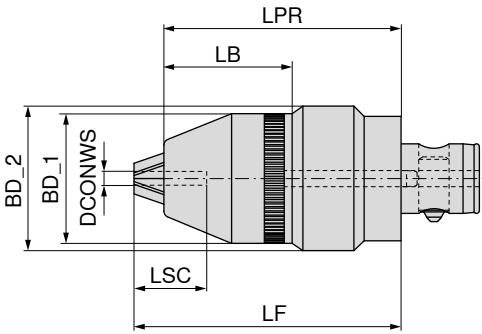


The cutting data is strongly influenced by external conditions, such as the stability of the tool and workpiece clamping, material and type of machine. The specified values represent guideline cutting data that can be adjusted by approx. ± 20% according to the usage conditions.

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
ABS 50	2,5 - 16	52	57,5	95	29	105,5	52,0

01397

01697



Set

84 950 ...



Positioning pin

84 950 ...



Pendulum bolt

84 950 ...



Coolant pipe

84 950 ...

Spare parts

DCONWS

0,5 - 13

2,5 - 16

99900

99900

20200

20200

20000

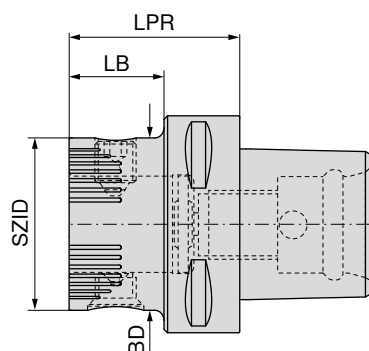
20000

20100

20100

Torsional vibration damper with ABS connection

▲ also available with Balluff chip **on request**



84 206 ...

Adapter	KOMET no.	SZID	BD mm	LPR mm	LB mm	
PSC 50	A69 05060	ABS 50	50	48	28	05094
PSC 63	A69 06070	ABS 50	50	50	28	05093
PSC 63	A69 06080	ABS 63	63	62	40	06393
PSC 80	A69 08090	ABS 50	50	58	28	05086
PSC 80	A69 08100	ABS 63	63	70	40	06386
PSC 80	A69 08110	ABS 80	80	92	62	08086

Clamping screw	Set	Taper screw
84 950 ...	84 950 ...	84 950 ...
20300	99800	20400
25500	99400	27300
25600	99300	25100

Spare parts

SZID

ABS 50	20300	99800	20400
ABS 63	25500	99400	27300
ABS 80	25600	99300	25100

Accessories



→ 182



→ 273

Coolant transfer pipe

Others

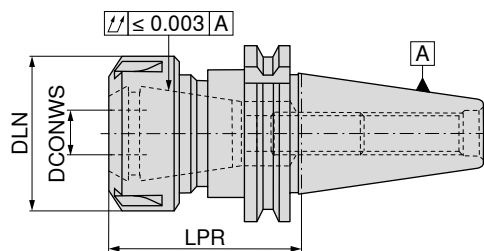
Accessories can be found in the clamping technology catalogue
→ **Chapter 16, Adapters and accessories**

ER Collet chuck

▲ also available with Balluff chip **on request**

Scope of supply:

Holder with lock nut and adjustable back stop



NEW

AD/B
G 2,5 n_{max} 25000

82 415 ...

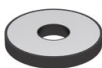
	Adapter	DCONWS mm	LPR mm	DLN mm	TQX Nm	for collet	
short	SK 40	1 - 10	60	22	8 - 56	426E (ER16 mini)	11179
medium length	SK 40	1 - 10	120	22	8 - 56	426E (ER16 mini)	21179

Spare parts
for collet

426E (ER16) / SK30-SK50

			
ER Mini clamping key	Mini lock nut	Mini IK	Stop screw IK
83 950 ...	62 950 ...	83 950 ...	82 950 ...
101	066	058	30000

Accessories

	→ 256-266		→ 269		→ 111-112		→ 273
ER collet		Sealing ring		Pull stud		Others	

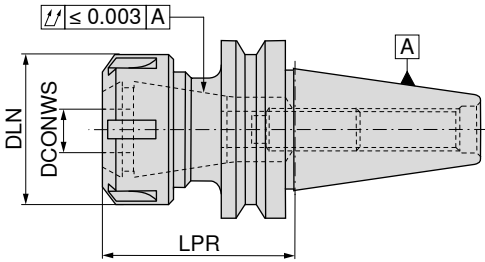
Accessories can be found in the clamping technology catalogue → Chapter 16, Adapters and accessories

ER-Collet chuck

▲ also available with Balluff chip on request

Scope of supply:

Holder with lock nut and adjustable back stop



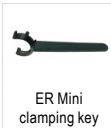
NEW



AD/B
G 2,5 n_{max} 25000

82 509 ...

	Adapter	DCONWS mm	LPR mm	DLN mm	TQX Nm	for collet	
short	BT 40	1 - 10	60	22	56	426E (ER16 mini)	11169
medium length	BT 40	1 - 10	120	22	56	426E (ER16 mini)	21169



ER Mini
clamping key

83 950 ...

101



Mini lock nut

62 950 ...

066



Mini IK

83 950 ...

058



Stop screw IK

82 950 ...

30000

for collet

426E (ER16) / BT30-BT50

Accessories



→ 256-266

ER collet



→ 111-112

Pull stud



→ 273

Others

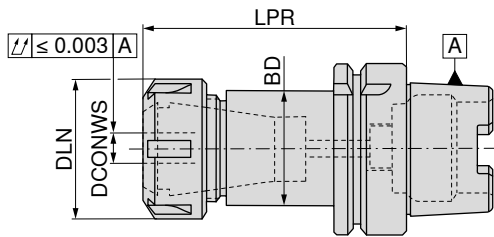
Accessories can be found in the clamping technology catalogue → Chapter 16, Adapters and accessories

ER Collet chuck

▲ also available with Balluff chip on request

Scope of supply:

Toolholder including nut



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
extra-long	HSK-A 63	1 - 10	160	22	8 - 56	426E (ER16 mini)	41157

for collet

426E (ER16 mini)	101	066	058	30000
426E (ER16 mini)	101	066	058	

			
ER Mini clamping key	Mini lock nut	Mini IK	Stop screw IK
83 950 ...	62 950 ...	83 950 ...	82 950 ...

Accessories

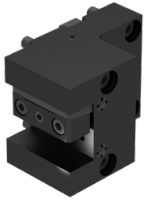
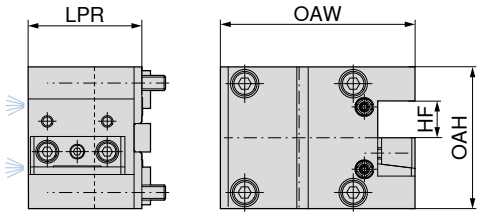
		
ER collet	Coolant transfer pipe	Others
→ 256-266	→ 163	→ 273

Accessories can be found in the clamping technology catalogue → **Chapter 16, Adapters and accessories**

Doosan/Spinner – BMT 45 –

Axial square section tool holder with DirectCooling

▲ directly screwed version



Left-hand

82 480 ...

Adapter	Hole pattern	HF mm	LPR mm	OAH mm	OAW mm
BMT 45	58 x 58	20	60	75	99,5

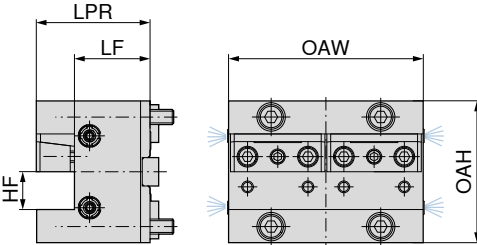
00006¹⁾

1) Not ex-stock

Doosan/Spinner – BMT 45 –

Radial square section tool holder with DirectCooling

▲ directly screwed version



Left-hand

82 480 ...

