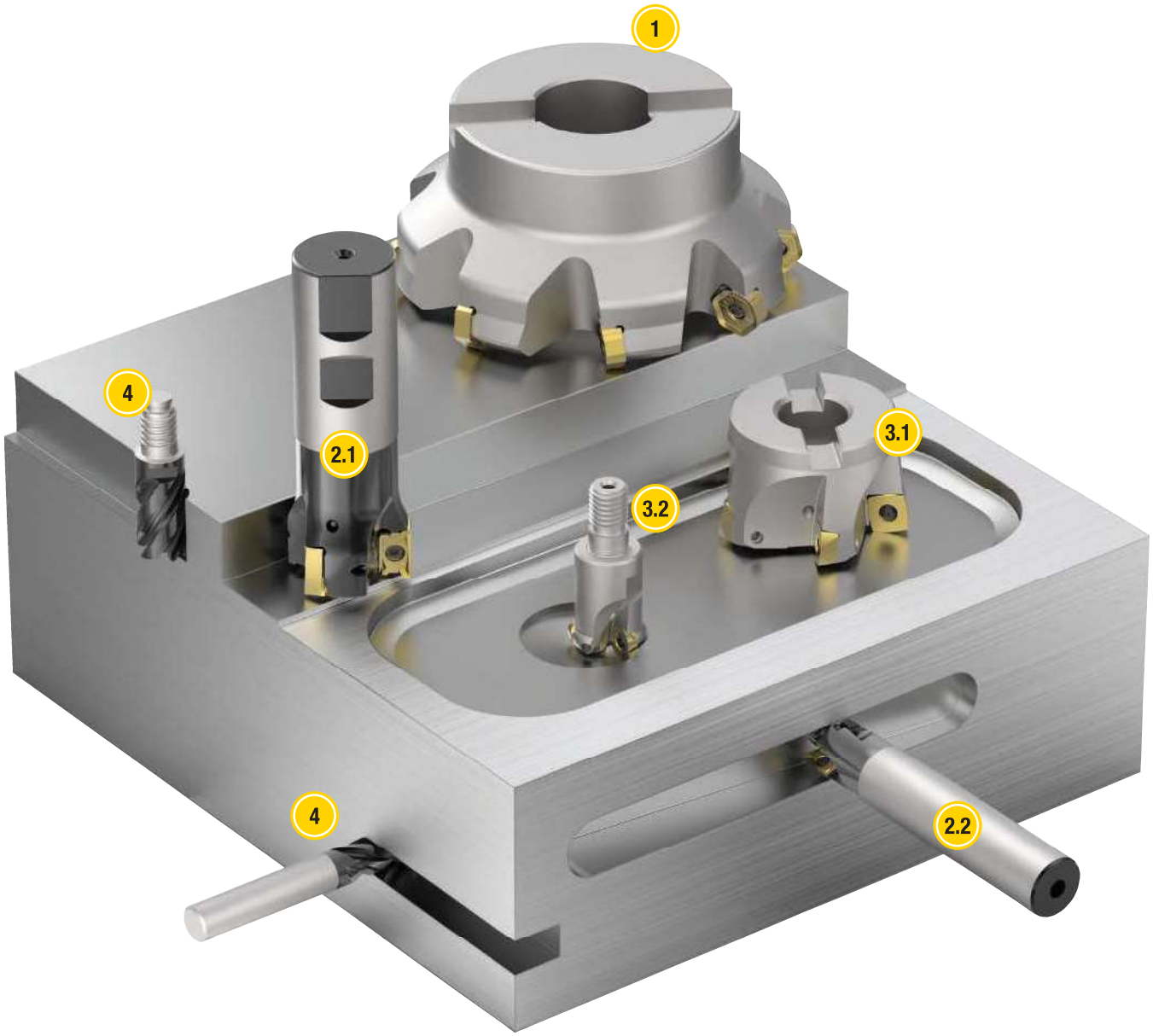
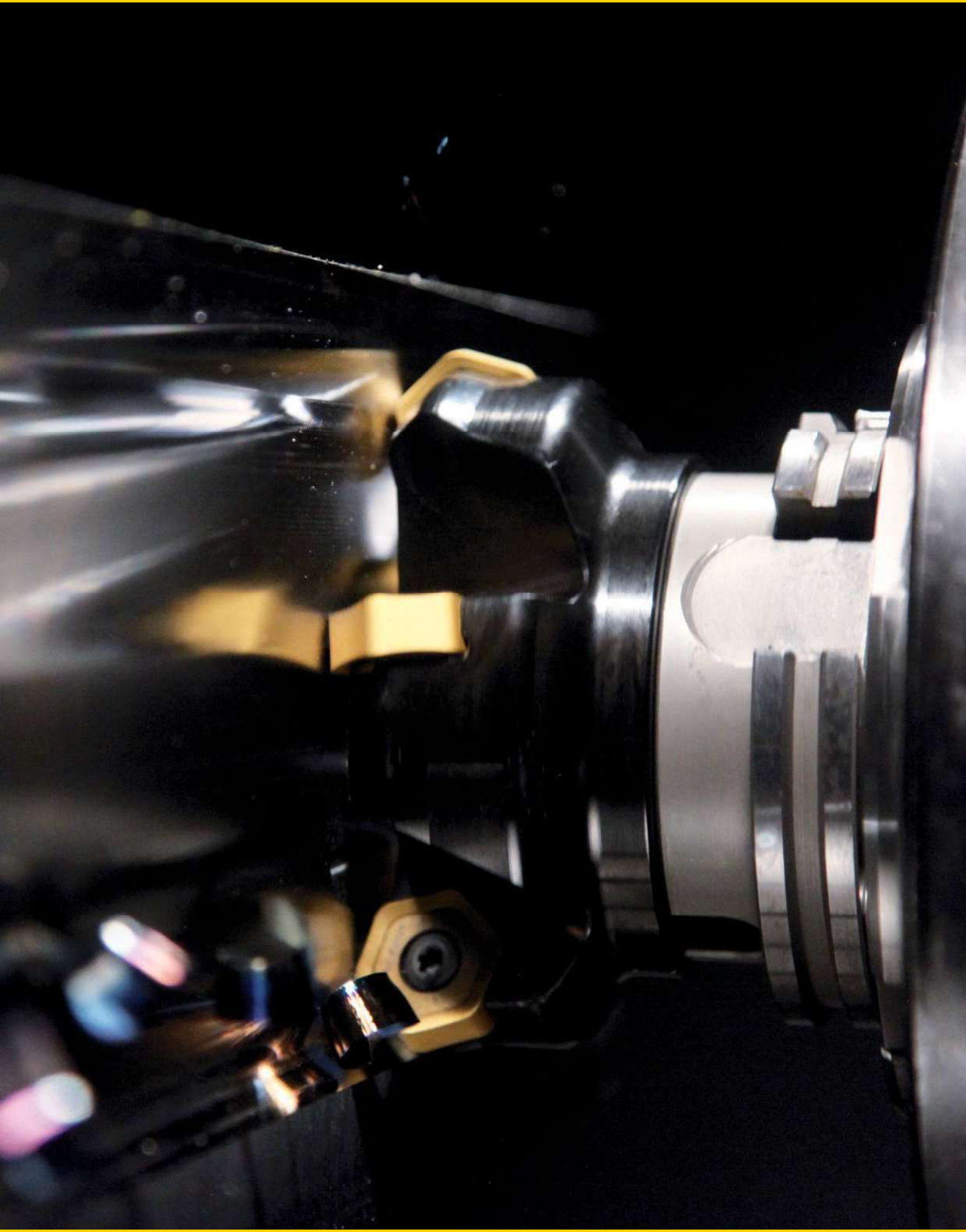
Milling



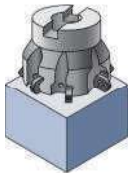
Indexable Milling

Solid End Milling



Application

1



Machining Conditions and Spindle Size

2

- Small to medium machines.
- Best fit for steep taper 40 / HSK63 and similar spindle sizes.
- Finishing cuts on large machines.

- Medium and large machines.
- Best fit for steep taper 50 / HSK100 and similar spindle sizes.
- Roughing with larger depth of cut and higher feed rates.

Capabilities

3

Platform

4

7745 VOD

42° cutter – ap max: 3,5mm
Cutter body: Ø32—Ø125mm
Insert style: OD*0404
8 cutting edges

Dodeka™ Mini

45° cutter — ap max: 3,2 mm
60° cutter — ap max: 4,4 mm
Cutter body: Ø25–Ø125mm
Insert style: HN*J0604
12 cutting edges

Dodeka

45° cutter — ap max: 4,5 mm
Cutter body: Ø50–Ø250mm
Insert style: HN*J0905
12 cutting edges

Insert Selection

5

Easy insert selection based on:
Workpiece material
Cutting conditions
Coolant type
Directly on the product page B24

Easy insert selection based on:
Workpiece material
Cutting conditions
Coolant type
Directly on the product pages B9 and B13

Easy insert selection based on:
Workpiece material
Cutting conditions
Coolant type
Directly on the product page B18

Tech Tips:

*Use 7745VOD for lowest cutting forces and improved chip evacuation. Suitable for unstable applications/fixtures.
*7745VOD is the preferred platform for finishing stainless steel and high-temp materials.
*Coarse pitch cutters are suggested for unstable applications/fixtures and long chipping materials.
*For cutter diameter selection, it is important to consider the torque value of the machine.

Dodeka™ Series

Leader in Advanced Face Milling Applications

Primary Application

Dodeka Mini and Dodeka platforms are the most comprehensive face milling boosters on the market today. Twelve true cutting edges per insert mean low cost-per-edge and high productivity. With Beyond™ premium milling grades, achieve up to 30% higher metal removal rates (MRR), 25% lower cutting forces due to soft cutting action, and up to 35% better tool life in light to heavy machining.

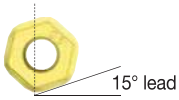
Features and Benefits

Dodeka Series • Most comprehensive face milling platform on the market. Providing an excellent cost-per-cutting edge with market leading performance. The Dodeka Series platform will cover all your face milling application needs.

All cutter body variations can be loaded with one insert style.

Dodeka Mini High-Feed 15°
Dodeka High-Feed 15°

12 True Cutting Edges



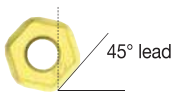
Dodeka Mini	**Ap1 max = 1,6mm**
Dodeka	**Ap1 max = 2,2mm**

Dodeka Mini HF and Dodeka HF can be loaded with all Dodeka Mini standard inserts, except wiper inserts.

See High-Feed section, pages B110–B119.

Dodeka Mini 45°
Dodeka 45°

12 True Cutting Edges

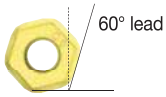


Dodeka Mini	**Ap1 max = 3,2mm**
Dodeka	**Ap1 max = 4,5mm**

Best-in-class leader in face milling up to Ap1 max = 4,5mm.

Dodeka Mini 60°

12 True Cutting Edges



Dodeka Mini	**Ap1 max = 4,4mm**

Achieve a higher axial depth-of-cut capability up to Ap1 = 4,4mm with standard Dodeka Mini inserts.

Dodeka™ Mini Series

insert size HN.J06
Ap1 max = 4,4mm
(for approach angle 60º)

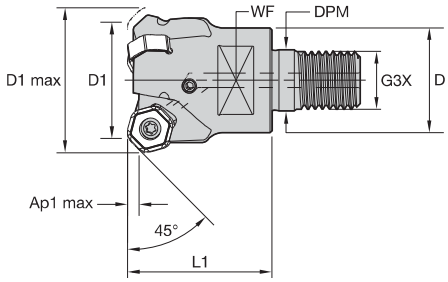
Dodeka

insert size HN.J0905
Ap1 max = 4,5mm

P M K N S

Applicable in most material groups • Excellent results in machining titanium

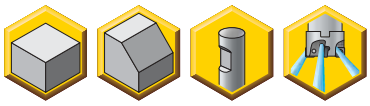
- Twelve cutting edges per insert.
- Maximum number of teeth per diameter.
- Productivity booster in all materials.

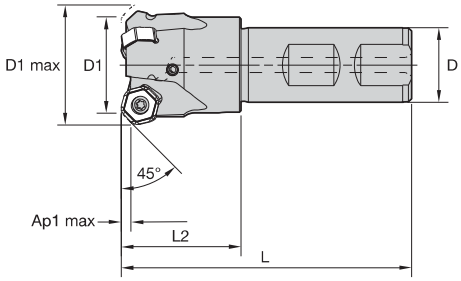


Dodeka Mini 45° • Screw-On End Mills

order number	catalogue number	D1	D1 max	D	DPM	G3X	L1	WF	Ap1 max	Z	kg	max RPM
4125882	**KSHR025D03M16HN06**	25	33,2	29	17,0	M16	32,0	22	3,2	3	0,13	20000
4126344	**KSHR032D04M16HN06**	32	40,2	29	17,0	M16	40,0	22	3,2	4	0,21	17600

- Twelve cutting edges per insert.
- Maximum number of teeth per diameter.
- Productivity booster in all materials.

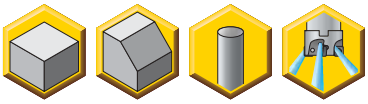


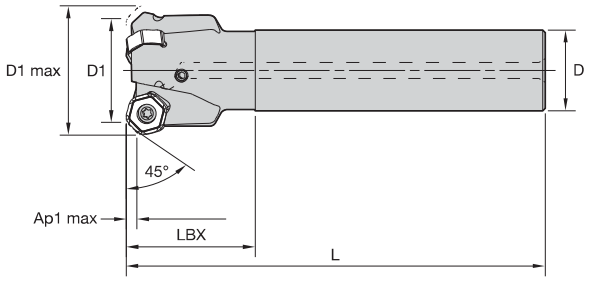


Dodeka Mini 45° • Weldon End Mills

order number	catalogue number	D1	D1 max	D	L	L2	Ap1 max	Z	kg	max RPM
4126348	**KSHR025D03B20HN06**	25	33,2	20	82	32	3,2	3	0,21	20000
4126349	**KSHR032D03B25HN06**	32	40,2	25	97	40	3,2	3	0,40	17600
4126350	**KSHR032D04B25HN06**	32	40,2	25	97	40	3,2	4	0,41	17600

- Twelve cutting edges per insert.
- Maximum number of teeth per diameter.
- Productivity booster in all materials.





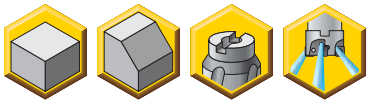
Dodeka Mini 45° • Cylindrical End Mills

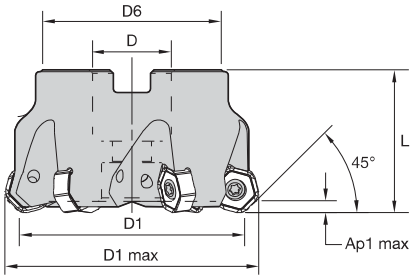
order number	catalogue number	D1	D1 max	D	L	LBX	Ap1 max	Z	kg	max RPM
4126352	**KSHR025D03A20HN06L120**	25	33,2	20	120	32	3,2	3	0,28	20000
4126383	**KSHR032D03A25HN06L130**	32	40,2	25	130	40	3,2	3	0,50	17600
4126384	**KSHR032D04A25HN06L130**	32	40,2	25	130	40	3,2	4	0,50	17600

Spare Parts

D1	 insert screw	 Nm	 wrench
25	**193.492**	3,5	**170.025**
32	**193.492**	3,5	**170.025**

- Twelve cutting edges per insert.
- Maximum number of teeth per diameter.
- Productivity booster in all materials.

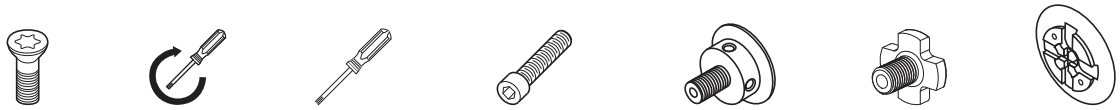




Dodeka Mini 45° • Shell Mills

order number	catalogue number	D1	D1 max	D	D6	L	Ap1 max	Z	kg	max RPM
4126387	KSHR040A04RS45HN06	40	48,2	22	38	40	3,2	4	0,25	15800
4124313	KSHR040A05RS45HN06	40	48,2	22	38	40	3,2	5	0,25	15800
4126388	KSHR050A04RS45HN06	50	58,2	22	38	40	3,2	4	0,36	12700
4122886	KSHR050A05RS45HN06	50	58,2	22	38	40	3,2	5	0,37	12700
4126389	KSHR050A06RS45HN06	50	58,2	22	38	40	3,2	6	0,36	12700
4122887	KSHR063A04RS45HN06	63	71,2	22	50	40	3,2	4	0,59	10100
4122889	KSHR063A06RS45HN06	63	71,2	22	50	40	3,2	6	0,65	10100
4126390	KSHR063A08RS45HN06	63	71,2	22	50	40	3,2	8	0,64	10100
4126391	KSHR080A05RS45HN06	80	88,1	27	60	50	3,2	5	1,13	7900
4126392	KSHR080A08RS45HN06	80	88,1	27	64	50	3,2	8	1,25	7900
4126403	KSHR080A10RS45HN06	80	88,1	27	60	50	3,2	10	1,19	7900
4126404	KSHR100B06RS45HN06	100	108,1	32	80	50	3,2	6	1,73	6300
4126405	KSHR100B09RS45HN06	100	108,1	32	80	50	3,2	9	1,84	6300
4126406	KSHR100B12RS45HN06	100	108,1	32	80	50	3,2	12	1,84	6300
4126408	KSHR125B12RS45HN06	125	133,1	40	90	63	3,2	12	2,98	5050
4124262	KSHR125B16RS45HN06	125	133,1	40	90	63	3,2	16	3,05	5050

Spare Parts

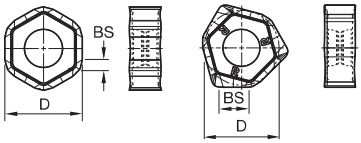


D1	insert screw	Nm	wrench	socket-head cap screw	coolant lock screw assembly	coolant lock screw	coolant shower plate
40	193.492	3,5	170.025	125.025	–	–	–
50	193.492	3,5	170.025	125.025	–	–	–
63	193.492	3,5	170.025	125.025	–	–	–
80	193.492	3,5	170.025	125.230	–	–	–
100	193.492	3,5	170.025	–	MS2189C	–	–
125	193.492	3,5	170.025	–	–	420.200	470.232

NOTE: Coolant lock screw assembly and coolant cap must be ordered separately.

✦✦ first choice with coolant
✧✧ first choice without coolant
✦ alternate choice with coolant
✧ alternate choice without coolant

P1–P2				✧/✦	✦✦		✧✧		
P3–P4				✧/✦	✦✦		✧	✧✧	
P5–P6				✧/✦	✦✦		✧	✧✧	
M1–M2				✧/✦	✦			✦	✦✦
M3				✧/✦	✦				✦✦
K1–K2		✧	✦✦			✧✧			
K3		✧	✦✦				✧✧		
N1	✦✦								
N2	✦✦								
S1					✦				✦✦
S2					✦				✦✦
S3				✦	✦				✦✦
S4				✦	✦				✦✦



	ISO catalogue number	D	BS	KC410M	KC510M	KC520M	KC522M	KC725M	KCK15	KCPK30	KCPM40	KCSM40
	Light Machining											
	**HNGJ0604ANFNLDJ**	12	1,54	**4121575**	–	–	–	–	–	–	–	–
	HNGJ0604ANENLD	12	1,54	–	**4121576**	–	**4121578**	–	**4119227**	**4119190**	**5550701**	**6165862**
	General Machining											
	**HNPJ0604ANSNGD**	12	1,45	–	–	**4119696**	**4119697**	**4119701**	**4119699**	**4119700**	**5550703**	**6165759**
	Heavy Machining											
	**HNGJ0604ANSNHD**	12	1,45	–	–	–	–	–	**6039660**	**6039812**	**6039659**	**6165864**
	HNPJ0604ANSNHD	12	1,45	–	–	–	**4119703**	**4119229**	–	**4119228**	**5550702**	**6165760**
	HNPJ060432ANSNHD	12	–	–	–	–	–	–	–	–	**6068798**	**6165861**
	Finishing with Wiper											
	**XNGJ0604ANENLD3W**	12	4,80	–	–	–	**4121607**	–	–	–	**5879813**	**6165863**

Recommended Starting Feeds

Recommended Starting Feeds [mm]

Light Machining	General Purpose	Heavy Machining

Insert Geometry	Recommended Starting Feed per Tooth (Fz) in Relation to % of Radial Engagement (ae)															Insert Geometry
	5%			10%			20%			30%			40–100%			
.F..LDJ	0,17	**0,46**	0,79	0,12	**0,33**	0,57	0,09	**0,25**	0,43	0,08	**0,22**	0,37	0,07	**0,20**	0,34	.F..LDJ
.E..LD	0,18	**0,59**	0,99	0,13	**0,43**	0,71	0,10	**0,32**	0,53	0,09	**0,28**	0,46	0,08	**0,25**	0,42	.E..LD
.S..GD	0,33	**0,79**	1,19	0,24	**0,57**	0,86	0,18	**0,43**	0,64	0,16	**0,37**	0,56	0,14	**0,34**	0,51	.S..GD
.S..HD	0,33	**0,84**	1,35	0,24	**0,60**	0,97	0,18	**0,45**	0,72	0,16	**0,39**	0,63	0,14	**0,36**	0,57	.S..HD

HNG….: Ground inserts; high versatility for all finishing applications and difficult-to-machine stainless steels and high-temp alloys.
HNP….: Pressed inserts; lower cost per edge for most roughing to semi-finishing operations.
XNG….: Wiper finishing insert. To be used in combination with HNGJ..LD insert.

Material Group		KC410M *			KC510M			KC520M			KC522M			KC725M		
P	1	–	–	–	–	–	–	–	–	–	395	**340**	325	310	**275**	260
	2	–	–	–	–	–	–	–	–	–	330	**290**	240	265	**230**	190
	3	–	–	–	–	–	–	–	–	–	305	**260**	210	240	**205**	170
	4	–	–	–	295	**240**	205	–	–	–	270	**220**	180	215	**180**	145
	5	–	–	–	–	–	–	–	–	–	220	**205**	180	180	**160**	145
	6	–	–	–	–	–	–	–	–	–	200	**150**	120	155	**120**	95
M	1	–	–	–	–	–	–	–	–	–	245	**215**	200	205	**180**	160
	2	–	–	–	–	–	–	–	–	–	220	**190**	155	185	**155**	130
	3	–	–	–	–	–	–	–	–	–	170	**145**	115	140	**120**	95
K	1	–	–	–	355	**320**	290	325	**295**	260	275	**245**	220	–	–	–
	2	–	–	–	275	**245**	230	250	**230**	210	215	**190**	180	–	–	–
	3	–	–	–	235	**210**	190	210	**190**	175	180	**160**	145	–	–	–
N	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
H	1	–	–	–	190	**155**	110	–	–	–	145	**110**	85	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

Material Group		KCK15			KCPK30			KCPM40			KCSM40		
P	1	–	–	–	545	**475**	445	355	**310**	295	275	**240**	205
	2	–	–	–	335	**305**	275	300	**260**	215	240	**205**	160
	3	–	–	–	305	**275**	245	275	**235**	190	205	**180**	160
	4	–	–	–	230	**210**	190	245	**205**	160	180	**160**	145
	5	–	–	–	310	**275**	250	205	**185**	160	160	**145**	125
	6	–	–	–	190	**160**	145	180	**140**	110	125	**110**	90
M	1	–	–	–	245	**220**	185	235	**205**	185	275	**220**	180
	2	–	–	–	220	**190**	170	210	**180**	150	180	**145**	125
	3	–	–	–	175	**155**	140	155	**140**	110	145	**125**	110
K	1	505	**460**	410	355	**320**	290	–	–	–	–	–	–
	2	400	**355**	330	280	**250**	230	–	–	–	–	–	–
	3	335	**300**	275	235	**210**	190	–	–	–	–	–	–
N	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–	–	–	–
H	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–

*Recommended for wet machining only.

NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness increases, the speed should be decreased.

Dry

Wet

Material Group		KC410M			KC510M			KC520M			KC522M			KC725M		
P	1	–	–	–	–	–	–	–	–	–	315	**270**	260	250	**220**	210
	2	–	–	–	–	–	–	–	–	–	265	**230**	190	210	**185**	150
	3	–	–	–	–	–	–	–	–	–	245	**210**	170	190	**165**	135
	4	–	–	–	235	**190**	165	–	–	–	215	**175**	145	170	**145**	115
	5	–	–	–	–	–	–	–	–	–	175	**165**	145	145	**130**	115
	6	–	–	–	–	–	–	–	–	–	160	**120**	95	125	**95**	75
M	1	–	–	–	–	–	–	–	–	–	195	**170**	160	165	**145**	130
	2	–	–	–	–	–	–	–	–	–	175	**150**	125	150	**125**	105
	3	–	–	–	–	–	–	–	–	–	135	**115**	90	110	**95**	75
K	1	–	–	–	285	**255**	230	260	**235**	210	220	**195**	175	–	–	–
	2	–	–	–	220	**195**	185	200	**185**	170	170	**150**	145	–	–	–
	3	–	–	–	190	**170**	150	170	**150**	140	145	**130**	115	–	–	–
N	1	1170	**1035**	955	615	**550**	505	–	–	–	–	–	–	–	–	–
	2	1035	**955**	880	555	**510**	470	–	–	–	–	–	–	–	–	–
	3	1035	**955**	880	555	**510**	470	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	–	–	–	40	**30**	25	30	**30**	25
	2	–	–	–	–	–	–	–	–	–	40	**30**	25	30	**30**	25
	3	–	–	–	–	–	–	–	–	–	50	**40**	25	45	**30**	25
	4	–	–	–	–	–	–	–	–	–	70	**50**	30	50	**45**	30
H	1	–	–	–	150	**125**	90	–	–	–	115	**90**	70	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

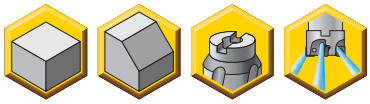
Material Group		KCK15			KCPK30			KCPM40			KCSM40		
P	1	–	–	–	435	**380**	355	285	**250**	235	–	–	–
	2	–	–	–	270	**245**	220	240	**210**	170	–	–	–
	3	–	–	–	245	**220**	195	220	**190**	150	–	–	–
	4	–	–	–	185	**170**	150	195	**165**	130	–	–	–
	5	–	–	–	250	**220**	200	165	**150**	130	165	**140**	115
	6	–	–	–	150	**130**	118	145	**110**	90	145	**105**	75
M	1	–	–	–	195	**175**	150	190	**165**	150	200	**165**	135
	2	–	–	–	175	**150**	135	170	**145**	120	170	**140**	115
	3	–	–	–	140	**125**	110	125	**110**	90	140	**105**	80
K	1	405	**370**	330	285	**255**	230	–	–	–	–	–	–
	2	320	**285**	265	225	**200**	185	–	–	–	–	–	–
	3	270	**240**	220	190	**170**	150	–	–	–	–	–	–
N	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	40	**30**	30	40	**30**	25
	2	–	–	–	–	–	–	40	**30**	30	40	**30**	25
	3	–	–	–	–	–	–	50	**40**	30	50	**40**	25
	4	–	–	–	65	**50**	30	65	**50**	30	55	**50**	30
H	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–

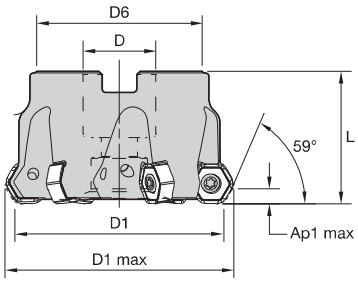
NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness increases, the speed should be decreased.

Dry

Wet

- Twelve cutting edges per insert.
- Higher Ap1 max with standard inserts.
- Productivity booster in all materials.





Dodeka Mini 60° • Shell Mills

order number	catalogue number	D1	D1 max	D	D6	L	Ap1 max	Z	kg	max RPM
4147022	**KSHR040A04RS60HN06**	40	46,4	22	38	40	4,3	4	0,21	15800
4147713	**KSHR040A05RS60HN06**	40	46,4	22	38	40	4,3	5	0,21	15800
4147714	**KSHR050A04RS60HN06**	50	56,4	22	38	40	4,3	4	0,32	12700
4147715	**KSHR050A05RS60HN06**	50	56,4	22	38	40	4,3	5	0,32	12700
4147716	**KSHR063A04RS60HN06**	63	69,3	22	50	40	4,3	4	0,57	10100
4147717	**KSHR063A06RS60HN06**	63	69,3	22	50	40	4,3	6	0,59	10100
4147718	**KSHR080A05RS60HN06**	80	86,3	27	60	50	4,3	5	1,08	7900
4147719	**KSHR080A08RS60HN06**	80	86,3	27	60	50	4,3	8	1,15	7900
4147720	**KSHR100B06RS60HN06**	100	106,3	32	80	50	4,3	6	1,70	6300
4147722	**KSHR125B08RS60HN06**	125	131,3	40	90	63	4,3	8	2,92	5050

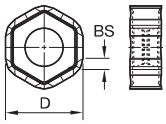
Spare Parts

D1	insert screw	Nm	wrench	mounting screw	socket-head cap screw	coolant lock screw assembly	coolant lock screw	coolant shower plate
40	**193.492**	3,5	**170.025**	**KLSSM22-39-CG**	–	–	–	–
50	**193.492**	3,5	**170.025**	–	**125.025**	–	–	–
63	**193.492**	3,5	**170.025**	–	**125.025**	–	–	–
80	**193.492**	3,5	**170.025**	–	**125.230**	–	–	–
100	**193.492**	3,5	**170.025**	–	–	**MS2189C**	–	–
125	**193.492**	3,5	**170.025**	–	–	–	**420.200**	**470.232**

NOTE: Coolant lock screw assembly and coolant cap must be ordered separately.

✦✦ first choice with coolant
✧✧ first choice without coolant
✦ alternate choice with coolant
✧ alternate choice without coolant

P1–P2				✧/✦	✦✦		✧✧		
P3–P4				✧/✦	✦✦		✧	✧✧	
P5–P6				✧/✦	✦✦		✧	✧✧	
M1–M2				✧/✦	✦			✦	✦✦
M3				✧/✦	✦				✦✦
K1–K2		✧	✦✦			✧✧			
K3		✧	✦✦				✧✧		
N1	✦✦								
N2	✦✦								
S1					✦				✦✦
S2					✦				✦✦
S3				✦	✦				✦✦
S4				✦	✦				✦✦



ISO catalogue number	D	BS	KC410M	KC510M	KC520M	KC522M	KC725M	KCK15	KCPK30	KCPM40	KCSM40
Light Machining											
HNGJ0604ANFNLDJ	12	1,54	4121575	–	–	–	–	–	–	–	–
HNGJ0604ANENLD	12	1,54	–	4121576	–	4121578	–	4119227	4119190	5550701	6165862
General Machining											
HNPJ0604ANSNGD	12	1,45	–	–	4119696	4119697	4119701	4119699	4119700	5550703	6165759
Heavy Machining											
HNGJ0604ANSNHD	12	1,45	–	–	–	–	–	6039660	6039812	6039659	6165864
HNPJ0604ANSNHD	12	1,45	–	–	–	4119703	4119229	–	4119228	5550702	6165760
HNPJ060432ANSNHD	12	–	–	–	–	–	–	–	–	6068798	6165861

Recommended Starting Feeds [mm]

Light Machining	General Purpose	Heavy Machining

Insert Geometry	Recommended Starting Feed per Tooth (Fz) in Relation to % of Radial Engagement (ae)															Insert Geometry
	5%			10%			20%			30%			40–100%			
.F..LDJ	0,13	**0,37**	0,64	0,10	**0,27**	0,46	0,07	**0,20**	0,35	0,06	**0,18**	0,30	0,06	**0,16**	0,28	.F..LDJ
.E..LD	0,15	**0,48**	0,81	0,11	**0,35**	0,58	0,08	**0,26**	0,43	0,07	**0,23**	0,38	0,07	**0,21**	0,35	.E..LD
.S..GD	0,27	**0,64**	0,97	0,20	**0,46**	0,70	0,15	**0,35**	0,52	0,13	**0,30**	0,45	0,12	**0,28**	0,42	.S..GD
.S..HD	0,27	**0,68**	1,10	0,20	**0,49**	0,79	0,15	**0,37**	0,59	0,13	**0,32**	0,51	0,12	**0,29**	0,47	.S..HD

HNG….: Ground inserts; high versatility for all finishing applications and difficult-to-machine stainless steels and high-temp alloys.
HNP….: Pressed inserts; lower cost per edge for most roughing to semi-finishing operations.

Material Group		KC410M*			KC510M			KC520M			KC522M			KC725M		
P	1	–	–	–	–	–	–	–	–	–	395	**340**	325	310	**275**	260
	2	–	–	–	–	–	–	–	–	–	330	**290**	240	265	**230**	190
	3	–	–	–	–	–	–	–	–	–	305	**260**	210	240	**205**	170
	4	–	–	–	295	**240**	205	–	–	–	270	**220**	180	215	**180**	145
	5	–	–	–	–	–	–	–	–	–	220	**205**	180	180	**160**	145
	6	–	–	–	–	–	–	–	–	–	200	**150**	120	155	**120**	95
M	1	–	–	–	–	–	–	–	–	–	245	**215**	200	205	**180**	160
	2	–	–	–	–	–	–	–	–	–	220	**190**	155	185	**155**	130
	3	–	–	–	–	–	–	–	–	–	170	**145**	115	140	**120**	95
K	1	–	–	–	355	**320**	290	325	**295**	260	275	**245**	220	–	–	–
	2	–	–	–	275	**245**	230	250	**230**	210	215	**190**	180	–	–	–
	3	–	–	–	235	**210**	190	210	**190**	175	180	**160**	145	–	–	–
N	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
H	1	–	–	–	190	**155**	110	–	–	–	145	**110**	85	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

Material Group		KCK15			KCPK30			KCPM40			KCSM40		
P	1	–	–	–	545	**475**	445	355	**310**	295	275	**240**	205
	2	–	–	–	335	**305**	275	300	**260**	215	240	**205**	160
	3	–	–	–	305	**275**	245	275	**235**	190	205	**180**	160
	4	–	–	–	230	**210**	190	245	**205**	160	180	**160**	145
	5	–	–	–	310	**275**	250	205	**185**	160	160	**145**	125
	6	–	–	–	190	**160**	145	180	**140**	110	125	**110**	90
M	1	–	–	–	245	**220**	185	235	**205**	185	275	**220**	180
	2	–	–	–	220	**190**	170	210	**180**	150	180	**145**	125
	3	–	–	–	175	**155**	140	155	**140**	110	145	**125**	110
K	1	505	**460**	410	355	**320**	290	–	–	–	–	–	–
	2	400	**355**	330	280	**250**	230	–	–	–	–	–	–
	3	335	**300**	275	235	**210**	190	–	–	–	–	–	–
N	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–	–	–	–
H	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–

*Recommended for wet machining only.

NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness increases, the speed should be decreased.

