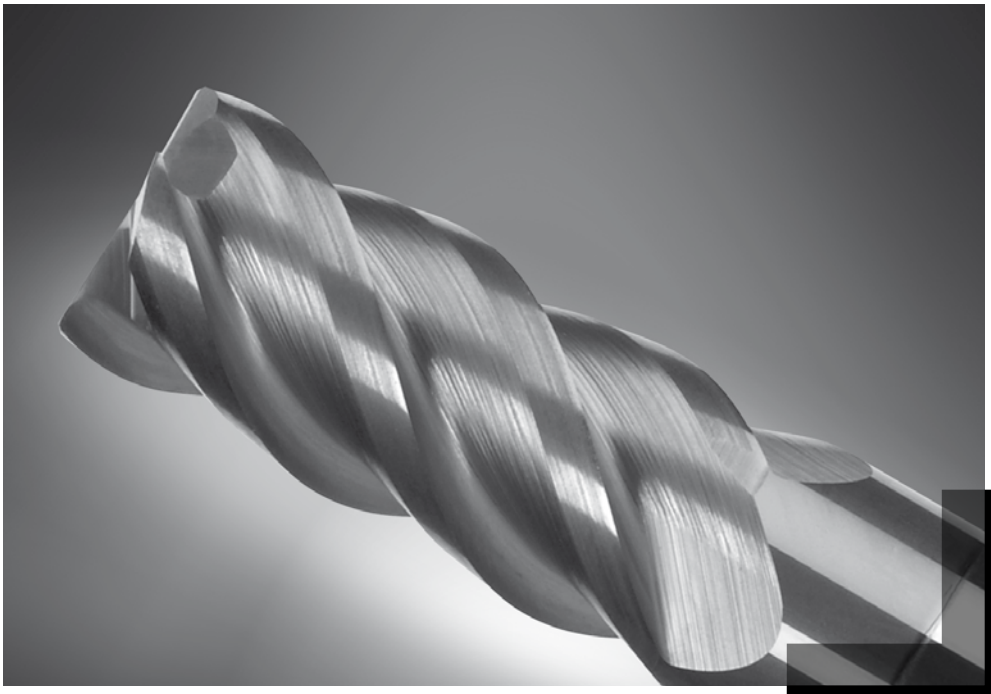
KOMET GROUP

KomPass
MILLING

TOOLS + IDEAS®

KomPass Milling – BENEFITS for you



KOMET GROUP – MILLING expertise

The KOMET GROUP is recognised internationally as a leader in innovation for high-precision drilling, reaming and threading and, as such, sees itself as more than simply a manufacturer of precision tools and rather as a provider of innovative ideas – true to the company motto "TOOLS PLUS IDEAS".

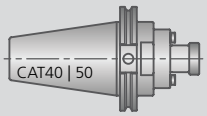
Our extensive range of milling tools guarantees the production of optimum surfaces in terms of quality and performance. Thanks to maximum process reliability, our tools form the basis for cost-effective production at our customer sites.

Special solutions for your milling operations – Greater range of functions, lower machining costs
Chapter 8

Programme summary

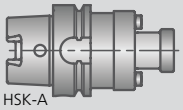
6 Adaptors

Taper shanks FA



Ø 0.500" | 0.750" | 1.000" | 1.500" | 2.000"
▸ 220

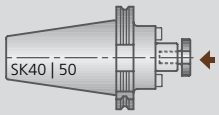
HSK-A Adaptors FA

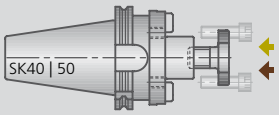


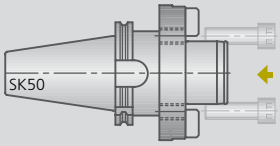
Ø 0.500" | 0.750" | 1.000" | 1.500" | 2.000"
▸ 221

DIN 69871

▸ 222 – 223

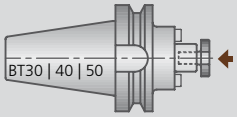


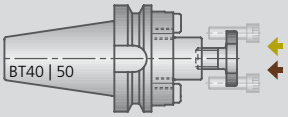


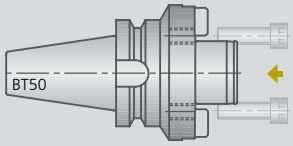


JIS B 6339 (MAS 403 BT)

▸ 224 – 225

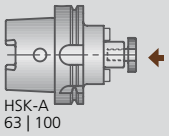


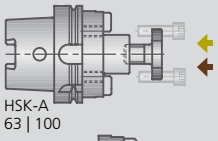


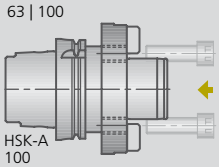


ISO 12164-1

▸ 226 – 227

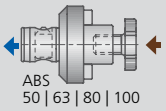


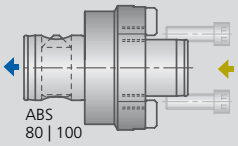




ABS® Adaptors FA | FAM

▸ 228 – 229

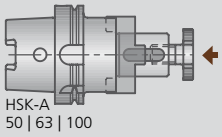


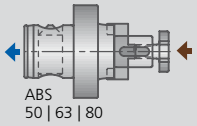


Key

- ABS® connection
- Cylindrical connection
- Weldon connection
- Shrink connection
- Screw connection
- DIN 6357 adaptor
- DIN 6358 adaptor

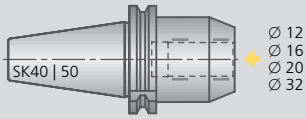
▸ 230 – 231 Combination milling cutter arbor FAK



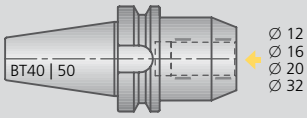


Expanding chuck

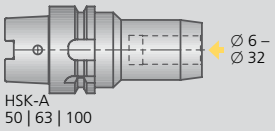
▸ 234



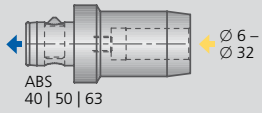
▸ 235



▸ 232 – 233

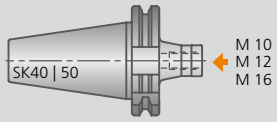


▸ 236

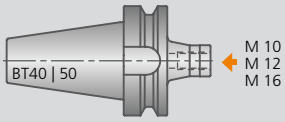


Adaptor for screw-on milling cutter

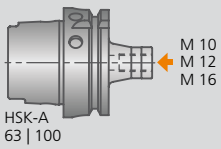
▸ 239



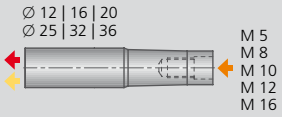
▸ 240



▸ 238

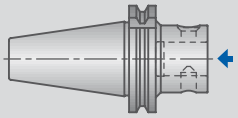


▸ 241

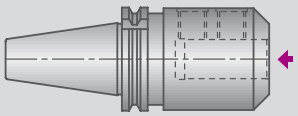


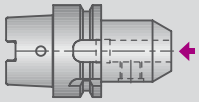
Adaptors see catalogue "KomPass – Bore machining"

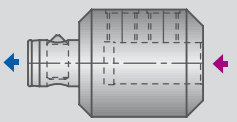
Adaptors with ABS® connection



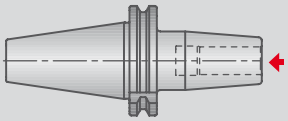
Adaptors with Weldon connection

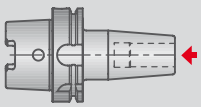


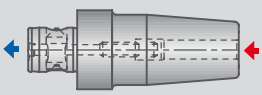




Shrink fit technology ThermoGrip®

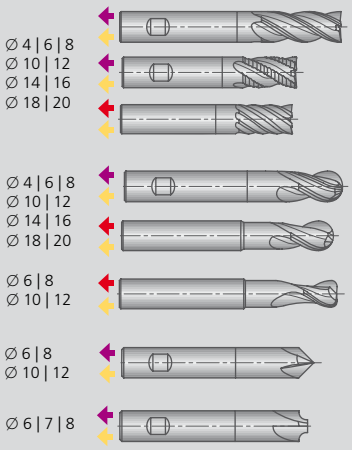






ThermoGrip® is a registered trademark for the Bilz Werkzeugfabrik GmbH & Co. KG

1 Solid carbide milling cutter



End milling cutter
Ø 1 – 20 mm
▶ 10 – 15
▶ 13 – 29
▶ 33 – 38

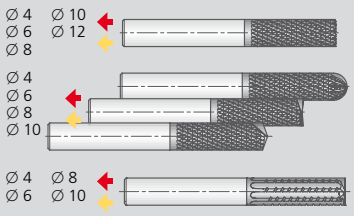
Spherical cutter
Ø 1 – 20 mm
▶ 14 – 32
▶ 40 – 41

Torus milling cutter
Ø 6 – 12 mm ▶ 27

Chamfer milling cutter
Ø 6 – 12 mm ▶ 23

Radius milling cutter
Ø 6 – 8 mm ▶ 24

2 NCD Composite milling cutter

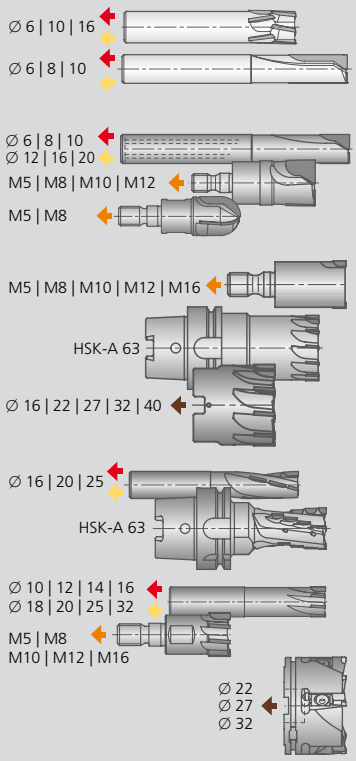


Ø 1,6 – 12 mm ▶ 48

Ø 4 – 10 mm ▶ 48 – 49

Multi-tooth milling cutter
Ø 4 – 10 mm ▶ 50

3 PCD Milling cutter



Compression and Slot milling cutter
Ø 6 – 16 mm ▶ 65
Ø 6 – 10 mm ▶ 64

Slot and radius milling cutter
Ø 6 – 20 mm ▶ 54
Ø 10 – 25 mm ▶ 54
Ø 10 – 16 mm ▶ 54

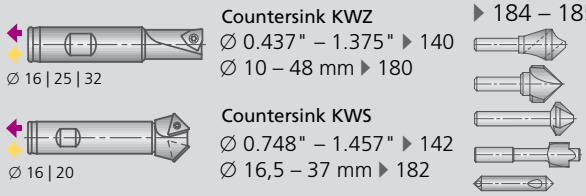
Face milling cutter
Ø 10 – 32 mm ▶ 56
Ø 40 – 160 mm ▶ 56
Ø 40 – 125 mm ▶ 56

Facing and corner milling cutter
Ø 16 – 25 mm ▶ 58
Ø 32 – 63 mm ▶ 58

Face milling cutter HPC
Ø 10 – 32 mm ▶ 60

Finishing, facing and corner milling cutter HSC
Ø 63 – 100 mm ▶ 66

5 Countersinking tool

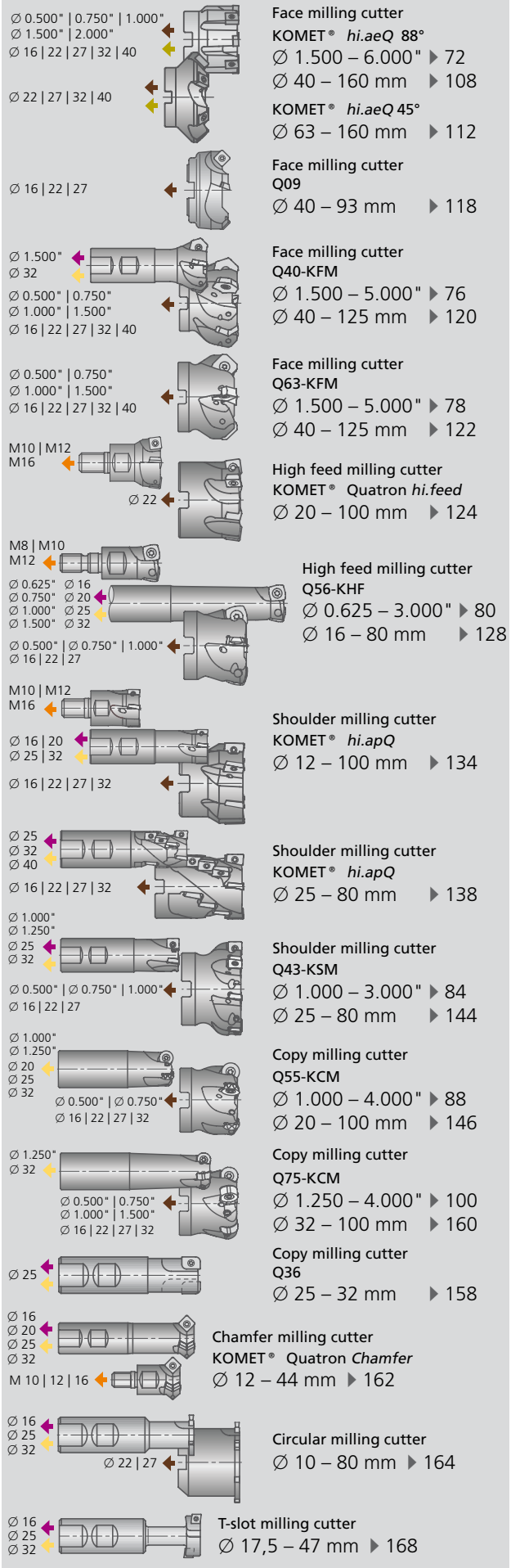


Countersink KWZ
Ø 0.437" – 1.375" ▶ 140
Ø 10 – 48 mm ▶ 180

Countersink KWS
Ø 0.748" – 1.457" ▶ 142
Ø 16,5 – 37 mm ▶ 182

▶ 184 – 185

4 Indexable insert mills



Face milling cutter
KOMET® *hi.aeQ* 88°
Ø 1.500 – 6.000" ▶ 72
Ø 40 – 160 mm ▶ 108
KOMET® *hi.aeQ* 45°
Ø 63 – 160 mm ▶ 112

Face milling cutter Q09
Ø 40 – 93 mm ▶ 118

Face milling cutter Q40-KFM
Ø 1.500 – 5.000" ▶ 76
Ø 40 – 125 mm ▶ 120

Face milling cutter Q63-KFM
Ø 1.500 – 5.000" ▶ 78
Ø 40 – 125 mm ▶ 122

High feed milling cutter KOMET® Quatron *hi.feed*
Ø 20 – 100 mm ▶ 124

High feed milling cutter Q56-KHF
Ø 0.625 – 3.000" ▶ 80
Ø 16 – 80 mm ▶ 128

Shoulder milling cutter KOMET® *hi.apQ*
Ø 12 – 100 mm ▶ 134

Shoulder milling cutter KOMET® *hi.apQ*
Ø 25 – 80 mm ▶ 138

Shoulder milling cutter Q43-KSM
Ø 1.000 – 3.000" ▶ 84
Ø 25 – 80 mm ▶ 144

Copy milling cutter Q55-KCM
Ø 1.000 – 4.000" ▶ 88
Ø 20 – 100 mm ▶ 146

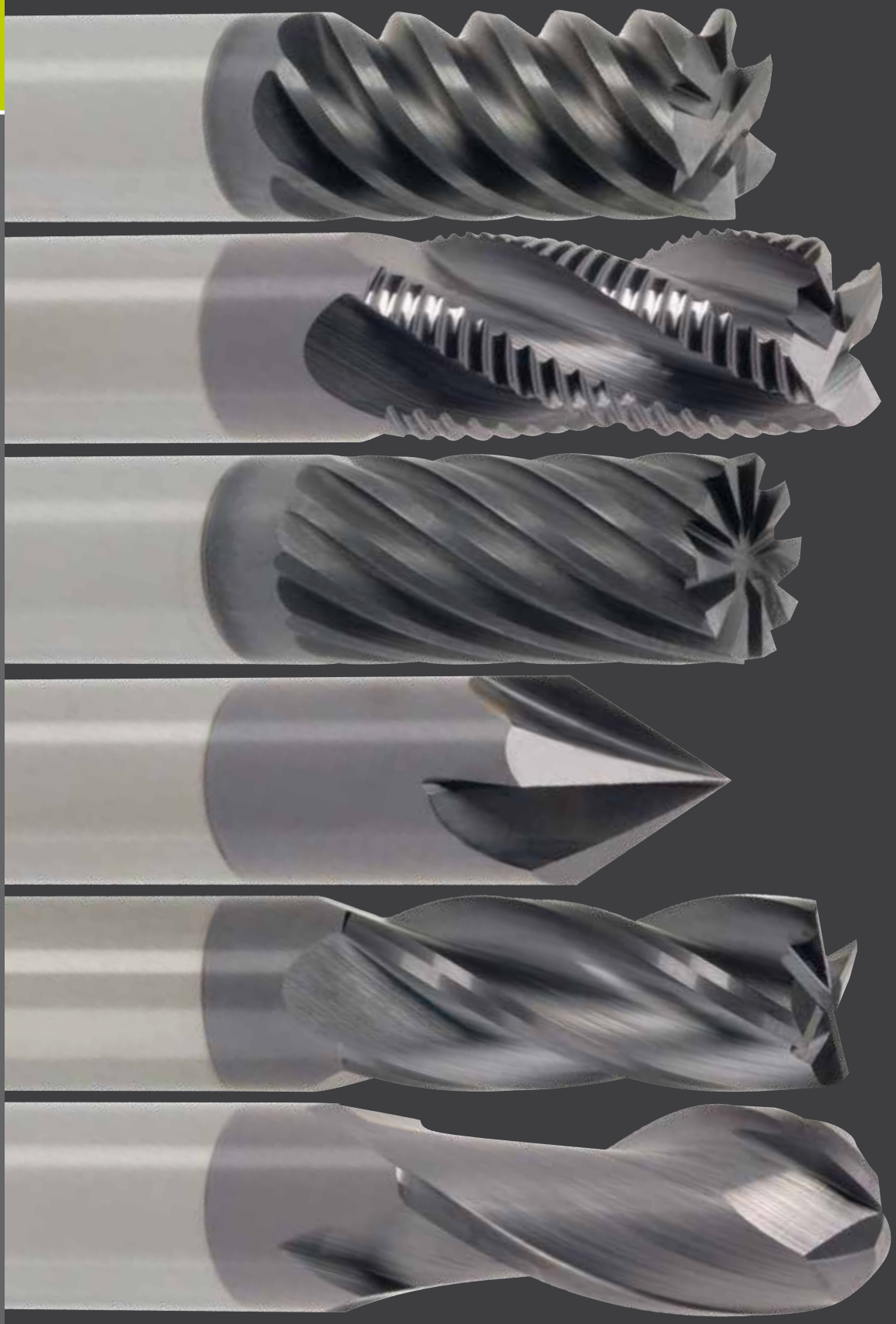
Copy milling cutter Q75-KCM
Ø 1.250 – 4.000" ▶ 100
Ø 32 – 100 mm ▶ 160

Copy milling cutter Q36
Ø 25 – 32 mm ▶ 158

Chamfer milling cutter KOMET® Quatron *Chamfer*
Ø 12 – 44 mm ▶ 162

Circular milling cutter
Ø 10 – 80 mm ▶ 164

T-slot milling cutter
Ø 17,5 – 47 mm ▶ 168



KOMET JEL®

KOMET JEL® Solid carbide milling cutter

The new solid carbide shank milling cutter range provides tools to meet all demands in the 1.0 - 25.0 mm diameter range.

They are used in cast iron and steel materials; soft and hard machining (up to 65 HRC); and in mould and die making.

The product range is completed with tools for aluminium and non-ferrous metal working.

BENEFITS for you:

- Comprehensive standard range from stock
- High productivity due to the perfectly tuned grade profile and coating for all of the workpiece materials

KOMET SERVICE® – Chapter 8
The KOMET SERVICE® TOOL*life*Box icon describes tools that are available for the high quality cost-efficient refurbishment of tools.

F.*line* Solid carbide milling cutter

KOMET JEL® F.*line*

Overview of the solid carbide milling cutter

Machining					Universal use					Roughing			Finishing	Stainless steel	
Material Group		Strength Rm (N/mm²)	Hardness HB	*F.line*	F044 UNI	F064 UNI	HPC	F144	F344	F544	F054 D	F154 D	F054 F	F055 INOX	F155 INOX
				Diameter (mm)	Ø 3-20	Ø 1-20	Ø 6-20	Ø 2-20	Ø 1-20	Ø 6-20	Ø 2-25	Ø 3-20	Ø 6-25	Ø 2-25	Ø 2-20
				No. of teeth	2 | 3 | 4	2 | 4	4	2 | 4	2 | 4	4	4	4	6	4	4
				Shank DIN 6535 ..	HA | HB	HA | HB	HB	HA | HB	HA | HB	HB	HA | HB	HA | HB	HA | HB	HA | HB	HA | HB
				Coating	TiAlN	TiAlN	TiAlN	TiAlN	TiAlN	TiAlN	AlCrN	AlCrN	AlCrN	AlCrN	AlCrN
				Facet (mm)	0,05-0,35	0,05-0,35	0,2-0,5	–	–	0,3-0,5	0,1-0,35	–	0,05-0,15	0,05-0,35	–
				Corner radius (mm)	–	–	–	0,5-2,0	0,5-10	–	–	0,2-4,0	–	–	0,2-6,35
				Page	10	11	12	13	14	15	16	17	18	19	20-22
				Material											
P	1.1	≤400	≤120	Magnetic soft iron	●	●	●	●	●	●	●	●	●	●	●
P	1.2	≤700	≤200	Structural, case hardened steel	●	●	●	●	●	●	●	●	●	●	●
P	1.3	≤850	≤250	Carbon steel	●	●	●	●	●	●	●	●	●	●	●
P	1.4	≤850	≤250	Alloy steel	●	●	●	●	●	●	●	●	●	●	●
P	1.5	>850 ≤1200	>250 ≤350	Alloy/heat treated steel	●	●	●	●	●	●	●	●	●	●	●
P	1.6	>1200	>350	Alloy/heat treated steel	●	●	●	●	●	●	●	●	●	●	●
H	1.7	≤1400	≤400	Hardened steel to 56 HRC											
H	1.8	≤2200	≤600	Hardened steel to 65 HRC											
M	2.1	≤850	≤250	Stainless steel, sulphu-retted	◐	◐	◐	◐	◐	◐	◐	◐	◐	○	○
M	2.2	≤850	≤250	Austentic	◐	◐	◐	◐	◐	◐	◐	◐	◐	○	○
M	2.3	≤1000	≤300	Ferritic, ferritic & austen-tic, mart.	◐	◐	◐	◐	◐	◐	◐	◐	◐	○	○
K	3.1	≤500	≤150	Grey cast iron	●	●	●	●	●	●	●	●	●	●	●
K	3.2	>500 ≤1000	>150 ≤300	Grey cast iron , heat treated	●	●	●	●	●	●	●	●	●	●	●
K	3.3	400-500	200-250	Vermicular cast iron	●	●	●	●	●	●	●	●	●	●	●
K	3.4	≤700	≤200	Spher. graph. cast iron	●	●	●	●	●	●	●	●	●	●	●
K	3.5	>700 ≤1000	>200 ≤300	Spher. graph. cast iron, heat treated	●	●	●	●	●	●	●	●	●	●	●
K	3.6	≤700	≤200	Malleable iron	●	●	●	●	●	●	●	●	●	●	●
K	3.7	>700 <1000	>200 ≤300	Malleable iron, heat treated	●	●	●	●	●	●	●	●	●	●	●
S	4.1	≤700	≤200	Pure titanium	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐
S	4.2	≤900	≤270	Titanium alloys	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐
S	4.3	>900 ≤1250	>270 ≤300	Titanium alloys	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐
S	5.1	≤500	≤150	Pure nickel	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐
S	5.2	≤900	<270	Nickel alloys, heat resistant	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐
S	5.3	>900 ≤1200	>270 ≤350	Nickel alloys, high heat resistant	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐
N	6.1	≤350	≤100	Non-alloy copper	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐
N	6.2	≤700	≤200	short chip, brass, bronze, red brass	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐
N	6.3	≤700	≤200	long chip brass	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐
N	6.4	≤500	≤470	Cu-Al-Fe alloy (Ampco)	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐
N	7.1	≤350	≤100	Alu, Mg non-alloy	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐
N	7.2	≤600	≤180	Alu wrought all., break. strain (A5) <14 %	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐
N	7.3	≤600	≤180	Alu wrought all., break. strain (A5) ≥14 %	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐
N	7.4	≤600	≤180	Alu cast alloy, Si <10 %	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐
N	7.5	≤600	≤180	Alu cast alloy, Si ≥10 %	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐
N				Fibre reinforced plastics	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐
N				Graphite	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐	◐

● very good | ◐ good

Overview of the solid carbide milling cutter

	Chamfering, deburring		46 – 56 HRC			50 – 65 HRC					Aluminium					Graphite			
	FK02	FZ02	F072 XH	F142 XH	F742 XH	F041 XH	F170 XH	F322 XH	F942 XH	F642 XH	F066 HF	F071 AL	F171 AL	F371 AL	FJ AL	F044 D	F144 D	F344 D	F944 D
	Ø 6-12	Ø 6-8	Ø 1-20	Ø 4-10	Ø 6-12	Ø 6-16	Ø 6-10	Ø 1-16	Ø 6-16	Ø 6-16	Ø 6-25	Ø 3-20	Ø 3-20	Ø 3-20	Ø 4-8	Ø 3-16	Ø 3-16	Ø 3-16	Ø 4-16
	3 | 4	4	4 | 6 | 8	2 | 4	2	6 - 16	6	2	2 | 4	2 | 4	2	2 | 3	2	2	1	2	2	2	2
	HA | HB	HA | HB	HA | HB	HA | HB	HA | HB	HA | HB	HA | HB	HA | HB	HA | HB	HA | HB	HA	HA | HB	HA | HB	HA | HB	HA | HB	HA | HB	HA | HB	HA | HB	HA | HB
	TiAlN	TiAlN	AlTiN	AlTiN	AlTiN	AlTiN	AlTiN	AlTiN	AlTiN	AlTiN	TiB2	VHM	VHM	VHM	VHM	◇	◇	◇	◇
	–	–	0,1-0,2	–	–	–	–	–	–	–	–	–	–	–	–	0 -0,15	–	–	–
	–	0,5-6,0	–	0,2-2,0	1,5-3,0	–	0,3-1,0	0,5-8,0	3,0-8,0	3,0-8,0	–	–	0,5-4,0	1,5-10	–	–	0,3-2,0	1,5-8,0	2,0-8,0
	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
	●	●	◐	◐	◐	◐	◐	◐	◐	◐									
	●	●	◐	◐	◐	◐	◐	◐	◐	◐									
	●	●	◐	◐	◐	◐	◐	◐	◐	◐									
	●	●	◐	◐	◐	◐	◐	◐	◐	◐									
	●	●	◐	◐	◐	◐	◐	◐	◐	◐									
	●	●	◐	◐	◐	◐	◐	◐	◐	◐									
			○	○	○	○	○	○	○	○									
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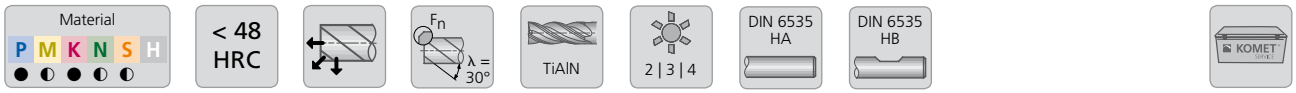
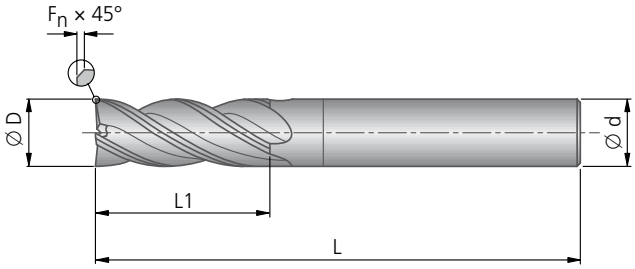
	●	●														●	●	●	●
	●	●														●	●	●	●

KOMET JEL® F.*line* F044 UNI

Ø 3 – 20 mm

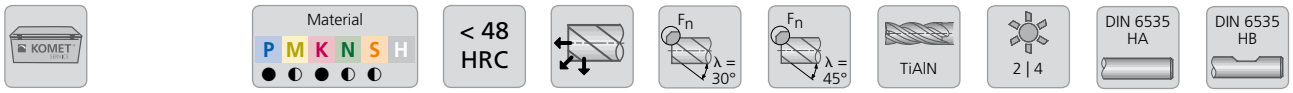
End milling cutter for universal use



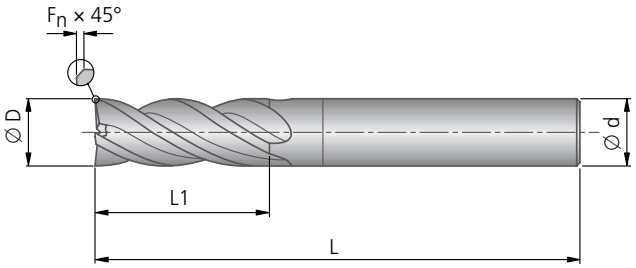


F.*line* F044 UNI					Z = 2 30°		Z = 3 30°		Z = 4 30°	
					DIN 6535 HA	DIN 6535 HB	DIN 6535 HA	DIN 6535 HB	DIN 6535 HA	DIN 6535 HB
D_{h10}	d_{h6}	L	L1	F_n	Order No.	Order No.	Order No.	Order No.	Order No.	Order No.
3	6	57	8	0,05	78900157020300	70900157020300	78901157030300	70901157030300	78902157040300	70902157040300
3	6	70	8	0,05	78900170020300	70900170020300	78901170030300	70901170030300	78902170040300	70902170040300
4	6	57	11	0,05	78900157020400	70900157020400	78901157030400	70901157030400	78902157040400	70902157040400
4	6	80	15	0,05	78900180020400	70900180020400	78901180030400	70901180030400	78902180040400	70902180040400
5	6	57	13	0,05	78900157020500	70900157020500	78901157030500	70901157030500	78902157040500	70902157040500
5	6	80	25	0,10	78900180020500	70900180020500	78901118030500	70901118030500	78902180040500	70902180040500
6	6	57	13	0,10	78900157020600	70900157020600	78901157030600	70901157030600	78902157040600	70902157040600
6	6	100	20	0,10	78900100020600	70900100020600	78901100030600	70901100030600	78902100040600	70902100040600
8	8	63	19	0,15	78900163020800	70900163020800	78901163030800	70901163030800	78902163040800	70902163040800
8	8	100	25	0,15	78900100020800	70900100020800	78901100030800	70901100030800	78902100040800	70902100040800
10	10	72	22	0,20	78900172021000	70900172021000	78901172031000	70901172031000	78902172041000	70902172041000
10	10	105	25	0,20	78900105021000	70900105021000	78901105031000	70901105031000	78902105041000	70902105041000
12	12	82	26	0,25	78900182021200	70900182021200	78901182031200	70901182031200	78902182041200	70902182041200
12	12	105	30	0,25	78900105021200	70900105021200	78901105031200	70901105031200	78902105041200	70902105041200
14	14	82	26	0,30	78900182021400	70900182021400	78901182031400	70901182031400	78902182041400	70902182041400
14	14	105	30	0,30	78900105021400	70900105021400	78901105031400	70901105031400	78902105041400	70902105041400
16	16	92	32	0,30	78900192021600	70900192021600	78901192031600	70901192031600	78902192041600	70902192041600
16	16	160	40	0,30	78900160021600	70900160021600	78901160031600	70901160031600	78902160041600	70902160041600
18	18	92	32	0,35	78900192021800	70900192021800	78901192031800	70901192031800	78902192041800	70902192041800
18	18	160	40	0,35	78900160021800	70900160021800	78901160031800	70901160031800	78902160041800	70902160041800
20	20	105	38	0,35	78900105022000	70900105022000	78901105032000	70901105032000	78902105042000	70902105042000
20	20	160	55	0,35	78900160022000	70900160022000	78901160032000	70901160032000	78902160042000	70902160042000

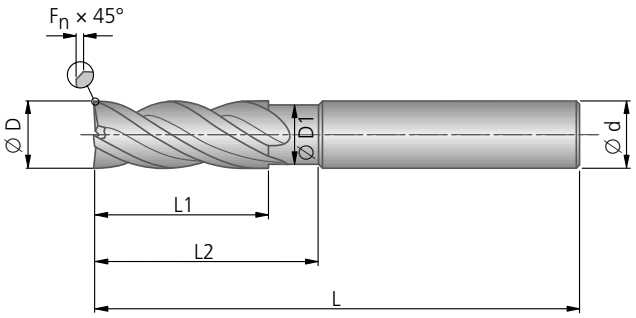
● very good | ◐ good



short dimension



long version
with neck groove



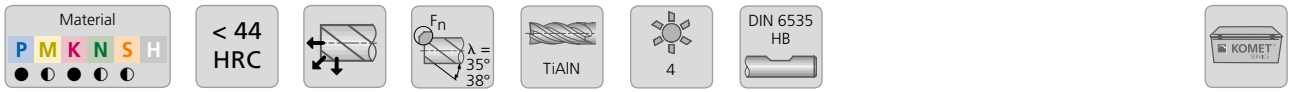
F.*line* F064 UNI							Z = 2 35°		Z = 4 45°	
							DIN 6535 HA	DIN 6535 HB	DIN 6535 HA	DIN 6535 HB
Ø D_{h10}	Ø d_{h6}	Ø D1	L	L1	L2	F_n	Order No.	Order No.	Order No.	Order No.
1	4	–	50	3	–	–	78903150020100		78904150040100	
2	6	–	50	5	–	–	78903150020200	70903150020200	78904150040200	70904150040200
2	6	–	60	8	–	–	78903160020200	70903160020200		
3	6	–	50	8	–	0,05	78903150020300	70903150020300	78904150040300	70904150040300
3	6	2,8	60	12	18	0,05	78903160020300	70903160020300	78904160040300	70904160040300
4	6	–	50	10	–	0,05	78903150020400	70903150020400	78904150040400	70904150040400
4	6	3,8	60	16	22	0,05	78903160020400	70903160020400	78904160040400	70904160040400
5	6	–	50	13	–	0,10	78903150020500	70903150020500	78904150040500	70904150040500
5	6	4,8	60	20	25	0,10	78903160020500	70903160020500	78904160040500	70904160040500
6	6	–	50	15	–	0,10	78903150020600	70903150020600	78904150040600	70904150040600
6	6	5,8	75	24	39	0,10	78903175020600	70903175020600	78904175040600	70904175040600
8	8	–	60	20	–	0,15	78903160020800	70903160020800	78904160040800	70904160040800
8	8	7,7	75	32	39	0,15	78903175020800	70903175020800	78904175040800	70904175040800
10	10	–	75	25	–	0,20	78903175021000	70903175021000	78904175041000	70904175041000
10	10	9,6	100	40	60	0,20	78903100021000	70903100021000	78904100041000	70904100041000
12	12	–	82	26	–	0,25			78904182041200	70904182041200
12	12	11,6	105	48	60	0,25			78904105041200	70904105041200
14	14	–	82	26	–	0,30			78904182041400	70904182041400
16	16	–	92	32	–	0,30			78904192041600	70904192041600
18	18	–	92	32	–	0,35			78904192041800	70904192041800
20	20	–	105	38	–	0,35			78904105042000	70904105042000

Cutting values for milling: Pages 42-43.

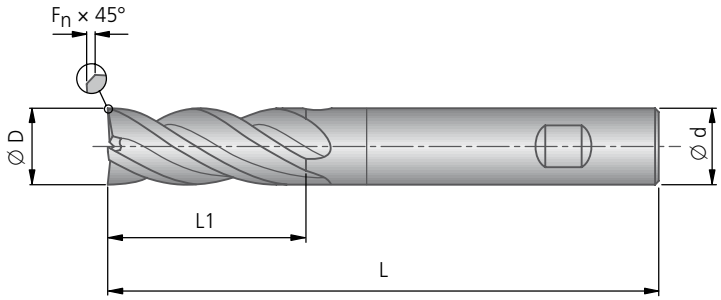
KOMET JEL® F.*line* HPC

Ø 6 – 20 mm

End milling cutter for roughing and finishing

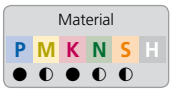


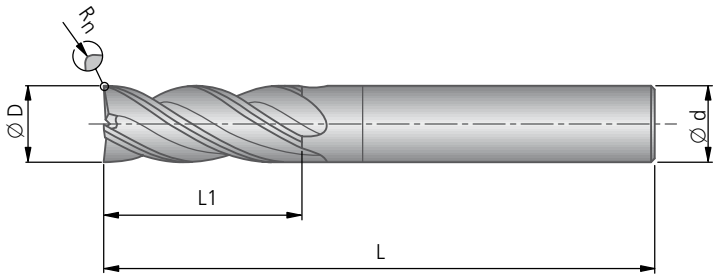
low-vibration running thanks to the uneven spiral angle of 35°/38°
two front cutters that cut as far as the centre



F.*line* HPC					Z = 4 35/38°
Ø D_{h10}	Ø d_{h6}	L	L1	F_n	DIN 6535 HB Order No.
6	6	57	13	0,2	**70906157040600**
8	8	63	19	0,2	**70906163040800**
10	10	72	22	0,3	**70906172041000**
12	12	83	26	0,3	**70906183041200**
14	14	83	26	0,3	**70906183041400**
16	16	92	32	0,4	**70906192041600**
20	20	104	38	0,5	**70906104042000**

● very good | ◐ good

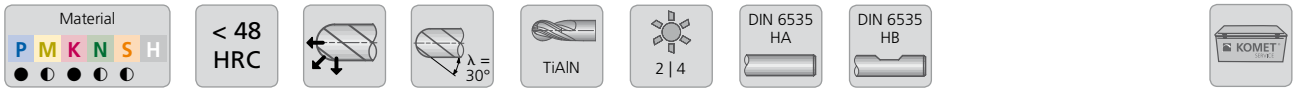



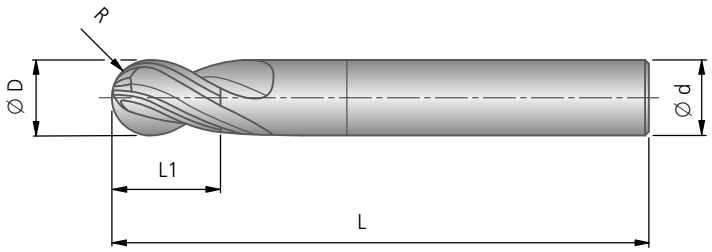
F.*line* F144					Z = 2 35°		Z = 4 45°	
					DIN 6535 HA	DIN 6535 HB	DIN 6535 HA	DIN 6535 HB
Ø D_{h10}	Ø d_{h6}	L	L1	R_n±0,02	Order No.	Order No.	Order No.	Order No.
2	3	50	5	0,5	78955150020202		78956150040202	
3	4	50	8	0,5	78955150020302		78956150040302	
4	4	50	10	0,5	78955150020402		78956150040402	
4	4	50	10	1,0	78955150020403		78956150040403	
6	6	50	15	0,5	78955150020602	70955150020602	78956150040602	70956150040602
6	6	50	15	1,0	78955150020603	70955150020603	78956150040603	70956150040603
8	8	60	20	0,5	78955160020802	70955160020802	78956160040802	70956160040802
8	8	60	20	1,0	78955160020803	70955160020803	78956160040803	70956160040803
10	10	75	25	0,5	78955175021002	70955175021002	78956175041002	70956175041002
10	10	75	25	1,0	78955175021003	70955175021003	78956175041003	70956175041003
10	10	75	25	2,0	78955175021005	70955175021005	78956175041005	70956175041005
12	12	82	26	1,5	78955182021204	70955182021204	78956182041204	70956182041204
12	12	82	26	2,0	78955182021205	70955182021205	78956182041205	70956182041205
14	14	82	26	1,5	78955182021404	70955182021404	78956182041404	70956182041404
14	14	82	26	2,0	78955182021405	70955182021405	78956182041405	70956182041405
16	16	92	32	1,5	78955192021604	70955192021604	78956192041604	70956192041604
16	16	92	32	2,0	78955192021605	70955192021605	78956192041605	70956192041605
18	18	92	32	1,5	78955192021804	70955192021804	78956192041804	70956192041804
18	18	92	32	2,0	78955192021805	70955192021805	78956192041805	70956192041805
20	20	105	38	1,5	78955105022004	70955105022004	78956105042004	70956105042004
20	20	105	38	2,0	78955105022005	70955105022005	78956105042005	70956105042005

Cutting values for milling: Pages 42-43.

KOMET JEL® F.*line* F344 Ø 1 – 20 mm

Spherical cutter for universal use

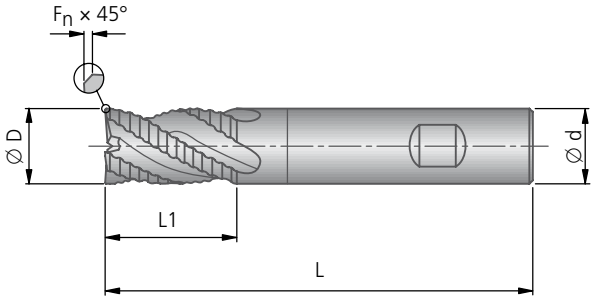




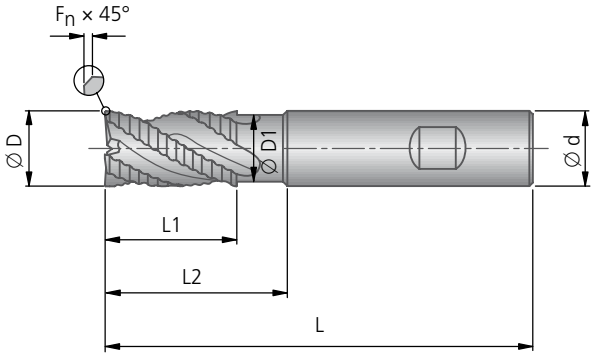
F.*line* F344					Z = 2 30°		Z = 4 30°	
					DIN 6535 HA	DIN 6535 HB	DIN 6535 HA	DIN 6535 HB
Ø D_{h10}	Ø d_{h6}	L	L1	R±0,02	Order No.	Order No.	Order No.	Order No.
1	4	50	2	0,5	78950450020100		78951450040100	
1	6	60	2	0,5	78950460020100	70950460020100		
1,5	4	50	3	0,75	78950011020150		78950011040150	
2	4	50	4	1	78950450020200		78951450040200	
2	6	60	4	1	78950460020200	70950460020200		
3	4	50	6	1,5	78950450020300		78951450040300	
3	6	60	6	1,5	78950460020300	70950460020300		
4	4	50	8	2	78950450020400		78951450040400	
4	6	75	8	2	78950475020400	70950475020400		
5	6	50	10	2,5	78950450020500	70950450020500	78951450040500	70951450040500
5	6	75	10	2,5	78950475020500	70950475020500		
6	6	50	12	3	78950450020600	70950450020600	78951450040600	70951450040600
6	6	75	12	3	78950475020600	70950475020600		
8	8	60	16	4	78950460020800	70950460020800	78951460040800	70951460040800
8	8	100	16	4	78950400020800	70950400020800		
10	10	75	20	5	78950475021000	70950475021000	78951475041000	70951475041000
10	10	100	20	5	78950400021000	70950400021000		
12	12	82	26	6	78950482021200	70950482021200	78951482041200	70951482041200
12	12	105	30	6	78950405021200	70950405021200	78951405041200	70951405041200
14	14	82	26	7	78950482021400	70950482021400	78951482041400	70951482041400
14	14	105	30	7	78950405021400	70950405021400	78951405041400	70951405041400
16	16	92	32	8	78950492021600	70950492021600	78951492041600	70951492041600
16	16	160	40	8	78950460021600	70950460021600	78951460041600	70951460041600
18	18	92	32	9	78950492021800	70950492021800	78951492041800	70951492041800
18	18	160	40	9	78950460021800	70950460021800	78951460041800	70951460041800
20	20	105	38	10	78950405022000	70950405022000	78951405042000	70951405042000
20	20	160	55	10	78950460022000	70950460022000	78951460042000	70951460042000

● very good | ◐ good


Ø 6 - 8 mm
without neck groove



≥ Ø 10 mm
with neck groove



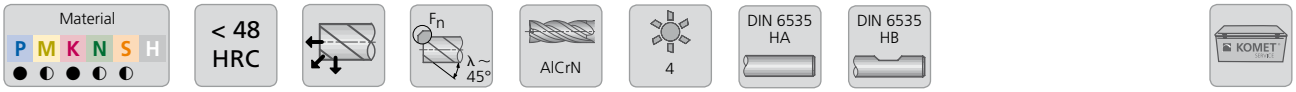
F.*line* F544							Z = 4
Ø D_{h10}	Ø d_{h6}	Ø D1	L	L1	L2	F_n	DIN 6535 HB Order No.
6	6	–	57	13	–	0,3	70905157040600
8	8	–	63	19	–	0,3	70905163040800
10	10	9,6	72	22	32	0,5	70905172041000
12	12	11,6	82	26	37	0,5	70905182041200
14	14	13,6	82	26	37	0,5	70905182041400
16	16	15,6	92	32	44	0,5	70905192041600
18	18	17,4	92	32	44	0,5	70905192041800
20	20	19,4	105	38	55	0,5	70905104042000

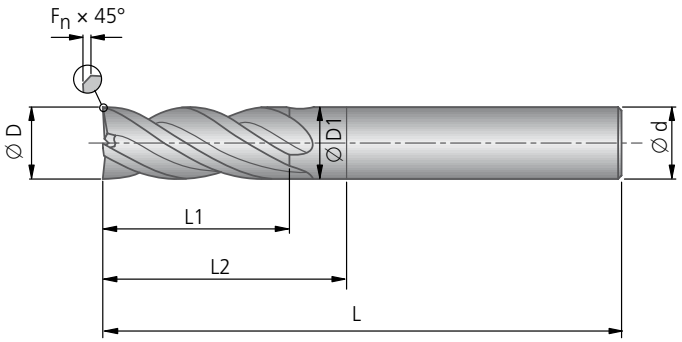
Cutting values for milling: Pages 42-43.

KOMET JEL® F.*line* F054 D

Ø 2 – 25 mm

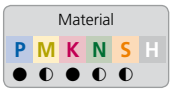
End milling cutter HPC for roughing



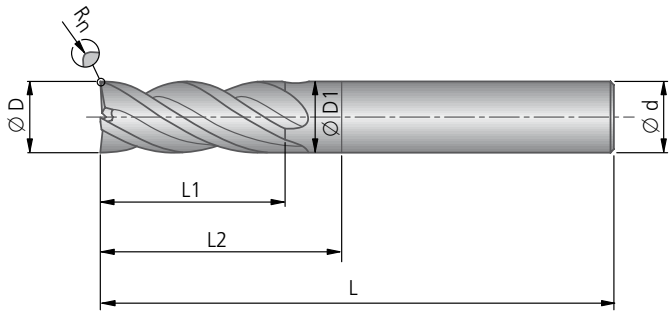


F.*line* F054 D							Z = 4 ~45°	
Ø D_{h10}	Ø d_{h6}	Ø D1	L	L1	L2	F_n	DIN 6535 HA Order No.	DIN 6535 HB Order No.
2	6	1,9	58	5	8	0,04	78916658040200	70916658040200
3	6	2,9	58	8	14	0,07	78916658040300	70916658040300
4	6	3,8	58	11	20	0,07	78916658040400	70916658040400
5	6	4,8	58	12	20	0,07	78916658040500	70916658040500
6	6	5,8	58	13	21	0,10	78916658040600	70916658040600
6	6	5,8	105	19	50	0,10	78916605040600	70916605040600
8	8	7,7	64	19	27	0,15	78916664040800	70916664040800
8	8	7,7	80	28	44	0,15	78916680040800	70916680040800
8	8	7,7	105	28	60	0,15	78916605040800	70916605040800
10	10	9,5	73	22	32	0,20	78916673041000	70916673041000
10	10	9,5	100	28	60	0,20	78916600041000	70916600041000
12	12	11,5	74	16	28	0,25	78916674041200	70916674041200
12	12	11,5	84	26	42	0,25	78916684041200	70916684041200
12	12	11,5	109	32	64	0,25	78916609041200	70916609041200
14	14	13,5	84	28	38	0,25	78916684041400	70916684041400
14	14	13,5	109	21	64	0,25	78916609041400	70916609041400
16	16	15,5	93	32	44	0,30	78916693041600	70916693041600
16	16	15,5	109	24	61	0,30	78916609041600	70916609041600
16	16	15,5	120	24	72	0,30	78916620041600	70916620041600
16	16	15,6	160	38	110	0,30	78916660041600	70916660041600
18	18	17,4	93	36	44	0,35	78916693041800	70916693041800
18	18	17,4	109	27	61	0,35	78916609041800	70916609041800
18	18	17,4	160	38	110	0,35	78916660041800	70916660041800
20	20	19,4	105	40	54	0,35	78916605042000	70916605042000
20	20	19,4	160	45	110	0,35	78916660042000	70916660042000
25	25	24,4	125	50	69	0,35	78916625042500	70916625042500
25	25	24,4	160	40	104	0,35	78916660042500	70916660042500

● very good | ◐ good


with corner radius



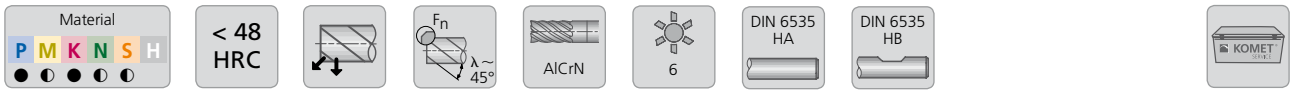
F.*line* F154 D							Z = 4 ~45°	
Ø D_{h10}	Ø d_{h6}	Ø D1	L	L1	L2	R_n±0,02	DIN 6535 HA Order No.	DIN 6535 HB Order No.
3	6	2,9	58	8	14	0,2	78921011250300	70921011250300
3	6	2,9	58	8	14	0,3	78921011260300	70921011260300
3	6	2,9	58	8	14	0,5	78921011280300	70921011280300
4	6	3,8	58	11	20	0,2	78921011250400	70921011250400
4	6	3,8	58	11	20	0,4	78921011270400	70921011270400
4	6	3,8	58	11	20	0,5	78921011280400	70921011280400
5	6	4,8	58	12	20	0,2	78921011250500	70921011250500
5	6	4,8	58	12	20	0,5	78921011280500	70921011280500
5	6	4,8	58	12	20	1,0	78921011310500	70921011310500
6	6	5,8	58	13	21	0,2	78921011250600	70921011250600
6	6	5,8	58	13	21	0,5	78921011280600	70921011280600
6	6	5,8	58	13	21	1,0	78921011310600	70921011310600
8	8	7,7	64	19	27	0,2	78921011250800	70921011250800
8	8	7,7	64	19	27	0,5	78921011280800	70921011280800
8	8	7,7	64	19	27	1,0	78921011310800	70921011310800
8	8	7,7	64	19	27	2,0	78921011330800	70921011330800
10	10	9,5	73	22	32	0,2	78921011251000	70921011251000
10	10	9,5	73	22	32	0,5	78921011281000	70921011281000
10	10	9,5	73	22	32	1,0	78921011311000	70921011311000
10	10	9,5	73	22	32	1,5	78921011321000	70921011321000
10	10	9,5	73	22	32	2,0	78921011331000	70921011331000
12	12	11,5	84	26	42	0,2	78921011251200	70921011251200
12	12	11,5	84	26	42	0,5	78921011281200	70921011281200
12	12	11,5	84	26	42	1,0	78921011311200	70921011311200
12	12	11,5	84	26	42	1,5	78921011321200	70921011321200
12	12	11,5	84	26	42	2,0	78921011331200	70921011331200
14	14	13,5	84	28	38	1,0	78921011311400	70921011311400
16	16	15,5	93	32	44	0,3	78921011261600	70921011261600
16	16	15,5	93	32	44	0,5	78921011281600	70921011281600
16	16	15,5	93	32	44	1,0	78921011311600	70921011311600
16	16	15,5	93	32	44	2,0	78921011331600	70921011331600
16	16	15,5	93	32	44	4,0	78921011361600	70921011361600
20	20	19,4	105	40	54	0,3	78921011262000	70921011262000
20	20	19,4	105	40	54	0,5	78921011282000	70921011282000
20	20	19,4	105	40	54	1,0	78921011312000	70921011312000
20	20	19,4	105	40	54	2,0	78921011332000	70921011332000

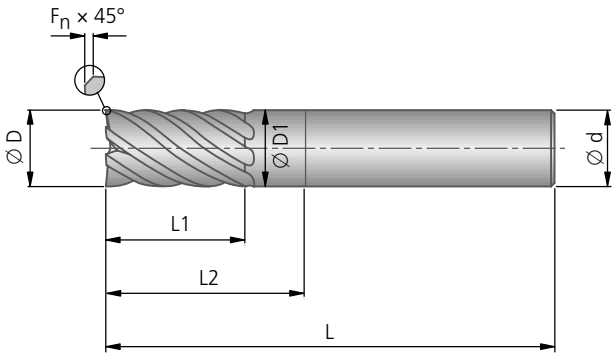
Cutting values for milling: Pages 42-43.

KOMET JEL® F.*line* F054 F

Ø 6 – 25 mm

End milling cutter HPC for finish machining

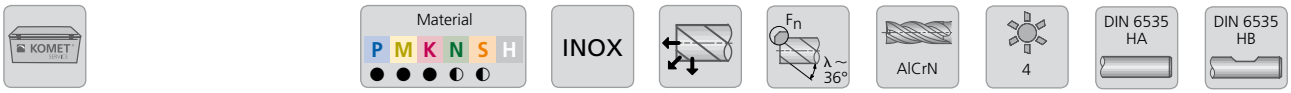


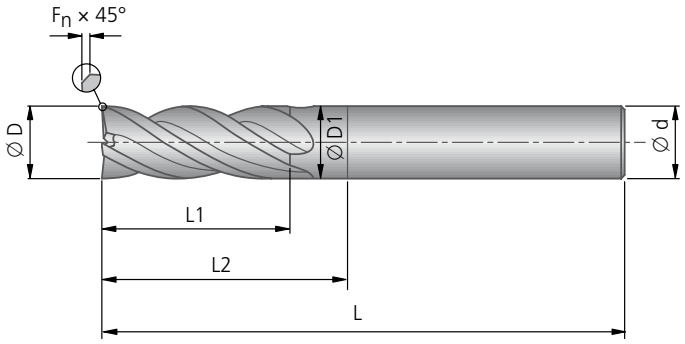


F.*line* F054 F							Z = 6 ~45°	
Ø D_{h10}	Ø d_{h6}	Ø D1	L	L1	L2	F_n	DIN 6535 HA Order No.	DIN 6535 HB Order No.
6	6	5,8	58	19	21	0,05	78917658060600	70917658060600
6	6	5,8	100	19	64	0,05	78917600060600	70917600060600
6	6	5,8	100	35	64	0,05	78917600060601	70917600060601
8	8	–	64	25	–	0,05	78917664060800	70917664060800
8	8	7,7	100	25	64	0,05	78917600060800	70917600060800
8	8	7,7	100	45	64	0,05	78917600060801	70917600060801
10	10	–	73	30	–	0,12	78917673061000	70917673061000
10	10	9,6	100	28	60	0,12	78917600061000	70917600061000
10	10	9,6	100	50	60	0,12	78917600061001	70917600061001
12	12	11,6	84	32	37	0,12	78917684061200	70917684061200
12	12	11,6	100	32	55	0,12	78917600061200	70917600061200
12	12	11,6	120	60	75	0,12	78917620061200	70917620061200
16	16	15,6	93	38	44	0,15	78917693061600	70917693061600
16	16	15,6	160	38	110	0,15	78917660061600	70917660061600
16	16	15,6	160	80	110	0,15	78917660061601	70917660061601
18	18	17,4	93	38	44	0,15	78917693061800	70917693061800
18	18	17,4	160	38	110	0,15	78917660061800	70917660061800
18	18	17,4	160	90	100	0,15	78917660061801	70917660061801
20	20	19,4	105	45	55	0,15	78917605062000	70917605062000
20	20	19,4	160	45	110	0,15	78917660062000	70917660062000
20	20	19,4	160	90	110	0,15	78917660062001	70917660062001
25	25	24,4	160	55	104	0,15	78917660062500	70917660062500
25	25	–	160	100	–	0,15	78917660062501	70917660062501

● very good | ◐ good

End milling cutter for stainless steel machining





F.*line* F055 INOX							Z = 4 ~36°	
Ø D_{h10}	Ø d_{h6}	Ø D1	L	L1	L2	F_n	DIN 6535 HA Order No.	DIN 6535 HB Order No.
2	6	1,9	58	5	11	0,05	78918002040200	70918002040200
2,5	6	2,4	58	5	11	0,05	78918001040250	70918001040250
3	6	2,9	58	8	15	0,07	78918002040300	70918002040300
4	6	3,8	58	10	17	0,07	78918002040400	70918002040400
5	6	4,8	58	13	20	0,07	78918002040500	70918002040500
6	6	5,8	58	13	21	0,10	78918001040600	70918001040600
6	6	5,8	80	19	43	0,10	78918002040600	70918002040600
8	8	7,7	64	19	27	0,15	78918001040800	70918001040800
8	8	7,7	80	28	43	0,15	78918002040800	70918002040800
10	10	9,5	73	22	32	0,20	78918001041000	70918001041000
10	10	9,5	100	32	59	0,20	78918002041000	70918002041000
12	12	11,5	74	16	28	0,25	78918011041200	70918011041200
12	12	11,5	84	26	38	0,25	78918012041200	70918012041200
12	12	11,5	94	26	48	0,25	78918021041200	70918021041200
12	12	11,5	109	38	63	0,25	78918022041200	70918022041200
14	14	13,5	84	28	38	0,25	78918001041400	70918001041400
14	14	13,5	109	40	63	0,25	78918002041400	70918002041400
16	16	15,5	93	32	44	0,30	78918011041600	70918011041600
16	16	15,5	109	36	60	0,30	78918012041600	70918012041600
16	16	15,5	120	45	71	0,30	78918022041600	70918022041600
18	18	17,5	93	36	44	0,35	78918011041800	70918011041800
18	18	17,5	109	38	60	0,35	78918012041800	70918012041800
18	18	17,5	160	50	111	0,35	78918022041800	70918022041800
20	20	19,5	105	40	54	0,35	78918001042000	70918001042000
20	20	19,5	160	60	109	0,35	78918002042000	70918002042000
25	25	24,5	125	55	68	0,35	78918001042500	70918001042500
25	25	24,5	160	70	103	0,35	78918002042500	70918002042500

Cutting values for milling: Pages 42-43.

KOMET JEL® F.*line* F155 INOX Ø 2 – 6 mm

End milling cutter for stainless steel machining

Material P M K N S H

INOX

Rn λ ~ 36°

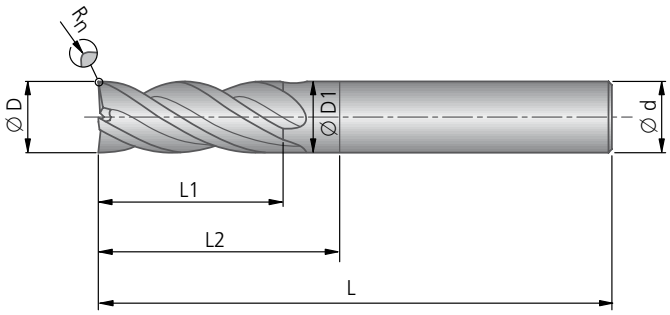
AlCrN

4

DIN 6535 HA

DIN 6535 HB

with corner radius

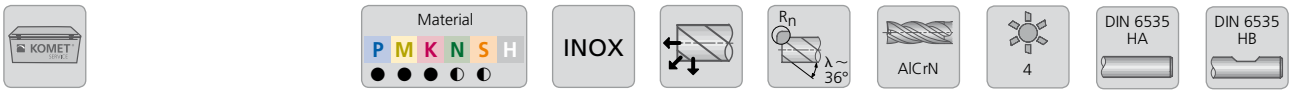


F.*line* F155 INOX							Z = 4 ~36°	
Ø D_{h10}	Ø d_{h6}	Ø D1	L	L1	L2	R_n±0,02	DIN 6535 HA Order No.	DIN 6535 HB Order No.
2	6	1,9	58	5	11	0,2	78919002250200	70919002250200
						0,3	78919002260200	70919002260200
						0,4	78919002270200	70919002270200
3	6	2,9	58	8	15	0,2	78919002250300	70919002250300
						0,3	78919002260300	70919002260300
						0,4	78919002270300	70919002270300
						0,5	78919002280300	70919002280300
						0,8	78919002300300	70919002300300
						1,0	78919002310300	70919002310300
4	6	3,8	58	10	17	0,2	78919002250400	70919002250400
						0,3	78919002260400	70919002260400
						0,4	78919002270400	70919002270400
						0,5	78919002280400	70919002280400
						0,8	78919002300400	70919002300400
						1,0	78919002310400	70919002310400
5	6	4,8	58	13	20	0,2	78919002250500	70919002250500
						0,3	78919002260500	70919002260500
						0,4	78919002270500	70919002270500
						0,5	78919002280500	70919002280500
						0,8	78919002300500	70919002300500
						1,0	78919002310500	70919002310500
6	6	5,8	58	13	21	0,2	78919001250600	70919001250600
						0,3	78919001260600	70919001260600
						0,4	78919001270600	70919001270600
						0,5	78919001280600	70919001280600
						0,8	78919001300600	70919001300600
						1,0	78919001310600	70919001310600
						1,5	78919001320600	70919001320600

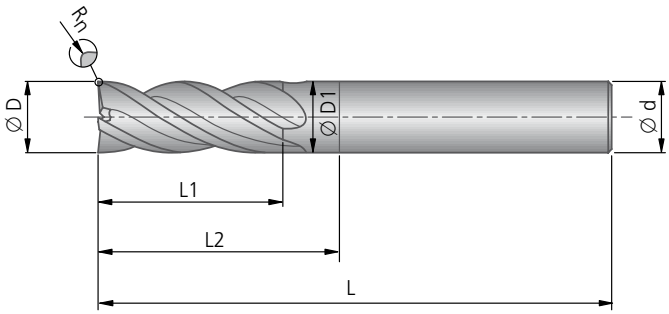
Other diameters see the following page.

● very good | ◐ good

End milling cutter for stainless steel machining



with corner radius



F.*line* F155 INOX							Z = 4 ~36°	
							DIN 6535 HA	DIN 6535 HB
Ø D_{h10}	Ø d_{h6}	Ø D1	L	L1	L2	R_n±0,02	Order No.	Order No.
8	8	7,7	64	19	27	0,3	78919001260800	70919001260800
						0,4	78919001270800	70919001270800
						0,5	78919001280800	70919001280800
						0,8	78919001300800	70919001300800
						1,0	78919001310800	70919001310800
						1,5	78919001320800	70919001320800
						2,0	78919001330800	70919001330800
10	10	9,5	73	22	32	0,3	78919001261000	70919001261000
						0,4	78919001271000	70919001271000
						0,5	78919001281000	70919001281000
						0,8	78919001301000	70919001301000
						1,0	78919001311000	70919001311000
						1,5	78919001321000	70919001321000
						2,0	78919001331000	70919001331000
12	12	11,5	84	26	38	0,4	78919012271200	70919012271200
						0,5	78919012281200	70919012281200
						0,8	78919012301200	70919012301200
						1,0	78919012311200	70919012311200
						1,5	78919012321200	70919012321200
						2,0	78919012331200	70919012331200
						2,5	78919012341200	70919012341200
						3,0	78919012351200	70919012351200
						4,0	78919012361200	70919012361200
14	14	13,5	84	28	38	0,4	78919001271400	70919001271400
						0,5	78919001281400	70919001281400
						0,8	78919001301400	70919001301400
						1,0	78919001311400	70919001311400
						1,5	78919001321400	70919001321400
						2,0	78919001331400	70919001331400
						3,0	78919001351400	70919001351400
						4,0	78919001361400	70919001361400

Other diameters see the following page.

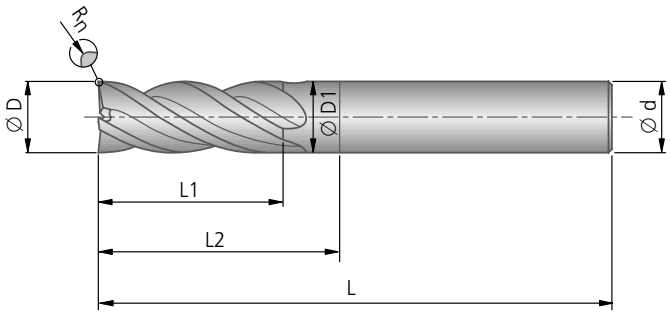
Cutting values for milling: Pages 42-43.

KOMET JEL® F.*line* F155 INOX Ø 16 – 20 mm

End milling cutter for stainless steel machining

Material P M K N S H ● ● ● ◐ ◐ | INOX | Rn | λ ~ 36° | AlCrN | 4 | DIN 6535 HA | DIN 6535 HB | KOMET

with corner radius



F.*line* F155 INOX							Z = 4 ~36°	
Ø D_{h10}	Ø d_{h6}	Ø D1	L	L1	L2	R_n±0,02	DIN 6535 HA Order No.	DIN 6535 HB Order No.
16	16	15,5	93	32	44	0,5	78919011281600	70919011281600
						0,8	78919011301600	70919011301600
						1,0	78919011311600	70919011311600
						1,5	78919011321600	70919011321600
						2,0	78919011331600	70919011331600
						2,5	78919011341600	70919011341600
						3,0	78919011351600	70919011351600
						4,0	78919011361600	70919011361600
						5,0	78919012371600	70919012371600
18	18	17,5	93	36	44	0,8	78919011301800	70919011301800
						1,0	78919011311800	70919011311800
						1,5	78919011321800	70919011321800
						2,0	78919011331800	70919011331800
						2,5	78919011341800	70919011341800
						3,0	78919011351800	70919011351800
						4,0	78919011361800	70919011361800
						5,0	78919011371800	70919011371800
20	20	19,5	105	40	54	0,8	78919001302000	70919001302000
						1,0	78919001312000	70919001312000
						1,5	78919001322000	70919001322000
						2,0	78919001332000	70919001332000
						2,5	78919001342000	70919001342000
						3,0	78919001352000	70919001352000
						4,0	78919001362000	70919001362000
						5,0	78919001372000	70919001372000
						6,35	78919001382000	70919001382000

● very good | ◐ good

Chamfer milling cutter

Material: P M K N S H

< 56 HRC

60° | 90°

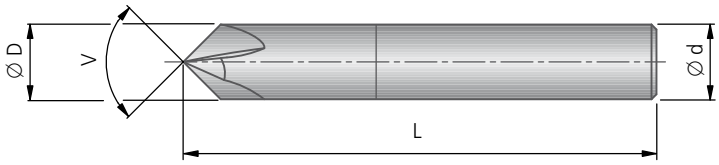
TiAlN

3 | 4

DIN 6535 HA

DIN 6535 HB

for chamfering and deburring of workpiece edges



F.*line* FK02				V = 60°		V = 90°	
				DIN 6535 HA	DIN 6535 HB	DIN 6535 HA	DIN 6535 HB
Ø D_{h10}	Ø d_{h6}	L	Z	Order No.	Order No.	Order No.	Order No.
6	6	57	3	78920557030600	70920557030600	78921557030600	70921557030600
8	8	63	3	78920563030800	70920563030800	78921563030800	70921563030800
10	10	72	4	78920572041000	70920572041000	78921572041000	70921572041000
12	12	82	4	78920582041200	70920582041200	78921582041200	70921582041200

Cutting values for milling: Pages 42-43.

KOMET JEL® F.*line* FZ02 Ø 6 – 8 mm

Radius milling cutter

Material P M K N S H

< 56 HRC

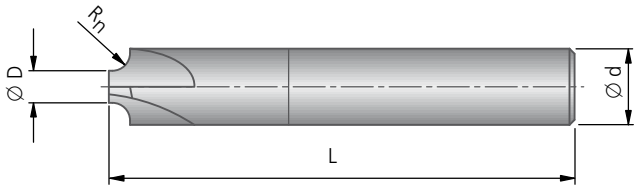
TiAlN

4

DIN 6535 HA

DIN 6535 HB

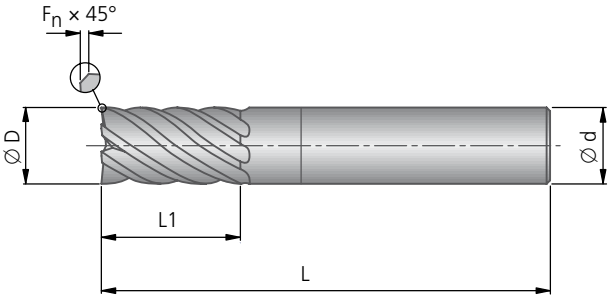
for chamfering and deburring edges an contours



F.*line* FZ02				Z = 4	
Ø D_{h10}	Ø d_{h6}	L	R_n±0,02	DIN 6535 HA Order No.	DIN 6535 HB Order No.
6	8	70	1,0	78922570040603	70922570040603
6	10	75	2,0	78922575040605	70922575040605
6	12	75	3,0	78922575040607	70922575040607
6	16	75	5,0	78922575040609	70922575040609
7	8	70	0,5	78922570040702	70922570040702
8	16	75	4,0	78922575040808	70922575040808
8	20	80	6,0	78922580040810	70922580040809

● very good | ◐ good

End milling cutter for finish machining on hardened steel



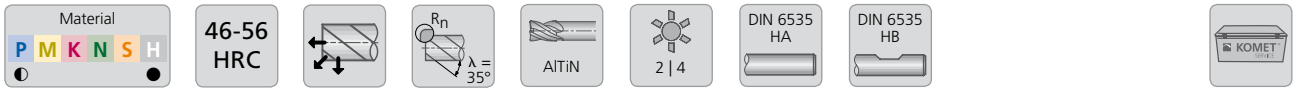
F.*line* F072 XH								
Ø D_{h10}	Ø d_{h6}	L	L1	F_n	λ	Z	DIN 6535 HA Order No.	DIN 6535 HB Order No.
1	4	50	1,5	–	35°	4	78910011040100	
1,5	4	50	2	–	35°	4	78910011040150	
2	4	50	3	–	35°	4	78910250040200	
3	6	50	4	–	50°	4	78910250040300	70910250040300
4	6	50	5	–	50°	4	78910250040400	70910250040400
6	6	57	13	–	50°	6	78910257060600	70910257060600
8	8	63	19	–	50°	6	78910263060800	70910263060800
8	8	100	25	–	50°	6	78910200060800	70910200060800
10	10	72	22	0,1	50°	6	78910272061000	70910272061000
10	10	105	25	0,1	50°	6	78910205061000	70910205061000
12	12	82	26	0,1	50°	6	78910282061200	70910282061200
12	12	105	30	0,1	50°	6	78910205061200	70910205061200
16	16	92	32	0,2	50°	8	78910292081600	70910292081600
16	16	160	40	0,2	50°	8	78910260081600	70910260081600
18	18	92	32	0,2	50°	8	78910292081800	70910292081800
18	18	160	40	0,2	50°	8	78910260081800	70910260081800
20	20	105	38	0,2	50°	8	78910205082000	70910205082000
20	20	160	55	0,2	50°	8	78910260082000	70910260082000

Cutting values for milling: Pages 42-43.

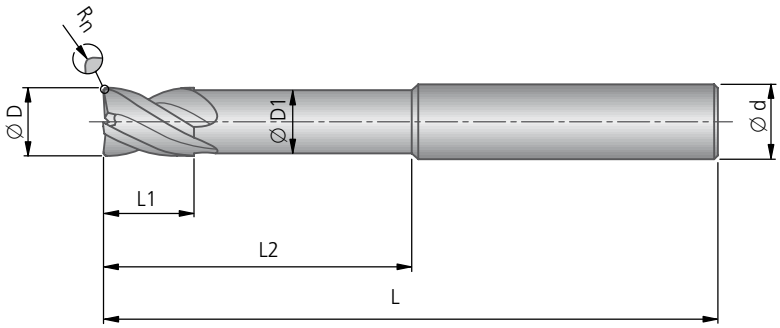
KOMET JEL® F.*line* F142 XH

Ø 4 – 10 mm

End milling cutter for use on hardened steel



with corner radius



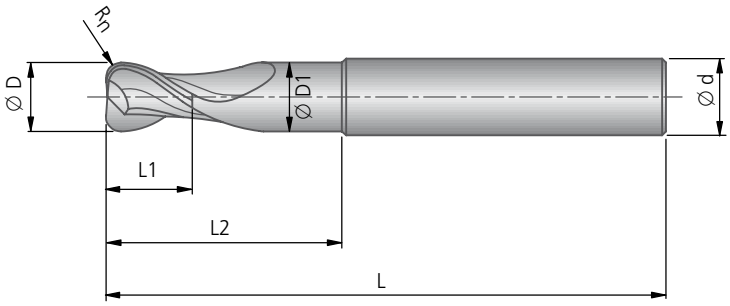
F.*line* F142 XH							Z = 2 35°		Z = 4 35°	
Ø D_{h10}	Ø d_{h6}	Ø D1	L	L1	L2	R_n±0,02	DIN 6535 HA Order No.	DIN 6535 HB Order No.	DIN 6535 HA Order No.	DIN 6535 HB Order No.
4	6	3,7	50	4	10	0,2	78912011250400	70912011250400		
4	6	3,7	50	4	10	0,5	78912250020402	70912250020402		
4	6	3,7	75	4	10	0,5			78913275040402	70913275040402
5	6	4,7	75	5	13	0,5			78912011280500	70912011280500
5	6	4,7	75	5	13	1,0			78912011310500	70912011310500
6	6	5,6	50	6	15	0,5	78912250020602	70912250020602		
6	6	5,6	75	6	15	0,5			78913275040602	70913275040602
6	6	5,6	75	6	15	1,0			78913275040603	70913275040603
8	8	7,6	60	8	20	0,5	78912260020802	70912260020802		
8	8	7,6	60	8	20	1,0	78912260020803	70912260020803		
8	8	7,6	60	8	20	2,0	78912260020805	70912260020805		
8	8	7,6	100	8	20	0,5			78913200040802	70913200040802
8	8	7,6	100	8	20	1,0			78913200040803	70913200040803
10	10	9,6	75	10	25	0,5	78912275021002	70912275021002		
10	10	9,6	75	10	25	1,0	78912275021003	70912275021003		
10	10	9,6	75	10	25	2,0	78912275021005	70912275021005		
10	10	9,6	100	10	25	1,0			78913200041003	70913200041003
10	10	9,6	100	10	25	2,0			78913200041005	70913200041005

● very good | ◐ good

KOMET JEL® F.*line* F742 XH

Torus milling cutter for use on hardened steel

with neck groove
front cutting for plunging
used especially in mould and die making for copy milling



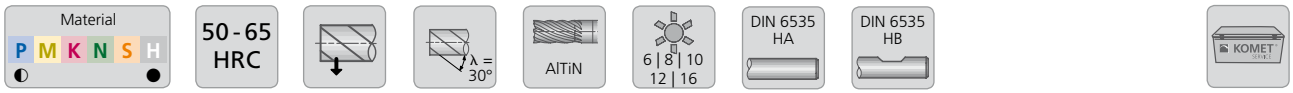
F.*line* F742 XH							Z = 2	
Ø D_{h10}	Ø d_{h6}	Ø D1	L	L1	L2	R_n±0,02	DIN 6535 HA Order No.	DIN 6535 HB Order No.
6	6	5,4	100	8	30	1,5	78915200020604	70915200020604
8	8	7,2	100	10	30	2,0	78915200020805	70915200020805
10	10	9	100	12	35	2,5	78915200021006	70915200021006
12	12	11	105	14	40	3,0	78915205021207	70915205021207

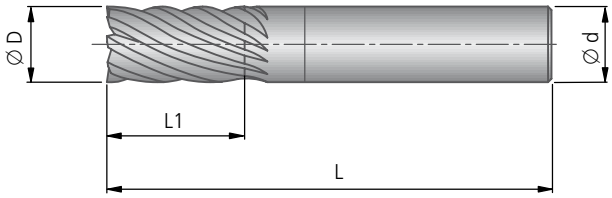
Cutting values for milling: Pages 42-43.

KOMET JEL® F.*line* F041 XH

Ø 6 – 16 mm

End milling cutter for finish machining on hardened steel





F.*line* F041 XH						
Ø D_{h10}	Ø d_{h6}	L	L1	Z	DIN 6535 HA Order No.	DIN 6535 HB Order No.
6	6	57	13	6	78911257060600	70911257060600
8	8	63	19	8	78911263080800	70911263080800
10	10	72	22	10	78911272101000	70911272101000
12	12	82	26	12	78911282121200	70911282121200
16	16	92	32	16	78911292161600	70911292161600

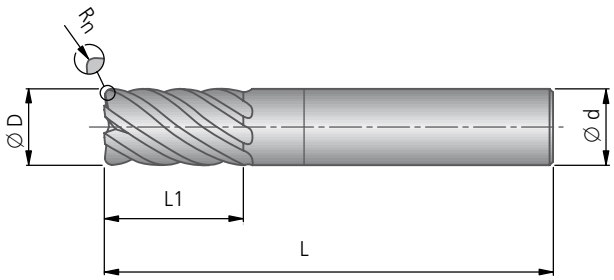
● very good | ◐ good

KOMET JEL® F.*line* F170 XH

End milling cutter for finish machining on hardened steel

Material P M K N S H | 50-65 HRC | R_n | λ = 50° | AlTiN | 6 | DIN 6535 HA | DIN 6535 HB

with corner radius



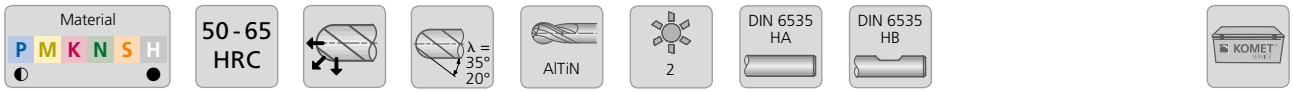
F.*line* F170 XH					Z = 6	
					DIN 6535 HA	DIN 6535 HB
Ø D_{h10}	Ø d_{h6}	L	L1	R_n±0,02	Order No.	Order No.
6	6	50	15	0,3	78914250060601	70914250060601
6	6	50	15	0,5	78914250060602	70914250060602
8	8	60	20	0,3	78914260060801	70914260060801
8	8	60	20	0,5	78914260060802	70914260060802
10	10	75	25	0,5	78914275061002	70914275061002
10	10	75	25	1,0	78914275061003	70914275061003

Cutting values for milling: Pages 42-43.

KOMET JEL® F.*line* F322 XH

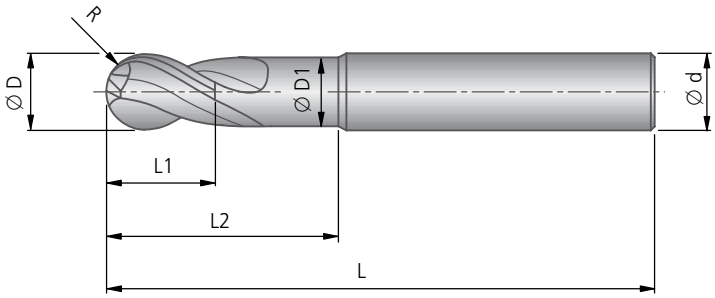
Ø 1 – 16 mm

Spherical cutter for use on hardened steel



front cutting technology for plunging

≧ Ø 6 mm
with neck groove



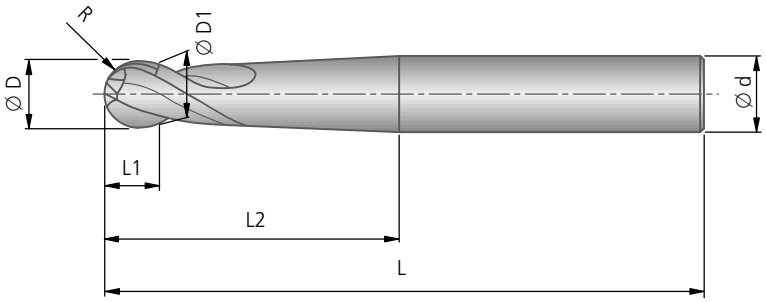
F.*line* F322 XH								Z = 2	
Ø D_{h10}	Ø d_{h6}	Ø D1	L	L1	L2	R±0,02	λ	DIN 6535 HA Order No.	DIN 6535 HB Order No.
1	4	–	50	1,5	8	0,5	35°	78951011020100	
1,5	4	–	50	2	10	0,75	35°	78951011020150	
2	4	–	50	3	10	1	35°	78952450020200	
3	6	–	50	4	10	1.5	20°	78952450020300	70952450020300
4	6	–	50	5	16	2	20°	78952450020400	70952450020400
6	6	5,6	80	6	20	3	20°	78952480020600	70952480020600
8	8	7,6	80	8	25	4	20°	78952480020800	70952480020800
10	10	9,6	105	10	30	5	20°	78952405021000	70952405021000
12	12	11,6	105	12	32	6	20°	78952405021200	70952405021200
16	16	15,6	105	16	36	8	20°	78952405021600	70952405021600

● very good | ◐ good

KOMET JEL® F.*line* F942 XH

Spherical cutter for use on hardened steel

conical version



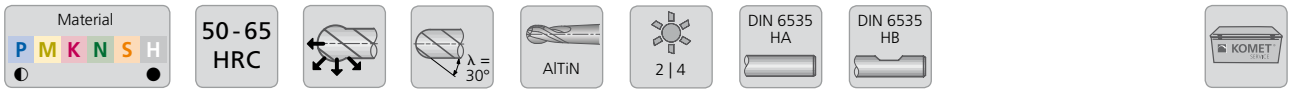
F.*line* F942 XH							Z = 2 30°		Z = 4 30°	
Ø D_{h10}	Ø d_{h6}	Ø D1	L	L1	L2	R±0,02	DIN 6535 HA Order No.	DIN 6535 HB Order No.	DIN 6535 HA Order No.	DIN 6535 HB Order No.
6	6	4,7	100	4,9	30	3	78953400020600	70953400020600	78954400040600	70954400040600
8	8	6,5	100	6,3	36	4	78953400020800	70953400020800	78954400040800	70954400040800
10	10	8,2	100	7,9	43	5	78953400021000	70953400021000	78954400041000	70954400041000
12	12	9,8	100	9,5	52	6	78953400021200	70953400021200	78954400041200	70954400041200
16	16	13,4	160	12,4	61	8	78953460021600	70953460021600	78954460041600	70954460041600

Cutting values for milling: Pages 42-43.

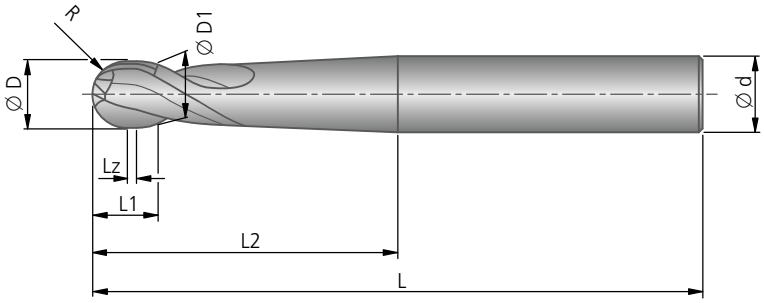
KOMET JEL® F.*line* F642 XH

Ø 6 – 16 mm

Spherical cutter for use on hardened steel



conical version



F.*line* F642 XH								Z = 2 30°		Z = 4 30°	
Ø D_{h10}	Ø d_{h6}	Ø D1	L	L1	L2	Lz	R±0,02	DIN 6535 HA Order No.	DIN 6535 HB Order No.	DIN 6535 HA Order No.	DIN 6535 HB Order No.
6	6	4,7	100	7	30	2	3	78953401020600	70953401020600	78954401040600	70954401040600
8	8	6,5	100	9	36	3	4	78953401020800	70953401020800	78954401040800	70954401040800
10	10	8,2	100	11	43	3	5	78953401021000	70953401021000	78954401041000	70954401041000
12	12	9,8	100	13	52	3	6	78953401021200	70953401021200	78954401041200	70954401041200
16	16	13,4	160	15	61	3	8	78953401021600	70953401021600	78954401041600	70954401041600

● very good | ◐ good

High-speed end milling cutter for aluminium machining

Material: P M K N S H

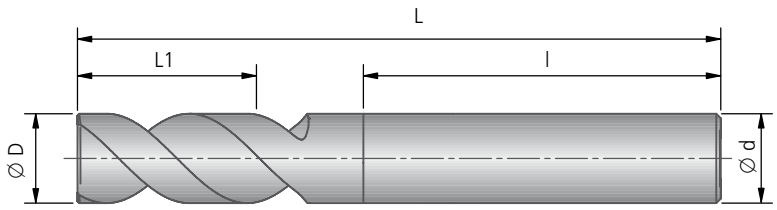
λ = 45°

TiB2

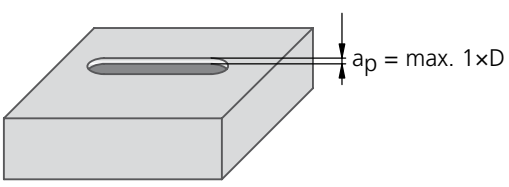
2

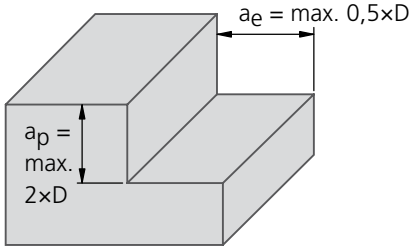
DIN 6535 HA

front-cutting



F.*line* F066					Z = 2
Ø D	Ø d	l	L	L1	DIN 6535 HA Order No.
6	6	36	57	12	**78931057000600**
8	8	36	63	16	**78931063000800**
10	10	40	72	20	**78931072001000**
12	12	45	83	24	**78931083001200**
16	16	48	90	35	**78931090001600**
20	20	50	104	40	**78931004002000**
25	25	56	120	45	**78931020002500**



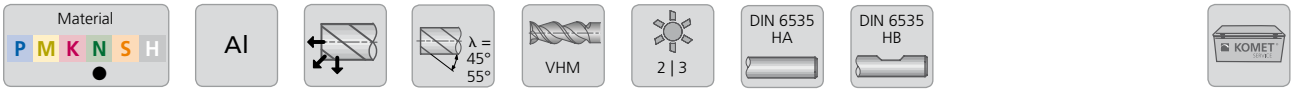


Cutting values for milling: Pages 42-43.

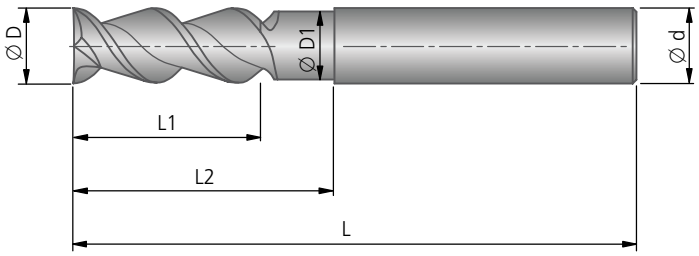
KOMET JEL® F.*line* F071 AL

Ø 3 – 20 mm

End milling cutter for aluminium machining



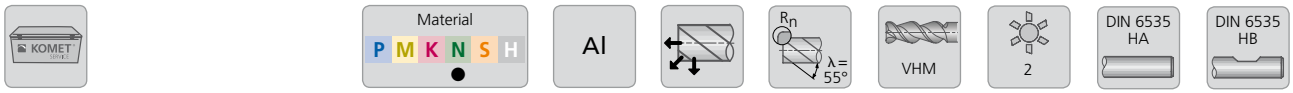
polished flutes



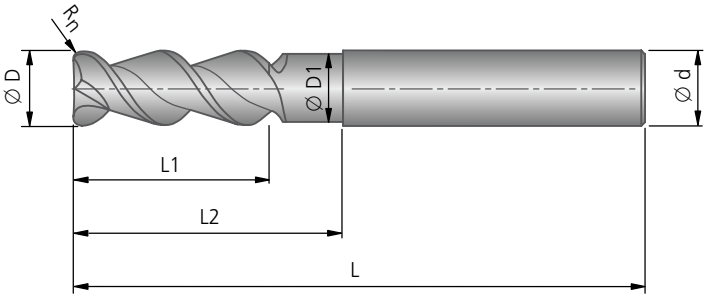
F.*line* F071 AL						Z = 2 55°		Z = 3 45°	
Ø D_{h10}	Ø d_{h6}	Ø D1	L	L1	L2	DIN 6535 HA Order No.	DIN 6535 HB Order No.	DIN 6535 HA Order No.	DIN 6535 HB Order No.
3	6	2,8	58	5	17	78907011020300	70907011020300	78907011030300	70907011030300
3	6	2,8	58	8	17	78907012020300	70907012020300		
3	6	2,8	64	12	25			78907012030300	70907012030300
4	6	3,7	58	6	19	78907011020400	70907011020400		
4	6	3,7	58	11	19	78907012020400	70907012020400	78907011030400	70907011030400
4	6	3,7	64	17	26			78907012030400	70907012030400
5	6	4,6	58	8	20	78907011020500	70907011020500		
5	6	4,6	58	13	20	78907012020500	70907012020500	78907011030500	70907011030500
5	6	4,6	64	19	26			78907012030500	70907012030500
6	6	5,5	58	8	21	78907011020600	70907011020600		
6	6	5,5	58	13	21	78907012020600	70907012020600	78907011030600	70907011030600
6	6	5,5	64	19	27			78907012030600	70907012030600
6	6	5,5	81	26	44			78907022030600	70907022030600
8	8	7,4	64	10	27	78907011020800	70907011020800		
8	8	7,4	64	19	27	78907012020800	70907012020800	78907011030800	70907011030800
8	8	7,4	81	28	44			78907012030800	70907012030800
8	8	7,4	81	36	44			78907022030800	70907022030800
10	10	9,2	73	12	32	78907011021000	70907011021000		
10	10	9,2	73	22	32	78907012021000	70907012021000	78907011031000	70907011031000
10	10	9,2	81	34	40			78907012031000	70907012031000
10	10	9,2	109	45	68			78907022031000	70907022031000
12	12	11	84	14	38	78907011021200	70907011021200		
12	12	11	84	26	38	78907012021200	70907012021200	78907011031200	70907011031200
12	12	11	109	40	63			78907012031200	70907012031200
12	12	11	109	53	63			78907022031200	70907022031200
16	16	15	93	18	44	78907011021600	70907011021600		
16	16	15	93	32	44	78907012021600	70907012021600	78907011031600	70907011031600
16	16	15	109	48	60			78907012031600	70907012031600
16	16	15	160	63	110			78907022031600	70907022031600
20	20	19	105	22	55	78907011022000	70907011022000		
20	20	19	105	38	55	78907012022000	70907012022000	78907011032000	70907011032000
20	20	19	160	56	110			78907012032000	70907012032000
20	20	19	160	75	110			78907022032000	70907022032000

● very good | ◐ good

End milling cutter for aluminium machining



polished flutes
with corner radius



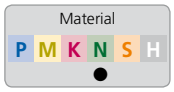
F.*line* F171 AL							Z = 2 55°	
Ø D_{h10}	Ø d_{h6}	Ø D1	L	L1	L2	R_n±0,02	DIN 6535 HA Order No.	DIN 6535 HB Order No.
3	6	2,8	58	8	17	0,5	78908012280300	70908012280300
4	6	3,7	58	11	19	0,5	78908012280400	70908012280400
5	6	4,6	58	13	20	0,5	78908012280500	70908012280500
6	6	5,5	58	13	21	0,5	78908012280600	70908012280600
6	6	5,5	58	13	21	1,0	78908012310600	70908012310600
8	8	7,4	64	19	27	0,5	78908012280800	70908012280800
8	8	7,4	64	19	27	1,0	78908012310800	70908012310800
10	10	9,2	73	22	32	0,5	78908012281000	70908012281000
10	10	9,2	73	22	32	1,0	78908012311000	70908012311000
10	10	9,2	73	22	32	1,5	78908012321000	70908012321000
12	12	11	84	26	38	0,5	78908012281200	70908012281200
12	12	11	84	26	38	1,0	78908012311200	70908012311200
12	12	11	84	26	38	1,5	78908012321200	70908012321200
12	12	11	84	26	38	2,0	78908012331200	70908012331200
16	16	15	93	32	44	1,0	78908012311600	70908012311600
16	16	15	93	32	44	1,5	78908012321600	70908012321600
16	16	15	93	32	44	2,0	78908012331600	70908012331600
16	16	15	93	32	44	2,5	78908012341600	70908012341600
20	20	19	105	38	55	2,0	78908012332000	70908012332000
20	20	19	105	38	55	2,5	78908012342000	70908012342000
20	20	19	105	38	55	3,0	78908012352000	70908012352000
20	20	19	105	38	55	4,0	78908012362000	70908012362000

Cutting values for milling: Pages 42-43.

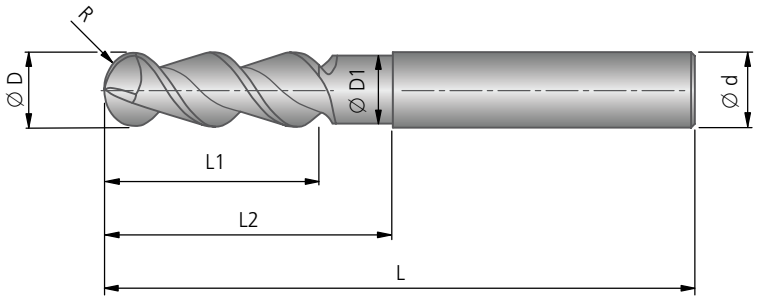
KOMET JEL® F.*line* F371 AL

Ø 3 – 20 mm

Spherical cutter for aluminium machining



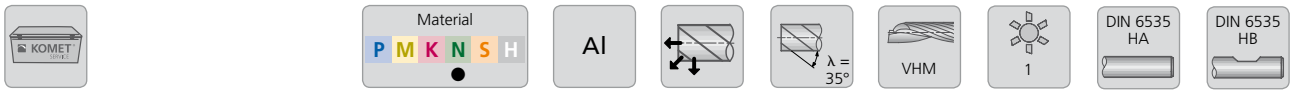

polished flutes



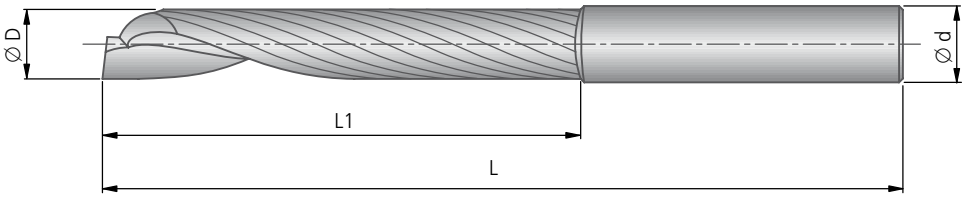
F.*line* F371 AL							Z = 2 55°	
Ø D_{h10}	Ø d_{h6}	Ø D1	L	L1	L2	R±0,02	DIN 6535 HA Order No.	DIN 6535 HB Order No.
3	6	2,8	58	8	17	1,5	78909012320300	70909012320300
3	6	2,8	64	8	25	1,5	78909022320300	70909022320300
4	6	3,7	58	11	19	2	78909012330400	70909012330400
4	6	3,7	64	11	26	2	78909022330400	70909022330400
5	6	4,6	58	13	20	2,5	78909012340500	70909012340500
5	6	4,6	64	13	26	2,5	78909022340500	70909022340500
6	6	5,5	58	13	21	3	78909012350600	70909012350600
6	6	5,5	81	13	44	3	78909022350600	70909022350600
8	8	7,4	64	19	27	4	78909012360800	70909012360800
8	8	7,4	81	19	44	4	78909022360800	70909022360800
10	10	9,2	73	22	32	5	78909012371000	70909012371000
10	10	9,2	109	22	68	5	78909022371000	70909022371000
12	12	11	84	26	38	6	78909012381200	70909012381200
12	12	11	109	26	63	6	78909022381200	70909022381200
16	16	15	93	32	44	8	78909012401600	70909012401600
16	16	15	160	32	110	8	78909022401600	70909022401600
20	20	19	105	38	55	10	78909012422000	70909012422000
20	20	19	160	38	110	10	78909022422000	70909022422000

● very good | ◐ good

End milling cutter with special geometry for aluminium and plastic machining



polished flutes
contour milling
1 cutting edge



F.*line* FJ AL				Z = 1 L.H. cutting		Z = 1 R.H. cutting	
				DIN 6535 HA	DIN 6535 HB	DIN 6535 HA	DIN 6535 HB
Ø D_{h10}	Ø d_{h6}	L	L1	Order No.	Order No.	Order No.	Order No.
4	4	51	12	78913111010400		78913011010400	
4	4	81	20	78913122010400		78913022010400	
5	5	51	16	78913111010500		78913011010500	
5	5	81	28	78913122010500		78913022010500	
6	6	58	18	78913111010600	70913111010600	78913011010600	70913011010600
6	6	81	53	78913122010600	70913122010600	78913022010600	70913022010600
8	8	64	20	78913111010800	70913111010800	78913011010800	70913011010800
8	8	81	40	78913122010800	70913122010800	78913022010800	70913022010800

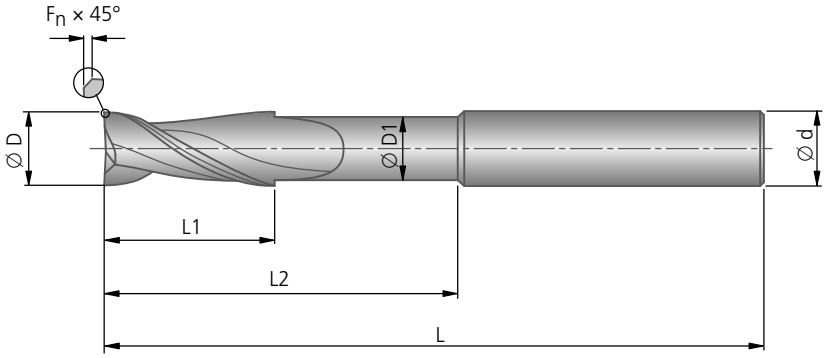
Cutting values for milling: Pages 42-43.