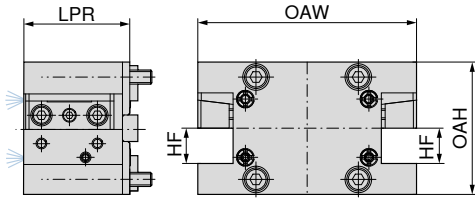
Adapter	Hole pattern	HF mm	LF mm	LPR mm	OAH mm	OAW mm
BMT 45	58 x 58	20	40	60	75	80

01007¹⁾

1) Not ex-stock

Doosan/Spinner – BMT 45 – Multi square section tool holder with DirectCooling

▲ directly screwed version



82 480 ...

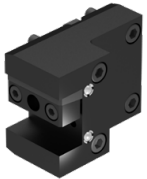
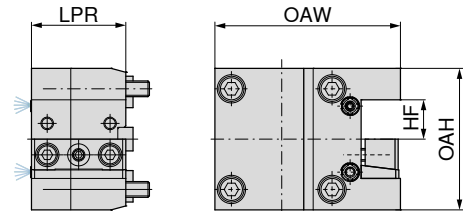
Adapter	Hole pattern	HF mm	LPR mm	OAH mm	OAW mm
BMT 45	58 x 58	20	60	75	124

02008¹⁾

1) Not ex-stock

Doosan – BMT 55 – Axial square section tool holder with DirectCooling

▲ directly screwed version



Left-hand

82 481 ...

Adapter	Hole pattern	HF mm	LPR mm	OAH mm	OAW mm
BMT 55	64 x 64	25	60	90	118

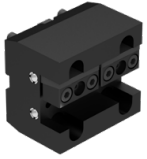
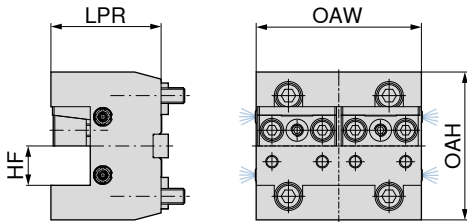
00005¹⁾

1) Not ex-stock

Doosan – BMT 55 –

Radial square section tool holder with DirectCooling

▲ directly screwed version



NEW



Left-hand

82 481 ...

Adapter	Hole pattern	HF mm	LPR mm	OAH mm	OAW mm
BMT 55	64 x 64	25	95	94	105

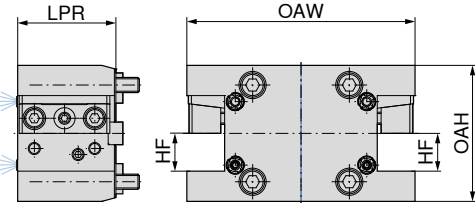
01006¹⁾

1) Not ex-stock

Doosan – BMT 55 –

Multi square section tool holder with DirectCooling

▲ directly screwed version



NEW



82 481 ...

Adapter	Hole pattern	HF mm	LPR mm	OAH mm	OAW mm
BMT 55	64 x 64	25	60	90	151

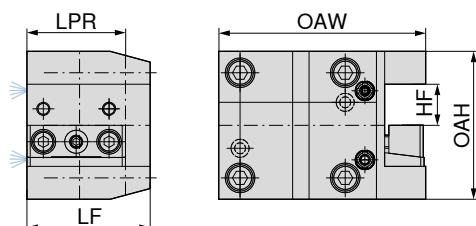
02007¹⁾

1) Not ex-stock

EMAG – BMT 55 –

Axial square section tool holder with DirectCooling

▲ directly screwed version



NEW



Left-hand

82 482 ...

Adapter	Hole pattern	HF mm	LPR mm	OAH mm	OAW mm
BMT 55	64 X 64	25	60	90	126

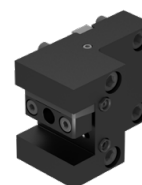
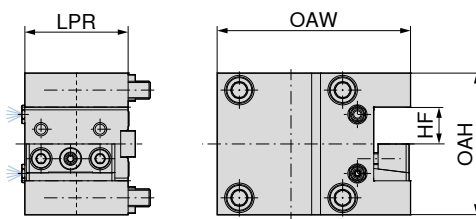
00004¹⁾

1) Not ex-stock

HAAS/Doosan – BMT 65 –

Axial square section tool holder with DirectCooling

▲ directly screwed version



NEW



Left-hand

82 483 ...

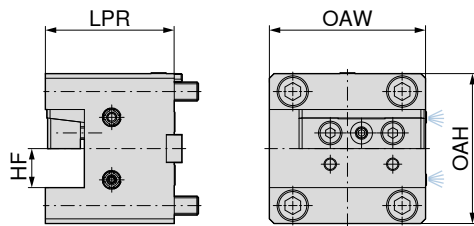
Adapter	Hole pattern	HF mm	LPR mm	OAH mm	OAW mm
BMT 65	70 x 73	25	75	97	131

00005¹⁾

1) Not ex-stock

HAAS/Doosan – BMT 65 – Radial square section tool holder with DirectCooling

▲ directly screwed version



NEW



Right-hand

82 483 ...

Adapter	Hole pattern	HF mm	LPR mm	OAH mm	OAW mm
BMT 65	70 x 73	25	82,5	96	100

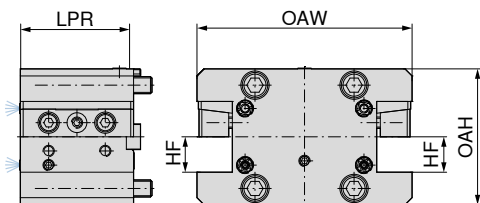
05006¹⁾

1) Not ex-stock

HAAS/Doosan – BMT 65 – Multi square section tool holder with DirectCooling

▲ directly screwed version

▲ For right and left direction of rotation



NEW



82 483 ...

Adapter	Hole pattern	HF mm	LPR mm	OAH mm	OAW mm
BMT 65	70 x 73	25	80	96	152

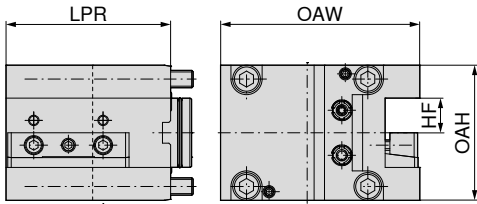
02007¹⁾

1) Not ex-stock

Mori/Seiki – BMT 40 –

Axial square section tool holder with DirectCooling

- ▲ directly screwed version
- ▲ For right and left direction of rotation



NEW



Left-hand

82 484 ...

00005¹⁾

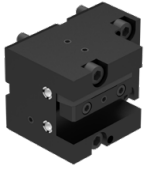
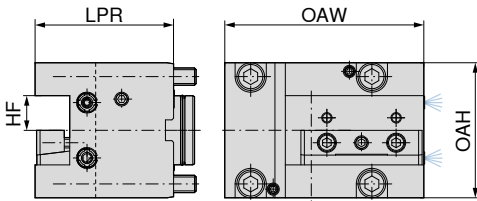
Adapter	Hole pattern	HF mm	LPR mm	OAH mm	OAW mm
BMT 40	70 x 62	20	95	78	115

1) Not ex-stock

Mori/Seiki – BMT 40 –

Radial square section tool holder with DirectCooling

- ▲ directly screwed version
- ▲ For right and left direction of rotation



NEW



Left-hand

82 484 ...

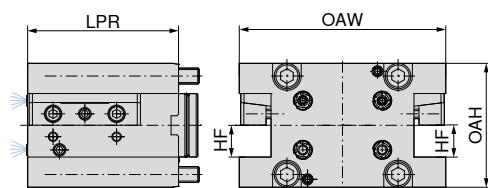
01006¹⁾

Adapter	Hole pattern	HF mm	LPR mm	OAH mm	OAW mm
BMT 40	70 x 62	20	80	78	115

1) Not ex-stock

Mori/Seiki – BMT 40 – Multi square section tool holder with DirectCooling

- ▲ directly screwed version
- ▲ For right and left direction of rotation



82 484 ...

