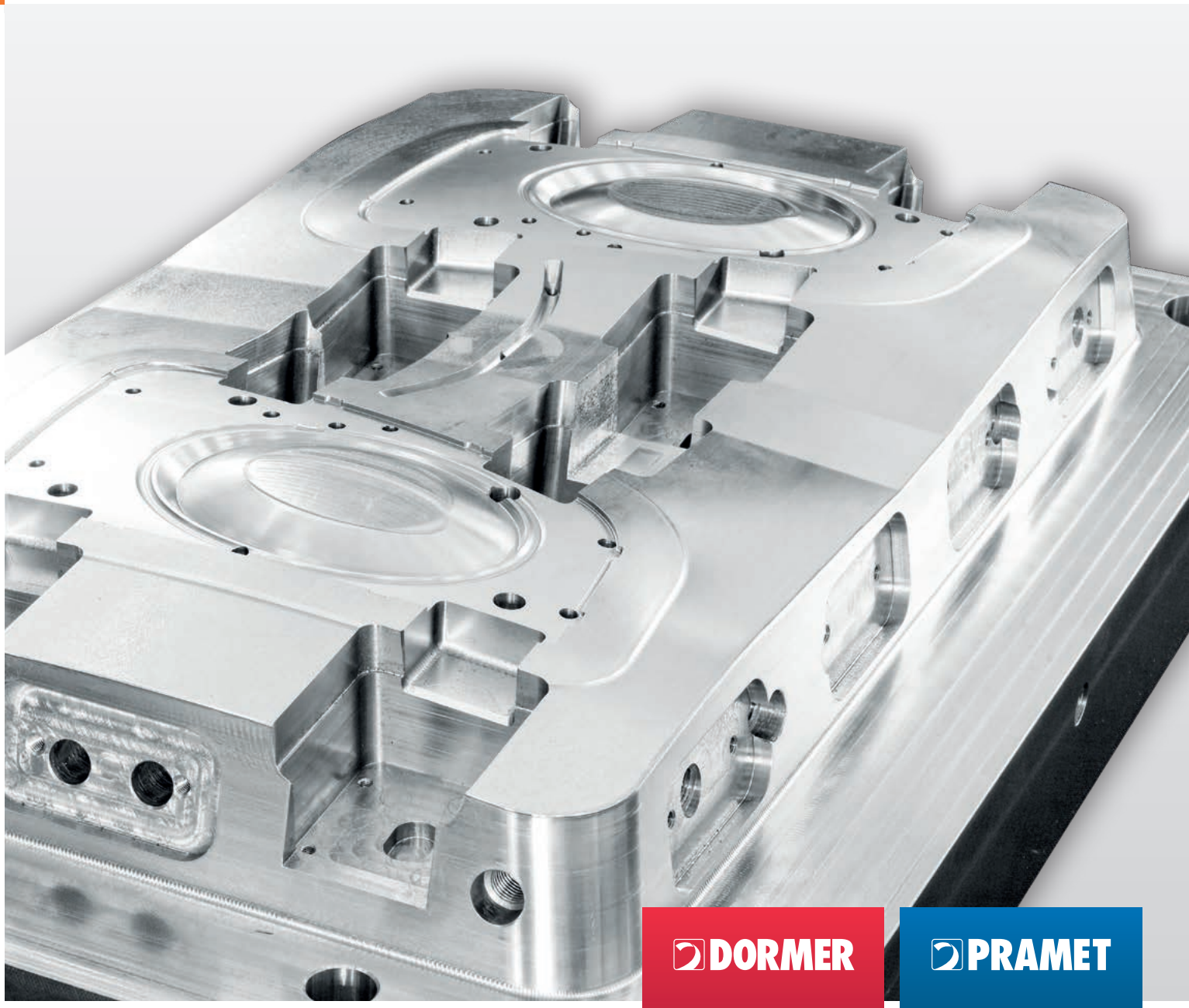
DORMER PRAMET

DIE & MOLD

2020



DORMER

PRAMET

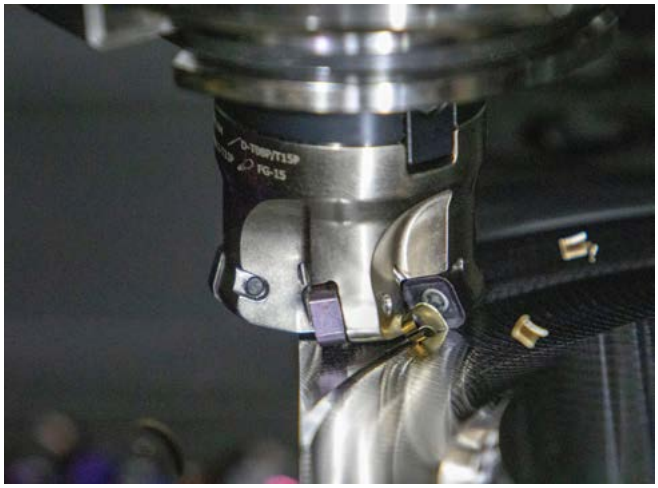
CONTENTS

INTRODUCTION

In recent years, Dormer Pramet has expanded its assortment of indexable and solid round tools to support an extensive variety of die and mold applications.

This industry features a variety of molding components, often featuring materials in a condition that makes them difficult to machine, with a requirement for tools capable of supporting high feeds as well as large material removal rates.

Common components include plastic injection molds, forging dies, die casting and micro molds, with each requiring application specific tooling. Our range of applications covers heavy roughing through to fine finishing.



With the many different workpiece materials and variety of sizes involving several machining operations, having the right cutting tools is paramount. Dormer Pramet offer numerous standard and special tools - primarily milling cutters.

As part of its continued expansion into the die and mold segment, Dormer Pramet has built a comprehensive high feed milling assortment with several recent introductions.

Another key operation in die and mold applications is copy milling and finishing.

Dormer Pramet's family of indexable milling tools includes cutters for semi-finishing and finishing of steels, hardened steels and cast irons.

From a round tools perspective, Dormer Pramet's solid ball nose cutters support 3D profile milling and contouring of complex surfaces. The S5xx assortment for hardened steels is available in short to extra-long lengths and feature a double-radii to reduce cutting forces and support higher feed. The S2xx assortment is mainly for the machining of stainless steels and super alloys. The S7xx program of solid carbide cutters provide a multi-material milling option.

All cutters in this range feature an extra margin on the cutting edge for a highly stable and secure process. A variety of diameters, lengths, flute designs and coatings, as well as roughing profile and corner radii options, make this assortment an ideal all-round choice.

This diverse program of cutting tools demonstrates Dormer Pramet's commitment to the die and mold segment, with further additions planned in the coming years.

For more information on Dormer Pramet's complete product range, please visit www.dormerpramet.com or contact your local sales office.

HIGH FEED CUTTERS

The pressure of cost cutting is a commonly-faced reality in many production environments. One option, however, enables you to significantly reduce machining times without the need for major financial investment: **high-feed machining.** Carried out with existing machines, it combines a low pass depth with a high feed per tooth and is a low-cost alternative to high-speed machining strategies.

This program covers diameters from 6 to 175 mm, and supports feeds-per-tooth from 0.4 to 3 mm.

HIGH-FEED SOLUTIONS

- SBN10 milling cutters
- SSN11 milling cutters
- Penta HF milling cutters
- Feed ZD milling cutters
- PPHF inserts for K2-PPH milling cutters
- HF and HF2 inserts for SAD milling cutters
- S536 high-feed carbide milling cutters

SUPPORTED APPLICATIONS

- Face milling
- Oblique plunge milling
- Profile milling
- Helical interpolation
- Copy turning
- Ramping
- Slot milling
- Plunge milling

SRC COPY MILLING CUTTERS

ASSORTMENT HIGHLIGHTS

The SRC line of copy milling cutters features a wide range of diameters, each offering **versatile and productive** machining. They are suitable for face milling, helical interpolation, ramping, progressive plunging and high feed cutting.

FEATURES AND BENEFITS

SRC RANGE

- Double negative design for stable cutting action
- RCMT inserts in size 10, 12, 16, 20 designed to allow high feed per tooth, bigger depth of cut and high durability
- Compatible with three geometries (F, M, R), suitable for a wide range of materials
- Comprehensive assortment of cutters (end mills, modular and shell mills) and diameters 25-160 mm
- All cutters feature through coolant

COPY MILLING TOOLS FOR SEMI-FINISHING AND FINISHING

ASSORTMENT HIGHLIGHTS

Our family of economical milling tools has been further enhanced with a new range of highly productive tools. The SCN05C (ø 12-20mm) and SWN04C (ø 20-35mm) support smooth cutting in applications with long overhang. Featuring **more cutting edges for extreme economy** and wiper geometry for improved surface finish, resulting in reduced machining time for finishing operations.

FEATURES AND BENEFITS

- **Productivity** - Close pitch increases the number of teeth and enables higher productivity than standard pitch cutters
- **Increased surface quality** - Patented wiper edges generate superior finish on component walls and face
- **Decreased vibration** - Optimized for deep cavity milling with particularly smooth cutting in corners and pockets
- **Cost saving per cutting edge** - Double-sided inserts with up to 4 (SCN05C) or 6 cutting edges (SWN04C).
- **Optimal chip evacuation** - Internal coolant

SOLID CARBIDE END MILLS

Dormer Pramet's range of Solid Carbide End Mills are ideally suited to most common milling operations such as slotting, plunging, side and face milling, as well as ramping and copy milling in a wide range of materials. The solid carbide end mill family includes ranges of coated tools with options for square end (with/without chamfer), ball nosed and corner radius as well as various length options.

PROGRAM OVERVIEW

S8 – universal multi-application end mills
S7 – performance end mills for medium strength steels, stainless steels, titanium and nickel alloys
S5 – end mills designed for performance milling in hardened steels more then 49HRC
S2 – performance end mills for high alloyed steels, stainless steels, titanium and nickel alloys

MATERIAL

PREMIUM MICROGRAIN CARBIDE

- An excellent combination of hardness and toughness
- High wear resistance
- Long, consistent tool life

COATING

MULTI-LAYER (AlTiN) or (TiSiN)

- Improved cutting edge stability
- Outstanding wear protection
- Higher hot hardness
- Increased tool life

VARIABLE PITCH AND HELIX

- Offers increased stability and improved harmonics during the milling process
- Reduction of possible vibrations and lower risk of chipping at the cutting edges or corners
- Increased stability also allows these cutters to be used in a wide variety of materials and applications where conventional type cutters do not perform as well

SHANK

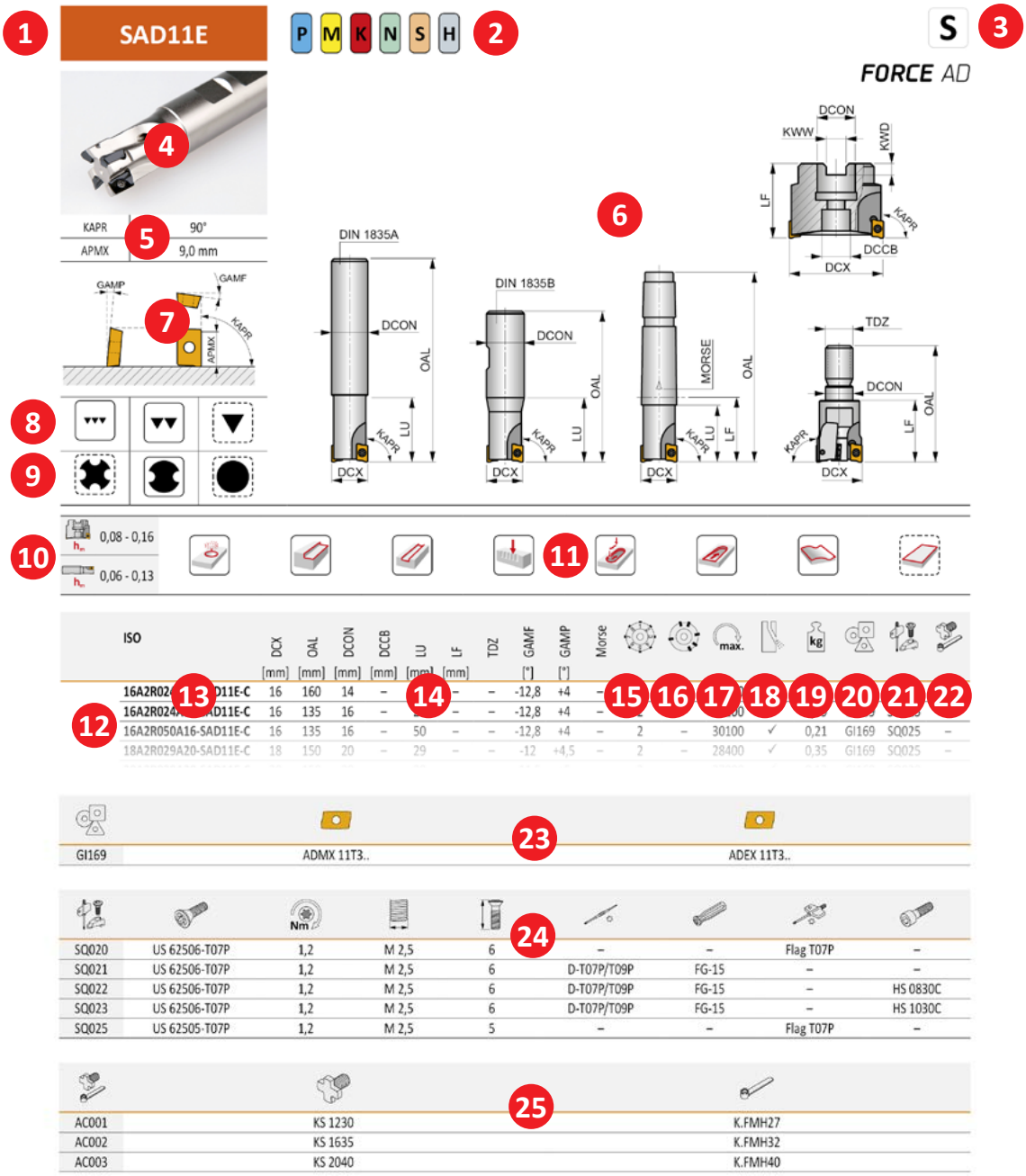
HIGH PRECISION (h6)

- Offered as standard on most cutters
- Cylindrical shanks are made to DIN 6535HA and DIN 6535HB

S767 end mill with unequal helix and pitch

INDEXABLE MILLING CUTTERS

PAGE OVERVIEW – MILLING CUTTERS



Typical page with milling cutter displayed – specific page details will differ.

1	Designation of cutter
2	Material group recommendations
3	Clamping system of insert
4	Illustrative picture
5	Setting angle and maximal theoretical depth of cut [mm]
6	Schematic drawing of tool
7	Tool geometry
8	Achievable quality of surface

PAGE OVERVIEW – MILLING CUTTERS

9	Character of cut/working conditions
10	Maximum range of mean chip thickness [mm] for end milling cutters and/or shell milling cutters
11	Possible applications
12	Shank type
13	ISO code of cutter
14	Dimensions [mm], angles [1] [°] and type of tool clamping
15	Number of teeth
16	Irregular teeth pitch
17	Maximum revolutions of cutter
18	Internal supply of coolant
19	Weight [kg]
20	Group of compatible inserts [2]
21	Group of spare parts [2]
22	Group of special accessories [2]
23	Compatible inserts
24	Spare parts
25	Special accessories

[1] GAMF = radial rake angle

GAMP = axial rake angle

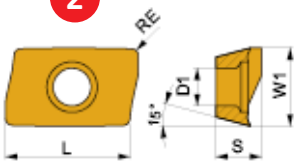
[2] Spare parts and special accessories icons are designed schematically for their ease of understanding. They aren't included in the list of icons. Screws are, in some cases, completed with info on torque value in Nm, length of screw and size of thread.

1

ADMX 11

	W1	D1	L	S
11T3	6,530	2,90 3	11,00	3,97

2



ISO		P	M	K	N	S	H	?		RE	FN	FX	APMN	APMX
ADMX 11T304SR-F	M9340	◪	■			◪		●	---	0,4	0,07	0,10	0,2	9,0
		■	◪			◪					0,07	0,1	0,2	9,0
		■	◪			◪					0,07	0,12	0,2	9,0
	M8340	■	■	◪		◪		●	+/-	0,4	0,07	0,12	0,2	9,0
	8215	■	◪	◪	■	◪		●	-	0,4	0,07	0,12	0,2	9,0
ADMX 11T308SR-F	M9340	◪	■			◪		✖	---	0,8	0,07	0,10	0,2	9,0
	M8330	■	◪	◪		◪		✖	-	0,8	0,07	0,12	0,2	9,0
	M8340	■	■	◪		◪		✖	+/-	0,8	0,07	0,12	0,2	9,0

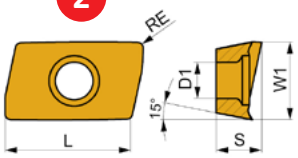
4 5 6 7 8 9 10 11 12

1

ADEX 11-FA

	W1	D1	L	S
11T3	6,450	2,90 3	9,70	3,91

2



ISO		P	M	K	N	S	H	?		RE	FN	FX	APMN	APMX
ADEX 11T304FR-FA	M0315				■			●	++	0,4	0,03	0,30	0,4	9,0
	HF7				■						0,03	0,30	0,2	9,0
ADEX 6 FR-FA	7			8				9	10	11	0,03	0,3	12 0,2	9,0
	HF7				■						0,03	0,30	0,2	9,0
ADEX 11T312FR-FA	M0315				■			●	++	1,2	0,03	0,30	0,2	9,0
	HF7				■			●	+/-	1,2	0,03	0,30	0,2	9,0
ADEX 11T316FR-FA	HF7				■			●	+/-	1,6	0,03	0,30	0,2	9,0

4 5 6 7 8 9 10 11 12

ISO		FN	FX	M5315	M9315	M9325	M9340	M0315	M6330	M8310	M8330	M8340	M8345	8215	HF7
P	●	0,07	0,18	392	392	347	311	–	266	329	333	284	225	311	–
	⧗	0,07	0,15	365	356	306	279	–	239	297	298	252	198	275	–
	✖	0,07	0,10	333	324	270	248	–	207	266	258	221	176	243	–
M	●	0,07	0,18	–	–	176	185	–	189	167	190	167	135	185	72
	⧗	0,07	0,15	–	–	158	167	–	167	149	171	149	117	167	63
	✖	0,07	0,10	–	–	135	149	–	144	135	151	131	104	144	54
K	●	0,07	0,18	374	374	–	–	–	–	311	318	270	–	293	117
	⧗	0,07	0,15	347	338	–	–	13	–	284	282	239	–	261	104
	✖	0,07	0,10	320	306	–	–		–	252	248	207	–	230	90
N	●	0,07	0,18	–	–	–	–	684	–	–	837	–	–	774	306
	⧗	0,07	0,15	–	–	–	–	612	–	–	746	–	–	693	275
	✖	0,07	0,10	–	–	–	–	536	–	–	651	–	–	612	239
S	●	0,07	0,18	–	–	86	90	–	95	81	93	81	68	90	36
	⧗	0,07	0,15	–	–	77	81	–	81	72	83	72	59	81	32
	✖	0,07	0,10	–	–	68	72	–	72	68	73	63	50	72	27
H	●	0,07	0,18	77	77	–	–	–	–	63	59	–	–	59	23
	⧗	0,07	0,15	72	68	–	–	–	–	59	50	–	–	54	18
	✖	0,07	0,10	63	63	–	–	–	–	50	45	–	–	45	18

PAGE OVERVIEW – MILLING INSERTS

Typical page with milling inserts displayed – specific page details will differ. Most of inserts can be found in this catalogue just immediately after the relevant milling cutter.

1	Designation of insert
2	Schematic drawing of insert
3	Table with insert sizes [mm]
4	Icons – specific features, cutting edge type and picture of representative insert
5	Profile of main cutting edge
6	ISO code of insert
7	Grade

8	Application area of insert
9	Suitability of insert use with respect to specific working conditions
10	Influence of use of cutting fluids in continual cut
11	Insert radii [mm]
12	Maximum range of feed [mm/tooth] and cutting depth [mm]
13	Table of starting cutting speeds for grades, which the insert is available in

ICONS AND SYMBOLS – MILLING

Priority use

Possible use

Icons – milling cutters

General features of tools	
P M K N S H / P M K N H S	Material groups
▼▼▼ / ▼▼▼	Finishing – very good surface quality
▼▼ / ▼▼	Medium machining – good surface quality
▼ / ▼	Roughing – unlimited surface roughness
● / ●	Stable working conditions
✖ / ✖	Unstable working conditions
✖ / ✖	Very unstable working conditions
Possible applications	
	Face milling
	Shallow shoulder milling
	Deep shoulder milling
	Plunge milling
	Shallow slot milling
	Deep slot milling
	Chamfer milling
	Shape surfaces milling (copy milling)
	Ramping

	Progressive plunging
	Helical interpolation
Shank type	
DIN 1835B	End mill cutter with WELDON shank
DIN 1835A	End mill cutter with cylindrical shank
MODULAR	Modular clamping system
ISO 6462 DIN 8030	Standard shell cutter
Others	
Nm	Clamping torque of screw [Nm]

Icons and symbols – inserts

Features	
1	First choice
U	Universal wide range option
	Thin-walled and slim workpieces
	Heavy working conditions
	Large overhang
HFC	High Feed Cutting
W	Insert with Wiper geometry

ICONS AND SYMBOLS – MILLING

F	Sharp edge
E	Rounded edge
T	Edge with facet
S	Rounded edge with facet
K	Edge with double facet
P	Rounded edge with double facet
Conditions of use	
■	Main application
◪	Secondary application
●	Stable working conditions
☎	Unstable working conditions
✖	Very unstable working conditions
- - -	Very negative effect on tool life – cooling is not recommended
- -	Negative effect on tool life – cooling is not recommended
-	Slightly negative effect on tool life
+/-	Influence of cooling may be both positive and negative – decisive factor is specific working conditions
+	Slightly positive effect on tool life
++	Positive effect on tool life – cooling is recommended
+++	Very positive effect on tool life – cooling is recommended

Icons – technical pages

x.v	Multiplication factor for cutting speed
x.f	Multiplication factor for feed

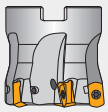
x.f	Multiplication factor for feed (machining on center line)
x.f	Multiplication factor for feed (machining off center line)
RE	Radius of insert [mm]
BS	Size of smoothing segment [mm]
AP	Depth of cut [mm]
f	Feed [mm/tooth]
1 f	Starting feed [mm/tooth]
DCX	Diameter of cutter [mm]
DEF	Effective diameter of cutter [mm]
RPMX	Maximal angle for ramping [°]
APMX / l	Maximum cutting depth in direction of cutting [mm]
µm	Waviness of machined surface [µm]
f_e	Step of conventional milling [mm]
f_e	Step of cross milling [mm]
s_{max} d_{min}	s_{max} for d_{min} [mm]
s_{max} d_{max}	s_{max} for d_{max} [mm]
	Number of edges in use
max	Maximal width of machined area [mm]
max	Cutting depth for plunging [mm]
	Cooling

ISO group		WMG (Work Material Group)			Hardness (HB or HRC)	Ultimate Tensile Strength (MPa)	Examples of material (AISI, EN, DIN, SS, STN, BS, UNE, CN, AFNOR, GOST, UNI...)
P	P1	P1.1	Free machining steel (carbon steels with increased machinability)	sulfurized	< 240 HB	≤ 830	AISI 1108, EN 15S22, DIN 1.0723, SS 1922, ČSN 11120, BS 210A15, UNE F.210F, GB Y15, AFNOR 10F1, GOST A30, UNI CF10S20
		P1.2		sulfurized and phosphorized	< 180 HB	≤ 620	AISI 1211, EN 11SMn30, DIN 1.0715, SS 1912, ČSN 11109, BS 230M7, UNE F.2111, GB Y15, AFNOR S250, GOST A40G, UNI CF9SMn28
		P1.3		sulfurized/phosphorized and leaded	< 180 HB	≤ 620	AISI 12L13, EN 11SMnPb30, DIN 1.0718, SS 1914, ČSN 12110, BS 210M16, UNE F.2114, GB Y15Pb, AFNOR S250Pb, GOST AS35G2, UNI CF10SPb20
	P2	P2.1	Plain carbon steel (steels comprised of mainly iron and carbon)	containing <0.25%C	< 180 HB	≤ 620	AISI 1015, EN C15, DIN 1.0401, SS 1350, ČSN 11301 , BS 080A15, UNE F.111, GB 15, AFNOR C18RR, GOST St2ps, UNI Fe360
		P2.2		containing <0.55%C	< 240 HB	≤ 830	AISI 1030, EN C30, DIN 1.0528, SS 1550, ČSN 12031, BS 080M32, UNE F.1130, GB 30, AFNOR AF50C30, GOST 30G, UNI Fe590
		P2.3		containing >0.55%C	< 300 HB	≤ 1030	AISI 1060, EN C60, DIN 1.0601, SS 165S, ČSN 12061, BS 080A62, UNE F513, GB 60, AFNOR 1C60, GOST 60G, UNI C60
	P3	P3.1	Alloy steel (carbon steels with an alloying content ≤ 10%)	annealed	< 180 HB	≤ 620	AISI 5015, EN 16Mo3, DIN 1.5415, SS 2912, ČSN 15020, BS 1501-240, UNE F.2601, GB 16Mo, AFNOR 15D3, GOST 15M, UNI 16Mo3KW
		P3.2		hardened and tempered	180 - 260 HB	> 620 ≤ 900	AISI 4140, EN 42CrMo4, DIN 1.7225, SS 2244, ČSN 15142, BS 708M40, UNE F.8232, GB 42CrMo, AFNOR 42CD4, GOST 40ChFA, UNI 42CrMo4
		P3.3			260 - 360 HB	> 900 ≤ 1240	AISI 4140, EN 42CrMo4, DIN 1.7225, SS 2244, ČSN 15142, BS 708M40, UNE F.8232, GB 42CrMo, AFNOR 42CD4, GOST 40ChFA, UNI 42CrMo4
	P4	P4.1	Tool steel (special alloy steel for tools, dies and molds)	annealed	< 26 HRC	≤ 900	AISI D2, EN X155CrVMo12-1, DIN 1.2370, SS 2736, ČSN 19573, BS BD2, UNE F.520A, GB Cr12Mo1V1, AFNOR Z160CDV12, GOST Ch12MF, UNI X155CrVMo121KU
		P4.2		hardened and tempered	26 - 39 HRC	> 900 ≤ 1240	AISI D2, EN X155CrVMo12-1, DIN 1.2370, SS 2736, ČSN 19573, BS BD2, UNE F.520A, GB Cr12Mo1V1, AFNOR Z160CDV12, GOST Ch12MF, UNI X155CrVMo121KU
		P4.3			39 - 45 HRC	> 1240 ≤ 1450	AISI D2, EN X155CrVMo12-1, DIN 1.2370, SS 2736, ČSN 19573, BS BD2, UNE F.520A, GB Cr12Mo1V1, AFNOR Z160CDV12, GOST Ch12MF, UNI X155CrVMo121KU
M	M1	M1.1	Ferritic stainless steel (straight chromium non-hardenable alloys)		< 160 HB	≤ 520	AISI S429, EN X7Cr14, DIN 1.4001, SS 2326, BS 434S17, UNE F.3401, AFNOR Z8C12, GOST 08Ch13, UNI X6CrTi12
		M1.2			160 - 220 HB	> 520 ≤ 700	AISI 446, EN X10CrAl24, DIN 1.4762, SS 2322, ČSN 17113, BS 430S17, UNE F.3154, GB 10Cr17, AFNOR Z10CAS24, GOST 12Ch17, UNI X16Cr26
	M2	M2.1	Martensitic stainless steel (straight chromium hardenable alloys)	annealed	< 200 HB	≤ 670	AISI 430F, EN X14CrMoS17, DIN 1.4104, SS 2383, ČSN 17140, BS 410S21, UNE F.3117, AFNOR Z10CF17, UNI X10CrS17
		M2.2		quenched and tempered	200 - 280 HB	> 670 ≤ 950	AISI 440C, EN X105CrMo17, DIN 1.4125, SS 2385, ČSN 17023, BS 425C11, UNE F.3402; GB 102Cr17Mo, AFNOR Z100CD17, GOST 95Ch18, UNI GX6CrNi 13 04
		M2.3		precipitation-hardened	280 - 380 HB	> 950 ≤ 1300	AISI 420, EN X45Cr13, DIN 1.4034, ČSN 17029, BS 425C11, UNE F.3405, AFNOR Z44C14, GOST 20X17H12, UNI X30Cr13
	M3	M3.1	Austenitic stainless steel (chromium-nickel and chromium-nickel-manganese alloys)		< 200 HB	≤ 750	AISI 308, EN X5CrNi18-12, DIN 1.4303, SS 2352, ČSN 17249, BS 305S17, UNE F.3513, GB 10Cr18Ni12, AFNOR Z8CN18.12, UNI X7CrNi18 10
		M3.2			200 - 260 HB	> 750 ≤ 870	AISI 309, EN X15CrNiSi20-12, DIN 1.4828, ČSN 17251, BS 309S24, UNE F.3312, GB 1Cr23Ni13, AFNOR Z15CNS20.12, GOST 20Ch20N14S2, UNI 16CrNi23 14
		M3.3			260 - 300 HB	> 870 ≤ 1040	AISI 5848, EN X45CrNiW18-9, DIN 1.4873, BS 331540, UNE F.3211, AFNOR Z35CNWS14-4, UNI X45CrNiW 18 9
	M4	M4.1	Austenitic-ferritic (DUPLEX) or super-austenitic stainless steel		< 300 HB	≤ 990	AISI 329, EN X1-NiCrMoCU25-20-5, DIN 1.4539, SS 2562, ČSN 17265, BS 318S13, UNE F.3552, GB 022Cr25NiMo2N, AFNOR Z1NCDU25.20
		M4.2	Precipitation hardening austenitic stainless steel		300 - 380 HB	≤ 1320	AISI 631 (17-7PH), EN X7CrNiAL17-7, DIN 1.4568, SS 2388, ČSN 17465 , BS 301S13, UNE F.3217, GB 07Cr17Ni7Al, AFNOR 29CNA17-07, GOST 09Ch17N7Ju1, UNI X53CrMnNiN21
K	K1	K1.1	Gray iron (ASTM A48) or Automotive Gray iron (ASTM A159) (iron-carbon castings with a lamellar graphite microstructure)	ferritic or ferritic-pearlitic	< 180 HB	≤ 190	ASTM A48 Grade 20 (F11401), EN-JL-100, DIN GG-10 (0.6010), SS 0110, STN 422410, BS Grade 150, UNE FG10, GB HAT 100, AFNOR Ft10D, GOST SC 10, UNI G10
		K1.2		ferritic-pearlictic or pearlitic	180 - 240 HB	> 190 ≤ 310	ASTM A48 Grade 30 (F12101), EN-JL-1030, DIN GG-20 (0.6020), SS 0120, STN 422420, BS Grade 220, UNE FG20, GB HT200, AFNOR Ft20D, GOST C420, UNI G20
		K1.3		pearlitic	240 - 280 HB	> 310 ≤ 390	ASTM A48 Grade 50 (F13501), EN-JL-1060, DIN GG-35 (0.6035), SS 0135, STN 422435, BS Grade 350, UNE FG35, GB HAT300, AFNOR Ft35D, GOST SC35, UNI G35
	K2	K2.1	Malleable iron (ASTM A602) (iron-carbon castings with a graphite-free microstructure)	ferritic	< 160 HB	≤ 400	ASTM A602 Grade M3210 (F20000), EN-JM-1130, DIN GTS-35 (0.8135), SS 0815, BS B340/12, UNE Type A, AFNOR MN 35-10, GOST K435-10
		K2.2		ferritic or pearlitic	160 - 200 HB	> 400 ≤ 550	ASTM A602 Grade M4504 (F20001), EN-JM-1040, DIN GTS-50-05 (0.8045), BS P50-05, AFNOR MB 45-7
		K2.3		pearlitic	200 - 240 HB	> 550 ≤ 660	ASTM A602 Grade M7002 (F20004), EN-JM-1140, DIN GTS-45 (0.8145), SS 0854, STN 422540, BS P 45-06, UNE Typ B, AFNOR MP 50-5, GOST K45-7, UNI GMN 45
	K3	K3.1	Ductile iron (ASTM A536) (iron-carbon castings with a nodular graphite microsturcture)	ferritic	< 180 HB	≤ 560	ASTM A536 Grade 60-40-18 (F32800), EN-JS-1030, DIN GGG-40 (0.7040), SS 0717, STN 422304, BS 420/12, UNE FGE 42-12, GB QT 400, AFNOR FGS 400-12, GOST B40
		K3.2		ferritic or pearlitic	180 - 220 HB	> 560 ≤ 680	ASTM A536 Grade 80-55-06 (F33800), EN-JS-1050, DIN GGG-50 (0.7050), SS 0727, STN 422305, BS 500/7, UNE FGE 50-7, GB QT 500-7, AFNOR FGS 500-7, GOST B50
		K3.3		pearlitic	220 - 260 HB	> 680 ≤ 800	ASTM A536 Grade 100-70-03 (F34800), EN-JS-1060, DIN GGG-60 (0.7060), SS 0732, STN 422306, BS 600/3, UNE FG70-2, GB QT 600-3, AFNOR FGS 600-3, GOST B60
	K4	K4.1	Austenitic gray iron (ASTM A436) (iron-carbon alloy castings with an austenitic lamellar graphite microstructure)		< 180 HB	≤ 190	ASTM A436 Type 1 (L-NiCuCr 15 6 2, F41000), EN-JL-3011, DIN GGL-NiMn 13 7 (0.6652), SS 0523, BS Grade F1, AFNOR FGL-Ni13Mn7, GOST S-NiMn 13 7
		K4.2	Austenitic ductile iron (ASTM A439 or ASTM A571) (iron-carbon alloy castings with an austenitic nodular graphite microstructure)		< 240 HB	≤ 740	ASTM A439 Type D-2B (S-NiCr 20 3, F43001), EN-JS-3021, DIN GGG-NiMn 23 4, SS 0776, BS Grade S2M, AFNOR FGS Ni23 Mn4, GOST ЧН19Х3Ш
		K4.3	Austempered ductile iron (ASTM A897) (iron-carbon alloy castings with an ausferrite microstructure)		< 280 HB	> 840 ≤ 980	ASTM A897 Grade 110-70-11
		K4.4			280 - 320 HB	> 980 ≤ 1130	ASTM A897 Grade 125-80-10, EN-JS-1100, DIN GGG-90 (5.3400)
		K4.5			320 - 360 HB	> 1130 ≤ 1280	ASTM A897 Grade 2 (150-110-07), EN-JS-1110, DIN GGG-100 (5.3403)
	K5	K5.1	Compacted graphite iron CGI (ASTM A842) (iron-carbon castings with a vermicular graphite structure)	ferritic	< 180 HB	≤ 400	ASTM A842 Grade 300, EN-GJV-300, DIN GGV 30, GOST ЧВГ30,
		K5.2		ferritic-pearlitic	180 - 220 HB	> 400 ≤ 450	ASTM A842 Grade 350, EN-GJV-350, DIN GGV 35 (5.2200), GOST ЧВГ30,
		K5.3		pearlitic	220 - 260 HB	> 450 ≤ 500	ASTM A842 Grade 450, EN-GJV-450, DIN GGV 45, GOST ЧВГ45,
N	N1	N1.1	Commercially pure wrought aluminum		< 60 HB	≤ 240	UNS A91200, EN AL99.0, DIN 3.0205, SS 4010, STN 424009, BS 1C, UNE L-3001, GB L5, AFNOR A4, GOST АДС, UNI 3567
		N1.2	Wrought aluminum alloys	half hard tempered	60 - 100 HB	> 240 ≤ 400	UNS A93004, EN AlMn0.5Mg0.5, DIN 3.0505, SS 4054, STN 424432, BS N31, UNE L-3831, GB LF2, AFNOR A-M1, GOST AMц, UNI 3568
		N1.3		full hard tempered	100 - 150 HB	> 400 ≤ 590	UNS A95083, EN AlMg4.5Mn0.7, DIN 3.3547, SS 4140, STN 424415, BS N8, UNE L-3321, GB AlMg4.5Mn, AFNOR A-G4.5Mn, GOST Amg 4.5, UNI P-AlMg4.4
	N2	N2.1	Cast aluminium alloys		< 75 HB	≤ 240	UNS A02080, EN AlCu4S, BS LM11, STN 424331, UNE Al Si1Cu, GOST AMg5K, UNI G-AlSi7Mg
		N2.2			75 - 90 HB	> 240 ≤ 270	UNS A02420, EN AlCu4Ni2Mg2, SS AlSi7MgFe, BS LM6, STN 424519, UNE Al-7SiMg, AFNOR A-S7G, GOST AK7, UNI G-AlSi7Mg
		N2.3			90 - 140 HB	> 270 ≤ 440	UNS A03360, EN G-ALCu4NiMg2, SS ALSi10Mg, STN 424336, BS LM 30, AFNOR A-S10G, UNI G-AlSi9Mg
	N3	N3.1	Free-cutting copper-alloys materials with excellent machining properties				UNS C14700, EN CuPb1P, DIN 2.1498, STN 423214, BS C111, AFNOR CuZn35Pb2, GOST L63-3, UNI CuS(P0.01)
		N3.2	Short-chip copper-alloys with good to moderate machining properties				UNS C81540, EN CuNi2SiCr, DIN 2.0857, STN 423220, BS NS113, UNE CuSn12, AFNOR CuZn40, GOST L60, UNI P-CuZn-40
		N3.3	Electrolytic copper and long-chip copper-alloys with moderate to poor machining properties				UNS C10100, EN CuAg0.1, DIN 2.1203, SS 5010, UNE CUSi3Mn1, AFNOR Cu-C2, GOST M1f, UNI Cu-OF
	N4	N4.1	Thermoplastic polymers				ABS, Acryl, Duraplast, Elastomer, EP, Epoxid, FEP, Fluor, Gummi, Kautschuk, Latex, MF, MPF, PA, PAI, PC, PE, PEEK, PEI, PES, PET, PF, Phenolharze, PI, PMMA, Polyamide, Polyester, Polyolefine, Polysulfon, POM, PP, PPE, PPS, PS, PSU, PTFE, PU, PUR, PVDF, SAN, SI, Styrol, UF, Ureol
		N4.2	Thermosetting polymers				Aramid, Epoxy, Fluoropolymer, Mehacrylate, Melamine, Phenolic, Polyester, Polyimide, Polymethacrylimide, Polyurethane
		N4.3	Reinforced polymers or composites				CFK, GFK, GMT, Honeycomb, Kevlar, LFT, Organo, SMC
	N5	N5.1	Graphite				CGM-1, CM-00, GM-10, GM-11, GR030, GR030PI, GR060, GR060PI, GR125, MC-01, MC-01RO, MC-03, MC-03M
S	S1	S1.1	Titanium or titanium alloys		< 200 HB	≤ 660	UNS R50250 (Grade 1), EN Ti 99.6, DIN 3.7035, BS TA.2, UNE Ti-Po2, AFNOR T-40, GOST BT1-00
		S1.2			200 - 280 HB	> 660 ≤ 950	UNS R56404 (Grade 29), EN Ti2Cu, DIN 3.7124, BS TA.21, UNE Ti-P11, AFNOR T-U2
		S1.3			280 - 360 HB	> 950 ≤ 1200	UNS R54250 (Grade 38), EN TiAl6V4, DIN 3.7165, ČSN TiAl6VELI, BS TA. 13, UNE Ti-P63, AFNOR T-A6V, GOST BT6
	S2	S2.1	Fe-based high-temperature alloys		< 200 HB	≤ 690	UNS N08801 (Incoloy 801), EN X8 NiCrAlTi31-21, DIN 1.4959, BS NA 15, AFNOR Z8NC33-21
		S2.2			200 - 280 HB	> 690 ≤ 970	UNS N19907, EN X6NiCrTiMoVB25-15-2, DIN 1.4980, SS 2570, BS HR52, AFNOR Z6NCTDV25.15B, GOST 36HXTIO
	S3	S3.1	Ni-based high-temperature alloys		< 280 HB	≤ 940	UNS A09706 (Inconel 706), EN NiCr25FeAl, DIN 2.4856, BS HR 6, ČSN Inconel 625, UNE F.3313, GB 1Cr16Ni35, AFNOR NC22FeDNB, GOST XH38BT
		S3.2			280 - 360 HB	> 940 ≤ 1200	UNS N07001, EN NiCr20Co13Mo4Ti3Al, DIN 2.4654, BS HR 2, ČSN Waspaloy, AFNOR NCKD 20ATV, GOST XH80T6IO
	S4	S4.1	Co-based high-temperature alloys		< 240 HB	≤ 800	UNS R30016 (Stellite 6b), EN CoCr20W15Ni, DIN 2.4964, AFNOR KC 20 WN, GOST ЛКS2
		S4.2			240 - 320 HB	> 800 ≤ 1070	UNS R30016 (Stellite 6b), EN CoCr20W15Ni, DIN 2.4964, AFNOR KC 20 WN, GOST ЛКS2
H	H1	H1.1	Chilled cast iron		< 440 HB		UNS F45001, EN-GJS-1050-6, DIN 5.3406, SS 0512, BS Grade 2A
	H2	H2.1	Hardended cast iron		< 55 HRC		UNS F45003, EN-GJS-1400-1, DIN 5.3405, SS 0457, BS Grade 3D
		H2.2			> 55 HRC		UNS F45003, EN G-X260NiCr4-2, DIN 0.9620, SS 0466, BS Grade S
	H3	H3.1	Hardened steel <55HRC		< 51 HRC		AISI 4135, EN 34CrMo4, DIN 1.7220, SS 2234, STN 415131, BS 198, UNE F.1250, GB 35CrMo, AFNOR 35CD4, GOST AC38ХГМ, UNI 35CrMo4KB
		H3.2			51 - 55 HRC		AISI 4135, EN 34CrMo4, DIN 1.7220, SS 2234, STN 415131, BS 198, UNE F.1250, GB 35CrMo, AFNOR 35CD4, GOST AC38ХГМ, UNI 35CrMo4KB
	H4	H4.1	Hardened steel >55HRC		55 - 59 HRC		UNS T31501, EN 100MnCrW4, DIN 1.2510, SS 2140, STN 419413, BS BO1, UNE F.5220, GB 9CrWMn, AFNOR 90MWCrV5, GOST 9ХВГ, UNI 95MNWCr5KU
		H4.2			> 59 HRC		UNS T31501, EN 100MnCrW4, DIN 1.2510, SS 2140, STN 419413, BS BO1, UNE F.5220, GB 9CrWMn, AFNOR 90MWCrV5, GOST 9ХВГ, UNI 95MNWCr5KU

HIGH FEED MILLING

SBN10

20°	APMX [mm]	1,0
	DCX [mm]	16 – 42



BN.. 10T3	P	M	K
AN.. 10T3		S	H
	18 – 24		

SPD09

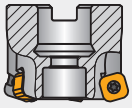
19°	APMX [mm]	2,0
	DCX [mm]	32 – 140

PENTA HF

PD.. 0905	P	M	K
	N	S	H
	25 – 30		

SSN11

18°	APMX [mm]	1,7
	DCX [mm]	32 – 125



SN.. 1104	P	M	K
		S	H
	31 – 34		

SZD07

–	APMX [mm]	1,0
	DCX [mm]	16 – 32

FEED ZD

ZD.. 0703	P		K
			H
	35 – 38		

SZD09

–	APMX [mm]	1,0
	DCX [mm]	25 – 66

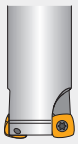
FEED ZD

ZD.. 09T3	P		K
			H
	39 – 42		

SZD12

–	APMX [mm]	1,6
	DCX [mm]	32 – 80

FEED ZD



ZD.. 1204	P		K
			H
	43 – 46		

SAD07D

90°	APMX [mm]	0,3
	DCX [mm]	10 – 14

FORCE AD

ADEX 0702	P	M	K
	N	S	H
	128-133		

SAD11E

90°	APMX [mm]	0,6
	DCX [mm]	16 – 125

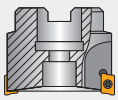
FORCE AD

ADEX 11T3	P	M	K
	N	S	H
	134-141		

SAD16E

90°	APMX [mm]	1,3
	DCX [mm]	25 – 175

FORCE AD



ADEX 1606	P	M	K
	N	S	H
	142-149		

COPY MILLING - ROUND SHAPE INSERTS

SRC10

–	APMX [mm]	5,0
	DCX [mm]	25 – 66

	RC.. 10T3	P	M	K
		N	S	H
		47 – 50		

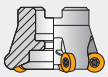
SRC12

–	APMX [mm]	6,0
	DCX [mm]	40 – 100

	RC.. 1204	P	M	K
		N	S	H
		51 – 55		

SRC16

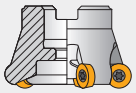
–	APMX [mm]	8,0
	DCX [mm]	63 – 160



	RC.. 1606	P	M	K
		N	S	H
		56 – 59		

SRC20

–	APMX [mm]	10,0
	DCX [mm]	80 – 160



	RC.. 2006	P	M	K
		N	S	H
		60 – 63		

SRD05

–	APMX [mm]	1,5
	DCX [mm]	10 – 15

	RD.. 0501	P	M	K
				H
		64 – 66		

SRD07

–	APMX [mm]	2,0
	DCX [mm]	15 – 25

	RD.. 07T1	P	M	K
	RD.. 0702	N	S	H
		67 – 71		

SRD10

–	APMX [mm]	2,5
	DCX [mm]	20 – 35

	RD.. 1003	P	M	K
		N	S	H
		72 – 77		

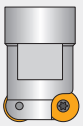
SRD12

–	APMX [mm]	3,0
	DCX [mm]	24 – 80

	RD.. 12T3	P	M	K
		N	S	H
		78 – 83		

SRD16

–	APMX [mm]	4,0
	DCX [mm]	32 – 100



	RD.. 1604	P	M	K
		N	S	H
		84 – 89		

NAVIGATOR

COPY MILLING - BALL NOSE INSERTS

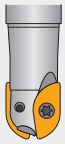
K2-PPH

90°	APMX [mm]	4,0
	DCX [mm]	8 - 32

PPH	P	M	K
PPHF	N	S	H
PPHT	90 – 101		

L2-SZP

–	APMX [mm]	44,7
	DCX [mm]	10 – 50



ZP	P	M	K
		S	H
	102-107		

K2-SRC

–	APMX [mm]	3,2
	DCX [mm]	8 – 32

RC	P		K
			H
	108-116		

K2-SLC

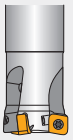
90°	APMX [mm]	4,0
	DCX [mm]	8 – 20

LC	P		K
			H
	117-121		

COPY MILLING - FINISHING

SCN05C

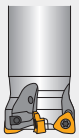
93°	APMX [mm]	1,0
	DCX [mm]	12 - 20



CNHX 05	P		K
			H
	122-124		

SWN04C

93°	APMX [mm]	2,0
	DCX [mm]	20 - 35



WNHX 04	P		K
			H
	125-127		

SHOULDER MILLING

SAD07D

90°	APMX [mm]	5,0
	DCX [mm]	10 – 32

FORCE AD

AD.. 0702	P	M	K
	N	S	H
	128-133		

SAD11E

90°	APMX [mm]	9,0
	DCX [mm]	16 – 125

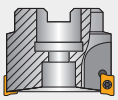
FORCE AD

AD.. 11T3	P	M	K
	N	S	H
	134-141		

SAD16E

90°	APMX [mm]	13,0
	DCX [mm]	25 – 175

FORCE AD



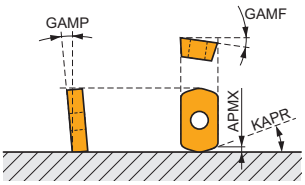
AD.. 1606	P	M	K
	N	S	H
	142-149		

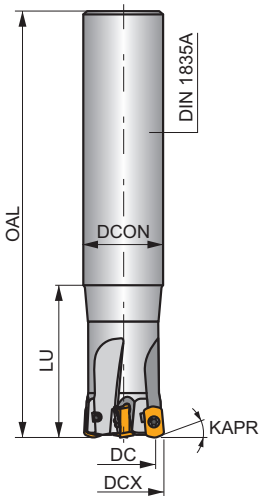
SBN10

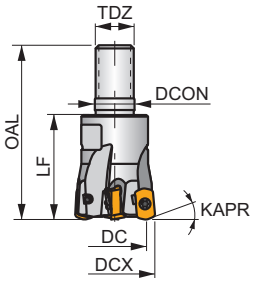
P M K S H

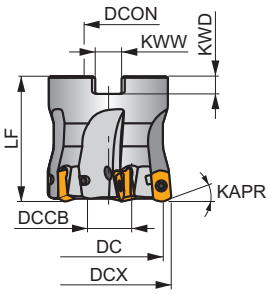
S

KAPR	20°
APMX	1,0 mm









h_m 0,17-0,41

h_m 0,17-0,41

	ISO	DCX [mm]	OAL [mm]	DCON [mm]	DCCB [mm]	LU [mm]	LF [mm]	TDZ	KWW [mm]	KWD [mm]	GAMP [°]	GAMF [°]			max.		kg		
DIN 1835A	16E2R030A16-SBN10-C	16	100	16	–	30	–	–	–	–	-10	-12	2	–	31100	✓	0,12	GI329	CO310
	16E2R050A16-SBN10-C	16	150	16	–	50	–	–	–	–	-10	-12	2	–	31100	✓	0,18	GI329	CO310
	16E2R030A14-SBN10-C	16	150	14	–	30	–	–	–	–	-10	-12	2	–	31100	✓	0,15	GI329	CO310
	18E2R030A16-SBN10-C	18	150	16	–	30	–	–	–	–	-10	-11	2	–	29200	✓	0,20	GI329	CO310
	20E3R040A20-SBN10-C	20	130	20	–	40	–	–	–	–	-10	-10	3	–	27700	✓	0,25	GI329	CO310
	20E3R080A20-SBN10-C	20	160	20	–	80	–	–	–	–	-10	-10	3	–	27700	✓	0,29	GI329	CO310
	20E3R040A18-SBN10-C	20	180	18	–	40	–	–	–	–	-10	-10	3	–	27700	✓	0,30	GI329	CO310
	20E4R040A20-SBN10-C	20	130	20	–	40	–	–	–	–	-10	-10	4	–	27700	✓	0,26	GI329	CO310
	25E4R050A25-SBN10-C	25	140	25	–	50	–	–	–	–	-10	-9	4	✓	24800	✓	0,42	GI329	CO310
	25E4R100A25-SBN10-C	25	180	25	–	100	–	–	–	–	-10	-9	4	✓	24800	✓	0,51	GI329	CO310
	25E4R050A22-SBN10-C	25	220	22	–	50	–	–	–	–	-10	-9	4	✓	24800	✓	0,54	GI329	CO310
	25E5R050A25-SBN10-C	25	140	25	–	50	–	–	–	–	-10	-9	5	–	24800	✓	0,50	GI329	CO310
	32E5R070A32-SBN10-C	32	150	32	–	70	–	–	–	–	-10	-8	5	✓	21900	✓	0,73	GI329	CO310
	32E6R070A32-SBN10-C	32	150	32	–	70	–	–	–	–	-10	-8	6	✓	21900	✓	0,73	GI329	CO310
	32E5R120A32-SBN10-C	32	200	32	–	120	–	–	–	–	-10	-8	5	✓	21900	✓	0,94	GI329	CO310
	35E5R050A32-SBN10-C	35	200	32	–	50	–	–	–	–	-10	-7,5	5	✓	21000	✓	1,08	GI329	CO310
	35E6R050A32-SBN10-C	35	200	32	–	50	–	–	–	–	-10	-7,5	6	✓	21000	✓	1,08	GI329	CO310
MODULAR	16E2R025M08-SBN10-C	16	43	8,5	–	–	25	M8	–	–	-10	-12	2	–	31100	✓	0,03	GI329	CO310
	18E2R025M08-SBN10-C	18	43	8,5	–	–	25	M8	–	–	-10	-11	2	–	29200	✓	0,03	GI329	CO310
	20E3R030M10-SBN10-C	20	49	10,5	–	–	30	M10	–	–	-10	-10	3	–	27700	✓	0,05	GI329	CO310
	20E4R030M10-SBN10-C	20	49	10,5	–	–	30	M10	–	–	-10	-10	4	–	27700	✓	0,05	GI329	CO310
	25E4R033M12-SBN10-C	25	55	12,5	–	–	33	M12	–	–	-10	-9	4	✓	24800	✓	0,08	GI329	CO310
	25E5R033M12-SBN10-C	25	55	12,5	–	–	33	M12	–	–	-10	-9	5	–	24800	✓	0,19	GI329	CO310
	28E5R035M12-SBN10-C	28	57	12,5	–	–	35	M12	–	–	-10	-8,5	5	✓	23400	✓	0,10	GI329	CO310
	32E5R040M16-SBN10-C	32	63	17	–	–	40	M16	–	–	-10	-8	5	✓	21900	✓	0,19	GI329	CO310
	32E6R040M16-SBN10-C	32	63	17	–	–	40	M16	–	–	-10	-8	6	✓	21900	✓	0,19	GI329	CO310
	35E6R043M16-SBN10-C	35	66	17	–	–	43	M16	–	–	-10	-7,5	6	✓	21000	✓	0,22	GI329	CO310

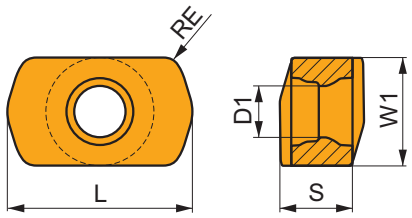
	ISO	DCX [mm]	OAL [mm]	DCON [mm]	DCCB [mm]	LU [mm]	LF [mm]	TDZ	KWW [mm]	KWD [mm]	GAMP [°]	GAMF [°]			max.		kg		
MODULAR	**40E6R043M16-SBN10-C**	40	66	17	–	–	43	M16	–	–	-10	-7	6	✓	19600	✓	0,26	GI329	CO310
	40E7R043M16-SBN10-C	40	66	17	–	–	43	M16	–	–	-10	-7	7	✓	19600	✓	0,26	GI329	CO310
ISO 6462 DIN 8030	**40A05R-SMOBN10-C**	40	–	16	14,1	–	40	–	8,4	5,6	-10	-7	5	✓	19600	✓	0,21	GI329	CO312
	40A07R-SMOBN10-C	40	–	16	14,1	–	40	–	8,4	5,6	-10	-7	7	✓	19600	✓	0,22	GI329	CO312
	42A05R-SMOBN10-C	42	–	16	14,1	–	40	–	8,4	5,6	-10	-7	5	✓	19100	✓	0,23	GI329	CO312
	42A07R-SMOBN10-C	42	–	16	14,1	–	40	–	8,4	5,6	-10	-7	7	✓	19100	✓	0,24	GI329	CO312

GI329	BNGX 10T3..	ANHX 10T3..

		Nm						
CO310	US42507-T07P	0,9	M 2,5	7	–	–	Flag T07P	–
CO312	US42507-T07P	0,9	M 2,5	7	D-T07P/T09P	FG-15	–	HS0830C

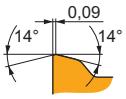
BNGX 10

	W1	D1	L	S
10T3	5,800	2,76	9,92	3,90



	ISO		P	M	K	N	S	H			RE	FN	FX	APMN	APMX
	BNGX 10T308SR-M	**M9325**	■							- - -	0,8	0,20	1,05	0,3	1,0
		M6330	◪							-	0,8	0,20	1,40	0,3	1,0
		M8310	■		■			◪		-	0,8	0,20	1,40	0,3	1,0
		M8330	■		■			◪		-	0,8	0,20	1,40	0,3	1,0
		M8340	■		◪					+ / -	0,8	0,20	1,40	0,3	1,0
		M8345	■							+ / -	0,8	0,20	1,40	0,3	1,0
		8215	■		■			◪		-	0,8	0,20	1,40	0,3	1,0
HFC	**BNGX 10T308SR-MM**	**M9325**	◪	◪			◪			- - -	0,8	0,20	0,83	0,3	1,0
		M9340	◪	■			■			- - -	0,8	0,20	0,83	0,3	1,0
		M6330	◪	■			■			-	0,8	0,25	1,10	0,3	1,0
		M8310	◪	◪						-	0,8	0,25	1,10	0,3	1,0
		M8330	◪	◪						-	0,8	0,25	1,10	0,3	1,0
		M8340	◪	■			■			+ / -	0,8	0,25	1,10	0,3	1,0
		M8345	◪	■			■			+ / -	0,8	0,25	1,10	0,3	1,0

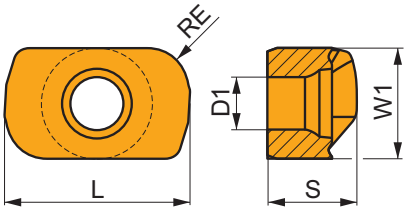
ISO		P	M	K	N	S	H			RE	FN	FX	APMN	APMX
BNGX 10T308SR-HM	**M8310**			■			■	✖	-	0,8	0,10	1,00	0,1	1,0
	M8330			■			◪	✖	-	0,8	0,10	1,00	0,1	1,0
	8215			■			■	✖	-	0,8	0,10	1,00	0,1	1,0

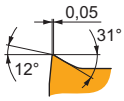


ISO		FN	FX	M9325	M9340	M6330	M8310	M8330	M8340	M8345	8215
P	●	0,20	1,40	296	264	212	267	244	222	177	257
	⧗	0,20	1,16	272	243	195	246	224	204	162	236
	✖	0,20	0,93	234	209	167	205	187	175	140	194
M	●	0,25	1,10	149	155	149	127	137	132	104	142
	⧗	0,25	0,88	137	143	137	117	126	121	95	130
	✖	0,25	0,66	117	123	117	100	108	104	82	112
K	●	0,20	1,50	–	–	–	253	230	208	–	242
	⧗	0,20	1,25	–	–	–	233	211	191	–	223
	✖	0,20	1,00	–	–	–	200	181	164	–	191
S	●	0,20	0,90	68	72	65	59	63	59	47	–
	⧗	0,20	0,77	62	66	60	54	58	54	43	–
	✖	0,10	0,66	53	57	52	46	50	46	37	–
H	●	0,05	0,70	–	–	–	53	48	–	–	51
	⧗	0,05	0,56	–	–	–	49	45	–	–	47
	✖	0,05	0,42	–	–	–	42	38	–	–	40

ANHX 10

	W1	D1	L	S
10T3	5,800	2,76	9,72	4,70





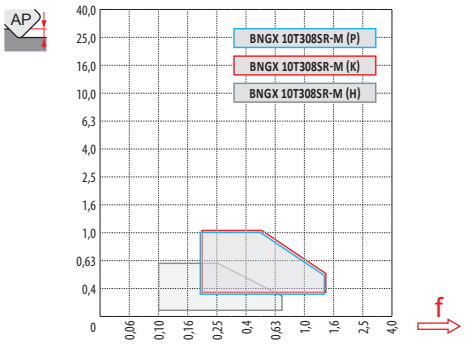
ISO		P	M	K	N	S	H		RE	FN	FX	APMN	APMX
ANHX 10T320SR-F	M8310	■	◪				◪	✱	-	2,0	0,05	0,15	0,1	3,0
	M8330	■	◪				◪	✖	-	2,0	0,05	0,15	0,1	3,0
	M8340	■	◪			◪		✖	+ / -	2,0	0,05	0,15	0,1	3,0

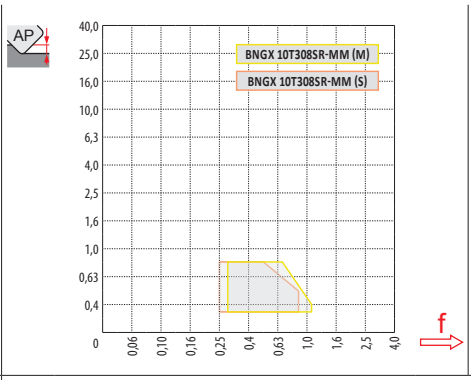
ISO		FN	FX	M8310	M8330	M8340
P	●	0,05	0,15	400	323	323
	✱	0,05	0,12	368	297	297
	✖	0,05	0,10	316	255	255
M	●	0,05	0,15	203	190	213
	✱	0,05	0,12	186	175	196
	✖	0,05	0,09	160	150	168
K	●	0,05	0,15	378	303	340
	✱	0,05	0,12	347	278	313
	✖	0,05	0,10	298	239	269
S	●	0,05	0,15	90	85	95
	✱	0,05	0,13	83	78	87
	✖	0,05	0,11	71	67	75
H	●	0,05	0,15	78	70	-
	✱	0,05	0,12	71	64	-
	✖	0,05	0,09	61	55	-

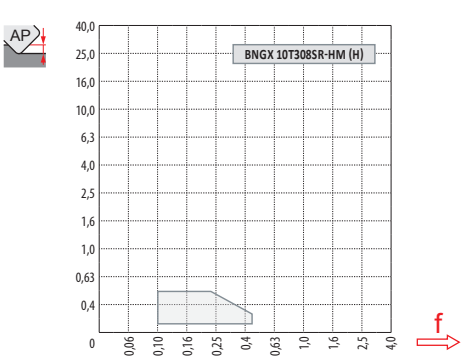
a_e / DCX	0,05	0,10	0,15	0,20	0,25	0,30	0,40	0,50	0,60	0,70	0,75	0,80	0,90	1,00
X.V	1,48	1,35	1,27	1,22	1,19	1,16	1,11	1,08	1,05	1,03	1,00	1,00	1,00	1,00
⇨X.f	2,87	2,05	1,69	1,48	1,33	1,23	1,09	0,75	0,94	0,90	0,89	0,88	0,88	1,00
⇨X.f	0,64	0,64	0,64	0,64	0,64	0,65	0,65	0,67	0,68	0,71	0,72	0,74	0,79	1,00

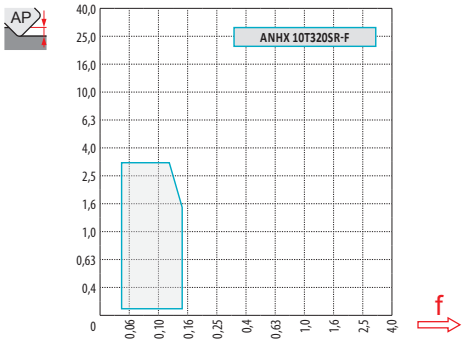
	BNGX 10-M	BNGX 10-MM	BNGX 10-HM
RE	0,8	0,8	0,8
BS	–	–	–

	ANHX 10 - F
RE	2,0
BS	0,92









BNGX 10 (HFC)										
DCX	AP	0,00	0,30	0,40	0,50	0,60	0,70	0,80	0,90	1,00
16		9,40	12,85	13,36	13,80	14,20	14,56	14,88	15,19	15,47
18		11,40	14,85	15,36	15,80	16,20	16,56	16,88	17,19	17,47
20		13,40	16,85	17,36	17,80	18,20	18,56	18,88	19,19	19,47
25	DEF	18,40	21,85	22,36	22,80	23,20	23,56	23,88	24,19	24,47
32		25,40	28,85	29,36	29,80	30,20	30,56	30,88	31,19	31,47
35		28,40	31,85	32,36	32,80	33,20	33,56	33,88	34,19	34,47
40		33,40	36,85	37,36	37,80	38,20	38,56	38,88	39,19	39,47
42		35,40	38,85	39,36	39,80	40,20	40,56	40,88	41,19	41,47

	AP	0,00	0,30	0,40	0,50	0,60	0,70	0,80	0,90	1,00
	1 f	–	1,30	1,10	0,90	0,80	0,72	0,68	0,65	0,50

BNGX 10		
DCX	max	FX
16	3,5	0,12
18	3,5	0,12
20	4,0	0,15
25	4,0	0,15
28	4,0	0,17
32	4,0	0,17
35	4,0	0,17
40	4,0	0,17
42	4,0	0,17

BNGX 10 (HFC)			
AP	0,3	0,6	1,0
1 f	1,10	0,60	0,30

BNGX 10 (HFC)		
DCX	RPMX	APMX / l
16	4,0	1/16
18	4,0	1/16
20	4,0	1/16
25	2,8	1/22
28	2,3	1/26
32	1,9	1/32
35	1,7	1/35
40	1,3	1/46
42	1,3	1/46

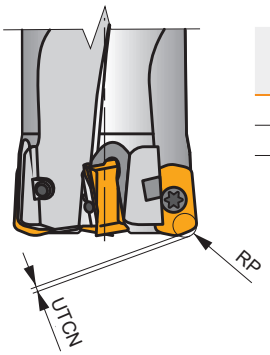
ANHX 10		
DCX	RPMX	APMX / l
16	1,6	2,65/100
18	1,3	2,15/100
20	1,1	1,80/100
25	0,8	1,25/100
28	0,7	1,10/100
32	0,5	0,75/100
35	0,5	0,75/100
40	0,4	0,55/100
42	0,4	0,55/100

BNGX 10 (HFC)		
DCX	AP	FX
16	0,4	0,15
18	0,7	0,15
20	0,7	0,15
25	0,7	0,15
32	0,7	0,2
35	0,7	0,2
40	0,7	0,2
42	0,7	0,2

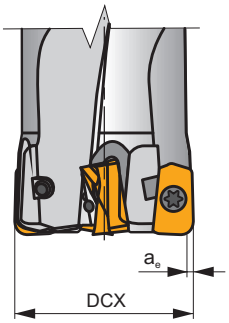
BNGX 10 (HFC)				
DCX	d_{min}	d_{max}	s_{max} / d_{min}	s_{max} / d_{max}
16	22,4	31,8	0,5	0,5
18	25,4	35,8	0,5	0,5
20	29,4	39,8	0,5	0,5
25	39,4	49,8	0,5	0,5
28	45,4	55,8	0,5	0,5
32	53,4	63,8	0,5	0,5
35	59,4	69,8	0,5	0,5
40	69,4	79,8	0,5	0,5
42	73,4	83,8	0,5	0,5

DCX	µm	3	5	10	15	20	30	40	50	60	80	100
16	f_e	0,438	0,566	0,800	0,980	1,131	1,386	1,600	1,789	1,960	2,263	2,530
18		0,465	0,600	0,849	1,039	1,200	1,470	1,697	1,897	2,078	2,400	2,683
20		0,490	0,632	0,894	1,095	1,265	1,549	1,789	2,000	2,191	2,530	2,828
25		0,548	0,707	1,000	1,225	1,414	1,732	2,000	2,236	2,449	2,828	3,162
32		0,620	0,800	1,131	1,386	1,600	1,960	2,263	2,530	2,771	3,200	3,578
35		0,648	0,837	1,183	1,449	1,673	2,049	2,366	2,646	2,898	3,347	3,742
40		0,693	0,894	1,265	1,549	1,789	2,191	2,530	2,828	3,098	3,578	4,000
42		0,710	0,917	1,296	1,587	1,833	2,245	2,592	2,898	3,175	3,666	4,099

ANHX 10												
RE	µm	3	5	10	15	20	30	40	50	60	80	100
2,0	f_e	0,219	0,283	0,400	0,490	0,566	0,693	0,800	0,894	0,980	1,131	1,265



BNGX	RP	UTCN
	[mm]	[mm]
BNGX 10T308	1,60	0,44



ANHX	max a_e/DCX
	[mm]
ANHX 10T320	0,05

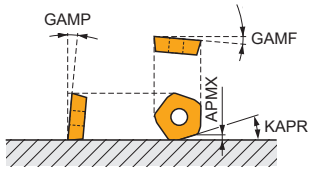
SPD09

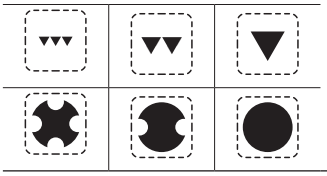
P M K N S H

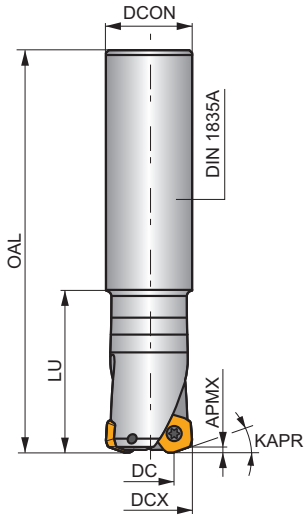
S

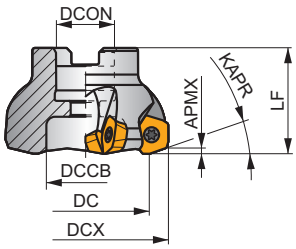
PENTA *HF*

KAPR	19°
APMX	2,0 mm









h_m	0,065 - 0,975
h_m	0,065 - 0,975

	ISO	DCX [mm]	DC [mm]	OAL [mm]	LF [mm]	DCON [mm]	DCCB [mm]	LU [mm]	GAMP [°]	GAMF [°]			max.		kg			
DIN 1835A	32E2R060A32-SPD09-C	32	–	250	–	32	–	60	-24	+10	2	–	13100	✓	1,54	GI245	CO340	–
	40E3R060A32-SPD09-C	40	–	250	–	32	–	60	-11	+10	3	–	11700	✓	1,43	GI245	CO340	–
ISO 6462 DIN 8030	42A03R-S19PD09-C	42	28	–	40	16	12	–	-8	+10	3	–	11500	✓	0,18	GI245	CO342	–
	50A04R-S19PD09-C	50	36	–	40	22	18	–	-3	+10	4	–	10500	✓	0,23	GI245	CO343	–
	50A05R-S19PD09-C	50	36	–	40	22	18	–	-3	+10	5	–	10500	✓	0,36	GI245	CO343	–
	52A04R-S19PD09-C	52	38	–	40	22	18	–	-3	+10	4	–	10300	✓	0,25	GI245	CO343	–
	63A05R-S19PD09-C	63	49	–	40	22	18	–	-1	+10	5	–	9400	✓	0,33	GI245	CO343	–
	63A06R-S19PD09-C	63	49	–	40	22	18	–	-1	+10	6	–	9300	✓	0,47	GI245	CO343	–
	66A06R-S19PD09-C	66	52	–	40	22	18	–	-1	+10	6	–	9200	✓	0,35	GI245	CO343	–
	66A06R-S19PD09-CF	66	52	–	50	27	22	–	-1	+10	6	–	9100	✓	0,68	GI245	CO344	–
	80A05R-S19PD09-C	80	66	–	50	27	37	–	-1	+10	5	–	8300	✓	0,84	GI245	CO341	AC001
	80A06R-S19PD09-C	80	66	–	50	27	37	–	-1	+10	6	–	8300	✓	0,88	GI245	CO341	AC001
	100A06R-S19PD09-C	100	86	–	50	32	45	–	-1	+10	6	–	7400	✓	1,46	GI245	CO341	AC002
	100A08R-S19PD09-C	100	86	–	50	32	45	–	-1	+10	8	–	7400	✓	1,40	GI245	CO341	AC002
	125A08R-S19PD09-C	125	111	–	63	40	36	–	-1	+10	8	–	6600	✓	3,16	GI245	CO349	–
	125A10R-S19PD09-C	125	111	–	63	40	36	–	-1	+10	10	–	6600	✓	3,15	GI245	CO349	–
	140A08R-S19PD09-C	140	126	–	63	40	36	–	-1	+10	8	–	6200	✓	3,62	GI245	CO349	–

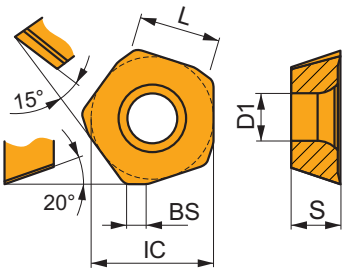
GI245	PD.X 0905ZE..	PDKT 0905..	PDMW 0905..

		Nm					
CO340	US 45011-T20P	5,0	M 5	11	–	–	Flag T20P
CO341	US 45011-T20P	5,0	M 5	11	SDR T20P-T	–	–
CO342	US 45011-T20P	5,0	M 5	11	SDR T20P-T	HS 90835	–
CO343	US 45011-T20P	5,0	M 5	11	SDR T20P-T	HS 1030C	–
CO344	US 45011-T20P	5,0	M 5	11	SDR T20P-T	HS 1230C	–
CO349	US 45011-T20P	5,0	M 5	11	SDR T20P-T	HSD 2040	–

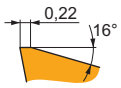
AC001	KS 1230	K.FMH27
AC002	KS 1635	K.FMH32

PDKX 09

	BS	IC	D1	L	S
0905	2,00	13,500	5,50	9,00	5,47

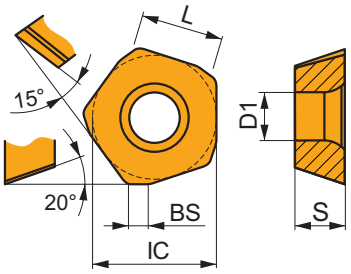


ISO		P	M	K	N	S	H		RE	FN	FX	APMN	APMX
PDKX 0905ZEER-FM	M9340	◪	■			◪		---	–	0,50	2,50	0,3	2,0
	M6330	◪	■			◪		-	–	0,50	2,50	0,3	2,0
	M8345	■	■			◪		+ / -	–	0,50	2,50	0,3	2,0

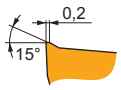


PDMX 09

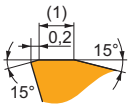
	BS	IC	D1	L	S
0905	2,00	13,500	5,50	9,00	5,47



ISO		P	M	K	N	S	H		RE	FN	FX	APMN	APMX
PDMX 0905ZEER-M	M9340	◪	■			◪		---	–	0,50	1,75	0,3	2,0
	M8330	■	◪	◪				-	–	0,50	2,50	0,3	2,0
	M8345	■	■			◪		+ / -	–	0,50	2,50	0,3	2,0
	8215	◪	◪	◪				-	–	0,50	2,50	0,3	2,0

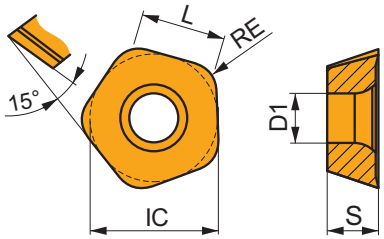


ISO		P	M	K	N	S	H			RE	FN	FX	APMN	APMX
PDMX 0905ZESR-R	M9325	◪						✖	- - -	–	0,50	1,75	0,3	2,0
	M8330	◪		■			◪	✖	-	–	0,50	2,50	0,3	2,0
	M8345	◪						✖	+ / -	–	0,50	2,50	0,3	2,0
	8215	◪		■			■	✖	-	–	0,50	2,50	0,3	2,0

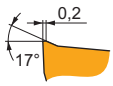


PDKT 09

	IC	D1	L	S
0905	13,500	5,50	9,00	5,47

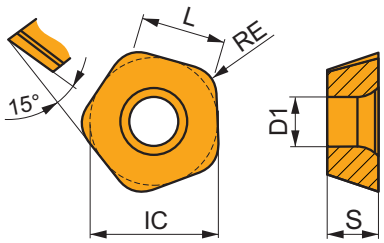


ISO		P	M	K	N	S	H			RE	FN	FX	APMN	APMX
PDKT 090530ER-FM	M9325	■	◪					✖	- - -	3,0	0,50	1,75	0,3	2,0
	M6330	◪	■			◪		✖	-	3,0	0,50	2,50	0,3	2,0
	M8310	■	◪	◪				✖	-	3,0	0,50	2,50	0,3	2,0
	M8330	■	◪	◪				✖	-	3,0	0,50	2,50	0,3	2,0
	M8345	■	■			◪		✖	+ / -	3,0	0,50	2,50	0,3	2,0
	8215	■	◪	◪				✖	-	3,0	0,50	2,50	0,3	2,0

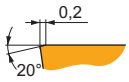


PDMW 09

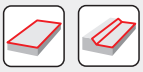
	IC	D1	L	S
0905	13,500	5,50	9,00	5,47



ISO		P	M	K	N	S	H			RE	FN	FX	APMN	APMX
PDMW 090530SR	M9315	◪		◪			◪	✖	- - -	3,0	0,50	1,75	0,3	2,0
	M9325	◪		■				✖	- - -	3,0	0,50	1,75	0,3	2,0
	M8310	◪		■			■	✖	-	3,0	0,50	2,50	0,3	2,0
	M8345	◪						✖	+ / -	3,0	0,50	2,50	0,3	2,0

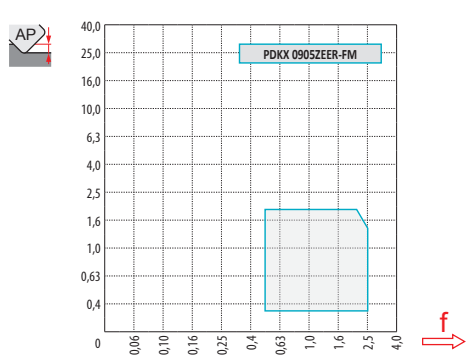


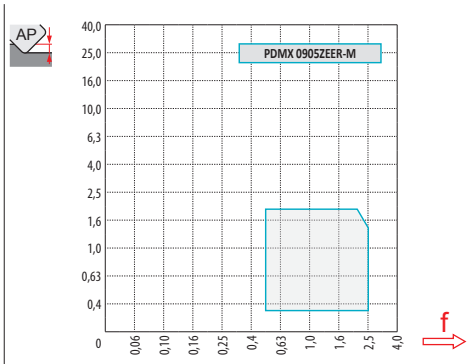
ISO		FN	FX	M9315	M9325	M9340	M6330	M8310	M8330	M8345	8215
P	●	0,50	2,50	479	424	380	325	402	370	275	380
	⧗	0,50	2,00	435	374	341	292	363	332	242	336
	✖	0,50	1,50	396	330	303	253	325	287	215	297
M	●	0,50	2,50	–	215	226	231	204	219	165	226
	⧗	0,50	2,00	–	193	204	204	182	197	143	204
	✖	0,50	1,50	–	165	182	176	165	174	127	176
K	●	0,50	2,50	457	–	–	–	380	354	–	358
	⧗	0,50	2,00	413	–	–	–	347	314	–	319
	✖	0,50	1,50	374	–	–	–	308	275	–	281
N	●	0,50	2,50	–	–	–	–	–	931	–	946
	⧗	0,50	2,00	–	–	–	–	–	830	–	847
	✖	0,50	1,50	–	–	–	–	–	724	–	748
S	●	0,50	2,15	–	105	110	116	99	107	83	110
	⧗	0,50	1,80	–	94	99	99	88	96	72	99
	✖	0,50	1,40	–	83	88	88	83	85	61	88
H	●	0,50	2,00	94	–	–	–	77	73	–	72
	⧗	0,50	1,60	83	–	–	–	72	62	–	66
	✖	0,50	1,20	77	–	–	–	61	56	–	55

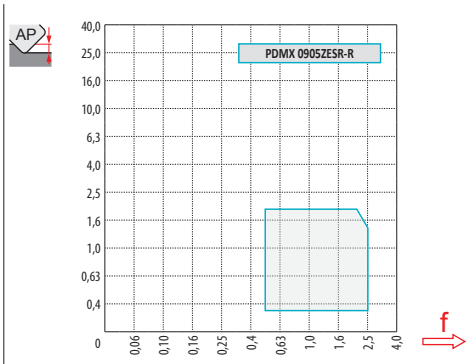


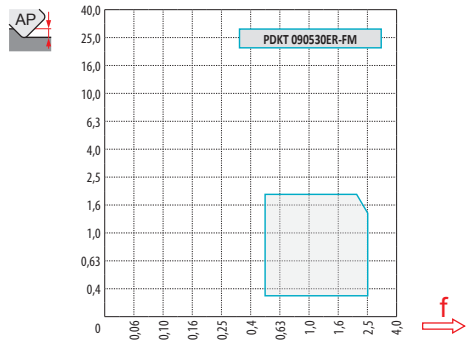
a_e / DCX	0,05	0,10	0,15	0,20	0,25	0,30	0,40	0,50	0,60	0,70	0,75	0,80	0,90	1,00
X.V	1,48	1,35	1,27	1,22	1,19	1,16	1,11	1,08	1,05	1,03	1,00	1,00	1,00	1,00
⇨X.f	2,87	2,05	1,69	1,48	1,33	1,23	1,09	0,75	0,94	0,90	0,89	0,88	0,88	1,00
⇨X.f	0,64	0,64	0,64	0,64	0,64	0,65	0,65	0,67	0,68	0,71	0,72	0,74	0,79	1,00

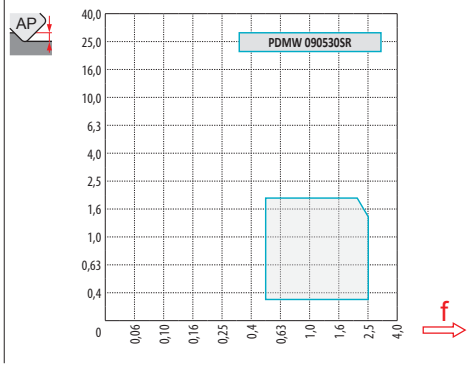
	PDKX 09-FM	PDMX 09-M	PDMX 09-R	PDKT 09-FM	PDMW 09
RE	–	–	–	3,0	3,0
BS	2,00	2,00	2,00	–	–











DCX	AP	0,00	0,30	0,40	0,50	0,60	0,70	0,80	0,90	1,00	1,25	1,50	2,00
32	DEF	18,4	20,1	20,7	21,3	21,9	22,5	23,0	23,6	24,2	25,7	27,1	30,0
40		25,5	27,2	27,8	28,4	29,0	29,6	30,1	30,7	31,3	32,8	34,2	37,1
42		27,5	29,2	29,8	30,4	31,0	31,6	32,1	32,7	33,3	34,8	36,2	39,1
50		35,3	37,0	37,6	38,2	38,8	39,4	39,9	40,5	41,1	42,6	44,0	46,9
52		37,3	39,0	39,6	40,2	40,8	41,4	41,9	42,5	43,1	44,6	46,0	48,9
63		48,2	49,9	50,5	51,1	51,7	52,3	52,8	53,4	54,0	55,5	56,9	59,8
66		51,2	52,9	53,5	54,1	54,7	55,3	55,8	56,4	57,0	58,5	59,9	62,8
80		65,3	67,0	67,6	68,2	68,8	69,4	69,9	70,5	71,1	72,6	74,0	76,9
100		85,3	87,0	87,6	88,2	88,8	89,4	89,9	90,5	91,1	92,6	94,0	96,9

AP	0,00	0,30	0,40	0,50	0,60	0,70	0,80	0,90	1,00	1,25	1,50	2,00
1 f	–	3,00	3,00	2,90	2,80	2,70	2,60	2,50	2,40	2,25	1,50	1,50

Follow instructions provided for flat surface milling. When milling close to vertical surfaces, decrease feed per tooth (f_z) by 50 % to prevent vibrations and damage of the cutting edge.