KOMET JEL® F.*line* F044 D

Ø 3 – 16 mm

End milling cutter for graphite machining

with neck groove



F.*line* F044 D							Z = 2 30°	
Ø D_{h10}	Ø d_{h6}	Ø D1	L	L1	L2	F_n	DIN 6535 HA Order No.	DIN 6535 HB Order No.
3	6	2,8	70	8	20	–	78933170020300	70933170020300
4	6	3,7	80	15	27	–	78933180020400	70933180020400
5	6	4,7	80	25	37	–	78933180020500	70933180020500
6	6	5,6	100	20	32	–	78933100020600	70933100020600
8	8	7,6	100	25	37	–	78933100020800	70933100020800
10	10	9,6	160	25	45	0,12	78933160021000	70933160021000
12	12	11,6	160	30	55	0,12	78933160021200	70933160021200
16	16	15,6	160	40	65	0,15	78933160021600	70933160021600

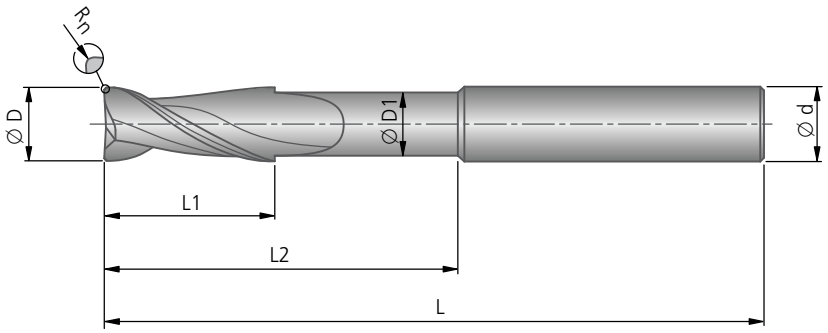
● very good | ◐ good

KOMET JEL® F.*line* F144 D

End milling cutter for graphite machining

Material: P M K N S H

with corner radius
with neck groove



F.*line* F144 D							Z = 2 30°	
							DIN 6535 HA	DIN 6535 HB
Ø D_{h10}	Ø d_{h6}	Ø D1	L	L1	L2	R_n±0,02	Order No.	Order No.
3	3	2,8	50	7	13	0,3	78904012260300	
4	4	3,7	50	8	14	0,3	78904012260400	
4	4	3,7	80	8	28	0,3	78904022260400	
5	5	4,7	50	10	16	0,5	78904012280500	
5	5	4,7	100	10	30	0,5	78904022280500	
6	6	5,6	57	13	25	0,5	78904012280600	70904012280600
6	6	5,6	100	20	40	0,5	78904022280600	70904022280600
8	8	7,6	63	19	31	0,5	78904012280800	70904012280800
8	8	7,6	100	25	45	0,5	78904022280800	70904022280800
10	10	9,6	72	22	34	0,5	78904012281000	70904012281000
10	10	9,6	160	25	45	0,5	78904022281000	70904022281000
12	12	11,6	82	26	38	1,0	78904012311200	70904012311200
12	12	11,6	160	30	42	1,0	78904022311200	70904022311200
16	16	15,6	92	32	44	2,0	78904012331600	70904012331600
16	16	15,6	160	40	60	2,0	78904022331600	70904022331600

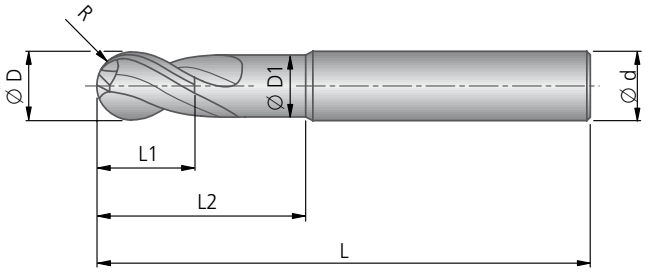
Cutting values for milling: Pages 42-43.

KOMET JEL® F.*line* F344 D

Ø 3 – 16 mm

Spherical cutter for graphite machining

with neck groove
front cutting technology for plunging

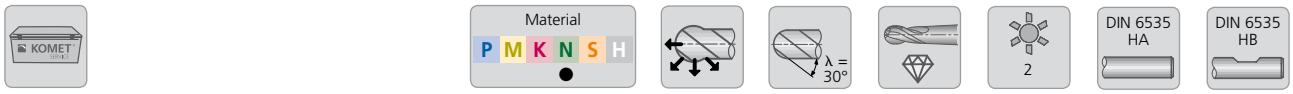


F.*line* F344 D							Z = 2 30°	
Ø D_{h10}	Ø d_{h6}	Ø D1	L	L1	L2	R ±0,02	DIN 6535 HA Order No.	DIN 6535 HB Order No.
3	4	2,8	57	8	14	1,5	78954010020300	
4	4	3,7	50	8	14	2,0	78954010020400	
4	6	3,7	80	15	25	2,0	78954020020400	70954020020400
5	5	4,7	50	11	17	2,5	78954010020500	
5	6	4,7	80	25	35	2,5	78954020020500	70954020020500
6	6	5,6	57	13	21	3,0	78954010020600	70954010020600
6	6	5,6	100	20	40	3,0	78954020020600	70954020020600
8	8	7,6	63	19	31	4,0	78954010020800	70954010020800
8	8	7,6	100	25	45	4,0	78954020020800	70954020020800
10	10	9,6	72	22	34	5,0	78954010021000	70954010021000
10	10	9,6	160	25	45	5,0	78954020021000	70954020021000
12	12	11,6	82	26	38	6,0	78954010021200	70954010021200
12	12	11,6	160	30	50	6,0	78954020021200	70954020021200
16	16	15,6	92	32	44	8,0	78954010021600	70954010021600
16	16	15,6	160	40	60	8,0	78954020021600	70954020021600

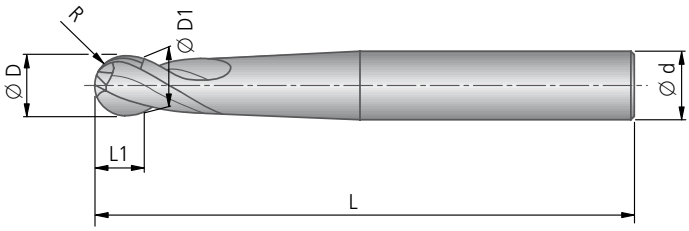
● very good | ◐ good

KOMET JEL® F.*line* F944 D

Spherical cutter for graphite machining



conical version



F.*line* F944 D						Z = 2 30°	
Ø D_{h10}	Ø d_{h6}	Ø D1	L	L1	R ±0,02	DIN 6535 HA Order No.	DIN 6535 HB Order No.
4	6	3,3	60	3,1	2,0	78955000020400	70955000020400
5	6	4,1	60	3,9	2,5	78955000020500	70955000020500
6	6	4,7	100	4,9	3,0	78955000020600	70955000020600
8	8	6,5	100	6,3	4,0	78955000020800	70955000020800
10	10	8,2	100	7,9	5,0	78955000021000	70955000021000
12	12	9,8	100	9,5	6,0	78955000021200	70955000021200
16	16	13,4	160	12,4	8,0	78955000021600	70955000021600

Cutting values for milling: Pages 42-43.

KOMET JEL® F.*line*

Recommended cutting data

Machining				Universal use										Roughing						Finishing		Stainless steel			
Material Group		Strength Rm (N/mm²)	Hardness HB	F.*line*		F044 UNI		F064 UNI		HPC		F144		F344		F544		F054 D		F154 D		F054 F		F055 INOX		F155 INOX	
				Diameter (mm)		Ø 3-20		Ø 1-20		Ø 6-20		Ø 2-20		Ø 1-20		Ø 6-20		Ø 2-25		Ø 3-20		Ø 6-25		Ø 2-25		Ø 2-20	
				No. of teeth		2 | 3 | 4		2 | 4		4		2 | 4		2 | 4		4		4		4		6		4		4	
				Shank DIN 6535 ..		HA | HB		HA | HB		HB		HA | HB		HA | HB		HB		HA | HB		HA | HB		HA | HB		HA | HB		HA | HB	
				Coating		TiAlN		TiAlN		TiAlN		TiAlN		TiAlN		TiAlN		AlCrN		AlCrN		AlCrN		AlCrN		AlCrN	
				Page		10		11		12		13		14		15		16		17		18		19		20-22	
				Material		v_c	Kf	v_c	Kf	v_c	Kf	v_c	Kf	v_c	Kf	v_c	Kf	v_c	Kf	v_c	Kf	v_c	Kf	v_c	Kf	v_c	Kf
P	1.1	≤400	≤120	Magnetic soft iron		165	2	165	2	180	2	165	2	170	p4	165	2	165	2	165	2	165	2	165	2	165	2
P	1.2	≤700	≤200	Structural, case hardened steel		135	2	135	2	160	2	135	2	160	p4	150	2	150	2	150	2	150	2	135	2	135	2
P	1.3	≤850	≤250	Carbon steel		125	2	125	2	140	2	125	2	150	p4	140	2	145	2	145	2	145	2	125	2	125	2
P	1.4	≤850	≤250	Alloy steel		125	2	125	2	140	2	125	2	150	p4	140	2	145	2	145	2	145	2	125	2	125	2
P	1.5	>850 ≤1200	>250 ≤350	Alloy/heat treated steel		100	1	100	1	120	1	100	1	130	p4	120	1	120	1	120	1	120	1	100	1	100	1
P	1.6	>1200	>350	Alloy/heat treated steel		90	1	90	1	100	1	90	1	95	p3	100	1	90	1	90	1	90	1	90	1	90	1
H	1.7	≤1400	≤400	Hardened steel to 56 HRC																							
H	1.8	≤2200	≤600	Hardened steel to 65 HRC																							
M	2.1	≤850	≤250	Stainless steel, sulphu-retted		75	1	75	1	110	1	75	1	95	p3	80	1	105	1	105	1	105	1	120	1	120	1
M	2.2	≤850	≤250	Austentic		65	1	65	1	110	1	65	1	85	p2	70	1	75	1	75	1	75	1	120	1	120	1
M	2.3	≤1000	≤300	Ferritic, ferritic & austen-tic, mart.		70	1	70	1	110	1	70	1	75	p3	60	1	100	1	100	1	100	1	120	1	120	1
K	3.1	≤500	≤150	Grey cast iron		150	2	150	2	150	2	150	2	225	p4	160	2	120	2	120	2	120	2	160	2	160	2
K	3.2	>500 ≤1000	>150 ≤300	Grey cast iron , heat treated		130	2	130	2	130	2	130	2	210	p4	140	2	100	2	100	2	100	2	140	2	140	2
K	3.3	400-500	200-250	Vermicular cast iron		130	2	130	2	130	2	130	2	210	p4	140	2	100	2	100	2	100	2	140	2	140	2
K	3.4	≤700	≤200	Spher. graph. cast iron		130	2	130	2	130	2	130	2	190	p4	140	2	120	2	100	2	120	2	140	2	140	2
K	3.5	>700 ≤1000	>200 ≤300	Spher. graph. cast iron, heat treated		110	2	110	2	110	2	110	2	160	p4	120	2	100	2	100	2	100	2	120	2	120	2
K	3.6	≤700	≤200	Malleable iron		110	2	110	2	110	2	110	2	145	p4	120	2	100	2	100	2	100	2	120	2	120	2
K	3.7	>700 <1000	>200 ≤300	Malleable iron, heat treated		110	2	110	2	110	2	110	2	145	p4	120	2							120	2	120	2
S	4.1	≤700	≤200	Pure titanium		60	1	60	1	60	1	60	1			65	1	60	1	60	1	60	1	60	1	60	1
S	4.2	≤900	≤270	Titanium alloys		60	1	60	1	60	1	60	1			65	1	60	1	60	1	60	1	60	1	60	1
S	4.3	>900 ≤1250	>270 ≤300	Titanium alloys		55	1	55	1	55	1	55	1			60	1	55	1	55	1	55	1	55	1	55	1
S	5.1	≤500	≤150	Pure nickel		45	1	45	1	45	1	45	1	55	p2			45	1	45	1	45	1	45	1	45	1
S	5.2	≤900	<270	Nickel alloys, heat resistant		35	1	35	1	35	1	35	1	55	p2			45	1	45	1	45	1	35	1	35	1
S	5.3	>900 ≤1200	>270 ≤350	Nickel alloys, high heat resistant		30	1	30	1	30	1	30	1	45	p2									30	1	30	1
N	6.1	≤350	≤100	Non-alloy copper		175	3	175	3			175	3	145	p5	190	3							175	3	175	3
N	6.2	≤700	≤200	short chip, brass, bronze, red brass		160	3	160	3			160	3	140	p5	180	3							160	3	160	3
N	6.3	≤700	≤200	long chip brass		175	3	175	3			175	3	145	p5	190	3							175	3	175	3
N	6.4	≤500	≤470	Cu-Al-Fe alloy (Ampco)		100	3	100	3			100	3	80	p5	110	3							100	3	100	3
N	7.1	≤350	≤100	Alu, Mg non-alloy		280	3	280	3			280	3	520	p5	310	3							280	3	280	3
N	7.2	≤600	≤180	Alu wrought all., break. strain (A5) <14 %		260	3	260	3			260	3	460	p5	285	3							260	3	260	3
N	7.3	≤600	≤180	Alu wrought all., break. strain (A5) ≥14 %		260	3	260	3			260	3	460	p5	285	3							260	3	260	3
N	7.4	≤600	≤180	Alu cast alloy, Si <10 %		240	3	240	3			240	3	270	p5	270	3							240	3	240	3
N	7.5	≤600	≤180	Alu cast alloy, Si ≥10 %		200	3	200	3			200	3	220	p5	220	3							200	3	200	3
N				Fibre reinforced plastics		145	3	145	3			145	3	190	p5	160	3							145	3	145	3
N				Graphite		175	3	175	3			175	3	225	p5	190	3							175	3	175	3

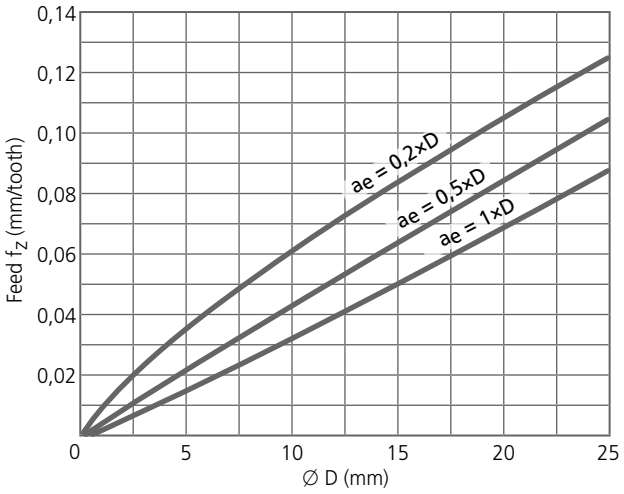
v_c = Cutting speed; Kf = Correction factor for feed f_z (page 44)

	Chamfering, deburring		46 – 56 HRC						50 – 65 HRC								Aluminium										Graphite							
	FK02	FZ02	F072 XH		F142 XH		F742 XH		F041 XH		F170 XH		F322 XH		F942 XH		F642 XH		F066 HF		F071 AL		F171 AL		F371 AL		FJ AL		F044 D		F144 D		F344 D		F944 D	
	Ø 6-12 3 | 4 HA | HB TiAlN 23	Ø 6-8 4 HA | HB TiAlN 24	Ø 1-20 4 | 6 | 8 HA | HB AlTiN 25		Ø 4-10 2 | 4 HA | HB AlTiN 26		Ø 6-12 2 HA | HB AlTiN 27		Ø 6-16 6 - 16 HA | HB AlTiN 28		Ø 6-10 6 HA | HB AlTiN 29		Ø 1-16 2 HA | HB AlTiN 30		Ø 6-16 2 | 4 HA | HB AlTiN 31		Ø 6-16 2 | 4 HA | HB AlTiN 32		Ø 6-25 2 HA TiB2 33		Ø 3-20 2 | 3 HA | HB VHM 34		Ø 3-20 2 HA | HB VHM 35		Ø 3-20 2 HA | HB VHM 36		Ø 4-8 1 HA | HB VHM 37		Ø 3-16 2 HA | HB 38		Ø 3-16 2 HA | HB 39		Ø 3-16 2 HA | HB 40		Ø 4-16 2 HA | HB 41	
	v_c	v_c	v_c	Kf	v_c	Kf	v_c	Kf	v_c	Kf	v_c	Kf	v_c	Kf	v_c	Kf	v_c	Kf	v_c	Kf	v_c	Kf	v_c	Kf	v_c	Kf	v_c	Kf	v_c	Kf	v_c	Kf	v_c	Kf
	165	165					225	p4					235	p4	225	p4	225	p4																
	135	135					210	p4					220	p4	210	p4	210	p4																
	125	125					200	p4					205	p4	200	p4	200	p4																
	125	125					200	p4					205	p4	200	p4	200	p4																
	100	100					175	p4					180	p4	175	p4	175	p4																
	90	90					125	p3					135	p3	125	p3	125	p3																
			80	4	80	p4	140	p1	80	4	80	4	145	p1	140	p1	140	p1																
			60	4	60	p4	120	p1	60	4	60	4	125	p1	120	p1	120	p1																
	75	75																																
	65	65																																
	70	70																																
	150	150					300	p4					305	p4	300	p4	300	p4																
	130	130					275	p4					280	p4	275	p4	275	p4																
	130	130					275	p4					280	p4	275	p4	275	p4																
	130	130					250	p4					260	p4	250	p4	250	p4																
	110	110					210	p4					220	p4	210	p4	210	p4																
	110	110					190	p4					200	p4	190	p4	190	p4																
	110	110					190	p4					200	p4	190	p4	190	p4																
	60	60																																
	60	60																																
	55	55																																
	45	45																																
	35	35																																
	30	30																																
	175	175																			210	5	210	5	210	5	210	5						
	160	160																			300	5	300	5	300	5	300	5	175	3			230	p5	230	p5
	175	175																			210	5	210	5	210	5	210	5						
	100	100																			120	5	120	5	120	5	120	5						
	280	280																	300 - 600	3	550	6	550	6	550	6	550	5						
	260	260																	300 - 600	3	550	6	550	6	550	6	550	5						
	260	260																	300 - 600	3	350	6	350	6	350	6	350	5						
	240	240																	200 - 500	3	350	6	350	6	350	6	350	5						
	200	200																	100 - 300	3	250	6	250	6	250	6	250	5	160	3			220	p5	220	p5
	145	145																											145	3			190	p5	190	p5
	175	175																											265	3			340	p5	340	p5

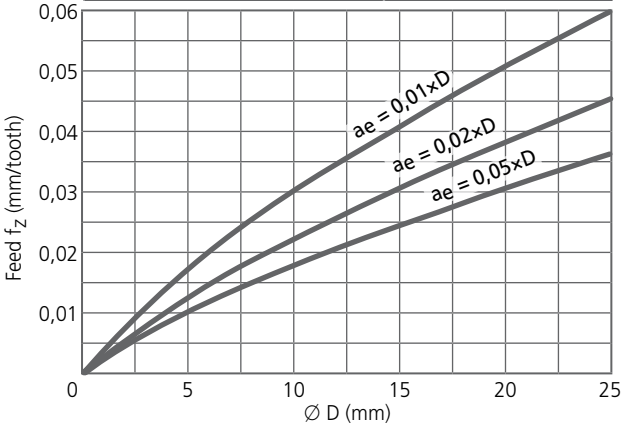
KOMET JEL® F.*line*

Correction factor Kf for feed f_z

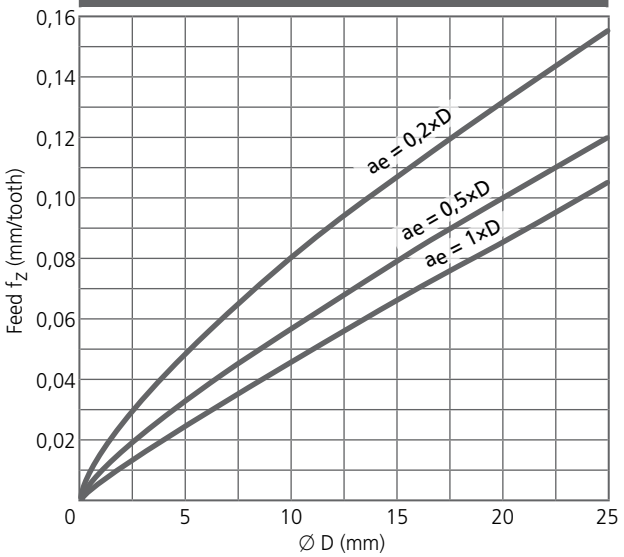
Kf 1



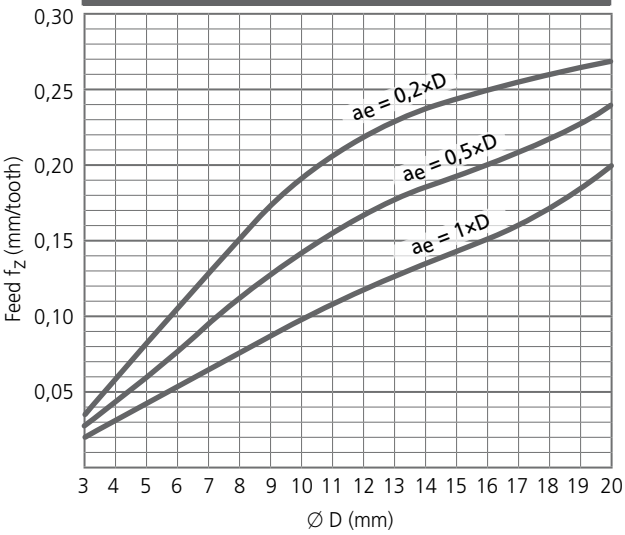
Kf 4 hardened steel, a_p max. = 0,2 mm



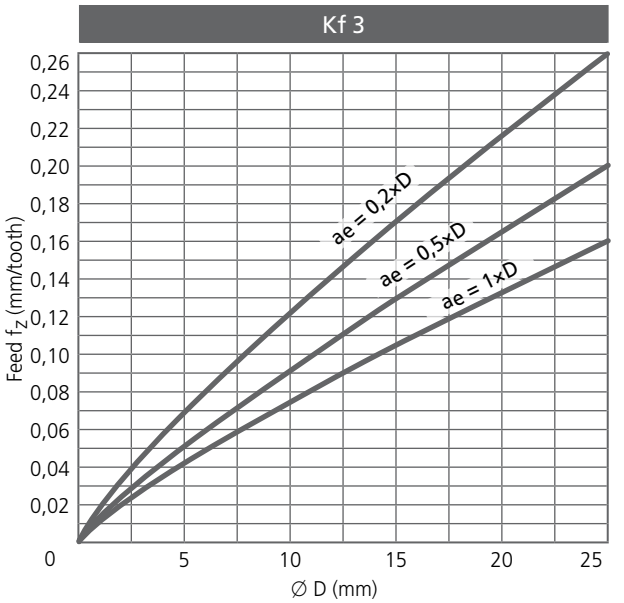
Kf 2



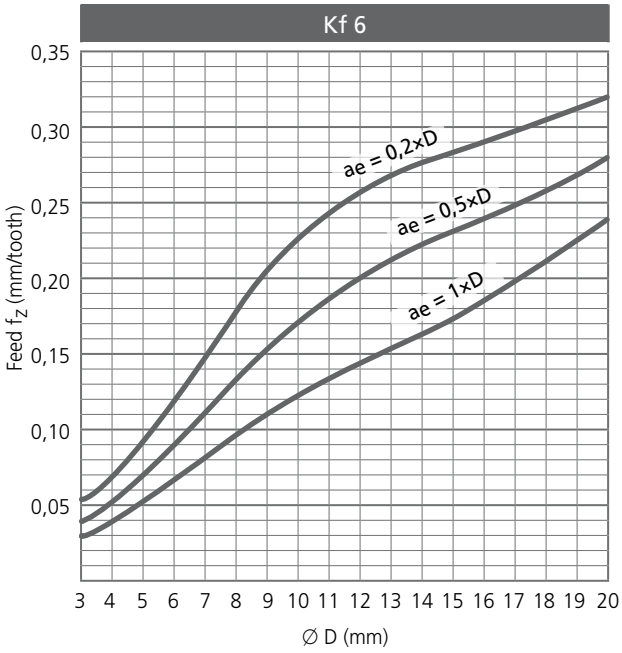
Kf 5



Kf 3

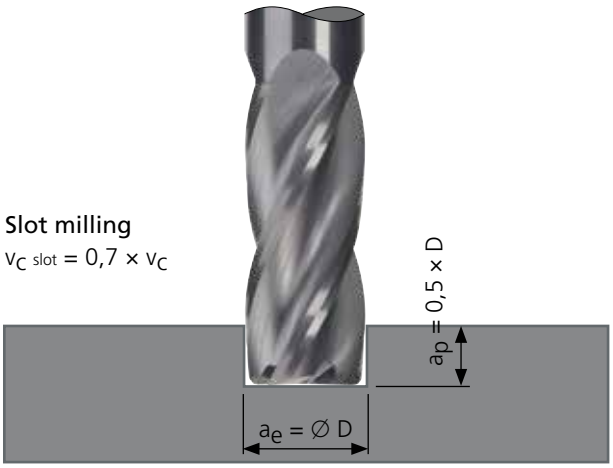


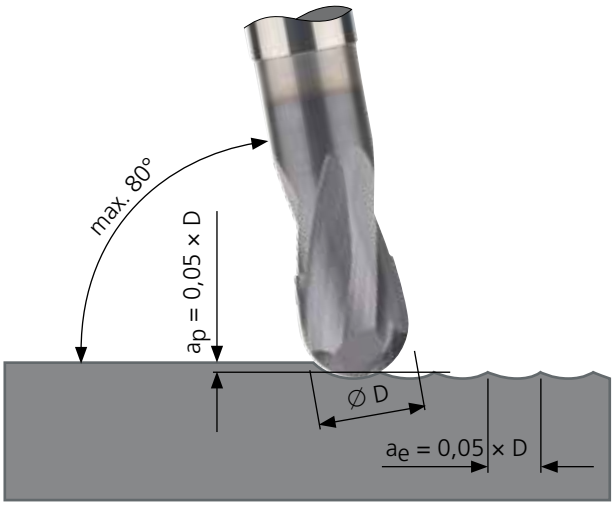
Kf 6



Slot milling

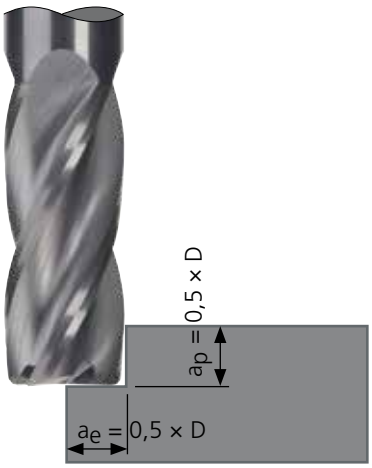
$v_{C\ slot} = 0{,}7 \times v_C$





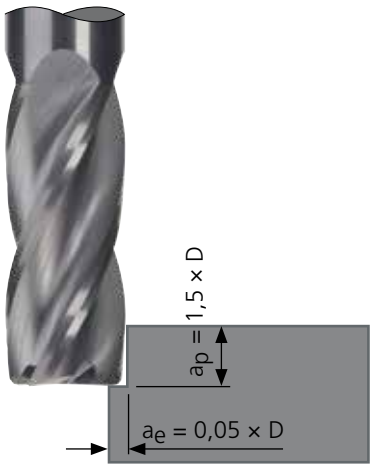
Rough milling

$v_{C\ rough} = v_C$

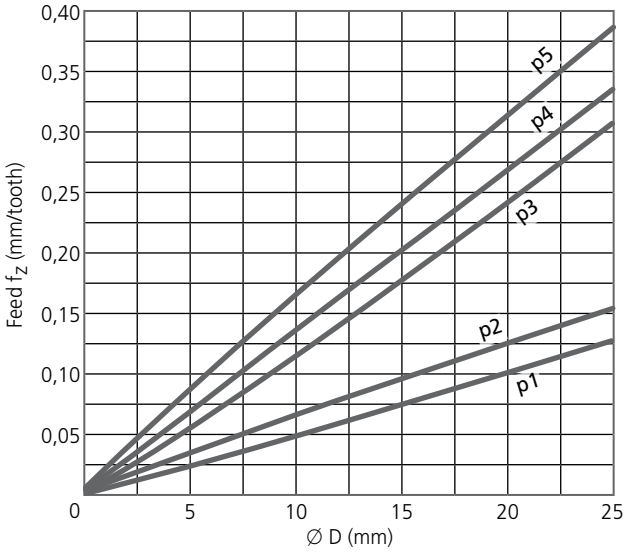


Finish milling

$v_{C\ finish} = 1{,}5 \times v_C$



Kf p1-p5



Coefficients cutting speed and feed

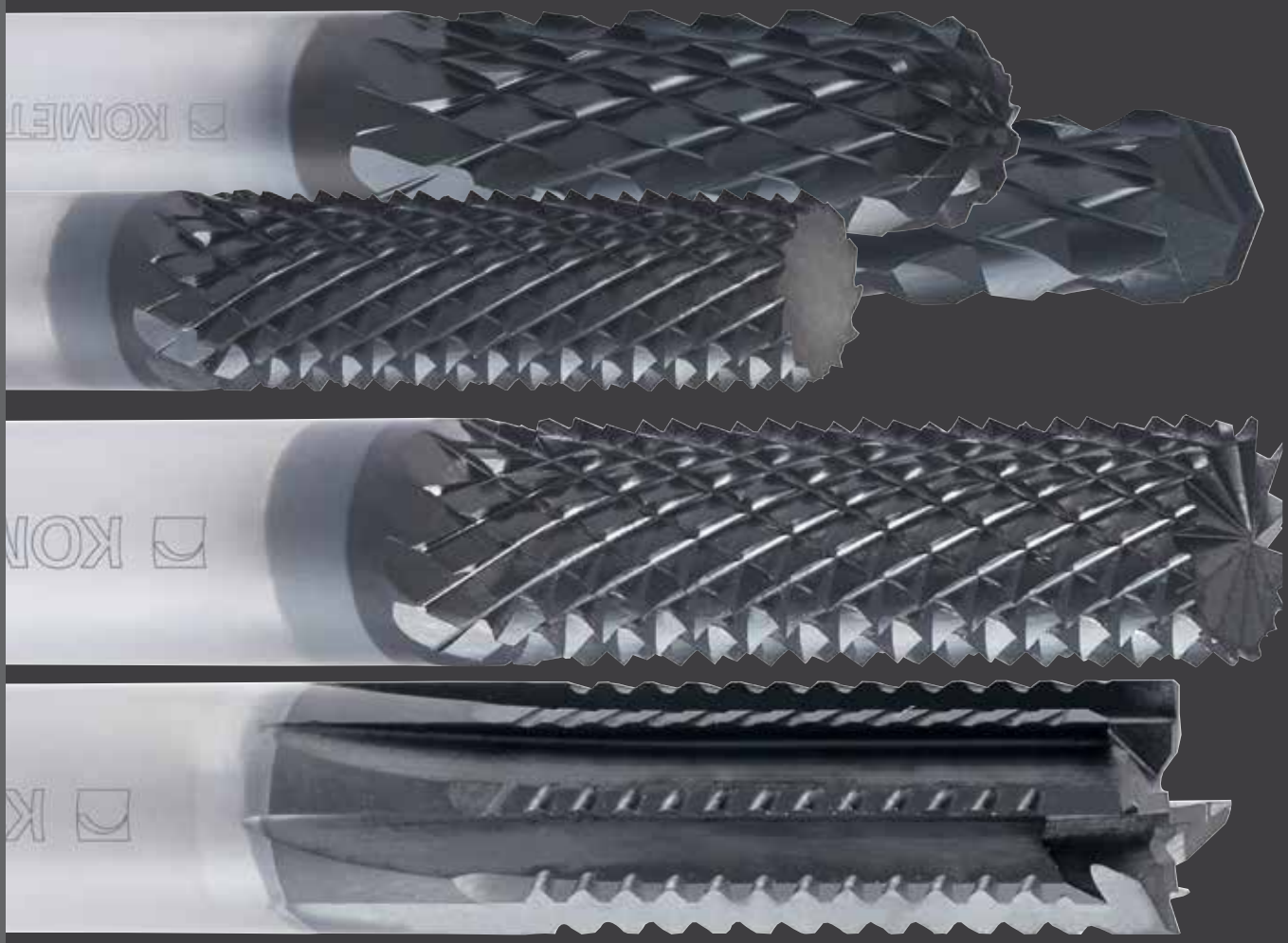
short version	v_C = 100%	f_Z = 100%
long version	v_C = 60% (v_C × 0,6)	f_Z = 75% (f_Z × 0,75)
very long version	v_C = 40% (v_C × 0,4)	f_Z = 30% (f_Z × 0,3)

KOMET® Diamond coated milling tools

In an era of increasing awareness of the issues surrounding energy, energy conservation and energy efficiency, the lightweight construction segment is becoming more and more important. At a rapid pace, composite materials are carving out ever larger market shares.
Outstanding material properties, however, also present challenges for the manufacturers of precision tools. The extremely high strength and complex make-up of these materials are placing new demands on the tools that work them: the high degree of abrasiveness means that conventional tools in drilling and milling setups last only a few metres.

In light of this requirement, the KOMET GROUP has developed a brand new class of tools distinguished by their innovative geometry, suitability for new machining strategies involving very high cutting parameters and also by the use of intelligent cutting materials. These new solutions range from single-edge to multi-tooth milling cutters and from drills with a new chamfer geometry to indexable tools having a special insert arrangement. Cutting materials have also followed the trend:
KOMET RHOBEST® diamond coatings and PCD solutions are demonstrating that they are fully equipped for the task.

The non-homogeneous nature of these new lightweight materials imposes exacting and individual requirements on the machining process. Not only does the KOMET GROUP offer a standard product range, it is an expert partner for its customers – with absolute focus on problem-solving.
Thanks to full process control in-house – from carbide/cutting material selection, consolidated expertise and many years of experience in grinding – the KOMET GROUP is your single source of smart and viable machining solutions.



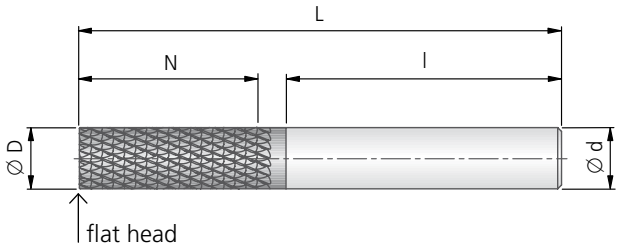
The standard product range presented here enables you to order the right tool for your applications and feasibility tests with zero fuss. All other specifications including inch measurements can be created for you on request and tailored to your individual requirements.

We would be delighted to collaborate with you to develop new machining strategies. We offer a modern machining environment to conduct tests in-house or we can visit you to coordinate further. Interested? Simply contact our experts in lightweight construction at www.kometgroup.com

KOMET RHOBEST® NCD

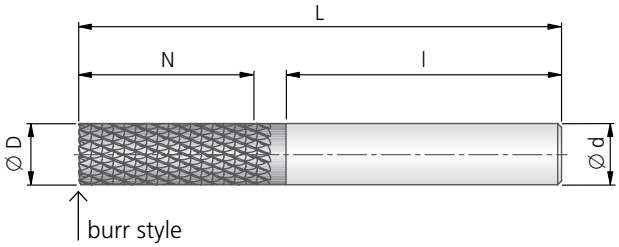
NCD Composite milling cutter, HSC

Milling and trimming



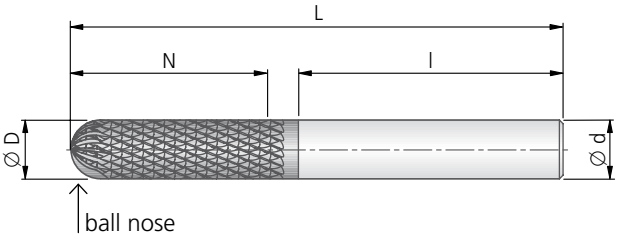
78980.. FZ				
Ø D_{h10}	Order No.	Ø d_{h6} × l	L	N
4	78980040000400	4 × 28	40	15
4	78980075000400	4 × 28	75	15
6	78980050000600	6 × 25	50	18
6	78980075000600	6 × 36	75	18
8	78980063000800	8 × 36	63	25
8	78980075000800	8 × 36	75	25
10	78980072001000	10 × 40	72	30

Milling and trimming

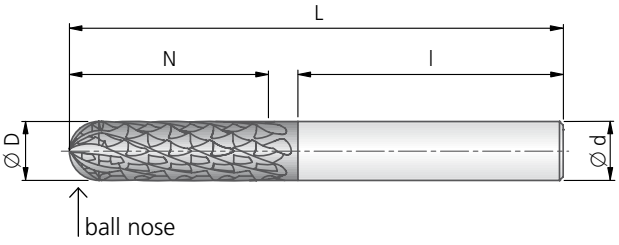


78981.. FZ				
Ø D_{h10}	Order No.	Ø d_{h6} × l	L	N
1,6	78981038000160	3 × 25	38	8
2	78981038000200	3 × 25	38	8
3	78981038000300	3 × 20	38	12
4	78981040000400	4 × 20	40	15
4	78981075000400	4 × 28	75	15
6	78981050000600	6 × 25	50	18
6	78981075000600	6 × 36	75	18
8	78981063000800	8 × 36	63	25
8	78981075000800	8 × 36	75	25
10	78981072001000	10 × 40	72	30
12	78981083001200	12 × 45	83	32

Slot milling and plunge milling



78982.. FZ				
Ø D_{h10}	Order No.	Ø d_{h6} × l	L	N
4	78982050000400	4 × 28	50	16
6	78982060000600	6 × 36	60	19
8	78982063000800	8 × 36	63	25
10	78982072001000	10 × 40	72	30
12	78982083001200	12 × 45	83	32



78983.. GZ				
Ø D_{h10}	Order No.	Ø d_{h6} × l	L	N
4	78983050000400	4 × 28	50	16
6	78983063000600	6 × 36	60	19
8	78983060000800	8 × 36	63	25
10	78983072001000	10 × 40	72	30
12	78983083001200	12 × 45	83	32

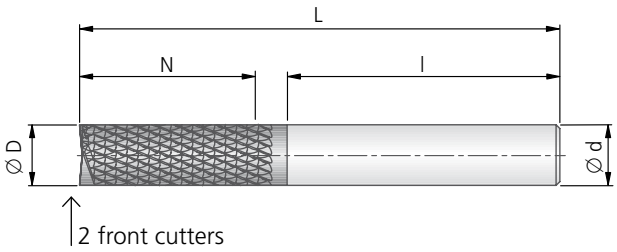
● very good | ◐ good

NCD Composite milling cutter, HSC

Material: CFRP ● | GFRP ● | CFRP/Al stacks | Honeycombs

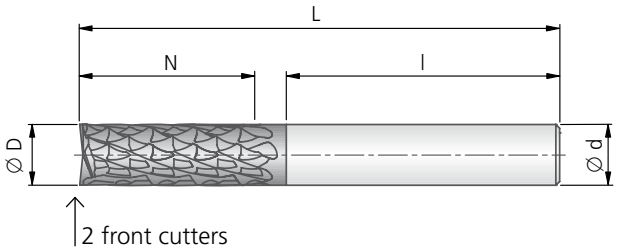
FZ fine-tooth | GZ coarse-tooth | DIN 6535 HA

Trimming, slot milling, plunge milling and shoulder milling



78984.. FZ

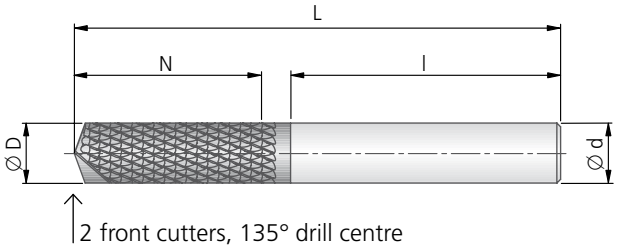
Ø D_{h10}	Order No.	Ø d_{h6} × l	L	N
1,6	78984038000160	3 × 25	38	8
2	78984038000200	3 × 25	38	8
3	78984038000300	3 × 20	38	12
4	78984050000400	4 × 28	50	16
4	78984075000400	4 × 28	75	15
6	78984060000600	6 × 36	60	19
6	78984075000600	6 × 36	75	30
8	78984063000800	8 × 36	63	25
8	78984075000800	8 × 36	75	35
10	78984072001000	10 × 40	72	30
12	78984083001200	12 × 45	83	32



78985.. GZ

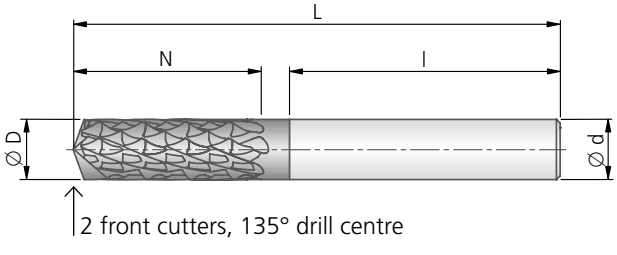
Ø D_{h10}	Order No.	Ø d_{h6} × l	L	N
1,6	78985038000160	3 × 25	38	8
2	78985038000200	3 × 25	38	8
3	78985038000300	3 × 20	38	12
4	78985050000400	4 × 28	50	16
4	78985075000400	4 × 28	75	15
6	78985060000600	6 × 36	60	19
6	78985075000600	6 × 36	75	30
8	78985063000800	8 × 36	63	25
8	78985075000800	8 × 36	75	35
10	78985072001000	10 × 40	72	30
12	78985083001200	12 × 45	83	32

Plunge milling and trimming



78986.. FZ

Ø D_{h10}	Order No.	Ø d_{h6} × l	L	N
3	78986038000300	3 × 20	38	12
4	78986050000400	4 × 28	50	16
4	78986075000400	4 × 28	75	15
6	78986060000600	6 × 36	60	19
6	78986075000600	6 × 36	75	18
8	78986063000800	8 × 36	63	25
8	78986075000800	8 × 36	75	25
10	78986072001000	10 × 40	72	30
12	78986083001200	12 × 45	83	32



78987.. GZ

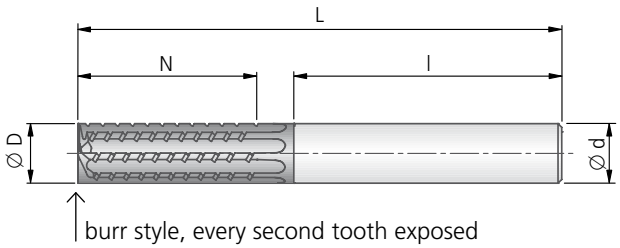
Ø D_{h10}	Order No.	Ø d_{h6} × l	L	N
3	78987038000300	3 × 20	38	12
4	78987050000400	4 × 28	50	16
4	78987075000400	4 × 28	75	15
6	78987060000600	6 × 36	60	19
6	78987075000600	6 × 36	75	18
8	78987063000800	8 × 36	63	25
8	78987075000800	8 × 36	75	25
10	78987072001000	10 × 40	72	30
12	78987083001200	12 × 45	83	32

Guideline values for milling: page 50.

KOMET RHOBEST® NCD

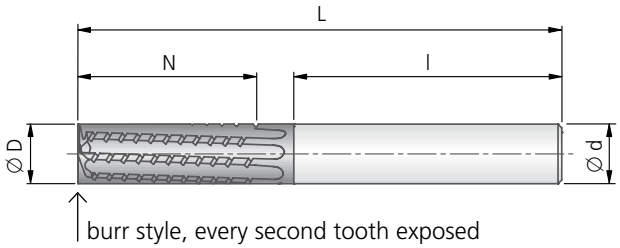
NCD Composite multi-tooth milling cutter

straight teeth, fine chip breaker



78988..					
Ø D_{h10}	Order No.	Ø d_{h6} × l	L	N	Z
3	78988060000300	3 × 28	60	12	4
4	78988060000400	4 × 28	60	16	6
6	78988060000600	6 × 36	60	20	8
6	78988075000600	6 × 36	75	28	8
8	78988063000800	8 × 36	63	22	8
8	78988075000800	8 × 36	75	32	8
10	78988072001000	10 × 40	72	32	8
12	78988083001200	12 × 45	83	32	8

helical teeth, pull cut, fine chip breaker



78989..					
Ø D_{h10}	Order No.	Ø d_{h6} × l	L	N	Z
3	78989060000300	3 × 28	60	12	4
4	78989060000400	4 × 28	60	16	6
6	78989060000600	6 × 36	60	20	8
6	78989075000600	6 × 36	75	28	8
8	78989063000800	8 × 36	63	22	8
8	78989075000800	8 × 36	75	32	8
10	78989072001000	10 × 40	72	32	8
12	78989083001200	12 × 45	83	32	8

Recommended cutting data

NCD Composite milling cutter, HSC (78980.. · 78981.. · 78982.. · 78983.. · 78984.. · 78985.. · 78986.. · 78987..)

Machining: trimming, circular cutting, grooving, ramping, plunging, pocket and slot milling

Cutting speed v_c (m/min) Feed f (mm/rev)	Ø 1,6 mm		Ø 2 mm		Ø 3 mm		Ø 4 mm		Ø 6 mm		Ø 8 mm		Ø 10 mm		Ø 12 mm	
	v_c	f	v_c	f	v_c	f	v_c	f	v_c	f	v_c	f	v_c	f	v_c	f
CFRP	50-100	0,02-0,04	80-150	0,03-0,06	100-200	0,04-0,08	100-200	0,06-0,10	100-300	0,08-0,12	100-300	0,10-0,15	100-300	0,10-0,20	100-300	0,10-0,25
GFRP	70-100	0,02-0,05	100-150	0,03-0,07	120-200	0,04-0,10	120-200	0,06-0,12	100-300	0,08-0,15	100-300	0,10-0,20	100-300	0,10-0,25	100-300	0,10-0,30

NCD Composite multi-tooth milling cutter (78988.. · 78989..)

Machining: trimming, circular cutting, axial grooving, pocket and slot milling

Cutting speed v_c (m/min) Feed f_z (mm/tooth)	Ø 3 mm		Ø 4 mm		Ø 6 mm		Ø 8 mm		Ø 10 mm		Ø 12 mm	
	v_c	f_z	v_c	f_z	v_c	f_z	v_c	f_z	v_c	f_z	v_c	f_z
CFRP	100-200	0,01-0,03	100-200	0,02-0,04	100-300	0,02-0,06	100-300	0,02-0,08	100-300	0,02-0,10	100-300	0,03-0,12
GFRP	100-200	0,01-0,04	100-200	0,02-0,06	100-300	0,02-0,08	100-300	0,02-0,10	100-300	0,02-0,12	100-300	0,03-0,15
CFRP/Al stacks	100-200	0,01-0,03	100-200	0,02-0,04	100-300	0,02-0,06	100-300	0,02-0,08	100-300	0,02-0,10	100-300	0,03-0,12
Honeycombs	100-200	0,01-0,03	100-200	0,02-0,04	100-300	0,02-0,06	100-300	0,02-0,08	100-300	0,02-0,10	100-300	0,03-0,12

● very good | ◐ good

Important: See chapter 8 for more application details and safety notes!

① Solid drilling with PCD High-performance drill Drillmax 90 (V11..)
② Solid drilling with NCD High-performance drill Drillmax 90 (V11..)
③ Slot milling with PCD Slot milling cutter straight fluted (38304..)
④ Interpolation milling with NCD Composite multi-tooth milling cutter, helical teeth, pull cut (78989..)
⑤ Circular and slot milling with NCD Composite milling cutter, HSC type FZ, straight teeth (78981..)
⑥ Slot milling with NCD Composite milling cutter, HSC type FZ, 2 front cutters, 135° drill centre (78986..)

Classification of composite materials and typical applications

FIBROUS COMPOSITE MATERIALS

Fibrous composites are inhomogeneous materials that are essentially an assembly of three components – fibres and matrices or binders.

Typical fibres include carbon fibre (CFRP), glass fibre (GFRP) or aramid fibre (AFRP). With respect to their tensile strength, they are categorised into HT (high tenacity), UT (ultra high tenacity) and IM (intermediate modulus). Depending on the properties desired, the fibres differ in length, thickness and relative orientation (unidirectional, bidirectional, multidirectional).

As matrices, there are currently more than 100 different resins/polymers available on the market, which is just a hint at how varied these materials are. "Cold" cutting is generally recommended for duroplastics (90%) and thermoplastics (PEEK, PEI, PPS, etc.), while elastomers (PUR) should be cut at "high speed".

Applications:
Aerospace, automotive, medical industry, sports industry, wind farms, transport, building/architecture

HYBRIDS

Hybrids are material combinations of at least three layers of metals, polymers and fibrous composites.

Application: Aircraft construction

HONEYCOMBS

These materials are usually three-layer composite constructions with a honeycomb-shaped core made, for example, of aluminium, polycarbonate or polypropylene and are therefore characterised by their extremely lightweight and highly stiff properties.

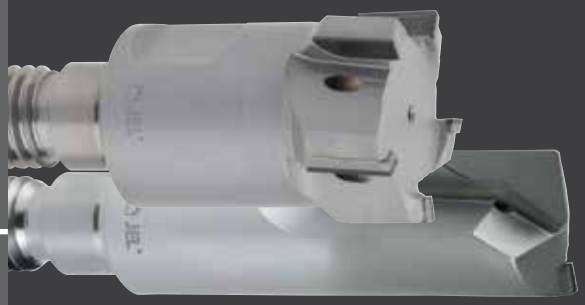
Applications:
Satellite engineering, packaging industry, exhibition stand, model and aircraft construction

METAL MATRIX COMPOSITE MATERIAL

Metal matrix composites (MMC) have at least two constituent materials, usually a ceramic or organic component bonded in a metal matrix.

Applications:
Engine building, cylinder liners, connecting rods

KOMET® PCD Slot milling cutter and PCD Face milling cutter



BENEFITS for you:

- Tool versatility and reduction of costs thanks to modular head system
- Great flexibility since a variety of lengths can be adapted
- Good availability: PCD slot milling cutter and PCD face milling cutter: available ex stock

PCD screw-in cutters for grooving and face milling

Milling shoulders and grooves, making circular drilled holes on a helix path, and face and peripheral milling are typical operations that occur frequently when machining components.

Among the selling points of the KOMET JEL® PCD milling cutters are that they are highly flexible and easy to handle.

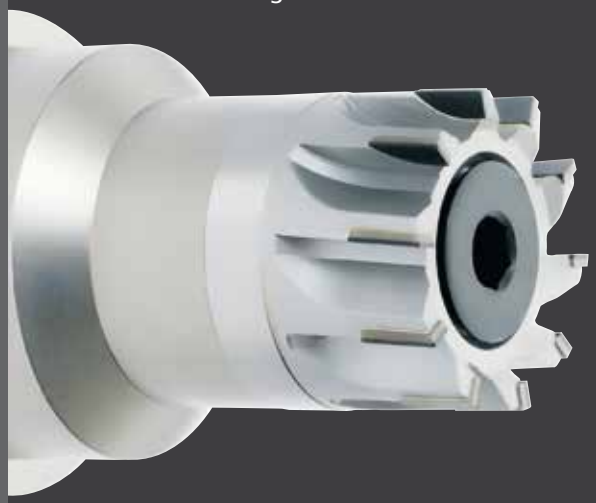
The modular system allows you to choose between brazed PCD face milling cutters and PCD slot milling cutters. It also contains a vibration-dampened tool shank available in various lengths.

The milling heads are available in diameters of 10 to 32 mm. The heads can be changed quickly and easily on the machine itself.

Application:
- For roughing and finishing in aluminium
- Face milling, slot milling, peripheral milling and circular milling, as well as machining shoulders and grooves
- As a "problem solver" for long overhangs

PCD Face milling cutter

The KOMET JEL® PCD face milling cutter is noteworthy for its outstanding cost efficiency. High feeds, cutting depth and longest tool lifes can be achieved thanks to the high number of teeth and solid design.



BENEFITS for you:

- Cutting depths of up to 8 mm thanks to firmly soldered cutting edges in a solid basic body
- Short cycle times thanks to maximum number of cutting edges and highest cutting speeds
- No adjustment necessary thanks to Monoblock design
- Attainable surface quality: Rz < 10 µm (type 150) thanks to fine balancing and extremely tight manufacturing tolerances
- Available in two variants:
  type 140: for Rz > 10 µm - with eroded cutting edge design
  type 150: for Rz < 10 µm - with special cutting edge design
- Internal cooling supply
  Fed to the cutting edge via a coolant screw
- Available at short notice
  PCD face milling cutter available ex stock

PCD face-milling cutter HPC

The cutter holders in the completely redesigned KOMET JEL® PCD milling cutters are manufactured using the generative process of laser melting, which means that these new tools can offer feed rates of up to 50% higher than before. 3D printing enables up to twice as many cutting edges to be created – regardless of diameter. KOMET® is also utilising the structural flexibility provided by the additive manufacturing process to optimise the course of the coolant channels inside these milling cutters. Curved channel routes now reduce pressure loss in the coolant and are positioned in such a way that ensures every cutting edge is supplied with coolant from a separate channel.

PCD tools for defined surfaces

Use of PCD monotools in the production of aluminium components is wide spread. This system is distinguished by the minimum effort required to set an increased number of teeth, as well as its long service life and very low roughness depths.

If, however, areas of surface roughness are required or need to be even rougher than the very good standard surfaces produced during PCD machining, then PCD tools often meet their limits.

This can be remedied with a PCD auxiliary cutter(s) individually adapted to the application situation, which can also be fitted retroactively in existing standard tools.

These can be precisely adjusted axially with face-milling cutters and radially with drilling and reaming tools for the required surface finish. This means that the required roughness can be achieved, for example for seals. Not only are larger Rz values attainable, but improvements to the surface, e.g. by means of a wiper edge insert, are also possible.

Application:
- Bearing plate
- End faces of cylinder heads (liquid seal)

BENEFITS for you:

- Defined surfaces
- Variable surface finish can be achieved
- Can be retroactively fitted in standard tools
- Cutters can be custom designed to the application

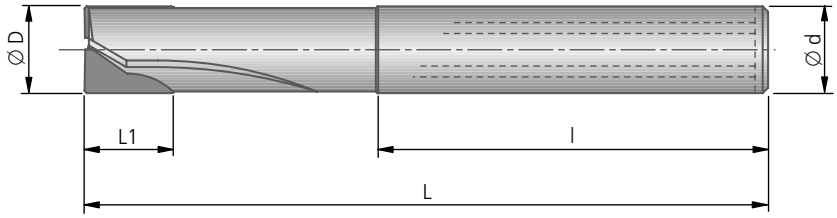
PCD Milling cutter

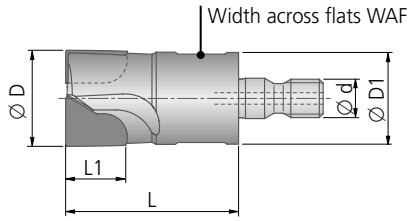
KOMET RHOBEST® Slot milling cutter and compression milling cutter for machining composite materials.

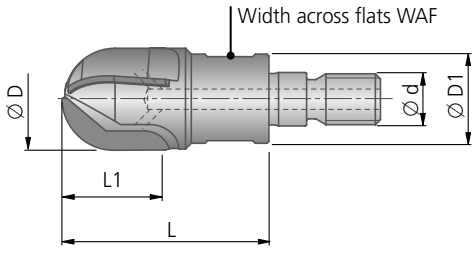
KOMET JEL®

Ø 6 – 25 mm

PCD Slot milling cutter | PCD Radius milling cutter







● very good | ◐ good

DIN 6535 HA 1×D					
Ø D	Cylindrical shank Ø d × l	L	L1	Z	Order No.
6	6 × 36	57	6	2	38390000000600
8	8 × 36	63	8	2	38390000000800
10	10 × 40	72	10	2	38390000001000
12	12 × 45	83	12	2	38390000001200
16	16 × 48	90	16	3	38391000001600
20	20 × 50	104	20	3	38391000002000
DIN 6535 HA 2×D					
6	6 × 36	57	12	2	38392057000600
8	8 × 36	63	16	2	38392063000800
10	10 × 40	72	20	2	38392072001000
12	12 × 45	83	24	2	38392083001200
16	16 × 48	90	32	3	38393090001600
20	20 × 50	104	40	3	38393004002000

Screw-in cutter									
Ø D	Ø d	Width across flats WAF	Tightening torque Nm	Ø D1	L	L1	Z	kg	Order No.
10	M5	8	7	9,6	28	10	2	0,018	37340099001000
12	M5	8	7	9,6	28	12	2	0,018	37340099001200
16	M8	13	18	13,8	32	16	3	0,036	37340099001600
20	M10	16	30	18,0	45	20	3	0,095	37340099002000
25	M12	18	40	21,0	45	20	3	0,165	37340099002500

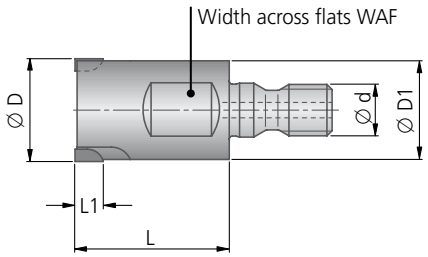
Radius screw-in cutter										
Ø D	R	Ø d	Width across flats WAF	Tightening torque Nm	Ø D1	L	L1	Z	kg	Order No.
10	5	M5	8	7	9,6	28	10	2	0,018	37340098001000
12	6	M5	8	7	9,6	28	12	2	0,018	37340098001200
16	8	M8	13	18	13,8	32	16	3	0,036	37340098001600

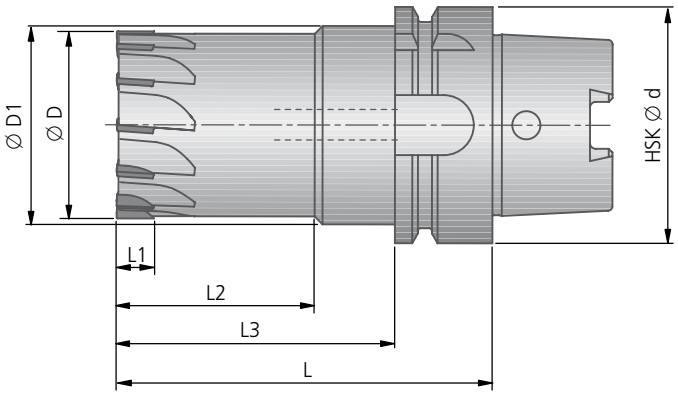
Cutting values for milling: Page 62.

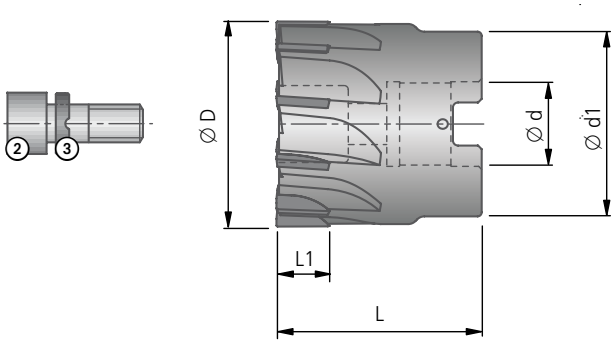
KOMET JEL®

Ø 10 – 160 mm

PCD Face milling cutter







● very good | ◐ good

Screw-in cutter									
Ø D	Ø d	Width across flats WAF	Tightening torque Nm	Ø D1	L	L1	Z	kg	Order No.
10	M5	8	7	9,6	22	5	2	0,012	37341099001000
12	M5	8	7	9,6	28	5	2	0,018	37341099001200
16	M8	13	18	13,8	28	10	3	0,040	37341099001600
20	M10	16	30	18,0	30	10	4	0,070	37341099002000
25	M12	18	40	21,0	35	10	5	0,140	37341099002500
32	M16	27	80	29,0	35	10	6	0,250	37341099003200

HSK-A									Type 140 · R_Z > 10 µm	Type 150 · R_Z < 10 µm
Ø D	HSK Ø d	Ø D1	L ±0,02	L1	L2	L3	Z	kg	eroded cutting edge Order No.	specially design cutting edge Order No.
40	63	53	100	10	48	74	10	1,4	37140026004000	37150026004000
50	63	52	100	10	21	74	12	1,7	37140026005000	37150026005000
63	63	–	100	10	–	–	14	2,0	37140026006300	37150026006300
80	63	–	100	10	–	–	16	2,5	37140026008000	37150026008000
100	63	–	100	10	–	–	18	3,2	37140026010000	37150026010000
125	63	–	100	10	–	–	22	4,3	37140026012500	37150026012500
160	63	–	100	10	–	–	24	6,2	37140026016000	37150026016000

Other connections and cutting edge shapes available on request.

Supply includes: PCD face milling cutter with coolant screw and coolant supply kit.

Arbor milling cutter									Cylindrical screw ② Order No. Article	Coolant sleeve ③ Order No.
ØD	DIN 8030 form	Ød^{H6}	Ød1	L	L1	Z	kg	Order No.		
40	A	16	36	40	10	10		37155099004000	55011 08025 M8×25	L01 01020 0,05
50	A	22	41	40	10	12		37155099005000	55011 10025 M10×25	L01 01030 0,05
63	A	22	48	40	10	14		37155099006300	55011 10025 M10×25	L01 01040 0,022
80	B	27	60	50	10	16		37155099008000	55011 12040 M12×40	L01 01050 0,152
100	B	32	78	50	10	18		37155099010000	55011 16030 M16×30	L01 01060 0,17
125	B	40	100	63	10	22		37155099012500	55011 20040 M20×40	L01 01070 0,396

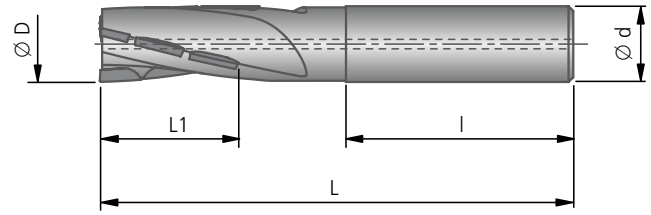
Supply includes milling cutter: with coolant sleeve ③ and cylindrical screw ②.
Screwdriver see chapter 8.

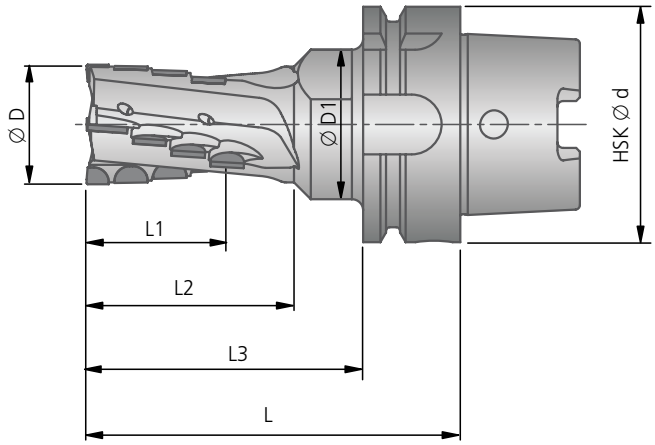
Cutting values for milling: Page 62.

KOMET JEL®

Ø 16 – 63 mm

PCD Face and corner milling cutter





● very good | ◐ good

DIN 6535 HA					
Ø D	Cylindrical shank Ø d × l	L	L1	Z	Order No.
16	16 × 48	93	30	3	**38170099001600**
20	20 × 50	100	30	3	**38170099002000**
25	25 × 56	110	30	3	**38170099002500**

HSK-A									
Ø D	HSK Ø d	Ø D1	L ±0,02	L1	L2	L3	Z	kg	Order No.
32	63	40	100	40	55	74	4		**37170026003200**
40	63	-	100	40	-	-	4		**37170026004000**
50	63	-	100	40	-	-	4		**37170026005000**
63	63	-	100	40	-	-	4		**37170026006300**

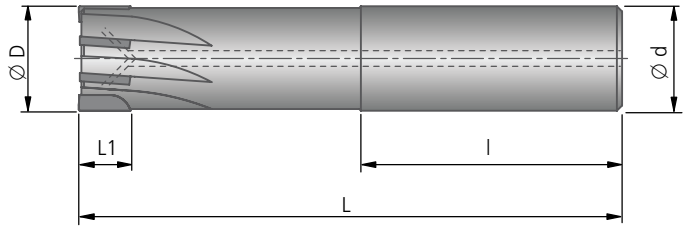
Supply includes: PCD face milling cutter with coolant screw and coolant supply kit.

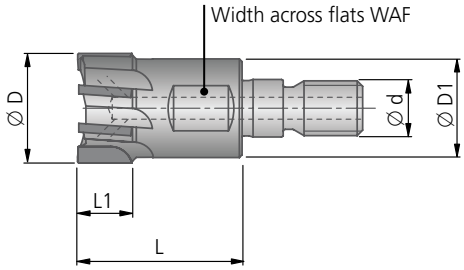
Cutting values for milling: Page 63.

KOMET JEL®

Ø 10 – 32 mm

PCD Face milling cutter HPC





● very good | ◐ good

DIN 6535 HA 2,5×D						
Ø D	Cylindrical shank Ø d × l	L	L1	Z	kg	Order No.
10	10 × 40	67	5	4	0,074	38320001001000
12	12 × 45	78	5	4	0,084	38320001001200
16	16 × 48	91	10	5	0,132	38320001001600
20	20 × 50	104	10	6	0,229	38320001002000
25	25 × 56	124	10	8	0,401	38320001002500
32	32 × 60	147	10	10	0,871	38320001003200
DIN 6535 HA 4×D						
10	10 × 40	82	5	4	0,084	38321001001000
12	12 × 45	96	5	4	0,104	38321001001200
16	16 × 48	115	10	5	0,192	38321001001600
20	20 × 50	134	10	6	0,349	38321001002000
25	25 × 56	161	10	8	0,631	38321001002500
32	32 × 60	195	10	10	1,391	38321001003200

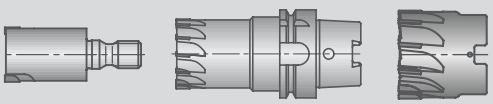
Screw-in cutter									
Ø D	Ø d	Width across flats WAF	Tightening torque Nm	Ø D1	L	L1	Z	kg	Order No.
10	M5	8	7	9,6	22	5	4	0,012	37310001001000
12	M5	8	7	9,6	28	5	4	0,018	37310001001200
16	M8	13	15	13,8	28	10	5	0,040	37310001001600
20	M10	16	30	18,0	30	10	6	0,070	37310001002000
25	M12	18	50	21,0	35	10	8	0,140	37310001002500
32	M16	27	100	29,0	35	10	10	0,250	37310001003200

Cutting values for milling: Page 63.

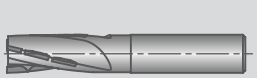
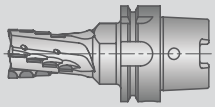
KOMET JEL®

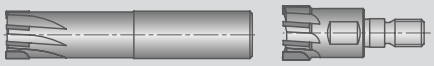
Recommended cutting data

Guideline values for milling					PCD Slot milling cutter | PCD Radius milling cutter									
Material group		Strength Rm (N/mm²)	Hardness HB	v_c (m/min) = Cutting speed f_z (mm/tooth) = Milling feed Material										
					∅ 6		∅ 8		∅ 10		∅ 12		∅ 16 | 20 | 25	
					v_c m/min	f_z mm/tooth	v_c m/min	f_z mm/tooth	v_c m/min	f_z mm/tooth	v_c m/min	f_z mm/tooth	v_c m/min	f_z mm/tooth
N	6.1	≤350	≤100	non-alloy copper										
N	6.2	≤700	≤200	short chip, brass, bronze, red brass	200-600	0,04-0,08	200-800	0,04-0,10	300-800	0,04-0,12	300-1000	0,04-0,15	300-1000	0,06-0,20
N	6.3	≤700	≤200	long chip brass										
N	6.4	≤500	≤470	Cu-Al-Fe alloy (Ampco)										
N	7.1	≤350	≤100	Al, Mg non-alloy	200-800	0,04-0,08	200-800	0,04-0,10	400-1000	0,04-0,12	400-1500	0,04-0,15	400-1500	0,06-0,20
N	7.2	≤600	≤180	Al wrought alloy, breaking strain (A 5) <14 %	200-800	0,04-0,08	200-800	0,04-0,10	400-1000	0,04-0,12	400-1500	0,04-0,15	400-1500	0,06-0,20
N	7.3	≤600	≤180	Al wrought alloy, breaking strain (A 5) ≥14 %	200-800	0,04-0,08	200-800	0,04-0,10	400-1000	0,04-0,12	400-1500	0,04-0,15	400-1500	0,06-0,20
N	7.4	≤600	≤180	Al cast alloy, Si <10 %	200-800	0,04-0,08	200-800	0,04-0,10	400-1000	0,04-0,12	400-1500	0,04-0,15	400-1500	0,06-0,20
N	7.5	≤600	≤180	Al cast alloy, Si ≥10 %	200-800	0,04-0,08	200-800	0,04-0,10	400-1000	0,04-0,12	400-1500	0,04-0,15	400-1500	0,06-0,20
N	8.1			thermoplastics										
N	8.2			thermosetting plastics										
N	8.3			fibre reinforced plastics	200-500	0,02-0,06	200-500	0,03-0,08	200-600	0,03-0,10	200-600	0,04-0,12	500-1200	0,05-0,15

Guideline values for milling					PCD Face milling cutter							
Material group		Strength Rm (N/mm²)	Hardness HB	v_c (m/min) = Cutting speed f_z (mm/tooth) = Milling feed Material								
					∅ 10		∅ 12		∅ 16 | 20 | 25 | 32		∅ 40 – 160	
					v_c m/min	f_z mm/tooth	v_c m/min	f_z mm/tooth	v_c m/min	f_z mm/tooth	v_c m/min	f_z mm/tooth
N	6.1	≤350	≤100	non-alloy copper								
N	6.2	≤700	≤200	short chip, brass, bronze, red brass	300-800	0,04-0,12	300-1000	0,04-0,15	300-1000	0,06-0,20	1000-1500	0,04-0,15
N	6.3	≤700	≤200	long chip brass								
N	6.4	≤500	≤470	Cu-Al-Fe alloy (Ampco)								
N	7.1	≤350	≤100	Al, Mg non-alloy	400-1000	0,04-0,12	400-1500	0,04-0,15	400-1500	0,06-0,20	1000-3500	0,04-0,15
N	7.2	≤600	≤180	Al wrought alloy, breaking strain (A 5) <14 %	400-1000	0,04-0,12	400-1500	0,04-0,15	400-1500	0,06-0,20	1000-3500	0,04-0,15
N	7.3	≤600	≤180	Al wrought alloy, breaking strain (A 5) ≥14 %	400-1000	0,04-0,12	400-1500	0,04-0,15	400-1500	0,06-0,20	1000-3500	0,04-0,15
N	7.4	≤600	≤180	Al cast alloy, Si <10 %	400-1000	0,04-0,12	400-1500	0,04-0,15	400-1500	0,06-0,20	1000-1500	0,04-0,15
N	7.5	≤600	≤180	Al cast alloy, Si ≥10 %	400-1000	0,04-0,12	400-1500	0,04-0,15	400-1500	0,06-0,20	1000-1500	0,04-0,15
N	8.1			thermoplastics								
N	8.2			thermosetting plastics								
N	8.3			fibre reinforced plastics	200-600	0,03-0,10	200-600	0,04-0,12	500-1200	0,05-0,15	500-1200	0,05-0,15

Cutting values shown are relating to the basic recommendations for cutting materials given.

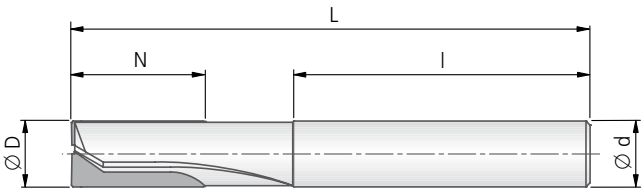
Guideline values for milling					PCD Face and corner milling cutter			
Material group		Strength Rm (N/mm²)	Hardness HB	v_c (m/min) = Cutting speed f_z (mm/tooth) = Milling feed Material				
					∅ 16 | 20 | 25		∅ 32 | 40 | 50 | 63	
					v_c m/min	f_z mm/tooth	v_c m/min	f_z mm/tooth
N	6.1	≤350	≤100	non-alloy copper				
	6.2	≤700	≤200	short chip, brass, bronze, red brass	300-1000	0,06-0,20	300-1500	0,06-0,20
	6.3	≤700	≤200	long chip brass				
	6.4	≤500	≤470	Cu-Al-Fe alloy (Ampco)				
	7.1	≤350	≤100	Al, Mg non-alloy	400-1500	0,06-0,20	400-2500	0,06-0,20
	7.2	≤600	≤180	Al wrought alloy, breaking strain (A 5) <14 %	400-1500	0,06-0,20	400-2500	0,06-0,20
	7.3	≤600	≤180	Al wrought alloy, breaking strain (A 5) ≥14 %	400-1500	0,06-0,20	400-2500	0,06-0,20
	7.4	≤600	≤180	Al cast alloy, Si <10 %	400-1500	0,06-0,20	400-2500	0,06-0,20
	7.5	≤600	≤180	Al cast alloy, Si ≥10 %	400-1500	0,06-0,20	400-2500	0,06-0,20
	8.1			thermoplastics				
	8.2			thermosetting plastics				
	8.3			fibre reinforced plastics	500-1200	0,05-0,15	500-1200	0,05-0,15

Guideline values for milling					PCD Face milling cutter HPC					
Material group		Strength Rm (N/mm²)	Hardness HB	v_c (m/min) = Cutting speed f_z (mm/tooth) = Milling feed Material						
					∅ 10		∅ 12		∅ 16 | 20 | 25 | 32	
					v_c m/min	f_z mm/tooth	v_c m/min	f_z mm/tooth	v_c m/min	f_z mm/tooth
N	6.1	≤350	≤100	non-alloy copper						
	6.2	≤700	≤200	short chip, brass, bronze, red brass	300-800	0,04-0,12	300-1000	0,04-0,15	300-1000	0,06-0,20
	6.3	≤700	≤200	long chip brass						
	6.4	≤500	≤470	Cu-Al-Fe alloy (Ampco)						
	7.1	≤350	≤100	Al, Mg non-alloy	400-1000	0,04-0,12	400-1500	0,04-0,15	400-1500	0,06-0,20
	7.2	≤600	≤180	Al wrought alloy, breaking strain (A 5) <14 %	400-1000	0,04-0,12	400-1500	0,04-0,15	400-1500	0,06-0,20
	7.3	≤600	≤180	Al wrought alloy, breaking strain (A 5) ≥14 %	400-1000	0,04-0,12	400-1500	0,04-0,15	400-1500	0,06-0,20
	7.4	≤600	≤180	Al cast alloy, Si <10 %	400-1000	0,04-0,12	400-1500	0,04-0,15	400-1500	0,06-0,20
	7.5	≤600	≤180	Al cast alloy, Si ≥10 %	400-1000	0,04-0,12	400-1500	0,04-0,15	400-1500	0,06-0,20
	8.1			thermoplastics						
	8.2			thermosetting plastics						
	8.3			fibre reinforced plastics	200-600	0,03-0,10	200-600	0,04-0,12	500-1200	0,05-0,15

KOMET RHOBEST®

PCD Slot milling cutter

straight fluted



38304..					
Ø D_{h10}	Order No.	Ø d_{h6} × l	L	N	Z
6	38304057000600	6 × 36	57	12	2
8	38304063000800	8 × 36	63	16	3
10	38304072001000	10 × 40	72	20	4

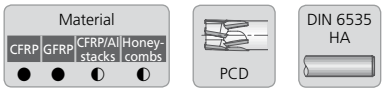
Recommended cutting data

PCD Slot milling cutter (38304..)						
Machining: trimming, face milling, plunge milling						
Cutting speed v_c (m/min) Feed f_z (mm/tooth)	Ø 6 mm		Ø 8 mm		Ø 10 mm	
	v_c	f_z	v_c	f_z	v_c	f_z
CFRP	200-400	0,02-0,06	200-400	0,03-0,08	200-400	0,03-0,10
GFRP	200-400	0,02-0,08	200-400	0,03-0,10	200-400	0,03-0,12
CFRP/Al stacks	200-400	0,02-0,06	200-400	0,03-0,08	200-400	0,03-0,10
Honeycombs	200-400	0,02-0,06	200-400	0,03-0,08	200-400	0,03-0,10

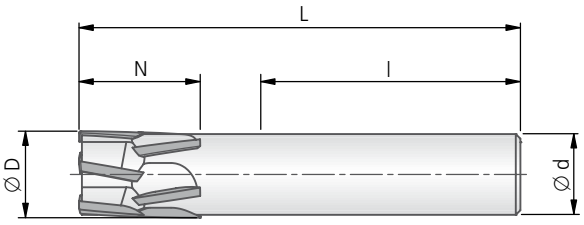
● very good | ◐ good

Important: See chapter 8 for more application details and safety notes!

PCD Compression milling cutter



staggered cut with dual right and left helix



38300..					
Ø D_{h10}	Order No.	Ø d_{h6} × l	L	N	Z
6	38300057000600	6 × 36	57	10	3
10	38300072001000	10 × 40	72	16	4
16	38300090001600	16 × 48	90	20	5

Recommended cutting data

PCD Compression milling cutter (38300..)								
Machining: trimming, pocket and slot milling								
Cutting speed v_c (m/min) Feed f_z (mm/tooth)	Ø 6 mm		Ø 8 mm		Ø 10 mm		Ø 16 mm	
	v_c	f_z	v_c	f_z	v_c	f_z	v_c	f_z
CFRP	200 - 400	0,02 - 0,06	200 - 400	0,03 - 0,08	200 - 400	0,03 - 0,10	200 - 400	0,03 - 0,12
GFRP	200 - 400	0,02 - 0,08	200 - 400	0,03 - 0,10	200 - 400	0,03 - 0,12	200 - 400	0,03 - 0,15
CFRP/Al stacks	200 - 400	0,02 - 0,06	200 - 400	0,03 - 0,08	200 - 400	0,03 - 0,10	200 - 400	0,03 - 0,12
Honeycombs	200 - 400	0,02 - 0,06	200 - 400	0,03 - 0,08	200 - 400	0,03 - 0,10	200 - 400	0,03 - 0,12

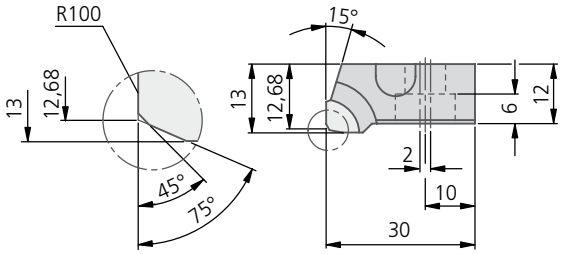
PCD high-performance drill Drillmax

With a point angle of 90° and 130°, the Drillmax PCD high-performance drill is excellently suited for drilling composite materials.

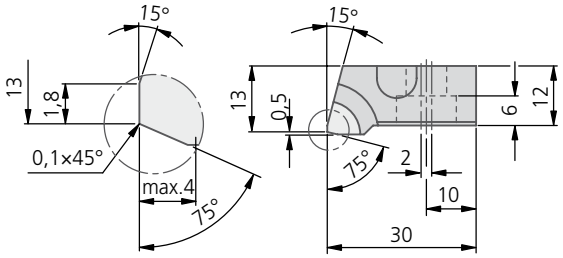
PCD Finishing, facing and corner milling cutter for HSC operations

Cartridges

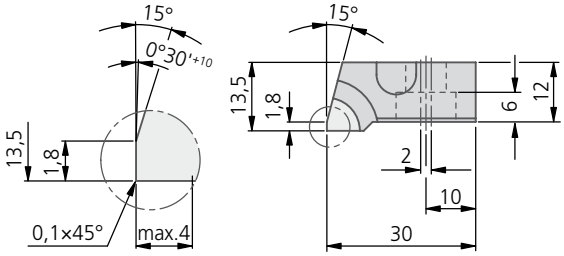
Finishing cartridge F51 34130



Facing cartridge F51 34120

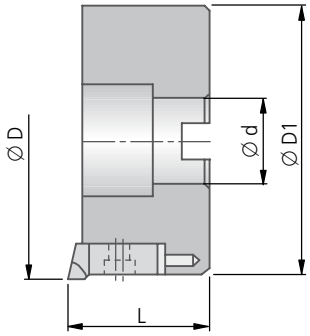


Corner cartridge F51 34110



Basic body

Dimensions to DIN 8030



Supply of basic body includes:
Basic body incl. balancing screws and clamping screws already fitted. Cartridges not included.

Supply of cartridges includes:
Cartridges without clamping screws.

Clamping screw for cartridges: Order No. 55024 06012

Examples for ordering:
Corner mill – complete tool ∅ 63 mm, Z = 3
1 × basic body F51 02340
3 × corner cartridge F51 34110

Face milling cutter complete tool ∅ 80 mm, Z = 5
1 × basic body F51 02350
4 × facing cartridge F51 34120
1 × finishing cartridge F51 34130

Note:
If the basic body and the cartridges are ordered together as shown in the order example, the tool is supplied fully assembled and adjusted. For safety reasons, only use holding screws as shown.

Basic body							Clamping screw		Cartridge with PCD insert		
Ø D	Order No.	Ø d^{H7}	L	Ø D1	Z	kg	Size	Torque setting Milling cutter arbor	Corner cartridge Order No.	Facing cartridge Order No.	Finishing cartridge Order No.
63	**F51 02340**[1)]	22	48	61	3	0,75	M10	70 Nm	**F51 34110**	**F51 34120**	**F51 34130**
80	**F51 02350**	27	50	78	5	0,57	M12				
100	**F51 02360**	32	50	98	6	0,95	M16				

[1)] basic steel body

Special milling cutter features:

Internal coolant supply
applied with clamping screw provided

Balance
Balanced to DIN 69888 and additional screws for precision balancing

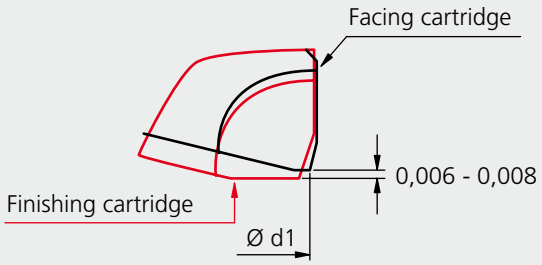
Setting
Secure adjusting screws for setting axial run-out on the milling head

Cartridges
PCD cartridges manufactured to high precision for maximum stability and perfect circular cutting movement

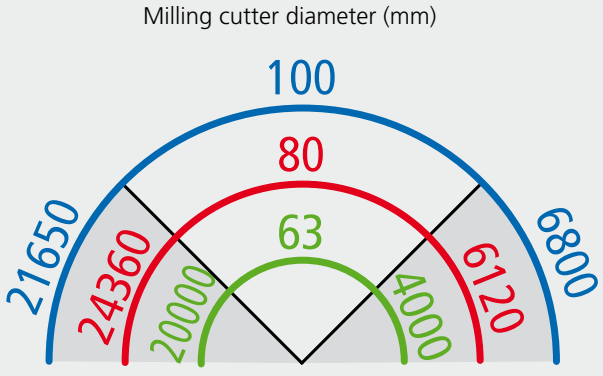
Milling cutter body
Manufactured from special aluminium alloy with high tensile strength, considerably reduced weight and excellent surface finish (Note 63 mm diameter body in steel)

Secure srews
Strong, high quality screws in hardened threaded inserts and with additional lateral screws

Setting notes for combination finishing and facing cartridge



Spindle speeds and cutting speeds



n (min⁻¹)
permissible maximum spindle speed

v_c (m/min)
Permissible maximum cutting speed

KOMET® Indexable insert mills

Combining an innovative design and the special geometry of their indexable inserts, KOMET® milling cutters make a distinctive difference when machining an extremely wide variety of different materials. Using more than 70 indexable inserts with different topographies, substrates and coatings, and a variety of 60 basic body versions, KOMET® provides a versatile, complete range of tools with which all milling tasks from face, shoulder and chamfer milling to milling straight and 45-degree slots, circular and plunge milling, inclined plunge milling as well as free-form milling can be mastered with optimum efficiency.

KOMET® *hi.aeQ*

The innovative KOMET® *hi.aeQ* arbor face milling cutter is excellently suited for reliable face milling of cast iron materials. It features a high number of teeth and low cutting forces.

The Q80 tangential indexable inserts used are designed for counterboring and milling operations. Thanks to a standing-lying arrangement, each insert has eight usable cutting edges. The extremely stable tangential indexable inserts, when combined with selected cutting tool materials and coatings, provide a great economic advantage when machining cast iron materials.

KOMET® Q40-KFM

Highly positive and soft-cutting KOMET® Q40-KFM face-milling cutter with a cutting depth up to 0.177". Suitable for precision and medium machining. The high-performance cutting tool materials BK6130 and BK2735 increase productivity in steel and cast iron machining.

KOMET® Q63-KFM

The 46° face-milling cutter KOMET® Q63-KFM is ideally designed for middle and roughing operations with a cutting depth of up to 0.256" and a tooth feed of up to 0.020". Extremely sturdy design and eight usable cutting edges for working with process reliability.

KOMET® Q56-KHF

The face-milling cutter KOMET® Q56-KHF is particularly efficient. It was designed for high-feed applications and achieves a very high metal removal rate. Its angled cutting edge also achieves optimum surface quality.

inch programme

KOMET® Q43-KSM

The shoulder milling cutter KOMET® Q43-KSM produces shoulders that are step-free and are exactly an 90 degrees as a result of its soft-cutting geometry.

KOMET® Q55-KCM

The copy-milling cutter KOMET® Q55-KCM is suitable for an extremely wide variety of milling tasks and allows high feed rates combined with maximum stability. Due to the use of further indexable insert shapes such as Q43-SDMX, Q47-EOMT or Q55 circular inserts with wiper geometry on the same basic body, this milling system is an all-rounder as far as machining options are concerned. The KOMET® Q55-KCM can therefore be used for chamfer milling, and used equally well as a high feed-rate milling cutter. Tipped with circular wiper inserts, it ensures particularly good surface quality.

KOMET® Q75-KCM

The copy-milling cutter KOMET® Q75-KCM is suitable for face and slot milling. For applications in super alloys as well as titanium and titanium alloys, the specially matched topography -25 is available in combination with the coatings BK6435 and BK7740 and, thanks to the eight usable cutting edges, ensures efficient machining of difficult materials.

KOMET® Tool selection

Help table for milling

Machining											
Surface milling	Axial plunging	Circular milling	Plunge milling	Slot milling	Shoulder milling	Slot milling 45°	Chamfer milling	Free form milling	Turn milling	Circular turn milling	T-slot milling
											
●											
●						●	●				
●							●				
●	●	●	●	●	●						
●	●	●		●	●						
●	●	●	●	●				●	●		
●	●	●	●	●				●	●		
●						●	●				
●	●	●	●	●							
●				●					●		

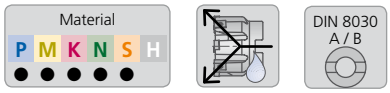
70

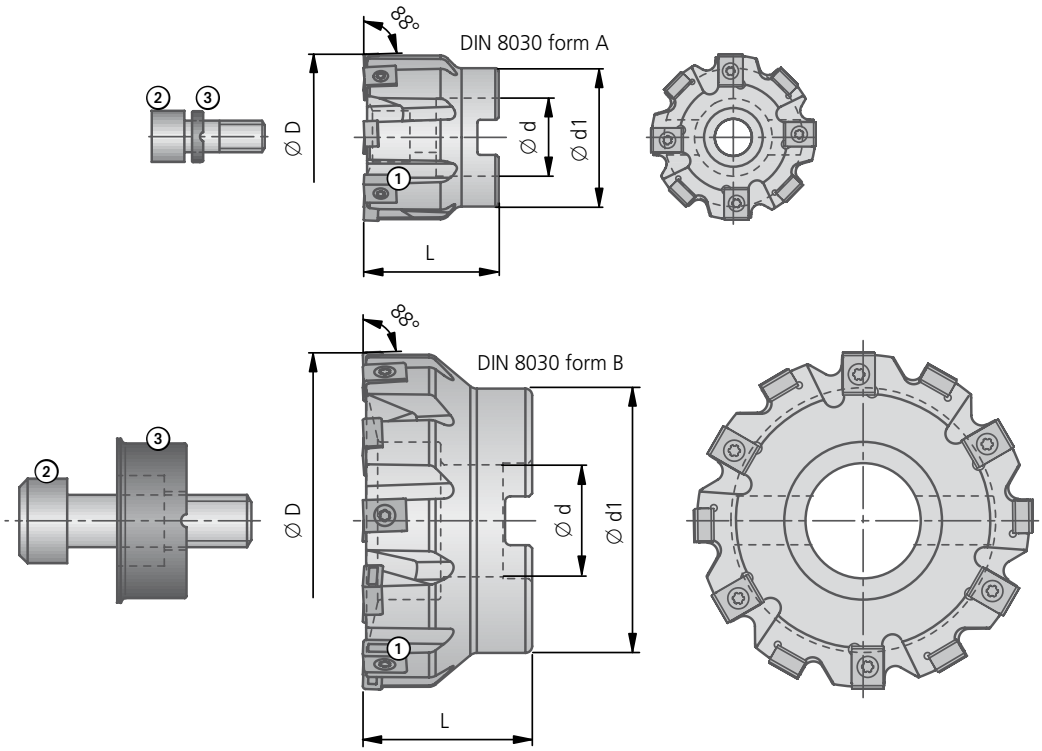
● very good | ◐ good | ○ possible

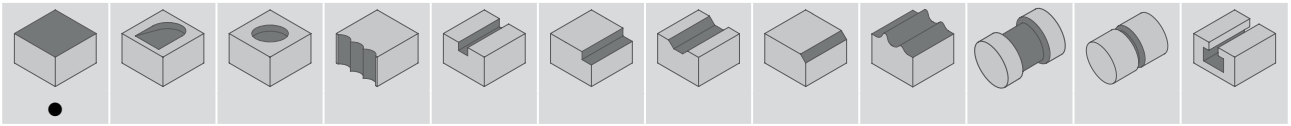
Material						Ø	Indexable insert					Tool	Page
Steel P	Stainless steel M	Cast iron K	Non-ferrous metals N	Superalloys and titanium S	Hardened materials H	inch	Cutting depth a_p max	Setting angle κ_r		ISO code	Cutting edges per indexable insert		
●	○	●	●	●		1.500-2.000 2.500-6.000	0.118 0.157	88°	Q80 20.. Q80 32..	LNGU	8	Face milling cutter KOMET ® *hi.aeQ*	72
●	○	●	●	●		1.500-5.000	0.177	45°	Q40 53..	HOKT HPCT HPKT	6	Face milling cutter Q40-KFM	76
●	○	●		●		1.500-5.000	0.236 0.256	46°	Q63 46.. Q63 53..	SOKU	8	Face milling cutter Q63-KFM	78
●	○	●		●		0.625-1.000 1.000-2.500 1.500-3.000	0.031 0.039 0.079	90°	Q56 20.. Q56 32.. Q56 46..	XPLT XDLT XOLT	4	High feed milling cutter Q56-KHF	80
●	○	●	●	●		1.000-3.000	0.315	90°	Q43 28..	SDKT SDHT	4	Shoulder milling cutter Q43-KSM	84
●	○	●	●	●	○	1.000-2.000 1.000-4.000	0.197 0.236	~	Q55 34.. Q55 42..	RDHW RDHX RPHX RPMX	8	Copy milling cutter Q55-KCM	88
●	○	●		●		1.000-4.000	0.236	~	Q55 42..	RPHX RPMX	4	Copy milling cutter Q55-KCM	96
●	○		●	●		1.000-4.000	0.157	45°	Q43 38..	SDMX	4	Copy milling cutter Q55-KCM	94
●	○					1.250-4.000	0.059		Q47 34..	EOMT	2	Copy milling cutter Q55-KCM	98
●	○	●		●		1.250-4.000	0.177	~	Q75 42..	RNKU ROHU	8	Copy milling cutter Q75-KCM	100

KOMET® *hi.aeQ* Ø 1.500" – 6.000"

Face milling cutter 88°







Z = effective number of teeth for calculating v_f

Arbor milling cutter													Indexable insert
ØD	Order No.	DIN 8030 form	Ød^{H6}	Ød1	L	a_p max	spindle speed max. rpm	Z	lbs	Clamping screw ① Order No. Article	Cylindrical screw ② Order No. Article	Coolant sleeve ③ Order No.	Order No. ISO Code ▽▽ Size
1.500	**F51 15040**	A	0.500	1.417	1.575	0.118	15,000	6	0.79	**N00 57251** S3076-8IP 19.9 in-lbs	**55011 07025** 1/4-28 UNF	**L01 01320** 0.01	**Q80 20050.06....** LNGU 090406 EN-05
2.000	**F51 15050**	A	0.750	1.614	1.575	0.118	13,000	8	0.79	**N00 57251** S3076-8IP 19.9 in-lbs	**55011 09025** 3/8-24 UNF	**L01 01330** 0.03	
2.500	**F51 15060**	A	0.750	1.890	1.575	0.157	10,000	8	1.15	**N00 57411** S40101-15IP 38.1 in-lbs	**55011 09025** 3/8-24 UNF	**L01 01340** 0.05	**Q80 32000.01....** LNGU 120508 EN-05 **Q80 32210.08....** LNGU 120508 EN-21
3.000	**F51 15080**	B	1.000	2.362	1.967	0.157	9,000	10	2.18	**N00 57411** S40101-15IP 38.1 in-lbs	**55011 13038** 1/2-20 UNF	**L01 01350** 0.23	
4.000	**F51 15100**	B	1.500	3.071	1.967	0.157	8,000	12	3.77	**N00 57411** S40101-15IP 38.1 in-lbs	**55011 19031** 3/4-16 UNF	**L01 01360** 0.44	
5.000	**F51 15120**	B	2.000	3.937	2.479	0.157	7,000	16	7.78	**N00 57411** S40101-15IP 38.1 in-lbs	**55011 19044** 3/4-16 UNF	**L01 01370** 0.64	
6.000	**F51 15160**	B	2.000	5.512	2.479	0.157	6,000	20	12.48	**N00 57411** S40101-15IP 38.1 in-lbs	**55011 25038** 1-14 UNS	**L01 01380** 1.41	

For further details on selecting the cutting material, see page 75. Enter cutting material code ▲

Supply includes milling cutter Ø 1.500" - 2.500" mm:
with clamping screws ① (pre-fitted with high-temperature paste, order no.: 47001 00105) and cylindrical screw ②.

Supply includes milling cutter Ø 3.000" - 6.000" mm:
with clamping screws ① (pre-fitted with high-temperature paste, order no.: 47001 00105).

Supply includes coolant sleeve ③:
with cylindrical screw ②.

Please order inserts separately. Screwdriver see chapter 8.

Recommendation: Change the clamping screws regularly to ensure the smooth running of the milling cutter.

● very good | ◐ good

Cutting values for milling: Page 75.

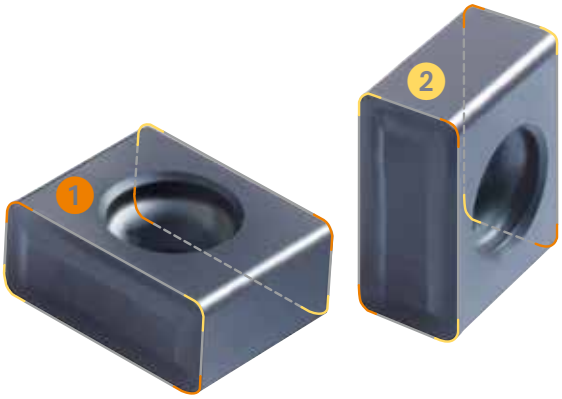
KOMET® *hi.aeQ*

Application example face milling cutter 88°

Face milling of large cast material pump casing

Material: EN-GJS-600-3
Machine: Mazak BAZ
v_c = 1181 SFM
f_z = 0.006"
f = 0.118 IPR
a_p = 0.059"

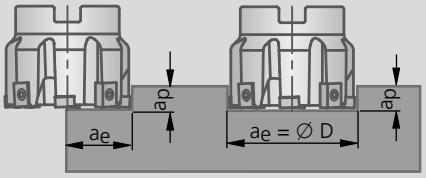
Quiet and quick machining



BENEFITS for you:

- High stability for high cutting efficiency thanks to the use of tangential screw-fit Q80 indexable inserts
- Eight usable cutting edges thanks to indexable inserts which are fitted in an alternately standing and lying arrangement
- Low power consumption thanks to low cutting forces and a low-vibration, quiet milling characteristic reduces the spindle loads
- This concept guarantees extremely high process reliability when combined with modern, matched substrates and coatings
- Both PVD and CVD-coated indexable inserts are available
- If internal coolant supply is used, optimum cooling of every cutting edge is achieved by using the coolant sleeve

Recommended cutting data for face milling cutter 88°



		Feed f_z (in/tooth) at a_e/D											
		≤ 0.1			> 0.1 - 0.2			> 0.2 - 0.3			> 0.3		
P	1.0 2.0	0.005	**0.012**	0.019	0.004	**0.009**	0.014	0.003	**0.007**	0.011	0.002	**0.006**	0.010
P	2.1 3.0	0.006	**0.015**	0.023	0.005	**0.011**	0.017	0.004	**0.009**	0.014	0.003	**0.007**	0.012
P	4.0	0.005	**0.010**	0.015	0.004	**0.007**	0.011	0.003	**0.006**	0.009	0.002	**0.005**	0.008
S		0.005	**0.007**	0.009	0.004	**0.005**	0.006	0.003	**0.004**	0.005	0.002	**0.004**	0.005
M	6.0 6.1	0.005	**0.007**	0.009	0.004	**0.005**	0.006	0.003	**0.004**	0.005	0.002	**0.004**	0.005
M	7.0	0.005	**0.0055**	0.006	0.004	**0.0045**	0.005	0.003	**0.0035**	0.004	0.002	**0.003**	0.004
K		0.010	**0.019**	0.027	0.007	**0.014**	0.019	0.006	**0.011**	0.016	0.005	**0.009**	0.014
N		0.007	**0.022**	0.037	0.006	**0.016**	0.026	0.005	**0.013**	0.022	0.004	**0.012**	0.020
H													

p.ex. mill dia. 4.000", engagement width a_e 0.400" = $\frac{a_e}{D} = \frac{0.400}{4.000} = 0.1$

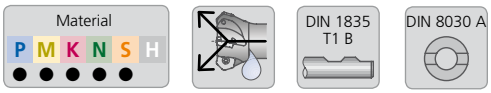
Cutting speed v_c (fpm)

					Geometry	Q80..-05			Q80..-21	
					Coating type	CVD	PVD	PVD	PVD	PVD
					Cutting material designation	BK6115	BK2715	BK2730	BK2730	BK7935
					Cutting material code	6115	2715	2730	2730	7935
Material	Material example, material code ANSI / SAE	Strength Rm (lbf/in²)	Hardness HB	Material group						
non-alloy steels	A570.36 / 1213 A573.81	≤ 72500		1.0	P				390-790	490-985
non-alloy / low alloy steels	5120 / 1055 5115	72500- 130000		2.0	P				390-790	490-985
lead alloys	12L13	< 72500		2.1	P				390-790	490-985
low alloy steels	4140 1064	>130000 - 174000		3.0	P				390-655	490-820
high alloy steels	H13 H21	> 174000		4.0	P				210-525	260-655
HSS				4.1	P					
super alloys: Inconel, Hastelloy, Nimonic, stc.	Inconel® 718 Nimonic® 80A		250	5.0	S					
titanium, titanium alloys	AMS R54520	58000		5.1	S					100-390
stainless steels	304L 316	≤ 87000		6.0	M					260-460
stainless steels	630	< 130000		6.1	M					195-390
stainless / fireproof steels	420 403	> 130000		7.0	M					100-260
gray cast iron	No 35 B No 50 B		180	8.0	K	490-1050	450-820	390-590	390-590	
alloy gray cast iron	A436 Type 2		250	8.1	K	390-850	360-655	195-390	195-390	
spheroidal graphite cast iron, ferritic	60-40-18	≤ 87000	130	9.0	K	460-985	425-755	260-525	260-525	
spheroidal graphite cast iron, ferritic/perlitic	80-55-06		230	9.1	K	390-850	360-655	260-525	260-525	
spheroidal graphite cast iron, perlitic, malleable iron	100-70-03 70003	> 87000	250	10.0	K	360-755	325-590	195-390	195-390	
alloyed spheroidal graphite cast iron	A43D2		200	10.1	K	360-755	325-590	165-360	165-360	
vermicular cast iron			300	10.2	K	295-655	295-490	165-330	165-330	
copper alloy, brass, lead-alloy bronze, lead bronze: good cut	UNS C36000		90	12.0	N				490-820	
copper alloy, brass, bronze: average cut			100	12.1	N				655-1300	
wrought aluminium alloys	GD-AlSi12		60	13.0	N				985-1640	
cast alum. alloy: Si-content <10% magnesium alloy			75	13.1	N				590-1050	
cast alum.alloy: Si-content >10%	A360.2		100	14.0	N				490-820	
hardened steels < 45 HRC		203000		15.0	H					
hardened steels > 45 HRC		261000		16.0	H					

Cutting speed v_c can be increased by reducing the width of cutting edge engagement a_e

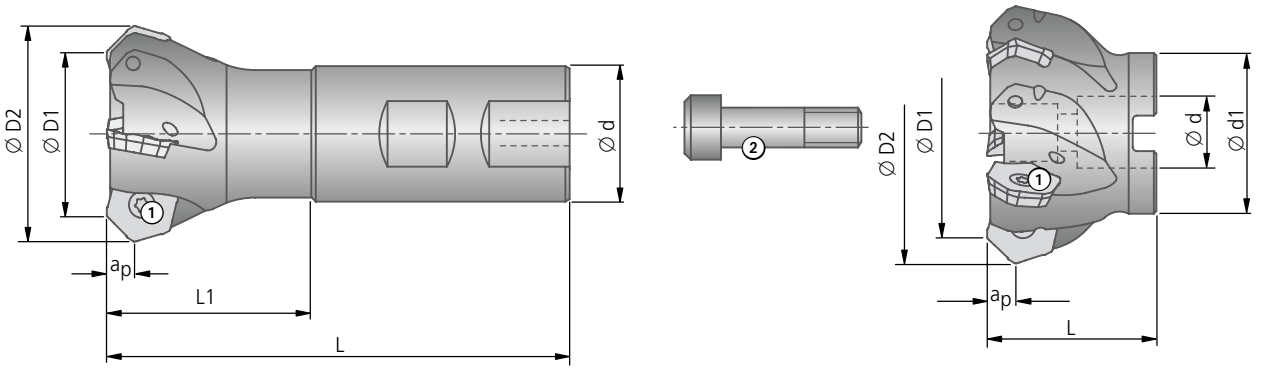
Important: See chapter 8 for more application details and safety notes !