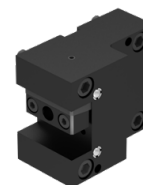
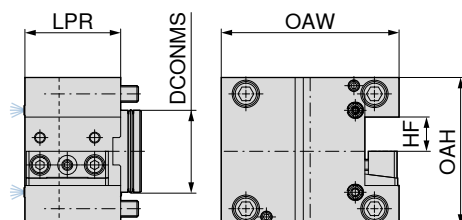
02007¹⁾

Adapter	Hole pattern	HF mm	LPR mm	OAH mm	OAW mm
BMT 40	70 x 62	20	95	78	130

1) Not ex-stock

Mori/Seiki – BMT 60 – Axial square section tool holder with DirectCooling

- ▲ directly screwed version
- ▲ For right and left direction of rotation



Left-hand

82 485 ...

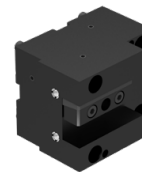
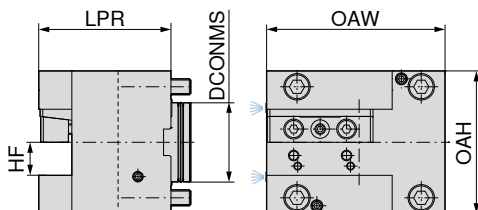
00005¹⁾

Adapter	Hole pattern	HF mm	DCONMS mm	LPR mm	OAH mm	OAW mm
BMT 60	94 x 84	25	60	70	108	130

1) Not ex-stock

Mori/Seiki – BMT 60 – Radial square section tool holder with DirectCooling

- ▲ directly screwed version
- ▲ For right and left direction of rotation



Left-hand

82 485 ...

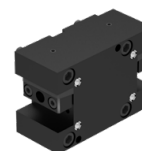
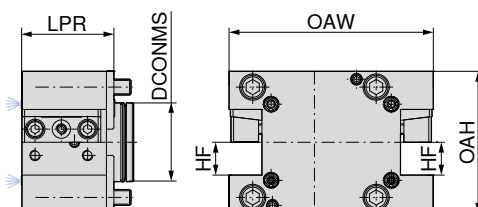
Adapter	Hole pattern	HF mm	DCONMS mm	LPR mm	OAH mm	OAW mm
BMT 60	94 x 84	25	59,9	100	108	135

01006¹⁾

1) Not ex-stock

Mori/Seiki – BMT 60 – Multi square section tool holder with DirectCooling

- ▲ directly screwed version
- ▲ For right and left direction of rotation

**82 485 ...**

Adapter	Hole pattern	HF mm	DCONMS mm	LPR mm	OAH mm	OAW mm
BMT 60	94 x 84	25	60	70	108	155,5

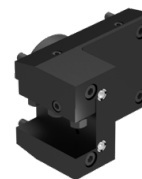
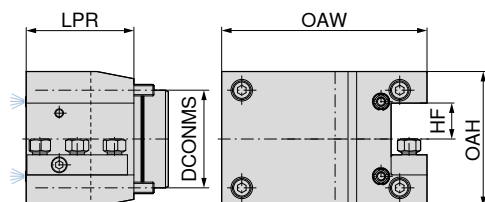
02007¹⁾

1) Not ex-stock

Mazak – BMT 68 –

Axial square section tool holder with DirectCooling

- ▲ directly screwed version
- ▲ For right and left direction of rotation



Left-hand

82 486 ...

00005¹⁾

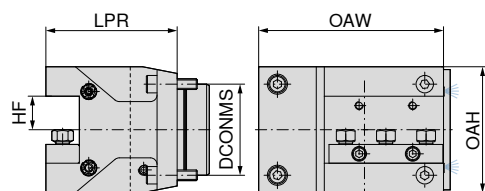
Adapter	Hole pattern	HF mm	DCONMS mm	LPR mm	OAH mm	OAW mm
BMT 68	110 x 68	25	68	75	94	143

1) Not ex-stock

Mazak – BMT 68 –

Radial square section tool holder with DirectCooling

- ▲ directly screwed version
- ▲ For right and left direction of rotation



Left-hand

82 486 ...

01006¹⁾

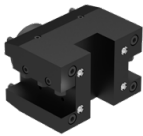
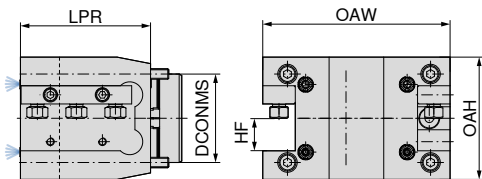
Adapter	Hole pattern	HF mm	DCONMS mm	OAH mm	LPR mm	OAW mm
BMT 68	110 x 68	25	68	94	98	143

1) Not ex-stock

EMAG – BMT 68 –

Multi square section tool holder with DirectCooling

▲ directly screwed version



82 486 ...

Adapter	Hole pattern	HF mm	DCONMS mm	OAH mm	LPR mm	OAW mm
BMT 68	110 x 68	25	68	94	100	144

02007 ¹⁾

1) Not ex-stock

Environmentally friendly, sustainable & cost-effective

Certified recycling of valuable carbide

By deliberately conserving limited primary resources, we aim to significantly increase the proportion of recovered materials using carbide recycling. Our certified recycling process allows us to transform our used carbide products into a reusable powder and, using extremely low amounts of energy, to completely convert the finished product back into its original form.

Join our sustainable material cycle

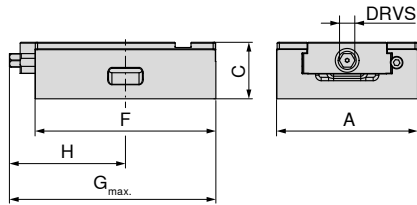
As part of our long-term partnership, we hope that we can together complete the cycle from the secondary raw material to a new finished product. Send us your used carbide. We will then process it in the approved manner. The price we offer for the returned carbide is always based on the current market price. Best of all: We take care of the entire process for you and also provide free, quantity-specific collection containers and transport solutions. Do you want to conserve valuable resources and make an important contribution to protecting the environment together with us? If so, our recycling process is just what you need.



SoloClamp – ESG 5

- ▲ Single vice without system jaws
- ▲ Ball bearing mounted spindle
- ▲ ± 0.01 mm repeatability
- ▲ Suitable for PNG and MNG

**ESG
5**



NEW

80 857 ...

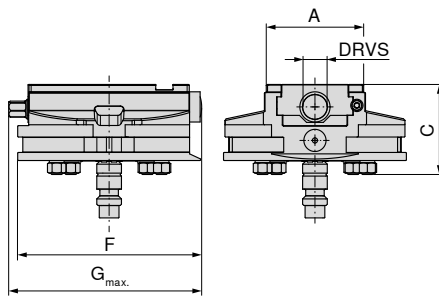
A mm	C mm	F mm	G _{max} mm	H mm	DRVS mm	MXC kN	WT kg	
80	50	130	155,0	82	12	25	2,9	8085708500
80	50	190	203,0	102	12	25	4,4	8085708600
125	50	160	169,0	103	12	35	6,0	8085715000
125	50	235	235,0	132	12	35	8,4	8085715100
125	50	300	300,0	170	12	35	10,5	8085715200
160	70	280	309,0	169	14	50	25,0	8085726100
160	70	480	512,5	267	14	50	30,0	8085726200

Suitable for zero point clamping system						Lang Quick Point	Lang Quick Point
Article no.	Type	Width in mm	Length in mm	MNG	PNG	96 x 96	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	✓	✓	✗	✗

SoloClamp – ESG 5

- ▲ Sealed single vice for Erowa ITS 148
- ▲ Ball bearing mounted spindle
- ▲ ± 0.01 mm repeatability

ESG
5



NEW

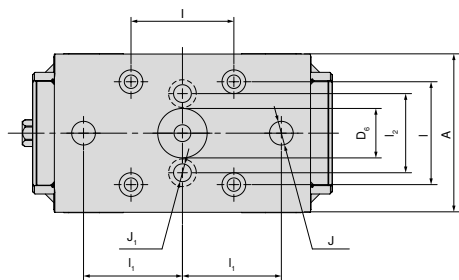
80 857 ...