DCX	max	FX
32	5,0	0,20
40	5,0	0,20
42	5,0	0,20
50	6,0	0,20
52	6,0	0,20
63	7,0	0,25
66	7,0	0,25
80	8,0	0,30
100	8,0	0,30

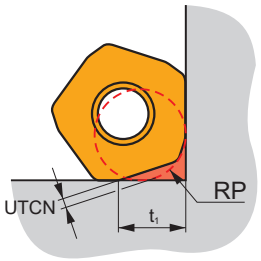
	HFC		
AP	0,5	1,0	2,0
1 f	2,99	2,30	1,49

DCX	RPMX	APMX / l
40	8,0	1,80/16
42	8,0	2,00/16
50	8,0	2,00/16
52	8,0	2,00/16
63	7,0	2,00/18
66	6,0	2,00/21
80	5,0	2,00/24
100	3,0	2,00/40

DCX	d_{min}	d_{max}	s_{max} / d_{min}	s_{max} / d_{max}
40	63,7	80,0	2,00	2,00
42	67,5	84,0	2,00	2,00
50	83,3	100,0	2,00	2,00
52	87,3	104,0	2,00	2,00
63	109,2	126,0	2,00	2,00
66	115,2	132,0	2,00	2,00
80	143,3	160,0	2,00	2,00
100	183,3	200,0	2,00	2,00

DCX	AP	FX
32	1,8	0,20
40	1,8	0,20
42	2,0	0,20
50	2,0	0,20
52	2,0	0,20
63	2,0	0,25
66	2,0	0,25
80	2,0	0,30
100	2,0	0,30

DCX	µm	3	5	10	15	20	30	40	50	60	80	100
32		0,620	0,800	1,131	1,386	1,600	1,960	2,263	2,530	2,771	3,200	3,578
40		0,693	0,894	1,265	1,549	1,789	2,191	2,530	2,828	3,098	3,578	4,000
42		0,710	0,917	1,296	1,587	1,833	2,245	2,592	2,898	3,175	3,666	4,099
50	f_e	0,775	1,000	1,414	1,732	2,000	2,449	2,828	3,162	3,464	4,000	4,472
52		0,790	1,020	1,442	1,766	2,040	2,498	2,884	3,225	3,533	4,079	4,561
63		0,869	1,122	1,587	1,944	2,245	2,750	3,175	3,550	3,888	4,490	5,020
66		0,890	1,149	1,625	1,990	2,298	2,814	3,250	3,633	3,980	4,596	5,138
80		0,980	1,265	1,789	2,191	2,530	3,098	3,578	4,000	4,382	5,060	5,657



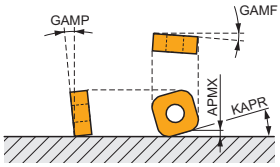
DCX	RP	UTCN	t_1
[mm]	[mm]	[mm]	[mm]
32	4,5	1,1	6,8
40 – 140	4,5	1,1	7,3

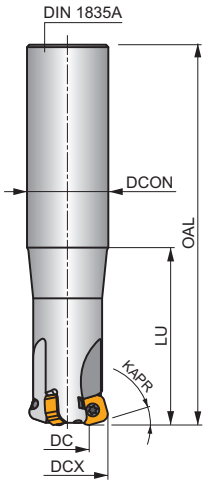
SSN11

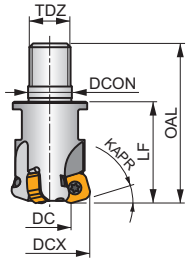
P M K S H

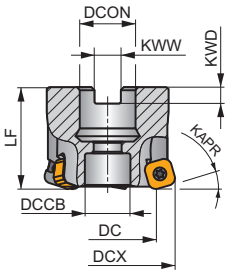
S

KAPR	18°
APMX	1,7 mm









h_m	0,20-0,46
h_m	0,20-0,46

	ISO	DCX [mm]	DC [mm]	OAL [mm]	LF [mm]	DCON [mm]	DCCB [mm]	LU [mm]	TDZ	KWW [mm]	KWD [mm]	GAMP [°]	GAMF [°]			max.		kg			
DIN 1835A	32E3R070A32-SSN11-C	32	18,3	150	–	32	–	70	–	–	–	-10	-11,5	3	–	17500	✓	0,69	GI339	C0314	–
	32E3R120A32-SSN11-C	32	18,3	200	–	32	–	120	–	–	–	-10	-11,5	3	–	17500	✓	0,89	GI339	C0314	–
	35E3R050A32-SSN11-C	35	21,2	200	–	32	–	50	–	–	–	-10	-11	3	–	16800	✓	1,05	GI339	C0314	–
MODULAR	32E3R040M16-SSN11-C	32	18,3	63	40	17	–	–	M16	–	–	-10	-11,5	3	–	–	✓	0,17	GI339	C0314	–
	35E3R040M16-SSN11-C	35	21,2	63	40	17	–	–	M16	–	–	-10	-11	3	–	–	✓	0,19	GI339	C0314	–
	40E4R043M16-SSN11-C	40	26,2	66	43	17	–	–	M16	–	–	-10	-10,5	4	✓	–	✓	0,23	GI339	C0314	–
ISO 6462 DIN 8030	40A04R-SMOSN11-C	40	26,2	–	40	16	12,4	–	–	8,4	5,6	-10	-10,5	4	✓	15700	✓	0,19	GI339	C0316	–
	42A04R-SMOSN11-C	42	28,2	–	40	16	14,1	–	–	8,4	5,6	-10	-10,5	4	✓	15300	✓	0,21	GI339	C0318	–
	50A05R-SMOSN11-C	50	36,1	–	40	22	18,1	–	–	10,4	6,3	-10	-10	5	✓	14000	✓	0,31	GI339	C0320	–
	50A06R-SMOSN11-C	50	36,1	–	40	22	18,1	–	–	10,4	6,3	-10	-10	6	✓	14000	✓	0,31	GI339	C0320	–
	52A05R-SMOSN11-C	52	38,1	–	40	22	18,1	–	–	10,4	6,3	-10	-10	5	✓	13800	✓	0,34	GI339	C0320	–
	52A06R-SMOSN11-C	52	38,1	–	40	22	18,1	–	–	10,4	6,3	-10	-10	6	✓	13800	✓	0,33	GI339	C0320	–
	63A06R-SMOSN11-C	63	49,1	–	40	22	18,1	–	–	10,4	6,3	-10	-10	6	✓	12500	✓	0,46	GI339	C0320	–
	63A08R-SMOSN11-C	63	49,1	–	40	22	18,1	–	–	10,4	6,3	-10	-10	8	✓	12500	✓	0,47	GI339	C0320	–
	66A06R-SMOSN11-C	66	52,1	–	50	27	18,1	–	–	12,4	7	-10	-10	6	✓	12200	✓	0,74	GI339	C0322	–
	66A08R-SMOSN11-C	66	52,1	–	50	27	18,1	–	–	12,4	7	-10	-10	8	✓	12200	✓	0,75	GI339	C0322	–
	80A07R-SMOSN11-C	80	66,1	–	50	27	38,1	–	–	12,4	7	-10	-10	7	✓	11100	✓	0,95	GI339	C0324	AC001
	80A09R-SMOSN11-C	80	66,1	–	50	27	38,1	–	–	12,4	7	-10	-10	9	✓	11100	✓	0,93	GI339	C0324	AC001
	100A08R-SMOSN11-C	100	86,1	–	50	32	45,1	–	–	14,4	8	-10	-10	8	✓	9900	✓	1,63	GI339	C0324	AC002
	115A08R-SMOSN11-C	115	101,1	–	50	32	45,1	–	–	14,4	8	-10	-10	8	✓	9200	✓	2,09	GI339	C0324	AC002
	125A08R-SMOSN11-C	125	111,1	–	63	40	56,1	–	–	16,4	9	-10	-10	8	✓	8900	✓	3,16	GI339	C0324	AC003

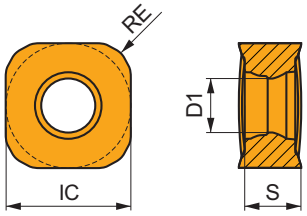
GI339	SNGX 1104..

		Nm						
C0314	US 44012-T15P	3,5	M4	12	–	–	Flag T15P	–
C0316	US 44012-T15P	3,5	M4	12	D-T08P/T15P	FG-15	–	HCS0840C
C0318	US 44012-T15P	3,5	M4	12	D-T08P/T15P	FG-15	–	HS90835
C0320	US 44012-T15P	3,5	M4	12	D-T08P/T15P	FG-15	–	HS1030C
C0322	US 44012-T15P	3,5	M4	12	D-T08P/T15P	FG-15	–	HS1230C
C0324	US 44012-T15P	3,5	M4	12	D-T08P/T15P	FG-15	-	-

AC001	KS 1230	K.FMH27
AC002	KS 1635	K.FMH32
AC003	KS 2040	K.FMH40

SNGX 11

	IC	D1	S
1104	10,6	4,56	4,76

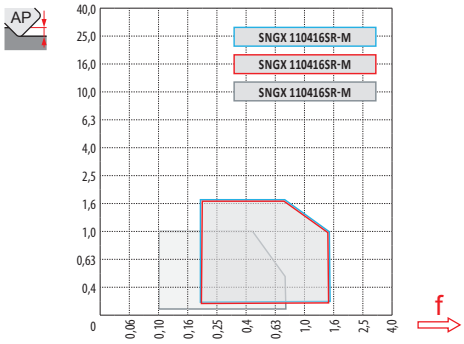


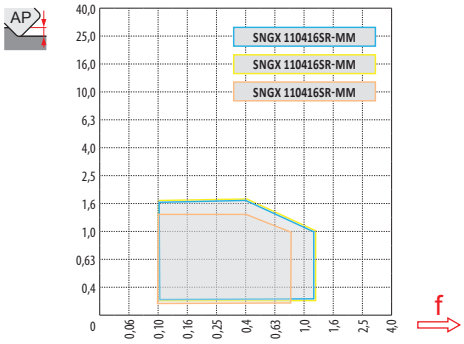
ISO		P	M	K	N	S	H			RE	FN	FX	APMN	APMX
SNGX 110416SR-M	M9325	■						⧗	---	1,6	0,2	1,13	0,2	1,7
	M9340	■						✖	---	1,6	0,2	1,13	0,2	1,7
	M8310	■		◪			◪	✖	-	1,6	0,2	1,5	0,2	1,7
	M8330	■		◪			◪	✖	-	1,6	0,2	1,5	0,2	1,7
	M8340	■		◪				✖	+/-	1,6	0,2	1,5	0,2	1,7
	8215	■		◪			◪	✖	-	1,6	0,2	1,5	0,2	1,7
SNGX 110416SR-MM	M9340	◪	■			■		⧗	---	1,6	0,1	0,9	0,2	1,7
	M6330	◪	■			■		✖	-	1,6	0,1	1,2	0,2	1,7
	M8340	◪	■			■		✖	+/-	1,6	0,1	1,2	0,2	1,7
	M8345	◪	■			■		✖	+/-	1,6	0,1	1,2	0,2	1,7

ISO		FN	FX	M9325	M9340	M6330	M8310	M8330	M8340	M8345	8215
P	●	0,20	1,50	335	299	230	290	273	246	193	275
	⧗	0,20	1,25	308	275	212	267	251	227	177	253
	✖	0,20	1,00	265	236	182	229	215	195	152	217
M	●	0,10	1,20	-	175	163	-	-	143	113	-
	⧗	0,10	1,00	-	161	150	-	-	131	104	-
	✖	0,10	0,80	-	138	128	-	-	113	89	-
K	●	0,20	1,50	-	-	-	275	258	238	-	260
	⧗	0,20	1,25	-	-	-	253	237	219	-	239
	✖	0,20	1,00	-	-	-	217	203	188	-	205
S	●	0,10	0,84	-	80	73	-	-	63	50	-
	⧗	0,10	0,70	-	74	67	-	-	58	46	-
	✖	0,10	0,60	-	63	57	-	-	49	40	-
H	●	0,10	0,75	-	-	-	58	53	-	-	53
	⧗	0,10	0,60	-	-	-	53	48	-	-	48
	✖	0,10	0,45	-	-	-	45	41	-	-	41

a_e / DCX	0,05	0,10	0,15	0,20	0,25	0,30	0,40	0,50	0,60	0,70	0,75	0,80	0,90	1,00
X.V	1,48	1,35	1,27	1,22	1,19	1,16	1,11	1,08	1,05	1,03	1,02	1,01	0,99	0,98
⇨X.f	2,87	2,05	1,69	1,48	1,33	1,23	1,09	0,75	0,94	0,90	0,89	0,88	0,88	1,00
⇨X.f	0,64	0,64	0,64	0,64	0,64	0,65	0,65	0,67	0,68	0,71	0,72	0,74	0,79	1,00

	SNGX 11 - M	SNGX 11 - MM
RE	1,6	1,6
BS	-	-





HFC

DCX	AP	0,00	0,20	0,40	0,60	0,80	1,00	1,10	1,20	1,30	1,40	1,50	1,60	1,70
32		18,30	19,53	20,76	21,99	23,22	24,46	25,07	25,69	26,30	26,92	27,53	28,15	28,76
35		21,20	22,43	23,66	24,89	26,12	27,36	27,97	28,59	29,20	29,82	30,43	31,05	31,66
40		26,20	27,43	28,66	29,89	31,12	32,36	32,97	33,59	34,20	34,82	35,43	36,05	36,66
42		28,20	29,43	30,66	31,89	33,12	34,36	34,97	35,59	36,20	36,82	37,43	38,05	38,66
50		36,10	37,33	38,56	39,79	41,02	42,26	42,87	43,49	44,10	44,72	45,33	45,95	46,56
52	DEF	38,10	39,33	40,56	41,79	43,02	44,26	44,87	45,49	46,10	46,72	47,33	47,95	48,56
63		49,10	50,33	51,56	52,79	54,02	55,26	55,87	56,49	57,10	57,72	58,33	58,95	59,56
66		52,10	53,33	54,56	55,79	57,02	58,26	58,87	59,49	60,10	60,72	61,33	61,95	62,56
80		66,10	67,33	68,56	69,79	71,02	72,26	72,87	73,49	74,10	74,72	75,33	75,95	76,56
100		86,10	87,33	88,56	89,79	91,02	92,26	92,87	93,49	94,10	94,72	95,33	95,95	96,56
115		101,10	102,33	103,56	104,79	106,02	107,26	107,87	108,49	109,10	109,72	110,33	110,95	111,56
125		111,10	112,33	113,56	114,79	116,02	117,26	117,87	118,49	119,10	119,72	120,33	120,95	121,56

	AP	–	0,20	0,40	0,60	0,80	1,00	1,10	1,20	1,30	1,40	1,50	1,60	1,70
	1 ⇨f	–	1,37	0,98	0,81	0,71	0,64	0,62	0,59	0,58	0,56	0,54	0,53	0,52

SNGX		
DCX	max	FX
32	5,0	0,25
35	5,0	0,25
40	5,2	0,30
42	5,2	0,30
50	5,3	0,30
52	5,3	0,30
63	5,4	0,30
66	5,4	0,30
80	5,5	0,35
100	5,5	0,35
115	5,5	0,35
125	5,5	0,35

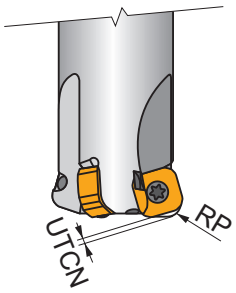
SNGX (HFC)		
DCX	RPMX	APMX / l
32	0,8	1,4/100
35	0,8	1,4/100
40	0,7	1,2/100
42	0,7	1,2/100
50	0,5	0,9/100
52	0,5	0,9/100
63	0,4	0,7/100
66	0,4	0,7/100
80	0,3	0,5/100
100	0,2	0,3/100
115	0,2	0,3/100
125	0,2	0,3/100

SNGX (HFC)		
DCX	AP	FX
32	0,2	0,3
35	0,2	0,3
40	0,2	0,3
42	0,2	0,3
50	0,3	0,4
52	0,3	0,4
63	0,3	0,4
66	0,3	0,4
80	0,3	0,4
100	0,3	0,4
115	0,3	0,4
125	0,3	0,4

DCX	µm	3	5	10	15	20	30	40	50	60	80	100
32		0,620	0,800	1,131	1,386	1,600	1,960	2,263	2,530	2,771	3,200	3,578
35		0,648	0,837	1,183	1,449	1,673	2,049	2,366	2,646	2,898	3,347	3,742
40		0,693	0,894	1,265	1,549	1,789	2,191	2,530	2,828	3,098	3,578	4,000
42		0,710	0,917	1,296	1,587	1,833	2,245	2,592	2,898	3,175	3,666	4,099
50		0,775	1,000	1,414	1,732	2,000	2,449	2,828	3,162	3,464	4,000	4,472
52	f_e	0,790	1,020	1,442	1,766	2,040	2,498	2,884	3,225	3,533	4,079	4,561
63		0,869	1,122	1,587	1,944	2,245	2,750	3,175	3,550	3,888	4,490	5,020
66		0,890	1,149	1,625	1,990	2,298	2,814	3,250	3,633	3,980	4,596	5,138
80		0,980	1,265	1,789	2,191	2,530	3,098	3,578	4,000	4,382	5,060	5,657
100		1,095	1,414	2,000	2,449	2,828	3,464	4,000	4,472	4,899	5,657	6,325
115		1,175	1,517	2,145	2,627	3,033	3,715	4,290	4,796	5,254	6,066	6,782
125		1,225	1,581	2,236	2,739	3,162	3,873	4,472	5,000	5,477	6,325	7,071

SNGX				
AP	0,2	0,5	1,0	1,7
1 f	1,20	1,00	0,50	0,25

SNGX (HFC)				
DCX	d_{min}	d_{max}	s_{max} d_{min}	s_{max} d_{max}
32	48,0	63,8	0,7	1,4
35	54,0	69,8	0,8	1,5
40	64,0	79,8	0,9	1,5
42	68,0	83,8	1,0	1,6
50	84,0	99,8	0,9	1,4
52	88,0	103,8	1,0	1,4
63	109,0	125,8	1,0	1,4
66	115,0	131,8	1,1	1,4
80	143,0	159,8	1,0	1,3
100	183,0	199,8	0,9	1,1
115	213,0	229,8	1,1	1,3
125	233,0	249,8	1,2	1,4



SNGX	RP	UTCN
	[mm]	[mm]
SNGX 110416	4,6	0,92

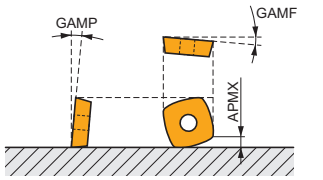
SZD07

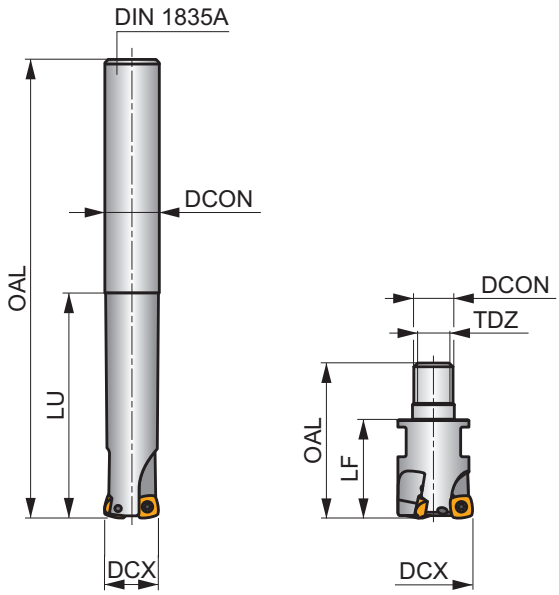
P K H

S

FEED *ZD*

APMX	1,0 mm





h_m 0,175 - 0,44

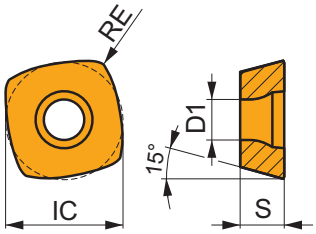
	ISO	DCX [mm]	OAL [mm]	DCON [mm]	LU [mm]	LF [mm]	TDZ	GAMP [°]	GAMF [°]			max.		kg		
DIN 1835A	**16E2R030A16-SZD07**	16	100	16,0	30	–	–	-5	+8	2	–	47400	✓	0,13	GI201	CO350
	16E2R065A16-SZD07	16	145	16,0	65	–	–	-5	+8	2	–	47400	✓	0,19	GI201	CO350
	20E3R040A20-SZD07	20	120	20,0	40	–	–	-5	+8	3	–	42400	✓	0,25	GI201	CO350
	20E3R080A20-SZD07	20	165	20,0	80	–	–	-5	+8	3	–	42400	✓	0,33	GI201	CO350
	25E3R050A25-SZD07	25	140	25,0	50	–	–	-5	+8	3	–	37900	✓	0,47	GI201	CO350
	25E3R100A25-SZD07	25	190	25,0	100	–	–	-5	+8	3	–	37900	✓	0,60	GI201	CO350
MODULAR	**16E2R030M08-SZD07**	16	48	8,5	–	30	M8	-5	+8	2	–	–	✓	0,04	GI201	CO350
	20E3R030M10-SZD07	20	49	10,5	–	30	M10	-5	+8	3	–	–	✓	0,08	GI201	CO350
	25E3R032M12-SZD07	25	54	12,5	–	32	M12	-5	+8	3	–	–	✓	0,15	GI201	CO350
	25E4R032M12-SZD07	25	54	12,5	–	32	M12	-5	+8	4	✓	–	✓	0,04	GI201	CO350
	32E4R040M16-SZD07	32	65	17,0	–	40	M16	-5	+8	4	✓	–	✓	0,22	GI201	CO350

GI201	ZDCW 0703..

		Nm			
CO350	US 2205-T07P	0,9	M 2,2	5	Flag T07P

ZDCW 07

	IC	D1	S
0703	6,800	2,60	3,18



ISO		P	M	K	N	S	H		RE	FN	FX	APMN	APMX
ZDCW 070304	M8310	■		■			■		-	0,4	0,15	1,50	0,3	1,0
	M8325	■		◪					-	0,4	0,15	1,50	0,3	1,0
	M8345	■							+ / -	0,4	0,15	1,50	0,3	1,0

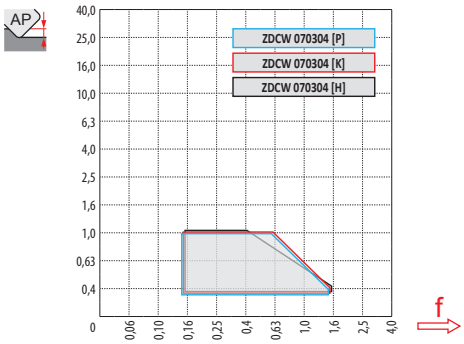
HFC

20° 0,15

ISO		FN	FX	M8310	M8325	M8345
P	●	0,15	1,50	383	294	263
		0,15	1,25	347	263	231
	✖	0,15	1,00	310	231	205
K	●	0,15	1,50	362	278	–
		0,15	1,25	331	247	–
	✖	0,15	1,00	294	221	–
H	●	0,15	1,00	74	–	–
		0,15	0,80	68	–	–
	✖	0,15	0,60	58	–	–

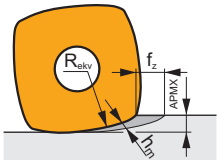
a_e / DCX	0,05	0,10	0,15	0,20	0,25	0,30	0,40	0,50	0,60	0,70	0,75	0,80	0,90	1,00
X.V	1,48	1,35	1,27	1,22	1,19	1,16	1,11	1,08	1,05	1,03	1,00	1,00	1,00	1,00
⇨X.f	2,87	2,05	1,69	1,48	1,33	1,23	1,09	0,75	0,94	0,90	0,89	0,88	0,88	1,00
⇨X.f	0,64	0,64	0,64	0,64	0,64	0,65	0,65	0,67	0,68	0,71	0,72	0,74	0,79	1,00

	ZDCW 07
RE	0,4
BS	–



DCX	AP	0,00	0,30	0,40	0,50	0,60	0,70	0,80	0,90	1,00
16	DEF	6,0	12,0	12,9	13,7	14,4	15,1	15,7	16,2	16,8
20		10,0	16,0	16,9	17,7	18,4	19,1	19,7	20,2	20,8
25		15,0	21,0	21,9	22,7	23,4	24,1	24,7	25,2	25,8
32		22,0	28,0	28,9	29,7	30,4	31,1	31,7	32,2	32,8

AP	0,00	0,30	0,40	0,50	0,60	0,70	0,80	0,90	1,00
1 f	–	1,50	1,50	1,13	1,00	0,88	0,75	0,61	0,60



$$f_z = h_m \sqrt{\frac{2R_{ekv.}}{APMX}} \quad \text{[mm/tooth]}$$

Follow instructions provided for flat surface milling. When milling close to vertical surfaces, decrease feed per tooth (f_z) by 50 % to prevent vibrations and damage of the cutting edge.

DCX	max.	FX
16	5,6	0,12
20	5,6	0,15
25	5,6	0,17
32	5,6	0,17

HFC		
AP	0,3	0,6	1,0
1 f	1,50	0,80	0,40

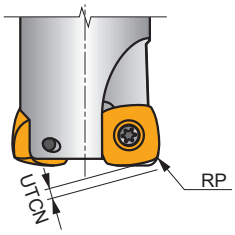
DCX	RPMX	APMX / l
16	7,8	1,0/9
20	9,7	1,0/7
25	4,9	1,0/13
32	2,8	1,0/22

HFC		
DCX	RPMX	APMX / l
16	0,5	0,75/100
20	0,3	0,40/100
25	0,2	0,20/100
32	0,1	0,05/100

DCX	d_{min}	d_{max}	s_{max} d_{min}	s_{max} d_{max}
16	21,0	32,0	0,10	0,40
20	29,0	40,0	0,10	0,30
25	39,0	50,0	0,15	0,25
32	53,0	64,0	0,10	0,15

DCX	AP	FX
16	0,05	0,12
20	0,05	0,15
25	0,05	0,17
32	0,05	0,17

DCX	µm	3	5	10	15	20	30	40	50	60	80	100
16		0,438	0,566	0,800	0,980	1,131	1,386	1,600	1,789	1,960	2,263	2,530
20	f_e	0,490	0,632	0,894	1,095	1,265	1,549	1,789	2,000	2,191	2,530	2,828
25		0,548	0,707	1,000	1,225	1,414	1,732	2,000	2,236	2,449	2,828	3,162
32		0,620	0,800	1,131	1,386	1,600	1,960	2,263	2,530	2,771	3,200	3,578



ZDCW 07	RP	UTCN
	[mm]	[mm]
ZDCW 070304	1,70	0,60

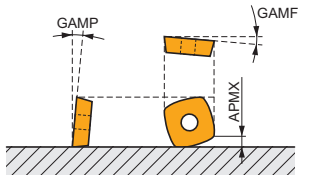
SZD09

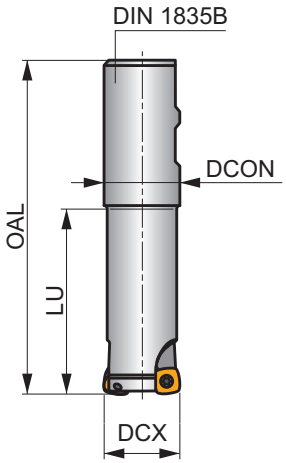
P K H

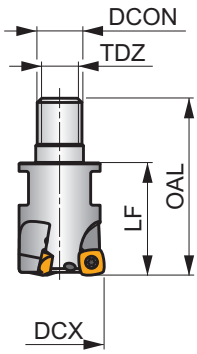
S

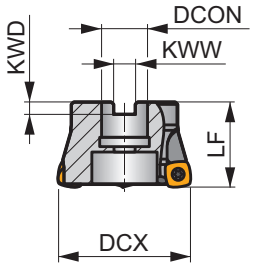
FEED *ZD*

APMX	1,0 mm









h_m	0,31 - 0,618
h_m	0,31 - 0,618

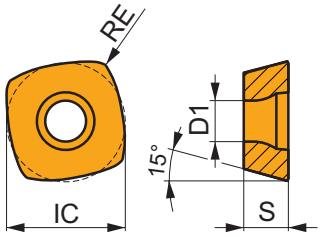
	ISO	DCX [mm]	OAL [mm]	DCON [mm]	LU [mm]	LF [mm]	TDZ	KWW [mm]	KWD [mm]	GAMF [°]	GAMP [°]			max.		kg		
DIN 1835B	25E2R080B25-SZD09-C	25	140	25	80	–	–	–	–	-6	+10	2	–	22800	✓	0,49	GI191	SQ400
	25E2R140B25-SZD09-C	25	200	25	140	–	–	–	–	-6	+10	2	–	22800	✓	0,60	GI191	SQ400
	25E2R240B25-SZD09-C	25	300	25	240	–	–	–	–	-6	+10	2	–	22800	✓	0,90	GI191	SQ400
	32E2R080B32-SZD09-C	32	140	32	80	–	–	–	–	-6	+10	2	–	20100	✓	0,80	GI191	SQ400
	32E2R140B32-SZD09-C	32	200	32	140	–	–	–	–	-6	+10	2	–	20100	✓	1,07	GI191	SQ400
	32E2R240B32-SZD09-C	32	300	32	240	–	–	–	–	-6	+10	2	–	20100	✓	1,57	GI191	SQ400
MODULAR	25E2R032M12-SZD09-C	25	54	12,5	–	32	M12	–	–	-6	+10	2	–	–	✓	0,15	GI191	SQ400
	25E3R032M12-SZD09-C	25	54	12,5	–	32	M12	–	–	-6	+10	3	–	–	✓	0,14	GI191	SQ400
	32E3R040M16-SZD09-C	32	63	17	–	40	M16	–	–	-6	+10	3	–	–	✓	0,26	GI191	SQ400
	35E4R040M16-SZD09-C	35	63	17	–	40	M16	–	–	-6	+10	4	✓	–	✓	0,22	GI191	SQ400
	42E4R040M16-SZD09-C	42	63	17	–	40	M16	–	–	-6	+10	4	✓	–	✓	0,27	GI191	SQ400
ISO 6462 DIN 8030	40A03R-SMOZD09-C	40	–	16	–	40	–	8,4	5,6	-6	+10	3	–	18000	✓	0,36	GI191	SQ402
	40A04R-SMOZD09-C	40	–	16	–	40	–	8,4	5,6	-6	+10	4	✓	18000	✓	0,44	GI191	SQ402
	50A05R-SMOZD09-C	50	–	22	–	40	–	10,4	6,4	-6	+10	5	✓	16000	✓	0,43	GI191	SQ403
	52A05R-SMOZD09-C	52	–	22	–	40	–	10,4	6,4	-6	+10	5	✓	15700	✓	0,46	GI191	SQ403
	63A06R-SMOZD09-C	63	–	22	–	40	–	10,4	6,4	-6	+10	6	✓	14300	✓	0,60	GI191	SQ403
	66A06R-SMOZD09-C	66	–	27	–	50	–	12,0	7	-6	+10	6	✓	14000	✓	0,89	GI191	CO364

GI191	ZDCW 09T3..

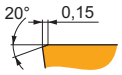
		Nm						
SQ400	US 3006-T09P	2,0	M 3	6	–	–	Flag T09P	–
SQ402	US 3006-T09P	2,0	M 3	6	D-T07P/T09P	FG-15	–	HS 0830C
SQ403	US 3006-T09P	2,0	M 3	6	D-T07P/T09P	FG-15	–	HS 1030C
CO364	US 3006-T09P	2,0	M 3	6	D-T07P/T09P	FG-15	HS 1230C	–

ZDCW 09

	IC	D1	S
09T3	9,525	3,40	3,97



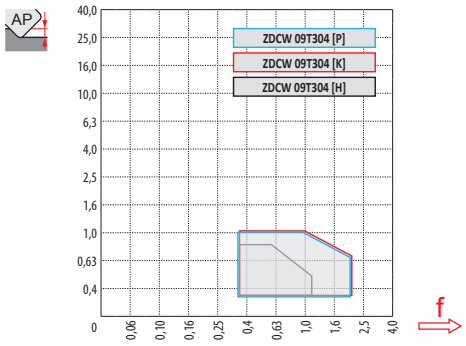
ISO		P	M	K	N	S	H			RE	FN	FX	APMN	APMX
ZDCW 09T304	M8310	■		■			■	●	-	0,4	0,30	2,00	0,3	1,0
	M8325	■		◪				●	-	0,4	0,30	2,00	0,3	1,0
	M8345	■						●	+ / -	0,4	0,30	2,00	0,3	1,0



ISO		FN	FX	M8310	M8325	M8345
P	●	0,30	2,00	402	308	275
	●	0,30	1,80	363	275	242
	✖	0,30	1,60	325	242	215
K	●	0,30	2,00	380	292	-
	●	0,30	1,80	347	259	-
	✖	0,30	1,60	308	231	-
H	●	0,30	1,60	77	-	-
	●	0,30	1,40	72	-	-
	✖	0,30	1,20	61	-	-

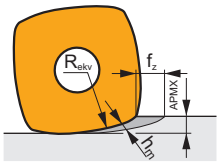
a_e / DCX	0,05	0,10	0,15	0,20	0,25	0,30	0,40	0,50	0,60	0,70	0,75	0,80	0,90	1,00
X.V	1,48	1,35	1,27	1,22	1,19	1,16	1,11	1,08	1,05	1,03	1,00	1,00	1,00	1,00
⇨X.f	2,87	2,05	1,69	1,48	1,33	1,23	1,09	0,75	0,94	0,90	0,89	0,88	0,88	1,00
⇨X.f	0,64	0,64	0,64	0,64	0,64	0,65	0,65	0,67	0,68	0,71	0,72	0,74	0,79	1,00

	ZDCW 09
RE	0,4
BS	–



DCX	AP	0,00	0,30	0,40	0,50	0,60	0,70	0,80	0,90	1,00
25	DEF	11,6	17,4	18,2	19,0	19,7	20,3	20,9	21,5	22,0
32		18,7	24,5	25,3	26,1	26,8	27,4	28,0	28,6	29,1
40		27,7	33,5	34,3	35,1	35,8	36,4	37,0	37,6	38,1

AP	0,00	0,30	0,40	0,50	0,60	0,70	0,80	0,90	1,00
1 ⇨f	–	2,00	2,00	2,00	1,75	1,50	1,25	1,13	1,00



$$f_z = h_m \sqrt{\frac{2R_{ekv.}}{APMX}} \quad \text{[mm/tooth]}$$

Follow instructions provided for flat surface milling. When milling close to vertical surfaces, decrease feed per tooth (f_z) by 50 % to prevent vibrations and damage of the cutting edge.

DCX	max	FX
25	7,7	0,15
32	7,7	0,17
40	7,7	0,20

	HFC		
AP	0,3	0,6	1,0
1 f	2,00	1,50	1,00

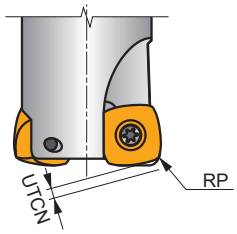
DCX	RPMX	APMX / l
25	12,0	1,0/6
32	7,5	1,0/11
40	3,6	1,0/17

HFC		
DCX	RPMX	APMX / l
25	0,9	1,00/65
32	0,5	0,75/100
40	0,4	0,55/100

DCX	d_{min}	d_{max}	s_{max} / d_{min}	s_{max} / d_{max}
25	35,0	50,0	0,45	1,00
32	49,0	64,0	0,45	0,85
40	65,0	80,0	0,50	0,85

DCX	AP	FX
25	0,15	0,15
32	0,15	0,17
40	0,15	0,20

DCX	µm	3	5	10	15	20	30	40	50	60	80	100
25	f_e	0,548	0,707	1,000	1,225	1,414	1,732	2,000	2,236	2,449	2,828	3,162
32		0,620	0,800	1,131	1,386	1,600	1,960	2,263	2,530	2,771	3,200	3,578
40		0,693	0,894	1,265	1,549	1,789	2,191	2,530	2,828	3,098	3,578	4,000



ZDCW 09	RP	UTCN
	[mm]	[mm]
ZDCW 09T304	2,27	0,52

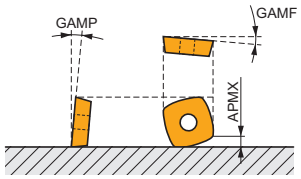
SZD12

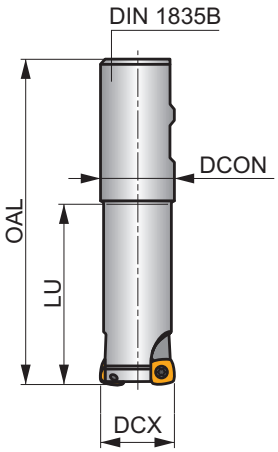
P K H

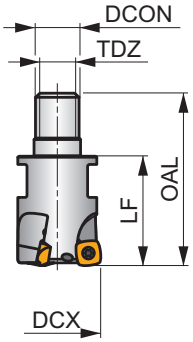
S

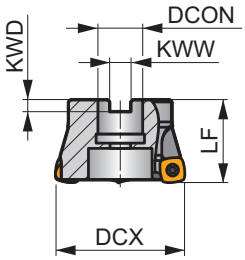
FEED *ZD*

APMX	1,6 mm









h_m	0,46 - 0,925
h_m	0,46 - 0,925

	ISO	DCX [mm]	OAL [mm]	DCON [mm]	LU [mm]	LF [mm]	TDZ	KWW [mm]	KWD [mm]	GAMF [°]	GAMP [°]			max.		kg			
DIN 1835B	40E4R080B32-SZD12-C	40	140	32	80	–	–	–	–	-6	+10	4	✓	15700	✓	0,78	GI192	SQ220	–
	40E4R140B32-SZD12-C	40	200	32	140	–	–	–	–	-6	+10	4	✓	15700	✓	1,13	GI192	SQ220	–
	40E4R240B32-SZD12-C	40	300	32	240	–	–	–	–	-6	+10	4	✓	15700	✓	1,58	GI192	SQ220	–
MODULAR	32E3R040M16-SZD12-C	32	63	17	–	40	M16	–	–	-6	+10	3	–	–	✓	0,24	GI192	SQ220	–
	40E4R040M16-SZD12-C	40	63	17	–	40	M16	–	–	-6	+10	4	–	–	✓	0,27	GI192	SQ220	–
ISO 6462 DIN 8030	50A04R-SMOZD12-C	50	–	22	–	40	–	10,4	6,4	-6	+10	4	✓	14000	✓	0,47	GI192	SQ033	–
	52A04R-SMOZD12-C	52	–	22	–	40	–	10,4	6,4	-6	+10	4	✓	13700	✓	0,47	GI192	SQ033	–
	63A04R-SMOZD12-C	63	–	22	–	40	–	10,4	6,4	-6	+10	4	✓	12500	✓	0,65	GI192	SQ033	–
	63A05R-SMOZD12-C	63	–	22	–	40	–	10,4	6,4	-6	+10	5	✓	12500	✓	0,63	GI192	SQ033	–
	66A05R-SMOZD12-C	66	–	27	–	50	–	12,0	7,0	-6	+10	5	✓	12200	✓	0,88	GI192	CO371	–
	80A05R-SMOZD12-C	80	–	27	–	50	–	12,0	7,0	-6	+10	5	✓	11100	✓	1,12	GI192	CO371	AC001

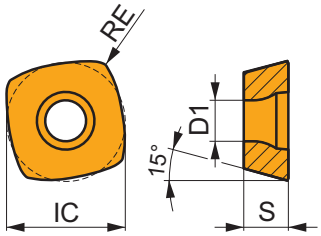
GI192	ZDEW 1204..

		Nm						
CO371	US 4011-T15P	3,5	M 4	11	D-T08P/T15P	FG-15	–	–
SQ033	US 4011-T15P	3,5	M 4	11	D-T08P/T15P	FG-15	–	HS 1030C
SQ220	US 4011-T15P	3,5	M 4	11	–	–	Flag T15P	–

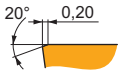
AC001	KS 1230	K.FMH27

ZDEW 12

	IC	D1	S
1204	12,700	4,40	4,76



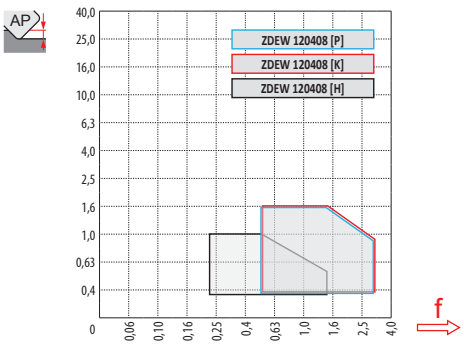
ISO		P	M	K	N	S	H			RE	FN	FX	APMN	APMX
ZDEW 120408	M4303	◪		■			■	⚙	-	0,8	0,50	3,00	0,3	1,6
	M8310	■		■			■	⚙	-	0,8	0,50	3,00	0,3	1,6
	M8325	■		◪				⚙	-	0,8	0,50	3,00	0,3	1,6
	M8345	■						✖	+ / -	0,8	0,50	3,00	0,3	1,6



ISO		FN	FX	M4303	M8310	M8325	M8345
P	●	0,50	3,00	411	420	322	288
	⚙	0,50	2,50	363	380	288	253
	✖	0,50	2,00	324	339	253	224
K	●	0,50	3,00	390	397	305	–
	⚙	0,50	2,50	351	362	270	–
	✖	0,50	2,00	305	322	242	–
H	●	0,50	2,00	83	81	–	–
	⚙	0,50	1,50	76	75	–	–
	✖	0,50	1,00	62	63	–	–

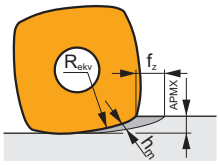
a_e / DCX	0,05	0,10	0,15	0,20	0,25	0,30	0,40	0,50	0,60	0,70	0,75	0,80	0,90	1,00
X.V	1,48	1,35	1,27	1,22	1,19	1,16	1,11	1,08	1,05	1,03	1,00	1,00	1,00	1,00
X.f	2,87	2,05	1,69	1,48	1,33	1,23	1,09	0,75	0,94	0,90	0,89	0,88	0,88	1,00
X.f	0,64	0,64	0,64	0,64	0,64	0,65	0,65	0,67	0,68	0,71	0,72	0,74	0,79	1,00

	ZDEW 12
RE	0,8
BS	–



DCX	AP	0,00	0,50	0,60	0,70	0,80	0,90	1,00	1,10	1,20	1,30	1,40	1,50	1,60
32	DEF	14,5	22,7	23,5	24,2	24,8	25,4	26,0	26,5	27,0	27,5	28,0	28,5	28,9
40		22,5	30,7	31,5	32,2	32,8	33,4	34,0	34,5	35,0	35,5	36,0	36,5	36,9
50		32,5	40,7	41,5	42,2	42,8	43,4	44,0	44,5	45,0	45,5	46,0	46,5	46,9
52		34,5	42,7	43,5	44,2	44,8	45,4	46,0	46,5	47,0	47,5	48,0	48,5	48,9
63		45,5	53,7	54,5	55,2	55,8	56,4	57,0	57,5	58,0	58,5	59,0	59,5	59,9
66		48,5	56,7	57,5	58,2	58,8	59,4	60,0	60,5	61,0	61,5	62,0	62,5	62,9
80		62,5	70,7	71,5	72,2	72,8	73,4	74,0	74,5	75,0	75,5	76,0	76,5	76,9

AP	0,00	0,50	0,60	0,70	0,80	0,90	1,00	1,10	1,20	1,30	1,40	1,50	1,60
1 f	–	3,00	3,00	3,00	3,00	3,00	3,00	2,50	2,25	2,00	1,80	1,65	1,50



$$f_z = h_m \sqrt{\frac{2R_{ekv.}}{APMX}} \quad \text{[mm/tooth]}$$

Follow instructions provided for flat surface milling. When milling close to vertical surfaces, decrease feed per tooth (f_z) by 50 % to prevent vibrations and damage of the cutting edge.

DCX	max	FX
32	10,0	0,15
40	10,0	0,17
50	10,0	0,20
52	10,0	0,20
63	10,0	0,20
66	10,0	0,20
80	10,0	0,25

	HFC		
AP	0,5	1,0	1,6
1 f	3,00	2,00	1,50

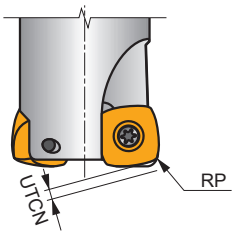
DCX	RPMX	APMX / l
32	10	1,6/11
40	5,5	1,6/18
50	3,3	1,6/29
52	3,1	1,6/31
63	2,2	1,6/43
66	2,0	1,6/47
80	1,5	1,6/63

HFC		
DCX	RPMX	APMX / l
32	1,2	1,60/78
40	0,7	1,10/100
50	0,5	0,75/100
52	0,5	0,75/100
63	0,3	0,40/100
66	0,3	0,40/100
80	0,2	0,20/100

DCX	d_{min}	d_{max}	s_{max} d_{min}	s_{max} d_{max}
32	44,0	64,0	0,75	1,60
40	60,0	80,0	0,75	1,50
50	80,0	100,0	0,80	1,35
52	84,0	104,0	0,80	1,35
63	106,0	126,0	0,70	1,00
66	112,0	132,0	0,70	1,00
80	140,0	160,0	0,65	0,85

DCX	AP	FX
32	0,25	0,15
40	0,25	0,17
50	0,25	0,20
52	0,25	0,20
63	0,25	0,20
66	0,25	0,20
80	0,25	0,25

DCX	µm	3	5	10	15	20	30	40	50	60	80	100
32	f_e	0,620	0,800	1,131	1,386	1,600	1,960	2,263	2,530	2,771	3,200	3,578
40		0,693	0,894	1,265	1,549	1,789	2,191	2,530	2,828	3,098	3,578	4,000
50		0,775	1,000	1,414	1,732	2,000	2,449	2,828	3,162	3,464	4,000	4,472
52		0,790	1,020	1,442	1,766	2,040	2,498	2,884	3,225	3,533	4,079	4,561
63		0,869	1,122	1,587	1,944	2,245	2,750	3,175	3,550	3,888	4,490	5,020
66		0,890	1,149	1,625	1,990	2,298	2,814	3,250	3,633	3,980	4,596	5,138
80		0,980	1,265	1,789	2,191	2,530	3,098	3,578	4,000	4,382	5,060	5,657



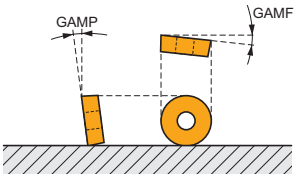
ZDEW 12	RP	UTCN
	[mm]	[mm]
ZDEW 120408	3,52	0,64

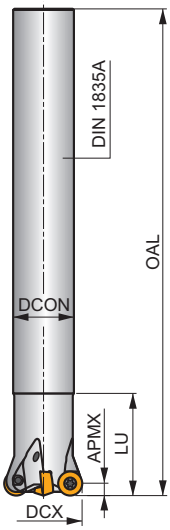
SRC10

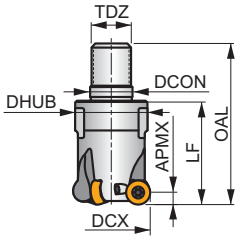
P M K N S H

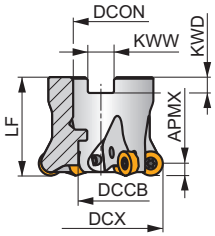
S

APMX	5,0 mm









h_m	0,08-0,15
h_m	0,05-0,12

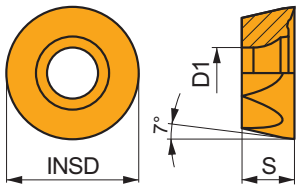
	ISO	DCX [mm]	DHUB [mm]	OAL [mm]	DCON [mm]	DCCB [mm]	LU [mm]	LF [mm]	TDZ	KWW [mm]	KWD [mm]	GAMF [°]	GAMP [°]			max.		kg		
DIN 1835A	25E2R034A20-SRC10-C	25	–	170	20	–	34	–	–	–	–	-7	-3	2	–	20900	✓	0,37	GI328	CO010
	25E3R034A20-SRC10-C	25	–	170	20	–	34	–	–	–	–	-7	-3	3	–	20900	✓	0,36	GI328	CO010
	32E3R042A25-SRC10-C	32	–	200	25	–	42	–	–	–	–	-7	-2,6	4	–	18500	✓	0,67	GI328	CO010
	32E4R042A25-SRC10-C	32	–	200	25	–	42	–	–	–	–	-7	-2,6	3	–	18500	✓	0,67	GI328	CO010
MODULAR	25E2R032M12-SRC10-C	25	21	54	12,5	–	–	32	M12	–	–	-7	-3	2	–	20900	✓	0,08	GI328	CO010
	25E3R032M12-SRC10-C	25	21	54	12,5	–	–	32	M12	–	–	-7	-3	3	–	20900	✓	0,08	GI328	CO010
	32E3R042M16-SRC10-C	32	29	65	17	–	–	42	M16	–	–	-7	-2,6	3	–	18500	✓	0,18	GI328	CO010
	32E4R042M16-SRC10-C	32	29	65	17	–	–	42	M16	–	–	-7	-2,6	4	–	18500	✓	0,18	GI328	CO010
	35E4R042M16-SRC10-C	35	29	65	17	–	–	42	M16	–	–	-7	-2,4	4	–	17700	✓	0,20	GI328	CO010
	42E4R042M16-SRC10-C	42	29	65	17	–	–	42	M16	–	–	-7	-2,1	4	–	16100	✓	0,22	GI328	CO010
	42E5R042M16-SRC10-C	42	29	65	17	–	–	42	M16	–	–	-7	-2,1	5	–	16100	✓	0,22	GI328	CO010
ISO 6462 DIN 8030	40A05R-SMORC10-C	40	–	–	16	14	40	–	–	8,4	5,6	-7	-2,2	5	–	16500	✓	0,14	GI328	CO012
	50A05R-SMORC10-C	50	–	–	22	18	40	–	–	10,4	6,3	-7	-2	5	–	14800	✓	0,25	GI328	CO013
	50A06R-SMORC10-C	50	–	–	22	18	40	–	–	10,4	6,3	-7	-2	6	–	14800	✓	0,24	GI328	CO013
	52A05R-SMORC10-C	52	–	–	22	18	40	–	–	10,4	6,3	-7	-2	5	–	14500	✓	0,26	GI328	CO013
	52A06R-SMORC10-C	52	–	–	22	18	40	–	–	10,4	6,3	-7	-2	6	–	14500	✓	0,26	GI328	CO013
	63A06R-SMORC10-C	63	–	–	22	18	40	–	–	10,4	6,3	-7	-1,8	6	–	13200	✓	0,43	GI328	CO013
	63A07R-SMORC10-C	63	–	–	22	18	40	–	–	10,4	6,3	-7	-1,8	7	–	13200	✓	0,42	GI328	CO013
	66A06R-SMORC10-C	66	–	–	27	22	50	–	–	12,4	7	-7	-1,4	6	–	12800	✓	0,54	GI328	CO014
	66A07R-SMORC10-C	66	–	–	27	22	50	–	–	12,4	7	-7	-1,4	7	–	12800	✓	0,52	GI328	CO014

GI328	RCMT 10T3MO..

		Nm				
CO010	US 63509-T10P	3,0	M 3,5	9	Flag T10P	–
CO012	US 63509-T10P	3,0	M 3,5	9	Flag T10P	HS 8030C
CO013	US 63509-T10P	3,0	M 3,5	9	Flag T10P	HS 1030C
CO014	US 63509-T10P	3,0	M 3,5	9	Flag T10P	HS 1230C

RCMT 10

	INSD	D1	S
10T3	10,000	3,90	3,97

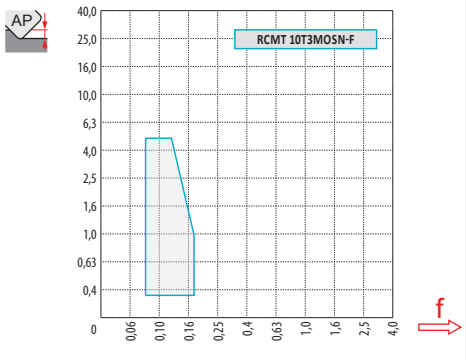


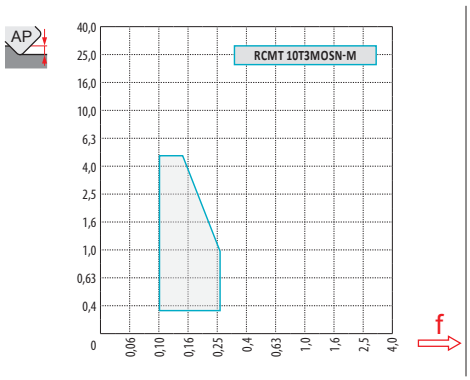
ISO		P	M	K	N	S	H		RE	FN	FX	APMN	APMX
RCMT 10T3MOSN-F	M6330	◪	■			■		✖	-	–	0,08	0,18	0,3	5,0
	M8310	■	◪			◪		⚙	-	–	0,08	0,18	0,3	5,0
	M8330	■	◪					⚙	-	–	0,08	0,18	0,3	5,0
	M8340	■	■			■		✖	+ / -	–	0,08	0,18	0,3	5,0
RCMT 10T3MOSN-M	M9325	■	◪			◪		✖	- - -	–	0,10	0,24	0,3	5,0
	M9340	◪	■			■		✖	- - -	–	0,10	0,24	0,3	5,0
	M6330	◪	■			■		✖	-	–	0,10	0,27	0,3	5,0
	M8310	■	◪	■		◪	◪	✖	-	–	0,10	0,27	0,3	5,0
	M8330	■	◪	■				✖	-	–	0,10	0,27	0,3	5,0
	M8340	■	■	◪		■		✖	+ / -	–	0,10	0,27	0,3	5,0
	M8345	■	■			■		✖	+ / -	–	0,10	0,27	0,3	5,0
RCMT 10T3MOSN-R	M5315	◪		■			■	✖	- - -	–	0,15	0,38	0,5	5,0
	M9325	■	◪			◪		✖	- - -	–	0,15	0,38	0,5	5,0
	M8310	■	◪	■			■	✖	-	–	0,15	0,40	0,5	5,0
	M8330	■	◪	■			◪	✖	-	–	0,15	0,40	0,5	5,0
	M8340	■	◪	◪		◪		✖	+ / -	–	0,15	0,40	0,5	5,0

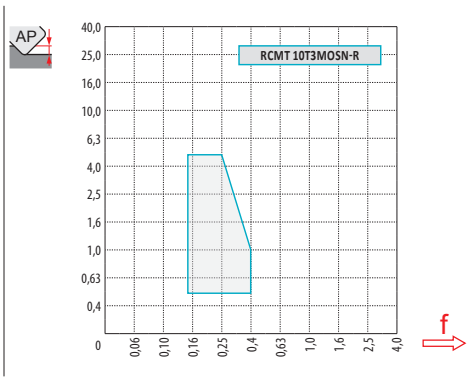
ISO		FN	FX	M5315	M9325	M9340	M6330	M8310	M8330	M8340	M8345
P	●	0,10	0,35	373	383	380	299	358	322	293	235
	⚙	0,10	0,25	335	344	342	269	322	290	257	212
	✖	0,10	0,15	298	306	304	239	286	257	221	188
M	●	0,10	0,25	-	193	225	211	179	192	176	138
	⚙	0,10	0,20	-	173	203	190	161	173	153	124
	✖	0,10	0,15	-	154	180	169	143	153	131	110
K	●	0,10	0,35	353	-	-	-	338	303	275	-
	⚙	0,10	0,25	317	-	-	-	304	272	243	-
	✖	0,10	0,15	282	-	-	-	270	242	212	-
S	●	0,10	0,25	-	84	100	91	78	83	86	60
	⚙	0,10	0,20	-	75	90	82	71	74	77	54
	✖	0,10	0,15	-	67	80	73	63	66	63	48
H	●	0,10	0,20	73	-	-	-	64	59	-	-
	⚙	0,10	0,15	65	-	-	-	57	53	-	-
	✖	0,10	0,12	58	-	-	-	51	47	-	-

a_e / DCX	0,05	0,10	0,15	0,20	0,25	0,30	0,40	0,50	0,60	0,70	0,75	0,80	0,90	1,00
X.V	1,48	1,35	1,27	1,22	1,19	1,16	1,11	1,08	1,05	1,03	1,00	1,00	1,00	1,00
⇨X.f	2,87	2,05	1,69	1,48	1,33	1,23	1,09	0,75	0,94	0,90	0,89	0,88	0,88	1,00
⇨X.f	0,64	0,64	0,64	0,64	0,64	0,65	0,65	0,67	0,68	0,71	0,72	0,74	0,79	1,00

	RCMT 10-F	RCMT 10-M	RCMT 10-R
RE	5,0	5,0	5,0
BS	–	–	–







DCX	AP	0,00	0,15	0,30	0,50	0,75	1,00	1,25	1,50	2,00	2,50	3,00	4,00	5,00
25		15,00	17,43	18,41	19,36	20,27	21,00	21,61	22,14	23,00	23,66	24,17	24,80	25,00
32		22,00	24,43	25,41	26,36	27,27	28,00	28,61	29,14	30,00	30,66	31,17	31,80	32,00
35		25,00	27,43	28,41	29,36	30,27	31,00	31,61	32,14	33,00	33,66	34,17	34,80	35,00
40		30,00	32,43	33,41	34,36	35,27	36,00	36,61	37,14	38,00	38,66	39,17	39,80	40,00
42	DEF	32,00	34,43	35,41	36,36	37,27	38,00	38,61	39,14	40,00	40,66	41,17	41,80	42,00
50		40,00	42,43	43,41	44,36	45,27	46,00	46,61	47,14	48,00	48,66	49,17	49,80	50,00
52		42,00	44,43	45,41	46,36	47,27	48,00	48,61	49,14	50,00	50,66	51,17	51,80	52,00
63		53,00	55,43	56,41	57,36	58,27	59,00	59,61	60,14	61,00	61,66	62,17	62,80	63,00
66		56,00	58,43	59,41	60,36	61,27	62,00	62,61	63,14	64,00	64,66	65,17	65,80	66,00

	AP	–	0,15	0,30	0,50	0,75	1,00	1,25	1,50	2,00	2,50	3,00	4,00	5,00
	1 ⇨f	–	0,90	0,64	0,50	0,41	0,35	0,32	0,29	0,25	0,23	0,21	0,19	0,17

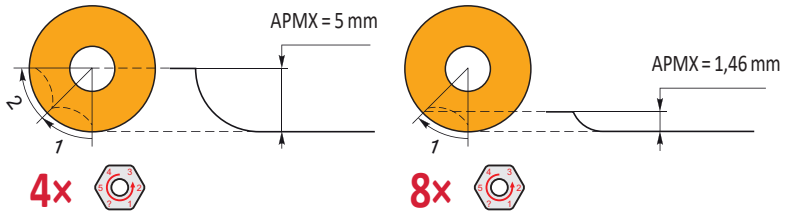
DCX	RPMX	APMX / l
25	13,2	5/23
32	12,6	5/24
35	12,3	5/24
40	9,5	5/31
42	6,5	5/45
50	6,4	5/46
52	6,1	5/48
63	4,7	5/62
66	4,4	5/66

DCX	d_{min}	d_{max}	s_{max} / d_{min}	s_{max} / d_{max}
25	32,0	50,0	3,0	3,0
32	45,0	64,0	3,0	3,0
35	51,0	70,0	3,0	3,0
40	61,0	80,0	3,0	3,0
42	65,0	84,0	3,0	3,0
50	81,0	100,0	3,0	3,0
52	85,0	104,0	3,0	3,0
63	107,0	126,0	3,0	3,0
66	113,0	132,0	3,0	3,0

AP
2,24

DCX	µm	3	5	10	15	20	30	40	50	60	80	100
25	f_e	0,548	0,707	1,000	1,225	1,414	1,732	2,000	2,236	2,449	2,828	3,162
32		0,620	0,800	1,131	1,386	1,600	1,960	2,263	2,530	2,771	3,200	3,578
35		0,648	0,837	1,183	1,449	1,673	2,049	2,366	2,646	2,898	3,347	3,742
40		0,693	0,894	1,265	1,549	1,789	2,191	2,530	2,828	3,098	3,578	4,000
42		0,710	0,917	1,296	1,587	1,833	2,245	2,592	2,898	3,175	3,666	4,099
50		0,775	1,000	1,414	1,732	2,000	2,449	2,828	3,162	3,464	4,000	4,472
52		0,790	1,020	1,442	1,766	2,040	2,498	2,884	3,225	3,533	4,079	4,561
63		0,869	1,122	1,587	1,944	2,245	2,750	3,175	3,550	3,888	4,490	5,020
66		0,890	1,149	1,625	1,990	2,298	2,814	3,250	3,633	3,980	4,596	5,138

RE	µm	3	5	10	15	20	30	40	50	60	80	100
5,0	f_e	0,346	0,447	0,632	0,775	0,894	1,095	1,265	1,414	1,549	1,789	2,000

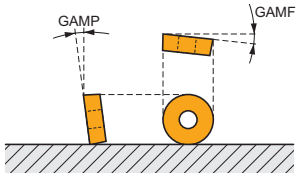


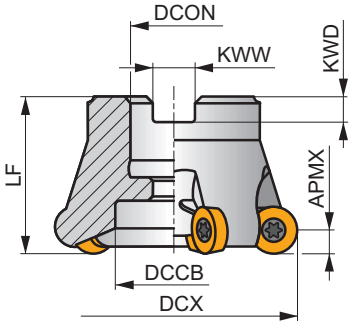
SRC12

P M K N S H

S

APMX	6,0 mm





h_m 0,1 - 0,2

	ISO	DCX [mm]	LF [mm]	DCON [mm]	DCCB [mm]	KWW [mm]	KWD [mm]	GAMF [°]	GAMP [°]			max.		kg			
ISO 6462 DIN 8030	**40A03R-SMORC12-C**	40	40	16	12	8,4	5,6	-2,1	-7	3	–	14800	✓	0,29	GI279	CO022	–
	50A04R-SMORC12-C	50	40	22	18	10,4	6,3	-2	-7	4	–	13200	✓	0,39	GI279	CO023	–
	52A05R-SMORC12-C	52	40	22	18	10,4	6,3	-2	-7	5	–	12900	✓	0,36	GI279	CO029	–
	63A05R-SMORC12-C	63	40	22	30	10,4	6,3	-2	-7	5	–	11800	✓	0,51	GI279	CO023	–
	66A06R-SMORC12-C	66	50	27	22	12,4	7	-1,5	-7	6	–	11400	✓	0,67	GI279	CO024	–
	80A05R-SMORC12-C	80	50	27	37	12,4	7	-1,7	-7	5	–	10400	✓	1,10	GI279	CO024	–
	100A06R-SMORC12-C	100	50	32	45	14,4	8	-1,8	-7	6	–	9300	✓	1,83	GI279	CO021	AC002

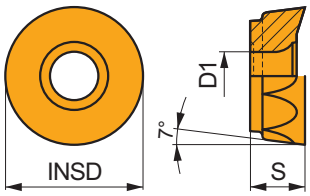
GI279	RCMT 1204MO..

		Nm					
CO021	US 63509-T15P	3,0	M 3,5	10	D-T08P/T15P	FG-15	–
CO022	US 63509-T15P	3,0	M 3,5	10	D-T08P/T15P	FG-15	HS 90835
CO023	US 63509-T15P	3,0	M 3,5	10	D-T08P/T15P	FG-15	HS 1030C
CO024	US 63509-T15P	3,0	M 3,5	10	D-T08P/T15P	FG-15	HS 1230C

AC002	KS 1635	K.FMH32

RCMT 12

	INSD	D1	S
1204	12,000	4,40	4,76

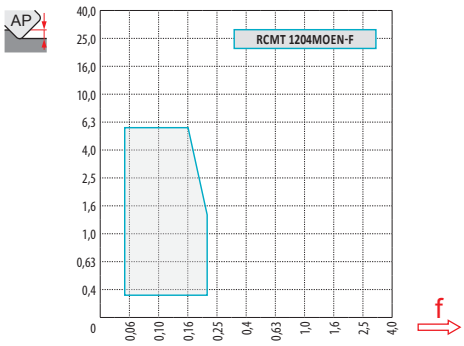


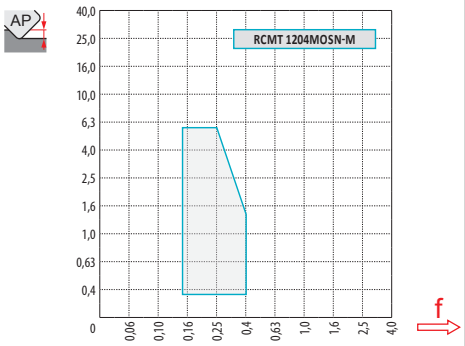
ISO		P	M	K	N	S	H			RE	FN	FX	APMN	APMX
RCMT 1204MOEN-F	M8310	■	◪			◪		✱	-	–	0,05	0,20	0,3	6,0
	M8330	■	◪			◪		✱	-	–	0,05	0,20	0,3	6,0
	8215	◪	◪		◪			✱	-	–	0,05	0,20	0,3	6,0
RCMT 1204MOSN-M	M9325	■	◪	■		◪		✖	- - -	–	0,15	0,34	0,3	6,0
	M9340	◪	■			◪		✖	- - -	–	0,15	0,34	0,3	6,0
	M6330	◪	■			■		✖	-	–	0,15	0,40	0,3	6,0
	M8310	■	◪	■		◪	◪	✖	-	–	0,15	0,40	0,3	6,0
	M8330	■	◪	■	◪			✖	-	–	0,15	0,40	0,3	6,0
	M8345	■	■			◪		✖	+ / -	–	0,15	0,40	0,3	6,0
RCMT 1204MOEN-R	M9315	■		◪			◪	✱	- - -	–	0,20	0,43	0,3	6,0
	M8310	■	◪	■		◪	■	✖	-	–	0,20	0,50	0,3	6,0
	M8330	■	◪	■			◪	✖	-	–	0,20	0,50	0,3	6,0
RCMT 1204MOSN-R	M9315	■		◪			◪	✖	- - -	–	0,20	0,43	0,3	6,0
	M8345	■	◪			◪		✖	+ / -	–	0,20	0,50	0,3	6,0

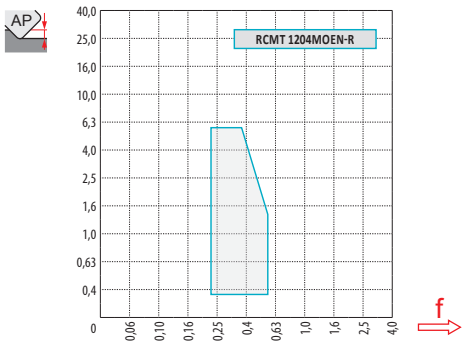
ISO		FN	FX	M9315	M9325	M9340	M6330	M8310	M8330	M8345	8215
P	●	0,10	0,40	479	424	380	325	402	363	275	380
	⬢	0,10	0,30	435	374	341	292	363	325	242	336
	✖	0,10	0,18	396	330	303	253	325	281	215	297
M	●	0,10	0,30	–	215	226	231	204	215	165	226
	⬢	0,10	0,25	–	193	204	204	182	193	143	204
	✖	0,10	0,17	–	165	182	176	165	171	127	176
K	●	0,10	0,40	457	–	–	–	380	347	–	358
	⬢	0,10	0,30	413	–	–	–	347	308	–	319
	✖	0,10	0,18	374	–	–	–	308	270	–	281
N	●	0,10	0,40	–	–	–	–	–	913	–	946
	⬢	0,10	0,30	–	–	–	–	–	814	–	847
	✖	0,10	0,18	–	–	–	–	–	710	–	748
S	●	0,10	0,30	–	105	110	116	99	105	83	110
	⬢	0,10	0,25	–	94	99	99	88	94	72	99
	✖	0,10	0,17	–	83	88	88	83	83	61	88
H	●	0,10	0,25	94	–	–	–	77	72	–	72
	⬢	0,10	0,20	83	–	–	–	72	61	–	66
	✖	0,10	0,15	77	–	–	–	61	55	–	55

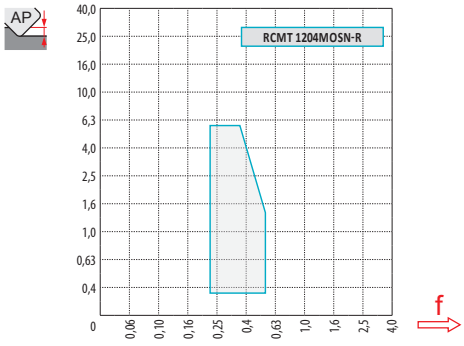
a_e / DCX	0,05	0,10	0,15	0,20	0,25	0,30	0,40	0,50	0,60	0,70	0,75	0,80	0,90	1,00
X.V	1,48	1,35	1,27	1,22	1,19	1,16	1,11	1,08	1,05	1,03	1,00	1,00	1,00	1,00
X.f	2,87	2,05	1,69	1,48	1,33	1,23	1,09	0,75	0,94	0,90	0,89	0,88	0,88	1,00
X.f	0,64	0,64	0,64	0,64	0,64	0,65	0,65	0,67	0,68	0,71	0,72	0,74	0,79	1,00

	RCMT 12-F	RCMT 12-M	RCMT 12 EN-R	RCMT 12 SN-R
RE	6,0	6,0	6,0	6,0
BS	–	–	–	–









DCX	AP	0,00	0,30	0,50	0,75	1,00	1,25	1,50	2,00	2,50	3,00	4,00	5,00	6,00
40	DEF	28,0	31,7	32,8	33,8	34,6	35,3	35,9	36,9	37,7	38,4	39,3	39,8	40,0
50		38,0	41,7	42,8	43,8	44,6	45,3	45,9	46,9	47,7	48,4	49,3	49,8	50,0
52		40,0	43,7	44,8	45,8	46,6	47,3	47,9	48,9	49,7	50,4	51,3	51,8	52,0
63		51,0	54,7	55,8	56,8	57,6	58,3	58,9	59,9	60,7	61,4	62,3	62,8	63,0
66		54,0	57,7	58,8	59,8	60,6	61,3	61,9	62,9	63,7	64,4	65,3	65,8	66,0
80		68,0	71,7	72,8	73,8	74,6	75,3	75,9	76,9	77,7	78,4	79,3	79,8	80,0
100		88,0	91,7	92,8	93,8	94,6	95,3	95,9	96,9	97,7	98,4	99,3	99,8	100,0

AP	–	0,30	0,50	0,75	1,00	1,25	1,50	2,00	2,50	3,00	4,00	5,00	6,00
1 f	–	0,95	0,74	0,61	0,53	0,47	0,43	0,38	0,34	0,31	0,28	0,25	0,24

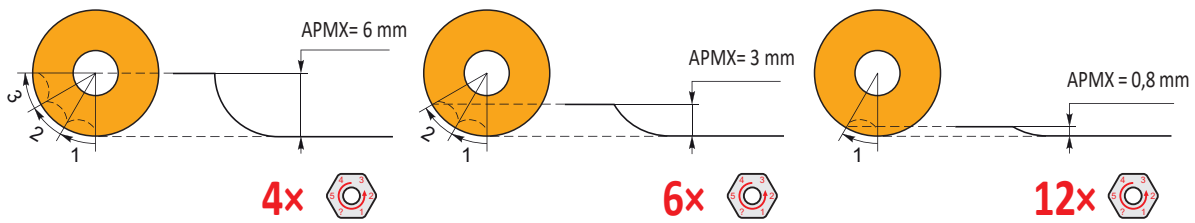
DCX	RPMX	APMX / l
40	9,0	6,0/39
50	7,0	6,0/50
52	6,5	6,0/53
63	5,0	6,0/70
66	4,5	6,0/76
80	3,0	5,1/100
100	2,0	3,3/100

DCX	d_{min}	d_{max}	s_{max} / d_{min}	s_{max} / d_{max}
40	56,0	80,0	6,0	6,0
50	76,0	100,0	6,0	6,0
52	80,0	104,0	6,0	6,0
63	102,0	126,0	6,0	6,0
66	108,0	132,0	6,0	6,0
80	136,0	160,0	6,0	6,0
100	176,0	200,0	6,0	6,0

AP
3,5

DCX	µm	3	5	10	15	20	30	40	50	60	80	100
40	f_e	0,693	0,894	1,265	1,549	1,789	2,191	2,530	2,828	3,098	3,578	4,000
50		0,775	1,000	1,414	1,732	2,000	2,449	2,828	3,162	3,464	4,000	4,472
52		0,790	1,020	1,442	1,766	2,040	2,498	2,884	3,225	3,533	4,079	4,561
63		0,869	1,122	1,587	1,944	2,245	2,750	3,175	3,550	3,888	4,490	5,020
66		0,890	1,149	1,625	1,990	2,298	2,814	3,250	3,633	3,980	4,596	5,138
80		0,980	1,265	1,789	2,191	2,530	3,098	3,578	4,000	4,382	5,060	5,657

RE	µm	3	5	10	15	20	30	40	50	60	80	100
6,0	f_e	0,379	0,490	0,693	0,849	0,980	1,200	1,386	1,549	1,697	1,960	2,191

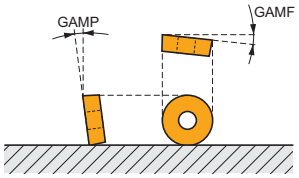


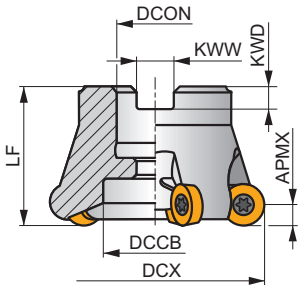
SRC16

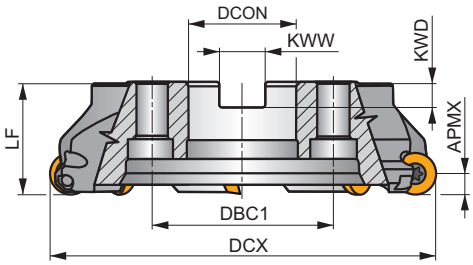
P M K N S H

S

APMX	8,0 mm







h_m 0,1 - 0,25

	ISO	DCX [mm]	LF [mm]	DCON [mm]	DBC1 [mm]	KWW [mm]	KWD [mm]	GAMF [°]	GAMP [°]			max.		kg			
ISO 6462 DIN 8030	**63A04R-SMORC16-C**	63	50	22	18	10,4	6,3	-2,6	-7	4	–	9700	✓	0,61	GI280	CO033	–
	66A05R-SMORC16-C	66	50	27	22	12,4	7	-2,5	-7	5	–	9200	✓	0,60	GI280	CO030	–
	80A05R-SMORC16-C	80	50	27	37	12,4	7	-1,7	-7	5	–	8600	✓	0,88	GI280	CO030	–
	100A06R-SMORC16-C	100	50	32	45	14,4	8	-1,7	-7	6	–	7700	✓	1,33	GI280	CO031	AC002
	125A07R-SMORC16-C	125	63	40	36	16,4	9	-1,2	-7	7	–	6500	✓	3,07	GI280	CO032	–
	160C08R-SMORC16-C	160	63	40	66,7	16,4	9	-0,9	-7	8	–	5400	✓	5,68	GI280	CO034	–

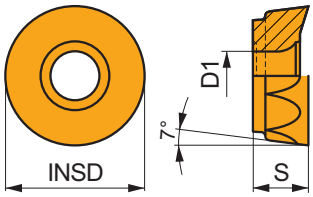
GI280	RCMT 1606MO..

		Nm							
CO030	US 65014-T20P	5,0	M 5	14	SDR T20P-T	HS 1230C	–	–	–
CO031	US 65014-T20P	5,0	M 5	14	SDR T20P-T	–	–	–	–
CO032	US 65014-T20P	5,0	M 5	14	SDR T20P-T	HSD 2040	–	–	–
CO033	US 65014-T20P	5,0	M 5	14	SDR T20P-T	HS 1030C	–	–	–
CO034	US 65014-T20P	5,0	M 5	14	SDR T20P-T	HS 1240C	CAC 160C	HSD 0825C	HXK 5

AC002	KS 1635	K.FMH32

RCMT 16

	INSD	D1	S
1606	16,000	5,50	6,35

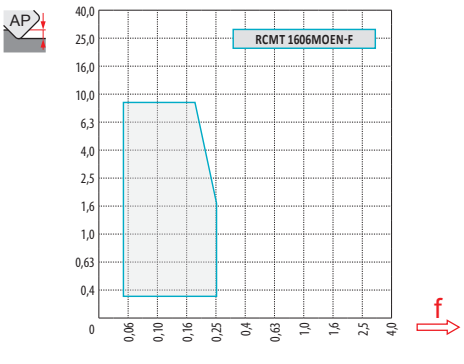


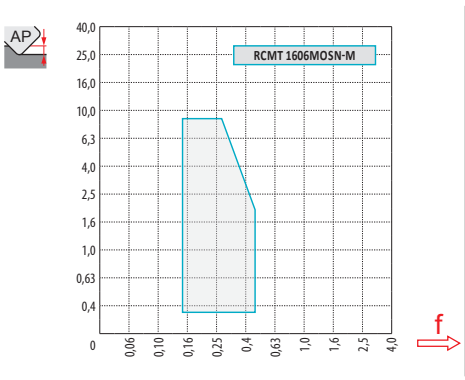
ISO		P	M	K	N	S	H		RE	FN	FX	APMN	APMX
RCMT 1606MOEN-F	M8310	■	◪			◪		●	-	–	0,05	0,25	0,3	8,0
	M8330	■	◪					●	-	–	0,05	0,25	0,3	8,0
RCMT 1606MOSN-M	M9325	■	◪	■		◪		✖	- - -	–	0,15	0,38	0,3	8,0
	M9340	◪	■			◪		✖	- - -	–	0,15	0,38	0,3	8,0
	M6330	◪	■			■		✖	-	–	0,15	0,45	0,3	8,0
	M8330	■	◪	■				✖	-	–	0,15	0,45	0,3	8,0
	M8345	■	■			◪		✖	+ / -	–	0,15	0,45	0,3	8,0
RCMT 1606MOSN-R	M9325	■	◪			◪		✖	- - -	–	0,20	0,51	0,3	8,0
	M8310	■	◪	■		◪	■	✖	-	–	0,20	0,60	0,3	8,0
	M8330	■	◪	■			◪	✖	-	–	0,20	0,60	0,3	8,0
	M8345	■	◪			◪		✖	+ / -	–	0,20	0,60	0,3	8,0

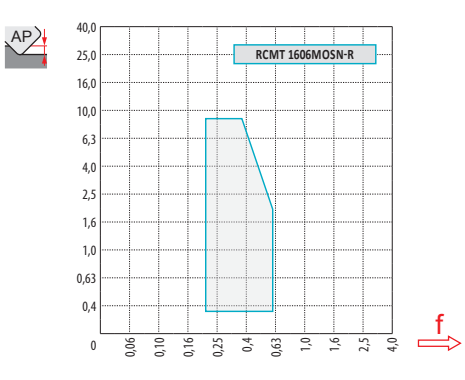
ISO		FN	FX	M9325	M9340	M6330	M8310	M8330	M8345
P	●	0,10	0,45	424	380	325	402	363	275
	●	0,10	0,35	374	341	292	363	325	242
	✖	0,10	0,25	330	303	253	325	281	215
M	●	0,10	0,45	215	226	231	204	215	165
	●	0,10	0,35	193	204	204	182	193	143
	✖	0,10	0,25	165	182	176	165	171	127
K	●	0,10	0,45	–	–	–	380	347	–
	●	0,10	0,35	–	–	–	347	308	–
	✖	0,10	0,25	–	–	–	308	270	–
N	●	0,10	0,45	–	–	–	–	913	–
	●	0,10	0,35	–	–	–	–	814	–
	✖	0,10	0,25	–	–	–	–	710	–
S	●	0,10	0,40	105	110	116	99	105	83
	●	0,10	0,30	94	99	99	88	94	72
	✖	0,10	0,20	83	88	88	83	83	61
H	●	0,10	0,30	–	–	–	77	72	–
	●	0,10	0,25	–	–	–	72	61	–
	✖	0,10	0,20	–	–	–	61	55	–

a_e / DCX	0,05	0,10	0,15	0,20	0,25	0,30	0,40	0,50	0,60	0,70	0,75	0,80	0,90	1,00
X.V	1,48	1,35	1,27	1,22	1,19	1,16	1,11	1,08	1,05	1,03	1,00	1,00	1,00	1,00
X.f	2,87	2,05	1,69	1,48	1,33	1,23	1,09	0,75	0,94	0,90	0,89	0,88	0,88	1,00
X.f	0,64	0,64	0,64	0,64	0,64	0,65	0,65	0,67	0,68	0,71	0,72	0,74	0,79	1,00

	RCMT 16-F	RCMT 16-M	RCMT 16-R
RE	8,0	8,0	8,0
BS	–	–	–







DCX	AP	0,00	0,30	0,50	0,75	1,00	1,25	1,50	2,00	2,50	3,00	4,00	5,00	6,00	7,00	8,00
63	DEF	47,0	51,3	52,6	53,8	54,7	55,6	56,3	57,6	58,6	59,5	60,9	61,8	62,5	62,9	63,0
66		50,0	54,3	55,6	56,8	57,8	58,6	59,3	60,6	61,6	62,5	63,9	64,8	65,5	65,9	66,0
80		64,0	68,3	69,6	70,8	71,7	72,6	73,3	74,6	75,6	76,5	77,9	78,8	79,5	79,9	80,0
100		84,0	88,3	89,6	90,8	91,7	92,6	93,3	94,6	95,6	96,5	97,9	98,8	99,5	99,9	100,0

AP	–	0,30	0,50	0,75	1,00	1,25	1,50	2,00	2,50	3,00	4,00	5,00	6,00	7,00	8,00
1 f	–	1,10	0,85	0,70	0,61	0,54	0,50	0,43	0,39	0,36	0,31	0,28	0,26	0,25	0,24

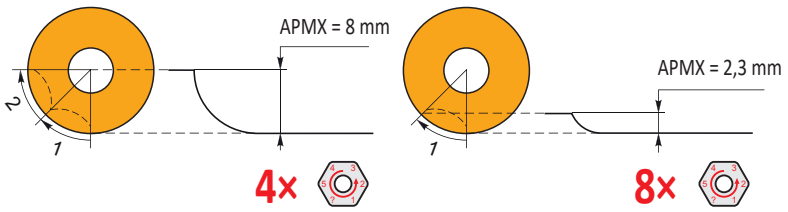
DCX	RPMX	APMX / l
63	7,0	8,0/67
66	6,5	8,0/71
80	5,0	8,0/93
100	4,0	6,8/100

DCX	d_{min}	d_{max}	s_{max} / d_{min}	s_{max} / d_{max}
63	94,0	126,0	8,0	8,0
66	100,0	132,0	8,0	8,0
80	128,0	160,0	8,0	8,0
100	168,0	200,0	8,0	8,0

AP
5,0

DCX	µm	3	5	10	15	20	30	40	50	60	80	100
63	f_e	0,869	1,122	1,587	1,944	2,245	2,750	3,175	3,550	3,888	4,490	5,020
66		0,890	1,149	1,625	1,990	2,298	2,814	3,250	3,633	3,980	4,596	5,138
80		0,980	1,265	1,789	2,191	2,530	3,098	3,578	4,000	4,382	5,060	5,657
100		1,095	1,414	2,000	2,449	2,828	3,464	4,000	4,472	4,899	5,657	6,325

RE	µm	3	5	10	15	20	30	40	50	60	80	100
8,0	f_e	0,438	0,566	0,800	0,980	1,131	1,386	1,600	1,789	1,960	2,263	2,530

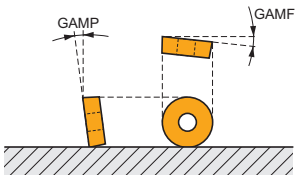


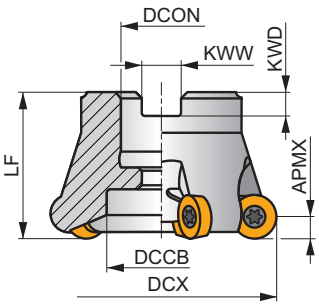
SRC20

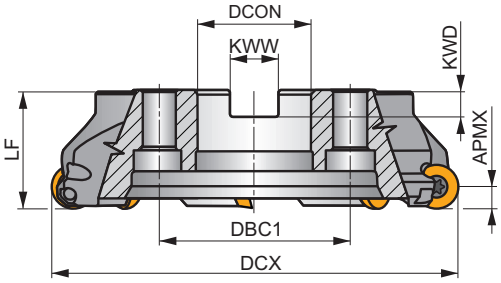
P M K N S H

S

APMX	10,0 mm







h_m 0,11 - 0,32

	ISO	DCX [mm]	LF [mm]	DCON [mm]	DBC1 [mm]	KWW [mm]	KWD [mm]	GAMF [°]	GAMP [°]			max.		kg			
ISO 6462 DIN 8030	**80A04R-SMORC20-C**	80	50	27	28	12,4	7	-2,7	-7	4	–	8500	✓	0,96	GI281	CO040	–
	100A05R-SMORC20-C	100	50	32	45	14,4	8	-1,7	-7	5	–	7600	✓	1,26	GI281	CO041	AC002
	125A06R-SMORC20-C	125	63	40	36	16,4	9	-1	-7	6	–	6500	✓	2,96	GI281	CO042	–
	160C07R-SMORC20-C	160	63	40	66,7	16,4	9	-0,9	-7	7	–	5400	✓	5,44	GI281	CO046	–

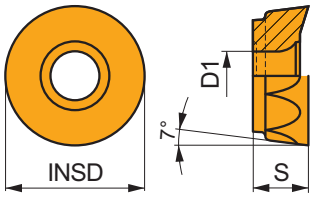
GI281	RCMT 2006MO..