Dry

Wet

Material Group		KC410M			KC510M			KC520M			KC522M			KC725M		
P	1	–	–	–	–	–	–	–	–	–	315	**270**	260	250	**220**	210
	2	–	–	–	–	–	–	–	–	–	265	**230**	190	210	**185**	150
	3	–	–	–	–	–	–	–	–	–	245	**210**	170	190	**165**	135
	4	–	–	–	235	**190**	165	–	–	–	215	**175**	145	170	**145**	115
	5	–	–	–	–	–	–	–	–	–	175	**165**	145	145	**130**	115
	6	–	–	–	–	–	–	–	–	–	160	**120**	95	125	**95**	75
M	1	–	–	–	–	–	–	–	–	–	195	**170**	160	165	**145**	130
	2	–	–	–	–	–	–	–	–	–	175	**150**	125	150	**125**	105
	3	–	–	–	–	–	–	–	–	–	135	**115**	90	110	**95**	75
K	1	–	–	–	285	**255**	230	260	**235**	210	220	**195**	175	–	–	–
	2	–	–	–	220	**195**	185	200	**185**	170	170	**150**	145	–	–	–
	3	–	–	–	190	**170**	150	170	**150**	140	145	**130**	115	–	–	–
N	1	1170	**1035**	955	615	**550**	505	–	–	–	–	–	–	–	–	–
	2	1035	**955**	880	555	**510**	470	–	–	–	–	–	–	–	–	–
	3	1035	**955**	880	555	**510**	470	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	–	–	–	40	**30**	25	30	**30**	25
	2	–	–	–	–	–	–	–	–	–	40	**30**	25	30	**30**	25
	3	–	–	–	–	–	–	–	–	–	50	**40**	25	45	**30**	25
	4	–	–	–	–	–	–	–	–	–	70	**50**	30	50	**45**	30
H	1	–	–	–	150	**125**	90	–	–	–	115	**90**	70	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

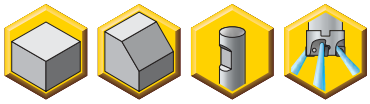
Material Group		KCK15			KCPK30			KCPM40			KCSM40		
P	1	–	–	–	435	**380**	355	285	**250**	235	–	–	–
	2	–	–	–	270	**245**	220	240	**210**	170	–	–	–
	3	–	–	–	245	**220**	195	220	**190**	150	–	–	–
	4	–	–	–	185	**170**	150	195	**165**	130	–	–	–
	5	–	–	–	250	**220**	200	165	**150**	130	165	**140**	115
	6	–	–	–	150	**130**	120	145	**110**	90	145	**105**	75
M	1	–	–	–	195	**175**	150	190	**165**	150	200	**165**	135
	2	–	–	–	175	**150**	135	170	**145**	120	170	**140**	115
	3	–	–	–	140	**125**	110	125	**110**	90	140	**105**	80
K	1	405	**370**	330	285	**255**	230	–	–	–	–	–	–
	2	320	**285**	265	225	**200**	185	–	–	–	–	–	–
	3	270	**240**	220	190	**170**	150	–	–	–	–	–	–
N	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	40	**30**	30	40	**30**	25
	2	–	–	–	–	–	–	40	**30**	30	40	**30**	25
	3	–	–	–	–	–	–	50	**40**	30	50	**40**	25
	4	–	–	–	65	**50**	30	65	**50**	30	55	**50**	30
H	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–

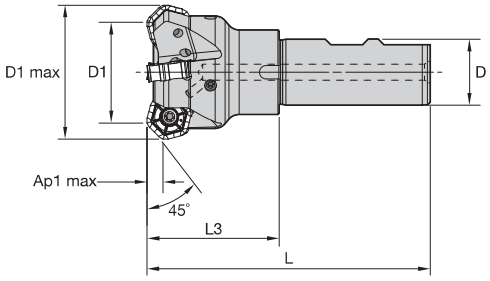
NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness increases, the speed should be decreased.

Dry

Wet

- Twelve cutting edges per insert.
- Soft cutting action.
- Through tool coolant.





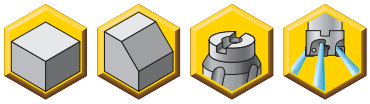
Dodeka 45° • Weldon End Mills

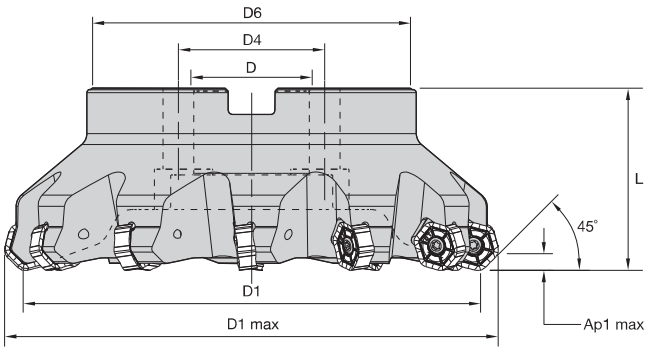
order number	catalogue number	D1	D1 max	D	L	L3	Ap1 max	Z	kg	max RPM
3324830	**KSHR40D04R50B25SHN09**	40	51,0	25	107	50,00	4,5	4	0,52	15800

Spare Parts

D1	insert screw	Nm	wrench
40	**193.492**	3,5	**170.025**

- Twelve cutting edges per insert.
- Through coolant standard.
- Soft cutting action.





Dodeka 45° • Shell Mills

order number	catalogue number	D1	D1 max	D	D4	D6	L	Ap1 max	Z	kg	max RPM
3324831	KSHR50A04RS45HN09	50	61,0	22	–	38	40	4,5	4	0,32	12700
3324832	KSHR50A05RS45HN09	50	61,0	22	–	38	40	4,5	5	0,33	12700
3749959	KSHR63A05RS45HN09	63	74,0	22	–	50	40	4,5	5	0,60	10100
3325163	KSHR63A06RS45HN09	63	74,0	22	–	50	40	4,5	6	0,56	10100
3325164	KSHR63A07RS45HN09	63	74,0	22	–	50	40	4,5	7	0,57	10100
3749960	KSHR80A05RS45HN09	80	91,0	27	–	60	50	4,5	5	1,12	7900
3325165	KSHR80A06RS45HN09	80	91,0	27	–	60	50	4,5	6	1,07	7900
3325166	KSHR80A09RS45HN09	80	91,0	27	–	60	50	4,5	9	1,11	7900
3749961	KSHR100B06RS45HN09	100	111,0	32	–	80	50	4,5	6	1,73	6300
3325167	KSHR100B08RS45HN09	100	111,0	32	–	80	50	4,5	8	1,68	6300
3325168	KSHR100B11RS45HN09	100	111,0	32	–	80	50	4,5	11	1,73	6300
3749962	KSHR125B08RS45HN09	125	135,9	40	–	90	63	4,5	8	2,84	5050
3325169	KSHR125B10RS45HN09	125	135,9	40	–	90	63	4,5	10	2,77	5050
3325170	KSHR125B14RS45HN09	125	136,0	40	–	90	63	4,5	14	2,86	5050
3750013	KSHR160C10RS45HN09	160	171,0	40	67	110	63	4,5	10	4,75	3900
3325171	KSHR160C12RS45HN09	160	171,0	40	67	110	63	4,5	12	4,56	3900
3325172	KSHR160C16RS45HN09	160	171,0	40	67	110	63	4,5	16	4,70	3900
3587732	KSHR200C16RS45HN09	200	211,0	60	102	130	63	4,5	16	6,43	3180
3587753	KSHR250C20RS45HN09	250	261,0	60	102	130	63	4,5	20	9,93	2550

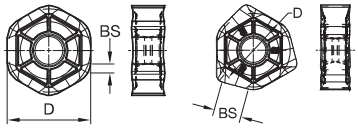
Spare Parts

D1	insert screw	Nm	wrench	mounting screw with coolant grooves	low-head cap screw	socket-head cap screw	coolant lock screw assembly	coolant lock screw	coolant shower plate
50	193.492	3,5	170.025	MS2072CG	129.025	–	–	–	–
63	193.492	3,5	170.025	MS1234CG	–	125.025	–	–	–
80	193.492	3,5	170.025	MS2038CG	–	125.230	–	–	–
100	193.492	3,5	170.025	–	–	–	MS2189C	–	–
125	193.492	3,5	170.025	–	–	–	–	420.200	470.232
160	193.492	3,5	170.025	–	–	–	–	420.200	470.233
200	193.492	3,5	170.025	–	–	–	–	–	470.234
250	193.492	3,5	170.025	–	–	–	–	–	470.235

NOTE: Coolant lock screw assembly and coolant cap must be ordered separately.

✦✦ first choice with coolant
✧✧ first choice without coolant
✦ alternate choice with coolant
✧ alternate choice without coolant

P1–P2			✧/✦	✦✦		✧✧			
P3–P4			✧/✦	✦✦		✧	✧✧		
P5–P6			✧/✦	✦✦		✧	✧✧		
M1–M2			✧/✦	✦			✦	✦✦	
M3			✧/✦	✦				✦✦	
K1–K2		✦✦			✧✧				✧✧
K3		✦✦				✧✧			
N1	✦✦								
N2	✦✦								
S1				✦				✦✦	
S2				✦				✦✦	
S3			✦	✦				✦✦	
S4			✦	✦				✦✦	



	ISO catalogue number	D	BS	KC410M	KC520M	KC522M	KC725M	KCK15	KCPK30	KCPM40	KCSM40	KY3500
	Light Machining											
	**HNGJ0905ANFNLDJ**	16	1,80	3849320	–	–	–	–	–	–	–	–
	HNGJ0905ANENLD	16	1,80	–	3331174	3093561	3331175	3330952	3331178	–	6178103	–
	General Machining											
	**HNGJ0905ANSNGD**	16	1,80	–	–	–	3331176	3331173	3093719	5550793	6178104	–
	HNPJ0905ANSNGD	16	1,80	–	3763726	3774250	3763727	3763725	3763728	5550795	–	–
	Heavy Machining											
	**HNGJ0905ANSNHD**	16	1,66	–	–	–	3556331	3556330	3556332	5550794	6178105	–
	HNPJ0905ANSNHD	16	1,66	–	–	3774249	3763723	3763185	3763724	5550796	6178108	–
	HNPJ090543ANSNHD	16	–	–	–	3774251	3763730	3763729	3763731	5550797	6178109	–
	HNGJ090543ANSNHD	16	–	–	–	–	3556374	3556373	3556375	6068043	6178106	–
	Finishing with Wiper											
	**XNGJ0905ANSNGD3W**	16	6,00	–	–	–	3547033	3547022	3547035	–	6178107	–
	High Speed Cast Iron Machining											
	**HNEC0905ANSN**	16	1,95	–	–	–	–	–	–	–	–	6140064

Recommended Starting Feeds

Recommended Starting Feeds [mm]

Light Machining	General Purpose	Heavy Machining

Insert Geometry	Recommended Starting Feed per Tooth (Fz) in Relation to % of Radial Engagement (ae)															Insert Geometry
	5%			10%			20%			30%			40–100%			
.F..LDJ	0,17	**0,46**	0,79	0,12	**0,33**	0,57	0,09	**0,25**	0,43	0,08	**0,22**	0,37	0,07	**0,20**	0,34	.F..LDJ
.E..LD	0,23	**0,66**	0,99	0,17	**0,47**	0,71	0,13	**0,35**	0,53	0,11	**0,31**	0,46	0,10	**0,28**	0,42	.E..LD
.S..GD	0,33	**0,72**	1,15	0,24	**0,52**	0,82	0,18	**0,39**	0,61	0,16	**0,34**	0,54	0,14	**0,31**	0,49	.S..GD
.S..HD	0,33	**0,84**	1,35	0,24	**0,60**	0,97	0,18	**0,45**	0,72	0,16	**0,39**	0,63	0,14	**0,36**	0,57	.S..HD

HNG….: Ground inserts; high versatility for all finishing applications and difficult-to-machine stainless steels and high-temp alloys.
HNP….: Pressed inserts; lower cost per edge for most roughing to semi-finishing operations.
XNG….: Wiper finishing insert. To be used in combination with HNGJ..LD insert.

Material Group		KC410M*			KC520M			KC522M			KC725M			KCK15		
P	1	–	–	–	–	–	–	395	**340**	325	310	**275**	260	–	–	–
	2	–	–	–	–	–	–	330	**290**	240	265	**230**	190	–	–	–
	3	–	–	–	–	–	–	305	**260**	210	240	**205**	170	–	–	–
	4	–	–	–	–	–	–	270	**220**	180	215	**180**	145	–	–	–
	5	–	–	–	–	–	–	220	**205**	180	180	**160**	145	–	–	–
	6	–	–	–	–	–	–	200	**150**	120	155	**120**	95	–	–	–
M	1	–	–	–	–	–	–	245	**215**	200	205	**180**	160	–	–	–
	2	–	–	–	–	–	–	220	**190**	155	185	**155**	130	–	–	–
	3	–	–	–	–	–	–	170	**145**	115	140	**120**	95	–	–	–
K	1	–	–	–	325	**295**	260	275	**245**	220	–	–	–	505	**460**	410
	2	–	–	–	250	**230**	210	215	**190**	180	–	–	–	400	**355**	330
	3	–	–	–	210	**190**	175	180	**160**	145	–	–	–	335	**300**	275
N	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
H	1	–	–	–	–	–	–	145	**110**	85	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

Material Group		KCPK30			KCPM40			KCSM40			KY3500		
P	1	545	**475**	445	355	**310**	295	275	**240**	205	–	–	–
	2	335	**305**	275	300	**260**	215	240	**205**	160	–	–	–
	3	305	**275**	245	275	**235**	190	205	**180**	160	–	–	–
	4	230	**210**	190	245	**205**	160	180	**160**	145	–	–	–
	5	310	**275**	250	205	**185**	160	160	**145**	125	–	–	–
	6	190	**160**	145	180	**140**	110	125	**110**	90	–	–	–
M	1	245	**220**	185	235	**205**	185	275	**220**	180	–	–	–
	2	220	**190**	170	210	**180**	150	180	**145**	125	–	–	–
	3	175	**155**	140	155	**140**	110	145	**125**	110	–	–	–
K	1	355	**320**	290	–	–	–	–	–	–	965	**875**	780
	2	280	**250**	230	–	–	–	–	–	–	760	**685**	635
	3	235	**210**	190	–	–	–	–	–	–	–	–	–
N	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–	–	–	–
H	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–

*Recommended for wet machining only.

NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness increases, the speed should be decreased.

Dry

Wet

Material Group		KC410M			KC520M			KC522M			KC725M			KCK15		
P	1	–	–	–	–	–	–	315	**270**	260	250	**220**	210	–	–	–
	2	–	–	–	–	–	–	265	**230**	190	210	**185**	150	–	–	–
	3	–	–	–	–	–	–	245	**210**	170	190	**165**	135	–	–	–
	4	–	–	–	–	–	–	215	**175**	145	170	**145**	115	–	–	–
	5	–	–	–	–	–	–	175	**165**	145	145	**130**	115	–	–	–
	6	–	–	–	–	–	–	160	**120**	95	125	**95**	75	–	–	–
M	1	–	–	–	–	–	–	195	**170**	160	165	**145**	130	–	–	–
	2	–	–	–	–	–	–	175	**150**	125	150	**125**	105	–	–	–
	3	–	–	–	–	–	–	135	**115**	90	110	**95**	75	–	–	–
K	1	–	–	–	260	**235**	210	220	**195**	175	–	–	–	405	**370**	330
	2	–	–	–	200	**185**	170	170	**150**	145	–	–	–	320	**285**	265
	3	–	–	–	170	**150**	140	145	**130**	115	–	–	–	270	**240**	220
N	1	1170	**1035**	955	–	–	–	–	–	–	–	–	–	–	–	–
	2	1035	**955**	880	–	–	–	–	–	–	–	–	–	–	–	–
	3	1035	**955**	880	–	–	–	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	40	**30**	25	30	**30**	25	–	–	–
	2	–	–	–	–	–	–	40	**30**	25	30	**30**	25	–	–	–
	3	–	–	–	–	–	–	50	**40**	25	45	**30**	25	–	–	–
	4	–	–	–	–	–	–	70	**50**	30	50	**45**	30	–	–	–
H	1	–	–	–	–	–	–	115	**90**	70	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

Material Group		KCPK30			KCPM40			KCSM40			KY3500*		
P	1	435	**380**	355	285	**250**	235	–	–	–	–	–	–
	2	270	**245**	220	240	**210**	170	–	–	–	–	–	–
	3	245	**220**	195	220	**190**	150	–	–	–	–	–	–
	4	185	**170**	150	195	**165**	130	–	–	–	–	–	–
	5	250	**220**	200	165	**150**	130	165	**140**	115	–	–	–
	6	150	**130**	118	145	**110**	90	145	**105**	75	–	–	–
M	1	195	**175**	150	190	**165**	150	200	**165**	135	–	–	–
	2	175	**150**	135	170	**145**	120	170	**140**	115	–	–	–
	3	140	**125**	110	125	**110**	90	140	**105**	80	–	–	–
K	1	285	**255**	230	–	–	–	–	–	–	–	–	–
	2	225	**200**	185	–	–	–	–	–	–	–	–	–
	3	190	**170**	150	–	–	–	–	–	–	–	–	–
N	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
S	1	–	–	–	40	**30**	30	40	**30**	25	–	–	–
	2	–	–	–	40	**30**	30	40	**30**	25	–	–	–
	3	–	–	–	50	**40**	30	50	**40**	25	–	–	–
	4	65	**50**	30	65	**50**	30	55	**50**	30	–	–	–
H	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–

*Recommended for dry machining only.

NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness increases, the speed should be decreased.

Dry

Wet

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Numbers shown only serve the originating country listed.

7745VOD Series

Face Milling Cutter

42° LEAD ANGLE – FACE MILLS

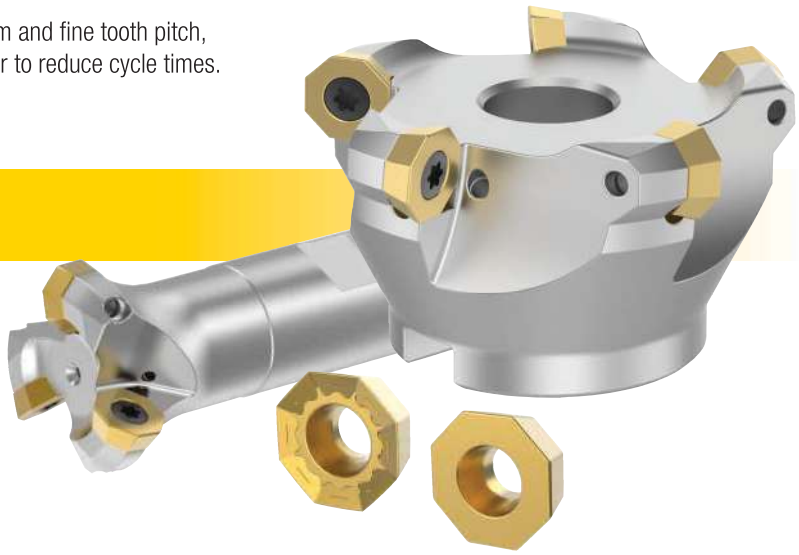
7745VOD cutters are designed for machining most materials. Octagonal inserts offer up to eight economical cutting edges.

These cutters are ideal for roughing, semi-finishing and finishing of Steel, Alloyed Steel, Stainless Steel, High Temperature Alloys, Cast Iron and Aluminium Alloys.

7745VOD cutters are also very robust when machining with tool holder extensions.

They are one of the first choice tools for machining component surface with scale as well as for machining of irregular stock.

Insert sizes: OD..04 avaliable in cutters with medium and fine tooth pitch, giving maximum efficency and performance in order to reduce cycle times.



Features and Benefits

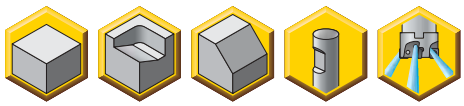
7745VOD

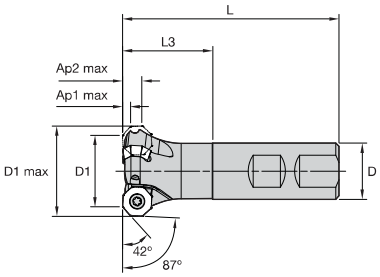
7745VOD04:

Maximum ap = 3,50mm (8 cutting edges)

Maximum ap = 8mm (4 cutting edges)

Diameter Range = 32mm to 125mm



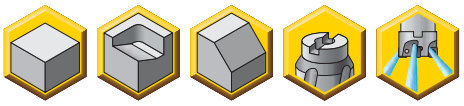


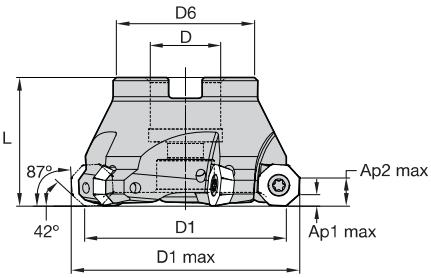
End Mill Weldon Shank

order number	catalogue number	D1 max	D1	D	L	L3	Ap1 max	Ap2 max	Z
5672181	7745VOD04WA032R	40	32	25	96	40	3,5	8,0	3

Spare Parts

catalogue number	insert screw	Nm	Torx driver
7745VOD04WA032R	F4011T	3,1	T20





Shell Mills

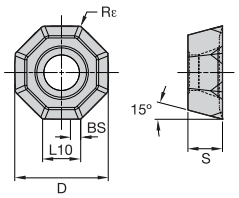
order number	catalogue number	D1 max	D1	D	D6	L	Ap1 max	Ap2 max	Z
5673810	7745VOD04-A040R	48	40	16	35	35	3,5	8,0	4
5672038	7745VOD04-A050Z6R	58	50	22	45	40	3,5	8,0	6
5671836	7745VOD04-A063R	71	63	22	45	40	3,5	8,0	5
5673700	7745VOD04-A080R	88	80	27	65	50	3,5	8,0	6
5672025	7745VOD04-A100R	108	100	32	80	50	3,5	8,0	7
5672190	7745VOD04-A125R	133	125	40	82	63	3,5	8,0	8

Spare Parts

catalogue number	insert screw	Nm	Torx driver	mounting screw	LHCS mounting screw
7745VOD04-A040R	F4011T	3,1	T20	M8 1.25 X 25 SHCS	–
7745VOD04-A050Z6R	F4011T	3,1	T20	M10 1.5 X 25 SHCS	–
7745VOD04-A063R	F4011T	3,1	T20	M10 1.5 X 25 SHCS	–
7745VOD04-A080R	F4011T	3,1	T20	M12 X 1.75 X 30 SHCS	–
7745VOD04-A100R	F4011T	3,1	T20	–	M16X2X40 LHSCS
7745VOD04-A125R	F4011T	3,1	T20	M20 X 2.5 X 50 SHCS	–

✦✦ first choice with coolant
✧✧ first choice without coolant
✦ alternate choice with coolant
✧alternate choice without coolant

P1–P2	✧✧	✧/✦	
P3–P4	✦✦	✧/✦	
P5–P6		✦✦	✧/✦
M1–M2	✧✧	✦✦	
M3	✦	✦✦	
K1–K2	✧✧	✧/✦	
K3	✦✦	✧/✦	
N1			
N2			
S1		✦✦	✦
S2		✦✦	✦
S3		✦✦	
S4		✦	✦✦



	ISO catalogue number	D	S	hm	BS	Rε	SP6519	X500	X700
	Light Machining ODET0404APEN44	12,80	4,76	0,04	1,50	–	5667950	5656499	–
	Light Machining ODMT040408EN412	12,80	4,76	0,06	–	0,80	5665818	–	5666904
	General Machining ODMT0404APEN41	12,80	4,76	0,06	1,50	0,20	5661185	5657014	–
	General Machining ODMT040408EN41	12,80	4,76	0,06	–	0,80	5667576	5656811	–
	Heavy Machining ODMW040408SN	12,80	4,76	0,27	–	0,80	5665739	5656555	–

NOTE: ODMW040408SN X500 should be generally used for heavy duty applications as well as Stainless Steel and High-Temperature Alloys with heavy scale.
Geometry -412 is slightly more positive than -41 and can improve tool life in several applications on Stainless Steel and High Temperature Alloys

Recommended Starting Feeds

Recommended Starting Feeds [mm]

Light Machining	General Purpose	Heavy Machining

Insert Geometry	Recommended Starting Feed per Tooth (Fz) in Relation to % of Radial Engagement (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..44	0,14	**0,35**	0,58	0,10	**0,25**	0,41	0,08	**0,19**	0,31	0,07	**0,17**	0,28	0,06	**0,15**	0,25	.E..44
.E..412	0,16	**0,41**	0,69	0,12	**0,30**	0,50	0,09	**0,23**	0,38	0,08	**0,20**	0,33	0,07	**0,18**	0,30	.E..412
.E..41	0,18	**0,51**	0,81	0,13	**0,36**	0,58	0,10	**0,28**	0,44	0,09	**0,24**	0,39	0,08	**0,22**	0,35	.E..41
.S..N	0,46	**0,81**	1,15	0,33	**0,58**	0,83	0,25	**0,44**	0,63	0,22	**0,39**	0,55	0,20	**0,35**	0,50	.S..N

Material Group		SP6519			X500			X700		
P	1	355	**260**	155	325	**240**	155	–	–	–
	2	310	**230**	140	290	**215**	140	–	–	–
	3	275	**200**	120	250	**185**	120	–	–	–
	4	210	**150**	90	190	**145**	90	–	–	–
	5	170	**125**	85	155	**120**	85	160	**125**	85
	6	145	**100**	60	130	**95**	60	140	**100**	60
M	1	325	**235**	140	300	**220**	140	310	**230**	140
	2	280	**205**	125	265	**190**	120	275	**205**	125
	3	235	**170**	100	215	**155**	95	230	**170**	100
K	1	355	**265**	170	310	**265**	205	–	–	–
	2	290	**210**	130	265	**215**	155	–	–	–
	3	265	**190**	120	205	**170**	120	–	–	–
N	1	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–
H	1	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–

Material Group		SP6519			X500			X700		
P	1	285	**210**	125	260	**190**	125	–	–	–
	2	250	**185**	110	230	**170**	110	–	–	–
	3	220	**160**	95	200	**150**	95	–	–	–
	4	170	**120**	70	150	**115**	70	–	–	–
	5	135	**100**	70	125	**95**	70	130	**100**	70
	6	115	**80**	50	105	**75**	50	110	**80**	50
M	1	260	**190**	110	240	**175**	110	250	**185**	110
	2	225	**165**	100	210	**150**	95	220	**165**	100
	3	190	**135**	80	170	**125**	75	185	**135**	80
K	1	285	**210**	135	250	**210**	165	–	–	–
	2	230	**170**	105	210	**170**	125	–	–	–
	3	210	**150**	95	165	**135**	95	–	–	–
N	1	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–
S	1	50	**40**	25	50	**30**	25	50	**40**	25
	2	50	**30**	20	45	**30**	20	45	**30**	20
	3	50	**40**	25	50	**40**	25	50	**40**	25
	4	75	**55**	35	70	**50**	30	70	**50**	35
H	1	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–

NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness increases, the speed should be decreased.

Dry

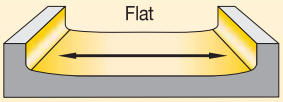
Wet

Technical Information (mm)

order number	catalogue number	dimension					
		facing pitch	ramping angle	helical hole min–max		a_p max helical/ linear	max RPM
5672181	7745VOD04WA032R	32	12,10	60	78	2,00	33200
5673810	7745VOD04-A040R	40	8.50	76	94	2,00	29200
5672038	7745VOD04-A050Z06R	50	6.10	96	114	2,00	25700
5671836	7745VOD04-A063R	63	4.30	122	140	2,00	22700
5673700	7745VOD04-A080R	80	3.00	156	174	2,00	17700
5672025	7745VOD04-A100R	100	2.40	196	214	2,00	17700
5672190	7745VOD04-A125R	125	2.00	246	264	2,00	15700


Ramping

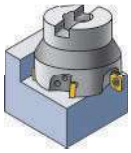

Helical Interpolation



Facing Pitch

Application

1



Machining Conditions and Spindle Size

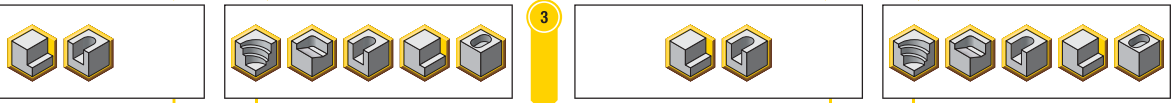
2

- Small to medium machines.
- Best fit for steep taper 40 / HSK63 and similar spindle sizes.
- All shoulder finishing cuts with medium depth of cut.

- Medium and large machines.
- Best fit for steep taper 50 / HSK100 and similar spindle sizes.
- Roughing and shoulder finishing with larger depth of cut.

Capabilities

3



Platform

4

Mill 4-11™

Ap max: 11mm
Cutter body: Ø16–Ø80mm
Insert style: LN*U1104
4 cutting edges

Mill 1-10™

Ap max: 10mm
Cutter body: Ø12–Ø100mm
Insert style: ED*T10T3
2 cutting edges

Mill 4-15™

Ap max: 15mm
Cutter body: Ø25–Ø160mm
Insert style: LN*U15T6
4 cutting edges

Mill 1-14™

Ap max: 14mm
Cutter body: Ø20–Ø160mm
Insert style: ED*T1404
2 cutting edges

Insert Selection

5

Easy insert selection based on:
- Workpiece material
- Cutting conditions
- Coolant type

Directly on the product page B34

Easy insert selection based on:
- Workpiece material
- Cutting conditions
- Coolant type

Directly on the product page B44

Tech Tips:

- Best wall and surface finishing with Mill 4-11 and Mill 4-15 series. “Stepless” solution for multiple-pass operations. For excellent wall finishing results, apply Ap up to ½ length of cutting edge.
- Full ramping, slotting, and plunging capabilities with Mill 1-10 and Mill 1-14.
- Coarse pitch cutters are suggested for large radial engagements. Fine pitch for smooth cuts at low radial engagement and/or stable machining conditions.

Mill 4-11™

One tool for all applications.

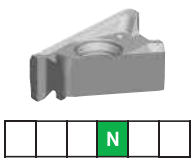
The Mill 4™ series is specially engineered to achieve excellent surface quality and higher metal removal rates in shoulder milling applications. Its unique design allows you to apply the tool in multiple passes (stepping down) with outstanding results.

From roughing to finishing operations, the Mill 4 series is applicable in a wide range of workpiece materials: steel, cast iron, stainless steel, non-ferrous materials, and high-temp alloys.

Features and Benefits

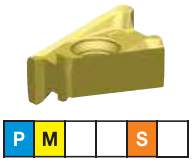
- Double-sided strong insert with 4 cutting edges.
- High positive geometry for lower cutting forces.
- Superior wall and surface finish capabilities.
- “Stepless” solution for multiple-pass operations.
- Comprehensive offering to cover all applications in all material groups.

-ELEJ



For non-ferrous materials.

-EGE

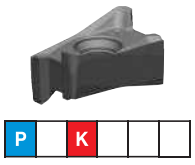


1st choice for stainless steel. Lower cutting forces.

-SGE

First choice for the Mill 4 platform, especially when machining steels.

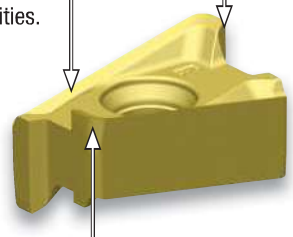
-SGEM



1st choice for cast iron. Strongest cutting edge.

Integrated wiper facet for best-in-class floor finisher.

Up to 11mm Ap capabilities.

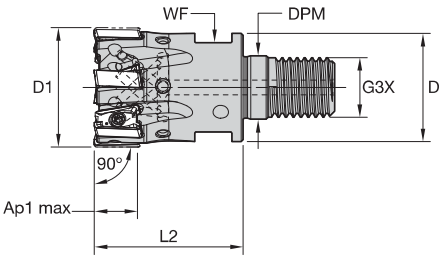


Multiple corner nose radii available from 0,4mm up to 1,6mm.

TP9 insert screw (M3) to provide higher reliability and safe processes.

Double-sided insert with 4 cutting edges.

- One tool for all applications: from roughing to finishing.
- Superior wall and surface finishing capabilities. Best choice for stepping down operations.
- Up to 11mm depth of cut.
- Screw-on cutters provide better rigidity and stability when used with small spindles: BT30, BT40, DV40, HSK50, HSK63, etc.
- Screw-on cutters can be less expensive when compared to cylindrical shank cutters due to their higher flexibility through multiple holder combinations.



Screw-On End Mills

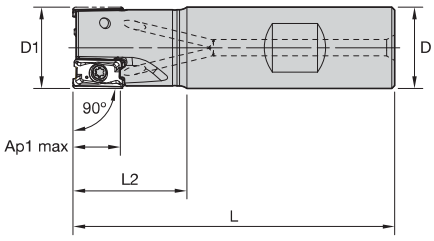
order number	catalogue number	D1	D	DPM	G3X	L2	WF	Ap1 max	Z	kg	max RPM
6136738	**M4D016Z02M08LN11**	16	13	8,5	M8	25	10	11,0	2	0,03	48000
6131682	**M4D020Z03M10LN11**	20	18	10,5	M10	28	15	11,0	3	0,06	40200
6131686	**M4D025Z04M12LN11**	25	21	12,5	M12	40	17	11,0	4	0,10	34300
6136793	**M4D032Z05M16LN11**	32	29	17,0	M16	40	24	11,0	5	0,20	29200
6134187	**M4D032Z06M16LN11**	32	29	17,0	M16	40	24	11,0	6	0,19	29200

Spare Parts



D1	insert screw	Nm	Torx Plus driver
16	**MS2263**	1,5	**DT9IP**
20	**MS2263**	1,5	**DT9IP**
25	**MS2263**	1,5	**DT9IP**
32	**MS2263**	1,5	**DT9IP**

- One tool for all applications: from roughing to finishing.
- Superior wall and surface finishing capabilities.
- Best choice for stepping down operations.
- Up to 11mm depth of cut.



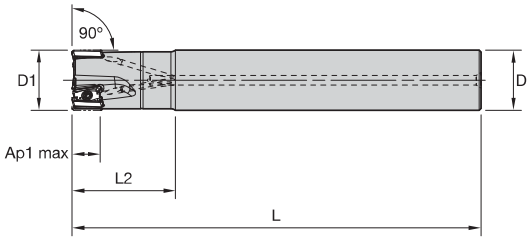
Weldon End Mills

order number	catalogue number	D1	D	L	L2	Ap1 max	Z	kg	max RPM
6131628	**M4D016Z02B16LN11**	16	16	74	25	11,0	2	0,09	48000
6131630	**M4D020Z02B20LN11**	20	20	79	28	11,0	2	0,17	40200
6136740	**M4D020Z03B20LN11**	20	20	79	28	11,0	3	0,16	42000
6131684	**M4D025Z03B25LN11**	25	25	89	32	11,0	3	0,29	34300
6134185	**M4D032Z04B32LN11**	32	32	110	49	11,0	4	0,60	29200
6136795	**M4D040Z05B32LN11**	40	32	110	49	11,0	5	0,66	25400

Spare Parts

D1	insert screw	Nm	Torx Plus driver
16	**MS2263**	1,5	**DT9IP**
20	**MS2263**	1,5	**DT9IP**
25	**MS2263**	1,5	**DT9IP**
32	**MS2263**	1,5	**DT9IP**
40	**MS2263**	1,5	**DT9IP**

- One tool for all applications: from roughing to finishing.
- Superior wall and surface finishing capabilities.
- Best choice for stepping down operations.
- Up to 11mm depth of cut.



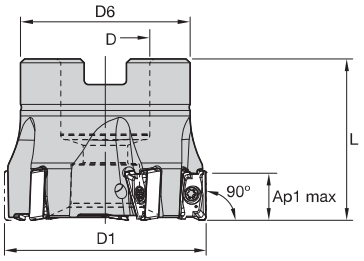
Cylindrical End Mills

order number	catalogue number	D1	D	L	L2	Ap1 max	Z	kg	max RPM
6131627	**M4D016Z02A16LN11L090**	16	16	90	25	11,0	2	0,12	48000
6136737	**M4D016Z02A16LN11L150**	16	16	150	25	11,0	2	0,21	48000
6131629	**M4D020Z02A20LN11L150**	20	20	150	28	11,0	2	0,33	40200
6131681	**M4D020Z03A20LN11L090**	20	20	90	28	11,0	3	0,21	40200
6136739	**M4D020Z03A20LN11L150**	20	20	150	28	11,0	3	0,33	40200
6131683	**M4D025Z03A25LN11L170**	25	25	170	43	11,0	3	0,63	34300
6131685	**M4D025Z04A25LN11L100**	25	25	100	43	11,0	4	0,33	34300
6136791	**M4D025Z04A25LN11L170**	25	25	170	43	11,0	4	0,59	34300
6134184	**M4D032Z04A32LN11L200**	32	32	200	49	11,0	4	1,16	29200
6134186	**M4D032Z05A32LN11L110**	32	32	110	49	11,0	5	0,61	29200
6136792	**M4D032Z05A32LN11L200**	32	32	200	49	11,0	5	1,17	29200

Spare Parts

D1	insert screw	Nm	Torx Plus driver
16	**MS2263**	1,5	**DT9IP**
20	**MS2263**	1,5	**DT9IP**
25	**MS2263**	1,5	**DT9IP**
32	**MS2263**	1,5	**DT9IP**

- One tool for all applications: from roughing to finishing.
- Superior wall and surface finishing capabilities.
- Best choice for stepping down operations.
- Up to 11mm depth of cut.