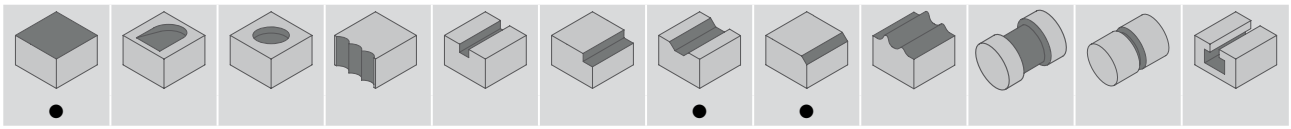
Face milling cutter Q40-KFM



BENEFITS for you:

- Highly positive cutting edge geometry for soft cutting action
- Optimised topographies for different applications on small and medium-sized milling machines
- Six useful cutting edges per indexable insert
- Every cutting edge with wiper geometry





Z = effective number of teeth for calculating v_f

End milling cutter										Clamping screw	Indexable insert
Ø D1	Ø D2	Order No.	$Ød_{h6}$	L	L1	a_p max	Spindle speed max. rpm	Z	lbs	Order No. Article	Order No. ISO Code
1.500	1.980	**F55 03650**	1.500	4.000	2.000	0.177	17,000	4		**N00 57890** S40110-15IP 38.1 in-lbs	Q40 53.. HOKT | HPCT | HPKT

Arbor milling cutter										Cylindrical screw ②	Clamping screw	Indexable insert
Ø D1	Ø D2	Order No.	Ø d^{H7}	Ø d1	L	a_p max	Spindle speed max. rpm	Z	lbs	Order No. Article	Order No. Article	Order No. ISO Code
1.500	1.980	**F55 04650**	0.500	1.456	1.575	0.177	19,900	4		**55011 07025** 1/4-28UNF	**N00 57890** S40110-15IP 38.1 in-lbs	Q40 53.. HOKT | HPCT | HPKT
2.000	2.480	**F55 04690**	0.750	1.771	1.575	0.177	15,900	5	0.71	**55011 09025** 3/8-24UNF		
2.500	2.980	**F55 04730**	0.750	1.928	1.575	0.177	12,600	6	1.23	**55011 09025** 3/8-24UNF		
3.000	3.480	**F55 04770**	1.000	2.283	1.968	0.177	9,900	7	2.56	**55011 13038** 1/2-20UNF		
4.000	4.480	**F55 04810**	1.500	3.779	1.968	0.177	7,900	9		–		
5.000	5.480	**F55 04850**	1.500	3.779	2.480	0.177	6,300	10	6.57	–		

Supply includes: Milling cutter with clamping screws ① (pre-fitted with high-temperature paste, order no.: 47001 00105).
Supply includes arbor milling cutter Ø 1.500" - 3.000":
Milling cutter with clamping screws ① (pre-fitted with high-temperature paste, order no.: 47001 00105) and cylindrical screw ②.
Please order inserts separately. Screwdriver see chapter 8.
Recommendation: Change the clamping screws regularly to ensure the smooth running of the milling cutter.

Feed f_z (in/tooth) at a_e/D

	Order No.	ISO code	Material group	p.ex. mill dia. 4.000", engagement width a_e 0.400" = $\frac{a_e}{D} = \frac{0.400}{4.000} = 0.1$				Cutting depth a_p
				≤ 0.1	> 0.1 - 0.2	> 0.2 - 0.3	> 0.3 - 1	
medium roughing operations higher cutting speed tougher steel materials precision-machining and finishing	Q40 53010.048425	HPKT0604AZER-01 BK8425	P	0.008 **0.011** 0.014	0.006 **0.008** 0.010	0.005 **0.007** 0.009	0.004 **0.006** 0.007	0.157
	Q40 53010.046130	HOKT0604AZER-01 BK6130						
	Q40 53010.042735	HOKT0604AZER-01 BK2735						
	Q40 53210.048425	HPKT0604AZER-21 BK8425						
super alloys	Q40 53210.046435	HPKT0604AZER-21 BK6435	S	0.006 **0.008** 0.010	0.005 **0.006** 0.007	0.004 **0.0045** 0.005	0.003 **0.0035** 0.004	0.157
medium roughing operations precision-machining and finishing	Q40 53010.042740	HPKT0604AZER-01 BK2740	M	0.008 **0.010** 0.012	0.006 **0.007** 0.008	0.005 **0.0055** 0.006	0.004 **0.0045** 0.005	0.157
	Q40 53210.042740	HPKT0604AZER-21 BK2740						
	Q40 53050.046110	HPKT0604AZER-05 BK6110	K	0.008 **0.011** 0.014	0.006 **0.008** 0.010	0.005 **0.007** 0.009	0.004 **0.006** 0.007	0.157
higher cutting speed	Q40 53010.046130	HOKT0604AZER-01 BK6130						
	Q40 53120.0423	HPCT0604AZFR-12 K10	N	0.008 **0.011** 0.014	0.006 **0.008** 0.010	0.005 **0.007** 0.009	0.004 **0.006** 0.007	0.157

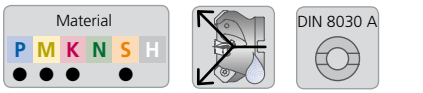
Cutting speed v_c (fpm)

					Indexable insert	Q40 53.. (HOKT / HPCT / HPKT)										
					Coating type	PVD		PVD		CVD		CVD	PVD		CVD	–
					Cutting material designation	BK8425		BK2735		BK6130		BK6435	BK2740		BK6110	K10
					Cutting material code	8425		2735		6130		6435	2740		6110	23
Material	Material example, material code ANSI / SAE	Strength Rm (lbf/In²)	Hardness HB	Material group		dry	wet	dry	wet	dry	wet	dry	dry	wet	dry+wet	wet
non-alloy steels	A570.36 / 1213 A573.81	≤ 72500		P	1.0	330-720	230-590	525-790	330-460	395-920	260-490					
non-alloy / low alloy steels	5120 / 1055 5115	72500-130000			2.0	260-720	230-560	395-720	295-395	260-820	230-460					
lead alloys	12L13	< 72500			2.1	330-720	230-560	525-790	330-460	395-920	260-490					
low alloy steels	4140 1064	>130000 - 174000			3.0	260-655	230-525	395-720	295-395	260-720	230-460					
high alloy steels	H13 H21	> 174000			4.0	260-560	230-490	260-360	195-260	260-425	195-295					
HSS					4.1	260-460	195-395	260-460	195-395	260-460	195-395					
super alloys: Inconel, Hastelloy, Nimonic, stc.	Inconel® 718 Nimonic® 80A		250	S	5.0							80-245				
titanium, titanium alloys	AMS R54520	58000			5.1											
stainless steels	304L 316	≤ 87000		M	6.0								525-820	195-460		
stainless steels	630	< 130000			6.1								490-720	195-460		
stainless / fireproof steels	420 403	> 130000			7.0								330-820	195-460		
gray cast iron	No 35 B No 50 B		180	K	8.0					590-1150	460-625				460-1150	
alloy gray cast iron	A436 Type 2		250		8.1					590-1150	460-625				395-1050	
spheroidal graphite cast iron, ferritic	60-40-18	≤ 87000	130		9.0					425-690	260-395				330-820	
spheroidal graphite cast iron, ferritic/perlitic	80-55-06		230		9.1					425-690	260-395				395-1050	
spheroidal graphite cast iron, perlitic, malleable iron	100-70-03 70003	> 87000	250		10.0					525-655	295-395				395-1050	
alloyed spheroidal graphite cast iron	A43D2		200		10.1					1260-820	330-590				395-1050	
vermicular cast iron			300		10.2					330-525	260-395				330-820	
copper alloy, brass, lead-alloy bronze, lead bronze: good cut	UNS C36000		90	N	12.0											985-3280
copper alloy, brass, bronze: average cut			100		12.1											985-3280
wrought aluminium alloys	GD-AlSi12		60		13.0											655-9840
cast alum. alloy: Si-content <10% magnesium alloy			75		13.1											985-1640
cast alum.alloy: Si-content >10%	A360.2		100		14.0											985-1310
hardened steels < 45 HRC		203000		H	15.0											
hardened steels > 45 HRC		261000			16.0											

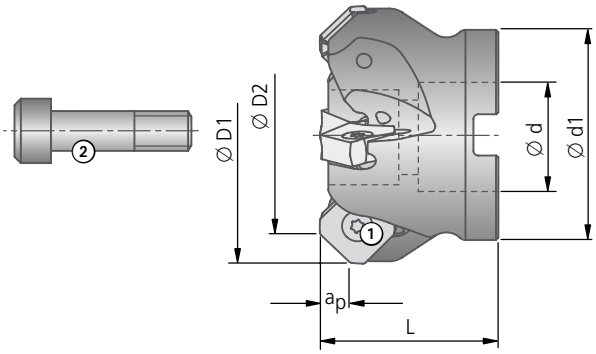
Cutting speed v_c can be increased by reducing the width of cutting edge engagement a_e. Further cutting parameters see page 102-103.

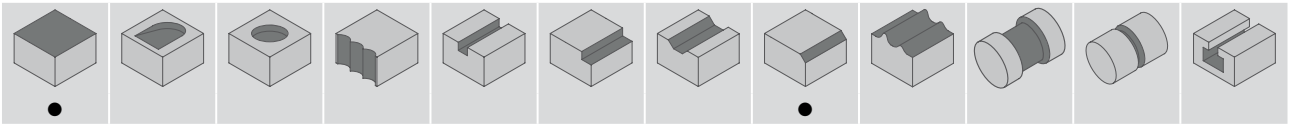
Important: See chapter 8 for more application details and safety notes !

Face milling cutter Q63-KFM



BENEFITS for you:
- Stable double-sided indexable insert for ap up to 0.256"
- High-quality surface finish thanks to wiper geometry
- Eight cutting edges per indexable insert





Z = effective number of teeth for calculating v_f

Arbor milling cutter												
Ø D1	Ø D2	Order No.	Ø d^{H7}	Ø d1	L	a_p max.	Spindle speed max. rpm	Z	lbs	Cylindrical screw ② Order No. Article	Clamping screw TORX® | TORX PLUS® ① Order No. Article	Indexable insert Order No. ISO Code
1.500	1.988	**F55 01650**	0.500	1.496	1.772	0.236	19,900	4		**55011 07025** 1/4-28UNF	**N00 57920** S40110-T15-55° 37.6 in-lbs	**Q63 46..** SOKU 12..
2.000	2.488	**F55 01690**	0.750	1.772	1.772	0.236	15,900	5		**55011 09025** 3/8-24UNF		
2.500	2.988	**F55 01730**	0.750	1.929	1.772	0.236	12,600	6	1.32	**55011 09025** 3/8-24UNF		
3.000	3.488	**F55 01770**	1.000	2.323	1.968	0.236	9,900	8		**55011 13032** 1/2-20UNF		
4.000	4.488	**F55 01810**	1.500	3.779	2.488	0.236	7,900	10	3.97	–		
5.000	5.488	**F55 01850**	1.500	3.779	2.488	0.236	6,300	12	7.32	–		
1.500	2.091	**F55 02650**	0.500	1.811	1.772	0.256	15,900	4		**55011 07025** 1/4-28UNF	**N00 57900** S45130-20IP 44.3 in-lbs	**Q63 53..** SOKU 15..
2.000	2.591	**F55 02690**	0.750	1.772	1.772	0.256	12,700	4	0.93	**55011 09025** 3/8-24UNF		
2.500	3.091	**F55 02730**	0.750	1.968	1.772	0.256	10,100	5	1.37	**55011 09025** 3/8-24UNF		
3.000	3.591	**F55 02770**	1.000	2.362	1.968	0.256	7,900	6		**55011 13032** 1/2-20UNF		
4.000	4.591	**F55 02810**	1.500	3.779	2.480	0.256	6,300	7	4.01	–		
5.000	5.591	**F55 02850**	1.500	3.779	2.480	0.256	5,000	8		–		

Supply includes: Milling cutter with clamping screws ① (pre-fitted with high-temperature paste, order no.: 47001 00105).

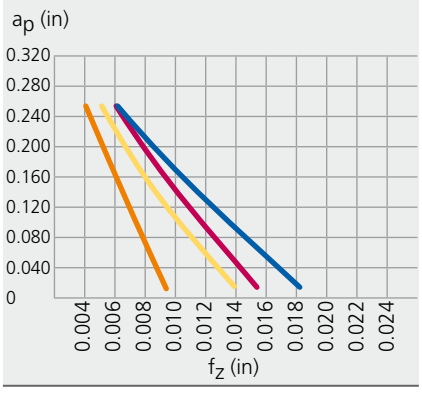
Supply includes arbor milling cutter Ø 1.500" - 3.000": Milling cutter with clamping screws ① (pre-fitted with high-temperature paste, order no.: 47001 00105) and cylindrical screw ②.

Please order inserts separately.
Screwdriver see chapter 8.

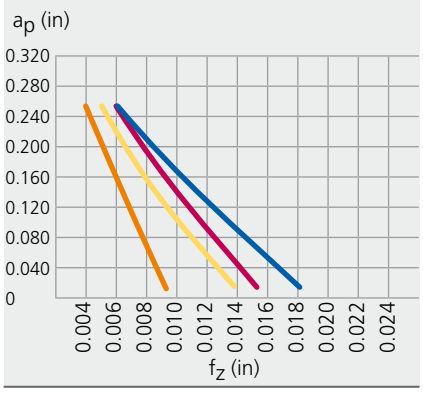
Recommendation: Change the clamping screws regularly to ensure the smooth running of the milling cutter.

With decreasing cutting depth the tooth feed can be increased. Example given for $a_e/D > 0.3$-1

Q63 46 / SOKU 12...



Q63 53 / SOKU 15...



TORX® and TORX PLUS® are registered trademarks for the Acument Intellectual Properties, LLC, Troy Mich., US

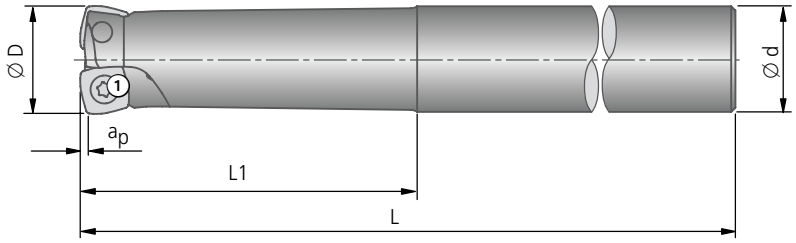
● very good | ◐ good

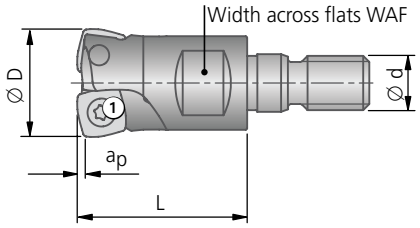
Feed f_z (in/tooth) at a_e/D								
	Order No.	ISO code	Material group	p.ex. mill dia. 4.000", engagement width a_e 0.400" = $\frac{a_e}{D} = \frac{0.400}{4.000} = 0.1$				Cutting depth a_p
				≤ 0.1	> 0.1 - 0.2	> 0.2 - 0.3	> 0.3 - 1	
Q63 46.. (SOKU 12...)								
medium roughing operations	Q63 46210.068425	SOKU1205AZ-21 BK8425	P	0.008 **0.012** 0.016	0.006 **0.009** 0.012	0.005 **0.007** 0.010	0.004 **0.006** 0.009	0.236
super alloys	Q63 46210.066435	SOKU1205AZ-21 BK6435	S	0.007 **0.008** 0.009	0.005 **0.006** 0.007	0.004 **0.005** 0.006	0.003 **0.004** 0.005	0.236
medium roughing operations	Q63 46210.062740	SOKU1205AZ-21 BK2740	M	0.008 **0.010** 0.012	0.006 **0.007** 0.009	0.005 **0.006** 0.007	0.004 **0.005** 0.006	0.236
	Q63 46050.066110	SOKU1205AZ-05 BK6110	K	0.008 **0.012** 0.016	0.006 **0.009** 0.012	0.005 **0.007** 0.010	0.004 **0.006** 0.009	0.236
Q63 53.. (SOKU 15...)								
medium roughing operations	Q63 53210.068425	SOKU1505AZ-21 BK8425	P	0.008 **0.012** 0.016	0.006 **0.009** 0.012	0.005 **0.007** 0.010	0.004 **0.006** 0.009	0.256
super alloys	Q63 53210.066435	SOKU1505AZ-21 BK6435	S	0.007 **0.008** 0.009	0.005 **0.006** 0.007	0.004 **0.005** 0.006	0.003 **0.004** 0.005	0.256
medium roughing operations	Q63 53210.062740	SOKU1505AZ-21 BK2740	M	0.008 **0.010** 0.012	0.006 **0.007** 0.009	0.005 **0.006** 0.007	0.004 **0.005** 0.006	0.256
	Q63 53050.066110	SOKU1505AZ-05 BK6110	K	0.008 **0.012** 0.016	0.006 **0.009** 0.012	0.005 **0.007** 0.010	0.004 **0.006** 0.009	0.256

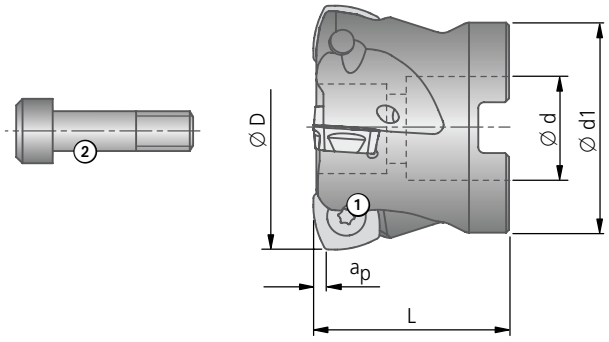
Cutting speed v_c (fpm)											
				Indexable insert	Q63.. (SOKU..)						
				Coating type	PVD		CVD	PVD		CVD	
				Cutting material designation	BK8425		BK6435	BK2740		BK6110	
				Cutting material code	**8425**		**6435**	**2740**		**6110**	
Material	Material example, material code ANSI / SAE	Strength Rm (lbf/in²)	Hardness HB	Material group	dry	wet	dry	dry	wet	dry + wet	
non-alloy steels	A570.36 / 1213 A573.81	≤ 72500		1.0	330-720	230-590					
non-alloy / low alloy steels	5120 / 1055 5115	72500-130000		2.0	260-720	230-560					
lead alloys	12L13	< 72500		2.1	330-720	230-560					
low alloy steels	4140 1064	>130000 - 174000		P 3.0	260-655	230-525					
high alloy steels	H13 H21	> 174000		4.0	260-560	230-490					
HSS				4.1	260-460	195-395					
super alloys: Inconel, Hastelloy, Nimonic, stc.	Inconel® 718 Nimonic® 80A		250	5.0			80-245				
titanium, titanium alloys	AMS R54520	58000		S 5.1							
stainless steels	304L 316	≤ 87000		6.0				525-820	195-460		
stainless steels	630	< 130000		M 6.1				490-720	195-460		
stainless / fireproof steels	420 403	> 130000		7.0				330-820	195-460		
gray cast iron	No 35 B No 50 B		180	8.0						460-1150	
alloy gray cast iron	A436 Type 2		250	8.1						395-1050	
spheroidal graphite cast iron, ferritic	60-40-18	≤ 87000	130	9.0						330-820	
spheroidal graphite cast iron, ferritic/perlitic	80-55-06		230	K 9.1						395-1050	
spheroidal graphite cast iron, perlitic, malleable iron	100-70-03 70003	> 87000	250	10.0						395-1050	
alloyed spheroidal graphite cast iron	A43D2		200	10.1						395-1050	
vermicular cast iron			300	10.2						330-820	

Cutting speed v_c can be increased by reducing the width of cutting edge engagement a_e. Further cutting parameters see page 102-103.

High feed milling cutter Q56-KHF

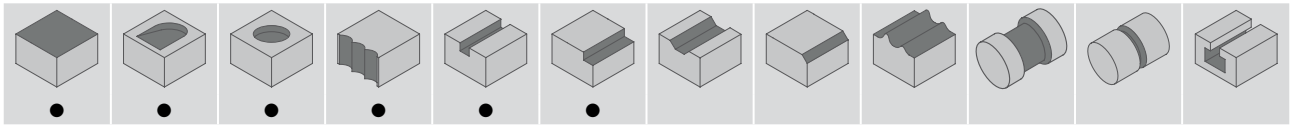






BENEFITS for you:

- High feed-rate milling
- High metal removal rate achievable because tooth feed rate of up to 0.118" possible
- Soft-cutting geometry reduces vibration
- Angled cutting edge for outstanding surface quality
- Creation of a 90° shoulder



Z = effective number of teeth for calculating v_f

End milling cutter											
Ø D	Order No.	Ød_{h6}	L	L1	a_p max	Spindle speed max. rpm	Z	lbs	Clamping screw TORX® ① Order No. Article	Indexable insert Order No. ISO Code
0.625	**F55 05550**	0.625	7.874	1.968	0.031	4,600	2		**N00 57820** S2550-T8-55° 10.6 in-lbs	**Q56 20..** XPLT 07..
0.750	**F55 05570**	0.750	7.874	1.968	0.031	4,200	3	0.22		
1.000	**F55 05610**	1.000	7.874	1.968	0.031	4,600	4			
1.000	**F55 07610**	1.000	8.858	1.968	0.039	9,000	3	1.68	**N00 57860** S3572-T15-55° 28.3 in-lbs	**Q56 32..** XDLT 10..
1.500	**F55 09650**	1.500	9.843	2.480	0.079	6,400	3		**N00 57880** S45105-T20-55° 44.3 in-lbs	**Q56 46..** XOLT 13..

Screw-in cutter											
Ø D	Order No.	Ø d	L	a_p max	Spindle speed max. rpm	Width across flats WAF	Tightening torque Nm	Z	lbs	Clamping screw TORX® ① Order No. Article	Indexable insert Order No. ISO Code Size
0.625	**F55 06550**	M8	1.693	0.031	20,800	10	25	2		**N00 57820** S2550-T8-55° 10.6 in-lbs	**Q56 20..** XPLT 07..
0.750	**F55 06570**	M10	1.929	0.031	19,800	15	40	3			
1.000	**F55 06610**	M12	2.244	0.031	18,700	17	60	4	0.22		

Arbor milling cutter											
Ø D	Order No.	Ø d^{H7}	Ø d1	L	a_p max	Spindle speed max. rpm	Z	lbs	Cylindrical screw ② Order No. Article	Clamping screw TORX® ① Order No. Article	Indexable insert Order No. ISO Code
1.500	**F55 08650**	0.500	1.457	1.575	0.039	26,400	4		**55011 07025** 1/4-28UNF	**N00 57870** S3586-T15-55° 28.3 in-lbs	**Q56 32..** XDLT 10..
2.000	**F55 08690**	0.750	1.770	1.575	0.039	23,500	5		**55011 09025** 3/8-24UNF		
2.500	**F55 08730**	0.750	1.920	1.575	0.039	20,500	6		**55011 09025** 3/8-24UNF		
2.000	**F55 10690**	0.750	1.773	1.575	0.079	18,800	4		**55011 09025** 3/8-24UNF	**N00 57880** S45105-T20-55° 44.3 in-lbs	**Q56 46..** XOLT 13..
2.500	**F55 10730**	0.750	1.968	1.575	0.079	16,400	5	0.95	**55011 09025** 3/8-24UNF		
3.000	**F55 10770**	1.000	2.283	1.575	0.079	14,000	7	1.76	**55011 13038** 1/2-20UNF		

Supply includes: Milling cutter with clamping screws ① (pre-fitted with high-temperature paste, order no.: 47001 00105).

Supply includes arbor milling cutter:

Milling cutter with clamping screws ① (pre-fitted with high-temperature paste, order no.: 47001 00105) and cylindrical screw ②.

Please order inserts separately. Screwdriver see chapter 8.

Recommendation: Change the clamping screws regularly to ensure the smooth running of the milling cutter.

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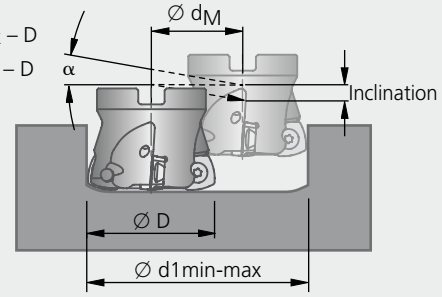
Cutting values for milling: page 83.

Application example high feed milling cutter Q56-KHF

Circular plunging

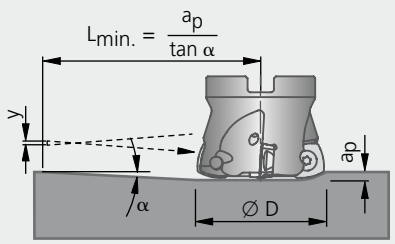
$d_M = d1max - D$
$d_M = d1min - D$



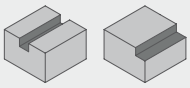
Ø D	ISO code insert	Ø d1 min Ramping angle α max	Ø d1 min Ø d1 min	Ø d1 min Incli-nation (in/rev)	Ø d1 max Ramping angle α max	Ø d1 max Ø d1 max	Ø d1 max Incli-nation (in/rev)
End milling cutter							
0.625	XPLT07	2.4°	0.857	0.031	1.0°	1.211	0.031
0.750	XPLT07	1.6°	1.107	0.031	0.8°	1.461	0.031
1.000	XPLT07	0.9°	1.607	0.031	0.6°	1.961	0.031
1.000	XDLT10	1.7°	1.4094	0.039	0.8°	1.9213	0.039
1.500	XOLT13	2.0°	2.2126	0.079	1.0°	2.9213	0.079
Screw-in cutter							
0.625	XPLT07	2.4°	0.857	0.031	1.0°	1.211	0.031
0.750	XPLT07	1.6°	1.107	0.031	0.8°	1.461	0.031
1.000	XPLT07	0.9°	1.607	0.031	0.6°	1.961	0.031
Arbor milling cutter							
1.500	XDLT10	0.8°	2.4094	0.039	0.5°	2.9213	0.039
2.000	XDLT10	0.5°	3.4094	0.039	0.4°	3.9213	0.039
2.500	XDLT10	0.4°	4.4094	0.039	0.3°	4.9213	0.039
2.000	XOLT13	1.2°	3.2126	0.079	0.7°	3.9213	0.079
2.500	XOLT13	0.8°	4.2126	0.079	0.6°	4.9213	0.079
3.000	XOLT13	0.7°	5.2126	0.079	0.5°	5.9213	0.079

Inclined plunging

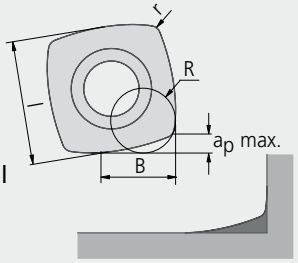
$L_{min.} = \frac{a_p}{\tan \alpha}$



Ø D	ISO code insert	a_p max	Lift from work-piece if direction is reversed y	Ramping angle α max	L min
End milling cutter					
0.625	XPLT07	0.031	0.023	5.9°	0.300
0.750	XPLT07	0.031	0.020	3.2°	0.554
1.000	XPLT07	0.031	0.021	2.0°	0.888
1.000	XDLT10	0.039	0.022	3.5°	0.638
1.500	XOLT13	0.079	0.053	4.4°	1.027
Screw-in cutter					
0.625	XPLT07	0.031	0.023	5.9°	0.300
0.750	XPLT07	0.031	0.020	3.2°	0.554
1.000	XPLT07	0.031	0.021	2.0°	0.888
Arbor milling cutter					
1.500	XDLT10	0.039	0.018	1.2°	1.862
2.000	XDLT10	0.039	0.022	0.9°	2.483
2.500	XDLT10	0.039	0.026	0.8°	2.793
2.000	XOLT13	0.079	0.029	1.4°	3.232
2.500	XOLT13	0.079	0.033	1.1°	4.114
3.000	XOLT13	0.079	0.039	1.0°	4.526



Profile for shoulder and groove milling
Program radius and residual material

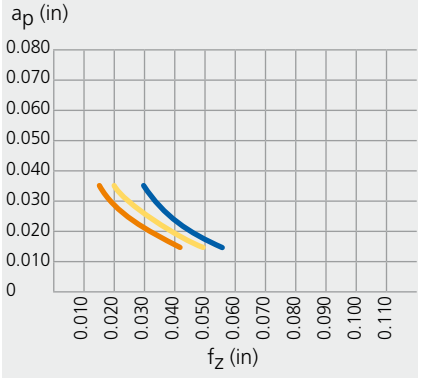


ISO code indexable insert	l	Program radius R	B	r	Cutting depth a_p max
XPLT 07	0.2756	0.0472	0.1693	0.0197	0.0315
XDLT 10	0.3937	0.0787	0.2323	0.0315	0.0394
XOLT 13	0.5118	0.1181	0.3356	0.0394	0.0787

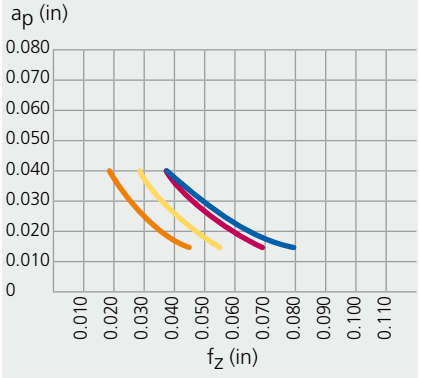
Recommended: $f_z \geq 0.020$ in/tooth

With decreasing cutting depth the tooth feed can be increased. Example given for $a_e/D > 0.3$-1

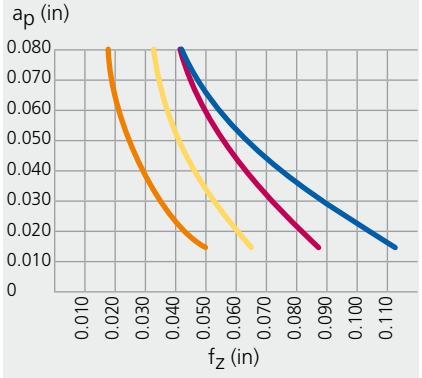
Q56 20 / XPLT 07...



Q56 32 / XDLT 10...



Q56 46 / XOLT 13...



Recommended cutting data for high feed milling cutter Q56-KHF

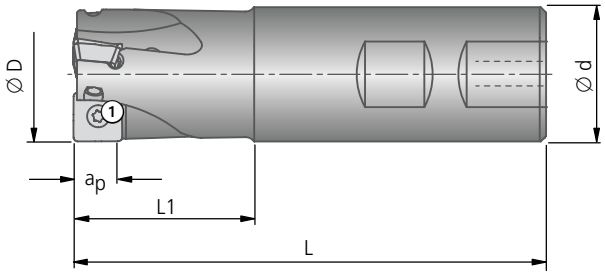
Feed f_z (in/tooth) at a_e/D								
	Order No.	ISO code	Material group	p.ex. mill dia. 4.000", engagement width a_e 0.400" = $\frac{a_e}{D} = \frac{0.400}{4.000} = 0.1$				Cutting depth a_p
				≤ 0.1	> 0.1 - 0.2	> 0.2 - 0.3	> 0.3 - 1	
Q56 20 / XPLT 07...								
medium roughing operations	Q56 20010.058425	XPLT070305-01 BK8425	P	0.033 **0.057** 0.080	0.024 **0.041** 0.058	0.020 **0.033** 0.048	0.016 **0.030** 0.043	0.031
super alloys	Q56 20210.056435	XPLT070305-21 BK6435	S	0.024 **0.032** 0.039	0.017 **0.023** 0.028	0.015 **0.017** 0.020	0.012 **0.015** 0.017	0.031
titanium / titanium alloys	Q56 20210.057740	XPLT070305-21 BK7740						
medium roughing operations	Q56 20010.052740	XPLT070305-01 BK2740	M	0.032 **0.046** 0.059	0.023 **0.033** 0.042	0.019 **0.025** 0.030	0.016 **0.020** 0.025	0.031
Q56 32 / XDLT 10...								
medium roughing operations	Q56 32010.088425	XDLT10T308-01 BK8425	P	0.033 **0.071** 0.109	0.023 **0.051** 0.079	0.020 **0.043** 0.066	0.016 **0.038** 0.058	0.039
precision-machining and finishing	Q56 32210.088425	XDLT10T308-21 BK8425						
super alloys	Q56 32210.086435	XDLT10T308-21 BK6435	S	0.032 **0.040** 0.047	0.023 **0.029** 0.034	0.019 **0.022** 0.024	0.016 **0.018** 0.020	0.039
titanium / titanium alloys	Q56 32210.087740	XDLT10T308-21 BK7740						
medium roughing operations	Q56 32010.082740	XDLT10T308-01 BK2740	M	0.032 **0.065** 0.098	0.023 **0.047** 0.070	0.019 **0.035** 0.051	0.016 **0.029** 0.042	0.039
precision-machining and finishing	Q56 32210.082740	XDLT10T308-21 BK2740						
	Q56 32050.086110	XDLT10T308-05 BK6110	K	0.033 **0.071** 0.109	0.023 **0.051** 0.079	0.020 **0.043** 0.066	0.016 **0.038** 0.058	0.039
Q56 46 / XOLT 13...								
medium roughing operations	Q56 46010.108425	XOLT130410-01 BK8425	P	0.033 **0.078** 0.124	0.023 **0.057** 0.089	0.020 **0.047** 0.074	0.016 **0.041** 0.066	0.078
precision-machining and finishing	Q56 46210.108425	XOLT130410-21 BK8425						
super alloys	Q56 46210.106435	XOLT130410-21 BK6435	S	0.024 **0.036** 0.047	0.023 **0.029** 0.034	0.019 **0.022** 0.024	0.016 **0.018** 0.020	0.078
titanium / titanium alloys	Q56 46210.107740	XOLT130410-21 BK7740						
medium roughing operations	Q56 46010.102740	XOLT130410-01 BK2740	M	0.032 **0.075** 0.118	0.023 **0.054** 0.084	0.019 **0.040** 0.061	0.016 **0.033** 0.050	0.078
precision-machining and finishing	Q56 46210.102740	XOLT130410-21 BK2740						
	Q56 46050.106110	XOLT130410-05 BK6110	K	0.033 **0.078** 0.124	0.023 **0.057** 0.089	0.020 **0.047** 0.074	0.016 **0.041** 0.066	0.078

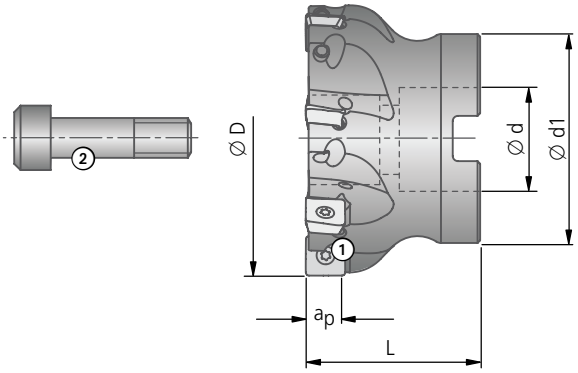
Cutting speed v_c (fpm)												
				Indexable insert	Q56.. (XPLT..)							
				Coating type	PVD		CVD	PVD		PVD		CVD
				Cutting material designation	BK8425		BK6435	BK7740		BK2740		BK6110
				Cutting material code	8425		6435	7740		2740		6110
Material	Material example, material code ANSI / SAE	Strength Rm (lbf/in²)	Hardness HB	Material group	dry	wet	dry	wet		dry	wet	dry + wet
non-alloy steels	A570.36 / 1213, A573.81	≤ 72500		1.0	330-720	230-590						
non-alloy / low alloy steels	5120 / 1055 5115	72500-130000		2.0	260-720	230-560						
lead alloys	12L13	< 72500		2.1	330-720	230-560						
low alloy steels	4140 1064	>130000 - 174000		P 3.0	260-655	230-525						
high alloy steels	H13 H21	> 174000		4.0	260-560	230-490						
HSS				4.1	260-460	195-395						
super alloys: Inconel, Hastelloy, Nimonic, stc.	Inconel® 718 Nimonic® 80A		250	5.0			80-245					
titanium, titanium alloys	AMS R54520	58000		S 5.1				80-245				
stainless steels	304L 316	≤ 87000		6.0						525-820	195-460	
stainless steels	630	< 130000		M 6.1						490-720	195-460	
stainless / fireproof steels	420 403	> 130000		7.0						330-820	195-460	
gray cast iron	No 35 B No 50 B		180	8.0								460-1150
alloy gray cast iron	A436 Type 2		250	8.1								395-1050
spheroidal graphite cast iron, ferritic	60-40-18	≤ 87000	130	9.0								330-820
spheroidal graphite cast iron, ferritic/perlitic	80-55-06		230	K 9.1								395-1050
spheroidal graphite cast iron, perlitic, malleable iron	100-70-03 70003	> 87000	250	10.0								395-1050
alloyed spheroidal graphite cast iron	A43D2		200	10.1								395-1050
vermicular cast iron			300	10.2								330-820

Cutting speed v_c can be increased by reducing the width of cutting edge engagement a_e. Further cutting parameters see page 102-103.

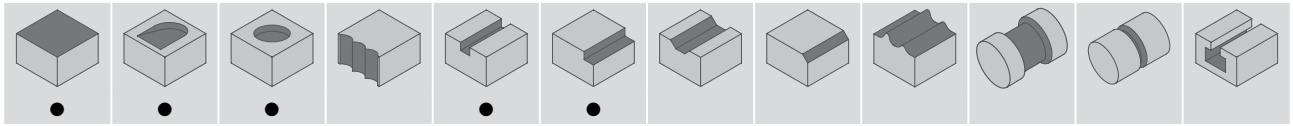
Important: See chapter 8 for more application details and safety notes !

Shoulder milling cutter Q43-KSM





● very good | ◐ good



Z = effective number of teeth for calculating v_f

End milling cutter										
Ø D	Order No.	Ød_{h6}	L	L1	a_p max.	Spindle speed max. rpm	Z	lbs	Clamping screw TORX® ① Order No. Article	Indexable insert Order No. ISO Code Size
1.000	**F55 18610**	1.000	3.830	1.551	0.315	23,700	3		**N00 57830** S3073-T8-55° 17.7 in-lbs	**Q43 28..** SDHT | SDKT 09..
1.250	**F55 18630**	1.250	4.376	2.097	0.315	19,700	4	1.21		

Arbor milling cutter											
Ø D	Order No.	Ø d^{H7}	Ø d1	L	a_p max.	Spindle speed max. rpm	Z	lbs	Cylindrical screw ② Order No. Article	Clamping screw TORX® ① Order No. Article	Indexable insert Order No. ISO Code Size
1.500	**F55 19650**	0.500	1.476	1.575	0.315	17,000	5	0.53	**55011 07025** 1/4-28UNF	**N00 57830** S3073-T8-55° 17.7 in-lbs	**Q43 28..** SDHT | SDKT 09..
2.000	**F55 19690**	0.750	1.772	1.575	0.315	14,800	6	0.66	**55011 09025** 3/8-24UNF		
2.500	**F55 19730**	0.750	1.968	1.575	0.315	12,850	7	1.10	**55011 09025** 3/8-24UNF		
3.000	**F55 19770**	1.000	2.362	1.968	0.315	11,250	9	2.16	**55011 13038** 1/2-20UNF		

Supply includes: Milling cutter with clamping screws ① (pre-fitted with high-temperature paste, order no.: 47001 00105).

Supply includes arbor milling cutter:

Milling cutter with clamping screws ① (pre-fitted with high-temperature paste, order no.: 47001 00105) and cylindrical screw ②.

Please order inserts separately. Screwdriver see chapter 8.

Recommendation: Change the clamping screws regularly to ensure the smooth running of the milling cutter.

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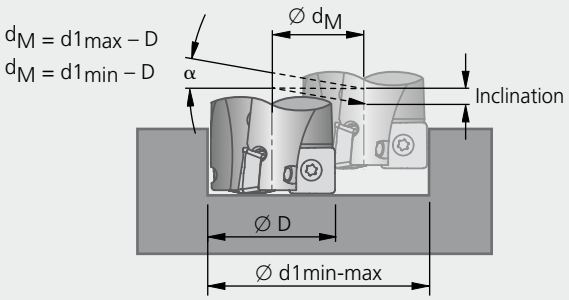
Cutting values for milling: page 87.

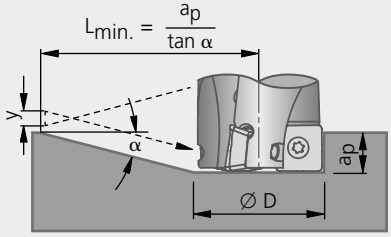
Application examples for shoulder milling cutter Q43-KSM

Circular plunging



Ø D	Ramping angle α max	Ø d1 min		Ø d1 max	
		Ø d1 min	Inclination (in/rev)	Ø d1 max	Inclination (in/rev)
End milling cutter					
1.000	4.3°	1.4961	0.117	1.8998	0.213
1.250	2.2°	1.8504	0.072	2.4016	0.139
Arbor milling cutter					
1.500	0.75°	2.3622	0.035	2.9134	0.058
2.000	0.5°	3.3465	0.037	3.8976	0.052
2.500	0.35°	4.3307	0.035	4.9213	0.046
3.000	0.25°	5.3573	0.032	5.9035	0.040

Inclined plunging

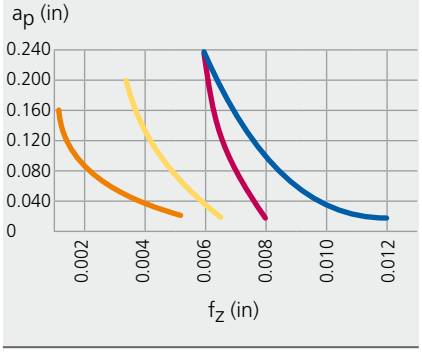


Ø D	a_p max	Lift from work-piece if direction is reversed y	Ramping angle α max	L min
End milling cutter				
1.000	0.315	0.026	4.3°	4.189
1.250	0.315	0.023	2.2°	8.200
Arbor milling cutter				
1.500	0.315	0.011	0.75°	24.063
2.000	0.315	0.010	0.4°	45.120
2.500	0.315	0.010	0.3°	60.160
3.000	0.315	0.011	0.25°	72.192

With decreasing cutting depth the tooth feed can be increased.

Example given for $a_e/D > 0.3$-1

Q43 28



Recommended cutting data for shoulder milling cutter Q43-KSM

Feed f_z (in/tooth) at a_e/D

	Order No.	ISO code	Material group	p.ex. mill dia. 4.000", engagement width a_e 0.400" = $\frac{a_e}{D} = \frac{0.400}{4.000} = 0.1$				Cutting depth a_p
				≤ 0.1	> 0.1 - 0.2	> 0.2 - 0.3	> 0.3 - 1	
medium roughing operations	Q43 28010.088425	SDKT09T308SR-01 BK8425	P	0.006 **0.009** 0.013	0.004 **0.007** 0.009	0.004 **0.006** 0.007	0.003 **0.005** 0.007	0.240
super alloys	Q43 28210.086435	SDKT09T308SR-21 BK6435	S	0.004 **0.005** 0.006	0.003 **0.0035** 0.004	0.002 **0.0025** 0.003	0.001 **0.0015** 0.002	0.160
titanium / titanium alloys	Q43 28210.087740	SDKT09T308SR-21 BK7740						
precision-machining and finishing	Q43 28210.082740	SDKT09T308SR-21 BK2740	M	0.006 **0.007** 0.008	0.004 **0.005** 0.006	0.004 **0.0045** 0.005	0.003 **0.0035** 0.004	0.200
	Q43 28050.086110	SDKT09T308SR-05 BK6110	K	0.006 **0.011** 0.015	0.004 **0.007** 0.011	0.004 **0.006** 0.009	0.003 **0.006** 0.008	0.240
	Q43 28120.0823	SDHT09T308FR-12 K10	N	0.006 **0.011** 0.015	0.004 **0.007** 0.011	0.004 **0.006** 0.009	0.003 **0.006** 0.008	0.240

Cutting speed v_c (fpm)

					Indexable insert	Q43.. (SDHT / SDKT..)							
					Coating type	PVD		CVD	PVD	PVD		CVD	–
					Cutting material designation	BK8425		BK6435	BK7740	BK2740		BK6110	K10
					Cutting material code	**8425**		**6435**	**7740**	**2740**		**6110**	**23**
Material	Material example, material code ANSI / SAE	Strength Rm (lbf/in²)	Hardness HB	Material group		dry	wet	dry	wet	dry	wet	dry + wet	wet
non-alloy steels	A570.36 / 1213 A573.81	≤ 72500		P	1.0	330-720	230-590						
non-alloy / low alloy steels	5120 / 1055 5115	72500-130000			2.0	260-720	230-560						
lead alloys	12L13	< 72500			2.1	330-720	230-560						
low alloy steels	4140 1064	>130000 - 174000			3.0	260-655	230-525						
high alloy steels	H13 H21	> 174000			4.0	260-560	230-490						
HSS					4.1	260-460	195-395						
super alloys: Inconel, Hastelloy, Nimonic, stc.	Inconel® 718 Nimonic® 80A		250	S	5.0			80-245					
titanium, titanium alloys	AMS R54520	58000			5.1				80-245				
stainless steels	304L 316	≤ 87000			6.0					525-820	195-460		
stainless steels	630	< 130000		M	6.1					490-720	195-460		
stainless / fireproof steels	420 403	> 130000			7.0					330-820	195-460		
gray cast iron	No 35 B No 50 B		180	K	8.0							460-1150	
alloy gray cast iron	A436 Type 2		250		8.1							395-1050	
spheroidal graphite cast iron, ferritic	60-40-18	≤ 87000	130		9.0							330-820	
spheroidal graphite cast iron, ferritic/perlitic	80-55-06		230		9.1							395-1050	
spheroidal graphite cast iron, perlitic, malleable iron	100-70-03 70003	> 87000	250		10.0							395-1050	
alloyed spheroidal graphite cast iron	A43D2		200		10.1							395-1050	
vermicular cast iron			300		10.2							330-820	
copper alloy, brass, lead-alloy bronze, lead bronze: good cut	UNS C36000		90	N	12.0								985-3280
copper alloy, brass, bronze: average cut			100		12.1								985-3280
wrought aluminium alloys	GD-AlSi12		60		13.0								655-9840
cast alum. alloy: Si-content <10% magnesium alloy			75		13.1								985-1640
cast alum.alloy: Si-content >10%	A360.2		100		14.0								985-1310
hardened steels < 45 HRC		203000		H	15.0								
hardened steels > 45 HRC		261000			16.0								

Cutting speed v_c can be increased by reducing the width of cutting edge engagement a_e. Further cutting parameters see page 102-103.

Important: See chapter 8 for more application details and safety notes !

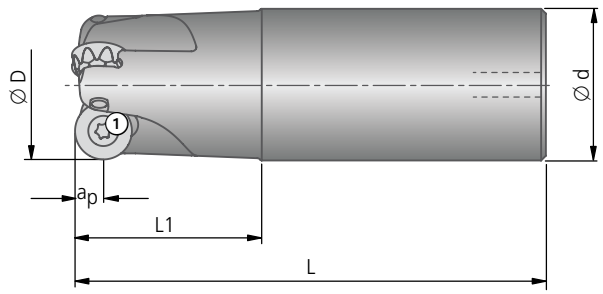
Copy milling cutter Q55-KCM | RP../ RD..10

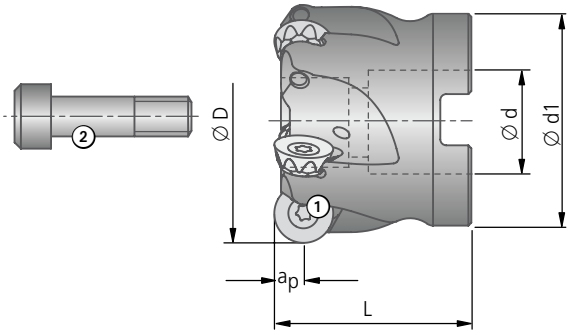
Material: P M K N S H

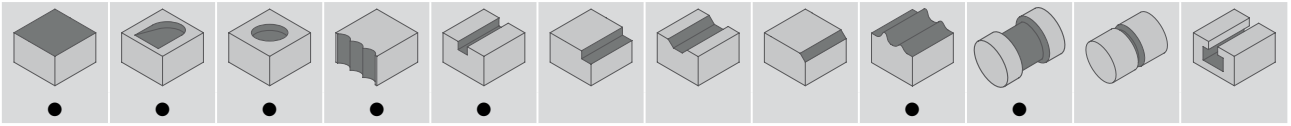
DIN 1835 T1 A

DIN 8030 A

BENEFITS for you:
- High feed rates with maximum stability
- 8 indexing positions for maximum cost-efficiency







Z = effective number of teeth for calculating v_f

End milling cutter										
Ø D	Order No.	Ød$_{h6}$	L	L1	a_p max.	Spindle speed max. rpm	Z	lbs	Clamping screw ① Order No. Article	Indexable insert Order No. ISO Code
1.000	**F55 11610**	1.000	4.567	2.362	0.197	20,000	3		**N00 57840** S3075-10IP 17.7 in-lbs	**Q55 34..** RP.. / RD.. 10
	F55 12610		6.496			20,000				
1.250	**F55 11630**	1.250	5.118	2.756	0.197	19,000	4	1.39		
	F55 12630		6.496			18,000				

Arbor milling cutter											
Ø D	Order No.	Ø d^{H7}	Ø d1	L	a_p max.	Spindle speed max. rpm	Z	lbs	Cylindrical screw ② Order No. Article	Clamping screw ① Order No. Article	Indexable insert Order No. ISO Code
1.500	**F55 13650**	0.500	1.457	1.575	0.197	15,900	4		**55011 07025** 1/4-28UNF	**N00 57840** S3075-10IP 17.7 in-lbs	**Q55 34..** RP.. / RD.. 10
2.000	**F55 13690**	0.750	1.772	1.575	0.197	12,700	5	0.62	**55011 09025** 3/8-24UNF		

Supply includes:
Milling cutter with clamping screws ① (pre-fitted with high-temperature paste, order no.: 47001 00105).

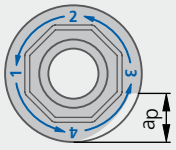
Supply includes arbor milling cutter:
Milling cutter with clamping screws ① (pre-fitted with high-temperature paste, order no.: 47001 00105) and differential screw.

Please order inserts separately. Screwdriver see chapter 8.

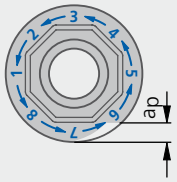
Recommendation: Change the clamping screws regularly to ensure the smooth running of the milling cutter.

Recommended feed

4-fold



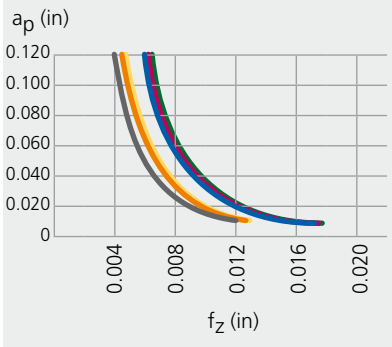
8-fold



a_p	a_p max.	a_p max.
0.098	0.177	0.055

With decreasing cutting depth the tooth feed can be increased.
Example given for a_e/D > 0.3-1

Q55 34



● very good | ◐ good

Feed f_z (in/tooth) at a_e/D

	Order No.	ISO code	Material group	p.ex. mill dia. 4.000", engagement width a_e 0.400" = $\frac{a_e}{D} = \frac{0.400}{4.000} = 0.1$				Cutting depth a_p
				≤ 0.1	> 0.1 - 0.2	> 0.2 - 0.3	> 0.3	
medium roughing operations	Q55 34010.118425	RPMX10T3MO-01 BK8425	P	0.008 **0.012** 0.015	0.006 **0.007** 0.011	0.005 **0.007** 0.009	0.004 **0.006** 0.008	0.120
super alloys	Q55 34250.116435	RPHX10T3MO-25 BK6435	S	0.008 **0.010** 0.012	0.006 **0.007** 0.008	0.005 **0.0055** 0.006	0.004 **0.0045** 0.005	0.120
titanium / titanium alloys	Q55 34250.117740	RPHX10T3MO-25 BK7740						
precision-machining and finishing	Q55 34210.112740	RPMX10T3MO-21 BK2740	M	0.008 **0.010** 0.012	0.006 **0.007** 0.008	0.005 **0.0055** 0.006	0.004 **0.0045** 0.005	0.120
	Q55 34050.116110	RPMX10T3MO-05 BK6110	K	0.008 **0.012** 0.015	0.006 **0.007** 0.011	0.005 **0.007** 0.009	0.004 **0.006** 0.008	0.120
	Q55 34120.1523	RDHX10T3MO-12 K10	N	0.008 **0.012** 0.015	0.006 **0.007** 0.011	0.005 **0.007** 0.009	0.004 **0.006** 0.008	0.120
	Q55 34020.152710	RDHW10T3MO-02 BK2710	H	0.008 **0.009** 0.010	0.006 **0.0065** 0.007	0.0045 **0.005** 0.0055	0.0035 **0.004** 0.0045	0.020

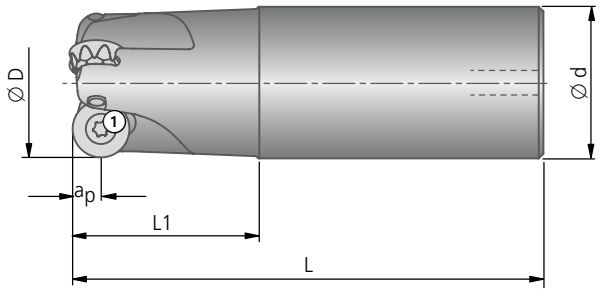
Cutting speed v_c (fpm)

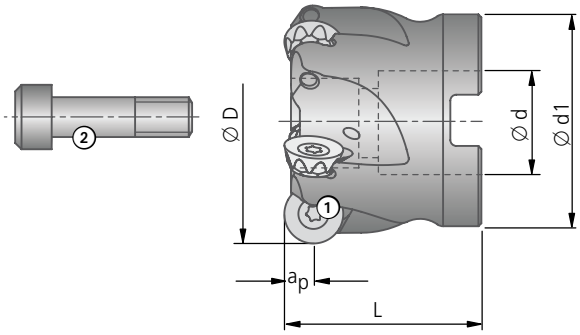
					Indexable insert	Q55 34.. (RP.. / RD.. 10)								
					Coating type	PVD		CVD	PVD	PVD		CVD	–	PVD
					Cutting material designation	BK8425		BK6435	BK7740	BK2740		BK6110	K10	BK2710
					Cutting material code	8425		6435	7740	2740		6110	23	2710
Material	Material example, material code ANSI / SAE	Strength Rm (lbf/in²)	Hardness HB	Material group		dry	wet	dry	wet	dry	wet	dry + wet	wet	dry
non-alloy steels	A570.36 / 1213 A573.81	≤ 72500		P	1.0	330-720	230-590							
non-alloy / low alloy steels	5120 / 1055 5115	72500-130000			2.0	260-720	230-560							
lead alloys	12L13	< 72500			2.1	330-720	230-560							
low alloy steels	4140 1064	>130000 - 174000			3.0	260-655	230-525							
high alloy steels	H13 H21	> 174000			4.0	260-560	230-490							
HSS					4.1	260-460	195-395							
super alloys: Inconel, Hastelloy, Nimonic, stc.	Inconel® 718 Nimonic® 80A		250	S	5.0			80-245						
titanium, titanium alloys	AMS R54520	58000			5.1				80-245					
stainless steels	304L 316	≤ 87000		M	6.0					525-820	195-460			
stainless steels	630	< 130000			6.1					490-720	195-460			
stainless / fireproof steels	420 403	> 130000			7.0					330-820	195-460			
gray cast iron	No 35 B No 50 B		180	K	8.0							460-1150		
alloy gray cast iron	A436 Type 2		250		8.1							395-1050		
spheroidal graphite cast iron, ferritic	60-40-18	≤ 87000	130		9.0							330-820		
spheroidal graphite cast iron, ferritic/perlitic	80-55-06		230		9.1							395-1050		
spheroidal graphite cast iron, perlitic, malleable iron	100-70-03 70003	> 87000	250		10.0							395-1050		
alloyed spheroidal graphite cast iron	A43D2		200		10.1							395-1050		
vermicular cast iron			300		10.2							330-820		
copper alloy, brass, lead-alloy bronze, lead bronze: good cut	UNS C36000		90	N	12.0								985-3280	
copper alloy, brass, bronze: average cut			100		12.1								985-3280	
wrought aluminium alloys	GD-AlSi12		60		13.0								655-9840	
cast alum. alloy: Si-content <10% magnesium alloy			75		13.1								985-1640	
cast alum.alloy: Si-content >10%	A360.2		100		14.0								985-1310	
hardened steels < 45 HRC		203000		H	15.0									130-195
hardened steels > 45 HRC		261000			16.0									100-165

Cutting speed v_c can be increased by reducing the width of cutting edge engagement a_e. Further cutting parameters see page 102-103.

Important: See chapter 8 for more application details and safety notes !

Copy milling cutter Q55-KCM | RP../ RD..12



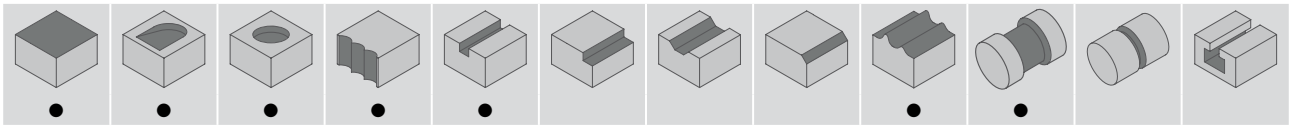


Q47.. | EOMT
High feed-rate milling
Page 98

Q43.. | SDMX
For face and chamfer milling
Page 94

Q55 42.. | RP..12
Wiper geometry for
high-quality surface finish
Page 96

● very good | ◐ good



Z = effective number of teeth for calculating v_f

End milling cutter										
Ø D	Order No.	Ød_{h6}	L	L1	a_p max.	Spindle speed max. rpm	Z	lbs	Clamping screw TORX ® ① Order No. Article	Indexable insert Order No. ISO Code
1.000	**F55 14610**	1.000	3.390	1.180	0.236	25,000	2		**N00 57910** S4085-T15-55° 37.6 in-lbs	**Q55 42..** RP.. / RD.. 12
	F55 15610		4.570	2.360		18,000				
1.250	**F55 14630**	1.250	3.940	1.570	0.236	19,000	3			
	F55 15630		5.120	2.760		17,000				

Arbor milling cutter											
Ø D	Order No.	Ø d^{H7}	Ø d1	L	a_p max.	Spindle speed max. rpm	Z	lbs	Cylindrical screw ② Order No. Article	Clamping screw ① Order No. Article	Indexable insert Order No. ISO Code
1.500	**F55 16650**	0.500	1.457	1.575	0.236	15,900	4	0.55	**55011 07025** 1/4-28UNF	**N00 57890** S40110-15IP 38.1 in-lbs	**Q55 42..** RP.. / RD.. 12
2.000	**F55 16690**	0.750	1.772	1.575	0.236	12,700	5		**55011 09025** 3/8-24UNF		
2.500	**F55 16730**	0.750	1.929	1.575	0.236	10,100	6		**55011 09025** 3/8-24UNF		
3.000	**F55 16770**	1.000	2.283	1.968	0.236	7,950	8		**55011 13038** 1/2-20UNF		
4.000	**F55 16810**	1.500	3.779	1.968	0.236	6,350	10		–		

Supply includes: Milling cutter with clamping screws ① (pre-fitted with high-temperature paste, order no.: 47001 00105).

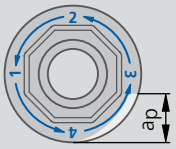
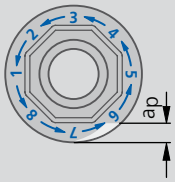
Supply includes arbor milling cutter Ø 1.500" - 3.000":
Milling cutter with clamping screws ① (pre-fitted with high-temperature paste, order no.: 47001 00105) and cylindrical screw ②.

Please order inserts separately. Screwdriver see chapter 8.

Recommendation: Change the clamping screws regularly to ensure the smooth running of the milling cutter.

Ihr PLUS:

- High feed rates with maximum stability
- 8 indexing positions for maximum cost-efficiency
- Selection of further indexable inserts on same basic body for high feed-rate milling, face and chamfer milling and with wiper geometry for high-quality surface finish

Recommended feed		
4-fold 		8-fold 
a_p	a_p max.	a_p max.
0.118	0.216	0.067

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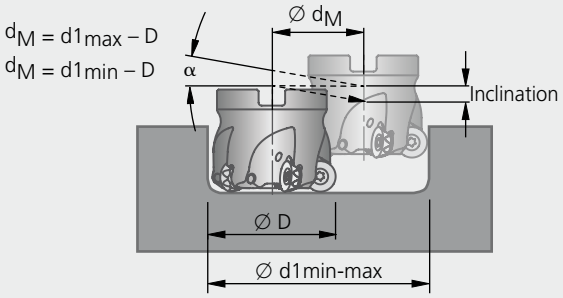
Cutting values for milling: page 93.

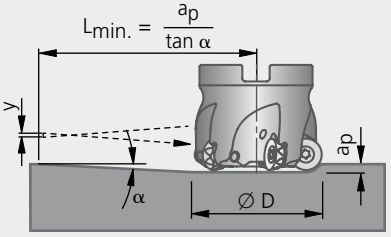
Application example copy milling cutter Q55-KCM

Circular plunging



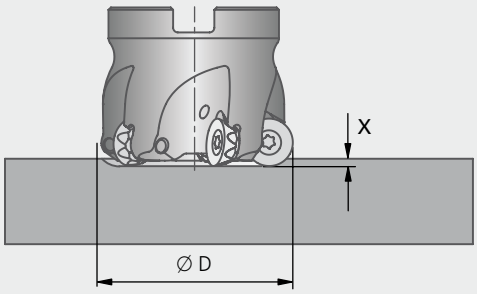
Ø D	ISO code insert	Ramping angle α max	Ø d1 min Ø d1 min	Ø d1 min Inclination (mm/rev)	Ø d1 max Ø d1 max	Ø d1 max Inclination (mm/rev)
End milling cutter						
1.000	RP/RD10	1.8°	1.4882	0.048	1.6063	0.060
1.250	RP/RD10	1.5°	1.9882	0.061	2.1063	0.070
1.000	RP/RD12	2.2°	1.252	0.030	1.5276	0.064
1.250	RP/RD12	1.7°	1.752	0.047	2.0276	0.073
Arbor milling cutter						
1.500	RP/RD10	1.1°	2.4882	0.060	2.6063	0.067
2.000	RP/RD10	0.9°	3.4882	0.073	3.6063	0.079
1.500	RP/RD12	1.4°	2.252	0.058	2.5276	0.079
2.000	RP/RD12	1.1°	3.252	0.076	3.5276	0.092
2.500	RP/RD12	0.9°	4.252	0.086	4.5276	0.100
3.000	RP/RD12	0.7°	5.252	0.086	5.5276	0.097
4.000	RP/RD12	0.5°	7.252	0.089	7.5276	0.097

Inclined plunging



Ø D	ISO code insert	a_p max	Lift from work-piece if direction is reversed y	Ramping angle α max	L min
End milling cutter					
1.000	RP/RD10	0.1968	0.022	2.0°	5.636
1.250	RP/RD10	0.1968	0.045	3.0°	3.755
1.000	RP/RD12	0.236	0.056	6.0°	2.245
1.250	RP/RD12	0.236	0.055	4.0°	3.375
Arbor milling cutter					
1.500	RP/RD10	0.1968	0.064	3.3°	3.413
2.000	RP/RD10	0.1968	0.065	2.3°	4.900
1.500	RP/RD12	0.236	0.051	2.8°	4.825
2.000	RP/RD12	0.236	0.067	2.5°	5.405
2.500	RP/RD12	0.236	0.064	1.8°	7.510
3.000	RP/RD12	0.236	0.058	1.3°	10.400
4.000	RP/RD12	0.236	0.056	0.9°	15.023

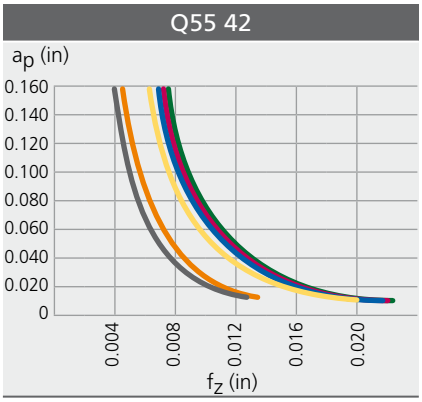
Axial plunging



Milling cutter dia. Ø D	ISO code indexable insert	X max
End milling cutter		
1.000	RP.. / RD.. 10	0.016
1.250	RP.. / RD.. 10	0.031
1.000	RP.. / RD.. 12	0.0394
1.250	RP.. / RD.. 12	0.0433

Milling cutter dia. Ø D	ISO code indexable insert	X max
Arbor milling cutter		
1.500	RP.. / RD.. 10	0.059
2.000	RP.. / RD.. 10	0.059
1.500	RP.. / RD.. 12	0.0472
2.000	RP.. / RD.. 12	0.059
2.500	RP.. / RD.. 12	0.059
3.000	RP.. / RD.. 12	0.059
4.000	RP.. / RD.. 12	0.059

With decreasing cutting depth the tooth feed can be increased.
Example given for a_e/D > 0.3-1



Recommended cutting data for copy milling cutter Q55-KCM | RP../ RD..12

Feed f_z (in/tooth) at a_e/D

	Order No.	ISO code	Material group	p.ex. mill dia. 4.000", engagement width a_e 0.400" = $\frac{a_e}{D} = \frac{0.400}{4.000} = 0.1$				Cutting depth a_p
				≤ 0.1	> 0.1 - 0.2	> 0.2 - 0.3	> 0.3	
medium roughing operations	Q55 42010.118425	RPMX1204MO-01 BK8425	P	0.008 **0.013** 0.018	0.006 **0.009** 0.013	0.005 **0.008** 0.010	0.004 **0.007** 0.009	0.160
super alloys	Q55 42250.116435	RPHX1204MO-25 BK6435	S	0.008 **0.010** 0.012	0.006 **0.007** 0.008	0.005 **0.0055** 0.006	0.004 **0.0045** 0.005	0.160
titanium / titanium alloys	Q55 42250.117740	RPHX1204MO-25 BK7740						
precision-machining and finishing	Q55 42210.112740	RPMX1204MO-21 BK2740	M	0.008 **0.013** 0.018	0.006 **0.009** 0.013	0.005 **0.007** 0.009	0.005 **0.006** 0.007	0.160
	Q55 42050.116110	RPMX1204MO-05 BK6110	K	0.008 **0.013** 0.018	0.006 **0.009** 0.013	0.005 **0.008** 0.010	0.004 **0.007** 0.009	0.160
	Q55 42120.1523	RDHX1204MO-12 K10	N	0.008 **0.013** 0.018	0.006 **0.009** 0.013	0.005 **0.008** 0.010	0.004 **0.007** 0.009	0.160
	Q55 42020.152710	RDHW1204MO-02 BK2710	H	0.008 **0.009** 0.010	0.006 **0.0065** 0.007	0.0045 **0.005** 0.0055	0.0035 **0.004** 0.0045	0.028

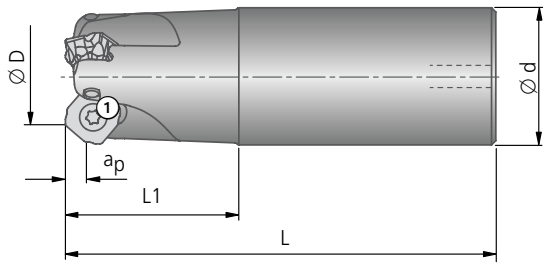
Cutting speed v_c (fpm)

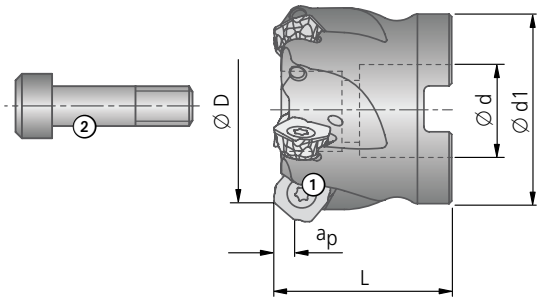
					Indexable insert	Q55 42.. (RP.. / RD.. 12)								
					Coating type	PVD		CVD	PVD	PVD		CVD	–	PVD
					Cutting material designation	BK8425		BK6435	BK7740	BK2740		BK6110	K10	BK2710
					Cutting material code	8425		6435	7740	2740		6110	23	2710
Material	Material example, material code ANSI / SAE	Strength Rm (lbf/in²)	Hardness HB	Material group		dry	wet	dry	wet	dry	wet	dry + wet	wet	dry
non-alloy steels	A570.36 / 1213 A573.81	≤ 72500		P	1.0	330-720	230-590							
non-alloy / low alloy steels	5120 / 1055 5115	72500-130000		P	2.0	260-720	230-560							
lead alloys	12L13	< 72500		P	2.1	330-720	230-560							
low alloy steels	4140 1064	>130000 - 174000		P	3.0	260-655	230-525							
high alloy steels	H13 H21	> 174000		P	4.0	260-560	230-490							
HSS				P	4.1	260-460	195-395							
super alloys: Inconel, Hastelloy, Nimonic, stc.	Inconel® 718 Nimonic® 80A		250	S	5.0			80-245						
titanium, titanium alloys	AMS R54520	58000		S	5.1				80-245					
stainless steels	304L 316	≤ 87000		M	6.0					525-820	195-460			
stainless steels	630	< 130000		M	6.1					490-720	195-460			
stainless / fireproof steels	420 403	> 130000		M	7.0					330-820	195-460			
gray cast iron	No 35 B No 50 B		180	K	8.0							460-1150		
alloy gray cast iron	A436 Type 2		250	K	8.1							395-1050		
spheroidal graphite cast iron, ferritic	60-40-18	≤ 87000	130	K	9.0							330-820		
spheroidal graphite cast iron, ferritic/perlitic	80-55-06		230	K	9.1							395-1050		
spheroidal graphite cast iron, perlitic, malleable iron	100-70-03 70003	> 87000	250	K	10.0							395-1050		
alloyed spheroidal graphite cast iron	A43D2		200	K	10.1							395-1050		
vermicular cast iron			300	K	10.2							330-820		
copper alloy, brass, lead-alloy bronze, lead bronze: good cut	UNS C36000		90	N	12.0								985-3280	
copper alloy, brass, bronze: average cut			100	N	12.1								985-3280	
wrought aluminium alloys	GD-AlSi12		60	N	13.0								655-9840	
cast alum. alloy: Si-content <10% magnesium alloy			75	N	13.1								985-1640	
cast alum.alloy: Si-content >10%	A360.2		100	N	14.0								985-1310	
hardened steels < 45 HRC		203000		H	15.0									130-195
hardened steels > 45 HRC		261000		H	16.0									100-165

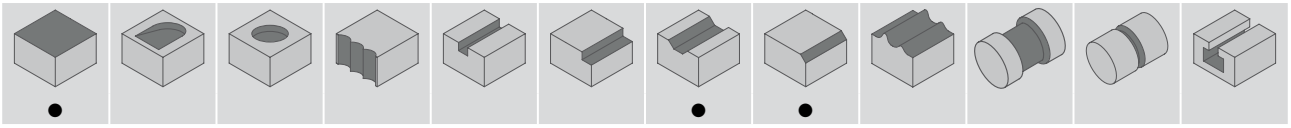
Cutting speed v_c can be increased by reducing the width of cutting edge engagement a_e. Further cutting parameters see page 102-103.

Important: See chapter 8 for more application details and safety notes !

Copy milling cutter Q55-KCM | SDMX..







Z = effective number of teeth for calculating v_f

End milling cutter										
Ø D	Order No.	Ød_{h6}	L	L1	a_p max.	Spindle speed max. rpm	Z	lbs	Clamping screw TORX ® ① Order No. Article	Indexable insert Order No. ISO Code
0.955	**F55 14630**	1.250	3.949	1.587	0.157	19,000	3		**N00 57910** S4085-T15-55° 37.6 in-lbs	**Q43 38..** SDMX 11
	F55 15630		5.130	2.768		17,000				

Arbor milling cutter											
Ø D	Order No.	Ø d^{H7}	Ø d1	L	a_p max.	Spindle speed max. rpm	Z	lbs	Cylindrical screw ② Order No. Article	Clamping screw ① Order No. Article	Indexable insert Order No. ISO Code
1.205	**F55 16650**	0.500	1.457	1.587	0.157	15,900	4		**55011 07025** 1/4-28UNF	**N00 57890** S40110-15IP 38.1 in-lbs	**Q43 38..** SDMX 11
1.705	**F55 16690**	0.750	1.772	1.587	0.157	12,700	5		**55011 09025** 3/8-24UNF		
2.205	**F55 16730**	0.750	1.929	1.587	0.157	10,100	6		**55011 09025** 3/8-24UNF		
2.705	**F55 16770**	1.000	2.283	1.980	0.157	7,950	8		**55011 13038** 1/2-20UNF		
3.705	**F55 16810**	1.500	3.779	1.980	0.157	6,350	10		–		

Supply includes: Milling cutter with clamping screws ① (pre-fitted with high-temperature paste, order no.: 47001 00105).

Supply includes arbor milling cutter Ø 1.500" - 3.000":
Milling cutter with clamping screws ① (pre-fitted with high-temperature paste, order no.: 47001 00105) and cylindrical screw ②.

Please order inserts separately. Screwdriver see chapter 8.

Recommendation: Change the clamping screws regularly to ensure the smooth running of the milling cutter.

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Feed f_z (in/tooth) at a_e/D								
	Order No.	ISO code	Material group	p.ex. mill dia. 4.000", engagement width a_e 0.400" = $\frac{a_e}{D} = \frac{0.400}{4.000} = 0.1$				Cutting depth a_p
				≤ 0.1	> 0.1 - 0.2	> 0.2 - 0.3	> 0.3	
medium roughing operations	Q43 38010.158425	SDMX1105AE-01 BK8425	P	0.008 **0.011** 0.014	0.006 **0.008** 0.010	0.004 **0.007** 0.009	0.004 **0.006** 0.007	0.160
super alloys	Q43 38250.156435	SDMX1105AE-25 BK6435	S	0.006 **0.008** 0.010	0.005 **0.006** 0.007	0.004 **0.0045** 0.005	0.003 **0.0035** 0.004	0.160
titanium / titanium alloys	Q43 38250.157740	SDMX1105AE-25 BK7740						
precision-machining and finishing	Q43 38210.152740	SDMX1105AE-21 BK2740	M	0.008 **0.011** 0.014	0.006 **0.008** 0.010	0.005 **0.006** 0.007	0.004 **0.005** 0.006	0.160
	Q43 38050.156110	SDMX1105AE-05 BK6110	K	0.008 **0.011** 0.014	0.006 **0.008** 0.010	0.004 **0.007** 0.009	0.004 **0.006** 0.007	0.160

Cutting speed v_c (fpm)												
				Indexable insert	Q43.. (SDMX..)							
				Coating type	PVD		CVD	PVD	PVD		CVD	
				Cutting material designation	BK8425		BK6435	BK7740	BK2740		BK6110	
				Cutting material code	8425		6435	7740	2740		6110	
Material	Material example, material code ANSI / SAE	Strength Rm (lbf/in²)	Hardness HB	Material group	dry	wet	dry	wet	dry	wet	dry + wet	
non-alloy steels	A570.36 / 1213 A573.81	≤ 72500		1.0	330-720	230-590						
non-alloy / low alloy steels	5120 / 1055 5115	72500-130000		2.0	260-720	230-560						
lead alloys	12L13	< 72500		2.1	330-720	230-560						
low alloy steels	4140 1064	>130000 - 174000		P 3.0	260-655	230-525						
high alloy steels	H13 H21	> 174000		4.0	260-560	230-490						
HSS				4.1	260-460	195-395						
super alloys: Inconel, Hastelloy, Nimonic, stc.	Inconel® 718 Nimonic® 80A		250	5.0			80-245					
titanium, titanium alloys	AMS R54520	58000		S 5.1				80-245				
stainless steels	304L 316	≤ 87000		6.0					525-820	195-460		
stainless steels	630	< 130000		M 6.1					490-720	195-460		
stainless / fireproof steels	420 403	> 130000		7.0					330-820	195-460		
gray cast iron	No 35 B No 50 B		180	8.0							460-1150	
alloy gray cast iron	A436 Type 2		250	8.1							395-1050	
spheroidal graphite cast iron, ferritic	60-40-18	≤ 87000	130	9.0							330-820	
spheroidal graphite cast iron, ferritic/perlitic	80-55-06		230	K 9.1							395-1050	
spheroidal graphite cast iron, perlitic, malleable iron	100-70-03 70003	> 87000	250	10.0							395-1050	
alloyed spheroidal graphite cast iron	A43D2		200	10.1							395-1050	
vermicular cast iron			300	10.2							330-820	
copper alloy, brass, lead-alloy bronze, lead bronze: good cut	UNS C36000		90	12.0								
copper alloy, brass, bronze: average cut			100	12.1								
wrought aluminium alloys	GD-AlSi12		60	N 13.0								
cast alum. alloy: Si-content <10% magnesium alloy			75	13.1								
cast alum.alloy: Si-content >10%	A360.2		100	14.0								
hardened steels < 45 HRC		203000		15.0								
hardened steels > 45 HRC		261000		H 16.0								

Cutting speed v_c can be increased by reducing the width of cutting edge engagement a_e. Further cutting parameters see page 102-103.

KOMET ®

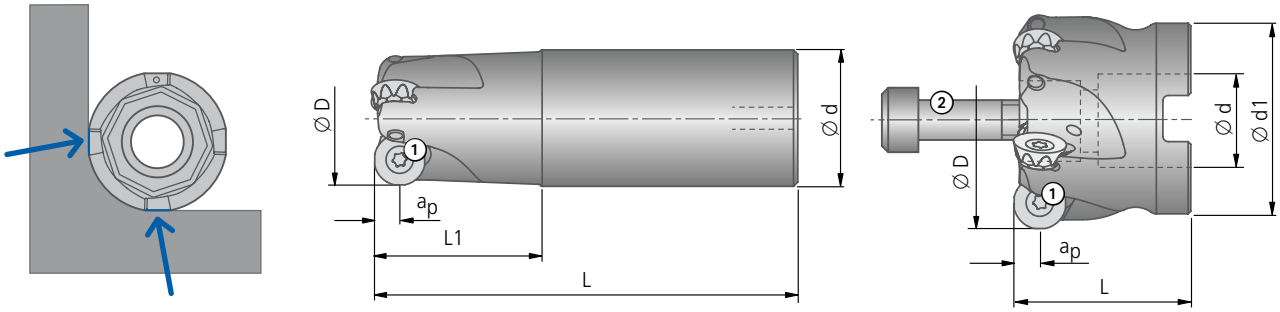
Copy milling cutter Q55-KCM | RP..1204MO..

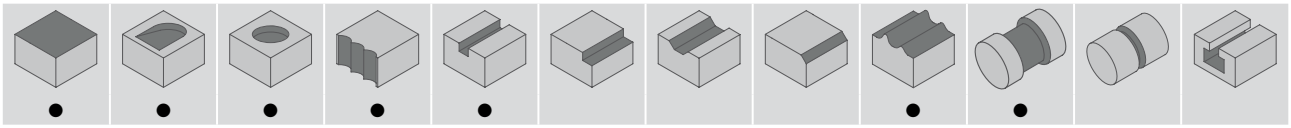
Material P M K N S H

DIN 1835 T1 A

DIN 8030 A

High-quality surface finish thanks to wiper geometry.
In order to guarantee the function of the wiper geometry, the milling cutter must be fully equipped.





Z = effective number of teeth for calculating v_f

End milling cutter										
Ø D	Order No.	Ød_{h6}	L	L1	a_p max.	Spindle speed max. rpm	Z	lbs	Clamping screw TORX ® ① Order No. Article	Indexable insert Order No. ISO Code
0.990	**F55 14610**	1.000	3.381	1.176	0.236	25,000	2		**N00 57910** S4085-T15-55° 37.6 in-lbs	**Q55 42260.11....** **Q55 42460.11....** RP.. 12
	F55 15610		4.562	2.357		18,000				
1.240	**F55 14630**	1.250	3.932	1.570	0.236	19,000	3			
	F55 15630		5.113	2.751		17,000				

Arbor milling cutter											
Ø D	Order No.	Ø d^{H7}	Ø d1	L	a_p max.	Spindle speed max. rpm	Z	lbs	Cylindrical screw ② Order No. Article	Clamping screw ① Order No. Article	Indexable insert Order No. ISO Code
1.490	**F55 16650**	0.500	1.457	1.570	0.236	15,900	4		**55011 07025** 1/4-28UNF	**N00 57890** S40110-15IP 38.1 in-lbs	**Q55 42260.11....** **Q55 42460.11....** RP.. 12
1.990	**F55 16690**	0.750	1.772	1.570	0.236	12,700	5		**55011 09025** 3/8-24UNF		
2.490	**F55 16730**	0.750	1.929	1.570	0.236	10,100	6		**55011 09025** 3/8-24UNF		
2.990	**F55 16770**	1.000	2.283	1.963	0.236	7,950	8		**55011 13038** 1/2-20UNF		
3.990	**F55 16810**	1.500	3.779	1.963	0.236	6,350	10		–		

Supply includes: Milling cutter with clamping screws ① (pre-fitted with high-temperature paste, order no.: 47001 00105).

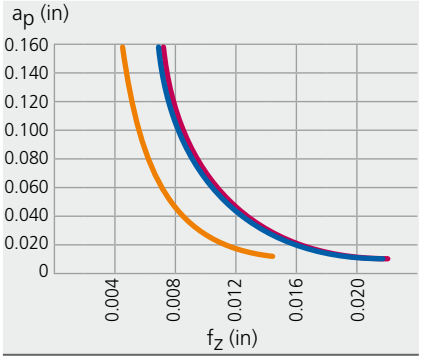
Supply includes arbor milling cutter Ø 1.500" - 3.000":
Milling cutter with clamping screws ① (pre-fitted with high-temperature paste, order no.: 47001 00105) and cylindrical screw ②.

Please order inserts separately. Screwdriver see chapter 8.

Recommendation: Change the clamping screws regularly to ensure the smooth running of the milling cutter.

With decreasing cutting depth the tooth feed can be increased.
Example given for a_e/D > 0.3-1

Q55 42



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● very good | ◐ good

Feed f_z (in/tooth) at a_e/D								
	Order No.	ISO code	Material group	p.ex. mill dia. 4.000", engagement width a_e 0.400" = $\frac{a_e}{D} = \frac{0.400}{4.000} = 0.1$				Cutting depth a_p
				≤ 0.1	> 0.1 - 0.2	> 0.2 - 0.3	> 0.3	
medium roughing operations	Q55 42260.118425	RPMX1204MO-26 BK8425	P	0.008 **0.013** 0.018	0.006 **0.009** 0.013	0.005 **0.008** 0.010	0.004 **0.007** 0.009	0.240
super alloys	Q55 42460.116435	RPHX1204MO-46 BK6435	S	0.008 **0.010** 0.012	0.006 **0.007** 0.008	0.005 **0.0055** 0.006	0.004 **0.0045** 0.005	0.240
titanium / titanium alloys	Q55 42460.117740	RPHX1204MO-46 BK7740						
	Q55 42260.116110	RPMX1204MO-26 BK6110	K	0.008 **0.013** 0.018	0.006 **0.009** 0.013	0.005 **0.008** 0.010	0.004 **0.007** 0.009	0.240

Cutting speed v_c (fpm)									
				Indexable insert	Q55.. (RP..1204MO..)				
				Coating type	PVD		CVD	PVD	CVD
				Cutting material designation	BK8425		BK6435	BK7740	BK6110
				Cutting material code	8425		6435	7740	6110
Material	Material example, material code ANSI / SAE	Strength Rm (lbf/in²)	Hardness HB	Material group	dry	wet	dry	wet	dry + wet
non-alloy steels	A570.36 / 1213 A573.81	≤ 72500		1.0	330-720	230-590			
non-alloy / low alloy steels	5120 / 1055 5115	72500-130000		2.0	260-720	230-560			
lead alloys	12L13	< 72500		2.1	330-720	230-560			
low alloy steels	4140 1064	>130000 - 174000		P 3.0	260-655	230-525			
high alloy steels	H13 H21	> 174000		4.0	260-560	230-490			
HSS				4.1	260-460	195-395			
super alloys: Inconel, Hastelloy, Nimonic, stc.	Inconel® 718 Nimonic® 80A		250	5.0			80-245		
titanium, titanium alloys	AMS R54520	58000		S 5.1				80-245	
stainless steels	304L 316	≤ 87000		6.0					
stainless steels	630	< 130000		M 6.1					
stainless / fireproof steels	420 403	> 130000		7.0					
gray cast iron	No 35 B No 50 B		180	8.0					460-1150
alloy gray cast iron	A436 Type 2		250	8.1					395-1050
spheroidal graphite cast iron, ferritic	60-40-18	≤ 87000	130	9.0					330-820
spheroidal graphite cast iron, ferritic/perlitic	80-55-06		230	K 9.1					395-1050
spheroidal graphite cast iron, perlitic, malleable iron	100-70-03 70003	> 87000	250	10.0					395-1050
alloyed spheroidal graphite cast iron	A43D2		200	10.1					395-1050
vermicular cast iron			300	10.2					330-820
copper alloy, brass, lead-alloy bronze, lead bronze: good cut	UNS C36000		90	12.0					
copper alloy, brass, bronze: average cut			100	12.1					
wrought aluminium alloys	GD-AlSi12		60	N 13.0					
cast alum. alloy: Si-content <10% magnesium alloy			75	13.1					
cast alum.alloy: Si-content >10%	A360.2		100	14.0					
hardened steels < 45 HRC		203000		15.0					
hardened steels > 45 HRC		261000		H 16.0					

Cutting speed v_c can be increased by reducing the width of cutting edge engagement a_e. Further cutting parameters see page 102-103.

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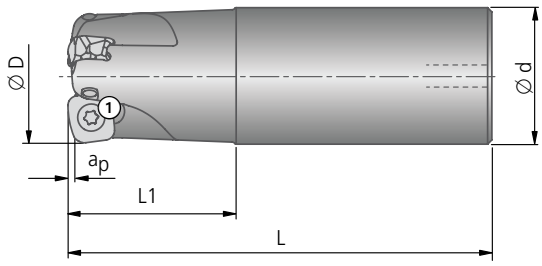
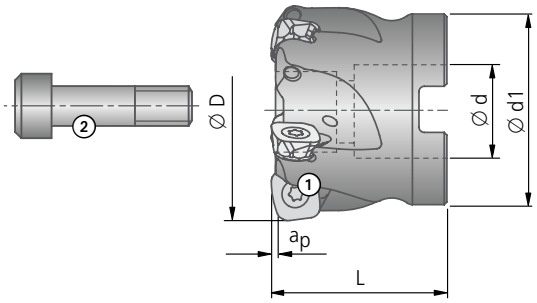
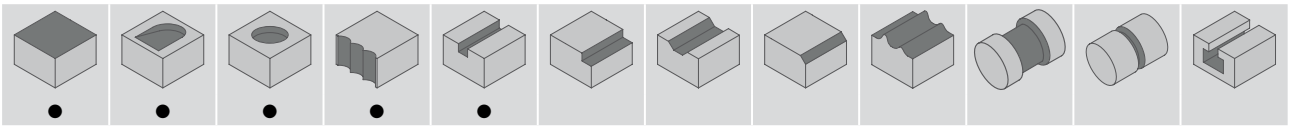
Copy milling cutter Q55-KCM | EOMT..







Z = effective number of teeth for calculating v_f

End milling cutter										
Ø D	Order No.	Ød_{h6}	L	L1	a_p max.	Spindle speed max. rpm	Z	lbs	Clamping screw TORX ® ① Order No. Article	Indexable insert Order No. ISO Code
1.238	**F55 14630**	1.250	3.917	1.555	0.059	19,000	3		**N00 57910** S4085-T15-55° 37.6 in-lbs	**Q47 34..** EOMT
	F55 15630		5.098	2.736		17,000				

Arbor milling cutter											
Ø D	Order No.	Ø d^{H7}	Ø d1	L	a_p max.	Spindle speed max. rpm	Z	lbs	Cylindrical screw ② Order No. Article	Clamping screw ① Order No. Article	Indexable insert Order No. ISO Code
1.488	**F55 16650**	0.500	1.457	1.555	0.059	15,900	4		**55011 07025** 1/4-28UNF	**N00 57890** S40110-15IP 38.1 in-lbs	**Q47 34..** EOMT
1.988	**F55 16690**	0.750	1.772	1.555	0.059	12,700	5		**55011 09025** 3/8-24UNF		
2.488	**F55 16730**	0.750	1.929	1.555	0.059	10,100	6		**55011 09025** 3/8-24UNF		
2.988	**F55 16770**	1.000	2.283	1.949	0.059	7,950	8		**55011 13038** 1/2-20UNF		
3.988	**F55 16810**	1.500	3.779	1.949	0.059	6,350	10		–		

Supply includes: Milling cutter with clamping screws ① (pre-fitted with high-temperature paste, order no.: 47001 00105).

Supply includes arbor milling cutter Ø 1.500" - 3.000":
Milling cutter with clamping screws ① (pre-fitted with high-temperature paste, order no.: 47001 00105) and cylindrical screw ②.

Please order inserts separately. Screwdriver see chapter 8.

Recommendation: Change the clamping screws regularly to ensure the smooth running of the milling cutter.

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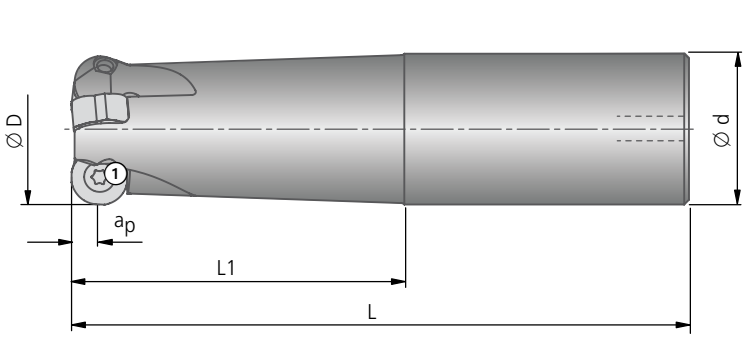
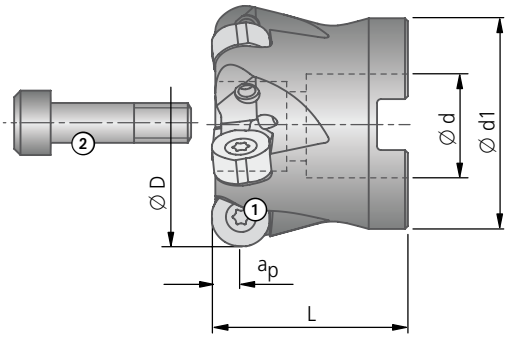
Feed f_z (in/tooth) at a_e/D								
	Order No.	ISO code	Material group	p.ex. mill dia. 4.000", engagement width a_e 0.400" = $\frac{a_e}{D} = \frac{0.400}{4.000} = 0.1$				Cutting depth a_p
				≤ 0.1	> 0.1 - 0.2	> 0.2 - 0.3	> 0.3	
medium roughing operations	Q47 34210.168425	EOMT120416-21 BK8425	P	0.033 **0.064** 0.095	0.024 **0.046** 0.068	0.020 **0.038** 0.057	0.016 **0.033** 0.050	0.060
precision-machining and finishing	Q47 34210.162740	EOMT120416-21 BK2740	M	0.033 **0.046** 0.058	0.024 **0.033** 0.042	0.020 **0.027** 0.035	0.016 **0.024** 0.031	0.060

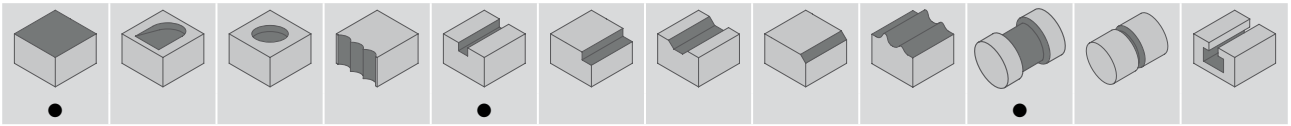
Cutting speed v_c (fpm)								
				Indexable insert	Q47.. (EOMT..)			
				Coating type	PVD		PVD	
				Cutting material designation	BK8425		BK2740	
				Cutting material code	8425		2740	
Material	Material example, material code ANSI / SAE	Strength Rm (lbf/in²)	Hardness HB	Material group	dry	wet	dry	wet
non-alloy steels	A570.36 / 1213 A573.81	≤ 72500		1.0	330-720	230-590		
non-alloy / low alloy steels	5120 / 1055 5115	72500-130000		2.0	260-720	230-560		
lead alloys	12L13	< 72500		2.1	330-720	230-560		
low alloy steels	4140 1064	>130000 - 174000		P 3.0	260-655	230-525		
high alloy steels	H13 H21	> 174000		4.0	260-560	230-490		
HSS				4.1	260-460	195-395		
super alloys: Inconel, Hastelloy, Nimonic, stc.	Inconel® 718 Nimonic® 80A		250	S 5.0				
titanium, titanium alloys	AMS R54520	58000		5.1				
stainless steels	304L 316	≤ 87000		6.0			525-820	195-460
stainless steels	630	< 130000		M 6.1			490-720	195-460
stainless / fireproof steels	420 403	> 130000		7.0			330-820	195-460
gray cast iron	No 35 B No 50 B		180	8.0				
alloy gray cast iron	A436 Type 2		250	8.1				
spheroidal graphite cast iron, ferritic	60-40-18	≤ 87000	130	9.0				
spheroidal graphite cast iron, ferritic/perlitic	80-55-06		230	K 9.1				
spheroidal graphite cast iron, perlitic, malleable iron	100-70-03 70003	> 87000	250	10.0				
alloyed spheroidal graphite cast iron	A43D2		200	10.1				
vermicular cast iron			300	10.2				
copper alloy, brass, lead-alloy bronze, lead bronze: good cut	UNS C36000		90	12.0				
copper alloy, brass, bronze: average cut			100	12.1				
wrought aluminium alloys	GD-AlSi12		60	N 13.0				
cast alum. alloy: Si-content <10% magnesium alloy			75	13.1				
cast alum.alloy: Si-content >10%	A360.2		100	14.0				
hardened steels < 45 HRC		203000		H 15.0				
hardened steels > 45 HRC		261000		16.0				

Cutting speed v_c can be increased by reducing the width of cutting edge engagement a_e. Further cutting parameters see page 102-103.

Copy milling cutter Q75-KCM







Z = effective number of teeth for calculating v_f

End milling cutter										
Ø D	Order No.	Ød$_{h6}$	L	L1	a_p max.	Spindle speed max. rpm	Z	lbs	Clamping screw ① Order No. Article	Indexable insert Order No. ISO Code
1.250	F55 20630	1.250	5.157	2.756	0.177	19,000	3		N00 57890 S40110-15IP 38.1 in-lbs	Q75 42.. RNKU | ROHU
	F55 21630		6.496			17,000				

Arbor milling cutter											
Ø D	Order No.	Ø d^{H7}	Ø d1	L	a_p max.	Spindle speed max. rpm	Z	lbs	Cylindrical screw ② Order No. Article	Clamping screw ① Order No. Article	Indexable insert Order No. ISO Code
1.500	F55 00650	0.500	1.457	1.575	0.177	15,900	4		55011 07025 1/4-28UNF	N00 57890 S40110-15IP 38.1 in-lbs	Q75 42.. RNKU | ROHU
2.000	F55 00690	0.750	1.772	1.575	0.177	12,700	5		55011 09025 3/8-24UNF		
2.500	F55 00730	0.750	1.929	1.575	0.177	10,100	6	0.95	55011 09025 3/8-24UNF		
3.000	F55 00770	1.000	2.283	1.968	0.177	7,950	8		55011 13038 1/2-20UNF		
4.000	F55 00810	1.500	3.779	1.968	0.177	6,350	10		–		

Supply includes: Milling cutter with clamping screws ① (pre-fitted with high-temperature paste, order no.: 47001 00105).

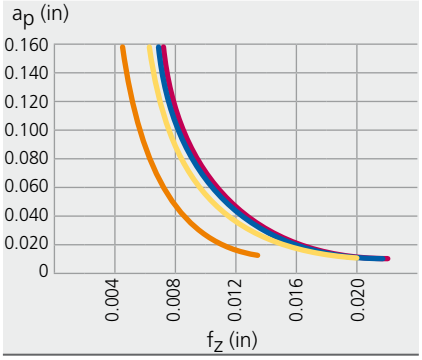
Supply includes arbor milling cutter Ø 1.500" - 3.000":
Milling cutter with clamping screws ① (pre-fitted with high-temperature paste, order no.: 47001 00105) and cylindrical screw ②.

Please order inserts separately. Screwdriver see chapter 8.

Recommendation: Change the clamping screws regularly to ensure the smooth running of the milling cutter.