		Nm							
CO040	US 66015-T25P	7,5	M 6	15	SDR T25P-T	HS 1230C	–	–	–
CO041	US 66015-T25P	7,5	M 6	15	SDR T25P-T	–	–	–	–
CO042	US 66015-T25P	7,5	M 6	15	SDR T25P-T	HSD 2040	–	–	–
CO046	US 66015-T25P	7,5	M 6	15	SDR T25P-T	HS 1240C	CAC 160C	HSD 0825C	HXK 5

AC002	KS 1635	K.FMH32

RCMT 20

	INSD	D1	S
2006	20,000	6,50	6,35

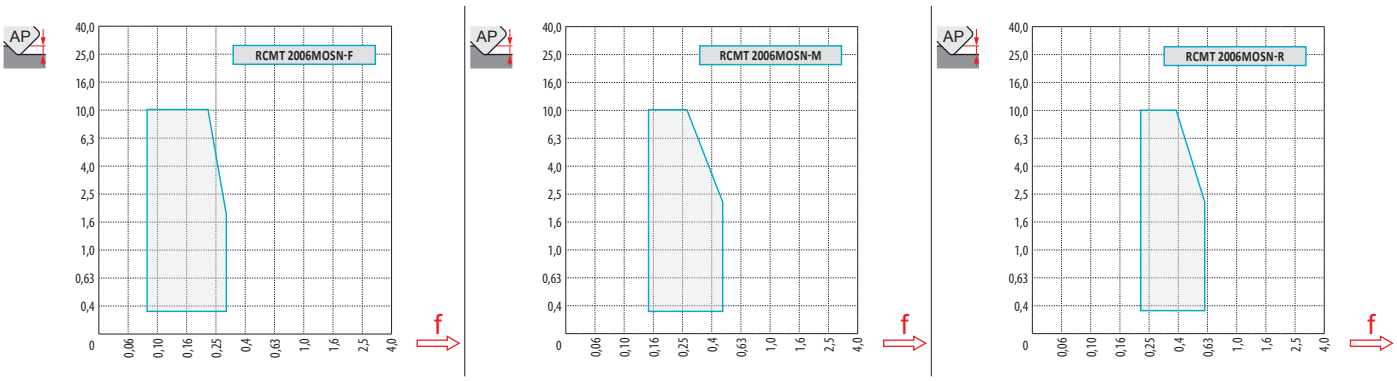


ISO		P	M	K	N	S	H		RE	FN	FX	APMN	APMX
RCMT 2006MOSN-F	M8330	■	◪			◪		✖	-	–	0,08	0,30	0,3	10,0
RCMT 2006MOSN-M	M9315	■		■			◪	⚙	- - -	–	0,15	0,38	0,3	10,0
	M9325	■	◪	■		◪		✖	- - -	–	0,15	0,38	0,3	10,0
	M9340	◪	■			◪		✖	- - -	–	0,15	0,38	0,3	10,0
	M6330	◪	■			■		✖	-	–	0,15	0,45	0,3	10,0
	M8330	■	◪	■				✖	-	–	0,15	0,45	0,3	10,0
	M8345	■	■			◪		✖	+ / -	–	0,15	0,45	0,3	10,0
RCMT 2006MOSN-R	M9325	■	◪			◪		✖	- - -	–	0,20	0,51	0,3	10,0
	M8330	■	◪	■			◪	✖	-	–	0,20	0,60	0,3	10,0
	M8345	■	◪			◪		✖	+ / -	–	0,20	0,60	0,3	10,0

ISO		FN	FX	M9315	M9325	M9340	M8330	M8345
P	●	0,10	0,50	479	424	380	363	275
	⚙	0,10	0,40	435	374	341	325	242
	✖	0,10	0,30	396	330	303	281	215
M	●	0,10	0,50	–	215	226	215	165
	⚙	0,10	0,40	–	193	204	193	143
	✖	0,10	0,30	–	165	182	171	127
K	●	0,10	0,50	457	–	–	347	–
	⚙	0,10	0,40	413	–	–	308	–
	✖	0,10	0,30	374	–	–	270	–
N	●	0,10	0,50	–	–	–	913	–
	⚙	0,10	0,40	–	–	–	814	–
	✖	0,10	0,30	–	–	–	710	–
S	●	0,10	0,45	–	105	110	105	83
	⚙	0,10	0,40	–	94	99	94	72
	✖	0,10	0,30	–	83	88	83	61
H	●	0,10	0,35	94	–	–	72	–
	⚙	0,10	0,30	83	–	–	61	–
	✖	0,10	0,25	77	–	–	55	–

a_e / DCX	0,05	0,10	0,15	0,20	0,25	0,30	0,40	0,50	0,60	0,70	0,75	0,80	0,90	1,00
X.V	1,48	1,35	1,27	1,22	1,19	1,16	1,11	1,08	1,05	1,03	1,00	1,00	1,00	1,00
X.f	2,87	2,05	1,69	1,48	1,33	1,23	1,09	0,75	0,94	0,90	0,89	0,88	0,88	1,00
X.f	0,64	0,64	0,64	0,64	0,64	0,65	0,65	0,67	0,68	0,71	0,72	0,74	0,79	1,00

	RCMT 20-F	RCMT 20-M	RCMT 20-R
RE	10,0	10,0	10,0
BS	–	–	–



DCX	AP	0,00	0,30	0,50	0,75	1,00	1,25	1,50	2,00	2,50	3,00	4,00	5,00	6,00	7,00	8,00	9,00	10,00
80	DEF	60,0	64,9	66,2	67,6	68,7	69,7	70,5	72,0	73,2	74,3	76,0	77,3	78,3	79,1	79,6	79,9	80,0
100		80,0	84,9	86,2	87,6	88,7	89,7	90,5	92,0	93,2	94,3	96,0	97,3	98,3	99,1	99,6	99,9	100,0

AP	-	0,30	0,50	0,75	1,00	1,25	1,50	2,00	2,50	3,00	4,00	5,00	6,00	7,00	8,00	9,00	10,00
1 f	-	1,23	0,95	0,78	0,68	0,61	0,55	0,48	0,43	0,40	0,35	0,31	0,29	0,27	0,26	0,25	0,24

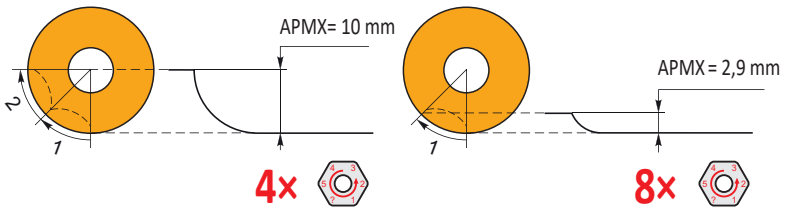
DCX	RPMX	APMX / l
80	7,0	10,0/83
100	5,0	8,6/100

DCX	d_{min}	d_{max}	s_{max} / d_{min}	s_{max} / d_{max}
80	120,0	160,0	10,0	10,0
100	160,0	200,0	10,0	10,0

AP
6,0

DCX	µm	3	5	10	15	20	30	40	50	60	80	100
80	f_e	0,980	1,265	1,789	2,191	2,530	3,098	3,578	4,000	4,382	5,060	5,657
100		1,095	1,414	2,000	2,449	2,828	3,464	4,000	4,472	4,899	5,657	6,325

RE	µm	3	5	10	15	20	30	40	50	60	80	100
10,0	f_e	0,490	0,632	0,894	1,095	1,265	1,549	1,789	2,000	2,191	2,530	2,828

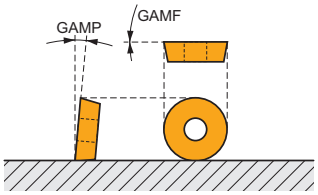


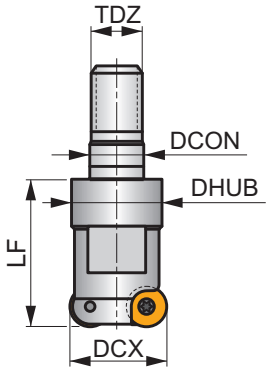
SRD05

P M K H

S

APMX	1,5 mm





h_m 0,03 - 0,1

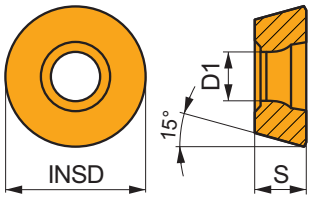
	ISO	DCX [mm]	DHUB [mm]	DCON [mm]	LF [mm]	TDZ	GAMF [°]	GAMP [°]			max.		kg		
MODULAR	**10E2R020M06-SRD05**	10	9,8	6,5	20	M6	0	+3	2	–	–	✓	0,02	GI117	CO050
	12E3R020M06-SRD05	12	10,0	6,5	20	M6	0	+3	3	–	–	✓	0,02	GI117	CO050
	15E4R020M08-SRD05	15	13,5	8,5	20	M8	0	+3	4	✓	–	✓	0,03	GI117	CO050

GI117	RD.. 0501MO..

		Nm			
CO050	US 20	0,9	M 2	3	Flag T06

RDHX 05

	INSD	D1	S
0501	5,000	2,20	1,51

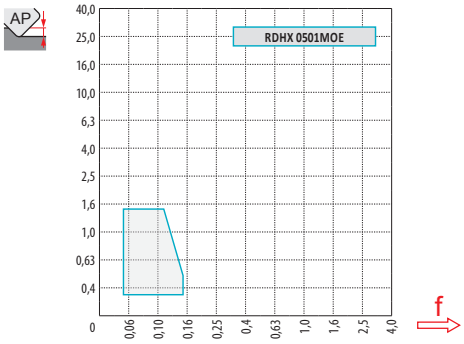


	ISO		P	M	K	N	S	H			RE	FN	FX	APMN	APMX
HFC, E	RDHX 0501MOE	M8310	◪	◪	■			■	✖	-	–	0,05	0,15	0,3	1,5

ISO		FN	FX	M8310
P	●	0,05	0,15	402
	⧗	0,05	0,12	363
	✖	0,05	0,10	325
M	●	0,05	0,15	204
	⧗	0,05	0,12	182
	✖	0,05	0,10	165
K	●	0,05	0,15	380
	⧗	0,05	0,12	347
	✖	0,05	0,10	308
H	●	0,05	0,15	77
	⧗	0,05	0,12	72
	✖	0,05	0,10	61

a_e / DCX	0,05	0,10	0,15	0,20	0,25	0,30	0,40	0,50	0,60	0,70	0,75	0,80	0,90	1,00
X.V	1,48	1,35	1,27	1,22	1,19	1,16	1,11	1,08	1,05	1,03	1,00	1,00	1,00	1,00
X.f	2,87	2,05	1,69	1,48	1,33	1,23	1,09	0,75	0,94	0,90	0,89	0,88	0,88	1,00
X.f	0,64	0,64	0,64	0,64	0,64	0,65	0,65	0,67	0,68	0,71	0,72	0,74	0,79	1,00

	RDHX 05
RE	2,5
BS	–



DCX	AP	0,00	0,30	0,50	0,75	1,00	1,25	1,50	2,00	2,50
10	DEF	5,0	7,4	8,0	8,6	9,0	9,3	9,6	9,9	10,0
12		7,0	9,4	10,0	10,6	11,0	11,3	11,6	11,9	12,0
15		10,0	12,4	13,0	13,6	14,0	14,3	14,6	14,9	15,0

AP	–	0,30	0,50	0,75	1,00	1,25	1,50	2,00	2,50
1 f	–	0,25	0,19	0,16	0,14	0,13	0,12	0,10	0,09

DCX	RPMX	APMX / l
10	15,0	1,3/11
12	11,0	1,3/14
15	7,0	1,3/22

DCX	d_{min}	d_{max}	s_{max} / d_{min}	s_{max} / d_{max}
10	12,0	20,0	1,2	1,2
12	16,0	24,0	1,2	1,2
15	22,0	30,0	1,2	1,2

AP
1,0

DCX	µm	3	5	10	15	20	30	40	50	60	80	100
10	f_e	0,346	0,447	0,632	0,775	0,894	1,095	1,265	1,414	1,549	1,789	2,000
12		0,379	0,490	0,693	0,849	0,980	1,200	1,386	1,549	1,697	1,960	2,191
15		0,424	0,548	0,775	0,949	1,095	1,342	1,549	1,732	1,897	2,191	2,449

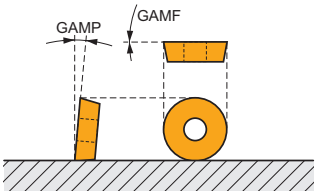
RE	µm	3	5	10	15	20	30	40	50	60	80	100
2,5	f_e	0,245	0,316	0,447	0,548	0,632	0,775	0,894	1,000	1,095	1,265	1,414

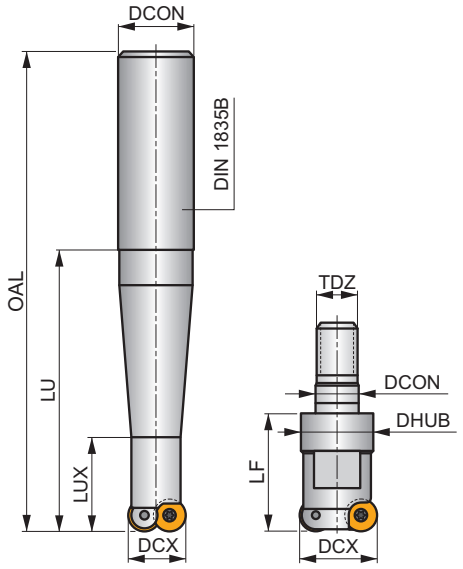
SRD07

P M K N S H

S

APMX	2,0 mm





h_m 0,065 - 0,13

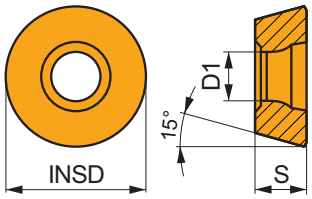
	ISO	DCX [mm]	DHUB [mm]	OAL [mm]	DCON [mm]	LU [mm]	LUX [mm]	LF [mm]	TDZ	GAMF [°]	GAMP [°]			max.		kg		
DIN 1835B	15E2R040B16-SRD07	15	–	88	16	40	20	–	–	0	+3	2	–	44200	✓	0,10	GI118	CO060
	15E2R060B16-SRD07	15	–	108	16	60	20	–	–	0	+3	2	–	44200	✓	0,22	GI118	CO060
	15E2R080B20-SRD07	15	–	130	20	80	22	–	–	0	+3	2	–	44200	✓	0,22	GI118	CO060
	15E2R100B20-SRD07	15	–	150	20	100	22	–	–	0	+3	2	–	44200	✓	0,27	GI118	CO060
	15E2R120B25-SRD07	15	–	176	25	120	22	–	–	0	+3	2	–	44200	✓	0,45	GI118	CO060
MODULAR	15E2R028M08-SRD07	15	13,5	–	8,5	–	–	28	M8	0	+3	2	–	–	✓	0,04	GI118	CO060
	15E3R028M08-SRD07	15	13,5	–	10,5	–	–	28	M8	0	+3	3	–	–	✓	0,03	GI118	CO060
	20E4R028M10-SRD07	20	18,0	–	12,5	–	–	28	M10	0	+3	4	✓	–	✓	0,06	GI118	CO060
	25E5R028M12-SRD07	25	21,0	–	12,5	–	–	28	M12	0	+3	5	✓	–	✓	0,10	GI118	CO060

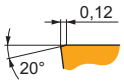
GI118	RD.. 0702MO..	RD.. 07T1MO..

		Nm			
CO060	US 25	1,2	M 2,5	5	Flag T07

RDHX 07

	INSD	D1	S
0702	7,000	2,80	2,38
07T1	7,000	2,80	1,98

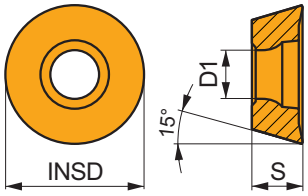


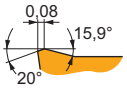


ISO		P	M	K	N	S	H			RE	FN	FX	APMN	APMX
RDHX 0702MOT	M4303	◪		■			■	✖	-	–	0,10	0,20	0,5	2,0
	M8310	◪	◪	■			■	✖	-	–	0,10	0,20	0,5	2,0
	M8325	◪	◪	◪				✖	-	–	0,10	0,20	0,5	2,0
RDHX 07T1MOT	M8310	◪	◪	■			■	✖	-	–	0,10	0,17	0,5	2,0
	M8325	◪	◪	◪				✖	-	–	0,10	0,17	0,5	2,0

RDGT 07

	INSD	D1	S
0702	7,000	2,80	2,38

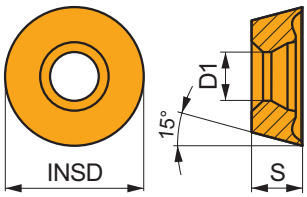




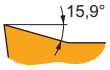
ISO		P	M	K	N	S	H			RE	FN	FX	APMN	APMX
RDGT 0702MOT	M8310	■	◪	◪		◪		✖	-	–	0,10	0,20	0,3	2,0
	M8325	■	◪					✖	-	–	0,10	0,20	0,3	2,0
	M8345	■	■			◪		✖	+ / -	–	0,10	0,20	0,3	2,0

RDHT 07-FA

	INSD	D1	S
0702	7,000	2,80	2,38
07T1	7,000	2,80	1,98

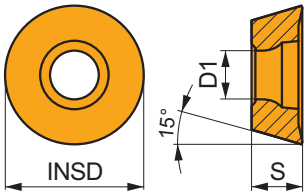


ISO		P	M	K	N	S	H		RE	FN	FX	APMN	APMX
RDHT 0702MO-FA	HF7				■			●	+ / -	–	0,10	0,20	0,3	2,0
RDHT 07T1MO-FA	HF7				■			●	+ / -	–	0,10	0,20	0,3	2,0

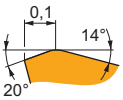


RDMT 07

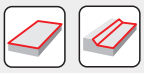
	INSD	D1	S
0702	7,000	2,8	2,38



ISO		P	M	K	N	S	H		RE	FN	FX	APMN	APMX
RDMT 0702MOT	M8325	■	◪	◪				⬢	-	–	0,10	0,20	0,3	2,0

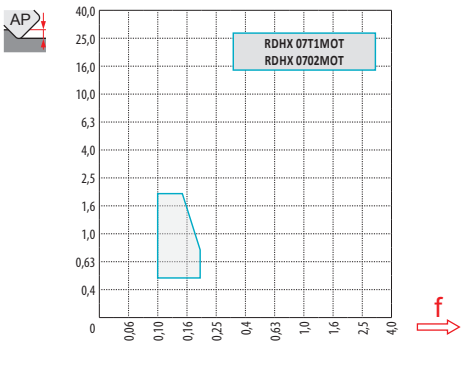


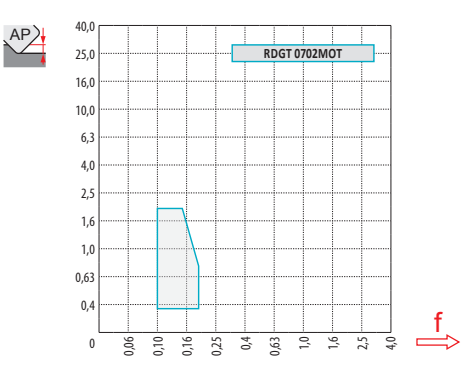
ISO		FN	FX	M4303	M8310	M8325	M8345	HF7
P	●	0,10	0,20	409	402	308	275	–
	⧗	0,10	0,17	364	363	275	242	–
	✖	0,10	0,15	324	325	242	215	–
M	●	0,10	0,20	245	204	149	165	88
	⧗	0,10	0,17	218	182	132	143	77
	✖	0,10	0,15	192	165	116	127	66
K	●	0,10	0,20	390	380	292	–	143
	⧗	0,10	0,17	350	347	259	–	127
	✖	0,10	0,15	304	308	231	–	110
N	●	0,10	0,20	1024	–	–	–	374
	⧗	0,10	0,17	918	–	–	–	336
	✖	0,10	0,15	812	–	–	–	292
S	●	0,10	0,20	-	99	–	83	44
	⧗	0,10	0,15	-	88	–	72	39
	✖	0,10	0,10	-	83	–	61	33
H	●	0,10	0,20	83	77	–	–	28
	⧗	0,10	0,15	76	72	–	–	22
	✖	0,10	0,10	63	61	–	–	22

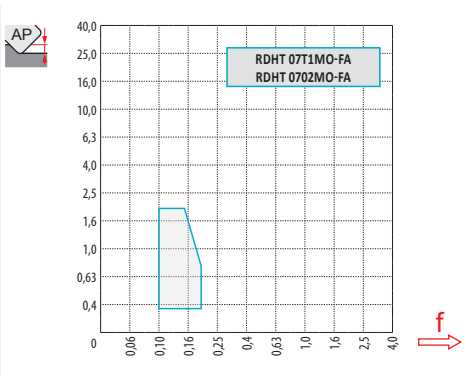


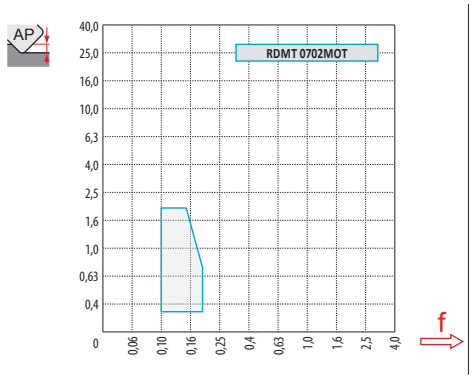
a_e / DCX	0,05	0,10	0,15	0,20	0,25	0,30	0,40	0,50	0,60	0,70	0,75	0,80	0,90	1,00
X.V	1,48	1,35	1,27	1,22	1,19	1,16	1,11	1,08	1,05	1,03	1,00	1,00	1,00	1,00
⇨X.f	2,87	2,05	1,69	1,48	1,33	1,23	1,09	0,75	0,94	0,90	0,89	0,88	0,88	1,00
⇨X.f	0,64	0,64	0,64	0,64	0,64	0,65	0,65	0,67	0,68	0,71	0,72	0,74	0,79	1,00

	RDHX 07	RDGT 07	RDHT 07-FA
RE	3,5	3,5	3,5
BS	–	–	–









DCX	AP	0,00	0,30	0,50	0,75	1,00	1,25	1,50	2,00	2,50	3,00	3,50
15	DEF	8,0	10,8	11,6	12,3	12,9	13,4	13,7	14,3	14,7	14,9	15,0
20		13,0	15,8	16,6	17,3	17,9	18,4	18,7	19,3	19,7	19,9	20,0
25		18,0	20,8	21,6	22,3	22,9	23,4	23,7	24,3	24,7	24,9	25,0

AP	0,00	0,30	0,50	0,75	1,00	1,25	1,50	2,00	2,50	3,00	3,50
1 f	–	0,29	0,23	0,19	0,16	0,15	0,13	0,12	0,11	0,10	0,09

DCX	RPMX	APMX / l
15	11,0	1,7/20
20	7,0	1,7/30
25	6,0	1,7/35

DCX	d_{min}	d_{max}	s_{max} / d_{min}	s_{max} / d_{max}
15	17,0	30,0	0,4	1,7
20	28,0	40,0	1,7	1,7
25	38,0	50,0	1,7	1,7

AP
1,2

DCX	µm	3	5	10	15	20	30	40	50	60	80	100
15	f_e	0,424	0,548	0,775	0,949	1,095	1,342	1,549	1,732	1,897	2,191	2,449
20		0,490	0,632	0,894	1,095	1,265	1,549	1,789	2,000	2,191	2,530	2,828
25		0,548	0,707	1,000	1,225	1,414	1,732	2,000	2,236	2,449	2,828	3,162

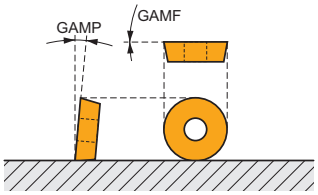
RE	µm	3	5	10	15	20	30	40	50	60	80	100
3,5	f_e	0,290	0,374	0,529	0,648	0,748	0,917	1,058	1,183	1,296	1,497	1,673

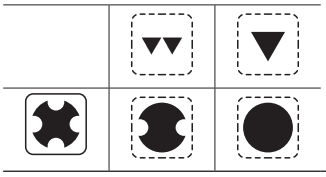
SRD10

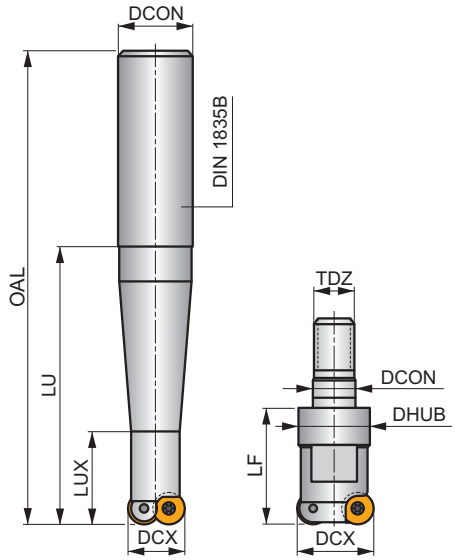
P M K N S H

S

APMX	2,5 mm







h_m 0,065 - 0,19

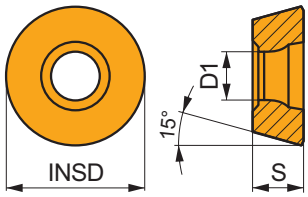
	ISO	DCX [mm]	DHUB [mm]	OAL [mm]	DCON [mm]	LU [mm]	LUX [mm]	LF [mm]	TDZ	GAMF [°]	GAMP [°]			max.		kg		
DIN 1835B	**20E2R040B20-SRD10**	20	–	90	20	40	20	–	–	0	+3	2	–	30800	✓	0,19	GI119	CO070
	20E2R060B20-SRD10	20	–	110	20	60	22	–	–	0	+3	2	–	30800	✓	0,20	GI119	CO070
	20E2R080B25-SRD10	20	–	136	25	80	25	–	–	0	+3	2	–	30800	✓	0,39	GI119	CO070
	20E2R100B25-SRD10	20	–	156	25	100	25	–	–	0	+3	2	–	30800	✓	0,45	GI119	CO070
	20E2R120B25-SRD10	20	–	176	25	120	25	–	–	0	+3	2	–	30800	✓	0,50	GI119	CO070
MODULAR	**20E2R028M10-SRD10**	20	18,0	–	10,5	–	–	28	M10	0	+3	2	–	–	✓	0,06	GI119	CO070
	25E2R032M12-SRD10	25	21,0	–	12,5	–	–	32	M12	0	+3	2	–	–	✓	0,11	GI119	CO070
	25E3R032M12-SRD10	25	21,0	–	12,5	–	–	32	M12	0	+3	3	–	–	✓	0,09	GI119	CO070
	30E4R042M16-SRD10	30	29,0	–	17,0	–	–	42	M16	0	+3	4	✓	–	✓	0,21	GI119	CO070
	35E5R042M16-SRD10	35	29,0	–	17,0	–	–	42	M16	0	+3	5	✓	–	✓	0,23	GI119	CO070

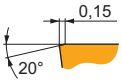
GI119	RD.. 1003MOT	RDHT 1003MO-FA

CO070	US 3507-T15	3,0	M 3,5	7	Flag T15

RDHX 10

	INSD	D1	S
1003	10,000	3,90	3,18

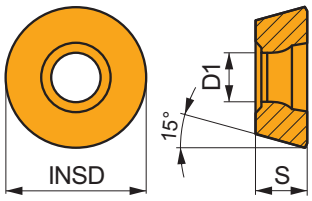


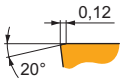


ISO		P	M	K	N	S	H			RE	FN	FX	APMN	APMX
RDHX 1003MOT	5040	◪	◪	◪			◪	✖	- - -	–	0,10	0,26	0,5	2,5
	M4303	◪		■			■	✖	-	–	0,10	0,30	0,5	2,5
	M8310	◪	◪	■			■	✖	-	–	0,10	0,30	0,5	2,5
	M8325	◪	◪	◪				✖	-	–	0,10	0,30	0,5	2,5
	M8345	◪	◪					✖	+ / -	–	0,10	0,30	0,5	2,5

RDMX 10

	INSD	D1	S
1003	10,000	3,90	3,18

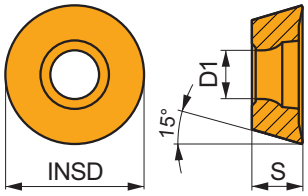


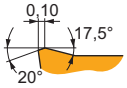


ISO		P	M	K	N	S	H			RE	FN	FX	APMN	APMX
RDMX 1003MOT	M8310	◪	◪	■			■	✖	-	–	0,10	0,30	0,5	2,5
	M8325	◪	◪	◪				✖	-	–	0,10	0,30	0,5	2,5
	M8345	◪	◪					✖	+ / -	–	0,10	0,30	0,5	2,5

RDGT 10

	INSD	D1	S
1003	10,000	3,90	3,18

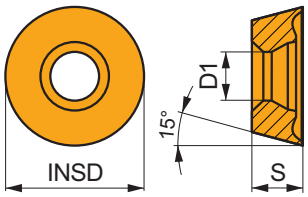


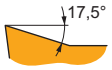


ISO		P	M	K	N	S	H			RE	FN	FX	APMN	APMX
RDGT 1003MOT	M9340	◪	■			◪		☻	- - -	–	0,10	0,23	0,5	2,5
	M6330	◪	■			◪		✖	-	–	0,10	0,30	0,5	2,5
	M8310	■	◪	◪		◪		☻	-	–	0,10	0,30	0,5	2,5
	M8325	■	◪					☻	-	–	0,10	0,30	0,5	2,5
	M8345	■	■			◪		✖	+ / -	–	0,10	0,30	0,5	2,5

RDHT 10-FA

	INSD	D1	S
1003	10,000	3,90	3,18

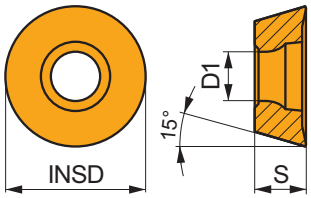




ISO		P	M	K	N	S	H			RE	FN	FX	APMN	APMX
RDHT 1003MO-FA	HF7				■			●	+ / -	–	0,10	0,30	0,3	2,5

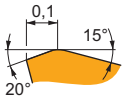
RDMT 10

	INSD	D1	S
1003	10,000	3,9	3,18



ISO		P	M	K	N	S	H		RE	FN	FX	APMN	APMX
RDMT 1003MOT	M8325	■	◪	◪				⚙	-	–	0,12	0,30	0,5	2,5
	M8345	■	◪					✖	+ / -	–	0,12	0,30	0,5	2,5

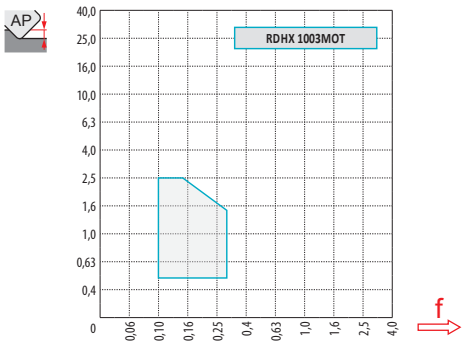
HFC

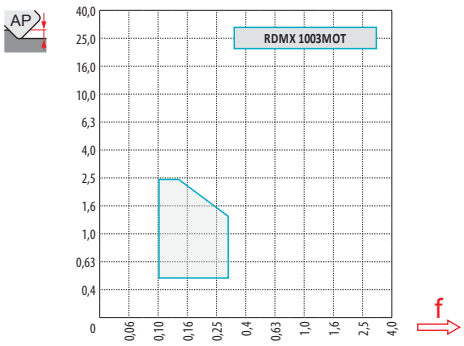


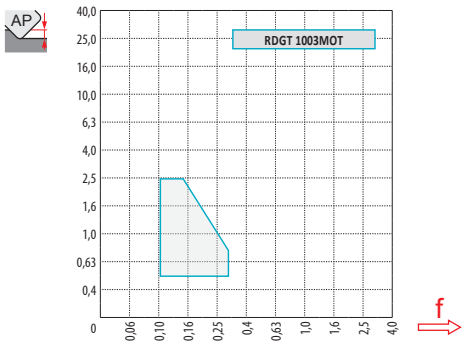
ISO		FN	FX	M4303	M9340	5040	M6330	M8310	M8325	M8345	HF7
P	●	0,10	0,30	409	380	275	285	402	308	275	–
	⚙	0,10	0,25	364	341	248	255	363	275	242	–
	✖	0,10	0,15	324	303	220	225	325	242	215	–
M	●	0,10	0,30	245	226	165	175	204	149	165	88
	⚙	0,10	0,25	218	204	149	160	182	132	143	77
	✖	0,10	0,15	192	182	132	145	165	116	127	66
K	●	0,10	0,30	390	–	259	–	380	292	–	143
	⚙	0,10	0,25	350	–	237	–	347	259	–	127
	✖	0,10	0,15	304	–	209	–	308	231	–	110
N	●	0,10	0,30	1024	–	–	–	–	–	–	374
	⚙	0,10	0,25	918	–	–	–	–	–	–	336
	✖	0,10	0,15	812	–	–	–	–	–	–	292
S	●	0,10	0,30	-	110	–	100	99	–	83	44
	⚙	0,10	0,25	-	99	–	90	88	–	72	39
	✖	0,10	0,15	-	88	–	80	83	–	61	33
H	●	0,10	0,30	83	–	55	–	77	–	–	28
	⚙	0,10	0,20	76	–	50	–	72	–	–	22
	✖	0,10	0,12	63	–	44	–	61	–	–	22

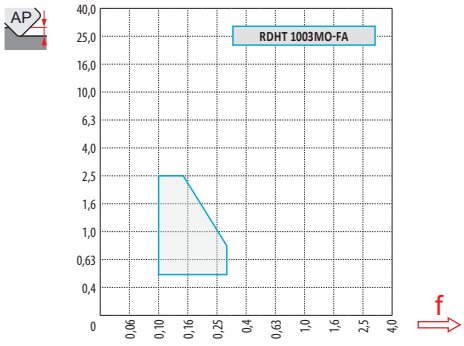
a_e / DCX	0,05	0,10	0,15	0,20	0,25	0,30	0,40	0,50	0,60	0,70	0,75	0,80	0,90	1,00
X.V	1,48	1,35	1,27	1,22	1,19	1,16	1,11	1,08	1,05	1,03	1,00	1,00	1,00	1,00
X.f	2,87	2,05	1,69	1,48	1,33	1,23	1,09	0,75	0,94	0,90	0,89	0,88	0,88	1,00
X.f	0,64	0,64	0,64	0,64	0,64	0,65	0,65	0,67	0,68	0,71	0,72	0,74	0,79	1,00

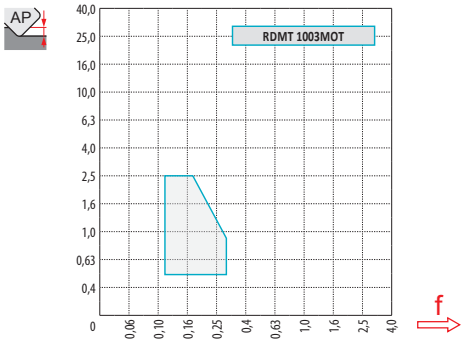
	RDHX 10	RDMX 10	RDGT 10	RDHT 10-FA
RE	5,0	5,0	5,0	5,0
BS	–	–	–	–











DCX	AP	0,00	0,50	0,75	1,00	1,25	1,50	2,00	2,50	3,00	3,50	4,00	5,00
20	DEF	10,0	14,4	15,3	16,0	16,6	17,1	18,0	18,7	19,2	19,5	19,8	20,0
25		15,0	19,4	20,3	21,0	21,6	22,1	23,0	23,7	24,2	24,5	24,8	25,0
30		20,0	24,4	25,3	26,0	26,6	27,1	28,0	28,7	29,2	29,5	29,8	30,0
35		25,0	29,4	30,3	31,0	31,6	32,1	33,0	33,7	34,2	34,5	34,8	35,0

AP	0,00	0,50	0,75	1,00	1,25	1,50	2,00	2,50	3,00	3,50	4,00	5,00
1 f	–	0,54	0,44	0,39	0,35	0,32	0,28	0,25	0,23	0,22	0,21	0,19

DCX	RPMX	APMX / l
20	20	2,5/15
25	12	2,5/25
30	8	2,5/37
35	7	2,5/42

DCX	d_{min}	d_{max}	s_{max} / d_{min}	s_{max} / d_{max}
20	22,0	40,0	2,5	2,5
25	32,0	50,0	2,5	2,5
30	42,0	60,0	2,5	2,5
35	52,0	70,0	2,5	2,5

AP
2,5

DCX	µm	3	5	10	15	20	30	40	50	60	80	100
20	f_e	0,490	0,632	0,894	1,095	1,265	1,549	1,789	2,000	2,191	2,530	2,828
25		0,548	0,707	1,000	1,225	1,414	1,732	2,000	2,236	2,449	2,828	3,162
30		0,600	0,775	1,095	1,342	1,549	1,897	2,191	2,449	2,683	3,098	3,464
35		0,648	0,837	1,183	1,449	1,673	2,049	2,366	2,646	2,898	3,347	3,742

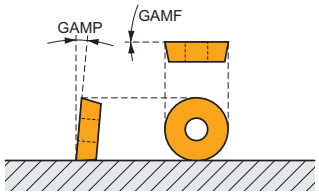
RE	µm	3	5	10	15	20	30	40	50	60	80	100
5,0	f_e	0,346	0,447	0,632	0,775	0,894	1,095	1,265	1,414	1,549	1,789	2,000

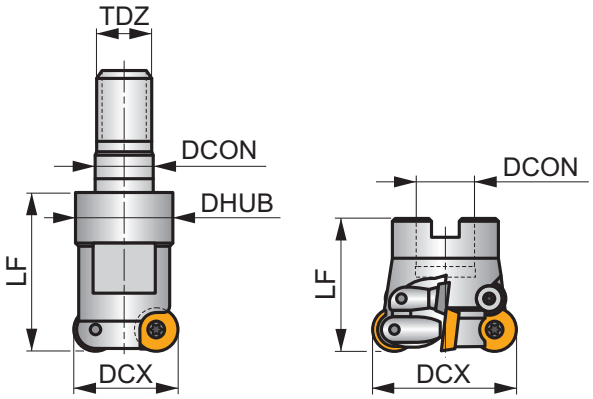
SRD12

P M K N S H

S(C)

APMX	3,0 mm





h_m	0,065 - 0,25
h_m	0,065 - 0,22

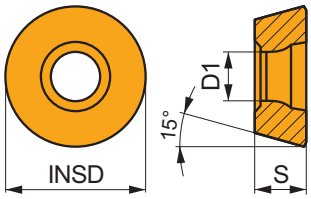
	ISO	DCX [mm]	DHUB [mm]	DCON [mm]	LF [mm]	TDZ	GAMF [°]	GAMP [°]			max.		kg		
MODULAR	24E2R032M12-SCRD12	24	21,0	12,5	32	M12	0	+3	2	–	–	✓	0,09	GI120	CO081
	35E3R042M16-SCRD12	35	29,0	17	42	M16	0	+3	3	–	–	✓	0,22	GI120	CO081
	35E4R042M16-SRD12	35	29,0	17	42	M16	0	+3	4	✓	–	✓	0,20	GI120	CO080
	42E4R042M16-SCRD12	42	29,0	17	42	M16	0	+3	4	✓	–	✓	0,26	GI120	CO081
	42E5R042M16-SRD12	42	29,0	17	42	M16	0	+3	5	✓	–	✓	0,25	GI120	CO080
ISO 6462 DIN 8030	50A05R-SCMORD12	50	–	22	50	–	0	+5	5	✓	15200	✓	0,34	GI120	CO089
	52A05R-SCMORD12	52	–	22	50	–	0	+5	5	✓	14900	✓	0,40	GI120	CO089
	66A06R-SCMORD12	66	–	27	50	–	0	+5	6	✓	13200	✓	0,54	GI120	CO089
	80B07R-SCMORD12	80	–	27	52	–	0	+5	7	✓	12000	✓	1,04	GI120	CO089

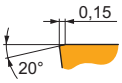
GI120	RD.. 12T3MOT	RDHT 12T3MO-FA

		Nm						
CO081	US 3507-T15	3,0	M 3,5	7	–	–	Flag T15	CS12
CO080	US 3507-T15	3,0	M 3,5	7	–	–	Flag T15	–
CO089	US 3507-T15	3,0	M 3,5	7	D-T07/T15	FG-15	–	CS12

RDHX 12

	INSD	D1	S
12T3	12,000	3,90	3,97

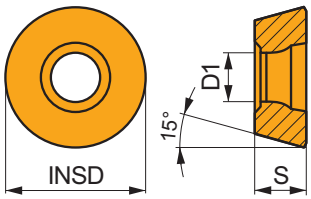


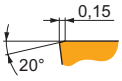


ISO		P	M	K	N	S	H			RE	FN	FX	APMN	APMX
RDHX 12T3MOT	M4303	◪		■			■	✖	-	–	0,10	0,35	1,0	3,0
	M8310	◪	◪	■			■	✖	-	–	0,10	0,35	1,0	3,0
	M8325	◪	◪	◪				✖	-	–	0,10	0,35	1,0	3,0
	M8345	◪	◪					✖	+ / -	–	0,10	0,35	1,0	3,0

RDMX 12

	INSD	D1	S
12T3	12,000	3,90	3,97

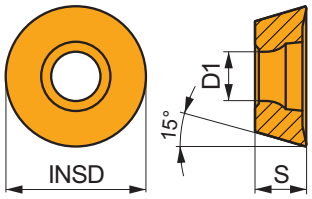


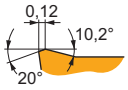


ISO		P	M	K	N	S	H			RE	FN	FX	APMN	APMX
RDMX 12T3MOT	M8310	◪	◪	■			■	✖	-	–	0,10	0,35	1,0	3,0
	M8325	◪	◪	◪				✖	-	–	0,10	0,35	1,0	3,0
	M8345	◪	◪					✖	+ / -	–	0,10	0,35	1,0	3,0

RDGT 12

	INSD	D1	S
12T3	12,000	3,90	3,97

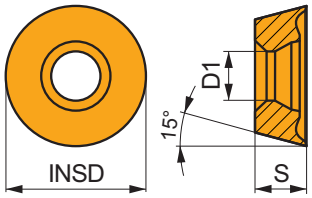


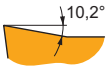


ISO		P	M	K	N	S	H		RE	FN	FX	APMN	APMX
RDGT 12T3MOT	M9340	◪	■			◪		☻	- - -	–	0,10	0,26	1,0	3,0
	M6330	◪	■			◪		✖	-	–	0,10	0,35	1,0	3,0
	M8310	■	◪	◪		◪		☻	-	–	0,10	0,35	1,0	3,0
	M8325	■	◪					☻	-	–	0,10	0,35	1,0	3,0
	M8345	■	■			◪		✖	+ / -	–	0,10	0,35	1,0	3,0

RDHT 12-FA

	INSD	D1	S
12T3	12,000	3,90	3,97

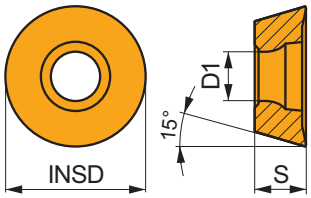




ISO		P	M	K	N	S	H		RE	FN	FX	APMN	APMX
RDHT 12T3MO-FA	HF7				■			●	+ / -	–	0,10	0,30	0,3	3,0

RDMT 12

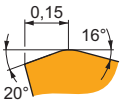
	INSD	D1	S
12T3	12,000	3,9	3,97



ISO		P	M	K	N	S	H		RE	FN	FX	APMN	APMX
RDMT 12T3MOT	M8325	■	◪	◪				⚙	-	–	0,15	0,35	1,0	3,0
	M8345	■	◪					✖	+ / -	–	0,15	0,35	1,0	3,0

HFC

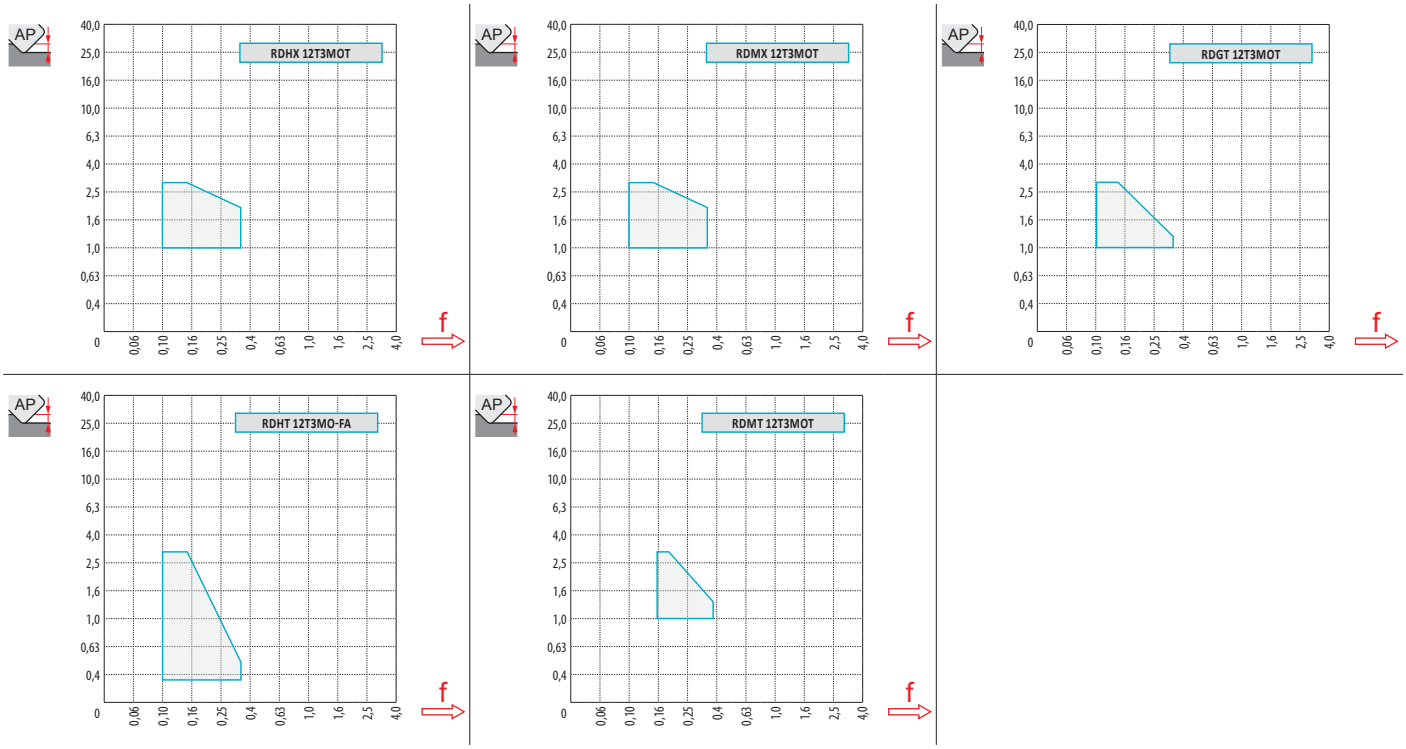
S



ISO		FN	FX	M4303	M9340	M6330	M8310	M8325	M8345	HF7
P	●	0,10	0,35	409	380	285	402	308	275	–
	⚙	0,10	0,30	364	341	255	363	275	242	–
	✖	0,10	0,20	324	303	225	325	242	215	–
M	●	0,10	0,35	245	226	175	204	149	165	88
	⚙	0,10	0,30	218	204	160	182	132	143	77
	✖	0,10	0,20	192	182	145	165	116	127	66
K	●	0,10	0,35	390	–	–	380	292	–	143
	⚙	0,10	0,30	350	–	–	347	259	–	127
	✖	0,10	0,20	304	–	–	308	231	–	110
N	●	0,10	0,35	1024	–	–	–	–	–	374
	⚙	0,10	0,30	918	–	–	–	–	–	336
	✖	0,10	0,20	812	–	–	–	–	–	292
S	●	0,10	0,30	-	110	100	99	–	83	44
	⚙	0,10	0,25	-	99	90	88	–	72	39
	✖	0,10	0,15	-	88	80	83	–	61	33
H	●	0,10	0,30	83	–	–	77	–	–	28
	⚙	0,10	0,20	76	–	–	72	–	–	22
	✖	0,10	0,15	63	–	–	61	–	–	22

a_e / DCX	0,05	0,10	0,15	0,20	0,25	0,30	0,40	0,50	0,60	0,70	0,75	0,80	0,90	1,00
X.V	1,48	1,35	1,27	1,22	1,19	1,16	1,11	1,08	1,05	1,03	1,00	1,00	1,00	1,00
X.f	2,87	2,05	1,69	1,48	1,33	1,23	1,09	0,75	0,94	0,90	0,89	0,88	0,88	1,00
X.f	0,64	0,64	0,64	0,64	0,64	0,65	0,65	0,67	0,68	0,71	0,72	0,74	0,79	1,00

	RDHX 12	RDMX 12	RDGT 12	RDHT 12-FA
RE	6,0	6,0	6,0	6,0
BS	–	–	–	–



DCX	AP	0,00	0,50	0,75	1,00	1,25	1,50	2,00	2,50	3,00	3,50	4,00	5,00	6,00
24		12,0	16,8	17,8	18,6	19,3	19,9	20,9	21,7	22,4	22,9	23,3	23,8	24,0
35		23,0	27,8	28,8	29,6	30,3	30,9	31,9	32,7	33,4	33,9	34,3	34,8	35,0
42		30,0	34,8	35,8	36,6	37,3	37,9	38,9	39,7	40,4	40,9	41,3	41,8	42,0
50	DEF	38,0	42,8	43,8	44,6	45,3	45,9	46,9	47,7	48,4	48,9	49,3	49,8	50,0
52		40,0	44,8	45,8	46,6	47,3	47,9	48,9	49,7	50,4	50,9	51,3	51,8	52,0
66		54,0	58,8	59,8	60,6	61,3	61,9	62,9	63,7	64,4	64,9	65,3	65,8	66,0
80		68,0	72,8	73,8	74,6	75,3	75,9	76,9	77,7	78,4	78,9	79,3	79,8	80,0

AP	0,00	0,50	0,75	1,00	1,25	1,50	2,00	2,50	3,00	3,50	4,00	5,00	6,00
1 f	–	0,49	0,40	0,35	0,32	0,29	0,25	0,23	0,21	0,20	0,18	0,17	0,16

DCX	RPMX	APMX / l
24	25,0	3,0/14
35	9,0	3,0/39
42	8,0	3,0/44
50	4,0	3,0/87
52	4,0	3,0/87
66	3,0	3,0/100
80	2,2	3,0/100

DCX	d_{min}	d_{max}	s_{max} / d_{min}	s_{max} / d_{max}
24	26,0	48,0	3,0	3,0
35	46,0	70,0	3,0	3,0
42	62,0	84,0	3,0	3,0
50	78,0	100,0	2,8	2,8
52	82,0	104,0	2,8	2,8
66	110,0	132,0	2,8	2,8
80	136,0	160,0	2,8	2,8

AP
2,8

DCX	µm	3	5	10	15	20	30	40	50	60	80	100
24	f_e	0,537	0,693	0,980	1,200	1,386	1,697	1,960	2,191	2,400	2,771	3,098
35		0,648	0,837	1,183	1,449	1,673	2,049	2,366	2,646	2,898	3,347	3,742
42		0,710	0,917	1,296	1,587	1,833	2,245	2,592	2,898	3,175	3,666	4,099
50		0,775	1,000	1,414	1,732	2,000	2,449	2,828	3,162	3,464	4,000	4,472
52		0,790	1,020	1,442	1,766	2,040	2,498	2,884	3,225	3,533	4,079	4,561
66		0,890	1,149	1,625	1,990	2,298	2,814	3,250	3,633	3,980	4,596	5,138
80		0,980	1,265	1,789	2,191	2,530	3,098	3,578	4,000	4,382	5,060	5,657

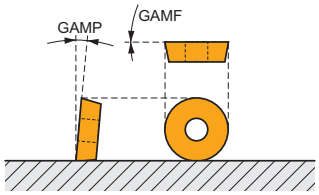
RE	µm	3	5	10	15	20	30	40	50	60	80	100
6,0	f_e	0,379	0,490	0,693	0,849	0,980	1,200	1,386	1,549	1,697	1,960	2,191

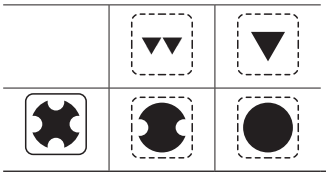
SRD16

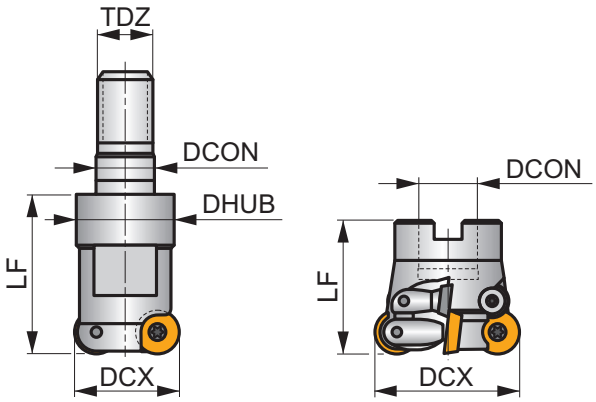
P M K N S H

S(C)

APKX	4,0 mm







h_m 0,11 - 0,25

h_m 0,1 - 0,2

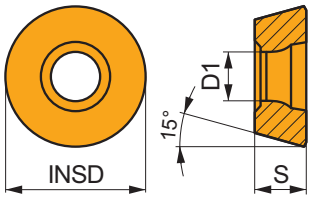
	ISO	DCX [mm]	DHUB [mm]	LF [mm]	DCON [mm]	TDZ	GAMF [°]	GAMP [°]			max.		kg		
MODULAR	**32E2R042M16-SCRD16**	32	29,0	42	17	M16	0	+3	2	–	–	✓	0,20	GI121	CO090
ISO 6462 DIN 8030	**52A04R-SCMORD16**	52	–	50	22	–	0	+5	4	✓	9900	✓	0,30	GI121	CO099
	66A05R-SCMORD16	66	–	50	27	–	0	+5	5	✓	8800	✓	0,55	GI121	CO099
	80A06R-SCMORD16	80	–	52	27	–	0	+5	6	✓	8000	✓	1,05	GI121	CO099
	100A07R-SCMORD16	100	–	52	32	–	0	+5	7	✓	7200	–	1,50	GI121	CO099

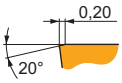
GI121	RD.. 1604MOT	RDHT 1604MO-FA

		Nm					
CO090	US 4511-T20	5,0	M 4,5	11	Flag T20	LA 12T3	–
CO099	US 4511-T20	5,0	M 4,5	11	–	–	SDR T20-T

RDHX 16

	INSD	D1	S
1604	16,000	5,20	4,76

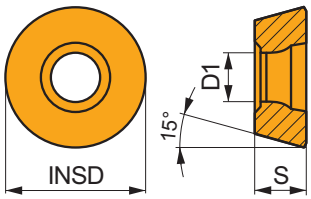


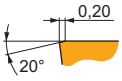


ISO		P	M	K	N	S	H			RE	FN	FX	APMN	APMX
RDHX 1604MOT	M9325	◪	◪					✖	- - -	–	0,20	0,40	1,0	4,0
	M8310	◪	◪	■			■	✖	-	–	0,20	0,40	1,0	4,0
	M8325	◪	◪	◪				✖	-	–	0,20	0,40	1,0	4,0
	M8345	◪	◪					✖	+ / -	–	0,20	0,40	1,0	4,0

RDMX 16

	INSD	D1	S
1604	16,000	5,20	4,76

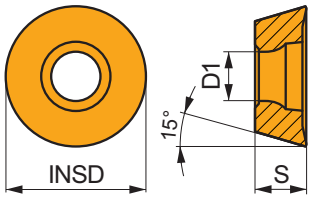


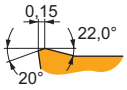


ISO		P	M	K	N	S	H			RE	FN	FX	APMN	APMX
RDMX 1604MOT	M8310	◪	◪	■			■	✖	-	–	0,20	0,40	1,0	4,0
	M8325	◪	◪	◪				✖	-	–	0,20	0,40	1,0	4,0
	M8345	◪	◪					✖	+ / -	–	0,20	0,40	1,0	4,0

RDGT 16

	INSD	D1	S
1604	16,000	5,20	4,76

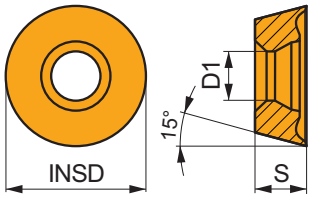


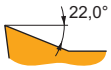


ISO		P	M	K	N	S	H		RE	FN	FX	APMN	APMX
RDGT 1604MOT	M9340	◪	■			◪		☻	- - -	–	0,10	0,30	1,0	4,0
	M6330	◪	■			◪		✖	-	–	0,10	0,40	1,0	4,0
	M8310	■	◪	◪		◪		☻	-	–	0,10	0,40	1,0	4,0
	M8325	■	◪					☻	-	–	0,10	0,40	1,0	4,0
	M8345	■	■			◪		✖	+ / -	–	0,10	0,40	1,0	4,0

RDHT 16-FA

	INSD	D1	S
1604	16,000	5,20	4,76

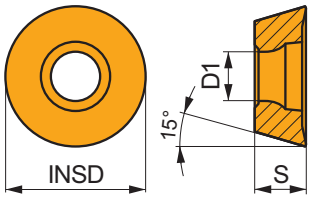




ISO		P	M	K	N	S	H		RE	FN	FX	APMN	APMX
RDHT 1604MO-FA	HF7				■			●	+ / -	–	0,10	0,40	0,3	4,0

RDMT 16

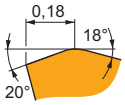
	INSD	D1	S
1604	16,000	5,2	4,76



ISO		P	M	K	N	S	H		RE	FN	FX	APMN	APMX
RDMT 1604MOT	M8325	■	◪	◪				●	-	–	0,18	0,40	1,0	4,0
	M8345	■	◪					✖	+ / -	–	0,18	0,40	1,0	4,0

HFC

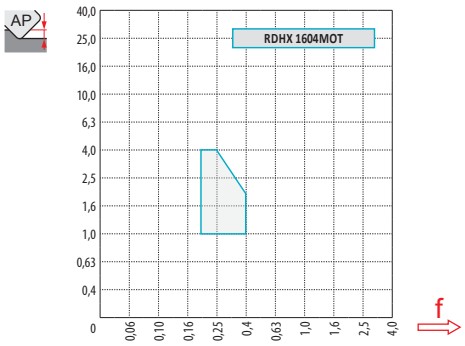
S

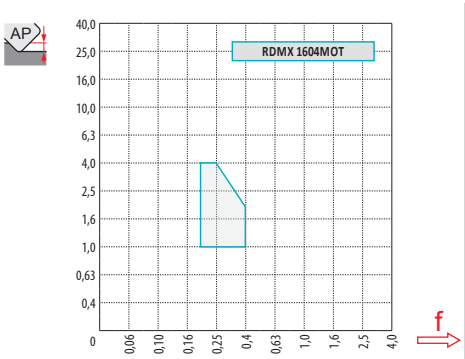


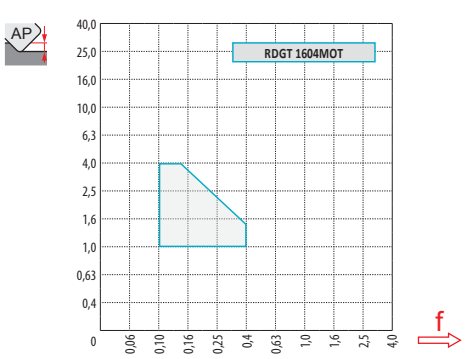
ISO		FN	FX	M9340	M6330	M8310	M8325	M8345	HF7
P	●	0,10	0,40	380	285	402	308	275	–
	●	0,10	0,30	341	255	363	275	242	–
	✖	0,10	0,18	303	225	325	242	215	–
M	●	0,10	0,30	226	175	204	149	165	88
	●	0,10	0,25	204	160	182	132	143	77
	✖	0,10	0,17	182	145	165	116	127	66
K	●	0,10	0,40	–	–	380	292	–	143
	●	0,10	0,30	–	–	347	259	–	127
	✖	0,10	0,18	–	–	308	231	–	110
N	●	0,10	0,40	–	–	–	–	–	374
	●	0,10	0,30	–	–	–	–	–	336
	✖	0,10	0,18	–	–	–	–	–	292
S	●	0,10	0,30	110	100	99	–	83	44
	●	0,10	0,25	99	90	88	–	72	39
	✖	0,10	0,17	88	80	83	–	61	33
H	●	0,10	0,25	–	–	77	–	–	28
	●	0,10	0,20	–	–	72	–	–	22
	✖	0,10	0,15	–	–	61	–	–	22

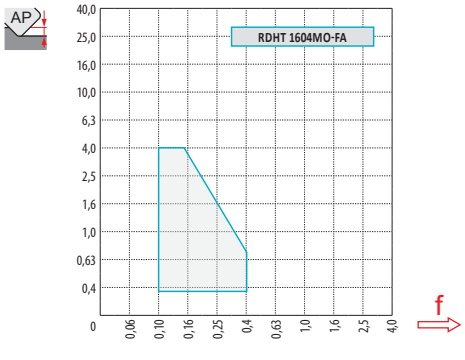
a_e / DCX	0,05	0,10	0,15	0,20	0,25	0,30	0,40	0,50	0,60	0,70	0,75	0,80	0,90	1,00
X.V	1,48	1,35	1,27	1,22	1,19	1,16	1,11	1,08	1,05	1,03	1,00	1,00	1,00	1,00
X.f	2,87	2,05	1,69	1,48	1,33	1,23	1,09	0,75	0,94	0,90	0,89	0,88	0,88	1,00
X.f	0,64	0,64	0,64	0,64	0,64	0,65	0,65	0,67	0,68	0,71	0,72	0,74	0,79	1,00

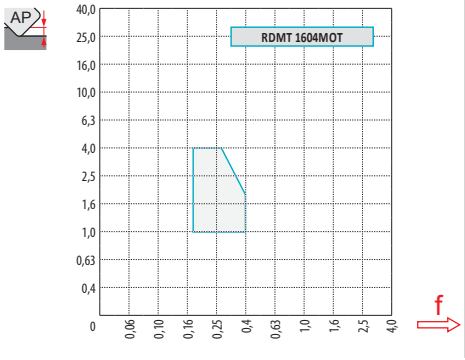
	RDHX 16	RDMX 16	RDGT 16	RDHT 16-FA
RE	8,0	8,0	8,0	8,0
BS	–	–	–	–











DCX	AP	0,00	0,50	0,75	1,00	1,25	1,50	2,00	2,50	3,00	3,50	4,00	5,00	6,00	7,00	8,00
32	DEF	16,0	21,6	22,8	23,7	24,6	25,3	26,6	27,6	28,5	29,2	29,9	30,8	31,5	31,9	32,0
52		36,0	41,6	42,8	43,7	44,6	45,3	46,6	47,6	48,5	49,2	49,9	50,8	51,5	51,9	52,0
66		50,0	55,6	56,8	57,7	58,6	59,3	60,6	61,6	62,5	63,2	63,9	64,8	65,5	65,9	66,0
80		64,0	69,6	70,8	71,7	72,6	73,3	74,6	75,6	76,5	77,2	77,9	78,8	79,5	79,9	80,0
100		84,0	89,6	90,8	91,7	92,6	93,3	94,6	95,6	96,5	97,2	97,9	98,8	99,5	99,9	100,0

AP	0,00	0,50	0,75	1,00	1,25	1,50	2,00	2,50	3,00	3,50	4,00	5,00	6,00	7,00	8,00
1 f	–	0,91	0,74	0,65	0,58	0,53	0,46	0,42	0,38	0,36	0,34	0,30	0,28	0,26	0,25

DCX	RPMX	APMX / l
32	25,0	4,0/19
52	8,0	4,0/58
66	6,0	4,0/78
80	4,0	4,0/100
100	3,0	4,0/100

DCX	d_{min}	d_{max}	s_{max} / d_{min}	s_{max} / d_{max}
32	34,0	64,0	4,0	4,0
52	74,0	104,0	4,0	4,0
66	102,0	132,0	4,0	4,0
80	130,0	160,0	4,0	4,0
100	170,0	200,0	4,0	4,0

AP
4,0

DCX	µm	3	5	10	15	20	30	40	50	60	80	100
32	f_e	0,620	0,800	1,131	1,386	1,600	1,960	2,263	2,530	2,771	3,200	3,578
52		0,790	1,020	1,442	1,766	2,040	2,498	2,884	3,225	3,533	4,079	4,561
66		0,890	1,149	1,625	1,990	2,298	2,814	3,250	3,633	3,980	4,596	5,138
80		0,980	1,265	1,789	2,191	2,530	3,098	3,578	4,000	4,382	5,060	5,657
100		1,095	1,414	2,000	2,449	2,828	3,464	4,000	4,472	4,899	5,657	6,325

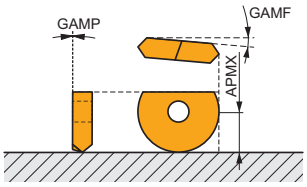
RE	µm	3	5	10	15	20	30	40	50	60	80	100
8,0	f_e	0,438	0,566	0,800	0,980	1,131	1,386	1,600	1,789	1,960	2,263	2,530

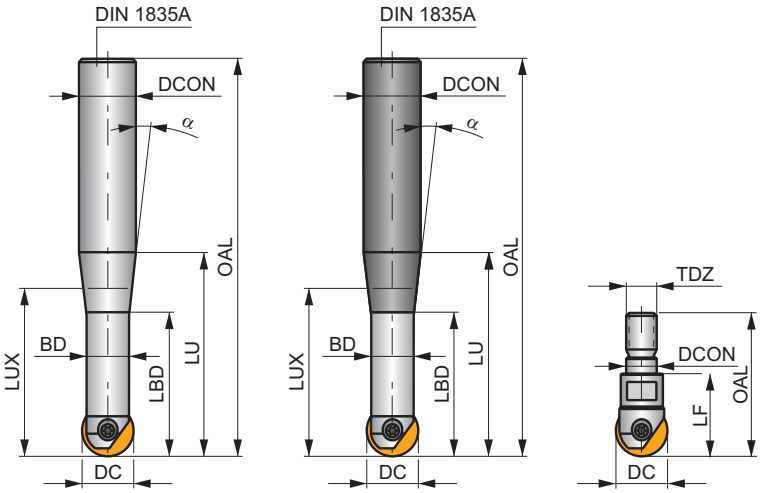
K2-PPH

P M K N S H

S

APMX	0,3 - 4,0 mm





h_m 0,07 - 0,14

	ISO	DCX [mm]	OAL [mm]	DCON [mm]	BD [mm]	LBD [mm]	LU [mm]	LUX [mm]	LF [mm]	TDZ	α [°]	Carbide			max.		kg		
	PPH-08/02-QC12-092	8	92	12	6,5	19	35	23,1	–	–	9°30´	–	–	–	40000	–	0,14	GI284	CO540
	PPH-08/02-QC12-110	8	110	12	6,5	33,5	53	41,5	–	–	5°00´	–	–	–	33600	–	0,15	GI284	CO540
	PPH-08/02-QC12-132	8	132	12	6,5	19	75	41,8	–	–	1°45´	–	–	–	16800	–	0,16	GI284	CO540
	PPH-10/02-QC12-092	10	92	12	8	22,4	38	30	–	–	7°00´	–	–	–	40000	–	0,12	GI285	CO541
	PPH-10/02-QC12-110	10	110	12	8	38,7	53	51,9	–	–	3°45´	–	–	–	40000	–	0,15	GI285	CO541
	PPH-10/02-QC12-132	10	132	12	8	21,8	75	73,6	–	–	1°00´	–	–	–	20300	–	0,17	GI285	CO541
	PPH-12/02-QC16-145	12	145	16	10	22,5	85	63,3	–	–	1°20´	–	–	–	19800	–	0,25	GI286	CO542
	PPH-16/02-QC20-166	16	166	20	14	29,5	100	75,5	–	–	1°10´	–	–	–	20000	–	0,38	GI287	CO543
	PPH-20/02-QC25-191	20	191	25	17	35	115	82,2	–	–	1°45´	–	–	–	18400	–	0,64	GI288	CO544
	PPH-25/02-QC32-215	25	215	32	21	42,5	135	97	–	–	2°00´	–	–	–	16500	–	1,07	GI289	CO545
	PPH-12/02-QC12-083	12	83	12	10	–	26	–	–	–	–	–	–	–	40000	–	0,15	GI286	CO542
	PPH-12/02-QC12-110	12	110	12	10	–	53	–	–	–	–	–	–	–	40000	–	0,17	GI286	CO542
	PPH-12/02-QC12-145	12	145	12	10	–	45	–	–	–	–	–	–	–	40000	–	0,20	GI286	CO542
	PPH-16/02-QC16-092	16	92	16	14	–	92	–	–	–	–	–	–	–	36000	–	0,21	GI287	CO543
	PPH-16/02-QC16-123	16	123	16	14	–	63	–	–	–	–	–	–	–	36000	–	0,24	GI287	CO543
	PPH-16/02-QC16-166	16	166	16	14	–	55	–	–	–	–	–	–	–	36000	–	0,31	GI287	CO543
DIN 1835A	PPH-20/02-QC20-104	20	104	20	17	–	38	–	–	–	–	–	–	–	40000	–	0,35	GI288	CO544
	PPH-20/02-QC20-141	20	141	20	17	–	75	–	–	–	–	–	–	–	40000	–	0,41	GI288	CO544
	PPH-20/02-QC20-191	20	191	20	17	–	65	–	–	–	–	–	–	–	40000	–	0,54	GI288	CO544
	PPH-25/02-QC25-121	25	121	25	21	–	45	–	–	–	–	–	–	–	40000	–	0,53	GI289	CO545
	PPH-25/02-QC25-166	25	166	25	21	–	90	–	–	–	–	–	–	–	37100	–	0,57	GI289	CO545
	PPH-32/02-QC32-186	32	186	32	26	–	107	–	–	–	–	–	–	–	32500	–	1,09	GI290	CO546
	PPH-32/02-QC32-240	32	240	32	26	–	160	–	–	–	–	–	–	–	14500	–	1,37	GI290	CO546
	PPH-08/02-QC12-110HSCW	8	110	12	6,5	19	53	30,1	–	–	4°00´	✓	–	–	40000	–	0,21	GI284	CO540
	PPH-08/02-QC12-132HSCW	8	132	12	6,5	19	75	37,1	–	–	2°30´	✓	–	–	23400	–	0,24	GI284	CO540
	PPH-10/02-QC12-092HSCW	10	92	12	8	21,9	38,1	90,9	–	–	6°30´	✓	–	–	40000	–	0,20	GI285	CO541
	PPH-10/02-QC12-110HSCW	10	110	12	8	21,8	53,1	41,4	–	–	3°00´	✓	–	–	40000	–	0,22	GI285	CO541
	PPH-10/02-QC12-132HSCW	10	132	12	8	21,8	75,1	51,1	–	–	2°00´	✓	–	–	23400	–	0,27	GI285	CO541
	PPH-12/02-QC16-145HSCW	12	145	16	10	21,5	85	65,6	–	–	1°20´	✓	–	–	21000	–	0,28	GI286	CO542
	PPH-16/02-QC20-166HSCW	16	166	20	14	28,5	100	87,2	–	–	1°00´	✓	–	–	25500	–	0,66	GI287	CO543
	PPH-20/02-QC25-191HSCW	20	191	25	17	35	115	75,6	–	–	2°00´	✓	–	–	18500	–	1,09	GI288	CO544
	PPH-08/02-QC08-130HSCW	8	130	8	6,5	–	20	–	–	–	–	✓	–	–	40000	–	0,17	GI284	CO540
	PPH-10/02-QC10-140HSCW	10	140	10	8	–	25	–	–	–	–	✓	–	–	40000	–	0,25	GI285	CO541
	PPH-12/02-QC12-083HSCW	12	83	12	10	–	26	–	–	–	–	✓	–	–	40000	–	0,23	GI286	CO542

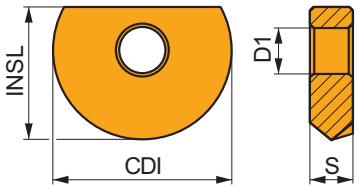
	ISO	DCX [mm]	OAL [mm]	DCON [mm]	BD [mm]	LBD [mm]	LU [mm]	LUX [mm]	LF [mm]	TDZ	a [°]	Carbide			max.		kg		
DIN 1835A	**PPH-12/02-QC12-110HSCW**	12	110	12	10	–	53	–	–	–	–	✓	–	–	40000	–	0,26	GI286	CO542
	PPH-16/02-QC16-092HSCW	16	92	16	14	–	32	–	–	–	–	✓	–	–	43000	–	0,32	GI287	CO543
	PPH-16/02-QC16-123HSCW	16	123	16	14	–	63	–	–	–	–	✓	–	–	43000	–	0,36	GI287	CO543
	PPH-20/02-QC20-104HSCW	20	104	20	17	–	38	–	–	–	–	✓	–	–	40000	–	0,50	GI288	CO544
	PPH-20/02-QC20-141HSCW	20	141	20	17	–	75	–	–	–	–	✓	–	–	40000	–	0,62	GI288	CO544
MODULAR	**PPH-16/02-025-P08**	16	42,5	8,5	–	–	–	–	25	M8	–	–	–	–	–	–	0,14	GI287	CO543
	PPH-20/02-030-P10	20	49,5	10,5	–	–	–	–	30	M10	–	–	–	–	–	–	0,18	GI288	CO544

GI284	PPH 08..	–	PPHT 08..	PPHF 08..
GI285	PPH 10..	PPHE 10..	PPHT 10..	PPHF 10..
GI286	PPH 12..	PPHE 12..	PPHT 12..	PPHF 12..
GI287	PPH 16..	PPHE 16..	PPHT 16..	PPHF 16..
GI288	PPH 20..	PPHE 20..	PPHT 20..	PPHF 20..
GI289	PPH 25..	–	PPHT 25..	PPHF 25..
GI290	PPH 32..	–	–	–

		Nm						
CO540	CS 42506-T07P	1,0	M 2,5	6	D-T07P/T09P	FG-15	–	–
CO541	CS 43008-T08P	1,2	M 3	8	D-T08P/T15P	FG-15	–	–
CO542	CS 43509-T10P	2,0	M 3,5	9	–	–	SDR T10P	–
CO543	CS 44013-T15P	3,0	M 4	13	D-T08P/T15P	FG-15	–	–
CO544	CS 45016-T20P	5,0	M 5	16	–	–	SDR T20P	–
CO545	CS 46020-T25P	7,5	M 6	20	–	–	–	SDR T25P-T
CO546	CS 48025-T40P	15,0	M 8	25	–	–	–	SDR T40P-T

PPH

	CDI	D1	INSL	S
0800	8,000	2,50	7,0	2,40
1000	10,000	3,00	8,5	2,60
1200	12,000	3,50	10,0	3,00
1600	16,000	4,00	12,0	4,00
2000	20,000	5,00	15,0	5,00
2500	25,000	6,00	18,5	6,00
3000	30,000	8,00	22,5	7,00
3200	32,000	8,00	23,5	7,00

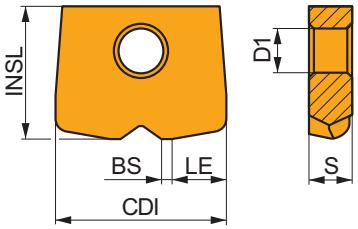


ISO		P	M	K	N	S	H		RE	FN	FX	APMN	APMX
PPH 0800-CL1	**2003**	■	◪	■		◪	■		-	–	0,05	0,20	0,1	0,8
PPH 1000-CL1	**2003**	■	◪	■		◪	■		-	–	0,05	0,20	0,1	1,0
PPH 1200-CL1	**2003**	■	◪	■		◪	■		-	–	0,05	0,20	0,1	1,2
PPH 1600-CL1	**2003**	■	◪	■		◪	■		-	–	0,05	0,20	0,1	1,6
PPH 2000-CL1	**2003**	■	◪	■		◪	■		-	–	0,05	0,20	0,1	2,0
PPH 2500-CL1	**2003**	■	◪	■		◪	■		-	–	0,05	0,20	0,1	2,5
PPH 3000-CL1	**2003**	■	◪	■		◪	■		-	–	0,05	0,20	0,1	3,0
PPH 3200-CL1	**2003**	■	◪	■		◪	■		-	–	0,05	0,20	0,1	3,2