Shell Mills

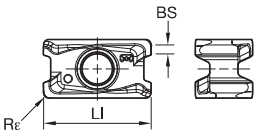
order number	catalogue number	D1	D	D6	L	Ap1 max	Z	kg	max RPM
6134188	**M4D040Z04S16LN11**	40	16	37	40	11,0	4	0,23	25400
6134189	**M4D040Z06S16LN11**	40	16	37	40	11,0	6	0,22	25400
6136796	**M4D040Z07S16LN11**	40	16	37	40	11,0	7	0,23	25400
6134190	**M4D050Z05S22LN11**	50	22	42	40	11,0	5	0,31	22300
6134231	**M4D050Z07S22LN11**	50	22	42	40	11,0	7	0,32	22300
6136797	**M4D050Z09S22LN11**	50	22	42	40	11,0	9	0,32	22300
6134232	**M4D063Z06S22LN11**	63	22	50	40	11,0	6	0,56	19500
6134233	**M4D063Z09S22LN11**	63	22	50	40	11,0	9	0,56	19500
6134234	**M4D080Z08S27LN11**	80	27	60	50	11,0	8	1,12	17100
6136798	**M4D080Z10S27LN11**	80	27	60	50	11,0	10	1,11	17100

Spare Parts

D1	 insert screw	 Nm	 Torx Plus driver	 socket-head cap screw
40	**MS2263**	1,5	**DT9IP**	**125.825**
50	**MS2263**	1,5	**DT9IP**	**125.025**
63	**MS2263**	1,5	**DT9IP**	**125.025**
80	**MS2263**	1,5	**DT9IP**	**125.230**

✦✦ first choice with coolant
✧✧ first choice without coolant
✦ alternate choice with coolant
✧ alternate choice without coolant

P1–P2			✧/✦	✦✦		✧✧		
P3–P4			✧/✦	✦✦		✧	✧✧	
P5–P6			✧/✦	✦✦		✧	✧✧	
M1–M2			✧/✦	✦			✦	✦✦
M3			✧/✦	✦				✦✦
K1–K2		✦✦			✧✧			
K3		✦✦				✧✧		
N1	✦✦							
N2	✦✦							
S1				✦				✦✦
S2				✦				✦✦
S3			✦	✦				✦✦
S4			✦	✦				✦✦



	ISO catalogue number	LI	BS	Rε	KC422M	KC520M	KC522M	KC725M	KCK15	KCPK30	KCPM40	KCSM40
	Light Machining											
	**LNGU110404ERGE**	12,16	1,40	0,4	–	–	–	6131514	–	–	6131516	–
	LNGU110408ERGE	12,16	1,00	0,8	–	–	6131542	6131541	–	–	6131543	6201354
	LNGU110412ERGE	12,17	0,60	1,2	–	–	–	–	–	–	6201353	6201351
	General Machining											
	**LNGU110404ERLEJ**	12,16	1,40	0,4	6201292	–	–	–	–	–	–	–
	LNGU110408ERLEJ	12,16	1,00	0,8	6131556	–	–	–	–	–	–	–
	LNGU110404SRGE	12,16	1,40	0,4	–	–	–	–	–	–	6201280	6201291
	LNGU110408SRGE	12,16	1,00	0,8	–	–	6132022	6132024	6132026	6132025	6132023	6165397
	LNPU110408SRGE	12,10	0,90	0,8	–	6131506	6131502	6131504	6131507	6131505	6131503	–
	LNPU110412SRGE	12,10	0,50	1,2	–	6131512	–	6131430	–	–	6131429	–
	LNPU110416SRGE	12,10	0,02	1,6	–	–	–	6131559	–	6131560	6131558	–
	Heavy Machining											
	**LNGU110408SRGEM**	12,16	0,90	0,8	–	6131604	–	–	6131602	6131603	6131606	–
	LNGU110412SRGEM	12,16	0,60	1,2	–	6131425	–	–	–	–	6131426	–
	LNGU110416SRGEM	12,16	0,10	1,6	–	6201021	–	–	–	6200730	6201022	–

Recommended Starting Feeds

Recommended Starting Feeds [mm]

Light Machining	General Purpose	Heavy Machining

Insert Geometry	Recommended Starting Feed per Tooth (Fz) in Relation to % of Radial Engagement (ae)															Insert Geometry
	5%			10%			20%			30%			40–100%			
.E..LEJ	0,13	**0,35**	0,58	0,09	**0,25**	0,42	0,07	**0,19**	0,31	0,06	**0,17**	0,27	0,06	**0,15**	0,25	.E..LEJ
.E..GE	0,23	**0,43**	0,59	0,17	**0,31**	0,43	0,13	**0,23**	0,32	0,11	**0,20**	0,28	0,10	**0,18**	0,25	.E..GE
.S..GE	0,23	**0,46**	0,65	0,17	**0,33**	0,47	0,13	**0,25**	0,35	0,11	**0,22**	0,31	0,10	**0,20**	0,28	.S..GE
.S..GEM	0,23	**0,46**	0,71	0,17	**0,33**	0,51	0,13	**0,25**	0,38	0,11	**0,22**	0,33	0,10	**0,20**	0,30	.S..GEM

LNG...: Ground inserts; high versatility for all finishing applications and difficult-to-machine stainless steels and high-temp alloys.
LNP...: Pressed; lower cost per edge for most roughing to semi-finishing operations.

.E..LEJ: For aluminium and other non-ferrous alloys.
.E..GE: First choice for stainless steel and high-temp alloys. For highest finishing requirements in light machining.
.S..GE: Universal geometry. First choice for steel.
.S..GEM: First choice for cast iron machining and all heavy applications.

Material Group		KC422M*			KC520M			KC522M			KC725M		
P	1	–	–	–	–	–	–	330	**285**	270	260	**230**	215
	2	–	–	–	–	–	–	275	**240**	200	220	**190**	160
	3	–	–	–	–	–	–	255	**215**	175	200	**170**	140
	4	–	–	–	–	–	–	225	**185**	150	180	**150**	120
	5	–	–	–	–	–	–	185	**170**	150	150	**135**	120
	6	–	–	–	–	–	–	165	**125**	100	130	**100**	80
M	1	–	–	–	–	–	–	205	**180**	165	170	**150**	135
	2	–	–	–	–	–	–	185	**160**	130	155	**130**	110
	3	–	–	–	–	–	–	140	**120**	95	115	**100**	80
K	1	–	–	–	270	**245**	215	230	**205**	185	–	–	–
	2	–	–	–	210	**190**	175	180	**160**	150	–	–	–
	3	–	–	–	175	**160**	145	150	**135**	120	–	–	–
N	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–	–	–	–
H	1	–	–	–	–	–	–	120	**90**	70	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–

Material Group		KCK15			KCPK30			KCPM40			KCSM40		
P	1	–	–	–	455	**395**	370	295	**260**	245	260	**230**	215
	2	–	–	–	280	**255**	230	250	**215**	180	220	**190**	160
	3	–	–	–	255	**230**	205	230	**195**	160	200	**170**	140
	4	–	–	–	190	**175**	160	205	**170**	135	180	**150**	120
	5	–	–	–	260	**230**	210	170	**155**	135	150	**135**	120
	6	–	–	–	160	**135**	125	150	**115**	90	130	**100**	80
M	1	–	–	–	205	**185**	155	195	**170**	155	170	**150**	135
	2	–	–	–	185	**160**	140	175	**150**	125	155	**130**	110
	3	–	–	–	145	**130**	115	130	**115**	90	115	**100**	80
K	1	420	**385**	340	295	**265**	240	–	–	–	–	–	–
	2	335	**295**	275	235	**210**	190	–	–	–	–	–	–
	3	280	**250**	230	195	**175**	160	–	–	–	–	–	–
N	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–	–	–	–
H	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–

*Recommended for wet machining only.

NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness increases, the speed should be decreased.

Dry

Wet

Material Group		KC422M			KC520M			KC522M			KC725M		
P	1	–	–	–	–	–	–	265	**230**	215	210	**185**	170
	2	–	–	–	–	–	–	220	**190**	160	175	**150**	130
	3	–	–	–	–	–	–	205	**170**	140	160	**135**	110
	4	–	–	–	–	–	–	180	**150**	120	145	**120**	95
	5	–	–	–	–	–	–	150	**135**	120	120	**110**	95
	6	–	–	–	–	–	–	130	**100**	80	105	**80**	65
M	1	–	–	–	–	–	–	165	**145**	130	135	**120**	110
	2	–	–	–	–	–	–	150	**130**	105	125	**105**	90
	3	–	–	–	–	–	–	110	**95**	75	90	**80**	65
K	1	–	–	–	215	**195**	170	185	**165**	150	–	–	–
	2	–	–	–	170	**150**	140	145	**130**	120	–	–	–
	3	–	–	–	140	**130**	115	120	**110**	95	–	–	–
N	1	860	**755**	700	–	–	–	–	–	–	–	–	–
	2	755	**700**	610	–	–	–	–	–	–	–	–	–
	3	755	**700**	610	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	30	**30**	20	30	**25**	20
	2	–	–	–	–	–	–	30	**30**	20	30	**25**	20
	3	–	–	–	–	–	–	40	**30**	20	35	**30**	20
	4	–	–	–	–	–	–	55	**40**	30	45	**35**	25
H	1	–	–	–	–	–	–	95	**70**	55	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–

Material Group		KCK15			KCPK30			KCPM40			KCSM40		
P	1	–	–	–	365	**315**	295	285	**250**	235	–	–	–
	2	–	–	–	225	**205**	185	240	**210**	170	–	–	–
	3	–	–	–	205	**185**	165	220	**190**	150	–	–	–
	4	–	–	–	150	**140**	130	195	**165**	130	–	–	–
	5	–	–	–	210	**185**	170	165	**150**	130	135	**115**	95
	6	–	–	–	130	**110**	100	145	**110**	90	120	**90**	65
M	1	–	–	–	165	**150**	125	190	**165**	150	170	**135**	110
	2	–	–	–	150	**130**	110	170	**145**	120	145	**115**	95
	3	–	–	–	115	**105**	90	125	**110**	90	115	**90**	70
K	1	335	**310**	270	235	**210**	190	–	–	–	–	–	–
	2	270	**235**	220	190	**170**	150	–	–	–	–	–	–
	3	225	**200**	185	155	**140**	130	–	–	–	–	–	–
N	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	40	**30**	30	30	**30**	20
	2	–	–	–	–	–	–	40	**30**	30	30	**30**	20
	3	–	–	–	–	–	–	50	**40**	30	40	**30**	20
	4	–	–	–	55	**40**	25	65	**50**	30	50	**40**	25
H	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–

NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness increases, the speed should be decreased.

Dry

Wet

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Mill 4-15™ • Double-Sided Shoulder Milling

Primary Application

The Mill 4-15 series is specially engineered to achieve excellent surface quality and higher material removal rates in shoulder milling applications. Its unique design enables multiple passes (stepping down) with outstanding results. The Mill 4™ platform is applicable in a wide range of workpiece materials: steel, cast iron, stainless steel, and titanium, from roughing to finishing operations.

Features and Benefits

- Double-sided strong insert with 4 cutting edges.
- High positive geometry for lower cutting forces.
- Superior wall and surface finish capabilities.
- "Stepless" solution. No mismatch when machining walls in different steps.

-EGEJ

For non-ferrous materials.

-EGE

1st choice for stainless steel. Lower cutting forces.

-SGE

First choice for the Mill 4 platform, especially when machining steels.

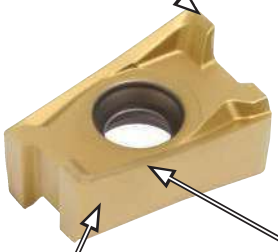
-SGEM

1st choice for cast iron. Strongest cutting edge.

Screw-on, end mill, and shell mill cutters with effective internal coolant supply.

State-of-the-art stepping down capabilities — "stepless" solution.

Multiple corner nose radii available.

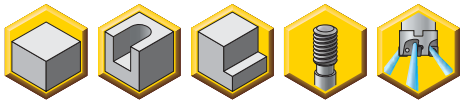


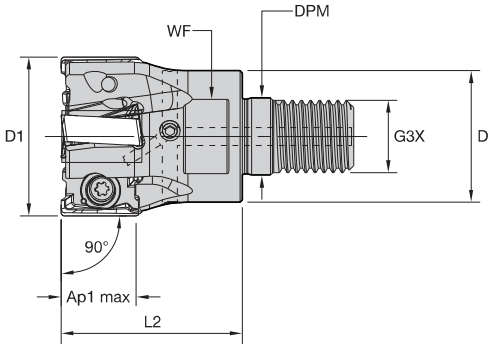
Up to 15,5mm depth-of-cut capabilities.

Innovative cutting geometry to provide superior wall and surface finish capabilities.

Integrated wiper facet for best-in-class floor finishing.

- Superior wall and surface finish capabilities.
- True 90° capabilities. Stepless solution when using multiple steps.
- Engineered to run up to 15,5mm depth of cut.
- Effective internal coolant feature, reaching the cutting edge precisely.





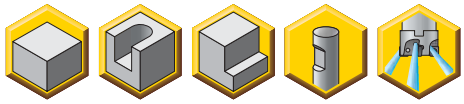
Screw-On End Mills

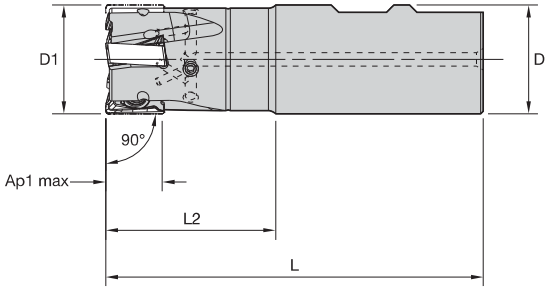
order number	catalogue number	D1	D	DPM	G3X	L2	WF	Ap1 max	Z	kg	max RPM
5531911	**M4D025Z02M12LN15**	25	21	12,5	M12	32	17	15,5	2	0,08	26700
5531912	**M4D032Z03M16LN15**	32	29	17,0	M16	40	24	15,5	3	0,18	22000
5555606	**M4D032Z04M16LN15**	32	29	17,0	M16	40	24	15,5	4	0,18	22000
5528599	**M4D035Z04M16LN15**	35	29	17,0	M16	40	24	15,5	4	0,19	20600
5531913	**M4D040Z05M16LN15**	40	29	17,0	M16	40	24	15,5	5	0,23	18800

Spare Parts

D1	insert screw	Nm	Torx Plus driver
25	**MS-2071**	3,5	**DT15IP**
32	**MS-2071**	3,5	**DT15IP**
35	**MS-2071**	3,5	**DT15IP**
40	**MS-2071**	3,5	**DT15IP**

- Superior wall and surface finish capabilities.
- True 90° capabilities. Stepless solution when using multiple steps.
- Engineered to run up to 15,5mm depth of cut.
- Effective internal coolant feature, reaching the cutting edge precisely.





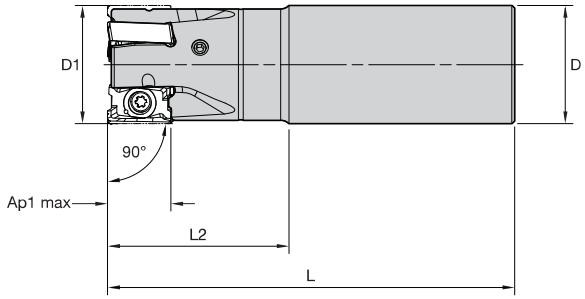
Weldon End Mills

order number	catalogue number	D1	D	L	L2	Ap1 max	Z	kg	max RPM
5528630	**M4D025Z02B25LN15**	25	25	89	32	15,5	2	0,28	26700
5528631	**M4D032Z03B32LN15**	32	32	111	50	15,5	3	0,58	22000
5531914	**M4D040Z03B32LN15**	40	32	111	50	15,5	3	0,65	18800
5555607	**M4D040Z04B32LN15**	40	32	111	50	15,5	4	0,65	18800

Spare Parts

D1	insert screw	Nm	Torx Plus driver
25	**MS-2071**	3,5	**DT15IP**
32	**MS-2071**	3,5	**DT15IP**
40	**MS-2071**	3,5	**DT15IP**

- Superior wall and surface finish capabilities.
- True 90° capabilities. Stepless solution when using multiple steps.
- Engineered to run up to 15,5mm depth of cut.
- Effective internal coolant feature, reaching the cutting edge precisely.



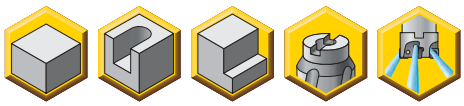
Cylindrical End Mills

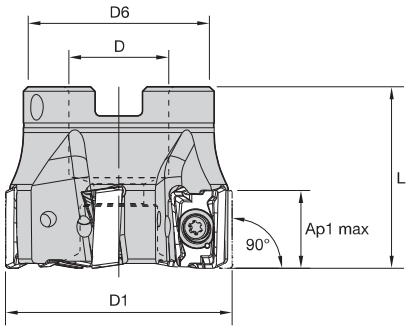
order number	catalogue number	D1	D	L	L2	Ap1 max	Z	kg	max RPM
5531915	**M4D025Z02A25LN15L100**	25	25	100	43	15,5	2	0,28	26700
5531916	**M4D025Z02A25LN15L170**	25	25	170	43	15,5	2	0,58	26700
5531917	**M4D032Z03A32LN15L110**	32	32	110	49	15,5	3	0,58	22000
5531918	**M4D032Z03A32LN15L200**	32	32	200	50	15,5	3	1,14	22000
5555608	**M4D032Z04A32LN15L110**	32	32	110	49	15,5	4	0,58	22000
5555609	**M4D032Z04A32LN15L200**	32	32	200	50	15,5	4	1,14	22000
5555800	**M4D040Z04A32LN15L200**	40	32	200	50	15,5	4	1,20	18800

Spare Parts

D1	 insert screw	 Nm	 Torx Plus driver
25	**MS-2071**	3,5	**DT15IP**
32	**MS-2071**	3,5	**DT15IP**
40	**MS-2071**	3,5	**DT15IP**

- Superior wall and surface finish capabilities.
- True 90° capabilities. Stepless solution when using multiple steps.
- Engineered to run up to 15,5mm depth of cut.
- Effective internal coolant feature, reaching the cutting edge precisely.

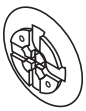




Shell Mills

order number	catalogue number	D1	D	D6	L	Ap1 max	Z	kg	max RPM
5528632	M4D040Z04S16LN15	40	16	37	40	15,5	4	0,20	18800
5555801	M4D040Z05S16LN15	40	16	37	40	15,5	5	0,19	18800
5698436	M4D050Z04S22LN15	50	22	42	40	15,5	4	0,28	16300
5528633	M4D050Z05S22LN15	50	22	42	40	15,5	5	0,28	16300
5528634	M4D050Z06S22LN15	50	22	42	40	15,5	6	0,27	16300
5698437	M4D063Z05S22LN15	63	22	50	40	15,5	5	0,50	14200
5528635	M4D063Z06S22LN15	63	22	50	40	15,5	6	0,49	14200
5528636	M4D063Z07S22LN15	63	22	50	40	15,5	7	0,50	14200
5698438	M4D080Z05S27LN15	80	27	60	50	15,5	5	1,03	12300
5528637	M4D080Z07S27LN15	80	27	60	50	15,5	7	1,02	12300
5555802	M4D080Z09S27LN15	80	27	60	50	15,5	9	1,04	12300
5698439	M4D100Z06S32LN15	100	32	80	50	15,5	6	1,58	10900
5528638	M4D100Z08S32LN15	100	32	80	50	15,5	8	1,57	10900
5555803	M4D100Z11S32LN15	100	32	80	50	15,5	11	1,64	10900
5698490	M4D125Z07S40LN15	125	40	90	63	15,5	7	2,96	9600
5555804	M4D125Z09S40LN15	125	40	90	63	15,5	9	2,98	9600
5532000	M4D125Z12S40LN15	125	40	90	63	15,5	12	3,00	9600
5698491	M4D160Z08S40LN15	160	40	110	63	15,5	8	4,67	8400
5555805	M4D160Z12S40LN15	160	40	110	63	15,5	12	4,78	8400
5555806	M4D160Z16S40LN15	160	40	110	63	15,5	16	4,75	8400

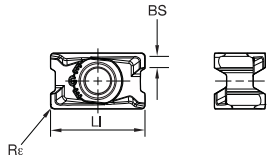
Spare Parts

D1	 insert screw	 Nm	 Torx Plus driver	 socket-head cap screw	 coolant lock screw assembly	 coolant lock screw	 coolant cap
40	MS-2071	3,5	DT15IP	MS1294	–	–	–
50	MS-2071	3,5	DT15IP	125.025	–	–	–
63	MS-2071	3,5	DT15IP	125.025	–	–	–
80	MS-2071	3,5	DT15IP	MS2038	–	–	–
100	MS-2071	3,5	DT15IP	–	MS2189C	–	–
125	MS-2071	3,5	DT15IP	–	MS2187C	–	–
160	MS-2071	3,5	DT15IP	–	–	420.200	470.233

NOTE: Coolant lock screw assembly and coolant cap must be ordered separately.

✦✦ first choice with coolant
✧✧ first choice without coolant
✦ alternate choice with coolant
✧ alternate choice without coolant

P1–P2			✧/✦	✦✦		✧✧		
P3–P4			✧/✦	✦✦		✧	✧✧	
P5–P6			✧/✦	✦✦		✧	✧✧	
M1–M2			✧/✦	✦			✦	✦✦
M3			✧/✦	✦				✦✦
K1–K2		✦✦			✧✧			
K3		✦✦				✧✧		
N1	✦✦							
N2	✦✦							
S1				✦				✦✦
S2				✦				✦✦
S3			✦	✦				✦✦
S4			✦	✦				✦✦



ISO catalogue number	LI	BS	Rε	KC422M	KC520M	KC522M	KC725M	KCK15	KCPK30	KCPM40	KCSM40
Light Machining											
LNGU15T604ERGE	17,01	2,20	0,4	–	–	–	5588513	–	–	5588515	–
LNGU15T608ERGE	17,01	1,80	0,8	–	–	5588388	5588385	–	–	5588387	6165422
LNGU15T612ERGE	17,01	1,40	1,2	–	–	–	5588517	–	–	5588519	6165423
LNGU15T616ERGE	17,01	1,07	1,6	–	–	–	5627789	–	–	5627871	–
General Machining											
LNPU15T604SRGE	16,90	2,20	0,4	–	5608034	–	5608036	–	–	–	–
LNGU15T604ERGEJ	17,00	2,20	0,4	6001231	–	–	–	–	–	–	–
LNGU15T604SRGE	17,00	2,20	0,4	–	5516073	–	5516075	–	–	–	–
LNPU15T608SRGE	16,90	1,80	0,8	–	5547848	5547849	5548040	5548041	5548042	5684657	–
LNGU15T608ERGEJ	17,00	1,80	0,8	6001232	–	–	–	–	–	–	–
LNGU15T608SRGE	17,01	1,80	0,8	–	5515759	5515890	5515891	5515892	5515893	–	6165400
LNPU15T612SRGE	16,90	1,50	1,2	–	5607996	–	5607998	–	–	5976169	–
LNGU15T612SRGE	17,01	1,40	1,2	–	5515746	–	5515748	–	–	–	6165421
LNPU15T616SRGE	16,90	1,10	1,6	–	6019501	–	6019503	–	6019505	6019506	–
LNGU15T616SRGE	17,01	1,07	1,6	–	5627784	–	5627786	–	5627788	–	–
LNPU15T620SRGE	16,92	0,70	2,0	–	–	–	6001233	–	–	6001236	–
Heavy Machining											
LNGU15T608SRGEM	17,01	1,70	0,8	–	5575827	–	–	5575828	5575829	5976170	–
LNGU15T612SRGEM	17,01	1,30	1,2	–	5947280	–	–	–	–	5976671	–
LNGU15T616SRGEM	17,01	0,95	1,6	–	5630018	–	–	–	5630070	5976672	–
LNGU15T620SRGEM	17,01	0,34	2,0	–	–	–	–	–	–	6019510	–

Recommended Starting Feeds

Recommended Starting Feeds [mm]

Light Machining	General Purpose	Heavy Machining

Insert Geometry	Recommended Starting Feed per Tooth (Fz) in Relation to % of Radial Engagement (ae)															Insert Geometry
	5%			10%			20%			30%			40–100%			
.E..GEJ	0,12	**0,47**	0,84	0,08	**0,34**	0,60	0,06	**0,26**	0,45	0,06	**0,22**	0,39	0,05	**0,20**	0,36	.E..GEJ
.E..GE	0,23	**0,54**	0,93	0,17	**0,39**	0,67	0,13	**0,29**	0,50	0,11	**0,25**	0,44	0,10	**0,23**	0,40	.E..GE
.S..GE	0,23	**0,59**	0,95	0,17	**0,43**	0,68	0,13	**0,32**	0,51	0,11	**0,28**	0,44	0,10	**0,25**	0,41	.S..GE
.S..GEM	0,23	**0,59**	0,95	0,17	**0,43**	0,68	0,13	**0,32**	0,51	0,11	**0,28**	0,44	0,10	**0,25**	0,41	.S..GEM

LNG...: Ground inserts; high versatility for all finishing applications and difficult-to-machine stainless steels and high-temp alloys.
LNP...: Pressed; lower cost per edge for most roughing to semi-finishing operations.

.E..LEJ: For aluminium and other non-ferrous alloys.
.E..GE: First choice for stainless steel and high-temp alloys. For highest finishing requirements in light machining.
.S..GE: Universal geometry. First choice for steel.
.S..GEM: First choice for cast iron machining and all heavy applications.

Material Group		KC422M*			KC520M			KC522M			KC725M		
P	1	–	–	–	–	–	–	330	**285**	270	260	**230**	215
	2	–	–	–	–	–	–	275	**240**	200	220	**190**	160
	3	–	–	–	–	–	–	255	**215**	175	200	**170**	140
	4	–	–	–	–	–	–	225	**185**	150	180	**150**	120
	5	–	–	–	–	–	–	185	**170**	150	150	**135**	120
	6	–	–	–	–	–	–	165	**125**	100	130	**100**	80
M	1	–	–	–	–	–	–	205	**180**	165	170	**150**	135
	2	–	–	–	–	–	–	185	**160**	130	155	**130**	110
	3	–	–	–	–	–	–	140	**120**	95	115	**100**	80
K	1	–	–	–	270	**245**	215	230	**205**	185	–	–	–
	2	–	–	–	210	**190**	175	180	**160**	150	–	–	–
	3	–	–	–	175	**160**	145	150	**135**	120	–	–	–
N	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–	–	–	–
H	1	–	–	–	–	–	–	120	**90**	70	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–

Material Group		KCK15			KCPK30			KCPM40			KCSM40		
P	1	–	–	–	455	**395**	370	295	**260**	245	260	**230**	215
	2	–	–	–	280	**255**	230	250	**215**	180	220	**190**	160
	3	–	–	–	255	**230**	205	230	**195**	160	200	**170**	140
	4	–	–	–	190	**175**	160	205	**170**	135	180	**150**	120
	5	–	–	–	260	**230**	210	170	**155**	135	150	**135**	120
	6	–	–	–	160	**135**	125	150	**115**	90	130	**100**	80
M	1	–	–	–	205	**185**	155	195	**170**	155	170	**150**	135
	2	–	–	–	185	**160**	140	175	**150**	125	155	**130**	110
	3	–	–	–	145	**130**	115	130	**115**	90	115	**100**	80
K	1	420	**385**	340	295	**265**	240	–	–	–	–	–	–
	2	335	**295**	275	235	**210**	190	–	–	–	–	–	–
	3	280	**250**	230	195	**175**	160	–	–	–	–	–	–
N	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–	–	–	–
H	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–

*Recommended for wet machining only.

NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness increases, the speed should be decreased.

Dry

Wet

Material Group		KC422M			KC520M			KC522M			KC725M		
P	1	–	–	–	–	–	–	265	**230**	215	210	**185**	170
	2	–	–	–	–	–	–	220	**190**	160	175	**150**	130
	3	–	–	–	–	–	–	205	**170**	140	160	**135**	110
	4	–	–	–	–	–	–	180	**150**	120	145	**120**	95
	5	–	–	–	–	–	–	150	**135**	120	120	**110**	95
	6	–	–	–	–	–	–	130	**100**	80	105	**80**	65
M	1	–	–	–	–	–	–	165	**145**	130	135	**120**	110
	2	–	–	–	–	–	–	150	**130**	105	125	**105**	90
	3	–	–	–	–	–	–	110	**95**	75	90	**80**	65
K	1	–	–	–	215	**195**	170	185	**165**	150	–	–	–
	2	–	–	–	170	**150**	140	145	**130**	120	–	–	–
	3	–	–	–	140	**130**	115	120	**110**	95	–	–	–
N	1	860	**755**	700	–	–	–	–	–	–	–	–	–
	2	755	**700**	610	–	–	–	–	–	–	–	–	–
	3	755	**700**	610	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	30	**30**	20	30	**25**	20
	2	–	–	–	–	–	–	30	**30**	20	30	**25**	20
	3	–	–	–	–	–	–	40	**30**	20	35	**30**	20
	4	–	–	–	–	–	–	55	**40**	30	45	**35**	25
H	1	–	–	–	–	–	–	95	**70**	55	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–

Material Group		KCK15			KCPK30			KCPM40			KCSM40		
P	1	–	–	–	365	**315**	295	285	**250**	235	–	–	–
	2	–	–	–	225	**205**	185	240	**210**	170	–	–	–
	3	–	–	–	205	**185**	165	220	**190**	150	–	–	–
	4	–	–	–	150	**140**	130	195	**165**	130	–	–	–
	5	–	–	–	210	**185**	170	165	**150**	130	135	**115**	95
	6	–	–	–	130	**110**	100	145	**110**	90	120	**90**	65
M	1	–	–	–	165	**150**	125	190	**165**	150	170	**135**	110
	2	–	–	–	150	**130**	110	170	**145**	120	145	**115**	95
	3	–	–	–	115	**105**	90	125	**110**	90	115	**90**	70
K	1	335	**310**	270	235	**210**	190	–	–	–	–	–	–
	2	270	**235**	220	190	**170**	150	–	–	–	–	–	–
	3	225	**200**	185	155	**140**	130	–	–	–	–	–	–
N	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	40	**30**	30	30	**30**	20
	2	–	–	–	–	–	–	40	**30**	30	30	**30**	20
	3	–	–	–	–	–	–	50	**40**	30	40	**30**	20
	4	–	–	–	55	**40**	25	65	**50**	30	50	**40**	25
H	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–

NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness increases, the speed should be decreased.

Dry

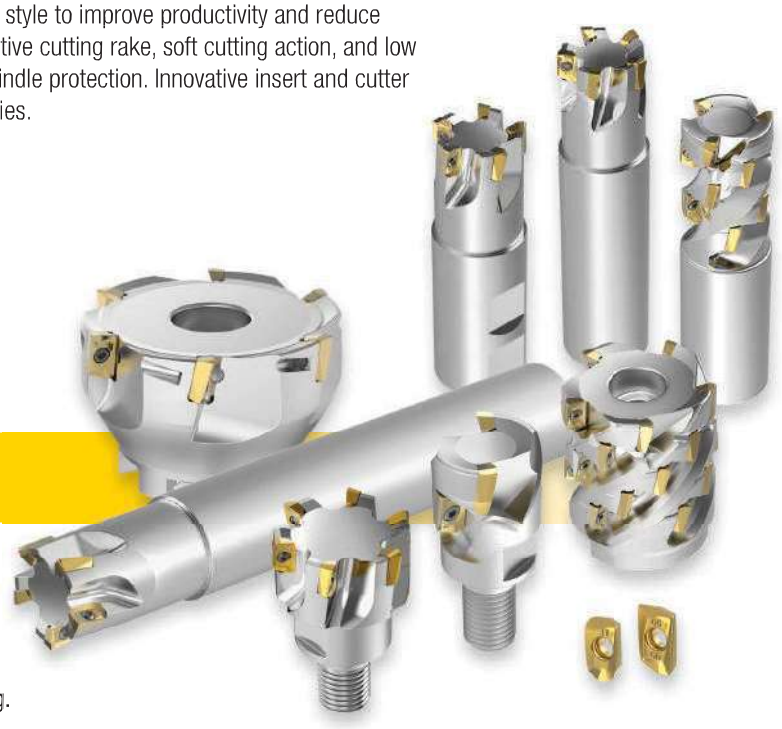
Wet

Mill 1-10™

High-Performance Shoulder Milling Platform

Primary Application

The multifunctional Mill 1-10 platform works with all workpiece materials in shoulder, ramp, slot, plunge, and helical milling with one insert style to improve productivity and reduce inventory and machining costs. The super positive cutting rake, soft cutting action, and low cutting forces enable higher feed rates and spindle protection. Innovative insert and cutter body designs offer improved ramping capabilities.



Features and Benefits

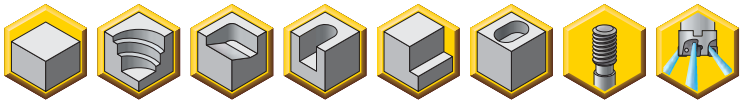
Versatility

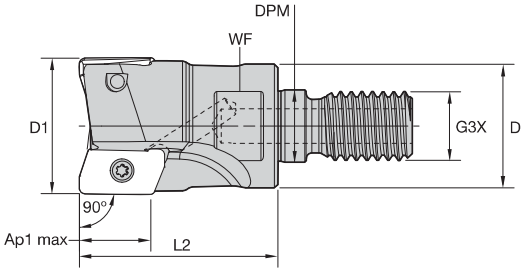
- Works with all workpiece materials.
- Capable of shoulder, ramp, plunge, and helical milling.
- Internal coolant and air supply.

Advantages

- Optimised soft cutting edge.
- Elliptical edge generates 90° wall.
- Increased ramping capability due to state of the art insert and cutter body design.
- Innovative chip gash design for excellent chip evacuation and perfect cutter body stability.
- All pockets are machined into heat-treated materials, guaranteeing best-in-class runout and pocket strength.
- Inserts feature innovative margin along the main cutting edge, corner nose radius, and wiper facet for perfect edge stability.

- Ramping capable for all Mill 1-10.
- Generates superior surface finish.
- Mill 90° walls.
- High RPM capabilities.





Screw-On End Mills

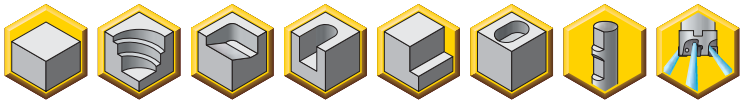
order number	catalogue number	D1	D	DPM	G3X	L2	WF	Ap1 max	Z	max ramp angle	kg	max RPM
3745708	**16A02R025M08ED10**	16	13	8,5	M8	25	10	10,1	2	9.5°	0,02	50100
3745709	**20A02R028M10ED10**	20	18	10,5	M10	28	15	10,1	2	6.0°	0,04	44800
3745710	**20A03R028M10ED10**	20	18	10,5	M10	28	15	10,1	3	6.0°	0,05	44800
3745711	**25A03R032M12ED10**	25	21	12,5	M12	32	17	10,0	3	4.0°	0,09	40000
3745712	**25A04R032M12ED10**	25	21	12,5	M12	32	17	10,0	4	4.0°	0,08	40000
3745723	**32A04R040M16ED10**	32	29	17,0	M16	40	24	10,0	4	2.8°	0,19	35400
3745724	**32A05R040M16ED10**	32	29	17,0	M16	40	24	10,0	5	2.8°	0,19	35400
3745725	**40A06R040M16ED10**	40	29	17,0	M16	40	24	9,9	6	2.0°	0,23	31600
3745726	**42A06R040M16ED10**	42	29	17,0	M16	40	24	9,9	6	1.8°	0,23	30900

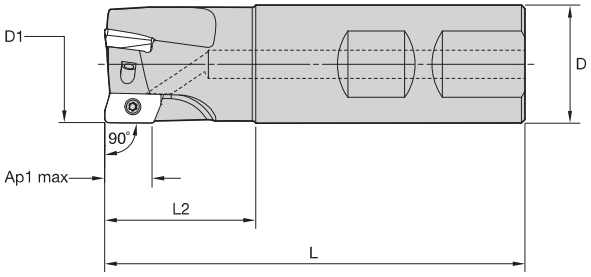
NOTE: Standard milling cutters will accept insert nose radii up to 2mm without modification.