With decreasing cutting depth the tooth feed can be increased.
Example given for a_e/D > 0.3-1

Q75 42



● very good | ◐ good

Feed f_z (in/tooth) at a_e/D								
	Order No.	ISO code	Material group	p.ex. mill dia. 4.000", engagement width a_e 0.400" = $\frac{a_e}{D} = \frac{0.400}{4.000} = 0.1$				Cutting depth a_p
				≤ 0.1	> 0.1 - 0.2	> 0.2 - 0.3	> 0.3	
medium roughing operations	Q75 42010.008425	RNKU1204MO-01 BK8425	P	0.008 **0.013** 0.018	0.006 **0.009** 0.013	0.005 **0.008** 0.011	0.004 **0.007** 0.009	0.177
super alloys	Q75 42250.036435	ROHU1204MO-25 BK6435	S	0.008 **0.010** 0.012	0.006 **0.007** 0.008	0.005 **0.0055** 0.006	0.004 **0.0045** 0.005	0.177
titanium / titanium alloys	Q75 42250.037740	ROHU1204MO-25 BK7740						
precision-machining and finishing	Q75 42210.032740	ROHU1204MO-21 BK2740	M	0.008 **0.013** 0.018	0.006 **0.009** 0.013	0.005 **0.007** 0.009	0.004 **0.006** 0.007	0.177
	Q75 42050.006110	RNKU1204MO-05 BK6110	K	0.008 **0.013** 0.018	0.006 **0.009** 0.013	0.005 **0.008** 0.011	0.004 **0.007** 0.009	0.177

Cutting speed v_c (fpm)												
				Indexable insert	Q75.. (RNKU.. / ROHU..)							
				Coating type	PVD		CVD	PVD	PVD			CVD
				Cutting material designation	BK8425		BK6435	BK7740	BK2740			BK6110
				Cutting material code	8425		6435	7740	2740			6110
Material	Material example, material code ANSI / SAE	Strength Rm (lbf/in²)	Hardness HB	Material group	dry	wet	dry	wet	dry	wet		dry + wet
non-alloy steels	A570.36 / 1213 A573.81	≤ 72500		1.0	330-720	230-590						
non-alloy / low alloy steels	5120 / 1055 5115	72500-130000		2.0	260-720	230-560						
lead alloys	12L13	< 72500		2.1	330-720	230-560						
low alloy steels	4140 1064	>130000 - 174000		P 3.0	260-655	230-525						
high alloy steels	H13 H21	> 174000		4.0	260-560	230-490						
HSS				4.1	260-460	195-395						
super alloys: Inconel, Hastelloy, Nimonic, stc.	Inconel® 718 Nimonic® 80A		250	S 5.0			80-245					
titanium, titanium alloys	AMS R54520	58000		5.1				80-245				
stainless steels	304L 316	≤ 87000		6.0					525-820	195-460		
stainless steels	630	< 130000		M 6.1					490-720	195-460		
stainless / fireproof steels	420 403	> 130000		7.0					330-820	195-460		
gray cast iron	No 35 B No 50 B		180	8.0								460-1150
alloy gray cast iron	A436 Type 2		250	8.1								395-1050
spheroidal graphite cast iron, ferritic	60-40-18	≤ 87000	130	9.0								330-820
spheroidal graphite cast iron, ferritic/perlitic	80-55-06		230	K 9.1								395-1050
spheroidal graphite cast iron, perlitic, malleable iron	100-70-03 70003	> 87000	250	10.0								395-1050
alloyed spheroidal graphite cast iron	A43D2		200	10.1								395-1050
vermicular cast iron			300	10.2								330-820
copper alloy, brass, lead-alloy bronze, lead bronze: good cut	UNS C36000		90	12.0								
copper alloy, brass, bronze: average cut			100	12.1								
wrought aluminium alloys	GD-AlSi12		60	N 13.0								
cast alum. alloy: Si-content <10% magnesium alloy			75	13.1								
cast alum.alloy: Si-content >10%	A360.2		100	14.0								
hardened steels < 45 HRC		203000		H 15.0								
hardened steels > 45 HRC		261000		16.0								

Cutting speed v_c can be increased by reducing the width of cutting edge engagement a_e. Further cutting parameters see page 102-103.

Recommended cutting data for Q40 | Q43 | Q55 | Q56 | Q63 | Q75

Guideline values for milling						Cutting speed v_c (fpm)							
Material group		Strength Rm (lbf/in2)	Hardness HB	Material	Material example, material code ANSI / SAE	BK8425		BK6110		K10		BK2740	
						dry	wet	dry	wet	dry	wet	dry	wet
P	1.0	≤ 72500		non-alloy steels	A570.36 / 1213 A573.81	330-720	230-590					490-855	295-590
P	2.0	72500-130000		non-alloy / low alloy steels	5120 / 1055 5115	260-720	230-560					260-655	230-525
P	2.1	< 72500		lead alloys	12L13	330-720	230-560					490-855	295-590
P	3.0	>130000 - 174000		non alloy / low alloy steels: heat resistant structural, heat treated, nitride and tools steels	4140 1064	260-655	230-525					295-590	230-460
P	4.0	> 174000		high alloy steels	H13 H21	260-560	230-490					395-655	195-460
P	4.1			HSS		260-460	195-395					230-590	195-425
S	5.0		250	super alloys: Inconel, Hastelloy, Nimonic, stc.	Inconel® 718 Nimonic® 80A								65-195
S	5.1	58000		titanium, titanium alloys	AMS R54520								65-230
M	6.0	≤ 87000		stainless steels	304L 316	525-720	230-460					525-820	195-460
M	6.1	< 130000		stainless steels	630	230-460	230-460					490-720	195-460
M	7.0	> 130000		stainless / fireproof steels	420 403	230-460	230-460					330-820	195-460
K	8.0		180	gray cast iron	No 35 B No 50 B			460-1150	460-1150		260-525		
K	8.1		250	alloy gray cast iron	A436 Type 2			395-1050	395-1050		260-525		
K	9.0	≤ 87000	130	spheroidal graphite cast iron, ferritic	60-40-18			330-820	330-820		260-525		
K	9.1		230	spheroidal graphite cast iron, ferritic / perlitic	80-55-06			395-1050	395-1050		260-525		
K	10.0	> 87000	250	spheroidal graphite cast iron, perlitic malleable iron	100-70-03 70003			395-1050	395-1050		260-525		
K	10.1		200	alloyed spheroidal graphite cast iron	A43D2			395-1050	395-1050		260-525		
K	10.2		300	vermicular cast iron				330-820	330-820		260-525		
N	12.0		90	copper alloy, brass, lead-alloy bronze, lead bronze: good cut	UNS C36000						985-3280		
N	12.1		100	copper alloy, brass, bronze: average cut							985-3280		
N	13.0		60	wrought aluminium alloys	GD-AlSi12						655-9840		
N	13.1		75	cast alum. alloy: Si-content <10% magnesium alloy							985-1640		
N	14.0		100	cast alum.alloy: Si-content >10%	A360.2						985-1310		
H	15.0	203000		hardened steels < 45 HRC									
H	16.0	261000		hardened steels > 45 HRC									

Cutting values shown are maximum values relating to the basic recommendations for cutting materials given.

Recommended cutting data for Q40 | Q43 | Q55 | Q56 | Q63 | Q75

	Cutting speed v_c (fpm)											
	BK6435		BK7740		BK2710		BK6130		BK2735			
	dry	wet	dry	wet	dry	wet	dry	wet	dry	wet		
							395-920	260-490	525-790	330-460	1.0	P
							260-820	230-460	395-720	295-395	2.0	
							395-920	260-490	525-790	330-460	2.1	
							260-720	230-460	395-720	295-395	3.0	
		195-460					260-425	195-295	260-360	195-260	4.0	
		195-460					260-460	195-395	260-460	195-395	4.1	
	80-245			35-195							5.0	S
				80-245							5.1	
	720-1150	195-590							395	360	6.0	M
	720-1150	195-460							360	330	6.1	
	490-790	195-460							330	295	7.0	
					590-1150	590-1150	590-1150	460-625			8.0	K
					330-820	330-820	590-1150	460-625			8.1	
					330-820	330-820	425-690	260-395			9.0	
					330-820	330-820	425-690	260-395			9.1	
					395-820	395-820	525-655	295-395			10.0	
					395-820	395-820	1260-820	330-590			10.1	
					330-820	330-820	330-525	260-395			10.2	
											12.0	N
											12.1	
											13.0	
											13.1	
											14.0	
					130-195						15.0	H
					100-165						16.0	

Cutting values shown are maximum values relating to the basic recommendations for cutting materials given.

Important: See chapter 8 for more application details and safety notes !

KOMET® Indexable insert mills

Combining an innovative design and the special geometry of their indexable inserts, KOMET® milling cutters make a distinctive difference when machining an extremely wide variety of different materials. Using more than 70 indexable inserts with different topographies, substrates and coatings, and a variety of 60 basic body versions, KOMET® provides a versatile, complete range of tools with which all milling tasks from face, shoulder and chamfer milling to milling straight and 45-degree slots, circular and plunge milling, inclined plunge milling as well as free-form milling can be mastered with optimum efficiency.

KOMET® *hi.aeQ*

The innovative KOMET® *hi.aeQ* arbor face milling cutter is excellently suited for reliable face milling of cast iron materials. It features a high number of teeth and low cutting forces.

The Q80 tangential indexable inserts used are designed for counterboring and milling operations. Thanks to a standing-lying arrangement, each insert has eight usable cutting edges. The extremely stable tangential indexable inserts, when combined with selected cutting tool materials and coatings, provide a great economic advantage when machining cast iron materials.

KOMET® Q40-KFM

Highly positive and soft-cutting KOMET® Q40-KFM face-milling cutter with a cutting depth up to 4 mm. Suitable for precision and medium machining. The high-performance cutting tool materials BK6130 and BK2735 increase productivity in steel and cast iron machining.

KOMET® Q63-KFM

The 46° face-milling cutter KOMET® Q63-KFM is ideally designed for middle and roughing operations with a cutting depth of up to 6.5 mm and a tooth feed of up to 0.5 mm. Extremely sturdy design and eight usable cutting edges for working with process reliability.

KOMET® Quatron *hi.feed*

The success enjoyed by our tried and tested KUB Quatron® solid drill range continues in our milling cutter range. With the successful Quatron indexable insert developed from solid drilling technology, we are extending our experience to the KOMET® Quatron *hi.feed* milling cutter. Plunge milling (also known more simply as plunging) is a type of machining particularly suitable for cutting deep grooves and large cavities. Plunge milling can be the ideal solution for large projection lengths and unstable conditions. The KOMET® Quatron *hi.feed* is a high-performance roughing tool for the fast removal of large quantities of cut metal.

KOMET® Q56-KHF

The face-milling cutter KOMET® Q56-KHF is particularly efficient. It was designed for high-feed applications and achieves a very high metal removal rate. Its angled cutting edge also achieves optimum surface quality.

KOMET® *hi.apQ*

A new generation of mills for efficiently processing an extremely wide variety of tasks. The tools are equipped with highly positive APKT indexable inserts and are suitable for shoulder milling, trimming, grooving, inclined plunging and circular interpolation milling. Almost any machining situation can be successfully handled thanks to the wide range of extremely different types of main carrier, e.g. in the form of arbor milling cutters, end milling cutters or screw-in cutters. In addition, a wide selection of cutting materials and coatings is available that can increase your productivity.

KOMET® Q43-KSM

The shoulder milling cutter KOMET® Q43-KSM produces shoulders that are step-free and are exactly an 90 degrees as a result of its soft-cutting geometry.

KOMET® Q55-KCM

The copy-milling cutter KOMET® Q55-KCM is suitable for an extremely wide variety of milling tasks and allows high feed rates combined with maximum stability. Due to the use of further indexable insert shapes such as Q43-SDMX, Q47-EOMT or Q55 circular inserts with wiper geometry on the same basic body, this milling system is an all-rounder as far as machining options are concerned. The KOMET® Q55-KCM can therefore be used for chamfer milling, and used equally well as a high feed-rate milling cutter. Tipped with circular wiper inserts, it ensures particularly good surface quality.

KOMET® Q75-KCM

The copy-milling cutter KOMET® Q75-KCM is suitable for face and slot milling. For applications in super alloys as well as titanium and titanium alloys, the specially matched topography -25 is available in combination with the coatings BK6435 and BK7740 and, thanks to the eight usable cutting edges, ensures efficient machining of difficult materials.

KOMET® Quatron *Chamfer*

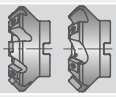
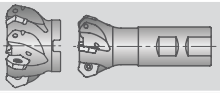
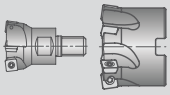
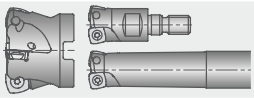
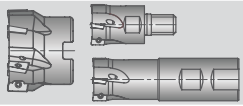
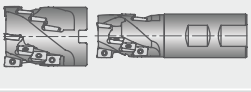
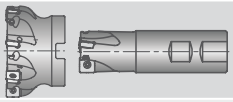
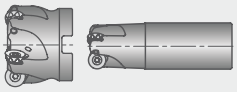
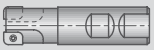
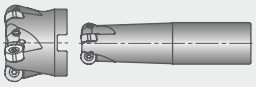
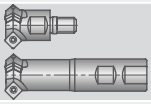
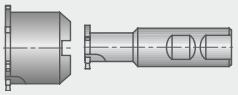
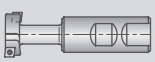
The chamfer milling cutters are optimally matched to your requirements and are suitable for chamfering workpiece edges and large holes, for both forward and reverse machining. The Quatron indexable insert used here has already distinguished itself in a number of applications .

KOMET® Tool selection

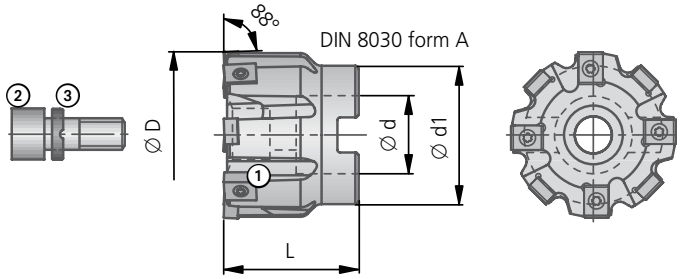
Help table for milling

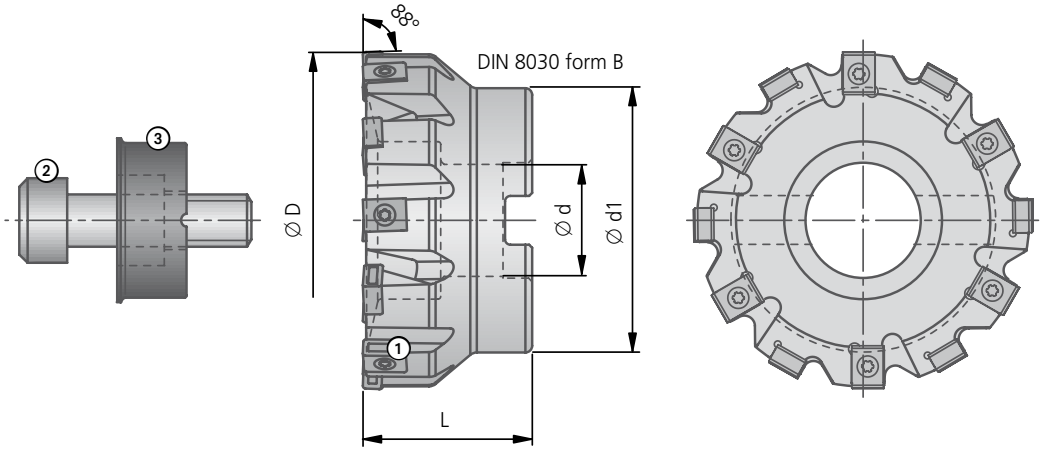
Machining											
Surface milling	Axial plunging	Circular milling	Plunge milling	Slot milling	Shoulder milling	Slot milling 45°	Chamfer milling	Free form milling	Turn milling	Circular turn milling	T-slot milling
●											
●							●				
●						●	●				
●						●	●				
●							●				
●	●	●	●	●	●						
●	●	●	●	●	●						
●	●	●		●	●						
	●	●		●	●						
●	●	●		●	●						
●	●	●	●	●				●	●		
●	●	●	●	●				●	●		
●						●	●				
●	●	●	●	●							
				●				●			
●				●					●		
						●	●				
										●	
											●

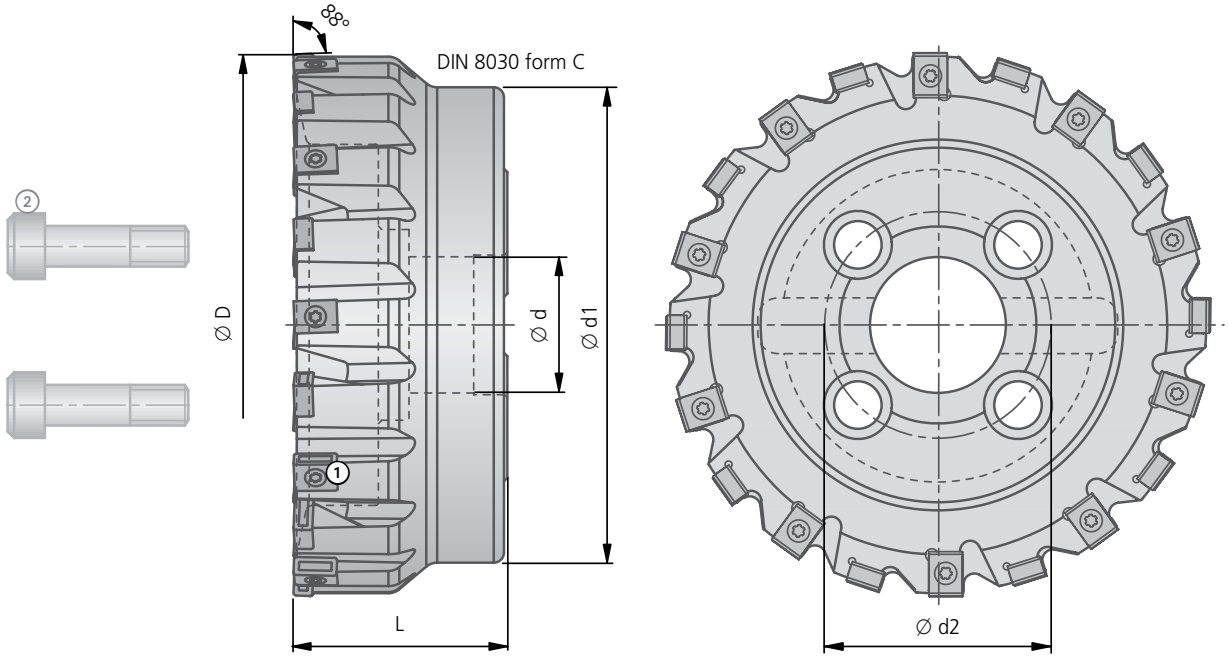
● very good | ◐ good | ○ possible

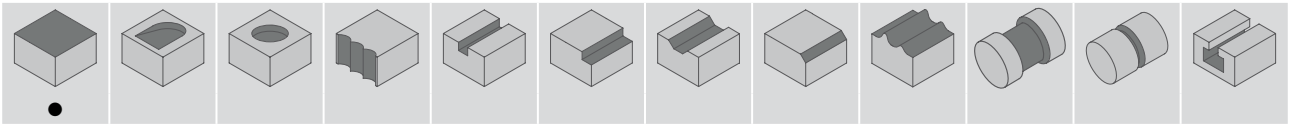
Material						Ø	Indexable insert				Tool	Page
Steel P	Stainless steel M	Cast iron K	Non-ferrous metals N	Superalloys and titanium S	Hardened materials H	mm	Cutting depth ap max	Setting angle ϰ		ISO code	Cutting edges per indexable insert		
●	○	●	●	●		40-50 63-160	3,0 4,0	88°	Q80 20.. Q80 32..	LNGU	8	 Face milling cutter KOMET® *hi.aeQ*	108
		●				63-160	3,0 6,0	45°	Q80 32..	LNGU	8	 Face milling cutter KOMET® *hi.aeQ*	112 114
●	○	●	●			40-80	6,0	45°	Q09 44..	SEHW	4	 Face milling cutter Q09	118
●	○	●	●	●		40-125	4,5	45°	Q40 53..	HOKT HPCT HPKT	6	 Face milling cutter Q40-KFM	120
●	○	●		●		40-125	6,0 6,5	46°	Q63 46.. Q63 53..	SOKU	8	 Face milling cutter Q63-KFM	122
●		●				20 25 32-35 42-52 63-66 80-100	0,67 0,72 0,88 1,1 1,1/1,5 2	8° 10°	W83 13.. W83 18.. W83 23.. W83 32.. W83 44..	SOEX	4	 High feed milling cutter KOMET® Quatron *hi.feed*	124
●	○	●		●		16-25 25-40 35-80	0,8 1,0 2,0	90°	Q56 20.. Q56 32.. Q56 46..	XPLT XDLT XOLT	4	 High feed milling cutter Q56-KHF	128
●	○	●	●	●		12-100 20-100 32-40	9 11 15	90°	Q36 18.. Q36 24.. Q36 38..	APKT	2	 Shoulder milling cutter KOMET® *hi.apQ*	132
●	○	●	●	●		25-40 32 32-50 40-63 80	26 32 35 42 55	90°	Q36 18.. Q36 24.. Q36 38..	APKT	2	 Shoulder milling cutter KOMET® *hi.apQ*	138
●	○	●	●	●		25-80	8	90°	Q43 28..	SDKT SDHT	4	 Shoulder milling cutter Q43-KSM	142
●	○	●	●	●	○	20-50 25-100	5 6	~	Q55 34.. Q55 42..	RDHW RDHX RPHX RPMX	8		146
●	○	●		●		25-100	6	~	Q55 42..	RPHX RPMX	4	 Copy milling cutter Q55-KCM	154
●	○		●	●		25-100	4	45°	Q43 38..	SDMX	4		152
●	○					32-100	1,5		Q47 34..	EOMT	2		156
●	○	●	●			25-32	11	90°	Q36 24..	APKT	2	 Copy milling cutter Q36	158
●	○	●		●		32-100	4,5	~	Q75 42..	RNKU ROHU	8	 Copy milling cutter Q75-KCM	160
●	○	●	●			12-44	~	45°	W83 13.. W83 18.. W83 23.. W83 32..	SOEX	4	 Chamfer milling cutter KOMET® Quatron *Chamfer*	162
●	○	●	●			10-80	~	~	Q12 18.. Q12 32.. Q12 44..	TPAX TCAX TNAX	3	 Circular milling cutter	164
●	○	●	●			17,5-47		90°	Q09 13.. Q15 18.. Q15 32..	SPGW CPMT CPMW	2	 T-slot milling cutter	168

Face milling cutter 88°









Z = effective number of teeth for calculating v_f

Arbor milling cutter															
ØD	Order No.	DIN 8030 form	Ød^{H6}	Ød1	Bolt circle Ød2	L	a_p max	spindle speed max. rpm	Z	kg	Clamping screw ① Order No. Article	Cylindrical screw ② Order No. Article	Coolant sleeve ③ Order No.	Indexable insert Order No. ISO Code ▽▽ Size
40	**F51 14040**	A	16	36	–	40	3	15.000	6	0,36	**N00 57251** S3076-8IP 2,25 Nm	**55011 08025** M8×25	**L01 01020** 0,05	**Q80 20050.06....** LNGU 090406 EN-05
50	**F51 14050**	A	22	41	–	40	3	13.000	8	0,36	**N00 57251** S3076-8IP 2,25 Nm	**55011 10025** M10×25	**L01 01030** 0,05	
63	**F51 14060**	A	22	48	–	40	4	10.000	8	0,52	**N00 57411** S40101-15IP 4,3 Nm	**55011 10025** M10×25	**L01 01040** 0,022	**Q80 32000.01....** LNGU 120508 EN-05 **Q80 32210.08....** LNGU 120508 EN-21
80	**F51 14080**	B	27	60	–	50	4	9.000	10	0,99	**N00 57411** S40101-15IP 4,3 Nm	**55011 12040** M12×40	**L01 01050** 0,152	
100	**F51 14100**	B	32	78	–	50	4	8.000	12	1,71	**N00 57411** S40101-15IP 4,3 Nm	**55011 16030** M16×30	**L01 01060** 0,17	
125	**F51 14120**	B	40	100	–	63	4	7.000	16	3,53	**N00 57411** S40101-15IP 4,3 Nm	**55011 20040** M20×40	**L01 01070** 0,396	
160	**F51 14160**	C	40	140	66,7	63	4	6.000	20	5,66	**N00 57411** S40101-15IP 4,3 Nm	**55011 12040** M12×40	–	

For further details on selecting the cutting material, see page 111. Enter cutting material code ▲

Supply includes milling cutter Ø 40 - 63 mm:
with clamping screws ① (pre-fitted with high-temperature paste, order no.: 47001 00105) and cylindrical screw ②.

Supply includes milling cutter Ø 80 - 160 mm:
with clamping screws ① (pre-fitted with high-temperature paste, order no.: 47001 00105).

Supply includes coolant sleeve ③:
with cylindrical screw ②.

Please order inserts separately. Screwdriver see chapter 8.

Recommendation: Change the clamping screws regularly to ensure the smooth running of the milling cutter.

● very good | ◐ good

Cutting values for milling: Page 111.

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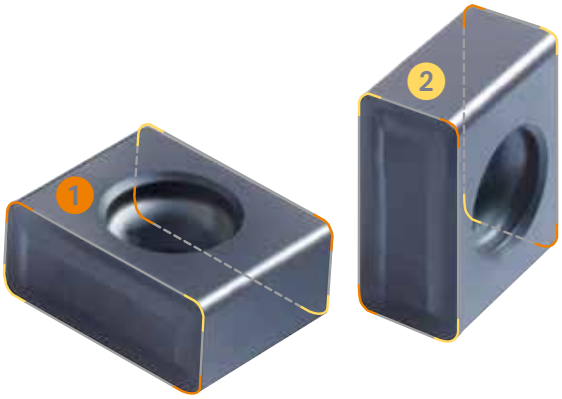
Application example face milling cutter 88°

Face milling of large cast material pump casing

Material: EN-GJS-600-3
Machine: Mazak BAZ
v_c = 360 m/min
f_z = 0,15 mm
f = 3,0 mm/rev
a_p = 1,5 mm

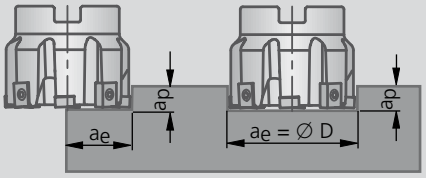
Quiet and quick machining



BENEFITS for you:

- High stability for high cutting efficiency thanks to the use of tangential screw-fit Q80 indexable inserts
- Eight usable cutting edges thanks to indexable inserts which are fitted in an alternately standing and lying arrangement
- Low power consumption thanks to low cutting forces and a low-vibration, quiet milling characteristic reduces the spindle loads
- This concept guarantees extremely high process reliability when combined with modern, matched substrates and coatings
- Both PVD and CVD-coated indexable inserts are available
- If internal coolant supply is used, optimum cooling of every cutting edge is achieved by using the coolant sleeve

Recommended cutting data for face milling cutter 88°



		Feed f_z (mm/tooth) at a_e/D											
		≤ 0,1			> 0,1 - 0,2			> 0,2 - 0,3			> 0,3		
P	1.0 2.0	0,13	**0,31**	0,48	0,09	**0,22**	0,35	0,08	**0,18**	0,29	0,06	**0,16**	0,26
P	2.1 3.0	0,16	**0,37**	0,58	0,12	**0,27**	0,42	0,10	**0,22**	0,35	0,08	**0,19**	0,31
P	4.0	0,13	**0,26**	0,39	0,09	**0,19**	0,28	0,08	**0,15**	0,23	0,06	**0,13**	0,21
S		0,13	**0,18**	0,23	0,09	**0,13**	0,16	0,08	**0,11**	0,14	0,06	**0,09**	0,12
M	6.0 6.1	0,13	**0,18**	0,23	0,09	**0,13**	0,16	0,08	**0,11**	0,14	0,06	**0,09**	0,12
M	7.0	0,13	**0,14**	0,16	0,09	**0,10**	0,12	0,08	**0,09**	0,10	0,06	**0,07**	0,09
K		0,26	**0,47**	0,68	0,19	**0,34**	0,49	0,15	**0,28**	0,41	0,13	**0,24**	0,36
N		0,19	**0,56**	0,93	0,14	**0,41**	0,67	0,12	**0,34**	0,56	0,09	**0,30**	0,50
H													

p.ex. mill dia. 100mm, engagement width a_e 10mm $= \frac{a_e}{D} = \frac{10}{100} = 0{,}1$

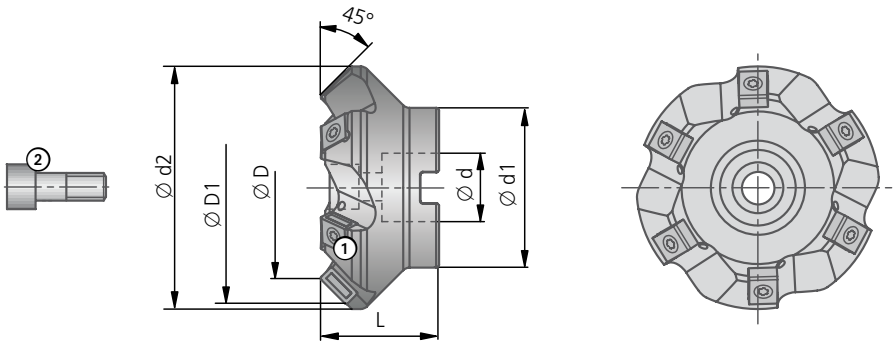
Cutting speed v_c (m/min)

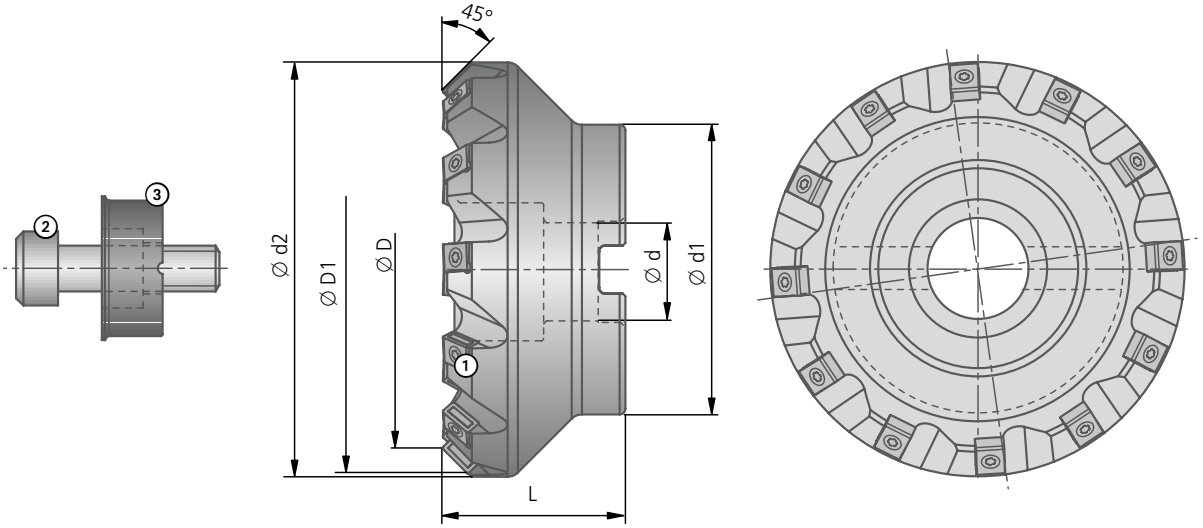
					Geometry	Q80..-05			Q80..-21	
					Coating type	CVD	PVD	PVD	PVD	PVD
					Cutting material designation	BK6115	BK2715	BK2730	BK2730	BK7935
					Cutting material code	6115	2715	2730	2730	7935
Material	Material example, material code DIN	Strength Rm (N/mm²)	Hardness HB	Material group						
non-alloy steels	1.0037 (S235JR) 1.0715 (11SMn30) 1.0044 (S2575JR)	≤500		P 1.0					120 - 240	150 - 300
non-alloy / low alloy steels	1.0050 (E295) 1.0535 (C55) 1.7131 (16MnCr5)	500-900		P 2.0					120 - 240	150 - 300
lead alloys	1.0718 (11SMnPb30)	<500		P 2.1					120 - 240	150 - 300
low alloy steels	1.7225 (42CrMo4) 1.1221 (C60E)	>900		P 3.0					120 - 200	150 - 250
high alloy steels	1.2341 (6CrMo15-5) 1.2601 (X165CrMoV12)	>900		P 4.0					65 - 160	80 - 200
HSS				P 4.1						
super alloys: Inconel, Hastelloy, Nimonic, stc.	2.4668 (NiuCr19Fe19Nb5Mo3) 2.4631 (Nimonic 80A)		250	S 5.0						
titanium, titanium alloys	3.7115 (TiAl5Sn2.5)	400		S 5.1						30 - 120
stainless steels	1.4306 (X2CrNi19-11) 1.4401 (X5CrNiMo17-12-2)	≤600		M 6.0						80 - 140
stainless steels	1.4511 (X3CrNb17) 1.4571 (X10CrNiMoTi17-12-2)	<900		M 6.1						60 - 120
stainless / fireproof steels	1.4713 (X10CrAlSi7) 1.4862 (X8NiCrSi38-18)	>900		M 7.0						30 - 80
gray cast iron	0.6025 (EN-GJL-250) 0.6035 (EN-GJL-350)		180	K 8.0	150 - 330	140 - 250	120 - 180	120 - 180		
alloy gray cast iron	0.6660 (GGL-NiCr20 2)		250	K 8.1	120 - 260	110 - 200	60 - 120	60 - 120		
spheroidal graphite cast iron, ferritic	0.7040 (EN-GJS-400-15)	≤600	130	K 9.0	140 - 300	130 - 230	80 - 160	80 - 160		
spheroidal graphite cast iron, ferritic/perlitic	0.7050 (EN-GJS-500-7) 0.7055 (GJS-55) 0.8055 (GTW-55)		230	K 9.1	120 - 260	110 - 200	80 - 160	80 - 160		
spheroidal graphite cast iron, perlitic, malleable iron	0.7060 (EN-GJS-600-3) 0.8165 (GTS-65)	>600	250	K 10.0	110 - 230	100 - 180	60 - 120	60 - 120		
alloyed spheroidal graphite cast iron	0.7661 (EN-GJSA-XNiCr20-2)		200	K 10.1	110 - 230	100 - 180	50 - 110	50 - 110		
vermicular cast iron	EN-GJV Ti < 0,2 EN-GJV Ti > 0,2		300	K 10.2	90 - 200	90 - 150	50 - 100	50 - 100		
copper alloy, brass, lead-alloy bronze, lead bronze: good cut	2.0375 (CuZn36Pb3) 2.1182.01 (G-CuPb15Sn)		90	N 12.0				150 - 250		
copper alloy, brass, bronze: average cut	2.0550 (CuZn40Al2) 2.0060 (E-Cu57)		100	N 12.1				200 - 400		
wrought aluminium alloys	3.3315 (AlMg1) 3.0517 (AlMnCu)		60	N 13.0				300 - 500		
cast alum. alloy: Si-content <10% magnesium alloy	3.3561 (G-AlMg5) 3.2373.61 (G-AlSi9Mg wa)		75	N 13.1				180 - 320		
cast alum.alloy: Si-content >10%	3.2381.01 (G-AlSi10Mg)		100	N 14.0				150 - 250		
hardened steels < 45 HRC		1400		H 15.0						
hardened steels > 45 HRC		1800		H 16.0						

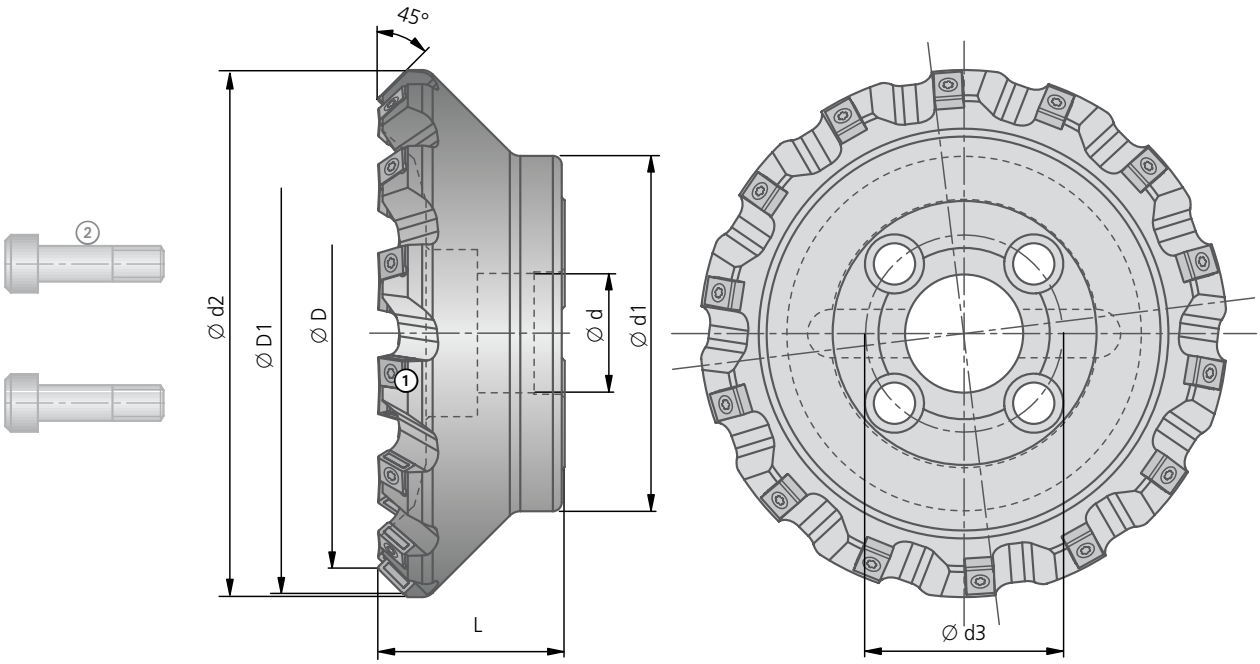
Cutting speed v_c can be increased by reducing the width of cutting edge engagement a_e

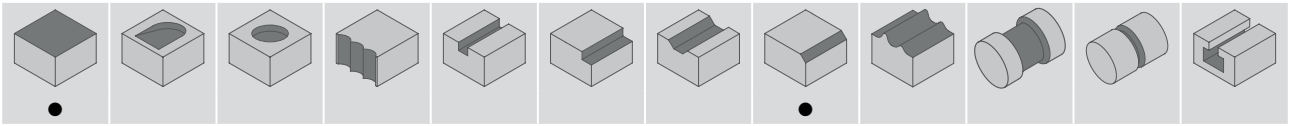
Important: See chapter 8 for more application details and safety notes !

Face milling cutter 45° ap6









Z = effective number of teeth for calculating v_f

Arbor milling cutter																	
ØD	ØD1	Order No.	DIN 8030 form	Ød^{H6}	Ød1	Ød2	Bolt circle Ød3	L	a_p max	spindle speed max. rpm	Z	kg	Clamping screw ① Order No. Article	Cylindrical screw ② Order No.	Coolant sleeve ③ Order No.	Indexable insert Order No. ISO Code ▽▽ Size	
63	75	**F51 05060**	A	22	54	82	–	40	6	10.000	6	0,82	**N00 57411** S40101-15IP 4,3 Nm	**55011 10025** M10×25	–	**Q80 32050.45....** LNGU 1205AN EN-05	
80	92	**F51 05080**	A	27	70	98	–	50	6	9000	8	1,65	**N00 57411** S40101-15IP 4,3 Nm	**55011 12035** M12×35	–		
100	112	**F51 05100**	A	32	90	118	–	50	6	8000	10	2,62	**N00 57411** S40101-15IP 4,3 Nm	**55011 16030** M16×30	–		
125	137	**F51 05120**	B	40	100	143	–	63	6	7000	12	4,73	**N00 57411** S40101-15IP 4,3 Nm	**55011 20040** M20×40	**L01 01070** 0,396		
160	172	**F51 05160**	C	40	120	178	66,7	63	6	6000	14	5,3	**N00 57411** S40101-15IP 4,3 Nm	**55011 12040** M12×40	–		

For further details on selecting the cutting material, see page 117. Enter cutting material code ▲

Supply includes milling cutter Ø 63 | 80 | 100 mm:
with clamping screws ① (pre-fitted with high-temperature paste, order no.: 47001 00105) and cylindrical screw ②.

Supply includes milling cutter Ø 125 mm:
with clamping screws ① (pre-fitted with high-temperature paste, order no.: 47001 00105) **without** coolant sleeve.
Supply includes coolant sleeve ③: with cylindrical screw ②.

Supply includes milling cutter Ø 160 mm:
with clamping screws ① (pre-fitted with high-temperature paste, order no.: 47001 00105) **without** cylindrical screw ②.

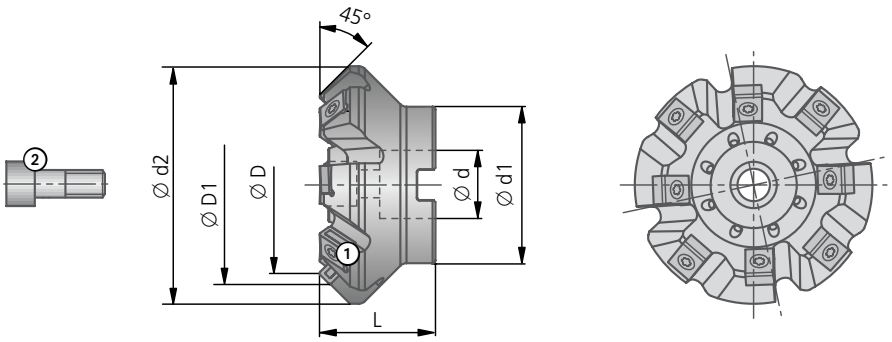
Please order inserts separately. Screwdriver see chapter 8.

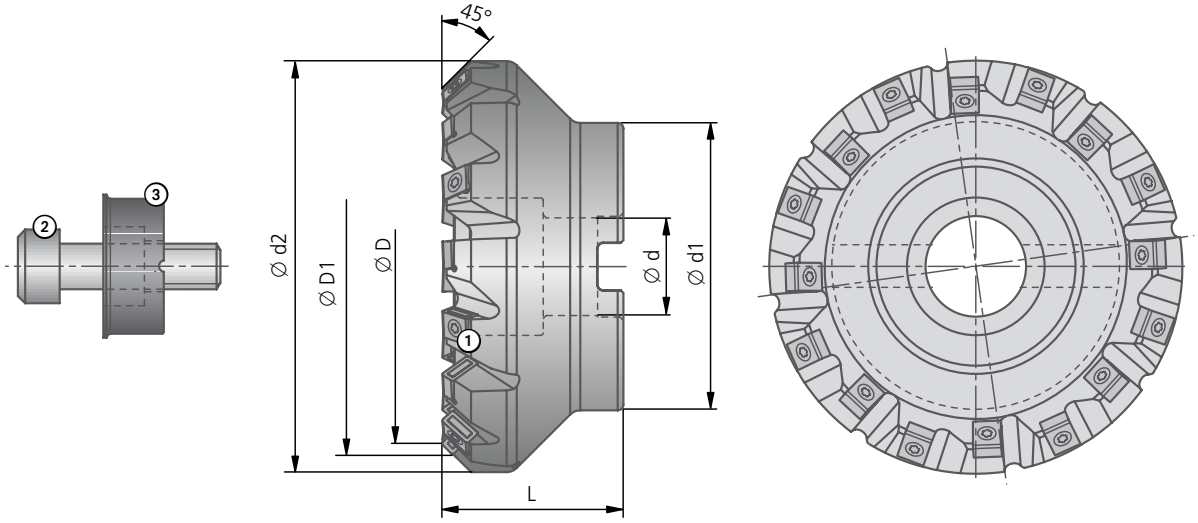
Recommendation: Change the clamping screws regularly to ensure the smooth running of the milling cutter.

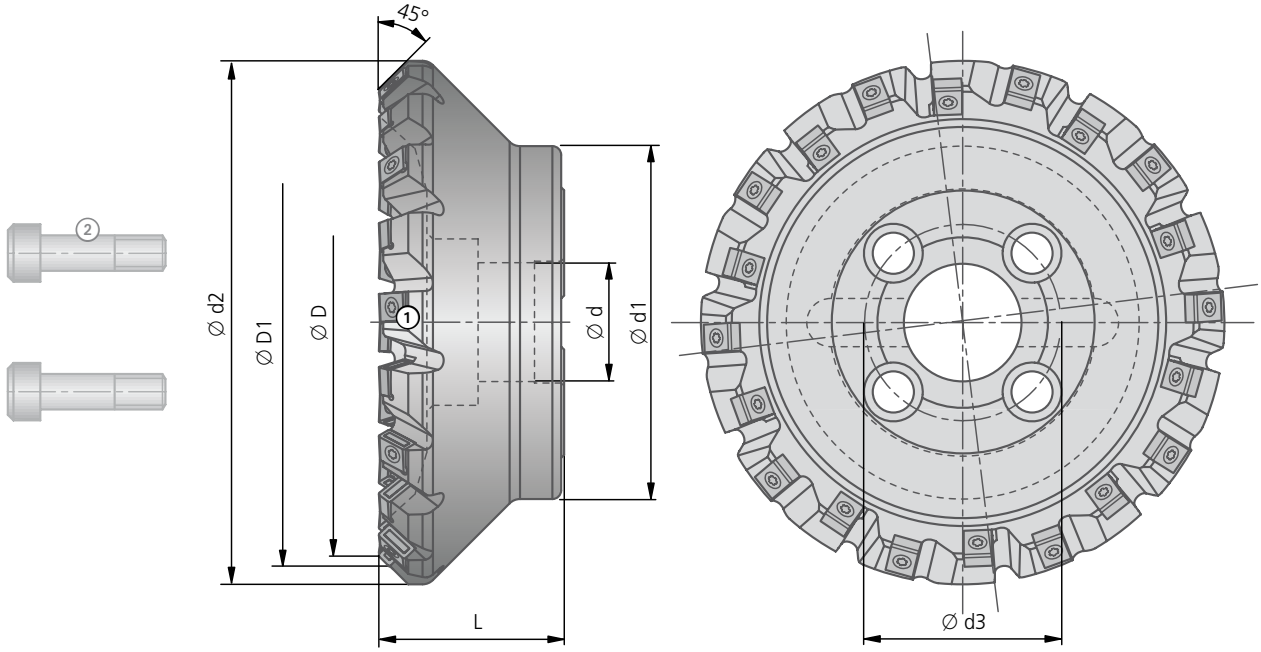
● very good | ◐ good

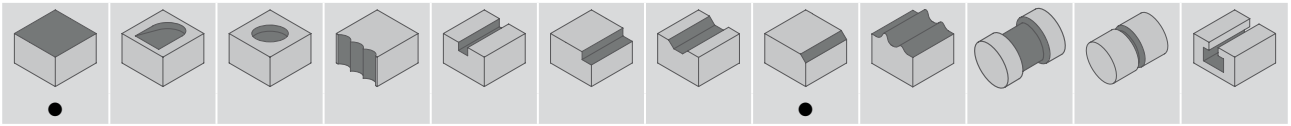
Cutting values for milling: Page 117.

Face milling cutter 45° ap3









Z = effective number of teeth for calculating v_f

Arbor milling cutter																	Indexable insert	
ØD	ØD1	Order No.	DIN 8030 form	Ød H6	Ød1	Ød2	Bolt circle Ød3	L	a_p max	spindle speed max. rpm	Z	kg	Clamping screw ① Order No. Article	Cylindrical screw ② Order No.	Coolant sleeve ③ Order No.	Order No.	ISO Code ▽▽ Size
63	69	**F51 04060**	A	22	54	82	–	40	3	10.000	8	0,77	**N00 57411** S40101-15IP 4,3 Nm	**55011 10025** M10×25	–		
80	86	**F51 04080**	A	27	70	98	–	50	3	9000	10	1,56	**N00 57411** S40101-15IP 4,3 Nm	**55011 12035** M12×35	–		
100	106	**F51 04100**	A	32	90	118	–	50	3	8000	12	2,48	**N00 57411** S40101-15IP 4,3 Nm	**55011 16030** M16×30	–		**Q80 32050.45....** LNGU 1205AN EN-05
125	131	**F51 04120**	B	40	100	143	–	63	3	7000	16	4,68	**N00 57411** S40101-15IP 4,3 Nm	**55011 20040** M20×40	**L01 01070** 0,396		
160	166	**F51 04160**	C	40	120	178	66,7	63	3	6000	20	5,41	**N00 57411** S40101-15IP 4,3 Nm	**55011 12040** M12×40	–		

For further details on selecting the cutting material, see page 117. Enter cutting material code ▲

Supply includes milling cutter Ø 63 | 80 | 100 mm:
with clamping screws ① (pre-fitted with high-temperature paste, order no.: 47001 00105) and cylindrical screw ②.

Supply includes milling cutter Ø 125 mm:
with clamping screws ① (pre-fitted with high-temperature paste, order no.: 47001 00105) **without** coolant sleeve.
Supply includes coolant sleeve ③: with cylindrical screw ②.

Supply includes milling cutter Ø 160 mm:
with clamping screws ① (pre-fitted with high-temperature paste, order no.: 47001 00105) **without** cylindrical screw ②.

Please order inserts separately. Screwdriver see chapter 8.

Recommendation: Change the clamping screws regularly to ensure the smooth running of the milling cutter.

● very good | ◐ good

Cutting values for milling: Page 117.

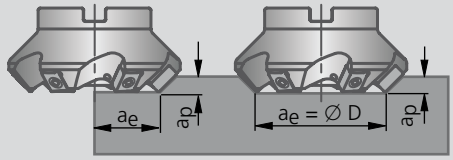
KOMET® *hi.aeQ*

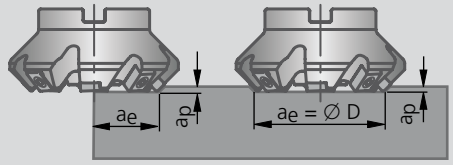
Face milling cutter 45°

BENEFITS for you:

- High stability for high cutting efficiency thanks to the use of tangential screw-fit Q80 indexable inserts
- Peripheral grounded indexable insert with finishing bevel for optimal surfaces
- Low power consumption thanks to low cutting forces and a low-vibration, quiet milling characteristic reduces the spindle loads
- This concept guarantees extremely high process reliability and economy
- Face milling cutter with weide tooth pitch: Four usable cutting edges, large cutting depth
- Face milling cutter with close tooth pitch: Eight usable cutting edges thanks to indexable inserts which are fitted in an alternately standing and lying arrangement

Recommended cutting data for face milling cutter 45°

F51 05... use with ap 6 mm		Feed f_z (mm/tooth) at a_e/D			
		≤ 0,1	> 0,1 - 0,2	> 0,2 - 0,3	> 0,3
	P				
	S				
	M				
	K	0,36 **0,52** 0,68	0,26 **0,38** 0,49	0,22 **0,31** 0,41	0,18 **0,27** 0,36
	N				
	H				

F51 04... / F51 05... use with ap 3 mm		Feed f_z (mm/tooth) at a_e/D			
		≤ 0,1	> 0,1 - 0,2	> 0,2 - 0,3	> 0,3
	P				
	S				
	M				
	K	0,36 **0,64** 0,91	0,26 **0,46** 0,66	0,22 **0,38** 0,55	0,18 **0,33** 0,48
	N				
	H				

p.ex. mill dia. 100mm, engagement width a_e 10mm $= \frac{a_e}{D} = \frac{10}{100} = 0{,}1$

Cutting speed v_c (m/min)

					Indexable insert	Q80 32000.01....			Q80 32050.45....	
					Coating type	CVD	PVD	PVD	CVD	PVD
					Cutting material designation	BK6115	BK2715	BK2730	BK6115	BK2715
					Cutting material code	6115	2715	2730	6115	2715
Material	Material example, material code DIN	Strength Rm (N/mm²)	Hardness HB	Material group						
non-alloy steels	1.0037 (S235JR) 1.0715 (11SMn30) 1.0044 (S2575JR)	≤500		P 1.0						
non-alloy / low alloy steels	1.0050 (E295) 1.0535 (C55) 1.7131 (16MnCr5)	500-900		P 2.0						
lead alloys	1.0718 (11SMnPb30)	<500		P 2.1						
low alloy steels	1.7225 (42CrMo4) 1.1221 (C60E)	>900		P 3.0						
high alloy steels	1.2341 (6CrMo15-5) 1.2601 (X165CrMoV12)	>900		P 4.0						
HSS				P 4.1						
super alloys: Inconel, Hastelloy, Nimonic, stc.	2.4668 (NiuCr19Fe19Nb5Mo3) 2.4631 (Nimonic 80A)		250	S 5.0						
titanium, titanium alloys	3.7115 (TiAl5Sn2.5)	400		S 5.1						
stainless steels	1.4306 (X2CrNi19-11) 1.4401 (X5CrNiMo17-12-2)	≤600		M 6.0						
stainless steels	1.4511 (X3CrNb17) 1.4571 (X10CrNiMoTi17-12-2)	<900		M 6.1						
stainless / fireproof steels	1.4713 (X10CrAlSi7) 1.4862 (X8NiCrSi38-18)	>900		M 7.0						
gray cast iron	0.6025 (EN-GJL-250) 0.6035 (EN-GJL-350)		180	K 8.0		150 - 330	140 - 250	120 - 180	150 - 330	140 - 250
alloy gray cast iron	0.6660 (GGL-NiCr20 2)		250	K 8.1		120 - 260	110 - 200	60 - 120	120 - 260	110 - 200
spheroidal graphite cast iron, ferritic	0.7040 (EN-GJS-400-15)	≤600	130	K 9.0		140 - 300	130 - 230	80 - 160	140 - 300	130 - 230
spheroidal graphite cast iron, ferritic/perlitic	0.7050 (EN-GJS-500-7) 0.7055 (GJS-55) 0.8055 (GTW-55)		230	K 9.1		120 - 260	110 - 200	80 - 160	120 - 260	110 - 200
spheroidal graphite cast iron, perlitic, malleable iron	0.7060 (EN-GJS-600-3) 0.8165 (GTS-65)	>600	250	K 10.0		110 - 230	100 - 180	60 - 120	110 - 230	100 - 180
alloyed spheroidal graphite cast iron	0.7661 (EN-GJSA-XNiCr20-2)		200	K 10.1		110 - 230	100 - 180	50 - 110	110 - 230	100 - 180
vermicular cast iron	EN-GJV Ti < 0,2 EN-GJV Ti > 0,2		300	K 10.2		90 - 200	90 - 150	50 - 100	90 - 200	90 - 150
copper alloy, brass, lead-alloy bronze, lead bronze: good cut	2.0375 (CuZn36Pb3) 2.1182.01 (G-CuPb15Sn)		90	N 12.0						
copper alloy, brass, bronze: average cut	2.0550 (CuZn40Al2) 2.0060 (E-Cu57)		100	N 12.1						
wrought aluminium alloys	3.3315 (AlMg1) 3.0517 (AlMnCu)		60	N 13.0						
cast alum. alloy: Si-content <10% magnesium alloy	3.3561 (G-AlMg5) 3.2373.61 (G-AlSi9Mg wa)		75	N 13.1						
cast alum.alloy: Si-content >10%	3.2381.01 (G-AlSi10Mg)		100	N 14.0						
hardened steels < 45 HRC		1400		H 15.0						
hardened steels > 45 HRC		1800		H 16.0						

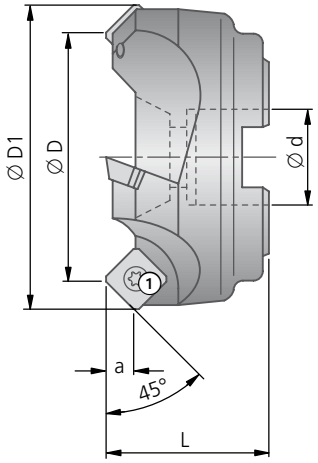
Cutting speed v_c can be increased by reducing the width of cutting edge engagement a_e

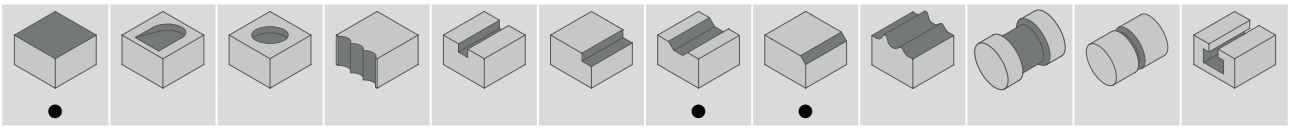
Important: See chapter 8 for more application details and safety notes !

Face milling cutter Q09

Material P M K N S H

DIN 6358 A / B





Y = number of inserts | Z = effective number of teeth for calculating v_f

Ø D1	Ø D2	Order No.	Ø d^{H7}	L	a_p max	Y	Z	kg	Clamping screw Order No. Article	Indexable insert Order No. ISO Code
40	53	**F51 01040**	16	40	6	3	3	0,38	**N00 57301** S45100-20IP 6,25 Nm	**Q09 44000. ..** SEHW 1204 ...
50	63	**F51 01050**	22	40	6	4	4	0,46		
63	76	**F51 01060**	22	40	6	4	4	0,67		
80	93	**F51 01080**	27	50	6	5	5	1,17		

For further details on selecting the cutting material, see page 119. Enter cutting material code ▲

Supply includes: Milling cutter with clamping screws ① (pre-fitted with high-temperature paste, order no.: 47001 00105). Please order insert separately. Screwdriver see chapter 8.

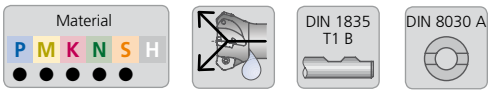
Recommendation: Change the clamping screws regularly to ensure the smooth running of the milling cutter.

Cutting values for milling							Cutting speed v_c (m/min)			
				Substrate			Solid carbide			Cermet
				Coating type			–	CVD	PVD	–
				Cutting material designation			K20	BK64	BK8425	CK37
				Cutting material code			22	64	8425	37
Material group		Strength Rm (N/mm²)	Hardness HB	Material	Material example, material code DIN	Feed f_z (mm/tooth)				
P	1.0	< 500		non-alloy steels	1.0037 (S235JR) 1.0715 (11SMn30) 1.0044 (S2575JR)	0,08 - 0,40		100 - 180	100 - 180	180 - 350
P	2.0	500-900		non-alloy / low alloy steels	1.0050 (E295) 1.0535 (C55) 1.7131 (16MnCr5)	0,08 - 0,40		100 - 180	100 - 180	180 - 350
P	2.1	< 500		lead alloys	1.0718 (11SMnPb30)	0,08 - 0,40		100 - 180	100 - 180	180 - 350
P	3.0	> 900		low alloy steels: heat resistant structural, heat treated, nitride and tools steels	1.7225 (42CrMo4) 1.1221 (C60E)	0,08 - 0,30		60 - 120	70 - 130	160 - 280
P	4.0	> 900		high alloy steels	1.2341 (6CrMo15-5) 1.2601 (X165CrMoV12)	0,05 - 0,25		60 - 120	70 - 130	160 - 280
P	4.1			HSS						
S	5.0		250	super alloys: Inconel, Hastelloy, Nimonic, stc.	2.4668 (NiuCr19Fe19Nb-5Mo3) 2.4631 (Nimonic 80A)					
S	5.1	400		titanium,titanium alloys	3.7115 (TiAl5Sn2.5)					
M	6.0	< 600		stainless steels	1.4306 (X2CrNi19-11) 1.4401 (X5CrNiMo17-12-2)	0,05 - 0,20		60 - 140	80 - 160	200 - 260
M	6.1	< 900		stainless steels	1.4511 (X3CrNb17) 1.4571 (X10CrNiMo-Ti17-12-2)	0,05 - 0,20		60 - 140	80 - 160	200 - 260
M	7.0	> 900		stainless / fireproof steels	1.4713 (X10CrAlSi7) 1.4862 (X8NiCrSi38-18)	0,05 - 0,20		60 - 140	80 - 160	200 - 260
K	8.0		180	gray cast iron	0.6025 (EN-GJL-250) 0.6035 (EN-GJL-350)	0,08 - 0,40	60 - 150		140 - 200	250 - 320
K	8.1		250	alloy gray cast iron	0.6660 (GGL-NiCr20 2)	0,08 - 0,40	60 - 150		140 - 200	250 - 320
K	9.0	< 600	130	spheroidal graphite cast iron, ferritic	0.7040 (EN-GJS-400-15)	0,08 - 0,40	60 - 150		140 - 200	250 - 320
K	9.1		230	spheroidal graphite cast iron, ferritic/ perlitic	0.7050 (EN-GJS-500-7) 0.7055 (GJS-55) 0.8055 (GTW-55)	0,08 - 0,30	60 - 150		140 - 200	250 - 320
K	10.0	> 600	250	spheroidal graphite cast iron, perlitic malleable iron	0.7060 (EN-GJS-600-3) 0.8165 (GTS-65)	0,08 - 0,30	60 - 150		140 - 200	250 - 320
K	10.1		200	alloyed spheroidal graphite cast iron	0.7661 (EN-GJSA-XNiCr20-2)	0,08 - 0,30	60 - 150		140 - 200	250 - 320
K	10.2		300	vermicular cast iron	EN-GJV Ti < 0,2 EN-GJV Ti > 0,2	0,08 - 0,30	60 - 100			
N	12.0		90	copper alloy, brass, lead-alloy bronze, lead bronze: good cut	2.0375 (CuZn36Pb3) 2.1182.01 (G-CuPb15Sn)	0,05 - 0,40	200 - 500			
N	12.1		100	copper alloy, brass, bronze: average cut	2.0550 (CuZn40Al2) 2.0060 (E-Cu57)	0,05 - 0,30	200 - 500			
N	13.0		60	wrought aluminium alloys	3.3315 (AlMg1) 3.0517 (AlMnCu)	0,05 - 0,30	200 - 500			
N	13.1		75	cast alum. alloy: Si-content <10% magnesium alloy	3.3561 (G-AlMg5) 3.2373.61 (G-AlSi9Mg wa)	0,10 - 0,50	200 - 500			
N	14.0		100	cast alum.alloy: Si-content >10%	3.2381.01 (G-AlSi10Mg)	0,10 - 0,50	200 - 500			
H	15.0	1400		hardened steels < 45 HRC						
H	16.0	1800		hardened steels > 45 HRC						

Cutting values shown are maximum values relating to the basic recommendations for cutting materials given.

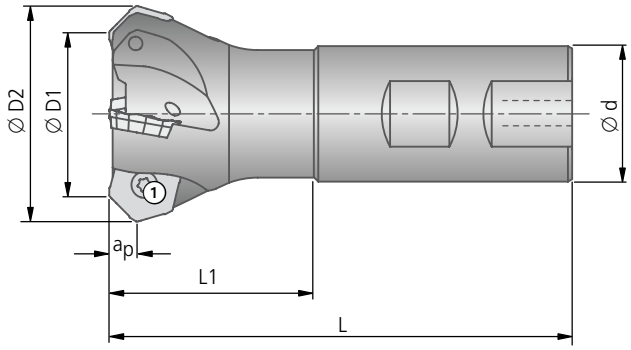
Important: See chapter 8 for more application details and safety notes !

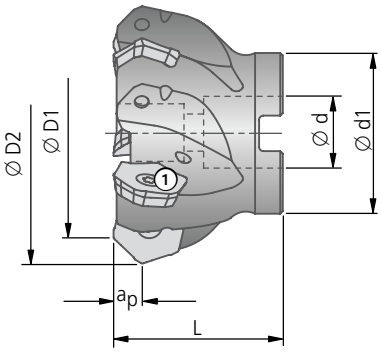
Face milling cutter Q40-KFM

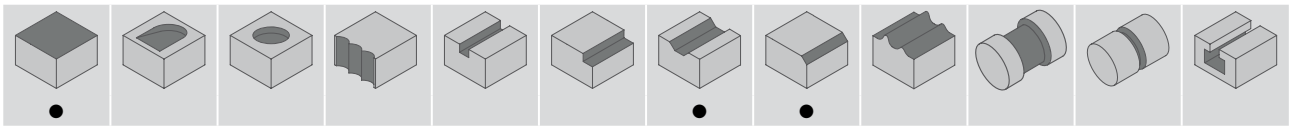


BENEFITS for you:

- Highly positive cutting edge geometry for soft cutting action
- Optimised topographies for different applications on small and medium-sized milling machines
- Six useful cutting edges per indexable insert
- Every cutting edge with wiper geometry







Z = effective number of teeth for calculating v_f

End milling cutter										Clamping screw	Indexable insert
Ø D1	Ø D2	Order No.	Ød$_{h6}$	L	L1	a_p max	Spindle speed max. rpm	Z	kg	Order No. Article	Order No. ISO Code
40	52,2	**F55 03150**	32	110	50	4,5	17.000	4		**N00 57890** S40110-15IP 4,3 Nm	Q40 53.. HOKT | HPCT | HPKT

Arbor milling cutter										Differential screw	Clamping screw	Indexable insert
Ø D1	Ø D2	Order No.	Ø d^{H7}	Ø d1	L	a_p max	Spindle speed max. rpm	Z	kg	Order No.	Order No. Article	Order No. ISO Code
40	52,2	**F55 04150**	16	38	40	4,5	19.900	4		**L02 30980** 15Nm	**N00 57890** S40110-15IP 4,3 Nm	Q40 53.. HOKT | HPCT | HPKT
50	62,2	**F55 04170**	22	38	40	4,5	15.900	5	0,32	–		
63	75,2	**F55 04190**	22	48	40	4,5	12.600	6	0,56	–		
80	92,2	**F55 04210**	27	58	50	4,5	9.900	7	1,16	–		
100	112,2	**F55 04230**	32	78	50	4,5	7.900	9		–		
125	137,2	**F55 04250**	40	88	63	4,5	6.300	10	2,98	–		

Supply includes: Milling cutter with clamping screws ① (pre-fitted with high-temperature paste, order no.: 47001 00105).

Supply includes arbor milling cutter Ø 40 mm:
Milling cutter with clamping screws ① (pre-fitted with high-temperature paste, order no.: 47001 00105) and differential screw.

Please order inserts separately. Screwdriver see chapter 8.

Recommendation: Change the clamping screws regularly to ensure the smooth running of the milling cutter.

Feed f_z (mm/tooth) at a_e/D														Cutting depth a_p mm
	Order No.	ISO code	Material group	p.ex. mill dia. 100mm, engagement width a_e 10 mm = $\frac{a_e}{D} = \frac{10}{100} = 0,1$										
				≤ 0,1			> 0,1 - 0,2			> 0,2 - 0,3			> 0,3 - 1		
medium roughing operations	Q40 53010.048425	HPKT0604AZER-01 BK8425	P	0,20	**0,28**	0,36	0,15	**0,20**	0,26	0,12	**0,17**	0,22	0,10	**0,15**	0,19	4,0
higher cutting speed	Q40 53010.046130	HOKT0604AZER-01 BK6130														
tougher steel materials	Q40 53010.042735	HOKT0604AZER-01 BK2735														
precision-machining and finishing	Q40 53210.048425	HPKT0604AZER-21 BK8425														
super alloys	Q40 53210.046435	HPKT0604AZER-21 BK6435	S	0,16	**0,21**	0,25	0,12	**0,15**	0,18	0,10	**0,12**	0,13	0,08	**0,10**	0,11	4,0
medium roughing operations	Q40 53010.042740	HPKT0604AZER-01 BK2740	M	0,21	**0,26**	0,30	0,15	**0,18**	0,21	0,12	**0,14**	0,15	0,10	**0,12**	0,13	4,0
precision-machining and finishing	Q40 53210.042740	HPKT0604AZER-21 BK2740														
	Q40 53050.046110	HPKT0604AZER-05 BK6110	K	0,20	**0,28**	0,36	0,15	**0,20**	0,26	0,12	**0,17**	0,22	0,10	**0,15**	0,19	4,0
higher cutting speed	Q40 53010.046130	HOKT0604AZER-01 BK6130														
	Q40 53120.0423	HPCT0604AZFR-12 K10	N	0,20	**0,28**	0,36	0,15	**0,20**	0,26	0,12	**0,17**	0,22	0,10	**0,15**	0,19	4,0

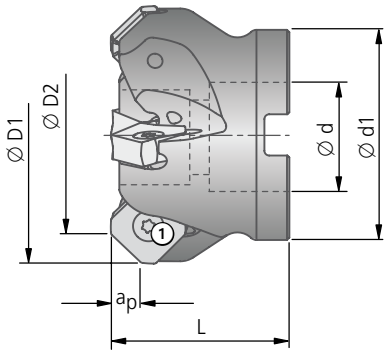
Cutting speed v_c (m/min)					Indexable insert	Q40 53.. (HOKT / HPCT / HPKT)										
					Coating type	PVD		PVD		CVD		CVD	PVD		CVD	–
					Cutting material designation	BK8425		BK2735		BK6130		BK6435	BK2740		BK6110	K10
					Cutting material code	8425		2735		6130		6435	2740		6110	23
Material	Material example, material code DIN	Strength Rm (N/mm²)	Hardness HB	Material group		dry	wet	dry	wet	dry	wet	dry	dry	wet	dry + wet	wet
non-alloy steels	1.0037 (S235JR) 1.0715 (11SMn30) 1.0044 (S2575JR)	≤500		P	1.0	100-220	70-180	160-240	100-140	120-280	80-150					
non-alloy / low alloy steels	1.0050 (E295) 1.0535 (C55) 1.7131 (16MnCr5)	500-900			2.0	80-220	70-170	120-220	90-120	80-250	70-140					
lead alloys	1.0718 (11SMnPb30)	<500			2.1	100-220	70-170	160-240	100-140	120-280	80-150					
low alloy steels	1.7225 (42CrMo4) 1.1221 (C60E)	>900			3.0	80-200	70-160	120-220	90-120	80-220	70-140					
high alloy steels	1.2341 (6CrMo15-5) 1.2601 (X165CrMoV12)	>900			4.0	80-170	70-150	80-110	60-80	80-130	60-90					
HSS					4.1	80-140	60-120	80-140	60-120	80-140	60-120					
super alloys: Inconel, Hastelloy, Nimonic, stc.	2.4668 (NiuCr19Fe19Nb5Mo3) 2.4631 (Nimonic 80A)		250	S	5.0							25-75				
titanium, titanium alloys	3.7115 (TiAl5Sn2.5)	400			5.1											
stainless steels	1.4306 (X2CrNi19-11) 1.4401 (X5CrNiMo17-12-2)	≤600			6.0								160-250	60-140		
stainless steels	1.4511 (X3CrNb17) 1.4571 (X10CrNiMoTi17-12-2)	<900		M	6.1								150-220	60-140		
stainless / fireproof steels	1.4713 (X10CrAlSi7) 1.4862 (X8NiCrSi38-18)	>900			7.0								100-250	60-140		
gray cast iron	0.6025 (EN-GJL-250) 0.6035 (EN-GJL-350)		180		8.0					180-350	140-190				140-350	
alloy gray cast iron	0.6660 (GGL-NiCr20 2)		250		8.1					180-350	140-190				120-320	
spheroidal graphite cast iron, ferritic	0.7040 (EN-GJS-400-15)	≤600	130		9.0					130-210	80-120				100-250	
spheroidal graphite cast iron, ferritic/perlitic	0.7050 (EN-GJS-500-7) 0.7055 (GJS-55) 0.8055 (GTW-55)		230	K	9.1					130-210	80-120				120-320	
spheroidal graphite cast iron, perlitic, malleable iron	0.7060 (EN-GJS-600-3) 0.8165 (GTS-65)	>600	250		10.0					160-200	90-120				120-320	
alloyed spheroidal graphite cast iron	0.7661 (EN-GJSA-XNiCr20-2)		200		10.1					180-250	100-180				120-320	
vermicular cast iron	EN-GJV Ti < 0,2 EN-GJV Ti > 0,2		300		10.2					100-160	80-120				100-250	
copper alloy, brass, lead-alloy bronze, lead bronze: good cut	2.0375 (CuZn36Pb3) 2.1182.01 (G-CuPb15Sn)		90		12.0											300-1000
copper alloy, brass, bronze: average cut	2.0550 (CuZn40Al2) 2.0060 (E-Cu57)		100		12.1											300-1000
wrought aluminium alloys	3.3315 (AlMg1) 3.0517 (AlMnCu)		60	N	13.0											200-3000
cast alum. alloy: Si-content <10% magnesium alloy	3.3561 (G-AlMg5) 3.2373.61 (G-AlSi9Mg wa)		75		13.1											300-500
cast alum.alloy: Si-content >10%	3.2381.01 (G-AlSi10Mg)		100		14.0											300-400
hardened steels < 45 HRC		1400		H	15.0											
hardened steels > 45 HRC		1800			16.0											

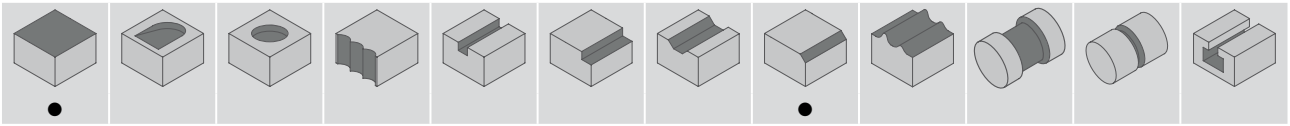
Cutting speed v_c can be increased by reducing the width of cutting edge engagement a_e. Further cutting parameters see page 172-173.

Important: See chapter 8 for more application details and safety notes !

Face milling cutter Q63-KFM

BENEFITS for you:
- Stable double-sided indexable insert for ap up to 6.5 mm
- High-quality surface finish thanks to wiper geometry
- Eight cutting edges per indexable insert





Z = effective number of teeth for calculating v_f

Arbor milling cutter												
Ø D1	Ø D2	Order No.	Ø d^{H7}	Ø d1	L	a_p max.	Spindle speed max. rpm	Z	kg	Differential screw Order No.	Clamping screw TORX® | TORX PLUS® Order No. Article	Indexable insert Order No. ISO Code
40	52,4	**F55 01150**	16	38	45	6	19.900	4		**L02 30980** 15Nm	**N00 57920** S40110-T15-55° 4,25 Nm	**Q63 46..** SOKU 12..
50	62,4	**F55 01170**	22	43	45	6	15.900	5		–		
63	75,4	**F55 01190**	22	48	45	6	12.600	6	0,60	–		
80	92,4	**F55 01210**	27	58	50	6	9.900	8		–		
100	112,4	**F55 01230**	32	78	50	6	7.900	10	1,80	–		
125	137,4	**F55 01250**	40	88	63	6	6.300	12	3,32	–		
40	55	**F55 02150**	16	38	45	6,5	15.900	4		**L02 30980** 15Nm	**N00 57900** S45130-20IP 5 Nm	**Q63 53..** SOKU 15..
50	65	**F55 02170**	22	43	45	6,5	12.700	4	0,42	–		
63	78	**F55 02190**	22	48	45	6,5	10.100	5	0,62	–		
80	95	**F55 02210**	27	58	50	6,5	7.900	6		–		
100	115	**F55 02230**	32	78	50	6,5	6.300	7	1,82	–		
125	140	**F55 02250**	40	88	63	6,5	5.000	8		–		

Supply includes: Milling cutter with clamping screws ① (pre-fitted with high-temperature paste, order no.: 47001 00105).

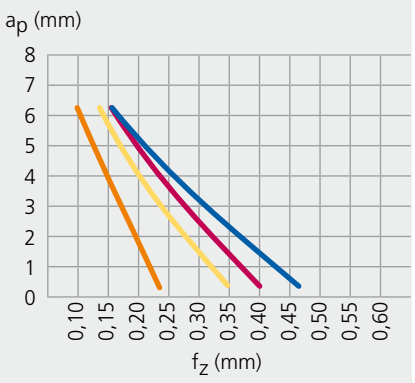
Supply includes arbor milling cutter Ø 40 mm: Milling cutter with clamping screws ① (pre-fitted with high-temperature paste, order no.: 47001 00105) and differential screw.

Please order inserts separately. Screwdriver see chapter 8.

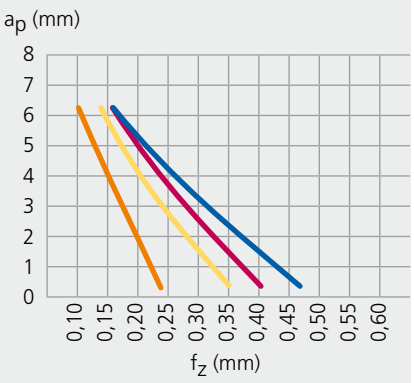
Recommendation: Change the clamping screws regularly to ensure the smooth running of the milling cutter.

With decreasing cutting depth the tooth feed can be increased. Example given for $a_e/D > 0,3$-1

Q63 46 / SOKU 12...



Q63 53 / SOKU 15...



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● very good | ◐ good

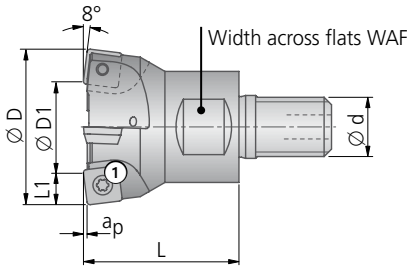
Feed f_z (mm/tooth) at a_e/D									
	Order No.	ISO code	Material group	p.ex. mill dia. 100mm, engagement width a_e 10 mm = $\frac{a_e}{D} = \frac{10}{100} = 0,1$				Cutting depth a_p mm
				≤ 0,1	> 0,1 - 0,2	> 0,2 - 0,3	> 0,3 - 1	
Q63 46.. (SOKU 12...)								
medium roughing operations	Q63 46210.068425	SOKU1205AZ-21 BK8425	P	0,20 **0,31** 0,41	0,15 **0,22** 0,30	0,12 **0,18** 0,25	0,10 **0,16** 0,22	6,0
super alloys	Q63 46210.066435	SOKU1205AZ-21 BK6435	S	0,18 **0,20** 0,23	0,13 **0,15** 0,16	0,11 **0,12** 0,14	0,09 **0,10** 0,12	6,0
medium roughing operations	Q63 46210.062740	SOKU1205AZ-21 BK2740	M	0,20 **0,26** 0,32	0,15 **0,19** 0,23	0,12 **0,16** 0,19	0,10 **0,13** 0,17	6,0
	Q63 46050.066110	SOKU1205AZ-05 BK6110	K	0,20 **0,31** 0,41	0,15 **0,22** 0,30	0,12 **0,18** 0,25	0,10 **0,16** 0,22	6,0
Q63 53.. (SOKU 15...)								
medium roughing operations	Q63 53210.068425	SOKU1505AZ-21 BK8425	P	0,20 **0,31** 0,41	0,15 **0,22** 0,30	0,12 **0,18** 0,25	0,10 **0,16** 0,22	6,5
super alloys	Q63 53210.066435	SOKU1505AZ-21 BK6435	S	0,18 **0,20** 0,23	0,13 **0,15** 0,16	0,11 **0,12** 0,14	0,09 **0,10** 0,12	6,5
medium roughing operations	Q63 53210.062740	SOKU1505AZ-21 BK2740	M	0,20 **0,26** 0,32	0,15 **0,19** 0,23	0,12 **0,16** 0,19	0,10 **0,13** 0,17	6,5
	Q63 53050.066110	SOKU1505AZ-05 BK6110	K	0,20 **0,31** 0,41	0,15 **0,22** 0,30	0,12 **0,18** 0,25	0,10 **0,16** 0,22	6,5

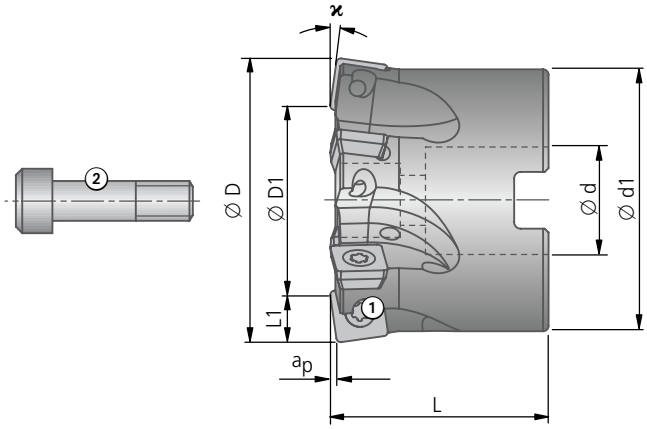
Cutting speed v_c (m/min)										
				Indexable insert	Q63.. (SOKU..)					
				Coating type	PVD		CVD	PVD		CVD
				Cutting material designation	BK8425		BK6435	BK2740		BK6110
				Cutting material code	**8425**		**6435**	**2740**		**6110**
Material	Material example, material code DIN	Strength Rm (N/mm²)	Hardness HB	Material group	dry	wet	dry	dry	wet	dry + wet
non-alloy steels	1.0037 (S235JR) 1.0715 (11SMn30) 1.0044 (S2575JR)	≤500		1.0	100-220	70-180				
non-alloy / low alloy steels	1.0050 (E295) 1.0535 (C55) 1.7131 (16MnCr5)	500-900		2.0	80-220	70-170				
lead alloys	1.0718 (11SMnPb30)	<500		2.1	100-220	70-170				
low alloy steels	1.7225 (42CrMo4) 1.1221 (C60E)	>900		P 3.0	80-200	70-160				
high alloy steels	1.2341 (6CrMo15-5) 1.2601 (X165CrMoV12)	>900		4.0	80-170	70-150				
HSS				4.1	80-140	60-120				
super alloys: Inconel, Hastelloy, Nimonic, stc.	2.4668 (NiuCr19Fe19Nb5Mo3) 2.4631 (Nimonic 80A)		250	5.0			25-75			
titanium, titanium alloys	3.7115 (TiAl5Sn2.5)	400		S 5.1						
stainless steels	1.4306 (X2CrNi19-11) 1.4401 (X5CrNiMo17-12-2)	≤600		6.0				160-250	60-140	
stainless steels	1.4511 (X3CrNb17) 1.4571 (X10CrNiMoTi17-12-2)	<900		M 6.1				150-220	60-140	
stainless / fireproof steels	1.4713 (X10CrAlSi7) 1.4862 (X8NiCrSi38-18)	>900		7.0				100-250	60-140	
gray cast iron	0.6025 (EN-GJL-250) 0.6035 (EN-GJL-350)		180	8.0						140-350
alloy gray cast iron	0.6660 (GGL-NiCr20 2)		250	8.1						120-320
spheroidal graphite cast iron, ferritic	0.7040 (EN-GJS-400-15)	≤600	130	9.0						100-250
spheroidal graphite cast iron, ferritic/perlitic	0.7050 (EN-GJS-500-7) 0.7055 (GJS-55) 0.8055 (GTW-55)		230	K 9.1						120-320
spheroidal graphite cast iron, perlitic, malleable iron	0.7060 (EN-GJS-600-3) 0.8165 (GTS-65)	>600	250	10.0						120-320
alloyed spheroidal graphite cast iron	0.7661 (EN-GJSA-XNiCr20-2)		200	10.1						120-320
vermicular cast iron	EN-GJV Ti < 0,2 EN-GJV Ti > 0,2		300	10.2						100-250
copper alloy, brass, lead-alloy bronze, lead bronze: good cut	2.0375 (CuZn36Pb3) 2.1182.01 (G-CuPb15Sn)		90	12.0						
copper alloy, brass, bronze: average cut	2.0550 (CuZn40Al2) 2.0060 (E-Cu57)		100	12.1						
wrought aluminium alloys	3.3315 (AlMg1) 3.0517 (AlMnCu)		60	N 13.0						
cast alum. alloy: Si-content <10% magnesium alloy	3.3561 (G-AlMg5) 3.2373.61 (G-AlSi9Mg wa)		75	13.1						
cast alum.alloy: Si-content >10%	3.2381.01 (G-AlSi10Mg)		100	14.0						
hardened steels < 45 HRC		1400		15.0						
hardened steels > 45 HRC		1800		H 16.0						

Cutting speed v_c can be increased by reducing the width of cutting edge engagement a_e. Further cutting parameters see page 172-173.

KOMET® Quatron *hi.feed* Ø 20 – 100 mm

High feed milling cutter

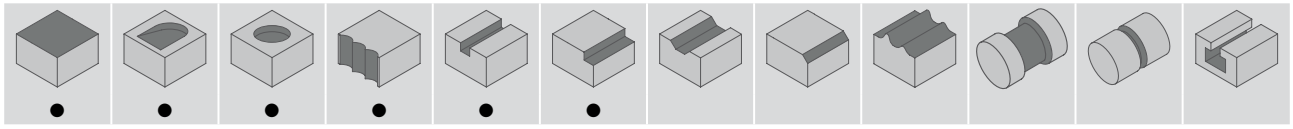




BENEFITS for you:

- Mill cutting bores with just one tool rather than enlarging them with several drilling tools
- Four cutting edges per insert lowers production costs per cutter
- Increase in productivity thanks to high-volume chip removal
- Deflection of passive forces in an axial direction. Plunge milling puts less stress on the spindle thanks to the lower loading
- Variable manufacture of different diameters
- Low cutting pressure
- A tough substrate allows universal use for steel, cast iron and stainless materials
- Capable of high feed rates – up to 2 mm per cutting edge
- Ideal when producing larger drilled holes using small and low-performance machines

● very good | ◐ good



Z = effective number of teeth for calculating v_f

Screw-in cutter														
Ø D	Ø D1	Order No.	Ø d	L	a_p max	L1	Spindle speed max. rpm	Width across flats WAF	Tightening torque Nm	Z	kg	Clamping screw ① Order No. Article	Indexable insert W83..01 Order No. ISO Code ▽▽ Size
20	10	**F51 01190**	M10	30	0,67	5	30.000	15	40	3	0,06	**N00 56041** S/M2×4,3-6IP 0,62 Nm	**W83 13010.048425** SOEX 050204-01 BK8425
25	14	**F51 01200**	M12	35	0,72	5,6	23.000	17	60	3	0,09	**N00 57553** S/M2,2×5,5-6IP 1,01 Nm	**W83 18010.068425** SOEX 060306-01 BK8425
32	18	**F51 01210**	M16	42	0,88	7,0	17.000	27	80	4	0,21	**N00 57571** S/M2,5×6,3-8IP 1,28 Nm	**W83 23010.088425** SOEX 07T308-01 BK8425
35	21	**F51 01230**	M16	42	0,88	7,0	16.000	27	80	4	0,23		
42	25	**F51 01220**	M16	42	1,1	8,5	16.000	27	80	4	0,26	**N00 57261** S3575-15IP 2,8 Nm	**W83 32010.088425** SOEX 090408-01 BK8425
42	25	**F51 01240**	M16	42	1,1	8,5	16.000	27	80	5	0,25		

Arbor milling cutter														
Ø D	Ø D1	ϰ	Order No.	Ø d^{H6}	Ø d1	L	a_p max	L1	Spindle speed max. rpm	Z	kg	Cylindrical screw ② Order No.	Clamping screw ① Order No. Article	Indexable insert W83..01 Order No. ISO Code ▽▽ Size
52	35	8°	**F51 01250**	22	48	40	1,1	8,5	14.000	6	0,37	**55011 10020**	**N00 57261** S3575-15IP 2,8 Nm	**W83 32010.088425** SOEX 090408-01 BK8425
63	45,9	8°	**F51 01260**	22	50	40	1,1	8,5	13.000	6	0,51	**55011 10025**		
63	39,6	8°	**F51 01270**	22	50	40	1,5	11,5	11.000	5	0,46	**55011 10025**	**N00 57301** S45100-20IP 6,25 Nm	**W83 44010.088425** SOEX 120508-01 BK8425
66	42,6	8°	**F51 01280**	22	50	40	1,5	11,5	11.000	6	0,49	**55011 10025**		
80	56,8	10°	**F51 01290**	27	60	50	2	11,5	10.000	6	0,99	**55011 12030**		
85	61,8	10°	**F51 01300**	27	60	50	2	11,5	10.000	6	1,10	**55011 12030**		
100	76,8	10°	**F51 01310**	32	80	50	2	11,5	9000	7	1,74	**55011 16040**		

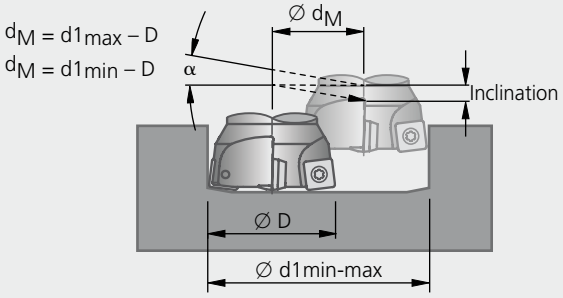
Supply includes: Milling cutter with clamping screws ① (pre-fitted with high-temperature paste, order no.: 47001 00105).
Supply includes arbor milling cutter:
Milling cutter with clamping screws ① (pre-fitted with high-temperature paste, order no.: 47001 00105) and cylindrical screw ②. Please order inserts separately. Screwdriver see chapter 8.

Recommendation: Change the clamping screws regularly to ensure the smooth running of the milling cutter.

Cutting values for milling: page 127.

Application examples

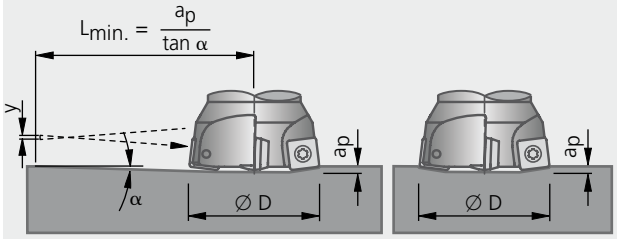
Circular plunging



Ø D	Indexable insert size	Ø d1 min Ramping angle α max	Ø d1 min Ø d1 min	Ø d1 min Incli-nation (mm/rev)	Ø d1 max Ramping angle α max	Ø d1 max Ø d1 max	Ø d1 max Incli-nation (mm/rev)
Screw-in cutter							
20	W83 13	1,2°	30	0,67	1,1°	38	0,67
25	W83 18	0,8°	41	0,72	0,6°	48	0,72
32	W83 23	0,8°	52	0,88	0,5°	62	0,88
35	W83 23	0,8°	56	0,88	0,5°	68	0,88
42	W83 32	0,7°	69	1,1	0,5°	82	1,1
Arbor milling cutter							
52	W83 32	0,6°	87	1,1	0,4°	100	1,1
63	W83 32	0,4°	109	1,1	0,3°	122	1,1
63	W83 44	0,7°	103	1,5	0,5°	122	1,5
66	W83 44	0,6°	109	1,5	0,4°	128	1,5
80	W83 44	0,6°	137	2	0,5°	156	2
85	W83 44	0,6°	147	2	0,5°	166	2
100	W83 44	0,5°	177	2	0,4°	196	2

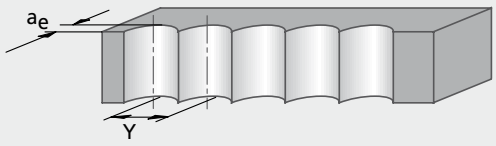
Inclined plunging

Axial plunging

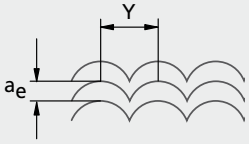


Ø D	Indexable insert size	ap max	Lift from work-piece if direction is reversed y	Ramping angle α max	L min
Screw-in cutter					
20	W83 13	0,67	0,4	2,5°	15,3
25	W83 18	0,72	0,6	2,6°	15,9
32	W83 23	0,88	0,8	2,6°	19,4
35	W83 23	0,88	0,8	2,2°	22,9
42	W83 32	1,1	0,8	1,9°	33,2
Arbor milling cutter					
52	W83 32	1,1	0,8	1,3°	48,5
63	W83 32	1,1	0,7	0,8°	78,8
63	W83 44	1,5	0,8	1,1°	78,1
66	W83 44	1,5	0,8	1°	85,9
80	W83 44	2	0,8	0,8°	143,2
85	W83 44	2	0,8	0,7°	163,7
100	W83 44	2	0,8	0,6°	191,0

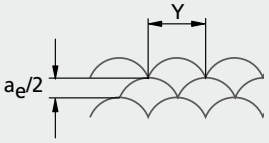
Plunge milling



Tool offset with optimum coverage



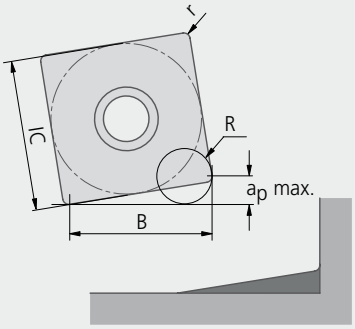
Tool offset for unstable conditions



Milling cutter dia. Ø D	Indexable insert Size	ae max
20	W83 13	5,0
25	W83 18	5,6
32 | 35	W83 23	7,0
42 | 52 | 63	W83 32	8,5
63 | 66 | 80 | 85 | 100	W83 44	11,5

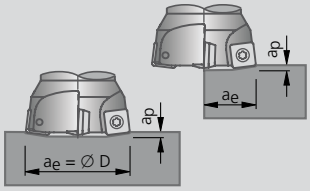
fz initial	fz min	fz max	Y max
0,10	0,07	0,15	< 0,7 × D

Shoulder and groove milling
Program radius and residual material



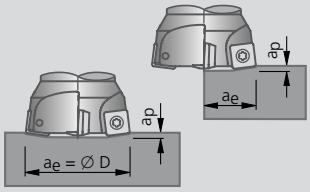
Milling cutter dia. Ø D	Indexable insert Size	IC	r	ϰ	Program radius R	B
20	W83 13	5,56	0,4	8°	1,1	5,1
25	W83 18	6,35	0,6	8°	1,3	5,7
32 | 35	W83 23	7,94	0,8	8°	1,7	7,1
42 | 52 | 63	W83 32	9,52	0,8	8°	1,9	8,6
63 | 66	W83 44	12,7	0,8	8°	2,3	11,8
80 | 85 | 100	W83 44	12,7	0,8	10°	2,7	11,7

Surface milling



	ϰ			Feed f_z (mm/tooth) at a_e/D											
				≤ 0,1			> 0,1 - 0,2			> 0,2 - 0,3			> 0,3		
W83 13 | W83 18	8	P	K	1,04	**1,56**	2,08	0,75	**1,12**	1,50	0,62	**0,94**	1,25	0,51	**0,81**	1,11
W83 23	8			1,04	**2,02**	3,01	0,75	**1,46**	2,17	0,62	**1,21**	1,80	0,51	**1,05**	1,60
W83 32	8			1,04	**2,37**	3,70	0,75	**1,71**	2,67	0,62	**1,42**	2,22	0,51	**1,24**	1,97
W83 44	8			1,04	**2,49**	3,93	0,75	**1,79**	2,83	0,62	**1,49**	2,36	0,51	**1,30**	2,09
W83 44	10			0,83	**1,99**	3,15	0,60	**1,44**	2,27	0,50	**1,20**	1,89	0,41	**1,04**	1,68

Axial plunging



	ϰ			Feed f_z (mm/tooth) at a_e/D		
W83 13 | W83 18	8	P	K	0,05	**0,08**	0,11
W83 23	8			0,06	**0,10**	0,13
W83 32	8			0,07	**0,11**	0,15
W83 44	8			0,07	**0,11**	0,15
W83 44	10			0,07	**0,11**	0,15

p.ex. mill dia. 100mm, engagement width a_e 10mm = $\frac{a_e}{D} = \frac{10}{100} = 0,1$

Cutting speed v_c (m/min)

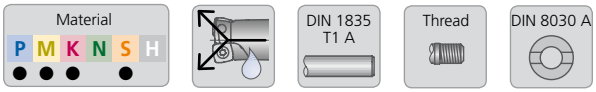
Geometry	**W83..01**
Coating type	PVD
Cutting material designation	BK8425
Cutting material code	**8425**

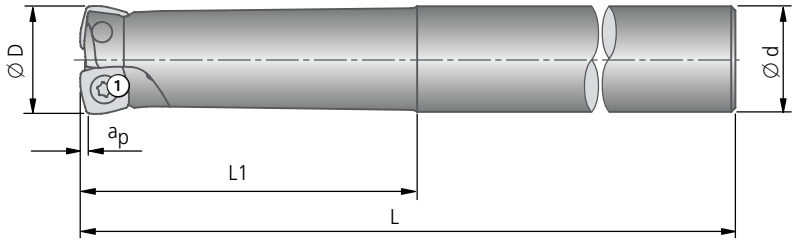
Material	Material example, material code DIN	Strength Rm (N/mm²)	Hardness HB	Material group	
non-alloy steels	1.0037 (S235JR) 1.0715 (11SMn30) 1.0044 (S2575JR)	≤500		1.0	300
non-alloy / low alloy steels	1.0050 (E295) 1.0535 (C55) 1.7131 (16MnCr5)	500-900		2.0	250
lead alloys	1.0718 (11SMnPb30)	<500		2.1	300
low alloy steels: heat resistant structural, heat treated, nitride and tools steels	1.7225 (42CrMo4) 1.1221 (C60E)	>900		P 3.0	200
high alloy steels	1.2341 (6CrMo15-5) 1.2601 (X165CrMoV12)	>900		4.0	180
HSS				4.1	80
super alloys: Inconel, Hastelloy, Nimonic, stc.	2.4668 (NiuCr19Fe19Nb5Mo3) 2.4631 (Nimonic 80A)		250	5.0	
titanium, titanium alloys	3.7115 (TiAl5Sn2.5)	400		S 5.1	
stainless steels	1.4306 (X2CrNi19-11) 1.4401 (X5CrNiMo17-12-2)	≤600		6.0	
stainless steels	1.4511 (X3CrNb17) 1.4571 (X10CrNiMoTi17-12-2)	<900		M 6.1	
stainless / fireproof steels	1.4713 (X10CrAlSi7) 1.4862 (X8NiCrSi38-18)	>900		7.0	
gray cast iron	0.6025 (EN-GJL-250) 0.6035 (EN-GJL-350)		180	8.0	120 - 180
alloy gray cast iron	0.6660 (GGL-NiCr20 2)		250	8.1	60 - 120
spheroidal graphite cast iron, ferritic	0.7040 (EN-GJS-400-15)	≤600	130	9.0	80 - 160
spheroidal graphite cast iron, ferritic/perlitic	0.7050 (EN-GJS-500-7) 0.7055 (GJS-55) 0.8055 (GTW-55)		230	K 9.1	60 - 120
spheroidal graphite cast iron, perlitic, malleable iron	0.7060 (EN-GJS-600-3) 0.8165 (GTS-65)	>600	250	10.0	50 - 110
alloyed spheroidal graphite cast iron	0.7661 (EN-GJSA-XNiCr20-2)		200	10.1	50 - 110
vermicular cast iron	EN-GJV Ti < 0,2 EN-GJV Ti > 0,2		300	10.2	50 - 110

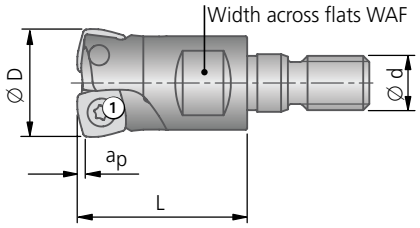
Cutting speed v_c can be increased by reducing the width of cutting edge engagement a_e

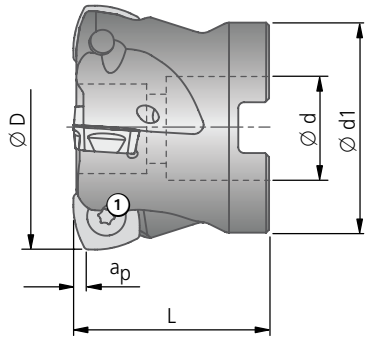
Important: See chapter 8 for more application details and safety notes !