ISO		P	M	K	N	S	H			RE	FN	FX	APMN	APMX
PPH 0800-CL4	8215	■	◪	■	◪	◪	■	●	-	–	0,05	0,20	0,1	0,8
PPH 1000-CL4	8215	■	◪	■	◪	◪	■	●	-	–	0,05	0,20	0,1	1,0
PPH 1200-CL4	8215	■	◪	■	◪	◪	■	●	-	–	0,05	0,20	0,1	1,2
PPH 1600-CL4	8215	■	◪	■	◪	◪	■	●	-	–	0,05	0,20	0,1	1,6
PPH 2000-CL4	8215	■	◪	■	◪	◪	■	●	-	–	0,05	0,20	0,1	2,0
PPH 2500-CL4	8215	■	◪	■	◪	◪	■	●	-	–	0,05	0,20	0,1	2,5
PPH 3000-CL4	8215	■	◪	■	◪	◪	■	●	-	–	0,05	0,20	0,1	3,0
PPH 3200-CL4	8215	■	◪	■	◪	◪	■	●	-	–	0,05	0,20	0,1	3,2
PPHE 1000-SM1	8215	■	◪	■	◪	◪	■	●	-	–	0,05	0,20	0,1	1,0
PPHE 1200-SM1	8215	■	◪	■	◪	◪	■	●	-	–	0,05	0,20	0,1	1,2
PPHE 1600-SM1	8215	■	◪	■	◪	◪	■	●	-	–	0,05	0,20	0,1	1,6
PPHE 2000-SM1	8215	■	◪	■	◪	◪	■	●	-	–	0,05	0,20	0,1	2,0

PPHF

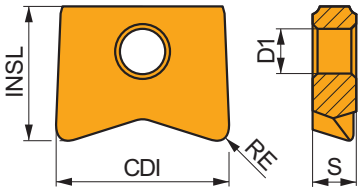
	BS	LE	CDI	D1	INSL	S
0800	0,40	2,60	8,000	2,50	7,0	2,40
1000	0,50	3,20	10,000	3,00	8,5	2,60
1200	0,60	3,90	12,000	3,50	10,0	3,00
1600	0,80	5,20	16,000	4,00	12,0	4,00
2000	1,00	6,40	20,000	5,00	15,0	5,00
2500	1,20	7,90	25,000	6,00	18,5	6,00

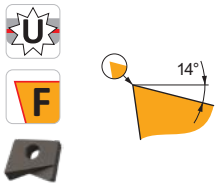


ISO		P	M	K	N	S	H			RE	FN	FX	APMN	APMX
PPHF 080004-CE1	M8330	■	◪	■	◪	◪	◪	●	-	–	0,20	0,40	0,1	0,4
PPHF 100005-CE1	M8330	■	◪	■	◪	◪	◪	●	-	–	0,20	0,50	0,1	0,5
PPHF 120006-CE1	M8330	■	◪	■	◪	◪	◪	●	-	–	0,30	0,60	0,1	0,6
PPHF 160008-CE1	M8330	■	◪	■	◪	◪	◪	●	-	–	0,40	0,80	0,1	0,8
PPHF 200010-CE1	M8330	■	◪	■	◪	◪	◪	●	-	–	0,50	1,00	0,1	1,0
PPHF 250012-CE1	M8330	■	◪	■	◪	◪	◪	●	-	–	0,60	1,50	0,2	1,2

PPHT

	CDI	D1	INSL	S
0800	8,000	2,50	7,0	2,40
1000	10,000	3,00	8,5	2,60
1200	12,000	3,50	10,0	3,00
1600	16,000	4,00	12,0	4,00
2000	20,000	5,00	15,0	5,00
2500	25,000	6,00	18,5	6,00





ISO		P	M	K	N	S	H			RE	FN	FX	APMN	APMX
PPHT 080003-A2	2003	■	◪	■		◪	■	●	-	0,3	0,05	0,20	0,1	0,3
PPHT 080005-A2	2003	■	◪	■		◪	■	●	-	0,5	0,05	0,20	0,1	0,5
PPHT 080008-A2	2003	■	◪	■		◪	■	⬢	-	0,8	0,05	0,20	0,1	0,8
PPHT 080010-A2	2003	■	◪	■		◪	■	⬢	-	1,0	0,05	0,20	0,1	1,0
PPHT 100005-A2	2003	■	◪	■		◪	■	●	-	0,5	0,05	0,20	0,1	0,5
PPHT 100008-A2	2003	■	◪	■		◪	■	⬢	-	0,8	0,05	0,20	0,1	0,8
PPHT 100010-A2	2003	■	◪	■		◪	■	⬢	-	1,0	0,05	0,20	0,1	1,0
PPHT 120005-A2	2003	■	◪	■		◪	■	●	-	0,5	0,05	0,20	0,1	0,5
PPHT 120010-A2	2003	■	◪	■		◪	■	⬢	-	1,0	0,05	0,20	0,1	1,0
PPHT 120020-A2	2003	■	◪	■		◪	■	⬢	-	2,0	0,05	0,20	0,1	2,0
PPHT 160010-A2	2003	■	◪	■		◪	■	⬢	-	1,0	0,05	0,20	0,1	1,0
PPHT 160013-A2	2003	■	◪	■		◪	■	⬢	-	1,3	0,05	0,20	0,1	1,2
PPHT 160020-A2	2003	■	◪	■		◪	■	⬢	-	2,0	0,05	0,20	0,1	2,0
PPHT 160030-A2	2003	■	◪	■		◪	■	⬢	-	3,0	0,05	0,20	0,1	3,0
PPHT 200010-A2	2003	■	◪	■		◪	■	⬢	-	1,0	0,05	0,20	0,1	1,0
PPHT 200016-A2	2003	■	◪	■		◪	■	⬢	-	1,6	0,05	0,20	0,1	1,6
PPHT 200030-A2	2003	■	◪	■		◪	■	⬢	-	3,0	0,05	0,20	0,1	3,0
PPHT 200040-A2	2003	■	◪	■		◪	■	⬢	-	4,0	0,05	0,20	0,1	4,0
PPHT 250020-A2	2003	■	◪	■		◪	■	⬢	-	2,0	0,05	0,20	0,1	2,0

ISO		FN	FX	2003	8215
P	●	0,05	0,17	329	311
		0,05	0,20		
		0,05	0,25		
	⬢	0,05	0,15	297	275
		0,05	0,18		
		0,05	0,23		
	✖	0,05	0,12	266	243
		0,05	0,15		
		0,05	0,20		
M	●	0,05	0,17	167	185
		0,05	0,20		
		0,05	0,25		
	⬢	0,05	0,15	149	167
		0,05	0,18		
		0,05	0,23		
	✖	0,05	0,12	135	144
		0,05	0,15		
		0,05	0,20		
K	●	0,05	0,17	311	293
		0,05	0,20		
		0,05	0,25		
	⬢	0,05	0,15	284	261
		0,05	0,18		
		0,05	0,23		
	✖	0,05	0,12	252	230
		0,05	0,15		
		0,05	0,20		
N	●	0,05	0,17	-	774
		0,05	0,20		
		0,05	0,25		
	⬢	0,05	0,15	-	693
		0,05	0,18		
		0,05	0,23		
	✖	0,05	0,12	-	612
		0,05	0,15		
		0,05	0,20		
S	●	0,05	0,17	81	90
		0,05	0,20		
		0,05	0,25		
	⬢	0,05	0,15	72	81
		0,05	0,18		
		0,05	0,23		
	✖	0,05	0,12	68	72
		0,05	0,15		
		0,05	0,20		
H	●	0,05	0,17	63	59
		0,05	0,20		
		0,05	0,25		
	⬢	0,05	0,15	59	54
		0,05	0,18		
		0,05	0,23		
	✖	0,05	0,12	50	45
		0,05	0,15		
		0,05	0,20		

HFC		FN	FX	M8330
P	●	0,20	0,50	248
		0,30	0,60	
		0,50	1,50	
	⬢	0,20	0,45	221
		0,30	0,55	
		0,50	1,35	
	✖	0,20	0,40	191
		0,30	0,50	
		0,50	1,20	
M	●	0,20	0,50	146
		0,30	0,60	
		0,50	1,50	
	⬢	0,20	0,45	131
		0,30	0,55	
		0,50	1,35	
	✖	0,20	0,40	116
		0,30	0,50	
		0,50	1,20	
K	●	0,20	0,50	236
		0,30	0,60	
		0,50	1,50	
	⬢	0,20	0,45	210
		0,30	0,55	
		0,50	1,35	
	✖	0,20	0,40	184
		0,30	0,50	
		0,50	1,20	
N	●	0,20	0,50	623
		0,30	0,60	
		0,50	1,50	
	⬢	0,20	0,45	555
		0,30	0,55	
		0,50	1,35	
	✖	0,20	0,40	484
		0,30	0,50	
		0,50	1,20	
S	●	0,20	0,50	71
		0,30	0,60	
		0,50	1,50	
	⬢	0,20	0,45	64
		0,30	0,55	
		0,50	1,35	
	✖	0,20	0,40	56
		0,30	0,50	
		0,50	1,20	
H	●	0,20	0,50	49
		0,30	0,60	
		0,50	1,50	
	⬢	0,20	0,45	41
		0,30	0,55	
		0,50	1,35	
	✖	0,20	0,40	38
		0,30	0,50	
		0,50	1,20	

a_e / DCX	0,05	0,10	0,15	0,20	0,25	0,30	0,40	0,50	0,60	0,70	0,75	0,80	0,90	1,00
X.V	1,48	1,35	1,27	1,22	1,19	1,16	1,11	1,08	1,05	1,03	1,00	1,00	1,00	1,00
⇨X.f	2,87	2,05	1,69	1,48	1,33	1,23	1,09	0,75	0,94	0,90	0,89	0,88	0,88	1,00
⇨X.f	0,64	0,64	0,64	0,64	0,64	0,65	0,65	0,67	0,68	0,71	0,72	0,74	0,79	1,00

	PPH 08-CL1	PPH 10-CL1	PPH 12-CL1	PPH 16-CL1	PPH 20-CL1	PPH 25-CL1	PPH 30-CL1	PPH 32-CL1
RE	4,0	5,0	6,0	8,0	10,0	12,5	15,0	16,0
BS	–	–	–	–	–	–	–	–

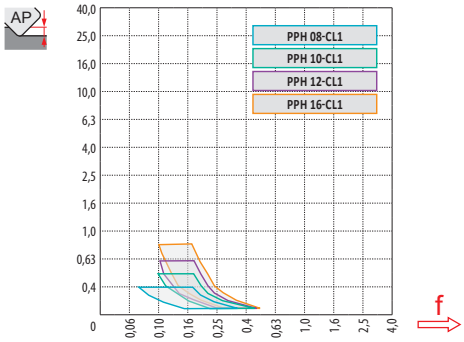
	PPH 08-CL4	PPH 10-CL4	PPH 12-CL4	PPH 16-CL4	PPH 20-CL4	PPH 25-CL4	PPH 30-CL4	PPH 32-CL4
RE	4,0	5,0	6,0	8,0	10,0	12,5	15,0	16,0
BS	–	–	–	–	–	–	–	–

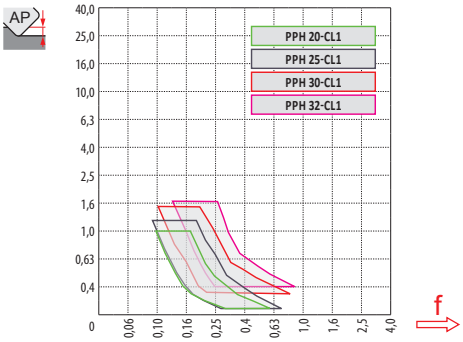
	PPHE 10-SM1	PPHE 12-SM1	PPHE 16-SM1	PPHE 20-SM1
RE	5,0	6,0	8,0	10,0
BS	–	–	–	–

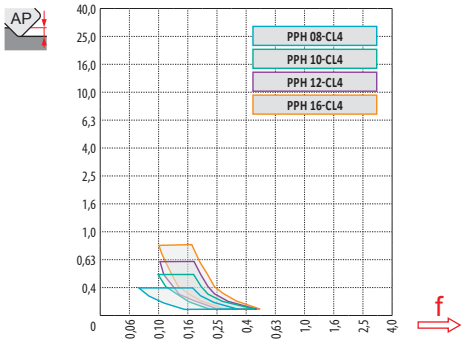
	PPHF 08-CE1	PPHF 10-CE1	PPHF 12-CE1	PPHF 16-CE1	PPHF 20-CE1	PPHF 25-CE1
RE	0,6	0,8	1,0	1,3	1,6	1,9
BS	0,40	0,50	0,60	0,80	1,00	1,20

	PPHT 08-A2	PPHT 08-A2	PPHT 08-A2	PPHT 08-A2	PPHT 10-A2	PPHT 10-A2	PPHT 10-A2	PPHT 12-A2	PPHT 12-A2	PPHT 12-A2	PPHT 16-A2
RE	0,3	0,5	0,8	1,0	0,5	0,8	1,0	0,5	1,0	2,0	1,0
BS	–	–	–	–	–	–	–	–	–	–	–

	PPHT 16-A2	PPHT 16-A2	PPHT 16-A2	PPHT 20-A2	PPHT 20-A2	PPHT 20-A2	PPHT 20-A2	PPHT 25-A2
RE	1,3	2,0	3,0	1,0	1,6	3,0	4,0	2,0
BS	–	–	–	–	–	–	–	–


AP
PPH 08-CL1
PPH 10-CL1
PPH 12-CL1
PPH 16-CL1
f


AP
PPH 20-CL1
PPH 25-CL1
PPH 30-CL1
PPH 32-CL1
f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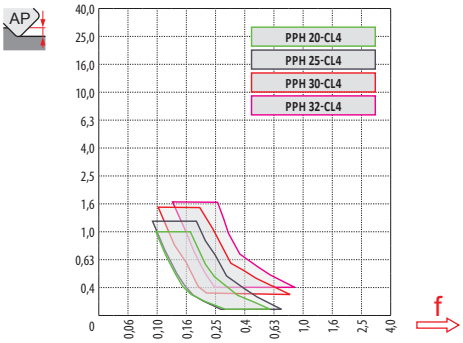
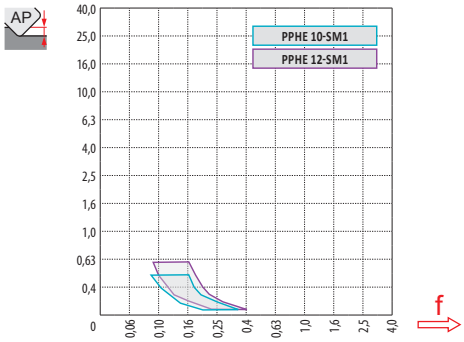
PPH 10-CL4
PPH 12-CL4
PPH 16-CL4
f


AP
PPH 20-CL4
PPH 25-CL4
PPH 30-CL4
PPH 32-CL4
f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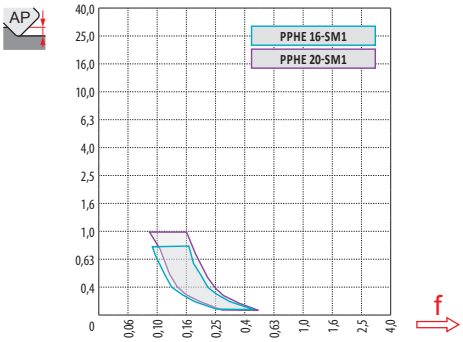
PPHE 12-SM1
f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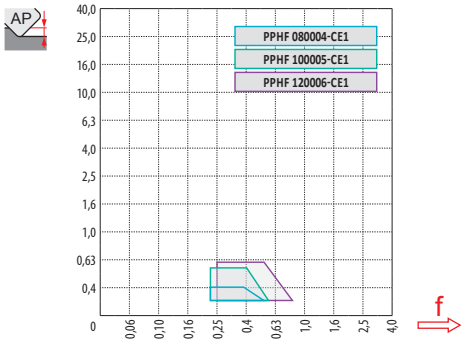
PPHE 16-SM1
PPHE 20-SM1
f


AP
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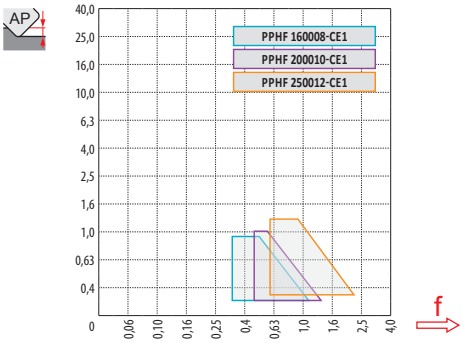
PPHF 100005-CE1
PPHF 120006-CE1
f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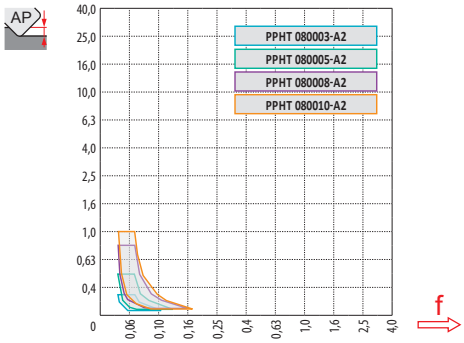
PPHF 250012-CE1
f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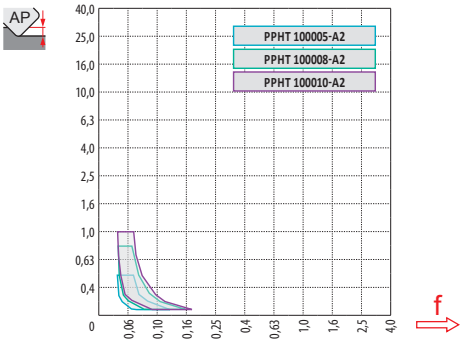
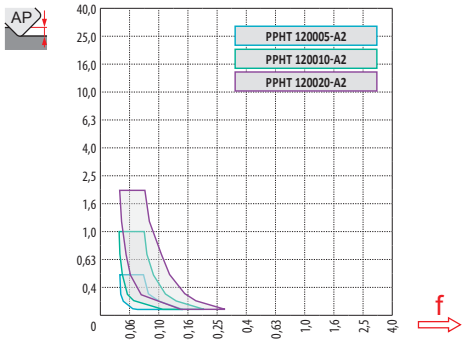
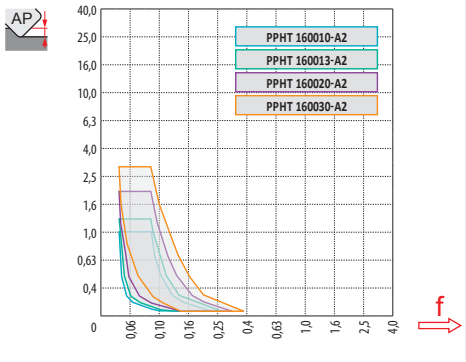
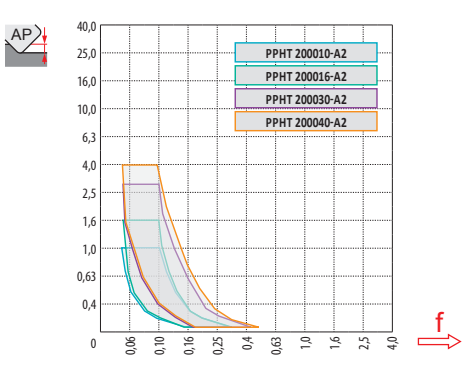
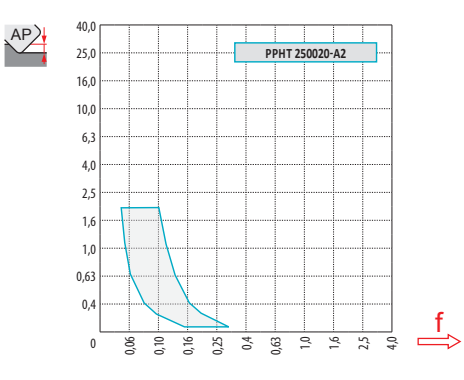
PPHT 080005-A2
PPHT 080008-A2
PPHT 080010-A2
f


AP
PPHT 100005-A2
PPHT 100008-A2
PPHT 100010-A2
f


AP
PPHT 120005-A2
PPHT 120010-A2
PPHT 120020-A2
f







	DCX	AP	0,30	0,40	0,50	0,70	1,00	1,25	1,50	2,00	2,50	3,00	4,00	5,00	6,00	8,00	10,00	12,00	15,00	16,00
PPH 08	8		3,0	3,5	3,9	4,5	5,3	5,8	6,2	6,9	7,4	7,7	8,0	–	–	–	–	–	–	–
PPH 10	10		3,4	3,9	4,4	5,1	6,0	6,6	7,1	8,0	8,7	9,2	9,8	10,0	–	–	–	–	–	–
PPH 12	12		3,7	4,3	4,8	5,6	6,6	7,3	7,9	8,9	9,7	10,4	11,3	11,8	12,0	–	–	–	–	–
PPH 16	16	DEF	4,3	5,0	5,6	6,5	7,7	8,6	9,3	10,6	11,6	12,5	13,9	14,8	15,5	16,0	–	–	–	–
PPH 20	20		4,9	5,6	6,2	7,4	8,7	9,7	10,5	12,0	13,2	14,3	16,0	17,3	18,3	19,6	20,0	–	–	–
PPH 25	25		5,4	6,3	7,0	8,2	9,8	10,9	11,9	13,6	15,0	16,2	18,3	20,0	21,4	23,3	24,5	25,0	–	–
PPH 30	30		5,97	6,88	7,68	9,06	10,77	11,99	13,08	14,97	16,58	18,00	20,40	22,36	24,00	26,53	28,28	29,39	30,00	–
PPH 32	32		6,17	7,11	7,94	9,36	11,14	12,40	13,53	15,49	17,18	18,65	21,17	23,24	24,98	27,71	29,66	30,98	31,94	32,00

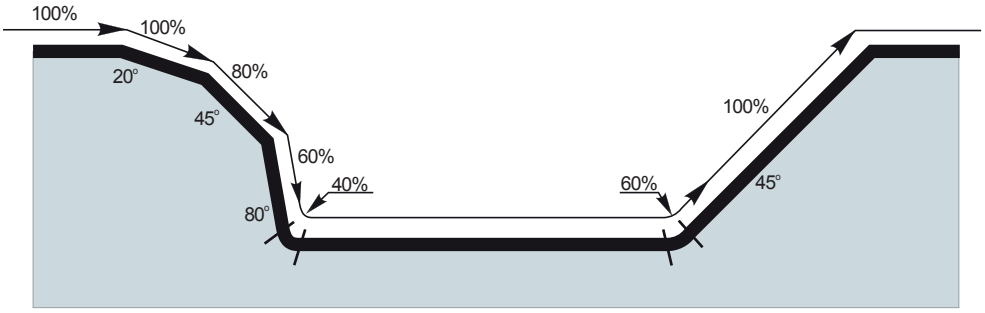
	DCX	µm	3	5	10	15	20	30	40	50	60	80	100
PPH 08	8		0,310	0,400	0,566	0,693	0,800	0,980	1,131	1,265	1,386	1,600	1,789
PPH 10	10		0,346	0,447	0,632	0,775	0,894	1,095	1,265	1,414	1,549	1,789	2,000
PPH 12	12	f_e	0,379	0,490	0,693	0,849	0,980	1,200	1,386	1,549	1,697	1,960	2,191
PPH 16	16		0,438	0,566	0,800	0,980	1,131	1,386	1,600	1,789	1,960	2,263	2,530
PPH 20	20	f_e	0,490	0,632	0,894	1,095	1,265	1,549	1,789	2,000	2,191	2,530	2,828
PPH 25	25		0,548	0,707	1,000	1,225	1,414	1,732	2,000	2,236	2,449	2,828	3,162
PPH 30	30		0,600	0,775	1,095	1,342	1,549	1,897	2,191	2,449	2,683	3,098	3,464
PPH 32	32		0,620	0,800	1,131	1,386	1,600	1,960	2,263	2,530	2,771	3,200	3,578

DEF	a_e	1,0%	2,5%	5,0%	7,5%	10,0%	15,0%	20,0%	25,0%	30,0%	35,0%	40,0%	45,0%	50,0%	60,0%	70,0%	75,0%	80,0%	90,0%	100,0%
	a_p										⇨x.f									
19,9 %	1,0 %	2,86	1,84	1,33	1,12	1,00	0,89	–	–	–	–	–	–	–	–	–	–	–	–	–
31,2 %	2,5 %	3,58	2,28	1,64	1,36	1,20	1,01	0,92	0,88	0,91	–	–	–	–	–	–	–	–	–	–
43,6 %	5,0 %	4,22	2,68	1,92	1,58	1,39	1,16	1,03	0,95	0,90	0,88	0,89	–	–	–	–	–	–	–	–
52,7%	7,5 %	4,63	2,95	2,10	1,73	1,51	1,26	1,11	1,02	0,96	0,91	0,89	0,88	0,90	–	–	–	–	–	–
60,0 %	10,0%	4,94	3,14	2,24	1,84	1,61	1,33	1,18	1,07	1,00	0,95	0,91	0,89	0,88	1,00	–	–	–	–	–
71,4 %	15,0 %	5,39	3,42	2,43	2,00	1,74	1,44	1,27	1,15	1,07	1,01	0,96	0,93	0,90	0,88	0,93	–	–	–	–
80,0 %	20,0 %	5,70	3,62	2,57	2,11	1,84	1,52	1,33	1,21	1,12	1,05	1,00	0,96	0,93	0,89	0,88	0,89	1,00	–	–
86,6 %	25,0 %	5,93	3,76	2,67	2,20	1,91	1,58	1,38	1,25	1,16	1,08	1,03	0,99	0,95	0,90	0,88	0,88	0,89	–	–
91,7%	30,0 %	6,10	3,87	2,75	2,26	1,96	1,62	1,42	1,28	1,18	1,11	1,05	1,01	0,97	0,92	0,89	0,88	0,88	0,93	–
95,4%	35,0 %	6,23	3,95	2,80	2,30	2,00	1,65	1,44	1,31	1,20	1,13	1,07	1,02	0,98	0,93	0,89	0,88	0,88	0,90	–
98,0%	40,0 %	6,31	4,00	2,84	2,33	2,03	1,67	1,46	1,32	1,22	1,14	1,08	1,03	0,99	0,93	0,90	0,89	0,88	0,89	–
99,5 %	45,0 %	6,36	4,03	2,86	2,35	2,04	1,68	1,47	1,33	1,23	1,15	1,09	1,04	1,00	0,94	0,90	0,89	0,88	0,88	–
100,0 %	50,0 %	6,38	4,04	2,87	2,35	2,05	1,69	1,48	1,33	1,23	1,15	1,09	1,04	1,00	0,94	0,90	0,89	0,88	0,88	1,00

	DCX	RE	AP 0,00	0,30	0,40	0,50	0,60	0,70	0,80	0,90	1,00	1,25	1,50	2,00	2,50	3,00	4,00
PPHT 08-A2	8	0,3	7,4	8,0	–	–	–	–	–	–	–	–	–	–	–	–	–
PPHT 08-A2		0,5	7,0	7,9	8,0	8,0	–	–	–	–	–	–	–	–	–	–	–
PPHT 08-A2		0,8	6,4	7,6	7,8	7,9	7,9	8,0	8,0	–	–	–	–	–	–	–	–
PPHT 08-A2		1,0	6,0	7,4	7,6	7,7	7,8	7,9	8,0	8,0	8,0	–	–	–	–	–	–
PPHT 10-A2	10	0,5	9,0	9,9	10,0	10,0	–	–	–	–	–	–	–	–	–	–	–
PPHT 10-A2		0,8	8,4	9,6	9,8	9,9	9,9	10,0	10,0	–	–	–	–	–	–	–	–
PPHT 10-A2		1,0	8,0	9,4	9,6	9,7	9,8	9,9	10,0	10,0	10,0	–	–	–	–	–	–
PPHT 12-A2	12	0,5	11,0	11,9	12,0	12,0	–	–	–	–	–	–	–	–	–	–	–
PPHT 12-A2		1,0	10,0	11,4	11,6	11,7	11,8	11,9	12,0	12,0	12,0	–	–	–	–	–	–
PPHT 12-A2		2,0	8,0	10,1	10,4	10,6	10,9	11,0	11,2	11,3	11,5	11,7	11,9	12,0	–	–	–
PPHT 16-A2	16	1,0	14,0	15,4	15,6	15,7	15,8	15,9	16,0	16,0	16,0	–	–	–	–	–	–
PPHT 16-A2		1,3	13,4	15,1	15,3	15,4	15,6	15,7	15,8	15,9	15,9	16,0	–	–	–	–	–
PPHT 16-A2		2,0	12,0	14,1	14,4	14,6	14,9	15,0	15,2	15,3	15,5	15,7	15,9	16,0	–	–	–
PPHT 16-A2		3,0	10,0	12,6	13,0	13,3	13,6	13,9	14,1	14,3	14,5	14,9	15,2	15,7	15,9	16,0	–
PPHT 20-A2	20	1,0	18,0	19,4	19,6	19,7	19,8	19,9	20,0	20,0	20,0	–	–	–	–	–	–
PPHT 20-A2		1,6	16,8	18,7	18,9	19,1	19,3	19,4	19,6	19,7	19,8	19,9	20,0	–	–	–	–
PPHT 20-A2		3,0	14,0	16,6	17,0	17,3	17,6	17,9	18,1	18,3	18,5	18,9	19,2	19,7	19,9	20,0	–
PPHT 20-A2		4,0	12,0	15,0	15,5	15,9	16,2	16,5	16,8	17,1	17,3	17,8	18,2	18,9	19,4	19,7	20,0
PPHT 25-A2	25	2,0	21,0	23,1	23,4	23,6	23,9	24,0	24,2	24,3	24,5	24,7	24,9	25,0	–	–	–
PPHF 08-CE1	8	0,6	2,8	6,0	7,1	–	–	–	–	–	–	–	–	–	–	–	–
PPHF 10-CE1	10	0,8	3,6	6,8	7,9	9,0	–	–	–	–	–	–	–	–	–	–	–
PPHF 12-CE1	12	1,0	4,2	7,4	8,5	9,6	10,7	11,8	–	–	–	–	–	–	–	–	–
PPHF 16-CE1	16	1,3	5,6	8,8	9,9	11,0	12,1	13,2	14,2	15,3	–	–	–	–	–	–	–
PPHF 20-CE1	20	1,6	7,2	10,4	11,5	12,6	13,7	14,8	15,8	16,9	18,0	–	–	–	–	–	–
PPHF 25-CE1	25	1,9	9,2	12,4	13,5	14,6	15,7	16,8	17,8	18,9	20,0	22,7	–	–	–	–	–

DCX	µm	3	5	10	15	20	30	40	50	60	80	100
8		0,310	0,400	0,566	0,693	0,800	0,980	1,131	1,265	1,386	1,600	1,789
10		0,346	0,447	0,632	0,775	0,894	1,095	1,265	1,414	1,549	1,789	2,000
12		0,379	0,490	0,693	0,849	0,980	1,200	1,386	1,549	1,697	1,960	2,191
16		0,438	0,566	0,800	0,980	1,131	1,386	1,600	1,789	1,960	2,263	2,530
20		0,490	0,632	0,894	1,095	1,265	1,549	1,789	2,000	2,191	2,530	2,828
25		0,548	0,707	1,000	1,225	1,414	1,732	2,000	2,236	2,449	2,828	3,162

RE	µm	3	5	10	15	20	30	40	50	60	80	100
1,3		0,177	0,228	0,322	0,395	0,456	0,559	0,645	0,721	0,790	0,912	1,020
1,6		0,196	0,253	0,358	0,438	0,506	0,620	0,716	0,800	0,876	1,012	1,131
1,9		0,214	0,276	0,390	0,477	0,551	0,675	0,780	0,872	0,955	1,103	1,233
2,0		0,219	0,283	0,400	0,490	0,566	0,693	0,800	0,894	0,980	1,131	1,265
3,0		0,268	0,346	0,490	0,600	0,693	0,849	0,980	1,095	1,200	1,386	1,549
4,0		0,310	0,400	0,566	0,693	0,800	0,980	1,131	1,265	1,386	1,600	1,789



	DCX	RE	max
PPHT 08-A2	8	0,3	2,4
PPHT 08-A2		0,5	2,4
PPHT 08-A2		0,8	2,5
PPHT 08-A2		1,0	2,7
PPHT 10-A2	10	0,5	3,2
PPHT 10-A2		0,8	3,3
PPHT 10-A2		1,0	3,4
PPHT 12-A2	12	0,5	4,0
PPHT 12-A2		1,0	4,2
PPHT 12-A2		2,0	4,6
PPHT 16-A2	16	1,0	5,7
PPHT 16-A2		1,3	5,8
PPHT 16-A2		2,0	6,0
PPHT 16-A2		3,0	6,4
PPHT 20-A2	20	1,0	7,2
PPHT 20-A2		1,6	7,4
PPHT 20-A2		3,0	7,8
PPHT 20-A2		4,0	8,2
PPHT 25-A2	25	2,0	9,3

	DCX	RE	max
PPHF 08-CE1	8	0,6	2,0
PPHF 10-CE1	10	0,8	2,5
PPHF 12-CE1	12	1,0	3,0
PPHF 16-CE1	16	1,3	4,0
PPHF 20-CE1	20	1,6	5,0
PPHF 25-CE1	25	1,9	6,0

	DCX	RE	RPMX	APMX / l
PPHT 08-A2	8	0,3	6,3	1,2/11
PPHT 08-A2		0,5	6,1	1,2/12
PPHT 08-A2		0,8	5,7	1,2/12
PPHT 08-A2		1,0	6,8	1,2/11
PPHT 10-A2	10	0,5	6,9	1,5/13
PPHT 10-A2		0,8	6,6	1,5/13
PPHT 10-A2		1,0	7,5	1,5/12
PPHT 12-A2	12	0,5	7,9	1,8/13
PPHT 12-A2		1,0	7,5	1,8/14
PPHT 12-A2		2,0	9,0	1,8/12
PPHT 16-A2	16	1,0	8,9	2,4/16
PPHT 16-A2		1,3	8,9	2,4/16
PPHT 16-A2		2,0	8,5	2,4/17
PPHT 16-A2		3,0	12,3	2,4/11
PPHT 20-A2	20	1,0	9,3	3/19
PPHT 20-A2		1,6	9,1	3/19
PPHT 20-A2		3,0	8,8	3/20
PPHT 20-A2		4,0	11,4	3/15
PPHT 25-A2	25	2,0	8,3	3,7/26

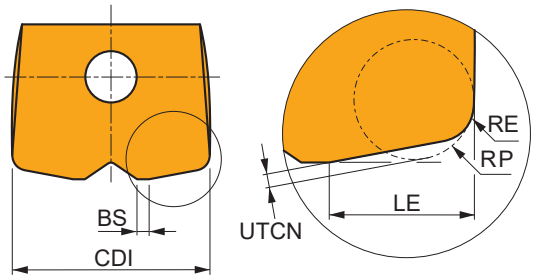
	DCX	RE	RPMX	APMX / l
PPHF 08-CE1	8	0,6	8,0	0,4/3
PPHF 10-CE1	10	0,8	8,0	0,5/4
PPHF 12-CE1	12	1,0	8,0	0,6/5
PPHF 16-CE1	16	1,3	8,0	0,8/6
PPHF 20-CE1	20	1,6	8,0	1,0/8
PPHF 25-CE1	25	1,9	8,0	1,2/9

	DCX	RE	d_{min}	d_{max}	s_{max} / d_{min}	s_{max} / d_{max}
PPHT 08-A2	8	0,3	11,0	15,9	0,5	0,5
PPHT 08-A2		0,5	10,9	15,9	0,5	0,5
PPHT 08-A2		0,8	10,7	15,9	0,4	0,4
PPHT 08-A2		1,0	10,3	15,9	0,4	0,4
PPHT 10-A2	10	0,5	13,4	19,9	0,7	0,7
PPHT 10-A2		0,8	13,2	19,9	0,6	0,6
PPHT 10-A2		1,0	12,9	19,9	0,6	0,6
PPHT 12-A2	12	0,5	15,8	23,9	1,0	1,0
PPHT 12-A2		1,0	15,4	23,9	0,8	0,8
PPHT 12-A2		2,0	14,6	23,9	0,7	0,7
PPHT 16-A2	16	1,0	20,4	31,9	1,3	1,3
PPHT 16-A2		1,3	20,2	31,9	1,3	1,3
PPHT 16-A2		2,0	19,7	31,9	1,0	1,0
PPHT 16-A2		3,0	18,9	31,9	1,2	1,2
PPHT 20-A2	20	1,0	25,4	39,9	1,8	1,8
PPHT 20-A2		1,6	24,9	39,9	1,6	1,6
PPHT 20-A2		3,0	24,1	39,9	1,2	1,2
PPHT 20-A2		4,0	23,3	39,9	1,3	1,3
PPHT 25-A2	25	2,0	31,1	49,9	1,8	1,8

	DCX	RE	d_{min}	d_{max}	s_{max} / d_{min}	s_{max} / d_{max}
PPHF 08-CE1	8	0,6	10,0	14,7	0,40	0,40
PPHF 10-CE1	10	0,8	13,0	18,4	0,50	0,50
PPHF 12-CE1	12	1,0	15,7	22,0	0,60	0,60
PPHF 16-CE1	16	1,3	20,9	29,4	0,80	0,80
PPHF 20-CE1	20	1,6	26,2	36,7	1,00	1,00
PPHF 25-CE1	25	1,9	33,0	46,1	1,20	1,20

	DCX	RE	AP
PPHT 08-A2	8	0,3	0,52
PPHT 08-A2		0,5	0,47
PPHT 08-A2		0,8	0,39
PPHT 08-A2		1,0	0,40
PPHT 10-A2	10	0,5	0,69
PPHT 10-A2		0,8	0,61
PPHT 10-A2		1,0	0,62
PPHT 12-A2	12	0,5	0,97
PPHT 12-A2		1,0	0,79
PPHT 12-A2		2,0	0,68
PPHT 16-A2	16	1,0	1,33
PPHT 16-A2		1,3	1,26
PPHT 16-A2		2,0	1,03
PPHT 16-A2		3,0	1,15
PPHT 20-A2	20	1,0	1,80
PPHT 20-A2		1,6	1,59
PPHT 20-A2		3,0	1,21
PPHT 20-A2		4,0	1,27
PPHT 25-A2	25	2,0	1,83

	DCX	RE	AP
PPHF 08-CE1	8	0,6	0,40
PPHF 10-CE1	10	0,8	0,50
PPHF 12-CE1	12	1,0	0,60
PPHF 16-CE1	16	1,3	0,80
PPHF 20-CE1	20	1,6	1,00
PPHF 25-CE1	25	1,9	1,20



CDI	RE	RP	LE	UTCN
08	0,6	1,0	2,6	0,3
10	0,8	1,2	3,2	0,4
12	1,0	1,5	3,9	0,4
16	1,3	2,0	5,2	0,6
20	1,6	2,5	6,4	0,7
25	1,9	3,0	7,9	0,9

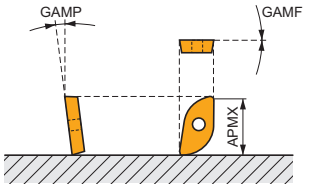
Overhang (multiple of diameter DCX)	**<3**	**3 – 3,5**	**3,6 – 4**	**4,1 – 4,5**	**>4,6**
Multiplication factor for speed	1	0,9	0,8	0,7	0,5

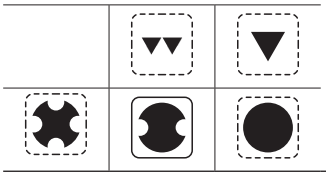
L2-SZP

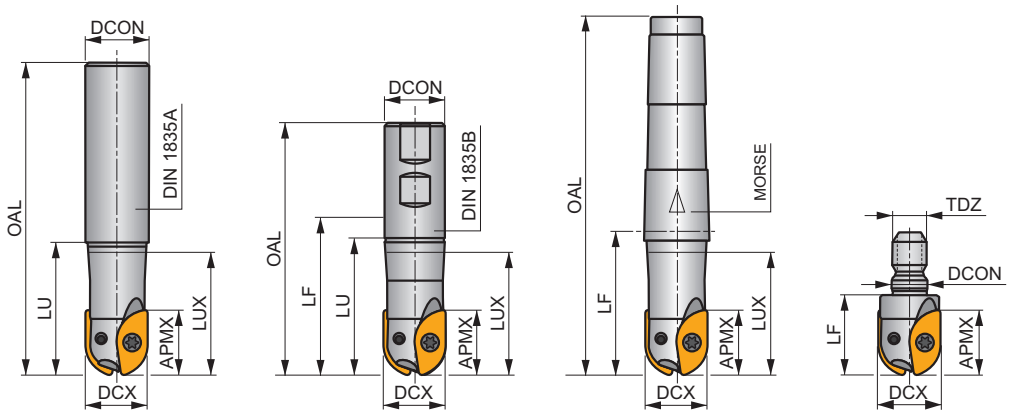
P M K S H

S

APMX	8,9 - 44,7 mm







h_m 0,05 - 0,19

	ISO	DCX [mm]	OAL [mm]	DCON [mm]	LU [mm]	LF [mm]	LUX [mm]	TDZ	Morse [mm]	APMX [mm]	GAMF [°]	GAMP [°]			max.		kg		
DIN 1835A	10L2R030A10-SZP10	10	130	10	30	–	30	–	–	8,9	0	-10	2	–	35800	–	0,11	GI255	CO510
	10L2R050A16-SZP10	10	160	16	50	–	22,3	–	–	8,9	0	-10	2	–	35800	–	0,26	GI255	CO510
	12L2R035A12-SZP12	12	140	12	35	–	35	–	–	10,7	0	-10	2	–	21000	–	0,15	GI253	CO510
	12L2R045A20-SZP12	12	200	20	–	–	22	–	–	10,7	0	-10	2	–	21000	–	0,51	GI253	CO511
	16L2R040A16-SZP16-C	16	160	16	40	–	40	–	–	14,4	0	-10	2	–	20000	✓	0,24	GI256	CO510
	16L2R045A20-SZP16-C	16	200	20	–	–	29,4	–	–	14,4	0	-10	2	–	20000	✓	1,48	GI256	CO512
	20L2R050A20-SZP20-C	20	250	20	50	–	–	–	–	17,9	0	-10	2	–	24000	✓	0,56	GI254	CO513
	20L2R055A25-SZP20-C	20	200	25	–	–	36,1	–	–	17,9	0	-10	2	–	24000	✓	0,68	GI254	CO513
	20L2R055A32-SZP20-C	20	250	32	–	–	34,5	–	–	17,9	0	-10	2	–	24000	✓	1,34	GI254	CO513
	25L2R060A25-SZP25-C	25	250	25	60	–	–	–	–	22,3	0	-10	2	–	24000	✓	0,86	GI257	CO514
	25L2R065A32-SZP25-C	25	250	32	–	–	43	–	–	22,3	0	-10	2	–	24000	✓	1,34	GI257	CO514
	32L2R070A32-SZP32-C	32	250	32	–	–	–	–	–	28,6	0	-10	2	–	18500	✓	1,43	GI258	CO515
DIN 1835B	12L2R040B20-SZP12	12	91	20	40	66,5	21,5	–	–	10,7	0	-10	2	–	21000	–	0,19	GI253	CO511
	12L2R060B20-SZP12	12	111	20	60	86,5	23,8	–	–	10,7	0	-10	2	–	21000	–	0,23	GI253	CO511
	16L2R040B20-SZP16-C	16	91	20	40	66,5	28,3	–	–	14,4	0	-10	2	–	20000	✓	0,15	GI256	CO512
	16L2R060B20-SZP16-C	16	111	20	60	86,5	32,9	–	–	14,4	0	-10	2	–	20000	✓	0,21	GI256	CO512
	20L2R050B25-SZP20-C	20	107	25	50	75,5	35,1	–	–	17,9	0	-10	2	–	24000	✓	0,31	GI254	CO513
	20L2R070B25-SZP20-C	20	127	25	70	95,5	39,5	–	–	17,9	0	-10	2	–	24000	✓	0,36	GI254	CO513
	25L2R060B25-SZP25-C	25	117	25	60	85,5	–	–	–	22,3	0	-10	2	–	24000	✓	0,36	GI257	CO514
	25L2R080B25-SZP25-C	25	137	25	80	105	–	–	–	22,3	0	-10	2	–	24000	✓	0,43	GI257	CO514
	32L2R070B32-SZP32-C	32	131	32	70	95,5	–	–	–	28,6	0	-10	2	–	18500	✓	0,72	GI258	CO515
	32L2R100B32-SZP32-C	32	161	32	100	125,5	–	–	–	28,6	0	-10	2	–	18500	✓	0,85	GI258	CO515
	40L2R070B32-SZP40-C	40	131	32	70	95,5	–	–	–	35,7	0	-10	2	–	8000	✓	0,81	GI259	CO516
	40L2R100B40-SZP40-C	40	171	40	100	131	–	–	–	35,7	0	-10	2	–	8000	✓	1,40	GI259	CO516
	50L2R100B50-SZP50-C	50	181	50	100	136,5	–	–	–	44,7	0	-10	2	–	7000	✓	2,25	GI260	CO517
DIN 228A	10L2R050E02-SZP10	10	114	–	–	50	21,9	–	2	8,9	0	-10	2	–	35800	–	0,13	GI255	CO510
	12L2R040E02-SZP12	12	104	–	–	40	22,5	–	2	10,7	0	-10	2	–	21000	–	0,14	GI253	CO511
	12L2R060E02-SZP12	12	124	–	–	60	25,8	–	2	10,7	0	-10	2	–	21000	–	0,18	GI253	CO511
	12L2R090E02-SZP12	12	154	–	–	90	25,8	–	2	10,7	0	-10	2	–	21000	–	0,23	GI253	CO511
	16L2R040E02-SZP16	16	104	–	–	40	31,3	–	2	14,4	0	-10	2	–	20000	–	-	GI256	CO512
	16L2R060E02-SZP16	16	124	–	–	60	42,2	–	2	14,4	0	-10	2	–	20000	–	0,19	GI256	CO512
	16L2R090E02-SZP16	16	154	–	–	90	75,9	–	2	14,4	0	-10	2	–	20000	–	0,23	GI256	CO512
	20L2R050E03-SZP20	20	131	–	–	50	36,6	–	3	17,9	0	-10	2	–	24000	–	-	GI254	CO513
	20L2R070E03-SZP20	20	151	–	–	70	–	–	3	17,9	0	-10	2	–	24000	–	0,39	GI254	CO513

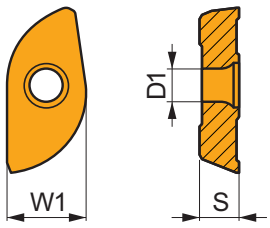
	ISO	DCX [mm]	OAL [mm]	DCON [mm]	LU [mm]	LF [mm]	LUX [mm]	TDZ	Morse [mm]	APMX [mm]	GAMF [°]	GAMP [°]			max.		kg		
	20L2R100E03-SZP20	20	181	–	–	100	77,4	–	3	17,9	0	-10	2	–	24000	–	0,42	GI254	CO513
DIN 228A	**25L2R080E03-SZP25**	25	161	–	–	80	–	–	3	22,3	0	-10	2	–	24000	–	0,46	GI257	CO514
	25L2R110E04-SZP25	25	213	–	–	110	92,7	–	4	22,3	0	-10	2	–	24000	–	0,84	GI257	CO514
	32L2R100E04-SZP32	32	203	–	–	100	–	–	4	28,6	0	-10	2	–	18500	–	0,90	GI258	CO515
	32L2R150E04-SZP32	32	253	–	–	150	–	–	4	28,6	0	-10	2	–	18500	–	1,10	GI258	CO515
	50L2R100E05-SZP50	50	230	–	–	100	–	–	5	44,7	0	-10	2	–	7000	–	-	GI260	CO517
MODULAR	**10L2R025M08-SZP10**	10	–	8,5	–	25	–	M8	–	8,9	0	-10	2	–	–	–	-	GI255	CO510
	12L2R025M06-SZP12	12	–	6,5	–	25	–	M6	–	10,7	0	-10	2	–	–	–	0,05	GI253	CO510
	12L2R025M08-SZP12	12	–	8,5	–	25	–	M8	–	10,7	0	-10	2	–	–	–	0,05	GI253	CO511
	16L2R025M08-SZP16	16	–	8,5	–	25	–	M8	–	14,4	0	-10	2	–	–	–	0,05	GI256	CO512
	20L2R030M10-SZP20-C	20	–	10,5	–	30	–	M10	–	17,9	0	-10	2	–	–	✓	0,07	GI254	CO513
	25L2R035M12-SZP25-C	25	–	12,5	–	35	–	M12	–	22,3	0	-10	2	–	–	✓	0,09	GI257	CO514
	32L2R045M16-SZP32-C	32	–	17	–	45	–	M16	–	27,9	0	-10	2	–	–	✓	0,15	GI258	CO515

GI253	ZP 12..
GI254	ZP 20..
GI255	ZP 10..
GI256	ZP 16..
GI257	ZP 25..
GI258	ZP 32..
GI259	ZP 40..
GI260	ZP 50..

					Nm			
CO510	–	–	Flag T06P	US 62004-T06P	0,6	M 2	4	–
CO511	–	–	Flag T08P	US 62506-T08P	1,2	M 2,5	6	–
CO512	–	–	Flag T08P	US 62508-T08P	1,2	M 2,5	7	–
CO513	–	–	Flag T10P	US 63510-T10P	2,0	M 3,5	9	–
CO514	–	–	Flag T15P	US 4011A-T15P	3,5	M 4	11	–
CO515	–	–	–	US 65013-T20	5,0	M 5	13	SDR T20
CO516	–	–	–	US 66015-T25P	7,5	M 6	15	SDR T25P
CO517	SZN 400322	US 3508-T15P	Flag T15P	US 68020-T30P	15,0	M 8	20	SDR T30P

ZP

	W1	D1	S
10	10	2,20	1,70
12	12	2,90	2,38
16	16	2,90	3,18
20	20	4,00	3,97
25	25	4,70	4,76
32	32	5,90	6,35
40	40	7,00	7,94
50	50	9,60	7,94



ISO		P	M	K	N	S	H			RE	FN	FX	APMN	APMX
ZP 20ER-F	M8310	◪	◪			◪		●	-	–	0,04	0,09	0,3	17,9
ZP 50ER-F	M8310	◪	◪			◪		●	-	–	0,07	0,18	0,3	44,7
ZP 10ER-FM	M8310	■	◪	■		◪	◪	●	-	–	0,05	0,10	0,3	8,9
	M8345	■	◪			◪		⬢	+ / -	–	0,05	0,10	0,3	8,9
ZP 12ER-FM	M8310	■	◪	■		◪	◪	●	-	–	0,05	0,11	0,3	10,7
	M8345	■	◪			◪		⬢	+ / -	–	0,05	0,11	0,3	10,7
ZP 16ER-FM	M8310	■	◪	■		◪	◪	●	-	–	0,06	0,14	0,3	15,0
	M8345	■	◪			◪		⬢	+ / -	–	0,06	0,14	0,3	15,0
ZP 20ER-FM	M8310	■	◪	■		◪	◪	●	-	–	0,06	0,16	0,3	17,9
	M8345	■	◪			◪		⬢	+ / -	–	0,06	0,16	0,3	17,9
ZP 25ER-FM	M8310	■	◪	■		◪	◪	●	-	–	0,08	0,21	0,3	22,3
	M8345	■	◪			◪		⬢	+ / -	–	0,08	0,21	0,3	22,3
ZP 32ER-FM	M8310	■	◪	■		◪	◪	●	-	–	0,08	0,21	0,3	28,6
	M8345	■	◪			◪		⬢	+ / -	–	0,08	0,21	0,3	28,6
ZP 12ER-M	M8330	■	◪	◪		◪		⬢	-	–	0,06	0,13	0,3	10,7
	M8340	■	■	◪		◪		⬢	+ / -	–	0,06	0,13	0,3	10,7
	M8345	■	■			◪		⬢	+ / -	–	0,06	0,13	0,3	10,7
ZP 16ER-M	M8330	■	◪	◪		◪		⬢	-	–	0,07	0,16	0,3	15,0
	M8340	■	■	◪		◪		⬢	+ / -	–	0,07	0,16	0,3	15,0
	M8345	■	■			◪		⬢	+ / -	–	0,07	0,16	0,3	15,0
ZP 20ER-M	M8330	■	◪	◪		◪		⬢	-	–	0,07	0,16	0,3	17,9
	M8345	■	■			◪		⬢	+ / -	–	0,07	0,16	0,3	17,9
ZP 25ER-M	M8330	■	◪	◪		◪		⬢	-	–	0,08	0,20	0,3	22,3
	M8345	■	■			◪		⬢	+ / -	–	0,08	0,20	0,3	22,3
ZP 32ER-M	M8330	■	◪	◪		◪		⬢	-	–	0,10	0,25	0,3	28,6
	M8345	■	■			◪		⬢	+ / -	–	0,10	0,25	0,3	28,6
ZP 16ER-R	M8345	■	■			◪		⬢	+ / -	–	0,09	0,21	0,3	15,0
ZP 20ER-R	M8345	■	■			◪		⬢	+ / -	–	0,09	0,21	0,3	17,9
ZP 25ER-R	M8345	■	■			◪		⬢	+ / -	–	0,12	0,30	0,3	22,3
ZP 32ER-R	M8330	■	◪	◪		◪	◪	⬢	-	–	0,12	0,31	0,3	28,6
	M8345	■	■			◪		⬢	+ / -	–	0,12	0,31	0,3	28,6
ZP 40ER-R	M8345	■	■			◪		⬢	+ / -	–	0,12	0,33	0,3	35,7
ZP 50ER-R	M8345	■	■			◪		⬢	+ / -	–	0,15	0,33	0,3	44,7

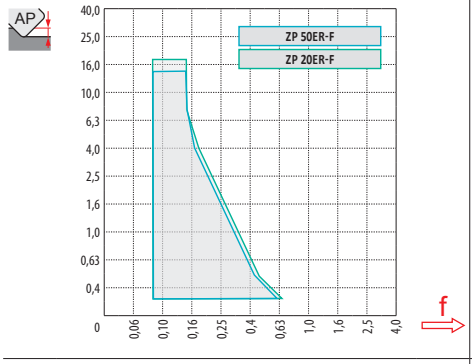
ISO		FN	FX	M8310	M8330	M8340	M8345
P	●	0,06	0,10	329	333	284	225
		0,09	0,20				
		0,12	0,30				
		0,06	0,09	297	298	252	198
		0,09	0,18				
		0,12	0,27				
	✖	0,05	0,07	266	258	221	176
		0,10	0,14				
		0,15	0,20				
M	●	0,05	0,10	167	194	167	135
		0,10	0,20				
		0,15	0,30				
		0,05	0,09	149	174	149	117
		0,10	0,18				
		0,15	0,27				
	✖	0,05	0,07	135	154	131	104
		0,10	0,14				
		0,15	0,20				
K	●	0,05	0,10	311	327	270	–
		0,10	0,20				
		0,15	0,30				
		0,05	0,09	284	290	239	–
		0,10	0,18				
		0,15	0,27				
	✖	0,05	0,07	252	254	207	–
		0,10	0,14				
		0,15	0,20				
S	●	0,05	0,10	81	95	81	68
		0,10	0,20				
		0,15	0,30				
		0,05	0,09	72	85	72	59
		0,10	0,18				
		0,15	0,27				
	✖	0,05	0,07	68	75	63	50
		0,10	0,14				
		0,15	0,20				
H	●	0,05	0,10	63	68	–	–
		0,10	0,20				
		0,15	0,30				
		0,05	0,09	59	58	–	–
		0,10	0,18				
		0,15	0,27				
	✖	0,05	0,07	50	52	–	–
		0,10	0,14				
		0,15	0,20				

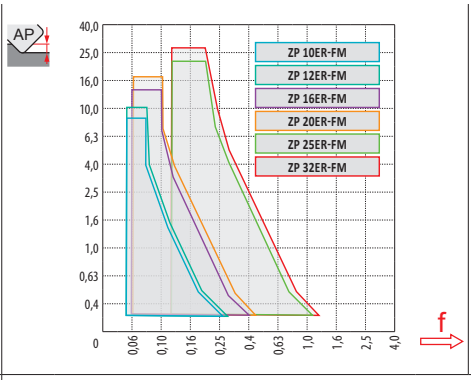
a_e / DCX	0,05	0,10	0,15	0,20	0,25	0,30	0,40	0,50	0,60	0,70	0,75	0,80	0,90	1,00
X.V	1,48	1,35	1,27	1,22	1,19	1,16	1,11	1,08	1,05	1,03	1,00	1,00	1,00	1,00
⇨X.f	2,87	2,05	1,69	1,48	1,33	1,23	1,09	0,75	0,94	0,90	0,89	0,88	0,88	1,00
⇨X.f	0,64	0,64	0,64	0,64	0,64	0,65	0,65	0,67	0,68	0,71	0,72	0,74	0,79	1,00

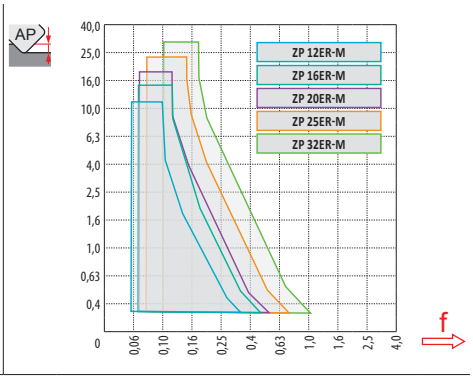
	ZP 20-F	ZP 50-F	ZP 10-FM	ZP 12-FM	ZP 16-FM	ZP 20-FM	ZP 25-FM	ZP 32-FM
RE	10,0	25,0	5,0	6,0	8,0	10,0	12,5	16,0
BS	–	–	–	–	–	–	–	–

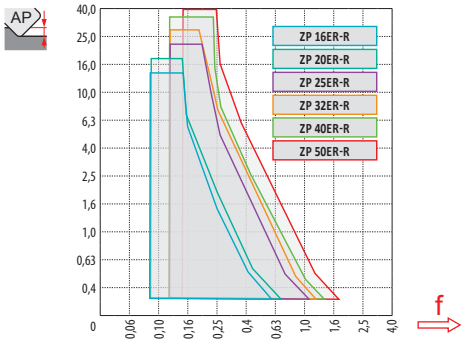
	ZP 12-M	ZP 16-M	ZP 20-M	ZP 25-M	ZP 32-M
RE	6,0	8,0	10,0	12,5	16,0
BS	–	–	–	–	–

	ZP 16-R	ZP 20-R	ZP 25-R	ZP 32-R	ZP 40-R	ZP 50-R
RE	8,0	10,0	12,5	16,0	20,0	25,0
BS	–	–	–	–	–	–

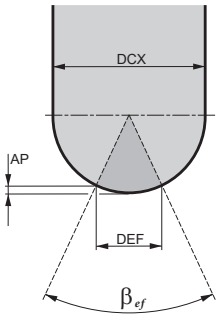








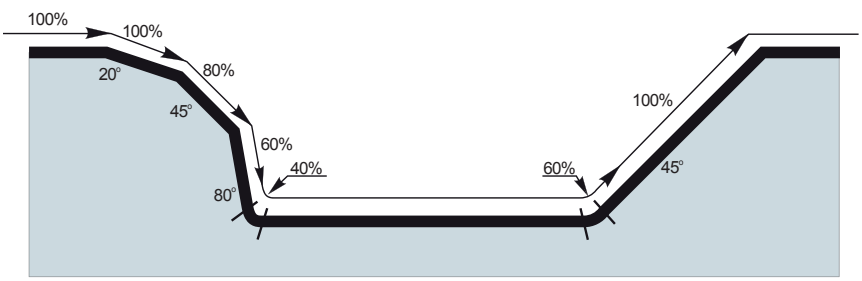
DCX	AP	0,30	0,40	0,50	0,70	1,00	1,25	1,50	2,00	2,50	3,00	4,00	5,00	6,00	8,00	10,00	12,00	15,00	16,00	20,00	22,50	25,00
10	DEF	3,4	3,9	4,4	5,1	6,0	6,6	7,1	8,0	8,7	9,2	9,8	10,0	–	–	–	–	–	–	–	–	–
12		3,7	4,3	4,8	5,6	6,6	7,3	7,9	8,9	9,7	10,4	11,3	11,8	12,0	–	–	–	–	–	–	–	–
16		4,3	5,0	5,6	6,5	7,7	8,6	9,3	10,6	11,6	12,5	13,9	14,8	15,5	16,0	–	–	–	–	–	–	–
20		4,9	5,6	6,2	7,4	8,7	9,7	10,5	12,0	13,2	14,3	16,0	17,3	18,3	19,6	20,0	–	–	–	–	–	–
25		5,4	6,3	7,0	8,2	9,8	10,9	11,9	13,6	15,0	16,2	18,3	20,0	21,4	23,3	24,5	25,0	–	–	–	–	–
32		6,2	7,1	7,9	9,4	11,1	12,4	13,5	15,5	17,2	18,7	21,2	23,2	25,0	27,7	29,7	31,2	31,9	32,0	–	–	–
40		6,9	8,0	8,9	10,5	12,5	13,9	15,2	17,4	19,4	21,1	24,0	26,5	28,6	32,0	34,6	37,1	38,7	39,2	40,0	–	–
50		7,7	8,9	9,9	11,7	14,0	15,6	17,1	19,6	21,8	23,7	27,1	30,0	32,5	36,7	40,0	43,3	45,8	46,6	49,0	49,7	50,0



DCX [mm]		β_{ef}	DEF [mm]	AP [mm]
10	FM	41°	3,496	0,322
12	FM	41°	4,194	0,381
16	FM	42°	5,660	0,520
20	FM	42°	7,100	0,650
25	FM	41°	8,756	0,794
35	FM	41°	11,113	0,998
40	R	41°	14,108	1,298
50	R	45°	19,176	1,915

DCX	µm	3	5	10	15	20	30	40	50	60	80	100
10		0,346	0,447	0,632	0,775	0,894	1,095	1,265	1,414	1,549	1,789	2,000
12		0,379	0,490	0,693	0,849	0,980	1,200	1,386	1,549	1,697	1,960	2,191
16	f_e	0,438	0,566	0,800	0,980	1,131	1,386	1,600	1,789	1,960	2,263	2,530
20		0,490	0,632	0,894	1,095	1,265	1,549	1,789	2,000	2,191	2,530	2,828
25	f_e	0,548	0,707	1,000	1,225	1,414	1,732	2,000	2,236	2,449	2,828	3,162
32		0,620	0,800	1,131	1,386	1,600	1,960	2,263	2,530	2,771	3,200	3,578
40		0,693	0,894	1,265	1,549	1,789	2,191	2,530	2,828	3,098	3,578	4,000
50		0,775	1,000	1,414	1,732	2,000	2,449	2,828	3,162	3,464	4,000	4,472

DEF	a_e	1 %	2,5 %	5 %	7,5 %	10 %	15 %	20 %	25 %	30 %	35 %	40 %	45 %	50 %	60 %	70 %	75 %	80 %	90 %	100 %
	AP										⇨x.f									
19,9 %	1,0 %	2,86	1,84	1,33	1,12	1,00	0,89	–	–	–	–	–	–	–	–	–	–	–	–	–
31,2 %	2,5 %	3,58	2,28	1,64	1,36	1,20	1,01	0,92	0,88	0,91	–	–	–	–	–	–	–	–	–	–
43,6 %	5,0 %	4,22	2,68	1,92	1,58	1,39	1,16	1,03	0,95	0,90	0,88	0,89	–	–	–	–	–	–	–	–
52,7 %	7,5 %	4,63	2,95	2,10	1,73	1,51	1,26	1,11	1,02	0,96	0,91	0,89	0,88	0,90	–	–	–	–	–	–
60,0 %	10,0 %	4,94	3,14	2,24	1,84	1,61	1,33	1,18	1,07	1,00	0,95	0,91	0,89	0,88	1,00	–	–	–	–	–
71,4 %	15,0 %	5,39	3,42	2,43	2,00	1,74	1,44	1,27	1,15	1,07	1,01	0,96	0,93	0,90	0,88	0,93	–	–	–	–
80,0 %	20,0 %	5,70	3,62	2,57	2,11	1,84	1,52	1,33	1,21	1,12	1,05	1,00	0,96	0,93	0,89	0,88	0,89	1,00	–	–
86,6 %	25,0 %	5,93	3,76	2,67	2,20	1,91	1,58	1,38	1,25	1,16	1,08	1,03	0,99	0,95	0,90	0,88	0,88	0,89	–	–
91,7 %	30,0 %	6,10	3,87	2,75	2,26	1,96	1,62	1,42	1,28	1,18	1,11	1,05	1,01	0,97	0,92	0,89	0,88	0,88	0,93	–
95,4 %	35,0 %	6,23	3,95	2,80	2,30	2,00	1,65	1,44	1,31	1,20	1,13	1,07	1,02	0,98	0,93	0,89	0,88	0,88	0,90	–
98,0 %	40,0 %	6,31	4,00	2,84	2,33	2,03	1,67	1,46	1,32	1,22	1,14	1,08	1,03	0,99	0,93	0,90	0,89	0,88	0,89	–
99,5%	45,0 %	6,36	4,03	2,86	2,35	2,04	1,68	1,47	1,33	1,23	1,15	1,09	1,04	1,00	0,94	0,90	0,89	0,88	0,88	–
100,0 %	50,0 %	6,38	4,04	2,87	2,35	2,05	1,69	1,48	1,33	1,23	1,15	1,09	1,04	1,00	0,94	0,90	0,89	0,88	0,88	1,00

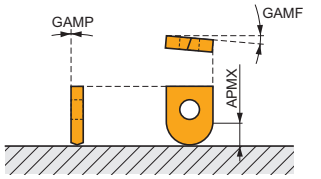


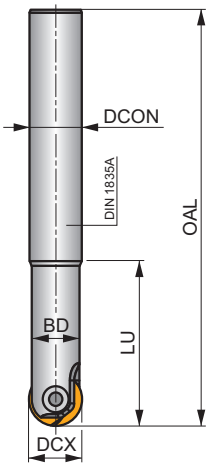
Overhang (multiple of diameter *DCX*)	<3	3 – 3,5	3,6 – 4	4,1 – 4,5	>4,6
Multiplication factor for speed	1	0,9	0,8	0,7	0,5

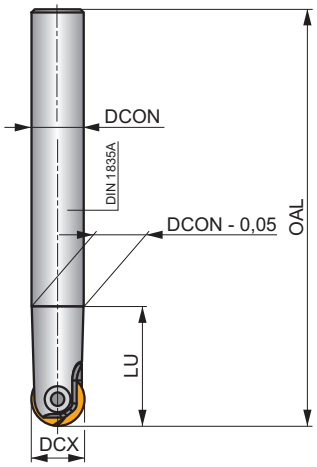
K2-SRC

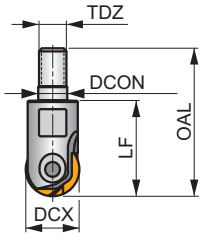
P K H S

APMX	0,6 - 3,2 mm









h_m 0,07 - 0,14

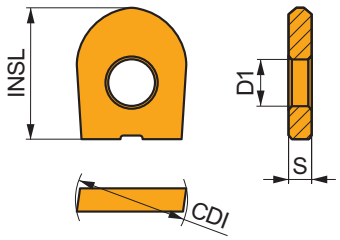
	ISO	DCX [mm]	OAL [mm]	DCON [mm]	BD [mm]	LU [mm]	LF [mm]	TDZ			max.		kg		
DIN 1835A	08K2R025A10-SRC08-A	8	110	10	7,5	25	–	–	2	–	56000	–	0,08	GI030	CO530
	08K2R050A12-SRC08-A	8	140	12	–	13,5	–	–	2	–	56000	–	0,11	GI030	CO530
	10K2R030A12-SRC10-A	10	130	12	9,0	30	–	–	2	–	42000	–	0,11	GI031	CO531
	10K2R060A16-SRC10-A	10	150	16	–	19,5	–	–	2	–	42000	–	0,18	GI031	CO531
	12K2R030A12-SRC12-A	12	130	12	10,5	30	–	–	2	–	35000	–	0,11	GI032	CO532
	16K2R035A16-SRC16-A	16	140	16	14,0	35	–	–	2	–	22000	–	0,23	GI033	CO533
	20K2R045A20-SRC20-A	20	160	20	18,0	45	–	–	2	–	16000	–	0,40	GI034	CO534
	25K2R045A25-SRC25-A	25	160	25	22,4	45	–	–	2	–	10000	–	0,59	GI035	CO535
	32K2R060A32-SRC32-A	32	180	32	28,6	60	–	–	2	–	6000	–	1,10	GI036	CO536
	12K2R060A16-SRC12-A	12	160	16	–	24,5	–	–	2	–	35000	–	0,14	GI032	CO532
	16K2R065A20-SRC16-A	16	175	20	–	31,5	–	–	2	–	22000	–	0,41	GI033	CO533
	20K2R080A25-SRC20-A	20	190	25	–	33,5	–	–	2	–	16000	–	0,66	GI034	CO534
MODULAR	08K2R30M06-SRC08-A	8	45	6,5	–	–	30	M6	2	–	–	–	0,02	GI123	CO530
	10K2R30M06-SRC10-A	10	45	6,5	–	–	30	M6	2	–	–	–	0,03	GI124	CO531
	12K2R30M06-SRC12-A	12	45	6,5	–	–	30	M6	2	–	–	–	0,16	GI125	CO530
	12K2R30M08-SRC12-A	12	48	8,5	–	–	30	M8	2	–	–	–	0,04	GI125	CO532
	16K2R35M08-SRC16-A	16	53	8,5	–	–	35	M8	2	–	–	–	0,05	GI033	CO533
	20K2R35M10-SRC20-A	20	54	10,5	–	–	35	M10	2	–	–	–	0,08	GI034	CO534

GI030	RC 08	RC 08-F	LC 08-KP	LC 08-KPF	–	–
GI031	RC 10	RC 10-F	LC 10-KP	LC 10-KPF	–	–
GI032	RC 12	RC 12-F	–	–	LC 12..-CH	LC 12..-RE
GI033	RC 16	RC 16-F	–	–	–	–
GI034	RC 20	RC 20-F	–	–	–	–
GI035	RC 25	–	–	–	–	–
GI036	RC 32	–	–	–	–	–
GI123	RC 08	RC 08-F	–	–	–	–
GI124	RC 10	RC 10-F	–	–	–	–
GI125	RC 12	RC 12-F	–	–	–	–

		Nm					
CO530	CS 3007-T08P	1,2	M 3	7	–	–	Flag T08P
CO531	CS 4008-T15P	3,0	M 4	8	D-T08P/T15P	FG-15	–
CO532	CS 5009-T20P	5,0	M 5	9	–	–	SDR T20P
CO533	CS 5013-T20P	5,0	M 5	13	–	–	SDR T20P
CO534	CS 5015-T20P	5,0	M 5	15	–	–	SDR T20P
CO535	CS 6020-T20P	7,5	M 6	20	–	–	SDR T20P
CO536	CS 8025-T30P	15	M 8	25	–	–	SDR T30P

RC

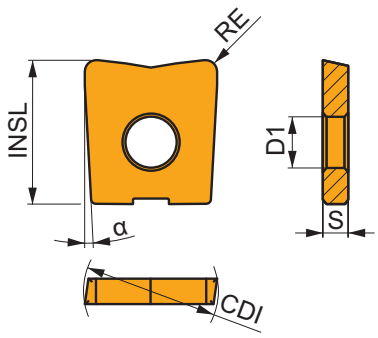
	CDI	D1	INSL	S
08	8,000	3,00	9,50	2,00
10	10,000	4,00	11,50	2,50
12	12,000	5,00	12,00	2,50
16	16,000	5,00	14,00	3,00
20	20,000	5,00	16,00	3,00
25	25,000	6,00	21,50	4,00
32	32,000	8,00	25,80	5,00



ISO		P	M	K	N	S	H		RE	FN	FX	APMN	APMX
RC 08	M4310	◪		■			■		-	–	0,10	0,30	0,3	0,8
	M8310	■		■			■		-	–	0,10	0,30	0,3	0,8
	M8330	■		■			◪		-	–	0,10	0,30	0,3	0,8
RC 10	M4310	◪		■			■		-	–	0,10	0,33	0,3	1,0
	M8310	■		■			■		-	–	0,10	0,33	0,3	1,0
	M8330	■		■			◪		-	–	0,10	0,33	0,3	1,0
RC 12	M4310	◪		■			■		-	–	0,10	0,35	0,4	1,2
	M8310	■		■			■		-	–	0,10	0,35	0,4	1,2
	M8330	■		■			◪		-	–	0,10	0,35	0,4	1,2
RC 16	M4310	◪		■			■		-	–	0,10	0,40	0,5	1,6
	M8310	■		■			■		-	–	0,10	0,40	0,5	1,6
	M8330	■		■			◪		-	–	0,10	0,40	0,5	1,6
RC 20	M4310	◪		■			■		-	–	0,10	0,50	0,6	2,0
	M8310	■		■			■		-	–	0,10	0,50	0,6	2,0
	M8330	■		■			◪		-	–	0,10	0,50	0,6	2,0
RC 25	M4310	◪		■			■		-	–	0,10	0,55	0,6	2,5
	M8310	■		■			■		-	–	0,10	0,55	0,6	2,5
	M8330	■		■			◪		-	–	0,10	0,55	0,6	2,5
RC 32	M4310	◪		■			■		-	–	0,10	0,60	0,6	3,2
	M8330	■		■			◪		-	–	0,10	0,60	0,6	3,2
RC 08-F	M4310	◪		■			■		-	–	0,05	0,30	0,3	0,8
RC 10-F	M4310	◪		■			■		-	–	0,05	0,33	0,3	1,0
RC 12-F	M4310	◪		■			■		-	–	0,05	0,35	0,4	1,2
RC 16-F	M4310	◪		■			■		-	–	0,05	0,40	0,5	1,6
	M8330	■		■			◪		-	–	0,05	0,40	0,5	1,6
RC 20-F	M4310	◪		■			■		-	–	0,05	0,50	0,5	2,0
	M8330	■		■			◪		-	–	0,05	0,50	0,5	2,0

LC

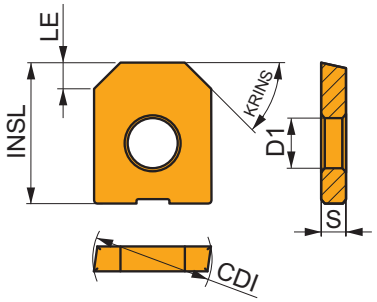
	α	CDI	D1	INSL	S
08	3°	8,000	3,00	9,50	2,00
10	3°	10,000	4,00	11,50	2,50



	ISO		P	M	K	N	S	H		RE	FN	FX	APMN	APMX
	LC 0806-KP	M4310	◪		■			■	●	-	0,6	0,08	0,20	0,1	0,6
		M8310	■		■			■	●	-	0,6	0,08	0,20	0,1	0,6
		M8330	■		■			◪	⬌	-	0,6	0,08	0,20	0,1	0,6
	LC 0810-KP	M4310	◪		■			■	⬌	-	1,0	0,08	0,20	0,1	1,0
		M8310	■		■			■	⬌	-	1,0	0,08	0,20	0,1	1,0
	LC 1008-KP	M4310	◪		■			■	⬌	-	0,8	0,08	0,25	0,1	0,8
		M8310	■		■			■	⬌	-	0,8	0,08	0,25	0,1	0,8
		M8330	■		■			◪	⬌	-	0,8	0,08	0,25	0,1	0,8
	LC 1010-KP	M4310	◪		■			■	⬌	-	1,0	0,08	0,25	0,1	1,0
		M8310	■		■			■	⬌	-	1,0	0,08	0,25	0,1	1,0
		M8330	■		■			◪	⬌	-	1,0	0,08	0,25	0,1	1,0
	LC 0806-KPF	M4310	◪		■			■	●	-	0,6	0,05	0,15	0,1	0,6
	LC 1008-KPF	M4310	◪		■			■	⬌	-	0,8	0,05	0,20	0,1	0,8

LC 12-CH

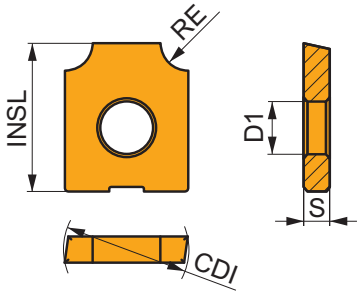
	KRINS	CDI	D1	LE	INSL	S
1245	45°	12,000	5,00	3,0	14,00	2,50



ISO		P	M	K	N	S	H		RE	FN	FX	APMN	APMX
LC 1245-CH	**M4310**	◪		■			■		-	–	0,08	0,25	0,1	2,0

LC 12-RE

	CDI	D1	INSL	S
12	12,000	5,00	14,00	2,50



ISO		P	M	K	N	S	H		RE	FN	FX	APMN	APMX
LC 1220-RE	**M4310**	◪		■			■		-	2,0	0,08	0,25	0,1	2,0
LC 1230-RE	**M4310**	◪		■			■		-	3,0	0,08	0,25	0,1	3,0

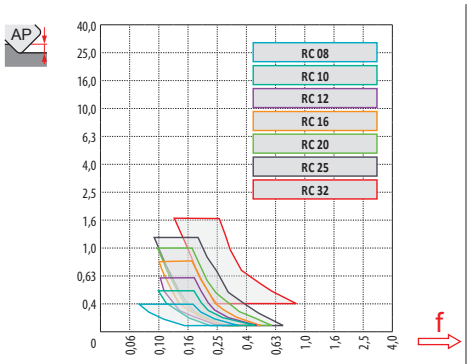
ISO		FN	FX	M4310	M8310	M8330
P	●	0,05	0,30	280	329	296
		0,05	0,45			
		0,05	0,60			
		0,05	0,25	252	297	267
		0,05	0,40			
		0,05	0,55			
	✖	0,05	0,20	226	266	239
		0,05	0,35			
		0,05	0,50			
K	●	0,05	0,30	264	311	280
		0,05	0,45			
		0,05	0,60			
		0,05	0,25	241	284	256
		0,05	0,40			
		0,05	0,55			
	✖	0,05	0,20	214	252	227
		0,05	0,35			
		0,05	0,50			
H	●	0,05	0,30	52	63	57
		0,05	0,45			
		0,05	0,60			
		0,05	0,25	48	59	53
		0,05	0,40			
		0,05	0,55			
	✖	0,05	0,20	41	50	45
		0,05	0,30			
		0,05	0,40			

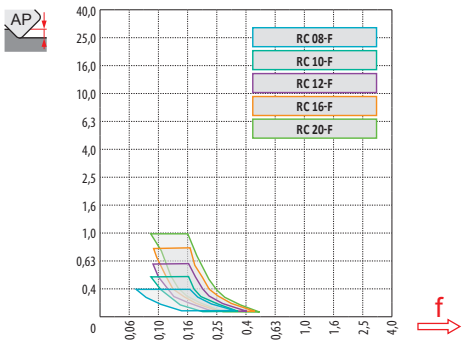
	RC 08	RC 10	RC 12	RC 16	RC 20	RC 25	RC 32
RE	4,0	5,0	6,0	8,0	10,0	12,5	16,0
BS	–	–	–	–	–	–	–

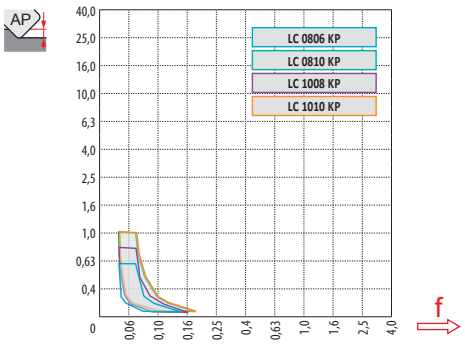
	RC 08-F	RC 10-F	RC 12-F	RC 16-F	RC 20-F
RE	4,0	5,0	6,0	8,0	10,0
BS	–	–	–	–	–

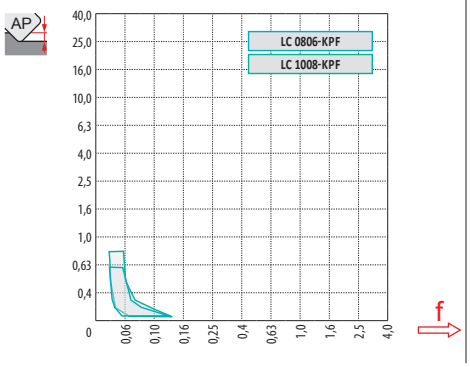
	LC 08-KP	LC 08-KP	LC 10-KP	LC 10-KP	LC 08-KPF	LC 10-KPF
RE	0,6	1,0	0,8	1,0	0,6	0,8
BS	–	–	–	–	–	–

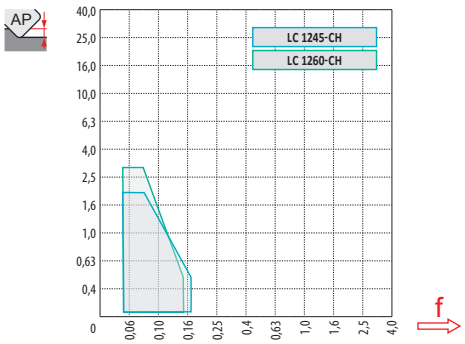
	LC 1245-CH	LC 1260-CH	LC 1210-RE	LC 1220-RE	LC 1230-RE
RE	3×45	5×60	1,0	2,0	3,0
BS	–	–	–	–	–