Spare Parts

D1	insert screw	Nm	Torx wrench
16	**MS2205**	1,0	**F7IP**
20	**MS2205**	1,0	**F7IP**
25	**MS2205**	1,0	**F7IP**
32	**MS2205**	1,0	**F7IP**
40	**MS2205**	1,0	**F7IP**
42	**MS2205**	1,0	**F7IP**

- Aggressive ramping rates.
- Generates superior surface finish.
- Mill 90° walls.
- High RPM capabilities.





Weldon End Mills

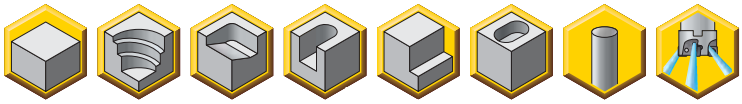
order number	catalogue number	D1	D	L	L2	Ap1 max	Z	max ramp angle	kg	max RPM
3744633	**16A02R025B16ED10**	16	16	74	25	10,1	2	9.5°	0,09	50100
3744635	**20A03R028B20ED10**	20	20	79	28	10,1	3	6.0°	0,15	44800
3744636	**25A03R032B25ED10**	25	25	89	32	10,0	3	4.0°	0,28	40000
3744637	**25A04R032B25ED10**	25	25	89	32	10,0	4	4.0°	0,28	40000
3744638	**32A04R040B32ED10**	32	32	101	40	10,0	4	2.8°	0,53	35400
3744639	**32A05R040B32ED10**	32	32	101	40	10,0	5	2.8°	0,53	35400

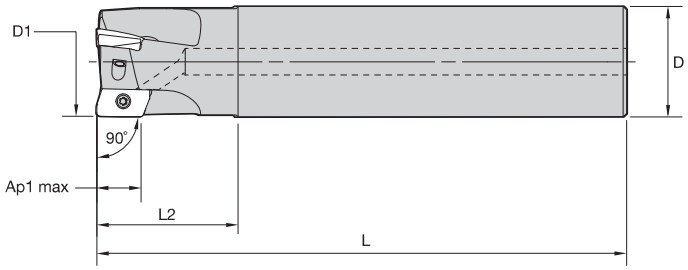
NOTE: Standard milling cutters will accept insert nose radii up to 2mm without modification.

Spare Parts

D1	 insert screw	 Nm	 Torx Plus driver
16	**MS2205**	1,0	**DT7IP**
20	**MS2205**	1,0	**DT7IP**
25	**MS2205**	1,0	**DT7IP**
32	**MS2205**	1,0	**DT7IP**

- Aggressive ramping rates.
- Generates superior surface finish.
- Mill 90° walls.
- High RPM capabilities.





Cylindrical End Mills

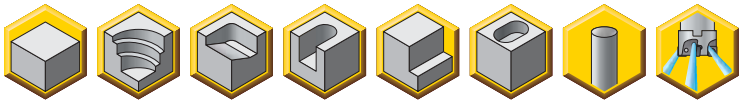
order number	catalogue number	D1	D	L	L2	Ap1 max	Z	max ramp angle	kg	max RPM
3744538	**12A01R020A16ED10**	12	16	90	20	10,3	1	11.5°	0,12	57800
3744539	**16A02R025A16ED10**	16	16	100	25	10,1	2	9.5°	0,13	50100
3744540	**20A02R028A20ED10**	20	20	110	28	10,1	2	6.0°	0,23	44800
3744541	**20A03R028A20ED10**	20	20	110	28	10,1	3	6.0°	0,22	44800
3744542	**25A03R032A25ED10**	25	25	120	32	10,0	3	4.0°	0,40	40000
3744613	**25A04R032A25ED10**	25	25	120	32	10,0	4	4.0°	0,40	40000
3744614	**32A04R040A32ED10**	32	32	130	40	10,0	4	2.8°	0,72	35400
3744615	**32A05R040A32ED10**	32	32	130	40	10,0	5	2.8°	0,71	35400

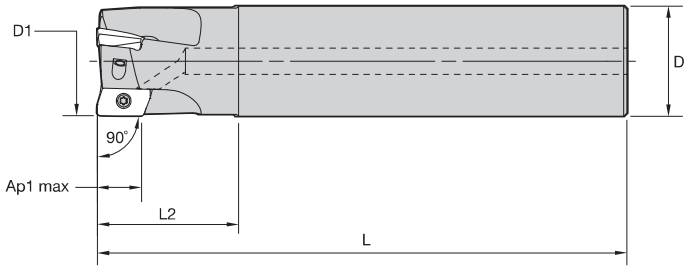
NOTE: Standard milling cutters will accept insert nose radii up to 2mm without modification.

Spare Parts

D1	insert screw	Nm	Torx Plus driver
12	**MS2205**	1,0	**DT7IP**
16	**MS2205**	1,0	**DT7IP**
20	**MS2205**	1,0	**DT7IP**
25	**MS2205**	1,0	**DT7IP**
32	**MS2205**	1,0	**DT7IP**

- Aggressive ramping rates.
- Generates superior surface finish.
- Mill 90° walls.
- High RPM capabilities.





Cylindrical End Mills • Long Length

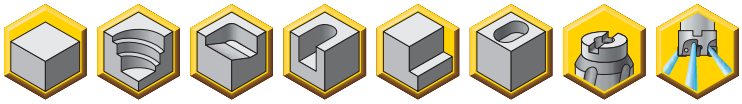
order number	catalogue number	D1	D	L	L2	Ap1 max	Z	max ramp angle	kg	max RPM
3744616	**16A02R025A16ED10-170**	16	16	170	25	10,1	2	9.5°	0,23	50100
3744617	**16A02R025A16ED10R31-170**	16	16	170	25	9,7	2	8.0°	0,23	50100
3744618	**18A02R028A16ED10-170**	18	16	170	28	10,1	2	7.5°	0,24	47200
3744619	**20A02R032A20ED10-170**	20	20	170	32	10,1	2	6.0°	0,37	44800
3744621	**20A03R032A20ED10-170**	20	20	170	32	10,1	3	6.0°	0,36	44800
3744622	**20A03R032A20ED10R31-170**	20	20	170	32	9,8	3	4.5°	0,36	44800
3744623	**22A03R032A20ED10-170**	22	20	170	32	10,1	3	5.0°	0,37	42700
3744624	**25A03R040A25ED10-200**	25	25	200	40	10,0	3	4.0°	0,69	40000
3744625	**25A03R040A25ED10R31-200**	25	25	200	40	9,8	3	3.0°	0,69	40000
3744626	**25A04R040A25ED10-200**	25	25	200	40	10,0	4	4.0°	0,68	40000
3744627	**25A04R040A25ED10R31-200**	25	25	200	40	9,8	4	3.0°	0,68	40000
3744628	**28A04R040A25ED10-200**	28	25	200	40	10,0	4	3.3°	0,71	37800
3744629	**32A04R048A32ED10-200**	32	32	200	48	10,0	4	2.8°	1,14	35400
3744631	**32A05R048A32ED10-200**	32	32	200	48	10,0	5	2.8°	1,13	35400

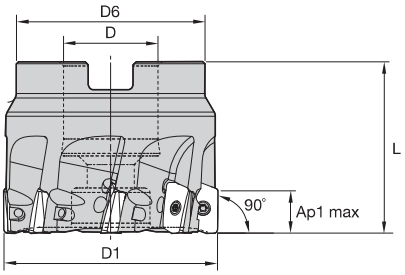
NOTE: Standard milling cutters will accept insert nose radii up to 2mm without modification.
"R31" in catalogue number designates factory-relieved tool which accepts inserts with nose radii > 2mm.

Spare Parts

D1	insert screw	Nm	Torx Plus driver
16	**MS2205**	1,0	**DT7IP**
18	**MS2205**	1,0	**DT7IP**
20	**MS2205**	1,0	**DT7IP**
22	**MS2205**	1,0	**DT7IP**
25	**MS2205**	1,0	**DT7IP**
28	**MS2205**	1,0	**DT7IP**
32	**MS2205**	1,0	**DT7IP**

- Aggressive ramping rates.
- Generates superior surface finish.
- Mill 90° walls.
- High RPM capabilities.





Shell Mills

order number	catalogue number	D1	D	D6	L	Ap1 max	Z	max ramp angle	kg	max RPM
3745674	**40A04RS90ED10D**	40	16	37	40	9,9	4	2.0°	0,25	31600
3745675	**40A06RS90ED10D**	40	16	37	40	9,9	6	2.0°	0,24	31600
3745676	**50A05RS90ED10D**	50	22	44	40	9,9	5	1.5°	0,38	28300
3745677	**50A08RS90ED10D**	50	22	44	40	9,9	8	1.5°	0,36	28300
3745678	**63A06RS90ED10D**	63	22	44	40	9,9	6	1.0°	0,54	25200
3745679	**63A09RS90ED10D**	63	22	44	40	9,9	9	1.0°	0,53	25200
3745680	**80A08RS90ED10D**	80	27	60	50	9,9	8	.8°	1,26	22400
3745682	**100B08RS90ED10D**	100	32	80	50	9,9	8	.5°	1,88	20000

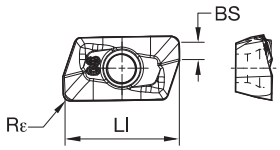
NOTE: Standard milling cutters will accept insert nose radii up to 2mm without modification.

Spare Parts

D1	insert screw	Nm	Torx Plus driver	socket-head cap screw
40	**MS2205**	1,0	**DT7IP**	**–**
50	**MS2205**	1,0	**DT7IP**	**–**
63	**MS2205**	1,0	**DT7IP**	**MS1234**
80	**MS2205**	1,0	**DT7IP**	**MS2038**
100	**MS2205**	1,0	**DT7IP**	**–**

✦✦ first choice with coolant
✧✧ first choice without coolant
✦ alternate choice with coolant
✧ alternate choice without coolant

P1–P2				✧/✦	✦✦	✧✧		
P3–P4				✧/✦	✦✦	✧	✧✧	
P5–P6				✧/✦	✦✦	✧	✧✧	
M1–M2				✧/✦	✦		✦	✦✦
M3				✧/✦	✦			✦✦
K1–K2			✦✦/✧✧			✧		
K3			✦✦			✧✧		
N1	✦✦	✦						
N2	✦✦	✦						
S1					✦			✦✦
S2					✦			✦✦
S3				✦	✦			✦✦
S4				✦	✦			✦✦



ISO catalogue number	LI	BS	Rε	KC410M	KC422M	KC520M	KC522M	KC725M	KCPK30	KCPM40	KCSM40
Light Machining											
EDCT10T302PDERLD	12,04	2,29	0,2	–	–	–	–	3959611	–	–	–
EDCT10T302PDFRLDJ	12,05	2,29	0,2	3684779	–	–	–	–	–	–	–
EDCT10T304PDERLD	12,05	1,98	0,4	–	–	3682452	3682513	3682514	–	–	–
EDCT10T304PDFRLDJ	12,05	1,98	0,4	3682450	–	–	–	–	–	–	–
EDCT10T308PDERLD	12,05	1,70	0,8	–	–	3649189	3649190	3649191	3649192	5545217	6176096
EDCT10T308PDFRLDJ	12,05	1,70	0,8	3649187	–	–	–	–	–	–	–
EDCT10T312PDERLD	12,06	1,30	1,2	–	–	–	–	3682655	–	–	6176097
EDCT10T316PDERLD	12,06	0,90	1,6	–	–	–	–	3682781	3682782	–	6176098
EDCT10T320PDERLD	12,06	0,49	2,0	–	–	–	–	3766023	–	–	–
EDCT10T324PDERLD	12,06	0,11	2,4	–	–	–	–	–	–	–	6176099
EDCT10T331PDERLD	11,52	–	3,1	–	–	–	–	3684828	–	–	6176100
General Machining											
EDCT10T304PDERLDJ	12,05	1,98	0,4	–	3682451	–	–	–	–	–	–
EDCT10T308PDERLDJ	12,05	1,70	0,8	–	3649188	–	–	–	–	–	–
EDCT10T316PDERLDJ	12,06	0,90	1,6	–	3682778	–	–	–	–	–	–
EDCT10T320PDERLDJ	12,06	0,49	2,0	–	3765831	–	–	–	–	–	–
EDCT10T324PDERLDJ	12,06	0,11	2,4	–	3766027	–	–	–	–	–	–
EDPT10T304PDERHD	12,05	2,07	0,4	–	–	3753592	–	3641741	–	5545215	–
EDPT10T308PDERHD	12,05	1,70	0,8	–	–	3753593	3641712	3641734	3641736	–	6175756
EDPT10T308PDERHD	12,05	1,69	0,8	–	–	–	–	–	–	5545214	–
EDPT10T310PDERHD	12,05	1,49	1,0	–	–	–	–	3747114	–	–	–
EDPT10T312PDERHD	12,06	1,30	1,2	–	–	3753594	–	3642029	–	6127887	6175757
EDPT10T316PDERHD	12,06	0,90	1,6	–	–	–	–	3642094	3642096	6127888	6175758
EDPT10T320PDERHD	12,06	0,49	2,0	–	–	–	–	3642097	–	6127889	6175759
EDPT10T324PDERHD	12,06	0,11	2,4	–	–	–	–	3642102	–	–	6175760
EDPT10T331PDERHD	11,52	–	3,1	–	–	–	–	3642137	–	–	6176091
Heavy Machining											
EDPT10T304PDSRGD	12,05	2,07	0,4	–	–	–	–	3642141	–	–	–
EDPT10T308PDSRGD	12,05	1,70	0,8	–	–	3753386	–	3642170	3642172	5545216	–
EDPT10T308PDSRGE	12,05	1,70	0,8	–	–	–	3775016	–	–	–	–
EDPT10T312PDSRGD	12,06	1,30	1,2	–	–	3753387	–	3642193	–	–	–
EDPT10T316PDSRGD	12,06	0,90	1,6	–	–	–	–	3642196	3642198	–	–

Recommended Starting Feeds [mm]

Light Machining	General Purpose	Heavy Machining

Insert Geometry	Recommended Starting Feed per Tooth (Fz) in Relation to % of Radial Engagement (ae)															Insert Geometry
	5%			10%			20%			30%			40–100%			
.F..LDJ	0,12	**0,35**	0,58	0,08	**0,25**	0,42	0,06	**0,19**	0,31	0,06	**0,16**	0,27	0,05	**0,15**	0,25	.F..LDJ
.F..-PCD	0,12	**0,35**	0,58	0,08	**0,25**	0,42	0,06	**0,19**	0,31	0,06	**0,16**	0,27	0,05	**0,15**	0,25	.F..-PCD
.E..LDJ	0,12	**0,35**	0,58	0,08	**0,25**	0,42	0,06	**0,19**	0,32	0,06	**0,16**	0,28	0,05	**0,15**	0,25	.E..LDJ
.E..LD	0,12	**0,35**	0,57	0,09	**0,25**	0,41	0,07	**0,19**	0,31	0,06	**0,17**	0,27	0,05	**0,15**	0,25	.E..LD
.S..GE	0,23	**0,46**	0,70	0,17	**0,33**	0,51	0,13	**0,25**	0,38	0,11	**0,22**	0,33	0,10	**0,20**	0,30	.S..GE
.S..GD	0,23	**0,47**	0,71	0,17	**0,34**	0,51	0,13	**0,25**	0,38	0,11	**0,22**	0,33	0,10	**0,20**	0,30	.S..GD
.E..HD	0,23	**0,51**	0,82	0,17	**0,37**	0,59	0,13	**0,28**	0,44	0,11	**0,24**	0,38	0,10	**0,22**	0,35	.E..HD

EDC...: Ground inserts; high versatility for all finishing applications and difficult-to-machine stainless steels and high-temp alloys.
EDP...: Pressed; lower cost per edge for most roughing to semi-finishing operations.

.F.LDJ: Sharp cutting edge for aluminium and other non-ferrous alloys.
.E.LDJ: For aluminium and other non-ferrous alloys.
.E.LD: Finishing and high-precision applications.
.E.HD: Medium roughing and semi-finishing.
.S.GE: Medium roughing and semi-finishing. Also suitable for austenitic stainless steel and super alloys.
.S.GD: Strongest cutting edge for heavy roughing applications with high feed rates in all material groups.

Recommended Starting Speeds for Dry Machining (m/min)

Material Group		KC520M			KC522M			KC725M			KCPK30			KCPM40			KCSM40		
P	1	–	–	–	330	**285**	270	260	**230**	215	455	**395**	370	295	**260**	245	260	**230**	215
	2	–	–	–	275	**240**	200	220	**190**	160	280	**255**	230	250	**215**	180	220	**190**	160
	3	–	–	–	255	**215**	175	200	**170**	140	255	**230**	205	230	**195**	160	200	**170**	140
	4	–	–	–	225	**185**	150	180	**150**	120	190	**175**	160	205	**170**	135	180	**150**	120
	5	–	–	–	185	**170**	150	150	**135**	120	260	**230**	210	170	**155**	135	150	**135**	120
	6	–	–	–	165	**125**	100	130	**100**	80	160	**135**	125	150	**115**	90	130	**100**	80
M	1	–	–	–	205	**180**	165	170	**150**	135	205	**185**	155	195	**170**	155	170	**150**	135
	2	–	–	–	185	**160**	130	155	**130**	110	185	**160**	140	175	**150**	125	155	**130**	110
	3	–	–	–	140	**120**	95	115	**100**	80	145	**130**	115	130	**115**	90	115	**100**	80
K	1	270	**245**	215	230	**205**	185	–	–	–	295	**265**	240	–	–	–	–	–	–
	2	210	**190**	175	180	**160**	150	–	–	–	235	**210**	190	–	–	–	–	–	–
	3	175	**160**	145	150	**135**	120	–	–	–	195	**175**	160	–	–	–	–	–	–
N	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
H	1	–	–	–	120	**90**	70	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness increases, the speed should be decreased.

Dry

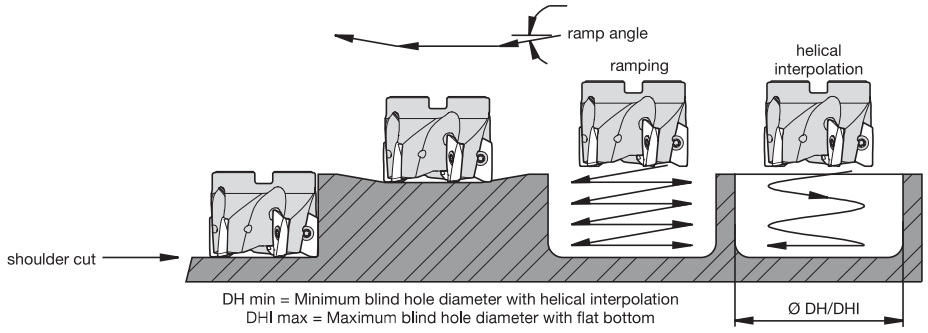
Wet

Material Group		KC410M/KC422M			KC520M			KC522M			KC725M			KCPK30			KCPM40			KCSM40		
P	1	–	–	–	–	–	–	265	**230**	215	210	**185**	170	365	**315**	295	285	**250**	235	–	–	–
	2	–	–	–	–	–	–	220	**190**	160	175	**150**	130	225	**205**	185	240	**210**	170	–	–	–
	3	–	–	–	–	–	–	205	**170**	140	160	**135**	110	205	**185**	165	220	**190**	150	–	–	–
	4	–	–	–	–	–	–	180	**150**	120	145	**120**	95	150	**140**	130	195	**165**	130	–	–	–
	5	–	–	–	–	–	–	150	**135**	120	120	**110**	95	210	**185**	170	165	**150**	130	135	**115**	95
	6	–	–	–	–	–	–	130	**100**	80	105	**80**	65	130	**110**	110	145	**110**	90	120	**90**	65
M	1	–	–	–	–	–	–	165	**145**	130	135	**120**	110	165	**150**	125	190	**165**	150	170	**135**	110
	2	–	–	–	–	–	–	150	**130**	105	125	**105**	90	150	**130**	110	170	**145**	120	145	**115**	95
	3	–	–	–	–	–	–	110	**95**	75	90	**80**	65	115	**105**	90	125	**110**	90	115	**90**	70
K	1	–	–	–	215	**195**	170	185	**165**	150	–	–	–	235	**210**	190	–	–	–	–	–	–
	2	–	–	–	170	**150**	140	145	**130**	120	–	–	–	190	**170**	150	–	–	–	–	–	–
	3	–	–	–	140	**130**	115	120	**110**	95	–	–	–	155	**140**	130	–	–	–	–	–	–
N	1	1170	**1035**	840	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	2	1035	**955**	730	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3	1035	**955**	730	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	30	**30**	20	30	**25**	20	–	–	–	40	**30**	30	30	**30**	20
	2	–	–	–	–	–	–	30	**30**	20	30	**25**	20	–	–	–	40	**30**	30	30	**30**	20
	3	–	–	–	–	–	–	40	**30**	20	35	**30**	20	–	–	–	50	**40**	30	40	**30**	20
	4	–	–	–	–	–	–	55	**40**	30	45	**35**	25	55	**40**	25	65	**50**	30	50	**40**	25
H	1	–	–	–	–	–	–	95	**70**	55	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness increases, the speed should be decreased.

Dry

Wet

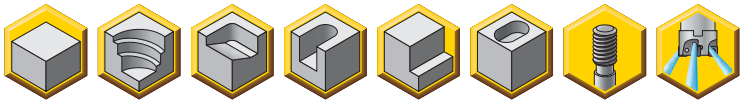


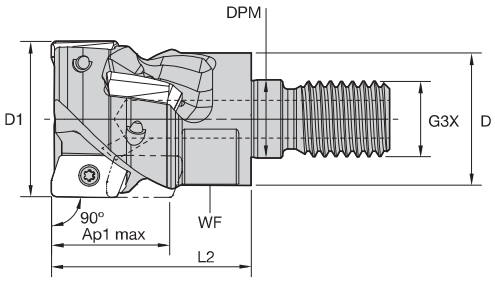
Application Examples

insert style	cutting diameter	max ramp angle to non-cutting corner tangent	max ramp angle to steel body interference	DH min (min hole diameter)	DHI min (min flat-bottomed hole diameter)	max diameter (no flat bottom)
Mill-1, 10mm	12	not recommended	not recommended	not recommended	not recommended	not recommended
Mill-1, 10mm	16	9,7°	12,3°	19,50	28,73	32
Mill-1, 10mm	18	7,6°	9,6°	23,29	32,68	63
Mill-1, 10mm	20	6,2°	8,6°	27,25	36,63	40
Mill-1, 10mm	22	5,2°	7,0°	31,25	40,63	44
Mill-1, 10mm	25	4,2°	5,3°	37,26	46,62	50
Mill-1, 10mm	28	3,5°	4,3°	43,26	52,62	56
Mill-1, 10mm	32	2,8°	3,3°	51,27	60,62	64
Mill-1, 10mm	40	2,0°	2,3°	67,30	76,61	80
Mill-1, 10mm	50	1,5°	1,6°	87,53	96,86	100
Mill-1, 10mm	63	1,2°	1,2°	113,54	122,86	126
Mill-1, 10mm	80	0,9°	0,9°	147,54	156,85	160
Mill-1, 10mm	100	0,7°	0,7°	187,54	196,85	200

NOTE: Max ramp angle decreases as nose radius increases.

- Aggressive ramping rates.
- Generates superior surface finish.
- Mill 90° walls.





Screw-On Helical End Mills

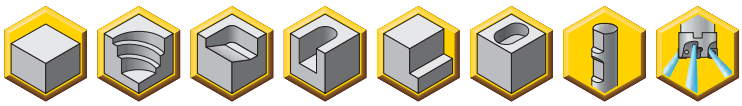
order number	catalogue number	D1	D	DPM	G3X	L2	WF	Ap1 max	Z	Z U	max ramp angle	kg	max RPM
3773811	**M1H25J02R32M12ED10C4**	25	21	12,5	M12	32	17	18,8	4	2	4.0°	0,07	33200

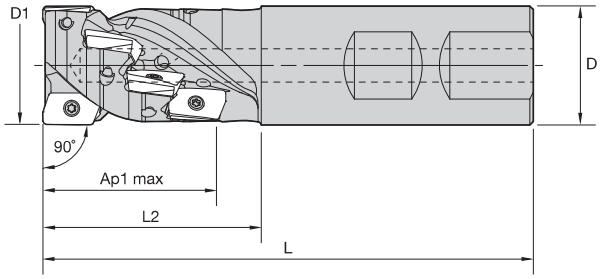
NOTE: Standard milling cutters will accept insert nose radii up to 2mm without modification.

Spare Parts

D1	insert screw	Nm	Torx wrench
25	**MS2205**	1,0	**F7IP**

- Aggressive ramping rates.
- Generates superior surface finish.
- Mill 90° walls.





Weldon Helical End Mills

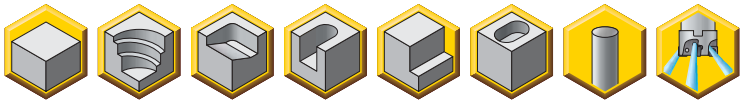
order number	catalogue number	D1	D	L	L2	Ap1 max	Z	Z U	max ramp angle	kg	max RPM
3773119	**M1H25J02R46B25ED10C8**	25	25	103	46	36,4	8	2	4.0°	0,31	33200
3773121	**M1H32J03R54B32ED10C15**	32	32	115	54	44,8	15	3	2.8°	0,53	29300

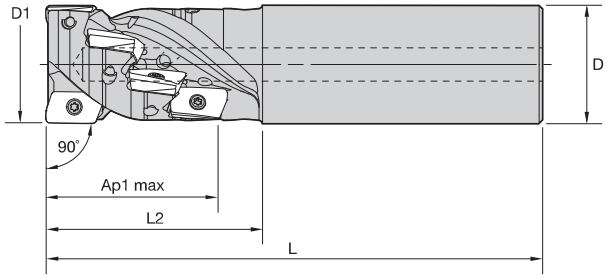
NOTE: Standard milling cutters will accept insert nose radii up to 2mm without modification.

Spare Parts

D1	insert screw	Nm	Torx Plus driver
25	**MS2205**	1,0	**DT7IP**
32	**MS2205**	1,0	**DT7IP**

- Aggressive ramping rates.
- Generates superior surface finish.
- Mill 90° walls.





Cylindrical Helical End Mills

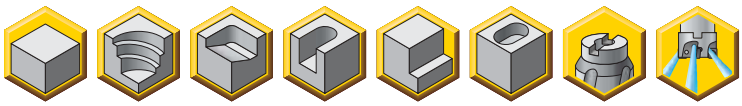
order number	catalogue number	D1	D	L	L2	Ap1 max	Z	Z U	max ramp angle	kg	max RPM
3773805	**M1H32J03R54A32ED10C15**	32	32	115	54	44,8	15	3	2.8°	0,53	29300

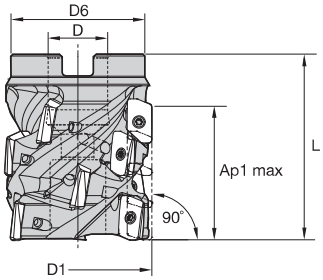
NOTE: Standard milling cutters will accept insert nose radii up to 2mm without modification.

Spare Parts

D1	insert screw	Nm	Torx Plus driver
32	**MS2205**	1,0	**DT7IP**

- Aggressive ramping rates.
- Generates superior surface finish.
- Mill 90° walls.





Helical Shell Mills

order number	catalogue number	D1	D	D6	L	Ap1 max	Z	Z U	max ramp angle	kg	max RPM
3773814	**M1H40T03R50A16ED10C12**	40	16	37	50	35,9	12	3	2.0°	0,27	26200
3773815	**M1H40T05R50A16ED10C20**	40	16	37	50	35,9	20	5	2.0°	0,26	26200
3773817	**M1H50T05R60A22ED10C25**	50	22	44	60	44,3	25	5	1.5°	0,55	23400

NOTE: Standard milling cutters will accept insert nose radii up to 2mm without modification.

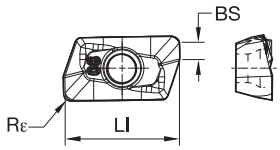
Spare Parts




D1	insert screw	Nm	Torx Plus driver	socket-head cap screw
40	**MS2205**	1,0	**DT7IP**	**MS1340**
50	**MS2205**	1,0	**DT7IP**	**MS1558**

✦✦ first choice with coolant
✧✧ first choice without coolant
✦ alternate choice with coolant
✧ alternate choice without coolant

P1–P2				✧/✦	✦✦	✧✧		
P3–P4				✧/✦	✦✦	✧	✧✧	
P5–P6				✧/✦	✦✦	✧	✧✧	
M1–M2				✧/✦	✦		✦	✦✦
M3				✧/✦	✦			✦✦
K1–K2			✦✦/✧✧			✧		
K3			✦✦			✧✧		
N1	✦✦	✦						
N2	✦✦	✦						
S1					✦			✦✦
S2					✦			✦✦
S3				✦	✦			✦✦
S4				✦	✦			✦✦



ISO catalogue number	LI	BS	Rε	KC410M	KC422M	KC520M	KC522M	KC725M	KCPK30	KCPM40	KCSM40
Light Machining											
EDCT10T302PDERLD	12,04	2,29	0,2	–	–	–	–	3959611	–	–	–
EDCT10T302PDFRLDJ	12,05	2,29	0,2	3684779	–	–	–	–	–	–	–
EDCT10T304PDERLD	12,05	1,98	0,4	–	–	3682452	3682513	3682514	–	–	–
EDCT10T304PDFRLDJ	12,05	1,98	0,4	3682450	–	–	–	–	–	–	–
EDCT10T308PDERLD	12,05	1,70	0,8	–	–	3649189	3649190	3649191	3649192	–	6176096
EDCT10T308PDFRLDJ	12,05	1,70	0,8	3649187	–	–	–	–	–	–	–
EDCT10T312PDERLD	12,06	1,30	1,2	–	–	–	–	3682655	–	–	6176097
EDCT10T316PDERLD	12,06	0,90	1,6	–	–	–	–	3682781	3682782	–	6176098
EDCT10T320PDERLD	12,06	0,49	2,0	–	–	–	–	3766023	–	–	–
EDCT10T324PDERLD	12,06	0,11	2,4	–	–	–	–	–	–	–	6176099
EDCT10T331PDERLD	11,52	–	3,1	–	–	–	–	–	–	–	6176100
General Machining											
EDCT10T304PDERLDJ	12,05	1,98	0,4	–	3682451	–	–	–	–	–	–
EDCT10T308PDERLDJ	12,05	1,70	0,8	–	3649188	–	–	–	–	–	–
EDCT10T316PDERLDJ	12,06	0,90	1,6	–	3682778	–	–	–	–	–	–
EDCT10T320PDERLDJ	12,06	0,49	2,0	–	3765831	–	–	–	–	–	–
EDCT10T324PDERLDJ	12,06	0,11	2,4	–	3766027	–	–	–	–	–	–
EDPT10T304PDERHD	12,05	2,07	0,4	–	–	3753592	–	3641741	–	5545215	–
EDPT10T308PDERHD	12,05	1,70	0,8	–	–	3753593	3641712	3641734	3641736	–	6175756
EDPT10T308PDERHD	12,05	1,69	0,8	–	–	–	–	–	–	5545214	–
EDPT10T310PDERHD	12,05	1,49	1,0	–	–	–	–	3747114	–	–	–
EDPT10T312PDERHD	12,06	1,30	1,2	–	–	3753594	–	3642029	–	6127887	6175757
EDPT10T316PDERHD	12,06	0,90	1,6	–	–	–	–	3642094	3642096	6127888	6175758
EDPT10T320PDERHD	12,06	0,49	2,0	–	–	–	–	3642097	–	6127889	6175759
EDPT10T324PDERHD	12,06	0,11	2,4	–	–	–	–	3642102	–	–	6175760
EDPT10T331PDERHD	11,52	–	3,1	–	–	–	–	3642137	–	–	6176091
Heavy Machining											
EDPT10T304PDSRGD	12,05	2,07	0,4	–	–	–	–	3642141	–	–	–
EDPT10T308PDSRGD	12,05	1,70	0,8	–	–	3753386	–	3642170	3642172	5545216	–
EDPT10T308PDSRGE	12,05	1,70	0,8	–	–	–	3775016	–	–	–	–
EDPT10T312PDSRGD	12,06	1,30	1,2	–	–	3753387	–	3642193	–	–	–
EDPT10T316PDSRGD	12,06	0,90	1,6	–	–	–	–	3642196	3642198	–	–

Recommended Starting Feeds [mm]

Light Machining	General Purpose	Heavy Machining

Insert Geometry	Recommended Starting Feed per Tooth (Fz) in Relation to % of Radial Engagement (ae)															Insert Geometry
	5%			10%			20%			30%			40–100%			
.F..LDJ	0,12	**0,35**	0,58	0,08	**0,25**	0,42	0,06	**0,19**	0,31	0,06	**0,16**	0,27	0,05	**0,15**	0,25	.F..LDJ
.F..-PCD	0,12	**0,35**	0,58	0,08	**0,25**	0,42	0,06	**0,19**	0,31	0,06	**0,16**	0,27	0,05	**0,15**	0,25	.F..-PCD
.E..LDJ	0,12	**0,35**	0,58	0,08	**0,25**	0,42	0,06	**0,19**	0,32	0,06	**0,16**	0,28	0,05	**0,15**	0,25	.E..LDJ
.E..LD	0,12	**0,35**	0,57	0,09	**0,25**	0,41	0,07	**0,19**	0,31	0,06	**0,17**	0,27	0,05	**0,15**	0,25	.E..LD
.S..GE	0,23	**0,46**	0,70	0,17	**0,33**	0,51	0,13	**0,25**	0,38	0,11	**0,22**	0,33	0,10	**0,20**	0,30	.S..GE
.S..GD	0,23	**0,47**	0,71	0,17	**0,34**	0,51	0,13	**0,25**	0,38	0,11	**0,22**	0,33	0,10	**0,20**	0,30	.S..GD
.E..HD	0,23	**0,51**	0,82	0,17	**0,37**	0,59	0,13	**0,28**	0,44	0,11	**0,24**	0,38	0,10	**0,22**	0,35	.E..HD

EDC...: Ground inserts; high versatility for all finishing applications and difficult-to-machine stainless steels and high-temp alloys.
EDP...: Pressed; lower cost per edge for most roughing to semi-finishing operations.

.F.LDJ: Sharp cutting edge for aluminium and other non-ferrous alloys.
.E.LDJ: For aluminium and other non-ferrous alloys.
.E.LD: Finishing and high-precision applications.
.E.HD: Medium roughing and semi-finishing.
.S.GE: Medium roughing and semi-finishing. Also suitable for austenitic stainless steel and super alloys.
.S.GD: Strongest cutting edge for heavy roughing applications with high feed rates in all material groups.