High feed milling cutter Q56-KHF



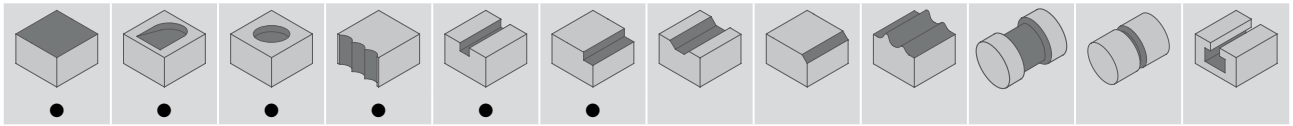






BENEFITS for you:

- High feed-rate milling
- High metal removal rate achievable because tooth feed rate of up to 3 mm possible
- Soft-cutting geometry reduces vibration
- Angled cutting edge for outstanding surface quality
- Creation of a 90° shoulder



Z = effective number of teeth for calculating v_f

End milling cutter										
Ø D	Order No.	Ød$_{h6}$	L	L1	a_p max	Spindle speed max. rpm	Z	kg	Clamping screw TORX ® ① Order No. Article	Indexable insert Order No. ISO Code
16	**F55 05070**	16	200	50	0,8	4.600	2		**N00 57820** S2550-T8-55° 1,2 Nm	**Q56 20..** XPLT 07..
20	**F55 05090**	20	200	50	0,8	4.200	3	0,10		
25	**F55 05110**	25	200	50	0,8	4.600	4			
25	**F55 07110**	25	225	50	1,0	9.000	3	0,76	**N00 57860** S3572-T15-55° 3,2 Nm	**Q56 32..** XDLT 10..
35	**F55 09140**	32	250	63	2,0	6.400	3		**N00 57880** S45105-T20-55° 5 Nm	**Q56 46..** XOLT 13..

Screw-in cutter										
Ø D	Order No.	Ø d	L	a_p max	Spindle speed max. rpm	Width across flats WAF	Tightening torque Nm	Z	kg	Clamping screw TORX ® ① Order No. Article	Indexable insert Order No. ISO Code Size
16	**F55 06070**	M8	25	0,8	20.800	10	25	2		**N00 57820** S2550-T8-55° 1,2 Nm	**Q56 20..** XPLT 07..
20	**F55 06090**	M10	30	0,8	19.800	15	40	3			
25	**F55 06110**	M12	35	0,8	18.700	17	60	4	0,10		

Arbor milling cutter											
Ø D	Order No.	Ø d^{H7}	Ø d1	L	a_p max	Spindle speed max. rpm	Z	kg	Differential screw Order No.	Clamping screw TORX ® ① Order No. Article	Indexable insert Order No. ISO Code
40	**F55 08150**	16	38	40	1,0	26.400	4		**L02 30980** 15Nm	**N00 57870** S3586-T15-55° 3,2 Nm	**Q56 32..** XDLT 10..
50	**F55 08170**	22	43	40	1,0	23.500	5		–		
63	**F55 08190**	22	48	40	1,0	20.500	6		–		
50	**F55 10170**	22	43	40	2,0	18.800	4		–	**N00 57880** S45105-T20-55° 5 Nm	**Q56 46..** XOLT 13..
63	**F55 10190**	22	48	40	2,0	16.400	5	0,43	–		
80	**F55 10210**	27	58	50	2,0	14.000	7	0,80	–		

Supply includes: Milling cutter with clamping screws ① (pre-fitted with high-temperature paste, order no.: 47001 00105).
Supply includes arbor milling cutter Ø 40 mm:
Milling cutter with clamping screws ① (pre-fitted with high-temperature paste, order no.: 47001 00105) and differential screw.
Please order inserts separately. Screwdriver see chapter 8.

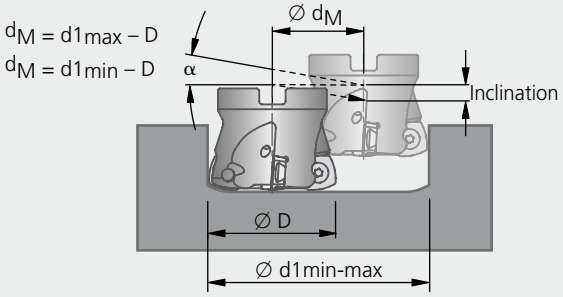
Recommendation: Change the clamping screws regularly to ensure the smooth running of the milling cutter.

TORX ® is a registered trademark for the Acument Intellectual Properties, LLC, Troy Mich., US

Cutting values for milling: page 131.

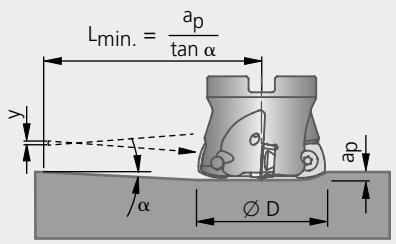
Application examples for high feed milling cutter Q56-KHF

Circular plunging

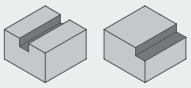


Ø D	ISO code insert	Ø d1 min Ramping angle α max	Ø d1 min Ø d1 min	Ø d1 min Incli-nation (mm/rev)	Ø d1 max Ramping angle α max	Ø d1 max Ø d1 max	Ø d1 max Incli-nation (mm/rev)
End milling cutter							
16	XPLT07	2,4°	22	0,8	1,0°	31	0,8
20	XPLT07	1,5°	30	0,8	0,8°	39	0,8
25	XPLT07	1,0°	40	0,8	0,6°	49	0,8
25	XDLT10	1,8°	35	1	0,8°	48	1
35	XOLT13	2,4°	50	2	1,1°	68	2
Screw-in cutter							
16	XPLT07	2,4°	22	0,8	1,0°	31	0,8
20	XPLT07	1,5°	30	0,8	0,8°	39	0,8
25	XPLT07	1,0°	40	0,8	0,6°	49	0,8
Arbor milling cutter							
40	XDLT10	0,7°	65	1	0,5°	78	1
50	XDLT10	0,5°	85	1	0,4°	98	1
63	XDLT10	0,4°	111	1	0,3°	124	1
50	XOLT13	1,2°	80	2	0,8°	98	2
63	XOLT13	0,8°	106	2	0,6°	124	2
80	XOLT13	0,6°	140	2	0,5°	158	2

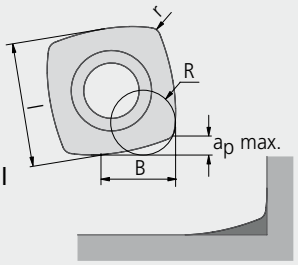
Inclined plunging



Ø D	ISO code insert	ap max	Lift from work-piece if direction is reversed y	Ramping angle α max	L min
End milling cutter					
16	XPLT07	0,8	0,6	5,9°	7,7
20	XPLT07	0,8	0,6	3,2°	14,3
25	XPLT07	0,8	0,6	2°	22,9
25	XDLT10	1	0,6	3,6°	15,9
35	XOLT13	2	1,1	4,4°	26,0
Screw-in cutter					
16	XPLT07	0,8	0,6	5,9°	7,7
20	XPLT07	0,8	0,6	3,2°	14,3
25	XPLT07	0,8	0,6	2°	22,9
Arbor milling cutter					
40	XDLT10	1	0,5	1,2°	47,7
50	XDLT10	1	0,6	0,9°	63,7
63	XDLT10	1	0,7	0,8°	71,6
50	XOLT13	2	0,8	1,5°	76,4
63	XOLT13	2	0,9	1,1°	104,2
80	XOLT13	2	1,4	1,3°	88,1



Profile for shoulder and groove milling
Program radius and residual material

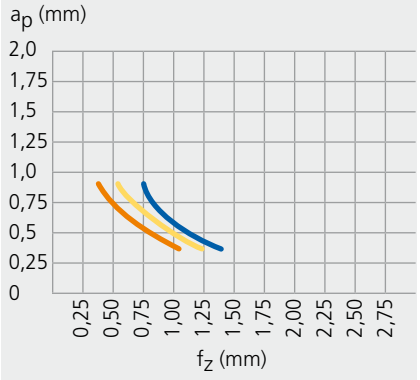


ISO code indexable insert	l	Program radius R	B	r	Cutting depth ap max
XPLT 07	7	1,2	4,3	0,5	0,8
XDLT 10	10	2	5,9	0,8	1,0
XOLT 13	13	3	8,5	1	2,0

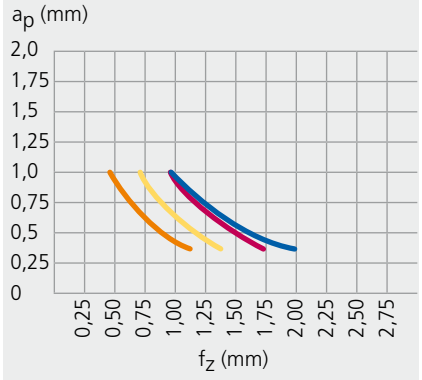
Recommended: $f_z \geq 0{,}5$ mm/tooth

With decreasing cutting depth the tooth feed can be increased. Example given for $a_e/D > 0{,}3\text{-}1$

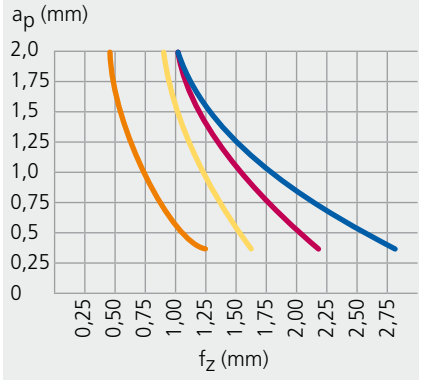
Q56 20 / XPLT 07...



Q56 32 / XDLT 10...



Q56 46 / XOLT 13...



Recommended cutting data for high feed milling cutter Q56-KHF

Feed f_z (mm/tooth) at a_e/D																Cutting depth a_p mm
	Order No.	ISO code	Material group	p.ex. mill dia. 100mm, engagement width a_e 10 mm = $\frac{a_e}{D} = \frac{10}{100} = 0,1$												
				≤ 0,1			> 0,1 - 0,2			> 0,2 - 0,3			> 0,3 - 1			
Q56 20 / XPLT 07...																
medium roughing operations	Q56 20010.058425	XPLT070305-01 BK8425	P	0,83	**1,44**	2,04	0,60	**1,03**	1,47	0,50	**0,86**	1,22	0,41	**0,75**	1,08	0,8
super alloys	Q56 20210.056435	XPLT070305-21 BK6435	S	0,62	**0,81**	1,00	0,44	**0,58**	0,71	0,37	**0,44**	0,51	0,30	**0,37**	0,43	0,8
titanium / titanium alloys	Q56 20210.057740	XPLT070305-21 BK7740														
medium roughing operations	Q56 20010.052740	XPLT070305-01 BK2740	M	0,82	**1,16**	1,50	0,59	**0,83**	1,07	0,49	**0,63**	0,77	0,40	**0,52**	0,64	0,8
Q56 32 / XDLT 10...																
medium roughing operations	Q56 32010.088425	XDLT10T308-01 BK8425	P	0,83	**1,81**	2,78	0,60	**1,30**	2,00	0,50	**1,08**	1,67	0,41	**0,97**	1,48	1,0
precision-machining and finishing	Q56 32210.088425	XDLT10T308-21 BK8425														
super alloys	Q56 32210.086435	XDLT10T308-21 BK6435	S	0,82	**1,01**	1,20	0,59	**0,73**	0,86	0,49	**0,56**	0,62	0,40	**0,46**	0,51	1,0
titanium / titanium alloys	Q56 32210.087740	XDLT10T308-21 BK7740														
medium roughing operations	Q56 32010.082740	XDLT10T308-01 BK2740	M	0,82	**1,66**	2,50	0,59	**1,19**	1,78	0,49	**0,89**	1,29	0,40	**0,74**	1,07	1,0
precision-machining and finishing	Q56 32210.082740	XDLT10T308-21 BK2740														
	Q56 32050.086110	XDLT10T308-05 BK6110	K	0,83	**1,81**	2,78	0,60	**1,30**	2,00	0,50	**1,08**	1,67	0,41	**0,97**	1,48	1,0
Q56 46 / XOLT 13...																
medium roughing operations	Q56 46010.108425	XOLT130410-01 BK8425	P	0,83	**1,99**	3,15	0,60	**1,44**	2,27	0,50	**1,20**	1,89	0,41	**1,04**	1,68	2,0
precision-machining and finishing	Q56 46210.108425	XOLT130410-21 BK8425														
super alloys	Q56 46210.106435	XOLT130410-21 BK6435	S	0,62	**0,91**	1,20	0,59	**0,73**	0,86	0,49	**0,56**	0,62	0,40	**0,46**	0,51	2,0
titanium / titanium alloys	Q56 46210.107740	XOLT130410-21 BK7740														
medium roughing operations	Q56 46010.102740	XOLT130410-01 BK2740	M	0,82	**1,91**	3,00	0,59	**1,37**	2,14	0,49	**1,02**	1,54	0,40	**0,84**	1,28	2,0
precision-machining and finishing	Q56 46210.102740	XOLT130410-21 BK2740														
	Q56 46050.106110	XOLT130410-05 BK6110	K	0,83	**1,99**	3,15	0,60	**1,44**	2,27	0,50	**1,20**	1,89	0,41	**1,04**	1,68	2,0

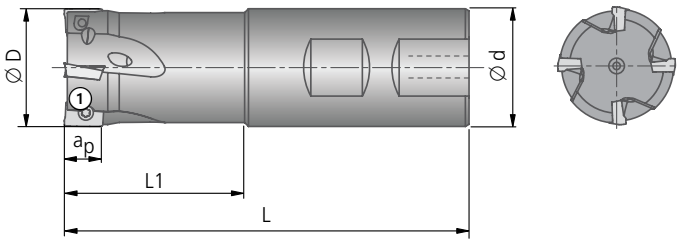
Cutting speed v_c (m/min)													
				Indexable insert	Q56.. (XPLT..)								
				Coating type	PVD		CVD	PVD		PVD		CVD	
				Cutting material designation	BK8425		BK6435	BK7740		BK2740		BK6110	
				Cutting material code	8425		6435	7740		2740		6110	
Material	Material example, material code DIN	Strength Rm (N/mm²)	Hardness HB	Material group	dry	wet	dry	wet		dry	wet	dry + wet	
non-alloy steels	1.0037 (S235JR) 1.0715 (11SMn30) 1.0044 (S2575JR)	≤500		1.0	100-220	70-180							
non-alloy / low alloy steels	1.0050 (E295) 1.0535 (C55) 1.7131 (16MnCr5)	500-900		2.0	80-220	70-170							
lead alloys	1.0718 (11SMnPb30)	<500		2.1	100-220	70-170							
low alloy steels	1.7225 (42CrMo4) 1.1221 (C60E)	>900		P 3.0	80-200	70-160							
high alloy steels	1.2341 (6CrMo15-5) 1.2601 (X165CrMoV12)	>900		4.0	80-170	70-150							
HSS				4.1	80-140	60-120							
super alloys: Inconel, Hastelloy, Nimonic, stc.	2.4668 (NiuCr19Fe19Nb5Mo3) 2.4631 (Nimonic 80A)		250	5.0			25-75						
titanium, titanium alloys	3.7115 (TiAl5Sn2.5)	400		S 5.1				25-75					
stainless steels	1.4306 (X2CrNi19-11) 1.4401 (X5CrNiMo17-12-2)	≤600		6.0						160-250	60-140		
stainless steels	1.4511 (X3CrNb17) 1.4571 (X10CrNiMoTi17-12-2)	<900		M 6.1						150-220	60-140		
stainless / fireproof steels	1.4713 (X10CrAlSi7) 1.4862 (X8NiCrSi38-18)	>900		7.0						100-250	60-140		
gray cast iron	0.6025 (EN-GJL-250) 0.6035 (EN-GJL-350)		180	8.0								140-350	
alloy gray cast iron	0.6660 (GGL-NiCr20 2)		250	8.1								120-320	
spheroidal graphite cast iron, ferritic	0.7040 (EN-GJS-400-15)	≤600	130	9.0								100-250	
spheroidal graphite cast iron, ferritic/perlitic	0.7050 (EN-GJS-500-7) 0.7055 (GJS-55) 0.8055 (GTW-55)		230	K 9.1								120-320	
spheroidal graphite cast iron, perlitic, malleable iron	0.7060 (EN-GJS-600-3) 0.8165 (GTS-65)	>600	250	10.0								120-320	
alloyed spheroidal graphite cast iron	0.7661 (EN-GJSA-XNiCr20-2)		200	10.1								120-320	
vermicular cast iron	EN-GJV Ti < 0,2 EN-GJV Ti > 0,2		300	10.2								100-250	

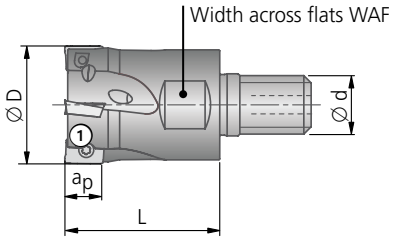
Cutting speed v_c can be increased by reducing the width of cutting edge engagement a_e. Further cutting parameters see page 172-173.

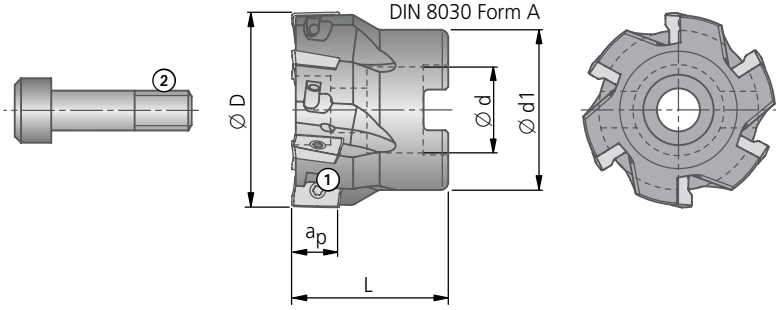
Important: See chapter 8 for more application details and safety notes !

KOMET® *hi.apQ* Ø 12 – 100 mm

Shoulder milling cutter







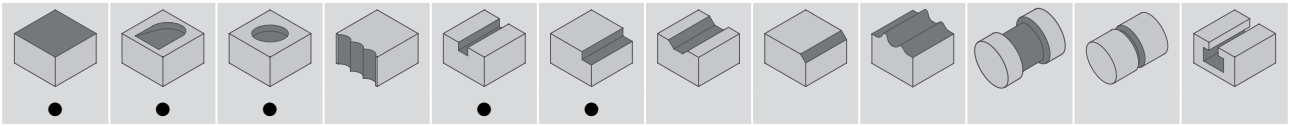
Supply includes:
Milling cutter with clamping screws ① (pre-fitted with high-temperature paste, order no.: 47001 00105).

Supply includes arbor milling cutter:
Milling cutter with clamping screws ① (pre-fitted with high-temperature paste, order no.: 47001 00105) and cylindrical screw ②.

Please order inserts separately. Screwdriver see chapter 8.

Recommendation: Change the clamping screws regularly to ensure the smooth running of the milling cutter.

● very good | ◐ good



Z = effective number of teeth for calculating v_f

End milling cutter										
Ø D	Order No.	Ød$_{h6}$	L	L1	a_p max.	Spindle speed max. rpm	Z	kg	Clamping screw ① Order No. Article	Indexable insert Order No. ISO Code ▽▽ Size
12	**F51 50520**	16	80	21	9	32.000	1	0,09	**N00 57321** S2556-8IP 1,28 Nm	**Q36 18000.01....** APKT 1003PD-R
14	**F51 50530**	16	80	21	9	30.000	1	0,09		
16	**F51 50540**	16	85	35	9	28.000	2	0,10		
20	**F51 50550**	20	90	38	9	25.000	2	0,19		
	F51 50560						3			
25	**F51 50570**	25	100	42	9	22.000	3	0,31		
	F51 50580						4			
32	**F51 50590**	32	110	48	9	20.000	4	0,58		
	F51 50600						5			

For further details on selecting the cutting material, see page 141. Enter cutting material code ▲

Screw-in cutter										
Ø D	Order No.	Ød	L	a_p max.	Spindle speed max. rpm	Width across flats WAF	Tightening torque Nm	Z	kg	Clamping screw ① Order No. Article / Indexable insert Order No. ISO Code ▽▽ Size
20	**F51 55550**	M10	30	9	25.000	15	40	2	0,06	**N00 57321** S2556-8IP 1,28 Nm — **Q36 18000.01....** APKT 1003PD-R
	F51 55560							3		
25	**F51 55570**	M12	35	9	22.000	17	60	3	0,10	
	F51 55580							4		
32	**F51 55590**	M16	42	9	20.000	27	80	4	0,22	
	F51 55600							5		
42	**F51 55610**	M16	42	9	17.000	27	80	5	0,27	
	F51 55620							6		

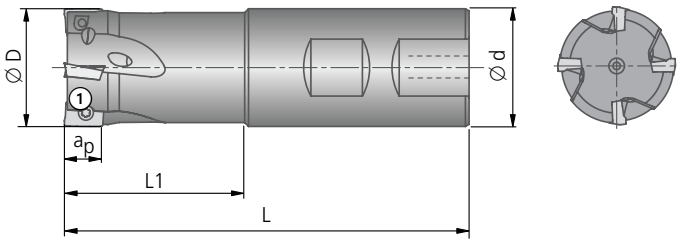
For further details on selecting the cutting material, see page 141. Enter cutting material code ▲

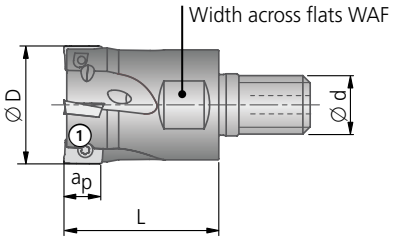
Arbor milling cutter											
Ø D	Order No.	Ø d^{H6}	Ø d1	L	a_p max.	Spindle speed max. rpm	Z	kg	Cylindrical screw ② Order No. Article	Clamping screw ① Order No. Article	Indexable insert Order No. ISO Code ▽▽ Size
40	**F51 12200**	16	36	40	9	17.000	4	0,24	**55011 08025** M8×25	**N00 57321** S2556-8IP 1,28 Nm	**Q36 18000.01....** APKT 1003PD-R
	F51 12210						6				
50	**F51 12220**	22	41	40	9	16.000	5	0,32	**55011 10020** M10×20		
	F51 12230						8				
63	**F51 12240**	22	55	40	9	14.000	6	0,65	**55011 10020** M10×20		
	F51 12250						9				
80	**F51 12260**	27	70	50	9	12.000	8	1,32	**55011 12030** M12×30		
	F51 12270						10				
100	**F51 12280**	32	85	50	9	11.000	8	2,06	**55011 16035** M16×35		
	F51 12290						12				

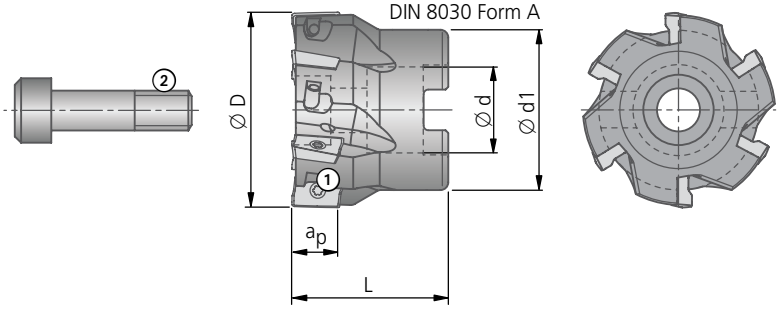
For further details on selecting the cutting material, see page 141. Enter cutting material code ▲

KOMET® *hi.apQ* Ø 20 – 100 mm

Shoulder milling cutter







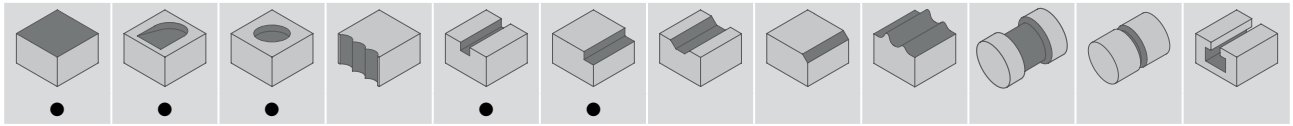
Supply includes:
Milling cutter with clamping screws ① (pre-fitted with high-temperature paste, order no.: 47001 00105).

Supply includes arbor milling cutter:
Milling cutter with clamping screws ① (pre-fitted with high-temperature paste, order no.: 47001 00105) and cylindrical screw ②.

Please order insert separately. Screwdriver see chapter 8.

Recommendation: Change the clamping screws regularly to ensure the smooth running of the milling cutter.

● very good | ◐ good



Z = effective number of teeth for calculating v_f

End milling cutter										
Ø D	Order No.	Ød$_{h6}$	L	L1	a_p max.	Spindle speed max. rpm	Z	kg	Clamping screw Order No. Article	Indexable insert Order No. ISO Code ▽▽ Size
20	**F51 50700**	20	85	39	11	24.000	2	0,18	**N00 57341** S3066-9IP 2,25 Nm	**Q36 24000.02....** APKT 1203PD-R
25	**F51 50710**	25	100	43	11	21.000	2	0,31		
	F51 50720						3			
32	**F51 50730**	32	110	49	11	19.000	3	0,57		
	F51 50740						4			
40	**F51 50750**	40	115	44	11	17.000	4	0,95		
	F51 50760						5			

For further details on selecting the cutting material, see page 141. Enter cutting material code ▲

Screw-in cutter										
Ø D	Order No.	Ød	L	a_p max.	Spindle speed max. rpm	Width across flats WAF	Tightening torque Nm	Z	kg	Clamping screw Order No. Article	Indexable insert Order No. ISO Code ▽▽ Size
20	**F51 55700**	M10	30	11	24.000	15	40	2	0,05	**N00 57341** S3066-9IP 2,25 Nm	**Q36 24000.02....** APKT 1203PD-R
25	**F51 55710**	M12	35	11	21.000	17	60	2	0,10		
	F51 55720							3			
32	**F51 55730**	M16	42	11	19.000	27	80	3	0,23		
	F51 55740							4			
42	**F51 55750**	M16	42	11	16.000	27	80	4	0,28		
	F51 55760							5			

For further details on selecting the cutting material, see page 141. Enter cutting material code ▲

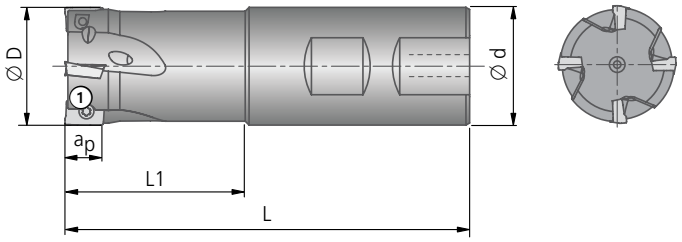
Arbor milling cutter											
Ø D	Order No.	Ø d^{H6}	Ø d1	L	a_p max.	Spindle speed max. rpm	Z	kg	Cylindrical screw Order No. Article	Clamping screw Order No. Article	Indexable insert Order No. ISO Code ▽▽ Size
40	**F51 12400**	16	36	40	11	17.000	4	0,23	**55011 08025** M8×25	**N00 57341** S3066-9IP 2,25 Nm	**Q36 24000.02....** APKT 1203PD-R
	F51 12410						5				
50	**F51 12420**	22	41	40	11	15.000	4	0,33	**55011 10020** M10×20		
	F51 12430						6				
63	**F51 12440**	22	55	40	11	13.000	5	0,63	**55011 10020** M10×20		
	F51 12450						8				
80	**F51 12460**	27	70	50	11	12.000	6	1,30	**55011 12030** M12×30		
	F51 12470						9				
100	**F51 12480**	32	85	50	11	10.000	8	2,04	**55011 16035** M16×35		
	F51 12490						10				

For further details on selecting the cutting material, see page 141. Enter cutting material code ▲

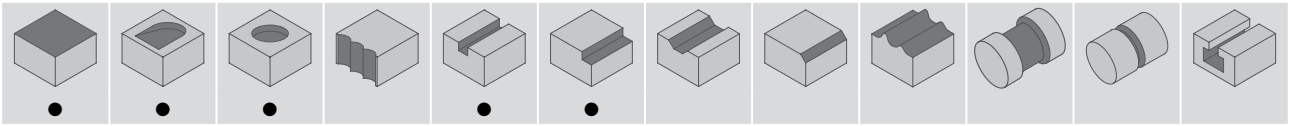
KOMET® *hi.apQ*

Ø 32 – 40 mm

Shoulder milling cutter



● very good | ◐ good



Z = effective number of teeth for calculating v_f

End milling cutter										Indexable insert
Ø D	Order No.	Ød_{h6}	L	L1	a_p max.	Spindle speed max. rpm	Z	kg	Clamping screw ① Order No. Article	Order No. ISO Code ▽▽ Size
32	**F51 50810**	32	110	49	15	11.000	3	0,53	**N00 57411** S40101-15IP 4,3 Nm	**Q36 38000.07....** APKT 1605PD-R
40	**F51 50820**	40	115	44	15	10.000	3	0,95		
	F51 50830						4	0,95		

For further details on selecting the cutting material, see page 141. Enter cutting material code ▲

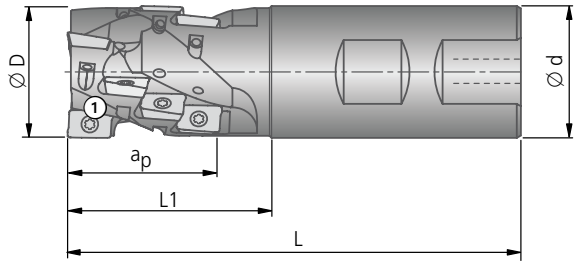
Supply includes:
Milling cutter with clamping screws ① (pre-fitted with high-temperature paste, order no.: 47001 00105).

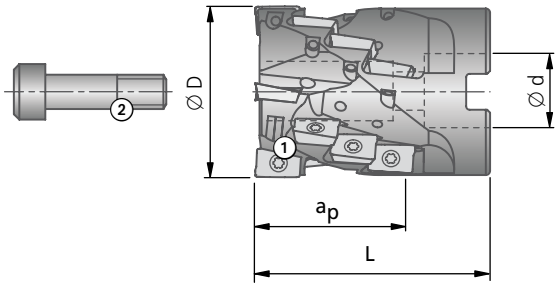
Please order insert separately. Screwdriver see chapter 8.

Recommendation: Change the clamping screws regularly to ensure the smooth running of the milling cutter.

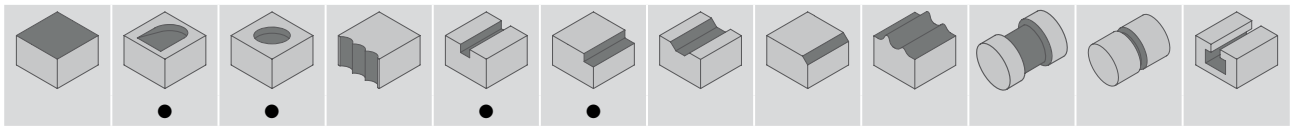
KOMET® *hi.apQ* Ø 25 – 80 mm

Shoulder milling cutter





● very good | ◐ good



Y = number of inserts
Z = effective number of teeth for calculating v_f

End milling cutter										Clamping screw	Indexable insert
Ø D	Order No.	Ø d_{h6}	L	L1	a_p max.	Spindle speed max. rpm	Y	Z	kg	Order No. Article	Order No. ISO Code ▽▽ Size
25	**F51 40321**	25	100	44	26	22.000	6	2	0,30	**N00 57321** S2556-8IP 1,28 Nm	**Q36 18000.01....** APKT 1003PD-R
32	**F51 40370**	32	110	49	26	20.000	6	2	0,57		
32	**F51 40361**	32	110	49	35	20.000	12	3	0,54		
32	**F51 40400**	32	119	50	32	19.000	6	2	0,53	**N00 57341** S3066-9IP 2,25 Nm	**Q36 24000.02....** APKT 1203PD-R
40	**F51 40410**	40	130	59	42	17.000	12	3	1,01		

For further details on selecting the cutting material, see page 141. Enter cutting material code ▲

Arbor milling cutter									Cylindrical screw	Clamping screw	Indexable insert
Ø D	Order No.	Ø d^{H6}	L	a_p max.	Spindle speed max. rpm	Y	Z	kg	Order No. Article	Order No. Article	Order No. ISO Code ▽▽ Size
40	**F51 42200**	16	45	26	17.000	9	3	0,28	**55011 08040** M8×40	**N00 57321** S2556-8IP 1,28 Nm	**Q36 18000.01....** APKT 1003PD-R
40	**F51 42210***	16	55	35	17.000	16	4	0,31			
50	**F51 42220**	22	55	32	15.000	9	3	0,51	**55011 10050** M10×50	**N00 57341** S3066-9IP 2,25 Nm	**Q36 24000.02....** APKT 1203PD-R
50	**F51 42230***	22	60	42	15.000	16	4	0,52			
63	**F51 42061**	27	70	42	11.000	9	3	1,07	**55011 12050** M12×50	**N00 57411** S40101-15IP 4,3 Nm	**Q36 38000.07....** APKT 1605PD-R
80	**F51 42081**	32	80	55	10.000	16	4	2,03			

For further details on selecting the cutting material, see page 141. Enter cutting material code ▲

* only suitable for contour milling

Supply includes:
Milling cutter with clamping screws ① (pre-fitted with high-temperature paste, order no.: 47001 00105).

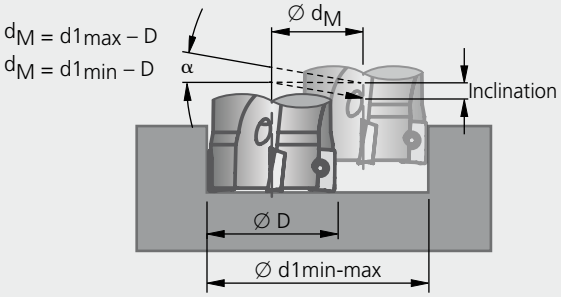
Supply includes arbor milling cutter:
Milling cutter with clamping screws ① (pre-fitted with high-temperature paste, order no.: 47001 00105) and cylindrical screw ②.

Please order insert separately. Screwdriver see chapter 8.

Recommendation: Change the clamping screws regularly to ensure the smooth running of the milling cutter.

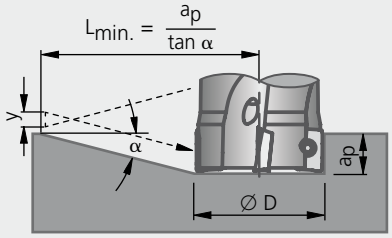
Application examples

Circular plunging



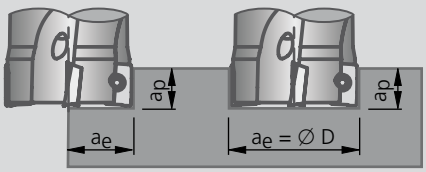
Ø D	Ramping angle α max	Ø d1 min Ø d1 min	Ø d1 min Inclination (mm/rev)	Ø d1 max Ø d1 max	Ø d1 max Inclination (mm/rev)
Q36 18..					
12	3,6°	21,8	1,9	23	2,2
14	3,1°	25,8	2,0	27	2,2
16	2,6°	29,4	1,9	31	2,1
20	1,8°	37,4	1,7	39	1,9
25	1,3°	47,4	1,6	49	1,7
32	1,9°	61,4	3,1	63	3,2
40	1,4°	77,4	2,9	79	3,0
42	1,3°	81,4	2,8	83	2,9
50	1°	97,4	2,6	99	2,7
63	0,8°	123,4	2,6	125	2,7
80	0,6°	157,4	2,5	159	2,6
100	0,4°	197,4	2,1	199	2,2
Q36 24..					
20	4,5°	35,4	3,8	38,4	4,5
25	3°	45,2	3,3	48,4	3,9
32	2°	59	3,0	62,4	3,3
40	1,5°	75	2,9	78,4	3,2
42	1,4°	79	2,8	82,4	3,1
50	1,1°	95	2,7	98,4	2,9
63	0,8°	121	2,5	124,4	2,7
80	0,6°	155	2,5	158,4	2,6
100	0,5°	195	2,6	198,4	2,7
Q36 38..					
32	2,9°	89	4,3	62	4,8
40	2°	75	3,8	78	4,2
63	1,1°	121	3,5	124	3,7
80	0,8°	155	3,3	158	3,4

Inclined plunging



Ø D	a_p max.	Lift from work-piece if direction is reversed y	Ramping angle α max.	L min.
Q36 18..				
12	9	0,4	3,6°	143
14	9	0,4	3,1°	166
16	9	0,4	2,6°	198
20	9	0,4	1,8°	286
25	9 / 26	0,4	1,3°	397
32	9 / 26 / 35	0,8	1,9°	271
40	9 / 26 / 35	0,8	1,4°	368
42	9	0,8	1,3°	397
50	9	0,8	1°	516
63	9	0,8	0,8°	645
80	9	0,8	0,6°	859
100	9	0,8	0,4°	1289
Q36 24..				
20	35,4	0,8	4,5°	140
25	45,2	0,8	3°	210
32	59	0,8	2°	315
40	75	0,8	1,5°	420
42	79	0,8	1,4°	450
50	95	0,8	1,1°	573
63	121	0,8	0,8°	788
80	155	0,8	0,6°	1050
100	195	0,8	0,5°	1260
Q36 38..				
32	15	1	2,9°	296
40	15	1	2°	430
63	15 / 42	1	1,1°	781
80	15 / 55	1	0,8°	1074

For reasons of safety, the recommended maximum speed must not be exceeded. For shoulder milling, the feed rate/tooth and cutting speed should be increased in comparison to milling with full cutting edge engagement.



	Feed f_z (mm/tooth) at a_e/D			
	≤ 0,1	> 0,1 - 0,2	> 0,2 - 0,3	> 0,3
P	0,14 **0,27** 0,39	0,10 **0,19** 0,28	0,09 **0,16** 0,23	0,07 **0,14** 0,21
S	0,14 **0,19** 0,23	0,10 **0,13** 0,16	0,09 **0,11** 0,14	0,07 **0,10** 0,12
M	0,14 **0,19** 0,23	0,10 **0,13** 0,16	0,09 **0,11** 0,14	0,07 **0,10** 0,12
K	0,14 **0,38** 0,61	0,10 **0,27** 0,44	0,09 **0,23** 0,37	0,07 **0,20** 0,33
N	0,14 **0,38** 0,61	0,10 **0,27** 0,44	0,09 **0,23** 0,37	0,07 **0,20** 0,33
H				

p.ex. mill dia. 100mm, engagement width a_e 10mm $= \frac{a_e}{D} = \frac{10}{100} = 0,1$

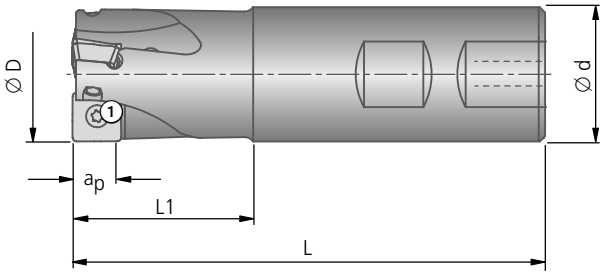
Cutting speed v_c (m/min)

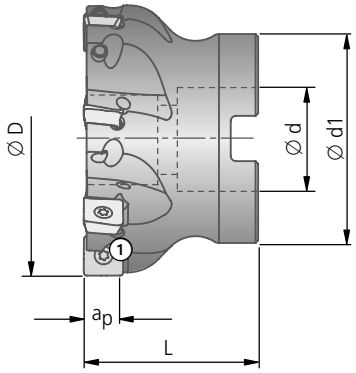
					Indexable insert	Q36.. (APKT..)							
					Coating type	–	–	CVD	CVD	CVD	PVD	PVD	PVD
					Cutting material designation	P25M	K10	BK6110	BK64	BK68	BK78	BK80	BK8425
					Cutting material code	**03**	**21**	**6110**	**64**	**68**	**78**	**80**	**8425**
Material	Material example, material code DIN	Strength Rm (N/mm²)	Hardness HB	Material group									
non-alloy steels	1.0037 (S235JR) 1.0715 (11SMn30) 1.0044 (S2575JR)	≤500		1.0		60-120			100-180	170-280	160-230	120-180	150-280
non-alloy / low alloy steels	1.0050 (E295) 1.0535 (C55) 1.7131 (16MnCr5)	500-900		2.0		50-100			80-150	80-200	120-200	90-150	100-220
lead alloys	1.0718 (11SMnPb30)	<500		2.1	P	60-120			100-180	170-280	160-230	120-180	150-280
low alloy steels: heat resistant structural, heat treated, nitride and tools steels	1.7225 (42CrMo4) 1.1221 (C60E)	>900		3.0		40-90			60-140	70-160	90-160	70-140	70-220
high alloy steels	1.2341 (6CrMo15-5) 1.2601 (X165CrMoV12)	>900		4.0		40-80			60-120	60-120	70-150	50-120	70-180
HSS				4.1		–			–	–	–	–	–
super alloys: Inconel, Hastelloy, Nimonic, stc.	2.4668 (NiuCr19Fe19Nb5Mo3) 2.4631 (Nimonic 80A)		250	5.0			30-60					20-60	
titanium, titanium alloys	3.7115 (TiAl5Sn2.5)	400		5.1	S		30-120					30-60	
stainless steels	1.4306 (X2CrNi19-11) 1.4401 (X5CrNiMo17-12-2)	≤600		6.0					100-180	160-320	120-220	100-180	120-220
stainless steels	1.4511 (X3CrNb17) 1.4571 (X10CrNiMoTi17-12-2)	<900		6.1	M				80-160	140-280	100-190	100-160	80-190
stainless / fireproof steels	1.4713 (X10CrAlSi7) 1.4862 (X8NiCrSi38-18)	>900		7.0					60-110	100-190	70-130	80-120	60-130
gray cast iron	0.6025 (EN-GJL-250) 0.6035 (EN-GJL-350)		180	8.0			100-150	180-350		100-240	80-180	90-160	100-200
alloy gray cast iron	0.6660 (GGL-NiCr20 2)		250	8.1			60-100	130-230		80-160	80-150	60-120	80-130
spheroidal graphite cast iron, ferritic	0.7040 (EN-GJS-400-15)	≤600	130	9.0			80-120	150-280		130-190	100-170	90-130	110-160
spheroidal graphite cast iron, ferritic/perlitic	0.7050 (EN-GJS-500-7) 0.7055 (GJS-55) 0.8055 (GTW-55)		230	9.1	K		80-120	150-280		130-190	100-170	90-130	110-160
spheroidal graphite cast iron, perlitic, malleable iron	0.7060 (EN-GJS-600-3) 0.8165 (GTS-65)	>600	250	10.0			60-100	120-210		80-160	80-150	80-120	80-130
alloyed spheroidal graphite cast iron	0.7661 (EN-GJSA-XNiCr20-2)		200	10.1			50-70	100-170		80-120	70-100	60-90	50-100
vermicular cast iron	EN-GJV Ti < 0,2 EN-GJV Ti > 0,2		300	10.2			40-60	90-140		70-110	50-90	50-80	50-90
copper alloy, brass, lead-alloy bronze, lead bronze: good cut	2.0375 (CuZn36Pb3) 2.1182.01 (G-CuPb15Sn)		90	12.0			250-500						
copper alloy, brass, bronze: average cut	2.0550 (CuZn40Al2) 2.0060 (E-Cu57)		100	12.1			200-375						
wrought aluminium alloys	3.3315 (AlMg1) 3.0517 (AlMnCu)		60	13.0	N		300-650						
cast alum. alloy: Si-content <10% magnesium alloy	3.3561 (G-AlMg5) 3.2373.61 (G-AlSi9Mg wa)		75	13.1			220-450						
cast alum.alloy: Si-content >10%	3.2381.01 (G-AlSi10Mg)		100	14.0			200-375						
hardened steels < 45 HRC		1400		15.0	H								
hardened steels > 45 HRC		1800		16.0									

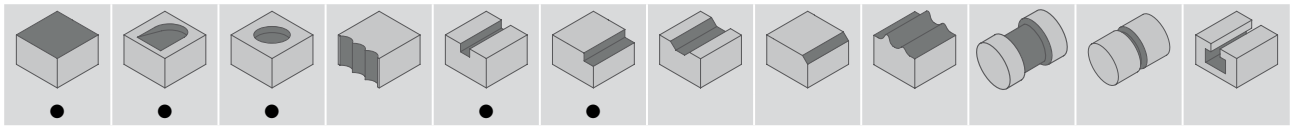
Cutting speed v_c can be increased by reducing the width of cutting edge engagement a_e

Important: See chapter 8 for more application details and safety notes !

Shoulder milling cutter Q43-KSM







Z = effective number of teeth for calculating v_f

End milling cutter										
Ø D	Order No.	Ød_{h6}	L	L1	a_p max.	Spindle speed max. rpm	Z	kg	Clamping screw TORX ® ① Order No. Article	Indexable insert Order No. ISO Code Size
25	**F55 18110**	25	88	32	8	23.700	3		**N00 57830** S3073-T8-55° 2 Nm	**Q43 28..** SDHT | SDKT 09..
32	**F55 18130**	32	100	40	8	19.700	4	0,55		

Arbor milling cutter											
Ø D	Order No.	Ø d^{H7}	Ø d1	L	a_p max.	Spindle speed max. rpm	Z	kg	Differential screw Order No.	Clamping screw TORX ® ① Order No. Article	Indexable insert Order No. ISO Code Size
40	**F55 19150**	16	38	40	8	17.000	5	0,24	**L02 30980** 15Nm	**N00 57830** S3073-T8-55° 2 Nm	**Q43 28..** SDHT | SDKT 09..
50	**F55 19170**	22	43	40	8	14.800	6	0,30	–		
63	**F55 19190**	22	48	40	8	12.850	7	0,50	–		
80	**F55 19210**	27	58	50	8	11.250	9	0,98	–		

Supply includes: Milling cutter with clamping screws ① (pre-fitted with high-temperature paste, order no.: 47001 00105).
Supply includes arbor milling cutter Ø 40 mm:
Milling cutter with clamping screws ① (pre-fitted with high-temperature paste, order no.: 47001 00105) and differential screw. Please order inserts separately. Screwdriver see chapter 8.

Recommendation: Change the clamping screws regularly to ensure the smooth running of the milling cutter.

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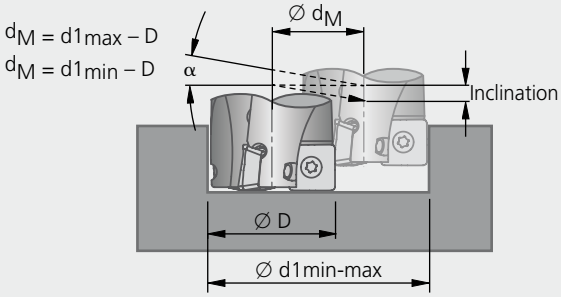
Cutting values for milling: page 145.

Application examples for shoulder milling cutter Q43-KSM

Circular plunging

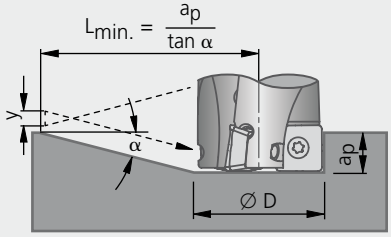
$d_M = d1max - D$
$d_M = d1min - D$



Ø D	Ramping angle α max	Ø d1 min		Ø d1 max	
		Ø d1 min	Inclination (mm/rev)	Ø d1 max	Inclination (mm/rev)
End milling cutter					
25	4,4°	37	2,9	48	5,6
32	2,2°	47	1,8	62	3,6
Arbor milling cutter					
40	0,75°	63	0,9	78	1,6
50	0,5°	83	0,9	98	1,3
63	0,35°	109	0,9	124	1,2
80	0,25°	143	0,9	158	1,1

Inclined plunging

$L_{min.} = \frac{a_p}{\tan \alpha}$

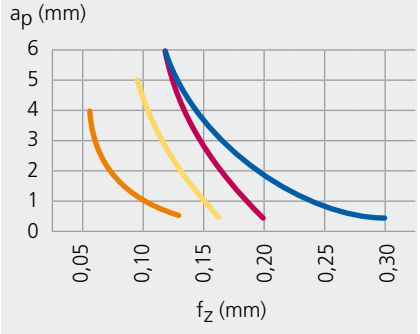


Ø D	a_p max	Lift from work-piece if direction is reversed y	Ramping angle α max	L min
End milling cutter				
25	8	0,70	4,4°	104
32	8	0,60	2,2°	208
Arbor milling cutter				
40	8	0,40	0,75°	611
50	8	0,30	0,5°	917
63	8	0,30	0,35°	1310
80	8	0,30	0,25°	1833

With decreasing cutting depth the tooth feed can be increased.

Example given for $a_e/D > 0,3$-1

Q43 28



Recommended cutting data for shoulder milling cutter Q43-KSM

Feed f_z (mm/tooth) at a_e/D

	Order No.	ISO code	Material group	p.ex. mill dia. 100mm, engagement width a_e 10 mm = $\frac{a_e}{D} = \frac{10}{100} = 0{,}1$				Cutting depth a_p mm
				≤ 0,1	> 0,1 - 0,2	> 0,2 - 0,3	> 0,3 - 1	
medium roughing operations	Q43 28010.088425	SDKT09T308SR-01 BK8425	P	0,14 **0,23** 0,32	0,10 **0,17** 0,23	0,09 **0,14** 0,19	0,07 **0,12** 0,17	6
super alloys	Q43 28210.086435	SDKT09T308SR-21 BK6435	S	0,10 **0,12** 0,15	0,07 **0,09** 0,11	0,06 **0,07** 0,08	0,05 **0,055** 0,06	4
titanium / titanium alloys	Q43 28210.087740	SDKT09T308SR-21 BK7740						
precision-machining and finishing	Q43 28210.082740	SDKT09T308SR-21 BK2740	M	0,14 **0,18** 0,21	0,10 **0,13** 0,15	0,09 **0,11** 0,13	0,07 **0,09** 0,11	5
	Q43 28050.086110	SDKT09T308SR-05 BK6110	K	0,14 **0,27** 0,39	0,10 **0,19** 0,28	0,09 **0,16** 0,23	0,07 **0,14** 0,21	6
	Q43 28120.0823	SDHT09T308FR-12 K10	N	0,14 **0,27** 0,39	0,10 **0,19** 0,28	0,09 **0,16** 0,23	0,07 **0,14** 0,21	6

Cutting speed v_c (m/min)

					Indexable insert	Q43.. (SDHT / SDKT..)							
					Coating type	PVD		CVD	PVD	PVD		CVD	–
					Cutting material designation	BK8425		BK6435	BK7740	BK2740		BK6110	K10
					Cutting material code	**8425**		**6435**	**7740**	**2740**		**6110**	**23**
Material	Material example, material code DIN	Strength Rm (N/mm²)	Hardness HB	Material group		dry	wet	dry	wet	dry	wet	dry + wet	wet
non-alloy steels	1.0037 (S235JR) 1.0715 (11SMn30) 1.0044 (S2575JR)	≤500		P 1.0		100-220	70-180						
non-alloy / low alloy steels	1.0050 (E295) 1.0535 (C55) 1.7131 (16MnCr5)	500-900		2.0		80-220	70-170						
lead alloys	1.0718 (11SMnPb30)	<500		2.1		100-220	70-170						
low alloy steels	1.7225 (42CrMo4) 1.1221 (C60E)	>900		3.0		80-200	70-160						
high alloy steels	1.2341 (6CrMo15-5) 1.2601 (X165CrMoV12)	>900		4.0		80-170	70-150						
HSS				4.1		80-140	60-120						
super alloys: Inconel, Hastelloy, Nimonic, stc.	2.4668 (NiuCr19Fe19Nb5Mo3) 2.4631 (Nimonic 80A)		250	S 5.0				25-75					
titanium, titanium alloys	3.7115 (TiAl5Sn2.5)	400		5.1					25-75				
stainless steels	1.4306 (X2CrNi19-11) 1.4401 (X5CrNiMo17-12-2)	≤600		6.0						160-250	60-140		
stainless steels	1.4511 (X3CrNb17) 1.4571 (X10CrNiMoTi17-12-2)	<900		M 6.1						150-220	60-140		
stainless / fireproof steels	1.4713 (X10CrAlSi7) 1.4862 (X8NiCrSi38-18)	>900		7.0						100-250	60-140		
gray cast iron	0.6025 (EN-GJL-250) 0.6035 (EN-GJL-350)		180	8.0								140-350	
alloy gray cast iron	0.6660 (GGL-NiCr20 2)		250	8.1								120-320	
spheroidal graphite cast iron, ferritic	0.7040 (EN-GJS-400-15)	≤600	130	9.0								100-250	
spheroidal graphite cast iron, ferritic/perlitic	0.7050 (EN-GJS-500-7) 0.7055 (GJS-55) 0.8055 (GTW-55)		230	K 9.1								120-320	
spheroidal graphite cast iron, perlitic, malleable iron	0.7060 (EN-GJS-600-3) 0.8165 (GTS-65)	>600	250	10.0								120-320	
alloyed spheroidal graphite cast iron	0.7661 (EN-GJSA-XNiCr20-2)		200	10.1								120-320	
vermicular cast iron	EN-GJV Ti < 0,2 EN-GJV Ti > 0,2		300	10.2								100-250	
copper alloy, brass, lead-alloy bronze, lead bronze: good cut	2.0375 (CuZn36Pb3) 2.1182.01 (G-CuPb15Sn)		90	12.0									300-1000
copper alloy, brass, bronze: average cut	2.0550 (CuZn40Al2) 2.0060 (E-Cu57)		100	12.1									300-1000
wrought aluminium alloys	3.3315 (AlMg1) 3.0517 (AlMnCu)		60	N 13.0									200-3000
cast alum. alloy: Si-content <10% magnesium alloy	3.3561 (G-AlMg5) 3.2373.61 (G-AlSi9Mg wa)		75	13.1									300-500
cast alum.alloy: Si-content >10%	3.2381.01 (G-AlSi10Mg)		100	14.0									300-400
hardened steels < 45 HRC		1400		H 15.0									
hardened steels > 45 HRC		1800		16.0									

Cutting speed v_c can be increased by reducing the width of cutting edge engagement a_e. Further cutting parameters see page 172-173.

Important: See chapter 8 for more application details and safety notes !

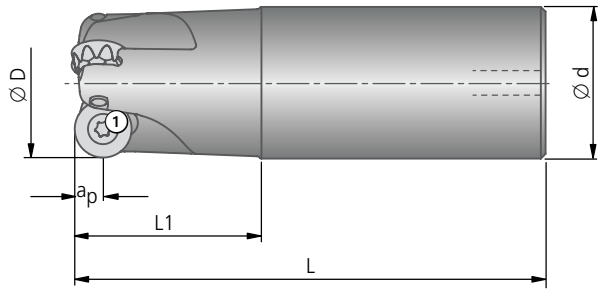
Copy milling cutter Q55-KCM | RP../ RD..10

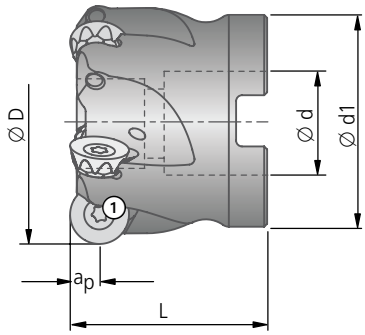
Material P M K N S H

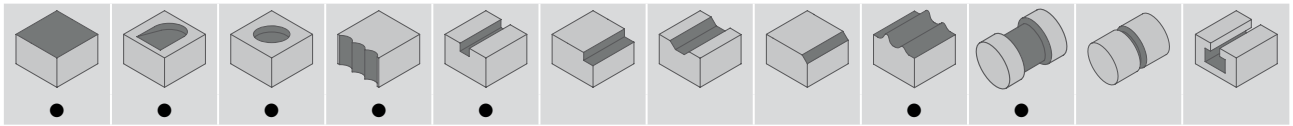
DIN 1835 T1 A

DIN 8030 A

BENEFITS for you:
- High feed rates with maximum stability
- 8 indexing positions for maximum cost-efficiency







Z = effective number of teeth for calculating v_f

End milling cutter										
Ø D	Order No.	Ød$_{h6}$	L	L1	a_p max.	Spindle speed max. rpm	Z	kg	Clamping screw ① Order No. Article	Indexable insert Order No. ISO Code
20	**F55 11090**	20	102	50	5	31.800	2		**N00 57840** S3075-10IP 2 Nm	**Q55 34..** RP.. / RD.. 10
	F55 12090		165			22.260				
25	**F55 11110**	25	116	60	5	20.000	3			
	F55 12110		165			20.000				
32	**F55 11130**	32	130	70	5	19.000	4	0,63		
	F55 12130		165			18.000				

Arbor milling cutter											
Ø D	Order No.	Ø d^{H7}	Ø d1	L	a_p max.	Spindle speed max. rpm	Z	kg	Differential screw Order No.	Clamping screw ① Order No. Article	Indexable insert Order No. ISO Code
40	**F55 13150**	16	38	40	5	15.900	4		**L02 30980** 15Nm	**N00 57840** S3075-10IP 2 Nm	**Q55 34..** RP.. / RD.. 10
50	**F55 13170**	22	43	40	5	12.700	5	0,28	–		

Supply includes:
Milling cutter with clamping screws ① (pre-fitted with high-temperature paste, order no.: 47001 00105).

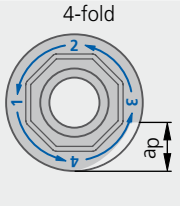
Supply includes arbor milling cutter Ø 40 mm:
Milling cutter with clamping screws ① (pre-fitted with high-temperature paste, order no.: 47001 00105) and differential screw.

Please order inserts separately. Screwdriver see chapter 8.

Recommendation: Change the clamping screws regularly to ensure the smooth running of the milling cutter.

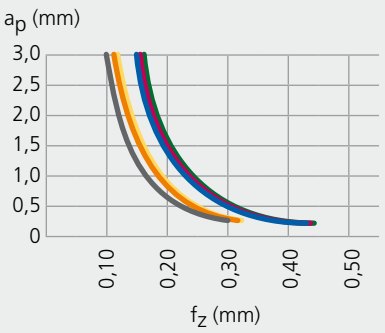
With decreasing cutting depth the tooth feed can be increased.
Example given for $a_e/D > 0,3$-1

Recommended feed



a_p	a_p max.	a_p max.
2,5	4,5	1,4

Q55 34



● very good | ◐ good

Feed f_z (mm/tooth) at a_e/D

	Order No.	ISO code	Material group	p.ex. mill dia. 100mm, engagement width a_e 10 mm = $\frac{a_e}{D} = \frac{10}{100} = 0,1$ ≤ 0,1	> 0,1 - 0,2	> 0,2 - 0,3	> 0,3	Cutting depth a_p mm
medium roughing operations	Q55 34010.118425	RPMX10T3MO-01 BK8425	P	0,21 **0,30** 0,39	0,15 **0,22** 0,28	0,13 **0,18** 0,23	0,10 **0,15** 0,21	3,0
super alloys	Q55 34250.116435	RPHX10T3MO-25 BK6435	S	0,21 **0,26** 0,30	0,15 **0,18** 0,21	0,12 **0,135** 0,15	0,10 **0,115** 0,13	3,0
titanium / titanium alloys	Q55 34250.117740	RPHX10T3MO-25 BK7740						
precision-machining and finishing	Q55 34210.112740	RPMX10T3MO-21 BK2740	M	0,21 **0,26** 0,30	0,15 **0,18** 0,21	0,12 **0,135** 0,15	0,10 **0,115** 0,13	3,0
	Q55 34050.116110	RPMX10T3MO-05 BK6110	K	0,21 **0,30** 0,39	0,15 **0,22** 0,28	0,13 **0,18** 0,23	0,10 **0,15** 0,21	3,0
	Q55 34120.1523	RDHX10T3MO-12 K10	N	0,21 **0,30** 0,39	0,15 **0,22** 0,28	0,13 **0,18** 0,23	0,10 **0,15** 0,21	3,0
	Q55 34020.152710	RDHW10T3MO-02 BK2710	H	0,21 **0,23** 0,25	0,15 **0,165** 0,18	0,12 **0,125** 0,13	0,10 **0,105** 0,11	0,5

Cutting speed v_c (m/min)

					Indexable insert	Q55 34.. (RP.. / RD.. 10)								
					Coating type	PVD		CVD	PVD	PVD		CVD	–	PVD
					Cutting material designation	BK8425		BK6435	BK7740	BK2740		BK6110	K10	BK2710
					Cutting material code	8425		6435	7740	2740		6110	23	2710
Material	Material example, material code DIN	Strength Rm (N/mm²)	Hardness HB	Material group		dry	wet	dry	wet	dry	wet	dry + wet	wet	dry
non-alloy steels	1.0037 (S235JR) 1.0715 (11SMn30) 1.0044 (S2575JR)	≤500		P	1.0	100-220	70-180							
non-alloy / low alloy steels	1.0050 (E295) 1.0535 (C55) 1.7131 (16MnCr5)	500-900		P	2.0	80-220	70-170							
lead alloys	1.0718 (11SMnPb30)	<500		P	2.1	100-220	70-170							
low alloy steels	1.7225 (42CrMo4) 1.1221 (C60E)	>900		P	3.0	80-200	70-160							
high alloy steels	1.2341 (6CrMo15-5) 1.2601 (X165CrMoV12)	>900		P	4.0	80-170	70-150							
HSS				P	4.1	80-140	60-120							
super alloys: Inconel, Hastelloy, Nimonic, stc.	2.4668 (NiuCr19Fe19Nb5Mo3) 2.4631 (Nimonic 80A)		250	S	5.0			25-75						
titanium, titanium alloys	3.7115 (TiAl5Sn2.5)	400		S	5.1				25-75					
stainless steels	1.4306 (X2CrNi19-11) 1.4401 (X5CrNiMo17-12-2)	≤600		M	6.0					160-250	60-140			
stainless steels	1.4511 (X3CrNb17) 1.4571 (X10CrNiMoTi17-12-2)	<900		M	6.1					150-220	60-140			
stainless / fireproof steels	1.4713 (X10CrAlSi7) 1.4862 (X8NiCrSi38-18)	>900		M	7.0					100-250	60-140			
gray cast iron	0.6025 (EN-GJL-250) 0.6035 (EN-GJL-350)		180	K	8.0							140-350		
alloy gray cast iron	0.6660 (GGL-NiCr20 2)		250	K	8.1							120-320		
spheroidal graphite cast iron, ferritic	0.7040 (EN-GJS-400-15)	≤600	130	K	9.0							100-250		
spheroidal graphite cast iron, ferritic/perlitic	0.7050 (EN-GJS-500-7) 0.7055 (GJS-55) 0.8055 (GTW-55)		230	K	9.1							120-320		
spheroidal graphite cast iron, perlitic, malleable iron	0.7060 (EN-GJS-600-3) 0.8165 (GTS-65)	>600	250	K	10.0							120-320		
alloyed spheroidal graphite cast iron	0.7661 (EN-GJSA-XNiCr20-2)		200	K	10.1							120-320		
vermicular cast iron	EN-GJV Ti < 0,2 EN-GJV Ti > 0,2		300	K	10.2							100-250		
copper alloy, brass, lead-alloy bronze, lead bronze: good cut	2.0375 (CuZn36Pb3) 2.1182.01 (G-CuPb15Sn)		90	N	12.0								300-1000	
copper alloy, brass, bronze: average cut	2.0550 (CuZn40Al2) 2.0060 (E-Cu57)		100	N	12.1								300-1000	
wrought aluminium alloys	3.3315 (AlMg1) 3.0517 (AlMnCu)		60	N	13.0								200-3000	
cast alum. alloy: Si-content <10% magnesium alloy	3.3561 (G-AlMg5) 3.2373.61 (G-AlSi9Mg wa)		75	N	13.1								300-500	
cast alum.alloy: Si-content >10%	3.2381.01 (G-AlSi10Mg)		100	N	14.0								300-400	
hardened steels < 45 HRC		1400		H	15.0									40-60
hardened steels > 45 HRC		1800		H	16.0									30-50

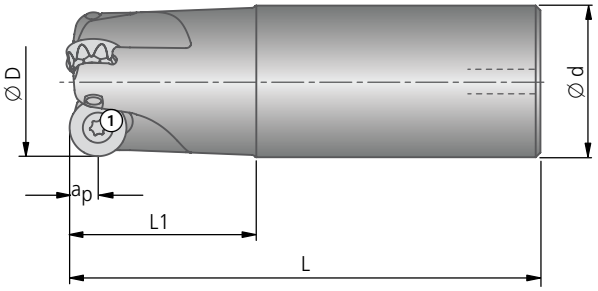
Cutting speed v_c can be increased by reducing the width of cutting edge engagement a_e. Further cutting parameters see page 172-173.

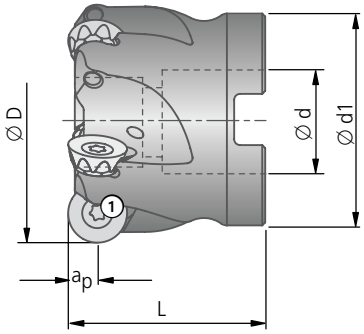
Important: See chapter 8 for more application details and safety notes !

KOMET ®

Ø 25 – 100 mm

Copy milling cutter Q55-KCM | RP../ RD..12



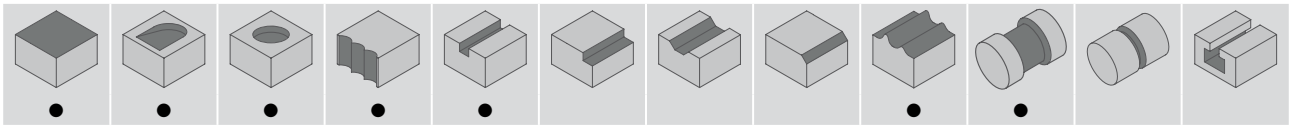


Q47.. | EOMT
High feed-rate milling
Page 156

Q43.. | SDMX
For face and chamfer milling
Page 152

Q55 42.. | RP..12
Wiper geometry for
high-quality surface finish
Page 154

● very good | ◐ good



Z = effective number of teeth for calculating v_f

End milling cutter										
Ø D	Order No.	Ød_{h6}	L	L1	a_p max.	Spindle speed max. rpm	Z	kg	Clamping screw TORX ® ① Order No. Article	Indexable insert Order No. ISO Code
25	**F55 14110**	25	86	30	6	25.000	2		**N00 57910** S4085-T15-55° 4,25 Nm	**Q55 42..** RP.. / RD.. 12
	F55 15110		116	60		18.000				
32	**F55 14130**	32	100	40	6	19.000	3			
	F55 15130		130	70		17.000				

Arbor milling cutter											
Ø D	Order No.	Ø d^{H7}	Ø d1	L	a_p max.	Spindle speed max. rpm	Z	kg	Differential screw Order No.	Clamping screw ① Order No. Article	Indexable insert Order No. ISO Code
40	**F55 16150**	16	38	40	6	15.900	4	0,25	**L02 30980** 15Nm	**N00 57890** S40110-15IP 4,3 Nm	**Q55 42..** RP.. / RD.. 12
50	**F55 16170**	22	43	40	6	12.700	5		–		
63	**F55 16190**	22	48	40	6	10.100	6		–		
80	**F55 16210**	27	58	50	6	7.950	8		–		
100	**F55 16230**	32	78	50	6	6.350	10		–		

Supply includes: Milling cutter with clamping screws ① (pre-fitted with high-temperature paste, order no.: 47001 00105).

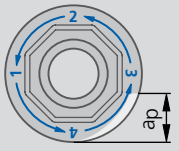
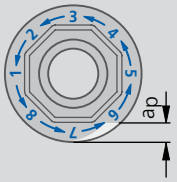
Supply includes arbor milling cutter Ø 40 mm:
Milling cutter with clamping screws ① (pre-fitted with high-temperature paste, order no.: 47001 00105) and differential screw.

Please order inserts separately. Screwdriver see chapter 8.

Recommendation: Change the clamping screws regularly to ensure the smooth running of the milling cutter.

Ihr PLUS:

- High feed rates with maximum stability
- 8 indexing positions for maximum cost-efficiency
- Selection of further indexable inserts on same basic body for high feed-rate milling, face and chamfer milling and with wiper geometry for high-quality surface finish

Recommended feed		
4-fold		8-fold
		
a_p	a_p max.	a_p max.
3,0	5,5	1,7

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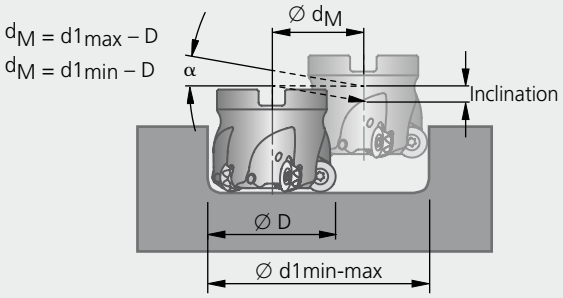
Cutting values for milling: page 151.

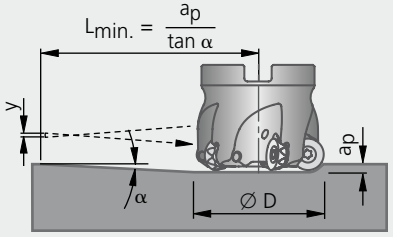
Application examples for copy milling cutter Q55-KCM

Circular plunging



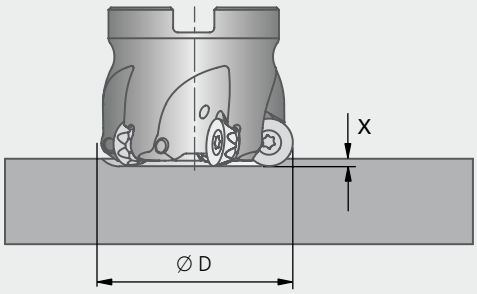
Ø D	ISO code insert	Ramping angle α max	Ø d1 min Ø d1 min	Ø d1 min Inclination (mm/rev)	Ø d1 max Ø d1 max	Ø d1 max Inclination (mm/rev)
End milling cutter						
20	RP/RD10	1,3°	26	0,4	30	0,7
25	RP/RD10	1,8°	37	1,2	40	1,5
32	RP/RD10	1,5°	50	1,5	54	1,8
25	RP/RD12	2,2°	31	0,7	38	1,6
32	RP/RD12	1,7°	46	1,3	52	1,9
Arbor milling cutter						
40	RP/RD10	1,1°	64	1,4	70	1,8
50	RP/RD10	1,1°	68	1,1	74	1,4
40	RP/RD12	1,4°	62	1,7	68	2,1
50	RP/RD12	1,1°	81	1,9	88	2,3
63	RP/RD12	0,9°	107	2,2	114	2,5
80	RP/RD12	0,7°	142	2,4	148	2,6
100	RP/RD12	0,5°	181	2,2	188	2,4

Inclined plunging



Ø D	ISO code insert	ap max	Lift from work-piece if direction is reversed y	Ramping angle α max	L min
End milling cutter					
20	RP/RD10	5	0,3	1,3°	220,3
25	RP/RD10	5	0,6	2°	143,2
32	RP/RD10	5	1,2	3°	95,4
25	RP/RD12	6	1,5	6,4°	53,5
32	RP/RD12	6	1,4	4°	85,8
Arbor milling cutter					
40	RP/RD10	5	1,8	3,3°	86,7
50	RP/RD10	5	1,7	2,4°	119,3
40	RP/RD12	6	1,4	2,8°	122,7
50	RP/RD12	6	1,8	2,6°	132,1
63	RP/RD12	6	1,7	1,9°	180,9
80	RP/RD12	6	1,6	1,3°	264,4
100	RP/RD12	6	1,6	1°	343,7

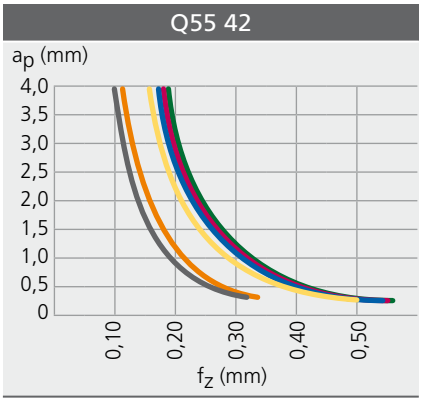
Axial plunging



Milling cutter dia. Ø D	ISO code indexable insert	X max
End milling cutter		
20	RP.. / RD.. 10	0,2
25	RP.. / RD.. 10	0,4
32	RP.. / RD.. 10	0,8
25	RP.. / RD.. 12	1,0
32	RP.. / RD.. 12	1,1

Milling cutter dia. Ø D	ISO code indexable insert	X max
Arbor milling cutter		
40	RP.. / RD.. 10	1,5
50	RP.. / RD.. 10	1,5
40	RP.. / RD.. 12	1,2
50	RP.. / RD.. 12	1,5
63	RP.. / RD.. 12	1,5
80	RP.. / RD.. 12	1,5
100	RP.. / RD.. 12	1,5

With decreasing cutting depth the tooth feed can be increased.
Example given for a_e/D > 0,3-1



Recommended cutting data for copy milling cutter Q55-KCM | RP../ RD..12

Feed f_z (mm/tooth) at a_e/D

	Order No.	ISO code	Material group	p.ex. mill dia. 100mm, engagement width a_e 10 mm = $\frac{a_e}{D} = \frac{10}{100} = 0{,}1$				Cutting depth a_p mm
				≤ 0,1	> 0,1 - 0,2	> 0,2 - 0,3	> 0,3	
medium roughing operations	Q55 42010.118425	RPMX1204MO-01 BK8425	P	0,21 **0,33** 0,46	0,15 **0,24** 0,33	0,13 **0,20** 0,27	0,10 **0,17** 0,24	4,0
super alloys	Q55 42250.116435	RPHX1204MO-25 BK6435	S	0,21 **0,26** 0,30	0,15 **0,18** 0,21	0,12 **0,135** 0,15	0,10 **0,115** 0,13	4,0
titanium / titanium alloys	Q55 42250.117740	RPHX1204MO-25 BK7740						
precision-machining and finishing	Q55 42210.112740	RPMX1204MO-21 BK2740	M	0,21 **0,33** 0,45	0,15 **0,24** 0,32	0,12 **0,18** 0,23	0,12 **0,15** 0,19	4,0
	Q55 42050.116110	RPMX1204MO-05 BK6110	K	0,21 **0,33** 0,46	0,15 **0,24** 0,33	0,13 **0,20** 0,27	0,10 **0,17** 0,24	4,0
	Q55 42120.1523	RDHX1204MO-12 K10	N	0,21 **0,33** 0,46	0,15 **0,24** 0,33	0,13 **0,20** 0,27	0,10 **0,17** 0,24	4,0
	Q55 42020.152710	RDHW1204MO-02 BK2710	H	0,21 **0,23** 0,25	0,15 **0,165** 0,18	0,12 **0,125** 0,13	0,10 **0,105** 0,11	0,7

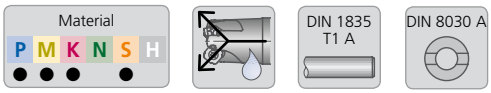
Cutting speed v_c (m/min)

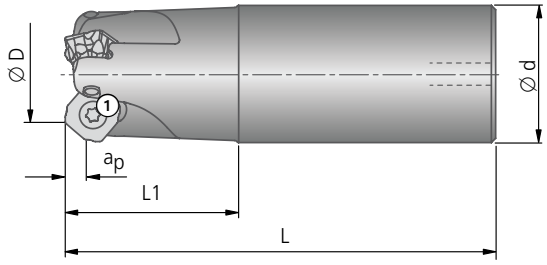
				Indexable insert	Q55 42.. (RP.. / RD.. 12)								
				Coating type	PVD		CVD	PVD	PVD		CVD	–	PVD
				Cutting material designation	BK8425		BK6435	BK7740	BK2740		BK6110	K10	BK2710
				Cutting material code	**8425**		**6435**	**7740**	**2740**		**6110**	**23**	**2710**
Material	Material example, material code DIN	Strength Rm (N/mm²)	Hardness HB	Material group	dry	wet	dry	wet	dry	wet	dry + wet	wet	dry
non-alloy steels	1.0037 (S235JR) 1.0715 (11SMn30) 1.0044 (S2575JR)	≤500		1.0	100-220	70-180							
non-alloy / low alloy steels	1.0050 (E295) 1.0535 (C55) 1.7131 (16MnCr5)	500-900		2.0	80-220	70-170							
lead alloys	1.0718 (11SMnPb30)	<500		2.1	100-220	70-170							
low alloy steels	1.7225 (42CrMo4) 1.1221 (C60E)	>900		P 3.0	80-200	70-160							
high alloy steels	1.2341 (6CrMo15-5) 1.2601 (X165CrMoV12)	>900		4.0	80-170	70-150							
HSS				4.1	80-140	60-120							
super alloys: Inconel, Hastelloy, Nimonic, stc.	2.4668 (NiuCr19Fe19Nb5Mo3) 2.4631 (Nimonic 80A)		250	5.0			25-75						
titanium, titanium alloys	3.7115 (TiAl5Sn2.5)	400		S 5.1				25-75					
stainless steels	1.4306 (X2CrNi19-11) 1.4401 (X5CrNiMo17-12-2)	≤600		6.0					160-250	60-140			
stainless steels	1.4511 (X3CrNb17) 1.4571 (X10CrNiMoTi17-12-2)	<900		M 6.1					150-220	60-140			
stainless / fireproof steels	1.4713 (X10CrAlSi7) 1.4862 (X8NiCrSi38-18)	>900		7.0					100-250	60-140			
gray cast iron	0.6025 (EN-GJL-250) 0.6035 (EN-GJL-350)		180	8.0							140-350		
alloy gray cast iron	0.6660 (GGL-NiCr20 2)		250	8.1							120-320		
spheroidal graphite cast iron, ferritic	0.7040 (EN-GJS-400-15)	≤600	130	9.0							100-250		
spheroidal graphite cast iron, ferritic/perlitic	0.7050 (EN-GJS-500-7) 0.7055 (GJS-55) 0.8055 (GTW-55)		230	K 9.1							120-320		
spheroidal graphite cast iron, perlitic, malleable iron	0.7060 (EN-GJS-600-3) 0.8165 (GTS-65)	>600	250	10.0							120-320		
alloyed spheroidal graphite cast iron	0.7661 (EN-GJSA-XNiCr20-2)		200	10.1							120-320		
vermicular cast iron	EN-GJV Ti < 0,2 EN-GJV Ti > 0,2		300	10.2							100-250		
copper alloy, brass, lead-alloy bronze, lead bronze: good cut	2.0375 (CuZn36Pb3) 2.1182.01 (G-CuPb15Sn)		90	12.0								300-1000	
copper alloy, brass, bronze: average cut	2.0550 (CuZn40Al2) 2.0060 (E-Cu57)		100	12.1								300-1000	
wrought aluminium alloys	3.3315 (AlMg1) 3.0517 (AlMnCu)		60	N 13.0								200-3000	
cast alum. alloy: Si-content <10% magnesium alloy	3.3561 (G-AlMg5) 3.2373.61 (G-AlSi9Mg wa)		75	13.1								300-500	
cast alum.alloy: Si-content >10%	3.2381.01 (G-AlSi10Mg)		100	14.0								300-400	
hardened steels < 45 HRC		1400		15.0									40-60
hardened steels > 45 HRC		1800		H 16.0									30-50

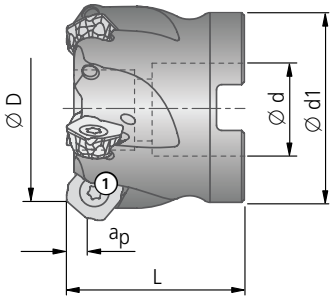
Cutting speed v_c can be increased by reducing the width of cutting edge engagement a_e. Further cutting parameters see page 172-173.

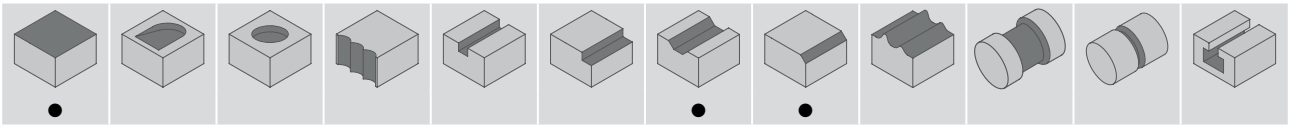
Important: See chapter 8 for more application details and safety notes !

Copy milling cutter Q55-KCM | SDMX..









Z = effective number of teeth for calculating v_f

End milling cutter										
Ø D	Order No.	Ød$_{h6}$	L	L1	a_p max.	Spindle speed max. rpm	Z	kg	Clamping screw TORX ® ① Order No. Article	Indexable insert Order No. ISO Code
24,5	**F55 14130**	32	100,3	40,3	4	19.000	3		**N00 57910** S4085-T15-55° 4,25 Nm	**Q43 38..** SDMX 11
	F55 15130		130,3	70,3		17.000				

Arbor milling cutter											
Ø D	Order No.	Ø d^{H7}	Ø d1	L	a_p max.	Spindle speed max. rpm	Z	kg	Differential screw Order No.	Clamping screw ① Order No. Article	Indexable insert Order No. ISO Code
32,5	**F55 16150**	16	38	40,3	4	15.900	4		**L02 30980** 15Nm	**N00 57890** S40110-15IP 4,3 Nm	**Q43 38..** SDMX 11
42,5	**F55 16170**	22	43	40,3	4	12.700	5		–		
55,5	**F55 16190**	22	48	40,3	4	10.100	6		–		
72,5	**F55 16210**	27	58	50,3	4	7.950	8		–		
92,5	**F55 16230**	32	78	50,3	4	6.350	10		–		

Supply includes: Milling cutter with clamping screws ① (pre-fitted with high-temperature paste, order no.: 47001 00105).
Supply includesarbor milling cutter Ø 40 mm:
Milling cutter with clamping screws ① (pre-fitted with high-temperature paste, order no.: 47001 00105) and differential screw.
Please order inserts separately. Screwdriver see chapter 8.
Recommendation: Change the clamping screws regularly to ensure the smooth running of the milling cutter.

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Feed f_z (mm/tooth) at a_e/D													
	Order No.	ISO code	Material group	p.ex. mill dia. 100mm, engagement width a_e 10 mm = $\frac{a_e}{D} = \frac{10}{100} = 0,1$									Cutting depth a_p mm
				≤ 0,1			> 0,1 - 0,2			> 0,2 - 0,3			> 0,3			
medium roughing operations	Q43 38010.158425	SDMX1105AE-01 BK8425	P	0,20	**0,28**	0,36	0,15	**0,20**	0,26	0,12	**0,17**	0,22	0,10	**0,15**	0,19	4
super alloys	Q43 38250.156435	SDMX1105AE-25 BK6435	S	0,16	**0,21**	0,25	0,12	**0,15**	0,18	0,10	**0,115**	0,13	0,08	**0,10**	0,11	4
titanium / titanium alloys	Q43 38250.157740	SDMX1105AE-25 BK7740														
precision-machining and finishing	Q43 38210.152740	SDMX1105AE-21 BK2740	M	0,21	**0,28**	0,35	0,15	**0,20**	0,25	0,12	**0,15**	0,18	0,10	**0,13**	0,15	4
	Q43 38050.156110	SDMX1105AE-05 BK6110	K	0,20	**0,28**	0,36	0,15	**0,20**	0,26	0,12	**0,17**	0,22	0,10	**0,15**	0,19	4

Cutting speed v_c (m/min)													
Indexable insert					Q43.. (SDMX..)								
Coating type					PVD		CVD	PVD		PVD		CVD	
Cutting material designation					BK8425		BK6435	BK7740		BK2740		BK6110	
Cutting material code					8425		6435	7740		2740		6110	
Material	Material example, material code DIN	Strength Rm (N/mm²)	Hardness HB	Material group	dry	wet	dry	wet		dry	wet	dry + wet	
non-alloy steels	1.0037 (S235JR) 1.0715 (11SMn30) 1.0044 (S2575JR)	≤500		1.0	100-220	70-180							
non-alloy / low alloy steels	1.0050 (E295) 1.0535 (C55) 1.7131 (16MnCr5)	500-900		2.0	80-220	70-170							
lead alloys	1.0718 (11SMnPb30)	<500		2.1	100-220	70-170							
low alloy steels	1.7225 (42CrMo4) 1.1221 (C60E)	>900		P 3.0	80-200	70-160							
high alloy steels	1.2341 (6CrMo15-5) 1.2601 (X165CrMoV12)	>900		4.0	80-170	70-150							
HSS				4.1	80-140	60-120							
super alloys: Inconel, Hastelloy, Nimonic, stc.	2.4668 (NiuCr19Fe19Nb5Mo3) 2.4631 (Nimonic 80A)		250	5.0			25-75						
titanium, titanium alloys	3.7115 (TiAl5Sn2.5)	400		S 5.1				25-75					
stainless steels	1.4306 (X2CrNi19-11) 1.4401 (X5CrNiMo17-12-2)	≤600		6.0						160-250	60-140		
stainless steels	1.4511 (X3CrNb17) 1.4571 (X10CrNiMoTi17-12-2)	<900		M 6.1						150-220	60-140		
stainless / fireproof steels	1.4713 (X10CrAlSi7) 1.4862 (X8NiCrSi38-18)	>900		7.0						100-250	60-140		
gray cast iron	0.6025 (EN-GJL-250) 0.6035 (EN-GJL-350)		180	8.0								140-350	
alloy gray cast iron	0.6660 (GGL-NiCr20 2)		250	8.1								120-320	
spheroidal graphite cast iron, ferritic	0.7040 (EN-GJS-400-15)	≤600	130	9.0								100-250	
spheroidal graphite cast iron, ferritic/perlitic	0.7050 (EN-GJS-500-7) 0.7055 (GJS-55) 0.8055 (GTW-55)		230	K 9.1								120-320	
spheroidal graphite cast iron, perlitic, malleable iron	0.7060 (EN-GJS-600-3) 0.8165 (GTS-65)	>600	250	10.0								120-320	
alloyed spheroidal graphite cast iron	0.7661 (EN-GJSA-XNiCr20-2)		200	10.1								120-320	
vermicular cast iron	EN-GJV Ti < 0,2 EN-GJV Ti > 0,2		300	10.2								100-250	
copper alloy, brass, lead-alloy bronze, lead bronze: good cut	2.0375 (CuZn36Pb3) 2.1182.01 (G-CuPb15Sn)		90	12.0									
copper alloy, brass, bronze: average cut	2.0550 (CuZn40Al2) 2.0060 (E-Cu57)		100	12.1									
wrought aluminium alloys	3.3315 (AlMg1) 3.0517 (AlMnCu)		60	N 13.0									
cast alum. alloy: Si-content <10% magnesium alloy	3.3561 (G-AlMg5) 3.2373.61 (G-AlSi9Mg wa)		75	13.1									
cast alum.alloy: Si-content >10%	3.2381.01 (G-AlSi10Mg)		100	14.0									
hardened steels < 45 HRC		1400		H 15.0									
hardened steels > 45 HRC		1800		16.0									

Cutting speed v_c can be increased by reducing the width of cutting edge engagement a_e. Further cutting parameters see page 172-173.

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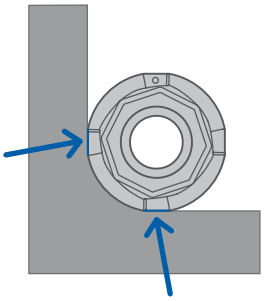
Copy milling cutter Q55-KCM | RP..1204MO..

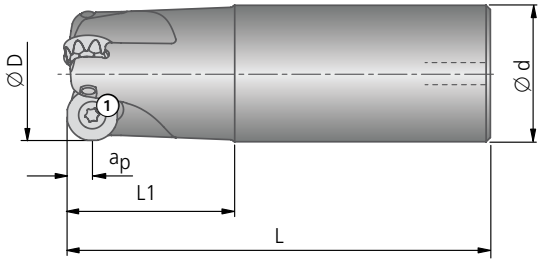
Material P M K N S H

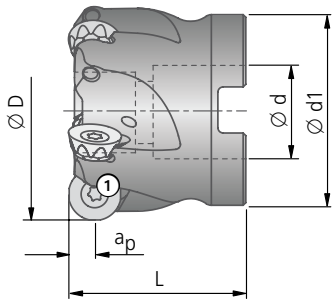
DIN 1835 T1 A

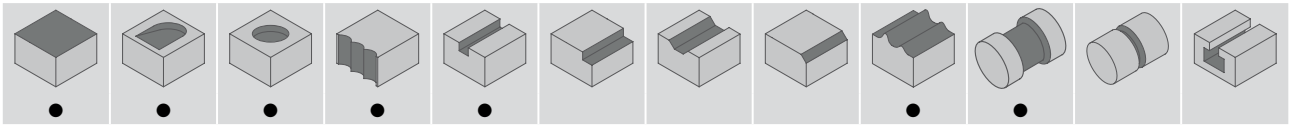
DIN 8030 A

High-quality surface finish thanks to wiper geometry.
In order to guarantee the function of the wiper geometry, the milling cutter must be fully equipped.









Z = effective number of teeth for calculating v_f

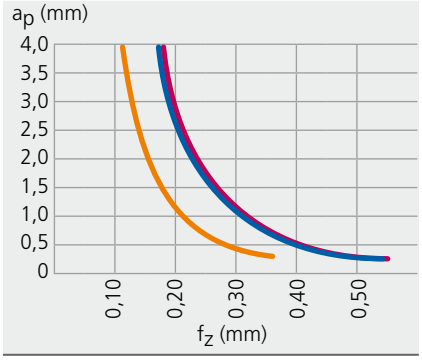
End milling cutter										
Ø D	Order No.	Ød$_{h6}$	L	L1	a_p max.	Spindle speed max. rpm	Z	kg	Clamping screw TORX ® ① Order No. Article	Indexable insert Order No. ISO Code
24,75	**F55 14110**	25	85,87	29,87	6	25.000	2		**N00 57910** S4085-T15-55° 4,25 Nm	**Q55 42260.11....** **Q55 42460.11....** RP.. 12
	F55 15110		115,87	59,87		18.000				
31,75	**F55 14130**	32	99,87	39,87	6	19.000	3			
	F55 15130		129,87	69,87		17.000				

Arbor milling cutter											
Ø D	Order No.	Ø d^{H7}	Ø d1	L	a_p max.	Spindle speed max. rpm	Z	kg	Differential screw Order No.	Clamping screw ① Order No. Article	Indexable insert Order No. ISO Code
39,75	**F55 16150**	16	38	39,87	6	15.900	4		**L02 30980** 15Nm	**N00 57890** S40110-15IP 4,3 Nm	**Q55 42260.11....** **Q55 42460.11....** RP.. 12
49,75	**F55 16170**	22	43	39,87	6	12.700	5		–		
62,75	**F55 16190**	22	48	39,87	6	10.100	6		–		
79,75	**F55 16210**	27	58	49,87	6	7.950	8		–		
99,75	**F55 16230**	32	78	49,87	6	6.350	10		–		

Supply includes: Milling cutter with clamping screws ① (pre-fitted with high-temperature paste, order no.: 47001 00105).
Supply includes arbor milling cutter Ø 40 mm:
Milling cutter with clamping screws ① (pre-fitted with high-temperature paste, order no.: 47001 00105) and differential screw.
Please order inserts separately. Screwdriver see chapter 8.
Recommendation: Change the clamping screws regularly to ensure the smooth running of the milling cutter.

With decreasing cutting depth the tooth feed can be increased.
Example given for a_e/D > 0,3-1

Q55 42



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● very good | ◐ good

Feed f_z (mm/tooth) at a_e/D									
	Order No.	ISO code	Material group	p.ex. mill dia. 100mm, engagement width a_e 10 mm = $\frac{a_e}{D} = \frac{10}{100} = 0,1$				Cutting depth a_p mm
				≤ 0,1	> 0,1 - 0,2	> 0,2 - 0,3	> 0,3	
medium roughing operations	Q55 42260.118425	RPMX1204MO-26 BK8425	P	0,21 **0,33** 0,46	0,15 **0,24** 0,33	0,13 **0,20** 0,27	0,10 **0,17** 0,24	6
super alloys	Q55 42460.116435	RPHX1204MO-46 BK6435	S	0,21 **0,26** 0,30	0,15 **0,18** 0,21	0,12 **0,135** 0,15	0,10 **0,115** 0,13	6
titanium / titanium alloys	Q55 42460.117740	RPHX1204MO-46 BK7740						
	Q55 42260.116110	RPMX1204MO-26 BK6110	K	0,21 **0,33** 0,46	0,15 **0,24** 0,33	0,13 **0,20** 0,27	0,10 **0,17** 0,24	6

Cutting speed v_c (m/min)									
				Indexable insert	Q55.. (RP..1204MO..)				
				Coating type	PVD	CVD	PVD	CVD	
				Cutting material designation	BK8425	BK6435	BK7740	BK6110	
				Cutting material code	8425	6435	7740	6110	
Material	Material example, material code DIN	Strength Rm (N/mm²)	Hardness HB	Material group	dry	wet	dry	wet	dry + wet
non-alloy steels	1.0037 (S235JR) 1.0715 (11SMn30) 1.0044 (S2575JR)	≤500		1.0	100-220	70-180			
non-alloy / low alloy steels	1.0050 (E295) 1.0535 (C55) 1.7131 (16MnCr5)	500-900		2.0	80-220	70-170			
lead alloys	1.0718 (11SMnPb30)	<500		2.1	100-220	70-170			
low alloy steels	1.7225 (42CrMo4) 1.1221 (C60E)	>900		P 3.0	80-200	70-160			
high alloy steels	1.2341 (6CrMo15-5) 1.2601 (X165CrMoV12)	>900		4.0	80-170	70-150			
HSS				4.1	80-140	60-120			
super alloys: Inconel, Hastelloy, Nimonic, stc.	2.4668 (NiuCr19Fe19Nb5Mo3) 2.4631 (Nimonic 80A)		250	5.0			25-75		
titanium, titanium alloys	3.7115 (TiAl5Sn2.5)	400		S 5.1				25-75	
stainless steels	1.4306 (X2CrNi19-11) 1.4401 (X5CrNiMo17-12-2)	≤600		6.0					
stainless steels	1.4511 (X3CrNb17) 1.4571 (X10CrNiMoTi17-12-2)	<900		M 6.1					
stainless / fireproof steels	1.4713 (X10CrAlSi7) 1.4862 (X8NiCrSi38-18)	>900		7.0					
gray cast iron	0.6025 (EN-GJL-250) 0.6035 (EN-GJL-350)		180	8.0					140-350
alloy gray cast iron	0.6660 (GGL-NiCr20 2)		250	8.1					120-320
spheroidal graphite cast iron, ferritic	0.7040 (EN-GJS-400-15)	≤600	130	9.0					100-250
spheroidal graphite cast iron, ferritic/perlitic	0.7050 (EN-GJS-500-7) 0.7055 (GJS-55) 0.8055 (GTW-55)		230	K 9.1					120-320
spheroidal graphite cast iron, perlitic, malleable iron	0.7060 (EN-GJS-600-3) 0.8165 (GTS-65)	>600	250	10.0					120-320
alloyed spheroidal graphite cast iron	0.7661 (EN-GJSA-XNiCr20-2)		200	10.1					120-320
vermicular cast iron	EN-GJV Ti < 0,2 EN-GJV Ti > 0,2		300	10.2					100-250
copper alloy, brass, lead-alloy bronze, lead bronze: good cut	2.0375 (CuZn36Pb3) 2.1182.01 (G-CuPb15Sn)		90	12.0					
copper alloy, brass, bronze: average cut	2.0550 (CuZn40Al2) 2.0060 (E-Cu57)		100	12.1					
wrought aluminium alloys	3.3315 (AlMg1) 3.0517 (AlMnCu)		60	N 13.0					
cast alum. alloy: Si-content <10% magnesium alloy	3.3561 (G-AlMg5) 3.2373.61 (G-AlSi9Mg wa)		75	13.1					
cast alum.alloy: Si-content >10%	3.2381.01 (G-AlSi10Mg)		100	14.0					
hardened steels < 45 HRC		1400		15.0					
hardened steels > 45 HRC		1800		H 16.0					

Cutting speed v_c can be increased by reducing the width of cutting edge engagement a_e. Further cutting parameters see page 172-173.

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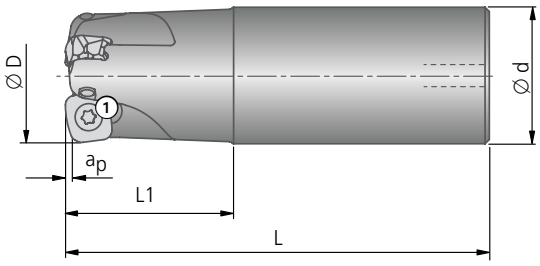
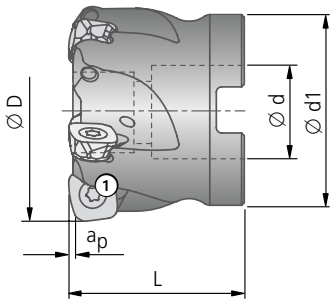
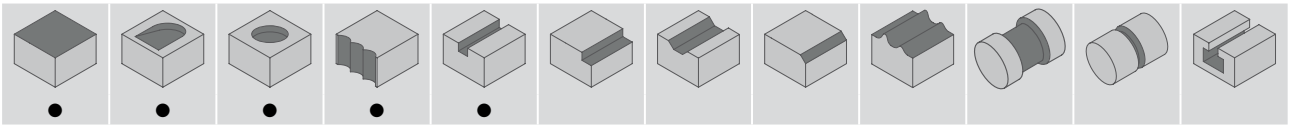
Copy milling cutter Q55-KCM | EOMT..







Z = effective number of teeth for calculating v_f

End milling cutter										
Ø D	Order No.	Ød_{h6}	L	L1	a_p max.	Spindle speed max. rpm	Z	kg	Clamping screw TORX ® ① Order No. Article	Indexable insert Order No. ISO Code
31,7	**F55 14130**	32	99,5	39,5	1,5	19.000	3		**N00 57910** S4085-T15-55° 4,25 Nm	**Q47 34..** EOMT
	F55 15130		129,5	69,5		17.000				

Arbor milling cutter											
Ø D	Order No.	Ø d^{H7}	Ø d1	L	a_p max.	Spindle speed max. rpm	Z	kg	Differential screw Order No.	Clamping screw ① Order No. Article	Indexable insert Order No. ISO Code
39,7	**F55 16150**	16	38	39,5	1,5	15.900	4		**L02 30980** 15Nm	**N00 57890** S40110-15IP 4,3 Nm	**Q47 34..** EOMT
49,7	**F55 16170**	22	43	39,5	1,5	12.700	5		–		
62,7	**F55 16190**	22	48	39,5	1,5	10.100	6		–		
79,7	**F55 16210**	27	58	49,5	1,5	7.950	8		–		
99,7	**F55 16230**	32	78	49,5	1,5	6.350	10		–		

Supply includes: Milling cutter with clamping screws ① (pre-fitted with high-temperature paste, order no.: 47001 00105).
Supply includes arbor milling cutter Ø 40 mm:
Milling cutter with clamping screws ① (pre-fitted with high-temperature paste, order no.: 47001 00105) and differential screw.
Please order inserts separately. Screwdriver see chapter 8.
Recommendation: Change the clamping screws regularly to ensure the smooth running of the milling cutter.