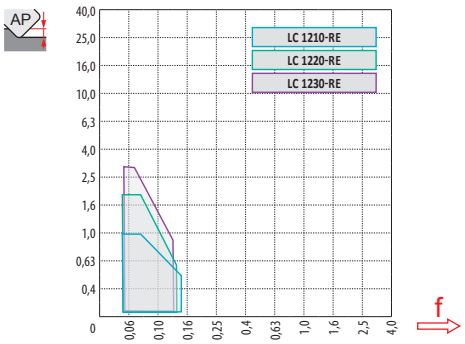








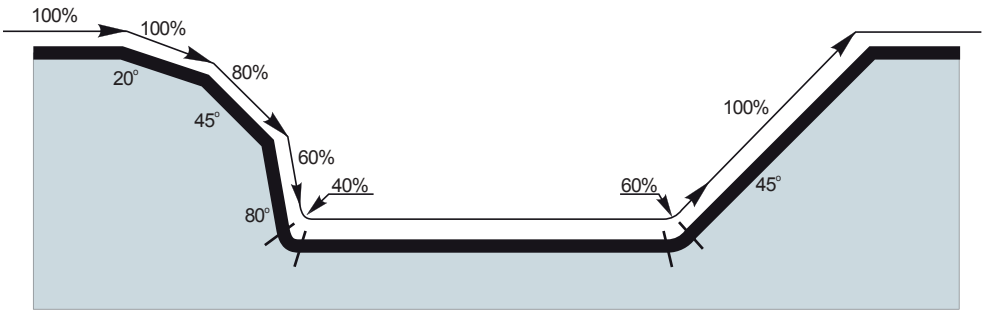




	DCX	AP	0,30	0,40	0,50	0,70	1,00	1,25	1,50	2,00	2,50	3,00	4,00	5,00	6,00	8,00	10,00	12,00	15,00	16,00
RC 08 / RC 08-F	8	DEF	3,0	3,5	3,9	4,5	5,3	5,8	6,2	6,9	7,4	7,7	8,0	–	–	–	–	–	–	–
RC 10 / RC 10-F	10		3,4	3,9	4,4	5,1	6,0	6,6	7,1	8,0	8,7	9,2	9,8	10,0	–	–	–	–	–	–
RC 12 / RC 12-F	12		3,7	4,3	4,8	5,6	6,6	7,3	7,9	8,9	9,7	10,4	11,3	11,8	12,0	–	–	–	–	–
RC 16 / RC 16-F	16		4,3	5,0	5,6	6,5	7,7	8,6	9,3	10,6	11,6	12,5	13,9	14,8	15,5	16,0	–	–	–	–
RC 20 / RC 20-F	20		4,9	5,6	6,2	7,4	8,7	9,7	10,5	12,0	13,2	14,3	16,0	17,3	18,3	19,6	20,0	–	–	–
RC 25 / RC 25-F	25		5,4	6,3	7,0	8,2	9,8	10,9	11,9	13,6	15,0	16,2	18,3	20,0	21,4	23,3	24,5	25,0	–	–
RC 32 / RC 32-F	32		6,17	7,11	7,94	9,36	11,14	12,40	13,53	15,49	17,18	18,65	21,17	23,24	24,98	27,71	29,66	30,98	31,94	32,00

	DCX	µm	3	5	10	15	20	30	40	50	60	80	100
RC 08 / RC 08-F	8	f_e	0,310	0,400	0,566	0,693	0,800	0,980	1,131	1,265	1,386	1,600	1,789
RC 10 / RC 10-F	10		0,346	0,447	0,632	0,775	0,894	1,095	1,265	1,414	1,549	1,789	2,000
RC 12 / RC 12-F	12		0,379	0,490	0,693	0,849	0,980	1,200	1,386	1,549	1,697	1,960	2,191
RC 16 / RC 16-F	16		0,438	0,566	0,800	0,980	1,131	1,386	1,600	1,789	1,960	2,263	2,530
RC 20 / RC 20-F	20		0,490	0,632	0,894	1,095	1,265	1,549	1,789	2,000	2,191	2,530	2,828
RC 25 / RC 25-F	25		0,548	0,707	1,000	1,225	1,414	1,732	2,000	2,236	2,449	2,828	3,162
RC 32 / RC 32-F	32		0,620	0,800	1,131	1,386	1,600	1,960	2,263	2,530	2,771	3,200	3,578

DEF	a_e	1,0%	2,5%	5,0%	7,5%	10,0%	15,0%	20,0%	25,0%	30,0%	35,0%	40,0%	45,0%	50,0%	60,0%	70,0%	75,0%	80,0%	90,0%	100,0%
	AP										⇨x.f									
19,9%	1,0%	2,86	1,84	1,33	1,12	1,00	0,89	–	–	–	–	–	–	–	–	–	–	–	–	–
31,2%	2,5%	3,58	2,28	1,64	1,36	1,20	1,01	0,92	0,88	0,91	–	–	–	–	–	–	–	–	–	–
43,6%	5,0%	4,22	2,68	1,92	1,58	1,39	1,16	1,03	0,95	0,90	0,88	0,89	–	–	–	–	–	–	–	–
52,7%	7,5%	4,63	2,95	2,10	1,73	1,51	1,26	1,11	1,02	0,96	0,91	0,89	0,88	0,90	–	–	–	–	–	–
60,0%	10,0%	4,94	3,14	2,24	1,84	1,61	1,33	1,18	1,07	1,00	0,95	0,91	0,89	0,88	1,00	–	–	–	–	–
71,4%	15,0%	5,39	3,42	2,43	2,00	1,74	1,44	1,27	1,15	1,07	1,01	0,96	0,93	0,90	0,88	0,93	–	–	–	–
80,0%	20,0%	5,70	3,62	2,57	2,11	1,84	1,52	1,33	1,21	1,12	1,05	1,00	0,96	0,93	0,89	0,88	0,89	1,00	–	–
86,6%	25,0%	5,93	3,76	2,67	2,20	1,91	1,58	1,38	1,25	1,16	1,08	1,03	0,99	0,95	0,90	0,88	0,88	0,89	–	–
91,7%	30,0%	6,10	3,87	2,75	2,26	1,96	1,62	1,42	1,28	1,18	1,11	1,05	1,01	0,97	0,92	0,89	0,88	0,88	0,93	–
95,4%	35,0%	6,23	3,95	2,80	2,30	2,00	1,65	1,44	1,31	1,20	1,13	1,07	1,02	0,98	0,93	0,89	0,88	0,88	0,90	–
98,0%	40,0%	6,31	4,00	2,84	2,33	2,03	1,67	1,46	1,32	1,22	1,14	1,08	1,03	0,99	0,93	0,90	0,89	0,88	0,89	–
99,5%	45,0%	6,36	4,03	2,86	2,35	2,04	1,68	1,47	1,33	1,23	1,15	1,09	1,04	1,00	0,94	0,90	0,89	0,88	0,88	–
100,0%	50,0%	6,38	4,04	2,87	2,35	2,05	1,69	1,48	1,33	1,23	1,15	1,09	1,04	1,00	0,94	0,90	0,89	0,88	0,88	1,00



	DCX	RE	AP 0,00	0,30	0,40	0,50	0,60	0,70	0,80	0,90	1,00	1,25	1,50	2,00	2,50	3,00	4,00
LC 0806-KP		0,6	6,8	7,8	7,9	8,0	8,0	–	–	–	–	–	–	–	–	–	–
LC 0806-KPF	8	0,6	6,8	7,8	7,9	8,0	8,0	–	–	–	–	–	–	–	–	–	–
LC 0810-KP		1,0	6,0	7,4	7,6	7,7	7,8	7,9	8,0	8,0	8,0	–	–	–	–	–	–
LC 1008-KP		0,8	8,4	9,6	9,8	9,9	9,9	10,0	10,0	–	–	–	–	–	–	–	–
LC 1008-KPF	10	0,8	8,4	9,6	9,8	9,9	9,9	10,0	10,0	–	–	–	–	–	–	–	–
LC 1010-KP		1,0	8,0	9,4	9,6	9,7	9,8	9,9	10,0	10,0	10,0	–	–	–	–	–	–
LC 1245-CH		3x45	8,0	8,6	8,8	9,0	9,2	9,4	9,6	9,8	10,0	10,5	11,0	12,0	–	–	–
LC 1260-CH		5x60	9,7	10,0	10,2	10,3	10,4	10,5	10,6	10,7	10,8	11,1	11,4	12,0	–	–	–
LC 1210-RE	12	1,0	10,0	10,1	10,2	10,3	10,4	10,6	10,8	11,1	12,0	–	–	–	–	–	–
LC 1220-RE		2,0	8,0	8,0	8,1	8,1	8,2	8,3	8,3	8,4	8,5	8,9	9,4	12,0	–	–	–
LC 1230-RE		3,0	6,0	6,0	6,1	6,1	6,1	6,2	6,2	6,3	6,3	6,5	6,8	7,5	8,7	12,0	–

DCX	µm	3	5	10	15	20	30	40	50	60	80	100
8	f_e	0,310	0,400	0,566	0,693	0,800	0,980	1,131	1,265	1,386	1,600	1,789
10		0,346	0,447	0,632	0,775	0,894	1,095	1,265	1,414	1,549	1,789	2,000

RE	µm	3	5	10	15	20	30	40	50	60	80	100
0,6	f_e	0,120	0,155	0,219	0,268	0,310	0,379	0,438	0,490	0,537	0,620	0,693
0,8		0,139	0,179	0,253	0,310	0,358	0,438	0,506	0,566	0,620	0,716	0,800
1,0		0,155	0,200	0,283	0,346	0,400	0,490	0,566	0,632	0,693	0,800	0,89

	DCX	RE	max
LC 0806-KP		0,6	3,0
LC 0806-KPF	8	0,6	2,8
LC 0810-KP		1,0	3,0
LC 1008-KP		0,8	3,8
LC 1008-KPF	10	0,8	3,6
LC 1010-KP		1,0	3,8
LC 1245-CH		3x45	–
LC 1260-CH		5x60	–
LC 1210-RE	12	1,0	–
LC 1220-RE		2,0	–
LC 1230-RE		3,0	–

	DCX	RE	RPMX	APMX / l
LC 0806-KP		0,6	2,5	1,5/35
LC 0806-KPF	8	0,6	2,2	1,5/39
LC 0810-KP		1,0	2,4	1,5/36
LC 1008-KP		0,8	2,6	1,5/33
LC 1008-KPF	10	0,8	2,3	1,5/38
LC 1010-KP		1,0	2,6	1,5/33
LC 1245-CH		3×45	–	–
LC 1260-CH		5×60	–	–
LC 1210-RE	12	1,0	–	–
LC 1220-RE		2,0	–	–
LC 1230-RE		3,0	–	–

	DCX	RE	d_{min}	d_{max}	s_{max} d_{min}	s_{max} d_{max}
LC 0806-KP		0,6	9,8	15,9	0,8	1,0
LC 0806-KPF	8	0,6	10,2	15,9	0,1	0,1
LC 0810-KP		1,0	9,9	15,9	0,1	0,1
LC 1008-KP		0,8	12,2	19,9	0,9	1,1
LC 1008-KPF	10	0,8	12,6	19,9	0,2	0,2
LC 1010-KP		1,0	12,2	19,9	0,2	0,2
LC 1245-CH		3×45	–	–	–	–
LC 1260-CH		5×60	–	–	–	–
LC 1210-RE	12	1,0	–	–	–	–
LC 1220-RE		2,0	–	–	–	–
LC 1230-RE		3,0	–	–	–	–

	DCX	RE	AP
LC 0806-KP		0,6	0,15
LC 0806-KPF	8	0,6	0,13
LC 0810-KP		1,0	0,13
LC 1008-KP		0,8	0,2
LC 1008-KPF	10	0,8	0,18
LC 1010-KP		1,0	0,19
LC 1245-CH		3×45	–
LC 1260-CH		5×60	–
LC 1210-RE	12	1,0	–
LC 1220-RE		2,0	–
LC 1230-RE		3,0	–

	DCX			
LC 1245-CH	12	3×45°	1,26	0,21

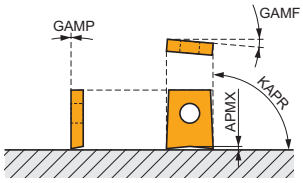
Overhang (multiple of diameter *DCX*)	**<3**	**3 – 3,5**	**3,6 – 4**	**4,1 – 4,5**	**>4,6**
Multiplication factor for speed	1	0,9	0,8	0,7	0,5

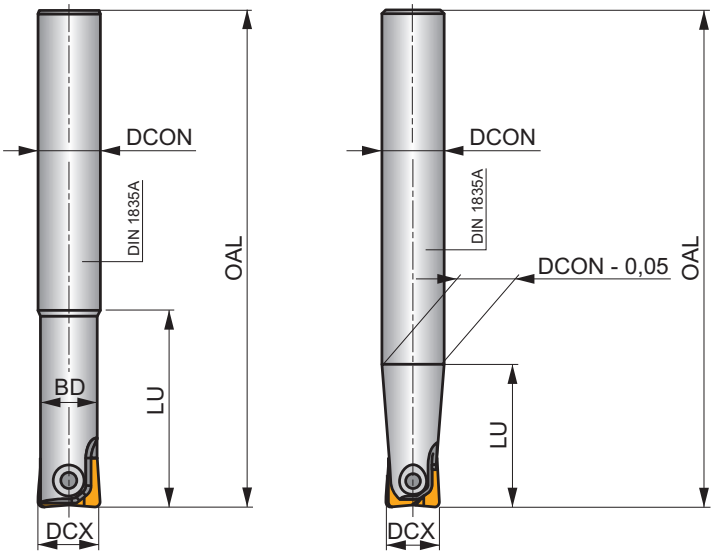
K2-SLC

P K H

S

APMX	1,0 - 4,0 mm





h_m 0,03 - 0,10

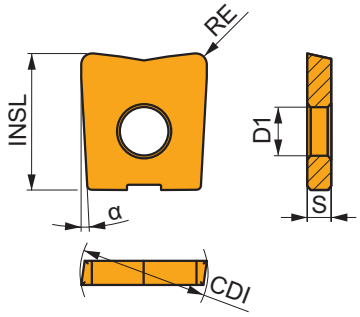
	ISO	DCX [mm]	OAL [mm]	DCON [mm]	BD [mm]	LU [mm]			max.		kg		
DIN 1835A	**12K2R030A12-SLC12-A**	12	130	12	10,5	30	2	–	35000	–	0,11	GI037	CO532
	16K2R035A16-SLC16-A	16	140	16	14,0	35	2	–	22000	–	0,20	GI038	CO533
	20K2R045A20-SLC20-A	20	160	20	18,0	45	2	–	16000	–	0,38	GI039	CO534

GI037	LC 12-KP	LC 12-KPF
GI038	LC 16-KP	LC 16-KPF
GI039	LC 20-KP	LC 20-KPF

		Nm			
CO532	CS 5009-T20P	5,0	M 5	9	SDR T20P
CO533	CS 5013-T20P	5,0	M 5	13	SDR T20P
CO534	CS 5015-T20P	5,0	M 5	15	SDR T20P

LC

	α	CDI	D1	INSL	S
12	7°	12,000	5,00	14,00	2,50
16	7°	16,000	5,00	16,00	3,00
20	7°	20,000	5,00	18,00	3,00



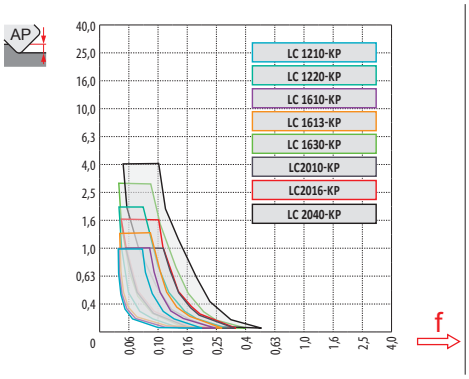
ISO		P	M	K	N	S	H		RE	FN	FX	APMN	APMX
LC 1210-KP	M4310	◪		■			■	-	1,0	0,08	0,25	0,1	1,0
	M8310	■		■			■	-	1,0	0,08	0,25	0,1	1,0
	M8330	■		■			◪	-	1,0	0,08	0,25	0,1	1,0
LC 1220-KP	M4310	◪		■			■	-	2,0	0,08	0,25	0,1	2,0
LC 1610-KP	M4310	◪		■			■	-	1,0	0,08	0,30	0,1	1,0
	M8310	■		■			■	-	1,0	0,08	0,30	0,1	1,0
	M8330	■		■			◪	-	1,0	0,08	0,30	0,1	1,0
LC 1613-KP	M4310	◪		■			■	-	1,3	0,08	0,30	0,1	1,3
	M8310	■		■			■	-	1,3	0,08	0,30	0,1	1,3
LC 1630-KP	M4310	◪		■			■	-	3,0	0,08	0,30	0,1	3,0
LC 2010-KP	M4310	◪		■			■	-	1,0	0,08	0,35	0,1	1,0
	M8310	■		■			■	-	1,0	0,08	0,35	0,1	1,0
	M8330	■		■			◪	-	1,0	0,08	0,35	0,1	1,0
LC 2016-KP	M4310	◪		■			■	-	1,6	0,08	0,35	0,1	1,6
	M8310	■		■			■	-	1,6	0,08	0,35	0,1	1,6
LC 2040-KP	M8330	■		■			◪	-	4,0	0,08	0,35	0,1	4,0
LC 1210-KPF	M4310	◪		■			■	-	1,0	0,05	0,15	0,1	1,0
	M8330	■		■			◪	-	1,0	0,05	0,15	0,1	1,0
LC 1613-KPF	M4310	◪		■			■	-	1,3	0,05	0,15	0,1	1,3
LC 2016-KPF	M4310	◪		■			■	-	1,6	0,05	0,15	0,1	1,6

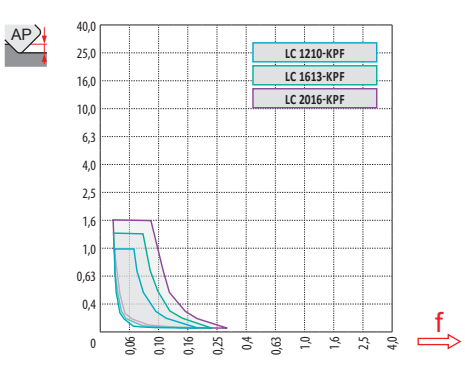
ISO		FN	FX	M4310	M8310	M8330
P	●	0,05	0,10	264	310	279
		0,10	0,20			
		0,15	0,30			
		0,05	0,09	239	281	253
		0,10	0,18			
		0,15	0,27			
	✖	0,05	0,07	213	251	226
		0,10	0,14			
		0,15	0,20			
K	●	0,05	0,10	249	293	264
		0,10	0,20			
		0,15	0,30			
		0,05	0,09	228	268	241
		0,10	0,18			
		0,15	0,27			
	✖	0,05	0,07	202	238	214
		0,10	0,14			
		0,15	0,20			
H	●	0,05	0,10	49	60	54
		0,10	0,20			
		0,15	0,30			
		0,05	0,09	45	55	50
		0,10	0,18			
		0,15	0,27			
	✖	0,05	0,07	39	47	42
		0,10	0,14			
		0,15	0,20			

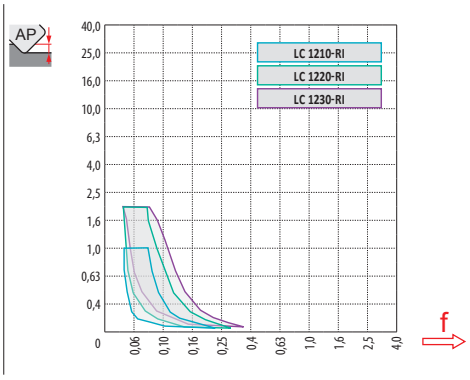
a_e / DCX	0,05	0,10	0,15	0,20	0,25	0,30	0,40	0,50	0,60	0,70	0,75	0,80	0,90	1,00
X.V	1,48	1,35	1,27	1,22	1,19	1,16	1,11	1,08	1,05	1,03	1,00	1,00	1,00	1,00
⇨X.f	2,87	2,05	1,69	1,48	1,33	1,20	0,90	0,70	0,85	0,90	0,89	0,88	0,88	1,00
⇨X.f	0,64	0,64	0,64	0,64	0,64	0,65	0,65	0,67	0,68	0,71	0,72	0,74	0,79	1,00

	LC 12-KP	LC 12-KP	LC 16-KP	LC 16-KP	LC 16-KP	LC 20-KP	LC 20-KP	LC 20-KP
RE	1,0	2,0	1,0	1,3	3,0	1,0	1,6	4,0
BS	–	–	–	–	–	–	–	–

	LC 12-KPF	LC 16-KPF	LC 20-KP	LC 1215-RI	LC 1220-RI	LC 1230-RI
RE	1,0	1,3	1,6	1,5	2,0	3,0
BS	–	–	–	–	–	–







	DCX	RE	0,00	0,30	0,40	0,50	0,60	0,70	0,80	0,90	1,00	1,25	1,50	2,00	2,50	3,00	4,00
			AP														
LC 1210-KP	12	1,0	10,0	11,4	11,6	11,7	11,8	11,9	12,0	12,0	12,0	–	–	–	–	–	–
LC 1210-KPF		1,0	10,0	11,4	11,6	11,7	11,8	11,9	12,0	12,0	12,0	–	–	–	–	–	–
LC 1220-KP		2,0	8,0	10,1	10,4	10,6	10,9	11,0	11,2	11,3	11,5	11,7	11,9	12,0	–	–	–
LC 1210-RI		1,0	10,0	11,4	11,6	11,7	11,8	11,9	12,0	12,0	12,0	–	–	–	–	–	–
LC 1220-RI		2,0	8,0	10,1	10,4	10,6	10,9	11,0	11,2	11,3	11,5	11,7	11,9	12,0	–	–	–
LC 1230-RI		3,0	6,0	8,6	9,0	9,3	9,6	9,9	10,1	10,3	10,5	10,9	11,2	11,7	11,9	–	–
LC 1610-KP	16	1,0	14,0	15,4	15,6	15,7	15,8	15,9	16,0	16,0	16,0	–	–	–	–	–	–
LC 1613-KP		1,3	13,4	15,1	15,3	15,4	15,6	15,7	15,8	15,9	15,9	16,0	–	–	–	–	–
LC 1613-KPF		1,3	13,4	15,1	15,3	15,4	15,6	15,7	15,8	15,9	15,9	16,0	–	–	–	–	–
LC 1630-KP		3,0	10,0	12,6	13,0	13,3	13,6	13,9	14,1	14,3	14,5	14,9	15,2	15,7	15,9	–	–
LC 2010-KP	20	1,0	18,0	19,4	19,6	19,7	19,8	19,9	20,0	20,0	20,0	–	–	–	–	–	–
LC 2016-KP		1,6	16,8	18,7	18,9	19,1	19,3	19,4	19,6	19,7	19,8	19,9	20,0	–	–	–	–
LC 2016-KPF		1,6	16,8	18,7	18,9	19,1	19,3	19,4	19,6	19,7	19,8	19,9	20,0	–	–	–	–
LC 2040-KP		4,0	12,0	15,0	15,5	15,9	16,2	16,5	16,8	17,1	17,3	17,8	18,2	18,9	19,4	–	–

DCX	µm	3	5	10	15	20	30	40	50	60	80	100
12	f_e	0,379	0,490	0,693	0,849	0,980	1,200	1,386	1,549	1,697	1,960	2,191
16		0,438	0,566	0,800	0,980	1,131	1,386	1,600	1,789	1,960	2,263	2,530
20		0,490	0,632	0,894	1,095	1,265	1,549	1,789	2,000	2,191	2,530	2,828

RE	µm	3	5	10	15	20	30	40	50	60	80	100
1,3	f_e	0,177	0,228	0,322	0,395	0,456	0,559	0,645	0,721	0,790	0,912	1,020
1,6		0,196	0,253	0,358	0,438	0,506	0,620	0,716	0,800	0,876	1,012	1,131
2,0		0,219	0,283	0,400	0,490	0,566	0,693	0,800	0,894	0,980	1,131	1,265
3,0		0,268	0,346	0,490	0,600	0,693	0,849	0,980	1,095	1,200	1,386	1,549
4,0		0,310	0,400	0,566	0,693	0,800	0,980	1,131	1,265	1,386	1,600	1,789

	DCX	RE	max
LC 1210-KP	12	1,0	4,8
LC 1210-KPF		1,0	4,4
LC 1220-KP		2,0	4,8
LC 1210-RI		1,0	–
LC 1220-RI		2,0	–
LC 1230-RI		3,0	–
LC 1610-KP	16	1,0	6,6
LC 1613-KP		1,3	6,6
LC 1613-KPF		1,3	5,9
LC 1630-KP		3,0	6,6
LC 2010-KP	20	1,0	8,5
LC 2016-KP		1,6	8,5
LC 2016-KPF		1,6	7,5
LC 2040-KP		4,0	8,5

	DCX	RE	RPMX	APMX / l
LC 1210-KP	12	1,0	4,7	1,5/19
LC 1210-KPF		1,0	3,8	1,5/23
LC 1220-KP		2,0	4,4	2,0/26
LC 1210-RI		1,0	–	–
LC 1220-RI		2,0	–	–
LC 1230-RI		3,0	–	–
LC 1610-KP	16	1,0	4,8	1,5/18
LC 1613-KP		1,3	4,8	1,5/18
LC 1613-KPF		1,3	3,8	1,5/23
LC 1630-KP		3,0	4,4	3,0/39
LC 2010-KP	20	1,0	5,0	1,5/18
LC 2016-KP		1,6	4,9	1,6/19
LC 2016-KPF		1,6	3,8	1,6/25
LC 2040-KP		4,0	4,5	4,0/51

	DCX	RE	d_{min}	d_{max}	S_{max} d_{min}	S_{max} d_{max}
LC 1210-KP	12	1,0	14,1	23,9	1,0	1,2
LC 1210-KPF		1,0	15,0	23,9	0,4	0,4
LC 1220-KP		2,0	14,1	23,9	0,3	0,3
LC 1210-RI		1,0	–	–	–	–
LC 1220-RI		2,0	–	–	–	–
LC 1230-RI		3,0	–	–	–	–
LC 1610-KP	16	1,0	18,6	31,9	1,1	1,4
LC 1613-KP		1,3	18,6	31,9	0,6	0,6
LC 1613-KPF		1,3	19,9	31,9	0,5	0,5
LC 1630-KP		3,0	18,6	31,9	0,4	0,4
LC 2010-KP	20	1,0	22,8	39,9	1,3	1,5
LC 2016-KP		1,6	22,8	39,9	0,8	0,8
LC 2016-KPF		1,6	24,8	39,9	0,7	0,7
LC 2040-KP		4,0	22,8	39,9	0,5	0,5

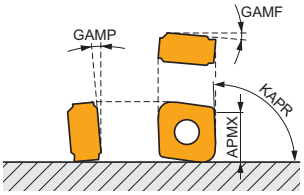
	DCX	RE	AP
LC 1210-KP	12	1,0	0,44
LC 1210-KPF		1,0	0,9
LC 1220-KP		2,0	0,4
LC 1210-RI		1,0	–
LC 1220-RI		2,0	–
LC 1230-RI		3,0	–
LC 1610-KP	16	1,0	0,65
LC 1613-KP		1,3	0,62
LC 1613-KPF		1,3	0,53
LC 1630-KP		3,0	0,44
LC 2010-KP	20	1,0	0,85
LC 2016-KP		1,6	0,79
LC 2016-KPF		1,6	0,67
LC 2040-KP		4,0	0,54

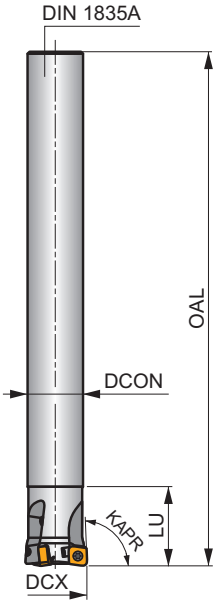
Overhang (multiple of diameter *DCX*)	**<3**	**3 – 3,5**	**3,6 – 4**	**4,1 – 4,5**	**>4,6**
Multiplication factor for speed	1	0,9	0,8	0,7	0,5

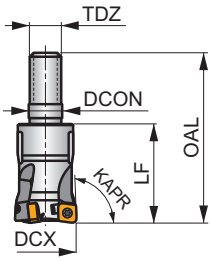
SCN05C

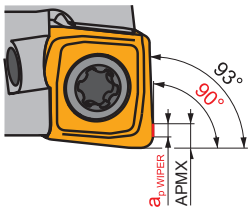
P K H S

KAPR	93°
APMX($a_{p\ WIPER}$)	1,0 (0,5 mm)









h_m 0,02 - 0,07

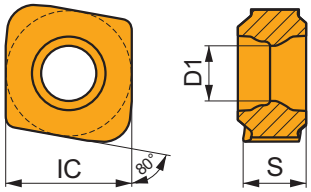
	ISO	DCX [mm]	OAL [mm]	DCON [mm]	LU [mm]	LF [mm]	M [mm]	GAMF [°]	GAMP [°]			max.		kg		
DIN 1835A	**12A2R020A10-SCN05C-C**	12	100	10	20	–	–	-15	-8	2	–	48700	✓	0,05	GI330	CO601
	16A3R020A14-SCN05C-C	16	130	14	20	–	–	-13,5	-7,8	3	–	42200	✓	0,13	GI330	CO601
	20A5R020A18-SCN05C-C	20	160	18	20	–	–	-12,7	-7,5	5	✓	37700	✓	0,28	GI330	CO601
MODULAR	**12A2R020M06-SCN05C-C**	12	35	–	–	20	M6	-15	-8	2	–	–	✓	0,01	GI330	CO601
	16A3R025M08-SCN05C-C	16	43	–	–	25	M8	-13,5	-7,8	3	–	–	✓	0,03	GI330	CO601
	20A5R030M10-SCN05C-C	20	49	–	–	30	M10	-12,7	-7,5	5	✓	–	✓	0,05	GI330	CO601

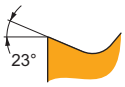
GI330	CNHX 0502..

		Nm			
CO601	US 62005-T06P	0,9	M 2	4,9	Flag T06P

CNHX 05

	IC	D1	S
0502	4,800	2,10	2,40





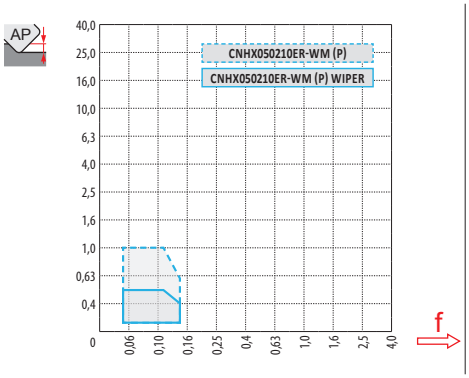
ISO		P	M	K	N	S	H		RE	FN	FX	APMN	APMX
CNHX 050205ER-WM	M4310	◪		■			■	●	-	0,5	0,05	0,15	0,1	1,0
	M8330	■		■			◪	⬢	-	0,5	0,05	0,15	0,1	1,0
CNHX 050210ER-WM	M4310	◪		■			■	⬢	-	1,0	0,05	0,15	0,1	1,0
	M8330	■		■			◪	⬢	-	1,0	0,05	0,15	0,1	1,0

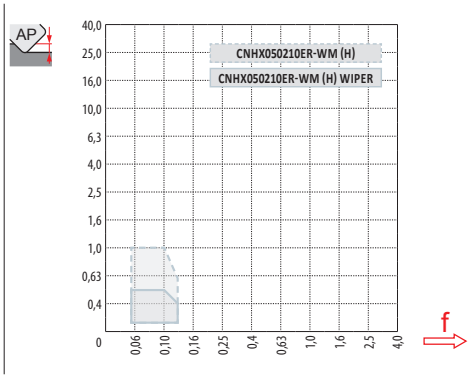
ISO		FN	FX	M4310	M8330
P	●	0,05	0,15	350	365
	⬢	0,05	0,12	315	329
	✖	0,05	0,10	280	292
K	●	0,05	0,15	330	345
	⬢	0,20	0,12	297	311
	✖	0,20	0,10	264	276
H	●	0,05	0,15	71	68
	⬢	0,05	0,12	64	61
	✖	0,05	0,10	57	54

a_e / DCX	0,05	0,10	0,15	0,20	0,25	0,30	0,40	0,50	0,60	0,70	0,75	0,80	0,90	1,00
X.V	1,48	1,35	1,27	1,22	1,19	1,16	1,11	1,08	1,05	1,03	1,00	1,00	1,00	1,00

a_e / DCX	0,005	0,01	0,02	0,03	0,04	0,05
X.V	2,04	1,85	1,68	1,59	1,53	1,48

	CNHX 05-WM	
RE	0,5	1,0
BS	0,50	0,50





DCX	max.
12	0,4
16	0,4
20	0,5

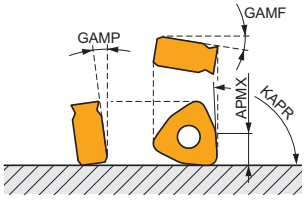
DCX	RPMX	APMX / l
12	2,4	1/25
14	1,5	1/40
16	1,1	1/54

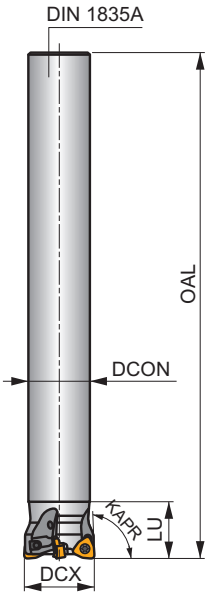
SWN04C

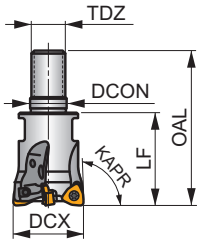
P K H

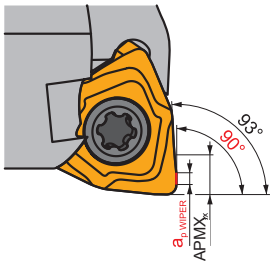
S

KAPR	93°
APMX($a_{p\,WIPER}$)	2,0 (0,5 mm)









h_m 0,02 - 0,07

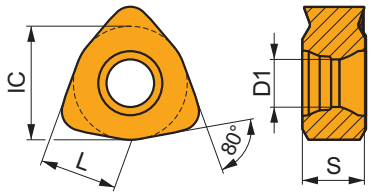
	ISO	DCX [mm]	OAL [mm]	DCON [mm]	LU [mm]	LF [mm]	TDZ [mm]	GAMF [°]	GAMP [°]			max.		kg		
DIN 1835A	**20A3R020A18-SWN04C-C**	20	160	18	20	–	–	-12	-8	3	–	19700	✓	0,27	GI331	CO602
	25A4R020A22-SWN04C-C	25	180	22	20	–	–	-11,5	-8	4	✓	26600	✓	0,45	GI331	CO602
	32A6R020A25-SWN04C-C	32	200	25	20	–	–	-11,2	-8	6	✓	23500	✓	0,69	GI331	CO602
MODULAR	**20A3R030M10-SWN04C-C**	20	49	–	–	30	M10	-12	-8	3	–	–	✓	0,05	GI331	CO602
	25A4R033M12-SWN04C-C	25	55	–	–	33	M12	-11,5	-8	4	✓	–	✓	0,08	GI331	CO602
	32A6R040M16-SWN04C-C	32	63	–	–	40	M16	-11,2	-8	6	✓	–	✓	0,19	GI331	CO602
	35A6R043M16-SWN04C-C	35	66	–	–	43	M16	-11,1	-8	6	✓	–	✓	0,22	GI331	CO602

GI331	WNHX 0403..

		Nm			
CO602	US 42507-T07P	1,2	M 2,5	7	Flag T07P

WNHX 04

	IC	D1	S
0403	6,200	2,60	3,38



ISO		P	M	K	N	S	H		RE	FN	FX	APMN	APMX
WNHX 040305ER-WM	M4310	◪		■			■	●	-	0,5	0,05	0,25	0,1	2,0
	M8330	■		■			◪	⬢	-	0,5	0,05	0,25	0,1	2,0
WNHX 040310ER-WM	M4310	◪		■			■	⬢	-	1,0	0,05	0,25	0,1	2,0
	M8330	■		■			◪	⬢	-	1,0	0,05	0,25	0,1	2,0
WNHX 040315ER-WM	M4310	◪		■			■	⬢	-	1,5	0,05	0,25	0,1	2,0
	M8330	■		■			◪	⬢	-	1,5	0,05	0,25	0,1	2,0

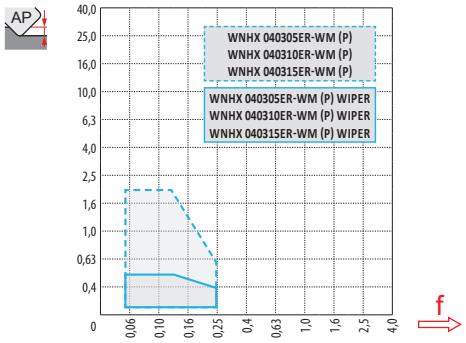
15°

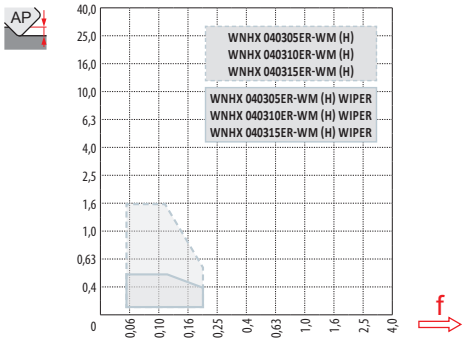
ISO		FN	FX	M4310	M8330
P	●	0,05	0,15	327	345
	⬢	0,05	0,12	294	311
	✖	0,05	0,10	261	276
K	●	0,05	0,15	308	326
	⬢	0,20	0,12	278	293
	✖	0,20	0,10	247	261
H	●	0,05	0,15	68	64
	⬢	0,05	0,12	61	58
	✖	0,05	0,10	54	51

a_e / DCX	0,05	0,10	0,15	0,20	0,25	0,30	0,40	0,50	0,60	0,70	0,75	0,80	0,90	1,00
X.V	1,48	1,35	1,27	1,22	1,19	1,16	1,11	1,08	1,05	1,03	1,00	1,00	1,00	1,00

a_e / DCX	0,005	0,01	0,02	0,03	0,04	0,05
X.V	2,04	1,85	1,68	1,59	1,53	1,48

	WNHX 04-WM		
RE	0,5	1,0	1,5
BS	0,50	0,50	0,50





DCX	max
20	0,4
25	0,5
32	0,5
35	0,5

DCX	RPMX	APMX / I
20	0,7	1,1/100
25	0,5	0,75/100
32	03	0,4/100
35	0,3	0,4/100

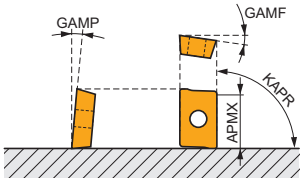
SAD07D

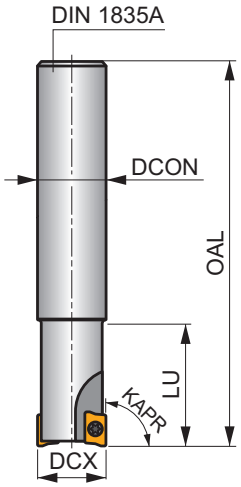
P M K N S

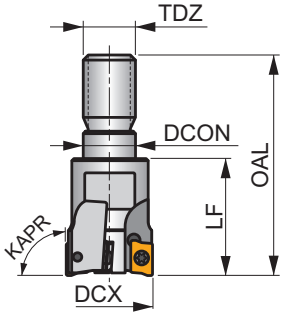
S

FORCE *AD*

KAPR	90°
APMX	5,0 mm







h_m 0,03 - 0,08

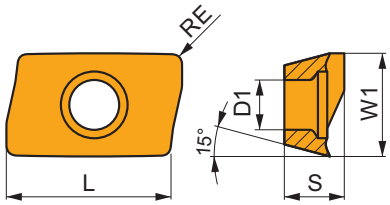
	ISO	DCX [mm]	OAL [mm]	DCON [mm]	LU [mm]	LF [mm]	TDZ [mm]	GAMF [°]	GAMP [°]			max.		kg		
DIN 1835A	10A2R016A08-SAD07D-C	10	100	8	16	–	–	-12	+8	2	–	61600	✓	0,07	GI276	SQ010
	10A2R016A10-SAD07D-C	10	80	10	16	–	–	-12	+8	2	–	61600	✓	0,07	GI276	SQ010
	10A2R018A08-SAD07D-CF	10	100	8	18	–	–	-12	+8	2	–	61600	✓	0,03	GI276	SQ010
	10A2R018A10-SAD07D-CF	10	80	10	18	–	–	-12	+8	2	–	61600	✓	0,04	GI276	SQ010
	12A2R018A10-SAD07D-C	12	120	10	18	–	–	-10	+8	2	–	56300	✓	0,09	GI276	SQ010
	12A2R018A12-SAD07D-C	12	90	12	18	–	–	-10	+8	2	–	56300	✓	0,10	GI276	SQ010
	12A3R018A12-SAD07D-C	12	90	12	18	–	–	-10	+8	3	–	56200	✓	0,10	GI276	SQ010
	12A3R020A12-SAD07D-CF	12	90	12	20	–	–	-10	+8	3	–	56200	✓	0,07	GI276	SQ010
	14A3R018A12-SAD07D-C	14	140	12	18	–	–	-9	+8	3	–	52100	✓	0,15	GI276	SQ010
	14A3R018A14-SAD07D-C	14	90	14	18	–	–	-9	+8	3	–	52100	✓	0,12	GI276	SQ010
	14A3R020A12-SAD07D-CF	14	140	12	20	–	–	-9	+8	3	–	52100	✓	0,10	GI276	SQ010
	14A3R020A14-SAD07D-CF	14	90	14	20	–	–	-9	+8	3	–	52100	✓	0,09	GI276	SQ010
	16A3R019A14-SAD07D-C	16	160	14	19	–	–	-8	+8	3	–	48700	✓	0,21	GI276	SQ011
	16A3R019A16-SAD07D-C	16	110	16	19	–	–	-8	+8	3	–	48700	✓	0,18	GI276	SQ011
	16A4R019A16-SAD07D-C	16	110	16	19	–	–	-8	+8	4	–	48700	✓	0,18	GI276	SQ011
	18A4R019A16-SAD07D-C	18	180	16	19	–	–	-7,5	+8	4	✓	45900	✓	0,29	GI276	SQ011
	18A4R019A18-SAD07D-C	18	110	18	19	–	–	-7,5	+8	4	✓	45900	✓	0,22	GI276	SQ011
	20A4R020A18-SAD07D-C	20	200	18	20	–	–	-7	+8	4	✓	43600	✓	0,38	GI276	SQ011
	20A4R020A20-SAD07D-C	20	125	20	20	–	–	-7	+8	4	✓	43600	✓	0,30	GI276	SQ011
	20A5R020A20-SAD07D-C	20	125	20	20	–	–	-7	+8	5	✓	43600	✓	0,30	GI276	SQ011
	25A5R024A25-SAD07D-C	25	140	25	24	–	–	-6,5	+8	5	✓	39000	✓	0,52	GI276	SQ011
	25A6R024A25-SAD07D-C	25	140	25	24	–	–	-6,5	+8	6	✓	39000	✓	0,52	GI276	SQ011
MODULAR	12A2R020M06-SAD07D-C	12	35	6,5	–	20	M6	-10	+8	2	–	–	✓	0,05	GI276	SQ010
	14A3R020M08-SAD07D-C	14	38	8,5	–	20	M8	-9	+8	3	–	–	✓	0,05	GI276	SQ010
	14A3R023M08-SAD07D-CF	14	41	8,5	–	23	M8	-9	+8	3	–	–	✓	0,02	GI276	SQ010
	16A4R023M08-SAD07D-C	16	41	8,5	–	23	M8	-8	+8	4	✓	–	✓	0,06	GI276	SQ011
	20A5R030M10-SAD07D-C	20	49	10,5	–	30	M10	-7	+8	5	✓	–	✓	0,09	GI276	SQ011
	25A6R035M12-SAD07D-C	25	57	12,5	–	35	M12	-6,5	+8	6	✓	–	✓	0,13	GI276	SQ011
	32A8R043M16-SAD07D-C	32	66	17	–	43	M16	-6	+8	8	✓	–	✓	0,25	GI276	SQ011

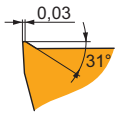
GI276	ADMX 0702..	ADEX 0702..

		Nm			
SQ010	US 62003A-T06P	0,6	M 2	3	Flag T06P
SQ011	US 62004A-T06P	0,6	M 2	4	Flag T06P

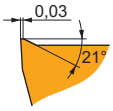
ADMX 07

	W1	D1	L	S
0702	4,482	2,20	6,95	2,48



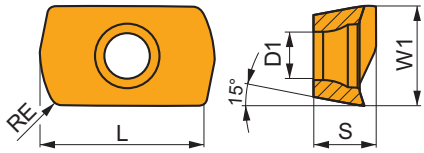


ISO		P	M	K	N	S	H	?		RE	FN	FX	APMN	APMX
ADMX 070202SR-F	M8330	■	◪	◪	◪	◪		●	-	0,2	0,02	0,10	0,1	5,0
	M8340	■	■	◪		◪		●	+/-	0,2	0,02	0,10	0,1	5,0
ADMX 070204SR-F	M9340	◪	■			◪		●	---	0,4	0,02	0,08	0,1	5,0
	M6330	◪	■			◪		⚙	-	0,4	0,02	0,10	0,1	5,0
	M8310	■	◪	◪		◪		●	-	0,4	0,02	0,10	0,1	5,0
	M8330	■	◪	◪	◪	◪		⚙	-	0,4	0,02	0,10	0,1	5,0
	M8340	■	■	◪		◪		⚙	+/-	0,4	0,02	0,10	0,1	5,0
ADMX 070208SR-F	M6330	◪	■			◪		⚙	-	0,8	0,02	0,10	0,1	5,0
	M8310	■	◪	◪		◪		⚙	-	0,8	0,02	0,10	0,1	5,0
	M8330	■	◪	◪	◪	◪		⚙	-	0,8	0,02	0,10	0,1	5,0
	M8340	■	■	◪		◪		⚙	+/-	0,8	0,02	0,10	0,1	5,0
ADMX 070202SR-M	M8330	■	◪	■		◪		●	-	0,2	0,03	0,12	0,1	5,0
	M8340	■	■	◪		◪		●	+ / -	0,2	0,03	0,12	0,1	5,0
	8215	■	◪	■		◪		●	-	0,2	0,03	0,12	0,1	5,0
ADMX 070204SR-M	M9340	◪	■			◪		●	- - -	0,4	0,03	0,10	0,1	5,0
	M6330	◪	■			◪		⚙	-	0,4	0,03	0,12	0,1	5,0
	M8310	■	◪	■		◪		●	-	0,4	0,03	0,12	0,1	5,0
	M8330	■	◪	■		◪		⚙	-	0,4	0,03	0,12	0,1	5,0
	M8340	■	■	◪		◪		⚙	+ / -	0,4	0,03	0,12	0,1	5,0
	8215	■	◪	■		◪		●	-	0,4	0,03	0,12	0,1	5,0
ADMX 070208SR-M	M9340	◪	■			◪		⚙	- - -	0,8	0,03	0,10	0,1	5,0
	M6330	◪	■			◪		⚙	-	0,8	0,03	0,12	0,1	5,0
	M8310	■	◪	■		◪		⚙	-	0,8	0,03	0,12	0,1	5,0
	M8330	■	◪	■		◪		⚙	-	0,8	0,03	0,12	0,1	5,0
	M8340	■	■	◪		◪		⚙	+ / -	0,8	0,03	0,12	0,1	5,0
	8215	■	◪	■		◪		⚙	-	0,8	0,03	0,12	0,1	5,0
ADMX 070212SR-M	M8340	■	■	◪		◪		⚙	+/-	1,2	0,03	0,12	0,1	5,0
ADMX 070216SR-M	M8310	■	◪	◪		◪		⚙	-	1,6	0,03	0,12	0,1	5,0
	M8330	■	◪	■		◪		✖	-	1,6	0,03	0,12	0,1	5,0
	M8340	■	■	◪		◪		✖	+/-	1,6	0,03	0,12	0,1	5,0
ADMX 070220SR-M	M6330	◪	■			◪		✖	-	2,0	0,03	0,12	0,1	5,0
	M8310	■	◪	■		◪		⚙	-	2,0	0,03	0,12	0,1	5,0
	M8330	■	◪	■		◪		✖	-	2,0	0,03	0,12	0,1	5,0
	M8340	■	■	◪		◪		✖	+ / -	2,0	0,03	0,12	0,1	5,0

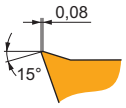


ADEX 07-HF

	W1	D1	L	S
0702	4,439	2,20	6,45	2,48

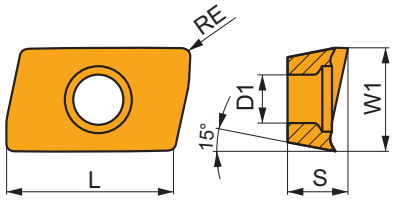


ISO		P	M	K	N	S	H		RE	FN	FX	APMN	APMX
ADEX 070206SR-HF	M6330	◪	■			◪		●	-	0,6	0,20	0,90	0,1	0,3
	M8330	■	◪	◪		◪	◪	●	-	0,6	0,20	0,90	0,1	0,3
	M8340	■	■			◪		●	+ / -	0,6	0,20	0,90	0,1	0,3

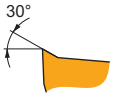


ADEX 07-FA

	W1	D1	L	S
0702	4,497	2,20	6,95	2,48

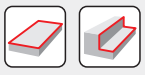


ISO		P	M	K	N	S	H		RE	FN	FX	APMN	APMX
ADEX 070204FR-FA	M0315				■			●	++	0,4	0,03	0,20	0,1	5,0
	HF7				■			●	+ / -	0,4	0,03	0,20	0,1	5,0
ADEX 070208FR-FA	HF7				■			●	+ / -	0,8	0,03	0,20	0,1	5,0



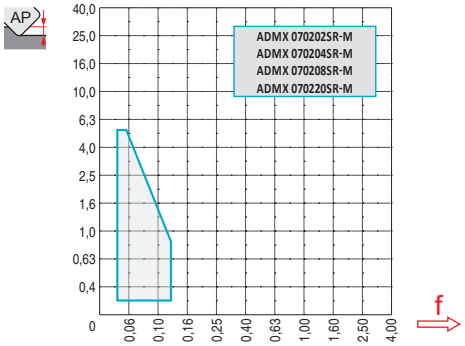
ISO		FN	FX	M0315	M9340	M6330	M8310	M8330	M8340	8215	HF7
P	●	0,03	0,12	–	276	236	292	296	252	276	–
	⧗	0,03	0,08	–	248	212	264	264	224	244	–
	✖	0,03	0,05	–	220	184	236	228	196	216	–
M	●	0,03	0,12	–	164	168	148	168	148	164	–
	⧗	0,03	0,08	–	148	148	132	151	132	148	–
	✖	0,03	0,05	–	132	128	120	134	116	128	–
K	●	0,03	0,12	–	–	–	276	282	240	260	–
	⧗	0,03	0,08	–	–	–	252	251	212	232	–
	✖	0,03	0,05	–	–	–	224	220	184	204	–
N	●	0,03	0,20	684	–	–	–	-	–	–	306
	⧗	0,03	0,16	612	–	–	–	-	–	–	275
	✖	0,03	0,12	536	–	–	–	-	–	–	239
S	●	0,03	0,12	–	80	84	72	82	72	80	–
	⧗	0,03	0,08	–	72	72	64	73	64	72	–
	✖	0,03	0,05	–	64	64	60	65	56	64	–
H	●	0,03	0,12	–	–	80	–	-	75	–	–
	⧗	0,03	0,08	–	–	70	–	-	65	–	–
	✖	0,03	0,05	–	–	60	–	-	55	–	–

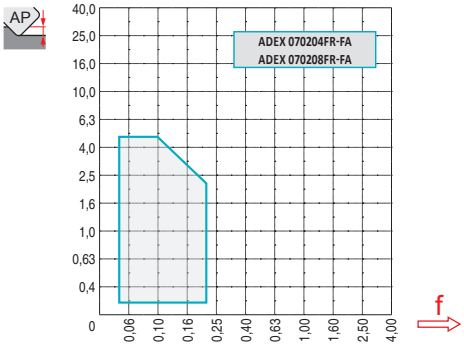
HFC		FN	FX	M8330	M8340	M6330
P	●	0,20	0,90	265	250	235
	⧗	0,20	0,70	235	220	210
	✖	0,20	0,50	205	190	180
M	●	0,20	0,90	160	150	165
	⧗	0,20	0,70	140	130	145
	✖	0,20	0,50	125	115	127
K	●	0,20	0,90	250	235	–
	⧗	0,20	0,70	220	205	–
	✖	0,20	0,50	190	180	–
S	●	0,20	0,70	70	65	73
	⧗	0,20	0,60	60	55	65
	✖	0,20	0,50	55	50	56
H	●	0,10	0,20	52	–	–
	⧗	0,10	0,20	42	–	–
	✖	0,10	0,20	40	–	–

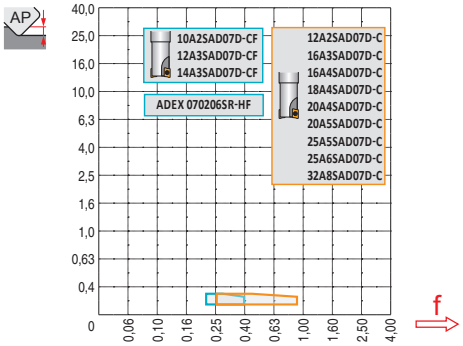


a_e / DCX	0,05	0,10	0,15	0,20	0,25	0,30	0,40	0,50	0,60	0,70	0,75	0,80	0,90	1,00
X.V	1,48	1,35	1,27	1,22	1,19	1,16	1,11	1,08	1,05	1,03	1,00	1,00	1,00	1,00
⇨X.f	2,87	2,05	1,69	1,48	1,33	1,23	1,09	0,75	0,94	0,90	0,89	0,88	0,88	1,00
⇨X.f	0,64	0,64	0,64	0,64	0,64	0,65	0,65	0,67	0,68	0,71	0,72	0,74	0,79	1,00

	ADMX 07-F			ADMX 07-M						ADEX 07-HF	ADEX 07-FA	
RE	0,2	0,4	0,8	0,2	0,4	0,8	1,2	1,6	2,0	0,6	0,4	0,8
BS	1,38	0,89	0,54	1,38	0,89	0,54	1,13	0,73	0,33	–	0,94	0,55







ADEX 07-HF					
DCX	AP	0	0,1	0,2	0,3
10		5,6	7,8	8,7	9,4
12		7,6	9,8	10,7	11,4
14		9,6	11,8	12,7	13,4
16	DEF	11,6	13,8	14,7	15,4
18		13,6	15,8	16,7	17,4
20		15,6	17,8	18,7	19,4
25		20,6	22,8	23,7	24,4
32		27,6	29,8	30,7	31,4

HFC			
AP	0,1	0,2	0,3
1 f	0,9	0,8	0,6

max.

3,9

AP	1,0	3,0	5,0
1 f	0,13	0,08	0,05

HFC			
AP	0,1	0,2	0,3
1 f	0,7	0,6	0,4

DCX	RPMX	APMX / l
10	5,2	5,0/56
12	3,4	5,0/86
14	2,5	4,2/100
16	1,9	3,2/100
18	1,7	2,8/100
20	1,5	2,5/100
25	1,1	1,8/100
32	0,8	1,2/100

HFC		
RPMX	RPMX	APMX / l
3,5	3,5	0,3/6
2,2	2,2	0,3/9
1,6	1,6	0,3/12
1,3	1,3	0,3/15
1,1	1,1	0,3/17
0,9	0,9	0,3/21
0,7	0,7	0,3/26
0,5	0,5	0,3/36

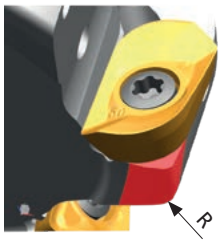
DCX	d_{min}	d_{max}	s_{max} / d_{min}	s_{max} / d_{max}
10	12,0	20,0	0,5	2,8
12	16,0	24,0	0,7	2,2
14	20,0	28,0	0,8	1,9
16	24,0	32,0	0,8	1,6
18	28,0	36,0	0,9	1,6
20	32,0	40,0	0,9	1,6
25	42,0	50,0	1,0	1,5
32	56,0	64,0	1,0	1,4

HFC				
DCX	d_{min}	d_{max}	s_{max} / d_{min}	s_{max} / d_{max}
10	12	20	0,30	0,30
12	16	24	0,30	0,30
14	20	28	0,30	0,30
16	24	32	0,30	0,30
18	28	36	0,30	0,30
20	32	40	0,30	0,30
25	42	50	0,30	0,30
32	56	64	0,30	0,30

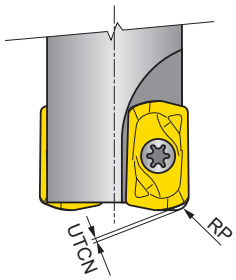
AP	HFC
0,9	0,3

max
3,9

DCX	µm	3	5	10	15	20	30	40	50	60	80	100
10	f_e	0,346	0,447	0,632	0,775	0,894	1,095	1,265	1,414	1,549	1,789	2,000
12		0,379	0,490	0,693	0,849	0,980	1,200	1,386	1,549	1,697	1,960	2,191
14		0,410	0,529	0,748	0,917	1,058	1,296	1,497	1,673	1,833	2,117	2,366
16		0,438	0,566	0,800	0,980	1,131	1,386	1,600	1,789	1,960	2,263	2,530
18		0,465	0,600	0,849	1,039	1,200	1,470	1,697	1,897	2,078	2,400	2,683
20		0,490	0,632	0,894	1,095	1,265	1,549	1,789	2,000	2,191	2,530	2,828
25		0,548	0,707	1,000	1,225	1,414	1,732	2,000	2,236	2,449	2,828	3,162
32		0,620	0,800	1,131	1,386	1,600	1,960	2,263	2,530	2,771	3,200	3,578



ADMX 07	R
ADMX 070216SR-M	1
ADMX 070220SR-M	1,5



ADEX 07	RP	UTCN
	[mm]	[mm]
ADEX 070206SR-HF	0,8	0,18

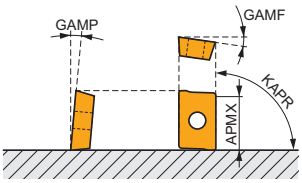
SAD11E

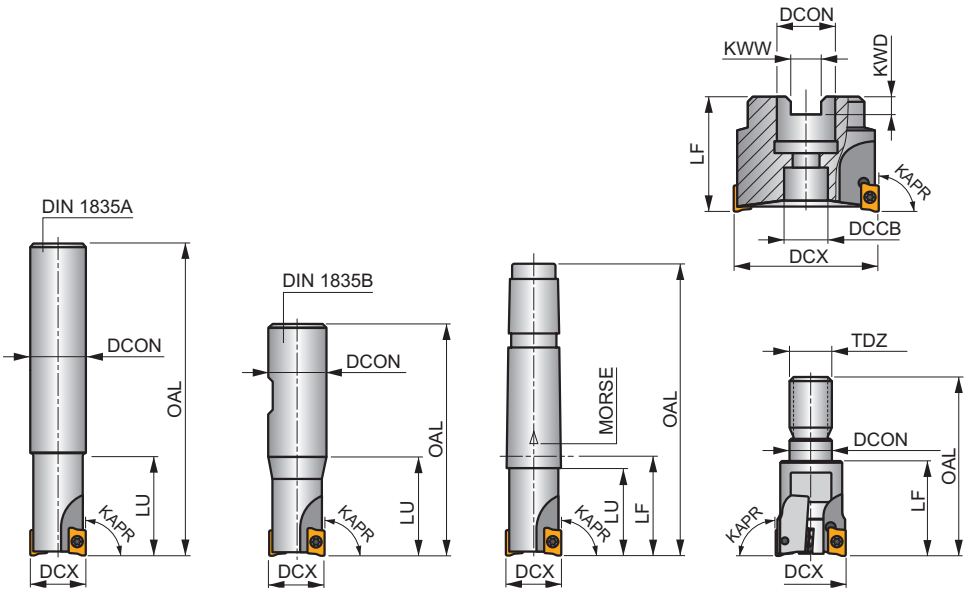
P M K N S H

S

FORCE *AD*

KAPR	90°
APMX	9,0 mm





h_m 0,08 - 0,16

h_m 0,06 - 0,13

	ISO	DCX [mm]	OAL [mm]	DCON [mm]	DCCB [mm]	LU [mm]	LF [mm]	TDZ	GAMF [°]	GAMP [°]	Morse			max.		kg			
DIN 1835A	16A2R024A14-SAD11E-C	16	160	14	–	24	–	–	-12,8	+4	–	2	–	30100	✓	0,21	GI169	SQ025	–
	16A2R024A16-SAD11E-C	16	135	16	–	24	–	–	-12,8	+4	–	2	–	30100	✓	0,09	GI169	SQ025	–
	16A2R050A16-SAD11E-C	16	135	16	–	50	–	–	-12,8	+4	–	2	–	30100	✓	0,21	GI169	SQ025	–
	18A2R029A20-SAD11E-C	18	150	20	–	29	–	–	-12	+4,5	–	2	–	28400	✓	0,35	GI169	SQ025	–
	20A2R029A20-SAD11E-C	20	150	20	–	29	–	–	-11,5	+5	–	2	–	27000	✓	0,13	GI169	SQ020	–
	20A2R070A20-SAD11E-C	20	150	20	–	70	–	–	-11,5	+5	–	2	–	27000	✓	0,32	GI169	SQ020	–
	20A3R029A18-SAD11E-C	20	200	18	–	29	–	–	-11,5	+5	–	3	–	27000	✓	0,38	GI169	SQ025	–
	20A3R029A20-SAD11E-C	20	150	20	–	29	–	–	-11,5	+5	–	3	–	27000	✓	0,13	GI169	SQ025	–
	22A3R029A20-SAD11E-C	22	200	20	–	29	–	–	-11,5	+5	–	3	–	25600	✓	0,49	GI169	SQ025	–
	25A3R034A25-SAD11E-C	25	170	25	–	34	–	–	-10,2	+5	–	3	–	24100	✓	0,42	GI169	SQ020	–
	25A3R080A25-SAD11E-C	25	170	25	–	80	–	–	-10,2	+5	–	3	–	24100	✓	0,55	GI169	SQ020	–
	25A4R034A25-SAD11E-C	25	170	25	–	34	–	–	-10,2	+5	–	4	–	24100	✓	0,42	GI169	SQ025	–
	25A4R040A25-SAD11E-C	25	250	25	–	40	–	–	-10,2	+5	–	4	–	24100	✓	0,86	GI169	SQ025	–
	30A3R080A32-SAD11E-C	30	200	32	–	80	–	–	-9,3	+7	–	3	–	22000	✓	1,02	GI169	SQ020	–
	32A3R090A32-SAD11E-C	32	195	32	–	90	–	–	-9	+5	–	3	–	21300	✓	1,01	GI169	SQ020	–
	32A5R034A32-SAD11E-C	32	195	32	–	34	–	–	-9	+8	–	5	–	21300	✓	1,03	GI169	SQ025	–
	35A5R025A32-SAD11E-C	35	200	32	–	25	–	–	-9	+8	–	5	–	20300	✓	1,16	GI169	SQ020	–
DIN 1835B	16A2R027B16-SAD11E-C	16	75	16	–	27	–	–	-12,8	+4	–	2	–	30100	✓	0,09	GI169	SQ025	–
	20A2R032B20-SAD11E-C	20	82	20	–	32	–	–	-11,5	+5	–	2	–	27000	✓	0,13	GI169	SQ020	–
	20A3R032B20-SAD11E-C	20	82	20	–	32	–	–	-11,5	+5	–	3	–	27000	✓	0,13	GI169	SQ025	–
	25A3R042B25-SAD11E-C	25	98	25	–	42	–	–	-10,2	+5	–	3	–	24100	✓	0,50	GI169	SQ020	–
	25A4R042B25-SAD11E-C	25	98	25	–	42	–	–	-10,2	+5	–	4	–	24100	✓	0,31	GI169	SQ025	–
	32A4R042B32-SAD11E-C	32	102	32	–	42	–	–	-9	+8	–	4	–	21300	✓	0,27	GI169	SQ020	–
	32A5R042B32-SAD11E-C	32	102	32	–	42	–	–	-9	+8	–	5	–	21300	✓	0,52	GI169	SQ025	–
DIN 228A	16A2R030E02-SAD11E-C	16	94	–	–	25	30	–	-12,8	+4	2	2	–	30100	✓	0,15	GI169	SQ025	–
	20A3R035E03-SAD11E-C	20	116	–	–	30	35	–	-11,5	+5	3	3	–	27000	✓	0,28	GI169	SQ025	–
	25A4R043E03-SAD11E-C	25	124	–	–	38	43	–	-10,2	+5	3	4	–	24100	✓	0,32	GI169	SQ025	–
MODULAR	16A2R024M08-SAD11E-C	16	38	8,5	–	–	24	M8	-12,8	+4	–	2	–	–	✓	0,10	GI169	SQ025	–
	20A2R026M10-SAD11E-C	20	45	11	–	–	26	M10	-11,5	+5	–	2	–	–	✓	0,09	GI169	SQ020	–
	20A3R026M10-SAD11E-C	20	45	10,5	–	–	26	M10	-11,5	+5	–	3	–	–	✓	0,11	GI169	SQ025	–
	25A3R033M12-SAD11E-C	25	55	12,5	–	–	33	M12	-10,2	+5	–	3	–	–	✓	0,15	GI169	SQ020	–
	25A4R033M12-SAD11E-C	25	55	12,5	–	–	33	M12	-10,2	+5	–	4	–	–	✓	0,09	GI169	SQ025	–

	ISO	DCX [mm]	OAL [mm]	DCON [mm]	DCCB [mm]	LU [mm]	LF [mm]	TDZ	GAMF [°]	GAMP [°]	Morse			max.		kg			
MODULAR	32A4R043M16-SAD11E-C	32	66	17	–	–	43	M16	-9	+8	–	4	–	–	✓	0,26	GI169	SQ020	–
	32A5R043M16-SAD11E-C	32	66	17	–	–	43	M16	-9	+8	–	5	–	–	✓	0,21	GI169	SQ025	–
	40A4R043M16-SAD11E-C	40	66	17	–	–	43	M16	-8,1	+11	–	4	–	–	✓	0,31	GI169	SQ020	–
	40A6R043M16-SAD11E-C	40	66	17	–	–	43	M16	-8,1	+11	–	6	–	–	✓	0,21	GI169	SQ020	–
ISO 6462 DIN 8030	40A04R-S90AD11E-C	40	–	16	14	40	–	–	-8,1	+11	–	4	✓	19100	✓	0,16	GI169	SQ022	–
	40A05R-S90AD11E-C	40	–	16	14	40	–	–	-8,1	+11	–	5	✓	19000	✓	0,32	GI169	SQ022	–
	40A06R-S90AD11E-C	40	–	16	14	40	–	–	-8,1	+11	–	6	✓	19100	✓	0,16	GI169	SQ022	–
	50A05R-S90AD11E-C	50	–	22	18	40	–	–	-7,2	+12	–	5	✓	17000	✓	0,31	GI169	SQ023	–
	50A07R-S90AD11E-C	50	–	22	18	40	–	–	-7,2	+12	–	7	✓	17000	✓	0,45	GI169	SQ023	–
	63A06R-S90AD11E-C	63	–	22	18	40	–	–	-6,5	+12	–	6	✓	15200	✓	0,54	GI169	SQ023	–
	63A09R-S90AD11E-C	63	–	22	18	40	–	–	-6,5	+12	–	9	✓	15200	✓	0,63	GI169	SQ023	–
	80A10R-S90AD11E-C	80	–	27	38	50	–	–	-6	+12	–	10	✓	13500	✓	1,06	GI169	SQ021	AC001
	100A11R-S90AD11E-C	100	–	32	45	50	–	–	-5,5	+12	–	11	✓	12100	✓	1,89	GI169	SQ021	AC002
	125A12R-S90AD11E-C	125	–	40	56	63	–	–	-5,2	+12	–	12	✓	10800	✓	2,97	GI169	SQ021	AC003

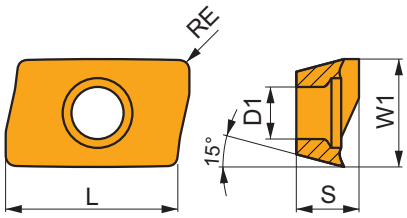
GI169	ADMX 11T3..	ADEX 11T3..

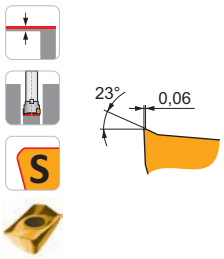
		Nm						
SQ020	US 62506-T07P	1,2	M 2,5	6	–	–	Flag T07P	–
SQ021	US 62506-T07P	1,2	M 2,5	6	D-T07P/T09P	FG-15	–	–
SQ022	US 62506-T07P	1,2	M 2,5	6	D-T07P/T09P	FG-15	–	HS 0830C
SQ023	US 62506-T07P	1,2	M 2,5	6	D-T07P/T09P	FG-15	–	HS 1030C
SQ025	US 62505-T07P	1,2	M 2,5	5	–	–	Flag T07P	–

AC001	KS 1230	K.FMH27
AC002	KS 1635	K.FMH32
AC003	KS 2040	K.FMH40

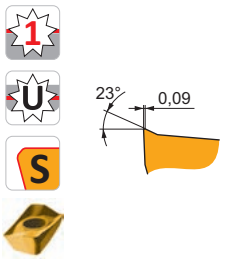
ADMX 11

	W1	D1	L	S
11T3	6,530	2,90	11,00	3,97

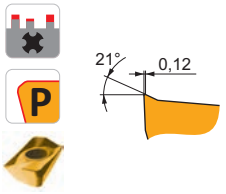




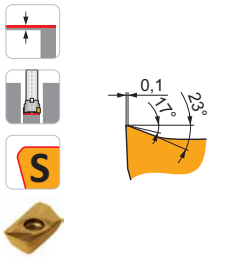
ISO		P	M	K	N	S	H			RE	FN	FX	APMN	APMX
ADMX 11T304SR-F	M9340	◪	■			◪		●	- - -	0,4	0,07	0,10	0,2	9,0
	M8310	■	◪	◪		◪		●	-	0,4	0,07	0,12	0,2	9,0
	M8330	■	◪	◪		◪		●	-	0,4	0,07	0,12	0,2	9,0
	M8340	■	■	◪		◪		●	+ / -	0,4	0,07	0,12	0,2	9,0
	8215	■	◪	◪	■	◪		●	-	0,4	0,07	0,12	0,2	9,0
ADMX 11T308SR-F	M9340	◪	■			◪		⬢	- - -	0,8	0,07	0,10	0,2	9,0
	M8330	■	◪	◪		◪		⬢	-	0,8	0,07	0,12	0,2	9,0
	M8340	■	■	◪		◪		⬢	+ / -	0,8	0,07	0,12	0,2	9,0
	8215	■	◪	◪	■	◪		⬢	-	0,8	0,07	0,12	0,2	9,0



ISO		P	M	K	N	S	H			RE	FN	FX	APMN	APMX
ADMX 11T302SR-M	M8330	■	◪	■		◪		●	-	0,2	0,10	0,14	0,2	9,0
	M8340	■	■	◪		◪		●	+ / -	0,2	0,10	0,14	0,2	9,0
ADMX 11T304SR-M	M9325	■	◪			◪		●	- - -	0,4	0,10	0,14	0,2	9,0
	M9340	◪	■			◪		●	- - -	0,4	0,10	0,14	0,2	9,0
	M8310	■	◪	■		◪		●	-	0,4	0,10	0,18	0,2	9,0
	M8330	■	◪	■		◪		⬢	-	0,4	0,10	0,18	0,2	9,0
	M8340	■	■	◪		◪		⬢	+ / -	0,4	0,10	0,18	0,2	9,0
	8215	■	◪	■		◪		●	-	0,4	0,10	0,18	0,2	9,0
ADMX 11T308SR-M	M5315	◪		■				⬢	- - -	0,8	0,10	0,14	0,2	9,0
	M9315	■		◪				⬢	- - -	0,8	0,10	0,14	0,2	9,0
	M9325	■	◪			◪		⬢	- - -	0,8	0,10	0,14	0,2	9,0
	M9340	◪	■			◪		⬢	- - -	0,8	0,10	0,14	0,2	9,0
	M8310	■	◪	■		◪		⬢	-	0,8	0,10	0,18	0,2	9,0
	M8330	■	◪	■		◪		⬢	-	0,8	0,10	0,18	0,2	9,0
	M8340	■	■	◪		◪		⬢	+ / -	0,8	0,10	0,18	0,2	9,0
	8215	■	◪	■		◪		⬢	-	0,8	0,10	0,18	0,2	9,0
ADMX 11T310SR-M	M8330	■	◪	■		◪		✖	-	1,0	0,10	0,22	0,2	9,0
	M8340	■	■	◪		◪		✖	+ / -	1,0	0,10	0,22	0,2	9,0
ADMX 11T312SR-M	M8330	■	◪	■		◪		✖	-	1,2	0,10	0,22	0,2	9,0
	M8340	■	■	◪		◪		✖	+ / -	1,2	0,10	0,22	0,2	9,0
	8215	■	◪	■		◪		⬢	-	1,2	0,10	0,22	0,2	9,0
ADMX 11T316SR-M	M6330	◪	■			◪		✖	-	1,6	0,10	0,22	0,2	9,0
	M8310	■	◪	■		◪		⬢	-	1,6	0,10	0,22	0,2	9,0
	M8330	■	◪	■		◪		✖	-	1,6	0,10	0,22	0,2	9,0
	M8340	■	■	◪		◪		✖	+ / -	1,6	0,10	0,22	0,2	9,0
	8215	■	◪	■		◪		⬢	-	1,6	0,10	0,22	0,2	9,0
ADMX 11T320SR-M	M6330	◪	■			◪		✖	-	2,0	0,10	0,22	0,2	9,0
	M8330	■	◪	■		◪		✖	-	2,0	0,10	0,22	0,2	9,0
	M8340	■	■	◪		◪		✖	+ / -	2,0	0,10	0,22	0,2	9,0
ADMX 11T325SR-M	M6330	◪	■			◪		✖	-	2,5	0,10	0,22	0,2	9,0
	M8330	■	◪	■		◪		✖	-	2,5	0,10	0,22	0,2	9,0
	M8340	■	■	◪		◪		✖	+ / -	2,5	0,10	0,22	0,2	9,0
ADMX 11T330SR-M	M6330	◪	■			◪		✖	-	3,0	0,10	0,22	0,2	9,0
	M8330	■	◪	■		◪		✖	-	3,0	0,10	0,22	0,2	9,0
	M8340	■	■	◪		◪		✖	+ / -	3,0	0,10	0,22	0,2	9,0



ISO		P	M	K	N	S	H			RE	FN	FX	APMN	APMX
ADMX 11T308PR-R	M5315	◪		■			◪	⬢	- - -	0,8	0,15	0,20	0,8	9,0
	M9315	■		◪			◪	⬢	- - -	0,8	0,15	0,20	0,8	9,0
	M9325	■	◪			◪		✖	- - -	0,8	0,15	0,20	0,8	9,0
	M8310	■	◪	■		◪	◪	✖	-	0,8	0,15	0,25	0,8	9,0
	M8330	■	◪	■		◪	◪	✖	-	0,8	0,15	0,25	0,8	9,0
	M8340	■	◪	◪		◪		✖	+ / -	0,8	0,15	0,25	0,8	9,0
	8215	■	◪	■		◪	◪	✖	-	0,8	0,15	0,25	0,8	9,0
ADMX 11T316PR-R	M9325	■	◪			◪		✖	- - -	1,6	0,15	0,20	0,8	9,0
	M8330	■	◪	■		◪	◪	✖	-	1,6	0,15	0,25	0,8	9,0
	M8340	■	◪	◪		◪		✖	+ / -	1,6	0,15	0,25	0,8	9,0
	8215	■	◪	■		◪	◪	✖	-	1,6	0,15	0,25	0,8	9,0

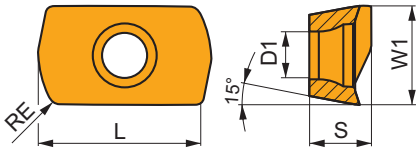


ISO		P	M	K	N	S	H			RE	FN	FX	APMN	APMX
ADMX 11T304SR-MF	M9340	◪	■			■		●	- - -	0,4	0,05	0,12	0,2	9,0
	M6330	◪	■			■		●	-	0,4	0,05	0,14	0,2	9,0
	M8340	■	■			■		●	+ / -	0,4	0,05	0,14	0,2	9,0
ADMX 11T308SR-MF	M9340	◪	■			■		⬢	- - -	0,8	0,05	0,12	0,2	9,0
	M6330	◪	■			■		⬢	-	0,8	0,05	0,14	0,2	9,0
	M8340	■	■			■		⬢	+ / -	0,8	0,05	0,14	0,2	9,0

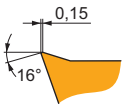
ISO		P	M	K	N	S	H			RE	FN	FX	APMN	APMX
ADMX 11T304SR-MM	M9340	◪	■			■		●	- - -	0,4	0,10	0,15	0,2	9,0
	M6330	◪	■			■		⬢	-	0,4	0,10	0,18	0,2	9,0
	M8340	■	■			■		⬢	+ / -	0,4	0,10	0,18	0,2	9,0
ADMX 11T308SR-MM	M9340	◪	■			■		⬢	- - -	0,8	0,10	0,15	0,2	9,0
	M6330	◪	■			■		⬢	-	0,8	0,10	0,18	0,2	9,0
	M8340	■	■			■		⬢	+ / -	0,8	0,10	0,18	0,2	9,0
	M8345	■	■			■		⬢	+ / -	0,8	0,10	0,18	0,2	9,0
ADMX 11T312SR-MM	M9340	◪	■			■		⬢	- - -	1,2	0,10	0,15	0,2	9,0
	M6330	◪	■			■		✖	-	1,2	0,10	0,18	0,2	9,0
	M8340	■	■			■		✖	+ / -	1,2	0,10	0,18	0,2	9,0
	M8345	■	■			■		✖	+ / -	1,2	0,10	0,18	0,2	9,0

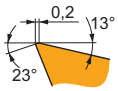
ADEX 11-HF

	W1	D1	L	S
11T3	6,450	2,90	10,67	3,82



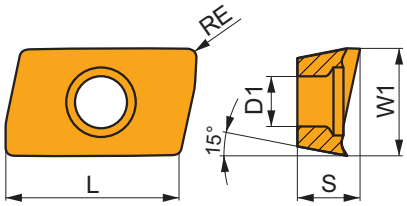
ISO		P	M	K	N	S	H			RE	FN	FX	APMN	APMX
ADEX 11T308SR-HF	M9340	◪	■			◪		⬢	- - -	0,8	0,40	1,11	0,1	0,6
	M6330	◪	■			◪		⬢	-	0,8	0,40	1,30	0,1	0,6
	M8310	■	◪	◪		◪	◪	⬢	-	0,8	0,40	1,30	0,1	0,6
	M8330	■	◪	◪		◪	◪	⬢	-	0,8	0,40	1,30	0,1	0,6
	M8340	■	■	◪		◪		⬢	+ / -	0,8	0,40	1,30	0,1	0,6
	8215	■	◪	◪		◪	◪	⬢	-	0,8	0,40	1,30	0,1	0,6
ADEX 11T308SR-HF2	M9325	■	◪			◪		⬢	- - -	0,8	0,40	1,17	0,2	0,6
	M9340	◪	◪			◪		⬢	- - -	0,8	0,40	1,17	0,2	0,6
	M8310	■	◪	■		◪	■	⬢	-	0,8	0,40	1,30	0,2	0,6
	M8330	■	◪	■		◪	◪	⬢	-	0,8	0,40	1,30	0,2	0,6
	M8340	■	◪	◪		◪		✖	+ / -	0,8	0,40	1,30	0,2	0,6

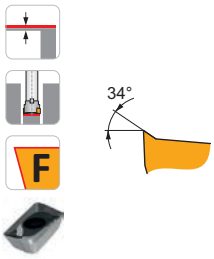




ADEX 11-FA

	W1	D1	L	S
11T3	6,450	2,90	9,70	3,91





ISO		P	M	K	N	S	H			RE	FN	FX	APMN	APMX
ADEX 11T304FR-FA	M0315				■			●	++	0,4	0,03	0,30	0,4	9,0
	HF7				■			●	+ / -	0,4	0,03	0,30	0,2	9,0
ADEX 11T308FR-FA	M0315				■			●	++	0,8	0,03	0,30	0,2	9,0
	HF7				■			●	+ / -	0,8	0,03	0,30	0,2	9,0
ADEX 11T312FR-FA	M0315				■			●	++	1,2	0,03	0,30	0,2	9,0
	HF7				■			●	+ / -	1,2	0,03	0,30	0,2	9,0
ADEX 11T316FR-FA	HF7				■			●	+ / -	1,6	0,03	0,30	0,2	9,0

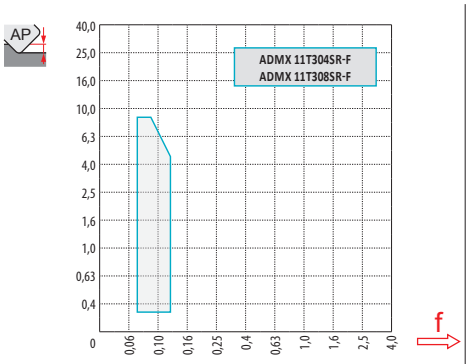
ISO		FN	FX	M5315	M9315	M9325	M9340	M0315	M6330	M8310	M8330	M8340	M8345	8215	HF7
P	●	0,07	0,18	392	392	347	311	–	266	329	333	284	225	311	–
	⧗	0,07	0,15	365	356	306	279	–	239	297	298	252	198	275	–
	✖	0,07	0,10	333	324	270	248	–	207	266	258	221	176	243	–
M	●	0,07	0,18	–	–	176	185	–	189	167	190	167	135	185	72
	⧗	0,07	0,15	–	–	158	167	–	167	149	171	149	117	167	63
	✖	0,07	0,10	–	–	135	149	–	144	135	151	131	104	144	54
K	●	0,07	0,18	374	374	–	–	–	–	311	318	270	–	293	117
	⧗	0,07	0,15	347	338	–	–	–	–	284	282	239	–	261	104
	✖	0,07	0,10	320	306	–	–	–	–	252	248	207	–	230	90
N	●	0,07	0,18	–	–	–	–	684	–	–	837	–	–	774	306
	⧗	0,07	0,15	–	–	–	–	612	–	–	746	–	–	693	275
	✖	0,07	0,10	–	–	–	–	536	–	–	651	–	–	612	239
S	●	0,07	0,18	–	–	86	90	–	95	81	93	81	68	90	36
	⧗	0,07	0,15	–	–	77	81	–	81	72	83	72	59	81	32
	✖	0,07	0,10	–	–	68	72	–	72	68	73	63	50	72	27
H	●	0,07	0,18	77	77	–	–	–	–	63	59	–	–	59	23
	⧗	0,07	0,15	72	68	–	–	–	–	59	50	–	–	54	18
	✖	0,07	0,10	63	63	–	–	–	–	50	45	–	–	45	18