Recommended Starting Speeds for Dry Machining (m/min)

Material Group		KC520M			KC522M			KC725M			KCPK30			KCPM40			KCSM40		
P	1	–	–	–	330	**285**	270	260	**230**	215	455	**395**	370	295	**260**	245	260	**230**	215
	2	–	–	–	275	**240**	200	220	**190**	160	280	**255**	230	250	**215**	180	220	**190**	160
	3	–	–	–	255	**215**	175	200	**170**	140	255	**230**	205	230	**195**	160	200	**170**	140
	4	–	–	–	225	**185**	150	180	**150**	120	190	**175**	160	205	**170**	135	180	**150**	120
	5	–	–	–	185	**170**	150	150	**135**	120	260	**230**	210	170	**155**	135	150	**135**	120
	6	–	–	–	165	**125**	100	130	**100**	80	160	**135**	125	150	**115**	90	130	**100**	80
M	1	–	–	–	205	**180**	165	170	**150**	135	205	**185**	155	195	**170**	155	170	**150**	135
	2	–	–	–	185	**160**	130	155	**130**	110	185	**160**	140	175	**150**	125	155	**130**	110
	3	–	–	–	140	**120**	95	115	**100**	80	145	**130**	115	130	**115**	90	115	**100**	80
K	1	270	**245**	215	230	**205**	185	–	–	–	295	**265**	240	–	–	–	–	–	–
	2	210	**190**	175	180	**160**	150	–	–	–	235	**210**	190	–	–	–	–	–	–
	3	175	**160**	145	150	**135**	120	–	–	–	195	**175**	160	–	–	–	–	–	–
N	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
H	1	–	–	–	120	**90**	70	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness increases, the speed should be decreased.

Dry

Wet

Material Group		KC410M/KC422M			KC520M			KC522M			KC725M			KCPK30			KCPM40			KCSM40		
P	1	–	–	–	–	–	–	265	**230**	215	210	**185**	170	365	**315**	295	285	**250**	235	–	–	–
	2	–	–	–	–	–	–	220	**190**	160	175	**150**	130	225	**205**	185	240	**210**	170	–	–	–
	3	–	–	–	–	–	–	205	**170**	140	160	**135**	110	205	**185**	165	220	**190**	150	–	–	–
	4	–	–	–	–	–	–	180	**150**	120	145	**120**	95	150	**140**	130	195	**165**	130	–	–	–
	5	–	–	–	–	–	–	150	**135**	120	120	**110**	95	210	**185**	170	165	**150**	130	135	**115**	95
	6	–	–	–	–	–	–	130	**100**	80	105	**80**	65	130	**110**	100	145	**110**	90	120	**90**	65
M	1	–	–	–	–	–	–	165	**145**	130	135	**120**	110	165	**150**	125	190	**165**	150	170	**135**	110
	2	–	–	–	–	–	–	150	**130**	105	125	**105**	90	150	**130**	110	170	**145**	120	145	**115**	95
	3	–	–	–	–	–	–	110	**95**	75	90	**80**	65	115	**105**	90	125	**110**	90	115	**90**	70
K	1	–	–	–	215	**195**	170	185	**165**	150	–	–	–	235	**210**	190	–	–	–	–	–	–
	2	–	–	–	170	**150**	140	145	**130**	120	–	–	–	190	**170**	150	–	–	–	–	–	–
	3	–	–	–	140	**130**	115	120	**110**	95	–	–	–	155	**140**	130	–	–	–	–	–	–
N	1	1170	**1035**	840	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	2	1035	**955**	730	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3	1035	**955**	730	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	30	**30**	20	30	**25**	20	–	–	–	40	**30**	30	30	**30**	20
	2	–	–	–	–	–	–	30	**30**	20	30	**25**	20	–	–	–	40	**30**	30	30	**30**	20
	3	–	–	–	–	–	–	40	**30**	20	35	**30**	20	–	–	–	50	**40**	30	40	**30**	20
	4	–	–	–	–	–	–	55	**40**	30	45	**35**	25	55	**40**	25	65	**50**	30	50	**40**	25
H	1	–	–	–	–	–	–	95	**70**	55	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness increases, the speed should be decreased.

Dry

Wet

Mill 1-14™

Primary Application

The Mill 1-14 series is a versatile, functional cutter system for a range of cutting tasks. Mill 1-14 cutters can be used for profiling, slotting, ramping, helical interpolation, circular interpolation, and other milling applications. It's a single tool with multi-functional benefits. Mill 1-14 inserts are specially designed to add cutting versatility. Innovative micro-geometry features contribute greatly to enhanced performance, various rake angles, negative T-land, and small hone. Results include significantly reduced cycle times and lower cutting forces. Test results in producing 90º walls have proven excellent with the GD2 geometry.

Features and Benefits

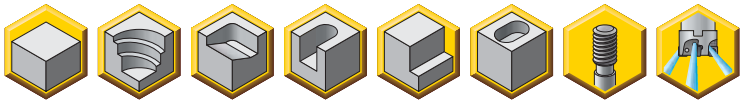
Features

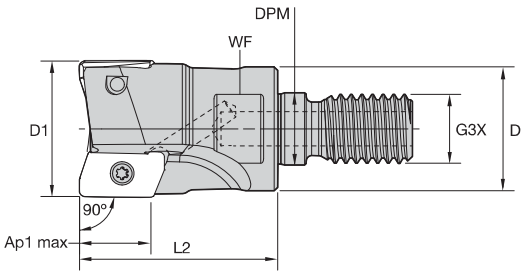
- Insert geometries and grades for most workpiece materials.
- Insert radii from 0,4mm up to 4mm.
- Axial depth of cut up to 14mm.
- Beyond™ grade technology.

Benefits

- Easy cutting action, even on entry and exiting the workpiece.
- Polished geometry for aluminium machining.
- Slotting, profiling, ramping, helical interpolation, and plunging.

- Aggressive ramping rates.
- Generates superior surface finish.
- Mill 90° walls.
- High RPM capabilities.





Screw-On End Mills

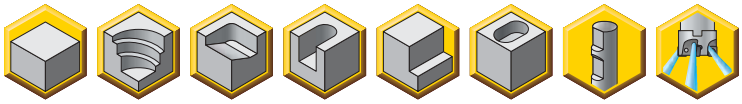
order number	catalogue number	D1	D	DPM	G3X	L2	WF	Ap1 max	Z	max ramp angle	kg	max RPM
2968370	**20A02R035M10SED14**	20	18	10,5	M10	35	15	14,6	2	16.6°	0,05	47500
2968371	**25A02R035M12SED14**	25	21	12,5	M12	35	17	14,5	2	10.5°	0,08	39700
3345679	**25A03R035M12SED14**	25	21	12,5	M12	35	17	14,5	3	10.5°	0,08	39700
2968372	**32A03R040M16SED14**	32	29	17,0	M16	40	22	14,4	3	6.8°	0,17	33300
3345680	**32A04R040M16SED14**	32	29	17,0	M16	40	22	14,4	4	6.8°	0,18	33300
2968373	**40A04R040M16SED14**	40	29	17,0	M16	40	22	14,3	4	4.8°	0,23	28700

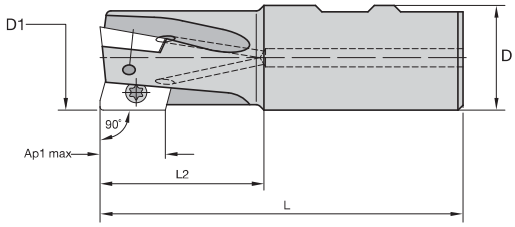
NOTE: Standard milling cutters will accept insert nose radii up to 2mm without modification.

Spare Parts

D1	 insert screw	 Nm	 Torx Plus driver
20	**MS2167**	2,3	**DT9IP**
25	**MS2166**	2,3	**DT9IP**
32	**MS2166**	2,3	**DT9IP**
40	**MS2166**	2,3	**DT9IP**

- Aggressive ramping rates.
- Generates superior surface finish.
- Mill 90° walls.
- High RPM capabilities.





Weldon End Mills

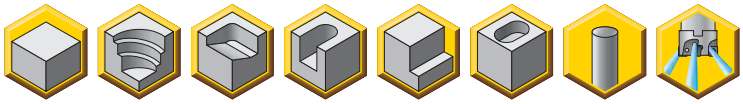
order number	catalogue number	D1	D	L	L2	Ap1 max	Z	max ramp angle	kg	max RPM
2622232	**20A02R039B20SED14**	20	20	90	39	14,7	2	16.6°	0,17	47500
2623937	**25A02R044B25SED14**	25	25	101	44	14,6	2	10.7°	0,31	39700
2478640	**25A03R044B25SED14**	25	25	101	44	14,6	3	10.5°	0,30	39700
2623938	**32A03R050B32SED14**	32	32	111	50	14,5	3	6.8°	0,55	33300
2478642	**32A04R050B32SED14**	32	32	111	50	14,5	4	6.8°	0,56	33300
2623939	**40A04R050B32SED14**	40	32	111	50	14,3	4	4.8°	0,71	28700

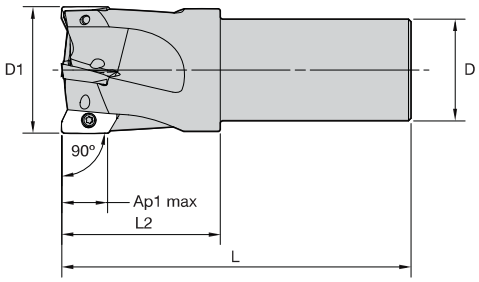
NOTE: Standard milling cutters will accept insert nose radii up to 2mm without modification.

Spare Parts

D1	 insert screw	 Nm	 Torx Plus driver
20	**MS2167**	2,3	**DT9IP**
25	**MS2166**	2,3	**DT9IP**
32	**MS2166**	2,3	**DT9IP**
40	**MS2166**	2,3	**DT9IP**

- Aggressive ramping rates.
- Generates superior surface finish.
- Mill 90° walls.
- High RPM capabilities.





Cylindrical End Mills

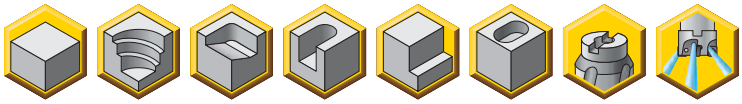
order number	catalogue number	D1	D	L	L2	Ap1 max	Z	max ramp angle	kg	max RPM
3345674	**20A02R039A20SED14**	20	20	90	39	14,7	2	16.6°	0,17	47500
2968363	**20A02R050A20SED14-170**	20	20	170	50	14,7	2	16.6°	0,34	47500
3345675	**25A02R044A25SED14**	25	25	100	44	14,6	2	10.5°	0,31	39700
2968367	**25A02R050A25SED14-170**	25	25	170	50	14,6	2	10.5°	0,56	39700
3345676	**25A03R044A25SED14**	25	25	100	44	14,6	3	10.5°	0,31	39700
2968364	**25A03R050A25SED14-170**	25	25	170	50	14,6	3	10.5°	0,56	39700
3345677	**32A03R050A25SED14**	32	25	107	50	14,6	3	6.8°	0,39	33300
3345678	**32A04R050A25SED14**	32	25	107	50	14,6	4	6.8°	0,41	33300
3348765	**32A03R050A32SED14**	32	32	110	50	14,5	3	6.8°	0,55	33300
2968368	**32A03R050A32SED14-200**	32	32	200	50	14,6	3	6.8°	1,10	33300
3348766	**32A04R050A32SED14**	32	32	110	50	14,5	4	6.8°	0,56	33300
2968365	**32A04R050A32SED14-200**	32	32	200	50	14,6	4	6.8°	1,11	33300
3348767	**40A04R050A32SED14**	40	32	110	50	14,5	4	4.8°	0,71	28700
2968369	**40A04R050A32SED14-200**	40	32	200	50	14,4	4	4.8°	1,26	28700
2968366	**40A05R050A32SED14-200**	40	32	200	50	14,4	5	4.8°	1,25	28700

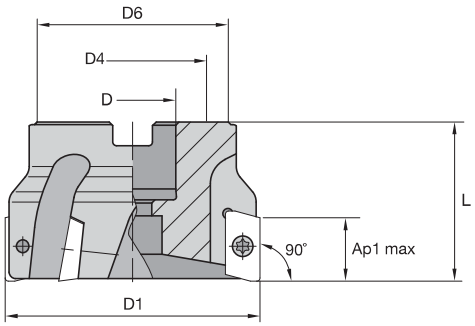
NOTE: Standard milling cutters will accept insert nose radii up to 2mm without modification.

Spare Parts

D1	 insert screw	 Nm	 Torx Plus driver
20	**MS2167**	2,3	**DT9IP**
25	**MS2166**	2,3	**DT9IP**
32	**MS2166**	2,3	**DT9IP**
40	**MS2166**	2,3	**DT9IP**

- Aggressive ramping rates.
- Generates superior surface finish.
- Mill 90° walls.
- High RPM capabilities.





Shell Mills

order number	catalogue number	D1	D	D4	D6	L	Ap1 max	Z	max ramp angle	kg	max RPM
2623940	**40A04RS90ED14D**	40	16	–	37	40	14,3	4	4.8°	0,21	28700
2623934	**40A05RS90ED14D**	40	16	–	37	40	14,3	5	4.8°	0,21	28700
2623941	**50A05RS90ED14D**	50	22	–	45	40	14,0	5	3.5°	0,30	25000
2478686	**50A06RS90ED14D**	50	22	–	45	40	14,0	6	3.5°	0,29	25000
2623942	**63A06RS90ED14D**	63	22	–	50	40	14,0	6	2.5°	0,49	21800
2478689	**63A07RS90ED14D**	63	22	–	50	40	14,0	7	2.5°	0,48	21800
2623963	**80A07RS90ED14D**	80	27	–	60	50	14,0	7	1.9°	1,00	19000
2478690	**80A09RS90ED14D**	80	27	–	60	50	14,0	9	1.9°	1,00	19000
2623964	**100A08RS90ED14D**	100	32	–	80	50	14,2	8	1.5°	1,80	16800
2623935	**100A10RS90ED14D**	100	32	–	80	50	14,2	10	1.5°	1,81	16800
2510390	**125B09RS90ED14D**	125	40	–	90	63	14,1	9	1.2°	2,64	14900
2623936	**125B12RS90ED14D**	125	40	–	90	63	14,1	12	1.2°	2,66	14900
2623965	**160C11RS90ED14D**	160	40	66,7	100	63	14,1	11	.9°	3,64	13100

NOTE: Standard milling cutters will accept insert nose radii up to 2mm without modification.

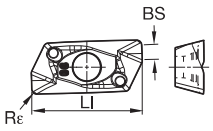
Spare Parts

D1	insert screw	Nm	Torx Plus driver	mounting screw	lock screw	coolant shower plate
40	**MS2166**	2,3	**DT9IP**	**MS1294**	–	–
50	**MS2166**	2,3	**DT9IP**	–	–	–
63	**MS2166**	2,3	**DT9IP**	–	–	–
80	**MS2166**	2,3	**DT9IP**	**MS2038**	–	–
100	**MS2166**	2,3	**DT9IP**	**MS1559**	–	–
125	**MS2166**	2,3	**DT9IP**	–	**420.200**	**470.232**
160	**MS2166**	2,3	**DT9IP**	–	**420.200**	**470.233**

NOTE: Coolant lock screw assembly and coolant cap must be ordered separately.

✦✦ first choice with coolant
✧✧ first choice without coolant
✦ alternate choice with coolant
✧ alternate choice without coolant

P1–P2				✦✦	✧✧		
P3–P4				✦✦	✧	✧✧	
P5–P6				✦✦	✧	✧✧	
M1–M2				✦		✦	✦✦
M3				✦			✦✦
K1–K2			✦✦/✧✧		✧		
K3			✦✦		✧✧		
N1	✦✦	✦					
N2	✦✦	✦					
S1				✦			✦✦
S2				✦			✦✦
S3				✦			✦✦
S4				✦			✦✦



	ISO catalogue number	LI	BS	Rε	KC410M	KC422M	KC520M	KC725M	KCPK30	KCPM40	KCSM40
	Light Machining										
	EDCT140402PDFRLDJ	17,46	3,14	0,2	3273589	–	–	–	–	–	–
	EDCT140404PDERGD	17,46	2,95	0,4	–	–	–	2983890	–	5545068	–
	EDCT140404PDFRLDJ	17,46	2,95	0,4	2984054	–	–	–	–	–	–
	EDCT140408PDERGD	17,47	2,56	0,8	–	–	–	2983331	–	5545067	6171518
	EDCT140408PDFRLDJ	17,47	2,56	0,8	2983279	–	–	–	–	–	–
	EDCT140412PDERGD	17,48	2,17	1,2	–	–	–	2984210	–	–	6171519
	EDCT140416PDERGD	17,49	1,77	1,6	–	–	–	2984773	–	–	6171520
	EDCT140431PDERGD	17,50	0,26	3,1	–	–	–	2983891	–	–	6171591
	General Machining										
	EDCT140404PDERLDJ	17,46	2,95	0,4	–	3324993	–	–	–	–	–
	EDPT140404PDERHD	17,46	2,95	0,4	–	–	3051866	3051863	–	–	–
	EDPT140404PDERHD	17,47	2,95	0,4	–	–	–	–	–	6128132	–
	EDCT140408PDERLDJ	17,47	2,56	0,8	–	3324994	–	–	–	–	–
	EDPT140408PDERHD	17,47	2,56	0,8	–	–	3033727	3033729	3033731	5545160	6172122
	EDPT140412PDERHD	17,48	2,16	1,2	–	–	3032732	3033724	–	–	6172123
	EDPT140412PDERHD	17,48	2,17	1,2	–	–	–	–	–	5545069	–
	EDPT140416PDERHD	17,49	1,77	1,6	–	–	–	3033752	3033954	6128134	6172124
	EDPT140420PDERHD	17,49	1,37	2,0	–	–	–	3051245	–	–	6172125
	EDCT140424PDERLDJ	17,50	0,99	2,4	–	3324726	–	–	–	–	–
	EDPT140424PDERHD	17,50	0,99	2,4	–	–	–	3051550	–	6128136	6172126
	EDPT140431PDERHD	17,51	0,26	3,1	–	–	–	3051248	–	–	6172127
	EDPT140440PDERHD	16,53	–	4,0	–	–	–	3051251	–	–	6172128
	Heavy Machining										
	EDPT140408PDSRGD	17,47	2,55	0,8	–	–	2980530	2981644	2980531	6128133	6172129
	EDPT140412PDSRGD	17,47	2,17	1,2	–	–	–	–	–	5545066	–
	EDPT140412PDSRGD	17,48	2,17	1,2	–	–	2980527	2980568	–	–	6172130
	EDPT140416PDSRGD	17,49	1,77	1,6	–	–	–	2982077	2982091	6128135	6172191

Recommended Starting Feeds [mm]

Light Machining	General Purpose	Heavy Machining

Insert Geometry	Recommended Starting Feed per Tooth (Fz) in Relation to % of Radial Engagement (ae)															Insert Geometry
	5%			10%			20%			30%			40–100%			
.F..LDJ	0,12	**0,46**	0,82	0,08	**0,33**	0,59	0,06	**0,25**	0,44	0,06	**0,22**	0,38	0,05	**0,20**	0,35	.F..LDJ
.E..LDJ	0,12	**0,47**	0,82	0,08	**0,34**	0,59	0,06	**0,26**	0,44	0,06	**0,22**	0,39	0,05	**0,20**	0,35	.E..LDJ
.E..LD	0,12	**0,46**	0,81	0,09	**0,33**	0,58	0,07	**0,25**	0,43	0,06	**0,22**	0,38	0,05	**0,20**	0,35	.E..LD
.E..GD	0,17	**0,52**	0,89	0,12	**0,38**	0,64	0,09	**0,28**	0,48	0,08	**0,24**	0,42	0,07	**0,22**	0,38	.E..GD
.S..GE	0,23	**0,51**	0,89	0,17	**0,37**	0,64	0,13	**0,27**	0,48	0,11	**0,24**	0,42	0,10	**0,22**	0,38	.S..GE
.S..GD	0,23	**0,50**	0,88	0,17	**0,36**	0,63	0,13	**0,27**	0,47	0,11	**0,24**	0,41	0,10	**0,22**	0,38	.S..GD
.S..GD2	0,23	**0,50**	0,88	0,17	**0,36**	0,63	0,13	**0,27**	0,47	0,11	**0,24**	0,41	0,10	**0,22**	0,38	.S..GD2
.E..HD	0,23	**0,59**	0,95	0,17	**0,43**	0,68	0,13	**0,32**	0,51	0,11	**0,28**	0,44	0,10	**0,25**	0,41	.E..HD
.E..HD2	0,21	**0,59**	0,95	0,15	**0,43**	0,68	0,11	**0,32**	0,51	0,10	**0,28**	0,44	0,09	**0,25**	0,41	.E..HD2

EDC...: Ground inserts; high versatility for all finishing applications and difficult-to-machine stainless steels and high-temp alloys.
EDP...: Pressed; lower cost per edge for most roughing to semi-finishing operations.

.F.LDJ: Sharp cutting edge for aluminium and other non-ferrous alloys.
.E.LDJ: For aluminium and other non-ferrous alloys.
.E.GD: Finishing and high-precision applications.
.E.HD: Medium roughing and semi-finishing.
.S.GD: Strongest cutting edge for heavy roughing applications with high feed rates in all material groups.

Material Group		KC520M			KC725M			KCPK30			KCPM40			KCSM40		
P	1	–	**–**	–	260	**230**	215	455	**395**	370	295	**260**	245	260	**230**	215
	2	–	**–**	–	220	**190**	160	280	**255**	230	250	**215**	180	220	**190**	160
	3	–	**–**	–	200	**170**	140	255	**230**	205	230	**195**	160	200	**170**	140
	4	–	**–**	–	180	**150**	120	190	**175**	160	205	**170**	135	180	**150**	120
	5	–	**–**	–	150	**135**	120	260	**230**	210	170	**155**	135	150	**135**	120
	6	–	**–**	–	130	**100**	80	160	**135**	125	150	**115**	90	130	**100**	80
M	1	–	**–**	–	170	**150**	135	205	**185**	155	195	**170**	155	170	**150**	135
	2	–	**–**	–	155	**130**	110	185	**160**	140	175	**150**	125	155	**130**	110
	3	–	**–**	–	115	**100**	80	145	**130**	115	130	**115**	90	115	**100**	80
K	1	270	**245**	215	–	**–**	–	295	**265**	240	–	**–**	–	–	**–**	–
	2	210	**190**	175	–	**–**	–	235	**210**	190	–	**–**	–	–	**–**	–
	3	175	**160**	145	–	**–**	–	195	**175**	160	–	**–**	–	–	**–**	–
N	1	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–
	2	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–
	3	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–
S	1	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–
	2	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–
	3	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–
	4	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–
H	1	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–
	2	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–
	3	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–

NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness increases, the speed should be decreased.

Dry

Wet

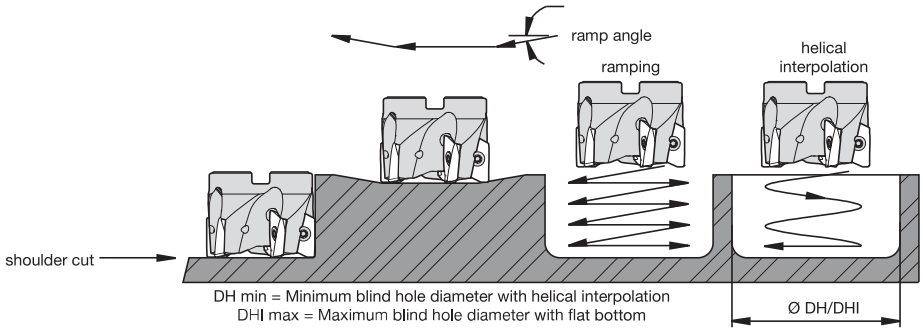
Material Group		KC410M/KC422M			KC520M			KC725M			KCPK30			KCPM40			KCSM40		
P	1	–	–	–	–	–	–	210	**185**	170	365	**315**	295	285	**250**	235	–	–	–
	2	–	–	–	–	–	–	175	**150**	130	225	**205**	185	240	**210**	170	–	–	–
	3	–	–	–	–	–	–	160	**135**	110	205	**185**	165	220	**190**	150	–	–	–
	4	–	–	–	–	–	–	145	**120**	95	150	**140**	130	195	**165**	130	–	–	–
	5	–	–	–	–	–	–	120	**110**	95	210	**185**	170	165	**150**	130	135	**115**	95
	6	–	–	–	–	–	–	105	**80**	65	130	**110**	100	145	**110**	90	120	**90**	65
M	1	–	–	–	–	–	–	135	**120**	110	165	**150**	125	190	**165**	150	170	**135**	110
	2	–	–	–	–	–	–	125	**105**	90	150	**130**	110	170	**145**	120	145	**115**	95
	3	–	–	–	–	–	–	90	**80**	65	115	**105**	90	125	**110**	90	115	**90**	70
K	1	–	–	–	215	**195**	170	–	–	–	235	**210**	190	–	–	–	–	–	–
	2	–	–	–	170	**150**	140	–	–	–	190	**170**	150	–	–	–	–	–	–
	3	–	–	–	140	**130**	115	–	–	–	155	**140**	130	–	–	–	–	–	–
N	1	1170	**1035**	840	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	2	1035	**955**	730	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3	1035	**955**	730	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	30	**25**	20	–	–	–	40	**30**	30	30	**30**	20
	2	–	–	–	–	–	–	30	**25**	20	–	–	–	40	**30**	30	30	**30**	20
	3	–	–	–	–	–	–	35	**30**	20	–	–	–	50	**40**	30	40	**30**	20
	4	–	–	–	–	–	–	45	**35**	25	55	**40**	25	65	**50**	30	50	**40**	25
H	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness increases, the speed should be decreased.

Dry

Wet

Application Examples



insert style	cutting diameter	max ramp angle	DH min (min hole diameter)	DHI min (min flat-bottomed hole diameter)	max diameter
Mill 1-14	20	16°	23,74	35,62	40
Mill 1-14	25	11°	33,75	44,44	50
Mill 1-14	32	7°	47,80	59,79	64
Mill 1-14	40	5°	63,76	75,22	80
Mill 1-14	50	4°	83,96	96,05	100
Mill 1-14	63	3°	109,93	121,47	126
Mill 1-14	80	2°	143,91	155,47	160
Mill 1-14	100	1°	183,89	199,47	200
Mill 1-14	125	1°	233,88	245,47	250
Mill 1-14	160	1°	303,88	315,47	320

NOTE: Max ramp angle decreases as nose radius increases.

Mill 1-14™

Helical Cutters

Primary Application

Mill 1-14 helical cutters will increase axial depth of cut. Designed with axial support pins for added stability, the Mill 1-14 helical cutters feature essential Load-Optimised Insert Spacing™ (LOIS) technology. LOIS dramatically minimises unwanted vibrations and fluctuations in power requirements, resulting in a much smoother-sounding cut. Up to nine different coolant nozzle diameters enable tailoring to suit each machine tool, providing remarkably consistent, focused coolant flow.

Features and Benefits

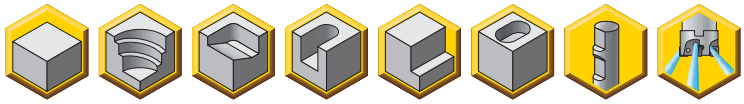
Functions

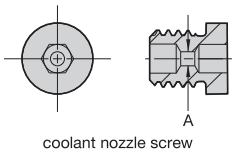
- Improves axial depth of cut better than standard end mills due to the positioning of inserts in helical configuration.
- Up to nine different coolant nozzle diameters tailored to suit each machine tool.
- One tool that offers features common to end mills, but rarely seen on a helical cutter: Helical ramping from solid, slotting, contouring, ramping, and plunging.

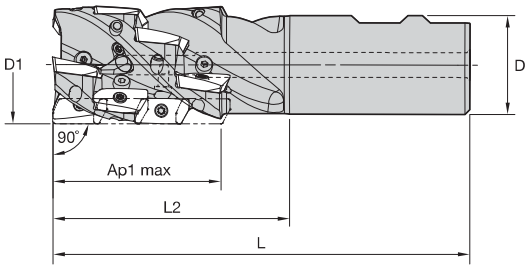
Benefits

- Increases depth of cut.
- Consistent, focused coolant flow.
- Built for performance, accuracy, and versatility.

- Aggressive ramping rates.
- Generates superior surface finish.
- Mill 90° walls.
- Axial support pins.
- Unique coolant nozzles.







Helical Weldon End Mills • Slot and Profile

order number	catalogue number	D1	D	L	L2	Ap1 max	Z	Z U	max ramp angle	kg	max RPM
3742932	M1H32J2R50B32S90ED14C4	32	32	111	50	27,8	4	2	6.8°	0,52	31100
3743033	M1H40J3R50B32S90ED14C6	40	32	111	50	27,5	6	3	4.8°	0,59	28400
3743034	M1H40J3R65B32S90ED14C9	40	32	126	65	40,8	9	3	4.8°	0,66	28400
3743035	M1H40J3R80B32S90ED14C12	40	32	141	80	54,0	12	3	4.8°	0,73	28400
5085631	M1H40J4R80B32S90ED14C12	40	32	141	80	40,8	12	4	4.8°	0,75	28400
3743038	M1H50J3R80B40S90ED14C12	50	40	151	80	53,5	12	3	3.5°	1,30	24600

NOTE: Standard milling cutters will accept insert nose radii up to 2mm without modification.

Spare Parts

D1	insert screw	Nm	Torx Plus driver	pin	coolant nozzle screw
32	MS2148	2,3	DT9IP	ASPM07001802	MS2191C20
40	MS2148	2,3	DT9IP	ASPM07001802	MS2191C20
50	MS2148	2,3	DT9IP	ASPM07001802	MS2191C20

Helical Weldon Mills • Profile Only

order number	catalogue number	D1	D	L	Ap1 max	Z	Z U	max ramp angle	kg	max RPM
5085631	M1H40J4R80B32S90ED14C12	40	32	141	40,8	12	4	4.8°	0,75	28400

Spare Parts

D1	insert screw	Nm	Torx Plus driver	pin	coolant nozzle screw
40	MS2148	2,3	DT9IP	ASPM07001802	MS2191C20

Optional Coolant Nozzle Screw

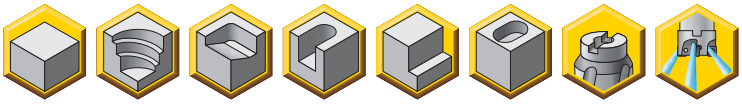
order number	catalogue number	A
3400611	MS2191C00	–
3400612	MS2191C06	0,6
3400613	MS2191C08	0,8
3400614	MS2191C10	1,0
3400616	MS2191C12	1,2
3400617	MS2191C14	1,4
3400618	MS2191C16	1,6
3400619	MS2191C18	1,8
3400620	MS2191C20	2,0

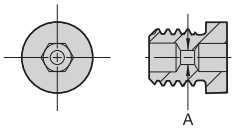
Coolant Nozzle Key

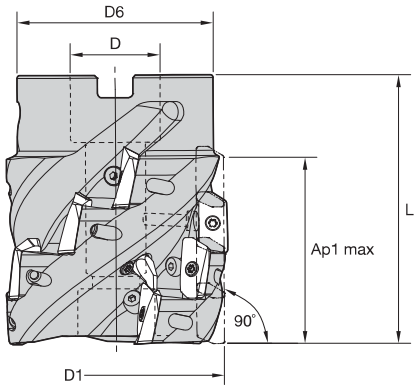
order number	catalogue number	drive size
1993552	THW2M	2 MM

NOTE: Check the spare parts table for the coolant hole size that is incorporated in the cutters.
If you need an alternative, there are eight other variants to choose from to increase or decrease the pressure.
Example: MS2191C12 is a 1,20mm hole. All coolant nozzles are interchangeable with the original that is supplied with the cutter.
This gives flexibility with coolant flow.

- Aggressive ramping rates.
- Generates superior surface finish.
- Mill 90° walls.
- Axial support pins.
- Unique coolant nozzles.







Helical Shell Mills • Slot and Profile

order number	catalogue number	D1	D	D6	L	Ap1 max	Z	Z U	max ramp angle	kg	max RPM
3743036	M1H50T3R50A22S90ED14C6	50	22	46	50	27,3	6	3	3.5°	0,43	24600
3743037	M1H50T3R65A22S90ED14C9	50	22	46	65	40,4	9	3	3.5°	0,57	24600
3743042	M1H63T3R75A27S90ED14C12	63	27	60	75	52,8	12	3	2.5°	1,16	22000
3743041	M1H63T4R65A27S90ED14C12	63	27	60	65	39,9	12	4	2.5°	0,97	22000

NOTE: Standard milling cutters will accept insert nose radii up to 2mm without modification.

Spare Parts

order number	D1	insert screw	Nm	Torx Plus driver	pin	socket-head cap screw	coolant nozzle screw
3743036	50	MS2148	2,3	DT9IP	ASPM07001802	MS1235	MS2191C20
3743037	50	MS2148	2,3	DT9IP	ASPM07001802	MS1233	MS2191C16
3743042	63	MS2148	2,3	DT9IP	ASPM07001802	MS1433	MS2191C16
3743041	63	MS2148	2,3	DT9IP	ASPM07001802	MS1238	MS2191C16

Helical Shell Mills • Profile Only

order number	catalogue number	D1	D	D6	L	Ap1 max	Z	Z U	max ramp angle	kg	max RPM
3831819	M1H63T5R75A27S90ED14C20	63	27	60	75	52,8	20	5	2.0°	1,06	22000

NOTE: Standard milling cutters will accept insert nose radii up to 2mm without modification.

Spare Parts

D1	insert screw	Nm	Torx Plus driver	pin	socket-head cap screw	coolant nozzle screw
63	MS2148	2,3	DT9IP	ASPM07001802	MS1433	MS2191C12

Optional Coolant Nozzle Screw

order number	catalogue number	A
3400611	MS2191C00	–
3400612	MS2191C06	0,6
3400613	MS2191C08	0,8
3400614	MS2191C10	1,0
3400616	MS2191C12	1,2
3400617	MS2191C14	1,4
3400618	MS2191C16	1,6
3400619	MS2191C18	1,8
3400620	MS2191C20	2,0

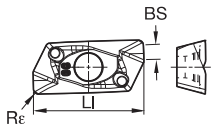
Coolant Nozzle Key

order number	catalogue number	drive size
1993552	THW2M	2 MM

NOTE: Check the spare parts table for the coolant hole size that is incorporated in the cutters.
If you need an alternative, there are eight other variants to choose from to increase or decrease the pressure.
Example: MS2191C12 is a 1,20mm hole. All coolant nozzles are interchangeable with the original that is supplied with the cutter.
This gives flexibility with coolant flow.