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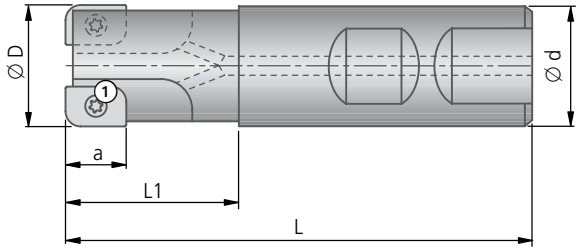
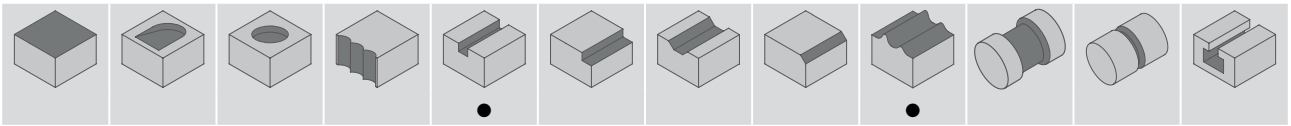
Feed f_z (mm/tooth) at a_e/D												
	Order No.	ISO code	Material group	p.ex. mill dia. 100mm, engagement width a_e 10 mm = $\frac{a_e}{D} = \frac{10}{100} = 0,1$								Cutting depth a_p mm
				≤ 0,1			> 0,1 - 0,2			> 0,2 - 0,3			> 0,3			
medium roughing operations	Q47 34210.168425	EOMT120416-21 BK8425	P	0,83	**1,62**	2,41	0,60	**1,17**	1,74	0,50	**0,97**	1,45	0,41	**0,84**	1,28	1,5
precision-machining and finishing	Q47 34210.162740	EOMT120416-21 BK2740	M	0,83	**1,16**	1,48	0,60	**0,83**	1,07	0,50	**0,70**	0,89	0,41	**0,60**	0,79	1,5

Cutting speed v_c (m/min)								
Indexable insert					Q47.. (EOMT..)			
Coating type					PVD		PVD	
Cutting material designation					BK8425		BK2740	
Cutting material code					8425		2740	
Material	Material example, material code DIN	Strength Rm (N/mm²)	Hardness HB	Material group	dry	wet	dry	wet
non-alloy steels	1.0037 (S235JR) 1.0715 (11SMn30) 1.0044 (S2575JR)	≤500		1.0	100-220	70-180		
non-alloy / low alloy steels	1.0050 (E295) 1.0535 (C55) 1.7131 (16MnCr5)	500-900		2.0	80-220	70-170		
lead alloys	1.0718 (11SMnPb30)	<500		2.1	100-220	70-170		
low alloy steels	1.7225 (42CrMo4) 1.1221 (C60E)	>900		P 3.0	80-200	70-160		
high alloy steels	1.2341 (6CrMo15-5) 1.2601 (X165CrMoV12)	>900		4.0	80-170	70-150		
HSS				4.1	80-140	60-120		
super alloys: Inconel, Hastelloy, Nimonic, stc.	2.4668 (NiuCr19Fe19Nb5Mo3) 2.4631 (Nimonic 80A)		250	S 5.0				
titanium, titanium alloys	3.7115 (TiAl5Sn2.5)	400		5.1				
stainless steels	1.4306 (X2CrNi19-11) 1.4401 (X5CrNiMo17-12-2)	≤600		6.0			160-250	60-140
stainless steels	1.4511 (X3CrNb17) 1.4571 (X10CrNiMoTi17-12-2)	<900		M 6.1			150-220	60-140
stainless / fireproof steels	1.4713 (X10CrAlSi7) 1.4862 (X8NiCrSi38-18)	>900		7.0			100-250	60-140
gray cast iron	0.6025 (EN-GJL-250) 0.6035 (EN-GJL-350)		180	8.0				
alloy gray cast iron	0.6660 (GGL-NiCr20 2)		250	8.1				
spheroidal graphite cast iron, ferritic	0.7040 (EN-GJS-400-15)	≤600	130	9.0				
spheroidal graphite cast iron, ferritic/perlitic	0.7050 (EN-GJS-500-7) 0.7055 (GJS-55) 0.8055 (GTW-55)		230	K 9.1				
spheroidal graphite cast iron, perlitic, malleable iron	0.7060 (EN-GJS-600-3) 0.8165 (GTS-65)	>600	250	10.0				
alloyed spheroidal graphite cast iron	0.7661 (EN-GJSA-XNiCr20-2)		200	10.1				
vermicular cast iron	EN-GJV Ti < 0,2 EN-GJV Ti > 0,2		300	10.2				
copper alloy, brass, lead-alloy bronze, lead bronze: good cut	2.0375 (CuZn36Pb3) 2.1182.01 (G-CuPb15Sn)		90	12.0				
copper alloy, brass, bronze: average cut	2.0550 (CuZn40Al2) 2.0060 (E-Cu57)		100	12.1				
wrought aluminium alloys	3.3315 (AlMg1) 3.0517 (AlMnCu)		60	N 13.0				
cast alum. alloy: Si-content <10% magnesium alloy	3.3561 (G-AlMg5) 3.2373.61 (G-AlSi9Mg wa)		75	13.1				
cast alum.alloy: Si-content >10%	3.2381.01 (G-AlSi10Mg)		100	14.0				
hardened steels < 45 HRC		1400		15.0				
hardened steels > 45 HRC		1800		H 16.0				

Cutting speed v_c can be increased by reducing the width of cutting edge engagement a_e. Further cutting parameters see page 172-173.

Copy milling cutter Q36





Y = number of inserts | Z = effective number of teeth for calculating v_f

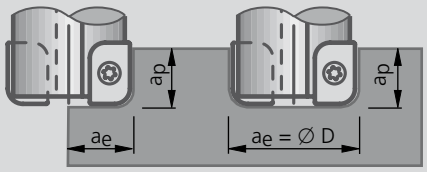
End milling cutter										Indexable insert
Ø D	Order No.	Ød$_{h6}$	L	L1	a_p max	Y	Z	kg	Clamping screw ① Order No. Article	Order No. ISO Code
25	**F51 50620**	25	100	32	11	3	3	0,30	**N00 57341** S3066-9IP 2,25 Nm	**Q36 24000.04....** APKT 120316PD-R **Q36 24000.05....** APKT 120324PD-R **Q36 24000.06....** APKT 120332PD-R
32	**F51 50660**	25	100	42	11	4	4	0,37		

For further details on selecting the cutting material, see page 159. Enter cutting material code ▲

Supply includes: Milling cutter with clamping screws ① (pre-fitted with high-temperature paste, order no.: 47001 00105). Please order insert separately. Screwdriver see chapter 8.

Recommendation: Change the clamping screws regularly to ensure the smooth running of the milling cutter.

p.ex. mill dia. 100mm, engagement width a_e 10mm = $\frac{a_e}{D} = \frac{10}{100} = 0,1$



		Feed f_z (mm/tooth) at a_e/D			
		≤ 0,1	> 0,1 - 0,2	> 0,2 - 0,3	> 0,3
P	1.0 2.0 2.1	0,13 **0,26** 0,39	0,09 **0,19** 0,28	0,08 **0,15** 0,23	0,06 **0,13** 0,21
P	3.0 4.0	0,13 **0,23** 0,32	0,09 **0,16** 0,23	0,08 **0,14** 0,19	0,06 **0,12** 0,17
S					
M		0,13 **0,19** 0,26	0,09 **0,14** 0,19	0,08 **0,12** 0,15	0,06 **0,10** 0,14
K		0,23 **0,39** 0,55	0,16 **0,28** 0,39	0,14 **0,23** 0,33	0,11 **0,20** 0,29
N		0,23 **0,53** 0,84	0,16 **0,38** 0,60	0,14 **0,32** 0,50	0,11 **0,28** 0,45
H					

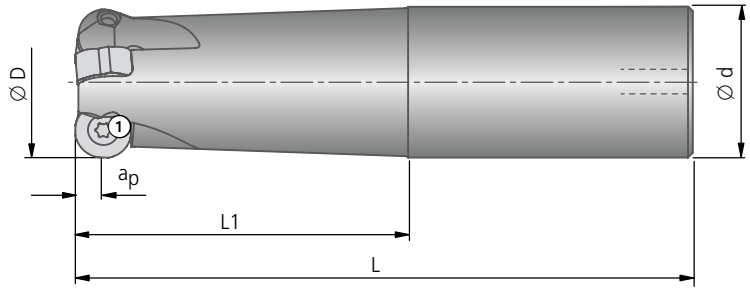
Cutting speed v_c (m/min)

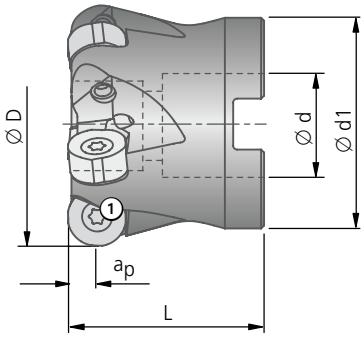
					Indexable insert	Q36.. (APKT..)		
					Coating type	–	CVD	CVD	PVD
					Cutting material designation	K10	BK64	BK68	BK8425
					Cutting material code	**21**	**64**	**68**	**8425**
Material	Material example, material code DIN	Strength Rm (N/mm²)	Hardness HB	Material group					
non-alloy steels	1.0037 (S235JR) 1.0715 (11SMn30) 1.0044 (S2575JR)	≤500		1.0			100 - 180	90 - 160	100 - 180
non-alloy / low alloy steels	1.0050 (E295) 1.0535 (C55) 1.7131 (16MnCr5)	500-900		2.0			100 - 180	90 - 160	100 - 180
lead alloys	1.0718 (11SMnPb30)	<500		2.1	P		100 - 180	90 - 160	100 - 180
low alloy steels: heat resistant structural, heat treated, nitride and tools steels	1.7225 (42CrMo4) 1.1221 (C60E)	>900		3.0			60 - 120	50 - 110	70 - 130
high alloy steels	1.2341 (6CrMo15-5) 1.2601 (X165CrMoV12)	>900		4.0			60 - 120	50 - 110	70 - 130
HSS				4.1					
super alloys: Inconel, Hastelloy, Nimonic, stc.	2.4668 (NiuCr19Fe19Nb5Mo3) 2.4631 (Nimonic 80A)		250	5.0	S				
titanium, titanium alloys	3.7115 (TiAl5Sn2.5)	400		5.1					
stainless steels	1.4306 (X2CrNi19-11) 1.4401 (X5CrNiMo17-12-2)	≤600		6.0			60 - 140		80 - 160
stainless steels	1.4511 (X3CrNb17) 1.4571 (X10CrNiMoTi17-12-2)	<900		6.1	M		60 - 140		80 - 160
stainless / fireproof steels	1.4713 (X10CrAlSi7) 1.4862 (X8NiCrSi38-18)	>900		7.0			60 - 140		80 - 160
gray cast iron	0.6025 (EN-GJL-250) 0.6035 (EN-GJL-350)		180	8.0		60 - 150		60 - 140	140 - 200
alloy gray cast iron	0.6660 (GGL-NiCr20 2)		250	8.1		60 - 150		60 - 140	140 - 200
spheroidal graphite cast iron, ferritic	0.7040 (EN-GJS-400-15)	≤600	130	9.0		60 - 150		60 - 140	140 - 200
spheroidal graphite cast iron, ferritic/perlitic	0.7050 (EN-GJS-500-7) 0.7055 (GJS-55) 0.8055 (GTW-55)		230	9.1	K	60 - 150		60 - 140	140 - 200
spheroidal graphite cast iron, perlitic, malleable iron	0.7060 (EN-GJS-600-3) 0.8165 (GTS-65)	>600	250	10.0		60 - 150		60 - 140	140 - 200
alloyed spheroidal graphite cast iron	0.7661 (EN-GJSA-XNiCr20-2)		200	10.1		60 - 150		60 - 140	140 - 200
vermicular cast iron	EN-GJV Ti < 0,2 EN-GJV Ti > 0,2		300	10.2		60 - 100			
copper alloy, brass, lead-alloy bronze, lead bronze: good cut	2.0375 (CuZn36Pb3) 2.1182.01 (G-CuPb15Sn)		90	12.0		200 - 500			
copper alloy, brass, bronze: average cut	2.0550 (CuZn40Al2) 2.0060 (E-Cu57)		100	12.1		200 - 500			
wrought aluminium alloys	3.3315 (AlMg1) 3.0517 (AlMnCu)		60	13.0	N	200 - 500			
cast alum. alloy: Si-content <10% magnesium alloy	3.3561 (G-AlMg5) 3.2373.61 (G-AlSi9Mg wa)		75	13.1		200 - 500			
cast alum.alloy: Si-content >10%	3.2381.01 (G-AlSi10Mg)		100	14.0		200 - 500			
hardened steels < 45 HRC		1400		15.0	H				
hardened steels > 45 HRC		1800		16.0					

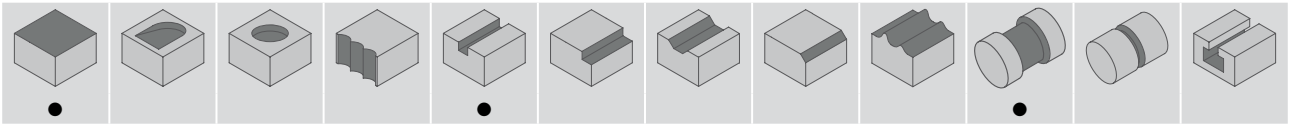
Cutting speed v_c can be increased by reducing the width of cutting edge engagement a_e

Important: See chapter 8 for more application details and safety notes !

Copy milling cutter Q75-KCM







Z = effective number of teeth for calculating v_f

End milling cutter										
Ø D	Order No.	Ød_{h6}	L	L1	a_p max.	Spindle speed max. rpm	Z	kg	Clamping screw ① Order No. Article	Indexable insert Order No. ISO Code
32	**F55 20130**	32	131	70	4,5	19.000	3		**N00 57890** S40110-15IP 4,3 Nm	**Q75 42..** RNKU | ROHU
	F55 21130		165			17.000				

Arbor milling cutter											
Ø D	Order No.	Ø d^{H7}	Ø d1	L	a_p max.	Spindle speed max. rpm	Z	kg	Differential screw Order No.	Clamping screw ① Order No. Article	Indexable insert Order No. ISO Code
40	**F55 00150**	16	38	40	4,5	15.900	4		**L02 30980** 15Nm	**N00 57890** S40110-15IP 4,3 Nm	**Q75 42..** RNKU | ROHU
50	**F55 00170**	22	43	40	4,5	12.700	5		–		
63	**F55 00190**	22	48	40	4,5	10.100	6	0,43	–		
80	**F55 00210**	27	58	50	4,5	7.950	8		–		
100	**F55 00230**	32	78	50	4,5	6.350	10		–		

Supply includes: Milling cutter with clamping screws ① (pre-fitted with high-temperature paste, order no.: 47001 00105).

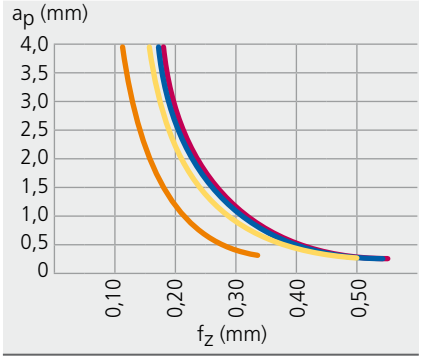
Supply includes arbor milling cutter Ø 40 mm:
Milling cutter with clamping screws ① (pre-fitted with high-temperature paste, order no.: 47001 00105) and differential screw.

Please order inserts separately. Screwdriver see chapter 8.

Recommendation: Change the clamping screws regularly to ensure the smooth running of the milling cutter.

With decreasing cutting depth the tooth feed can be increased.
Example given for a_e/D > 0,3-1

Q75 42



● very good | ◐ good

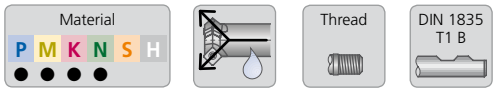
Feed f_z (mm/tooth) at a_e/D									
	Order No.	ISO code	Material group	p.ex. mill dia. 100mm, engagement width a_e 10 mm = $\frac{a_e}{D} = \frac{10}{100} = 0,1$				Cutting depth a_p mm
				≤ 0,1	> 0,1 - 0,2	> 0,2 - 0,3	> 0,3	
medium roughing operations	Q75 42010.008425	RNKU1204MO-01 BK8425	P	0,21 **0,33** 0,46	0,15 **0,24** 0,33	0,13 **0,20** 0,27	0,10 **0,17** 0,24	4,5
super alloys	Q75 42250.036435	ROHU1204MO-25 BK6435	S	0,21 **0,26** 0,30	0,15 **0,18** 0,21	0,12 **0,135** 0,15	0,10 **0,115** 0,13	4,5
titanium / titanium alloys	Q75 42250.037740	ROHU1204MO-25 BK7740						
precision-machining and finishing	Q75 42210.032740	ROHU1204MO-21 BK2740	M	0,21 **0,33** 0,45	0,15 **0,24** 0,32	0,12 **0,18** 0,23	0,10 **0,15** 0,19	4,5
	Q75 42050.006110	RNKU1204MO-05 BK6110	K	0,21 **0,33** 0,46	0,15 **0,24** 0,33	0,13 **0,20** 0,27	0,10 **0,17** 0,24	4,5

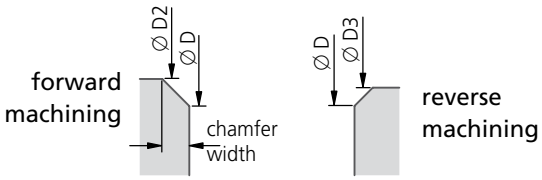
Cutting speed v_c (m/min)												
				Indexable insert	Q75.. (RNKU.. / ROHU..)							
				Coating type	PVD		CVD	PVD	PVD		CVD	
				Cutting material designation	BK8425		BK6435	BK7740	BK2740		BK6110	
				Cutting material code	8425		6435	7740	2740		6110	
Material	Material example, material code DIN	Strength Rm (N/mm²)	Hardness HB	Material group	dry	wet	dry	wet	dry	wet	dry + wet	
non-alloy steels	1.0037 (S235JR) 1.0715 (11SMn30) 1.0044 (S2575JR)	≤500		1.0	100-220	70-180						
non-alloy / low alloy steels	1.0050 (E295) 1.0535 (C55) 1.7131 (16MnCr5)	500-900		2.0	80-220	70-170						
lead alloys	1.0718 (11SMnPb30)	<500		2.1	100-220	70-170						
low alloy steels	1.7225 (42CrMo4) 1.1221 (C60E)	>900		P 3.0	80-200	70-160						
high alloy steels	1.2341 (6CrMo15-5) 1.2601 (X165CrMoV12)	>900		4.0	80-170	70-150						
HSS				4.1	80-140	60-120						
super alloys: Inconel, Hastelloy, Nimonic, stc.	2.4668 (NiuCr19Fe19Nb5Mo3) 2.4631 (Nimonic 80A)		250	5.0			25-75					
titanium, titanium alloys	3.7115 (TiAl5Sn2.5)	400		S 5.1				25-75				
stainless steels	1.4306 (X2CrNi19-11) 1.4401 (X5CrNiMo17-12-2)	≤600		6.0					160-250	60-140		
stainless steels	1.4511 (X3CrNb17) 1.4571 (X10CrNiMoTi17-12-2)	<900		M 6.1					150-220	60-140		
stainless / fireproof steels	1.4713 (X10CrAlSi7) 1.4862 (X8NiCrSi38-18)	>900		7.0					100-250	60-140		
gray cast iron	0.6025 (EN-GJL-250) 0.6035 (EN-GJL-350)		180	8.0							140-350	
alloy gray cast iron	0.6660 (GGL-NiCr20 2)		250	8.1							120-320	
spheroidal graphite cast iron, ferritic	0.7040 (EN-GJS-400-15)	≤600	130	9.0							100-250	
spheroidal graphite cast iron, ferritic/perlitic	0.7050 (EN-GJS-500-7) 0.7055 (GJS-55) 0.8055 (GTW-55)		230	K 9.1							120-320	
spheroidal graphite cast iron, perlitic, malleable iron	0.7060 (EN-GJS-600-3) 0.8165 (GTS-65)	>600	250	10.0							120-320	
alloyed spheroidal graphite cast iron	0.7661 (EN-GJSA-XNiCr20-2)		200	10.1							120-320	
vermicular cast iron	EN-GJV Ti < 0,2 EN-GJV Ti > 0,2		300	10.2							100-250	
copper alloy, brass, lead-alloy bronze, lead bronze: good cut	2.0375 (CuZn36Pb3) 2.1182.01 (G-CuPb15Sn)		90	12.0								
copper alloy, brass, bronze: average cut	2.0550 (CuZn40Al2) 2.0060 (E-Cu57)		100	12.1								
wrought aluminium alloys	3.3315 (AlMg1) 3.0517 (AlMnCu)		60	N 13.0								
cast alum. alloy: Si-content <10% magnesium alloy	3.3561 (G-AlMg5) 3.2373.61 (G-AlSi9Mg wa)		75	13.1								
cast alum.alloy: Si-content >10%	3.2381.01 (G-AlSi10Mg)		100	14.0								
hardened steels < 45 HRC		1400		15.0								
hardened steels > 45 HRC		1800		H 16.0								

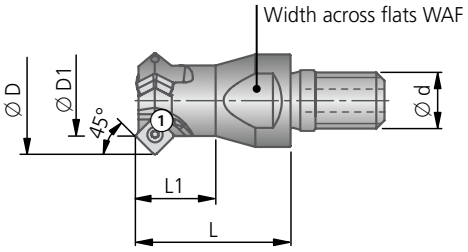
Cutting speed v_c can be increased by reducing the width of cutting edge engagement a_e. Further cutting parameters see page 172-173.

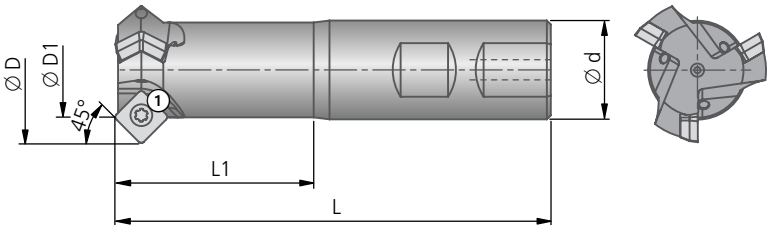
KOMET® Quatron *Chamfer* Ø 12 – 44 mm

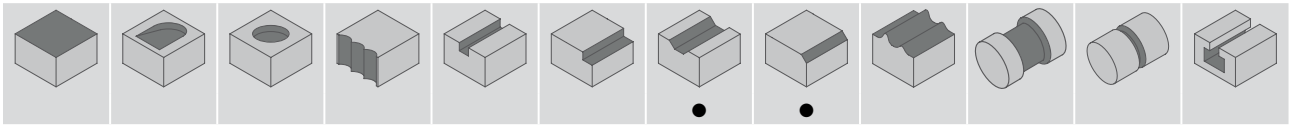
Chamfer milling cutter











Z = effective number of teeth for calculating v_f

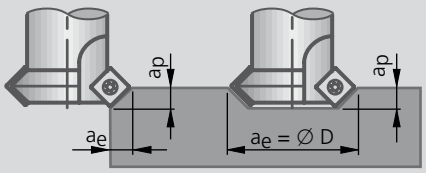
Screw-in cutter															
Ø D	Ø D1	Chamfering from slot width forward Ø D2	Chamfering from slot width reverse Ø D3	Chamfer width max.	Order No.	Ø d	L	L1	Spindle speed max. rpm	Width across flats WAF	Tightening torque Nm	Z	kg	Clamping screw Order No. Article	Indexable insert Order No. ISO Code
12	6	6	8	2×45°	**F53 30220**	M10	25	12	38.000	15	40	1	0,03	**N00 56041** S/M2×4,3-6IP 0,62 Nm	**W83 13..** SOEX 05..
17,5	11,5	12	11,5	2×45°	**F53 30230**	M10	30	15	32.000	15	40	2	0,04		
23	17	17	17	3×45°	**F53 30240**	M12	35	18	24.000	17	60	3	0,07	**N00 57553** S/M2,2×5,5-6IP 1,01 Nm	**W83 18..** SOEX 06..
30	22	22	22	4×45°	**F53 30250**	M12	35	35	17.000	17	60	3	0,09	**N00 57571** S/M2,5×6,3-8IP 1,28 Nm	**W83 23..** SOEX 07..
35	25	25	25	5×45°	**F53 30260**	M12	40	40	18.000	17	60	3	0,18	**N00 57261** S3575-15IP 2,8 Nm	**W83 32..** SOEX 09..
44	34	34	34	5×45°	**F53 30270**	M16	40	40	16.000	27	80	3	0,26		

End milling cutter													
Ø D	Ø D1	Chamfering from slot width forward Ø D2	Chamfering from slot width reverse Ø D3	Chamfer width max.	Order No.	Ø d_{h6}	L	L1	Spindle speed max. rpm	Z	kg	Clamping screw Order No. Article	Indexable insert Order No. ISO Code
12	6	6	8	2×45°	**F53 30120**	16	75	17	38.000	1	0,08	**N00 56041** S/M2×4,3-6IP 0,62 Nm	**W83 13..** SOEX 05..
17,5	11,5	12	11,5	2×45°	**F53 30130**	16	82	26	32.000	2	0,09		
23	17	17	17	3×45°	**F53 30140**	20	90	33	24.000	3	0,17	**N00 57553** S/M2,2×5,5-6IP 1,01 Nm	**W83 18..** SOEX 06..
30	22	22	22	4×45°	**F53 30150**	20	95	–	17.000	3	0,22	**N00 57571** S/M2,5×6,3-8IP 1,28 Nm	**W83 23..** SOEX 07..
35	25	25	25	5×45°	**F53 30160**	25	110	50	18.000	3	0,37	**N00 57261** S3575-15IP 2,8 Nm	**W83 32..** SOEX 09..
44	34	34	34	5×45°	**F53 30170**	32	115	50	16.000	3	0,67		

For further details on selecting the cutting material, see page 163.

Supply includes: Milling cutter with clamping screws ① (pre-fitted with high-temperature paste, order no.: 47001 00105).
Please order insert separately. Screwdriver see chapter 8.
Recommendation: Change the clamping screws regularly to ensure the smooth running of the milling cutter.

● very good | ◐ good



	Feed f_z (mm/tooth) at a_e/D											
	≤ 0,1			> 0,1 - 0,2			> 0,2 - 0,3			> 0,3		
P	0,14	**0,20**	0,27	0,10	**0,15**	0,20	0,08	**0,12**	0,16	0,07	**0,11**	0,15
S												
M	0,14	**0,25**	0,36	0,10	**0,18**	0,26	0,08	**0,15**	0,22	0,07	**0,13**	0,19
K	0,14	**0,20**	0,27	0,10	**0,15**	0,20	0,08	**0,12**	0,16	0,07	**0,11**	0,15
N	0,14	**0,20**	0,27	0,10	**0,15**	0,20	0,08	**0,12**	0,16	0,07	**0,11**	0,15
H												

p.ex. mill dia. 100mm, engagement width a_e 10mm $= \frac{a_e}{D} = \frac{10}{100} = 0{,}1$

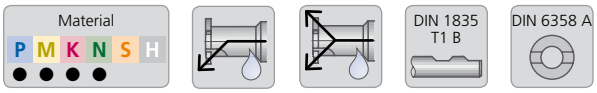
Cutting speed v_c (m/min)

Indexable insert					W83 13_.0.04___ / W83 18_.0.06___ / W83 23_.0.08___ / W83 32_.0.08___			
Topography code					01		21	
Coating type					PVD	PVD	PVD	PVD
Cutting material designation					BK7935	BK8425	BK8430	BK7710
Cutting material code					7935	8425	8430	7710
Material	Material example, material code DIN	Strength Rm (N/mm²)	Hardness HB	Material group				
non-alloy steels	1.0037 (S235JR) 1.0715 (11SMn30) 1.0044 (S275JR)	≤500		1.0	250 - 300	250 - 300	250 - 300	
non-alloy / low alloy steels	1.0050 (E295) 1.0535 (C55) 1.7131 (16MnCr5)	500-900		2.0	200 - 250	200 - 250	200 - 250	
lead alloys	1.0718 (11SMnPb30)	<500		2.1	250 - 300	250 - 300	250 - 300	
low alloy steels: heat resistant structural, heat treated, nitride and tools steels	1.7225 (42CrMo4) 1.1221 (C60E)	>900		P 3.0	150 - 200	150 - 200	150 - 200	
high alloy steels	1.2341 (6CrMo15-5) 1.2601 (X165CrMoV12)	>900		4.0	130 - 180	130 - 180	130 - 180	
HSS				4.1				
super alloys: Inconel, Hastelloy, Nimonic, stc.	2.4668 (NiuCr19Fe19Nb5Mo3) 2.4631 (Nimonic 80A)		250	5.0				
titanium, titanium alloys	3.7115 (TiAl5Sn2.5)	400		S 5.1				
stainless steels	1.4306 (X2CrNi19-11) 1.4401 (X5CrNiMo17-12-2)	≤600		6.0	80 - 120	80 - 160		
stainless steels	1.4511 (X3CrNb17) 1.4571 (X10CrNiMoTi17-12-2)	<900		M 6.1	80 - 120	80 - 160		
stainless / fireproof steels	1.4713 (X10CrAlSi7) 1.4862 (X8NiCrSi38-18)	>900		7.0	80 -120	80 - 160		
gray cast iron	0.6025 (EN-GJL-250) 0.6035 (EN-GJL-350)		180	8.0		140 - 200	80 - 120	
alloy gray cast iron	0.6660 (GGL-NiCr20 2)		250	8.1		140 - 200	80 - 120	
spheroidal graphite cast iron, ferritic	0.7040 (EN-GJS-400-15)	≤600	130	9.0		140 - 200	80 - 120	
spheroidal graphite cast iron, ferritic/perlitic	0.7050 (EN-GJS-500-7) 0.7055 (GJS-55) 0.8055 (GTW-55)		230	K 9.1		140 - 200	80 - 120	
spheroidal graphite cast iron, perlitic, malleable iron	0.7060 (EN-GJS-600-3) 0.8165 (GTS-65)	>600	250	10.0		140 - 200	80 - 120	
alloyed spheroidal graphite cast iron	0.7661 (EN-GJSA-XNiCr20-2)		200	10.1		140 - 200	80 - 120	
vermicular cast iron	EN-GJV Ti < 0,2 EN-GJV Ti > 0,2		300	10.2		–	80 - 120	
copper alloy, brass, lead-alloy bronze, lead bronze: good cut	2.0375 (CuZn36Pb3) 2.1182.01 (G-CuPb15Sn)		90	12.0				120 - 250
copper alloy, brass, bronze: average cut	2.0550 (CuZn40Al2) 2.0060 (E-Cu57)		100	12.1				120 - 250
wrought aluminium alloys	3.3315 (AlMg1) 3.0517 (AlMnCu)		60	N 13.0				120 - 250
cast alum. alloy: Si-content <10% magnesium alloy	3.3561 (G-AlMg5) 3.2373.61 (G-AlSi9Mg wa)		75	13.1				120 - 250
cast alum.alloy: Si-content >10%	3.2381.01 (G-AlSi10Mg)		100	14.0				120 - 250
hardened steels < 45 HRC		1400		15.0				
hardened steels > 45 HRC		1800		H 16.0				

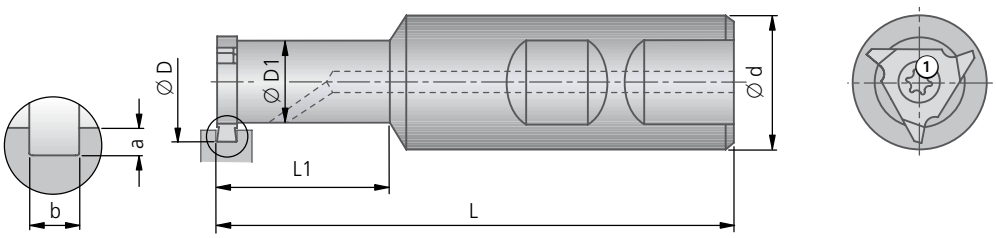
Cutting speed v_c can be increased by reducing the width of cutting edge engagement a_e

Important: See chapter 8 for more application details and safety notes !

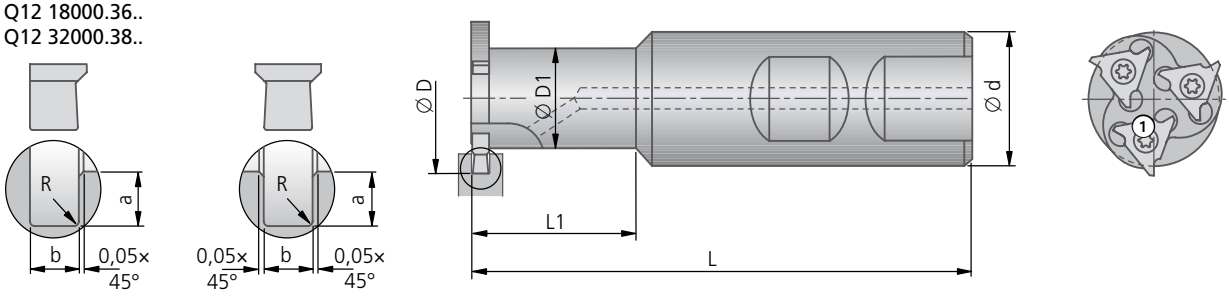
Circular milling cutter



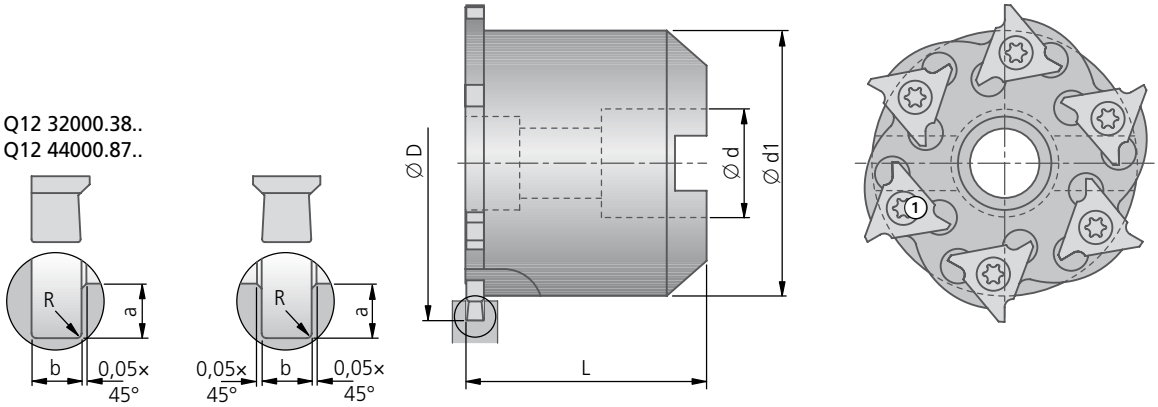
Design:
The dimension b is determined by the slot widths with H13 tolerance for holding rings to DIN 471 and DIN 472; this is the higher tolerance limit for the slot widths which can be produced.

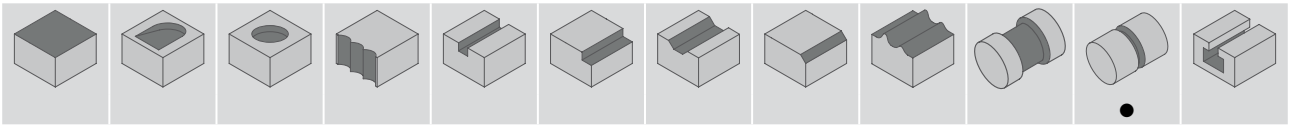


Q12 18000.36..
Q12 32000.38..



Q12 32000.38..
Q12 44000.87..





Y = number of inserts
Z = effective number of teeth for calculating v_f

End milling cutter														
												Clamping screw	Indexable insert .36.. .38..	
Ø D	b^{H13}	a	R	Order No.	$Ød_{h6}$	ØD1	L	L1	Y	Z	kg	Order No. Article	Order No. ISO Code	for b
10	1,1	0,9	–	**F51 70050**	16	8,2	84	24	1	3	0,09	**N00 57221** S2553-7IP 0,9 Nm	**Q12 18000.10..** TPAX1103ZZ R	1,1
16	1,1 1,3 1,6	0,9 1,3 1,4	–	**F51 70080**	16	13	84	24	1	3	0,10	**N00 57281** S3598-15IP 2,8 Nm	**Q12 32000.15..** **Q12 32000.16..** **Q12 32000.17..** TCAX16T3ZZ	1,1 1,3 1,6
25	1,6 1,85	1,0 1,25	0,1 0,1	**F51 70121**	25	20,5	100	42	3	3	0,35	**N00 57221** S2553-7IP 0,9 Nm	**Q12 18000.31..** **Q12 18000.32..** **Q12 18000.33..**	1,6 1,85 2,15
25	2,15 2,65	1,5 1,75	0,1 0,2	**F51 70140**	25	20,5	100	42	3	3	0,30		**Q12 18000.34..** **Q12 18000.36..** TNAX1103ZZ R	2,65 2,65
40	2,65 3,15 4,15	1,75 1,75 2,5	0,2 0,2 0,3	**F51 70201**	32	33	110	49,5	3	3	0,65	**N00 57281** S3598-15IP 2,8 Nm	**Q12 32000.41..** **Q12 32000.42..** **Q12 32000.43..** **Q12 32000.38..** TNAX1604ZZ R	2,65 3,15 4,15 4,15

Arbor milling cutter											Clamping screw	Indexable insert .38.. .87..	
Ø D	b^{H13}	a	R	Order No.	$Ø d^{H7}$	Ø d1	L	Y	Z	kg	Order No. Article	Order No. ISO Code	for b
63	2,65 3,15 4,15	1,75 1,75 2,5	0,2 0,2 0,3	**F51 71031**	16	8,2	84	6	6	0,63	**N00 57281** S3598-15IP 2,8 Nm	**Q12 32000.41..** **Q12 32000.42..** **Q12 32000.43..** **Q12 32000.38..** TNAX1604ZZ R	2,65 3,15 4,15 4,15
80	4,15 4,65 5,15	2,5 3,4 4,0	0,3 0,3 0,3	**F51 71101**	27	68	50	6	6	1,25	**N00 57301** S45100-20IP 6,25 Nm	**Q12 44000.84..** **Q12 44000.85..** **Q12 44000.86..** **Q12 44000.87..** NAX2206ZZ R	4,15 4,65 5,15 5,15

Supply includes: Milling cutter with clamping screws ① (pre-fitted with high-temperature paste, order no.: 47001 00105). Please order insert separately. Screwdriver see chapter 8.

Recommendation: Change the clamping screws regularly to ensure the smooth running of the milling cutter.

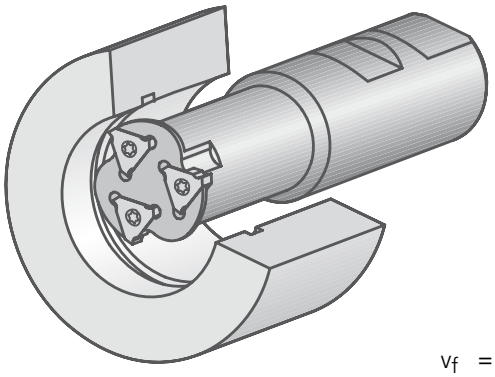
Calculations for circular milling see page 166 | Cutting values for milling: **Page 167.**

Calculations for circular milling

The average chip thickness is determined by considering workpiece and tool geometry data.
The total cutting time must allow for the entry and exit times. Axial "chambering" is also possible with these interpolating milling cutters.

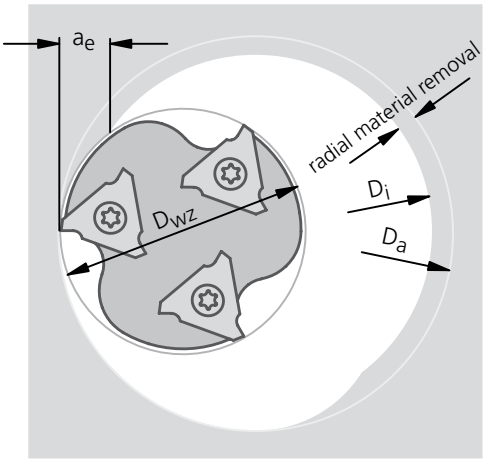
R = workpiece radius in mm
r = milling cutter radius in mm
a_r = radial cutting depth in mm
φ = approach angle in °
h_m = average chip thickness in mm
n = spindle speed in min^{-1}
z = number of teeth (effectively cutting)

Circular milling, internal



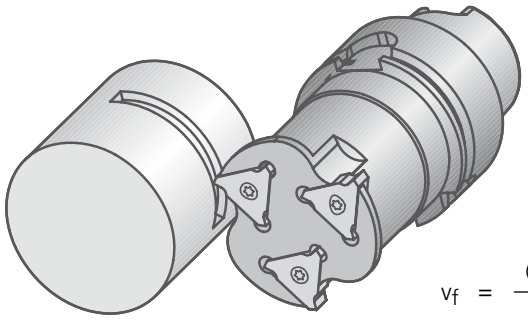
$$a_e = \frac{D_a^2 - D_i^2}{4\,(D_a - D_{wz})}$$

$$v_f = \frac{(D_a - D_{wz}) \times n \times z_{eff} \times f_z}{D_a}$$



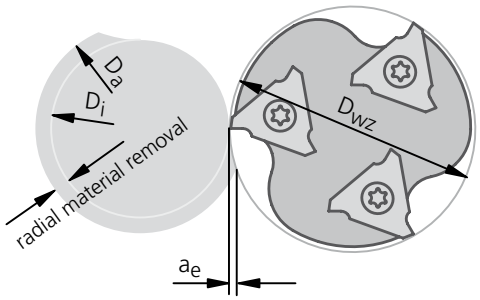
a_e > radial material removal

Circular milling, external



$$a_e = \frac{D_a^2 - D_i^2}{4\,(D_i - D_{wz})}$$

$$v_f = \frac{(D_i - D_{wz}) \times n \times z_{eff} \times f_z}{D_i}$$



a_e < radial material removal

	Feed f_z (mm/tooth) at a_e/D											
	≤ 0,1			> 0,1 - 0,2			> 0,2 - 0,3			> 0,3		
P	0,10	**0,16**	0,23	0,07	**0,12**	0,16	0,06	**0,10**	0,14	0,05	**0,08**	0,12
S												
M	0,10	**0,14**	0,19	0,07	**0,10**	0,14	0,06	**0,09**	0,12	0,05	**0,07**	0,10
K	0,10	**0,19**	0,29	0,07	**0,14**	0,21	0,06	**0,12**	0,17	0,05	**0,10**	0,15
N	0,10	**0,29**	0,48	0,07	**0,21**	0,35	0,06	**0,17**	0,29	0,05	**0,15**	0,26
H												

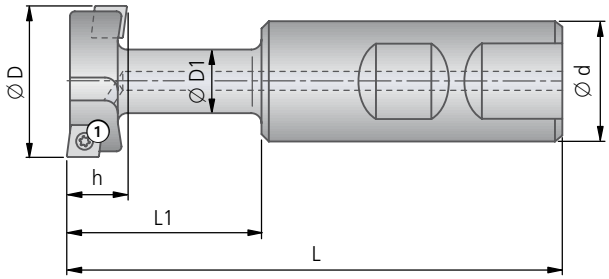
p.ex. mill dia. 100mm, engagement width a_e 10mm $= \frac{a_e}{D} = \frac{10}{100} = 0,1$

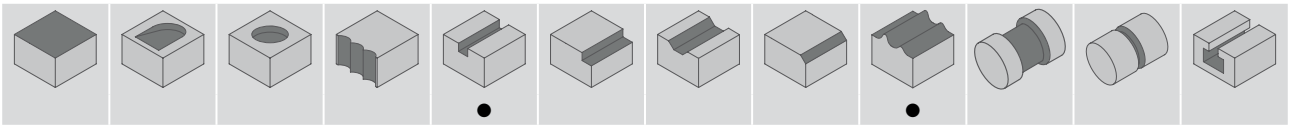
Cutting speed v_c (m/min)							
				Indexable insert	Q12		
				Coating type	–	PVD	PVD
				Cutting material designation	K20	BK2715	BK8425
				Cutting material code	**22**	**2715**	**8425**
Material	Material example, material code DIN	Strength Rm (N/mm²)	Hardness HB	Material group	 .36.. .38.. .87..	 .36.. .38.. .87..	 .36.. .38.. .87..
non-alloy steels	1.0037 (S235JR) 1.0715 (11SMn30) 1.0044 (S2575JR)	≤500		1.0			100-180
non-alloy / low alloy steels	1.0050 (E295) 1.0535 (C55) 1.7131 (16MnCr5)	500-900		2.0			100-180
lead alloys	1.0718 (11SMnPb30)	<500		2.1			100-180
low alloy steels: heat resistant structural, heat treated, nitride and tools steels	1.7225 (42CrMo4) 1.1221 (C60E)	>900		P 3.0			70-130
high alloy steels	1.2341 (6CrMo15-5) 1.2601 (X165CrMoV12)	>900		4.0			70-130
HSS				4.1			
super alloys: Inconel, Hastelloy, Nimonic, stc.	2.4668 (NiuCr19Fe19Nb5Mo3) 2.4631 (Nimonic 80A)		250	5.0			
titanium, titanium alloys	3.7115 (TiAl5Sn2.5)	400		S 5.1			
stainless steels	1.4306 (X2CrNi19-11) 1.4401 (X5CrNiMo17-12-2)	≤600		6.0			80-160
stainless steels	1.4511 (X3CrNb17) 1.4571 (X10CrNiMoTi17-12-2)	<900		M 6.1			80-160
stainless / fireproof steels	1.4713 (X10CrAlSi7) 1.4862 (X8NiCrSi38-18)	>900		7.0			80-160
gray cast iron	0.6025 (EN-GJL-250) 0.6035 (EN-GJL-350)		180	8.0	60-150	140-250	140-200
alloy gray cast iron	0.6660 (GGL-NiCr20 2)		250	8.1	60-150	110-200	140-200
spheroidal graphite cast iron, ferritic	0.7040 (EN-GJS-400-15)	≤600	130	9.0	60-150	130-230	140-200
spheroidal graphite cast iron, ferritic/perlitic	0.7050 (EN-GJS-500-7) 0.7055 (GJS-55) 0.8055 (GTW-55)		230	K 9.1	60-150	110-200	140-200
spheroidal graphite cast iron, perlitic, malleable iron	0.7060 (EN-GJS-600-3) 0.8165 (GTS-65)	>600	250	10.0	60-150	100-180	140-200
alloyed spheroidal graphite cast iron	0.7661 (EN-GJSA-XNiCr20-2)		200	10.1	60-150	100-180	140-200
vermicular cast iron	EN-GJV Ti < 0,2 EN-GJV Ti > 0,2		300	10.2	60-100	90-150	
copper alloy, brass, lead-alloy bronze, lead bronze: good cut	2.0375 (CuZn36Pb3) 2.1182.01 (G-CuPb15Sn)		90	12.0	200-500		
copper alloy, brass, bronze: average cut	2.0550 (CuZn40Al2) 2.0060 (E-Cu57)		100	12.1	200-500		
wrought aluminium alloys	3.3315 (AlMg1) 3.0517 (AlMnCu)		60	N 13.0	200-500		
cast alum. alloy: Si-content <10% magnesium alloy	3.3561 (G-AlMg5) 3.2373.61 (G-AlSi9Mg wa)		75	13.1	200-500		
cast alum.alloy: Si-content >10%	3.2381.01 (G-AlSi10Mg)		100	14.0	200-500		
hardened steels < 45 HRC		1400		15.0			
hardened steels > 45 HRC		1800		H 16.0			

Cutting speed v_c can be increased by reducing the width of cutting edge engagement a_e

Important: See chapter 8 for more application details and safety notes !

T-slot milling cutter





Y = number of inserts | Z = effective number of teeth for calculating v_f

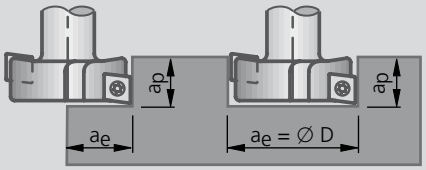
End milling cutter										Clamping screw	Indexable insert
Ø D	Order No.	Ød$_{h6}$	ØD1	h$_{-0,1}$	L	L1	Y	Z	kg	Order No. Article	Order No. ISO Code
17,5	**F51 60081**	16	9	8,0	80	25	2	1	0,09	**N00 57221** S2553-7IP 0,9 Nm	**Q09 13000.0103** **Q09 13000.0122** SPGW050204
20,5	**F51 60101**	16	11	9,0	85	30	2	1	0,10	**N00 57221** S2553-7IP 0,9 Nm	**Q15 18000.018425** **Q15 18000.018440** CPMT060304 **Q15 18000.0261** CPMW060304
23,5	**F51 60121**	25	13	10,0	95	32	2	1	0,26		
30,5	**F51 60151**	25	17	11,6	105	40	4	2	0,30		
37,5	**F51 60191**	32	21	16,0	115	50	4	2	0,53	**N00 57261** S3575-15IP 2,8 Nm	**Q15 32000.048425** **Q15 32000.048440** CPMT09T308 **Q15 32000.0322** CPMW09T308
47,0	**F51 60231**	32	27	20,0	125	60	4	1	0,65		

For further details on selecting the cutting material, see page 169.

Supply includes: Milling cutter with clamping screws ① (pre-fitted with high-temperature paste, order no.: 47001 00105).
Please order insert separately. Screwdriver see chapter 8.

Recommendation: Change the clamping screws regularly to ensure the smooth running of the milling cutter.

● very good | ◐ good



	Feed f_z (mm/tooth) at a_e/D											
	≤ 0,1			> 0,1 - 0,2			> 0,2 - 0,3			> 0,3		
P	0,10	**0,16**	0,23	0,07	**0,12**	0,16	0,06	**0,10**	0,14	0,05	**0,08**	0,12
S												
M	0,10	**0,14**	0,19	0,07	**0,10**	0,14	0,06	**0,09**	0,12	0,05	**0,07**	0,10
K	0,10	**0,19**	0,29	0,07	**0,14**	0,21	0,06	**0,12**	0,17	0,05	**0,10**	0,15
N	0,10	**0,19**	0,29	0,07	**0,14**	0,21	0,06	**0,12**	0,17	0,05	**0,10**	0,15
H												

p.ex. mill dia. 100mm, engagement width a_e 10mm $= \frac{a_e}{D} = \frac{10}{100} = 0{,}1$

Cutting speed v_c (m/min)

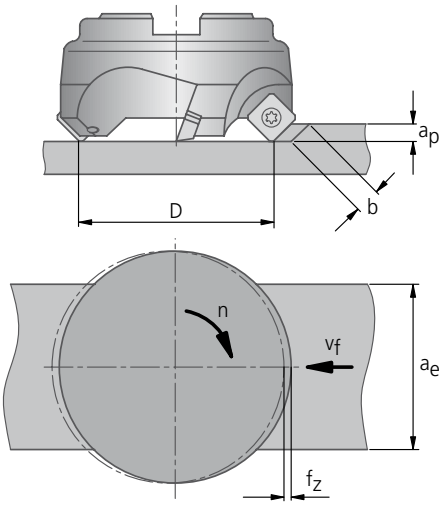
					Indexable insert	Q09		Q15			
					Coating type	–	–	PVD	PVD	CVD	–
					Cutting material designation	P25M	K20	BK8425	BK8440	BK61	K20
					Cutting material code	**03**	**22**	**8425**	**8440**	**61**	**22**
Material	Material example, material code DIN	Strength Rm (N/mm²)	Hardness HB	Material group							
non-alloy steels	1.0037 (S235JR) 1.0715 (11SMn30) 1.0044 (S2575JR)	≤500		1.0		30 - 50		50 - 90	40 - 80		
non-alloy / low alloy steels	1.0050 (E295) 1.0535 (C55) 1.7131 (16MnCr5)	500-900		2.0		30 - 50		50 - 90	40 - 80		
lead alloys	1.0718 (11SMnPb30)	<500		2.1	P	30 - 50		50 - 90	40 - 80		
low alloy steels: heat resistant structural, heat treated, nitride and tools steels	1.7225 (42CrMo4) 1.1221 (C60E)	>900		3.0		20 - 35		35 - 65	30 - 55		
high alloy steels	1.2341 (6CrMo15-5) 1.2601 (X165CrMoV12)	>900		4.0		20 - 35		35 - 65	30 - 55		
HSS				4.1							
super alloys: Inconel, Hastelloy, Nimonic, stc.	2.4668 (NiuCr19Fe19Nb5Mo3) 2.4631 (Nimonic 80A)		250	5.0	S						
titanium, titanium alloys	3.7115 (TiAl5Sn2.5)	400		5.1							
stainless steels	1.4306 (X2CrNi19-11) 1.4401 (X5CrNiMo17-12-2)	≤600		6.0				40 - 80	35 - 75		
stainless steels	1.4511 (X3CrNb17) 1.4571 (X10CrNiMoTi17-12-2)	<900		6.1	M			40 - 80	35 - 75		
stainless / fireproof steels	1.4713 (X10CrAlSi7) 1.4862 (X8NiCrSi38-18)	>900		7.0				40 - 80	35 - 75		
gray cast iron	0.6025 (EN-GJL-250) 0.6035 (EN-GJL-350)		180	8.0			30 - 75	140 - 200		60 - 175	30 - 75
alloy gray cast iron	0.6660 (GGL-NiCr20 2)		250	8.1			30 - 75	140 - 200		75 - 140	30 - 75
spheroidal graphite cast iron, ferritic	0.7040 (EN-GJS-400-15)	≤600	130	9.0			30 - 75	140 - 200		80 - 160	30 - 75
spheroidal graphite cast iron, ferritic/perlitic	0.7050 (EN-GJS-500-7) 0.7055 (GJS-55) 0.8055 (GTW-55)		230	9.1	K		30 - 75	140 - 200		75 - 140	30 - 75
spheroidal graphite cast iron, perlitic, malleable iron	0.7060 (EN-GJS-600-3) 0.8165 (GTS-65)	>600	250	10.0			30 - 75	140 - 200		65 - 125	30 - 75
alloyed spheroidal graphite cast iron	0.7661 (EN-GJSA-XNiCr20-2)		200	10.1			30 - 75	140 - 200		65 - 125	30 - 75
vermicular cast iron	EN-GJV Ti < 0,2 EN-GJV Ti > 0,2		300	10.2			30 - 50			55 - 105	30 - 50
copper alloy, brass, lead-alloy bronze, lead bronze: good cut	2.0375 (CuZn36Pb3) 2.1182.01 (G-CuPb15Sn)		90	12.0			100 - 250				100 - 250
copper alloy, brass, bronze: average cut	2.0550 (CuZn40Al2) 2.0060 (E-Cu57)		100	12.1			100 - 250				100 - 250
wrought aluminium alloys	3.3315 (AlMg1) 3.0517 (AlMnCu)		60	13.0	N		100 - 250				100 - 250
cast alum. alloy: Si-content <10% magnesium alloy	3.3561 (G-AlMg5) 3.2373.61 (G-AlSi9Mg wa)		75	13.1			100 - 250				100 - 250
cast alum.alloy: Si-content >10%	3.2381.01 (G-AlSi10Mg)		100	14.0			100 - 250				100 - 250
hardened steels < 45 HRC		1400		15.0	H						
hardened steels > 45 HRC		1800		16.0							

Cutting speed v_c can be increased by reducing the width of cutting edge engagement a_e

Important: See chapter 8 for more application details and safety notes !

Calculation information

a_e = milling width in mm
a_p = cutting depth in mm
b = chip width in mm
D = tool diameter in mm
f_z = feed/tooth in mm
n = speed in rpm
k_c = specific cutting force in N/mm²
P_e = power requirement in KW
v_c = cutting speed in m/min
v_f = feed rate in mm/min
z = tooth load
η = working angle



Cutting speed:

$$v_c = \frac{n \times \pi \times D}{1000} \quad \text{(m/min)}$$

Power requirement:

$$P_e = \frac{a_p \times a_e \times v_f \times k_c}{60 \times 10^6 \times \eta} \quad \text{(kW)}$$

Feed rate:

$$v_f = f_z \times z \times n \quad \text{(mm/min)}$$

Spindle speed:

$$n = \frac{v_c \times 1000}{\pi \times D} \quad \text{(rpm)}$$

	Workpiece material	Brinell-hardness HB	Specific cutting force k_c (N/mm²) Feed f_z (mm/tooth) 0,1	0,2	0,3	0,4
P	Carbon steel 0,2%C	150	3200	2700	2450	2300
P	Carbon steel 0,45%C	190	3550	3000	2750	2550
P	Carbon steel 0,83%C	250	3900	3300	3000	2800
P	Alloy steel	up to 200	3550	3000	2750	2550
P		200 - 250	3900	3300	3000	2800
P		275 - 325	4300	3600	3300	2100
P		325 - 375	4600	3900	3600	3300
P		375 - 425	4850	4100	3750	3500
P		425 - 475	5000	4300	3900	3700
M	Stainless steel, ferritic	135 - 175	3100	3600	2350	2200
M		175 - 225	4150	3500	3200	3000
M	Stainless steel, martensitic	275 - 325	4700	4000	3650	3400
M		375 - 425	5300	4500	4100	3850
M	Stainless steel, austenitic	135 - 425	4150	3500	3200	3000
K	Cast steel, carbon	up to 150	2850	2400	2200	2050
K		150 - 200	3150	2650	2400	2250
K	Cast steel, alloy	200 - 250	3400	2900	2650	2450
K		250 - 300	3700	3200	2900	2700
K	Malleable iron, ferritic	110 - 145		2000		
K	Malleable iron, perlitic	200 - 250		2000		
K	Grey cast iron, low tensile strengh	180		1400		
K	Grey cast iron, high tensile strengh, alloy	250		1800		
K	Spheroidal graphite cast iron, ferritic	160		1500		
K	Spheroidal graphite cast iron, perlitic	250		2250		
K	Chill cast iron	400		3500		

Order No. / Order date | Please state Customer No. | Signature | KOMET internal

Company:
Adress:

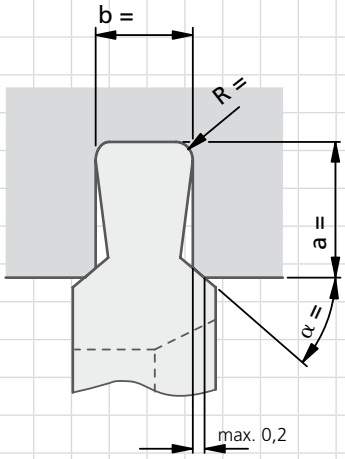
Contact:
Department:
Phone:
Fax:
E-Mail:

☐ Order ☐ Inquiry Quantity:

Material to be machined:

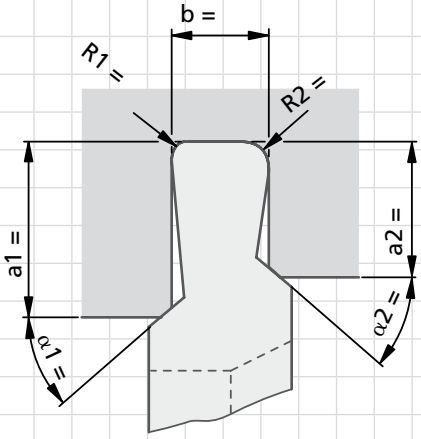
symmetrical

Parameters				
Insert size	Groove width b	Groove depth a max.	Radius R	Chamfer angle α
XQ12 18...	1,60 – 2,65	2,2	0,1 – 0,5	30° – 60°
XQ12 32...	2,65 – 4,15	3,2	0,1 – 0,5	30° – 60°
XQ12 44...	4,15 – 5,80	5,2	0,1 – 0,5	30° – 60°



asymmetrical

Parameters					
Insert size	Groove width b	Groove depth a1	Groove depth a2	Radius R1 / R2	Chamfer angle α1 / α2
XQ12 18...	1,60 – 2,65	2,5	2,2	$0,0 - \frac{b}{2}$	15° – 75°
XQ12 32...	2,65 – 4,15	3,5	3,2	$0,0 - \frac{b}{2}$	30° – 60°
XQ12 44...	4,15 – 5,80	5,5	5,2	$0,0 - \frac{b}{2}$	30° – 60°



Please provide workpiece sketch !

Recommended cutting data for Q40 | Q43 | Q55 | Q56 | Q63 | Q75

Guideline values for milling						Cutting speed v_c (m/min)							
Material group		Strength Rm (N/mm²)	Hardness HB	Material	Material example, material code/DIN	BK8425		BK6110		K10		BK2740	
						dry	wet	dry	wet	dry	wet	dry	wet
P	1.0	≤500		non-alloy steels	1.0037 (S235JR) 1.0715 (11SMn30) 1.0044 (S2575JR)	100-220	70-180					150-260	90-180
P	2.0	500-900		non-alloy / low alloy steels	1.0050 (E295) 1.0535 (C55) 1.7131 (16MnCr5)	80-220	70-170					80-200	70-160
P	2.1	<500		lead alloys	1.0718 (11SMnPb30)	100-220	70-170					150-260	90-180
P	3.0	>900		non alloy / low alloy steels: heat resistant structural, heat treated, nitride and tools steels	1.7225 (42CrMo4) 1.1221 (C60E)	80-200	70-160					90-180	70-140
P	4.0	>900		high alloy steels	1.2341 (6CrMo15-5) 1.2601 (X165Cr-MoV12)	80-170	70-150					120-200	60-140
P	4.1			HSS		80-140	60-120					70-180	60-130
S	5.0		250	super alloys: Inconel, Hastelloy, Nimonic, stc.	2.4668 (NiuCr19Fe19N-b5Mo3) 2.4631 (Nimonic 80A)								20-60
S	5.1	400		titanium, titanium alloys	3.7115 (TiAl5Sn2.5)								20-70
M	6.0	≤600		stainless steels	1.4306 (X2CrNi19-11) 1.4401 (X5CrNi-Mo17-12-2)	160-220	70-140					160-250	60-140
M	6.1	<900		stainless steels	1.4511 (X3CrNb17) 1.4571 (X10CrNiMo-Ti17-12-2)	70-140	70-140					150-220	60-140
M	7.0	>900		stainless / fireproof steels	1.4713 (X10CrAlSi7) 1.4862 (X8NiCrSi38-18)	70-140	70-140					100-250	60-140
K	8.0		180	gray cast iron	0.6025 (EN-GJL-250) 0.6035 (EN-GJL-350)			140-350	140-350		80-160		
K	8.1		250	alloy gray cast iron	0.6660 (GGL-NiCr20 2)			120-320	120-320		80-160		
K	9.0	≤600	130	spheroidal graphite cast iron, ferritic	0.7040 (EN-GJS-400-15)			100-250	100-250		80-160		
K	9.1		230	spheroidal graphite cast iron, ferritic / perlitic	0.7050 (EN-GJS-500-7) 0.7055 (GJS-55) 0.8055 (GTW-55)			120-320	120-320		80-160		
K	10.0	>600	250	spheroidal graphite cast iron, perlitic malleable iron	0.7060 (EN-GJS-600-3) 0.8165 (GTS-65)			120-320	120-320		80-160		
K	10.1		200	alloyed spheroidal graphite cast iron	0.7661 (EN-GJSA-XNiCr20-2)			120-320	120-320		80-160		
K	10.2		300	vermicular cast iron	EN-GJV Ti < 0,2 EN-GJV Ti > 0,2			100-250	100-250		80-160		
N	12.0		90	copper alloy, brass, lead-alloy bronze, lead bronze: good cut	2.0375 (CuZn36Pb3) 2.1182.01 (G-CuPb15Sn)						300-1000		
N	12.1		100	copper alloy, brass, bronze: average cut	2.0550 (CuZn40Al2) 2.0060 (E-Cu57)						300-1000		
N	13.0		60	wrought aluminium alloys	3.3315 (AlMg1) 3.0517 (AlMnCu)						200-3000		
N	13.1		75	cast alum. alloy: Si-content <10% magnesium alloy	3.3561 (G-AlMg5) 3.2373.61 (G-AlSi9Mg wa)						300-500		
N	14.0		100	cast alum.alloy: Si-content >10%	3.2381.01 (G-Al-Si10Mg)						300-400		
H	15.0	1400		hardened steels < 45 HRC									
H	16.0	1800		hardened steels > 45 HRC									

Cutting values shown are maximum values relating to the basic recommendations for cutting materials given.

Recommended cutting data for Q40 | Q43 | Q55 | Q56 | Q63 | Q75

Cutting speed v_c (m/min)												
	BK6435		BK7740		BK2710		BK6130		BK2735			
	dry	wet	dry	wet	dry	wet	dry	wet	dry	wet		
							120-280	80-150	160-240	100-140	1.0	P
							80-250	70-140	120-220	90-120	2.0	
							120-280	80-150	160-240	100-140	2.1	
							80-220	70-140	120-220	90-120	3.0	
		60-140					80-130	60-90	80-110	60-80	4.0	
		60-140					80-140	60-120	80-140	60-120	4.1	
	25-75			10-60							5.0	S
				25-75							5.1	
	220-350	60-180							120	110	6.0	M
	220-350	60-140							110	100	6.1	
	150-240	60-140							100	90	7.0	
					180-350	180-350	180-350	140-190			8.0	K
					100-250	100-250	180-350	140-190			8.1	
					100-250	100-250	130-210	80-120			9.0	
					100-250	100-250	130-210	80-120			9.1	
					120-250	120-250	160-200	90-120			10.0	
					120-250	120-250	180-250	100-180			10.1	
					100-250	100-250	100-160	80-120			10.2	
											12.0	N
											12.1	
											13.0	
											13.1	
											14.0	
					40-60						15.0	H
					30-50						16.0	

Cutting values shown are maximum values relating to the basic recommendations for cutting materials given.

Important: See chapter 8 for more application details and safety notes !

KOMET® Countersinking and chamfering tools

KOMET® Countersinking tool KWS
for producing 60° and 90°
counterbores

KOMET® Countersinking tool KWZ
for producing 90° counterbores to DIN 974 T1
for cap head screws

KOMET® SEA and SX countersinks
attract customers due to a perfect machining result.

The relief-ground cone on the tool forms the cutting edge at the hole exit. The KOMET® countersinks guarantee smooth running even for deep countersinking operations.

This is achieved due to a special KOMET® relief-grinding process on the cone envelope, which also prevents damage to machine, workpiece and tool.

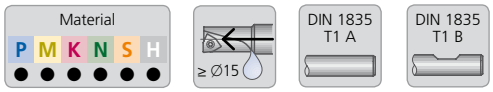
KOMET® SE countersink
The cutting edge is formed by the specially designed countersink cone.

As a result of this design, the countersinking area almost corresponds to the countersink diameter. The structural design of these countersinks ensures optimum chip flow as well as burr-free and smooth-running countersinking and deburring on almost all types of material.

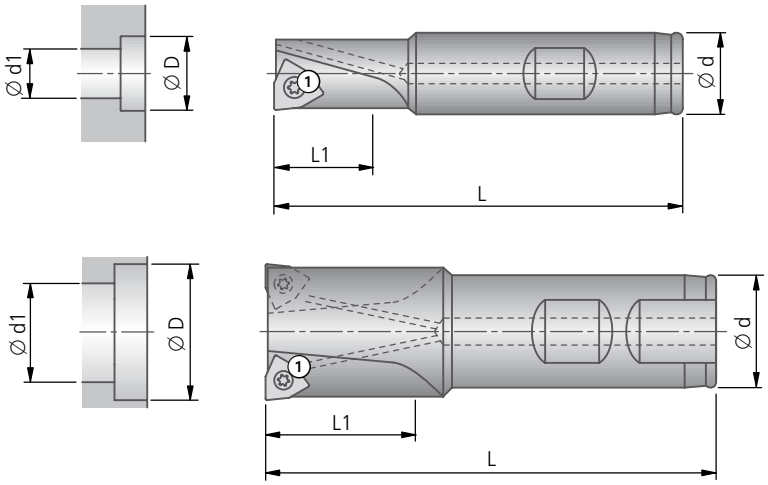
Countersinking

Countersinking

Countersinking tool KWZ



for producing 90° counterbores to DIN 974 T1 for cap head screws



Y = number of inserts
Z = effective number of teeth for calculating v_f

KWZ										Basic recommendation		
Ø D	Order No. Article	Rough bore Ø Ød1 min	Ød	L	Counter-sink depth L1 max	Y	Z	lbs	Clamping screw ① Order No. Article	Indexable insert Order No. ▽▽ size	ISO-Code	for workpiece material P M K N S H
0.437	**F10 30021** KWZ 1/4-1	0.281	0.625	3.15	0.75	1	1	0.33	**N00 56041** S/M2×4.3-6IP 5.5 in-lbs	**W29 10010.048425** **W29 10010.0421**	WOEX 030204-01 BK8425 WOEX 030204-01 K10	● ◐ ● ● ◐ ○
0.531	**F10 30031** KWZ 5/16-1	0.344	0.625	3.15	0.75	1	1	0.33				
0.625	**F10 30040** KWZ 3/8-1	0.406	0.625	3.15	0.75	1	1	0.33	**N00 55581** M2.5×4.5-8IP 11.3 in-lbs	**W29 24010.048425** **W29 24010.0421**	WOEX 05T304-01 BK8425 WOEX 05T304-01 K10	● ◐ ● ● ◐ ○
0.781	**F10 30050** KWZ 7/16-1	0.469	0.625	3.15	1.00	1	1	0.33	**N00 57511** S/M2.5×7.2-8IP 11.3 in-lbs	**W29 24010.048425** **W29 24010.0421**	WOEX 05T304-01 BK8425 WOEX 05T304-01 K10	● ◐ ● ● ◐ ○
0.812	**F10 30060** KWZ 1/2-1	0.531	1.000	3.94	1.25	1	1	0.77				
1.000	**F10 30070** KWZ 5/8-2	0.656	1.000	3.94	1.25	2	2	0.77				
1.187	**F10 30080** KWZ 3/4-2	0.781	1.000	3.94	1.25	2	2	0.77	**N00 57521** S/M3.5×7.3-10IP 11.3 in-lbs	**W29 34010.048425** **W29 34010.0421**	WOEX 06T304-01 BK8425 WOEX 06T304-01 K10	● ◐ ● ● ◐ ○
1.375	**F10 30090** KWZ 778-2	0.906	1.000	3.94	1.25	2	2	0.88	**N00 57531** S/M4.5×9-15IP 55.3 in-lbs	**W29 42010.048425** **W29 42010.0421**	WOEX 080404-01 BK8425 WOEX 080404-01 K10	● ◐ ● ● ◐ ○

Supply includes: Countersinking tool with clamping screw ①.
Please order inserts separately. Screwdriver see chapter 8.

● very good | ◐ good | ○ possible | ✕ not possible

Recommended application areas

Guideline values for countersinking							v_c	Max. f (in/rev)		
Material group		Strength Rm (lbf/in²)	Hardness HB	Material	Material example, material code/DIN		Cutting speed v_c (fpm)	Ø 0.437 – 0.531	Ø 0.625 – 0.781	Ø 0.812 – 1.375
P	1.0	VI 72500		non-alloy steels	A570.36 1213 A573.81		590 - 790	0.002 - 0.004	0.004 - 0.008	0.006 - 0.010
P	2.0	72500-130000		non-alloy / low alloy steels	5120 1055 5115		590 - 790	0.002 - 0.004	0.004 - 0.008	0.010 - 0.016
P	2.1	< 72500		lead alloys	12L13		530	0.002-0.004	0.008	0.008-0.012
P	3.0	> 130000		low alloy steels: heat resistant structural, heat treated, nitride and tools steels	4140 1064		460	0.002 - 0.004	0.007	0.008 - 0.014
P	4.0	> 130000		high alloy steels	H13 H21		390	0.002 - 0.003	0.006	0.008 - 0.012
P	4.1			HSS			–	–	–	–
S	5.0		250	super alloys: Inconel, Hastelloy, Nimonic, stc.	Inconel® 718 Nimonic® 80A		100	0.002	0.004	0.005
S	5.1	58000		titanium, titanium alloys	AMS R54520		100	0.002	0.004	0.005
M	6.0	VI 87000		stainless steels	304L 316		390	0.003	0.006	0.006
M	6.1	< 130000		stainless steels	630		390	0.003	0.006	0.006
M	7.0	> 130000		stainless / fireproof steels	420 403		330	0.002	0.004	0.004
K	8.0		180	gray cast iron	No 35 B No 50 B		530	0.006	0.012	0.016
K	8.1		250	alloy gray cast iron	A436 Type 2		460	0.006	0.010	0.012
K	9.0	VI 87000	130	ductile graphite cast iron, ferritic	60-40-18		460	0.006	0.010	0.012
K	9.1		230	ductile graphite cast iron, ferritic/ perlitic	80-55-06		390	0.005	0.008	0.010
K	10.0	> 87000	250	ductile graphite cast iron, perlitic, malleable iron	100-70-03 70003		390	0.004	0.007	0.010
K	10.1		200	alloyed ductile graphite cast iron	A43D2		390	0.004	0.007	0.008
K	10.2		300	vermicular cast iron			330	0.004	0.006	0.008
N	12.0		90	copper alloy, brass, lead-alloy bronze, lead bronze: good cut	UNS C36000		980	0.002	0.004	0.005
N	12.1		100	copper alloy, brass, bronze: average cut			980	0.002	0.004	0.005
N	13.0		60	wrought aluminium alloys	GD-AlSi12		980	0.002	0.005	0.006
N	13.1		75	cast alum. alloy: Si-content <10% magnesium alloy			820	0.002	0.006	0.008
N	14.0		100	cast alum.alloy: Si-content >10%	A360.2		660	0.004	0.008	0.010
H	15.0	203000		hardened steels < 45 HRC			160	0.002	0.004	0.006
H	16.0	261000		hardened steels > 45 HRC			160	0.002	0.004	0.006

Ø D	Alternative indexable insert -01 -03 -11 Order No.	ISO code	for workpiece material P M K N S H
for better chip control			
0.437 – 0.531	W29 10030.046425 W29 10110.0477	WOEX 030204-03 BK6425 WOEX 030204-11 BK77	● ● ● ◐ ◐
0.625 – 1.000	W29 24030.046425 W29 24110.0477	WOEX 05T304-03 BK6425 WOEX 05T304-11 BK77	● ● ● ◐ ◐
1.187	W29 34030.046425 W29 34110.0477	WOEX 06T304-03 BK6425 WOEX 06T304-11 BK77	● ● ● ◐ ◐
1.375	W29 42030.046425 W29 42110.0477	WOEX 080404-03 BK6425 WOEX 080404-11 BK77	● ● ● ◐ ◐
for higher cutting speed			
0.437 – 0.531	–		
0.625 – 1.000	W29 24010.046425 W29 24010.047615	WOEX 05T304-01 BK6425 WOEX 05T304-01 BK7615	● ●
1.187	W29 34010.0460 W29 34010.0461	WOEX 06T304-01 BK60 WOEX 06T304-01 BK61	● ●
1.375	W29 42010.0460 W29 42010.0461	WOEX 080404-01 BK60 WOEX 080404-01 BK61	● ●
for greater strength			
0.437 – 0.531	W29 10010.047930	WOEX 05T304-01 BK7930	● ● ● ● ○
0.625 – 1.000	W29 24010.047930	WOEX 05T304-01 BK7930	● ● ● ● ○
1.187	W29 34010.047930	WOEX 06T304-01 BK7930	● ● ● ● ○
1.375	W29 42010.047930	WOEX 080404-01 BK7930	● ● ● ● ○

Cutting values shown are maximum values relating to the basic recommendations for cutting materials given.

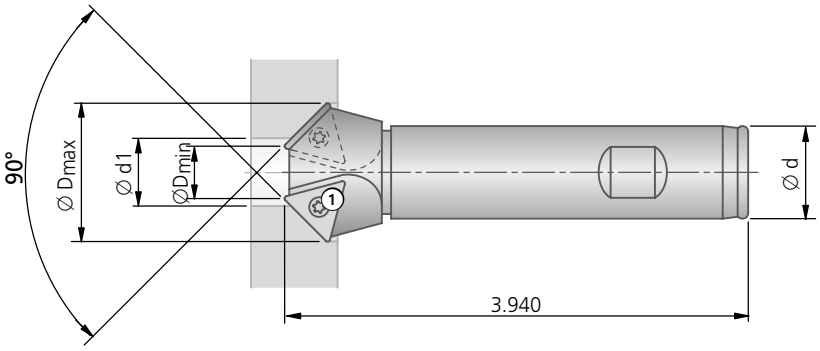
Important: See chapter 8 for more application details and safety notes !

KOMET® Countersinking and chamfering tools Ø 0.748" – 1.457"

Countersinking tool KWS 90°

Material: P M K N S H

DIN 1835 T1 B



Y = number of inserts
Z = effective number of teeth for calculating v_f

for producing the 90° countersinks to DIN 74, page 1, Form A, fine | for milling of trapezoidal slots | for circular milling on machining centres | for chamfering on machining centres

KWS 90°									Basic recommendation		
Ø D max	Ø D min	Order No. Article	Rough bore Ø Ø d1 min	Ø d	Y	Z	lbs	Clamping screw ① Order No. Article	Indexable insert Order No. ▽▽ size	ISO-Code	for workpiece material P M K N S H
0.748	0.276	**F10 20151** KWS-M10-5/8	0.374	0.625	2	2	0.44	**N00 56111** S/M2.6×6.2-8IP 11.3 in.lbs	**W30 14660.338425** **W30 14660.3321**	TOHX 090204EN-U8.77 BK8425 TOHX 090204EN-U8.77 K10	● ◐ ● ● ● ○
0.906	0.433	**F10 20161** KWS-M12-5/8	0.472	0.625	2	2	0.44				
1.024	0.433	**F10 20171** KWS-M14-5/8	0.472	0.625	2	1	0.44	**N00 56111** S/M2.6×6.2-8IP 11.3 in.lbs	**W30 14720.048425** **W30 14720.0421**	TOHX 090204EN-G12 BK8425 TOHX 090204FN-G12 K10	● ◐ ● ● ● ○
1.181	0.472	**F10 20181** KWS-M16-3/4	0.472	0.750	2	2	0.66	**N00 56211** S/M3.5×7.3-10IP 25.0 in.lbs	**W30 26720.0560** **W30 26720.0521**	TOHX 140305EN-G12 BK60 TOHX 140305FN-G12 K10	● ◐ ● ● ● ○
1.339	0.630	**F10 20191** KWS-M18-3/4	0.669	0.750	2	2	0.77				
1.457	0.748	**F10 20201** KWS-M20-3/4	0.787	0.750	2	2	0.77				

Supply includes: Countersinking tool with clamping screw ①.
Please order inserts separately. Screwdriver see chapter 8.

● very good | ◐ good | ○ possible | ✕ not possible

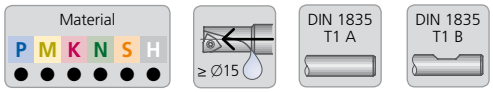
Recommended application areas

Guideline values for countersinking							v_c	Max. f (in/rev)
Material group		Strength Rm (lbf/In²)	Hardness HB	Material	Material example, material code/DIN	Cutting speed v_c (fpm)	Feed ∅ 0.748 – 1.457
P	1.0	VI 72500		non-alloy steels	A570.36 1213 A573.81	820	0.006
P	2.0	72500-130000		non-alloy / low alloy steels	5120 1055 5115	660	0.008
P	2.1	< 72500		lead alloys	12L13	820	0.012
P	3.0	> 130000		low alloy steels: heat resistant structural, heat treated, nitride and tools steels	4140 1064	490	0.008
P	4.0	> 130000		high alloy steels	H13 H21	390	0.006
P	4.1			HSS		330	0.007
S	5.0		250	super alloys: Inconel, Hastelloy, Nimonic, stc.	Inconel® 718 Nimonic® 80A	160	0.005
S	5.1	58000		titanium, titanium alloys	AMS R54520	330	0.008
M	6.0	VI 87000		stainless steels	304L 316	520	0.006
M	6.1	< 130000		stainless steels	630	390	0.006
M	7.0	> 130000		stainless / fireproof steels	420 403	330	0.006
K	8.0		180	gray cast iron	No 35 B No 50 B	490	0.016
K	8.1		250	alloy gray cast iron	A436 Type 2	390	0.012
K	9.0	VI 87000	130	ductile graphite cast iron, ferritic	60-40-18	390	0.012
K	9.1		230	ductile graphite cast iron, ferritic/ perlitic	80-55-06	330	0.012
K	10.0	> 87000	250	ductile graphite cast iron, perlitic, malleable iron	100-70-03 70003	330	0.008
K	10.1		200	alloyed ductile graphite cast iron	A43D2	260	0.008
K	10.2		300	vermicular cast iron		160	0.008
N	12.0		90	copper alloy, brass, lead-alloy bronze, lead bronze: good cut	UNS C36000	820	0.012
N	12.1		100	copper alloy, brass, bronze: average cut		820	0.008
N	13.0		60	wrought aluminium alloys	GD-AlSi12	820	0.008
N	13.1		75	cast alum. alloy: Si-content <10% magnesium alloy		490	0.012
N	14.0		100	cast alum.alloy: Si-content >10%	A360.2	390	0.010
H	15.0	203000		hardened steels < 45 HRC		160	0.006
H	16.0	261000		hardened steels > 45 HRC		80	0.004

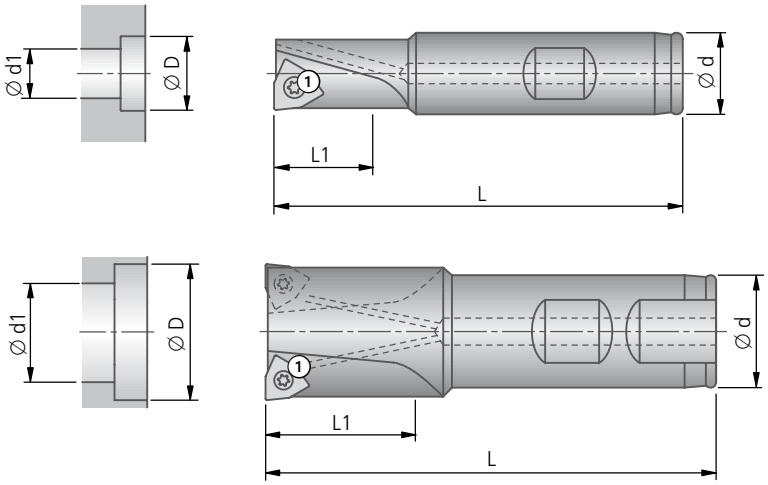
Cutting values shown are maximum values relating to the basic recommendations for cutting materials given.

Important: See chapter 8 for more application details and safety notes !

Countersinking tool KWZ



for producing 90° counterbores to DIN 974 T1 for cap head screws



Y = number of inserts
Z = effective number of teeth for calculating v_f

KWZ										Basic recommendation		
Ø D	Order No. Article	Rough bore Ø Ød1 min	Ød	L	Counter-sink depth L1 max	Y	Z	kg	Clamping screw ① Order No. Article	Indexable insert Order No. ▽▽ size	ISO-Code	for workpiece material P M K N S H
10	**F10 10021** KWZ-M5K1	5,3	16	80	10	1	1	0,09	**N00 56041** S/M2×4,3-6IP 0,62 Nm	**W29 10010.048425** **W29 10010.0421**	WOEX 030204-01 BK8425 WOEX 030204-01 K10	● ○ ● ● ○ ○
11	**F10 10031** KWZ-M6K1	6,4	16	80	11	1	1	0,10				
15	**F10 10040** KWZ-M8K1	8,4	16	80	15	1	1	0,10	**N00 55581** M2,5×4,5-8IP 1,28 Nm	**W29 24010.048425** **W29 24010.0421**	WOEX 05T304-01 BK8425 WOEX 05T304-01 K10	● ○ ● ● ○ ○
18	**F10 10050** KWZ-M10K1	10,4	16	80	18	1	1	0,11	**N00 57511** S/M2,5×7,2-8IP 1,28 Nm	**W29 24010.048425** **W29 24010.0421**	WOEX 05T304-01 BK8425 WOEX 05T304-01 K10	● ○ ● ● ○ ○
20	**F10 10060** KWZ-M12K1	13	25	100	20	1	1	0,28				
24	**F10 11070** KWZ-M14K2	15	25	100	24	2	2	0,29				
26	**F10 11080** KWZ-M16K2	17	25	100	26	2	2	0,31				
30	**F10 11090** KWZ-M18K2	19	25	100	30	2	2	0,34	**N00 57521** S/M3,5×7,3-10IP 2,8 Nm	**W29 34010.048425** **W29 34010.0421**	WOEX 06T304-01 BK8425 WOEX 06T304-01 K10	● ○ ● ● ○ ○
33	**F10 11100** KWZ-M20K2	21	25	100	33	2	2	0,36	**N00 57531** S/M4,5×9-15IP 6,25 Nm	**W29 42010.048425** **W29 42010.0421**	WOEX 080404-01 BK8425 WOEX 080404-01 K10	● ○ ● ● ○ ○
36	**F10 11110** KWZ-M22K2	21	25	100	36	2	2	0,39				
40	**F10 11120** KWZ-M24K2	25	25	100	40	2	2	0,45				
48	**F10 11130** KWZ-M30K2	28	32	120	48	2	2	0,85	**N00 57531** S/M4,5×9-15IP 6,25 Nm	**W29 50010.048425** **W29 50010.0421**	WOEX 100504-01 BK8425 WOEX 100504-01 K10	● ○ ● ● ○ ○

Supply includes: Countersinking tool with clamping screw ①.
Please order inserts separately. Screwdriver see chapter 8.

● very good | ◐ good | ○ possible | ✕ not possible

Recommended application areas

Guideline values for countersinking						v_c	Max. f (mm/rev)			
Material group		Strength Rm (N/mm²)	Hardness HB	Material	Material example, material code/DIN	Cutting speed v_c (m/min)	Feed Ø 10 – 15	Feed Ø 18 – 20	Feed Ø 24 – 30	Feed Ø 33 – 48
P	1.0	≤500		non-alloy steels	1.0037 (S235JR) 1.0715 (11SMn30) 1.0044 (S275JR)	180-240	0,06-0,12	0,12-0,20	0,15-0,25	0,20-0,30
P	2.0	500-900		non-alloy / low alloy steels	1.0050 (E295) 1.0535 (C55) 1.7131 (16MnCr5)	180-240	0,06-0,12	0,12-0,20	0,25-0,40	0,25-0,40
P	2.1	<500		lead alloys	1.0718 (11SMn-Pb30)	160	0,06-0,12	0,20	0,20-0,30	0,20-0,40
P	3.0	>900		non alloy / low alloy steels: heat resistant structural, heat treated, nitride and tools steels	1.7225 (42CrMo4) 1.1221 (C60E)	140	0,06-0,10	0,18	0,20-0,35	0,25-0,40
P	4.0	>900		high alloy steels	1.2341 (6CrMo15-5) 1.2601 (X165Cr-MoV12)	120	0,04-0,08	0,15	0,20-0,30	0,20-0,35
P	4.1			HSS		–	–	–	–	–
S	5.0		250	super alloys: Inconel, Hastelloy, Nimonic, stc.	2.4668 (NiuCr-19Fe19Nb5Mo3) 2.4631 (Nimonic 80A)	30	0,05	0,10	0,12	0,15
S	5.1	400		titanium, titanium alloys	3.7115 (Ti-Al5Sn2.5)	30	0,05	0,10	0,12	0,15
M	6.0	≤600		stainless steels	1.4306 (X2CrNi19-11) 1.4401 (X5CrNiMo17-12-2)	120	0,08	0,15	0,16	0,18
M	6.1	<900		stainless steels	1.4511 (X3CrNb17) 1.4571 (X10CrNiMoTi17-12-2)	120	0,08	0,15	0,16	0,18
M	7.0	>900		stainless / fireproof steels	1.4713 (X10CrAlSi7) 1.4862 (X8NiCrSi38-18)	100	0,05	0,10	0,10	0,12
K	8.0		180	gray cast iron	0.6025 (EN-GJL-250) 0.6035 (EN-GJL-350)	160	0,15	0,30	0,40	0,60
K	8.1		250	alloy gray cast iron	0.6660 (GGL-NiCr20 2)	140	0,15	0,25	0,30	0,40
K	9.0	≤600	130	spheroidal graphite cast iron, ferritic	0.7040 (EN-GJS-400-15)	140	0,15	0,25	0,30	0,35
K	9.1		230	spheroidal graphite cast iron, ferritic / perlitic	0.7050 (EN-GJS-500-7) 0.7055 (GJS-55) 0.8055 (GTW-55)	120	0,12	0,20	0,25	0,35
K	10.0	>600	250	spheroidal graphite cast iron, perlitic malleable iron	0.7060 (EN-GJS-600-3) 0.8165 (GTS-65)	120	0,10	0,18	0,25	0,30
K	10.1		200	alloyed spheroidal graphite cast iron	0.7661 (EN-GJSA-XNiCr20-2)	120	0,10	0,18	0,20	0,30
K	10.2		300	vermicular cast iron	EN-GJV Ti < 0,2 EN-GJV Ti > 0,2	100	0,10	0,15	0,20	0,25
N	12.0		90	copper alloy, brass, lead-alloy bronze, lead bronze: good cut	2.0375 (CuZn36Pb3) 2.1182.01 (G-CuPb15Sn)	300	0,05	0,10	0,12	0,15
N	12.1		100	copper alloy, brass, bronze: average cut	2.0550 (CuZn40Al2) 2.0060 (E-Cu57)	300	0,05	0,10	0,12	0,15
N	13.0		60	wrought aluminium alloys	3.3315 (AlMg1) 3.0517 (AlMnCu)	300	0,05	0,12	0,15	0,20
N	13.1		75	cast alum. alloy: Si-content <10% magnesium alloy	3.3561 (G-AlMg5) 3.2373.61 (G-AlSi9Mg wa)	250	0,06	0,16	0,20	0,25
N	14.0		100	cast alum.alloy: Si-content >10%	3.2381.01 (G-AlSi10Mg)	200	0,10	0,20	0,25	0,30
H	15.0	1400		hardened steels < 45 HRC		50	0,05	0,10	0,15	0,20
H	16.0	1800		hardened steels > 45 HRC		50	0,05	0,10	0,15	0,20

for better chip control							
Ø D	Alternative indexable insert -01 -03 -11 Order No.	ISO code	for workpiece material P	M	K	N	S	H
10 – 11	W29 10030.046425 W29 10110.0477	WOEX 030204-03 BK6425 WOEX 030204-11 BK77	●	●		●	◐	◑
15 – 26	W29 24030.046425 W29 24110.0477	WOEX 05T304-03 BK6425 WOEX 05T304-11 BK77	●	●		●	◐	◑
30	W29 34030.046425 W29 34110.0477	WOEX 06T304-03 BK6425 WOEX 06T304-11 BK77	●	●		●	◐	◑
33 – 40	W29 42030.046425 W29 42110.0477	WOEX 080404-03 BK6425 WOEX 080404-11 BK77	●	●		●	◐	◑
48	W29 50030.046425 W29 50110.0477	WOEX 100504-03 BK6425 WOEX 100504-11 BK77	●	●		●	◐	◑
for higher cutting speed								
10 – 11	–							
15 – 26	W29 24010.046425 W29 24010.047615	WOEX 05T304-01 BK6425 WOEX 05T304-01 BK7615	●		●			
30	W29 34010.0460 W29 34010.0461	WOEX 06T304-01 BK60 WOEX 06T304-01 BK61	●		●			
33 – 40	W29 42010.0460 W29 42010.0461	WOEX 080404-01 BK60 WOEX 080404-01 BK61	●		●			
48	W29 50010.0460 W29 50010.0461	WOEX 100504-01 BK60 WOEX 100504-01 BK61	●		●			
for greater strength								
10 – 11	W29 10010.047930	WOEX 05T304-01 BK7930	●	●	●		◐	○
15 – 26	W29 24010.047930	WOEX 05T304-01 BK7930	●	●	●		◐	○
30	W29 34010.047930	WOEX 06T304-01 BK7930	●	●	●		◐	○
33 – 40	W29 42010.047930	WOEX 080404-01 BK7930	●	●	●		◐	○
48	W29 50010.047930	WOEX 100504-01 BK7930	●	●	●		◐	○

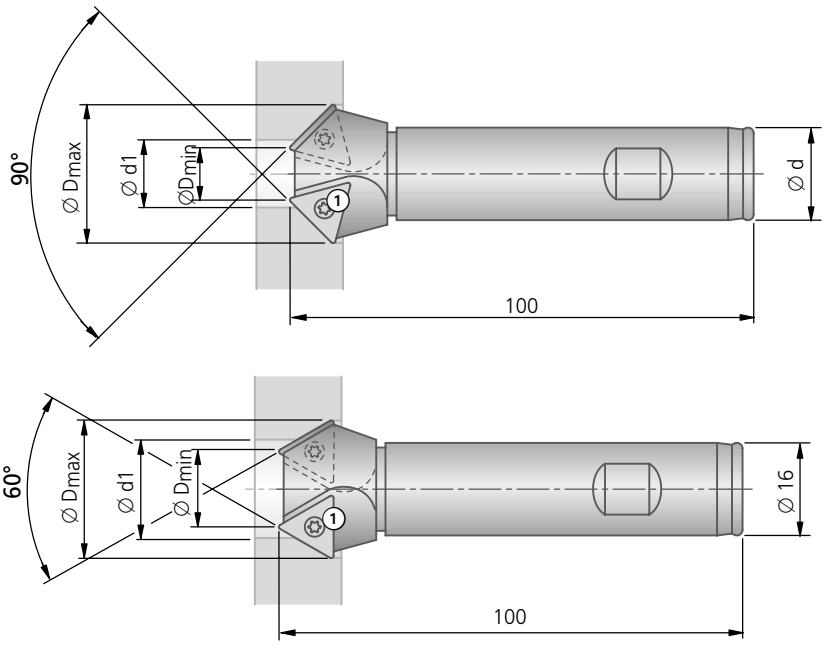
Cutting values shown are maximum values relating to the basic recommendations for cutting materials given.

Important: See chapter 8 for more application details and safety notes !

Countersinking tool KWS 90° | 60°

Material: P M K N S H

DIN 1835 T1 B



Y = number of inserts
Z = effective number of teeth for calculating v_f

for producing the 90° | 60° countersinks to DIN 74, page 1, Form A, fine | for milling of trapezoidal slots | for circular milling on machining centres | for chamfering on machining centres

KWS 90°									Basic recommendation		
Ø D max	Ø D min	Order No. Article	Rough bore Ø Ø d1 min	Ø d	Y	Z	kg	Clamping screw ① Order No. Article	Indexable insert Order No. ▽▽ size	ISO-Code	for workpiece material P M K N S H
19	7	**F10 00051** KWS-M10	9,5	16	2	2		**N00 56111** S/M2,6×6,2-8IP 1,28 Nm	**W30 14660.338425** **W30 14660.3321**	TOHX 090204EN-U8.77 BK8425 TOHX 090204EN-U8.77 K10	● ◐ ● ● ○
23	11	**F10 00061** KWS-M12	12	16	2	2					
26	11	**F10 00071** KWS-M14	12	16	2	1		**N00 56111** S/M2,6×6,2-8IP 1,28 Nm	**W30 14720.048425** **W30 14720.0421**	TOHX 090204EN-G12 BK8425 TOHX 090204FN-G12 K10	● ◐ ● ● ○
30	12	**F10 00081** KWS-M16	13	20	2	2		**N00 56211** S/M3,5×7,3-10IP 2,8 Nm	**W30 26720.0560** **W30 26720.0521**	TOHX 140305EN-G12 BK60 TOHX 140305FN-G12 K10	● ◐ ● ● ○
34	16	**F10 00091** KWS-M18	17	20	2	2					
37	19	**F10 00101** KWS-M20	20	20	2	2					

KWS 60°							Basic recommendation		
Ø D max	Ø D min	Order No. Article	Rough bore Ø Ø d1 min	y	z	kg	Clamping screw ① Order No. Article	Indexable insert Order No. ▽▽ size	ISO-Code	for workpiece material P M K N S H
16,5	8,1	**F10 00350** KWS-M10/12-60	8,5	1	1	0,14	**N00 56101** S/M2,6×5,2-8IP 1,28 Nm	**W30 14660.338425** **W30 14660.3321**	TOHX 090204EN-U8.77 BK8425 TOHX 090204EN-U8.77 K10	● ◐ ● ● ○
20	11,6	**F10 00370** KWS-M14-60	12	2	2	0,14				
22	13,6	**F10 00380** KWS-M16-60	14	2	2	0,15				
23,5	15,1	**F10 00390** KWS-M18-60	15,5	2	2	0,15	**N00 56111** S/M2,6×6,2-8IP 1,28 Nm	**W30 14720.048425** **W30 14720.0421**	TOHX 090204EN-G12 BK8425 TOHX 090204FN-G12 K10	● ◐ ● ● ○
25,5	17,1	**F10 00400** KWS-M20-60	17,5	2	2	0,16				

Supply includes: Countersinking tool with clamping screw ①.
Please order inserts separately. Screwdriver see chapter 8.

● very good | ◐ good | ○ possible | ✕ not possible

Recommended application areas

Guideline values for countersinking							v_c	Max. f (mm/rev)
Material group		Strength Rm (N/mm²)	Hardness HB	Material	Material example, material code/DIN	Cutting speed v_c (m/min)	Feed Ø 16,5 – 37
P	1.0	≤500		non-alloy steels	1.0037 (S235JR) 1.0715 (11SMn30) 1.0044 (S2575JR)	250	0,16
P	2.0	500-900		non-alloy / low alloy steels	1.0050 (E295) 1.0535 (C55) 1.7131 (16MnCr5)	200	0,20
P	2.1	<500		lead alloys	1.0718 (11SMn-Pb30)	250	0,30
P	3.0	>900		non alloy / low alloy steels: heat resistant structural, heat treated, nitride and tools steels	1.7225 (42CrMo4) 1.1221 (C60E)	150	0,20
P	4.0	>900		high alloy steels	1.2341 (6CrMo15-5) 1.2601 (X165Cr-MoV12)	120	0,15
P	4.1			HSS		100	0,18
S	5.0		250	super alloys: Inconel, Hastelloy, Nimonic, stc.	2.4668 (NiuCr-19Fe19Nb5Mo3) 2.4631 (Nimonic 80A)	50	0,12
S	5.1	400		titanium, titanium alloys	3.7115 (Ti-Al5Sn2.5)	100	0,20
M	6.0	≤600		stainless steels	1.4306 (X2Cr-Ni19-11) 1.4401 (X5CrNi-Mo17-12-2)	160	0,15
M	6.1	<900		stainless steels	1.4511 (X3CrNb17) 1.4571 (X10CrNi-MoTi17-12-2)	120	0,15
M	7.0	>900		stainless / fireproof steels	1.4713 (X10CrAl-Si7) 1.4862 (X8NiCr-Si38-18)	100	0,15
K	8.0		180	gray cast iron	0.6025 (EN-GJL-250) 0.6035 (EN-GJL-350)	150	0,40
K	8.1		250	alloy gray cast iron	0.6660 (GGL-NiCr20 2)	120	0,30
K	9.0	≤600	130	spheroidal graphite cast iron, ferritic	0.7040 (EN-GJS-400-15)	120	0,30
K	9.1		230	spheroidal graphite cast iron, ferritic / perlitic	0.7050 (EN-GJS-500-7) 0.7055 (GJS-55) 0.8055 (GTW-55)	100	0,30
K	10.0	>600	250	spheroidal graphite cast iron, perlitic malleable iron	0.7060 (EN-GJS-600-3) 0.8165 (GTS-65)	100	0,20
K	10.1		200	alloyed spheroidal graphite cast iron	0.7661 (EN-GJSA-XNiCr20-2)	80	0,20
K	10.2		300	vermicular cast iron	EN-GJV Ti < 0,2 EN-GJV Ti > 0,2	50	0,20
N	12.0		90	copper alloy, brass, lead-alloy bronze, lead bronze: good cut	2.0375 (CuZn36Pb3) 2.1182.01 (G-CuPb15Sn)	250	0,30
N	12.1		100	copper alloy, brass, bronze: average cut	2.0550 (CuZn40Al2) 2.0060 (E-Cu57)	250	0,20
N	13.0		60	wrought aluminium alloys	3.3315 (AlMg1) 3.0517 (AlMnCu)	250	0,20
N	13.1		75	cast alum. alloy: Si-content <10% magnesium alloy	3.3561 (G-AlMg5) 3.2373.61 (G-AlSi9Mg wa)	150	0,30
N	14.0		100	cast alum.alloy: Si-content >10%	3.2381.01 (G-AlSi10Mg)	120	0,25
H	15.0	1400		hardened steels < 45 HRC		50	0,15
H	16.0	1800		hardened steels > 45 HRC		25	0,10

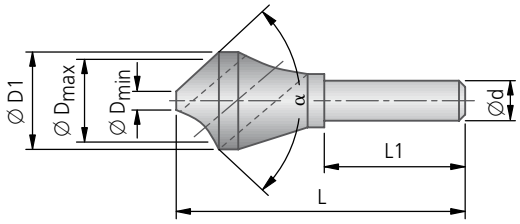
Cutting values shown are maximum values relating to the basic recommendations for cutting materials given.