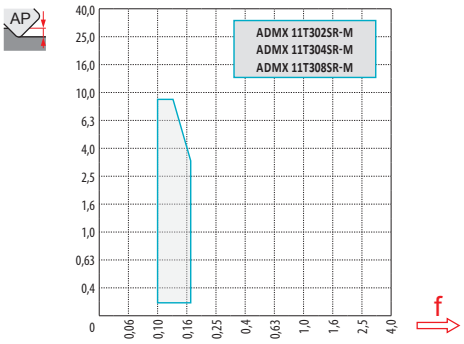
HFC		FN	FX	M9325	M9340	M8310	M8330	M8340	8215
P	●	0,45	1,25	308	276	292	296	252	276
	⧗	0,45	1,00	272	248	264	264	224	244
	✖	0,45	0,80	240	220	236	228	196	216
M	●	0,45	1,25	156	164	148	168	148	164
	⧗	0,45	1,00	140	148	132	151	132	148
	✖	0,45	0,80	120	132	120	134	116	128
K	●	0,45	1,25	–	–	276	282	240	260
	⧗	0,45	1,00	–	–	252	251	212	232
	✖	0,45	0,80	–	–	224	220	184	204
N	●	0,45	1,25	–	–	–	744	–	688
	⧗	0,45	1,00	–	–	–	663	–	616
	✖	0,45	0,80	–	–	–	578	–	544
S	●	0,45	1,20	76	80	72	82	72	80
	⧗	0,45	1,00	68	72	64	73	64	72
	✖	0,45	0,80	60	64	60	65	56	64
H	●	0,40	1,00	–	–	56	52	–	52
	⧗	0,40	0,80	–	–	52	44	–	48
	✖	0,40	0,60	–	–	44	40	–	40

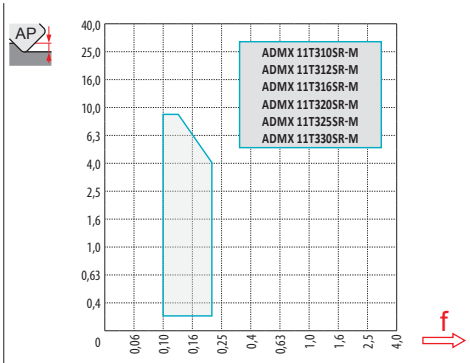
a_e / DCX	0,05	0,10	0,15	0,20	0,25	0,30	0,40	0,50	0,60	0,70	0,75	0,80	0,90	1,00
X.V	1,48	1,35	1,27	1,22	1,19	1,16	1,11	1,08	1,05	1,03	1,00	1,00	1,00	1,00
⇨X.f	2,87	2,05	1,69	1,48	1,33	1,23	1,09	0,75	0,94	0,90	0,89	0,88	0,88	1,00
⇨X.f	0,64	0,64	0,64	0,64	0,64	0,65	0,65	0,67	0,68	0,71	0,72	0,74	0,79	1,00

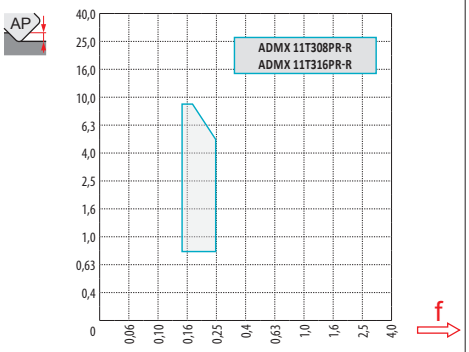
	ADMX 11-F		ADMX 11-M									ADMX 11-R		ADMX 11-MF	
RE	0,4	0,8	0,2	0,4	0,8	1,0	1,2	1,6	2,0	2,5	3,0	0,8	1,6	0,4	0,8
BS	1,89	1,48	2,09	1,89	1,48	1,27	1,08	0,68	1,61	1,13	0,66	1,48	0,68	1,89	1,48

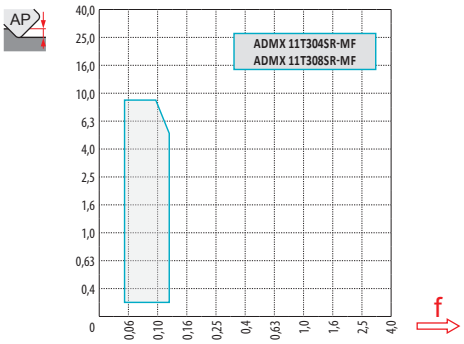
	ADMX 11-MM				ADEX 11-HF	ADEX 11-HF2	ADEX 11-FA			
RE	0,4	0,8	1,2	1,6	0,8	0,8	0,4	0,8	1,2	1,6
BS	1,89	1,48	1,08	0,61	0,17	0,17	1,77	1,39	1,0	0,62

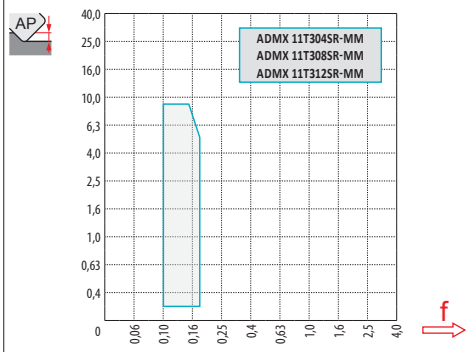


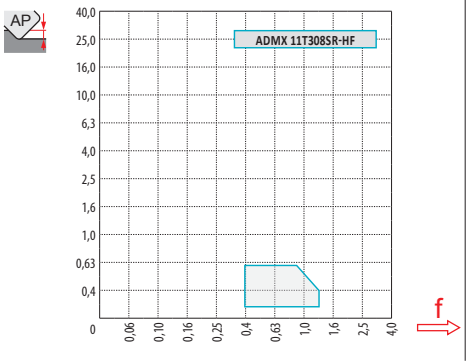


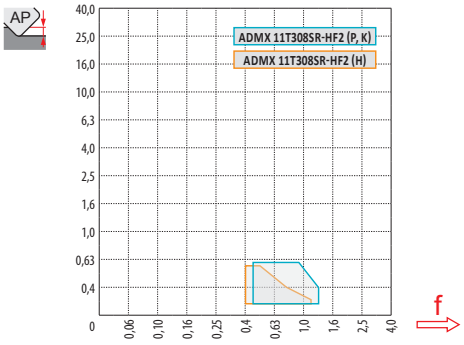


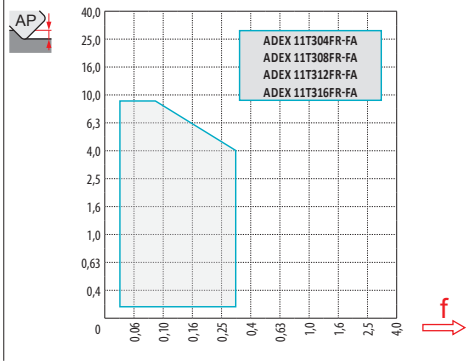












4,5

AP	1,0	5,0	9,0
1 f	0,20	0,13	0,10

			HFC		
DCX	RPMX	APMX / I	DCX	RPMX	APMX / I
16	13,5	9,0/40	4,1	5,7	0,6/8
18	10,0	9,0/53	2,8	4,5	0,6/12
20	9,0	9,0/59	2,3	4,3	0,6/15
25	6,0	9,0/87	1,3	6,7	0,6/26
32	5,3	9,0/99	0,7	4,3	0,6/49
40	3,8	6,5/100	0,3	2,9	0,6/100
50	2,8	4,7/100	0,1	2,1	0,6/100
63	1,8	3,0/100	–	–	–
80	1,6	2,6/100	–	–	–

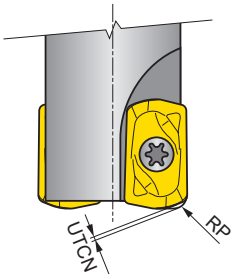
DCX	d_{min}	d_{max}	s_{max} d_{min}	s_{max} d_{max}	HFC d_{min}	HFC d_{max}	HFC s_{max} d_{min}	HFC s_{max} d_{max}
16	27,0	32,0	8,3	9,0	21,0	32,0	0,6	0,6
18	32,0	36,0	7,5	9,0	29,0	36,0	0,6	0,6
20	35,0	40,0	7,5	9,0	29,0	40,0	0,6	0,6
25	45,0	50,0	6,5	7,5	39,0	50,0	0,6	0,6
32	59,0	64,0	4,0	4,5	53,0	64,0	0,6	0,6
40	75,0	80,0	1,5	2,0	68,5	80,0	0,6	0,6
50	–	–	–	–	88,5	100,0	0,6	0,6

AP
1,7

DCX	µm 3	5	10	15	20	30	40	50	60	80	100
16	0,438	0,566	0,800	0,980	1,131	1,386	1,600	1,789	1,960	2,263	2,530
18	0,465	0,600	0,849	1,039	1,200	1,470	1,697	1,897	2,078	2,400	2,683
20	0,490	0,632	0,894	1,095	1,265	1,549	1,789	2,000	2,191	2,530	2,828
20	0,490	0,632	0,894	1,095	1,265	1,549	1,789	2,000	2,191	2,530	2,828
25	0,548	0,707	1,000	1,225	1,414	1,732	2,000	2,236	2,449	2,828	3,162
32	0,620	0,800	1,131	1,386	1,600	1,960	2,263	2,530	2,771	3,200	3,578
40	0,693	0,894	1,265	1,549	1,789	2,191	2,530	2,828	3,098	3,578	4,000
50	0,775	1,000	1,414	1,732	2,000	2,449	2,828	3,162	3,464	4,000	4,472
63	0,869	1,122	1,587	1,944	2,245	2,750	3,175	3,550	3,888	4,490	5,020
80	0,980	1,265	1,789	2,191	2,530	3,098	3,578	4,000	4,382	5,060	5,657

RE	µm 3	5	10	15	20	30	40	50	60	80	100
1,0	0,155	0,200	0,283	0,346	0,400	0,490	0,566	0,632	0,693	0,800	0,894
1,2	0,170	0,219	0,310	0,379	0,438	0,537	0,620	0,693	0,759	0,876	0,980
1,6	0,196	0,253	0,358	0,438	0,506	0,620	0,716	0,800	0,876	1,012	1,131
2,0	0,219	0,283	0,400	0,490	0,566	0,693	0,800	0,894	0,980	1,131	1,265
2,5	0,245	0,316	0,447	0,548	0,632	0,775	0,894	1,000	1,095	1,265	1,414
3,0	0,268	0,346	0,490	0,600	0,693	0,849	0,980	1,095	1,200	1,386	1,549

ADMX/ADEX 11	R
ADMX 11T320SR-M	1,0
ADMX 11T325SR-M	1,8
ADMX 11T330SR-M	1,8
ADEX 11T308SR-HF	1,4
ADEX 11T308SR-HF2	1,4



ADEX 11	RP	UTCN
	[mm]	[mm]
ADEX 11T308SR-HF	1,42	0,35
ADEX 11T308SR-HF2	1,34	0,38

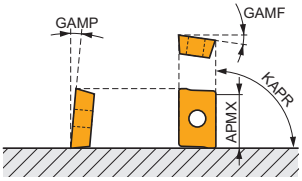
SAD16E

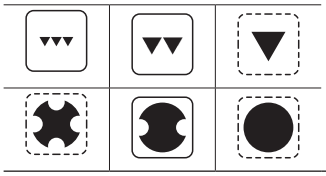
P M K N S H

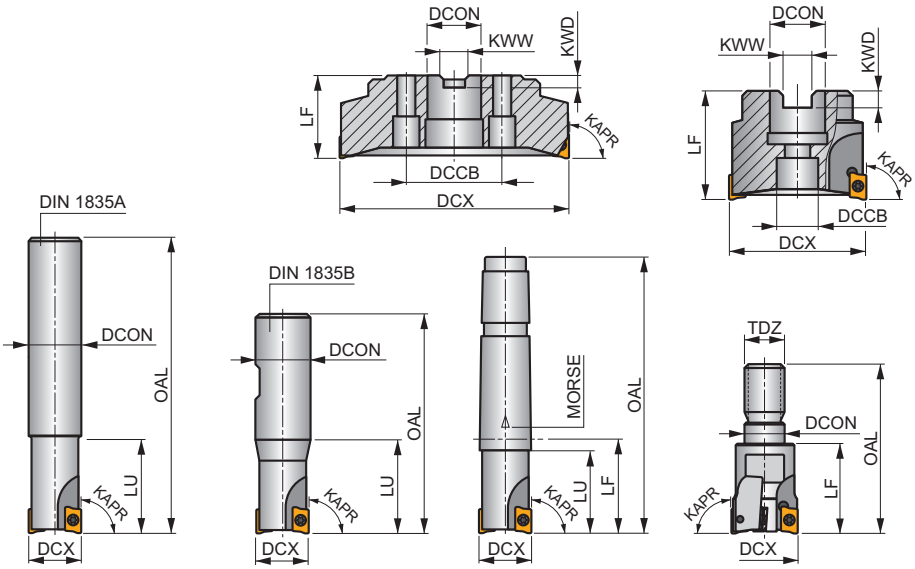
S

FORCE *AD*

KAPR	90°
APMX	13,0 mm







h_m 0,08 - 0,22

h_m 0,06 - 0,18

	ISO	DCX [mm]	OAL [mm]	DCON [mm]	DCCB [mm]	LU [mm]	LF [mm]	TDZ	GAMF [°]	GAMP [°]	Morse			max.		kg			
DIN 1835A	25A2R033A25-SAD16E-C	25	165	25	–	33	–	–	-13	+5	–	2	–	18700	✓	0,52	GI165	SQ030	–
	25A2R038A25-SAD16E-C	25	200	25	–	38	–	–	-13	+5	–	2	–	18700	✓	0,71	GI165	SQ030	–
	32A3R033A32-SAD16E-C	32	195	32	–	33	–	–	-12	+7	–	3	–	16500	✓	1,03	GI165	SQ030	–
	32A3R048A32-SAD16E-C	32	250	32	–	48	–	–	-12	+7	–	3	–	16500	✓	1,37	GI165	SQ030	–
DIN 1835B	25A2R042B25-SAD16E-C	25	98	25	–	42	–	–	-13	+5	–	2	–	18700	✓	0,29	GI165	SQ030	–
	32A3R040B32-SAD16E-C	32	100	32	–	40	–	–	-12	+7	–	3	–	16500	✓	0,59	GI165	SQ030	–
	40A3R050B32-SAD16E-C	40	110	32	–	50	–	–	-8,2	+10,5	–	3	–	14800	✓	0,59	GI165	SQ030	–
	40A4R050B32-SAD16E-C	40	110	32	–	50	–	–	-8,2	+10,5	–	4	–	14800	✓	0,65	GI165	SQ030	–
DIN 228A	25A2R043E03-SAD16E-C	25	98	–	–	38	43	–	-13	+5	3	2	–	18600	✓	0,31	GI165	SQ030	–
	32A3R043E03-SAD16E-C	32	100	–	–	38	43	–	-12	+7	3	3	–	16500	✓	0,33	GI165	SQ030	–
	40A3R054E04-SAD16E-C	40	110	–	–	48	54	–	-8,2	+10,5	4	3	–	14700	✓	0,74	GI165	SQ030	–
	40A4R054E04-SAD16E-C	40	110	–	–	48	54	–	-8,2	+10,5	4	4	–	14700	✓	0,70	GI165	SQ030	–
MODULAR	32A3R043M16-SAD16E-C	32	66	17	–	–	43	M16	-12	+7	–	3	–	–	✓	0,21	GI165	SQ030	–
	40A4R043M16-SAD16E-C	40	66	17	–	–	43	M16	-8,2	+10,5	–	4	–	–	✓	0,27	GI165	SQ030	–
ISO 6462 DIN 8030	40A04R-S90AD16E-C	40	40	16	14	–	–	–	-8,2	+10,5	–	4	–	14700	✓	0,16	GI165	SQ032	–
	50A03R-S90AD16E-C	50	40	22	18	–	–	–	-7	+11	–	3	–	13200	✓	0,43	GI165	SQ033	–
	50A05R-S90AD16E-C	50	40	22	18	–	–	–	-7	+11	–	5	✓	13200	✓	0,59	GI165	SQ033	–
	63A04R-S90AD16E-C	63	40	22	18	–	–	–	-6	+12	–	4	✓	11800	✓	0,62	GI165	SQ033	–
	63A06R-S90AD16E-C	63	40	22	18	–	–	–	-6	+12	–	6	✓	11800	✓	0,46	GI165	SQ033	–
	80A05R-S90AD16E-C	80	50	27	38	–	–	–	-5	+12	–	5	✓	10400	✓	1,01	GI165	SQ031	AC001
	80A07R-S90AD16E-C	80	50	27	38	–	–	–	-5	+13	–	7	✓	10400	✓	0,97	GI165	SQ031	AC001
	100A06R-S90AD16E-C	100	50	32	45	–	–	–	-4	+12	–	6	✓	9300	✓	1,89	GI165	SQ031	AC002
	100A08R-S90AD16E-C	100	50	32	45	–	–	–	-4	+12	–	8	✓	9300	✓	1,69	GI165	SQ031	AC002
	125A09R-S90AD16E-C	125	63	40	56	–	–	–	-3,8	+12	–	9	✓	8400	✓	3,46	GI165	SQ031	AC003
	140A08R-S90AD16E-C	140	63	40	56	–	–	–	-3,8	+12	–	8	✓	7900	✓	4,06	GI165	SQ031	–
	160C10R-S90AD16E-C	160	63	40	66,7	–	–	–	-3,8	+10	–	10	✓	7300	✓	6,04	GI165	SQ036	–
	175C10R-S90AD16E-C	175	63	40	66,7	–	–	–	-3,8	+12	–	10	✓	7000	✓	7,00	GI165	SQ036	–

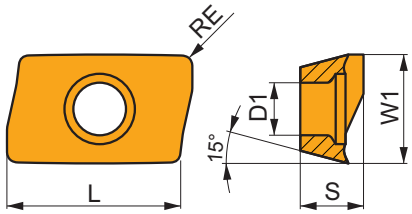
GI165	ADMX 1606..	ADEX 1606..

		Nm									
SQ030	US 4008-T15P	3,5	M 4	8	–	–	Flag T15P	–	–	–	–
SQ031	US 4011-T15P	3,5	M 4	11	D-T08P/T15P	FG-15	–	–	–	–	–
SQ032	US 4008-T15P	3,5	M 4	8	D-T08P/T15P	FG-15	–	HS 0830C	–	–	–
SQ033	US 4011-T15P	3,5	M 4	11	D-T08P/T15P	FG-15	–	HS 1030C	–	–	–
SQ036	US 4011-T15P	3,5	M 4	11	D-T08P/T15P	FG-15	–	HS 1240C	CAC 160C	HSD 0825C	HXK 5

AC001	KS 1230	K.FMH27
AC002	KS 1635	K.FMH32
AC003	KS 2040	K.FMH40

ADMX 16

	W1	D1	L	S
1606	9,950	4,50	16,00	6,25

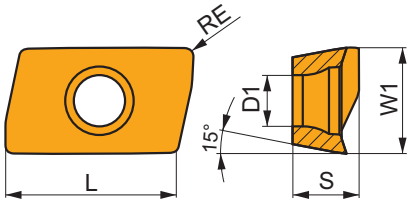


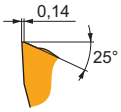
ISO		P	M	K	N	S	H			RE	FN	FX	APMN	APMX
ADMX 160608SR-F	M9340	◪	■					⬢	- - -	0,8	0,07	0,12	0,3	13,0
	M8310	■	◪	◪		◪		⬢	-	0,8	0,07	0,15	0,3	13,0
	M8330	■	◪	◪		◪		⬢	-	0,8	0,07	0,15	0,3	13,0
	M8340	■	■	◪		◪		⬢	+ / -	0,8	0,07	0,15	0,3	13,0
	8215	◪	◪	◪	■	◪		⬢	-	0,8	0,07	0,15	0,3	13,0
ADMX 160604SR-M	M8330	■	◪	■		◪		⬢	-	0,4	0,10	0,25	0,3	13,0
	M8340	■	■	◪		◪		⬢	+ / -	0,4	0,10	0,25	0,3	13,0
	8215	■	◪	■		◪		●	-	0,4	0,10	0,25	0,3	13,0
ADMX 160608SR-M	M5315			■				⬢	- - -	0,8	0,10	0,20	0,3	13,0
	M9315	■		◪				⬢	- - -	0,8	0,10	0,20	0,3	13,0
	M9325	■	◪			◪		⬢	- - -	0,8	0,10	0,20	0,3	13,0
	M9340	◪	■					⬢	- - -	0,8	0,10	0,20	0,3	13,0
	M8310	■	◪	■		◪		⬢	-	0,8	0,10	0,25	0,3	13,0
	M8330	■	◪	■		◪		⬢	-	0,8	0,10	0,25	0,3	13,0
	M8340	■	■	◪		◪		⬢	+ / -	0,8	0,10	0,25	0,3	13,0
	8215	■	◪	■		◪		⬢	-	0,8	0,10	0,25	0,3	13,0

ISO		P	M	K	N	S	H			RE	FN	FX	APMN	APMX
ADMX 160616SR-M	M9325	■	◪			◪		⚙	- - -	1,6	0,10	0,24	0,3	13,0
	M8310	■	◪	■		◪		⚙	-	1,6	0,10	0,30	0,3	13,0
	M8330	■	◪	■		◪		✖	-	1,6	0,10	0,30	0,3	13,0
	M8340	■	■	◪		◪		✖	+ / -	1,6	0,10	0,30	0,3	13,0
	8215	■	◪	■		◪		⚙	-	1,6	0,10	0,30	0,3	13,0
ADMX 160620SR-M	M6330	◪	■			◪		✖	-	2,0	0,10	0,30	0,3	13,0
	M8330	■	◪	■		◪		✖	-	2,0	0,10	0,30	0,3	13,0
	M8340	■	■	◪		◪		✖	+ / -	2,0	0,10	0,30	0,3	13,0
ADMX 160630SR-M	M8330	■	◪	■		◪		✖	-	3,0	0,10	0,30	0,3	13,0
	M8340	■	■	◪		◪		✖	+ / -	3,0	0,10	0,30	0,3	13,0
ADMX 160632SR-M	M6330	◪	■			◪		✖	-	3,2	0,10	0,30	0,3	13,0
	M9325	■	◪			◪		⚙	- - -	3,2	0,10	0,24	0,3	13,0
	M8330	■	◪	■		◪		✖	-	3,2	0,10	0,30	0,3	13,0
	M8340	■	■	◪		◪		✖	+ / -	3,2	0,10	0,30	0,3	13,0
ADMX 160640SR-M	M6330	◪	■			◪		✖	-	4,0	0,10	0,30	0,3	13,0
	M8330	■	◪	■		◪		✖	-	4,0	0,10	0,30	0,3	13,0
	M8340	■	■	◪		◪		✖	+ / -	4,0	0,10	0,30	0,3	13,0
ADMX 160650SR-M	M8330	■	◪	■		◪		✖	-	5,0	0,10	0,30	0,3	13,0
	M8340	■	■	◪		◪		✖	+ / -	5,0	0,10	0,30	0,3	13,0
ADMX 160608PR-R	M5315			■				✖	- - -	0,8	0,17	0,28	1,0	13,0
	M9315	■		◪			◪	✖	- - -	0,8	0,17	0,28	1,0	13,0
	M9325	■	◪			◪		✖	- - -	0,8	0,17	0,28	1,0	13,0
	M8310	■	◪	■		◪	◪	✖	-	0,8	0,17	0,35	1,0	13,0
	M8330	■	◪	■		◪	◪	✖	-	0,8	0,17	0,35	1,0	13,0
	M8340	■	◪	◪		◪		✖	+ / -	0,8	0,17	0,35	1,0	13,0
	8215	◪	◪	■		◪	◪	✖	-	0,8	0,17	0,35	1,0	13,0
ADMX 160616PR-R	M5315			■				✖	- - -	1,6	0,17	0,28	1,0	13,0
	M9315	■		◪			◪	✖	- - -	1,6	0,17	0,28	1,0	13,0
	M9325	■	◪			◪		✖	- - -	1,6	0,17	0,28	1,0	13,0
	M8330	■	◪	■		◪	◪	✖	-	1,6	0,17	0,35	1,0	13,0
	M8340	■	◪	◪		◪		✖	+ / -	1,6	0,17	0,35	1,0	13,0
ADMX 160608SR-MF	M9340	◪	■			■		⚙	- - -	0,8	0,05	0,14	0,3	13,0
	M6330	◪	■			■		⚙	-	0,8	0,05	0,16	0,3	13,0
	M8340	■	■			■		⚙	+ / -	0,8	0,05	0,16	0,3	13,0
ADMX 160604SR-MM	M9340	◪	■			■		●	- - -	0,4	0,14	0,19	0,3	13,0
	M6330	◪	■			■		⚙	-	0,4	0,14	0,22	0,3	13,0
	M8340	■	■			■		⚙	+ / -	0,4	0,14	0,22	0,3	13,0
ADMX 160608SR-MM	M9340	◪	■			■		⚙	- - -	0,8	0,14	0,19	0,3	13,0
	M6330	◪	■			■		⚙	-	0,8	0,14	0,22	0,3	13,0
	M8340	■	■			■		⚙	+ / -	0,8	0,14	0,22	0,3	13,0
	M8345	■	■			■		⚙	+ / -	0,8	0,14	0,22	0,3	13,0
ADMX 160616SR-MM	M9340	◪	■			■		⚙	- - -	1,6	0,14	0,19	0,3	13,0
	M6330	◪	■			■		✖	-	1,6	0,14	0,22	0,3	13,0
	M8340	■	■			■		✖	+ / -	1,6	0,14	0,22	0,3	13,0
	M8345	■	■			■		✖	+ / -	1,6	0,14	0,22	0,3	13,0

ADEX 16

	W1	D1	L	S
1606	9,950	4,50	16,00	6,25

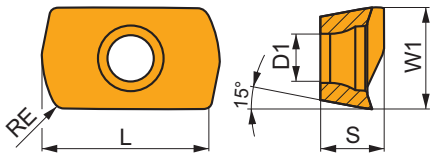


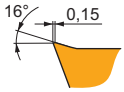


ISO		P	M	K	N	S	H			RE	FN	FX	APMN	APMX
ADEX 160608SR-FM	M8310	■	◪	■		◪			-	0,8	0,10	0,25	0,3	13,0
	M8330	■	◪	■		◪			-	0,8	0,10	0,25	0,3	13,0
	M8340	■	■	◪		◪			+ / -	0,8	0,10	0,25	0,3	13,0
	8215	■	◪	■		◪			-	0,8	0,10	0,25	0,3	13,0

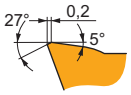
ADEX 16-HF

	W1	D1	L	S
1606	9,950	4,50	16,00	5,88





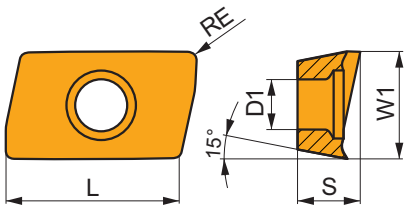
ISO		P	M	K	N	S	H			RE	FN	FX	APMN	APMX
ADEX 160612SR-HF	M9340	◪	■			◪			- - -	1,2	0,60	1,11	0,3	1,3
	M8310	■	◪	◪		◪	◪		-	1,2	0,60	1,30	0,3	1,3
	M8330	■	◪	◪		◪	◪		-	1,2	0,60	1,30	0,3	1,3
	M8340	■	■	◪		◪			+ / -	1,2	0,60	1,30	0,3	1,3
	8215	■	◪	◪		◪	◪		-	1,2	0,60	1,30	0,3	1,3

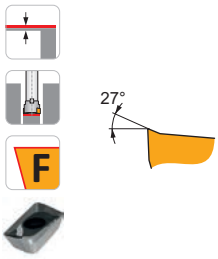


ISO		P	M	K	N	S	H			RE	FN	FX	APMN	APMX
ADEX 160612SR-HF2	M9325	■	◪			◪			- - -	1,2	0,60	1,17	0,3	1,3
	M9340	◪	◪			◪			- - -	1,2	0,60	1,17	0,3	1,3
	M8310	■	◪	■		◪	■		-	1,2	0,60	1,30	0,3	1,3
	M8330	■	◪	■		◪	◪		-	1,2	0,60	1,30	0,3	1,3
	M8340	■	◪	◪		◪			+ / -	1,2	0,60	1,30	0,3	1,3

ADEX 16-FA

	W1	D1	L	S
1606	9,950	4,50	16,00	6,17

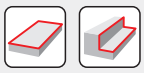




ISO		P	M	K	N	S	H			RE	FN	FX	APMN	APMX
ADEX 160604FR-FA	M0315				■			●	++	0,4	0,05	0,35	0,3	13,0
	HF7				■			●	+ / -	0,4	0,05	0,35	0,3	13,0
ADEX 160608FR-FA	M0315				■			●	++	0,8	0,05	0,35	0,3	13,0
	HF7				■			●	+ / -	0,8	0,05	0,35	0,3	13,0
ADEX 160616FR-FA	M0315				■			●	++	1,6	0,05	0,35	0,3	13,0
	HF7				■			●	+ / -	1,6	0,05	0,35	0,3	13,0
ADEX 160630FR-FA	HF7				■			●	+ / -	3,0	0,05	0,35	0,3	13,0

ISO		FN	FX	M5315	M9315	M9325	M9340	M0315	M6330	M8310	M8330	M8340	M8345	8215	HF7
P	●	0,10	0,30	435	435	385	345	–	295	365	337	315	250	345	–
	⧗	0,10	0,25	405	395	340	310	–	265	330	301	280	220	305	–
	✖	0,10	0,15	370	360	300	275	–	230	295	260	245	195	270	–
M	●	0,10	0,25	–	–	195	205	–	210	185	199	185	150	205	80
	⧗	0,10	0,20	–	–	175	185	–	185	165	179	165	130	185	70
	✖	0,10	0,12	–	–	150	165	–	160	150	158	145	115	160	60
K	●	0,10	0,30	415	415	–	–	–	–	345	321	300	–	325	130
	⧗	0,10	0,25	385	375	–	–	–	–	315	286	265	–	290	115
	✖	0,10	0,15	355	340	–	–	–	–	280	250	230	–	255	100
N	●	0,10	0,30	–	–	–	–	760	–	–	847	–	–	860	340
	⧗	0,10	0,25	–	–	–	–	680	–	–	755	–	–	770	305
	✖	0,10	0,15	–	–	–	–	595	–	–	658	–	–	680	265
S	●	0,10	0,25	–	–	95	100	–	105	90	97	90	75	100	40
	⧗	0,10	0,20	–	–	85	90	–	90	80	87	80	65	90	35
	✖	0,10	0,12	–	–	75	80	–	80	75	77	70	55	80	30
H	●	0,10	0,25	85	85	–	–	–	–	70	66	–	–	65	25
	⧗	0,10	0,20	80	75	–	–	–	–	65	56	–	–	60	20
	✖	0,10	0,12	70	70	–	–	–	–	55	51	–	–	50	20

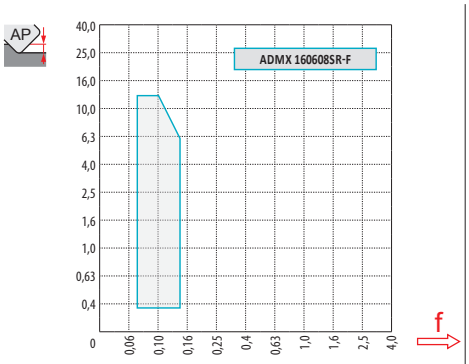
HFC		FN	FX	M9325	M9340	M8310	M8330	M8340	8215
P	●	0,55	1,25	327	293	310	315	268	293
	⧗	0,55	1,00	289	264	281	281	238	259
	✖	0,55	0,80	255	234	251	243	208	230
M	●	0,55	1,25	166	174	157	178	157	174
	⧗	0,55	1,00	149	157	140	159	140	157
	✖	0,55	0,80	128	140	128	141	123	136
K	●	0,55	1,25	–	–	293	300	255	276
	⧗	0,55	1,00	–	–	268	267	225	247
	✖	0,55	0,80	–	–	238	233	196	217
N	●	0,55	1,25	–	–	–	791	–	731
	⧗	0,55	1,00	–	–	–	705	–	655
	✖	0,55	0,80	–	–	–	614	–	578
S	●	0,55	1,20	81	85	77	87	77	85
	⧗	0,55	1,00	72	77	68	77	68	77
	✖	0,55	0,80	64	68	64	68	60	68
H	●	0,50	1,00	–	–	60	55	–	55
	⧗	0,50	0,80	–	–	55	47	–	51
	✖	0,50	0,60	–	–	47	43	–	43

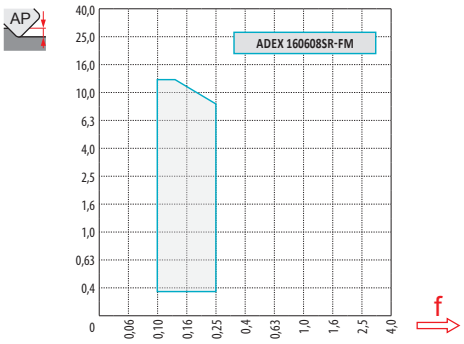


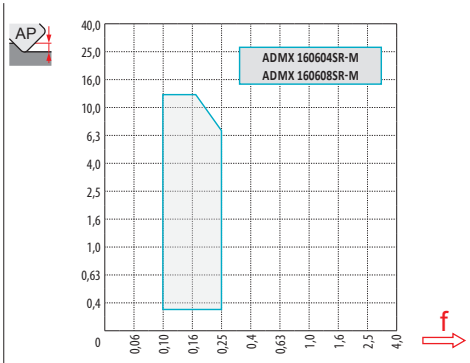
a_e / DCX	0,05	0,10	0,15	0,20	0,25	0,30	0,40	0,50	0,60	0,70	0,75	0,80	0,90	1,00
X.V	1,48	1,35	1,27	1,22	1,19	1,16	1,11	1,08	1,05	1,03	1,00	1,00	1,00	1,00
⇨X.f	2,87	2,05	1,69	1,48	1,33	1,23	1,09	0,75	0,94	0,90	0,89	0,88	0,88	1,00
⇨X.f	0,64	0,64	0,64	0,64	0,64	0,65	0,65	0,67	0,68	0,71	0,72	0,74	0,79	1,00

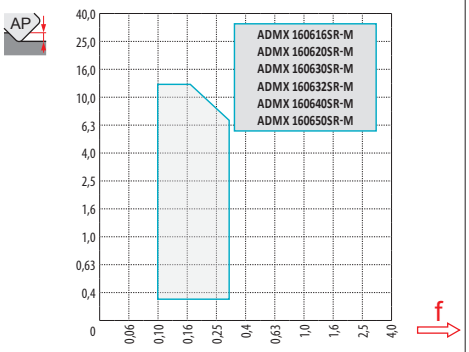
	ADMX 16-F	ADEX 16-FM	ADMX 16-M								ADMX 16-R	
RE	0,8	0,8	0,4	0,8	1,6	2,0	3,0	3,2	4,0	5,0	0,8	1,6
BS	2,99	2,18	3,39	2,99	1,62	1,23	0,28	0,09	2,69	1,52	2,99	1,62

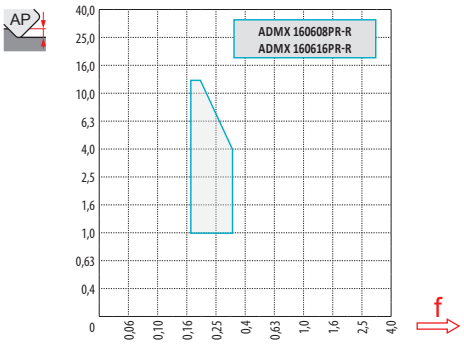
	ADMX 16-MF	ADMX 16-MM			ADEX 16-HF	ADEX 16-HF2	ADEX 16-FA			
RE	0,8	0,4	0,8	1,6	1,2	1,2	0,4	0,8	1,6	3,0
BS	2,99	3,39	2,99	1,62	0,52	0,52	2,84	2,44	1,65	0,69

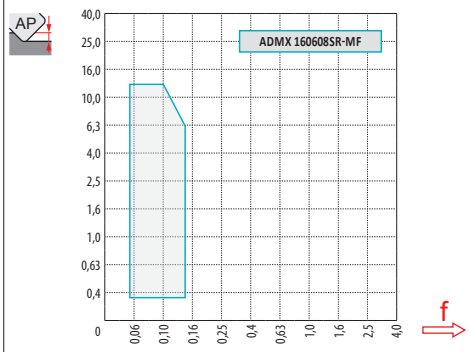


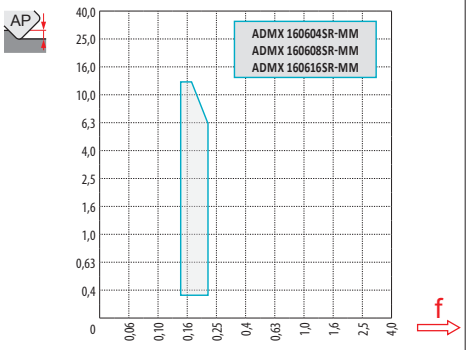


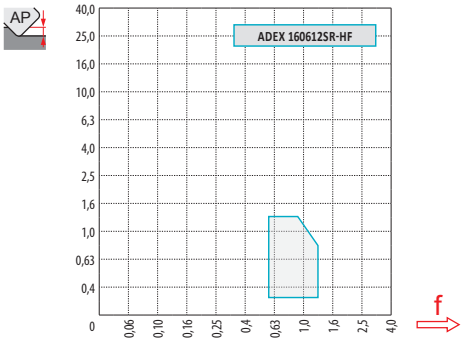


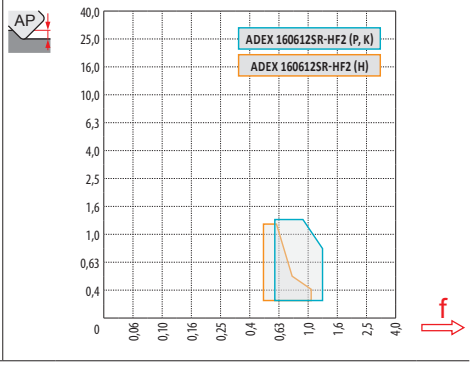


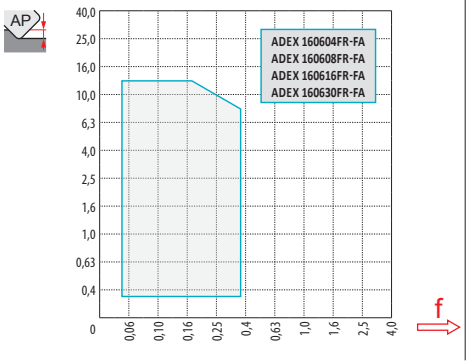












7,5

AP	1,0	6,0	13,0
1 f	0,28	0,19	0,10

DCX	RPMX	APMX / I
25	12,5	13,0/60
32	7,5	13,0/100
40	5,0	8,6/100
50	3,5	6,0/100
63	2,5	4,2/100
80	2,0	3,3/100

HFC		
RPMX	RPMX	APMX / I
4,0	8,0	1,3/19
2,0	7,5	1,3/38
1,2	4,5	1,3/65
0,8	3,0	1,3/100
0,5	2,0	0,8/100
0,4	1,5	0,6/100

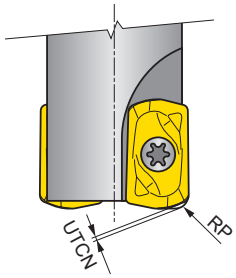
DCX	d_{min}	d_{max}	s_{max} d_{min}	s_{max} d_{max}	HFC d_{min}	HFC d_{max}	HFC s_{max} d_{min}	HFC s_{max} d_{max}
25	42,0	50,0	10,0	12,5	42,0	50,0	1,3	1,3
32	55,0	64,0	6,5	9,0	55,0	64,0	1,3	1,3
40	72,0	80,0	5,0	8,0	72,0	80,0	1,3	1,3
50	92,0	100,0	4,5	6,0	92,0	100,0	1,3	1,3
63	118,0	126,0	4,0	5,0	118,0	126,0	1,3	1,3
80	136,0	160,0	1,5	2,0	136,0	160,0	1,3	1,3

AP
2,5

DCX	µm 3	5	10	15	20	30	40	50	60	80	100
25	0,548	0,707	1,000	1,225	1,414	1,732	2,000	2,236	2,449	2,828	3,162
32	0,620	0,800	1,131	1,386	1,600	1,960	2,263	2,530	2,771	3,200	3,578
40	0,693	0,894	1,265	1,549	1,789	2,191	2,530	2,828	3,098	3,578	4,000
50	0,775	1,000	1,414	1,732	2,000	2,449	2,828	3,162	3,464	4,000	4,472
63	0,869	1,122	1,587	1,944	2,245	2,750	3,175	3,550	3,888	4,490	5,020
80	0,980	1,265	1,789	2,191	2,530	3,098	3,578	4,000	4,382	5,060	5,657

RE	µm 3	5	10	15	20	30	40	50	60	80	100
1,6	0,196	0,253	0,358	0,438	0,506	0,620	0,716	0,800	0,876	1,012	1,131
2,0	0,219	0,283	0,400	0,490	0,566	0,693	0,800	0,894	0,980	1,131	1,265
3,0	0,268	0,346	0,490	0,600	0,693	0,849	0,980	1,095	1,200	1,386	1,549
3,2	0,277	0,358	0,506	0,620	0,716	0,876	1,012	1,131	1,239	1,431	1,600
4,0	0,310	0,400	0,566	0,693	0,800	0,980	1,131	1,265	1,386	1,600	1,789
5,0	0,346	0,447	0,632	0,775	0,894	1,095	1,265	1,414	1,549	1,789	2,000

ADMX/ADEX 16	R
ADMX 160630SR-M	2,5
ADMX 160632SR-M	2,5
ADMX 160640SR-M	4,0
ADMX 160650SR-M	4,5
ADEX 160612SR-HF	3,0
ADEX 160612SR-HF2	3,0



ADEX 16	RP	UTCN
	[mm]	[mm]
ADEX 160612SR-HF	2,59	0,56
ADEX 160612SR-HF2	2,48	0,57

SOLID CARBIDE END MILLS

ICON DESCRIPTIONS

COMMON ICONS

Material

Carbide

Coating

Aluminium Chromium Nitride

Titanium Silicon Nitride

X-CEED

Aluminium Titanium Nitride

Alcrona

MILLING ICONS

Type

For steels with low to high resistance

Coarse pitch rounded profile chipbreaker

Application

Slotting P9

Slotting

Super-finishing

Finishing

Roughing

Ball nose

Corner radius

High feed

Multi

Direction

Slotting, ramping, diving

Slotting, ramping

Finishing

Milling

Cut Length

Extra short

Medium

Extra long

Diameter tolerance

Helix Angle/ Rake Angle

Teeth (z)

4 teeth - differential pitch

Shank

Standard

		S767	S262	S523	S521	S524	S536	S501	S229	S231	S233	S529	S531	S533	S511
		HM	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM
		N	N	N	N	N	N	N	N	N	N	N	N	N	N
		Z 4 ≠	Z 4 ≠	Z 4	Z 4	Z 4	Z 4-6	Z 2	Z 2	Z 2	Z 2	Z 2	Z 2	Z 2	Z 4
		λ≠ γ10°	λ40° γ4°	λ40° γ-6°	λ45° γ-10°	λ40° γ-6°	λ25° γ0°	λ30° γ10°	λ30° γ3°	λ30° γ3°	λ30° γ3°	λ30° γ-10°	λ30° γ-10°	λ30° γ-10°	λ30° γ10°
		DIN 6535HA	DIN 6535HA	DIN 6535HA	DIN 6535HA	DIN 6535HA	DIN 6535HA	DIN 6535HA	DIN 6535HA	DIN 6535HA	DIN 6535HA	DIN 6535HA	DIN 6535HA	DIN 6535HA	DIN 6535HA
		TiSiN	AlCrN	TiSiN	TiSiN	TiSiN	TiSiN	X-CEED	TiSiN	TiSiN	TiSiN	TiSiN	TiSiN	TiSiN	X-CEED
		h9	h9	h9	h9	h9	h9	h9	h9	h9	h9	h9	h9	h9	h9
		DORMER	DORMER	DORMER	DORMER	DORMER	DORMER	DORMER	DORMER	DORMER	DORMER	DORMER	DORMER	DORMER	DORMER
															
ISO 513		156	158	160	162	164	166	168	170	172	174	176	178	180	182
		4.00 - 20.00	3.00 - 20.00	1.50 - 16.00	3.00 - 16.00	3.00 - 16.00	6.00 - 12.00	1.00 - 16.00	1.50 - 16.00	1.50 - 16.00	2.00 - 16.00	1.50 - 16.00	1.50 - 16.00	2.00 - 16.00	3.00 - 16.00
P	P1	■						■							■
	P2	■						■							■
	P3	■						■							■
	P4	■	◪					■	◪	◪	◪				■
M	M1	■						■							■
	M2	■	■					■	■	■	■				■
	M3	■	■					◪	■	■	■				◪
	M4		■					◪	■	■	■				◪
K	K1	■						■							■
	K2	■						■							■
	K3	■						■							■
	K4	■						■							■
	K5	■						■							■
N	N1							◪							◪
	N2							◪							◪
	N3							■							■
	N4							◪							◪
	N5														
S	S1	■	■					◪	■	■	■				◪
	S2	■	■					◪	■	■	■				◪
	S3	■	■					◪	■	■	■				◪
	S4	■	■					◪	■	■	■				◪
H	H1		■	■	■	■	■					■	■	■	
	H2		■	■	■	■	■					■	■	■	
	H3		■	■	■	■	■					■	■	■	
	H4			■	■	■	■					■	■	■	

■ Main application ◪ Secondary application

		S534	S535	S765	S264	S766	S216	S761	S260	S717	S217	S718	S218	S219	S813HA
		HM	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM
															P9
		N	N	NR	NR	N	N	N	N	N	N	N	N	N	N
		Z 4	Z 4	Z 4	Z 4	Z 4	Z 4	Z 4	Z 4	Z 4	Z 4	Z 4	Z 4	Z 4	Z 3
		λ30° γ-10°	λ30° γ-10°	λ40° γ10°	λ40° γ4°	λ≠ γ10°	λ40° γ3°	λ40° γ10°	λ40° γ4°	λ40° γ10°	λ40° γ3°	λ40° γ10°	λ40° γ3°	λ40° γ3°	λ28° γ9°
		DIN 6535HA	DIN 6535HA	DIN 6535HA	DIN 6535HB	DIN 6535HA	DIN 6535HA	DIN 6535HA	DIN 6535HA	DIN 6535HA	DIN 6535HA	DIN 6535HA	DIN 6535HA	DIN 6535HA	DIN 6535HA
		TiSiN	TiSiN	AlCrN	AlCrN	TiSiN	AlTiN	AlCrN	AlCrN	AlCrN	AlTiN	AlCrN	AlTiN	AlTiN	Alcrona
		h9	h9	h9	h9	h9	h9	h9	h9	h9	h9	h9	h9	h9	
		DORMER	DORMER	DORMER	DORMER	DORMER	DORMER	DORMER	DORMER	DORMER	DORMER	DORMER	DORMER	DORMER	DIN 6527L
		3.00 - 16.00	3.00 - 16.00	6.00 - 20.00	6.00 - 20.00	4.00 - 20.00	2.00 - 20.00	3.00 - 20.00	3.00 - 20.00	3.00 - 20.00	3.00 - 20.00	3.00 - 20.00	3.00 - 20.00	3.00 - 20.00	2.00 - 20.00
ISO 513		184	186	188	190	192	194	196	198	200	200	202	202	204	206
P	P1			■		■		■		■		■			■
	P2			■		■		■		■		■			■
	P3			■		■		■		■		■			■
	P4			■		■	◪	■		■	◪	■	◪	◪	■
M	M1			■		■		■		■		■			■
	M2			■	■	■	■	■	■	■	■	■	■	■	■
	M3			■	■	■	■	■	■	■	■	■	■	■	◪
	M4				■		■		■	■	■	■	■	■	◪
K	K1			■		■		■		■		■			■
	K2			■		■		■		■		■			■
	K3			■		■		■		■		■			■
	K4			■		■		■		■		■			■
	K5			■		■		■							■
N	N1									◪		◪			◪
	N2									◪		◪			■
	N3									◪		◪			■
	N4														◪
	N5														
S	S1			■	■	■	■	■	■	■	■	■	■		◪
	S2			■	■	■	■	■	■	■	■	■	■	■	◪
	S3			■	■	■	■	■	■	■	■	■	■	■	◪
	S4			■	■	■	■	■	■	■	■	■	■	■	◪
H	H1	■	■		■				■						
	H2	■	■		■				■						
	H3	■	■		■				■						
	H4	■	■												

■ Main application ◪ Secondary application

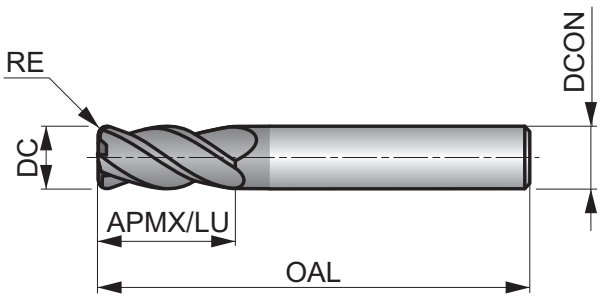
		S813HB	S823	S812HA	S812HB	S822	S225	S525	S226	S526	S227	S527
		HM	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM
		P9	P9	P9	P9	P9						
		N	N	N	N	N	N	N	N	N	N	N
		Z 3	Z 3	Z 2	Z 2	Z 2	Z 6-8	Z 6-8	Z 6-8	Z 6-8	Z 6-8	Z 6-8
		λ 28° γ 9°	λ 28° γ 9°	λ 28° γ 9°	λ 28° γ 9°	λ 28° γ 9°	λ 50° γ 3°	λ 50° γ -26°	λ 50° γ 3°	λ 50° γ -26°	λ 50° γ 3°	λ 50° γ -26°
		DIN 6535HB	DIN 6535HA	DIN 6535HA	DIN 6535HB	DIN 6535HA	DIN 6535HA	DIN 6535HA	DIN 6535HA	DIN 6535HA	DIN 6535HA	DIN 6535HA
		Alcrona	Alcrona	Alcrona	Alcrona	Alcrona	AlTiN	TiSiN	AlTiN	TiSiN	AlTiN	TiSiN
							h9	h9	h9	h9	h9	h9
		DIN 6527L	DORMER	DIN 6527L	DIN 6527L	DORMER	DORMER	DORMER	DORMER	DORMER	DORMER	DORMER
		2.00 - 20.00	2.00 - 20.00	2.00 - 20.00	2.00 - 20.00	2.00 - 20.00	3.00 - 20.00	3.00 - 20.00	3.00 - 20.00	3.00 - 20.00	6.00 - 20.00	3.00 - 20.00
ISO 513		206	208	210	210	212	214	214	216	216	218	218
P	P1	■	■	■	■	■						
	P2	■	■	■	■	■						
	P3	■	■	■	■	■						
	P4	■	■	■	■	■	◪		◪		◪	
M	M1	■	■	■	■	■						
	M2	■	■	■	■	■	■		■		■	
	M3	◪	◪	■	■	■	■		■		■	
	M4	◪	◪	■	■	■	■		■		■	
K	K1	■	■	■	■	■						
	K2	■	■	■	■	■						
	K3	■	■	■	■	■						
	K4	■	■	■	■	■						
	K5	■	■	■	■	■						
N	N1	◪	◪	■	■	■						
	N2	■	■	■	■	■						
	N3	■	■	■	■	■						
	N4	◪	◪	◪	◪	◪						
	N5											
S	S1	◪	◪	■	■	■	■		■		■	
	S2	◪	◪	■	■	■	■		■		■	
	S3	◪	◪	■	■	■	■		■		■	
	S4	◪	◪	■	■	■	■		■		■	
H	H1							■		■		■
	H2							■		■		■
	H3							■		■		■
	H4							■		■		■

■ Main application ◪ Secondary application

S767 • Corner Radius End Mill

S767																				
■	P1.1	P1.2	P1.3	P2.1	P2.2	P2.3	P3.1	P3.2	P3.3	P4.1	P4.2	M1.1	M1.2	M2.1	M2.2	M3.1	M3.2	K1.1	K1.2	K1.3
	K2.1	K2.2	K2.3	K3.1	K3.2	K3.3	K4.1	K4.2	K4.3	K4.4	K4.5	K5.1	K5.2	K5.3	S1.2	S2.1	S3.1	S4.1		

S767 HM N Z 4 λ≠ γ10° DIN 6535HA TiSiN h9 DORMER

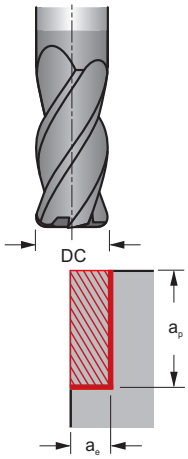


S767

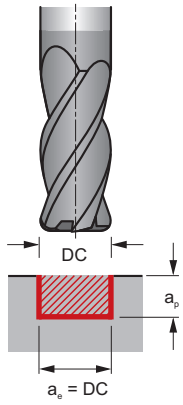
4.00 - 20.00

DC mm	RE mm	DCON h6 mm	APMX/LU mm	OAL mm	ZEFP	S767
4.0	0.30	6.0	11.0	57.0	4	S7674.0XR0.3
4.0	0.50	6.0	11.0	57.0	4	S7674.0XR0.5
5.0	0.30	6.0	13.0	57.0	4	S7675.0XR0.3
5.0	0.50	6.0	13.0	57.0	4	S7675.0XR0.5
6.0	0.30	6.0	13.0	57.0	4	S7676.0XR0.3
6.0	0.50	6.0	13.0	57.0	4	S7676.0XR0.5
6.0	1.00	6.0	13.0	57.0	4	S7676.0XR1.0
8.0	0.30	8.0	20.0	64.0	4	S7678.0XR0.3
8.0	0.50	8.0	20.0	64.0	4	S7678.0XR0.5
8.0	1.00	8.0	20.0	64.0	4	S7678.0XR1.0
10.0	0.30	10.0	22.0	72.0	4	S76710.0XR0.3
10.0	0.50	10.0	22.0	72.0	4	S76710.0XR0.5
10.0	1.00	10.0	22.0	72.0	4	S76710.0XR1.0
12.0	0.30	12.0	26.0	83.0	4	S76712.0XR0.3
12.0	0.50	12.0	26.0	83.0	4	S76712.0XR0.5
12.0	1.00	12.0	26.0	83.0	4	S76712.0XR1.0
12.0	2.00	12.0	26.0	83.0	4	S76712.0XR2.0
16.0	0.30	16.0	32.0	92.0	4	S76716.0XR0.3
16.0	0.50	16.0	32.0	92.0	4	S76716.0XR0.5
16.0	1.00	16.0	32.0	92.0	4	S76716.0XR1.0
16.0	2.00	16.0	32.0	92.0	4	S76716.0XR2.0
20.0	0.30	20.0	38.0	104.0	4	S76720.0XR0.3
20.0	0.50	20.0	38.0	104.0	4	S76720.0XR0.5
20.0	1.00	20.0	38.0	104.0	4	S76720.0XR1.0
20.0	2.00	20.0	38.0	104.0	4	S76720.0XR2.0

Example of initial conditions



S767			Depth a_p x DC (mm)	Width a_e x DC (mm)	Cutting speed V_c (m/min.)	Feed f_z (mm/tooth)	Profile/contour milling											
							2	3	4	5	6	8	10	12	14	16	18	20
C45, 16MnCr5 (180 - 220 HB)	Plain carbon steel	P2	1,50	0,60	160	f_z	0,009	0,014	0,026	0,033	0,041	0,048	0,057	0,066	0,074	0,083	0,090	0,099
			max	0,05	235		0,021	0,032	0,060	0,076	0,094	0,110	0,131	0,151	0,169	0,190	0,206	0,227
1.2312, 1.2379 (260 - 340 HB)	Alloy steel	P3	1,50	0,60	100	f_z	0,007	0,012	0,022	0,027	0,033	0,040	0,047	0,054	0,060	0,068	0,074	0,081
			max	0,05	150		0,016	0,027	0,050	0,062	0,076	0,092	0,108	0,124	0,137	0,156	0,169	0,185
Toolox44, Hardox450 (40 - 45 HRc)	Tool steel	P4	1,50	0,60	75	f_z	0,007	0,012	0,022	0,027	0,033	0,040	0,047	0,054	0,060	0,068	0,074	0,081
			max	0,05	110		0,016	0,027	0,050	0,062	0,076	0,092	0,108	0,124	0,137	0,156	0,169	0,185
0.9650, 0.9655 (<440 HB)	Chilled cast iron	H1	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
1.2343, 1.2738 (50-55 HRc)	Hardened steel	H3	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
1.2379, 1.2363 (60-62 HRc)	Hardened steel	H4	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
GG15, GG25 (180 - 220 HB)	Gray iron (GG)	K1	1,50	0,60	155	f_z	0,009	0,014	0,026	0,033	0,041	0,048	0,057	0,066	0,074	0,083	0,090	0,099
			max	0,05	230		0,021	0,032	0,060	0,076	0,094	0,110	0,131	0,151	0,169	0,190	0,206	0,227
GGG50, GGG60 (180 - 220 HB)	Ductile iron (GGG)	K3	1,50	0,60	145	f_z	0,009	0,014	0,026	0,033	0,041	0,048	0,057	0,066	0,074	0,083	0,090	0,099
			max	0,05	215		0,021	0,032	0,060	0,076	0,094	0,110	0,131	0,151	0,169	0,190	0,206	0,227



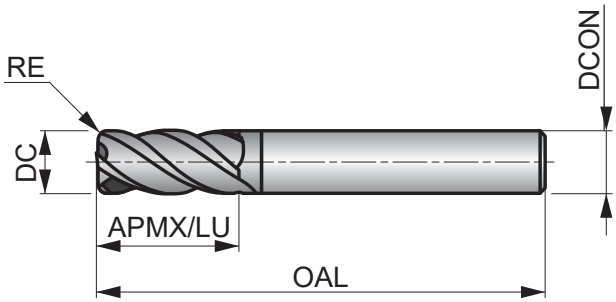
S767			Depth a_p x DC (mm)	Width a_e x DC (mm)	Cutting speed V_c (m/min.)	Feed f_z (mm/tooth)	Slotting											
							2	3	4	5	6	8	10	12	14	16	18	20
C45, 16MnCr5 (180 - 220 HB)	Plain carbon steel	P2	0,50	1,00	160	f_z	0,009	0,014	0,026	0,033	0,041	0,048	0,057	0,066	0,074	0,083	0,090	0,099
			1,00		120		0,007	0,011	0,020	0,025	0,031	0,036	0,043	0,050	0,056	0,062	0,068	0,074
1.2312, 1.2379 (260 - 340 HB)	Alloy steel	P3	0,50	1,00	100	f_z	0,007	0,012	0,022	0,027	0,033	0,040	0,047	0,054	0,060	0,068	0,074	0,081
			1,00		75		0,005	0,009	0,017	0,020	0,025	0,030	0,035	0,041	0,045	0,051	0,056	0,061
Toolox44, Hardox450 (40 - 45 HRc)	Tool steel	P4	0,50	1,00	75	f_z	0,007	0,012	0,022	0,027	0,033	0,040	0,047	0,054	0,060	0,068	0,074	0,081
			1,00		60		0,005	0,009	0,017	0,020	0,025	0,030	0,035	0,041	0,045	0,051	0,056	0,061
0.9650, 0.9655 (<440 HB)	Chilled cast iron	H1	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-		-		-	-	-	-	-	-	-	-	-	-	-	-
1.2343, 1.2738 (50-55 HRc)	Hardened steel	H3	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-		-		-	-	-	-	-	-	-	-	-	-	-	-
1.2379, 1.2363 (60-62 HRc)	Hardened steel	H4	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-		-		-	-	-	-	-	-	-	-	-	-	-	-
GG15, GG25 (180 - 220 HB)	Gray iron (GG)	K1	0,50	1,00	155	f_z	0,009	0,014	0,026	0,033	0,041	0,048	0,057	0,066	0,074	0,083	0,090	0,099
			1,00		120		0,007	0,011	0,020	0,025	0,031	0,036	0,043	0,050	0,056	0,062	0,068	0,074
GGG50, GGG60 (180 - 220 HB)	Ductile iron (GGG)	K3	0,50	1,00	145	f_z	0,009	0,014	0,026	0,033	0,041	0,048	0,057	0,066	0,074	0,083	0,090	0,099
			1,00		110		0,007	0,011	0,020	0,025	0,031	0,036	0,043	0,050	0,056	0,062	0,068	0,074

Cutting speed and feed values are approximate.
Cutting speed can be changed in a range (+/-10%) and feed in a range (+/-25%).
Customer specific factors such as input power, machine stability, tool overhang, type of clamping, etc. are not taken into account.

S262 • Corner Radius End Mill

S262 ■ P4.3 M2.3 M3.3 M4.1 M4.2 S1.3 S2.2 S3.2 S4.2 H1.1 H2.1 H3.1 H3.2

S262 HM N Z 4 λ40° γ4° DIN 6535HA AlCrN h9 DORMER

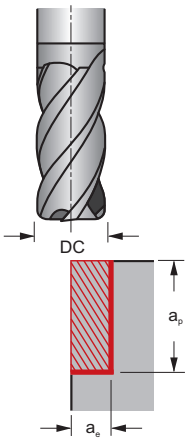


S262

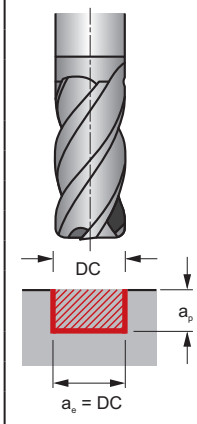
3.00 - 20.00

DC mm	RE mm	DCON h6 mm	APMX/LU mm	OAL mm	ZEFP	S262
3.0	0.30	6.0	9.0	50.0	4	S2623.0XR0.3
3.0	0.50	6.0	9.0	50.0	4	S2623.0XR0.5
4.0	0.30	6.0	12.0	57.0	4	S2624.0XR0.3
4.0	0.50	6.0	12.0	57.0	4	S2624.0XR0.5
4.0	1.00	6.0	12.0	57.0	4	S2624.0XR1.0
5.0	0.30	6.0	15.0	57.0	4	S2625.0XR0.3
5.0	0.50	6.0	15.0	57.0	4	S2625.0XR0.5
6.0	0.30	6.0	16.0	57.0	4	S2626.0XR0.3
6.0	0.50	6.0	16.0	57.0	4	S2626.0XR0.5
6.0	1.00	6.0	16.0	57.0	4	S2626.0XR1.0
8.0	0.30	8.0	20.0	64.0	4	S2628.0XR0.3
8.0	0.50	8.0	20.0	64.0	4	S2628.0XR0.5
8.0	1.00	8.0	20.0	64.0	4	S2628.0XR1.0
8.0	1.50	8.0	20.0	64.0	4	S2628.0XR1.5
8.0	2.00	8.0	20.0	64.0	4	S2628.0XR2.0
10.0	0.30	10.0	22.0	72.0	4	S26210.0XR0.3
10.0	0.50	10.0	22.0	72.0	4	S26210.0XR0.5
10.0	1.00	10.0	22.0	72.0	4	S26210.0XR1.0
10.0	1.50	10.0	22.0	72.0	4	S26210.0XR1.5
10.0	2.00	10.0	22.0	72.0	4	S26210.0XR2.0
12.0	0.30	12.0	26.0	83.0	4	S26212.0XR0.3
12.0	0.50	12.0	26.0	83.0	4	S26212.0XR0.5
12.0	1.00	12.0	26.0	83.0	4	S26212.0XR1.0
12.0	2.00	12.0	26.0	83.0	4	S26212.0XR2.0
12.0	2.50	12.0	26.0	83.0	4	S26212.0XR2.5
12.0	3.00	12.0	26.0	83.0	4	S26212.0XR3.0
14.0	0.30	14.0	32.0	83.0	4	S26214.0XR0.3
14.0	0.50	14.0	32.0	83.0	4	S26214.0XR0.5
14.0	1.00	14.0	32.0	83.0	4	S26214.0XR1.0
14.0	2.00	14.0	32.0	83.0	4	S26214.0XR2.0
14.0	3.00	14.0	32.0	83.0	4	S26214.0XR3.0
16.0	0.30	16.0	32.0	92.0	4	S26216.0XR0.3
16.0	0.50	16.0	32.0	92.0	4	S26216.0XR0.5
16.0	1.00	16.0	32.0	92.0	4	S26216.0XR1.0
16.0	2.00	16.0	32.0	92.0	4	S26216.0XR2.0
16.0	2.50	16.0	32.0	92.0	4	S26216.0XR2.5
16.0	3.00	16.0	32.0	92.0	4	S26216.0XR3.0
16.0	4.00	16.0	32.0	92.0	4	S26216.0XR4.0
18.0	0.30	18.0	38.0	92.0	4	S26218.0XR0.3
18.0	0.50	18.0	38.0	92.0	4	S26218.0XR0.5

Example of initial conditions



S262			Depth a_p x DC (mm)	Width a_e x DC (mm)	Cutting speed V_c (m/min.)	Feed f_z (mm/tooth)	Profile/contour milling											
							2	3	4	5	6	8	10	12	14	16	18	20
C45, 16MnCr5 (180 - 220 HB)	Plain carbon steel	P2	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
1.2312, 1.2379 (260 - 340 HB)	Alloy steel	P3	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
Toolox44, Hardox450 (40 - 45 HRc)	Tool steel	P4	1,50	0,60	100	f_z	0,009	0,014	0,026	0,033	0,041	0,048	0,057	0,066	0,074	0,083	0,090	0,099
			max	0,05	145		0,021	0,032	0,060	0,076	0,094	0,110	0,131	0,151	0,169	0,190	0,206	0,227
0.9650, 0.9655 (<440 HB)	Chilled cast iron	H1	1,50	0,60	180	f_z	0,006	0,009	0,017	0,022	0,027	0,032	0,038	0,044	0,049	0,055	0,060	0,066
			max	0,05	265		0,014	0,021	0,039	0,050	0,062	0,073	0,087	0,101	0,112	0,126	0,137	0,151
1.2343, 1.2738 (50-55 HRc)	Hardened steel	H3	1,50	0,60	100	f_z	0,005	0,008	0,014	0,018	0,022	0,026	0,031	0,035	0,040	0,044	0,048	0,053
			max	0,05	145		0,011	0,018	0,032	0,041	0,050	0,060	0,071	0,080	0,092	0,101	0,110	0,121
1.2379, 1.2363 (60-62 HRc)	Hardened steel	H4	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
GG15, GG25 (180 - 220 HB)	Gray iron (GG)	K1	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
GGG50, GGG60 (180 - 220 HB)	Ductile iron (GGG)	K3	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-



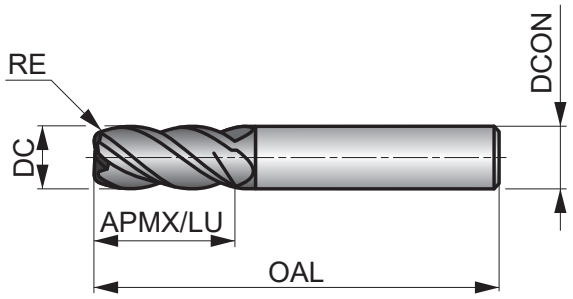
S262			Depth a_p x DC (mm)	Width a_e x DC (mm)	Cutting speed V_c (m/min.)	Feed f_z (mm/tooth)	Slotting											
							2	3	4	5	6	8	10	12	14	16	18	20
C45, 16MnCr5 (180 - 220 HB)	Plain carbon steel	P2	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-		-		-	-	-	-	-	-	-	-	-	-	-	-
1.2312, 1.2379 (260 - 340 HB)	Alloy steel	P3	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-		-		-	-	-	-	-	-	-	-	-	-	-	-
Toolox44, Hardox450 (40 - 45 HRc)	Tool steel	P4	0,50	1,00	100	f_z	0,009	0,014	0,026	0,033	0,041	0,048	0,057	0,066	0,074	0,083	0,090	0,099
			1,00		70		0,007	0,011	0,020	0,025	0,031	0,036	0,043	0,050	0,056	0,062	0,068	0,074
0.9650, 0.9655 (<440 HB)	Chilled cast iron	H1	0,50	1,00	180	f_z	0,006	0,009	0,017	0,022	0,027	0,032	0,038	0,044	0,049	0,055	0,060	0,066
			1,00		130		0,005	0,007	0,013	0,017	0,020	0,024	0,029	0,033	0,037	0,041	0,045	0,050
1.2343, 1.2738 (50-55 HRc)	Hardened steel	H3	0,50	1,00	100	f_z	0,005	0,008	0,014	0,018	0,022	0,026	0,031	0,035	0,040	0,044	0,048	0,053
			1,00		70		0,004	0,006	0,011	0,014	0,017	0,020	0,023	0,026	0,030	0,033	0,036	0,040
1.2379, 1.2363 (60-62 HRc)	Hardened steel	H4	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-		-		-	-	-	-	-	-	-	-	-	-	-	-
GG15, GG25 (180 - 220 HB)	Gray iron (GG)	K1	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-		-		-	-	-	-	-	-	-	-	-	-	-	-
GGG50, GGG60 (180 - 220 HB)	Ductile iron (GGG)	K3	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-		-		-	-	-	-	-	-	-	-	-	-	-	-

Cutting speed and feed values are approximate.
Cutting speed can be changed in a range (+/-10%) and feed in a range (+/-25%).
Customer specific factors such as input power, machine stability, tool overhang, type of clamping, etc. are not taken into account.

S523 • Corner Radius End Mill

S523 ■ H1.1 H2.1 H2.2 H3.1 H3.2 H4.1 H4.2

S523 HM N Z 4 λ40° γ-6° DIN 6535HA TiSiN h9 DORMER

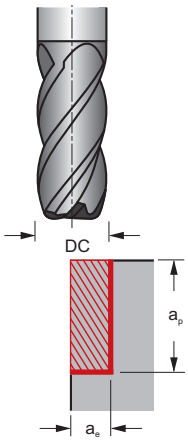


S523

1.50 - 16.00

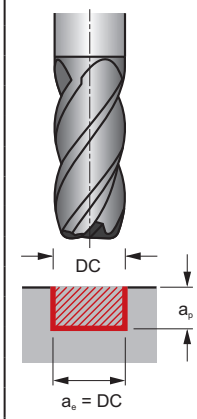
DC mm	RE mm	DCON h6 mm	APMX/LU mm	OAL mm	ZEFP	S523
1.5	0.20	6.0	4.5	50.0	4	S5231.5XR0.2
2.0	0.20	6.0	6.5	50.0	4	S5232.0XR0.2
3.0	0.20	3.0	9.0	50.0	4	S5233.0XR0.2XD3
3.0	0.30	3.0	9.0	50.0	4	S5233.0XR0.3XD3
3.0	0.20	6.0	9.0	50.0	4	S5233.0XR0.2XD6
3.0	0.30	6.0	9.0	50.0	4	S5233.0XR0.3XD6
3.0	0.50	6.0	9.0	50.0	4	S5233.0XR0.5XD6
4.0	0.30	4.0	12.0	50.0	4	S5234.0XR0.3XD4
4.0	0.50	4.0	12.0	50.0	4	S5234.0XR0.5XD4
4.0	0.30	6.0	12.0	50.0	4	S5234.0XR0.3XD6
4.0	0.50	6.0	12.0	50.0	4	S5234.0XR0.5XD6
5.0	0.30	5.0	15.0	50.0	4	S5235.0XR0.3XD5
5.0	0.50	5.0	15.0	50.0	4	S5235.0XR0.5XD5
5.0	0.30	6.0	15.0	50.0	4	S5235.0XR0.3XD6
5.0	0.50	6.0	15.0	50.0	4	S5235.0XR0.5XD6
6.0	0.30	6.0	16.0	50.0	4	S5236.0XR0.3
6.0	0.50	6.0	16.0	50.0	4	S5236.0XR0.5
6.0	1.00	6.0	16.0	50.0	4	S5236.0XR1.0
8.0	0.30	8.0	20.0	64.0	4	S5238.0XR0.3
8.0	0.50	8.0	20.0	64.0	4	S5238.0XR0.5
8.0	1.00	8.0	20.0	64.0	4	S5238.0XR1.0
8.0	2.00	8.0	20.0	64.0	4	S5238.0XR2.0
10.0	0.50	10.0	22.0	70.0	4	S52310.0XR0.5
10.0	1.00	10.0	22.0	70.0	4	S52310.0XR1.0
10.0	1.50	10.0	22.0	70.0	4	S52310.0XR1.5
10.0	2.00	10.0	22.0	70.0	4	S52310.0XR2.0
12.0	0.50	12.0	25.0	75.0	4	S52312.0XR0.5
12.0	1.00	12.0	25.0	75.0	4	S52312.0XR1.0
12.0	2.00	12.0	25.0	75.0	4	S52312.0XR2.0
12.0	3.00	12.0	25.0	75.0	4	S52312.0XR3.0
16.0	0.50	16.0	32.0	90.0	4	S52316.0XR0.5
16.0	1.00	16.0	32.0	90.0	4	S52316.0XR1.0
16.0	2.00	16.0	32.0	90.0	4	S52316.0XR2.0
16.0	3.00	16.0	32.0	90.0	4	S52316.0XR3.0

Example of initial conditions



S523

			Depth a_p x DC (mm)	Width a_e x DC (mm)	Cutting speed V_c (m/min.)	Feed f_z (mm/tooth)	Profile/contour milling 2	3	4	5	6	8	10	12	14	16	18	20
C45, 16MnCr5 (180 - 220 HB)	Plain carbon steel	P2	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
1.2312, 1.2379 (260 - 340 HB)	Alloy steel	P3	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
Toolox44, Hardox450 (40 - 45 HRc)	Tool steel	P4	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
0.9650, 0.9655 (<440 HB)	Chilled cast iron	H1	1,50	0,60	120	f_z	0,006	0,009	0,017	0,022	0,027	0,032	0,038	0,044	0,049	0,055	0,060	0,066
			max	0,05	175		0,014	0,021	0,039	0,050	0,062	0,073	0,087	0,101	0,112	0,126	0,137	0,151
1.2343, 1.2738 (50-55 HRc)	Hardened steel	H3	1,50	0,60	65	f_z	0,005	0,008	0,014	0,018	0,022	0,026	0,031	0,035	0,040	0,044	0,048	0,053
			max	0,05	95		0,011	0,018	0,032	0,041	0,050	0,060	0,071	0,080	0,092	0,101	0,110	0,121
1.2379, 1.2363 (60-62 HRc)	Hardened steel	H4	1,50	0,60	40	f_z	0,003	0,004	0,005	0,006	0,007	0,009	0,011	0,014	0,015	0,017	0,019	0,021
			max	0,05	60		0,007	0,009	0,011	0,014	0,016	0,021	0,025	0,032	0,034	0,039	0,044	0,048
GG15, GG25 (180 - 220 HB)	Gray iron (GG)	K1	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
GGG50, GGG60 (180 - 220 HB)	Ductile iron (GGG)	K3	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-



S523

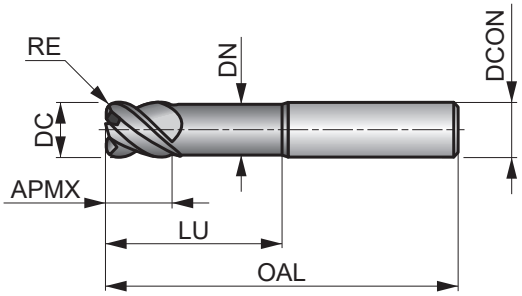
			Depth a_p x DC (mm)	Width a_e x DC (mm)	Cutting speed V_c (m/min.)	Feed f_z (mm/tooth)	Slotting 2	3	4	5	6	8	10	12	14	16	18	20
C45, 16MnCr5 (180 - 220 HB)	Plain carbon steel	P2	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-		-		-	-	-	-	-	-	-	-	-	-	-	-
1.2312, 1.2379 (260 - 340 HB)	Alloy steel	P3	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-		-		-	-	-	-	-	-	-	-	-	-	-	-
Toolox44, Hardox450 (40 - 45 HRc)	Tool steel	P4	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-		-		-	-	-	-	-	-	-	-	-	-	-	-
0.9650, 0.9655 (<440 HB)	Chilled cast iron	H1	0,50	1,00	120	f_z	0,006	0,009	0,017	0,022	0,027	0,032	0,038	0,044	0,049	0,055	0,060	0,066
			1,00		90		0,005	0,007	0,013	0,017	0,020	0,024	0,029	0,033	0,037	0,041	0,045	0,050
1.2343, 1.2738 (50-55 HRc)	Hardened steel	H3	0,50	1,00	65	f_z	0,005	0,008	0,014	0,018	0,022	0,026	0,031	0,035	0,040	0,044	0,048	0,053
			1,00		50		0,004	0,006	0,011	0,014	0,017	0,020	0,023	0,026	0,030	0,033	0,036	0,040
1.2379, 1.2363 (60-62 HRc)	Hardened steel	H4	0,50	1,00	40	f_z	0,003	0,004	0,005	0,006	0,007	0,009	0,011	0,014	0,015	0,017	0,019	0,021
			1,00		30		0,002	0,003	0,004	0,005	0,005	0,007	0,008	0,011	0,011	0,013	0,014	0,016
GG15, GG25 (180 - 220 HB)	Gray iron (GG)	K1	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-		-		-	-	-	-	-	-	-	-	-	-	-	-
GGG50, GGG60 (180 - 220 HB)	Ductile iron (GGG)	K3	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-		-		-	-	-	-	-	-	-	-	-	-	-	-

Cutting speed and feed values are approximate.
Cutting speed can be changed in a range (+/-10%) and feed in a range (+/-25%).
Customer specific factors such as input power, machine stability, tool overhang, type of clamping, etc. are not taken into account.