✦✦ first choice with coolant
✧✧ first choice without coolant
✦ alternate choice with coolant
✧ alternate choice without coolant

P1–P2				✦✦	✧✧		
P3–P4				✦✦	✧	✧✧	
P5–P6				✦✦	✧	✧✧	
M1–M2				✦		✦	✦✦
M3				✦			✦✦
K1–K2			✦✦/✧✧		✧		
K3			✦✦		✧✧		
N1	✦✦	✦					
N2	✦✦	✦					
S1				✦			✦✦
S2				✦			✦✦
S3				✦			✦✦
S4				✦			✦✦



ISO catalogue number	LI	BS	Rε	KC410M	KC422M	KC520M	KC725M	KCPK30	KCPM40	KCSM40
Light Machining										
EDCT140402PDFRLDJ	17,46	3,14	0,2	3273589	–	–	–	–	–	–
EDCT140404PDERGD	17,46	2,95	0,4	–	–	–	2983890	–	5545068	–
EDCT140404PDFRLDJ	17,46	2,95	0,4	2984054	–	–	–	–	–	–
EDCT140408PDERGD	17,47	2,56	0,8	–	–	–	2983331	–	5545067	6171518
EDCT140408PDFRLDJ	17,47	2,56	0,8	2983279	–	–	–	–	–	–
EDCT140412PDERGD	17,48	2,17	1,2	–	–	–	2984210	–	–	6171519
EDCT140416PDERGD	17,49	1,77	1,6	–	–	–	2984773	–	–	6171520
EDCT140431PDERGD	17,50	0,26	3,1	–	–	–	2983891	–	–	6171591
General Machining										
EDCT140404PDERLDJ	17,46	2,95	0,4	–	3324993	–	–	–	–	–
EDPT140404PDERHD	17,46	2,95	0,4	–	–	3051866	3051863	–	–	–
EDPT140404PDERHD	17,47	2,95	0,4	–	–	–	–	–	6128132	–
EDCT140408PDERLDJ	17,47	2,56	0,8	–	3324994	–	–	–	–	–
EDPT140408PDERHD	17,47	2,56	0,8	–	–	3033727	3033729	3033731	5545160	6172122
EDPT140412PDERHD	17,48	2,16	1,2	–	–	3032732	3033724	–	–	6172123
EDPT140412PDERHD	17,48	2,17	1,2	–	–	–	–	–	5545069	–
EDPT140416PDERHD	17,49	1,77	1,6	–	–	–	3033752	3033954	6128134	6172124
EDPT140420PDERHD	17,49	1,37	2,0	–	–	–	3051245	–	–	6172125
EDCT140424PDERLDJ	17,50	0,99	2,4	–	3324726	–	–	–	–	–
EDPT140424PDERHD	17,50	0,99	2,4	–	–	–	3051550	–	6128136	6172126
EDPT140431PDERHD	17,51	0,26	3,1	–	–	–	3051248	–	–	6172127
EDPT140440PDERHD	16,53	—	4,0	–	–	–	3051251	–	–	6172128
Heavy Machining										
EDPT140408PDSRGD	17,47	2,55	0,8	–	–	2980530	2981644	2980531	6128133	6172129
EDPT140412PDSRGD	17,47	2,17	1,2	–	–	–	–	–	5545066	–
EDPT140412PDSRGD	17,48	2,17	1,2	–	–	2980527	2980568	–	–	6172130
EDPT140416PDSRGD	17,49	1,77	1,6	–	–	–	2982077	2982091	6128135	6172191

Recommended Starting Feeds [mm]

Light Machining	General Purpose	Heavy Machining

Insert Geometry	Recommended Starting Feed per Tooth (Fz) in Relation to % of Radial Engagement (ae)															Insert Geometry
	5%			10%			20%			30%			40–100%			
.F..LDJ	0,12	**0,46**	0,82	0,08	**0,33**	0,59	0,06	**0,25**	0,44	0,06	**0,22**	0,38	0,05	**0,20**	0,35	.F..LDJ
.E..LDJ	0,12	**0,47**	0,82	0,08	**0,34**	0,59	0,06	**0,26**	0,44	0,06	**0,22**	0,39	0,05	**0,20**	0,35	.E..LDJ
.E..LD	0,12	**0,46**	0,81	0,09	**0,33**	0,58	0,07	**0,25**	0,43	0,06	**0,22**	0,38	0,05	**0,20**	0,35	.E..LD
.E..GD	0,17	**0,52**	0,89	0,12	**0,38**	0,64	0,09	**0,28**	0,48	0,08	**0,24**	0,42	0,07	**0,22**	0,38	.E..GD
.S..GE	0,23	**0,51**	0,89	0,17	**0,37**	0,64	0,13	**0,27**	0,48	0,11	**0,24**	0,42	0,10	**0,22**	0,38	.S..GE
.S..GD	0,23	**0,50**	0,88	0,17	**0,36**	0,63	0,13	**0,27**	0,47	0,11	**0,24**	0,41	0,10	**0,22**	0,38	.S..GD
.S..GD2	0,23	**0,50**	0,88	0,17	**0,36**	0,63	0,13	**0,27**	0,47	0,11	**0,24**	0,41	0,10	**0,22**	0,38	.S..GD2
.E..HD	0,23	**0,59**	0,95	0,17	**0,43**	0,68	0,13	**0,32**	0,51	0,11	**0,28**	0,44	0,10	**0,25**	0,41	.E..HD
.E..HD2	0,21	**0,59**	0,95	0,15	**0,43**	0,68	0,11	**0,32**	0,51	0,10	**0,28**	0,44	0,09	**0,25**	0,41	.E..HD2

EDC...: Ground inserts; high versatility for all finishing applications and difficult-to-machine stainless steels and high-temp alloys.
EDP...: Pressed; lower cost per edge for most roughing to semi-finishing operations.

.F.LDJ: Sharp cutting edge for aluminium and other non-ferrous alloys.
.E.LDJ: For aluminium and other non-ferrous alloys.
.E.GD: Finishing and high-precision applications.
.E.HD: Medium roughing and semi-finishing.
.S.GD: Strongest cutting edge for heavy roughing applications with high feed rates in all material groups.

Recommended Starting Speeds for Dry Machining (m/min)

Material Group		KC520M			KC725M			KCPK30			KCPM40			KCSM40		
P	1	–	–	–	260	**230**	215	455	**395**	370	295	**260**	245	260	**230**	215
	2	–	–	–	220	**190**	160	280	**255**	230	250	**215**	180	220	**190**	160
	3	–	–	–	200	**170**	140	255	**230**	205	230	**195**	160	200	**170**	140
	4	–	–	–	180	**150**	120	190	**175**	160	205	**170**	135	180	**150**	120
	5	–	–	–	150	**135**	120	260	**230**	210	170	**155**	135	150	**135**	120
	6	–	–	–	130	**100**	80	160	**135**	125	150	**115**	90	130	**100**	80
M	1	–	–	–	170	**150**	135	205	**185**	155	195	**170**	155	170	**150**	135
	2	–	–	–	155	**130**	110	185	**160**	140	175	**150**	125	155	**130**	110
	3	–	–	–	115	**100**	80	145	**130**	115	130	**115**	90	115	**100**	80
K	1	270	**245**	215	–	–	–	295	**265**	240	–	–	–	–	–	–
	2	210	**190**	175	–	–	–	235	**210**	190	–	–	–	–	–	–
	3	175	**160**	145	–	–	–	195	**175**	160	–	–	–	–	–	–
N	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
H	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness increases, the speed should be decreased.

Dry

Wet

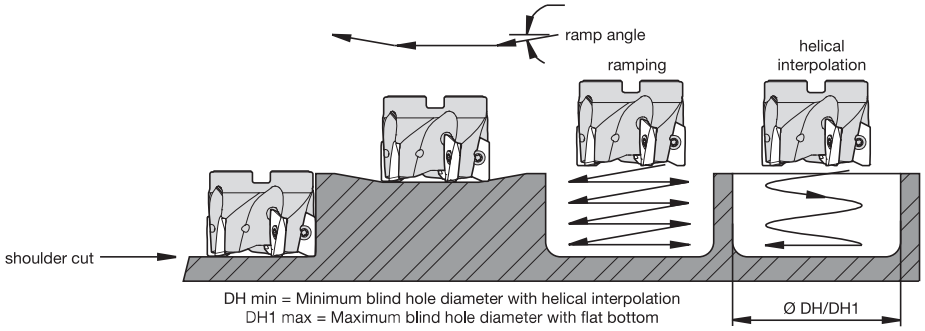
Material Group		KC410M/KC422M			KC520M			KC725M			KCPK30			KCPM40			KCSM40		
P	1	–	–	–	–	–	–	210	**185**	170	365	**315**	295	285	**250**	235	–	–	–
	2	–	–	–	–	–	–	175	**150**	130	225	**205**	185	240	**210**	170	–	–	–
	3	–	–	–	–	–	–	160	**135**	110	205	**185**	165	220	**190**	150	–	–	–
	4	–	–	–	–	–	–	145	**120**	95	150	**140**	130	195	**165**	130	–	–	–
	5	–	–	–	–	–	–	120	**110**	95	210	**185**	170	165	**150**	130	135	**115**	95
	6	–	–	–	–	–	–	105	**80**	65	130	**110**	100	145	**110**	90	120	**90**	65
M	1	–	–	–	–	–	–	135	**120**	110	165	**150**	125	190	**165**	150	170	**135**	110
	2	–	–	–	–	–	–	125	**105**	90	150	**130**	110	170	**145**	120	145	**115**	95
	3	–	–	–	–	–	–	90	**80**	65	115	**105**	90	125	**110**	90	115	**90**	70
K	1	–	–	–	215	**195**	170	–	–	–	235	**210**	190	–	–	–	–	–	–
	2	–	–	–	170	**150**	140	–	–	–	190	**170**	150	–	–	–	–	–	–
	3	–	–	–	140	**130**	115	–	–	–	155	**140**	130	–	–	–	–	–	–
N	1	1170	**1035**	840	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	2	1035	**955**	730	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3	1035	**955**	730	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	30	**25**	20	–	–	–	40	**30**	30	30	**30**	20
	2	–	–	–	–	–	–	30	**25**	20	–	–	–	40	**30**	30	30	**30**	20
	3	–	–	–	–	–	–	35	**30**	20	–	–	–	50	**40**	30	40	**30**	20
	4	–	–	–	–	–	–	45	**35**	25	55	**40**	25	65	**50**	30	50	**40**	25
H	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness increases, the speed should be decreased.

Dry

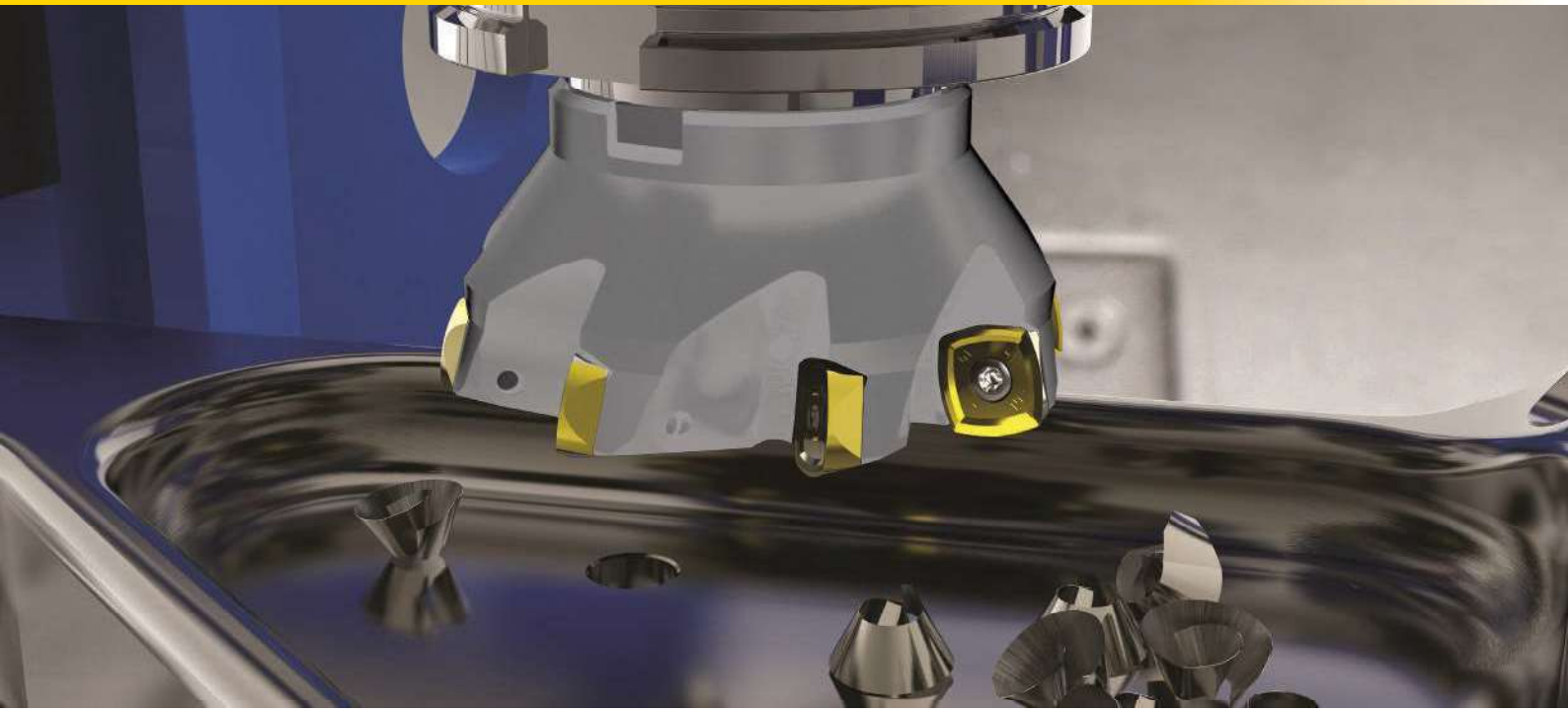
Wet

Application Examples

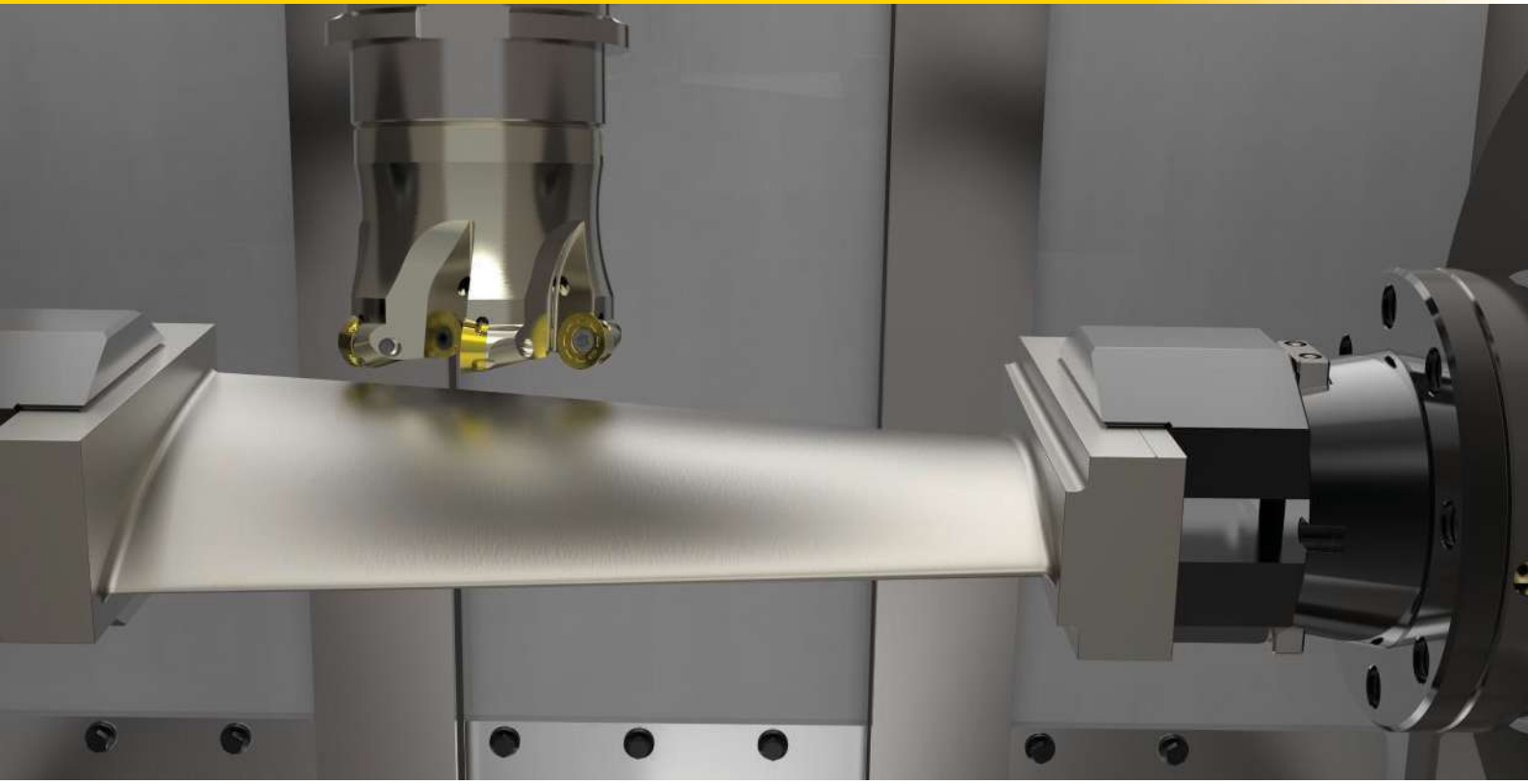


insert style	cutting diameter	max ramp angle	min hole diameter (DH min)	max flat-bottom hole diameter (DH1 max)	max diameter
Mill 1-14	32	5.4°	47,80	59,79	64
Mill 1-14	40	3.8°	64,00	75,47	80
Mill 1-14	50	2.7°	83,96	96,05	100
Mill 1-14	63	1.9°	109,93	121,47	126

High-Feed Milling

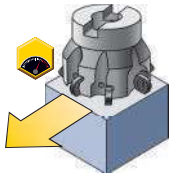


Copy/Contour Milling



Application

1



Machining Conditions and Spindle Size

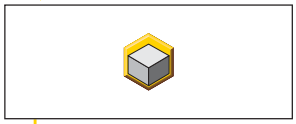
2

All applications with average Ap between 0,4mm up to 1,2mm.
Small to medium machines.
Application requires a small cutter body.

- All applications with average Ap 1,5mm, up to max. 2,5mm.
- Medium and large machines.
- Cutter body with larger diameter required.

Capabilities

3



Platform

4

7792VXP06

Ap max: 0,9mm
Cutter body: Ø16–Ø25mm
Insert style: XP*0603
4 cutting edges

7792VXD09

Ap max: 1,5mm
Cutter body: Ø25–Ø66mm
Insert style: XD*0904
4 cutting edges

Dodeka™ Mini 15° HF

Ap max: 1,6mm
Cutter body: Ø25–Ø80mm
Insert style: HN*J0604
12 cutting edges

7792VXD12

Ap max: 2,5mm
Cutter body: Ø32–Ø160mm
Insert style: XD*1205
4 cutting edges

Dodeka™ 15° HF

Ap max: 2,2mm
Cutter body: Ø63–Ø125mm
Insert style: HN*J0905
12 cutting edges

Insert Selection

5

Easy insert selection based on:
Workpiece material
Cutting conditions
Coolant type
Directly on the product pages B88 and B97

Easy insert selection based on:
Workpiece material
Cutting conditions
Coolant type
Directly on the product page B113

Easy insert selection based on:
Workpiece material
Cutting conditions
Coolant type
Directly on the product page B106

Easy insert selection based on:
Workpiece material
Cutting conditions
Coolant type
Directly on the product page B117

Tech Tips:

- HF-cutters also have a tremendous advantage when used in long (extended) toolholders. These cutters greatly reduce the instability and deflection of the tool.
- Consider 7792 series for all high-feed 3D milling and machining close to a wall.
- Benefit from 12 cutting edges per Dodeka insert at all pure high-feed face milling operations.
- To optimise the tool, adjust depth of cut (Ap) and cutting speed (vc), if necessary. Always keep feed rate on a high level.

Stellram® 7792 High-Feed Series

Indexable Milling

The 7792 cutter series has been designed for high-feed milling applications with superior surface generation. 7792VX cutters are designed for a wide range of applications, including facing, pocketing, ramping, helical interpolation, and plunging. They are capable of machining all materials, including steel, stainless steel, cast iron, and high-temperature and aluminium alloys.

Features and Benefits

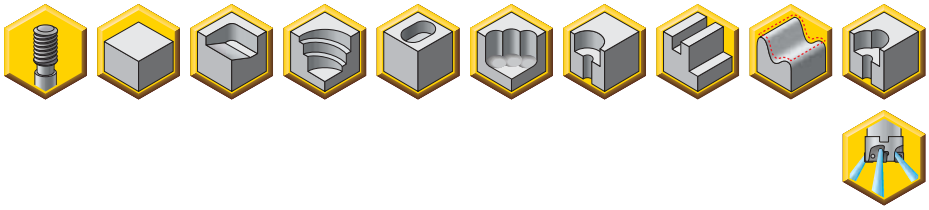
- The 7792VX high-feed cutters are the best solution for reducing cycle times or removing the maximum amount of material in the shortest time.
- New ultra-fine pitch cutters further increase metal removal rates, especially in high-temp alloys.
- The unique design and insert positioning help to achieve up to 5x higher feed rates than other cutters on the market.
- When used in long (extended) toolholders, 7792VX cutters absorb vibrations and greatly reduce instability and tool deflection.
- Integrated wiper facet for improved surface finish: 16 Ra (1,6µ) when used at <0,5mm/z.

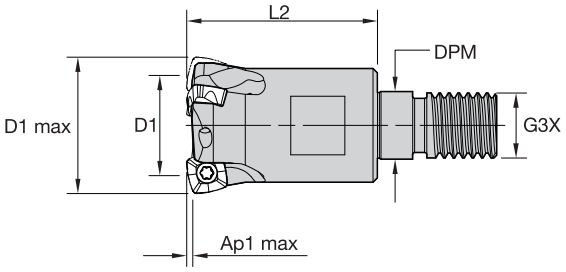
7792VXP06:
Maximum ap = 0,9mm
Diameter Range = 16-35mm

7792VXD09:
Maximum ap = 1,50mm
Diameter Range = 25–66mm

7792VXD12:
Maximum ap = 2,50mm
Diameter Range = 32–160mm

- Superior surface generation with integrated wiper facet.
- Maximum material removal rates.
- Suitable to machine HTA and titanium.





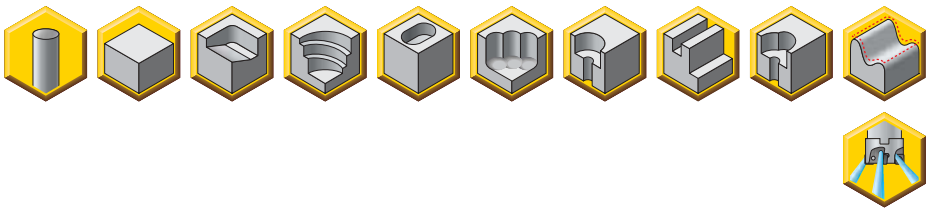
7792VXP06 Modular Head • Screw-On

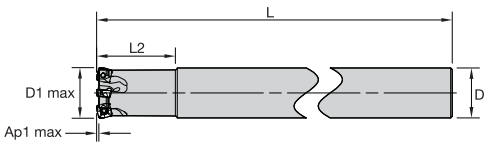
order number	catalogue number	D1 max	D1	L2	G3X	DPM	Ap1 max	Z U
5681105	7792VXP06SA016Z2R25	16	8	25	M8	8,50	0,90	2
5681122	7792VXP06SA020Z3R35	20	12	35	M10	10,50	0,90	3
5665964	7792VXP06SA025Z3R35	25	17	35	M12	12,50	0,90	3
5667023	7792VXP06SA025Z4R35	25	17	35	M12	12,50	0,90	4

Spare Parts

catalogue number	insert screw	Nm	Torx driver
7792VXP06SA016Z2R25	FP2506T	0,8	TP7
7792VXP06SA020Z3R35	FP2506T	0,8	TP7
7792VXP06SA025Z3R35	FP2507T	0,8	TP7
7792VXP06SA025Z4R35	FP2507T	0,8	TP7

- Superior surface generation with integrated wiper facet.
- Maximum material removal rates.
- Suitable to machine HTA and titanium.





7792VXP06 Cylindrical Shank

order number	catalogue number	D1 max	D	D1	L	L2	Ap1 max	Z U
5673240	7792VXP06CA016Z2R140	16	16	8	188	25	0,90	2
5673237	7792VXP06CA020Z3R154	20	20	11	200	32	0,90	3
5666409	7792VXP06CA025Z4R154	25	25	16	210	40	0,90	4

Spare Parts

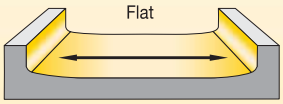
catalogue number	insert screw	Nm	Torx driver
7792VXP06CA016Z2R140	FP2506T	0,8	TP7
7792VXP06CA020Z3R154	FP2506T	0,8	TP7
7792VXP06CA025Z4R154	FP2507T	0,8	TP7

Technical Information (mm)

order number	catalogue number	dimension						max RPM
		facing pitch	ramping angle	helical hole min–max		ap max helical/ linear	a_e max plunging	
5673240	7792VXP06CA016Z2R140	7,60	5,9	22	30	0,60	3,00	65000
5673237	7792VXP06CA020Z3R154	11,60	3,4	30	38	0,60	3,00	57000
5666409	7792VXP06CA025Z4R154	16,60	2,2	40	48	0,60	3,00	49000
5681105	7792VXP06SA016Z2R25	7,60	5,9	22	30	0,60	3,00	65000
5681122	7792VXP06SA020Z3R35	11,6	3,4	30	38	0,60	3,00	57000
5665964	7792VXP06SA025Z3R35	16,60	2,8	40	48	0,60	3,00	49000
5667023	7792VXP06SA025Z4R35	16,60	2,2	40	48	0,60	3,00	49000


Helical Interpolation


Plunging



Facing Pitch

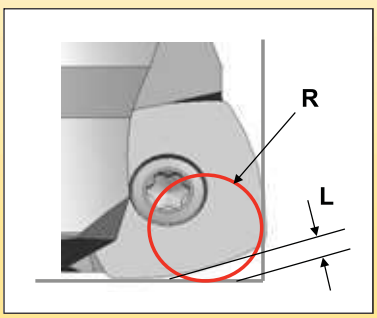
Ramp angle A uses one outside cutting edge only.

A = max ramp angle utilising full-face contact.

CNC Programme • Corner Radius Definition

The use of common CAD/CAM systems requires a round insert dimension to be known for cavity machining.
This is available with 7792VX cutters as shown below and in the reference table.

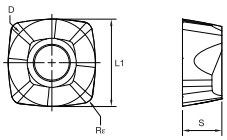
For finish pass applications:
Wiper Facet for finishing use max feed 0,5 mm/z



Programming Data (mm)			
Insert corner nose size (IC)	Rε	R	L
06	0,80	1,37	0,40
09	0,80	2,01	0,73
	1,20	2,27	0,67
12	0,80	2,50	1,02
	1,20	2,73	0,97

✦✦ first choice with coolant
✧✧ first choice without coolant
✦ alternate choice with coolant
✧ alternate choice without coolant

P1–P2	✧/✦	✧✧	✦✦		
P3–P4		✧✧	✦✦		
P5–P6		✧	✦✦	✧✧	✧/✦
M1–M2	✦✦		✧✧		✦
M3	✦		✦		✦✦
K1–K2		✧	✦✦		
K3		✧	✦✦		
N1					
N2					
S1	✦		✦		✦✦
S2	✦		✦		✦✦
S3	✦✦		✦		✦
S4	✦✦		✦		✦



ISO catalogue number	D	LI	S	Rε	KCSM40	SC6525	SP6519	X400	X500
General Machining									
XPLT060308ERD41	7,00	7,00	3,17	0,8	–	5655265	5654267	5654377	5654397
XPPT060308ERD41	7,00	7,00	3,17	0,8	6185769	–	–	–	–

Recommended Starting Feeds [mm] • High-Feed

Light Machining	General Purpose	Heavy Machining

At 0,90 Axial Depth of Cut (ap)

Insert Geometry	Recommended Starting Feed per Tooth (Fz) in Relation to % of Radial Engagement (ae)															Insert Geometry
	5%			10%			20%			30%			40–100%			
.E..D41	0,37	**1,06**	1,89	0,27	**0,73**	1,24	0,20	**0,53**	0,89	0,17	**0,46**	0,77	0,16	**0,42**	0,70	.E..D41
.S..D	0,68	**1,46**	2,35	0,48	**0,98**	1,49	0,36	**0,71**	1,07	0,31	**0,62**	0,92	0,28	**0,56**	0,84	.S..D

At 0,70 Axial Depth of Cut (ap)

Insert Geometry	Recommended Starting Feed per Tooth (Fz) in Relation to % of Radial Engagement (ae)															Insert Geometry
	5%			10%			20%			30%			40–100%			
.E..D41	0,42	**1,21**	2,20	0,30	**0,83**	1,41	0,22	**0,60**	1,01	0,19	**0,52**	0,87	0,18	**0,48**	0,79	.E..D41
.S..D	0,78	**1,68**	2,79	0,55	**1,12**	1,71	0,40	**0,81**	1,21	0,35	**0,70**	1,04	0,32	**0,64**	0,94	.S..D

At 0,60 Axial Depth of Cut (ap)

Insert Geometry	Recommended Starting Feed per Tooth (Fz) in Relation to % of Radial Engagement (ae)															Insert Geometry
	5%			10%			20%			30%			40–100%			
.E..D41	0,46	**1,32**	2,43	0,32	**0,89**	1,53	0,24	**0,65**	1,09	0,21	**0,56**	0,94	0,19	**0,52**	0,85	.E..D41
.S..D	0,84	**1,84**	3,12	0,59	**1,21**	1,85	0,43	**0,87**	1,30	0,38	**0,75**	1,12	0,34	**0,69**	1,02	.S..D

Feed Rate Guide • Plunging • IC 06 • fz [mm/tooth]

Insert Geometry	Programmed Feed per Tooth (fz) Max 3mm insert engagement (ae radial engagement)			Insert Geometry
.E..D41	0,06	**0,15**	0,25	.E..D41
.S..D	0,10	**0,20**	0,30	.S..D

Material Group		KCSM40			SC6525			SP6519			X400			X500		
P	1	275	**240**	205	445	**305**	170	355	**260**	155	310	**230**	145	325	**240**	155
	2	240	**205**	160	390	**270**	145	310	**230**	140	275	**205**	125	290	**215**	140
	3	205	**180**	160	350	**240**	125	275	**200**	120	240	**180**	115	250	**185**	120
	4	180	**160**	145	250	**175**	95	210	**150**	90	180	**130**	85	190	**145**	90
	5	160	**145**	125	190	**145**	95	170	**125**	85	–	**–**	–	155	**120**	85
	6	125	**110**	90	170	**120**	70	145	**100**	60	–	**–**	–	130	**95**	60
M	1	275	220	180	240	215	170	325	**235**	140	–	**–**	–	300	**220**	140
	2	180	**145**	125	230	**190**	145	280	**205**	125	–	**–**	–	265	**190**	120
	3	145	**125**	110	175	**155**	110	235	**170**	100	–	**–**	–	215	**155**	95
K	1	–	**–**	–	470	**325**	175	355	**265**	170	–	**–**	–	310	**265**	205
	2	–	**–**	–	365	**250**	140	290	**210**	130	–	**–**	–	265	**215**	155
	3	–	**–**	–	–	**–**	–	265	**190**	120	–	**–**	–	205	**170**	120
N	1	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–
	2	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–
	3	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–
S	1	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–
	2	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–
	3	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–
	4	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–
H	1	–	**–**	–	–	**–**	–	–	**–**	–	115	**85**	55	–	**–**	–
	2	–	**–**	–	–	**–**	–	–	**–**	–	95	**70**	40	–	**–**	–
	3	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–

NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness increases, the speed should be decreased.

Dry

Wet

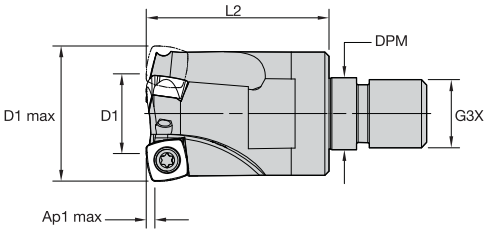
Material Group		KCSM40			SC6525			SP6519			X400			X500		
P	1	–	**–**	–	445	**305**	170	285	**210**	125	250	**185**	115	260	**190**	125
	2	–	**–**	–	390	**270**	145	250	**185**	110	220	**165**	100	230	**170**	110
	3	–	**–**	–	350	**240**	125	220	**160**	95	190	**145**	90	200	**150**	95
	4	–	**–**	–	250	**175**	95	170	**120**	70	145	**105**	70	150	**115**	70
	5	165	**140**	115	190	**145**	95	135	**100**	70	–	**–**	–	125	**95**	70
	6	145	**105**	75	170	**120**	70	115	**80**	50	–	**–**	–	105	**75**	50
M	1	200	165	135	240	215	170	260	**190**	110	–	**–**	–	240	**175**	110
	2	170	**140**	115	230	**190**	145	225	**165**	100	–	**–**	–	210	**150**	95
	3	140	**105**	80	175	**155**	110	190	**135**	80	–	**–**	–	170	**125**	75
K	1	–	**–**	–	470	**325**	175	285	**210**	135	–	**–**	–	250	**210**	165
	2	–	**–**	–	365	**250**	140	230	**170**	105	–	**–**	–	210	**170**	125
	3	–	**–**	–	–	**–**	–	210	**150**	95	–	**–**	–	165	**135**	95
N	1	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–
	2	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–
	3	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–
S	1	40	**30**	25	–	**–**	–	50	**40**	25	–	**–**	–	50	**30**	25
	2	40	**30**	25	–	**–**	–	50	**30**	20	–	**–**	–	45	**30**	20
	3	50	**40**	25	–	**–**	–	50	**40**	25	–	**–**	–	50	**40**	25
	4	55	**50**	30	–	**–**	–	75	**55**	35	–	**–**	–	70	**50**	30
H	1	–	**–**	–	–	**–**	–	–	**–**	–	90	**70**	45	–	**–**	–
	2	–	**–**	–	–	**–**	–	–	**–**	–	75	**55**	30	–	**–**	–
	3	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–

NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness increases, the speed should be decreased.

Dry

Wet

- Ultra-fine pitch cutters available to increase material removal rates, especially on high-temp alloys.
- Positive design to support lower cutting forces and long overhang usage.
- Ramping and plunge milling capabilities.
- Screw-on cutters provide better rigidity and stability when used with small spindels: BT30, BT40, DV40, HSK50, HSK63, etc.
- Screw-on cutters can be less expensive when compared to cylindrical shank cutters due to their higher flexibility through multiple holder combinations.



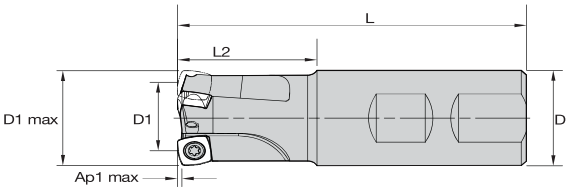
7792VXD09 Modular Head • Screw-On

order number	catalogue number	D1 max	D1	L2	G3X	DPM	Ap1 max	Z U
5667916	7792VXD09SA025Z2R35	25	12	35	M12	12,50	1,50	2
6024361	7792VXD09SA025Z3R35	25	12	35	M12	12,50	1,50	3
5660448	7792VXD09SA032Z3R43	32	19	43	M16	17,00	1,50	3
6024362	7792VXD09SA032Z4R43	32	19	43	M16	17,00	1,50	4
5673503	7792VXD09SA035Z3R43	35	22	43	M16	17,00	1,50	3
6024363	7792VXD09SA035Z4R43	35	22	43	M16	17,00	1,50	4
6024365	7792VXD09SA042Z5R43	42	29	43	M16	17,00	1,50	5

Spare Parts

catalogue number	insert screw	Nm	Torx driver
7792VXD09SA025Z2R35	F3508T	2,1	T15
7792VXD09SA025Z3R35	F3508T	2,1	TB15
7792VXD09SA032Z3R43	F3510T	2,1	T15
7792VXD09SA032Z4R43	F3508T	2,1	T15
7792VXD09SA035Z3R43	F3510T	2,1	T15
7792VXD09SA035Z4R43	F3510T	2,1	T15
7792VXD09SA042Z5R43	F3510T	2,1	T15

- Ultra-fine pitch cutters available to increase material removal rates, especially on high-temp alloys.
- Positive design to support lower cutting forces and long overhang usage.
- Ramping and plunge milling capabilities.



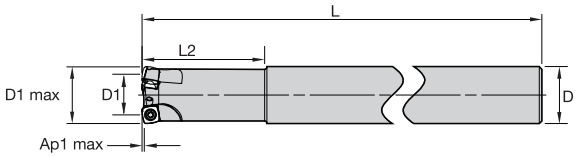
7792VXD09 Weldon Shank

order number	catalogue number	D1 max	D	D1	L	L2	Ap1 max	Z U
5658074	7792VXD09WA032Z3R	32	32	19	100	40	1,50	3

Spare Parts

catalogue number	 insert screw	 Nm	 Torx driver
7792VXD09WA032Z3R	F3510T	2,1	T15

- Ultra-fine pitch cutters available to increase material removal rates, especially on high-temp alloys.
- Positive design to support lower cutting forces and long overhang usage.
- Ramping and plunge milling capabilities.