Important: See chapter 8 for more application details and safety notes !

KOMET® Countersinking and chamfering tools

Countersinking tool SE Ø 2 - 15 mm

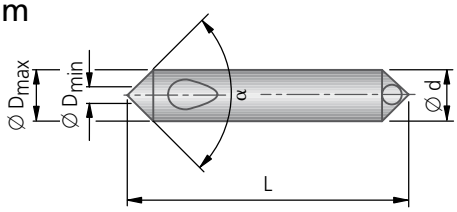
with cylindrical shank
head and shank in HSS



SE								
for bore dia. Ø D min – max	α	Article	Order No.	Ø d	Ø D1	L	L1	kg
2 – 5	90°	SE2/5-90ZYL	H20 21011	6	10	45	28,5	0,01
	60°	SE2/5-60ZYL	H20 21511	6	10	50	25	0,01
5 – 10	90°	SE5/10-90ZYL	H20 21021	6	14	56	30,5	0,02
	60°	SE5/10-60ZYL	H20 21521	6	14	63	28	0,02
10 – 15	90°	SE10/15-90ZYL	H20 21031	10	21	67	31,5	0,05

Countersinking tool DSE Ø 1 - 4 mm

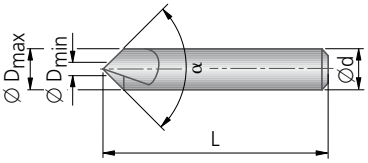
60° taper angle can be supplied on request



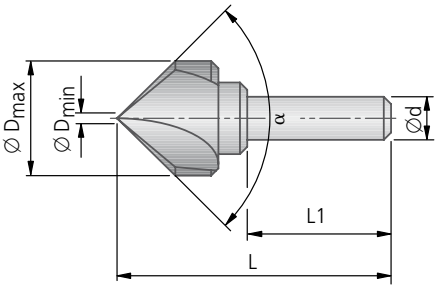
DSE						
for bore dia. Ø D min – max	α	Article	Order No.	Ø d	L	kg
1 – 4	90°	DSE2/5-90ZYL	H20 21111	6,35	45	0,01

Countersinking tool SEA Ø 2 - 30 mm

head and shank in HSS, *shank section in steel
single cutting edge



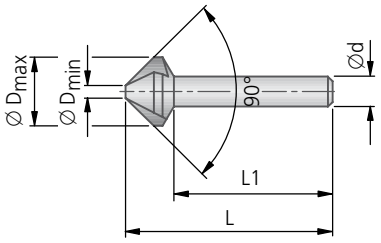
SEA 6 / SEA 9



SEA							
for bore dia. Ø D min – max	α	Article	Order No.	Ø d	L	L1	kg
2 – 5	90°	SEA6-90	H20 43011	5	50	–	0,02
2 – 10	90°	SEA9-90	H20 43021	10	60	–	0,03
2 – 15	90°	SEA13-90	H20 43111	10	65	52	0,04
2 – 20	90°	SEA19-90	H20 43121	10	73	48	0,06
2 – 25	90°	SEA25-90	H20 43121	10	80	50	0,07
3 – 30	90°	SEA32-90*	H20 43141	12	82	52	0,11

Countersinking tool SX Ø 2,5 - 25 mm

with cylindrical shank
produced in HSS



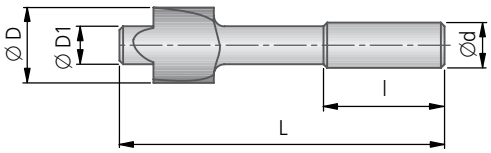
SX										
for bore dia. Ø D min – max	Article	Order No.	Ø d	L	L1	kg	for countersink screw DIN 963 964	63 91	84	inch size
2,5 – 10,0	SX10/74-90ZYL	**H20 42011**	6	50	40,2	0,01	M5			
2,5 – 10,4	SX10,4-90ZYL	**H20 42021**	6	50	40,1	0,01		M6	M5	3/16
2,8 – 12,4	SX12,4-90ZYL	**H20 42041**	8	56	44,2	0,02			M6	1/4
3,2 – 15,0	SX15/74-90ZYL	**H20 42061**	10	60	46	0,04	M8			
3,2 – 16,5	SX16,5-90ZYL	**H20 42071**	10	60	44,8	0,04		M10	M8	5/16
3,5 – 20,5	SX20,5-90ZYL	**H20 42101**	10	63	44,6	0,05				
3,8 – 25,0	SX25-90ZYL	**H20 42121**	10	67	45,3	0,06			M12	

BENEFITS for you:

- Efficient - 3 cutting edges cut simultaneously, making higher feed rates possible
- Cuts evenly because each of the 3 cutting edges has only to cut a third of the material
- Very well suited for deburring work due to their completely chatter-free operation

Countersinking tool SID Ø 8 - 20 mm

with pilot for through hole
DIN ISO 273 fine

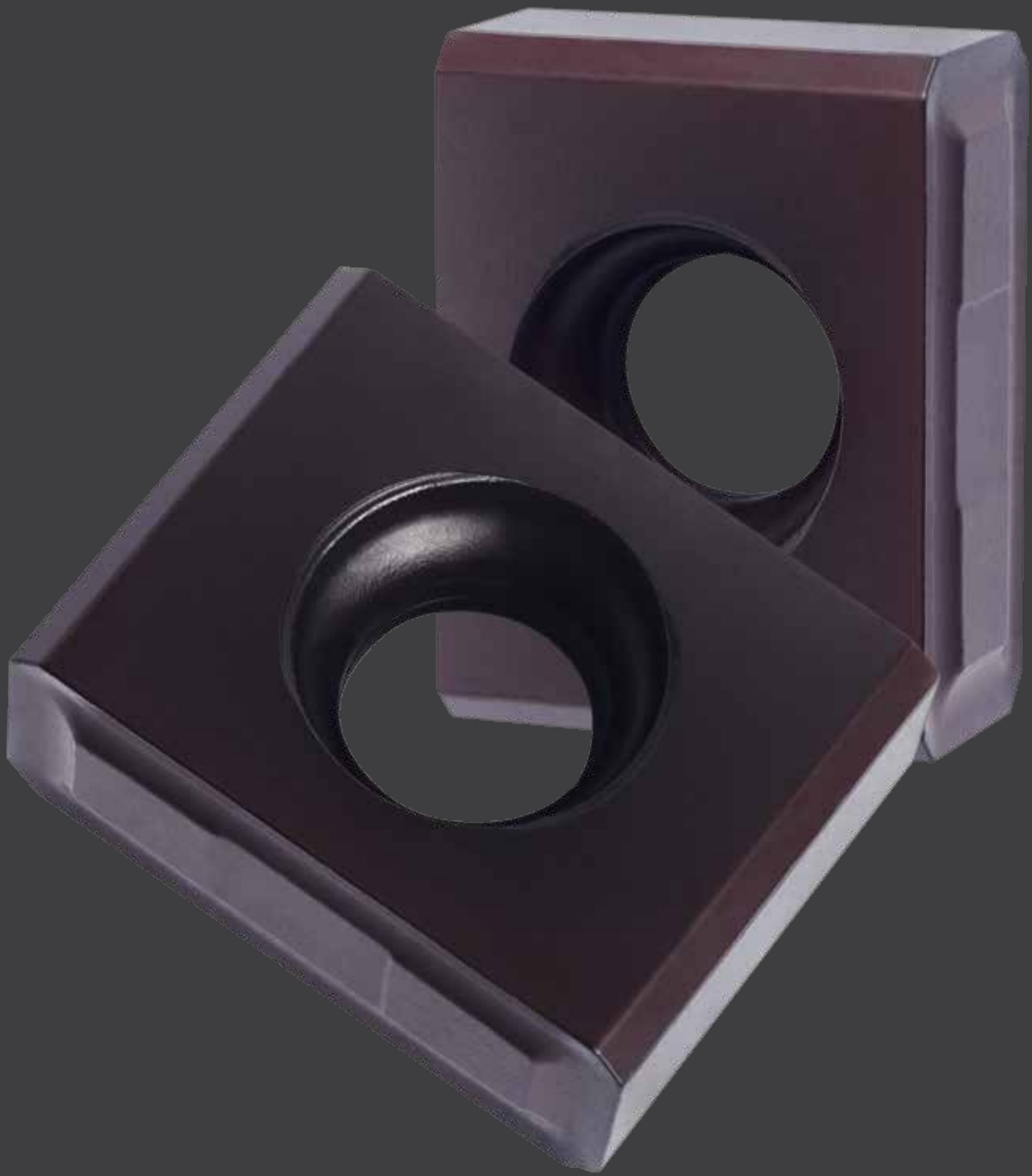


SID						
for bore dia. Ø D	Article	Order No.	Ø d × l	Ø D1	L	kg
8,0	SID-M4F	**H20 32121**	5 × 31,5	4,3	71	0,01
10,0	SID-M5F	**H20 32131**	8 × 35,5	5,3	80	0,03
11,0	SID-M6F	**H20 32141**	8 × 35,5	6,4	80	0,04
15,0	SID-M8F	**H20 32151**	12,5 × 40	8,4	100	0,06
18,0	SID-M10F	**H20 32161**	12,5 × 40	10,5	100	0,08
20,0	SID-M12F	**H20 32171**	12,5 × 40	13,0	100	0,10

KOMET®

Cutting elements

KOMET® inserts and the appropriate tools provide the user with an efficient system for machining any materials.



Cutting elements for milling

Guidelines
for selecting inserts

All dimensions shown are subject to tolerance in accordance with the relevant requirement.

	Workpiece material
P	**Steel:** All types of steel and cast steel, except for stainless steel with an austenitic microstructure
M	**Stainless steel:** Stainless, austenitic and austenitic-ferritic steel and cast steel
K	**Cast iron:** Gusseisen mit Lamellengrafit, Gusseisen mit Kugelgrafit, Temperguss, Vermikularguss
N	**Non-ferrous metals:** Aluminium and other non-ferrous metals, non-metallic materials
S	**Superalloys and titanium:** Highly heat-resistant iron-, nickel- and cobalt-based alloys, titanium and titanium alloys
H	**Hardened materials:** Hardened steel, hardened cast iron materials, white cast iron

Key
Abbreviations used

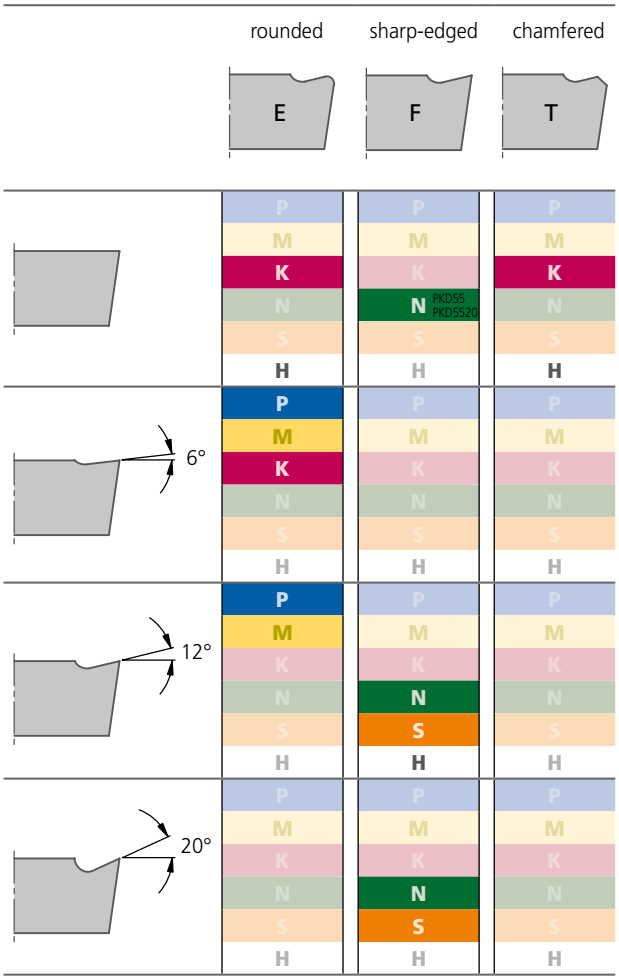
d1	mm	Incircle diameter
s	mm	Indexable insert thickness
l	mm	Theoretical usable length of cutting edge
γ	°	Rake angle
f	mm	Construction auxiliary dimension
R	mm	Corner radius
d2	mm	Hole diameter

New 4-digit cutting material code e.g.

BK6115
- Toughness grade (05...50)
- Coating type (e.g. CVD Al_2O_3)
- Cutting material designation: carbide + coating

Selecting the top rake
Recommendations for using inserts with ground chip grooves

(W00, W01, W04, W30, W32, W34, W37, W60)



uncoated

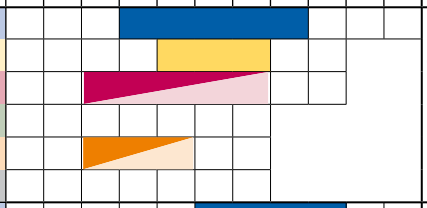
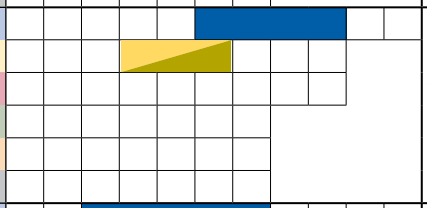
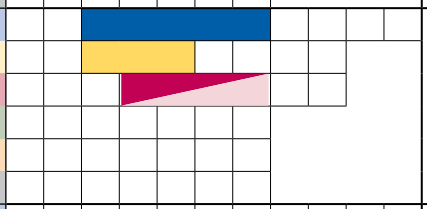
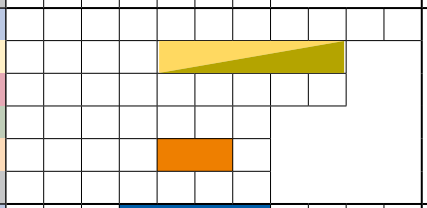
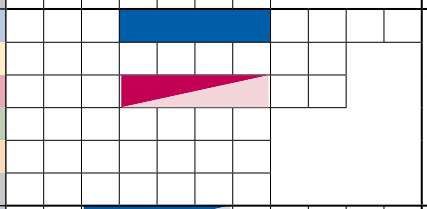
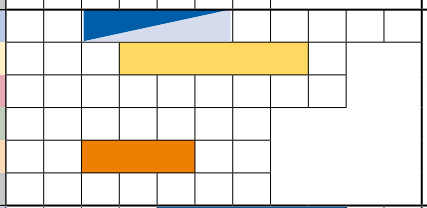
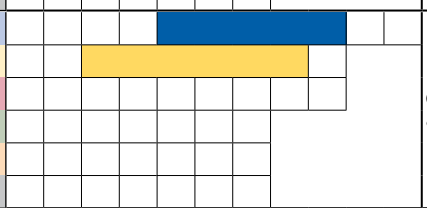
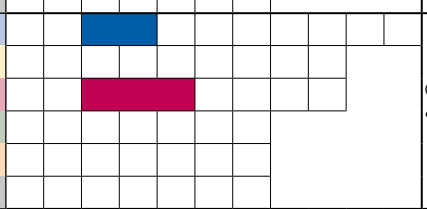
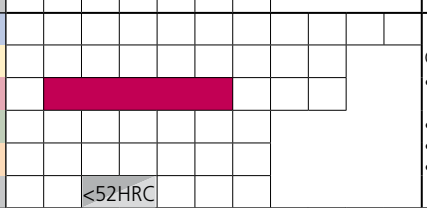
Cutting material designation	Code	Norm code	Application range (Wear resistance + → –; Toughness factor – → +) 01 05 10 15 20 25 30 35 40 45 50	Properties	Cutting element
P25M	03	HW-P25	P, M, K, N, S, H	uncoated: • with excellent wear resistance and good toughness factor • suitable for medium to high cutting speeds for roughing and finishing, also for interrupted cut • for non-alloy steel, malleable cast iron, stainless steel and cast steel	W01 Q09 W27 Q36 W29 W30 W34 W59 W60 W79
K10	21	HW-K10	P, M, K, N, S, H	uncoated: • chamfered and neutral cutter geometry suitable for all grades of cast iron • positively sintered (PD) and ground geometry is used for aluminium e.g.: 12° and 20° top rake, ground sharply and not rounded	W00 W37 W01 W59 W04 W60 W24 W79 W27 W83 W29 W85 W30 Q36 W32 W34
K10 / fine grain	23	HW-M10 HW-K15	P, M, K, N, S, H	uncoated: • fine grain carbide with high wear and thermal resistance • mainly for machining aluminium; PVD coated, also suitable for machining general steels and rust-resistant materials	W57..12 W58..12 C83.. C85.. C86.. Q40.. Q43.. Q55.. Q80..
K20	22	HW-K20	P, M, K, N, S, H	uncoated: • with large application range for cast iron materials • medium to high cutting speeds for roughing and finishing • wet and dry machining also possible • for cast iron, malleable cast iron, aluminium/copper/brass and bronze alloys; main application area in milling	Q09.. Q12.. Q15..
			01 05 10 15 20 25 30 35 40 45 50	main area of application; suitable in some cases	

CVD coated

Cutting material designation	Code	Norm code	Application range (Wear resistance + → –; Toughness factor – → +) 01 05 10 15 20 25 30 35 40 45 50	Properties	Cutting element
BK61	61	HC-K15	P, M, K, N, S, H (H: < 52 HRC)	CVD-TiC-Al_2O_3: • aluminium oxide coating (ceramic) for higher cutting speeds in all cast iron materials • not for use with aluminium materials !	Q15..
BK6110	6110	HC-P10 HC-K10	P, M, K, N, S, H (H: < 52 HRC)	CVD-TiCN-TiN-Al_2O_3: • for final machining bores in cast iron and steel materials • excellent dimensional stability due to combination of wear resistant substrate and ceramic, surface treated coating	W30 Q36 W59 Q40 H80 Q43 Q55 Q56 Q63 Q75
BK6115	6115	HC-P20 HC-K20	P, M, K, N, S, H (H: <52HRC)	CVD-TiCN-TiN-Al_2O_3: • high quality, surface treated coating • mainly for machining cast iron materials under standard to stable conditions, also at high cutting speeds	W01.. W29..00 W29..01 W30.. W80..01 W83..01 Q80..
			01 05 10 15 20 25 30 35 40 45 50	main area of application; suitable in some cases	

Summary and list of codes

CVD coated

Cutting material designation	Code	Norm code		Application range: Wear resistance (+) / Toughness factor (−) 01 05 10 15 20 25 30 35 40 45 50	Properties	Cutting element
BK6130	6130	HC-P30	P M K N S H		CVD-TiCN-TiN-Al_2O_3: • high quality, surface treated coating • mainly for machining cast iron materials • thanks to stabilised cutting edge excellent suitability for steel and stainless steel	W83..21 Q40..
BK64	64	HC-P35 HC-M15	P M K N S H		CVD-TiC-TiN: • multiple coating on P 40 carbide base • suitable for interrupted cut	Q09.. Q36..
BK6420	6420	HC-P20	P M K N S H		CVD-TiCN-Al_2O_3-TiN: • considerable level of toughness with extremely high wear resistance • for full cut at high cutting speeds in steel, cast steel and stainless steels	W29..01 W83..01 W83..13
BK6435	6435	HC-M35 HC-S35	P M K N S H		CVD-TiN-Ti (C,N);Al2O3; Ti (N,B) coated: • very tough and wear-resistant grade for use in special materials	Q40.. Q43.. Q55.. Q56.. Q63.. Q75..
BK68	68	HC-P20	P M K N S H		CVD-TiCN: • coated milling tools for high cutting speeds, particularly in the areas of steel and iron casting • high wear resistance, even with insufficient cooling lubricant supply	Q36.. Q80..
BK74	74	HC-M25	P M K N S H		CVD-TiCN-TiC-Al_2O_3: • extremely tough carbide substrate • for machining rust-resistant and stainless steels	W83..01 W83..13
BK7525	7525	HC-P30	P M K N S H		CVD-TiCN-Al_2O_3-TiN: • grade for universal use with balanced wear and toughness properties	C83.. C84.. C85.. C86..
BK7610	7610	HC-K10	P M K N S H		CVD-TiCN-Al_2O_3: • high wear-resistant grade for machining grey cast iron, S.G. cast iron and cast iron material	C83.. C84.. C85.. C86..
BK7615	7615	HC-K15	P M K N S H		CVD-TiCN-Al_2O_3: • main high wear-resistant grade for wet and dry machining of all cast iron materials • extremely good edge stability due to new type of surface finish • can therefore also be used for interrupted cut • highly productive cutting material grade	W01.. W27..01 W29..00 W29..01 W30.. W59.. W79.. W83..01

01 05 10 15 20 25 30 35 40 45 50 — main area of application — suitable in some cases

CVD coated

Cutting material designation	Code	Norm code		Application range: Wear resistance + / Toughness factor − (01 05 10 15 20 25 30 35 40 45 50)	Properties	Cutting element
BK7740	7740	HC-M40	P		CVD-TiN+TiB2 coated: • very tough and wear-resistant grade for use in titanium alloys and special materials	Q43 Q55.. Q56.. Q75..
			M			
			K			
			N			
		HC-S40	S			
			H			

PVD coated

Cutting material designation	Code	Norm code		Application range: Wear resistance + / Toughness factor − (01 05 10 15 20 25 30 35 40 45 50)	Properties	Cutting element
BK2710	2710	HC-K10	P		PVD-TiAlN: • extremely wear resistant carbide • for bore end machining stainless steels, structural and tool steels and cast materials • excellent dimensional stability due to combination of hard substrate and TiAln coating with high aluminium content	W00.. W30.. W60.. W79.. H80.. Q55..
			M			
			K			
			N			
			S			
			H	< 52 HRC		
BK2715	2715	HC-K20	P		PVD-TiAlN: • models designed especially for continuous drilling and milling in GJL and GJS • high wear resistance, good edge stability and sufficient toughness reserves • for double-edged continuous drilling, also suitable for high-strength steels and non-ferrous metals	H60.. Q12.. Q80..
			M			
			K			
			N			
			S			
			H			
BK2725	2725		P		PVD-TiAlN: • coated carbide in the P15-P30, M20-M25 and K15-K25 application areas with universal properties, for a wide scope of applications, also for difficult conditions in the medium speed range	H71.. Q09..
			M			
			K			
			N			
			S			
			H			
BK2730	2730	HC-M25	P		PVD-TiAlN: • extremely fine grades • extremely good edge stability and maximum wear resistance at medium and high speed ranges	W29..20 W82..21 Q80..
			M			
			K			
			N			
			S			
			H			
BK2735	2735	HC-P35 HC-M30	P		PVD-TiAlTaN coated: • extremely tough grade with outstanding coating adhesion and wear resistance • post-treated	Q40..
			M			
			K			
			N			
			S			
			H			
BK2740	2740	HC-P35	P		PVD-TiAlN: • coating with high aluminium content on extremely tough substrate • completes the grades for solid drilling steel materials in the medium cutting speed ranges	Q40.. Q43.. Q47.. Q55.. Q56.. Q63.. Q75..
			M			
			K			
			N			
			S			
			H			
BK7710	7710	HC-K10	P		PVD-TiB_2: • coating on extremely high wear resistance K10 carbide • for finish and rough machining aluminium up to approx. 10% Si content and titanium alloys • optimum coating properties to prevent build-up on cutting edges	W29..11 W32.. W57..12 W58..12 W80..01 W82..21 W83..21 H62..
			M			
			K			
			N			
			S			
			H			

01 05 10 15 20 25 30 35 40 45 50

main area of application suitable in some cases

Summary and list of codes

PVD coated

Cutting material designation	Code	Norm code		Application range: Wear resistance + / − ; Toughness factor − / + (01 05 10 15 20 25 30 35 40 45 50)	Properties	Cutting element
BK78	78	HC-P25	P M K N S H		PVD-TiAlN: • coated carbide on P25M base with high wear resistance • medium to high cutting speed for roughing and finishing and with interrupted cut • for non alloy steel, cast steel and die steels	Q36..
BK7935	7935		P M K N S H		PVD-AlTiN: • coating with high aluminium content on tough substrate for continuous drilling of rust- and acid-resistant steels, and special alloys • Use as continuous drilling inner indexable insert and for difficult conditions recommended	W80..01 W83..01 W83..13 W83..21 W83..32 Q80..
BK80	80	HC-P35	P M K N S H		PVD-TiCN: • for milling with a wide range of applications in steel and cast iron materials • excellent balance between wear resistance and srength makes this suitable for universal use	Q36..
BK8425	8425	HC-P25	P M K N S H		PVD-TiAlN/TiN: • universally usable grade with increased wear resistance thanks to innovative multi-layer design of PVD coating	W01 Q15 W29 Q36 W30 Q40 W59 Q43 W80 Q47 W83 Q55 H70 Q56 Q09 Q63 Q12 Q75
BK8430	8430	HC-P30	P M K N S H		PVD-TiAlN/TiN: • extremely fine grades • extremely good edge stability and maximum wear resistance at medium and high speed ranges	W29..15 W29..16 W29..20 W57..14 W57..18 W80..03 W83..03 W83..21
BK8440	8440	HC-P35	P M K N S H		PVD-TiCN/TiN: • coating on extremely tough substrate • for medium cutting speeds and also suitable for interrupted cut	W00.. H60.. Q15..
BK87	87	HC-P35	P M K N S H		PVD-TiN: • coated carbide on P40 base • medium to high cutting speeds for roughing and finishing and with interrupted cut • for non alloy steel, cast steel and die steels	Q09..

01 05 10 15 20 25 30 35 40 45 50 — main area of application; suitable in some cases

Cermet uncoated

Cutting material designation	Code	Norm code		Application range: Wear resistance + / − ; Toughness factor − / + (01 05 10 15 20 25 30 35 40 45 50)	Properties	Cutting element
CK37	37	HT-P20	P M K N S H		uncoated: • good balance of wear resistance and toughness • allows interrupted cuts and light roughing operations	W29..00 W30.. W79.. Q09..

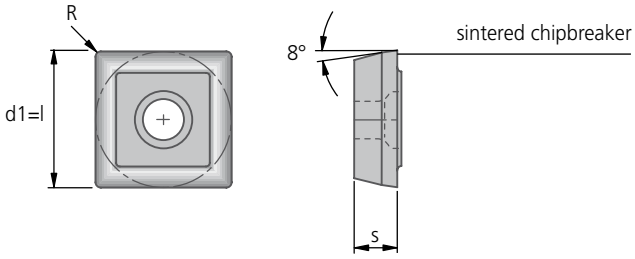
Application range:

- KUB Quatron®, KUB Centron® Powerline
- KOMET® Quatron *hi.feed*
- KOMET® Quatron *Chamfer*
- TwinKom® double insert tools
- Kometric® mounted seatings

Optimum solution for all roughing operations.
Suitable for medium and strong steels and cast iron according to quality.

All-round geometry:
Wear-resistant insert for universal use for internal and external cutting.

Cutter geometry:



Substrate		Carbide									
Coating type		CVD	CVD	CVD	CVD	PVD	PVD				
Cutting material designation		BK7615	BK6115	BK6420	BK74	BK7935	BK8425				
ISO Code	Order No.							d1	s	l	R
Enter code ▼		7615	6115	6420	74	7935	8425				
SOEX 050204-01	W83 13000.01..		▲		▲			5,56	2,38	5,56	0,4
	W83 13010.04..	▲		▲		▲	▲				
SOEX 060306-01	W83 18000.09..		▲		▲			6,35	3,18	6,35	0,6
	W83 18010.06..	▲		▲		▲	▲				
SOEX 07T308-01	W83 23000.01..		▲		▲			7,94	3,58	7,94	0,8
	W83 23010.08..	▲		▲		▲	▲				
SOEX 090408-01	W83 32000.15..		▲		▲			9,52	4,37	9,52	0,8
	W83 32010.08..	▲		▲		▲	▲				
SOEX 120508-01	W83 44000.18..		▲		▲			12,7	5,16	12,7	0,8
	W83 44010.08..	▲		▲		▲	▲				
Steel P			◐	●	◐	●	●	Order example:			
Stainless steel M				●	●	●	●	ISO Code			
Cast iron K		●	●	◐			●	SOEX 050204-01			
Non-ferrous metals N								Cutting material			
Superalloys and titanium S					●	◐		BK6420			
Hardened materials H		◐	◐ <52HRC					Order No.			
								W83 13010.046420			
External cutting edge		✓	✓	✓	✓	✓	✓				
Internal cutting edge *Recommendation*		*BK8425*	*BK8425*	*BK8425*	✓	✓	✓				

● Main area of application ◐ Suitable in some cases

Important: See chapter 8 for more application details and safety notes!

KOMET® W83..21

SOEX

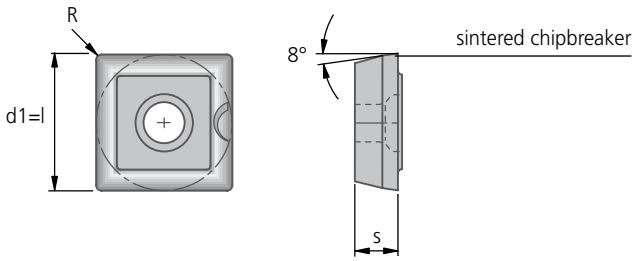
Indexable insert

Application range:

- KUB Quatron®, KUB Centron® Powerline
- KOMET® Quatron *Chamfer*
- TwinKom® double insert tools
- Kometric® mounted seatings

For cutting stainless and general steels and aluminium materials.

Cutter geometry:



Substrate		Carbide							
Coating type		PVD	PVD	PVD	CVD				
Cutting material designation		BK8430	BK7935	BK7710	BK6130				
ISO Code	Order No.					d1	s	l	R
Enter code ▼		8430	7935	7710	6130				
SOEX 050204-21	W83 13210.04..	▲	▲	▲	▲	5,56	2,38	5,56	0,4
SOEX 060306-21	W83 18210.06..	▲	▲	▲	▲	6,35	3,18	6,35	0,6
SOEX 060308-21	W83 18210.08..	▲	▲	▲	▲				0,8
SOEX 07T308-21	W83 23210.08..	▲	▲	▲	▲	7,94	3,58	7,94	0,8
SOEX 090408-21	W83 32210.08..	▲	▲	▲	▲	9,52	4,37	9,52	0,8
SOEX 110508-21	W83 39210.08..	▲	▲	▲	▲	11,1	4,76	11,1	0,8
SOEX 120508-21	W83 44210.08..	▲	▲	▲	▲	12,7	5,16	12,7	0,8
Steel P		●	●		●	Order example:			
Stainless steel M		◐	◐		◐	ISO Code			
Cast iron K		◐	◐		◐	SOEX 050204-21			
Non-ferrous metals N		◐		●		Cutting material			
Superalloys and titanium S		◐			◐	BK2730			
Hardened materials H						Order No.			
						W83 13210.042730			
External cutting edge		✓	✓	✓	✓				
Internal cutting edge *Recommendation*		✓	*W83..01 – BK8425*	✓	*W83..01 – BK8425*				

● Main area of application ◐ Suitable in some cases

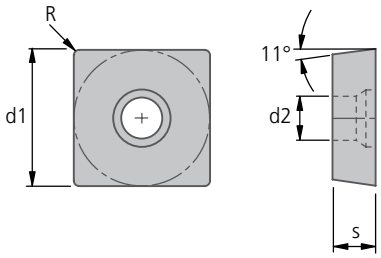
▲ Availability: for delivery see current price and stock list

Application range:

T slot cutter

Precision inserts ground on all sides with rounded cutting edges. Suitable for machining steel and cast iron materials in conjunction with positive axial position.

Cutter geometry:



Substrate		Carbide					
Coating type		–	–				
Cutting material designation		P25M	K20				
ISO Code	Order No.			d1	d2	s	R
	Enter code ▼	03	22				
SPGW 050204	Q09 13000.01..	▲	▲	5,57	2,8	2,38	0,4
Steel P		●		Order example:			
Stainless steel M		◐		ISO Code			
Cast iron K			●	SPGW 050204			
Non-ferrous metals N			●	Cutting material			
Superalloys and titanium S				P25M			
Hardened materials H				Order No.			
				Q09 13000.0103			

● Main area of application ◐ Suitable in some cases

Important: See chapter 8 for more application details and safety notes!

KOMET® Q09

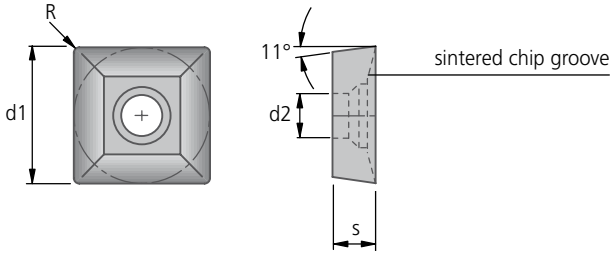
SPMT

Indexable insert

Application range:

Chamfering
Inserts with sintered positive chip groove and rounded cutting edge. Because of its positive chip geometry, this insert produces a good cutting result even under difficult and critical cutting conditions.

Cutter geometry:



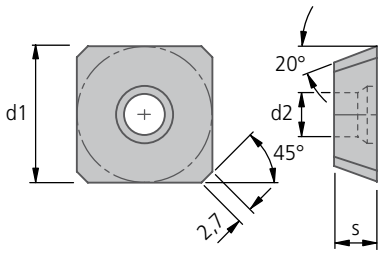
Substrate		Carbide						
Coating type		–	PVD	PVD				
Cutting material designation		K20	BK2725	BK87				
ISO Code	Order No.				d1	d2	s	R
	Enter code ▼	22	2725	87				
SPMT 060304	Q09 18000.17..	▲	▲	▲	6,35	2,8	3,18	0,4
Steel P			●	●	Order example:			
Stainless steel M			◐	◐	ISO Code			
Cast iron K		●			SPMT 060304			
Non-ferrous metals N		●			Cutting material			
Superalloys and titanium S		●			BK2725			
Hardened materials H					Order No.			
					Q09 18000.172725			

● Main area of application ◐ Suitable in some cases
▲ Availability: for delivery see current price and stock list

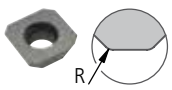
Application range:

Face milling cutter
Insert precision ground on all sides.

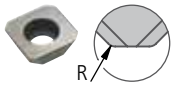
Cutter geometry:



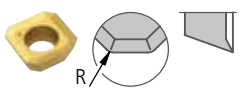
Substrate		Carbide			Cermet				
Coating type		–	CVD	PVD	–				
Cutting material designation		K20	BK64	BK8425	CK37				
ISO Code	Order No.					d1	d2	s	R
	Enter code ▼	22	64	8425	37				
SEHW 1204 AFFN-V	Q09 44000.02..	▲			▲	12,7	5,5	4,76	1,0
SEHW 1204 AFTN-V	Q09 44000.15..			▲	▲				1,0
SEHT 1204 AFEN	Q09 44000.23..		▲						1,0
Steel P			●	●	●	Order example:			
Stainless steel M			◐	◐	◐	ISO Code			
Cast iron K		●		◐	◐	SEHW 1204 AFFN-V			
Non-ferrous metals N		●				Cutting material			
Superalloys and titanium S						K20			
Hardened materials H						Order No.			
						Q09 44000.0222			



Q09 44000.02.. : With chamfering (blending radius) from main to secondary cutting edge, sharp edged.
The insert provides a specially shaped, positive cutter geometry for machining CrNi and unusual materials. Materials which tend to produce a build-up on the cutting edge can also be successfully machined with this geometry. Used in the lower cutting speed ranges with medium chip cross sections.



Q09 44000.15.. : With chamfering (blending radius) from main to secondary cutting edge, main edge chamfered. For roughing and finishing at medium to high cutting speeds and feed rates. Main cutting edge stabilised by chamfer. The rounded transition to the sharp secondary cutting edge produces a high quality surface finish. The wide application range is particular suitable for steel and cast iron materials.



Q09 44000.23..

● Main area of application ◐ Suitable in some cases

KOMET® Q12

Indexable insert

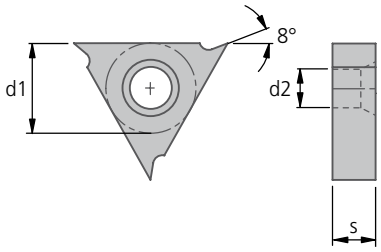
TCAA / TNAA

Application range:

Slot milling cutter
Slot milling cutter adaptor

Positive chip angle produces soft cut. The cutting edge is designed for machining steel or cast iron/aluminium.

Cutter geometry:



Substrate		Carbide						
Coating type		–	PVD	PVD				
Cutting material designation		K20	BK2715	BK8425				
ISO Code	Order No.				d1	d2	s	for milling width
	Enter code ▼	22	2715	8425				
TCAA 1102ZZ R	Q12 18000.01..	▲	▲	▲	6,35	2,8	2,6	4-5
TCAA 1102ZZ L	Q12 18000.02..	▲	▲	▲				
TCAA 1103ZZ R	Q12 18000.03..	▲	▲	▲	6,35	2,8	3,2	6
TCAA 1103ZZ L	Q12 18000.04..	▲	▲	▲				
TNAA 16T3ZZ R	Q12 32000.05..	▲	▲	▲	9,52	4,4	3,97	7
TNAA 16T3ZZ L	Q12 32000.06..	▲	▲	▲				
TNAA 1604ZZ N	Q12 32000.07..	▲	▲	▲	9,52	3,4	4,76	8-9
TNAA 1604ZZ R	Q12 32000.52..	▲	▲	▲	9,52	4,4	4,76	8-9
TNAA 1604ZZ L	Q12 32000.53..	▲	▲	▲				
TNAA 1606ZZ R	Q12 32000.08..	▲	▲	▲	9,52	4,4	6,4	10-12
TNAA 1606ZZ L	Q12 32000.09..	▲	▲	▲				
Steel P				●	Order example:			
Stainless steel M				◐	ISO Code			
Cast iron K			●	◐	TCAA 1102ZZ R			
Non-ferrous metals N		●			Cutting material			
Superalloys and titanium S					K20			
Hardened materials H					Order No.			
					Q12 18000.0122			

● Main area of application ◐ Suitable in some cases
▲ Availability: for delivery see current price and stock list

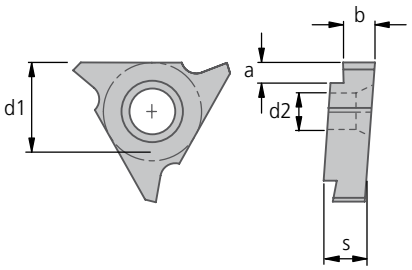
Application range:

Circular milling

Internal and external circular milling of longitudinal or annular slots for circlips/safety rings.
The cutting edge geometry produces a good machining result for steel, cast iron and aluminium when used with the appropriate carbide grades.

Design:
Dimension b is aligned with the slot width to H13 tolerance for circlips to DIN 471 and DIN 472. This relates to the upper tolerance limit for the slot widths which can be still be produced to the correct dimension after wear.

Cutter geometry:



Substrate		Carbide							
Coating type		–	PVD	PVD					
Cutting material designation		K20	BK2715	BK8425					
ISO Code	Order No.				d1	d2	s	b^{H13}	a max.
Enter code ▼		22	2715	8425					
TCAX 1103ZZ R-160	Q12 18000.11..	▲	▲	▲	6,35	2,8	3,2	1,60	1,4
TCAX 1103ZZ R-185	Q12 18000.12..	▲	▲	▲				1,85	1,7
TCAX 1103ZZ R-215	Q12 18000.13..	▲	▲	▲				2,15	2,0
TCAX 1103ZZ R-265	Q12 18000.14..	▲	▲	▲				2,65	2,2
TNAX 1604ZZ R-265	Q12 32000.18..	▲	▲	▲	9,52	3,4	4,76	2,65	2,2
TNAX 1604ZZ R-315	Q12 32000.19..	▲	▲	▲				3,15	2,2
TNAX 1604ZZ R-415	Q12 32000.20..	▲	▲	▲				4,15	3,2
TNAX 2206ZZ R-415	Q12 44000.21..	▲	▲	▲	12,7	5,5	6,4	4,15	4,0
TNAX 2206ZZ R-465	Q12 44000.22..	▲	▲	▲				4,65	4,5
TNAX 2206ZZ R-515	Q12 44000.23..	▲	▲	▲				5,15	4,5
TNAX 2206ZZ R-620	Q12 44000.25..	▲	▲	▲				6,20	6,0
Steel P				●					
Stainless steel M				◐					
Cast iron K			●	◐					
Non-ferrous metals N		●							
Superalloys and titanium S									
Hardened materials H									

Order example:
ISO Code
TCAX 1103ZZ R-160
Cutting material
K20
Order No.
Q12 18000.1122

● Main area of application ◐ Suitable in some cases

KOMET® Q12

Indexable insert

TPAX / TCAX / TNAX

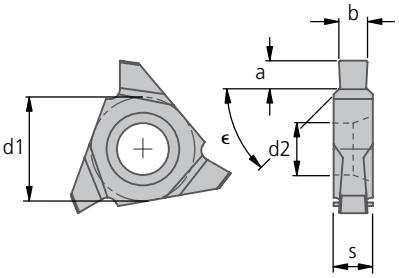
Application range:

Circular milling

Internal and external circular milling of longitudinal or annular slots for circlips/safety rings.
The cutting edge geometry produces a good machining result for steel, cast iron and aluminium when used with the appropriate carbide grades.

Design:
Dimension b is aligned with the slot width to H13 tolerance for circlips to DIN 471 and DIN 472. This relates to the upper tolerance limit for the slot widths which can be still be produced to the correct dimension after wear.

Cutter geometry:



Dimensions "a" and "b" apply
for the resulting workpiece contour.

Substrate		Carbide								
Coating type		–	PVD	PVD						
Cutting material designation		K20	BK2715	BK8425						
ISO Code	Order No.				d1	d2	s	b^{H13}	a	chamfer ϵ
Enter code ▼		22	2715	8425						
TPAX 1103ZZ R-110F	Q12 18000.10..	▲	▲	▲	6,35	2,9	3,2	1,1	0,9	–
TNAX 1103ZZ R-160F	Q12 18000.31..	▲	▲	▲	6,35	2,9	3,2	1,6	1,0	45°
TNAX 1103ZZ R-185F	Q12 18000.32..	▲	▲	▲				1,85	1,25	
TNAX 1103ZZ R-215F	Q12 18000.33..	▲	▲	▲				2,15	1,5	
TNAX 1103ZZ R-265F	Q12 18000.34..	▲	▲	▲				2,65	1,75	
TCAX 16T3ZZ R-110F	Q12 32000.15..	▲	▲	▲	9,52	4,4	3,96	1,1	0,9	–
TCAX 16T3ZZ R-130F	Q12 32000.16..	▲	▲	▲				1,3	1,3	
TCAX 16T3ZZ R-160F	Q12 32000.17..	▲	▲	▲				1,6	1,4	
TNAX 1604ZZ R-265F	Q12 32000.41..	▲	▲	▲	9,52	4,4	4,76	2,65	1,75	45°
TNAX 1604ZZ R-315F	Q12 32000.42..	▲	▲	▲				3,15	1,75	
TNAX 1604ZZ R-415F	Q12 32000.43..	▲	▲	▲				4,15	2,5	
TNAX 2206ZZ R-415F	Q12 44000.84..	▲	▲	▲	12,7	5,5	6,4	4,15	2,5	45°
TNAX 2206ZZ R-465F	Q12 44000.85..	▲	▲	▲				4,65	3,4	
TNAX 2206ZZ R-515F	Q12 44000.86..	▲	▲	▲				5,15	4,0	
TNAX 2206ZZ R-515F	Q12 44000.87..	▲	▲	▲				5,15	4,0	
Steel P				●	Order example: ISO Code TPAX 1103ZZ R-110F Cutting material K20 Order No. Q12 18000.1022					
Stainless steel M				◐						
Cast iron K			●	◐						
Non-ferrous metals N		●								
Superalloys and titanium S										
Hardened materials H										

● Main area of application ◐ Suitable in some cases
▲ Availability: for delivery see current price and stock list

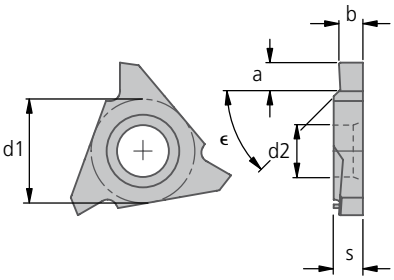
Application range:

Circular milling

Internal and external circular milling of longitudinal or annular slots for circlips/safety rings.
The cutting edge geometry produces a good machining result for steel, cast iron and aluminium when used with the appropriate carbide grades.

Design:
Dimension b is aligned with the slot width to H13 tolerance for circlips to DIN 471 and DIN 472. This relates to the upper tolerance limit for the slot widths which can be still be produced to the correct dimension after wear.

Cutter geometry:



Dimensions "a" and "b" apply
for the resulting workpiece contour.

Substrate		Carbide								
Coating type		–	PVD	PVD						
Cutting material designation		K20	BK2715	BK8425						
ISO Code	Order No.				d1	d2	s	b^{H13}	a	chamfer ϵ
	Enter code ▼	22	2715	8425						
TNAX 1103ZZ R-265F	Q12 18000.36..	▲	▲	▲	6,35	2,9	3,2	2,65	1,75	45°
TNAX 1604ZZ R-415F	Q12 32000.38..	▲	▲	▲	9,52	4,4	4,76	4,15	2,5	45°
Steel P				●	Order example:					
Stainless steel M				◐	ISO Code					
Cast iron K			●	◐	TNAX 1103ZZ R-265F					
Non-ferrous metals N		●			Cutting material					
Superalloys and titanium S					K20					
Hardened materials H					Order No.					
					Q12 18000.3622					

● Main area of application ◐ Suitable in some cases

Important: See chapter 8 for more application details and safety notes!

KOMET® Q15

Indexable insert

CPMT / CPMW

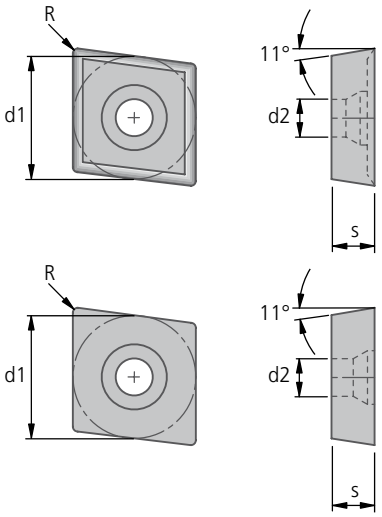
Application range:

T slot cutter

CPMT:
Inserts with sintered peripheral positive chip guide and chamfered cutting edge. Particularly suitable for T slot cutting for steel materials.

CPMW:
Insert with chamfered cutting edge.
Because of its cutting geometry, particularly suitable for machining cast iron materials.

Cutter geometry:



Substrate		Carbide								
Coating type		–	–	CVD	PVD	PVD				
Cutting material designation		P40	K20	BK61	BK8425	BK8440				
ISO Code	Order No.						d1	d2	s	R
Enter code ▼		04	22	61	8425	8440				
CPMT 060304	Q15 18000.01..	▲			▲	▲	6,35	2,8	3,18	0,4
CPMW 060304	Q15 18000.02..			▲						
CPMW 09T308	Q15 32000.03..		▲				9,52	4,3	3,97	0,8
CPMT 09T308	Q15 32000.04..				▲	▲				
Steel	P	●			●	●	Order example:			
Stainless steel	M	●			◐	◐	ISO Code			
Cast iron	K		●	●	◐		CPMT 060304			
Non-ferrous metals	N		●				Cutting material			
Superalloys and titanium	S						BK8425			
Hardened materials	H			◐ <52HRC			Order No.			
							Q15 18000.018425			

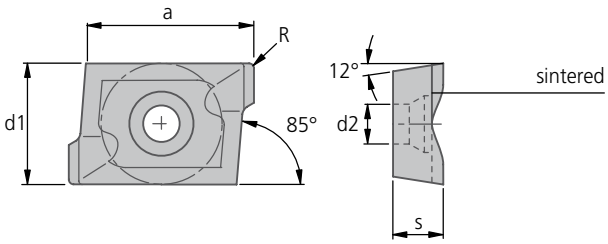
● Main area of application ◐ Suitable in some cases
▲ Availability: for delivery see current price and stock list

Application range:

Corner milling cutter
Shell end face milling cutter
End milling cutter

Highly positive cutter geometry with specially designed face cutter allows high feed rates and a good surface quality.
Soft cutting also possible even with unstable machining conditions. The special cutter geometry allows the insert to be used universally in the appropriate grades both for machining steel, cast iron and aluminium.

Cutter geometry:



Substrate		Carbide												
Coating type		–	–	CVD	CVD	CVD	PVD	PVD	PVD					
Cutting material designation		P25M	K10	BK6110	BK64	BK68	BK78	BK80	BK8425					
ISO Code RM = strengthened cutting edge	Order No.									d1	d2	s	a	R
	Enter code ▼	03	21	6110	64	68	78	80	8425					
APKT 1003PD-RM	Q36 18000.01..	▲	▲	▲	▲		▲	▲	▲	6,7	2,8	3,5	9	0,35
APKT 1003PD-R						▲								
APKT 1203PD-RM	Q36 24000.02..	▲	▲	▲	▲		▲		▲	8,0	3,5	3,8	11	0,6
APKT 1203PD-R						▲		▲						
APKT 1605PD-RM	Q36 38000.07..	▲	▲	▲	▲		▲		▲	11,1	4,5	5,26	15	0,8
APKT 1605PD-R								▲						
Steel P		●			●	●	●	●	●	Order example:				
Stainless steel M					◐		◐	◐	◐	ISO Code				
Cast iron K			●	●		◐			●	APKT 1003PD-RM				
Non-ferrous metals N			●							Cutting material				
Superalloys and titanium S			●							P25M				
Hardened materials H										Order No.				
										Q36 18000.0103				

● Main area of application ◐ Suitable in some cases

Important: See chapter 8 for more application details and safety notes!

KOMET® Q36

Indexable insert

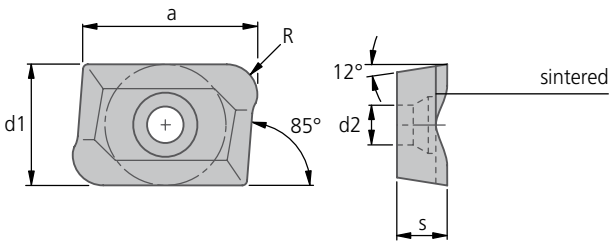
APKT

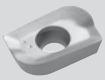
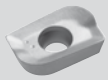
Application range:

Copy end milling cutter

A special cutter geometry whose main feature is a positive peripheral top rake, produces a soft cut particularly in the radius range of the insert; this requires low cutting forces and produces good chip formation.
The insert can be used universally in various carbide grades both for steel and cast iron.

Cutter geometry:



Substrate		Carbide								
Coating type		–	CVD	CVD	PVD					
Cutting material designation		K10	BK64	BK68	BK8425					
ISO Code	Order No.					d1	d2	s	a	R
Enter code ▼		21	64	68	8425					
APKT 120316PD-R	**Q36 24000.04..**	▲	▲	▲	▲	8,0	3,5	3,8	11	1,6
APKT 120324PD-R	**Q36 24000.05..**	▲	▲	▲	▲					2,4
APKT 120332PD-R	**Q36 24000.06..**	▲	▲	▲	▲					3,2
Steel P		◐	●	●	●	Order example:				
Stainless steel M			◐		◐	ISO Code				
Cast iron K		●		◐	●	APKT 120316PD-R				
Non-ferrous metals N		●				Cutting material				
Superalloys and titanium S						P25M				
Hardened materials H						Order No.				
						Q36 24000.0403				

● Main area of application ◐ Suitable in some cases

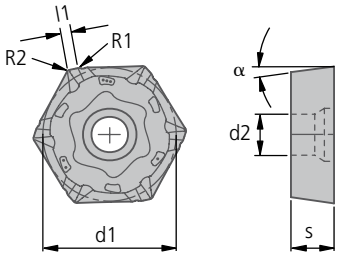
▲ Availability: for delivery see current price and stock list

Application range:

Face milling cutter Q40-KFM

Six useful cutting edges, each cutting edge with wiper cutting edge.
Highly positive cutting edge geometry for a soft cutting action.
Optimised topographies for different applications on small and medium-sized milling machines.

Cutter geometry:



Substrate		Solid carbide													
Coating type		–	PVD	PVD	PVD	CVD	CVD	CVD							
Cutting material designation		K10	BK2735	BK2740	BK8425	BK6130	BK6435	BK6110							
ISO Code	Order No.								d1	d2	s	l1	R1	R2	α
Topography ▼	Enter code ▼	23	2735	2740	8425	6130	6435	6110							
HOKT0604AZER-01	Q40 53010.04..		▲			▲									
HPCT0604AZFR-12	Q40 53120.04..	▲													
HPKT0604AZER-01	Q40 53010.04..			▲	▲				16,3	4,4	4,5	1,7	0,4	0,5	11°
HPKT0604AZER-21	Q40 53210.04..			▲	▲		▲								
HPKT0604AZER-05	Q40 53050.04..							▲							
Steel	P		●	◐	●	●			Order example:						
Stainless steel	M		◑	○	◑	◑	◑		ISO code						
Cast iron	K					●		●	HOKT 0604AZ-01						
Non-ferrous metals	N	●							Cutting material						
Superalloys and titanium	S						●		K10						
Hardened materials	H								Order No.						
									Q40 53010.0423						

Topographies	
-01	Stable cutting edge (chamfered and rounded) for universal steel machining, even with interrupted cuts
-05	Stable cutting edge (chamfered and rounded) for universal cast iron machining
-12	Extremely sharp topography (polished), large rake angle for NF machining
-21	Easy-cutting topography (cutting edge slightly rounded) for stainless and super alloys

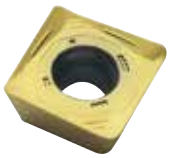
● Main area of application ◐ Suitable in some cases

Important: See chapter 8 for more application details and safety notes!

KOMET® Q43 28

Indexable insert

SDHT | SDKT

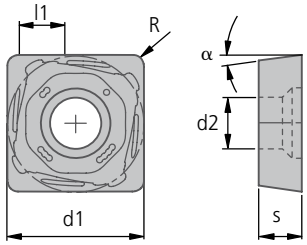


Application range:

Shoulder milling cutter Q43-KSM

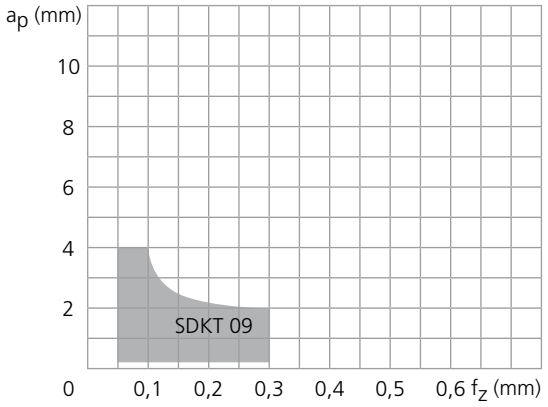
Four cutting edges per indexable insert.
For creating an exactly 90-degree shoulder.

Cutter geometry:



Substrate		Solid carbide											
Coating type		–	PVD	PVD	CVD	CVD	CVD						
Cutting material designation		K10	BK8425	BK2740	BK6110	BK6435	BK7740						
ISO Code	Order No.							d1	d2	s	l1	R	α
Topography ▼	Enter code ▼	23	8425	2740	6110	6435	7740						
SDHT 09T308FR-12	**Q43 28120.08..**	▲						9	3,4	3,97	2,5	0,8	15°
SDKT 09T308SR-01	**Q43 28010.08..**		▲										
SDKT 09T308SR-21	**Q43 28210.08..**			▲		▲	▲						
SDKT 09T308SR-05	**Q43 28050.08..**				▲								
Steel	P		●	◐				Order example:					
Stainless steel	M		◑	○		◑		ISO code					
Cast iron	K				●			SDHT 09T308FR-12					
Non-ferrous metals	N	●						Cutting material					
Superalloys and titanium	S					●	●	K10					
Hardened materials	H							Order No.					
								Q43 28120.0823					

Topographies	
-01	Stable cutting edge (chamfered and rounded) for universal steel machining, even with interrupted cuts
-05	Stable cutting edge (chamfered and rounded) for universal cast iron machining
-12	Extremely sharp topography (polished), large rake angle for NF machining
-21	Easy-cutting topography (cutting edge slightly rounded) for stainless and super alloys



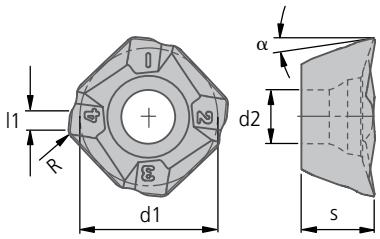
● Main area of application ◐ Suitable in some cases
▲ Availability: for delivery see current price and stock list

Application range:

Copy milling cutter Q55-KCM

Four useful cutting edges per indexable insert for face and chamfer milling.

Cutter geometry:



Substrate		Solid carbide										
Coating type		PVD	PVD	CVD	CVD	CVD						
Cutting material designation		BK8425	BK2740	BK6110	BK6435	BK7740						
ISO Code	Order No.						d1	d2	s	l1	R	α
Topography ▼	Enter code ▼	8425	2740	6110	6435	7740						
SDMX 1105AE-01	Q43 38010.15..	▲					11,4	4,4	5,9	1	0,8	20°
SDMX 1105AE-21	Q43 38210.15..		▲									
SDMX 1105AE-05	Q43 38050.15..			▲								
SDMX 1105AE-25	Q43 38250.15..				▲	▲						
Steel	P	●	◐				Order example:					
Stainless steel	M	◑	○		◑		ISO code					
Cast iron	K			●			SDMX 1105AE-01					
Non-ferrous metals	N						Cutting material					
Superalloys and titanium	S				●	●	BK8425					
Hardened materials	H						Order No.					
							Q43 38010.158425					

Topographies	
-01	Stable cutting edge (chamfered and rounded) for universal steel machining, even with interrupted cuts
-05	Stable cutting edge (chamfered and rounded) for universal cast iron machining
-21	Easy-cutting topography (cutting edge slightly rounded) for stainless and super alloys
-25	Robust cutting edge for highly heat-resistant alloys and titanium/titanium alloys

● Main area of application ◐ Suitable in some cases

Important: See chapter 8 for more application details and safety notes!

KOMET® Q47

Indexable insert

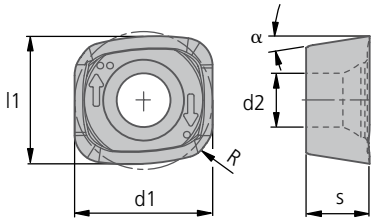
EOMT

Application range:

Copy milling cutter Q55-KCM

Two cutting edges per indexable insert for high feed-rate machining operations.

Cutter geometry:



Substrate		Solid carbide							
Coating type		PVD	PVD						
Cutting material designation		BK8425	BK2740						
ISO Code	Order No.			d1	d2	s	l1	R	α
Topography ▼	Enter code ▼	8425	2740						
EOMT 120416-21	Q47 34210.16..	▲	▲	12	4,4	5	10,5	16	9°
Steel P		●	◐	Order example: ISO code EOMT 120416-21 Cutting material BK8425 Order No. Q47 34210.168425					
Stainless steel M		◐	○						
Cast iron K									
Non-ferrous metals N									
Superalloys and titanium S									
Hardened materials H									

Topography

-21 Easy-cutting topography (cutting edge slightly rounded) for stainless and super alloys

● Main area of application ◐ Suitable in some cases

▲ Availability: for delivery see current price and stock list

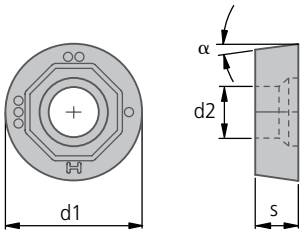
Application range:

Copy milling cutter Q55-KCM

Eight useful cutting edges per indexable insert.
Use of different indexable insert clearance angles.

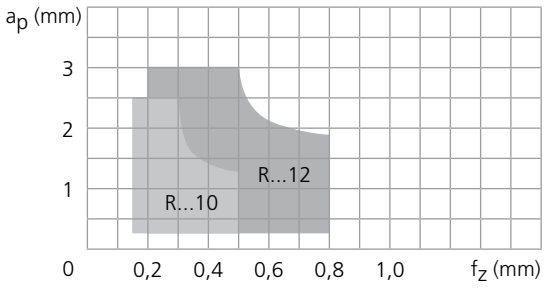
The indexable insert is supported with three surfaces, which allows high feed rates with maximum stability to be achieved. 8 indexing positions for optimum cost-efficiency.

Cutter geometry:



Substrate		Solid carbide										
Coating type		–	PVD	PVD	PVD	CVD	CVD	CVD				
Cutting material designation		K10	BK8425	BK2740	BK2710	BK6110	BK6435	BK7740				
ISO Code	Order No.								d1	d2	s	α
Topography ▼	Enter code ▼	23	8425	2740	2710	6110	6435	7740				
RPMX 10T3MO-01	Q55 34010.11..		▲						10	3,4	3,97	11°
RPMX 10T3MO-21	Q55 34210.11..			▲								
RPMX 10T3MO-05	Q55 34050.11..					▲						
RPHX 10T3MO-25	Q55 34250.11..						▲	▲				
RDHW 10T3MO-02	Q55 34020.15..				▲				10	3,4	3,97	15°
RDHX 10T3MO-12	Q55 34120.15..	▲										
RPMX 1204MO-01	Q55 42010.11..		▲						12	4,4	4,76	11°
RPMX 1204MO-21	Q55 42210.11..			▲								
RPMX 1204MO-05	Q55 42050.11..					▲						
RPHX 1204MO-25	Q55 42250.11..						▲	▲				
RDHW 1204MO-02	Q55 42020.15..				▲				12	4,4	4,76	15°
RDHX 1204MO-12	Q55 42120.15..	▲										
Steel P			●	◐			◐		Order example:			
Stainless steel M			◐	○					ISO code			
Cast iron K						●			RPMX 10T3MO-01			
Non-ferrous metals N		●							Cutting material			
Superalloys and titanium S							●	●	BK8425			
Hardened materials H					○				Order No.			
									Q55 34010.118425			

Topographies	
-01	Stable cutting edge (chamfered and rounded) for universal steel machining, even with interrupted cuts
-02	Reinforced cutting edge for hard machining
-05	Stable cutting edge (chamfered and rounded) for universal cast iron machining
-12	Extremely sharp topography (polished), large rake angle for NF machining
-21	Easy-cutting topography (cutting edge slightly rounded) for stainless and super alloys
-25	Robust cutting edge for highly heat-resistant alloys and titanium/titanium alloys



● Main area of application ◐ Suitable in some cases

Important: See chapter 8 for more application details and safety notes!

KOMET® Q55..26

Indexable insert

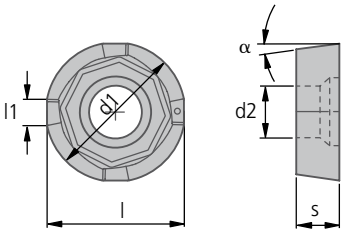
RPMX | RPHX

Application range:

Copy milling cutter Q55-KCM

Wiper geometry for outstanding surface finish.

Cutter geometry:



Substrate		Solid carbide									
Coating type		PVD	CVD	CVD	CVD						
Cutting material designation		BK8425	BK6110	BK6435	BK7740						
ISO Code	Order No.					d1	d2	l	l1	s	α
Topography ▼	Enter code ▼	8425	6110	6435	7740						
RPMX 1204MO-26	Q55 42260.11..	▲	▲			12	4,4	11,75	2,4	4,76	11°
RPHX 1204MO-46	Q55 42460.11..			▲	▲						
Steel P		●				Order example:					
Stainless steel M		◐		◐		ISO code					
Cast iron K			●			RPMX 1204MO-26					
Non-ferrous metals N						Cutting material					
Superalloys and titanium S				●	●	BK8425					
Hardened materials H						Order No.					
						Q55 42260.118425					

Topographies

-26	Wiper geometry for outstanding surface finish for steel, cast steel
-46	Wiper geometry for outstanding surface finish for exotic materials

● Main area of application ◐ Suitable in some cases

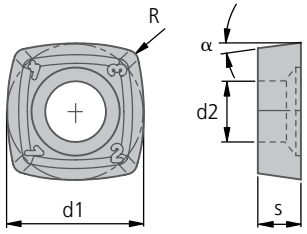
▲ Availability: for delivery see current price and stock list

Application range:

Face milling cutter Q56-KHF

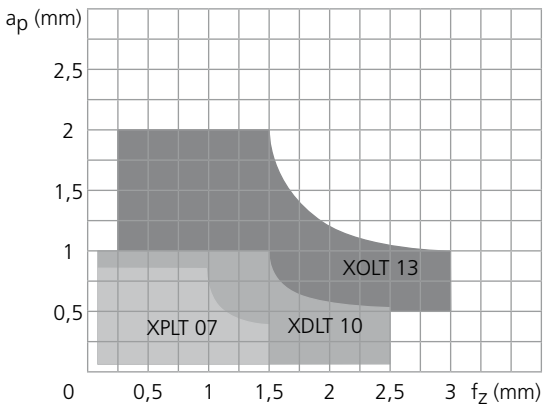
Four useful cutting edges per indexable insert.
High metal removal rate achievable because tooth feed rate of up to 3 mm possible.
Soft-cutting geometry reduces vibration during machining.
Premium-grade coatings for Superalloys and titaniumium materials.
Angled cutting edge for excellent surface quality, yet 90-degree shoulder still possible.

Cutter geometry:



Substrate		Solid carbide									
Coating type		PVD	PVD	CVD	CVD	CVD					
Cutting material designation		BK8425	BK2740	BK7740	BK6435	BK6110					
ISO Code	Order No.						d1	d2	s	R	α
Topography ▼	Enter code ▼	8425	2740	7740	6435	6110					
XPLT 070305-01	Q56 20010.05..	▲	▲				7	2,8	2,75	0,5	11°
XPLT 070305-21	Q56 20210.05..			▲	▲						
XDLT 10T308-01	Q56 32010.08..	▲	▲				10	4,4	3,97	0,8	9°
XDLT 10T308-21	Q56 32210.08..	▲	▲	▲	▲						
XDLT 10T308-05	Q56 32050.08..					▲					
XOLT 130410-01	Q56 46010.10..	▲	▲				13	5,5	4,76	1	9°
XOLT 130410-21	Q56 46210.10..	▲	▲	▲	▲						
XOLT 130410-05	Q56 46050.10..					▲					
Steel	P	●	◐				Order example: ISO code XPLT 070305-01 Cutting material BK8425 Order No. Q56 20010.058425				
Stainless steel	M	◑	○		◑						
Cast iron	K					●					
Non-ferrous metals	N										
Superalloys and titanium	S			●	●						
Hardened materials	H										

Topographies	
-01	Stable cutting edge (chamfered and rounded) for universal steel machining, even with interrupted cuts
-05	Stable cutting edge (chamfered and rounded) for universal cast iron machining
-21	Easy-cutting topography (cutting edge slightly rounded) for stainless and super alloys



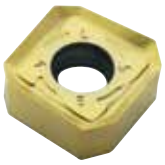
● Main area of application ◐ Suitable in some cases

Important: See chapter 8 for more application details and safety notes!

KOMET® Q63

Indexable insert

SOKU

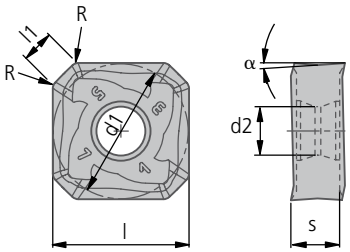


Application range:

Face milling cutter Q63-KFM

Eight useful cutting edges with positive clearance angle per indexable insert.
Stable double-sided indexable insert for ap up to 6.5 mm.
High-quality surface finishes are produced thanks to the wiper cutting edge.

Cutter geometry:



Substrate		Solid carbide											
Coating type		PVD	PVD	CVD	CVD								
Cutting material designation		BK8425	BK2740	BK6435	BK6110								
ISO Code	Order No.					d1	d2	s	l	l1	R	α
Topography ▼	Enter code ▼	8425	2740	6435	6110							
SOKU 1205AZ-21	Q63 46210.06..	▲	▲	▲		13	4,55	5	13	2	0,8	6°
SOKU 1205AZ-05	Q63 46050.06..				▲							
SOKU 1505AZ-21	Q63 53210.06..	▲	▲	▲		15,875	5,7	6,03	15,875	3,65	1	6°
SOKU 1505AZ-05	Q63 53050.06..				▲							
Steel P		●	◐			Order example:						
Stainless steel M		◐	○	◐		ISO code						
Cast iron K					●	SOKU 1205AZ-21						
Non-ferrous metals N						Cutting material						
Superalloys and titanium S				●		BK8425						
Hardened materials H						Order No.						
						Q63 46210.068425						

Topographies

-05	Stable cutting edge (chamfered and rounded) for universal cast iron machining
-21	Easy-cutting topography (cutting edge slightly rounded) for stainless and super alloys

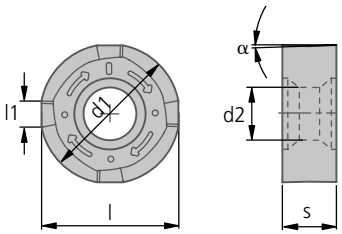
● Main area of application ◐ Suitable in some cases
▲ Availability: for delivery see current price and stock list

Application range:

Copy milling cutter Q75-KCM

Eight useful cutting edges per indexable insert.
Stable double-sided indexable insert for ap up to 4.5 mm.
High-quality surface finishes are produced thanks to the wiper cutting edge.

Cutter geometry:



Substrate		Solid carbide											
Coating type		PVD	PVD	CVD	CVD	CVD							
Cutting material designation		BK8425	BK2740	BK6110	BK6435	BK7740							
ISO Code	Order No.						d1	d2	s	l	l1	α
Topography ▼	Enter code ▼	8425	2740	6110	6435	7740						
RNKU 1204MO-01	Q75 42010.00..	▲					12	4,5	5,9	11,8	2,3	0°
ROHU 1204MO-21	Q75 42210.03..		▲									3°
RNKU 1204MO-05	Q75 42050.00..			▲								0°
ROHU 1204MO-25	Q75 42250.03..				▲	▲						3°
Steel	P	●	◐				Order example:						
Stainless steel	M	◑	○		◑		ISO code						
Cast iron	K			●			RNKU 1204MO-01						
Non-ferrous metals	N						Cutting material						
Superalloys and titanium	S				●	●	BK8425						
Hardened materials	H						Order No.						
							Q75 42010.008425						

Topographies	
-01	Stable cutting edge (chamfered and rounded) for universal steel machining, even with interrupted cuts
-05	Stable cutting edge (chamfered and rounded) for universal cast iron machining
-21	Easy-cutting topography (cutting edge slightly rounded) for stainless and super alloys
-25	Robust cutting edge for highly heat-resistant alloys and titanium/titanium alloys

● Main area of application ◐ Suitable in some cases

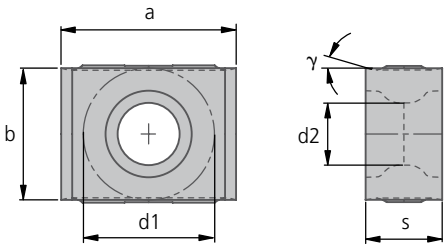
Important: See chapter 8 for more application details and safety notes!

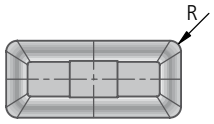
Tangential indexable inserts

Application range:

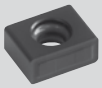
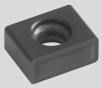
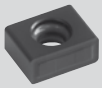
Roughing
Face milling cutter Q80-KFM
Setting angle 88°

Cutter geometry:

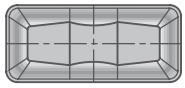


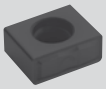
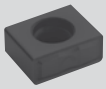


Topography -05:
Cast materials, some steel materials

Substrate		Carbide										
Coating type		CVD	PVD	PVD								
Cutting material designation		BK6115	BK2715	BK2730								
ISO Code	Order No.				d1	d2	a	b	s	γ	R	
Enter code ▼		6115	2715	2730								
LNGU 06T204 EN-05	Q80 09050.04..	▲	▲	▲	4,74	2,3	6,35	4,73	2,88	14°	0,4	
LNGU 090406 EN-05	Q80 20050.06..	▲	▲	▲	7,26	3,4	9,52	7,25	4,17	14°	0,6	
LNGU 120508 EN-05	Q80 32000.01..	▲	▲	▲	9,52	4,5	12,7	9,52	5,56	10°	0,8	
Steel P		◐		◐	Order example: ISO Code LNGU 120508 EN-05 Cutting material BK2715 Order No. Q80 32000.012715							
Stainless steel M				◐								
Cast iron K		●	●	●								
Non-ferrous metals N												
Superalloys and titanium S												
Hardened materials H												

Topography -21:
Steel materials, also limitedly suitable for superalloys and titanium



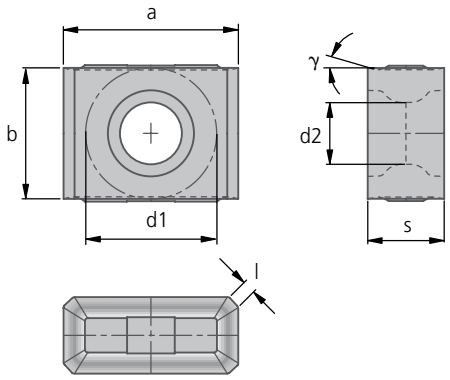
Substrate		Carbide									
Coating type		PVD	PVD								
Cutting material designation		BK2730	BK7935								
ISO Code	Order No.			d1	d2	a	b	s	γ	R	
Enter code ▼		2730	7935								
LNGU 120508 EN-21	Q80 32210.08..	▲	▲	9,52	4,5	12,7	9,52	5,56	22°	0,8	
Steel P		●	●	Order example: ISO Code LNGU 120508 EN-21 Cutting material BK2730 Order No. Q80 32210.082730							
Stainless steel M		◐	◐								
Cast iron K		◐									
Non-ferrous metals N		●									
Superalloys and titanium S			◐								
Hardened materials H											

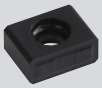
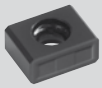
● Main area of application ◐ Suitable in some cases
▲ Availability: for delivery see current price and stock list

Application range:

Face milling cutter Q80-KFM
Setting angle 45°

Cutter geometry:



Substrate		Carbide								
Coating type		CVD	PVD							
Cutting material designation		BK6115	BK2715							
ISO Code	Order No.			d1	d2	a	b	l	s	γ
	Enter code ▼	6115	2715							
LNGU 1205AN EN-05	Q80 32050.45..	▲	▲	9,52	4,5	12,7	9,69	0,7	5,56	10°
Steel P		●	●	Order example: ISO Code LNGU 1205AN EN-05 Cutting material BK2715 Order No. Q80 32050.452715						
Stainless steel M										
Cast iron K										
Non-ferrous metals N										
Superalloys and titanium S										
Hardened materials H										

● Main area of application ◐ Suitable in some cases

Important: See chapter 8 for more application details and safety notes!

ISO Codes for inserts

W	N	M	G	0 8	0 4	0 8	F	L	–	0 1
①	②	③	④	⑤	⑥	⑦	⑧	⑨		⑩

①	Form	
A		85°
C		80° / 100°
D		55°
E		75°
H		120°
L		90°
O		135°
R		
S		90°
T		60°
V		35°
W		80°
X	special design	

②	Clearance angle	
B		5°
C		7°
D		15°
E		20°
N		0°
O		according to manufacturer specification
P		11°

③	Tolerance		
	m	*s*	*IC*
A	±0,005	±0,025	±0,025
C	±0,013	±0,025	±0,025
E	±0,025	±0,025	±0,025
G	±0,025	±0,13	±0,025
H	±0,013	±0,025	±0,013
K	±0,013	±0,025	±0,05...±0,15
L	±0,025	±0,025	±0,05...±0,15
M	±0,08...±0,18[1)]	±0,13	±0,05...±0,13[1)]
U	±0,13...±0,38[1)]	±0,13	±0,08...±0,25[1)]

Tolerance in mm

Ø *IC*	at *m* Class M	at *m* Class U	at *IC* Class M	at *IC* Class U
6,35	±0,08	±0,13	d±0,05	±0,08
9,52	±0,08	±0,13	d±0,05	±0,08
12,70	±0,13	±0,20	±0,08	±0,13
15,87	±0,15	±0,27	±0,10	±0,18
19,05	±0,15	±0,27	±0,10	±0,18
25,40	±0,18	±0,38	±0,13	±0,25

④	Type	
A		no chipformer, with hole
B		no chipformer, countersunk hole 70-90°
G		chipformer both sides, with hole
H		chipformer on one side, countersunk hole 70-90°
M		chipformer on one side, with hole
P		neg/pos. one or two sides, with hole
R		chipformer on one side, no hole
T		chipformer on one side, countersunk hole 40-60°
U		chipformer both sides, with countersunk hole
W		no chipformer, countersunk hole 40-60°
X	special design, drawing required	

⑤ Cutting edge length											
IC mm	A	C	D	E	H	L	R	S	T	V	W
3,97									06	07	02
4,76		04									
4,80						06					03
5,00							05				
5,56		05						05	09		
6,00							06				
6,35	10	06	07					06	11	11	04
7,00							07				
7,25						09					
7,94		08						07	13	13	
8,00	12						08	08	14		05
9,52		09	11			12		09	16	16	
10,00							10				06
11,10	16										
11,40								11			
12,00				12			12				08
12,70		12	15					12	22	22	
15,00											10
15,88								15	27		
16,00							16				
16,30					06						
17,60											12
19,05		19						19	33		13
20,00							20				
25,00							25				
25,40								25			

⑥	Thickness
T0	1,20 mm
01	1,59 mm
T1	1,80 mm
02	2,38 mm
T2	2,97 mm
03	3,18 mm
T3	3,97 mm
04	4,76 mm
05	5,30 mm
06	6,35 mm
07	7,94 mm

⑦	Corner radius
00	0,0 mm
01	0,1 mm
02	0,2 mm
03	0,3 mm
04	0,4 mm
05	0,5 mm
06	0,6 mm
08	0,8 mm
10	1,0 mm
12	1,2 mm
16	1,6 mm
20	2,0 mm
24	2,4 mm
MO	IC for round insert
ZZ	Face cutting edge

⑧	Cutting edge	
E		rounded
F		sharp
S		chamfered and rounded
T		chamfered (negative)

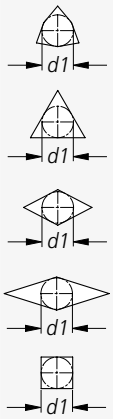
⑨	Cutting direction	
R		R.H.
L		L.H.
N		R.H. and L.H.

⑩	Topography
	-01
	-05
	-11
	-13
	-14
	-15
	-21
	...

W	8	3	1	3	0	1	0	.	0	4	7	6	1	5
①	②		③		④		⑤		⑥		⑦			

① Main group

③ Inscribed circle *d1*



03	3,97 mm
04	4,0 mm
10	4,8 / 5,0 mm
12	5,5 mm
13	5,56 mm
14	5,6 mm
17	6,0 mm
18	6,2 / 6,35 mm
20	7,0 / 7,1 mm
22	7,7 mm
23	7,94 mm
24	8,0 mm
26	8,2 mm
28	8,9 mm
32	9,52 / 9,8 mm
34	10,0 mm
38	10,9 / 11,1 mm
42	12,0 mm
44	12,7 mm
46	13,2 mm
50	15,0 mm
53	15,88 mm
58	17,6 mm

⑤ Modification code

1 ... 9

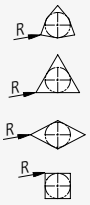
② Insert geometry

Code	Form	Version	peripheral	Chip groove	Clearance angle,other
80	square		sintered	sintered	
82	square		ground	sintered	
83	square		sintered	sintered	

④ Type of chip groove / chip surface

Code sintered	
00	Double chip groove (PD), cutting edge rounded
01	Double chip groove (K), cutting edge chamfered and rounded
02	Step geometry (KS), cutting edge chamfered and rounded
03	Dimple geometry (KX), cutting edge rounded
04	Finished geometry
05	10° chip groove (T), cutting edge rounded
06	12° chip groove (C), cutting edge rounded
07	Finished geometry
10	Shank geometry, cutting edge chamfered and rounded
11	20° chip groove, cutting edge rounded
12	AI / finished geometry
13	Shank geometry, cutting edge rounded
14	Finishing-Topographie
15	Semi-finishing Topographie
16	Semi-finishing Topographie with "Wiper" corner
17	22° Topographie / tangential insert
18	Finishing-Topographie with "Wiper" corner
20	Universal topography 8° top rake
21	20° Highly positive "Technology 21"
32	peripheral ground with minimal burring
33	peripheral sintered with minimal burring

⑥ Geometry of cutting edge



Code		
01	R 0,1 mm	
02	R 0,2 mm	
03	R 0,3 mm	
04	R 0,4 mm	
05	R 0,5 mm	
06	R 0,6 mm	
08	R 0,8 mm	
10	R 1,0 mm	
12	R 1,2 mm	
30	U8.00 R 0	
31	UF	
32	US	
33	U8.77	15° clearance angle additional cutting edge form for Unisix® milling cutter inserts
34	F / KUF 90°	
35	F / KUF 75°	
36	F / KUF 60°	
39	R 0,05 mm	
40	45° corner for chamfering cartridge	
75	Support chamfer 75° L.H.	
90	Support chamfer 90° L.H.	

⑦ Material grade

Q	8	0	3	2	0	0	0	.	0	1	6	1	1	5
①	②		③		④		⑤		⑥		⑦			

② Insert geometry

Code	ISO basic forms
09	S... square 90°
12	T... triangular 60°
15	C... rhomboid 80°
21	E... rhomboid 75°
36	A... rhomboid form
80	L... square 90°

④ Serial number

00 ... 99 Code

⑥ Serial number

01 ... 99 Code

KOMET® Adaptors

Perfecting the connection

With our comprehension programme of tool adaptors we have the right answer for every requirement.
Adaptors with connections specified by manufacturers available on request.

BENEFITS for you:

- Maximum tool change accuracy
- Perfect static rigidity
- High radial rigidity
- Short tool change times
- Ideal dimensions
- Low weight

KOMET® Adaptors

inch programme

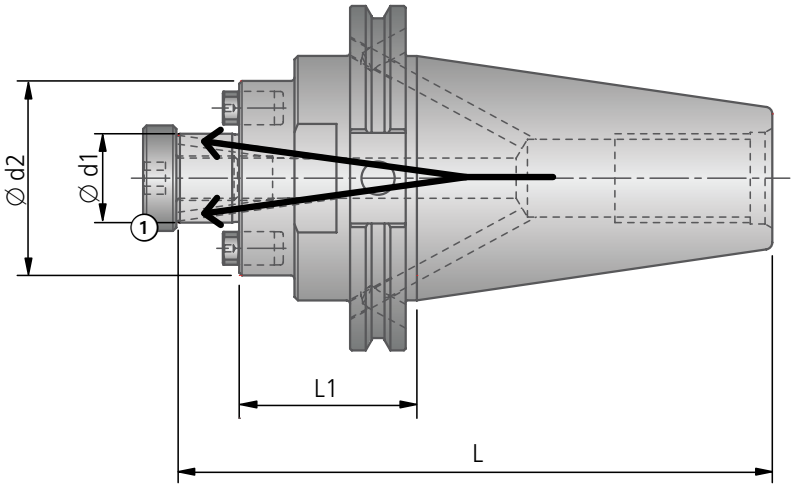
KOMET® Adaptors

Symbols

DIN 69871 AD/B, HSK-A ISO 12164-1	**Machine adaptor** Connection on machine side
balanced G6,3 8000 min^{-1}	**Balancing note** Balance as despatched
	Coolant supply
concentricity ≤ 3 µm	**Concentricity**
ABS®, DIN 6535 HA	**Tool holder** Connection on tool side

KOMET® CAT

Taper shank with milling cutter arbor FA

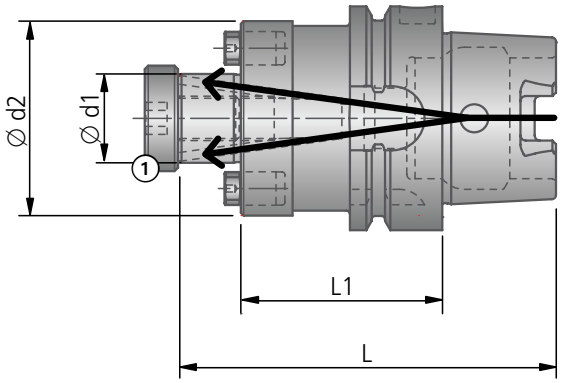


CAT FA										
Order No.	Article	Coolant supply	CAT	Ø d1	Ø d2	L	L1	lbs	Key size	Cutter clamping screw ① Arbor thread
A52 12070	CAT 40 FA 0.500-1.38	–	40	0.500	1.440	4.624	1.380	2.4	3/16	1/4 - 28
A52 12080	CAT 40 FA 0.750-1.38	AD/B	40	0.750	1.750	4.752	1.380	2.5	5/16	3/8 - 24
A52 12090	CAT 40 FA 1.000-1.75	AD/B	40	1.000	2.190	5.122	1.750	2.9	5/16	3/8 - 24
A52 12110	CAT 40 FA 1.500-2.41	AD/B	40	1.500	3.380	6.035	2.410	5.6	5/8	3/4 - 16
A52 12270	CAT 50 FA 0.500-1.50	–	50	0.500	1.440	5.500	1.500	6.9	3/16	1/4 - 28
A52 12280	CAT 50 FA 0.750-1.50	AD/B	50	0.750	2.752	6.187	1.500	7.3	5/16	3/8 - 24
A52 12290	CAT 50 FA 1.000-2.00	AD/B	50	1.000	2.190	6.687	2.000	7.9	5/16	3/8 - 24
A52 12310	CAT 50 FA 1.500-2.40	AD/B	50	1.500	3.380	7.340	2.400	10.3	5/8	3/4 - 16
A52 12330	CAT 50 FA 2.000-2.40	AD/B	50	2.000	4.880	7.340	2.400	13.5	3/4	1 - 14

Supply includes ...FA..: Milling cutter arbor with cutter clamping screw ①.

Note: With coolant supply through spindle, use pull stud with through hole.
To close off central coolant hole, use pull stud without through hole.

HSK-A Milling cutter arbor FA

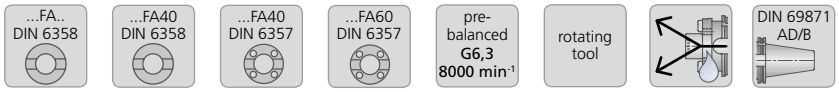


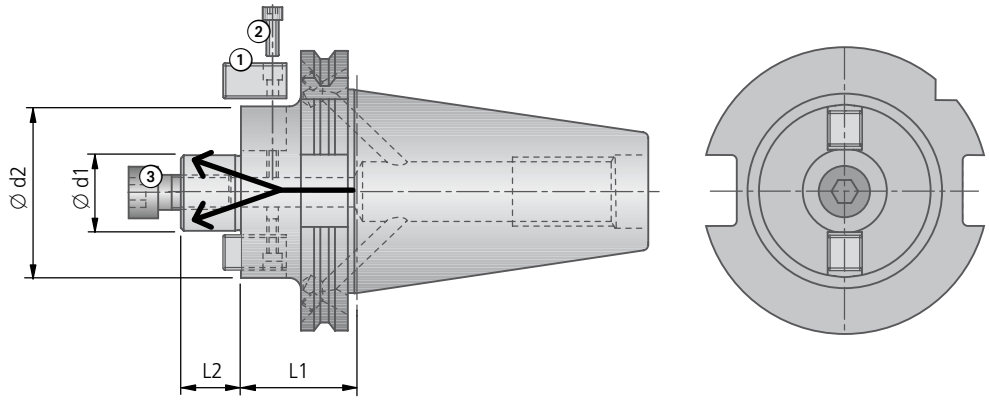
HSK-A FA										
Order No.	Article	Coolant supply	HSK	Ø d1	Ø d2	L	L1	lbs	Key size	Cutter clamping screw ① Arbor thread
A06 35300	HSK 63 FA 0.500 -2.00	–	63	0.500	1.440	3.819	2.000	2.1	3/16	1/4 - 28
A06 35310	HSK 63 FA 0.750 -2.00	AD	63	0.750	1.750	3.947	2.000	2.4	5/16	3/8 - 24
A06 35320	HSK 63 FA 1.000 -2.25	AD	63	1.000	2.190	4.197	2.250	3.0	5/16	3/8 - 24
A06 35340	HSK 63 FA 1.500 -2.25	AD	63	1.500	3.380	4.450	2.250	4.5	5/8	3/4 - 16
A06 55310	HSK 100 FA 0.750 -2.25	AD	100	0.750	1.750	4.218	2.250	7.6	5/16	3/8 - 24
A06 55320	HSK 100 FA 1.000 -2.25	AD	100	1.000	2.190	4.218	2.250	6.1	5/16	3/8 - 24
A06 55340	HSK 100 FA 1.500 -2.50	AD	100	1.500	3.347	5.409	2.500	8.8	5/8	3/4 - 16
A06 55360	HSK 100 FA 2.000 -2.50	AD	100	2.000	4.880	5.406	2.500	15.9	3/4	1 - 14

Supply includes ...FA..: Milling cutter arbor with cutter clamping screw ①.

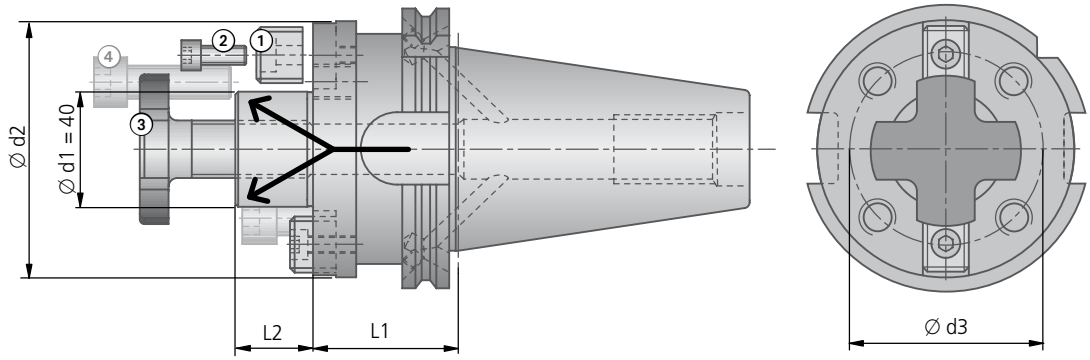
KOMET ® DIN 69871 AD/B

Taper shank with milling cutter arbor FA





...FA40



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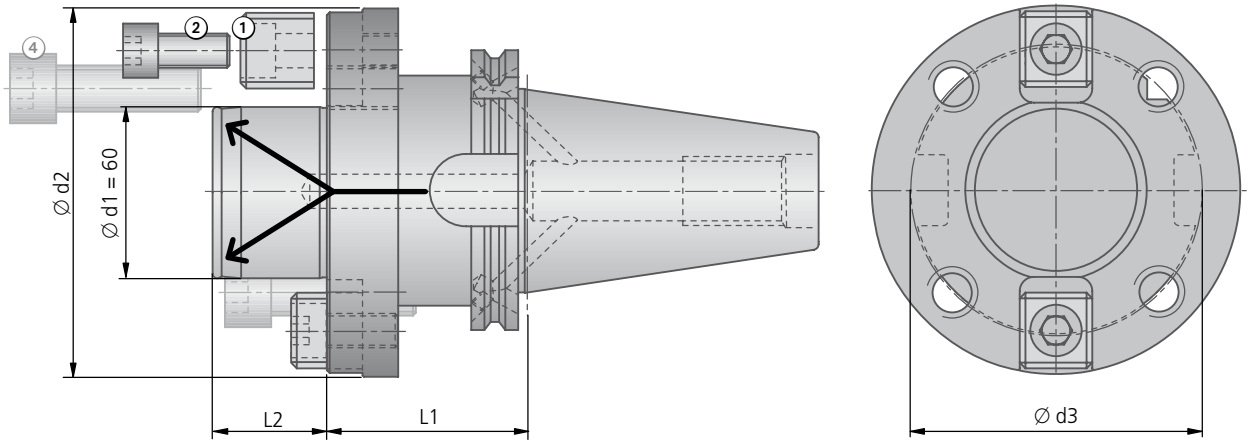


Taper shank in form B complete with conversion kit (for form AD). Please order pull stud separately (chapter 8).

Note: With coolant supply through spindle, use pull stud with through hole.
To close off central coolant hole, use pull stud without through hole.

DIN 69871 AD/B FA											Screws ④ for cutter heads with internal bore location
Order No. Article	SK	Ø d1	Ø d2	Bolt circle Ø d3	L1	L2	kg	Key block ① Order No. Article	Cylindrical screw ② DIN 912 Order No. Article	Cutter clamping screw ③ DIN 6367 Order No. Article	Order No. Article
A51 14100 SK40-FA16-35	40	16	38	–	35	17	1,0	**N12 20340** 8×8×14	**55011 03008** M3×8	**55011 08020** M8×20	–
A51 14110 SK40-FA22-35	40	22	48	–	35	19	1,0	**N12 20350** 10×10×17	**55011 04008** M4×8	**55011 10030** M10×30	–
A51 14120 SK40-FA27-40	40	27	58	–	40	21	1,1	**N12 20360** 12×14×20	**55011 04012** M4×12	**55011 12035** M12×35	–
A51 14130 SK40-FA32-50	40	32	78	–	50	24	1,3	**N12 20370** 14×14×22	**55011 05012** M5×12	**55011 16040** M16×40	–
A51 14140 SK40-FA40-50*	40	40	88	66,7	50	27	1,6	**N12 20380** 15,9×16×21	**55011 06016** M6×16	**55062 00020** M20 DIN6367	**55011 12040** M12×40
A51 14210 SK50-FA22-44	50	22	48	–	44	19	3,0	**N12 20350** 10×10×17	**55011 04008** M4×8	**55011 10030** M10×30	–
A51 14220 SK50-FA27-44	50	27	58	–	44	21	3,2	**N12 20360** 12×14×20	**55011 04012** M4×12	**55011 12035** M12×35	–
A51 14230 SK50-FA32-40	50	32	78	–	40	24	4,0	**N12 20370** 14×14×22	**55011 05012** M5×12	**55011 16040** M16×40	–
A51 14240 SK50-FA40-50*	50	40	88	66,7	50	27	4,2	**N12 20380** 15,9×16×21	**55011 06016** M6×16	**55062 00020** M20 DIN6367	**55011 12040** M12×40
A51 14250 SK50-FA60-70*	50	60	129	101,6	70	40	4,8	**N12 20390** 25,4×25×31	**55011 12025** M12×25	–	**55011 16050** M16×50

DIN 69871 AD/B FA..-160											Screws ④ for cutter heads with internal bore location
Order No. Article	SK	Ø d1	Ø d2	Bolt circle Ø d3	L1	L2	kg	Key block ① Order No. Article	Cylindrical screw ② DIN 912 Order No. Article	Cutter clamping screw ③ DIN 6367 Order No. Article	Order No. Article
A51 14300 SK40-FA16-160	40	16	38	–	160	17	2,1	**N12 20340** 8×8×14	**55011 03008** M3×8	**55062 00008** M8×20	–
A51 14310 SK40-FA22-160	40	22	48	–	160	19	2,7	**N12 20350** 10×10×17	**55011 04008** M4×8	**55011 10030** M10×30	–
A51 14320 SK40-FA27-160	40	27	58	–	160	21	3,7	**N12 20360** 12×14×20	**55011 04012** M4×12	**55011 12035** M12×35	–
A51 14330 SK40-FA32-160	40	32	78	–	160	24	5,8	**N12 20370** 14×14×22	**55011 05012** M5×12	**55011 16040** M16×40	–
A51 14340 SK40-FA40-160*	40	40	88	66,7	160	27	6,6	**N12 20380** 15,9×16×21	**55011 06016** M6×16	**55062 00020** M20 DIN6367	**55011 12040** M12×40
A51 14410 SK50-FA22-160	50	22	48	–	160	19	4,2	**N12 20350** 10×10×17	**55011 04008** M4×8	**55011 10030** M10×30	–
A51 14420 SK50-FA27-160	50	27	58	–	160	21	5,3	**N12 20360** 12×14×20	**55011 04012** M4×12	**55011 12035** M12×35	–
A51 14430 SK50-FA32-160	50	32	78	–	160	24	7,2	**N12 20370** 14×14×22	**55011 05012** M5×12	**55011 16040** M16×40	–
A51 14440 SK50-FA40-160*	50	40	88	66,7	160	27	8,8	**N12 20380** 15,9×16×21	**55011 06016** M6×16	**55062 00020** M20 DIN6367	**55011 12040** M12×40
A51 14450 SK50-FA60-160*	50	60	129	101,6	160	40		**N12 20390** 25,4×25×31	**55011 12025** M12×25	–	**55011 16050** M16×50

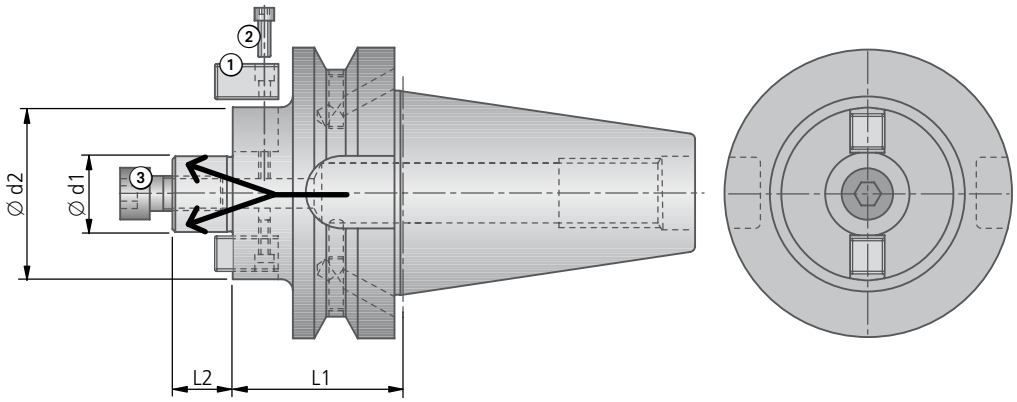
*** FA40 and 60 with 4 additional screw-in threads for cutter heads with tool clamping to DIN 2079.**

Supply includes ...FA..: Milling cutter arbor with cutter clamping screw ③, key block ① and cylindrical screw ②.
Supply includes ...FA40: Milling cutter arbor with cutter clamping screw ③, key block ① and cylindrical screw ②.
Supply includes ...FA60: Milling cutter arbor with key block ① and cylindrical screw ②.
Please order screws ④ for mounting the cutter heads separately.

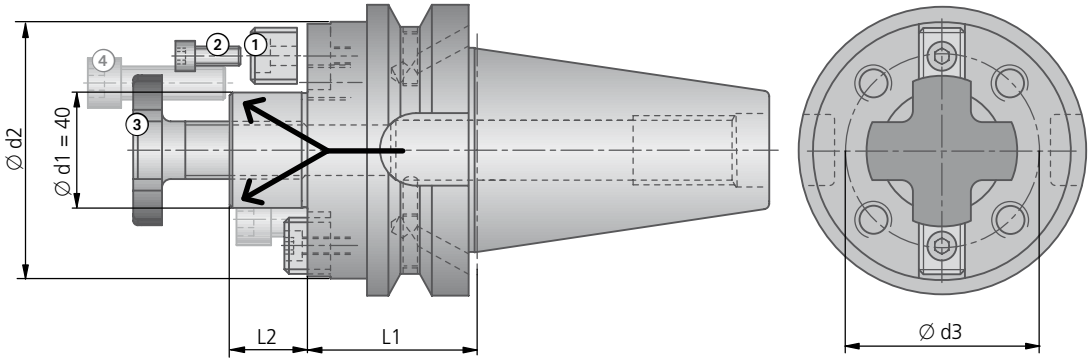
DIN 6368 Key on request (chapter 8).