A	C	F	G _{max.}	DRVS	MXC	WT
mm	mm	mm	mm	mm	kN	kg
80	73	130	148	12	25	5,6

08900

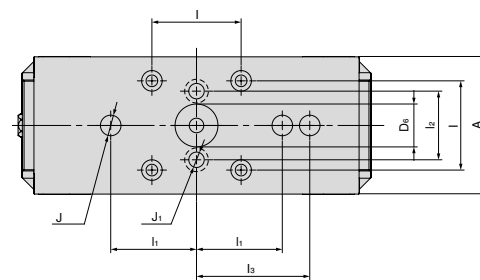
ESG 5 underside dimensions

Base width 80 mm and 130 mm length



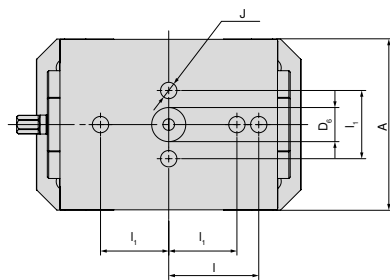
A	D ₆ H6	I ± 0.015	I ₁ ± 0.015	I ₂	J H7	J ₁
mm	mm	mm	mm	mm	mm	mm
80	25	52	50	40	12	9

Base width 80 mm and length 190 mm



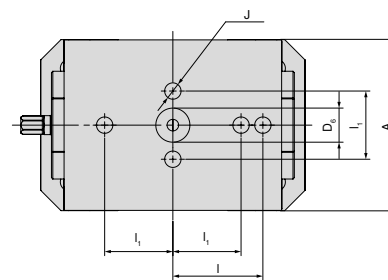
A	D ₆ H6	I ± 0.015	I ₁ ± 0.015	I ₂	J H7	J ₁
mm	mm	mm	mm	mm	mm	mm
80	25	52	50	40	12	9

Base width 125 mm and length 160 mm



A	D ₆ H6	I ± 0.015	I ₁ ± 0.015	J H7
mm	mm	mm	mm	mm
125	25	66	50	12

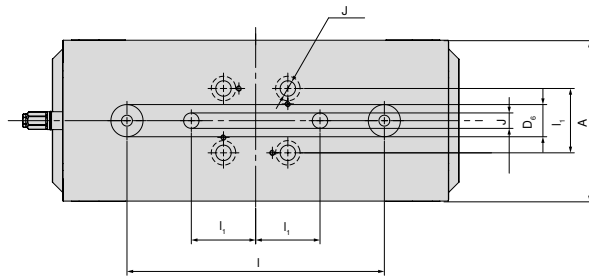
Base width 125 mm and length 235 mm



A	D ₆ H6	I ± 0.015	I ₁ ± 0.015	J H7
mm	mm	mm	mm	mm
125	25	66	50	12

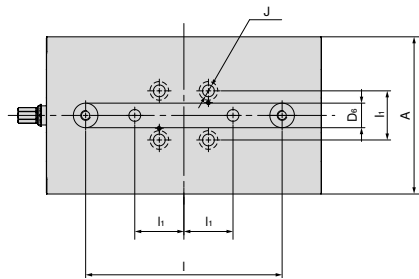
ESG 5 underside dimensions

Base width 125 mm and 300 mm length



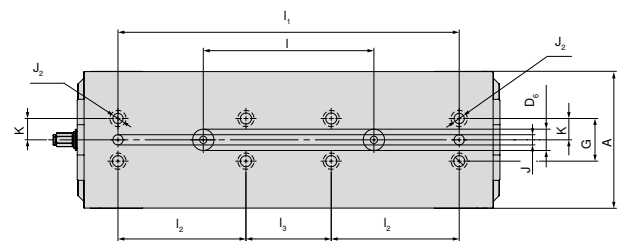
A	D ₆ H ₆	l ±0,015	l ₁ ±0,015	J H ₇
mm	mm	mm	mm	mm
125	25	200	50	12

Base width 160 mm and length 280 mm



A	D ₆ H ₆	l ±0,015	l ₁ ±0,015	J H ₇
mm	mm	mm	mm	mm
160	25	200	50	12

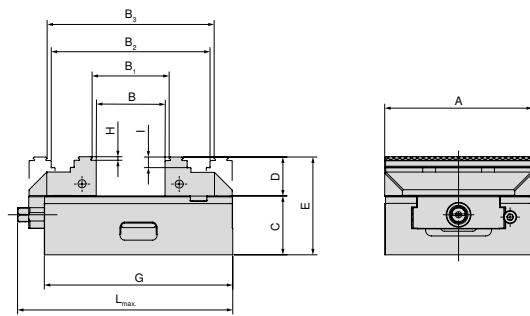
Base width 160 mm and length 480 mm



A	D ₆ H ₆	l ±0,015	l ₁ ±0,015	l ₂	l ₃ ±0,015	J H ₇	J ₂ F ₇	K ±0,02	G
mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
160	25	200	400	150	100	12	12	25	50

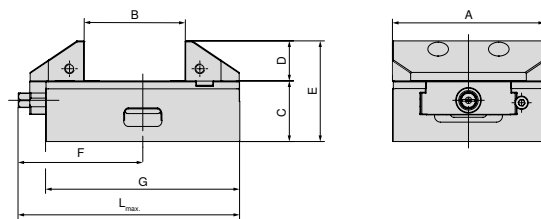
ESG 5 structural dimension table for the different jaws

With indexable jaw grip 3 mm, fixed and movable



A mm	B mm	B ₁ mm	B ₂ mm	B ₃ mm	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	50	28	78	130	3	8	155	80 901 306 + 80 878 810
80	0 - 109	4 - 113	59 - 167	63 - 171	50	28	78	190	3	8	206	80 901 306 + 80 878 810
125	0 - 57	8 - 64	77 - 134	84 - 141	50	33	83	160	3	9	183	80 857 30000 + 80 878 510
125	0 - 127	8 - 134	77 - 204	84 - 211	50	33	83	235	3	9	250	80 857 30000 + 80 878 510
125	0 - 197	8 - 204	77 - 274	84 - 281	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

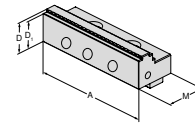


A mm	B mm	C mm	D mm	E mm	F mm	G mm	L _{max.} mm	Article no. System jaws
125	25 - 82	50	33	83	103	160	183	80 857 30200 + 80 857 30100
125	25 - 152	50	33	83	132	235	250	80 857 30200 + 80 857 30100
125	25 - 222	50	33	83	170	300	320	80 857 30200 + 80 857 30100

System jaws overview

Indexable jaw, grip 3 mm, fixed

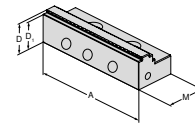
▲ Price per piece



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	ESG mini	HDG 2	ZSG 4	ZSG mini	DSG 4	MSG 2	Versa	HSG
80			28	25			40			80 901 306				●	●								
125			33	30			57			80 857 30000				●	●					●			
160			50	47			81			80 901 300				●	●								

Indexable jaw, grip 3 mm, movable

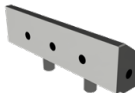
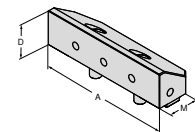
▲ Price per piece



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	ESG mini	HDG 2	ZSG 4	ZSG mini	DSG 4	MSG 2	Versa	HSG
80			28	25			40			80 878 810				●	●			●		●			
125			33	30			57			80 878 510				●	●			●					
160			50	47			81			80 878 610				●	●			●					