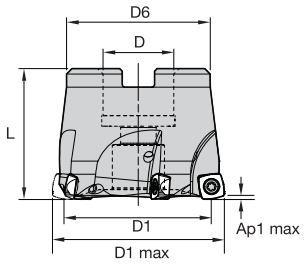
7792VXD09 Cylindrical Shank

order number	catalogue number	D1 max	D	D1	L	L2	Ap1 max	Z U
5659947	7792VXD09CA025Z2R50	25	25	12	200	50	1,50	2
6024366	7792VXD09CA025Z3R50	25	25	12	200	50	1,50	3
5661016	7792VXD09CA032Z3R70	32	32	19	250	70	1,50	3
6024367	7792VXD09CA032Z4R70	32	32	19	250	70	1,50	4

Spare Parts

catalogue number	insert screw	Nm	Torx driver
7792VXD09CA025Z2R50	F3508T	2,1	T15
7792VXD09CA025Z3R50	F3508T	2,1	TB15
7792VXD09CA032Z3R70	F3510T	2,1	T15
7792VXD09CA032Z4R70	F3510T	2,1	T15

- Ultra-fine pitch cutters available to increase material removal rates, especially on high-temp alloys.
- Positive design to support lower cutting forces and long overhang usage.
- Ramping and plunge milling capabilities.



7792VXD09 Shell Mill

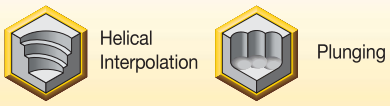
order number	catalogue number	D1 max	D	D1	D6	L	Ap1 max	Z U
5656727	7792VXD09-A040Z3R	40	16	27	36	32	1,50	3
5657234	7792VXD09-A040Z4R	40	16	27	36	32	1,50	4
5667475	7792VXD09-A040Z5R	40	16	27	36	32	1,50	5
5656914	7792VXD09-A050Z5R	50	22	37	46	40	1,50	5
5656377	7792VXD09-A050Z6R	50	22	37	46	40	1,50	6
6024368	7792VXD09-A050Z7R	50	22	37	45	40	1,50	7
6024369	7792VXD09-A052Z5R	52	22	39	45	40	1,50	5
6024370	7792VXD09-A052Z6R	52	22	39	45	40	1,50	6
6024371	7792VXD09-A052Z7R	52	22	39	45	40	1,50	7
6024372	7792VXD09-A063Z5R	63	22	50	42	40	1,50	5
6024373	7792VXD09-A063Z6R	63	22	50	42	40	1,50	6
6024374	7792VXD09-A063Z9R	63	22	50	45	40	1,50	9
6024375	7792VXD09-A066Z5R	66	27	53	55	50	1,50	5
6024376	7792VXD09-A066Z6R	66	27	53	55	50	1,50	6

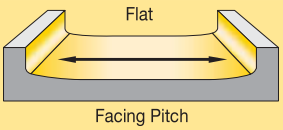
Spare Parts

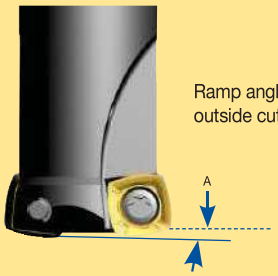
catalogue number	insert screw	Nm	Torx driver	mounting screw
7792VXD09-A040Z3R	F3510T	2,1	T15	M8 1.25 X 25 SHCS
7792VXD09-A040Z4R	F3510T	2,1	T15	M8 1.25 X 25 SHCS
7792VXD09-A040Z5R	F3510T	2,1	T15	M8 1.25 X 25 SHCS
7792VXD09-A050Z5R	F3510T	2,1	T15	M10 1.5 X 25 SHCS
7792VXD09-A050Z6R	F3510T	2,1	T15	M10 1.5 X 25 SHCS
7792VXD09-A050Z7R	F3510T	2,1	TB15	M10 1.5 X 25 SHCS
7792VXD09-A052Z5R	F3510T	2,1	T15	M10 1.5 X 25 SHCS
7792VXD09-A052Z6R	F3510T	2,1	T15	M10 1.5 X 25 SHCS
7792VXD09-A052Z7R	F3510T	2,1	TB15	M10 1.5 X 25 SHCS
7792VXD09-A063Z5R	F3510T	2,1	T15	M10 1.5 X 25 SHCS
7792VXD09-A063Z6R	F3510T	2,1	T15	M10 1.5 X 25 SHCS
7792VXD09-A063Z9R	F3510T	2,1	TB15	M10 1.5 X 25 SHCS
7792VXD09-A066Z5R	F3510T	2,1	T15	M12 X 1.75 X 30 SHCS
7792VXD09-A066Z6R	F3510T	2,1	T15	M12 X 1.75 X 30 SHCS

Technical Information (mm)

order number	catalogue number	dimension						max RPM
		facing pitch	ramping angle	helical hole min–max		ap max helical/ linear	a_e max plunging	
5658074	7792VXD09WA032Z3R	18,75	1,5	48	62	1,00	6,00	40500
5659947	7792VXD09CA025Z2R50	11,75	2,8	34	48	1,00	6,00	48500
6024366	7792VXD09CA025Z3R50	11,75	2,8	34	48	1,00	6,00	48500
5661016	7792VXD09CA032Z3R70	18,75	1,5	48	62	1,00	6,00	40500
6024367	7792VXD09CA032Z4R70	18,75	1,5	48	62	1,00	6,00	40500
5656727	7792VXD09-A040Z3R	26,75	0,8	64	78	1,00	6,00	34500
5657234	7792VXD09-A040Z4R	26,75	0,8	64	78	1,00	6,00	34500
5667475	7792VXD09-A040Z5R	26,75	0,8	64	78	1,00	6,00	34500
5656914	7792VXD09-A050Z5R	36,75	0,7	84	98	1,00	6,00	30000
5656377	7792VXD09-A050Z6R	36,75	0,7	84	98	1,00	6,00	29500
6024368	7792VXD09-A050Z7R	36,75	0,7	84	98	1,00	6,00	30000
6024369	7792VXD09-A052Z5R	38,75	0,7	88	102	1,00	6,00	29500
6024370	7792VXD09-A052Z6R	38,75	0,7	88	102	1,00	6,00	29500
6024371	7792VXD09-A052Z7R	38,75	0,7	88	102	1,00	6,00	29500
6024372	7792VXD09-A063Z5R	49,75	0,5	88	102	1,00	6,00	26000
6024373	7792VXD09-A063Z6R	49,75	0,5	88	102	1,00	6,00	26000
6024374	7792VXD09-A063Z8R	49,75	0,5	88	102	1,00	6,00	26000
6024375	7792VXD09-A066Z5R	52,75	0,5	116	130	1,00	6,00	25500
6024376	7792VXD09-A066Z6R	52,75	0,5	116	130	1,00	6,00	25500
5667916	7792VXD09SA025Z2R35	11,75	2,8	34	48	1,00	6,00	48500
6024361	7792VXD09SA025Z3R35	11,75	2,8	34	48	1,00	6,00	48500
5660448	7792VXD09SA032Z3R43	18,75	1,5	48	62	1,00	6,00	40500
6024362	7792VXD09SA032Z4R43	18,75	1,5	48	62	1,00	6,00	40500
5673503	7792VXD09SA035Z3R43	21,75	1,3	54	68	1,00	6,00	37500
6024363	7792VXD09SA035Z4R43	21,75	1,3	54	68	1,00	6,00	37500
6024365	7792VXD09SA042Z5R43	28,75	1,0	68	82	1,00	6,00	34000







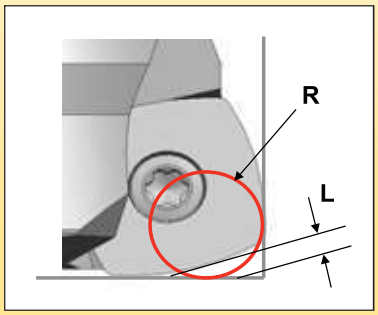
Ramp angle A uses one outside cutting edge only.

A = max ramp angle utilising full face contact.

CNC Program - Corner Radius Definition

The use of common CAD / CAM systems requires a round insert dimension to be known for cavity machining.
This is available with 7792VX cutters as shown to the right and in the reference table.

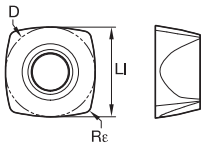
For finish pass applications:
Wiper Facet for finishing use max. feed 0,80mm/Revolution



Programming Data (mm)			
Insert size (IC)	radius	R	L
06	0,80	1,37	0,40
09	0,80	2,01	0,73
	1,20	2,27	0,67
12	0,80	2,50	1,02
	1,20	2,73	0,97

✦✦ first choice with coolant
✧✧ first choice without coolant
✦ alternate choice with coolant
✧ alternate choice without coolant

P1–P2					✧/✦		✧✧	✦✦		
P3–P4		✧/✦	✧	✧			✧✧	✦✦		
P5–P6		✧/✦		✧			✧	✦✦	✧✧	✧/✦
M1–M2					✦✦			✧✧		✦
M3					✦			✦		✦✦
K1–K2						✧✧	✧	✦✦		
K3		✧/✦	✧			✧✧	✧	✦✦		
N1	✦✦									
N2	✦✦									
S1					✦			✦		✦✦
S2					✦			✦		✦✦
S3					✦✦			✦		✦
S4					✦✦			✦		✦



ISO catalogue number	D	LI	Rε	GH2	KC522M	KCPK30	KCPM40	KCSM40	SC3025	SC6525	SP6519	X400	X500
Light Machining													
XDPT090412ERD411	9,53	9,53	1,2	–	–	–	–	6185922	–	–	–	–	–
General Machining													
XDLT090408ERD41	9,53	9,53	0,8	–	–	–	–	–	–	5653106	5652490	–	5654896
XDLT090408ERD721	9,53	9,53	0,8	5655472	–	–	–	–	–	–	–	–	–
XDPT090408ERD41	9,53	9,53	0,8	–	–	–	–	6185921	–	6010771	6010730	–	6010729
XDLT090412ERD411	9,53	9,53	1,2	–	–	–	–	–	–	–	5652249	–	5655172
XDPT090412SRGP	9,53	9,53	1,2	–	6191645	6191643	6191642	–	–	–	–	–	–
Heavy Machining													
XDLW090408SRD	9,53	9,53	0,8	–	–	–	–	–	5656081	5655255	–	5652239	5651222
XDPW090412SRD	9,52	9,52	1,2	–	6187538	–	6187535	–	–	–	–	–	–

XDL…: Ground inserts; high versatility for machining soft materials and difficult-to-machine stainless steels and high-temp alloys.
XDP…: Pressed; lower cost per edge for most roughing to semi-finishing operations.

.E..D721: First choice for non-ferrous alloys.
.E.D41: General purpose in soft steels. Best fit for face milling and slotting operations.
.E.D411: General purpose in stainless steel and high-temp alloys. Best fit for pocketing and profiling operations in general, also in combination with long overhangs.
.S..D: First choice for roughing alloyed steel and cast iron.
.S.GP: General use on alloyed steels. Good balance across all machining situations.

Recommended Starting Feeds [mm] • High-Feed

Light Machining	General Purpose	Heavy Machining

At 1,50 Axial Depth of Cut (ap)

Insert Geometry	Recommended Starting Feed per Tooth (Fz) in Relation to % of Radial Engagement (ae)															Insert Geometry
	5%			10%			20%			30%			40–100%			
.E..D721	0,30	**0,96**	1,69	0,22	**0,68**	1,18	0,16	**0,51**	0,87	0,14	**0,44**	0,75	0,13	**0,40**	0,69	.E..D721
.E..D41	0,38	**1,10**	1,69	0,27	**0,78**	1,18	0,20	**0,58**	0,87	0,18	**0,50**	0,75	0,16	**0,46**	0,69	.E..D41
.E..D411	0,38	**1,10**	1,69	0,27	**0,78**	1,18	0,20	**0,58**	0,87	0,18	**0,50**	0,75	0,16	**0,46**	0,69	.E..D411
.S..D	0,55	**1,21**	1,99	0,39	**0,86**	1,38	0,29	**0,63**	1,01	0,25	**0,55**	0,88	0,23	**0,50**	0,80	.S..D
.S..GP	0,55	**1,22**	2,01	0,39	**0,86**	1,39	0,29	**0,64**	1,02	0,25	**0,55**	0,89	0,23	**0,51**	0,81	.S..GP

At 1,10 Axial Depth of Cut (ap)

Insert Geometry	Recommended Starting Feed per Tooth (Fz) in Relation to % of Radial Engagement (ae)															Insert Geometry
	5%			10%			20%			30%			40–100%			
.E..D721	0,35	**1,12**	1,98	0,25	**0,79**	1,37	0,19	**0,59**	1,01	0,16	**0,51**	0,87	0,15	**0,47**	0,80	.E..D721
.E..D41	0,44	**1,28**	1,98	0,32	**0,90**	1,37	0,24	**0,67**	1,01	0,21	**0,58**	0,87	0,19	**0,53**	0,80	.E..D41
.E..D411	0,44	**1,28**	1,98	0,32	**0,90**	1,37	0,24	**0,67**	1,01	0,21	**0,58**	0,87	0,19	**0,53**	0,80	.E..D411
.S..D	0,64	**1,42**	2,35	0,45	**1,00**	1,61	0,34	**0,74**	1,18	0,30	**0,64**	1,02	0,27	**0,59**	0,93	.S..D
.S..GP	0,64	**1,42**	2,37	0,45	**1,00**	1,63	0,34	**0,74**	1,19	0,30	**0,64**	1,03	0,27	**0,59**	0,94	.S..GP

At 0,90 Axial Depth of Cut (ap)

Insert Geometry	Recommended Starting Feed per Tooth (Fz) in Relation to % of Radial Engagement (ae)															Insert Geometry
	5%			10%			20%			30%			40–100%			
.E..D721	0,39	**1,24**	2,20	0,28	**0,88**	1,52	0,21	**0,65**	1,11	0,18	**0,56**	0,96	0,17	**0,52**	0,88	.E..D721
.E..D41	0,48	**1,42**	2,20	0,35	**1,00**	1,52	0,26	**0,74**	1,11	0,23	**0,64**	0,96	0,21	**0,59**	0,88	.E..D41
.E..D411	0,48	**1,42**	2,20	0,35	**1,00**	1,52	0,26	**0,74**	1,11	0,23	**0,64**	0,96	0,21	**0,59**	0,88	.E..D411
.S..D	0,70	**1,57**	2,61	0,50	**1,10**	1,78	0,37	**0,81**	1,30	0,33	**0,71**	1,12	0,30	**0,64**	1,03	.S..D
.S..GP	0,70	**1,58**	2,65	0,50	**1,11**	1,80	0,37	**0,82**	1,31	0,33	**0,71**	1,14	0,30	**0,65**	1,04	.S..GP

Feed Rate Guide • Plunging • IC 09 • fz [mm/tooth]

Insert Geometry	Programmed Feed per Tooth (fz) Max 6mm insert engagement (ae radial engagement)			Insert Geometry
.E..D721	0,06	**0,18**	0,30	.E..D721
.E..D41	0,07	**0,20**	0,30	.E..D41
.E..D411	0,07	**0,20**	0,30	.E..D411
.S..D	0,10	**0,22**	0,35	.S..D
.S..GP	0,10	**0,22**	0,35	.S..GP

Material Group		GH2			KC522M			KCPK30			KCPM40			KCSM40		
P	1	–	–	–	395	**340**	325	545	**475**	445	355	**310**	295	275	**240**	205
	2	–	–	–	330	**290**	240	335	**305**	275	300	**260**	215	240	**205**	160
	3	–	–	–	305	**260**	210	305	**275**	245	275	**235**	190	205	**180**	160
	4	–	–	–	270	**220**	180	230	**210**	190	245	**205**	160	180	**160**	145
	5	–	–	–	220	**205**	180	310	**275**	250	205	**185**	160	160	**145**	125
	6	–	–	–	200	**150**	120	190	**160**	–	180	**140**	110	125	**110**	90
M	1	–	–	–	245	**215**	200	245	**220**	185	235	**205**	185	275	**220**	180
	2	–	–	–	220	**190**	155	220	**190**	170	210	**180**	150	180	**145**	125
	3	–	–	–	170	**145**	115	175	**155**	140	155	**140**	110	145	**125**	110
K	1	300	**220**	145	275	**245**	220	355	**320**	290	–	–	–	–	–	–
	2	260	**190**	125	215	**190**	180	280	**250**	230	–	–	–	–	–	–
	3	220	**175**	120	180	**160**	145	235	**210**	190	–	–	–	–	–	–
N	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
H	1	–	–	–	145	**110**	85	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

Material Group		SC3025			SC6525			SP6519			X400			X500		
P	1	–	–	–	445	**305**	170	355	**260**	155	310	**230**	145	325	**240**	155
	2	–	–	–	390	**270**	145	310	**230**	140	275	**205**	125	290	**215**	140
	3	–	–	–	350	**240**	125	275	**200**	120	240	**180**	115	250	**185**	120
	4	–	–	–	250	**175**	95	210	**150**	90	180	**130**	85	190	**145**	90
	5	–	–	–	190	**145**	95	170	**125**	85	–	–	–	155	**120**	85
	6	–	–	–	170	**120**	70	145	**100**	60	–	–	–	130	**95**	60
M	1	–	–	–	240	**215**	170	325	**235**	140	–	–	–	300	**220**	140
	2	–	–	–	230	**190**	145	280	**205**	125	–	–	–	265	**190**	120
	3	–	–	–	175	**155**	110	235	**170**	100	–	–	–	215	**155**	95
K	1	475	**330**	180	470	**325**	175	355	**265**	170	–	–	–	310	**265**	205
	2	400	**275**	145	365	**250**	140	290	**210**	130	–	–	–	265	**215**	155
	3	330	**230**	125	–	–	–	265	**190**	120	–	–	–	205	**170**	120
N	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
H	1	–	–	–	–	–	–	–	–	–	115	**85**	55	–	–	–
	2	–	–	–	–	–	–	–	–	–	95	**70**	40	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness increases, the speed should be decreased.

Dry

Wet

Material Group		GH2			KC522M			KCPK30			KCPM40			KCSM40		
P	1	–	–	–	315	**270**	260	435	**380**	355	285	**250**	235	–	–	–
	2	–	–	–	265	**230**	190	270	**245**	220	240	**210**	170	–	–	–
	3	–	–	–	245	**210**	170	245	**220**	195	220	**190**	150	–	–	–
	4	–	–	–	215	**175**	145	185	**170**	150	195	**165**	130	–	–	–
	5	–	–	–	175	**165**	145	250	**220**	200	165	**150**	130	165	**140**	115
	6	–	–	–	160	**120**	95	150	**130**	–	145	**110**	90	145	**105**	75
M	1	–	–	–	195	**170**	160	195	**175**	150	190	**165**	150	200	**165**	135
	2	–	–	–	175	**150**	125	175	**150**	135	170	**145**	120	170	**140**	115
	3	–	–	–	135	**115**	90	140	**125**	110	125	**110**	90	140	**105**	80
K	1	240	**175**	115	220	**195**	175	285	**255**	230	–	–	–	–	–	–
	2	210	**150**	100	170	**150**	145	225	**200**	185	–	–	–	–	–	–
	3	175	**140**	95	145	**130**	115	190	**170**	150	–	–	–	–	–	–
N	1	1150	**910**	385	–	–	–	–	–	–	–	–	–	–	–	–
	2	1150	**910**	385	–	–	–	–	–	–	–	–	–	–	–	–
	3	850	**700**	285	–	–	–	–	–	–	–	–	–	–	–	–
S	1	–	–	–	40	**30**	25	–	–	–	40	**30**	30	40	**30**	25
	2	–	–	–	40	**30**	25	–	–	–	40	**30**	30	40	**30**	25
	3	–	–	–	50	**40**	25	–	–	–	50	**40**	30	50	**40**	25
	4	–	–	–	70	**50**	30	65	**50**	30	65	**50**	30	55	**50**	30
H	1	–	–	–	115	**90**	70	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

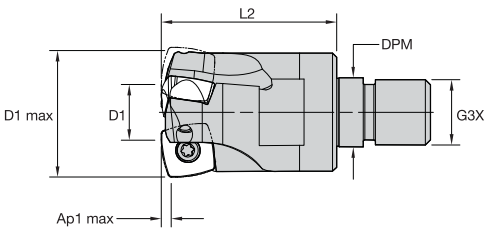
Material Group		SC3025			SC6525			SP6519			X400			X500		
P	1	355	**245**	135	445	**305**	170	285	**210**	125	250	**185**	115	260	**190**	125
	2	310	**215**	115	390	**270**	145	250	**185**	110	220	**165**	100	230	**170**	110
	3	280	**190**	100	350	**240**	125	220	**160**	95	190	**145**	90	200	**150**	95
	4	200	**140**	75	250	**175**	95	170	**120**	70	145	**105**	70	150	**115**	70
	5	150	**115**	75	190	**145**	95	135	**100**	70	–	–	–	125	**95**	70
	6	135	**95**	55	170	**120**	70	115	**80**	50	–	–	–	105	**75**	50
M	1	190	**170**	135	240	**215**	170	260	**190**	110	–	–	–	240	**175**	110
	2	185	**150**	115	230	**190**	145	225	**165**	100	–	–	–	210	**150**	95
	3	140	**125**	90	175	**155**	110	190	**135**	80	–	–	–	170	**125**	75
K	1	375	**260**	140	470	**325**	175	285	**210**	135	–	–	–	250	**210**	165
	2	290	**200**	110	365	**250**	140	230	**170**	105	–	–	–	210	**170**	125
	3	–	–	–	–	–	–	210	**150**	95	–	–	–	165	**135**	95
N	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	50	**40**	25	–	–	–	50	**30**	25
	2	–	–	–	–	–	–	50	**30**	20	–	–	–	45	**30**	20
	3	–	–	–	–	–	–	50	**40**	25	–	–	–	50	**40**	25
	4	–	–	–	–	–	–	75	**55**	35	–	–	–	70	**50**	30
H	1	–	–	–	–	–	–	–	–	–	90	**70**	45	–	–	–
	2	–	–	–	–	–	–	–	–	–	75	**55**	30	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness increases, the speed should be decreased.

Dry

Wet

- Ultra-fine pitch cutters available to increase material removal rates, especially on high-temp alloys.
- Positive design to support lower cutting forces and long overhang usage.
- Ramping and plunge milling capabilities.
- Screw-on cutters provide better rigidity and stability when used with small spindles: BT30, BT40, DV40, HSK50, HSK63, etc.
- Screw-on cutters can be less expensive when compared to cylindrical shank cutters due to their higher flexibility through multiple holder combinations.



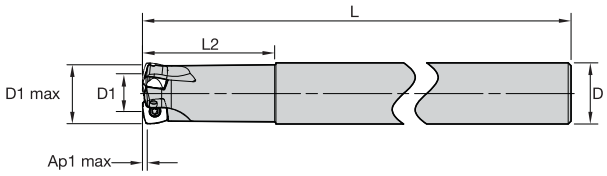
7792VXD12 Modular Head • Screw-On

order number	catalogue number	D1 max	D1	L2	G3X	DPM	Ap1 max	Z U
5659132	7792VXD12SA032Z2R43	32	11	43	M16	17,00	2,50	2
6025280	7792VXD12SA032Z3R43	32	14	43	M16	17,00	2,50	3
6025561	7792VXD12SA035Z3R43	35	17	43	M16	17,00	2,50	3
6025562	7792VXD12SA042Z4R43	42	24	43	M16	17,00	2,50	4

Spare Parts

catalogue number	insert screw	Nm	Torx driver
7792VXD12SA032Z2R43	D4010T	3,1	T15
7792VXD12SA032Z3R43	D4010T	3,1	T15
7792VXD12SA035Z3R43	D4010T	3,1	T15
7792VXD12SA042Z4R43	D4010T	3,1	T15

- Ultra-fine pitch cutters available to increase material removal rates, especially on high-temp alloys.
- Positive design to support lower cutting forces and long overhang usage.
- Ramping and plunge milling capabilities.



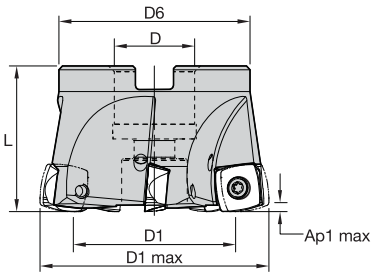
7792VXD12 Cylindrical Shank

order number	catalogue number	D1 max	D	D1	L	L2	Ap1 max	Z U
5661017	**7792VXD12CA032Z2R70**	32	32	11	250	70	2,50	2
6025563	**7792VXD12CA032Z3R70**	32	32	14	250	70	2,50	3

Spare Parts

catalogue number	insert screw	Nm	Torx driver
7792VXD12CA032Z2R70	**D4010T**	3,1	**T15**
7792VXD12CA032Z3R70	**D4010T**	3,1	**T15**

- Ultra-fine pitch cutters available to increase material removal rates, especially on high-temp alloys.
- Positive design to support lower cutting forces and long overhang usage.
- Ramping and plunge milling capabilities.



7792VXD12 Shell Mill • Coarse, Medium, and Fine Pitch

order number	catalogue number	D1 max	D	D1	D6	L	Ap1 max	Z U
6025272	7792VXD12-A040Z4R	40	22	22	38	40	2,50	4
5673504	7792VXD12-A050Z4R	50	22	32	48	40	2,50	4
6025273	7792VXD12-A050Z6R	50	22	32	45	40	2,50	6
5656728	7792VXD12-A052Z3R	52	22	34	48	40	2,50	3
5666187	7792VXD12-A052Z4R	52	22	34	48	40	2,50	4
5656383	7792VXD12-A052Z5R	52	22	34	48	40	2,50	5
6025274	7792VXD12-A052Z6R	52	22	34	45	40	2,50	6
5656729	7792VXD12-A063Z4R	63	22	45	53	40	2,50	4
5657235	7792VXD12-A063Z5R	63	22	45	53	40	2,50	5
6025275	7792VXD12-A063Z7R	63	22	45	45	40	2,50	7
5660065	7792VXD12-A066Z5R	66	27	48	58	45	2,50	5
6025276	7792VXD12-A066Z7R	66	27	48	50	45	2,50	7
5656730	7792VXD12-A080Z5R	80	27	62	55	50	2,50	5
5667478	7792VXD12-A080Z8R	80	27	62	55	50	2,50	8
6025277	7792VXD12-A080Z10R	80	27	62	55	50	2,50	10
5667834	7792VXD12-A100Z6R	100	32	82	82	50	2,50	6
5666144	7792VXD12-A100Z9R	100	32	82	82	50	2,50	9
6025278	7792VXD12-A100Z11R	100	32	82	68	50	2,50	11
5656380	7792VXD12-A125Z8R	125	40	107	82	63	2,50	8
5665943	7792VXD12-A125Z11R	125	40	107	82	63	2,50	11
5659130	7792VXD12-160Z7R	160	40	142	110	63	2,50	7

(continued)

NOTE: No through coolant for cutters where D1 max = 160mm.

(continued)

Spare Parts

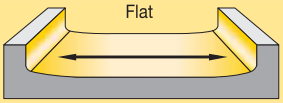
catalogue number	 insert screw	 Nm	 Torx driver	 mounting screw	 mounting screw
7792VXD12-A040Z4R	D4010T	3,1	T15	–	KLSSM22-39-CG
7792VXD12-A050Z4R	D4012T	3,1	T15	M10 1.5 X 25 SHCS	–
7792VXD12-A050Z6R	D4010T	3,1	TB15	M10 1.5 X 25 SHCS	–
7792VXD12-A052Z3R	D4012T	3,1	T15	M10 1.5 X 25 SHCS	–
7792VXD12-A052Z4R	D4012T	3,1	T15	M10 1.5 X 25 SHCS	–
7792VXD12-A052Z5R	D4010T	3,1	T15	M10 1.5 X 25 SHCS	–
7792VXD12-A052Z6R	D4010T	3,1	TB15	M10 1.5 X 25 SHCS	–
7792VXD12-A063Z4R	D4012T	3,1	T15	M10 1.5 X 25 SHCS	–
7792VXD12-A063Z5R	D4012T	3,1	T15	M10 1.5 X 25 SHCS	–
7792VXD12-A063Z7R	D4010T	3,1	TB15	M10 1.5 X 25 SHCS	–
7792VXD12-A066Z5R	D4012T	3,1	T15	M12 X 1.75 X 30 SHCS	–
7792VXD12-A066Z7R	D4010T	3,1	TB15	M12 X 1.75 X 30 SHCS	–
7792VXD12-A080Z5R	D4012T	3,1	T15	M12 X 1.75 X 30 SHCS	–
7792VXD12-A080Z8R	D4012T	3,1	T15	M12 X 1.75 X 30 SHCS	–
7792VXD12-A080Z10R	D4010T	3,1	TB15	M12 X 1.75 X 30 SHCS	–
7792VXD12-A100Z6R	D4012T	3,1	T15	M16 X 2 X 40 SHCS	–
7792VXD12-A100Z9R	D4012T	3,1	T15	M16 X 2 X 40 SHCS	–
7792VXD12-A100Z11R	D4010T	3,1	TB15	M16 X 2 X 40 SHCS	–
7792VXD12-A125Z8R	D4012T	3,1	T15	M20 X 2.5 X 50 SHCS	–
7792VXD12-A125Z11R	D4012T	3,1	T15	M20 X 2.5 X 50 SHCS	–
7792VXD12-160Z7R	D4012T	3,1	T15	–	–

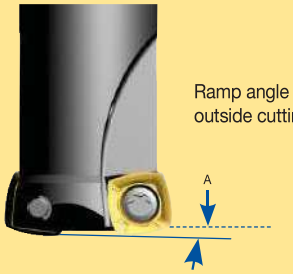
Technical Information (mm)

order number	catalogue number	dimension						max RPM
		facing pitch	ramping angle	helical hole min–max		ap max helical/ linear	a_e max plunging	
5661017	7792VXD12CA032Z2R70	10,60	1,8	42	62	1,80	9,00	31500
6025563	7792VXD12CA032Z3R70	10,6	1,8	42	62	1,80	9,00	31500
6025272	7792VXD12-A040Z4R	21,6	1,4	58	78	1,80	9,00	26500
5673504	7792VXD12-A050Z4R	31,6	0,9	78	98	1,80	9,00	22500
6025273	7792VXD12-A050Z6R	31,6	0,9	78	98	1,80	9,00	22500
5656728	7792VXD12-A052Z3R	33,60	0,8	82	102	1,80	9,00	22000
5666187	7792VXD12-A052Z4R	33,60	0,8	82	102	1,80	9,00	22000
5656383	7792VXD12-A052Z5R	33,60	0,8	82	102	1,80	9,00	22000
6025274	7792VXD12-A052Z6R	33,6	0,8	82	102	1,80	9,00	22000
5656729	7792VXD12-A063Z4R	44,60	0,6	104	124	1,80	9,00	19500
5657235	7792VXD12-A063Z5R	44,60	0,6	104	124	1,80	9,00	19500
6025275	7792VXD12-A063Z7R	44,6	0,6	104	124	1,80	9,00	19500
5660065	7792VXD12-A066Z5R	47,60	0,5	110	130	1,80	9,00	19000
6025276	7792VXD12-A066Z7R	47,6	0,5	110	130	1,80	9,00	19000
5656730	7792VXD12-A080Z5R	61,60	0,5	138	158	1,80	9,00	17000
5667478	7792VXD12-A080Z8R	61,60	0,5	138	158	1,80	9,00	17000
6025277	7792VXD12-A080Z10R	61,6	0,5	138	158	1,80	9,00	17000
5667834	7792VXD12-A100Z6R	81,60	0,3	178	198	1,80	9,00	15000
5666144	7792VXD12-A100Z9R	81,60	0,3	178	198	1,80	9,00	15000
6025278	7792VXD12-A100Z11R	81,6	0,3	178	198	1,80	9,00	15000
5656380	7792VXD12-A125Z8R	106,60	0,2	228	248	1,80	9,00	13000
5665943	7792VXD12-A125Z11R	106,60	0,2	228	248	1,80	9,00	13000
5659130	7792VXD12-160Z7R	141,6	0,2	298	318	1,80	9,00	11500
5659132	7792VXD12SA032Z2R43	10,60	1,8	42	62	1,80	9,00	31500
6025280	7792VXD12SA032Z3R43	10,6	1,8	42	62	1,80	9,0	31500
6025561	7792VXD12SA035Z3R43	16,6	1,8	48	68	1,80	9,0	29000
6025562	7792VXD12SA042Z4R43	23,6	1,3	62	82	1,80	9,0	25500


Helical Interpolation


Plunging





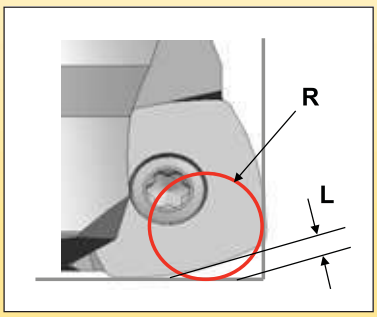
Ramp angle A uses one outside cutting edge only.

A = max ramp angle utilising full face contact.

CNC Programme • Corner Radius Definition

The use of common CAD/CAM systems requires a round insert dimension to be known for cavity machining.
This is available with 7792VX cutters as shown below and in the reference table.

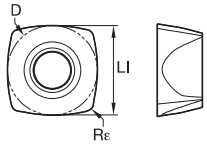
For finish pass applications:
Wiper Facet for finishing use max feed 0,5 mm/z



Programming Data (mm)			
Insert corner nose size (IC)	Rε	R	L
06	0,80	1,37	0,40
09	0,80	2,01	0,73
	1,20	2,27	0,67
12	0,80	2,50	1,02
	1,20	2,73	0,97

✦✦ first choice with coolant
✧✧ first choice without coolant
✦ alternate choice with coolant
✧ alternate choice without coolant

P1–P2					✧/✦		✧✧	✦✦		
P3–P4		✧/✦	✧	✧			✧✧	✦✦		
P5–P6		✧/✦		✧			✧	✦✦	✧✧	✧/✦
M1–M2					✦✦			✧✧		✦
M3					✦			✦		✦✦
K1–K2						✧✧	✧	✦✦		
K3		✧/✦	✧			✧✧	✧	✦✦		
N1	✦✦									
N2	✦✦									
S1					✦			✦		✦✦
S2					✦			✦		✦✦
S3					✦✦			✦		✦
S4					✦✦			✦		✦



ISO catalogue number	D	LI	Rε	GH2	KC522M	KCPK30	KCPM40	KCSM40	SC3025	SC6525	SP6519	X400	X500
Light Machining													
XDPT120512ERD411	12,70	12,70	1,2	–	–	–	–	6187808	–	–	–	–	–
General Machining													
XDLT120508ERD41	12,70	12,70	0,8	–	–	–	–	6441067	–	5652729	5654220	–	5653930
XDLT120508ERD721	12,70	12,70	0,8	5656252	–	–	–	–	–	–	–	–	–
XDPT120508ERD41	12,70	12,70	0,8	–	–	–	–	6187806	–	6010774	6010773	–	6010772
XDLT120512ERD411	12,70	12,70	1,2	–	–	–	–	6441068	–	–	5652899	–	5652248
XDPT120515SRGP	12,70	12,70	1,5	–	6074030	6074028	6074027	–	–	–	–	–	–
Heavy Machining													
XDLW120508SRD	12,70	12,70	0,8	–	–	–	–	–	5656214	–	–	5651223	5655109
XDPW120515SRD	12,70	12,70	1,5	–	6033256	6033255	6033254	–	–	–	–	–	–

XDL…: Ground inserts; high versatility for machining soft materials and difficult-to-machine stainless steels and high-temp alloys.
XDP…: Pressed; lower cost per edge for most roughing to semi-finishing operations.

.E..D721: First choice for non-ferrous alloys.
.E.D41: General purpose in soft steels. Best fit for face milling and slotting operations.
.E.D411: General purpose in stainless steel and high-temp alloys. Best fit for pocketing and profiling operations in general, also in combination with long overhangs.
.S..D: First choice for roughing alloyed steel and cast iron.
.S.GP: General use on alloyed steels. Good balance across all machining situations.