S521 • Corner Radius End Mill

S521 ■ H1.1 H2.1 H2.2 H3.1 H3.2 H4.1 H4.2

S521 HM N Z 4 λ45° γ-10° DIN 6535HA TiSiN h9 DORMER

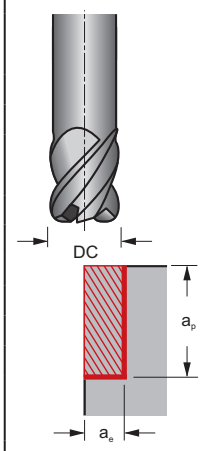


S521

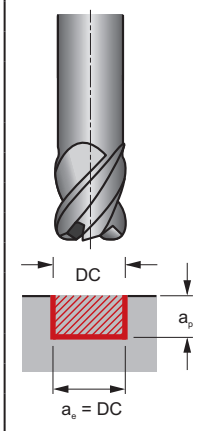
3.00 - 16.00

DC mm	RE mm	DCON h6 mm	APMX mm	OAL mm	ZEFP	LU mm	DN mm	S521
3.0	0.30	6.0	4.0	60.0	4	14.0	2.8	S5213.0XR0.3
4.0	0.30	6.0	5.0	60.0	4	16.0	3.7	S5214.0XR0.3
4.0	0.50	6.0	5.0	60.0	4	16.0	3.7	S5214.0XR0.5
5.0	0.30	6.0	6.0	60.0	4	18.0	4.6	S5215.0XR0.3
5.0	0.50	6.0	6.0	60.0	4	18.0	4.6	S5215.0XR0.5
6.0	0.50	6.0	7.0	60.0	4	20.0	5.5	S5216.0XR0.5
6.0	1.00	6.0	7.0	60.0	4	20.0	5.5	S5216.0XR1.0
8.0	0.50	8.0	9.0	64.0	4	26.0	7.4	S5218.0XR0.5
8.0	1.00	8.0	9.0	64.0	4	26.0	7.4	S5218.0XR1.0
10.0	1.00	10.0	11.0	70.0	4	31.0	9.2	S52110.0XR1.0
10.0	2.00	10.0	11.0	70.0	4	31.0	9.2	S52110.0XR2.0
12.0	1.00	12.0	13.0	75.0	4	37.0	11.0	S52112.0XR1.0
12.0	2.00	12.0	13.0	75.0	4	37.0	11.0	S52112.0XR2.0
16.0	1.00	16.0	17.0	90.0	4	43.0	15.0	S52116.0XR1.0
16.0	2.00	16.0	17.0	90.0	4	43.0	15.0	S52116.0XR2.0
16.0	3.00	16.0	17.0	90.0	4	43.0	15.0	S52116.0XR3.0

Example of initial conditions



S521			Depth a_p x DC (mm)	Width a_e x DC (mm)	Cutting speed V_c (m/min.)	Feed f_z (mm/tooth)	Profile/contour milling											
							2	3	4	5	6	8	10	12	14	16	18	20
C45, 16MnCr5 (180 - 220 HB)	Plain carbon steel	P2	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
1.2312, 1.2379 (260 - 340 HB)	Alloy steel	P3	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
Toolox44, Hardox450 (40 - 45 HRc)	Tool steel	P4	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
0.9650, 0.9655 (<440 HB)	Chilled cast iron	H1	1,50	0,60	120	f_z	0,006	0,009	0,017	0,022	0,027	0,032	0,038	0,044	0,049	0,055	0,060	0,066
			max	0,05	175		0,014	0,021	0,039	0,050	0,062	0,073	0,087	0,101	0,112	0,126	0,137	0,151
1.2343, 1.2738 (50-55 HRc)	Hardened steel	H3	1,50	0,60	65	f_z	0,005	0,008	0,014	0,018	0,022	0,026	0,031	0,035	0,040	0,044	0,048	0,053
			max	0,05	95		0,011	0,018	0,032	0,041	0,050	0,060	0,071	0,080	0,092	0,101	0,110	0,121
1.2379, 1.2363 (60-62 HRc)	Hardened steel	H4	1,50	0,60	40	f_z	0,003	0,004	0,005	0,006	0,007	0,009	0,011	0,014	0,015	0,017	0,019	0,021
			max	0,05	60		0,007	0,009	0,011	0,014	0,016	0,021	0,025	0,032	0,034	0,039	0,044	0,048
GG15, GG25 (180 - 220 HB)	Gray iron (GG)	K1	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
GGG50, GGG60 (180 - 220 HB)	Ductile iron (GGG)	K3	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-



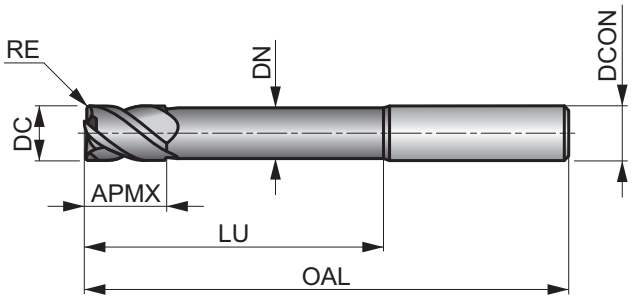
S521			Depth a_p x DC (mm)	Width a_e x DC (mm)	Cutting speed V_c (m/min.)	Feed f_z (mm/tooth)	Slotting											
							2	3	4	5	6	8	10	12	14	16	18	20
C45, 16MnCr5 (180 - 220 HB)	Plain carbon steel	P2	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-		-		-	-	-	-	-	-	-	-	-	-	-	-
1.2312, 1.2379 (260 - 340 HB)	Alloy steel	P3	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-		-		-	-	-	-	-	-	-	-	-	-	-	-
Toolox44, Hardox450 (40 - 45 HRc)	Tool steel	P4	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-		-		-	-	-	-	-	-	-	-	-	-	-	-
0.9650, 0.9655 (<440 HB)	Chilled cast iron	H1	0,50	1,00	120	f_z	0,006	0,009	0,017	0,022	0,027	0,032	0,038	0,044	0,049	0,055	0,060	0,066
			1,00		90		0,005	0,007	0,013	0,017	0,020	0,024	0,029	0,033	0,037	0,041	0,045	0,050
1.2343, 1.2738 (50-55 HRc)	Hardened steel	H3	0,50	1,00	65	f_z	0,005	0,008	0,014	0,018	0,022	0,026	0,031	0,035	0,040	0,044	0,048	0,053
			1,00		50		0,004	0,006	0,011	0,014	0,017	0,020	0,023	0,026	0,030	0,033	0,036	0,040
1.2379, 1.2363 (60-62 HRc)	Hardened steel	H4	0,50	1,00	40	f_z	0,003	0,004	0,005	0,006	0,007	0,009	0,011	0,014	0,015	0,017	0,019	0,021
			1,00		30		0,002	0,003	0,004	0,005	0,005	0,007	0,008	0,011	0,011	0,013	0,014	0,016
GG15, GG25 (180 - 220 HB)	Gray iron (GG)	K1	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-		-		-	-	-	-	-	-	-	-	-	-	-	-
GGG50, GGG60 (180 - 220 HB)	Ductile iron (GGG)	K3	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-		-		-	-	-	-	-	-	-	-	-	-	-	-

Cutting speed and feed values are approximate.
Cutting speed can be changed in a range (+/-10%) and feed in a range (+/-25%).
Customer specific factors such as input power, machine stability, tool overhang, type of clamping, etc. are not taken into account.

S524 • Corner Radius End Mill

S524 ■ H1.1 H2.1 H2.2 H3.1 H3.2 H4.1 H4.2

S524 HM N Z 4 λ40° γ-6° DIN 6535HA TiSiN h9 DORMER

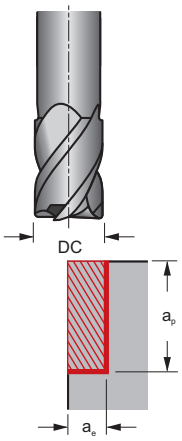


S524

3.00 - 16.00

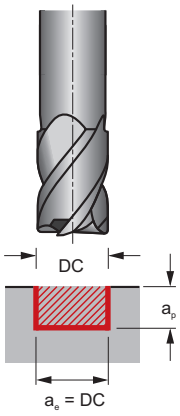
DC mm	RE mm	DCON h6 mm	APMX mm	OAL mm	ZEFP	LU mm	DN mm	S524
3.0	0.30	6.0	5.0	75.0	4	30.0	2.8	S5243.0XR0.3
4.0	0.30	6.0	8.0	75.0	4	32.0	3.7	S5244.0XR0.3
4.0	0.50	6.0	8.0	75.0	4	32.0	3.7	S5244.0XR0.5
5.0	0.30	6.0	9.0	75.0	4	32.0	4.6	S5245.0XR0.3
5.0	0.50	6.0	9.0	75.0	4	32.0	4.6	S5245.0XR0.5
6.0	0.30	6.0	10.0	75.0	4	40.0	5.5	S5246.0XR0.3
6.0	0.50	6.0	10.0	75.0	4	40.0	5.5	S5246.0XR0.5
6.0	1.00	6.0	10.0	75.0	4	40.0	5.5	S5246.0XR1.0
8.0	0.30	8.0	12.0	75.0	4	40.0	7.4	S5248.0XR0.3
8.0	0.50	8.0	12.0	75.0	4	40.0	7.4	S5248.0XR0.5
8.0	1.00	8.0	12.0	75.0	4	40.0	7.4	S5248.0XR1.0
10.0	0.50	10.0	14.0	75.0	4	40.0	9.2	S52410.0XR0.5
10.0	1.00	10.0	14.0	75.0	4	40.0	9.2	S52410.0XR1.0
10.0	2.00	10.0	14.0	75.0	4	40.0	9.2	S52410.0XR2.0
12.0	0.50	12.0	16.0	100.0	4	60.0	11.0	S52412.0XR0.5
12.0	1.00	12.0	16.0	100.0	4	60.0	11.0	S52412.0XR1.0
12.0	2.00	12.0	16.0	100.0	4	60.0	11.0	S52412.0XR2.0
16.0	0.50	16.0	22.0	125.0	4	85.0	15.0	S52416.0XR0.5
16.0	1.00	16.0	22.0	125.0	4	85.0	15.0	S52416.0XR1.0
16.0	2.00	16.0	22.0	125.0	4	85.0	15.0	S52416.0XR2.0
16.0	3.00	16.0	22.0	125.0	4	85.0	15.0	S52416.0XR3.0

Example of initial conditions



S524

			Depth a_p x DC (mm)	Width a_e x DC (mm)	Cutting speed V_c (m/min.)	Feed f_z (mm/tooth)	Profile/contour milling											
							2	3	4	5	6	8	10	12	14	16	18	20
C45, 16MnCr5 (180 - 220 HB)	Plain carbon steel	P2	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
1.2312, 1.2379 (260 - 340 HB)	Alloy steel	P3	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
Toolox44, Hardox450 (40 - 45 HRc)	Tool steel	P4	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
0.9650, 0.9655 (<440 HB)	Chilled cast iron	H1	1,50	0,60	120	f_z	0,006	0,009	0,017	0,022	0,027	0,032	0,038	0,044	0,049	0,055	0,060	0,066
			max	0,05	175		0,014	0,021	0,039	0,050	0,062	0,073	0,087	0,101	0,112	0,126	0,137	0,151
1.2343, 1.2738 (50-55 HRc)	Hardened steel	H3	1,50	0,60	65	f_z	0,005	0,008	0,014	0,018	0,022	0,026	0,031	0,035	0,040	0,044	0,048	0,053
			max	0,05	95		0,011	0,018	0,032	0,041	0,050	0,060	0,071	0,080	0,092	0,101	0,110	0,121
1.2379, 1.2363 (60-62 HRc)	Hardened steel	H4	1,50	0,60	40	f_z	0,003	0,004	0,005	0,006	0,007	0,009	0,011	0,014	0,015	0,017	0,019	0,021
			max	0,05	60		0,007	0,009	0,011	0,014	0,016	0,021	0,025	0,032	0,034	0,039	0,044	0,048
GG15, GG25 (180 - 220 HB)	Gray iron (GG)	K1	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
GGG50, GGG60 (180 - 220 HB)	Ductile iron (GGG)	K3	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-



S524

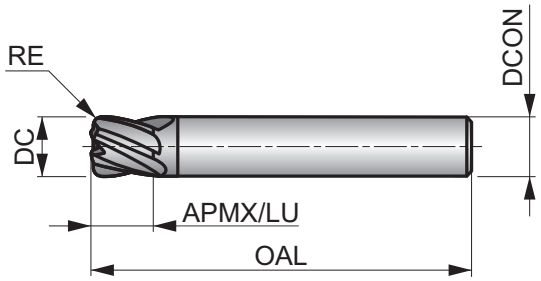
			Depth a_p x DC (mm)	Width a_e x DC (mm)	Cutting speed V_c (m/min.)	Feed f_z (mm/tooth)	Slotting											
							2	3	4	5	6	8	10	12	14	16	18	20
C45, 16MnCr5 (180 - 220 HB)	Plain carbon steel	P2	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-		-		-	-	-	-	-	-	-	-	-	-	-	-
1.2312, 1.2379 (260 - 340 HB)	Alloy steel	P3	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-		-		-	-	-	-	-	-	-	-	-	-	-	-
Toolox44, Hardox450 (40 - 45 HRc)	Tool steel	P4	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-		-		-	-	-	-	-	-	-	-	-	-	-	-
0.9650, 0.9655 (<440 HB)	Chilled cast iron	H1	0,50	1,00	120	f_z	0,006	0,009	0,017	0,022	0,027	0,032	0,038	0,044	0,049	0,055	0,060	0,066
			1,00		90		0,005	0,007	0,013	0,017	0,020	0,024	0,029	0,033	0,037	0,041	0,045	0,050
1.2343, 1.2738 (50-55 HRc)	Hardened steel	H3	0,50	1,00	65	f_z	0,005	0,008	0,014	0,018	0,022	0,026	0,031	0,035	0,040	0,044	0,048	0,053
			1,00		50		0,004	0,006	0,011	0,014	0,017	0,020	0,023	0,026	0,030	0,033	0,036	0,040
1.2379, 1.2363 (60-62 HRc)	Hardened steel	H4	0,50	1,00	40	f_z	0,003	0,004	0,005	0,006	0,007	0,009	0,011	0,014	0,015	0,017	0,019	0,021
			1,00		30		0,002	0,003	0,004	0,005	0,005	0,007	0,008	0,011	0,011	0,013	0,014	0,016
GG15, GG25 (180 - 220 HB)	Gray iron (GG)	K1	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-		-		-	-	-	-	-	-	-	-	-	-	-	-
GGG50, GGG60 (180 - 220 HB)	Ductile iron (GGG)	K3	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-		-		-	-	-	-	-	-	-	-	-	-	-	-

Cutting speed and feed values are approximate.
Cutting speed can be changed in a range (+/-10%) and feed in a range (+/-25%).
Customer specific factors such as input power, machine stability, tool overhang, type of clamping, etc. are not taken into account.

S536 • High Feed End Mill

S536 ■ H1.1 H2.1 H2.2 H3.1 H3.2 H4.1 H4.2

S536 HM N Z 4-6 λ25° γ0° DIN 6535HA TiSiN h9 DORMER

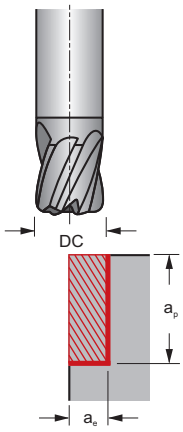


S536

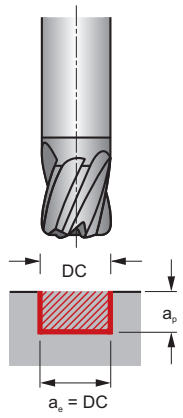
6.00 - 12.00

DC mm	RE mm	DCON h6 mm	APMX/LU mm	OAL mm	ZEFP	S536
6.0	1.00	6.0	6.0	60.0	4	S5366.0XR1.0
8.0	2.00	8.0	8.0	64.0	6	S5368.0XR2.0
10.0	2.00	10.0	10.0	75.0	6	S53610.0XR2.0
12.0	2.00	12.0	12.0	75.0	6	S53612.0XR2.0

Example of initial conditions



S536			Depth a_p x DC (mm)	Width a_e x DC (mm)	Cutting speed V_c (m/min.)	Feed f_z (mm/tooth)	Profile/contour milling											
							2	3	4	5	6	8	10	12	14	16	18	20
C45, 16MnCr5 (180 - 220 HB)	Plain carbon steel	P2	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
1.2312, 1.2379 (260 - 340 HB)	Alloy steel	P3	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
Toolox44, Hardox450 (40 - 45 HRc)	Tool steel	P4	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
0.9650, 0.9655 (<440 HB)	Chilled cast iron	H1	0,03	0,60	200	f_z	-	-	-	-	0,073	0,085	0,097	0,107	-	-	-	-
1.2343, 1.2738 (50-55 HRc)	Hardened steel	H3	0,03	0,60	110	f_z	-	-	-	-	0,073	0,085	0,097	0,107	-	-	-	-
1.2379, 1.2363 (60-62 HRc)	Hardened steel	H4	0,03	0,60	70	f_z	-	-	-	-	0,073	0,085	0,097	0,107	-	-	-	-
GG15, GG25 (180 - 220 HB)	Gray iron (GG)	K1	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
GGG50, GGG60 (180 - 220 HB)	Ductile iron (GGG)	K3	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-



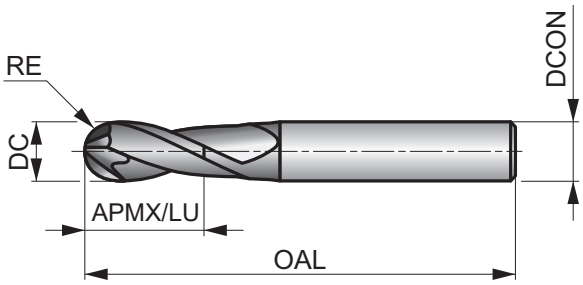
S536			Depth a_p x DC (mm)	Width a_e x DC (mm)	Cutting speed V_c (m/min.)	Feed f_z (mm/tooth)	Slotting											
							2	3	4	5	6	8	10	12	14	16	18	20
C45, 16MnCr5 (180 - 220 HB)	Plain carbon steel	P2	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-		-		-	-	-	-	-	-	-	-	-	-	-	-
1.2312, 1.2379 (260 - 340 HB)	Alloy steel	P3	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-		-		-	-	-	-	-	-	-	-	-	-	-	-
Toolox44, Hardox450 (40 - 45 HRc)	Tool steel	P4	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-		-		-	-	-	-	-	-	-	-	-	-	-	-
0.9650, 0.9655 (<440 HB)	Chilled cast iron	H1	0,03	1,00	150	f_z	-	-	-	-	0,073	0,085	0,097	0,107	-	-	-	-
1.2343, 1.2738 (50-55 HRc)	Hardened steel	H3	0,03	1,00	80	f_z	-	-	-	-	0,073	0,085	0,097	0,107	-	-	-	-
1.2379, 1.2363 (60-62 HRc)	Hardened steel	H4	0,03	1,00	55	f_z	-	-	-	-	0,073	0,085	0,097	0,107	-	-	-	-
GG15, GG25 (180 - 220 HB)	Gray iron (GG)	K1	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-		-		-	-	-	-	-	-	-	-	-	-	-	-
GGG50, GGG60 (180 - 220 HB)	Ductile iron (GGG)	K3	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-		-		-	-	-	-	-	-	-	-	-	-	-	-

Cutting speed and feed values are approximate.
Cutting speed can be changed in a range (+/-10%) and feed in a range (+/-25%).
Customer specific factors such as input power, machine stability, tool overhang, type of clamping, etc. are not taken into account.

S501 • Ball-Nosed End Mill

S501		
	■	P1.1 P1.2 P1.3 P2.1 P2.2 P2.3 P3.1 P3.2 P3.3 P4.1 P4.2 M1.1 M1.2 M2.1 M2.2 K1.1 K1.2 K1.3 K2.1 K2.2 K2.3 K3.1 K3.2 K3.3 K4.1 K4.2 K4.3 K4.4 K4.5 K5.1 K5.2 K5.3 N3.1 N3.2
	◪	P4.3 M3.1 M3.2 M3.3 M4.1 N1.1 N1.2 N1.3 N2.1 N2.2 N2.3 N3.3 N4.1 N4.2 S1.1 S1.2 S2.1 S3.1 S4.1

S501 HM | N | Z 2 | λ30° γ10° | DIN 6535HA | X-CEED | h9 | DORMER



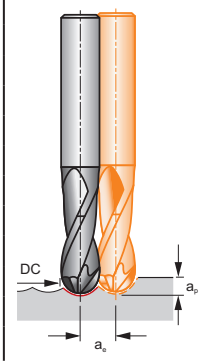
S501

1.00 - 16.00

DC mm	RE mm	DCON h6 mm	APMX/LU mm	OAL mm	ZEFP	S501
1.0	0.50	3.0	3.0	38.0	2	S5011.0
1.5	0.75	3.0	3.0	38.0	2	S5011.5
2.0	1.00	3.0	6.0	38.0	2	S5012.0
2.5	1.25	3.0	7.0	38.0	2	S5012.5
3.0	1.50	3.0	7.0	38.0	2	S5013.0
4.0	2.00	6.0	8.0	57.0	2	S5014.0
5.0	2.50	6.0	10.0	57.0	2	S5015.0
6.0	3.00	6.0	10.0	57.0	2	S5016.0
7.0	3.50	8.0	13.0	63.0	2	S5017.0
8.0	4.00	8.0	16.0	63.0	2	S5018.0
9.0	4.50	10.0	16.0	72.0	2	S5019.0
10.0	5.00	10.0	19.0	72.0	2	S50110.0
12.0	6.00	12.0	22.0	83.0	2	S50112.0
16.0	8.00	16.0	26.0	92.0	2	S50116.0

Example of initial conditions

S501



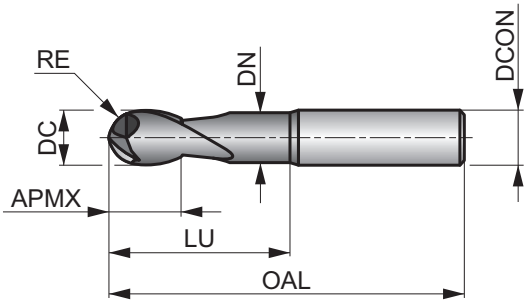
			Depth a_p x DC (mm)	Width a_e x DC (mm)	Cutting speed V_c (m/min.)	Feed f_z (mm/tooth)	Plain copy milling									
							2	3	4	5	6	8	10	12	14	16
C45, 16MnCr5 (180 - 220 HB)	Plain carbon steel	P2	0,10	0,10	200	f_z	0,008	0,013	0,025	0,033	0,045	0,056	0,069	0,084	0,096	0,111
			0,05	0,03	280		0,019	0,032	0,061	0,082	0,110	0,138	0,174	0,210	0,242	0,278
1.2312, 1.2379 (260 - 340 HB)	Alloy steel	P3	0,10	0,10	130	f_z	0,006	0,011	0,021	0,029	0,035	0,045	0,056	0,067	0,078	0,090
			0,05	0,03	175		0,014	0,026	0,050	0,070	0,085	0,112	0,139	0,166	0,197	0,224
Toolox44, Hardox450 (40 - 45 HRc)	Tool steel	P4	0,10	0,10	80	f_z	0,006	0,011	0,021	0,029	0,035	0,045	0,056	0,067	0,078	0,090
			0,05	0,03	105		0,014	0,026	0,050	0,070	0,085	0,112	0,139	0,166	0,197	0,224
0.9650, 0.9655 (<440 HB)	Chilled cast iron	H1	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-
1.2343, 1.2738 (50-55 HRc)	Hardened steel	H3	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-
1.2379, 1.2363 (60-62 HRc)	Hardened steel	H4	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-
GG15, GG25 (180 - 220 HB)	Gray iron (GG)	K1	0,10	0,10	200	f_z	0,008	0,013	0,025	0,033	0,045	0,056	0,069	0,084	0,096	0,111
			0,05	0,03	270		0,019	0,032	0,061	0,082	0,110	0,138	0,174	0,210	0,242	0,278
GGG50, GGG60 (180 - 220 HB)	Ductile iron (GGG)	K3	0,10	0,10	190	f_z	0,008	0,013	0,025	0,033	0,045	0,056	0,069	0,084	0,096	0,111
			0,05	0,03	260		0,019	0,032	0,061	0,082	0,110	0,138	0,174	0,210	0,242	0,278

Cutting speed and feed values are approximate.
Cutting speed can be changed in a range (+/-10%) and feed in a range (+/-25%).
Customer specific factors such as input power, machine stability, tool overhang, type of clamping, etc. are not taken into account.

S229 • Ball-Nosed End Mill

S229 ▪ P4.3 M2.3 M3.3 M4.1 M4.2 S1.3 S2.2 S3.2 S4.2

S229 HM | N | Z 2 | λ30° γ3° | DIN 6535HA | TiSiN | h9 | DORMER

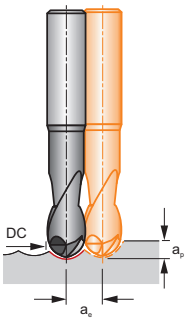


S229

1.50 - 16.00

DC mm	RE mm	DCON h6 mm	APMX mm	OAL mm	ZEFP	LU mm	DN mm	S229
1.5	0.75	4.0	3.0	50.0	2	6.0	1.4	S2291.5XD4
2.0	1.00	3.0	4.0	50.0	2	8.0	1.9	S2292.0XD3
2.0	1.00	4.0	4.0	50.0	2	8.0	1.9	S2292.0XD4
3.0	1.50	3.0	5.0	50.0	2	14.0	2.8	S2293.0XD3
3.0	1.50	6.0	5.0	50.0	2	14.0	2.8	S2293.0XD6
4.0	2.00	4.0	8.0	50.0	2	20.0	3.7	S2294.0XD4
4.0	2.00	6.0	8.0	50.0	2	20.0	3.7	S2294.0XD6
5.0	2.50	5.0	9.0	50.0	2	20.0	4.6	S2295.0XD5
5.0	2.50	6.0	9.0	50.0	2	20.0	4.6	S2295.0XD6
6.0	3.00	6.0	10.0	50.0	2	20.0	5.5	S2296.0
8.0	4.00	8.0	12.0	64.0	2	30.0	7.4	S2298.0
10.0	5.00	10.0	14.0	70.0	2	32.0	9.2	S22910.0
12.0	6.00	12.0	16.0	75.0	2	38.0	11.0	S22912.0
14.0	7.00	14.0	32.0	90.0	2	44.0	13.0	S22914.0
16.0	8.00	16.0	32.0	90.0	2	46.0	15.0	S22916.0

Example of initial conditions

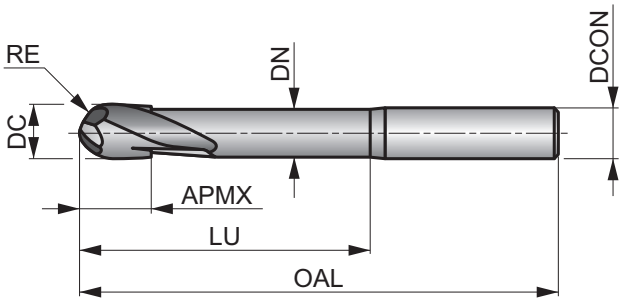
S229				Depth a_p x DC (mm)	Width a_e x DC (mm)	Cutting speed V_c (m/min.)	Feed f_z (mm/tooth)	Plain copy milling									
								2	3	4	5	6	8	10	12	14	16
	C45, 16MnCr5	Plain carbon steel	P2	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-
	(180 - 220 HB)			-	-	-		-	-	-	-	-	-	-	-	-	-
	1.2312, 1.2379	Alloy steel	P3	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-
	(260 - 340 HB)			-	-	-		-	-	-	-	-	-	-	-	-	-
	Toolox44, Hardox450	Tool steel	P4	0,10	0,10	130	f_z	0,008	0,013	0,025	0,033	0,045	0,056	0,069	0,084	0,096	0,111
	(40 - 45 HRc)			0,05	0,03	185		0,019	0,032	0,061	0,082	0,110	0,138	0,174	0,210	0,242	0,278
	0.9650, 0.9655	Chilled cast iron	H1	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-
	(<440 HB)			-	-	-		-	-	-	-	-	-	-	-	-	-
	1.2343, 1.2738	Hardened steel	H3	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-
	(50-55 HRc)			-	-	-		-	-	-	-	-	-	-	-	-	-
	1.2379, 1.2363	Hardened steel	H4	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-
	(60-62 HRc)			-	-	-		-	-	-	-	-	-	-	-	-	-
	GG15, GG25	Gray iron (GG)	K1	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-
	(180 - 220 HB)			-	-	-		-	-	-	-	-	-	-	-	-	-
	GGG50, GGG60	Ductile iron (GGG)	K3	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-
	(180 - 220 HB)			-	-	-		-	-	-	-	-	-	-	-	-	-

Cutting speed and feed values are approximate.
Cutting speed can be changed in a range (+/-10%) and feed in a range (+/-25%).
Customer specific factors such as input power, machine stability, tool overhang, type of clamping, etc. are not taken into account.

S231 • Ball-Nosed End Mill

S231 ▪ P4.3 M2.3 M3.3 M4.1 M4.2 S1.3 S2.2 S3.2 S4.2

S231 HM | N | Z 2 | λ30° γ3° | DIN 6535HA | TiSiN | h9 | DORMER



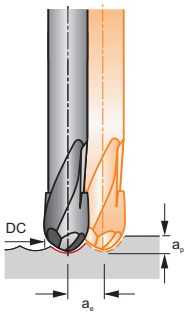
S231

1.50 - 16.00

DC mm	RE mm	DCON h6 mm	APMX mm	OAL mm	ZEFP	LU mm	DN mm	S231
1.5	0.75	4.0	3.0	75.0	2	10.0	1.4	S2311.5XD4
2.0	1.00	3.0	4.0	60.0	2	14.0	1.9	S2312.0XD3
2.0	1.00	4.0	4.0	75.0	2	14.0	1.9	S2312.0XD4
3.0	1.50	3.0	5.0	60.0	2	21.0	2.8	S2313.0XD3
3.0	1.50	6.0	5.0	75.0	2	21.0	2.8	S2313.0XD6
4.0	2.00	4.0	8.0	60.0	2	28.0	3.7	S2314.0XD4
4.0	2.00	6.0	8.0	75.0	2	28.0	3.7	S2314.0XD6
5.0	2.50	5.0	9.0	60.0	2	32.0	4.6	S2315.0
6.0	3.00	6.0	10.0	75.0	2	40.0	5.5	S2316.0
8.0	4.00	8.0	10.0	75.0	2	40.0	7.4	S2318.0
10.0	5.00	10.0	12.0	75.0	2	40.0	9.2	S23110.0
12.0	6.00	12.0	16.0	100.0	2	60.0	11.0	S23112.0
14.0	7.00	14.0	32.0	125.0	2	80.0	13.0	S23114.0
16.0	8.00	16.0	32.0	125.0	2	80.0	15.0	S23116.0

Example of initial conditions

S231



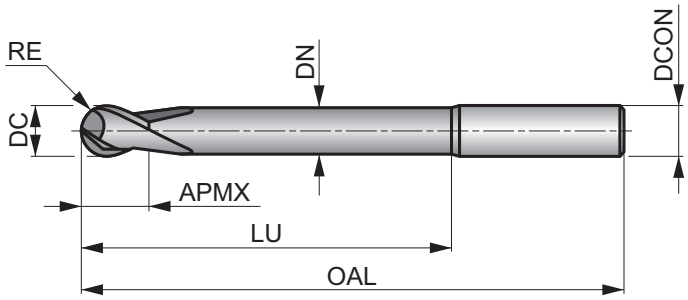
			Depth a_p x DC (mm)	Width a_e x DC (mm)	Cutting speed V_c (m/min.)	Feed f_z (mm/tooth)	Plain copy milling									
							2	3	4	5	6	8	10	12	14	16
C45, 16MnCr5 (180 - 220 HB)	Plain carbon steel	P2	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-
1.2312, 1.2379 (260 - 340 HB)	Alloy steel	P3	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-
Toolox44, Hardox450 (40 - 45 HRc)	Tool steel	P4	0,10	0,10	105	f_z	0,008	0,013	0,025	0,033	0,045	0,056	0,069	0,084	0,096	0,111
			0,05	0,03	150		0,019	0,032	0,061	0,082	0,110	0,138	0,174	0,210	0,242	0,278
0.9650, 0.9655 (<440 HB)	Chilled cast iron	H1	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-
1.2343, 1.2738 (50-55 HRc)	Hardened steel	H3	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-
1.2379, 1.2363 (60-62 HRc)	Hardened steel	H4	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-
GG15, GG25 (180 - 220 HB)	Gray iron (GG)	K1	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-
GGG50, GGG60 (180 - 220 HB)	Ductile iron (GGG)	K3	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-

Cutting speed and feed values are approximate.
Cutting speed can be changed in a range (+/-10%) and feed in a range (+/-25%).
Customer specific factors such as input power, machine stability, tool overhang, type of clamping, etc. are not taken into account.

S233 • Ball-Nosed End Mill

S233 ▪ P4.3 M2.3 M3.3 M4.1 M4.2 S1.3 S2.2 S3.2 S4.2

S233 HM N Z 2 λ30° γ3° DIN 6535HA TiSiN h9 DORMER

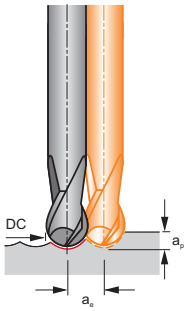


S233

2.00 - 16.00

DC mm	RE mm	DCON h6 mm	APMX mm	OAL mm	ZEFP	LU mm	DN mm	S233
2.0	1.00	3.0	4.0	100.0	2	20.0	1.9	S2332.0XD3
2.0	1.00	4.0	4.0	100.0	2	20.0	1.9	S2332.0XD4
3.0	1.50	3.0	5.0	100.0	2	30.0	2.8	S2333.0XD3
3.0	1.50	6.0	5.0	100.0	2	30.0	2.8	S2333.0XD6
4.0	2.00	4.0	8.0	100.0	2	40.0	3.7	S2334.0XD4
4.0	2.00	6.0	8.0	100.0	2	40.0	3.7	S2334.0XD6
5.0	2.50	5.0	9.0	100.0	2	50.0	4.6	S2335.0
6.0	3.00	6.0	10.0	100.0	2	60.0	5.5	S2336.0
8.0	4.00	8.0	12.0	100.0	2	60.0	7.4	S2338.0
10.0	5.00	10.0	14.0	125.0	2	85.0	9.2	S23310.0
12.0	6.00	12.0	16.0	125.0	2	85.0	11.0	S23312.0
14.0	7.00	14.0	32.0	150.0	2	110.0	13.0	S23314.0
16.0	8.00	16.0	32.0	150.0	2	110.0	15.0	S23316.0

Example of initial conditions



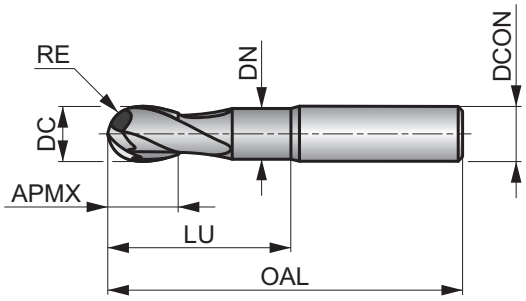
S233			Depth a_p x DC (mm)	Width a_e x DC (mm)	Cutting speed V_c (m/min.)	Feed f_z (mm/tooth)	Plain copy milling									
							2	3	4	5	6	8	10	12	14	16
C45, 16MnCr5 (180 - 220 HB)	Plain carbon steel	P2	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-
1.2312, 1.2379 (260 - 340 HB)	Alloy steel	P3	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-
Toolox44, Hardox450 (40 - 45 HRc)	Tool steel	P4	0,10	0,10	70	f_z	0,008	0,013	0,025	0,033	0,045	0,056	0,069	0,084	0,096	0,111
			0,05	0,03	90		0,019	0,032	0,061	0,082	0,110	0,138	0,174	0,210	0,242	0,278
0.9650, 0.9655 (<440 HB)	Chilled cast iron	H1	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-
1.2343, 1.2738 (50-55 HRc)	Hardened steel	H3	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-
1.2379, 1.2363 (60-62 HRc)	Hardened steel	H4	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-
GG15, GG25 (180 - 220 HB)	Gray iron (GG)	K1	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-
GGG50, GGG60 (180 - 220 HB)	Ductile iron (GGG)	K3	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-

Cutting speed and feed values are approximate.
Cutting speed can be changed in a range (+/-10%) and feed in a range (+/-25%).
Customer specific factors such as input power, machine stability, tool overhang, type of clamping, etc. are not taken into account.

S529 • Ball-Nosed End Mill

S529 ■ H1.1 H2.1 H2.2 H3.1 H3.2 H4.1 H4.2

S529 HM N Z 2 λ30° γ-10° DIN 6535HA TiSiN h9 DORMER

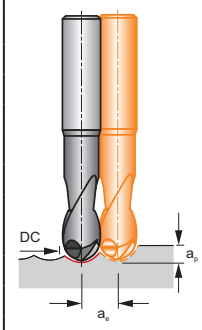


S529

1.50 - 16.00

DC mm	RE mm	DCON h6 mm	APMX mm	OAL mm	ZEFP	LU mm	DN mm	S529
1.5	0.75	6.0	3.0	50.0	2	6.0	1.4	S5291.5
2.0	1.00	4.0	4.0	50.0	2	8.0	1.9	S5292.0XD4
2.0	1.00	6.0	4.0	50.0	2	8.0	1.9	S5292.0XD6
3.0	1.50	3.0	5.0	50.0	2	14.0	2.8	S5293.0XD3
3.0	1.50	6.0	5.0	50.0	2	14.0	2.8	S5293.0XD6
4.0	2.00	4.0	8.0	50.0	2	20.0	3.7	S5294.0XD4
4.0	2.00	6.0	8.0	50.0	2	20.0	3.7	S5294.0XD6
5.0	2.50	5.0	9.0	50.0	2	20.0	4.6	S5295.0XD5
5.0	2.50	6.0	9.0	50.0	2	20.0	4.6	S5295.0XD6
6.0	3.00	6.0	10.0	50.0	2	20.0	5.5	S5296.0
8.0	4.00	8.0	12.0	64.0	2	30.0	7.4	S5298.0
10.0	5.00	10.0	14.0	70.0	2	32.0	9.2	S52910.0
12.0	6.00	12.0	16.0	75.0	2	38.0	11.0	S52912.0
14.0	7.00	14.0	32.0	90.0	2	44.0	13.0	S52914.0
16.0	8.00	16.0	32.0	90.0	2	46.0	15.0	S52916.0

Example of initial conditions



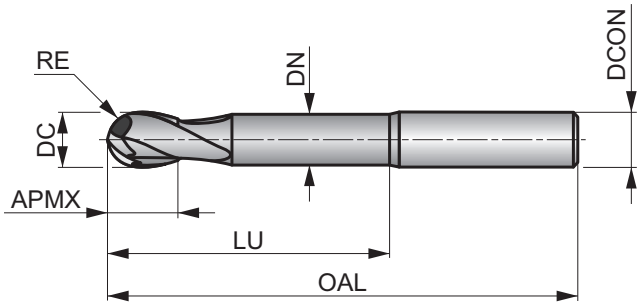
S529			Depth a_p x DC (mm)	Width a_e x DC (mm)	Cutting speed V_c (m/min.)	Feed f_z (mm/tooth)	Plain copy milling									
							2	3	4	5	6	8	10	12	14	16
C45, 16MnCr5 (180 - 220 HB)	Plain carbon steel	P2	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-
1.2312, 1.2379 (260 - 340 HB)	Alloy steel	P3	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-
Toolox44, Hardox450 (40 - 45 HRc)	Tool steel	P4	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-
0.9650, 0.9655 (<440 HB)	Chilled cast iron	H1	0,10	0,10	200	f_z	0,006	0,013	0,023	0,031	0,040	0,050	0,061	0,075	0,087	0,099
			0,05	0,03	270		0,014	0,032	0,055	0,076	0,098	0,125	0,153	0,188	0,219	0,248
1.2343, 1.2738 (50-55 HRc)	Hardened steel	H3	0,10	0,10	105	f_z	0,006	0,011	0,018	0,024	0,032	0,040	0,050	0,061	0,069	0,080
			0,05	0,03	150		0,014	0,026	0,044	0,059	0,079	0,099	0,125	0,152	0,174	0,201
1.2379, 1.2363 (60-62 HRc)	Hardened steel	H4	0,10	0,10	70	f_z	0,006	0,009	0,011	0,014	0,017	0,024	0,031	0,041	0,045	0,053
			0,05	0,03	95		0,014	0,021	0,028	0,035	0,043	0,059	0,076	0,101	0,113	0,131
GG15, GG25 (180 - 220 HB)	Gray iron (GG)	K1	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-
GGG50, GGG60 (180 - 220 HB)	Ductile iron (GGG)	K3	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-

Cutting speed and feed values are approximate.
Cutting speed can be changed in a range (+/-10%) and feed in a range (+/-25%).
Customer specific factors such as input power, machine stability, tool overhang, type of clamping, etc. are not taken into account.

S531 • Ball-Nosed End Mill

S531 ■ H1.1 H2.1 H2.2 H3.1 H3.2 H4.1 H4.2

S531 HM N Z 2 λ30° γ-10° DIN 6535HA TiSiN h9 DORMER

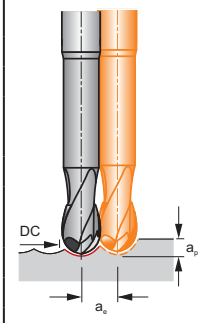


S531

1.50 - 16.00

DC mm	RE mm	DCON h6 mm	APMX mm	OAL mm	ZEFP	LU mm	DN mm	S531
1.5	0.75	6.0	3.0	75.0	2	10.0	1.4	S5311.5
2.0	1.00	4.0	4.0	75.0	2	14.0	1.9	S5312.0XD4
2.0	1.00	6.0	4.0	75.0	2	14.0	1.9	S5312.0XD6
3.0	1.50	3.0	5.0	60.0	2	21.0	2.8	S5313.0XD3
3.0	1.50	6.0	5.0	75.0	2	21.0	2.8	S5313.0XD6
4.0	2.00	4.0	8.0	60.0	2	28.0	3.7	S5314.0XD4
4.0	2.00	6.0	8.0	75.0	2	28.0	3.7	S5314.0XD6
5.0	2.50	5.0	9.0	60.0	2	32.0	4.6	S5315.0XD5
5.0	2.50	6.0	9.0	75.0	2	32.0	4.6	S5315.0XD6
6.0	3.00	6.0	10.0	75.0	2	40.0	5.5	S5316.0
8.0	4.00	8.0	12.0	75.0	2	40.0	7.4	S5318.0
10.0	5.00	10.0	14.0	75.0	2	40.0	9.2	S53110.0
12.0	6.00	12.0	16.0	100.0	2	60.0	11.0	S53112.0
14.0	7.00	14.0	32.0	125.0	2	80.0	13.0	S53114.0
16.0	8.00	16.0	32.0	125.0	2	80.0	15.0	S53116.0

Example of initial conditions



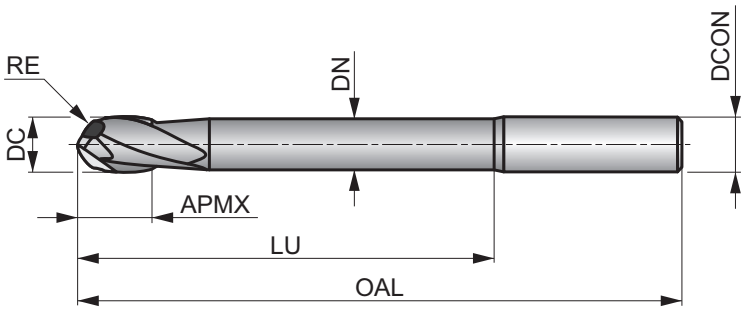
S531			Depth a_p x DC (mm)	Width a_e x DC (mm)	Cutting speed V_c (m/min.)	Feed f_z (mm/tooth)	Plain copy milling									
							2	3	4	5	6	8	10	12	14	16
C45, 16MnCr5 (180 - 220 HB)	Plain carbon steel	P2	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-
1.2312, 1.2379 (260 - 340 HB)	Alloy steel	P3	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-
Toolox44, Hardox450 (40 - 45 HRc)	Tool steel	P4	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-
0.9650, 0.9655 (<440 HB)	Chilled cast iron	H1	0,10	0,10	160	f_z	0,006	0,013	0,023	0,031	0,040	0,050	0,061	0,075	0,087	0,099
			0,05	0,03	220		0,014	0,032	0,055	0,076	0,098	0,125	0,153	0,188	0,219	0,248
1.2343, 1.2738 (50-55 HRc)	Hardened steel	H3	0,10	0,10	90	f_z	0,006	0,011	0,018	0,024	0,032	0,040	0,050	0,061	0,069	0,080
			0,05	0,03	120		0,014	0,026	0,044	0,059	0,079	0,099	0,125	0,152	0,174	0,201
1.2379, 1.2363 (60-62 HRc)	Hardened steel	H4	0,10	0,10	55	f_z	0,006	0,009	0,011	0,014	0,017	0,024	0,031	0,041	0,045	0,053
			0,05	0,03	80		0,014	0,021	0,028	0,035	0,043	0,059	0,076	0,101	0,113	0,131
GG15, GG25 (180 - 220 HB)	Gray iron (GG)	K1	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-
GGG50, GGG60 (180 - 220 HB)	Ductile iron (GGG)	K3	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-

Cutting speed and feed values are approximate.
Cutting speed can be changed in a range (+/-10%) and feed in a range (+/-25%).
Customer specific factors such as input power, machine stability, tool overhang, type of clamping, etc. are not taken into account.

S533 • Ball-Nosed End Mill

S533 ■ H1.1 H2.1 H2.2 H3.1 H3.2 H4.1 H4.2

S533 HM N Z 2 λ30° γ-10° DIN 6535HA TiSiN h9 DORMER

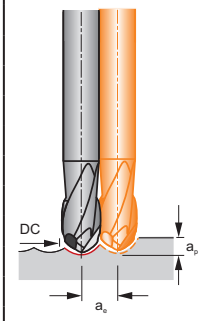


S533

2.00 - 16.00

DC mm	RE mm	DCON h6 mm	APMX mm	OAL mm	ZEFP	LU mm	DN mm	S533
2.0	1.00	4.0	4.0	100.0	2	20.0	1.9	S5332.0XD4
2.0	1.00	6.0	4.0	100.0	2	20.0	1.9	S5332.0XD6
3.0	1.50	4.0	5.0	100.0	2	30.0	2.8	S5333.0XD4
3.0	1.50	6.0	5.0	100.0	2	30.0	2.8	S5333.0XD6
4.0	2.00	4.0	8.0	100.0	2	40.0	3.7	S5334.0XD4
4.0	2.00	6.0	8.0	100.0	2	40.0	3.7	S5334.0XD6
5.0	2.50	5.0	9.0	100.0	2	50.0	4.6	S5335.0XD5
5.0	2.50	6.0	9.0	100.0	2	50.0	4.6	S5335.0XD6
6.0	3.00	6.0	10.0	100.0	2	60.0	5.5	S5336.0
8.0	4.00	8.0	12.0	100.0	2	60.0	7.4	S5338.0
10.0	5.00	10.0	14.0	125.0	2	85.0	9.2	S53310.0
12.0	6.00	12.0	16.0	125.0	2	85.0	11.0	S53312.0
14.0	7.00	14.0	32.0	150.0	2	110.0	13.0	S53314.0
16.0	8.00	16.0	32.0	150.0	2	110.0	15.0	S53316.0

Example of initial conditions



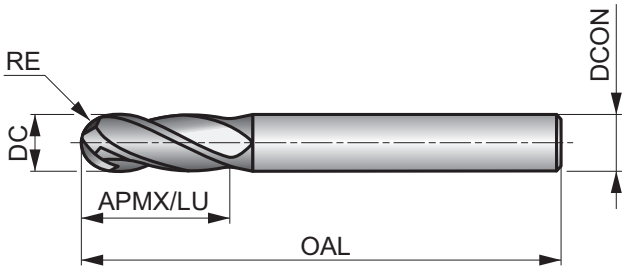
S533			Depth a_p x DC (mm)	Width a_e x DC (mm)	Cutting speed V_c (m/min.)	Feed f_z (mm/tooth)	Plain copy milling									
							2	3	4	5	6	8	10	12	14	16
C45, 16MnCr5 (180 - 220 HB)	Plain carbon steel	P2	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-
1.2312, 1.2379 (260 - 340 HB)	Alloy steel	P3	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-
Toolox44, Hardox450 (40 - 45 HRc)	Tool steel	P4	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-
0.9650, 0.9655 (<440 HB)	Chilled cast iron	H1	0,10	0,10	100	f_z	0,006	0,013	0,023	0,031	0,040	0,050	0,061	0,075	0,087	0,099
			0,05	0,03	135		0,014	0,032	0,055	0,076	0,098	0,125	0,153	0,188	0,219	0,248
1.2343, 1.2738 (50-55 HRc)	Hardened steel	H3	0,10	0,10	50	f_z	0,006	0,011	0,018	0,024	0,032	0,040	0,050	0,061	0,069	0,080
			0,05	0,03	70		0,014	0,026	0,044	0,059	0,079	0,099	0,125	0,152	0,174	0,201
1.2379, 1.2363 (60-62 HRc)	Hardened steel	H4	0,10	0,10	35	f_z	0,006	0,009	0,011	0,014	0,017	0,024	0,031	0,041	0,045	0,053
			0,05	0,03	50		0,014	0,021	0,028	0,035	0,043	0,059	0,076	0,101	0,113	0,131
GG15, GG25 (180 - 220 HB)	Gray iron (GG)	K1	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-
GGG50, GGG60 (180 - 220 HB)	Ductile iron (GGG)	K3	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-

Cutting speed and feed values are approximate.
Cutting speed can be changed in a range (+/-10%) and feed in a range (+/-25%).
Customer specific factors such as input power, machine stability, tool overhang, type of clamping, etc. are not taken into account.

S511 • Ball-Nosed End Mill

S511		
	■	P1.1 P1.2 P1.3 P2.1 P2.2 P2.3 P3.1 P3.2 P3.3 P4.1 P4.2 M1.1 M1.2 M2.1 M2.2 K1.1 K1.2 K1.3 K2.1 K2.2 K2.3 K3.1 K3.2 K3.3 K4.1 K4.2 K4.3 K4.4 K4.5 K5.1 K5.2 K5.3 N3.1 N3.2
	◪	P4.3 M3.1 M3.2 M3.3 M4.1 N1.1 N1.2 N1.3 N2.1 N2.2 N2.3 N3.3 N4.1 N4.2 S1.1 S1.2 S2.1 S3.1 S4.1

S511 HM | N | Z 4 | λ30° γ10° | DIN 6535HA | X-CEED | h9 | DORMER

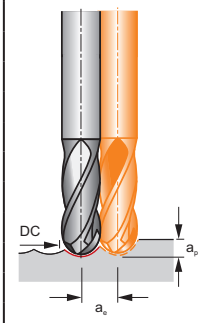


S511

3.00 - 16.00

DC mm	RE mm	DCON h6 mm	APMX/LU mm	OAL mm	ZEFP	S511
3.0	1.50	6.0	8.0	80.0	4	S5113.0
4.0	2.00	6.0	11.0	80.0	4	S5114.0
5.0	2.50	6.0	13.0	80.0	4	S5115.0
6.0	3.00	6.0	13.0	80.0	4	S5116.0
7.0	3.50	8.0	16.0	100.0	4	S5117.0
8.0	4.00	8.0	19.0	100.0	4	S5118.0
9.0	4.50	10.0	19.0	100.0	4	S5119.0
10.0	5.00	10.0	22.0	100.0	4	S51110.0
12.0	6.00	12.0	26.0	100.0	4	S51112.0
16.0	8.00	16.0	32.0	100.0	4	S51116.0

Example of initial conditions



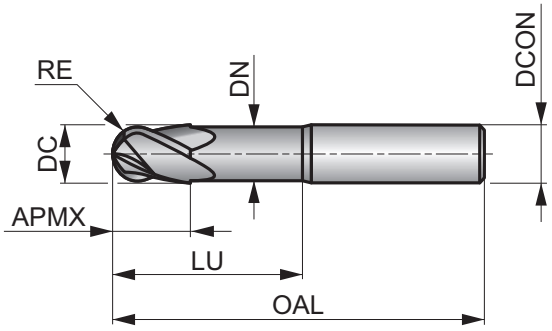
S511			Depth a_p x DC (mm)	Width a_e x DC (mm)	Cutting speed V_c (m/min.)	Feed f_z (mm/tooth)	Plain copy milling 2	3	4	5	6	8	10	12	14	16
C45, 16MnCr5 (180 - 220 HB)	Plain carbon steel	P2	0,10	0,10	200	f_z	0,006	0,011	0,018	0,024	0,032	0,040	0,050	0,061	0,069	0,080
			0,05	0,03	280		0,014	0,026	0,044	0,059	0,079	0,099	0,125	0,152	0,174	0,201
1.2312, 1.2379 (260 - 340 HB)	Alloy steel	P3	0,10	0,10	150	f_z	0,006	0,009	0,016	0,019	0,025	0,032	0,042	0,049	0,057	0,065
			0,05	0,03	175		0,014	0,021	0,039	0,047	0,061	0,079	0,104	0,123	0,144	0,162
Toolox44, Hardox450 (40 - 45 HRc)	Tool steel	P4	0,10	0,10	80	f_z	0,006	0,009	0,016	0,019	0,025	0,032	0,042	0,049	0,057	0,065
			0,05	0,03	105		0,014	0,021	0,039	0,047	0,061	0,079	0,104	0,123	0,144	0,162
0.9650, 0.9655 (<440 HB)	Chilled cast iron	H1	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-
1.2343, 1.2738 (50-55 HRc)	Hardened steel	H3	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-
1.2379, 1.2363 (60-62 HRc)	Hardened steel	H4	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-
GG15, GG25 (180 - 220 HB)	Gray iron (GG)	K1	0,10	0,10	200	f_z	0,006	0,011	0,018	0,024	0,032	0,040	0,050	0,061	0,069	0,080
			0,05	0,03	270		0,014	0,026	0,044	0,059	0,079	0,099	0,125	0,152	0,174	0,201
GGG50, GGG60 (180 - 220 HB)	Ductile iron (GGG)	K3	0,10	0,10	190	f_z	0,006	0,011	0,018	0,024	0,032	0,040	0,050	0,061	0,069	0,080
			0,05	0,03	260		0,014	0,026	0,044	0,059	0,079	0,099	0,125	0,152	0,174	0,201

Cutting speed and feed values are approximate.
Cutting speed can be changed in a range (+/-10%) and feed in a range (+/-25%).
Customer specific factors such as input power, machine stability, tool overhang, type of clamping, etc. are not taken into account.

S534 • Ball-Nosed End Mill

S534 ■ H1.1 H2.1 H2.2 H3.1 H3.2 H4.1 H4.2

S534 HM N Z 4 λ30° γ-10° DIN 6535HA TiSiN h9 DORMER



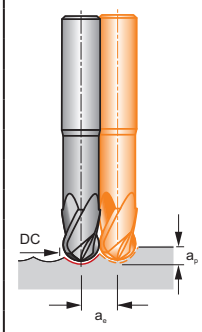
S534

3.00 - 16.00

DC mm	RE mm	DCON h6 mm	APMX mm	OAL mm	ZEFP	LU mm	DN mm	S534
3.0	1.50	6.0	5.0	50.0	4	14.0	2.8	S5343.0
4.0	2.00	6.0	8.0	50.0	4	20.0	3.7	S5344.0
5.0	2.50	6.0	9.0	50.0	4	20.0	4.6	S5345.0
6.0	3.00	6.0	10.0	50.0	4	20.0	5.5	S5346.0
8.0	4.00	8.0	12.0	64.0	4	30.0	7.4	S5348.0
10.0	5.00	10.0	14.0	70.0	4	32.0	9.2	S53410.0
12.0	6.00	12.0	16.0	75.0	4	38.0	11.0	S53412.0
14.0	7.00	14.0	32.0	90.0	4	44.0	13.0	S53414.0
16.0	8.00	16.0	32.0	90.0	4	46.0	15.0	S53416.0

Example of initial conditions

S534



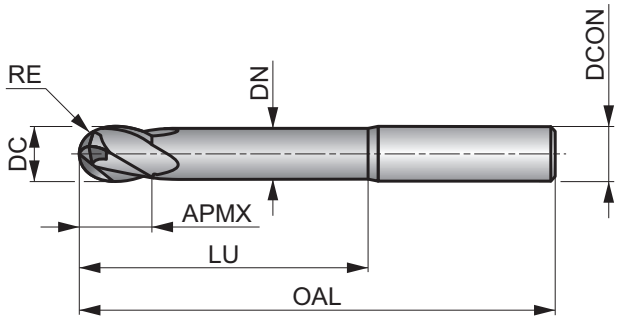
			Depth a_p x DC (mm)	Width a_e x DC (mm)	Cutting speed V_c (m/min.)	Feed f_z (mm/tooth)	Plain copy milling									
							2	3	4	5	6	8	10	12	14	16
C45, 16MnCr5 (180 - 220 HB)	Plain carbon steel	P2	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-
1.2312, 1.2379 (260 - 340 HB)	Alloy steel	P3	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-
Toolox44, Hardox450 (40 - 45 HRc)	Tool steel	P4	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-
0.9650, 0.9655 (<440 HB)	Chilled cast iron	H1	0,10	0,10	200	f_z	0,006	0,009	0,018	0,021	0,030	0,037	0,044	0,055	0,063	0,074
			0,05	0,03	270		0,014	0,021	0,044	0,053	0,073	0,092	0,111	0,137	0,159	0,186
1.2343, 1.2738 (50-55 HRc)	Hardened steel	H3	0,10	0,10	105	f_z	0,006	0,009	0,014	0,019	0,022	0,029	0,036	0,043	0,051	0,059
			0,05	0,03	150		0,014	0,021	0,033	0,047	0,055	0,073	0,090	0,108	0,129	0,147
1.2379, 1.2363 (60-62 HRc)	Hardened steel	H4	0,10	0,10	70	f_z	0,006	0,009	0,011	0,014	0,017	0,024	0,031	0,041	0,045	0,053
			0,05	0,03	100		0,014	0,021	0,028	0,035	0,043	0,059	0,076	0,101	0,113	0,131
GG15, GG25 (180 - 220 HB)	Gray iron (GG)	K1	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-
GGG50, GGG60 (180 - 220 HB)	Ductile iron (GGG)	K3	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-

Cutting speed and feed values are approximate.
Cutting speed can be changed in a range (+/-10%) and feed in a range (+/-25%).
Customer specific factors such as input power, machine stability, tool overhang, type of clamping, etc. are not taken into account.

S535 • Ball-Nosed End Mill

S535 ■ H1.1 H2.1 H2.2 H3.1 H3.2 H4.1 H4.2

S535 HM N Z 4 λ30° γ-10° DIN 6535HA TiSiN h9 DORMER

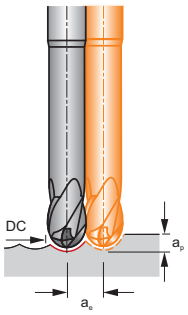


S535

3.00 - 16.00

DC mm	RE mm	DCON h6 mm	APMX mm	OAL mm	ZEFP	LU mm	DN mm	S535
3.0	1.50	6.0	5.0	75.0	4	21.0	2.8	S5353.0
4.0	2.00	6.0	8.0	75.0	4	28.0	3.7	S5354.0
5.0	2.50	6.0	9.0	75.0	4	32.0	4.6	S5355.0
6.0	3.00	6.0	10.0	75.0	4	40.0	5.5	S5356.0
8.0	4.00	8.0	12.0	75.0	4	40.0	7.4	S5358.0
10.0	5.00	10.0	14.0	75.0	4	40.0	9.2	S53510.0
12.0	6.00	12.0	16.0	100.0	4	60.0	11.0	S53512.0
14.0	7.00	14.0	32.0	125.0	4	80.0	13.0	S53514.0
16.0	8.00	16.0	32.0	125.0	4	80.0	15.0	S53516.0

Example of initial conditions



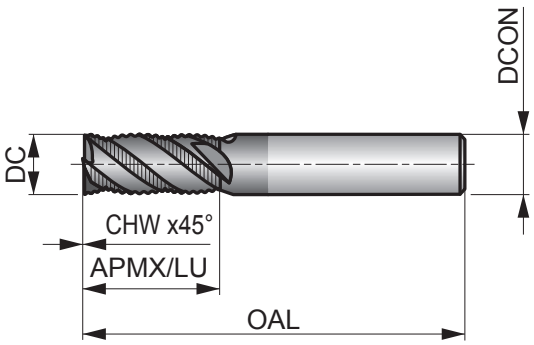
S535			Depth a_p x DC (mm)	Width a_e x DC (mm)	Cutting speed V_c (m/min.)	Feed f_z (mm/tooth)	Plain copy milling									
							2	3	4	5	6	8	10	12	14	16
C45, 16MnCr5 (180 - 220 HB)	Plain carbon steel	P2	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-
1.2312, 1.2379 (260 - 340 HB)	Alloy steel	P3	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-
Toolox44, Hardox450 (40 - 45 HRc)	Tool steel	P4	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-
0.9650, 0.9655 (<440 HB)	Chilled cast iron	H1	0,10	0,10	160	f_z	0,006	0,009	0,018	0,021	0,030	0,037	0,044	0,055	0,063	0,074
			0,05	0,03	220		0,014	0,021	0,044	0,053	0,073	0,092	0,111	0,137	0,159	0,186
1.2343, 1.2738 (50-55 HRc)	Hardened steel	H3	0,10	0,10	90	f_z	0,006	0,009	0,014	0,019	0,022	0,029	0,036	0,043	0,051	0,059
			0,05	0,03	120		0,014	0,021	0,033	0,047	0,055	0,073	0,090	0,108	0,129	0,147
1.2379, 1.2363 (60-62 HRc)	Hardened steel	H4	0,10	0,10	60	f_z	0,006	0,009	0,011	0,014	0,017	0,024	0,031	0,041	0,045	0,053
			0,05	0,03	80		0,014	0,021	0,028	0,035	0,043	0,059	0,076	0,101	0,113	0,131
GG15, GG25 (180 - 220 HB)	Gray iron (GG)	K1	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-
GGG50, GGG60 (180 - 220 HB)	Ductile iron (GGG)	K3	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-

Cutting speed and feed values are approximate.
Cutting speed can be changed in a range (+/-10%) and feed in a range (+/-25%).
Customer specific factors such as input power, machine stability, tool overhang, type of clamping, etc. are not taken into account.

S765 • Roughing End Mill

S765	■	P1.1	P1.2	P1.3	P2.1	P2.2	P2.3	P3.1	P3.2	P3.3	P4.1	P4.2	M1.1	M1.2	M2.1	M2.2	M3.1	M3.2	K1.1	K1.2	K1.3
		K2.1	K2.2	K2.3	K3.1	K3.2	K3.3	K4.1	K4.2	K4.3	K4.4	K4.5	K5.1	K5.2	K5.3	S1.2	S2.1	S3.1	S4.1		

S765

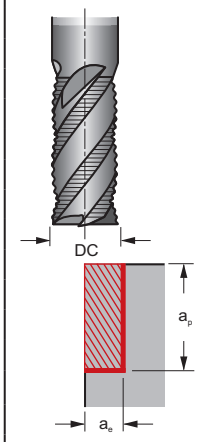


S765

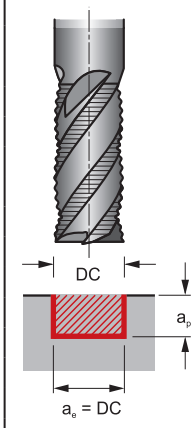
6.00 - 20.00

DC mm	CHW x45° mm	DCON h6 mm	APMX/LU mm	OAL mm	ZEFP	S765
6.0	0.10	6.0	16.0	50.0	4	S7656.0
8.0	0.20	8.0	20.0	64.0	4	S7658.0
10.0	0.20	10.0	22.0	70.0	4	S76510.0
12.0	0.20	12.0	26.0	75.0	4	S76512.0
14.0	0.30	14.0	32.0	90.0	4	S76514.0
16.0	0.30	16.0	32.0	90.0	4	S76516.0
18.0	0.30	18.0	38.0	100.0	4	S76518.0
20.0	0.40	20.0	38.0	100.0	4	S76520.0

Example of initial conditions



S765			Depth a_p x DC (mm)	Width a_e x DC (mm)	Cutting speed V_c (m/min.)	Feed f_z (mm/tooth)	Profile/contour milling											
							2	3	4	5	6	8	10	12	14	16	18	20
C45, 16MnCr5 (180 - 220 HB)	Plain carbon steel	P2	1,50	0,60	160	f_z	0,009	0,014	0,026	0,033	0,041	0,048	0,057	0,066	0,074	0,083	0,090	0,099
			max	0,05	235		0,021	0,032	0,060	0,076	0,094	0,110	0,131	0,151	0,169	0,190	0,206	0,227
1.2312, 1.2379 (260 - 340 HB)	Alloy steel	P3	1,50	0,60	100	f_z	0,007	0,012	0,022	0,027	0,033	0,040	0,047	0,054	0,060	0,068	0,074	0,081
			max	0,05	150		0,016	0,027	0,050	0,062	0,076	0,092	0,108	0,124	0,137	0,156	0,169	0,185
Toolox44, Hardox450 (40 - 45 HRc)	Tool steel	P4	1,50	0,60	75	f_z	0,007	0,012	0,022	0,027	0,033	0,040	0,047	0,054	0,060	0,068	0,074	0,081
			max	0,05	110		0,016	0,027	0,050	0,062	0,076	0,092	0,108	0,124	0,137	0,156	0,169	0,185
0.9650, 0.9655 (<440 HB)	Chilled cast iron	H1	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
1.2343, 1.2738 (50-55 HRc)	Hardened steel	H3	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
1.2379, 1.2363 (60-62 HRc)	Hardened steel	H4	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
GG15, GG25 (180 - 220 HB)	Gray iron (GG)	K1	1,50	0,60	155	f_z	0,009	0,014	0,026	0,033	0,041	0,048	0,057	0,066	0,074	0,083	0,090	0,099
			max	0,05	230		0,021	0,032	0,060	0,076	0,094	0,110	0,131	0,151	0,169	0,190	0,206	0,227
GGG50, GGG60 (180 - 220 HB)	Ductile iron (GGG)	K3	1,50	0,60	145	f_z	0,009	0,014	0,026	0,033	0,041	0,048	0,057	0,066	0,074	0,083	0,090	0,099
			max	0,05	215		0,021	0,032	0,060	0,076	0,094	0,110	0,131	0,151	0,169	0,190	0,206	0,227



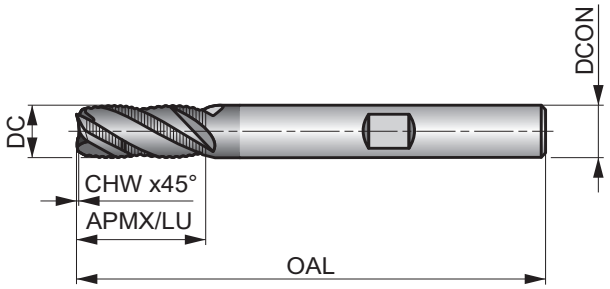
S765			Depth a_p x DC (mm)	Width a_e x DC (mm)	Cutting speed V_c (m/min.)	Feed f_z (mm/tooth)	Slotting											
							2	3	4	5	6	8	10	12	14	16	18	20
C45, 16MnCr5 (180 - 220 HB)	Plain carbon steel	P2	0,50	1,00	160	f_z	0,009	0,014	0,026	0,033	0,041	0,048	0,057	0,066	0,074	0,083	0,090	0,099
			1,00		120		0,007	0,011	0,020	0,025	0,031	0,036	0,043	0,050	0,056	0,062	0,068	0,074
1.2312, 1.2379 (260 - 340 HB)	Alloy steel	P3	0,50	1,00	100	f_z	0,007	0,012	0,022	0,027	0,033	0,040	0,047	0,054	0,060	0,068	0,074	0,081
			1,00		75		0,005	0,009	0,017	0,020	0,025	0,030	0,035	0,041	0,045	0,051	0,056	0,061
Toolox44, Hardox450 (40 - 45 HRc)	Tool steel	P4	0,50	1,00	75	f_z	0,007	0,012	0,022	0,027	0,033	0,040	0,047	0,054	0,060	0,068	0,074	0,081
			1,00		60		0,005	0,009	0,017	0,020	0,025	0,030	0,035	0,041	0,045	0,051	0,056	0,061
0.9650, 0.9655 (<440 HB)	Chilled cast iron	H1	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-		-		-	-	-	-	-	-	-	-	-	-	-	-
1.2343, 1.2738 (50-55 HRc)	Hardened steel	H3	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-		-		-	-	-	-	-	-	-	-	-	-	-	-
1.2379, 1.2363 (60-62 HRc)	Hardened steel	H4	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-		-		-	-	-	-	-	-	-	-	-	-	-	-
GG15, GG25 (180 - 220 HB)	Gray iron (GG)	K1	0,50	1,00	155	f_z	0,009	0,014	0,026	0,033	0,041	0,048	0,057	0,066	0,074	0,083	0,090	0,099
			1,00		120		0,007	0,011	0,020	0,025	0,031	0,036	0,043	0,050	0,056	0,062	0,068	0,074
GGG50, GGG60 (180 - 220 HB)	Ductile iron (GGG)	K3	0,50	1,00	145	f_z	0,009	0,014	0,026	0,033	0,041	0,048	0,057	0,066	0,074	0,083	0,090	0,099
			1,00		110		0,007	0,011	0,020	0,025	0,031	0,036	0,043	0,050	0,056	0,062	0,068	0,074

Cutting speed and feed values are approximate.
Cutting speed can be changed in a range (+/-10%) and feed in a range (+/-25%).
Customer specific factors such as input power, machine stability, tool overhang, type of clamping, etc. are not taken into account.

S264 • Roughing End Mill

S264 ■ P4.3 M2.3 M3.3 M4.1 M4.2 S1.3 S2.2 S3.2 S4.2 H1.1 H2.1 H3.1 H3.2

S264 HM NR Z 4 λ40° γ4° DIN 6535HB AlCrN h9 DORMER

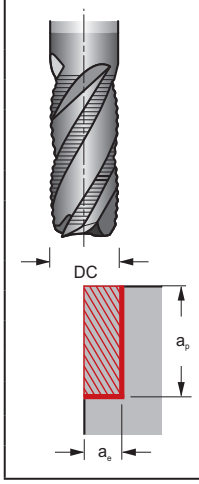


S264

6.00 - 20.00

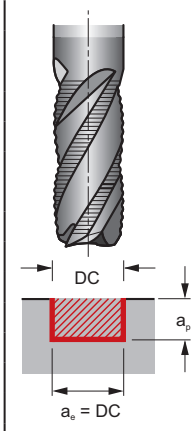
DC mm	CHW x45° mm	DCON h6 mm	APMX/LU mm	OAL mm	ZEFP	S264
6.0	0.10	6.0	13.0	57.0	4	S2646.0
8.0	0.20	8.0	20.0	64.0	4	S2648.0
10.0	0.20	10.0	22.0	72.0	4	S26410.0
12.0	0.20	12.0	26.0	83.0	4	S26412.0
14.0	0.30	14.0	26.0	83.0	4	S26414.0
16.0	0.30	16.0	32.0	92.0	4	S26416.0
18.0	0.30	18.0	32.0	92.0	4	S26418.0
20.0	0.40	20.0	38.0	104.0	4	S26420.0

Example of initial conditions



S264

			Depth a_p x DC (mm)	Width a_e x DC (mm)	Cutting speed V_c (m/min.)	Feed f_z (mm/tooth)	Profile/contour milling											
							2	3	4	5	6	8	10	12	14	16	18	20
C45, 16MnCr5 (180 - 220 HB)	Plain carbon steel	P2	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
1.2312, 1.2379 (260 - 340 HB)	Alloy steel	P3	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
Toolox44, Hardox450 (40 - 45 HRc)	Tool steel	P4	1,50	0,60	100	f_z	0,009	0,014	0,026	0,033	0,041	0,048	0,057	0,066	0,074	0,083	0,090	0,099
			max	0,05	145		0,021	0,032	0,060	0,076	0,094	0,110	0,131	0,151	0,169	0,190	0,206	0,227
0.9650, 0.9655 (<440 HB)	Chilled cast iron	H1	1,50	0,60	180	f_z	0,006	0,009	0,017	0,022	0,027	0,032	0,038	0,044	0,049	0,055	0,060	0,066
			max	0,05	265		0,014	0,021	0,039	0,050	0,062	0,073	0,087	0,101	0,112	0,126	0,137	0,151
1.2343, 1.2738 (50-55 HRc)	Hardened steel	H3	1,50	0,60	100	f_z	0,005	0,008	0,014	0,018	0,022	0,026	0,031	0,035	0,040	0,044	0,048	0,053
			max	0,05	145		0,011	0,018	0,032	0,041	0,050	0,060	0,071	0,080	0,092	0,101	0,110	0,121
1.2379, 1.2363 (60-62 HRc)	Hardened steel	H4	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
GG15, GG25 (180 - 220 HB)	Gray iron (GG)	K1	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
GGG50, GGG60 (180 - 220 HB)	Ductile iron (GGG)	K3	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-



S264

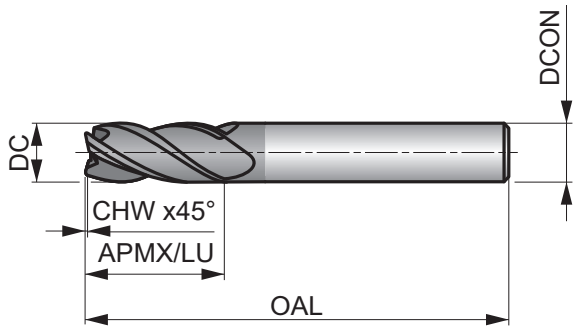
			Depth a_p x DC (mm)	Width a_e x DC (mm)	Cutting speed V_c (m/min.)	Feed f_z (mm/tooth)	Slotting											
							2	3	4	5	6	8	10	12	14	16	18	20
C45, 16MnCr5 (180 - 220 HB)	Plain carbon steel	P2	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-		-		-	-	-	-	-	-	-	-	-	-	-	-
1.2312, 1.2379 (260 - 340 HB)	Alloy steel	P3	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-		-		-	-	-	-	-	-	-	-	-	-	-	-
Toolox44, Hardox450 (40 - 45 HRc)	Tool steel	P4	0,50	1,00	100	f_z	0,009	0,014	0,026	0,033	0,041	0,048	0,057	0,066	0,074	0,083	0,090	0,099
			1,00		70		0,007	0,011	0,020	0,025	0,031	0,036	0,043	0,050	0,056	0,062	0,068	0,074
0.9650, 0.9655 (<440 HB)	Chilled cast iron	H1	0,50	1,00	180	f_z	0,006	0,009	0,017	0,022	0,027	0,032	0,038	0,044	0,049	0,055	0,060	0,066
			1,00		130		0,005	0,007	0,013	0,017	0,020	0,024	0,029	0,033	0,037	0,041	0,045	0,050
1.2343, 1.2738 (50-55 HRc)	Hardened steel	H3	0,50	1,00	100	f_z	0,005	0,008	0,014	0,018	0,022	0,026	0,031	0,035	0,040	0,044	0,048	0,053
			1,00		70		0,004	0,006	0,011	0,014	0,017	0,020	0,023	0,026	0,030	0,033	0,036	0,040
1.2379, 1.2363 (60-62 HRc)	Hardened steel	H4	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-		-		-	-	-	-	-	-	-	-	-	-	-	-
GG15, GG25 (180 - 220 HB)	Gray iron (GG)	K1	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-		-		-	-	-	-	-	-	-	-	-	-	-	-
GGG50, GGG60 (180 - 220 HB)	Ductile iron (GGG)	K3	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-		-		-	-	-	-	-	-	-	-	-	-	-	-

Cutting speed and feed values are approximate.
Cutting speed can be changed in a range (+/-10%) and feed in a range (+/-25%).
Customer specific factors such as input power, machine stability, tool overhang, type of clamping, etc. are not taken into account.

S766 • End Mill

S766	■	P1.1	P1.2	P1.3	P2.1	P2.2	P2.3	P3.1	P3.2	P3.3	P4.1	P4.2	M1.1	M1.2	M2.1	M2.2	M3.1	M3.2	K1.1	K1.2	K1.3
		K2.1	K2.2	K2.3	K3.1	K3.2	K3.3	K4.1	K4.2	K4.3	K4.4	K4.5	K5.1	K5.2	K5.3	S1.2	S2.1	S3.1	S4.1		

S766 HM N Z 4 λ≠ γ10° DIN 6535HA TiSiN h9 DORMER

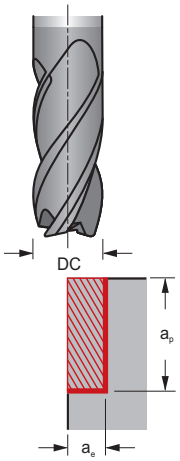


S766

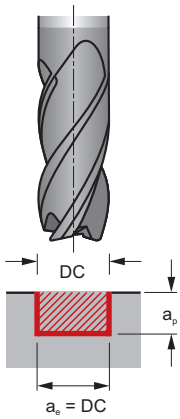
4.00 - 20.00

DC mm	CHW x45° mm	DCON h6 mm	APMX/LU mm	OAL mm	ZEFP	S766
4.0	0.10	6.0	11.0	57.0	4	S7664.0
5.0	0.10	6.0	13.0	57.0	4	S7665.0
6.0	0.10	6.0	13.0	57.0	4	S7666.0
8.0	0.20	8.0	20.0	64.0	4	S7668.0
10.0	0.20	10.0	22.0	72.0	4	S76610.0
12.0	0.20	12.0	26.0	83.0	4	S76612.0
14.0	0.30	14.0	26.0	83.0	4	S76614.0
16.0	0.30	16.0	32.0	92.0	4	S76616.0
20.0	0.40	20.0	38.0	104.0	4	S76620.0

Example of initial conditions



S766			Depth a_p x DC (mm)	Width a_e x DC (mm)	Cutting speed V_c (m/min.)	Feed f_z (mm/tooth)	Profile/contour milling											
							2	3	4	5	6	8	10	12	14	16	18	20
C45, 16MnCr5 (180 - 220 HB)	Plain carbon steel	P2	1,50	0,60	160	f_z	0,009	0,014	0,026	0,033	0,041	0,048	0,057	0,066	0,074	0,083	0,090	0,099
			max	0,05	235		0,021	0,032	0,060	0,076	0,094	0,110	0,131	0,151	0,169	0,190	0,206	0,227
1.2312, 1.2379 (260 - 340 HB)	Alloy steel	P3	1,50	0,60	100	f_z	0,007	0,012	0,022	0,027	0,033	0,040	0,047	0,054	0,060	0,068	0,074	0,081
			max	0,05	150		0,016	0,027	0,050	0,062	0,076	0,092	0,108	0,124	0,137	0,156	0,169	0,185
Toolox44, Hardox450 (40 - 45 HRc)	Tool steel	P4	1,50	0,60	75	f_z	0,007	0,012	0,022	0,027	0,033	0,040	0,047	0,054	0,060	0,068	0,074	0,081
			max	0,05	110		0,016	0,027	0,050	0,062	0,076	0,092	0,108	0,124	0,137	0,156	0,169	0,185
0.9650, 0.9655 (<440 HB)	Chilled cast iron	H1	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
1.2343, 1.2738 (50-55 HRc)	Hardened steel	H3	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
1.2379, 1.2363 (60-62 HRc)	Hardened steel	H4	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
GG15, GG25 (180 - 220 HB)	Gray iron (GG)	K1	1,50	0,60	155	f_z	0,009	0,014	0,026	0,033	0,041	0,048	0,057	0,066	0,074	0,083	0,090	0,099
			max	0,05	230		0,021	0,032	0,060	0,076	0,094	0,110	0,131	0,151	0,169	0,190	0,206	0,227
GGG50, GGG60 (180 - 220 HB)	Ductile iron (GGG)	K3	1,50	0,60	145	f_z	0,009	0,014	0,026	0,033	0,041	0,048	0,057	0,066	0,074	0,083	0,090	0,099
			max	0,05	215		0,021	0,032	0,060	0,076	0,094	0,110	0,131	0,151	0,169	0,190	0,206	0,227



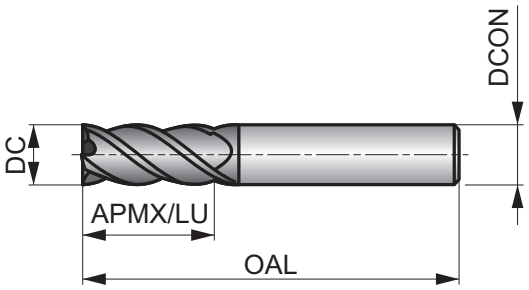
S766			Depth a_p x DC (mm)	Width a_e x DC (mm)	Cutting speed V_c (m/min.)	Feed f_z (mm/tooth)	Slotting											
							2	3	4	5	6	8	10	12	14	16	18	20
C45, 16MnCr5 (180 - 220 HB)	Plain carbon steel	P2	0,50	1,00	160	f_z	0,009	0,014	0,026	0,033	0,041	0,048	0,057	0,066	0,074	0,083	0,090	0,099
			1,00		120		0,007	0,011	0,020	0,025	0,031	0,036	0,043	0,050	0,056	0,062	0,068	0,074
1.2312, 1.2379 (260 - 340 HB)	Alloy steel	P3	0,50	1,00	100	f_z	0,007	0,012	0,022	0,027	0,033	0,040	0,047	0,054	0,060	0,068	0,074	0,081
			1,00		75		0,005	0,009	0,017	0,020	0,025	0,030	0,035	0,041	0,045	0,051	0,056	0,061
Toolox44, Hardox450 (40 - 45 HRc)	Tool steel	P4	0,50	1,00	75	f_z	0,007	0,012	0,022	0,027	0,033	0,040	0,047	0,054	0,060	0,068	0,074	0,081
			1,00		60		0,005	0,009	0,017	0,020	0,025	0,030	0,035	0,041	0,045	0,051	0,056	0,061
0.9650, 0.9655 (<440 HB)	Chilled cast iron	H1	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-		-		-	-	-	-	-	-	-	-	-	-	-	-
1.2343, 1.2738 (50-55 HRc)	Hardened steel	H3	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-		-		-	-	-	-	-	-	-	-	-	-	-	-
1.2379, 1.2363 (60-62 HRc)	Hardened steel	H4	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-		-		-	-	-	-	-	-	-	-	-	-	-	-
GG15, GG25 (180 - 220 HB)	Gray iron (GG)	K1	0,50	1,00	155	f_z	0,009	0,014	0,026	0,033	0,041	0,048	0,057	0,066	0,074	0,083	0,090	0,099
			1,00		120		0,007	0,011	0,020	0,025	0,031	0,036	0,043	0,050	0,056	0,062	0,068	0,074
GGG50, GGG60 (180 - 220 HB)	Ductile iron (GGG)	K3	0,50	1,00	145	f_z	0,009	0,014	0,026	0,033	0,041	0,048	0,057	0,066	0,074	0,083	0,090	0,099
			1,00		110		0,007	0,011	0,020	0,025	0,031	0,036	0,043	0,050	0,056	0,062	0,068	0,074

Cutting speed and feed values are approximate.
Cutting speed can be changed in a range (+/-10%) and feed in a range (+/-25%).
Customer specific factors such as input power, machine stability, tool overhang, type of clamping, etc. are not taken into account.