5-axis indexable jaw, fixed

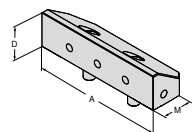
▲ Price per piece



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	ESG mini	HDG 2	ZSG 4	ZSG mini	DSG 4	MSG 2	Versa	HSG
125			33				44,5			80 857 30100					●			●		●			

5-axis indexable jaw, movable

▲ Price per piece

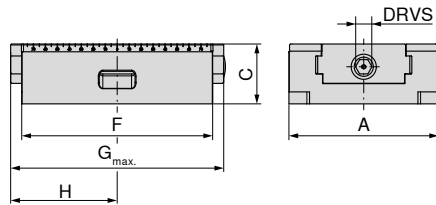


For vice width	A	A ₁	D	D ₁	D ₂	E	M	M ₁	M ₂		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	ESG mini	HDG 2	ZSG 4	ZSG mini	DSG 4	MSG 2	Versa	HSG
125			33				44,5			80 857 30200					●								

CentriClamp – ZSG 4

- ▲ Sealed centric vice
- ▲ Ball bearing mounted spindle
- ▲ ± 0.01 mm repeatability
- ▲ Suitable for PNG and MNG

**ZSG
4**



NEW

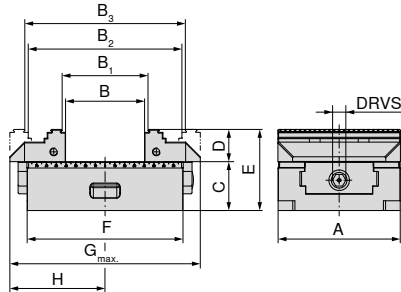
80 878 ...

A mm	C mm	F mm	G _{max} mm	H mm	DRVS mm	MXC kN	WT kg	
80	50	130	157	81	12	25	3,1	80 878 08500
80	50	190	206	104	12	25	4,5	80 878 08600
125	50	160	200	111,5	12	35	6,3	80 878 15000
125	50	235	272	143,5	12	35	9,5	80 878 15100
125	50	300	340	181	12	35	12,5	80 878 15200
160	70	280	315	172	14	50	25,0	80 878 26100
160	70	480	524	276	14	50	35,0	80 878 26200

Suitable for zero point clamping system						Lang Quick Point	Lang Quick Point
Article no.	Type	Width in mm	Length in mm	MNG	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	✓	✓	✗	✗

CentriClamp – ZSG 4

- ▲ Sealed centric vice
- ▲ With grip jaws, 3 mm
- ▲ Ball bearing mounted spindle
- ▲ ± 0.01 mm repeatability
- ▲ Suitable for PNG and MNG

**ZSG
4**

NEW
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	
80	0 - 59	4 - 63	59 - 117	63 - 121	50	28	78	130	157	81	12	25	3,9	80 878 08700
80	0 - 123	4 - 127	59 - 181	63 - 185	50	28	78	190	206	104	12	25	5,5	80 878 08800
125	0 - 80	8 - 87	77 - 156	84 - 163	50	33	83	160	208	111,5	12	35	8,7	80 878 15300
125	0 - 155	8 - 162	77 - 218	84 - 225	50	33	83	235	272	143,5	12	35	12,0	80 878 15400
125	0 - 220	8 - 227	77 - 296	84 - 303	50	33	83	300	348	181	12	35	14,0	80 878 15500



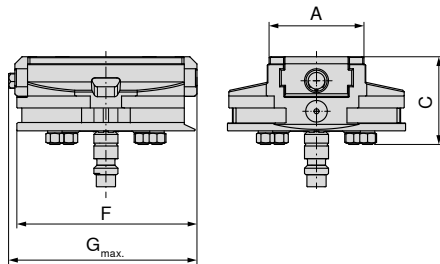
It is not possible to fit top jaws with a height of 40 mm, if this height is required, please use the reversible jaws with D = 40 mm (Article No. 80 878 520).

Suitable for zero point clamping system						Lang Quick Point		Lang Quick Point
Article no.	Type	Width in mm	Length in mm	MNG	PNG	96 x 96	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	✓	✓	✓	✗	

CentriClamp – ZSG 4

- ▲ Sealed centric vice for Erowa ITS 148
- ▲ Ball bearing mounted spindle
- ▲ ± 0.01 mm repeatability

ZSG
4



NEW

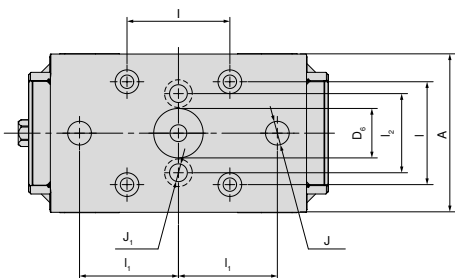
80 878 ...

A	C	F	G _{max.}	DRVS	MXC	WT
mm	mm	mm	mm	mm	kN	kg
80	73	130	148	12	25	5,6

08900

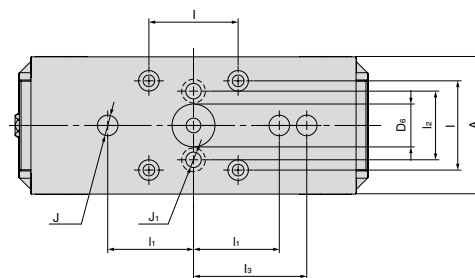
ZSG 4 underside dimensions

Base width 80 mm and 130 mm length



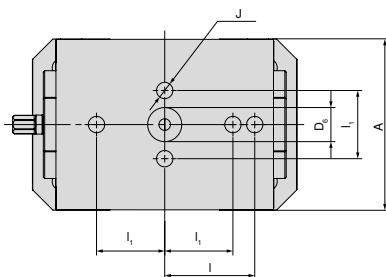
A	D ₆ H6	I $\pm 0,015$	I ₁ $\pm 0,015$	I ₂	J H7	J ₁
mm	mm	mm	mm	mm	mm	mm
80	25	52	50	40	12	9

Base width 80 mm and length 190 mm



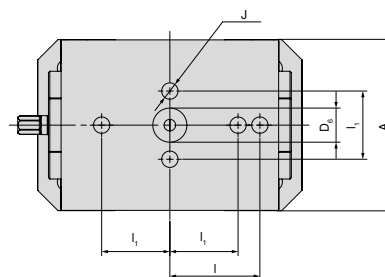
A	D ₆ H6	I $\pm 0,015$	I ₁ $\pm 0,015$	I ₂	J H7	J ₁
mm	mm	mm	mm	mm	mm	mm
80	25	52	50	40	12	9

Base width 125 mm and length 160 mm



A	D ₆ H6	I $\pm 0,015$	I ₁ $\pm 0,015$	J H7
mm	mm	mm	mm	mm
125	25	66	50	12
125	25	66	50	12

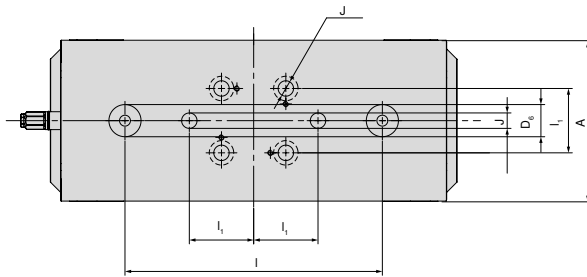
Base width 125 mm and length 235 mm



A	D ₆ H6	I $\pm 0,015$	I ₁ $\pm 0,015$	J H7
mm	mm	mm	mm	mm
125	25	66	50	12

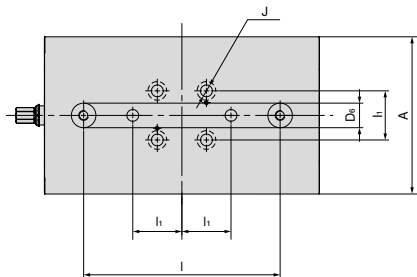
ZSG 4 underside dimensions

Base width 125 mm and 300 mm length



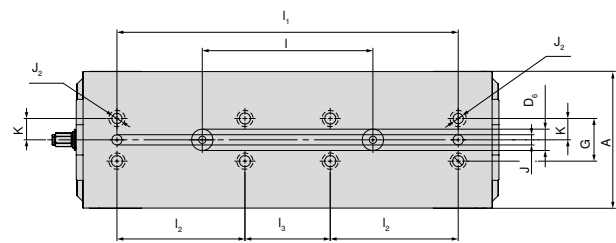
A	D ₆ H ₆	l ±0,015	l ₁ ±0,015	J H ₇
mm	mm	mm	mm	mm
125	25	200	50	12