KOMET® JIS B 6339 (MAS 403 BT)

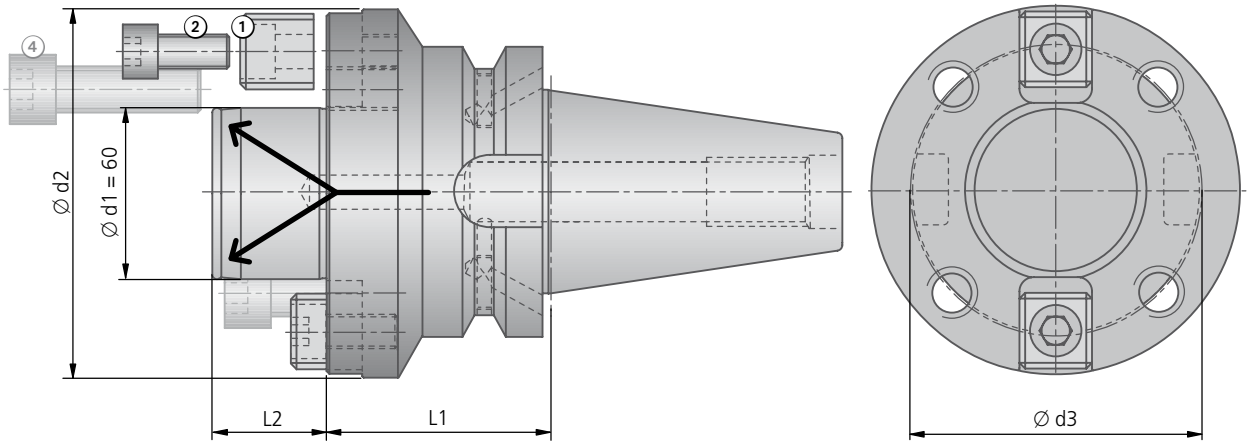
Taper shank with milling cutter arbor FA



...FA40



...FA60



Taper shank in form B complete with conversion kit (for form AD). Please order pull stud separately (chapter 8).

Note: With coolant supply through spindle, use pull stud with through hole.
To close off central coolant hole, use pull stud without through hole.

Taper shank with milling cutter arbor FA

JIS B 6339 AD/B FA											
Order No. Article	BT	Ø d1	Ø d2	Bolt circle Ø d3	L1	L2	kg	Key block ① Order No. Article	Cylindrical screw ② DIN 912 Order No. Article	Cutter clamping screw ③ DIN 6367 Order No. Article	Screws ④ for cutter heads with internal bore location Order No. Article
A51 15000 BT30-FA16-40	30	16	38	–	40	17	0,7	**N12 20340** 8×8×14	**55011 03008** M3×8	**55011 08020** M8×20	–
A51 15010 BT30-FA22-40	30	22	48	–	40	19	0,9	**N12 20350** 10×10×17	**55011 04008** M4×8	**55011 10030** M10×30	–
A51 15020 BT30-FA27-40	30	27	58	–	40	21	1,0	**N12 20360** 12×14×20	**55011 04012** M4×12	**55011 12035** M12×35	–
A51 15030 BT30-FA32-50	30	32	78	–	50	24	1,8	**N12 20370** 14×14×22	**55011 05012** M5×12	**55011 16040** M16×40	–
A51 15100 BT40-FA16-40	40	16	38	–	40	17	1,1	**N12 20340** 8×8×14	**55011 03008** M3×8	**55011 08020** M8×20	–
A51 15110 BT40-FA22-40	40	22	48	–	40	19	1,1	**N12 20350** 10×10×17	**55011 04008** M4×8	**55011 10030** M10×30	–
A51 15120 BT40-FA27-40	40	27	58	–	40	21	1,2	**N12 20360** 12×14×20	**55011 04012** M4×12	**55011 12035** M12×35	–
A51 15130 BT40-FA32-50	40	32	78	–	50	24	1,4	**N12 20370** 14×14×22	**55011 05012** M5×12	**55011 16040** M16×40	–
A51 15140 BT40-FA40-50*	40	40	88	66,7	50	27	1,7	**N12 20380** 15,9×16×21	**55011 06016** M6×16	**55062 00020** M20 DIN6367	**55011 12040** M12×40
A51 15210 BT50-FA22-63	50	22	48	–	63	19	3,5	**N12 20350** 10×10×17	**55011 04008** M4×8	**55011 10030** M10×30	–
A51 15220 BT50-FA27-63	50	27	58	–	63	21	3,7	**N12 20360** 12×14×20	**55011 04012** M4×12	**55011 12035** M12×35	–
A51 15230 BT50-FA32-60	50	32	78	–	60	24	3,6	**N12 20370** 14×14×22	**55011 05012** M5×12	**55011 16040** M16×40	–
A51 15240 BT50-FA40-60*	50	40	88	66,7	60	27	3,7	**N12 20380** 15,9×16×21	**55011 06016** M6×16	**55062 00020** M20 DIN6367	**55011 12040** M12×40
A51 15250 BT50-FA60-80*	50	60	129	101,6	80	40	8,5	**N12 20390** 25,4×25×31	**55011 12025** M12×25	–	**55011 16050** M16×50

JIS B 6339 AD/B FA..-160											
Order No. Article	BT	Ø d1	Ø d2	Bolt circle Ø d3	L1	L2	kg	Key block ① Order No. Article	Cylindrical screw ② DIN 912 Order No. Article	Cutter clamping screw ③ DIN 6367 Order No. Article	Screws ④ for cutter heads with internal bore location Order No. Article
A51 15300 BT40-FA16-160	40	16	38	–	160	17	2,2	**N12 20340** 8×8×14	**55011 03008** M3×8	**55011 08020** M8×20	–
A51 15310 BT40-FA22-160	40	22	48	–	160	19	3,0	**N12 20350** 10×10×17	**55011 04008** M4×8	**55011 10030** M10×30	–
A51 15320 BT40-FA27-160	40	27	58	–	160	21	3,8	**N12 20360** 12×14×20	**55011 04012** M4×12	**55011 12035** M12×35	–
A51 15330 BT40-FA32-160	40	32	78	–	160	24	4,6	**N12 20370** 14×14×22	**55011 05012** M5×12	**55011 16040** M16×40	–
A51 15340 BT40-FA40-160*	40	40	88	66,7	160	27	6,9	**N12 20380** 15,9×16×21	**55011 06016** M6×16	**55062 00020** M20 DIN6367	**55011 12040** M12×40
A51 15410 BT50-FA22-160	50	22	48	–	160	19	4,3	**N12 20350** 10×10×17	**55011 04008** M4×8	**55011 10030** M10×30	–
A51 15420 BT50-FA27-160	50	27	58	–	160	21	6,0	**N12 20360** 12×14×20	**55011 04012** M4×12	**55011 12035** M12×35	–
A51 15430 BT50-FA32-160	50	32	78	–	160	24	8,0	**N12 20370** 14×14×22	**55011 05012** M5×12	**55011 16040** M16×40	–
A51 15440 BT50-FA40-160*	50	40	88	66,7	160	27	9,0	**N12 20380** 15,9×16×21	**55011 06016** M6×16	**55062 00020** M20 DIN6367	**55011 12040** M12×40
A51 15450 BT50-FA60-160*	50	60	129	101,6	160	40		**N12 20390** 25,4×25×31	**55011 12025** M12×25	–	**55011 16050** M16×50

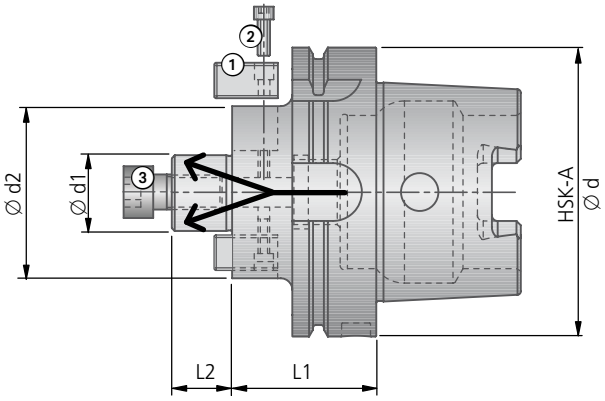
*** FA40 and 60 with 4 additional screw-in threads for cutter heads with tool clamping to DIN 2079.**

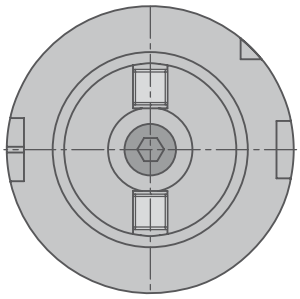
Supply includes ...FA..: Milling cutter arbor with cutter clamping screw ③, key block ① and cylindrical screw ②.
Supply includes ...FA40: Milling cutter arbor with cutter clamping screw ③, key block ① and cylindrical screw ②.
Supply includes ...FA60: Milling cutter arbor with key block ① and cylindrical screw ②.
Please order screws ④ for mounting the cutter heads separately.

DIN 6368 Key on request (chapter 8).

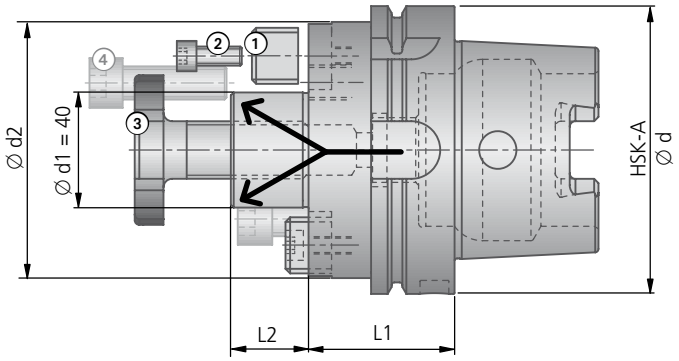
KOMET® ISO 12164-1

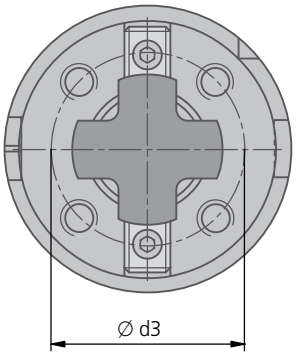
HSK-A Milling cutter arbor FA



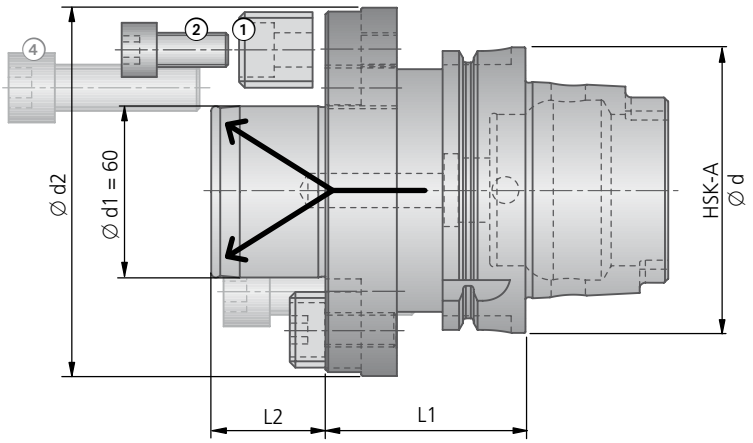


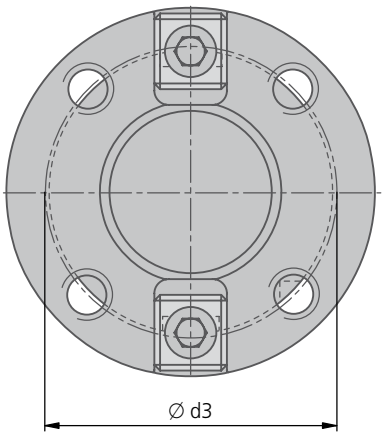
...FA40 / FA50





...FA60





HSK-A FA											Screws ④ for cutter heads with internal bore location
Order No. Article	HSK-A Ø d	Ø d1	Ø d2	Bolt circle Ø d3	L1	L2	kg	Key block ① Order No. Article	Cylindrical screw ② DIN 912 Order No. Article	Cutter clamping screw ③ DIN 6367 Order No. Article	Order No. Article
A06 33902 HSK-A63-FA16-50	63	16	38	–	50	17	1,1	**N12 20340** 8×8×14	**55011 03008** M3×8	**55011 08020** M8×20	–
A06 33912 HSK-A63-FA22-50	63	22	48	–	50	19	1,1	**N12 20350** 10×10×17	**55011 04008** M4×8	**55011 10030** M10×30	–
A06 33922 HSK-A63-FA27-60	63	27	58	–	60	21	1,3	**N12 20360** 12×14×20	**55011 04012** M4×12	**55011 12035** M12×35	–
A06 33932 HSK-A63-FA32-60	63	32	78	–	60	24	1,4	**N12 20370** 14×14×22	**55011 05012** M5×12	**55011 16040** M16×40	–
A06 33942 HSK-A63-FA40-60*	63	40	88	66,7	60	27	1,9	**N12 20380** 15,9×16×21	**55011 06016** M6×16	**55062 00020** M20 DIN6367	**55011 12040** M12×40
A06 53902 HSK-A100-FA16-50	100	16	38	–	50	17	2,3	**N12 20340** 8×8×14	**55011 03008** M3×8	**55011 08020** M8×20	–
A06 53912 HSK-A100-FA22-50	100	22	48	–	50	19	2,5	**N12 20350** 10×10×17	**55011 04008** M4×8	**55011 10030** M10×30	–
A06 53922 HSK-A100-FA27-50	100	27	58	–	50	21	2,7	**N12 20360** 12×14×20	**55011 04012** M4×12	**55011 12035** M12×35	–
A06 53932 HSK-A100-FA32-50	100	32	78	–	50	24	2,8	**N12 20370** 14×14×22	**55011 05012** M5×12	**55011 16040** M16×40	–
A06 53942 HSK-A100-FA40-60*	100	40	88	66,7	60	27	3,8	**N12 20380** 15,9×16×21	**55011 06016** M6×16	**55062 00020** M20 DIN6367	**55011 12040** M12×40
A06 53951 HSK-A100-FA50-70*	100	50	95	101,6	70	30		**N12 20400** 18×18×27	**55011 08020** M8×20	**55062 00024** M24 DIN6367	**55011 16050** M16×50
A06 53961 HSK-A100-FA60-70*	100	60	129	101,6	70	40	6,0	**N12 20390** 25,4×25×31	**55011 12025** M12×25	–	**55011 16050** M16×50

*** FA40, 50 and 60 with 4 additional screw-in threads for cutter heads with tool clamping to DIN 2079.**

Supply includes ...FA..: Milling cutter arbor with cutter clamping screw ③, key block ① and cylindrical screw ②.

Supply includes ...FA40/FA50: Milling cutter arbor with cutter clamping screw ③, key block ① and cylindrical screw ②.

Supply includes ...FA60: Milling cutter arbor with key block ① and cylindrical screw ②.

Please order screws ④ for mounting the cutter heads separately.
Please order coolant supply connection and key separately (chapter 8).

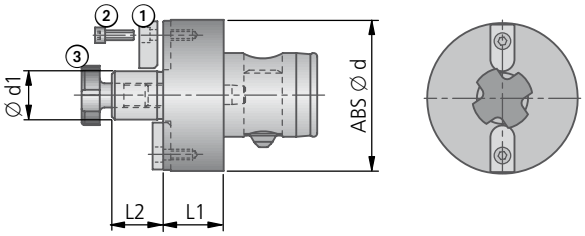
DIN 6368 Key on request (chapter 8).

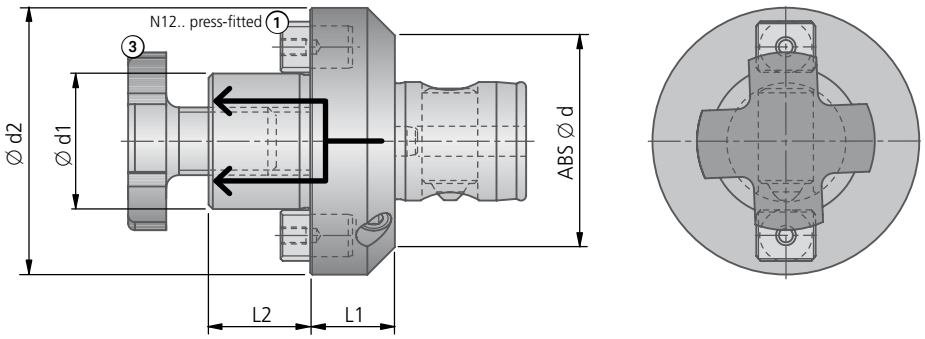
KOMET ABS®

Milling cutter arbor FA / FAM

...FA:

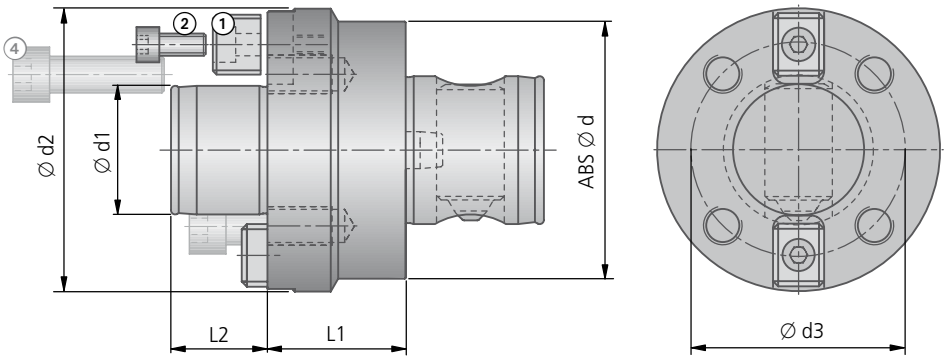
A40 24023 (ABS50 FA16)
without internal coolant supply





...FAM: Milling cutter adaptor with 4 screw-in threads for cutter heads with tool clamping to DIN 2079.

without internal coolant supply



Patent applied for inside and outside Germany

ABS® FA									
Order No. Article	ABS Ø d	Ø d1	Ø d2	L1	L2	kg	Drive key ① Key block Order No.	Cylindrical screw ② DIN 912 Order No. Article	Cutter clamping screw ③ DIN 6367 Order No. Article
A40 24023 ABS50 FA16	50	16	–	20	17	0,48	**A40 24020.12**	**55011 03010** M3×10	**55062 00008** M8
A40 24034 ABS50 FA22	50	22	50	20	19	0,51	**N12 20120**	–	**55062 00010** M10
A40 24043 ABS50 FA27	50	27	50	20	21	0,57	**N12 20140**	–	**55062 00012** M12
A40 24053 ABS50 FA32	50	32	63	20	24	0,80	**N12 20170**	–	**55062 00016** M16
A40 25032 ABS63 FA22	63	22	63	22	19	0,84	**N12 20120**	–	**55062 00010** M10
A40 25042 ABS63 FA27	63	27	63	22	21	0,90	**N12 20140**	–	**55062 00012** M12
A40 25052 ABS63 FA32	63	32	63	22	24	0,99	**N12 20170**	–	**55062 00016** M16
A40 25062 ABS63 FA40	63	40	80	22	27	1,41	**N12 20200**	–	**55062 00020** M20
A40 26042 ABS80 FA27	80	27	80	25	21	1,59	**N12 20140**	–	**55062 00012** M12
A40 26052 ABS80 FA32	80	32	80	25	24	1,68	**N12 20170**	–	**55062 00016** M16
A40 26062 ABS80 FA40	80	40	80	25	27	1,85	**N12 20200**	–	**55062 00020** M20
A40 27052 ABS100 FA32	100	32	100	25	24	2,10	**N12 20170**	–	**55062 00016** M16
A40 27062 ABS100 FA40	100	40	100	25	27	2,34	**N12 20200**	–	**55062 00020** M20

Supply includes:
Milling cutter adaptor ..FA with drive key/key block ①/cylindrical screw ② and cutter clamping screw ③.

ABS® FAM									Screws ④ for cutter heads with internal bore location
Order No. Article	ABS Ø d	Ø d1	Ø d2	Bolt circle Ø d3	L1	L2	kg	Key block ① Order No. Article	Cylindrical screw ② DIN 912 Order No. Article	Order No. Article
A40 16062 ABS 80-FAM40	80	40	88	66,7	43	30	2,60	**56341 00001** A40	**55011 06016** M6×16	**55011 12040** M12×40
A40 17062 ABS100-FAM40	100	40	88	66,7	38	30	3,50	**56341 00001** A40	**55011 06016** M6×16	**55011 12040** M12×40
A40 17072 ABS100-FAM60	100	60	130	101,6	56	40	6,50	**56341 00003** A50	**55011 12025** M12×25	**55011 16050** M16×50

Supply includes:
Milling cutter adaptor ..FAM with key block ① and cylindrical screw ②.
Please order screws ④ for mounting the cutter heads separately.

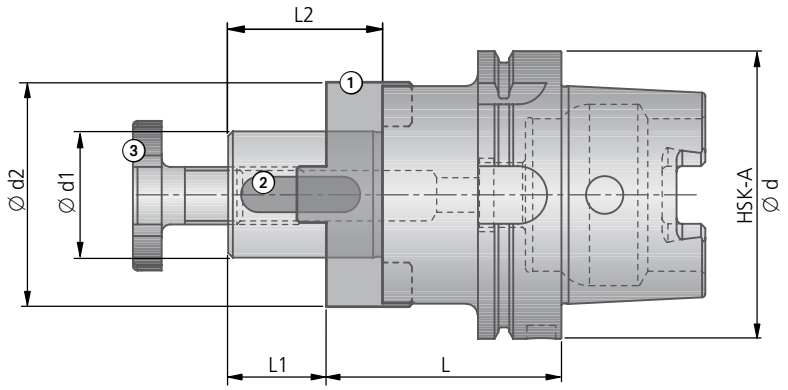
DIN 6368 Key on request (chapter 8).

KOMET® ISO 12164-1

HSK-A Combination milling cutter arbor

DIN 6358 | location DIN 69882-2 | pre-balanced G6,3 15.000 min^{-1} | rotating tool | HSK-A ISO 12164-1

for milling cutters with longitudinal or cross slots



HSK-A FAK								Driving ring ① DIN 6366 Part 1	Feather key ② DIN 6885 Part 1	Cutter clamping screw ③ DIN 6367
Order No. Article	HSK-A Ø d	Ø d1	Ø d2	L	L1	L2	kg	Order No. Article	Order No. Article	Order No. Article
A06 23751 HSK-A50-FAK16	50	16	32	50	17	27	0,62	**55237 00016** 16×10	**51305 04020** A4×4×20	**55062 00008** M8
A06 23761 HSK-A50-FAK22	50	22	40	50	19	31	0,60	**55237 00022** 22×12	**51305 06025** A6×6×25	**55062 00010** M10
A06 23771 HSK-A50-FAK27	50	27	48	65	21	33	1,05	**55237 00027** 27×12	**51305 07025** A7×7×25	**55062 00012** M12
A06 23781 HSK-A50-FAK32	50	32	58	65	24	38	1,25	**55237 00032** 32×14	**51305 08028** A8×7×28	**55062 00016** M16
A06 33750 HSK-A63-FAK16	63	16	32	60	17	27	0,96	**55237 00016** 16×10	**51305 04020** A4×4×20	**55062 00008** M8
A06 33760 HSK-A63-FAK22	63	22	40	60	19	31	1,10	**55237 00022** 22×12	**51305 06025** A6×6×25	**55062 00010** M10
A06 33770 HSK-A63-FAK27	63	27	48	60	21	33	1,22	**55237 00027** 27×12	**51305 07025** A7×7×25	**55062 00012** M12
A06 33780 HSK-A63-FAK32	63	32	58	60	24	38	1,45	**55237 00032** 32×14	**51305 08028** A8×7×28	**55062 00016** M16
A06 33790 HSK-A63-FAK40	63	40	70	70	27	41	2,10	**55237 00040** 40×14	**51305 10032** A10×8×32	**55062 00020** M20
A06 53750 HSK-A100-FAK16	100	16	32	60	17	27	2,20	**55237 00016** 16×10	**51305 04020** A4×4×20	**55062 00008** M8
A06 53760 HSK-A100-FAK22	100	22	40	60	19	31	2,48	**55237 00022** 22×12	**51305 06025** A6×6×25	**55062 00010** M10
A06 53770 HSK-A100-FAK27	100	27	48	60	21	33	2,55	**55237 00027** 27×12	**51305 07025** A7×7×25	**55062 00012** M12
A06 53780 HSK-A100-FAK32	100	32	58	60	24	38	2,80	**55237 00032** 32×14	**51305 08028** A8×7×28	**55062 00016** M16
A06 53790 HSK-A100-FAK40	100	40	70	70	27	41	3,55	**55237 00040** 40×14	**51305 10032** A10×8×32	**55062 00020** M20
A06 53800 HSK-A100-FAK50	100	50	90	80	30	46	5,00	**55237 00050** 50×16	**51305 12036** A12×8×36	**55062 00024** M24

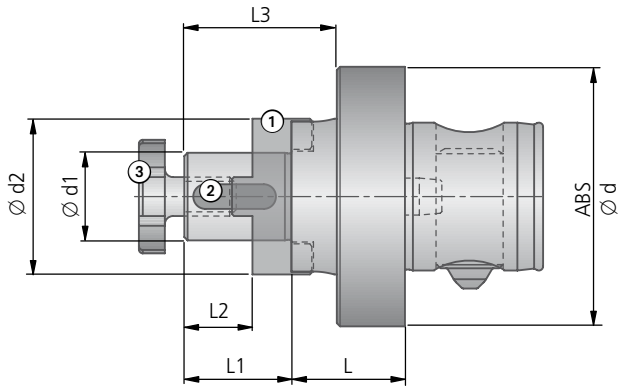
Supply includes: Milling cutter adaptor with driving ring ①, feather key ② and cutter clamping screw ③.
Please order coolant supply connection and key separately (chapter 8).

DIN 6368 Key on request (chapter 8).

Combination milling cutter arbor

DIN 6358 | rotating tool | ABS®

for milling cutters with longitudinal or cross slots



ABS® FAK											
Order No. Article	ABS Ø d	Ø d1	Ø d2	L	L1	L2	L3	kg	Driving ring ① DIN 6366 Part 1 Order No. Article	Feather key ② DIN 6885 Part 1 Order No. Article	Cutter clamping screw ③ DIN 6367 Order No. Article
A40 04022 ABS50 FAK16	50	16	32	22	27	17	39	0,46	**55237 00016** 16×10	**51305 04020** A4×4×20	**55062 00008** M8
A40 04032 ABS50 FAK22	50	22	40	22	31	19	43	0,59	**55237 00022** 22×12	**51305 06025** A6×6×25	**55062 00010** M10
A40 05021 ABS63 FAK16	63	16	32	26	27	17	42	1,0	**55237 00016** 16×10	**51305 04020** A4×4×20	**55062 00008** M8
A40 05031 ABS63 FAK22	63	22	40	26	31	19	46	1,15	**55237 00022** 22×12	**51305 06025** A6×6×25	**55062 00010** M10
A40 05041 ABS63 FAK27	63	27	48	26	33	21	48	1,25	**55237 00027** 27×12	**51305 07025** A7×7×25	**55062 00012** M12
A40 06031 ABS80 FAK22	80	22	40	33	31	19	51	1,8	**55237 00022** 22×12	**51305 06025** A6×6×25	**55062 00010** M10
A40 06041 ABS80 FAK27	80	27	48	33	33	21	53	1,9	**55237 00027** 27×12	**51305 07025** A7×7×25	**55062 00012** M12
A40 06051 ABS80 FAK32	80	32	58	33	38	24	58	2,3	**55237 00032** 32×14	**51305 08028** A8×7×28	**55062 00016** M16
A40 06061 ABS80 FAK40	80	40	70	33	41	27	61	2,75	**55237 00040** 40×14	**51305 10032** A10×8×32	**55062 00020** M20

Supply includes: Milling cutter adaptor with driving ring ①, feather key ② and cutter clamping screw ③.

DIN 6368 Key on request (chapter 8).

KOMET® ISO 12164-1

HSK-A Expanding chuck

DIN 6535 HA | DIN 6535 HB | DIN 6535 HE | DIN 6535 HE + DIN 6595 | concentricity ≦ 3 µm | location DIN 69882-7 | rotating tool | HSK-A50|63 pre-balanced G6,3 15000 min-1 | HSK-A100 pre-balanced G6,3 12000 min-1 | HSK-A ISO 12164-1

DIN 1835 T1 A | DIN 1835 T1 B | DIN 1835 T1 E

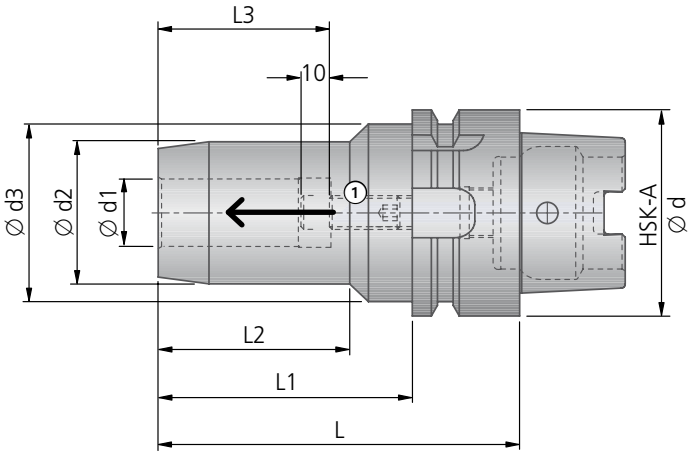
Admissible radial force F at the toolholder at an overhang of 50 mm

Ø d1	F (N)
Expanding chuck	
6	225
8	370
10	540
12	650
14	900
16	1410
18	1580
20	1860
25	4400
32	6500
Expanding chuck KS	
12	975
16	2115
20	2790
32	9750

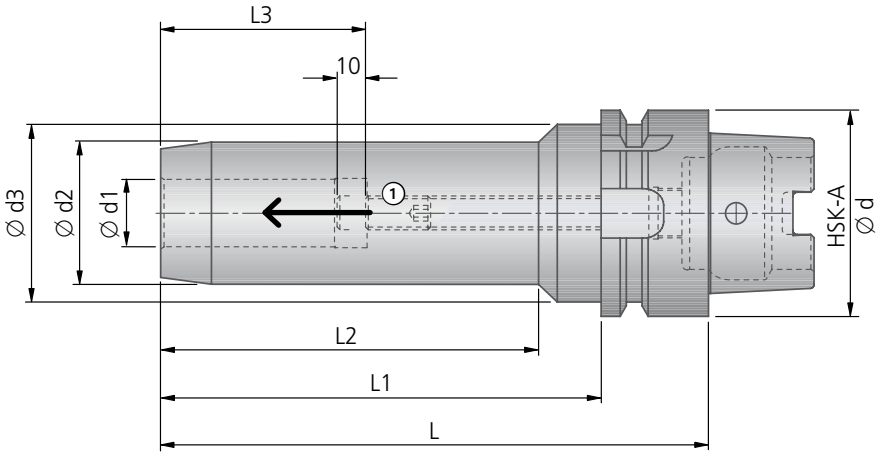
Expanding chuck &

Expanding chuck KS

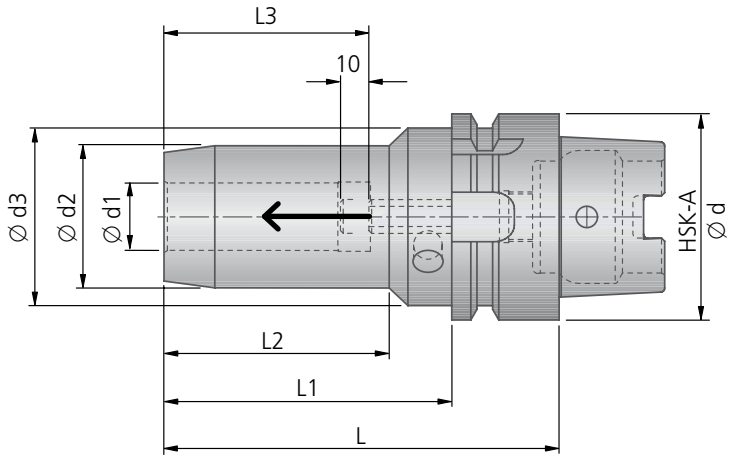
Torque ∅ 32 mm: **2000 Nm**



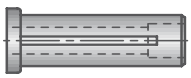
Expanding chuck
long version



Expanding chuck
radial length adjustment



Adaptor sleeve



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HSK-A DIN 69893 T1 Expanding chuck												
											Adjusting screw ①	
Article	Order No.	HSK-A Ø d	Ø d1	Ø d2	Ø d3	L	L1	L2	L3	kg	Article	Order No.
HSK-A50-D12	**A06 23530**	50	12	32	40	85	59	44	46	0,80	M10×1×12	**N00 71800**
HSK-A50-D20	**A06 23570**	50	20	42	60	90	64	29	51	1,10	M16×1×14	**N00 71550**
HSK-A63-D6	**A06 33500**	63	6	26	50	70	44	24	37	0,74	M5×12	**N00 71020**
HSK-A63-D8	**A06 33510**	63	8	28	50	70	44	25	37	0,83	M6×12	**N00 71070**
HSK-A63-D10	**A06 33520**	63	10	30	50	80	54	35	41	0,83	M8×1×12	**N00 71730**
HSK-A63-D12	**A06 33530**	63	12	32	50	85	59	40	46	1,14	M10×1×12	**N00 71800**
HSK-A63-D14	**A06 33540**	63	14	34	50	85	59	40	46	0,83	M10×1×12	**N00 71800**
HSK-A63-D16	**A06 33550**	63	16	38	50	90	64	46	49	1,05	M12×1×12	**N00 71860**
HSK-A63-D18	**A06 33560**	63	18	40	50	90	64	47	49	0,91	M12×1×12	**N00 71860**
HSK-A63-D20	**A06 33570**	63	20	42	50	90	64	48	51	1,15	M16×1×14	**N00 71550**
HSK-A63-D25	**A06 33580**	63	25	57	63	120	94	59	57	2,3	M16×1×14	**N00 71550**
HSK-A63-D32	**A06 33590**	63	32	64	75	125	99	63	61	2,9	M16×1×14	**N00 71550**
HSK-A100-D6	**A06 53500**	100	6	26	50	75	46	26	37	2,28	M5×12	**N00 71020**
HSK-A100-D8	**A06 53510**	100	8	28	50	75	46	26	37	2,28	M6×12	**N00 71070**
HSK-A100-D10	**A06 53520**	100	10	30	50	90	61	42	41	2,40	M8×1×12	**N00 71730**
HSK-A100-D12	**A06 53530**	100	12	32	50	95	66	47	46	2,29	M10×1×12	**N00 71800**
HSK-A100-D14	**A06 53540**	100	14	34	50	95	66	47	46	2,45	M10×1×12	**N00 71800**
HSK-A100-D16	**A06 53550**	100	16	38	50	100	71	53	49	2,59	M12×1×12	**N00 71860**
HSK-A100-D18	**A06 53560**	100	18	40	50	100	71	53	49	2,61	M12×1×12	**N00 71860**
HSK-A100-D20	**A06 53570**	100	20	42	50	105	76	59	51	3,07	M16×1×14	**N00 71550**
HSK-A100-D25	**A06 53580**	100	25	57	63	110	81	62	57	3,54	M16×1×14	**N00 71550**
HSK-A100-D32	**A06 53590**	100	32	64	75	110	81	62	61	2,80	M16×1×14	**N00 71550**
HSK-A DIN 69893 T1 Expanding chuck KS												
HSK-A63 D12 KS	**A06 37530**	63	12	42	52,5	80	54	34	46		M8×1×12	**N00 71730**
HSK-A63 D16 KS	**A06 37550**	63	16	52,5	–	80	54	–	51		M8×1×12	**N00 71730**
HSK-A63 D20 KS	**A06 37570**	63	20	52,5	–	80	54	–	51		M8×1×12	**N00 71730**
HSK-A100 D20 KS	**A06 57570**	100	20	52,5	–	90	61,05	–	51		M8×1×12	**N00 71730**
HSK-A100 D32 KS	**A06 57590**	100	32	72	–	100	71,05	–	61		M8×1×12	**N00 71730**
HSK-A DIN 69893 T1 Expanding chuck – long version												
HSK-A63-D6 L-200	**A06 34900**	63	6	26	50	200	174	153	37	1,6	M5×12	**N00 71020**
HSK-A63-D8 L-200	**A06 34910**	63	8	28	50	200	174	154	37	1,6	M6×12	**N00 71070**
HSK-A63-D10 L-200	**A06 34920**	63	10	30	50	200	174	154	41	1,7	M8×1×12	**N00 71730**
HSK-A63-D12 L-200	**A06 34930**	63	12	32	50	200	174	155	46	1,8	M10×1×12	**N00 71800**
HSK-A63-D14 L-200	**A06 34940**	63	14	34	50	200	174	155	46	1,9	M10×1×12	**N00 71800**
HSK-A63-D16 L-200	**A06 34950**	63	16	38	50	200	174	156	49	2,2	M12×1×12	**N00 71860**
HSK-A63-D18 L-200	**A06 34960**	63	18	40	50	200	174	157	49	2,3	M12×1×12	**N00 71860**
HSK-A63-D20 L-200	**A06 34970**	63	20	42	50	200	174	158	51	2,4	M16×1×14	**N00 71550**
HSK-A DIN 69893 T1 Expanding chuck – radial length adjustment												
HSK-A63-D6 RL	**A06 34800**	63	6	26	50	80	54	33	37	1,1		–
HSK-A63-D8 RL	**A06 34810**	63	8	28	50	80	54	33	37	1,1		–
HSK-A63-D10 RL	**A06 34820**	63	10	30	50	85	59	38	41	1,1		–
HSK-A63-D12 RL	**A06 34830**	63	12	32	50	90	64	40	46	1,2		–
HSK-A63-D14 RL	**A06 34840**	63	14	34	50	90	64	46	46	1,2		–
HSK-A63-D16 RL	**A06 34850**	63	16	38	50	95	69	51	49	1,3		–
HSK-A63-D18 RL	**A06 34860**	63	18	40	50	95	69	52	49	1,3		–
HSK-A63-D20 RL	**A06 34870**	63	20	42	50	100	74	51	51	1,4		–
HSK-A63-D25 RL	**A06 34880**	63	25	57	63	120	94	54,5	57	2,2		–
HSK-A63-D32 RL	**A06 34890**	63	32	64	75	125	99	57,5	61	2,7		–

Tool shank tolerance: h6 for Ø 6 - 32 mm

Supply includes: Expanding chuck fitted complete. Please order coolant supply connection and key separately (chapter 8).

further HSK-size on request

KOMET® DIN 69871 AD/B

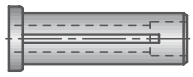
Expanding chuck

Admissible radial force F at the toolholder at an overhang of 50 mm

Ø d1	F (N)
Expanding chuck	
6	225
8	370
10	540
12	650
14	900
16	1410
18	1580
20	1860
25	4400
32	6500
Expanding chuck KS	
12	975
16	2115
20	2790
32	9750

Expanding chuck

Adaptor sleeve



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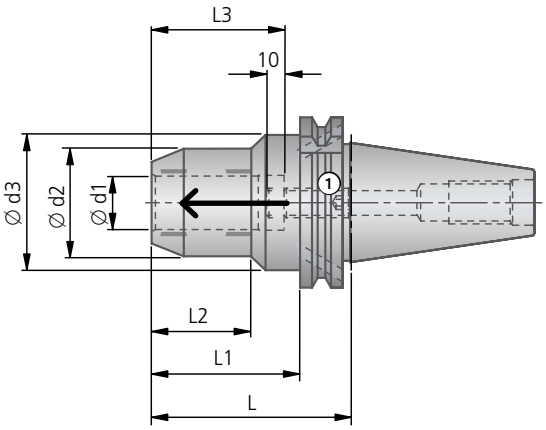
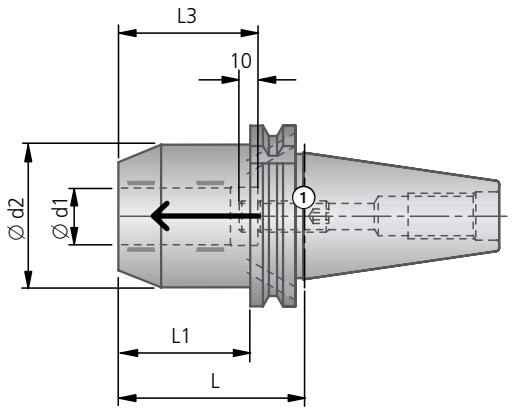


Expanding chuck KS
Torque ∅ 32 mm: **2000 Nm**



DIN 69871 AD/B Expanding chuck												
											Adjusting screw ①	
SK	Article	Order No.	Ø d1	Ø d2	Ø d3	L	L1	L2	L3	kg	Article	Order No.
40	ISO40 DIN69871AD/B-D12	**A05 92090**	12	32	49,5	80,5	61,5	31,5	46	1,4	M10×1×12	**N00 71800**
40	ISO40 DIN69871AD/B-D16	**A05 92100**	16	38	49,5	80,5	61,5	33	49	1,4	M12×1×12	**N00 71860**
40	ISO40 DIN69871AD/B-D25	**A05 92120**	25	55	66	80,5	61,5	22	57	1,8	M16×1×14	**N00 71550**
DIN 69871 AD/B Expanding chuck KS												
40	ISO40 DIN69871AD/B-D12-KS	**A05 97530**	12	42	–	50	31	–	46		M8×1×12	**N00 71730**
40	ISO40 DIN69871AD/B-D16-KS	**A05 97550**	16	49,25	–	64,5	45,45	–	51		M8×1×12	**N00 71730**
40	ISO40 DIN69871AD/B-D20-KS	**A05 97570**	20	49,25	–	64,5	45,5	–	51		M8×1×12	**N00 71730**
50	ISO50 DIN69871AD/B-D12-KS	**A05 97630**	12	42	–	50	31	–	46		M8×1×12	**N00 71730**
50	ISO50 DIN69871AD/B-D20-KS	**A05 97670**	20	49,25	–	64,5	45,5	–	51		M8×1×12	**N00 71730**
50	ISO50 DIN69871AD/B-D32-KS	**A05 97690**	32	72	–	81	62	–	61		M8×1×12	**N00 71730**

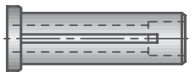
Tool shank tolerance: h6 for Ø 6 - 32 mm

Supply includes: Expanding chuck fitted complete.
Taper shank in form B complete with conversion kit (for form AD). Please order pull stud separately (chapter 8).

Note: With coolant supply through spindle, use pull stud with through hole. To close off central coolant hole, use pull stud without through hole.

Expanding chuck

Expanding chuck KS
Torque ∅ 32 mm: **2000 Nm**

Adaptor sleeve

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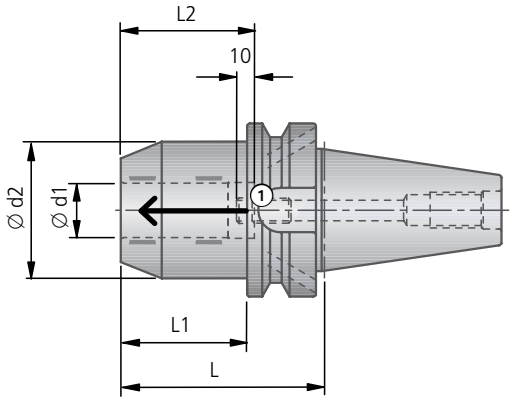


JIS B 6339 AD/B Expanding chuck KS

Article	Order No.	BT	Ø d1	Ø d2	L	L1	L2	kg	Adjusting screw ① Article	Adjusting screw ① Order No.
MAS BT40-D12-KS	**A05 97730**	40	12	42	58	31	46		M8×1×12	**N00 71730**
MAS BT40-D16-KS	**A05 97750**	40	16	49,25	72,5	45,5	51		M8×1×12	**N00 71730**
MAS BT40-D20-KS	**A05 97770**	40	20	49,25	72,5	45,5	51		M8×1×12	**N00 71730**
MAS BT50-D20-KS	**A05 97870**	50	20	49,25	83,5	45,5	51		M8×1×12	**N00 71730**
MAS BT50-D32-KS	**A05 97890**	50	32	72	90	52	61		M8×1×12	**N00 71730**

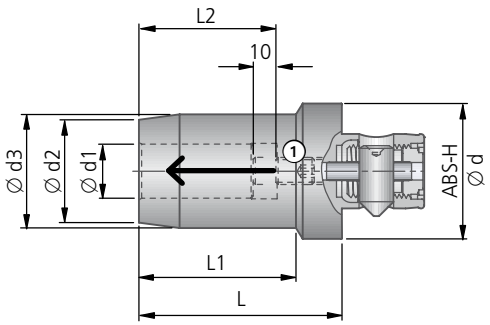
Tool shank tolerance: h6 for ∅ 6 - 32 mm

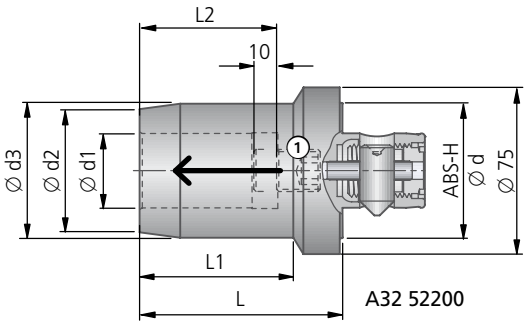
Supply includes: Expanding chuck fitted complete.
Taper shank in form B complete with conversion kit (for form AD). Please order pull stud separately (chapter 8).

Note: With coolant supply through spindle, use pull stud with through hole.
To close off central coolant hole, use pull stud without through hole.

KOMET ABS® H

Expanding chuck





ABS® H Expanding chuck

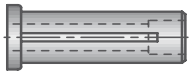
Article	Order No.	ABS-H Ø d	Ø d1	Ø d2	Ø d3	L	L1	L2	kg	Adjusting screw ① Article	Adjusting screw ① Order No.
ABS40-H D8	**A32 32060**	40	8	24	28	60	42	37	0,42	M6×12	**N00 71070**
ABS40-H D10	**A32 32070**	40	10	26	30	65	47,5	41	0,46	M8×1×12	**N00 71730**
ABS40-H D12	**A32 32080**	40	12	28	32	65	48	46	0,43	M10×1×12	**N00 71800**
ABS50-H D6	**A32 42110**	50	6	22	26	55	33,5	37	0,53	M5×12	**N00 71020**
ABS50-H D8	**A32 42120**	50	8	24	28	55	34	37	0,60	M6×12	**N00 71070**
ABS50-H D10	**A32 42130**	50	10	26	30	65	45	41	0,56	M8×1×12	**N00 71730**
ABS50-H D12	**A32 42140**	50	12	28	32	65	45,5	46	0,61	M10×1×12	**N00 71800**
ABS50-H D14	**A32 42150**	50	14	30	34	65	46	46	0,60	M10×1×12	**N00 71800**
ABS50-H D16	**A32 42160**	50	16	34	38	70	52	49	0,80	M10×1×12	**N00 71800**
ABS50-H D18	**A32 42170**	50	18	36	40	70	52,5	49	0,85	M10×1×12	**N00 71800**
ABS50-H D20	**A32 42101**	50	20	38	42	75	58	51	0,90	M16×1×16	**N00 71540**
ABS63-H D20	**A32 52180**	63	20	38	42	78	56	51	1,15	M16×1×16	**N00 71540**
ABS63-H D25	**A32 52190**	63	25	53	57	85	60	57		M16×1×16	**N00 71540**
ABS63-H D32	**A32 52200**	63	32	60	64	90	61	61	2,10	M16×1×16	**N00 71540**

Tool shank tolerance: h6 for Ø 6 - 32 mm

Supply includes: Expanding chuck fitted complete with adjusting screw.

- Axial adjustment: Adjustment is by means of the ABS® H spigot with an hexagonal key.
- ABS® H connection: ABS® H, the ABS® variation for use where greater concentricity is required, is fully compatible with the ABS® standard programme. During the clamping operation, the design of the ABS® H compensates for play in the connection.
- Spindle speed: from 15000 min-1 we recommend that the chuck be balanced before using with clamped tool.
- no maintenance

Adaptor sleeve



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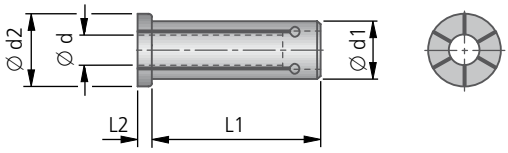
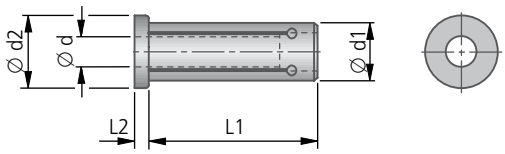
Patent applied for inside and outside Germany

with slotted collar
for peripheral cooling



with closed collar
for internal coolant supply

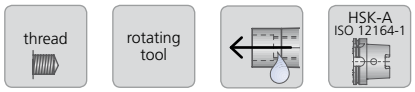


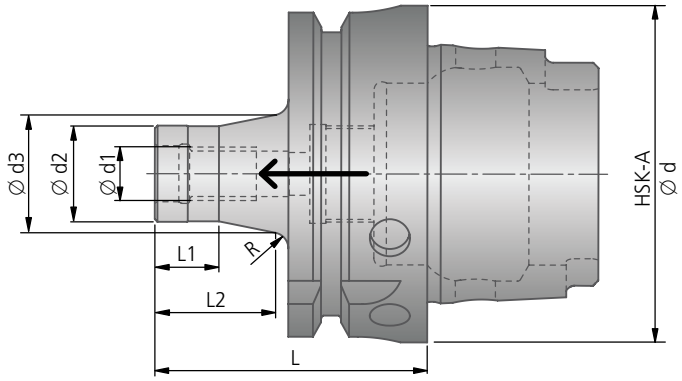
Adaptor sleeve						
Order No.	Ø d	Ø d1	Ø d2	L1	L2	kg
L01 13291	3	12	19	45	2	0,1
L01 13301	4					
L01 13311	5					
L01 13321	6					
L01 13331	8					
L01 13261	3	20	29	50,5	2	0,1
L01 13271	4					
L01 13281	5					
L01 13201	6					
L01 13211	8					
L01 13221	10					
L01 13231	12					
L01 13241	14					
L01 13251	16					
L01 13501	6	32	39	60,5	3	0,3
L01 13511	8					
L01 13521	10					
L01 13531	12					
L01 13541	14					
L01 13551	16					
L01 13561	18					
L01 13571	20					
L01 13581	25					

Adaptor sleeve						
Order No.	Ø d	Ø d1	Ø d2	L1	L2	kg
L01 14291	3	12	19	45	2	0,1
L01 14301	4					
L01 14311	5					
L01 14321	6					
L01 14331	8					
L01 14261	3	20	29	50,5	2	0,1
L01 14271	4					
L01 14281	5					
L01 14201	6					
L01 14211	8					
L01 14221	10					
L01 14231	12					
L01 14241	14					
L01 14251	16					
L01 14400	6	25	29	55	2	0,1
L01 14410	8					
L01 14420	10					
L01 14430	12					
L01 14440	14					
L01 14450	16					
L01 14460	18					
L01 14470	20					
L01 14501	6	32	39	60,5	3	0,3
L01 14511	8					
L01 14521	10					
L01 14531	12					
L01 14541	14					
L01 14551	16					
L01 14561	18					
L01 14571	20					
L01 14581	25					

KOMET® ISO 12164-1

HSK-A Adaptor for screw-on tools

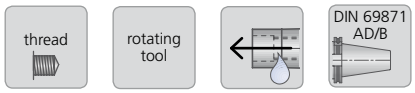


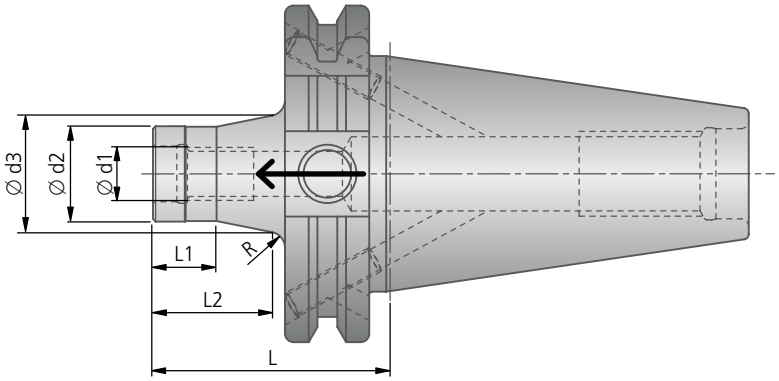


HSK-A										
Article	Order No.	HSK-A Ø d	Ø d1	Ø d2	Ø d3	L	L1	L2	R	kg
HSK-A63-M10/51	**A06 35100**	63	M10	18	22,0	51	12	22,6	3	
HSK-A63-M10/76	**A06 35110**	63	M10	18	24,5	76	12	47,3	3	
HSK-A63-M10/126	**A06 35120**	63	M10	18	34,5	126	12	97,3	3	
HSK-A63-M10/176	**A06 35130**	63	M10	18	44,5	176	12	147,3	3	
HSK-A63-M12/51	**A06 35140**	63	M12	21	23,4	51	12	22,4	3	
HSK-A63-M12/76	**A06 35150**	63	M12	21	29,4	76	12	47,4	3	
HSK-A63-M12/126	**A06 35160**	63	M12	21	37,5	126	12	97,3	3	
HSK-A63-M12/176	**A06 35170**	63	M12	21	44,5	176	12	147,3	3	
HSK-A63-M16/51	**A06 35180**	63	M16	29	–	51	12	23,0	2	
HSK-A63-M16/76	**A06 35190**	63	M16	29	33,7	76	12	48,1	2	
HSK-A63-M16/126	**A06 35200**	63	M16	29	39,8	126	12	98,1	2	
HSK-A63-M16/176	**A06 35210**	63	M16	29	47,7	176	12	148,1	2	
HSK-A100-M10/79	**A06 55100**	100	M10	18	23,3	79	12	40,9	10	
HSK-A100-M10/129	**A06 55110**	100	M10	18	33,2	129	12	90,9	10	
HSK-A100-M10/179	**A06 55120**	100	M10	18	43,2	179	12	140,9	10	
HSK-A100-M12/79	**A06 55130**	100	M12	21	27,9	79	12	41,2	10	
HSK-A100-M12/129	**A06 55140**	100	M12	21	36,2	129	12	90,9	10	
HSK-A100-M12/179	**A06 55150**	100	M12	21	43,3	179	12	140,9	10	
HSK-A100-M16/79	**A06 55160**	100	M16	29	32,7	79	12	40,7	10	
HSK-A100-M16/129	**A06 55170**	100	M16	29	38,8	129	12	90,6	10	
HSK-A100-M16/179	**A06 55180**	100	M16	29	46,7	179	12	140,7	10	

Please order coolant supply connection and key separately (chapter 8).

Taper shank for screw-on tools





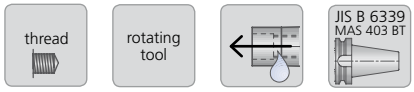
DIN 69871 AD/B										
SK	Article	Order No.	Ø d1	Ø d2	Ø d3	L	L1	L2	R	kg
40	SK40-AD/B-M10/44	**A51 14500**	M10	18	22,0	44	12	22,5	3	
40	SK40-AD/B-M10/69	**A51 14510**	M10	18	24,5	69	12	47,2	3	
40	SK40-AD/B-M10/94	**A51 14520**	M10	18	29,5	94	12	72,2	3	
40	SK40-AD/B-M10/119	**A51 14530**	M10	18	34,5	119	12	97,2	3	
40	SK40-AD/B-M10/169	**A51 14540**	M10	18	44,8	169	12	149,0	1	
40	SK40-AD/B-M12/44	**A51 14550**	M12	21	22,9	44	12	20,5	5	
40	SK40-AD/B-M12/69	**A51 14560**	M12	21	29,4	69	12	47,3	3	
40	SK40-AD/B-M12/94	**A51 14570**	M12	21	34,4	94	12	72,2	3	
40	SK40-AD/B-M12/119	**A51 14580**	M12	21	37,5	119	12	97,2	3	
40	SK40-AD/B-M12/169	**A51 14590**	M12	21	47,8	169	12	149,2	0,8	
40	SK40-AD/B-M16/44	**A51 14600**	M16	29	–	44	12	21,9	3	
40	SK40-AD/B-M16/69	**A51 14610**	M16	29	33,6	69	12	47,1	3	
40	SK40-AD/B-M16/94	**A51 14620**	M16	29	34,7	94	12	72,0	3	
40	SK40-AD/B-M16/119	**A51 14630**	M16	29	39,6	119	12	97,1	3	
40	SK40-AD/B-M16/169	**A51 14640**	M16	29	47,9	169	12	149,2	0,8	
50	SK50-AD/B-M10/69	**A51 14700**	M10	18	24,1	69	12	45,4	5	
50	SK50-AD/B-M10/119	**A51 14710**	M10	18	34,1	119	12	95,4	5	
50	SK50-AD/B-M10/169	**A51 14720**	M10	18	44,5	169	12	147,2	3	
50	SK50-AD/B-M12/69	**A51 14730**	M12	21	28,3	69	12	42,9	8	
50	SK50-AD/B-M12/119	**A51 14740**	M12	21	36,6	119	12	92,7	8	
50	SK50-AD/B-M12/169	**A51 14750**	M12	21	50,4	169	12	142,8	8	
50	SK50-AD/B-M16/69	**A51 14760**	M16	29	33,4	69	12	45,2	5	
50	SK50-AD/B-M16/119	**A51 14770**	M16	29	39,4	119	12	95,2	5	
50	SK50-AD/B-M16/169	**A51 14780**	M16	29	47,4	169	12	145,2	5	

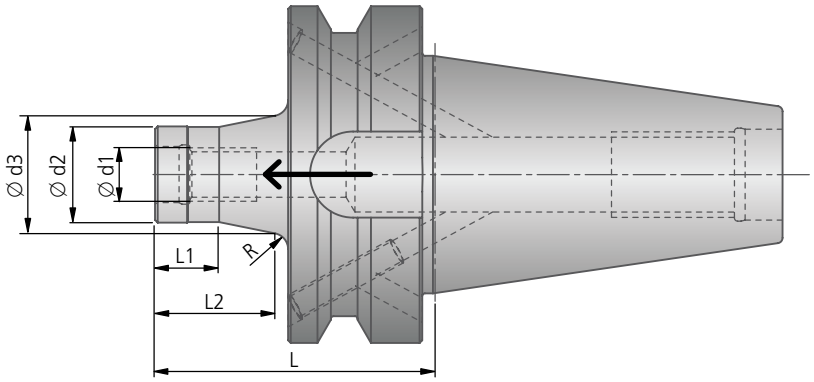
Taper shank in form B complete with conversion kit (for form AD). Please order pull stud separately (chapter 8).

Note: With coolant supply through spindle, use pull stud with through hole. To close off central coolant hole, use pull stud without through hole.

KOMET® JIS B 6339 (MAS 403 BT)

Taper shank for screw-on tools



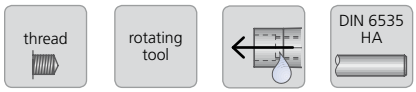


JIS B 6339 AD/B										
Article	Order No.	BT	Ø d1	Ø d2	Ø d3	L	L1	L2	R	kg
JIS B6339-40M10/52	**A51 15500**	40	M10	18	22,0	52	12	22,5	3	
JIS B6339-40M10/77	**A51 15510**	40	M10	18	24,5	77	12	47,2	3	
JIS B6339-40M10/102	**A51 15520**	40	M10	18	24,7	102	12	72,1	3	
JIS B6339-40M12/52	**A51 15530**	40	M12	21	23,3	52	12	22,3	3	
JIS B6339-40M12/77	**A51 15540**	40	M12	21	35	77	12	49,9	–	
JIS B6339-40M12/102	**A51 15550**	40	M12	21	37,4	102	12	72,6	3	
JIS B6339-40M12/127	**A51 15560**	40	M12	21	38,0	127	12	99,9	–	
JIS B6339-40M16/52	**A51 15570**	40	M16	29	–	52	12	21,9	3	
JIS B6339-40M16/77	**A51 15580**	40	M16	29	33,6	77	12	47,1	3	
JIS B6339-40M16/102	**A51 15590**	40	M16	29	34,7	102	12	72,0	3	
JIS B6339-40M16/127	**A51 15600**	40	M16	29	39,6	127	12	97,1	3	
JIS B6339-40M16/152	**A51 15610**	40	M16	29	39,7	152	12	122,4	3	
JIS B6339-40M16/177	**A51 15620**	40	M16	29	42,5	177	12	149,9	–	
JIS B6339-50M12/88	**A51 15700**	50	M12	21	27,6	88	12	47,1	3	
JIS B6339-50M12/138	**A51 15710**	50	M12	21	37,4	138	12	97,1	3	
JIS B6339-50M12/188	**A51 15720**	50	M12	21	47,2	188	12	147,1	3	
JIS B6339-50M16/88	**A51 15730**	50	M16	29	32,3	88	12	46,9	3	
JIS B6339-50M16/113	**A51 15740**	50	M16	29	34,7	113	12	71,9	3	
JIS B6339-50M16/138	**A51 15750**	50	M16	29	37,2	138	12	96,9	3	
JIS B6339-50M16/188	**A51 15760**	50	M16	29	42,2	188	12	146,9	3	

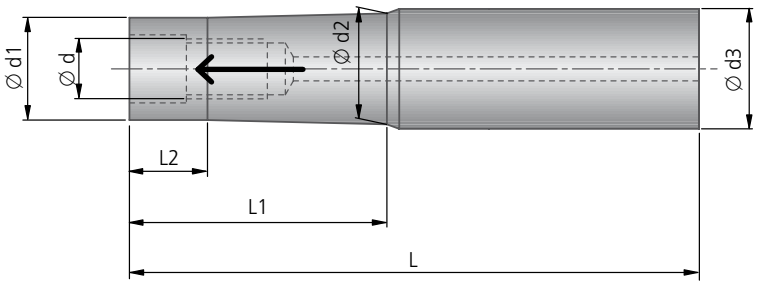
Taper shank in form B complete with conversion kit (for form AD). Please order pull stud separately (chapter 8).

Note: With coolant supply through spindle, use pull stud with through hole. To close off central coolant hole, use pull stud without through hole.

Adaptor for screw-on tools



cylindrical shank suitable for shrink fit chuck



Order No.	Ø d	Ø d1	Ø d2	Cylindrical shank Ø d3	L	L1	L2	kg
58797012000065*	M5	9,5	11,5	12	65	20	7,8	0,054
58798012000085	M5	9,5	11,8	12	85	40	9	0,147
58798012000105	M5	9,5	11,8	12	105	60	9	0,166
58798012000125	M5	9,5	11,8	12	125	80	9	0,197
58797016000088*	M8	13,8	15,8	16	88	40	7,8	0,122
58798016000108	M8	14,2	15,8	16	108	60	9	0,333
58798016000128	M8	14,2	15,8	16	128	80	9	0,402
58798016000148	M8	14,2	15,8	16	148	100	9	0,451
58798016000168	M8	14,2	15,8	16	168	120	9	0,522
58798016000198	M8	14,2	15,8	16	198	150	9	0,678
58797020000095*	M10	18,0	19,8	20	95	45	7,8	0,208
58798020000110	M10	18,5	19,8	20	110	60	9	0,552
58798020000130	M10	18,5	19,8	20	130	80	9	0,654
58798020000150	M10	18,5	19,8	20	150	100	9	0,754
58798020000170	M10	18,5	19,8	20	170	120	9	0,850
58798020000190	M10	18,5	19,8	20	190	140	9	0,958
58797025000106*	M12	21,0	24,8	25	106	50	7,8	0,347
58798025000131	M12	23,0	24,8	25	131	75	9	1,022
58798025000156	M12	23,0	24,8	25	156	100	9	1,225
58798025000181	M12	23,0	24,8	25	181	125	9	1,417
58798025000206	M12	23,0	24,8	25	206	150	9	1,620
58798025000231	M12	23,0	24,8	25	231	175	9	1,822
58797032000110*	M16	29,0	31,9	32	110	50	7,8	0,619
58798032000160	M16	29,0	31,9	32	160	100	16	2,612
58798032000210	M16	29,0	31,9	32	210	150	16	3,310
58798032000260	M16	29,0	31,9	32	260	200	16	4,174
58798032000310	M16	29,0	31,9	32	310	250	16	4,955
58798036000160	M16	31,5	34,8	36	160	100	9	2,406
58798036000310	M16	31,5	34,8	36	310	250	9	

Variant: heavy metal, *steel

The ideas factory

The IDEEN-FABRIK reflects the evolution of the KOMET GROUP from a tool manufacturer into a creative expert for solutions covering all aspects of boring, reaming, thread milling and mechatronic tools.

The central objective is to offer our customers and employees scope for creative working and learning.

On a total area of 2,500 m², we have created a modern, multi-storey factory environment. The IDEEN-FABRIK was deliberately not constructed as a separate, detached training building, but integrated directly above a manufacturing business.

While the metal swarf flies down below, ideas are exchanged above. By this, we aim to demonstrate that the work here is always associated with new ideas and creative ambition.

With the IDEEN-FABRIK and the comprehensive seminar programme for customers and employee qualification, we aim to offer you a measurable and permanent competitive advantage in your markets.

Ask for our no-obligation specialist seminar brochure.

TOOLS+IDEAS®

The KOMET GROUP is the worldwide technology leader for innovative tool concepts and complete solutions for drilling machining.

Our customers know us as a manufacturer of premium tools, and know the ideas behind our solutions. The further creativity is still unused, and remains to be discovered. We have set ourselves the objective of exploiting the added value thus created for the benefit of our customers.

We call this TOOLS+IDEAS. A new and different way of being able to offer our customers long-term, sustainable advantages through a plus in support and services.

Our IDEEN-FABRIK in Besigheim is the first step in this direction.

Informations

KOMET® – Expertise in special solutions

Application examples

Special solutions for your milling operations – Greater range of functions, lower machining costs

Developing customer-specific solutions has always been a showcase discipline at KOMET®.
Due to requirements relating to design, tolerance and other quality considerations, machining tasks can often not be accomplished using standard tools.
Special process evaluations and tool developments are then required.

BENEFITS for you:

- Optimised application design
- Idle times are significantly reduced
- KOMET® experts provide individual and professional advice
- Combining several machining operations
- Highest efficiency and productivity

Special side and face milling cutters for machining the bearing seat webs in a crankcase

Application example:
Material: GSJ 40
Cutting data:
Cutting speed
v_c = 100 m/min
Feed
f = 0,12 mm

Special milling cutters for machining brake calliper lugs

Application example:
Material: GSJ 50
Cutting data:
Cutting speed
v_c = 140 m/min
Feed
f = 0,1 mm

Special milling cutters for machining the sealing grooves in a pump housing

Application example:
Material: GJL 300
Cutting data:
Cutting speed
v_c = 130 m/min
Feed
f = 0,1 mm

KOMET® SERVICE

The service brand name of the KOMET GROUP

Fast, flexible and always close to you.

A network of local partners that provide professional tool refurbishment, trade tools and manufacture customized solid carbide special tools:

Everything from a single source.

Tool reconditioning that matches the original quality

Our conditioning experts analyse your tools both from a technical point of view and in terms of cost-effectiveness, and custom recondition them based on this assessment.

Fully customised coating

It goes without saying that KOMET GROUP tools are always given the same coating as they had originally.

We meet your specific needs and complete the coating within a few days – even with other common coatings available on the market.

Special tools

Thanks to expert technical project engineering and design planning by your KOMET SERVICE® partner, you will be provided with a special tool tailor-made from solid carbide to your exact requirements in next to no time.

Tool reworking

Our partners will happily adapt your tools for you, quickly and flexibly.

Tool*life* range

Buy KomPass TOOL *life* tools directly from your KOMET SERVICE® partner.

Strong and supportive network

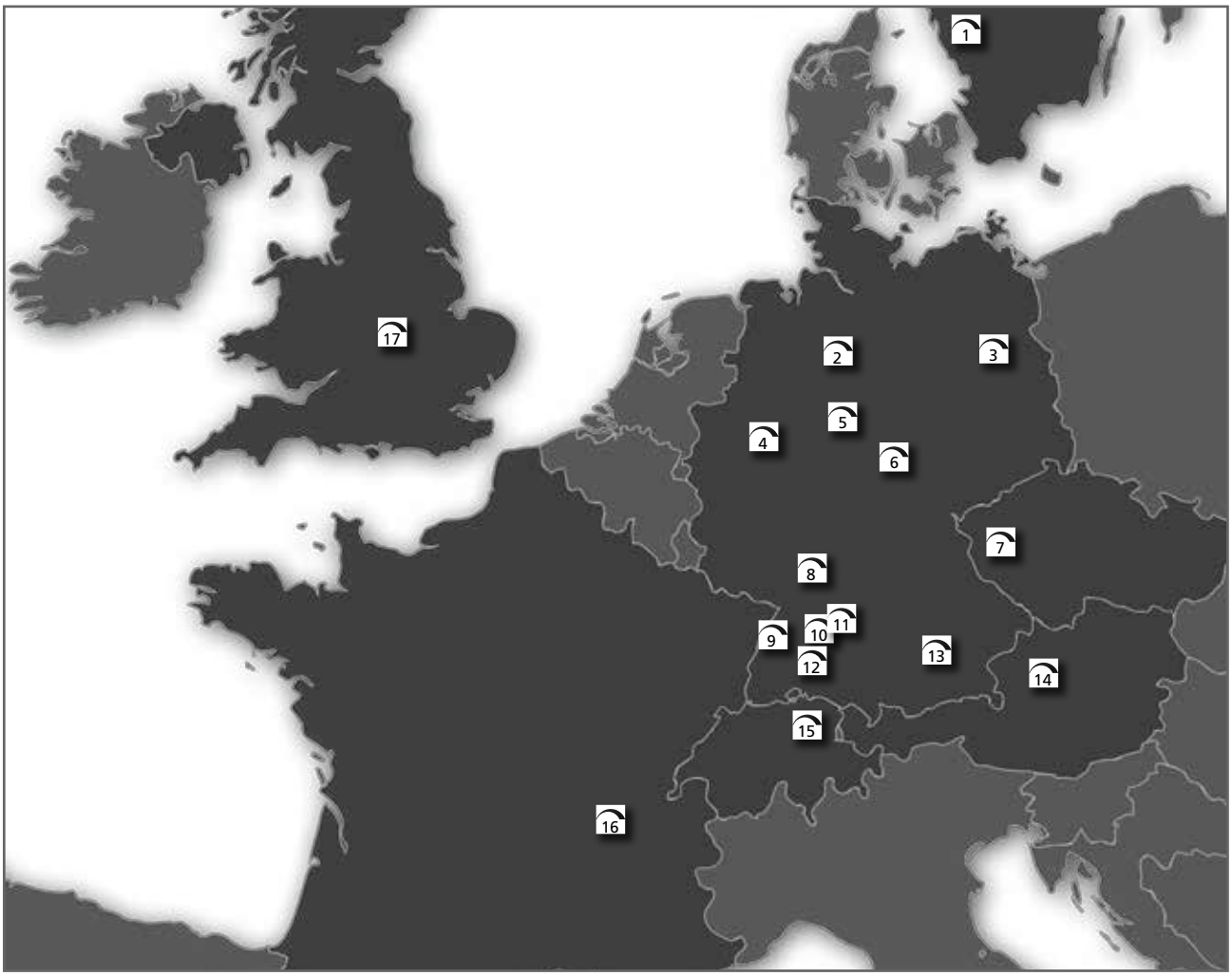
Extensive network of KOMET SERVICE® partners – wherever you are.

Collection and delivery service

Your KOMET SERVICE® partner will get your tools back to you in just a few days.

KOMET SERVICE ® Partner

Europe



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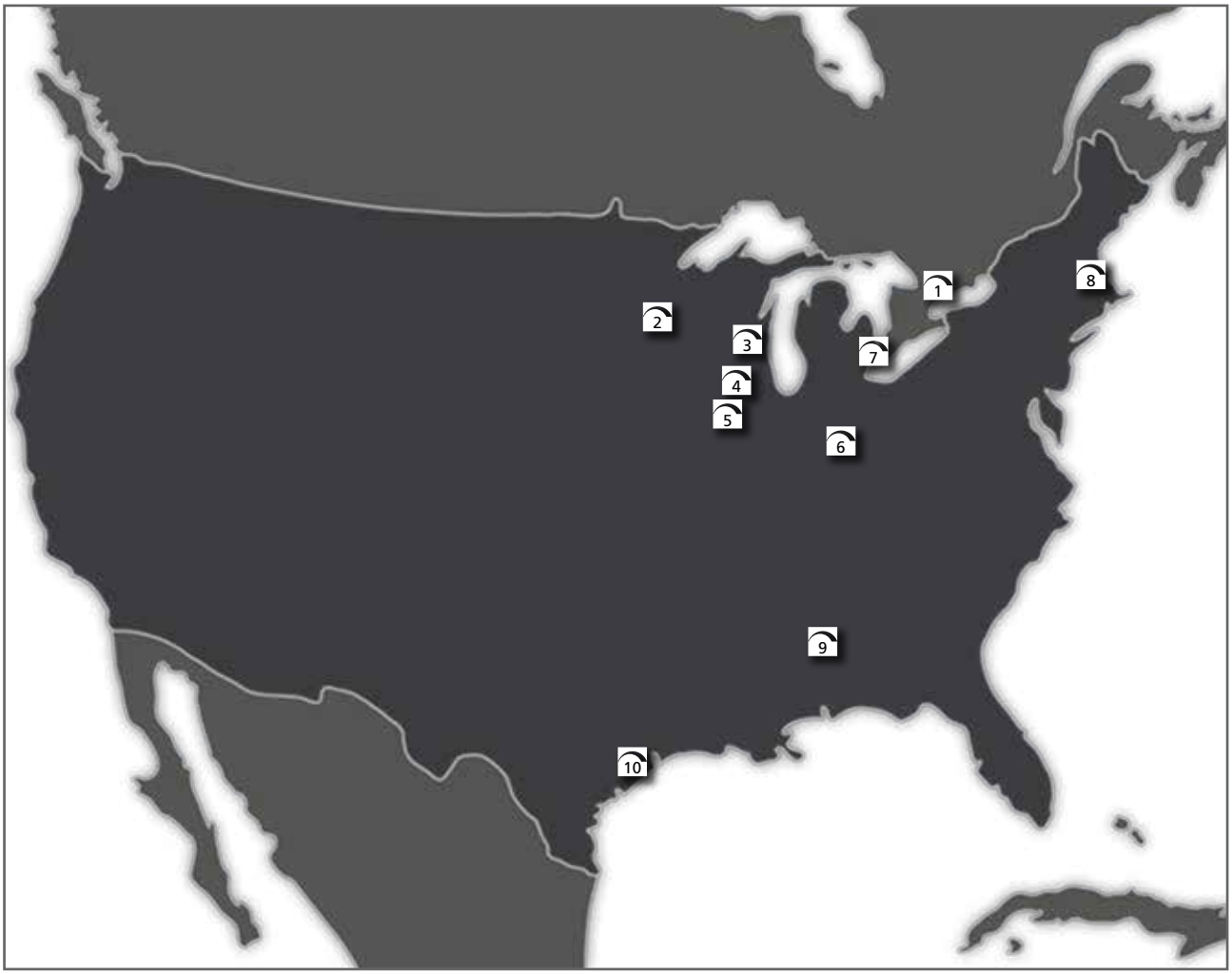

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www.kometservice.com

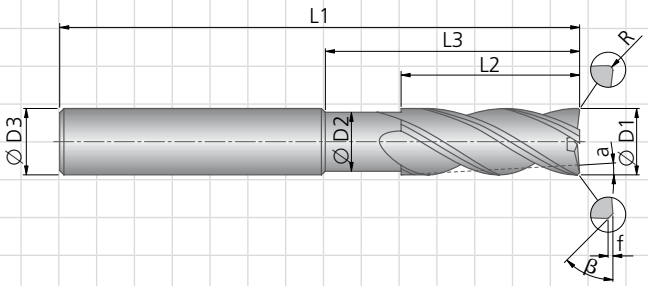
KOMET SERVICE

Inquiry special tools: Milling cutter

Company:
Customer No.:
Adress:

Contact:
Department:
Phone:
Fax:
E-Mail:

Workpiece drawing:



Tool: milling cutter	Dimensions	Tolerance
machining ☐ roughing ☐ finishing		
∅ D1		
neck groove	☐ yes	☐ no
neck dia. D2		
shank dia. D3		
L1		
L2		
L3		
conical	☐ yes	☐ no
angle of taper α		
no. of teeth z		
front milling	☐ yes	☐ no
face milling	☐ yes	☐ no
corner type	☐ A	☐ B
corner radius R		
bevel f		
bevel angle β	☐ 45°	☐ ____°
straight fluted	☐	
right hand spiraled, helix angle λ	☐ λ =	
left hand spiraled, helix anglel λ	☐ λ =	
cutting direction	☐ R.H.	☐ L.H.
coating	☐ yes	☐ no
inner cooling lubricant supply	☐ yes: ☐ side ☐ central	
cooling lubricant discharge	☐ no	
cylindrical shank DIN 6535	☐ HA ☐ other:	☐ HE ☐ HB
Machine data		
machine type		
spindle type / size		
spindle power (kW)		
cutting speed v_c (m/min)		

Workpiece:

Tools required _____units
Workpiece _____units/year

Material to be machined:

☐ construction steel, good machinability
☐ tool steel
☐ stainless steel
☐ hardened steel
☐ malleable cast iron
☐ spheroidal graphite cast iron
☐ non-ferrous metals (refractory)
☐ non-ferrous metals (malleable)
☐ _____

Material name
Strength Rm (N/mm²)
Hardness (HRc, HB, HV, ...)

A fax form is available to download from www.kometgroup.com

KOMET SERVICE

Inquiry special tools: Form cutter

Company:	Contact:
Customer No.:	Department:
Adress:	Phone:
	Fax:
	E-Mail:

Workpiece drawing:

Workpiece:

Tools required _____units

Workpiece _____units/year

Material to be machined:

- ☐ construction steel, good machinability
- ☐ tool steel
- ☐ stainless steel
- ☐ hardened steel
- ☐ malleable cast iron
- ☐ spheroidal graphite cast iron
- ☐ non-ferrous metals (refractory)
- ☐ non-ferrous metals (malleable)
- ☐ _____

Material name
Strength Rm (N/mm²)
Hardness (HRc, HB, HV, ...)

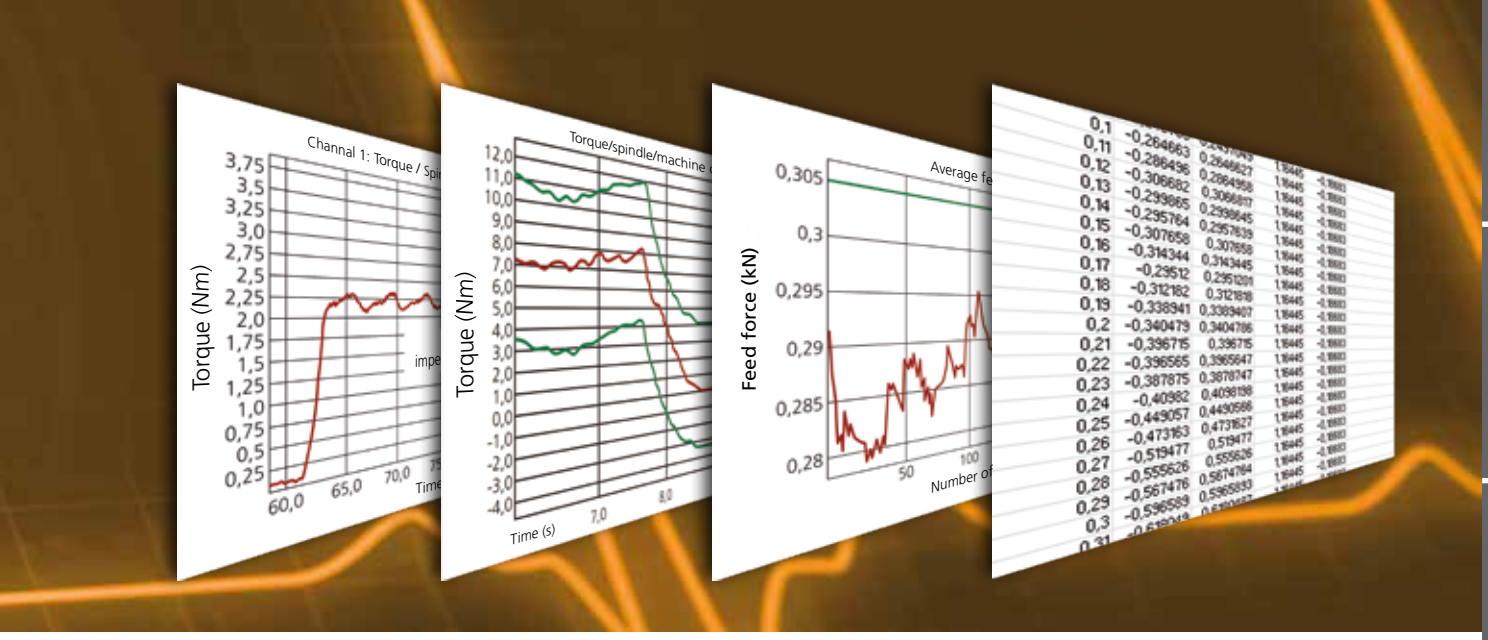
Tool: form cutter	Dimensions	Tolerance
shank dia.		
overall length		
no. of teeth z		
straight fluted	☐	
right hand spiraled, helix angle λ	☐ λ =	
left hand spiraled, helix anglel λ	☐ λ =	
cutting direction	☐ R.H.	☐ L.H.
coating	☐ yes	☐ no
inner cooling lubricant supply cooling lubricant discharge	☐ yes: ☐ side ☐ central ☐ no	
cylindrical shank DIN 6535	☐ HA ☐ other:	☐ HE ☐ HB
Machine data		
machine type		
spindle type / size		
spindle power (kW)		
cutting speed v_C (m/min)		

KOMET® BRINKHAUS ToolScope
Modular Assistance System

For YOUR Use
The comprehensive Industry 4.0 solution

With firmware version V10, KOMET® has developed ToolScope into a comprehensive assistance system for machining production.

It contains several apps, which harnesses recorded machine production and process data for the user in a simple manner.



Next generation process monitoring

Growing automation in the machining industry increases the demand for more process and machine tool monitoring, which can help minimize machine down time and reduce scrap rates, detect and manage wear in mass series production, thereby improving the delivery times to your customers.

Based on the latest technology of process and machine tool monitoring, the ToolScope System from KOMET® BRINKHAUS relies on a unique, patented method for statistical process monitoring which not only detects breakage but also recognizes considerably smaller process deviations. In addition to the usual procedures of process control, the ToolScope System provides a procedure for monitoring quality while a process is running.

KOMET® BRINKHAUS ToolScope adds considerable value to your production

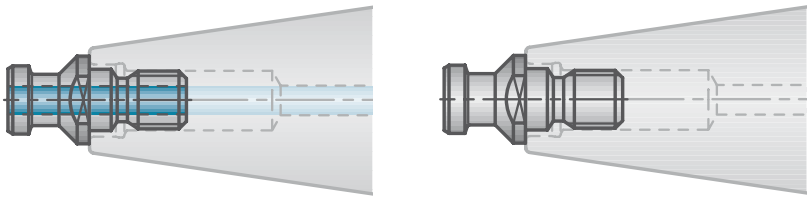
KOMET® BRINKHAUS ToolScope has an advantage over other systems not only because it features the latest technology, but also because of its modularity and user-friendliness. Above that, many additional modules like Adaptive Feed Control, Condition Monitoring or Energy Monitoring underline the multiplicity of the system. Finally we offer with our wide network of application tools and process specialist service up to the complete management of system and production process.

BENEFITS for you:

- Wide network of KOMET® tool and process experts, which can support the operation of the system
- Online visualization of the process (oscilloscope function) to support the set-up procedure, e.g. in order to promptly detect the jamming of chips
- Six Sigma Strategy: statistical process verification and process quality monitoring
- Dynamic Monitoring Module: Process monoitoring for small batch runs which alleviates the need for a learning period
- Adaptive Control (AC) Module: Optimization of the essential operating time through process acceleration for tools that are underused, and speed reduction for tools that are overused
- Measuring without (additional) sensors: The sensor data is read directly from the CNC via Profibus or TCP/IP
- Automatic documentation of the process data as a PDF, PNG or Excel file
- Monitoring for tool wear and missing tool
- Monitoring of any and all possible sensor signals
- Evaluating analogue sensor signals with up to 10 kHz
- Monitoring of the vibration behavior of bearings, axles, spindles and tools
- Operation via the machine control system HMI or using a touch screen
- Modular program structure enables the optimal adjustment to customer needs
- Many additional modules like chatter recognition and control, Condition Monitoring, Energy Monitoring etc.

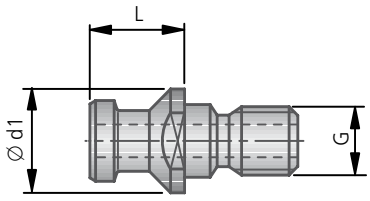
Pull studs

Note:
With coolant supply through spindle, use pull stud with through hole.
To close off central coolant hole, use pull stud without through hole.



DIN 69872 A

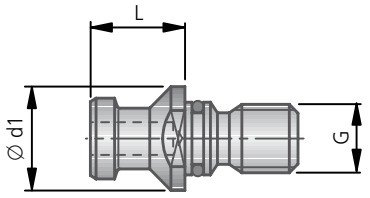
with through hole



DIN 69872 A				
ISO size	Order No.	Ø d1	L	G
40	55391 01240	23	26	M16
45	55391 01645	30	30	M20
50	55391 02050	36	34	M24

DIN 69872 B

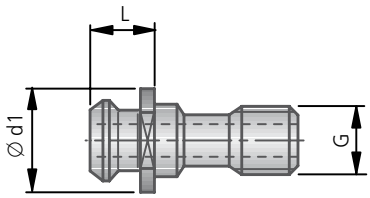
sealed,
for coolant through collar



DIN 69872 B				
ISO size	Order No.	Ø d1	L	G
40	55392 01240	23	26	M16
45	55392 01645	30	30	M20
50	55392 02050	36	34	M24

ISO 7388/2 B

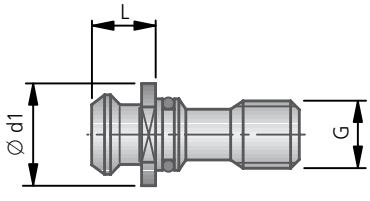
with through hole



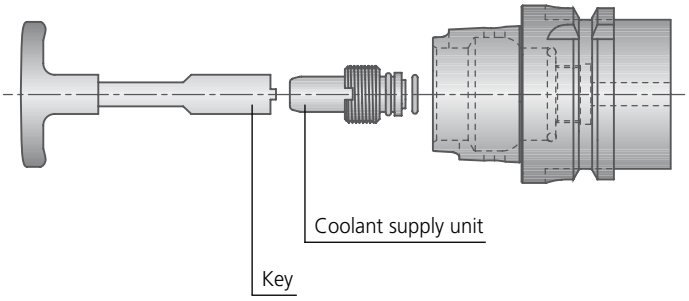
ISO 7388/2 B				
ISO size	Order No.	Ø d1	L	G
40	55391 51640	22,5	16,40	M16
45	55391 52045	30,0	20,95	M20
50	55391 52450	37,0	25,55	M24

ISO 7388 B

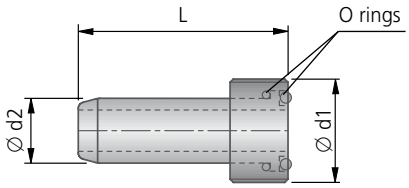
sealed,
for coolant through collar



ISO 7388 B				
ISO size	Order No.	Ø d1	L	G
40	55392 51640	22,5	16,40	M16
45	55392 52045	30,0	20,95	M20
50	55392 52450	37,0	25,55	M24

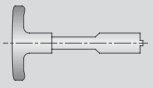


Note:
The coolant supply unit should be fitted in the tool with the key, to ensure a seal is produced.
A coolant supply unit specifically for the machine can also be fitted, if required, using the thread in the tool.



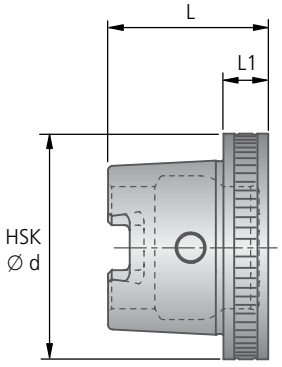
Note re. supply:
The coolant supply connection for the tool adaptors must be ordered separately.
Only use the keys listed for assembly.
This will prevent coolant flowing back into the machine spindle/clamping system.
A specific coolant hose for the machine can also be fitted on all HSK adaptors.

Supply coolant supply unit includes:
Coolant tube, locking collar and two O rings.

	Key	Coolant supply unit						
HSK-A size	 Order No.	Order No.	Ø d1	Ø d2	L	O ring face side and over tube Article		Order No.
32	**18021 01032**	**51391 00032**	M10×1,0	6	26	5×1,2	2×	**52914 00512**
40	**18021 01040**	**51391 00040**	M12×1,0	8	29,1	7,5×1,5	2×	**52914 00751**
50	**18021 01050**	**51391 00050**	M16×1,0	10	32,7	9×2	2×	**52914 00920**
63	**18021 01063**	**51391 00063**	M18×1,0	12	36,2	10×2,5 10×2	1× 1×	**52914 01025** **52914 01020**
80	**18021 01080**	**51391 00080**	M20×1,5	14	39,7	13×2	2×	**52914 01320**
100	**18021 01100**	**51391 00100**	M24×1,5	16	43,6	14×3	2×	**52914 01430**

HSK-A/C Plugs

For sealing HSK units against dirt or other contamination.



HSK-A | HSK-C				
Article	Order No.	HSK Ø d	L	L1
HSK-A/C 50	**A06 23470**	50	37,5	12,5
HSK-A/C 63	**A06 33470**	63	44,5	12,5
HSK-A/C100	**A06 53470**	100	66	16

KOMET ®

Screwdriver | Key

To ensure the correct starting torque on screws, the torque key from the TORX PLUS ® system has.
Complies with the following requirements: EN ISO 6789, BS EN 26789, ASME B107.14M (with certificate).

Torque wrench TorqueFix ®
with fixed preset torque
accuracy: ± 6% release torque: + 30%

TorqueFix ®			appropriate replaceable blade
			
Size	Torque	Order No.	Order No.
5IP	0,38 Nm	L05 00901	L05 00700
6IP	0,62 Nm	L05 00911	L05 00710
6IP	1,01 Nm	L05 03301	
7IP	0,90 Nm	L05 00921	L05 00720
8IP	1,28 Nm	L05 00931	L05 00730
8IP	2,25 Nm	L05 03311	
9IP	2,50 Nm	L05 00941	L05 00740
10IP	2,80 Nm	L05 00951	L05 00750
15IP	4,30 Nm	L05 00961	L05 00760
20IP	6,25 Nm	L05 00971	L05 00770

Supply includes: Torque wrench without replaceable blade.

Torque wrench easyTorque
with fixed preset torque
accuracy: ± 10% release torque: unbounded

easyTorque			appropriate replaceable blade
			
Size	Torque	Order No.	Order No.
5IP	0,38 Nm	L05 00902	L05 00700
6IP	0,62 Nm	L05 00912	L05 00710
6IP	1,01 Nm	L05 00922	
8IP	1,28 Nm	L05 00932	L05 00730
8IP	1,8 Nm	L05 03320	
8IP	2,25 Nm	L05 00942	
9IP	2,50 Nm	L05 00952	L05 00740
10IP	2,80 Nm	L05 00962	L05 00750
15IP	4,30 Nm	L05 00972	L05 00760

Supply includes: Torque wrench without replaceable blade.

Torque wrench TorqueVario ®
adjustable with scale

TorqueVario ®				
				
Size	Torque	Order No.	Adjusting key	Replaceable blades
5IP – 7IP	0,38 - 1,01 Nm	L05 00781	L05 00990	L05 00700
				L05 00710
				L05 00720
9IP – 20IP	2,25 - 6,25 Nm	L05 00791	L05 00990	L05 00740
				L05 00750
				L05 00760
				L05 00770

Supply includes:
Torque wrench with adjusting key and replaceable blades.

TORX PLUS ®	
	
Size	Order No.
5IP	L05 00800
6IP	L05 00810
7IP	L05 00820
8IP	L05 00830
9IP	L05 00840
10IP	L05 00850
15IP	L05 00860
20IP	L05 00870

The old Torx keys do fit the new TORX PLUS ® shape but we recommend only. TORX PLUS ® keys be used for tightening screws.

TORX ® and TORX PLUS ® are registered trademarks for the Acument Intellectual Properties, LLC, Troy Mich., US
TorqueFix ® and TorqueVario ® are registered trademarks for the Wiha Werkzeuge GmbH, Schonach

To ensure the correct starting torque on screws, the torque key from the TORX ® and TORX PLUS ® system has. Complies with the following requirements: EN ISO 6789, BS EN 26789, ASME B107.14M (with certificate).

TORX ®

Torque wrench

Size	Torque	Order No.
T8 – T20	1 – 5 Nm (0,2 Nm)	L05 00600

Replaceable blades

Size	Order No.
T8	L05 00601
T15	L05 00603
T20	L05 00604

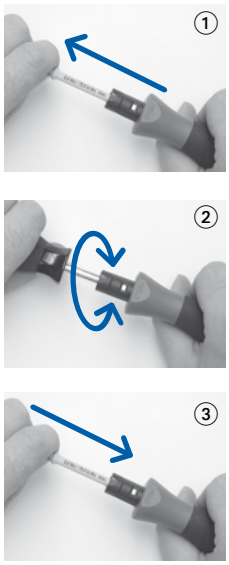
Supply includes: Torque wrench with adjusting key without replaceable blade.

Changing the torque

① Remove blade

② Insert adjusting key in variable torque key handle and turn to set the required torque. The appropriate IP size can be read from the graduated scale.

③ Push blade in again



TORX ®

Size	Order No.
T8	L05 00605

TORX ®

Size	Order No.
T15	L05 00607
T20	L05 00608

Allen key

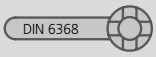
~ISO 2936L

Widht across flats WAF	Order No.
4	18591 10041

Allen key

Widht across flats WAF	Order No.
1,5	18591 10015
2,5	18591 10025
3	18591 10030
4	18591 10040
5	18591 10050
6	18591 10060
10	18591 10100

Key



Size	Order No.
16	18701 80016
22	18701 80022
27	18701 80027
32	18701 80032
40	18701 80040
50	18701 80050

on request

KOMET® APP

Products

Product menu with a short, descriptive text to the portfolio

Material classification

International translation table for material classification.

Cutting data

Cutting data: speed, feed, processing time, power and torque can be calculated.

Technical dictionary

German/English with full-text search. Many common words from the machining and tool world.

Calculator screen

Here you can enter the diameter and the cutting speed, is automatically calculated.

Videos

Links to the KOMET GROUP product videos on YouTube®

YouTube is a registered trademark for the Google Inc.

TOOLS IDEAS®

A PLUS for our customers and the environment

The company targets

The KOMET GROUP pursues a consistent policy of investments and achieves long-term and profitable growth via continuous improvement of products and processes as well as via consistent qualification of employees. This increases the value of the company. The KOMET GROUP consistently increases its innovation quota via research and development, offering the market new products every year. The KOMET GROUP is a premium quality manufacturer and motivates employee qualification and customers in their IDEAS FACTORY. The training quota of vocational beginners is exemplary for the entire field of business.

The products and services

KOMET GROUP products and services offer the customer incomparable added value. The KOMET GROUP develops, manufactures and sells the comprehensive, modular portfolio on bore machining as full-range suppliers. The KOMET GROUP offers the innovative technologies, thereby taking the high economic viability, best quality and most attractive designs into account. The KOMET GROUP sees itself not purely as a tool manufacturer, but rather as suppliers of innovative solutions and ideas for the benefit of the customer: TOOLS IDEAS®.

The customer

The KOMET GROUP places value on long-term, binding customer relations, seeing itself as a partner of the customer in a balance of benefit supplies and benefit harvests.
The KOMET GROUP records customers' demands and then produces the most effective ideas and tool solutions for their machining tasks. The KOMET GROUP offers the customer information and collaboration via their worldwide presence in local Service Centres. The IDEAS FACTORY supports vocation-related training and further qualifications for customers.

The environment / surroundings

The KOMET GROUP feels itself obliged to avoid any wastage, and therefore commits itself to responsible usage of raw materials and careful utilisation of remaining materials.
The KOMET GROUP management is well aware of its responsibilities towards society, and creates the foundations for modern working environments and working conditions. The specifications on ergonomics and work safety are taken into account. Beholden to the founder, Robert Breuning, the KOMET GROUP supports the site at Besigheim, maintaining direct contact to schools and social facilities in the region.

With these claims in mind, the KOMET GROUP has introduced a modern, integrated management system, known as KMS (KOMET Management System), which is certified in accordance with ISO 9001:2008, ISO 14001:2009 and the German „Akkreditierungs-und Zulassungsverordnung Arbeitsförderung – AZAV".

Certification

http://www.kometgroup.com/navigation-top/download/service/zertifikate.html

Energy efficiency and resource conservation

The KOMET GROUP is now also focussing on the issue of „energy efficiency". The reason is that metal machining companies need intelligent products, processes and systems in this regard as well, in order to successfully meet the challenges that the future holds.
Bluecompetence is the sustainability initiative launched by the VDMA (German Engineering Association) with which the KOMET GROUP has also associated itself. By combining the resources, expertise and strengths of all members of the VDMA, the intention is to consolidate and enhance the joint global position as the technology leader in sustainable production and products.

Certified Management System
Quality Management ISO 9001
Environmental Management ISO 14001
Arbeitsmarktinstrumente AZAV
BLUEcoMPETENCE Alliance Member
Partner of the Engineering Industry Sustainability Initiative
carbon neutral
natureOffice.com | DE-077-543654
print production
FSC www.fsc.org MIX Papier aus verantwortungsvollen Quellen FSC® C015194

Usage and safety notes

The application details given depend on the environmental and application conditions (e.g. machine, ambient temperature, lubricant/coolant used and machining result required): they are based on the correct application conditions, correct use and compliance with the spindle speed limits given for the tools.

All measurement specifications stated in the catalogue apply to the metric unit system, unless they are expressly identified using another unit of measurement.

Hazard warning:

If using tungsten carbide-based hard metal products together with cobalt as a binder metal, please read our safety data sheets, which are available for you to download from our website.
(http://www.kometgroup.com/navigation-top/download/service/datenblaetter.html)

Balancing note:

Tool holders or adaptors are only balanced as supplied, i.e. no allowance has been made for items which can alter this, such as boring tools, milling cutters, inserts, etc. When used at high speeds, we recommend precision balancing be carried out when the tool is fitted ready for use.

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Customer No. – please specify	Order No.	Order date	Supplier No.

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Contact person (surname) Name

Branch Department/site

Street

Town/city, postcode

Tel. Fax

Date Signature

Delivery address (if different)

Company

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Order quantity	Order No.	Tool name / Item Article	Customer material number	Additional information

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