S216 • End Mill

S216 ■ P4.3 M2.3 M3.3 M4.1 M4.2 S1.3 S2.2 S3.2 S4.2

S216 HM | N | Z 4 | λ40° γ3° | DIN 6535HA | AlTiN | h9 | DORMER

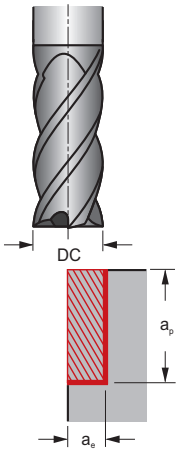


S216

2.00 - 20.00

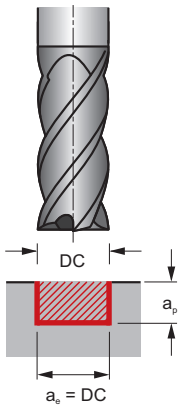
DC mm	DCON h6 mm	APMX/LU mm	OAL mm	ZEFP	S216
2.0	4.0	6.5	40.0	4	S2162.0
3.0	3.0	9.0	40.0	4	S2163.0XD3
3.0	6.0	9.0	50.0	4	S2163.0XD6
4.0	4.0	12.0	50.0	4	S2164.0XD4
4.0	6.0	12.0	50.0	4	S2164.0XD6
5.0	5.0	15.0	50.0	4	S2165.0
6.0	6.0	16.0	50.0	4	S2166.0
8.0	8.0	20.0	64.0	4	S2168.0
10.0	10.0	22.0	70.0	4	S21610.0
12.0	12.0	25.0	75.0	4	S21612.0
14.0	14.0	32.0	90.0	4	S21614.0
16.0	16.0	32.0	90.0	4	S21616.0
18.0	18.0	38.0	100.0	4	S21618.0
20.0	20.0	38.0	100.0	4	S21620.0

Example of initial conditions



S216

			Depth a_p x DC (mm)	Width a_e x DC (mm)	Cutting speed V_c (m/min.)	Feed f_z (mm/tooth)	Profile/contour milling											
							2	3	4	5	6	8	10	12	14	16	18	20
C45, 16MnCr5 (180 - 220 HB)	Plain carbon steel	P2	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
1.2312, 1.2379 (260 - 340 HB)	Alloy steel	P3	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
Toolox44, Hardox450 (40 - 45 HRc)	Tool steel	P4	1,50	0,60	80	f_z	0,009	0,014	0,026	0,033	0,041	0,048	0,057	0,066	0,074	0,083	0,090	0,099
			max	0,05	120		0,021	0,032	0,060	0,076	0,094	0,110	0,131	0,151	0,169	0,190	0,206	0,227
0.9650, 0.9655 (<440 HB)	Chilled cast iron	H1	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
1.2343, 1.2738 (50-55 HRc)	Hardened steel	H3	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
1.2379, 1.2363 (60-62 HRc)	Hardened steel	H4	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
GG15, GG25 (180 - 220 HB)	Gray iron (GG)	K1	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
GGG50, GGG60 (180 - 220 HB)	Ductile iron (GGG)	K3	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-



S216

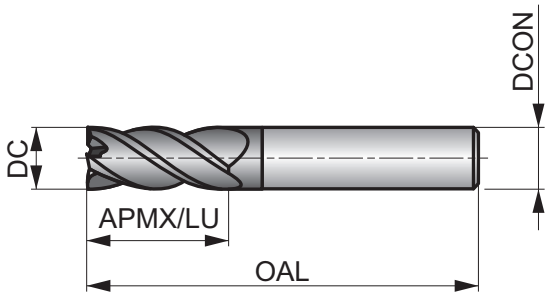
			Depth a_p x DC (mm)	Width a_e x DC (mm)	Cutting speed V_c (m/min.)	Feed f_z (mm/tooth)	Slotting											
							2	3	4	5	6	8	10	12	14	16	18	20
C45, 16MnCr5 (180 - 220 HB)	Plain carbon steel	P2	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-		-		-	-	-	-	-	-	-	-	-	-	-	-
1.2312, 1.2379 (260 - 340 HB)	Alloy steel	P3	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-		-		-	-	-	-	-	-	-	-	-	-	-	-
Toolox44, Hardox450 (40 - 45 HRc)	Tool steel	P4	0,50	1,00	80	f_z	0,009	0,014	0,026	0,033	0,041	0,048	0,057	0,066	0,074	0,083	0,090	0,099
			1,00		60		0,007	0,011	0,020	0,025	0,031	0,036	0,043	0,050	0,056	0,062	0,068	0,074
0.9650, 0.9655 (<440 HB)	Chilled cast iron	H1	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-		-		-	-	-	-	-	-	-	-	-	-	-	-
1.2343, 1.2738 (50-55 HRc)	Hardened steel	H3	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-		-		-	-	-	-	-	-	-	-	-	-	-	-
1.2379, 1.2363 (60-62 HRc)	Hardened steel	H4	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-		-		-	-	-	-	-	-	-	-	-	-	-	-
GG15, GG25 (180 - 220 HB)	Gray iron (GG)	K1	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-		-		-	-	-	-	-	-	-	-	-	-	-	-
GGG50, GGG60 (180 - 220 HB)	Ductile iron (GGG)	K3	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-		-		-	-	-	-	-	-	-	-	-	-	-	-

Cutting speed and feed values are approximate.
Cutting speed can be changed in a range (+/-10%) and feed in a range (+/-25%).
Customer specific factors such as input power, machine stability, tool overhang, type of clamping, etc. are not taken into account.

S761 • End Mill

S761	■	P1.1	P1.2	P1.3	P2.1	P2.2	P2.3	P3.1	P3.2	P3.3	P4.1	P4.2	M1.1	M1.2	M2.1	M2.2	M3.1	M3.2	K1.1	K1.2	K1.3
		K2.1	K2.2	K2.3	K3.1	K3.2	K3.3	K4.1	K4.2	K4.3	K4.4	K4.5	K5.1	K5.2	K5.3	S1.2	S2.1	S3.1	S4.1		

S761 HM N Z 4 λ40° γ10° DIN 6535HA AlCrN h9 DORMER

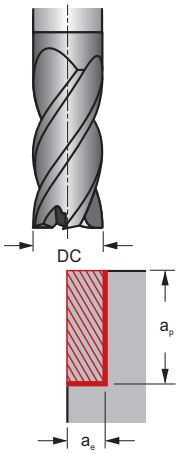


S761

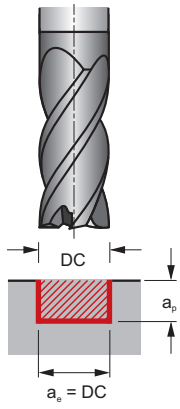
3.00 - 20.00

DC mm	DCON h6 mm	APMX/LU mm	OAL mm	ZEFP	S761
3.0	6.0	9.0	57.0	4	S7613.0
4.0	6.0	12.0	57.0	4	S7614.0
5.0	6.0	13.0	57.0	4	S7615.0
6.0	6.0	13.0	57.0	4	S7616.0
8.0	8.0	20.0	64.0	4	S7618.0
10.0	10.0	22.0	72.0	4	S76110.0
12.0	12.0	26.0	83.0	4	S76112.0
14.0	14.0	32.0	83.0	4	S76114.0
16.0	16.0	32.0	92.0	4	S76116.0
20.0	20.0	38.0	104.0	4	S76120.0

Example of initial conditions



S761			Depth a_p x DC (mm)	Width a_e x DC (mm)	Cutting speed V_c (m/min.)	Feed f_z (mm/tooth)	Profile/contour milling											
							2	3	4	5	6	8	10	12	14	16	18	20
C45, 16MnCr5 (180 - 220 HB)	Plain carbon steel	P2	1,50	0,60	160	f_z	0,009	0,014	0,026	0,033	0,041	0,048	0,057	0,066	0,074	0,083	0,090	0,099
			max	0,05	235		0,021	0,032	0,060	0,076	0,094	0,110	0,131	0,151	0,169	0,190	0,206	0,227
1.2312, 1.2379 (260 - 340 HB)	Alloy steel	P3	1,50	0,60	100	f_z	0,007	0,012	0,022	0,027	0,033	0,040	0,047	0,054	0,060	0,068	0,074	0,081
			max	0,05	150		0,016	0,027	0,050	0,062	0,076	0,092	0,108	0,124	0,137	0,156	0,169	0,185
Toolox44, Hardox450 (40 - 45 HRc)	Tool steel	P4	1,50	0,60	75	f_z	0,007	0,012	0,022	0,027	0,033	0,040	0,047	0,054	0,060	0,068	0,074	0,081
			max	0,05	110		0,016	0,027	0,050	0,062	0,076	0,092	0,108	0,124	0,137	0,156	0,169	0,185
0.9650, 0.9655 (<440 HB)	Chilled cast iron	H1	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
1.2343, 1.2738 (50-55 HRc)	Hardened steel	H3	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
1.2379, 1.2363 (60-62 HRc)	Hardened steel	H4	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
GG15, GG25 (180 - 220 HB)	Gray iron (GG)	K1	1,50	0,60	155	f_z	0,009	0,014	0,026	0,033	0,041	0,048	0,057	0,066	0,074	0,083	0,090	0,099
			max	0,05	230		0,021	0,032	0,060	0,076	0,094	0,110	0,131	0,151	0,169	0,190	0,206	0,227
GGG50, GGG60 (180 - 220 HB)	Ductile iron (GGG)	K3	1,50	0,60	145	f_z	0,009	0,014	0,026	0,033	0,041	0,048	0,057	0,066	0,074	0,083	0,090	0,099
			max	0,05	215		0,021	0,032	0,060	0,076	0,094	0,110	0,131	0,151	0,169	0,190	0,206	0,227



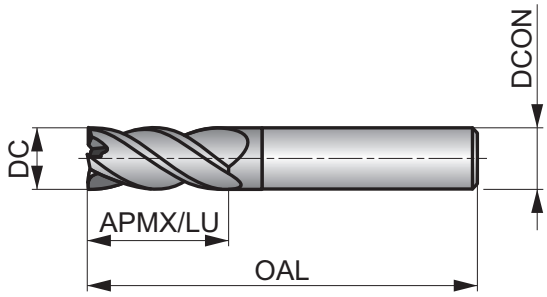
S761			Depth a_p x DC (mm)	Width a_e x DC (mm)	Cutting speed V_c (m/min.)	Feed f_z (mm/tooth)	Slotting											
							2	3	4	5	6	8	10	12	14	16	18	20
C45, 16MnCr5 (180 - 220 HB)	Plain carbon steel	P2	0,50	1,00	160	f_z	0,009	0,014	0,026	0,033	0,041	0,048	0,057	0,066	0,074	0,083	0,090	0,099
			1,00		120		0,007	0,011	0,020	0,025	0,031	0,036	0,043	0,050	0,056	0,062	0,068	0,074
1.2312, 1.2379 (260 - 340 HB)	Alloy steel	P3	0,50	1,00	100	f_z	0,007	0,012	0,022	0,027	0,033	0,040	0,047	0,054	0,060	0,068	0,074	0,081
			1,00		75		0,005	0,009	0,017	0,020	0,025	0,030	0,035	0,041	0,045	0,051	0,056	0,061
Toolox44, Hardox450 (40 - 45 HRc)	Tool steel	P4	0,50	1,00	75	f_z	0,007	0,012	0,022	0,027	0,033	0,040	0,047	0,054	0,060	0,068	0,074	0,081
			1,00		60		0,005	0,009	0,017	0,020	0,025	0,030	0,035	0,041	0,045	0,051	0,056	0,061
0.9650, 0.9655 (<440 HB)	Chilled cast iron	H1	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-		-		-	-	-	-	-	-	-	-	-	-	-	-
1.2343, 1.2738 (50-55 HRc)	Hardened steel	H3	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-		-		-	-	-	-	-	-	-	-	-	-	-	-
1.2379, 1.2363 (60-62 HRc)	Hardened steel	H4	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-		-		-	-	-	-	-	-	-	-	-	-	-	-
GG15, GG25 (180 - 220 HB)	Gray iron (GG)	K1	0,50	1,00	155	f_z	0,009	0,014	0,026	0,033	0,041	0,048	0,057	0,066	0,074	0,083	0,090	0,099
			1,00		120		0,007	0,011	0,020	0,025	0,031	0,036	0,043	0,050	0,056	0,062	0,068	0,074
GGG50, GGG60 (180 - 220 HB)	Ductile iron (GGG)	K3	0,50	1,00	145	f_z	0,009	0,014	0,026	0,033	0,041	0,048	0,057	0,066	0,074	0,083	0,090	0,099
			1,00		110		0,007	0,011	0,020	0,025	0,031	0,036	0,043	0,050	0,056	0,062	0,068	0,074

Cutting speed and feed values are approximate.
Cutting speed can be changed in a range (+/-10%) and feed in a range (+/-25%).
Customer specific factors such as input power, machine stability, tool overhang, type of clamping, etc. are not taken into account.

S260 • End Mill

S260 ■ P4.3 M2.3 M3.3 M4.1 M4.2 S1.3 S2.2 S3.2 S4.2 H1.1 H2.1 H3.1 H3.2

S260 HM | N | Z 4 | λ40° γ4° | DIN 6535HA | AlCrN | h9 | DORMER

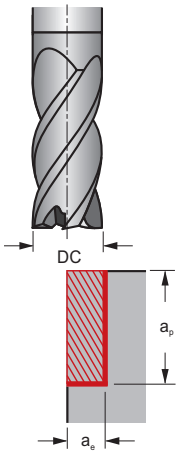


S260

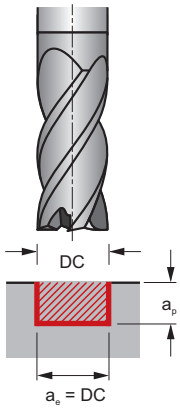
3.00 - 20.00

DC mm	DCON h6 mm	APMX/LU mm	OAL mm	ZEFP	S260
3.0	6.0	9.0	57.0	4	S2603.0
4.0	6.0	12.0	57.0	4	S2604.0
5.0	6.0	13.0	57.0	4	S2605.0
6.0	6.0	13.0	57.0	4	S2606.0
8.0	8.0	20.0	64.0	4	S2608.0
10.0	10.0	22.0	72.0	4	S26010.0
12.0	12.0	26.0	83.0	4	S26012.0
14.0	14.0	32.0	83.0	4	S26014.0
16.0	16.0	32.0	92.0	4	S26016.0
18.0	18.0	38.0	92.0	4	S26018.0
20.0	20.0	38.0	104.0	4	S26020.0

Example of initial conditions



S260			Depth a_p x DC (mm)	Width a_e x DC (mm)	Cutting speed V_c (m/min.)	Feed f_z (mm/tooth)	Profile/contour milling											
							2	3	4	5	6	8	10	12	14	16	18	20
C45, 16MnCr5 (180 - 220 HB)	Plain carbon steel	P2	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
1.2312, 1.2379 (260 - 340 HB)	Alloy steel	P3	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
Toolox44, Hardox450 (40 - 45 HRc)	Tool steel	P4	1,50	0,60	100	f_z	0,009	0,014	0,026	0,033	0,041	0,048	0,057	0,066	0,074	0,083	0,090	0,099
			max	0,05	145		0,021	0,032	0,060	0,076	0,094	0,110	0,131	0,151	0,169	0,190	0,206	0,227
0.9650, 0.9655 (<440 HB)	Chilled cast iron	H1	1,50	0,60	180	f_z	0,006	0,009	0,017	0,022	0,027	0,032	0,038	0,044	0,049	0,055	0,060	0,066
			max	0,05	265		0,014	0,021	0,039	0,050	0,062	0,073	0,087	0,101	0,112	0,126	0,137	0,151
1.2343, 1.2738 (50-55 HRc)	Hardened steel	H3	1,50	0,60	100	f_z	0,005	0,008	0,014	0,018	0,022	0,026	0,031	0,035	0,040	0,044	0,048	0,053
			max	0,05	145		0,011	0,018	0,032	0,041	0,050	0,060	0,071	0,080	0,092	0,101	0,110	0,121
1.2379, 1.2363 (60-62 HRc)	Hardened steel	H4	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
GG15, GG25 (180 - 220 HB)	Gray iron (GG)	K1	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
GGG50, GGG60 (180 - 220 HB)	Ductile iron (GGG)	K3	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-



S260			Depth a_p x DC (mm)	Width a_e x DC (mm)	Cutting speed V_c (m/min.)	Feed f_z (mm/tooth)	Slotting											
							2	3	4	5	6	8	10	12	14	16	18	20
C45, 16MnCr5 (180 - 220 HB)	Plain carbon steel	P2	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-		-		-	-	-	-	-	-	-	-	-	-	-	-
1.2312, 1.2379 (260 - 340 HB)	Alloy steel	P3	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-		-		-	-	-	-	-	-	-	-	-	-	-	-
Toolox44, Hardox450 (40 - 45 HRc)	Tool steel	P4	0,50	1,00	100	f_z	0,009	0,014	0,026	0,033	0,041	0,048	0,057	0,066	0,074	0,083	0,090	0,099
			1,00		70		0,007	0,011	0,020	0,025	0,031	0,036	0,043	0,050	0,056	0,062	0,068	0,074
0.9650, 0.9655 (<440 HB)	Chilled cast iron	H1	0,50	1,00	180	f_z	0,006	0,009	0,017	0,022	0,027	0,032	0,038	0,044	0,049	0,055	0,060	0,066
			1,00		130		0,005	0,007	0,013	0,017	0,020	0,024	0,029	0,033	0,037	0,041	0,045	0,050
1.2343, 1.2738 (50-55 HRc)	Hardened steel	H3	0,50	1,00	100	f_z	0,005	0,008	0,014	0,018	0,022	0,026	0,031	0,035	0,040	0,044	0,048	0,053
			1,00		70		0,004	0,006	0,011	0,014	0,017	0,020	0,023	0,026	0,030	0,033	0,036	0,040
1.2379, 1.2363 (60-62 HRc)	Hardened steel	H4	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-		-		-	-	-	-	-	-	-	-	-	-	-	-
GG15, GG25 (180 - 220 HB)	Gray iron (GG)	K1	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-		-		-	-	-	-	-	-	-	-	-	-	-	-
GGG50, GGG60 (180 - 220 HB)	Ductile iron (GGG)	K3	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-		-		-	-	-	-	-	-	-	-	-	-	-	-

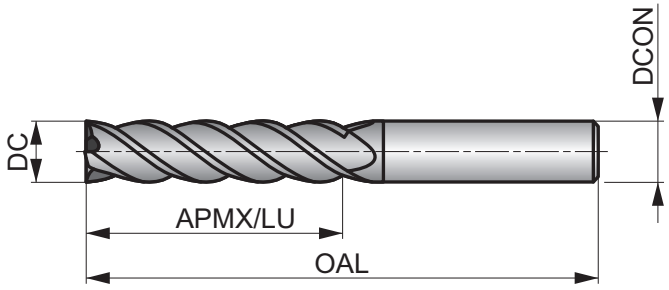
Cutting speed and feed values are approximate.
Cutting speed can be changed in a range (+/-10%) and feed in a range (+/-25%).
Customer specific factors such as input power, machine stability, tool overhang, type of clamping, etc. are not taken into account.

S717
S217

- End Mill

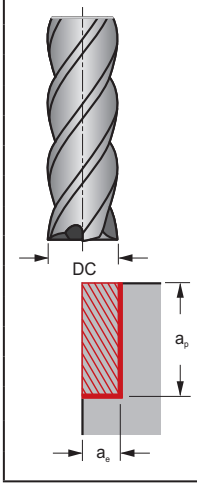
S717	■	P1.1 P1.2 P1.3 P2.1 P2.2 P2.3 P3.1 P3.2 P3.3 P4.1 P4.2 M1.1 M1.2 M2.1 M2.2 M3.1 M3.2 K1.1 K1.2 K1.3 K2.1 K2.2 K2.3 K3.1 K3.2 K3.3 K4.1 K4.2 K4.3 K4.4 K4.5 K5.1 K5.2 K5.3 S1.2 S2.1 S3.1 S4.1
	◪	N1.1 N1.2 N1.3 N2.1 N2.2 N2.3 N3.3
S217	■	P4.3 M2.3 M3.3 M4.1 M4.2 S1.3 S2.2 S3.2 S4.2

S717	HM		N	Z 4		λ40° γ10°	DIN 6535HA	AlCrN	h9			DORMER
S217	HM		N	Z 4		λ40° γ3°	DIN 6535HA	AlTiN	h9			DORMER



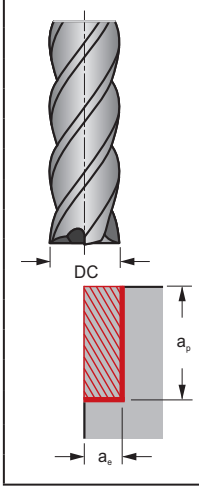
DC mm	DCON h6 mm	APMX/LU mm	OAL mm	ZEFP	S717	S217
3.0	3.0	19.0	60.0	4	S7173.0	S2173.0XD3
3.0	6.0	19.0	75.0	4		S2173.0XD6
4.0	4.0	19.0	60.0	4	S7174.0	S2174.0XD4
4.0	6.0	19.0	75.0	4		S2174.0XD6
5.0	5.0	19.0	60.0	4	S7175.0	S2175.0
6.0	6.0	31.0	75.0	4	S7176.0	S2176.0
8.0	8.0	31.0	75.0	4	S7178.0	S2178.0
10.0	10.0	31.0	75.0	4	S71710.0	S21710.0
12.0	12.0	50.0	100.0	4	S71712.0	S21712.0
14.0	14.0	57.0	125.0	4	S71714.0	S21714.0
16.0	16.0	57.0	125.0	4	S71716.0	S21716.0
18.0	18.0	57.0	125.0	4	S71718.0	S21718.0
20.0	20.0	57.0	125.0	4	S71720.0	S21720.0

Example of initial conditions



S717

			Depth a_p x DC (mm)	Width a_e x DC (mm)	Cutting speed V_c (m/min.)	Feed f_z (mm/tooth)	Profile/contour milling											
							2	3	4	5	6	8	10	12	14	16	18	20
C45, 16MnCr5 (180 - 220 HB)	Plain carbon steel	P2	1,50	0,60	105	f_z	0,008	0,013	0,024	0,030	0,037	0,044	0,052	0,060	0,067	0,075	0,082	0,090
			max	0,05	160		0,018	0,030	0,055	0,069	0,085	0,010	0,119	0,137	0,153	0,172	0,188	0,206
1.2312, 1.2379 (260 - 340 HB)	Alloy steel	P3	1,50	0,60	70	f_z	0,006	0,011	0,019	0,024	0,030	0,036	0,042	0,049	0,054	0,061	0,066	0,073
			max	0,05	100		0,014	0,025	0,044	0,055	0,069	0,082	0,096	0,112	0,124	0,140	0,151	0,167
Toolox44, Hardox450 (40 - 45 HRc)	Tool steel	P4	1,50	0,60	50	f_z	0,006	0,011	0,019	0,024	0,030	0,036	0,042	0,049	0,054	0,061	0,066	0,073
			max	0,05	70		0,014	0,025	0,044	0,055	0,069	0,082	0,096	0,112	0,124	0,140	0,151	0,167
0.9650, 0.9655 (<440 HB)	Chilled cast iron	H1	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
1.2343, 1.2738 (50-55 HRc)	Hardened steel	H3	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
1.2379, 1.2363 (60-62 HRc)	Hardened steel	H4	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
GG15, GG25 (180 - 220 HB)	Gray iron (GG)	K1	1,50	0,60	100	f_z	0,008	0,013	0,024	0,030	0,037	0,044	0,052	0,060	0,067	0,075	0,082	0,090
			max	0,05	150		0,018	0,030	0,055	0,069	0,085	0,010	0,119	0,137	0,153	0,172	0,188	0,206
GGG50, GGG60 (180 - 220 HB)	Ductile iron (GGG)	K3	1,50	0,60	95	f_z	0,008	0,013	0,024	0,030	0,037	0,044	0,052	0,060	0,067	0,075	0,082	0,090
			max	0,05	140		0,018	0,030	0,055	0,069	0,085	0,010	0,119	0,137	0,153	0,172	0,188	0,206



S217

			Depth a_p x DC (mm)	Width a_e x DC (mm)	Cutting speed V_c (m/min.)	Feed f_z (mm/tooth)	Profile/contour milling											
							2	3	4	5	6	8	10	12	14	16	18	20
C45, 16MnCr5 (180 - 220 HB)	Plain carbon steel	P2	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
1.2312, 1.2379 (260 - 340 HB)	Alloy steel	P3	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
Toolox44, Hardox450 (40 - 45 HRc)	Tool steel	P4	1,50	0,60	65	f_z	0,009	0,014	0,026	0,033	0,041	0,048	0,057	0,066	0,074	0,083	0,090	0,099
			max	0,05	95		0,021	0,032	0,060	0,076	0,094	0,110	0,131	0,151	0,169	0,190	0,206	0,227
0.9650, 0.9655 (<440 HB)	Chilled cast iron	H1	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
1.2343, 1.2738 (50-55 HRc)	Hardened steel	H3	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
1.2379, 1.2363 (60-62 HRc)	Hardened steel	H4	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
GG15, GG25 (180 - 220 HB)	Gray iron (GG)	K1	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
GGG50, GGG60 (180 - 220 HB)	Ductile iron (GGG)	K3	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-

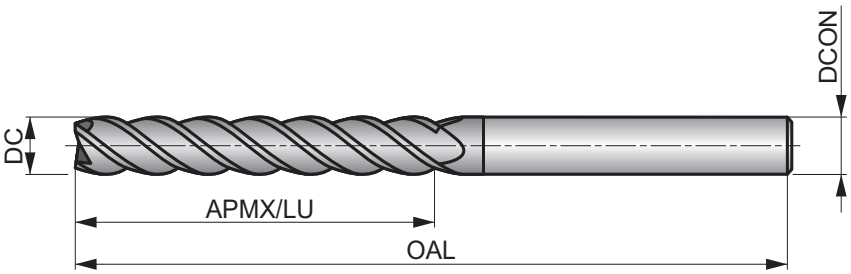
Cutting speed and feed values are approximate.
Cutting speed can be changed in a range (+/-10%) and feed in a range (+/-25%).
Customer specific factors such as input power, machine stability, tool overhang, type of clamping, etc. are not taken into account.

S718
S218

- End Mill

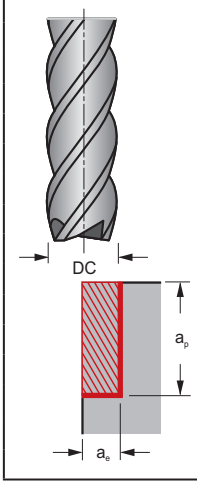
S718	■	P1.1 P1.2 P1.3 P2.1 P2.2 P2.3 P3.1 P3.2 P3.3 P4.1 P4.2 M1.1 M1.2 M2.1 M2.2 M3.1 M3.2 K1.1 K1.2 K1.3 K2.1 K2.2 K2.3 K3.1 K3.2 K3.3 K4.1 K4.2 K4.3 K4.4 K4.5 K5.1 K5.2 K5.3 S1.2 S2.1 S3.1 S4.1
	◪	N1.1 N1.2 N1.3 N2.1 N2.2 N2.3 N3.3
S218	■	P4.3 M2.3 M3.3 M4.1 M4.2 S1.3 S2.2 S3.2 S4.2

S718	HM		N	Z 4		λ40° γ10°	DIN 6535HA	AlCrN	h9		DORMER
S218	HM		N	Z 4		λ40° γ3°	DIN 6535HA	AlTiN	h9		DORMER



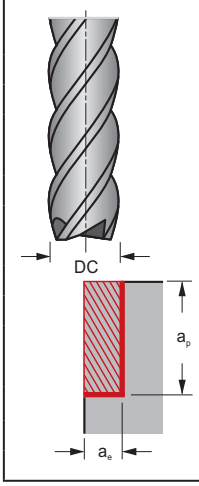
DC mm	DCON h6 mm	APMX/LU mm	OAL mm	ZEFP	S718	S218
3.0	3.0	25.0	100.0	4	S7183.0	S2183.0
4.0	4.0	31.0	100.0	4	S7184.0	S2184.0
5.0	5.0	31.0	100.0	4	S7185.0	S2185.0
6.0	6.0	38.0	100.0	4	S7186.0	S2186.0
8.0	8.0	41.0	100.0	4	S7188.0	S2188.0
10.0	10.0	57.0	125.0	4	S71810.0	S21810.0
12.0	12.0	75.0	150.0	4	S71812.0	S21812.0
14.0	14.0	75.0	150.0	4	S71814.0	S21814.0
16.0	16.0	75.0	150.0	4	S71816.0	S21816.0
18.0	18.0	75.0	150.0	4	S71818.0	S21818.0
20.0	20.0	75.0	150.0	4	S71820.0	S21820.0

Example of initial conditions



S718

			Depth a_p x DC (mm)	Width a_e x DC (mm)	Cutting speed V_c (m/min.)	Feed f_z (mm/tooth)	Profile/contour milling 2	3	4	5	6	8	10	12	14	16	18	20
C45, 16MnCr5 (180 - 220 HB)	Plain carbon steel	P2	1,50	0,60	65	f_z	0,008	0,013	0,024	0,030	0,037	0,044	0,052	0,060	0,067	0,075	0,082	0,090
			max	0,05	100		0,018	0,030	0,055	0,069	0,085	0,010	0,119	0,137	0,153	0,172	0,188	0,206
1.2312, 1.2379 (260 - 340 HB)	Alloy steel	P3	1,50	0,60	40	f_z	0,006	0,011	0,019	0,024	0,030	0,036	0,042	0,049	0,054	0,061	0,066	0,073
			max	0,05	60		0,014	0,025	0,044	0,055	0,069	0,082	0,096	0,112	0,124	0,140	0,151	0,167
Toolox44, Hardox450 (40 - 45 HRc)	Tool steel	P4	1,50	0,60	30	f_z	0,006	0,011	0,019	0,024	0,030	0,036	0,042	0,049	0,054	0,061	0,066	0,073
			max	0,05	45		0,014	0,025	0,044	0,055	0,069	0,082	0,096	0,112	0,124	0,140	0,151	0,167
0.9650, 0.9655 (<440 HB)	Chilled cast iron	H1	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
1.2343, 1.2738 (50-55 HRc)	Hardened steel	H3	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
1.2379, 1.2363 (60-62 HRc)	Hardened steel	H4	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
GG15, GG25 (180 - 220 HB)	Gray iron (GG)	K1	1,50	0,60	65	f_z	0,008	0,013	0,024	0,030	0,037	0,044	0,052	0,060	0,067	0,075	0,082	0,090
			max	0,05	95		0,018	0,030	0,055	0,069	0,085	0,010	0,119	0,137	0,153	0,172	0,188	0,206
GGG50, GGG60 (180 - 220 HB)	Ductile iron (GGG)	K3	1,50	0,60	60	f_z	0,008	0,013	0,024	0,030	0,037	0,044	0,052	0,060	0,067	0,075	0,082	0,090
			max	0,05	90		0,018	0,030	0,055	0,069	0,085	0,010	0,119	0,137	0,153	0,172	0,188	0,206



S218

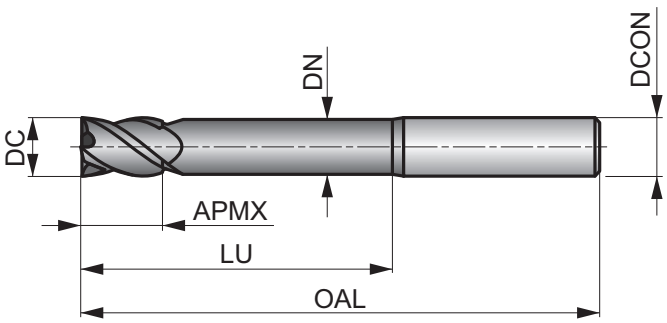
			Depth a_p x DC (mm)	Width a_e x DC (mm)	Cutting speed V_c (m/min.)	Feed f_z (mm/tooth)	Profile/contour milling 2	3	4	5	6	8	10	12	14	16	18	20
C45, 16MnCr5 (180 - 220 HB)	Plain carbon steel	P2	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
1.2312, 1.2379 (260 - 340 HB)	Alloy steel	P3	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
Toolox44, Hardox450 (40 - 45 HRc)	Tool steel	P4	1,50	0,60	40	f_z	0,009	0,014	0,026	0,033	0,041	0,048	0,057	0,066	0,074	0,083	0,090	0,099
			max	0,05	60		0,021	0,032	0,060	0,076	0,094	0,110	0,131	0,151	0,169	0,190	0,206	0,227
0.9650, 0.9655 (<440 HB)	Chilled cast iron	H1	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
1.2343, 1.2738 (50-55 HRc)	Hardened steel	H3	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
1.2379, 1.2363 (60-62 HRc)	Hardened steel	H4	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
GG15, GG25 (180 - 220 HB)	Gray iron (GG)	K1	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
GGG50, GGG60 (180 - 220 HB)	Ductile iron (GGG)	K3	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-

Cutting speed and feed values are approximate.
Cutting speed can be changed in a range (+/-10%) and feed in a range (+/-25%).
Customer specific factors such as input power, machine stability, tool overhang, type of clamping, etc. are not taken into account.

S219 • End Mill

S219 ■ P4.3 M2.3 M3.3 M4.1 M4.2 S1.3 S2.2 S3.2 S4.2

S219 HM | N | Z 4 | λ40° γ3° | DIN 6535HA | AlTiN | h9 | DORMER



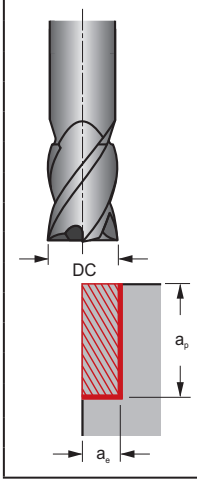
S219

3.00 - 20.00

DC mm	DCON h6 mm	APMX/LU mm	OAL mm	ZEFP	LU	DN mm	S219
3.0	3.0	5.0	60.0	4	30.0	2.8	S2193.0
4.0	4.0	8.0	60.0	4	32.0	3.7	S2194.0
5.0	5.0	9.0	60.0	4	32.0	4.6	S2195.0
6.0	6.0	10.0	75.0	4	40.0	5.5	S2196.0
8.0	8.0	12.0	75.0	4	40.0	7.4	S2198.0
10.0	10.0	14.0	75.0	4	40.0	9.2	S21910.0
12.0	12.0	16.0	100.0	4	60.0	11.0	S21912.0
14.0	14.0	22.0	125.0	4	85.0	13.0	S21914.0
16.0	16.0	22.0	125.0	4	85.0	15.0	S21916.0
18.0	18.0	26.0	125.0	4	85.0	17.0	S21918.0
20.0	20.0	26.0	125.0	4	85.0	19.0	S21920.0

Example of initial conditions

S219



			Depth a_p x DC (mm)	Width a_e x DC (mm)	Cutting speed V_c (m/min.)	Feed f_z (mm/tooth)	Profile/contour milling											
							2	3	4	5	6	8	10	12	14	16	18	20
C45, 16MnCr5	Plain carbon steel	P2	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
(180 - 220 HB)			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
1.2312, 1.2379	Alloy steel	P3	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
(260 - 340 HB)			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
Toolox44, Hardox450	Tool steel	P4	1,50	0,60	65	f_z	0,009	0,014	0,026	0,033	0,041	0,048	0,057	0,066	0,074	0,083	0,090	0,099
(40 - 45 HRc)			max	0,05	95		0,021	0,032	0,060	0,076	0,094	0,110	0,131	0,151	0,169	0,190	0,206	0,227
0.9650, 0.9655	Chilled cast iron	H1	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
(<440 HB)			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
1.2343, 1.2738	Hardened steel	H3	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
(50-55 HRc)			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
1.2379, 1.2363	Hardened steel	H4	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
(60-62 HRc)			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
GG15, GG25	Gray iron (GG)	K1	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
(180 - 220 HB)			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
GGG50, GGG60	Ductile iron (GGG)	K3	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
(180 - 220 HB)			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-

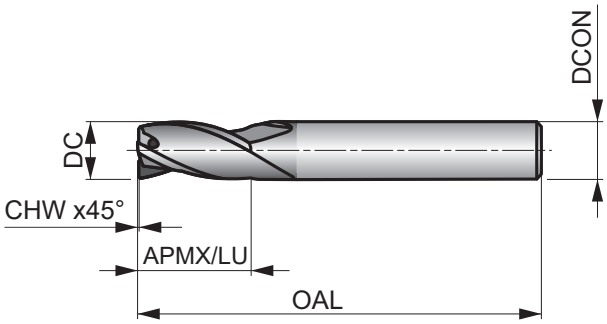
Cutting speed and feed values are approximate.
Cutting speed can be changed in a range (+/-10%) and feed in a range (+/-25%).
Customer specific factors such as input power, machine stability, tool overhang, type of clamping, etc. are not taken into account.

S813HA
S813HB

- End mill

S813HA S813HB	■	P1.1 P1.2 P1.3 P2.1 P2.2 P2.3 P3.1 P3.2 P3.3 P4.1 P4.2 M1.1 M1.2 M2.1 M2.2 K1.1 K1.2 K2.1 K2.2 K2.3 K3.1 K3.2 K3.3 K4.1 K4.2 K4.3 K4.4 K4.5 K5.1 K5.2 K5.3 N1.3 N2.1 N2.2 N2.3 N3.1 N3.2
	◪	P4.3 M3.1 M3.2 M3.3 M4.1 N1.1 N1.2 N3.3 N4.1 N4.2 S1.1 S1.2 S2.1 S3.1 S4.1

S813HA	HM	P9	N	Z 3		λ 28° γ 9°	DIN 6535HA	Alcrona			DIN 6527L
S813HB	HM	P9	N	Z 3		λ 28° γ 9°	DIN 6535HB	Alcrona			DIN 6527L



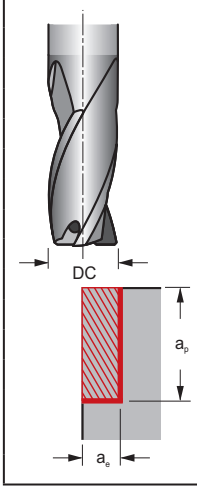
S813HA	S813HB
	
2.00 - 20.00	2.00 - 20.00

DC mm	CHW x45° mm	DCON h6 mm	APMX/LU mm	OAL mm	ZEFP	S813HA	S813HB
2.0	0.00	6.0	6.0	57.0	3	S813HA2.0	S813HB2.0
2.5	0.08	6.0	7.0	57.0	3	S813HA2.5	S813HB2.5
3.0	0.08	6.0	7.0	57.0	3	S813HA3.0	S813HB3.0
3.5	0.08	6.0	7.0	57.0	3	S813HA3.5	S813HB3.5
4.0	0.13	6.0	8.0	57.0	3	S813HA4.0	S813HB4.0
4.5	0.13	6.0	8.0	57.0	3	S813HA4.5	S813HB4.5
5.0	0.13	6.0	10.0	57.0	3	S813HA5.0	S813HB5.0
6.0	0.13	6.0	10.0	57.0	3	S813HA6.0	S813HB6.0
7.0	0.13	8.0	13.0	63.0	3	S813HA7.0	S813HB7.0
8.0	0.20	8.0	16.0	63.0	3	S813HA8.0 [1]	S813HB8.0 [1]
9.0	0.20	10.0	16.0	72.0	3	S813HA9.0 [1]	S813HB9.0 [1]
10.0	0.20	10.0	19.0	72.0	3	S813HA10.0 [1]	S813HB10.0 [1]
12.0	0.20	12.0	22.0	83.0	3	S813HA12.0 [1]	S813HB12.0 [1]
14.0	0.20	14.0	22.0	83.0	3	S813HA14.0 [1]	S813HB14.0 [1]
16.0	0.20	16.0	26.0	92.0	3	S813HA16.0 [1]	S813HB16.0 [1]
18.0	0.20	18.0	26.0	92.0	3	S813HA18.0 [1]	S813HB18.0 [1]
20.0	0.30	20.0	32.0	104.0	3	S813HA20.0 [1]	S813HB20.0 [1]

[1] CHW ±0.05x45° mm

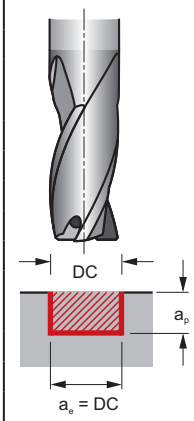
Example of initial conditions

S813HA S813HB



			Depth a_p x DC (mm)	Width a_e x DC (mm)	Cutting speed V_c (m/min.)	Feed f_z (mm/tooth)	Profile/contour milling											
							2	3	4	5	6	8	10	12	14	16	18	20
C45, 16MnCr5 (180 - 220 HB)	Plain carbon steel	P2	1,50	0,50	125	f_z	0,009	0,014	0,026	0,033	0,041	0,048	0,057	0,066	0,074	0,083	0,090	0,099
			max	0,05	180		0,021	0,032	0,060	0,076	0,094	0,110	0,131	0,151	0,169	0,190	0,206	0,227
1.2312, 1.2379 (260 - 340 HB)	Alloy steel	P3	1,50	0,50	75	f_z	0,007	0,012	0,022	0,027	0,033	0,040	0,047	0,054	0,060	0,068	0,074	0,081
			max	0,05	115		0,016	0,027	0,050	0,062	0,076	0,092	0,108	0,124	0,137	0,156	0,169	0,185
Toolox44, Hardox450 (40 - 45 HRc)	Tool steel	P4	1,50	0,50	45	f_z	0,007	0,012	0,022	0,027	0,033	0,040	0,047	0,054	0,060	0,068	0,074	0,081
			max	0,05	70		0,016	0,027	0,050	0,062	0,076	0,092	0,108	0,124	0,137	0,156	0,169	0,185
0.9650, 0.9655 (<440 HB)	Chilled cast iron	H1	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
1.2343, 1.2738 (50-55 HRc)	Hardened steel	H3	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
1.2379, 1.2363 (60-62 HRc)	Hardened steel	H4	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
GG15, GG25 (180 - 220 HB)	Gray iron (GG)	K1	1,50	0,50	120	f_z	0,009	0,014	0,026	0,033	0,041	0,048	0,057	0,066	0,074	0,083	0,090	0,099
			max	0,05	175		0,021	0,032	0,060	0,076	0,094	0,110	0,131	0,151	0,169	0,190	0,206	0,227
GGG50, GGG60 (180 - 220 HB)	Ductile iron (GGG)	K3	1,50	0,50	115	f_z	0,009	0,014	0,026	0,033	0,041	0,048	0,057	0,066	0,074	0,083	0,090	0,099
			max	0,05	165		0,021	0,032	0,060	0,076	0,094	0,110	0,131	0,151	0,169	0,190	0,206	0,227

S813HA S813HB



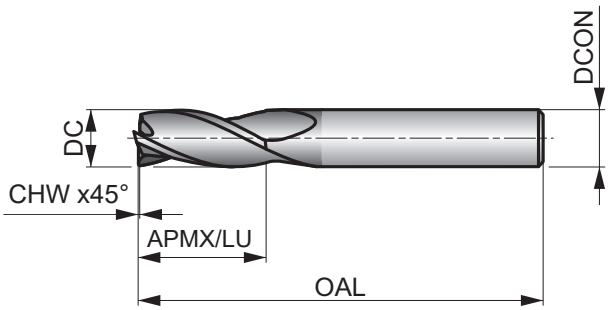
			Depth a_p x DC (mm)	Width a_e x DC (mm)	Cutting speed V_c (m/min.)	Feed f_z (mm/tooth)	Slotting											
							2	3	4	5	6	8	10	12	14	16	18	20
C45, 16MnCr5 (180 - 220 HB)	Plain carbon steel	P2	0,50	1,00	120	f_z	0,009	0,014	0,026	0,033	0,041	0,048	0,057	0,066	0,074	0,083	0,090	0,099
			1,00		90		0,007	0,011	0,020	0,025	0,031	0,036	0,043	0,050	0,056	0,062	0,068	0,074
1.2312, 1.2379 (260 - 340 HB)	Alloy steel	P3	0,50	1,00	80	f_z	0,007	0,012	0,022	0,027	0,033	0,040	0,047	0,054	0,060	0,068	0,074	0,081
			1,00		60		0,005	0,009	0,017	0,020	0,025	0,030	0,035	0,041	0,045	0,051	0,056	0,061
Toolox44, Hardox450 (40 - 45 HRc)	Tool steel	P4	0,50	1,00	45	f_z	0,007	0,012	0,022	0,027	0,033	0,040	0,047	0,054	0,060	0,068	0,074	0,081
			1,00		35		0,005	0,009	0,017	0,020	0,025	0,030	0,035	0,041	0,045	0,051	0,056	0,061
0.9650, 0.9655 (<440 HB)	Chilled cast iron	H1	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-		-		-	-	-	-	-	-	-	-	-	-	-	-
1.2343, 1.2738 (50-55 HRc)	Hardened steel	H3	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-		-		-	-	-	-	-	-	-	-	-	-	-	-
1.2379, 1.2363 (60-62 HRc)	Hardened steel	H4	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-		-		-	-	-	-	-	-	-	-	-	-	-	-
GG15, GG25 (180 - 220 HB)	Gray iron (GG)	K1	0,50	1,00	120	f_z	0,009	0,014	0,026	0,033	0,041	0,048	0,057	0,066	0,074	0,083	0,090	0,099
			1,00		90		0,007	0,011	0,020	0,025	0,031	0,036	0,043	0,050	0,056	0,062	0,068	0,074
GGG50, GGG60 (180 - 220 HB)	Ductile iron (GGG)	K3	0,50	1,00	110	f_z	0,009	0,014	0,026	0,033	0,041	0,048	0,057	0,066	0,074	0,083	0,090	0,099
			1,00		85		0,007	0,011	0,020	0,025	0,031	0,036	0,043	0,050	0,056	0,062	0,068	0,074

Cutting speed and feed values are approximate.
Cutting speed can be changed in a range (+/-10%) and feed in a range (+/-25%).
Customer specific factors such as input power, machine stability, tool overhang, type of clamping, etc. are not taken into account.

S823 • End mill

S823		
	■	P1.1 P1.2 P1.3 P2.1 P2.2 P2.3 P3.1 P3.2 P3.3 P4.1 P4.2 M1.1 M1.2 M2.1 M2.2 K1.1 K1.2 K2.1 K2.2 K2.3 K3.1 K3.2 K3.3 K4.1 K4.2 K4.3 K4.4 K4.5 K5.1 K5.2 K5.3 N1.3 N2.1 N2.2 N2.3 N3.1 N3.2
	◪	P4.3 M3.1 M3.2 M3.3 M4.1 N1.1 N1.2 N3.3 N4.1 N4.2 S1.1 S1.2 S2.1 S3.1 S4.1

S823 HM | P9 | N | Z 3 | λ 28° γ 9° | DIN 6535HA | Alcrona | DORMER



S823

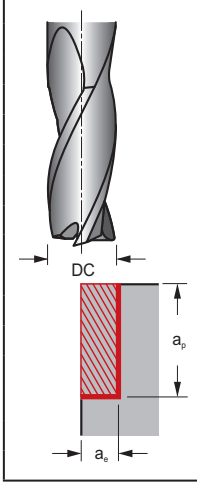
2.00 - 20.00

DC mm	CHW x45° mm	DCON h6 mm	APMX/LU mm	OAL mm	ZEFP	S823
2.0	-	6.0	8.0	57.0	3	S8232.0
2.5	0.08	6.0	12.0	57.0	3	S8232.5
3.0	0.08	6.0	12.0	57.0	3	S8233.0
4.0	0.13	6.0	14.0	57.0	3	S8234.0
5.0	0.13	6.0	16.0	57.0	3	S8235.0
6.0	0.13	6.0	19.0	57.0	3	S8236.0
7.0	0.13	8.0	19.0	63.0	3	S8237.0
8.0	0.20	8.0	19.0	63.0	3	S8238.0 [1]
9.0	0.20	10.0	21.0	72.0	3	S8239.0 [1]
10.0	0.20	10.0	22.0	72.0	3	S82310.0 [1]
12.0	0.20	12.0	25.0	83.0	3	S82312.0 [1]
14.0	0.20	14.0	30.0	83.0	3	S82314.0 [1]
16.0	0.20	16.0	32.0	92.0	3	S82316.0 [1]
18.0	0.20	18.0	32.0	92.0	3	S82318.0 [1]
20.0	0.30	20.0	38.0	104.0	3	S82320.0 [1]

[1] CHW ±0.05x45° mm

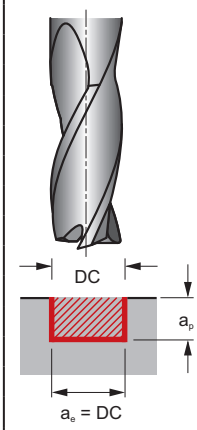
Example of initial conditions

S823



			Depth a_p x DC (mm)	Width a_e x DC (mm)	Cutting speed V_c (m/min.)	Feed f_z (mm/tooth)	Profile/contour milling 2	3	4	5	6	8	10	12	14	16	18	20
C45, 16MnCr5 (180 - 220 HB)	Plain carbon steel	P2	1,50	0,50	110	f_z	0,009	0,014	0,026	0,033	0,041	0,048	0,057	0,066	0,074	0,083	0,090	0,099
			max	0,05	160		0,021	0,032	0,060	0,076	0,094	0,110	0,131	0,151	0,169	0,190	0,206	0,227
1.2312, 1.2379 (260 - 340 HB)	Alloy steel	P3	1,50	0,50	70	f_z	0,007	0,012	0,022	0,027	0,033	0,040	0,047	0,054	0,060	0,068	0,074	0,081
			max	0,05	100		0,016	0,027	0,050	0,062	0,076	0,092	0,108	0,124	0,137	0,156	0,169	0,185
Toolox44, Hardox450 (40 - 45 HRc)	Tool steel	P4	1,50	0,50	40	f_z	0,007	0,012	0,022	0,027	0,033	0,040	0,047	0,054	0,060	0,068	0,074	0,081
			max	0,05	60		0,016	0,027	0,050	0,062	0,076	0,092	0,108	0,124	0,137	0,156	0,169	0,185
0.9650, 0.9655 (<440 HB)	Chilled cast iron	H1	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
1.2343, 1.2738 (50-55 HRc)	Hardened steel	H3	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
1.2379, 1.2363 (60-62 HRc)	Hardened steel	H4	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
GG15, GG25 (180 - 220 HB)	Gray iron (GG)	K1	1,50	0,50	110	f_z	0,009	0,014	0,026	0,033	0,041	0,048	0,057	0,066	0,074	0,083	0,090	0,099
			max	0,05	160		0,021	0,032	0,060	0,076	0,094	0,110	0,131	0,151	0,169	0,190	0,206	0,227
GGG50, GGG60 (180 - 220 HB)	Ductile iron (GGG)	K3	1,50	0,50	100	f_z	0,009	0,014	0,026	0,033	0,041	0,048	0,057	0,066	0,074	0,083	0,090	0,099
			max	0,05	150		0,021	0,032	0,060	0,076	0,094	0,110	0,131	0,151	0,169	0,190	0,206	0,227

S823



			Depth a_p x DC (mm)	Width a_e x DC (mm)	Cutting speed V_c (m/min.)	Feed f_z (mm/tooth)	Slotting 2	3	4	5	6	8	10	12	14	16	18	20
C45, 16MnCr5 (180 - 220 HB)	Plain carbon steel	P2	0,50	1,00	110	f_z	0,009	0,014	0,026	0,033	0,041	0,048	0,057	0,066	0,074	0,083	0,090	0,099
			1,00		80		0,007	0,011	0,020	0,025	0,031	0,036	0,043	0,050	0,056	0,062	0,068	0,074
1.2312, 1.2379 (260 - 340 HB)	Alloy steel	P3	0,50	1,00	70	f_z	0,007	0,012	0,022	0,027	0,033	0,040	0,047	0,054	0,060	0,068	0,074	0,081
			1,00		50		0,005	0,009	0,017	0,020	0,025	0,030	0,035	0,041	0,045	0,051	0,056	0,061
Toolox44, Hardox450 (40 - 45 HRc)	Tool steel	P4	0,50	1,00	40	f_z	0,007	0,012	0,022	0,027	0,033	0,040	0,047	0,054	0,060	0,068	0,074	0,081
			1,00		30		0,005	0,009	0,017	0,020	0,025	0,030	0,035	0,041	0,045	0,051	0,056	0,061
0.9650, 0.9655 (<440 HB)	Chilled cast iron	H1	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-		-		-	-	-	-	-	-	-	-	-	-	-	-
1.2343, 1.2738 (50-55 HRc)	Hardened steel	H3	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-		-		-	-	-	-	-	-	-	-	-	-	-	-
1.2379, 1.2363 (60-62 HRc)	Hardened steel	H4	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-		-		-	-	-	-	-	-	-	-	-	-	-	-
GG15, GG25 (180 - 220 HB)	Gray iron (GG)	K1	0,50	1,00	110	f_z	0,009	0,014	0,026	0,033	0,041	0,048	0,057	0,066	0,074	0,083	0,090	0,099
			1,00		80		0,007	0,011	0,020	0,025	0,031	0,036	0,043	0,050	0,056	0,062	0,068	0,074
GGG50, GGG60 (180 - 220 HB)	Ductile iron (GGG)	K3	0,50	1,00	100	f_z	0,009	0,014	0,026	0,033	0,041	0,048	0,057	0,066	0,074	0,083	0,090	0,099
			1,00		75		0,007	0,011	0,020	0,025	0,031	0,036	0,043	0,050	0,056	0,062	0,068	0,074

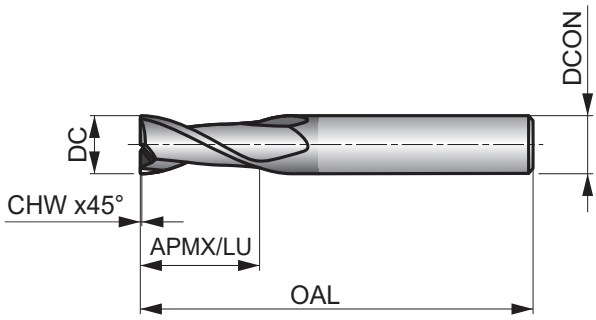
Cutting speed and feed values are approximate.
Cutting speed can be changed in a range (+/-10%) and feed in a range (+/-25%).
Customer specific factors such as input power, machine stability, tool overhang, type of clamping, etc. are not taken into account.

S812HA
S812HB

- End mill

S812HA S812HB		P1.1	P1.2	P1.3	P2.1	P2.2	P2.3	P3.1	P3.2	P3.3	P4.1	P4.2	P4.3	M1.1	M1.2	M2.1	M2.2	M3.1	M3.2	M3.3
	■	M4.1	K1.1	K1.2	K1.3	K2.1	K2.2	K2.3	K3.1	K3.2	K3.3	K4.1	K4.2	K4.3	K4.4	K4.5	K5.1	K5.2	K5.3	N1.3
		N2.1	N2.2	N2.3	N3.1	N3.2	S1.1	S1.2	S2.1	S3.1	S4.1									
	◪	N1.1	N1.2	N3.3	N4.1	N4.2														

S812HA	HM	P9	N	Z 2		λ 28° γ 9°	DIN 6535HA	Alcrona			DIN 6527L
S812HB	HM	P9	N	Z 2		λ 28° γ 9°	DIN 6535HB	Alcrona			DIN 6527L



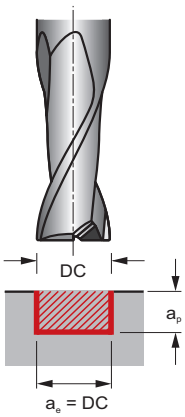
S812HA	S812HB
	
2.00 - 20.00	2.00 - 20.00

DC mm	CHW x45° mm	DCON h6 mm	APMX/LU mm	OAL mm	ZEFP	S812HA	S812HB
2.0	-	6.0	6.0	57.0	2	S812HA2.0	S812HB2.0
2.5	0.08	6.0	7.0	57.0	2	S812HA2.5	S812HB2.5
3.0	0.08	6.0	7.0	57.0	2	S812HA3.0	S812HB3.0
3.5	0.08	6.0	7.0	57.0	2	S812HA3.5	S812HB3.5
4.0	0.13	6.0	8.0	57.0	2	S812HA4.0	S812HB4.0
4.5	0.13	6.0	8.0	57.0	2	S812HA4.5	S812HB4.5
5.0	0.13	6.0	10.0	57.0	2	S812HA5.0	S812HB5.0
6.0	0.13	6.0	10.0	57.0	2	S812HA6.0	S812HB6.0
7.0	0.13	8.0	13.0	63.0	2	S812HA7.0	S812HB7.0
8.0	0.20	8.0	16.0	63.0	2	S812HA8.0 [1]	S812HB8.0 [1]
9.0	0.20	10.0	16.0	72.0	2	S812HA9.0 [1]	S812HB9.0 [1]
10.0	0.20	10.0	19.0	72.0	2	S812HA10.0 [1]	S812HB10.0 [1]
12.0	0.20	12.0	22.0	83.0	2	S812HA12.0 [1]	S812HB12.0 [1]
14.0	0.20	14.0	22.0	83.0	2	S812HA14.0 [1]	S812HB14.0 [1]
16.0	0.20	16.0	26.0	92.0	2	S812HA16.0 [1]	S812HB16.0 [1]
18.0	0.20	18.0	26.0	92.0	2	S812HA18.0 [1]	S812HB18.0 [1]
20.0	0.30	20.0	32.0	104.0	2	S812HA20.0 [1]	S812HB20.0 [1]

[1] CHW ±0.05x45° mm

Example of initial conditions

S812HA
S812HB



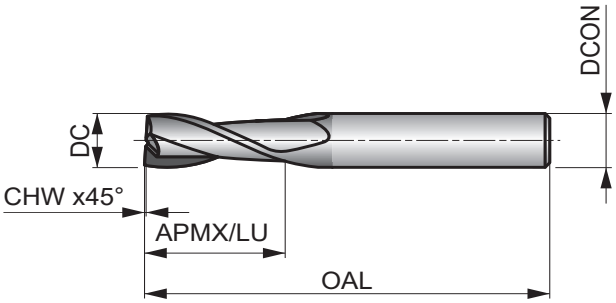
			Depth a_p x DC (mm)	Width a_e x DC (mm)	Cutting speed V_c (m/min.)	Feed f_z (mm/tooth)	Slotting 2	3	4	5	6	8	10	12	14	16	18	20
C45, 16MnCr5 (180 - 220 HB)	Plain carbon steel	P2	0,50	1,00	120	f_z	0,011	0,017	0,032	0,040	0,049	0,059	0,069	0,080	0,089	0,100	0,109	0,120
			1,00		90		0,008	0,013	0,024	0,030	0,037	0,044	0,052	0,060	0,067	0,075	0,082	0,090
1.2312, 1.2379 (260 - 340 HB)	Alloy steel	P3	0,50	1,00	80	f_z	0,009	0,014	0,026	0,033	0,041	0,048	0,057	0,066	0,074	0,083	0,090	0,099
			1,00		60		0,007	0,011	0,020	0,025	0,031	0,036	0,043	0,050	0,056	0,062	0,068	0,074
Toolox44, Hardox450 (40 - 45 HRc)	Tool steel	P4	0,50	1,00	50	f_z	0,009	0,014	0,026	0,033	0,041	0,048	0,057	0,066	0,074	0,083	0,090	0,099
			1,00		35		0,007	0,011	0,020	0,025	0,031	0,036	0,043	0,050	0,056	0,062	0,068	0,074
0.9650, 0.9655 (<440 HB)	Chilled cast iron	H1	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-		-		-	-	-	-	-	-	-	-	-	-	-	-
1.2343, 1.2738 (50-55 HRc)	Hardened steel	H3	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-		-		-	-	-	-	-	-	-	-	-	-	-	-
1.2379, 1.2363 (60-62 HRc)	Hardened steel	H4	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-		-		-	-	-	-	-	-	-	-	-	-	-	-
GG15, GG25 (180 - 220 HB)	Gray iron (GG)	K1	0,50	1,00	120	f_z	0,011	0,017	0,032	0,040	0,049	0,059	0,069	0,080	0,089	0,100	0,109	0,120
			1,00		90		0,008	0,013	0,024	0,030	0,037	0,044	0,052	0,060	0,067	0,075	0,082	0,090
GGG50, GGG60 (180 - 220 HB)	Ductile iron (GGG)	K3	0,50	1,00	110	f_z	0,011	0,017	0,032	0,040	0,049	0,059	0,069	0,080	0,089	0,100	0,109	0,120
			1,00		85		0,008	0,013	0,024	0,030	0,037	0,044	0,052	0,060	0,067	0,075	0,082	0,090

Cutting speed and feed values are approximate.
Cutting speed can be changed in a range (+/-10%) and feed in a range (+/-25%).
Customer specific factors such as input power, machine stability, tool overhang, type of clamping, etc. are not taken into account.

S822 • End mill

S822		
	■	P1.1 P1.2 P1.3 P2.1 P2.2 P2.3 P3.1 P3.2 P3.3 P4.1 P4.2 P4.3 M1.1 M1.2 M2.1 M2.2 M3.1 M3.2 M3.3 M4.1 K1.1 K1.2 K1.3 K2.1 K2.2 K2.3 K3.1 K3.2 K3.3 K4.1 K4.2 K4.3 K4.4 K4.5 K5.1 K5.2 K5.3 N1.3 N2.1 N2.2 N2.3 N3.1 N3.2 S1.1 S1.2 S2.1 S3.1 S4.1
	◪	N1.1 N1.2 N3.3 N4.1 N4.2

S822 HM | P9 | N | Z 2 | λ 28° γ 9° | DIN 6535HA | Alcrona | DORMER



S822

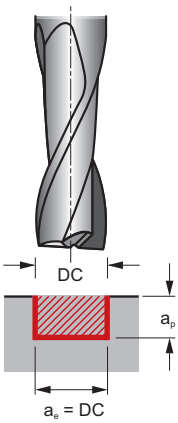
2.00 - 20.00

DC mm	CHW x45° mm	DCON h6 mm	APMX/LU mm	OAL mm	ZEFP	S822
2.0	-	6.0	8.0	57.0	2	S8222.0
2.5	0.08	6.0	12.0	57.0	2	S8222.5
3.0	0.08	6.0	12.0	57.0	2	S8223.0
4.0	0.13	6.0	14.0	57.0	2	S8224.0
5.0	0.13	6.0	16.0	57.0	2	S8225.0
6.0	0.13	6.0	19.0	57.0	2	S8226.0
7.0	0.13	8.0	19.0	63.0	2	S8227.0
8.0	0.20	8.0	19.0	63.0	2	S8228.0 [1]
9.0	0.20	10.0	21.0	72.0	2	S8229.0 [1]
10.0	0.20	10.0	22.0	72.0	2	S82210.0 [1]
12.0	0.20	12.0	25.0	83.0	2	S82212.0 [1]
14.0	0.20	14.0	30.0	83.0	2	S82214.0 [1]
16.0	0.20	16.0	32.0	92.0	2	S82216.0 [1]
18.0	0.20	18.0	32.0	92.0	2	S82218.0 [1]
20.0	0.30	20.0	38.0	104.0	2	S82220.0 [1]

[1] CHW ±0.05x45° mm

Example of initial conditions

S822



			Depth a_p x DC (mm)	Width a_e x DC (mm)	Cutting speed V_c (m/min.)	Feed f_z (mm/tooth)	Slotting 2	3	4	5	6	8	10	12	14	16	18	20
C45, 16MnCr5 (180 - 220 HB)	Plain carbon steel	P2	0,50	1,00	110	f_z	0,011	0,017	0,032	0,040	0,049	0,059	0,069	0,080	0,089	0,100	0,109	0,120
			1,00		80		0,008	0,013	0,024	0,030	0,037	0,044	0,052	0,060	0,067	0,075	0,082	0,090
1.2312, 1.2379 (260 - 340 HB)	Alloy steel	P3	0,50	1,00	70	f_z	0,009	0,014	0,026	0,033	0,041	0,048	0,057	0,066	0,074	0,083	0,090	0,099
			1,00		50		0,007	0,011	0,020	0,025	0,031	0,036	0,043	0,050	0,056	0,062	0,068	0,074
Toolox44, Hardox450 (40 - 45 HRc)	Tool steel	P4	0,50	1,00	40	f_z	0,009	0,014	0,026	0,033	0,041	0,048	0,057	0,066	0,074	0,083	0,090	0,099
			1,00		30		0,007	0,011	0,020	0,025	0,031	0,036	0,043	0,050	0,056	0,062	0,068	0,074
0.9650, 0.9655 (<440 HB)	Chilled cast iron	H1	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-		-		-	-	-	-	-	-	-	-	-	-	-	-
1.2343, 1.2738 (50-55 HRc)	Hardened steel	H3	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-		-		-	-	-	-	-	-	-	-	-	-	-	-
1.2379, 1.2363 (60-62 HRc)	Hardened steel	H4	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-		-		-	-	-	-	-	-	-	-	-	-	-	-
GG15, GG25 (180 - 220 HB)	Gray iron (GG)	K1	0,50	1,00	110	f_z	0,011	0,017	0,032	0,040	0,049	0,059	0,069	0,080	0,089	0,100	0,109	0,120
			1,00		80		0,008	0,013	0,024	0,030	0,037	0,044	0,052	0,060	0,067	0,075	0,082	0,090
GGG50, GGG60 (180 - 220 HB)	Ductile iron (GGG)	K3	0,50	1,00	100	f_z	0,011	0,017	0,032	0,040	0,049	0,059	0,069	0,080	0,089	0,100	0,109	0,120
			1,00		75		0,008	0,013	0,024	0,030	0,037	0,044	0,052	0,060	0,067	0,075	0,082	0,090

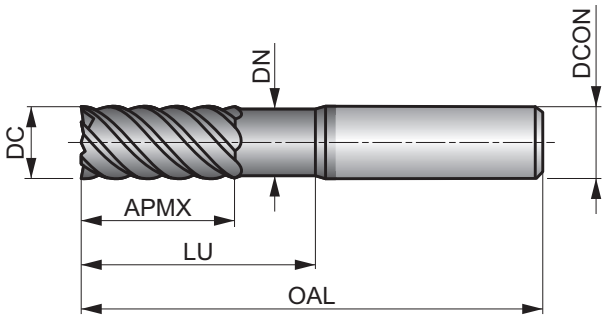
Cutting speed and feed values are approximate.
Cutting speed can be changed in a range (+/-10%) and feed in a range (+/-25%).
Customer specific factors such as input power, machine stability, tool overhang, type of clamping, etc. are not taken into account.

S225
S525

- Finishing End Mill

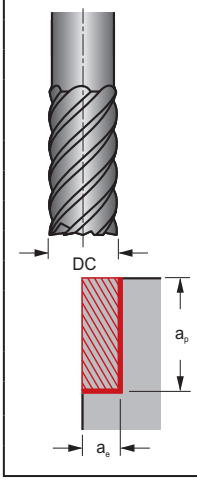
S225	■	P4.3 M2.3 M3.3 M4.1 M4.2 S1.3 S2.2 S3.2 S4.2
S525	■	H1.1 H2.1 H2.2 H3.1 H3.2 H4.1 H4.2

S225	HM		N	Z 6-8		λ50° γ3°	DIN 6535HA	AlTiN	h9		DORMER
S525	HM		N	Z 6-8		λ50° γ-26°	DIN 6535HA	TiSiN	h9		DORMER

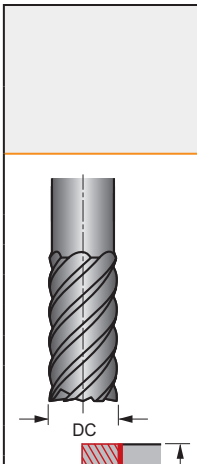


DC mm	DCON h6 mm	APMX mm	OAL mm	ZEFP	LU mm	DN mm	S225	S525
3.0	6.0	8.0	50.0	6	20.0	2.8	S2253.0	S5253.0
4.0	6.0	11.0	50.0	6	20.0	3.7	S2254.0	S5254.0
6.0	6.0	15.0	50.0	6	20.0	5.5	S2256.0	S5256.0
8.0	8.0	20.0	64.0	6	30.0	7.4	S2258.0	S5258.0
10.0	10.0	22.0	70.0	6	32.0	9.2	S22510.0	S52510.0
12.0	12.0	25.0	75.0	6	37.0	11.0	S22512.0	S52512.0
14.0	14.0	30.0	90.0	6	44.0	13.0	S22514.0	S52514.0
16.0	16.0	30.0	90.0	8	46.0	15.0	S22516.0	S52516.0
18.0	18.0	35.0	100.0	8	53.0	17.0	S22518.0	S52518.0
20.0	20.0	38.0	100.0	8	58.0	19.0	S22520.0	S52520.0

Example of initial conditions



S225			Depth a_p x DC (mm)	Width a_e x DC (mm)	Cutting speed V_c (m/min.)	Feed f_z (mm/tooth)	Profile/contour milling											
							2	3	4	5	6	8	10	12	14	16	18	20
C45, 16MnCr5 (180 - 220 HB)	Plain carbon steel	P2	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
1.2312, 1.2379 (260 - 340 HB)	Alloy steel	P3	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
Toolox44, Hardox450 (40 - 45 HRc)	Tool steel	P4	1,50	0,05	120	f_z	0,009	0,016	0,030	0,037	0,046	0,053	0,064	0,073	0,082	0,092	0,101	0,110
0.9650, 0.9655 (<440 HB)	Chilled cast iron	H1	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
1.2343, 1.2738 (50-55 HRc)	Hardened steel	H3	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
1.2379, 1.2363 (60-62 HRc)	Hardened steel	H4	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
GG15, GG25 (180 - 220 HB)	Gray iron (GG)	K1	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
GGG50, GGG60 (180 - 220 HB)	Ductile iron (GGG)	K3	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-



S525			Depth a_p x DC (mm)	Width a_e x DC (mm)	Cutting speed V_c (m/min.)	Feed f_z (mm/tooth)	Profile/contour milling											
							2	3	4	5	6	8	10	12	14	16	18	20
C45, 16MnCr5 (180 - 220 HB)	Plain carbon steel	P2	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
1.2312, 1.2379 (260 - 340 HB)	Alloy steel	P3	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
Toolox44, Hardox450 (40 - 45 HRc)	Tool steel	P4	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
0.9650, 0.9655 (<440 HB)	Chilled cast iron	H1	1,50	0,05	175	f_z	0,011	0,021	0,037	0,046	0,055	0,066	0,078	0,089	0,101	0,112	0,124	0,135
1.2343, 1.2738 (50-55 HRc)	Hardened steel	H3	1,50	0,05	95	f_z	0,009	0,016	0,030	0,037	0,046	0,053	0,064	0,073	0,082	0,092	0,101	0,110
1.2379, 1.2363 (60-62 HRc)	Hardened steel	H4	1,50	0,05	60	f_z	0,007	0,009	0,011	0,014	0,016	0,021	0,025	0,032	0,034	0,039	0,044	0,048
GG15, GG25 (180 - 220 HB)	Gray iron (GG)	K1	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
GGG50, GGG60 (180 - 220 HB)	Ductile iron (GGG)	K3	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-

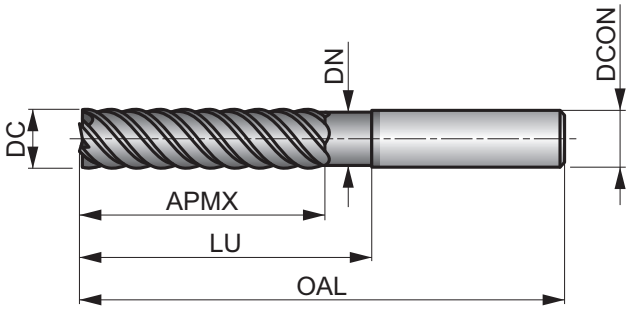
Cutting speed and feed values are approximate.
Cutting speed can be changed in a range (+/-10%) and feed in a range (+/-25%).
Customer specific factors such as input power, machine stability, tool overhang, type of clamping, etc. are not taken into account.

S226
S526

- Finishing End Mill

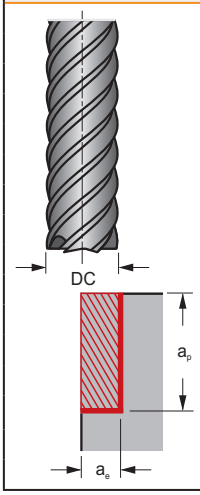
S226	■	P4.3 M2.3 M3.3 M4.1 M4.2 S1.3 S2.2 S3.2 S4.2
S526	■	H1.1 H2.1 H2.2 H3.1 H3.2 H4.1 H4.2

S226	HM		N	Z 6-8		λ50° γ3°	DIN 6535HA	AlTiN	h9		DORMER
S526	HM		N	Z 6-8		λ50° γ-26°	DIN 6535HA	TiSiN	h9		DORMER

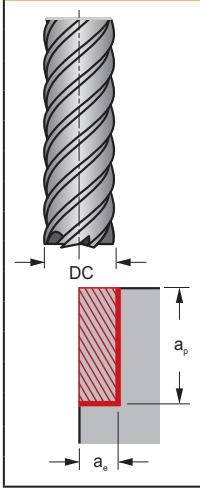


DC mm	DCON h6 mm	APMX mm	OAL mm	ZEFP	LU mm	DN mm	S226	S526
3.0	6.0	19.0	75.0	6	30.0	2.8	S2263.0	S5263.0
4.0	6.0	19.0	75.0	6	32.0	3.7	S2264.0	S5264.0
6.0	6.0	31.0	75.0	6	40.0	5.5	S2266.0	S5266.0
8.0	8.0	31.0	75.0	6	40.0	7.4	S2268.0	S5268.0
10.0	10.0	45.0	100.0	6	60.0	9.2	S22610.0	S52610.0
12.0	12.0	50.0	100.0	6	60.0	11.0	S22612.0	S52612.0
14.0	14.0	57.0	125.0	6	85.0	13.0	S22614.0	S52614.0
16.0	16.0	57.0	125.0	8	85.0	15.0	S22616.0	S52616.0
18.0	18.0	57.0	125.0	8	85.0	17.0	S22618.0	S52618.0
20.0	20.0	57.0	125.0	8	85.0	19.0	S22620.0	S52620.0

Example of initial conditions



S226			Depth a_p x DC (mm)	Width a_e x DC (mm)	Cutting speed V_c (m/min.)	Feed f_z (mm/tooth)	Profile/contour milling											
							2	3	4	5	6	8	10	12	14	16	18	20
C45, 16MnCr5 (180 - 220 HB)	Plain carbon steel	P2	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
1.2312, 1.2379 (260 - 340 HB)	Alloy steel	P3	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
Toolox44, Hardox450 (40 - 45 HRc)	Tool steel	P4	1,50	0,05	95	f_z	0,009	0,016	0,030	0,037	0,046	0,053	0,064	0,073	0,082	0,092	0,101	0,110
0.9650, 0.9655 (<440 HB)	Chilled cast iron	H1	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
1.2343, 1.2738 (50-55 HRc)	Hardened steel	H3	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
1.2379, 1.2363 (60-62 HRc)	Hardened steel	H4	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
GG15, GG25 (180 - 220 HB)	Gray iron (GG)	K1	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
GGG50, GGG60 (180 - 220 HB)	Ductile iron (GGG)	K3	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-



S526			Depth a_p x DC (mm)	Width a_e x DC (mm)	Cutting speed V_c (m/min.)	Feed f_z (mm/tooth)	Profile/contour milling											
							2	3	4	5	6	8	10	12	14	16	18	20
C45, 16MnCr5 (180 - 220 HB)	Plain carbon steel	P2	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
1.2312, 1.2379 (260 - 340 HB)	Alloy steel	P3	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
Toolox44, Hardox450 (40 - 45 HRc)	Tool steel	P4	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
0.9650, 0.9655 (<440 HB)	Chilled cast iron	H1	1,50	0,05	140	f_z	0,011	0,021	0,037	0,046	0,055	0,066	0,078	0,089	0,101	0,112	0,124	0,135
1.2343, 1.2738 (50-55 HRc)	Hardened steel	H3	1,50	0,05	80	f_z	0,009	0,016	0,030	0,037	0,046	0,053	0,064	0,073	0,082	0,092	0,101	0,110
1.2379, 1.2363 (60-62 HRc)	Hardened steel	H4	1,50	0,05	50	f_z	0,007	0,009	0,011	0,014	0,016	0,021	0,025	0,032	0,034	0,039	0,044	0,048
GG15, GG25 (180 - 220 HB)	Gray iron (GG)	K1	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
GGG50, GGG60 (180 - 220 HB)	Ductile iron (GGG)	K3	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-

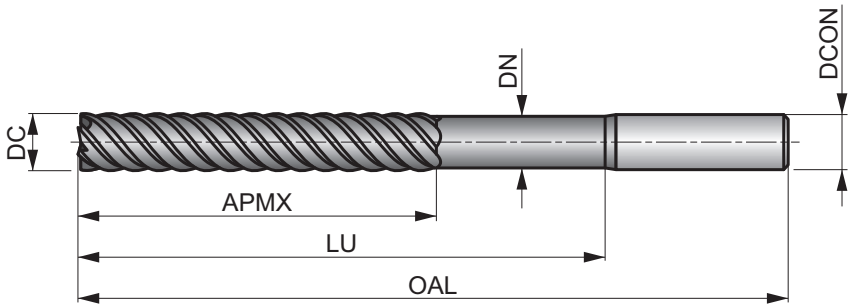
Cutting speed and feed values are approximate.
Cutting speed can be changed in a range (+/-10%) and feed in a range (+/-25%).
Customer specific factors such as input power, machine stability, tool overhang, type of clamping, etc. are not taken into account.

S227
S527

- Finishing End Mill

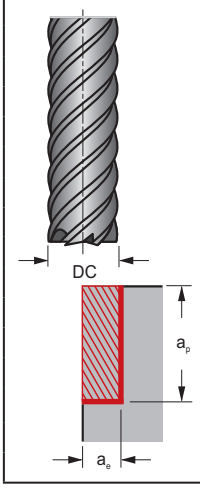
S227	■	P4.3 M2.3 M3.3 M4.1 M4.2 S1.3 S2.2 S3.2 S4.2
S527	■	H1.1 H2.1 H2.2 H3.1 H3.2 H4.1 H4.2

S227	HM		N	Z 6-8		λ50° γ3°	DIN 6535HA	AlTiN	h9		DORMER
S527	HM		N	Z 6-8		λ50° γ-26°	DIN 6535HA	TiSiN	h9		DORMER

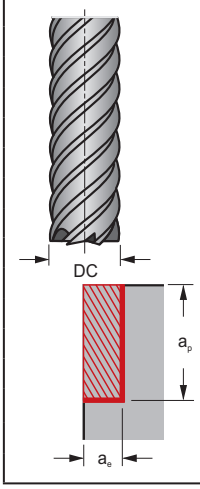


DC mm	DCON h6 mm	APMX mm	OAL mm	ZEFP	LU mm	DN mm	S227	S527
3.0	6.0	25.0	100.0	6	60.0	2.8		S5273.0
4.0	6.0	31.0	100.0	6	60.0	3.7		S5274.0
6.0	6.0	38.0	100.0	6	60.0	5.5	S2276.0	S5276.0
8.0	8.0	41.0	100.0	6	60.0	7.4	S2278.0	S5278.0
10.0	10.0	57.0	125.0	6	85.0	9.2	S22710.0	S52710.0
12.0	12.0	75.0	150.0	6	110.0	11.0	S22712.0	S52712.0
14.0	14.0	75.0	150.0	6	110.0	13.0	S22714.0	S52714.0
16.0	16.0	75.0	150.0	8	110.0	15.0	S22716.0	S52716.0
18.0	18.0	75.0	150.0	8	110.0	17.0	S22718.0	S52718.0
20.0	20.0	75.0	150.0	8	110.0	19.0	S22720.0	S52720.0

Example of initial conditions



S227			Depth a_p x DC (mm)	Width a_e x DC (mm)	Cutting speed V_c (m/min.)	Feed f_z (mm/tooth)	Profile/contour milling											
							2	3	4	5	6	8	10	12	14	16	18	20
C45, 16MnCr5 (180 - 220 HB)	Plain carbon steel	P2	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
1.2312, 1.2379 (260 - 340 HB)	Alloy steel	P3	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
Toolox44, Hardox450 (40 - 45 HRc)	Tool steel	P4	1,50	0,05	60	f_z	0,009	0,016	0,030	0,037	0,046	0,053	0,064	0,073	0,082	0,092	0,101	0,110
0.9650, 0.9655 (<440 HB)	Chilled cast iron	H1	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
1.2343, 1.2738 (50-55 HRc)	Hardened steel	H3	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
1.2379, 1.2363 (60-62 HRc)	Hardened steel	H4	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
GG15, GG25 (180 - 220 HB)	Gray iron (GG)	K1	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
GGG50, GGG60 (180 - 220 HB)	Ductile iron (GGG)	K3	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-



S527			Depth a_p x DC (mm)	Width a_e x DC (mm)	Cutting speed V_c (m/min.)	Feed f_z (mm/tooth)	Profile/contour milling											
							2	3	4	5	6	8	10	12	14	16	18	20
C45, 16MnCr5 (180 - 220 HB)	Plain carbon steel	P2	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
1.2312, 1.2379 (260 - 340 HB)	Alloy steel	P3	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
Toolox44, Hardox450 (40 - 45 HRc)	Tool steel	P4	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
0.9650, 0.9655 (<440 HB)	Chilled cast iron	H1	1,50	0,05	90	f_z	0,011	0,021	0,037	0,046	0,055	0,066	0,078	0,089	0,101	0,112	0,124	0,135
1.2343, 1.2738 (50-55 HRc)	Hardened steel	H3	1,50	0,05	45	f_z	0,009	0,016	0,030	0,037	0,046	0,053	0,064	0,073	0,082	0,092	0,101	0,110
1.2379, 1.2363 (60-62 HRc)	Hardened steel	H4	1,50	0,05	30	f_z	0,007	0,009	0,011	0,014	0,016	0,021	0,025	0,032	0,034	0,039	0,044	0,048
GG15, GG25 (180 - 220 HB)	Gray iron (GG)	K1	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-
GGG50, GGG60 (180 - 220 HB)	Ductile iron (GGG)	K3	-	-	-	f_z	-	-	-	-	-	-	-	-	-	-	-	-
			-	-	-		-	-	-	-	-	-	-	-	-	-	-	-

Cutting speed and feed values are approximate.
Cutting speed can be changed in a range (+/-10%) and feed in a range (+/-25%).
Customer specific factors such as input power, machine stability, tool overhang, type of clamping, etc. are not taken into account.

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As a professional you can judge the quality of work by just looking at the chip. Our chip is a clean and uncomplicated shape that in itself tells a story. It is a clear and consistent signal and that's why we use it as a symbol for being **Simply Reliable**.

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