Base width 160 mm and length 280 mm



A	D ₆ H ₆	l ±0,015	l ₁ ±0,015	J H ₇
mm	mm	mm	mm	mm
160	25	200	50	12

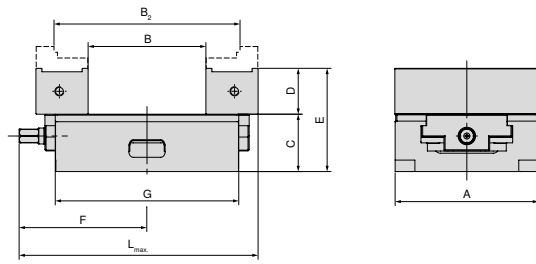
Base width 160 mm and length 480 mm



A	D ₆ H ₆	l ±0,015	l ₁ ±0,015	l ₂	l ₃ ±0,015	J H ₇	J ₂ F ₇	K ±0,02	G
mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
160	25	200	400	150	100	12	12	25	50

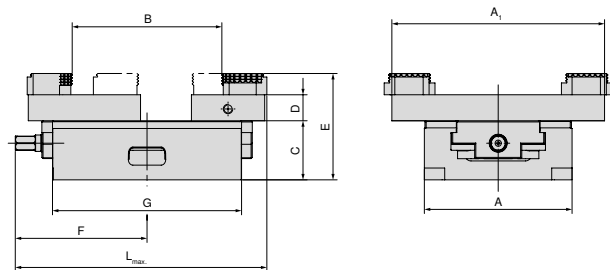
ZSG 4 structural dimension table for the different jaws

with combi jaws



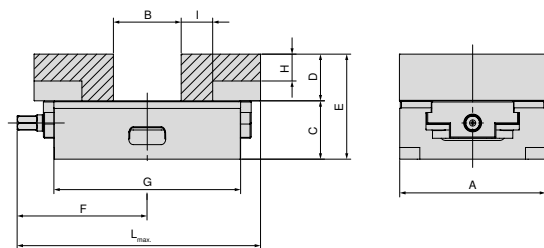
A mm	B mm	B ₂ mm	C mm	D mm	E mm	F mm	G mm	L _{max} mm	Article no. System jaws
125	10,5 - 113	60 - 161	50	40	90	111,5	160	208	2 x 80 878 530
125	10,5 - 188	60 - 237	50	40	90	143,5	235	272	2 x 80 878 530
125	10,5 - 253	60 - 302	50	40	90	181	300	348	2 x 80 878 530

With pendulum and adapter plate



A mm	A ₁ mm	B mm	C mm	D mm	E mm	F mm	G mm	L _{max} 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	35 - 126	50	22	90	111,5	160	212	80 878 590 + 80 878 570
125	180	35 - 201	50	22	90	143,5	235	272	80 878 590 + 80 878 570
125	180	35 - 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

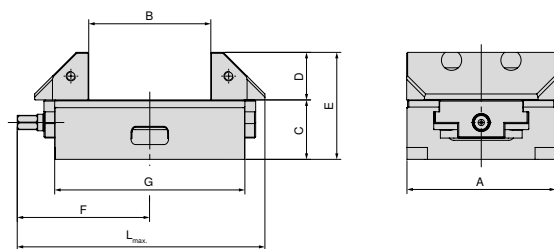
With aluminium jaws



A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	I mm	L _{max} 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

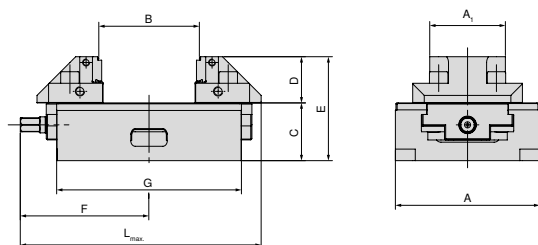
ZSG 4 structural dimension table for the different jaws

With 5-axis jaws



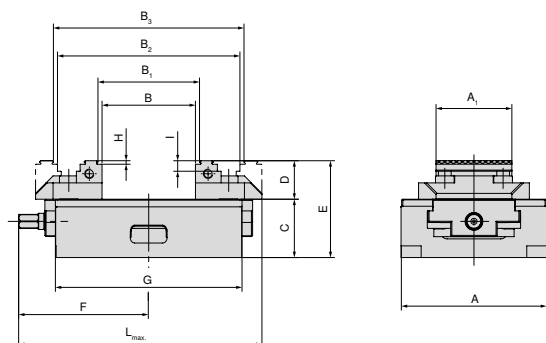
A mm	B mm	C mm	D mm	E mm	F mm	G mm	L _{max.} mm	Article no. System jaws
125	22 - 102	50	40	90	115,5	160	208	2 x 80 878 625
125	22 - 177	50	40	90	143,5	235	272	2 x 80 878 625
125	22 - 242	50	40	90	181	300	348	2 x 80 878 625
160	15 - 140	70	50	120	170	280	315	2 x 80 878 660
160	28 - 354	70	50	120	276	480	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

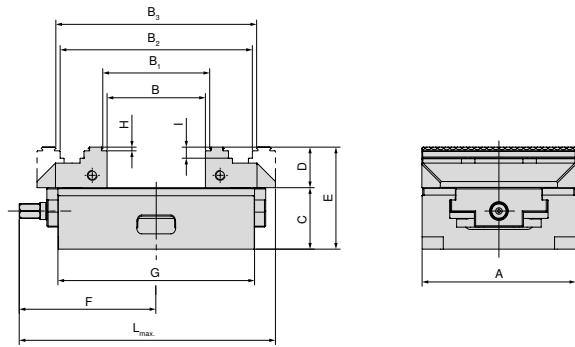
With indexable jaws, grip 3 mm, height 65 mm



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

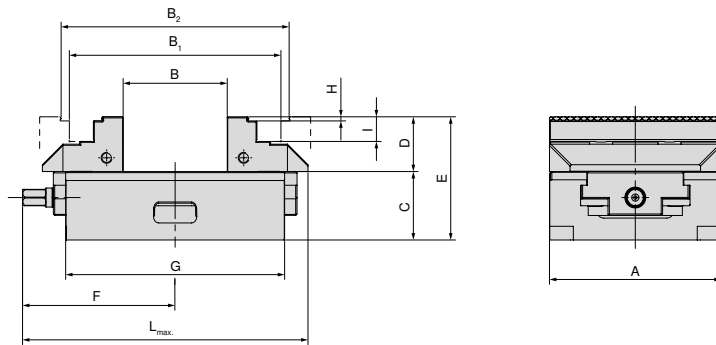
ZSG 4 structural dimension table for the different jaws

With indexable jaws, grip 3 mm



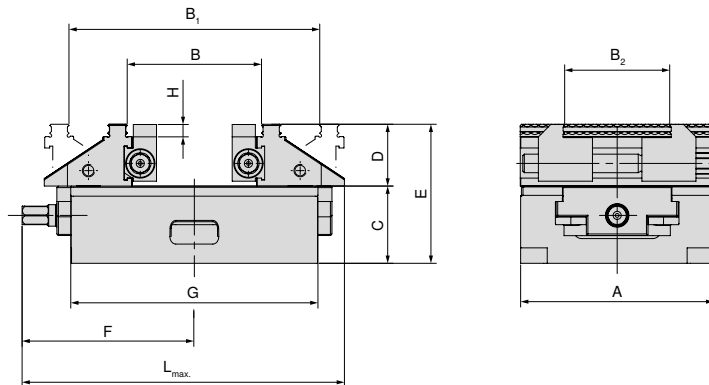
A mm	B mm	B ₁ mm	B ₂ mm	B ₃ mm	C mm	D mm	E mm	F mm	G mm	H mm	I mm	L _{max} mm	Article no. System jaws
160	0 - 127	8 - 134	118 - 244	125 - 251	70	50	120	170	280	3	10	315	2 x 80 878 610
160	15 - 341	22 - 348	132 - 458	139 - 465	70	50	120	276	480	3	10	524	2 x 80 878 610

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 - 230	75 - 229	88 - 241	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

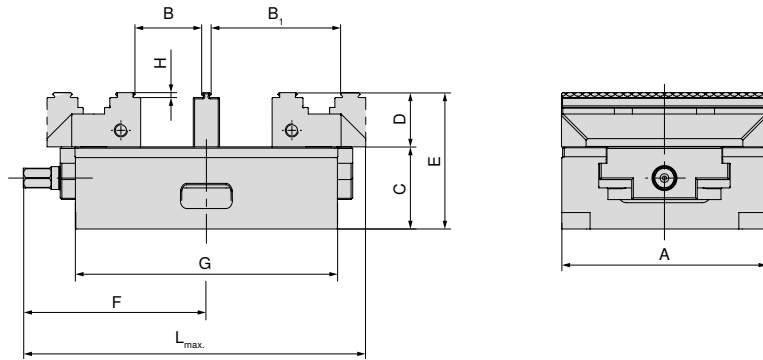
With 6 face jaw system for 125 mm jaw width



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	2 x 80 878 525
125	39 - 161	83 - 236	37 - 101	50	40	90	143,5	235	8	272	2 x 80 878 525
125	39 - 226	83 - 301	37 - 101	50	40	90	181	300	8	349	2 x 80 878 525

ZSG 4 structural dimension table for the different jaws

with middle jaw, grip 3 mm (width 28 mm / 33 mm) for jaw width 125 mm

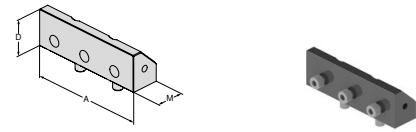


A mm	B mm	B ₁ mm	C mm	D mm	E mm	F mm	G mm	H mm	L _{max} mm	Article no. System jaws
80	8 - 28	37 - 57	50	28	78	81	130	3	157	2 x 80 878 810 + 80 878 31200
80	14 - 22	31 - 51	50	28	78	81	130	3	157	2 x 80 878 810 + 80 878 33400
80	8 - 58	37 - 87	50	28	78	104	190	3	206	2 x 80 878 810 + 80 878 31200
80	14 - 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

System jaws overview

5-axis jaw, movable

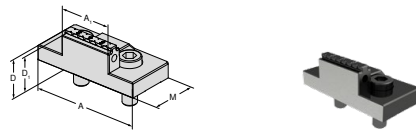
▲ Price per piece



											NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	ESG mini	HDG 2	ZSG 4	ZSG mini	DSG 4	MSG 2	Versa	HSG	
For vice width	A	A ₁	D	D ₁	D ₂	E	M	M ₁	M ₂															
125	125		40				45,5			80 878 625								●						
160	160		50				73			80 878 660								●						

Indexable grip jaw 3 mm, width 40 mm, movable

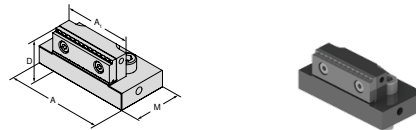
▲ Price per piece



										NEW														
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	ESG mini	HDG 2	ZSG 4	ZSG mini	DSG 4	MSG 2	Versa	HSG
80	80	40	28	25			40			80 878 81900					●				●					

5-axis jaw, grip 3 mm, width 65 mm, movable

▲ Price per piece

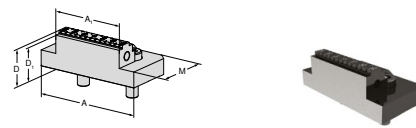


For vice width													NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	ESG mini	HDG 2	ZSG 4	ZSG mini	DSG 4	MSG 2	Versa	HSG
125	95	65,5	40				57			80 878 665									●						

5-axis indexable jaw, grip 3 mm, width 65 mm, movable

▲ double sided grip step

▲ price per piece

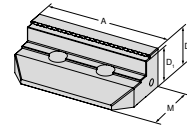


										NEW			NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	ESG mini	HDG 2	ZSG 4	ZSG mini	DSG 4	MSG 2	Versa	HSG
For vice width	A	A ₁	D	D ₁	D ₂	E	M	M ₁	M ₂																
125	95	65	33	30			57				80 878 51900				●					●					

System jaws overview

Indexable jaw, grip 3 mm, height 40 mm, movable

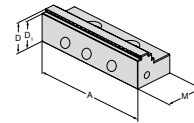
▲ Price per piece



For vice width																				80 878 520	NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	ESG mini	HDG 2	ZSG 4	ZSG mini	DSG 4	MSG 2	Versa	HSG
A	A ₁	D	D ₁	D ₂	E	M	M ₁	M ₂																									
125		40	37			59																											

Indexable jaw, grip 3 mm, movable

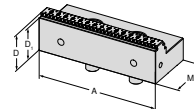
▲ Price per piece



											NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	ESG mini	HDG 2	ZSG 4	ZSG mini	DSG 4	MSG 2	Versa	HSG	
For vice width	A	A ₁	D	D ₁	D ₂	E	M	M ₁	M ₂															
	80		28	25			40			80 878 810				●	●			●		●				
	125		33	30			57			80 878 510				●	●			●						
	160		50	47			81			80 878 610				●	●			●						

Indexable jaw, grip 5 mm, movable

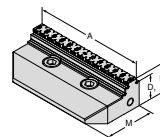
▲ Price per piece



										NEW													
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	ESG mini	HDG 2	ZSG 4	ZSG mini	DSG 4	MSG 2	Versa	HSG
	80		28	23			41			80 878 81400								●					
	125		33	28			57			80 878 51400								●					
	160		50	45			81			80 878 34300								●					

Indexable grip jaw, for aluminium and plastic

▲ Price per piece

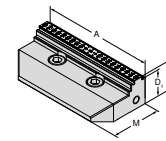


											NEW	NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	ESG mini	HDG 2	ZSG 4	ZSG mini	DSG 4	MSG 2	Versa	HSG
For vice width	A	A ₁	D	D ₁	D ₂	E	M	M ₁	M ₂															
	80		28	23			40				80 878 81500								●					
	125		33	28			57				80 878 51500								●					

System jaws overview

Indexable jaw embossed profile

- ▲ Price per piece
- ▲ suitable for LANG embossed profile

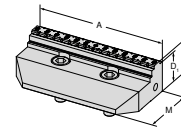


NEW

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	ESG mini	HDG 2	ZSG 4	ZSG mini	DSG 4	MSG 2	Versa	HSG
80			28	25			40			80 878 81800								●					
125			33	30			57			80 878 51800								●					

Indexable jaw, carbide, grip 3 mm, movable

- ▲ Price per piece

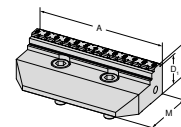


NEW

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	ESG mini	HDG 2	ZSG 4	ZSG mini	DSG 4	MSG 2	Versa	HSG
80			28	25			40			80 878 81600								●					
125			33	30			57			80 878 51600								●					
160			50	47			81			80 878 31700								●					

Indexable jaw, carbide, grip 5 mm, movable

- ▲ Price per piece

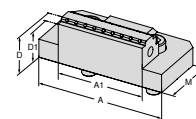


NEW

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	ESG mini	HDG 2	ZSG 4	ZSG mini	DSG 4	MSG 2	Versa	HSG
80			28	23			40			80 878 81700								●					
125			33	28			57			80 878 51700								●					

Indexable jaw, carbide grip 3 mm, width 40 mm, movable

- ▲ Price per piece

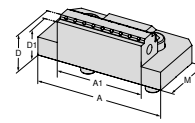


For vice width	A	A ₁	D	D ₁	D ₂	E	M	M ₁	M ₂		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	ESG mini	HDG 2	ZSG 4	ZSG mini	DSG 4	MSG 2	Versa	HSG
80	80	40	28	25			40			80 878 33200								●					

System jaws overview

Indexable jaw, carbide grip 3 mm, width 65 mm, movable

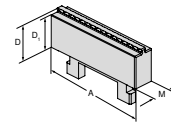
▲ Price per piece



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	ESG mini	HDG 2	ZSG 4	ZSG mini	DSG 4	MSG 2	Versa	HSG
125	125	65	33	30			57			80 878 33300								●					

Centre jaw, grip 3 mm, narrow

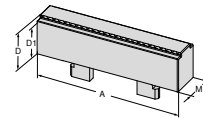
▲ Price per piece



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	ESG mini	HDG 2	ZSG 4	ZSG mini	DSG 4	MSG 2	Versa	HSG
	80		28	25			16			80 878 31200								●					
	125		33	30			16			80 878 31300								●					

Centre jaw, grip 3 mm, wide

▲ Price per piece

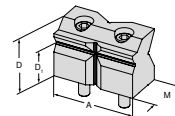
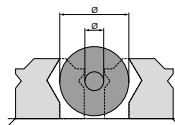


For vice width	A	A ₁	D	D ₁	D ₂	E	M	M ₁	M ₂		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	ESG mini	HDG 2	ZSG 4	ZSG mini	DSG 4	MSG 2	Versa	HSG
	80		28	25			24			80 878 33400								●					
	125		33	30			26			80 878 33500								●					

Prismatic jaw

▲ Prism jaw with horizontal and vertical prism

▲ price per piece

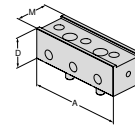


Ø For clamping diameter	A	A ₁	D	D ₁	D ₂	E	M	M ₁	M ₂		NEW	NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	ESG mini	HDG 2	ZSG 4	ZSG mini	DSG 4	MSG 2	Versa	HSG
10 - 60	80		52	32			38,5			80 878 31800									●					
10 - 60	80		28	23			41			80 878 34000									●					
10 - 60	125		33	28			57			80 878 34100									●					
10 - 80	125		67	42			57			80 878 31900									●					
10 - 80	160		50	45			81			80 878 34200									●					

System jaws overview

Combi jaw

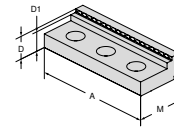
▲ Price per piece



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	ESG mini	HDG 2	ZSG 4	ZSG mini	DSG 4	MSG 2	Versa	HSG
	125		40				45,5			80 878 530								●					

Jaw, grip, VS

▲ Price per piece

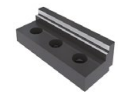
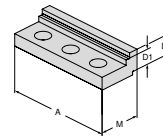


For vice width	A	A ₁	D	D ₁	D ₂	E	M	M ₁	M ₂		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	ESG mini	HDG 2	ZSG 4	ZSG mini	DSG 4	MSG 2	Versa	HSG
	125		22	17			45			80 892 245								●					

Jaw, smooth VS, carbide coated

▲ Increased clamping range for finish machining and 2nd operation

▲ Price per piece

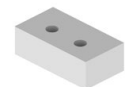
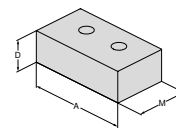


For vice width	A	A ₁	D	D ₁	D ₂	E	M	M ₁	M ₂		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	ESG mini	HDG 2	ZSG 4	ZSG mini	DSG 4	MSG 2	Versa	HSG
	125		19	14			45			80 892 240								●					

Alu jaw, movable

▲ for producing shaped jaws

▲ Price per piece

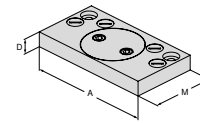


For vice width	A	A ₁	D	D ₁	D ₂	E	M	M ₁	M ₂		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	ESG mini	HDG 2	ZSG 4	ZSG mini	DSG 4	MSG 2	Versa	HSG
	80		28				48			80 878 850				●				●		●			
	125		40				68			80 878 550				●				●		●			
	160		50				85			80 878 305				●				●		●			

System jaws overview

Pendulum jaw, movable

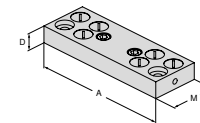
▲ Price per piece



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	ESG mini	HDG 2	ZSG 4	ZSG mini	DSG 4	MSG 2	Versa	HSG
80	125		19				76			80 878 870				●				●		●			
125	180		22				95			80 878 570				●				●		●			
160	256		22				170			80 878 670				●				●					

Adapter Jaw

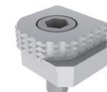
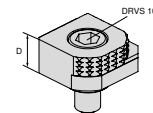
▲ Price per piece



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	ESG mini	HDG 2	ZSG 4	ZSG mini	DSG 4	MSG 2	Versa	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

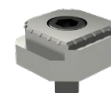
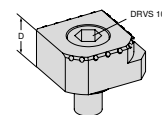
- ▲ 1 = Smooth, carbide coated
- ▲ 2 = Grip with 3 mm step
- ▲ 3 = Grip with 8 mm step
- ▲ 4 = Grip with 18 mm step
- ▲ 5 = Rough grip with 8 mm step
- ▲ 6 = Round grip
- ▲ M_{max} = 60 Nm
- ▲ Including fixation screws



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	ESG mini	HDG 2	ZSG 4	ZSG mini	DSG 4	MSG 2	Versa	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

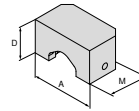


For vice width	A	A ₁	D	D ₁	D ₂	E	M	M ₁	M ₂		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	ESG mini	HDG 2	ZSG 4	ZSG mini	DSG 4	MSG 2	Versa	HSG
			18							80 890 35300	●	●	●	●	●	●	●	●	●	●	●		

System jaws overview – ZSG mini

Soft jaw, steel

▲ Price per piece



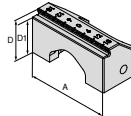
NEW

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	ESG mini	HDG 2	ZSG 4	ZSG mini	DSG 4	MSG 2	Versa	HSG
45	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



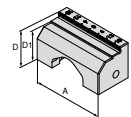
NEW

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	ESG mini	HDG 2	ZSG 4	ZSG mini	DSG 4	MSG 2	Versa	HSG
45	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



NEW

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	ESG mini	HDG 2	ZSG 4	ZSG mini	DSG 4	MSG 2	Versa	HSG
45	45		22	19						80 912 31400									●				
70	70		22	19						80 912 31500									●				

Magnet workpiece supports, set

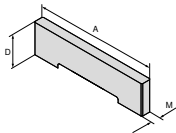


- ▲ With clearance on the underside
- ▲ Flexible and rational clamping
- ▲ Height accuracy +/- 0.01 mm
- ▲ Quick and easy to install thanks to magnetic adhesion

Workpiece supports overview

Magnet workpiece supports, set

- ▲ Stainless spring steel
- ▲ Pressed magnets
- ▲ Delivered in set: 5 pairs of 2 pieces
- ▲ Price per set



				NEW												
A	D	M		NCG	H5G / -S / -Z	X5G-Z / -S	ESG 4	ESG 5	ESG mini	HDG 2	ZSG 4	ZSG mini	DSG 4	MSG 2	Versa	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	●			●			●	●		●			



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