Recommended Starting Feeds [mm] • High-Feed

Light Machining	General Purpose	Heavy Machining

At 2,50 Axial Depth of Cut (ap)

Insert Geometry	Recommended Starting Feed per Tooth (Fz) in Relation to % of Radial Engagement (ae)															Insert Geometry
	5%			10%			20%			30%			40–100%			
.E..D721	0,28	**1,02**	1,65	0,21	**0,73**	1,18	0,15	**0,55**	0,88	0,13	**0,48**	0,76	0,12	**0,44**	0,70	.E..D721
.E..D41	0,36	**1,15**	1,81	0,26	**0,83**	1,29	0,19	**0,62**	0,96	0,17	**0,54**	0,83	0,15	**0,49**	0,76	.E..D41
.E..D411	0,36	**1,15**	1,81	0,26	**0,83**	1,29	0,19	**0,62**	0,96	0,17	**0,54**	0,83	0,15	**0,49**	0,76	.E..D411
.S..GP	0,51	**1,30**	1,99	0,37	**0,93**	1,41	0,28	**0,70**	1,05	0,24	**0,61**	0,91	0,22	**0,55**	0,83	.S..GP
.S..D	0,51	**1,30**	1,95	0,37	**0,93**	1,38	0,28	**0,70**	1,03	0,24	**0,61**	0,89	0,22	**0,55**	0,82	.S..D

At 1,70 Axial Depth of Cut (ap)

Insert Geometry	Recommended Starting Feed per Tooth (Fz) in Relation to % of Radial Engagement (ae)															Insert Geometry
	5%			10%			20%			30%			40–100%			
.E..D721	0,34	**1,23**	2,00	0,25	**0,88**	1,42	0,19	**0,66**	1,05	0,16	**0,57**	0,92	0,15	**0,52**	0,84	.E..D721
.E..D41	0,43	**1,39**	2,20	0,31	**0,99**	1,56	0,23	**0,74**	1,15	0,20	**0,64**	1,00	0,19	**0,59**	0,92	.E..D41
.E..D411	0,43	**1,39**	2,20	0,31	**0,99**	1,56	0,23	**0,74**	1,15	0,20	**0,64**	1,00	0,19	**0,59**	0,92	.E..D411
.S..GP	0,62	**1,57**	2,41	0,45	**1,12**	1,70	0,33	**0,84**	1,26	0,29	**0,73**	1,10	0,27	**0,67**	1,00	.S..GP
.S..D	0,62	**1,57**	2,36	0,45	**1,12**	1,67	0,33	**0,84**	1,24	0,29	**0,73**	1,08	0,27	**0,67**	0,98	.S..D

At 1,30 Axial Depth of Cut (ap)

Insert Geometry	Recommended Starting Feed per Tooth (Fz) in Relation to % of Radial Engagement (ae)															Insert Geometry
	5%			10%			20%			30%			40–100%			
.E..D721	0,39	**1,41**	2,29	0,28	**1,01**	1,62	0,21	**0,75**	1,20	0,18	**0,65**	1,04	0,17	**0,60**	0,96	.E..D721
.E..D41	0,49	**1,59**	2,52	0,35	**1,13**	1,78	0,26	**0,84**	1,31	0,23	**0,73**	1,14	0,21	**0,67**	1,04	.E..D41
.E..D411	0,49	**1,59**	2,52	0,35	**1,13**	1,78	0,26	**0,84**	1,31	0,23	**0,73**	1,14	0,21	**0,67**	1,04	.E..D411
.S..GP	0,70	**1,80**	2,76	0,51	**1,28**	1,94	0,38	**0,95**	1,44	0,33	**0,83**	1,25	0,30	**0,76**	1,14	.S..GP
.S..D	0,70	**1,80**	2,71	0,51	**1,28**	1,90	0,38	**0,95**	1,41	0,33	**0,83**	1,22	0,30	**0,76**	1,12	.S..D

Feed Rate Guide • Plunging • IC 12 • fz [mm/tooth]

Insert Geometry	Programmed Feed per Tooth (fz) Max 9mm insert engagement (ae radial engagement)			Insert Geometry
.E..D721	0,06	**0,20**	0,32	.E..D721
.E..D41	0,07	**0,23**	0,35	.E..D41
.E..D411	0,07	**0,23**	0,35	.E..D411
.S..GP	0,10	**0,25**	0,38	.S..GP
.S..D	0,10	**0,25**	0,38	.S..D

Material Group		GH2			KC522M			KCPK30			KCPM40			KCSM40		
P	1	–	–	–	395	**340**	325	545	**475**	445	355	**310**	295	275	**240**	205
	2	–	–	–	330	**290**	240	335	**305**	275	300	**260**	215	240	**205**	160
	3	–	–	–	305	**260**	210	305	**275**	245	275	**235**	190	205	**180**	160
	4	–	–	–	270	**220**	180	230	**210**	190	245	**205**	160	180	**160**	145
	5	–	–	–	220	**205**	180	310	**275**	250	205	**185**	160	160	**145**	125
	6	–	–	–	200	**150**	120	190	**160**	145	180	**140**	110	125	**110**	90
M	1	–	–	–	245	**215**	200	245	**220**	185	235	**205**	185	275	**220**	180
	2	–	–	–	220	**190**	155	220	**190**	170	210	**180**	150	180	**145**	125
	3	–	–	–	170	**145**	115	175	**155**	140	155	**140**	110	145	**125**	110
K	1	300	**220**	145	275	**245**	220	355	**320**	290	–	–	–	–	–	–
	2	260	**190**	125	215	**190**	180	280	**250**	230	–	–	–	–	–	–
	3	220	**175**	120	180	**160**	145	235	**210**	190	–	–	–	–	–	–
N	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
H	1	–	–	–	145	**110**	85	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

Material Group		SC3025			SC6525			SP6519			X400			X500		
P	1	–	–	–	445	**305**	170	355	**260**	155	310	**230**	145	325	**240**	155
	2	–	–	–	390	**270**	145	310	**230**	140	275	**205**	125	290	**215**	140
	3	–	–	–	350	**240**	125	275	**200**	120	240	**180**	115	250	**185**	120
	4	–	–	–	250	**175**	95	210	**150**	90	180	**130**	85	190	**145**	90
	5	–	–	–	190	**145**	95	170	**125**	85	–	–	–	155	**120**	85
	6	–	–	–	170	**120**	70	145	**100**	60	–	–	–	130	**95**	60
M	1	–	–	–	240	**215**	170	325	**235**	140	–	–	–	300	**220**	140
	2	–	–	–	230	**190**	145	280	**205**	125	–	–	–	265	**190**	120
	3	–	–	–	175	**155**	110	235	**170**	100	–	–	–	215	**155**	95
K	1	475	**330**	180	470	**325**	175	355	**265**	170	–	–	–	310	**265**	205
	2	400	**275**	145	365	**250**	140	290	**210**	130	–	–	–	265	**215**	155
	3	330	**230**	125	–	–	–	265	**190**	120	–	–	–	205	**170**	120
N	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
H	1	–	–	–	–	–	–	–	–	–	115	**85**	55	–	–	–
	2	–	–	–	–	–	–	–	–	–	95	**70**	40	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness increases, the speed should be decreased.

Dry

Wet

Material Group		GH2			KC522M			KCPK30			KCPM40			KCSM40		
P	1	–	–	–	315	**270**	260	435	**380**	355	285	**250**	235	–	–	–
	2	–	–	–	265	**230**	190	270	**245**	220	240	**210**	170	–	–	–
	3	–	–	–	245	**210**	170	245	**220**	195	220	**190**	150	–	–	–
	4	–	–	–	215	**175**	145	185	**170**	150	195	**165**	130	–	–	–
	5	–	–	–	175	**165**	145	250	**220**	200	165	**150**	130	165	**140**	115
	6	–	–	–	160	**120**	95	150	**130**	120	145	**110**	90	145	**105**	75
M	1	–	–	–	195	**170**	160	195	**175**	150	190	**165**	150	200	**165**	135
	2	–	–	–	175	**150**	125	175	**150**	135	170	**145**	120	170	**140**	115
	3	–	–	–	135	**115**	90	140	**125**	110	125	**110**	90	140	**105**	80
K	1	240	**175**	115	220	**195**	175	285	**255**	230	–	–	–	–	–	–
	2	210	**150**	100	170	**150**	145	225	**200**	185	–	–	–	–	–	–
	3	175	**140**	95	145	**130**	115	190	**170**	150	–	–	–	–	–	–
N	1	1150	**910**	385	–	–	–	–	–	–	–	–	–	–	–	–
	2	1150	**910**	385	–	–	–	–	–	–	–	–	–	–	–	–
	3	850	**700**	285	–	–	–	–	–	–	–	–	–	–	–	–
S	1	–	–	–	40	**30**	25	–	–	–	40	**30**	30	40	**30**	25
	2	–	–	–	40	**30**	25	–	–	–	40	**30**	30	40	**30**	25
	3	–	–	–	50	**40**	25	–	–	–	50	**40**	30	50	**40**	25
	4	–	–	–	70	**50**	30	65	**50**	30	65	**50**	30	55	**50**	30
H	1	–	–	–	115	**90**	70	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

Material Group		SC3025			SC6525			SP6519			X400			X500		
P	1	355	**245**	135	445	**305**	170	285	**210**	125	250	**185**	115	260	**190**	125
	2	310	**215**	115	390	**270**	145	250	**185**	110	220	**165**	100	230	**170**	110
	3	280	**190**	100	350	**240**	125	220	**160**	95	190	**145**	90	200	**150**	95
	4	200	**140**	75	250	**175**	95	170	**120**	70	145	**105**	70	150	**115**	70
	5	150	**115**	75	190	**145**	95	135	**100**	70	–	–	–	125	**95**	70
	6	135	**95**	55	170	**120**	70	115	**80**	50	–	–	–	105	**75**	50
M	1	190	**170**	135	240	**215**	170	260	**190**	110	–	–	–	240	**175**	110
	2	185	**150**	115	230	**190**	145	225	**165**	100	–	–	–	210	**150**	95
	3	140	**125**	90	175	**155**	110	190	**135**	80	–	–	–	170	**125**	75
K	1	375	**260**	140	470	**325**	175	285	**210**	135	–	–	–	250	**210**	165
	2	290	**200**	110	365	**250**	140	230	**170**	105	–	–	–	210	**170**	125
	3	–	–	–	–	–	–	210	**150**	95	–	–	–	165	**135**	95
N	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	50	**40**	25	–	–	–	50	**30**	25
	2	–	–	–	–	–	–	50	**30**	20	–	–	–	45	**30**	20
	3	–	–	–	–	–	–	50	**40**	25	–	–	–	50	**40**	25
	4	–	–	–	–	–	–	75	**55**	35	–	–	–	70	**50**	30
H	1	–	–	–	–	–	–	–	–	–	90	**70**	45	–	–	–
	2	–	–	–	–	–	–	–	–	–	75	**55**	30	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness increases, the speed should be decreased.

Dry

Wet

Dodeka™ 15° High-Feed

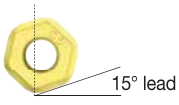
Primary Application

- Double-sided inserts with twelve cutting edges.
- Engineered to provide you with superior MRR and productivity through high feed rates for roughing operations.
- Equipped with standard Dodeka inserts.

Features and Benefits

Dodeka 15° Series — Most comprehensive high-feed milling platform. Provides excellent cost per cutting edge. Equipped with standard Dodeka inserts.

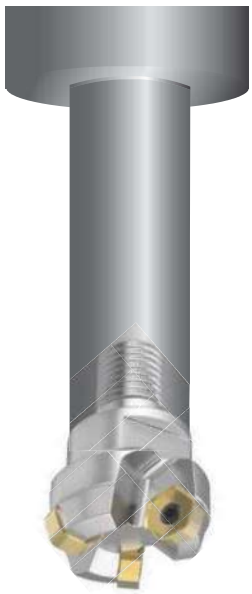
Dodeka Mini High-Feed 15°
Dodeka High-Feed 15°



12 True Cutting Edges

Dodeka Mini	**Ap1 max = 1,6mm**
Dodeka	**Ap1 max = 2,2mm**

Dodeka Mini HF and Dodeka HF can be loaded with all Dodeka Mini standard inserts, except wiper inserts.



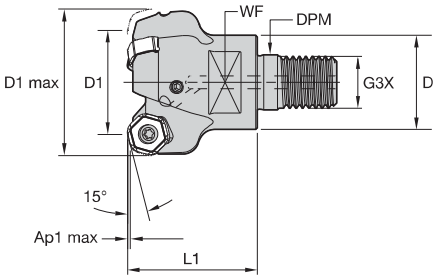
Dodeka Mini High-Feed

First choice for long reach face milling applications or light fixtures.

Chip thinning effect due to lead angle 14,5°. Tremendous enlargement of feed rate and metal removal rate (MRR).

Up to 40% shorter machining cycle time versus conventional milling.

- Twelve cutting edges per insert.
- High-feed capability.



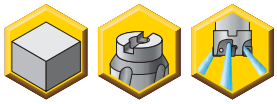
Dodeka Mini High-Feed 15° • Screw-On End Mills

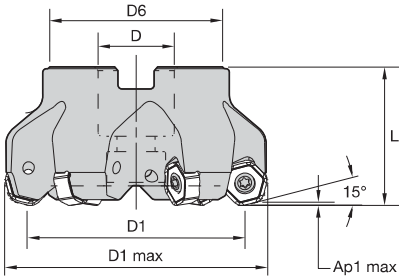
order number	catalogue number	D1	D1 max	D	DPM	G3X	L1	WF	Ap1 max	Z	kg	max RPM
4153687	KSHRHF025D03M16HN06	25	38,2	29	17,0	M16	32,0	22	1,6	3	0,16	20000

Spare Parts

D1	 insert screw	 Nm	 wrench
25	193.492	3,5	170.025

- Twelve cutting edges per insert.
- High-feed capability.





Dodeka Mini High-Feed 15° • Shell Mills

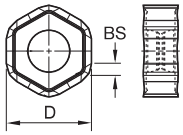
order number	catalogue number	D1	D1 max	D	D6	L	Ap1 max	Z	kg	max RPM
4153706	**KSHRHF040A05RS15HN06**	40	53,2	22	38	40	1,6	5	0,29	15800
4153707	**KSHRHF050A05RS15HN06**	50	63,1	22	38	40	1,6	5	0,39	12700
4153708	**KSHRHF063A06RS15HN06**	63	76,1	22	50	40	1,6	6	0,67	10100
4153709	**KSHRHF080A08RS15HN06**	80	93,1	27	60	50	1,6	8	1,26	7900

Spare Parts

D1	 insert screw	 Nm	 wrench	 socket-head cap screw
40	**193.492**	3,5	**170.025**	**125.025**
50	**193.492**	3,5	**170.025**	**125.025**
63	**193.492**	3,5	**170.025**	**125.025**
80	**193.492**	3,5	**170.025**	**125.230**

✦✦ first choice with coolant
✧✧ first choice without coolant
✦ alternate choice with coolant
✧ alternate choice without coolant

P1–P2				✧/✦	✦✦		✧✧		
P3–P4				✧/✦	✦✦		✧	✧✧	
P5–P6				✧/✦	✦✦		✧	✧✧	
M1–M2				✧/✦	✦			✦	✦✦
M3				✧/✦	✦				✦✦
K1–K2		✧	✦✦			✧✧			
K3		✧	✦✦				✧✧		
N1	✦✦								
N2	✦✦								
S1					✦				✦✦
S2					✦				✦✦
S3				✦	✦				✦✦
S4				✦	✦				✦✦



	ISO catalogue number	D	BS	KC410M	KC510M	KC520M	KC522M	KC725M	KCK15	KCPK30	KCPM40	KCSM40
	Light Machining											
	**HNGJ0604ANENLD**	12	1,54	–	4121576	–	4121578	–	4119227	4119190	5550701	6165862
	HNGJ0604ANFNLDJ	12	1,54	4121575	–	–	–	–	–	–	–	–
	General Machining											
	**HNPJ0604ANSNGD**	12	1,45	–	–	4119696	4119697	4119701	4119699	4119700	5550703	6165759
	Heavy Machining											
	**HNGJ0604ANSNHD**	12	1,45	–	–	–	–	–	6039660	6039812	6039659	6165864
	HNPJ0604ANSNHD	12	1,45	–	–	–	4119703	4119229	–	4119228	5550702	6165760
	HNPJ060432ANSNHD	12	–	–	–	–	–	–	–	–	6068798	6165861

Recommended Starting Feeds [mm]

Light Machining	General Purpose	Heavy Machining

Insert Geometry	Recommended Starting Feed per Tooth (Fz) in Relation to % of Radial Engagement (ae)															Insert Geometry
	5%			10%			20%			30%			40%–100%			
.F..LDJ	0,45	**1,27**	2,22	0,33	**0,91**	1,57	0,25	**0,68**	1,17	0,21	**0,59**	1,01	0,20	**0,54**	0,93	.F..LDJ
.E..LD	0,51	**1,65**	2,81	0,37	**1,17**	1,97	0,27	**0,87**	1,46	0,24	**0,76**	1,27	0,22	**0,70**	1,16	.E..LD
.S..GD	0,92	**2,22**	3,41	0,66	**1,57**	2,38	0,49	**1,17**	1,75	0,43	**1,01**	1,52	0,39	**0,93**	1,39	.S..GD
.S..HD	0,92	**2,35**	3,89	0,66	**1,67**	2,70	0,49	**1,23**	1,98	0,43	**1,07**	1,72	0,39	**0,98**	1,57	.S..HD

HNG….: Ground inserts; high versatility for all medium applications and difficult-to-machine stainless steels and high-temp alloys.
HNP….: Pressed inserts; lower cost per edge for roughing operations with high feed rates.

Material Group		KC410M*			KC510M			KC520M			KC522M			KC725M		
P	1	–	–	–	–	–	–	–	–	–	395	**340**	325	310	**275**	260
	2	–	–	–	–	–	–	–	–	–	330	**290**	240	265	**230**	190
	3	–	–	–	–	–	–	–	–	–	305	**260**	210	240	**205**	170
	4	–	–	–	295	**240**	205	–	–	–	270	**220**	180	215	**180**	145
	5	–	–	–	–	–	–	–	–	–	220	**205**	180	180	**160**	145
	6	–	–	–	–	–	–	–	–	–	200	**150**	120	155	**120**	95
M	1	–	–	–	–	–	–	–	–	–	245	**215**	200	205	**180**	160
	2	–	–	–	–	–	–	–	–	–	220	**190**	155	185	**155**	130
	3	–	–	–	–	–	–	–	–	–	170	**145**	115	140	**120**	95
K	1	–	–	–	355	**320**	290	325	**295**	260	275	**245**	220	–	–	–
	2	–	–	–	275	**245**	230	250	**230**	210	215	**190**	180	–	–	–
	3	–	–	–	235	**210**	190	210	**190**	175	180	**160**	145	–	–	–
N	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
H	1	–	–	–	190	**155**	110	–	–	–	145	**110**	85	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

Material Group		KCK15			KCPK30			KCPM40			KCSM40		
P	1	–	–	–	545	**475**	445	355	**310**	295	275	**240**	205
	2	–	–	–	335	**305**	275	300	**260**	215	240	**205**	160
	3	–	–	–	305	**275**	245	275	**235**	190	205	**180**	160
	4	–	–	–	230	**210**	190	245	**205**	160	180	**160**	145
	5	–	–	–	310	**275**	250	205	**185**	160	160	**145**	125
	6	–	–	–	190	**160**	145	180	**140**	110	125	**110**	90
M	1	–	–	–	245	**220**	185	235	**205**	185	275	**220**	180
	2	–	–	–	220	**190**	170	210	**180**	150	180	**145**	125
	3	–	–	–	175	**155**	140	155	**140**	110	145	**125**	110
K	1	505	**460**	410	355	**320**	290	–	–	–	–	–	–
	2	400	**355**	330	280	**250**	230	–	–	–	–	–	–
	3	335	**300**	275	235	**210**	190	–	–	–	–	–	–
N	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–	–	–	–
H	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–

*Recommended for wet machining only.

NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness increases, the speed should be decreased.

Dry

Wet

Material Group		KC410M			KC510M			KC520M			KC522M			KC725M		
P	1	–	–	–	–	–	–	–	–	–	315	**270**	260	250	**220**	210
	2	–	–	–	–	–	–	–	–	–	265	**230**	190	210	**185**	150
	3	–	–	–	–	–	–	–	–	–	245	**210**	170	190	**165**	135
	4	–	–	–	235	**190**	165	–	–	–	215	**175**	145	170	**145**	115
	5	–	–	–	–	–	–	–	–	–	175	**165**	145	145	**130**	115
	6	–	–	–	–	–	–	–	–	–	160	**120**	95	125	**95**	75
M	1	–	–	–	–	–	–	–	–	–	195	**170**	160	165	**145**	130
	2	–	–	–	–	–	–	–	–	–	175	**150**	125	150	**125**	105
	3	–	–	–	–	–	–	–	–	–	135	**115**	90	110	**95**	75
K	1	–	–	–	285	**255**	230	260	**235**	210	220	**195**	175	–	–	–
	2	–	–	–	220	**195**	185	200	**185**	170	170	**150**	145	–	–	–
	3	–	–	–	190	**170**	150	170	**150**	140	145	**130**	115	–	–	–
N	1	1170	**1035**	955	615	**550**	505	–	–	–	–	–	–	–	–	–
	2	1035	**955**	880	555	**510**	470	–	–	–	–	–	–	–	–	–
	3	1035	**955**	880	555	**510**	470	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	–	–	–	40	**30**	25	30	**30**	25
	2	–	–	–	–	–	–	–	–	–	40	**30**	25	30	**30**	25
	3	–	–	–	–	–	–	–	–	–	50	**40**	25	45	**30**	25
	4	–	–	–	–	–	–	–	–	–	70	**50**	30	50	**45**	30
H	1	–	–	–	150	**125**	90	–	–	–	115	**90**	70	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

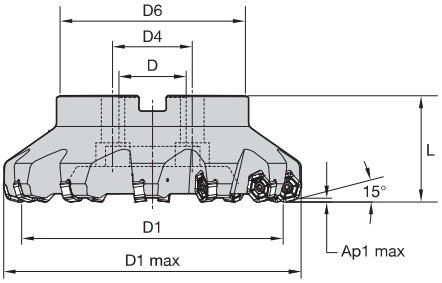
Material Group		KCK15			KCPK30			KCPM40			KCSM40		
P	1	–	–	–	435	**380**	355	285	**250**	235	–	–	–
	2	–	–	–	270	**245**	220	240	**210**	170	–	–	–
	3	–	–	–	245	**220**	195	220	**190**	150	–	–	–
	4	–	–	–	185	**170**	150	195	**165**	130	–	–	–
	5	–	–	–	250	**220**	200	165	**150**	130	165	**140**	115
	6	–	–	–	150	**130**	120	145	**110**	90	145	**105**	75
M	1	–	–	–	195	**175**	150	190	**165**	150	200	**165**	135
	2	–	–	–	175	**150**	135	170	**145**	120	170	**140**	115
	3	–	–	–	140	**125**	110	125	**110**	90	140	**105**	80
K	1	405	**370**	330	285	**255**	230	–	–	–	–	–	–
	2	320	**285**	265	225	**200**	185	–	–	–	–	–	–
	3	270	**240**	220	190	**170**	150	–	–	–	–	–	–
N	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	40	**30**	30	40	**30**	25
	2	–	–	–	–	–	–	40	**30**	30	40	**30**	25
	3	–	–	–	–	–	–	50	**40**	30	50	**40**	25
	4	–	–	–	65	**50**	30	65	**50**	30	55	**50**	30
H	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–

NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness increases, the speed should be decreased.

Dry

Wet

- High feed rates for rough face milling.
- 2mm depth-of-cut capability.
- Twelve cutting edges per insert.



Dodeka High-Feed 15° • Shell Mills

order number	catalogue number	D1	D1 max	D	D4	D6	L	Ap1 max	Z	kg	max RPM
4042533	KSHRHF63A05RS15HN09	63	80,9	22	–	50	40	2,2	5	0,65	8950
4042534	KSHRHF80A06RS15HN09	80	97,9	27	–	60	50	2,2	6	1,24	7300
4042535	KSHRHF100B08RS15HN09	100	117,9	32	–	80	50	2,2	8	1,89	5900
4042536	KSHRHF125B09RS15HN09	125	142,9	40	–	90	63	2,2	9	3,23	4800

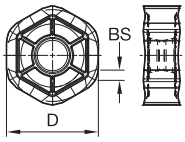
Spare Parts

D1	insert screw	Nm	wrench	socket-head cap screw	coolant lock screw assembly	coolant lock screw	coolant shower plate
63	193.492	3,5	170.025	125.025	–	–	–
80	193.492	3,5	170.025	125.230	–	–	–
100	193.492	3,5	170.025	–	MS2189C	–	–
125	193.492	3,5	170.025	–	–	420.200	470.232

NOTE: Coolant lock screw assembly and coolant cap must be ordered separately.

✦✦ first choice with coolant
✧✧ first choice without coolant
✦ alternate choice with coolant
✧ alternate choice without coolant

P1–P2			✧/✦	✦✦		✧✧		
P3–P4			✧/✦	✦✦		✧	✧✧	
P5–P6			✧/✦	✦✦		✧	✧✧	
M1–M2			✧/✦	✦			✦	✦✦
M3			✧/✦	✦				✦✦
K1–K2		✦✦			✧✧			
K3		✦✦				✧✧		
N1	✦✦							
N2	✦✦							
S1				✦				✦✦
S2				✦				✦✦
S3			✦	✦				✦✦
S4			✦	✦				✦✦



	ISO catalogue number	D	BS	KC410M	KC520M	KC522M	KC725M	KCK15	KCPK30	KCPM40	KCSM40
	**Light Machining**										
	HNGJ0905ANFNLDJ	16	1,80	3849320	–	–	–	–	–	–	–
	HNGJ0905ANENLD	16	1,80	–	3331174	3093561	3331175	3330952	3331178	–	6178103
	**General Machining**										
	HNGJ0905ANSNGD	16	1,80	–	–	–	3331176	3331173	3093719	5550793	6178104
	HNPJ0905ANSNGD	16	1,80	–	3763726	3774250	3763727	3763725	3763728	5550795	–
	**Heavy Machining**										
	HNGJ0905ANSNHD	16	1,66	–	–	–	3556331	3556330	3556332	5550794	6178105
	HNPJ0905ANSNHD	16	1,66	–	–	3774249	3763723	3763185	3763724	5550796	6178108
	HNPJ090543ANSNHD	16	–	–	–	3774251	3763730	3763729	3763731	5550797	6178109
	HNGJ090543ANSNHD	16	–	–	–	–	3556374	3556373	3556375	6068043	6178106

Recommended Starting Feeds [mm]

Light Machining	General Purpose	Heavy Machining

Insert Geometry	Recommended Starting Feed per Tooth (Fz) in Relation to % of Radial Engagement (ae)															Insert Geometry
	5%			10%			20%			30%			40–100%			
.F..LDJ	0.45	**1.27**	2.22	0.33	**0.91**	1.57	0.25	**0.68**	1.17	0.21	**0.59**	1.01	0.20	**0.54**	0.93	.F..LDJ
.E..LD	0.63	**1.84**	2.81	0.46	**1.31**	1.97	0.34	**0.97**	1.46	0.30	**0.84**	1.27	0.27	**0.77**	1.16	.E..LD
.S..GD	0.92	**2.01**	3.27	0.66	**1.42**	2.29	0.49	**1.06**	1.69	0.43	**0.92**	1.46	0.39	**0.84**	1.34	.S..GD
.S..HD	0.92	**2.35**	3.89	0.66	**1.67**	2.70	0.49	**1.23**	1.98	0.43	**1.07**	1.72	0.39	**0.98**	1.57	.S..HD

HNG….: Ground inserts; high versatility for all medium applications and difficult-to-machine stainless steels and high-temp alloys.
HNP….: Pressed inserts; lower cost per edge for roughing operations with high feed rates.

Material Group		KC410M*			KC520M			KC522M			KC725M		
P	1	–	–	–	–	–	–	395	**340**	325	310	**275**	260
	2	–	–	–	–	–	–	330	**290**	240	265	**230**	190
	3	–	–	–	–	–	–	305	**260**	210	240	**205**	170
	4	–	–	–	–	–	–	270	**220**	180	215	**180**	145
	5	–	–	–	–	–	–	220	**205**	180	180	**160**	145
	6	–	–	–	–	–	–	200	**150**	120	155	**120**	95
M	1	–	–	–	–	–	–	245	**215**	200	205	**180**	160
	2	–	–	–	–	–	–	220	**190**	155	185	**155**	130
	3	–	–	–	–	–	–	170	**145**	115	140	**120**	95
K	1	–	–	–	325	**295**	260	275	**245**	220	–	–	–
	2	–	–	–	250	**230**	210	215	**190**	180	–	–	–
	3	–	–	–	210	**190**	175	180	**160**	145	–	–	–
N	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–	–	–	–
H	1	–	–	–	–	–	–	145	**110**	85	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–

Material Group		KCK15			KCPK30			KCPM40			KCSM40		
P	1	–	–	–	545	**475**	445	355	**310**	295	275	**240**	205
	2	–	–	–	335	**305**	275	300	**260**	215	240	**205**	160
	3	–	–	–	305	**275**	245	275	**235**	190	205	**180**	160
	4	–	–	–	230	**210**	190	245	**205**	160	180	**160**	145
	5	–	–	–	310	**275**	250	205	**185**	160	160	**145**	125
	6	–	–	–	190	**160**	145	180	**140**	110	125	**110**	90
M	1	–	–	–	245	**220**	185	235	**205**	185	275	**220**	180
	2	–	–	–	220	**190**	170	210	**180**	150	180	**145**	125
	3	–	–	–	175	**155**	140	155	**140**	110	145	**125**	110
K	1	505	**460**	410	355	**320**	290	–	–	–	–	–	–
	2	400	**355**	330	280	**250**	230	–	–	–	–	–	–
	3	335	**300**	275	235	**210**	190	–	–	–	–	–	–
N	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–	–	–	–
H	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–

*Recommended for wet machining only.

NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness increases, the speed should be decreased.

Dry

Wet

Material Group		KC410M			KC520M			KC522M			KC725M		
P	1	–	–	–	–	–	–	315	**270**	260	250	**220**	210
	2	–	–	–	–	–	–	265	**230**	190	210	**185**	150
	3	–	–	–	–	–	–	245	**210**	170	190	**165**	135
	4	–	–	–	–	–	–	215	**175**	145	170	**145**	115
	5	–	–	–	–	–	–	175	**165**	145	145	**130**	115
	6	–	–	–	–	–	–	160	**120**	95	125	**95**	75
M	1	–	–	–	–	–	–	195	**170**	160	165	**145**	130
	2	–	–	–	–	–	–	175	**150**	125	150	**125**	105
	3	–	–	–	–	–	–	135	**115**	90	110	**95**	75
K	1	–	–	–	260	**235**	210	220	**195**	175	–	–	–
	2	–	–	–	200	**185**	170	170	**150**	145	–	–	–
	3	–	–	–	170	**150**	140	145	**130**	115	–	–	–
N	1	1170	**1035**	955	–	–	–	–	–	–	–	–	–
	2	1035	**955**	880	–	–	–	–	–	–	–	–	–
	3	1035	**955**	880	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	40	**30**	25	30	**30**	25
	2	–	–	–	–	–	–	40	**30**	25	30	**30**	25
	3	–	–	–	–	–	–	50	**40**	25	45	**30**	25
	4	–	–	–	–	–	–	70	**50**	30	50	**45**	30
H	1	–	–	–	–	–	–	115	**90**	70	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–

Material Group		KCK15			KCPK30			KCPM40			KCSM40		
P	1	–	–	–	435	**380**	355	285	**250**	235	–	–	–
	2	–	–	–	270	**245**	220	240	**210**	170	–	–	–
	3	–	–	–	245	**220**	195	220	**190**	150	–	–	–
	4	–	–	–	185	**170**	150	195	**165**	130	–	–	–
	5	–	–	–	250	**220**	200	165	**150**	130	165	**140**	115
	6	–	–	–	150	**130**	120	145	**110**	90	145	**105**	75
M	1	–	–	–	195	**175**	150	190	**165**	150	200	**165**	135
	2	–	–	–	175	**150**	135	170	**145**	120	170	**140**	115
	3	–	–	–	140	**125**	110	125	**110**	90	140	**105**	80
K	1	405	**370**	330	285	**255**	230	–	–	–	–	–	–
	2	320	**285**	265	225	**200**	185	–	–	–	–	–	–
	3	270	**240**	220	190	**170**	150	–	–	–	–	–	–
N	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	40	**30**	30	40	**30**	25
	2	–	–	–	–	–	–	40	**30**	30	40	**30**	25
	3	–	–	–	–	–	–	50	**40**	30	50	**40**	25
	4	–	–	–	65	**50**	30	65	**50**	30	55	**50**	30
H	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–

NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness increases, the speed should be decreased.

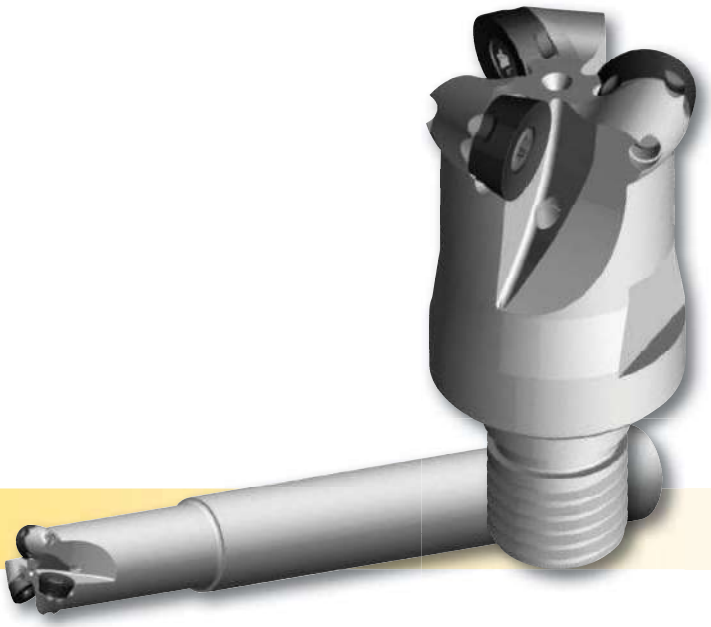
Dry

Wet

7713VR Series

Round Insert Milling Cutter with Indexation

The 7713VR is our newest round insert cutter series. Designed with a new silver-satin surface treatment that reduces body degradation during high-performance applications and enhances body tool life. This cutter series has an anti-rotation design that ensures a precise number of indexes per insert. This enables maximum usage of the available edges for roughing applications.



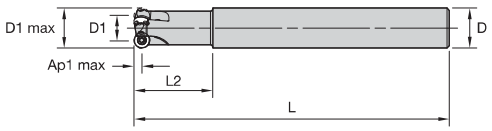
Features and Benefits

This unique patented pocket system prevents the inserts from rotating in the pocket during heavy-feed machining and unstable conditions. The 7713VR cutter is excellent for roughing and semi-finishing of all materials, especially stainless steel and high-temperature alloys, as well as for steel, and tool steel.

7713VR10:
Maximum ap = 5mm
Diameter Range = 20–50mm

7713VR12:
Maximum ap = 6mm
Diameter Range = 32–80mm

- Copy/contour milling applications.
- Patented locking system prevents insert rotation during heavy machining.
- Positive flute design for excellent chip evacuation.



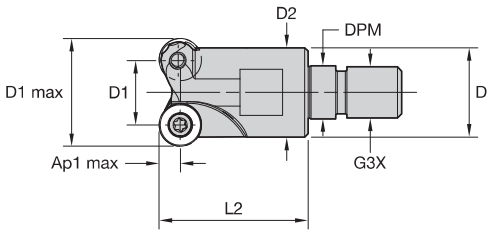
Cylindrical End Mills

order number	catalogue number	D1 max	D1	D	L	L2	Ap1 max	Z
5672811	7713VR10CA020Z2R40	20	10	20	180	40	5,0	2
5673047	7713VR10CA025Z3R50	25	15	25	200	50	5,0	3
5673048	7713VR10CA032Z4R70	32	22	32	250	70	5,0	4

Spare Parts



D1 max	insert screw	Nm	Torx driver
20	D4007T	3,1	TB15
25	D4007T	3,1	TB15
32	D4008T	3,1	TB15



Screw-On End Mills

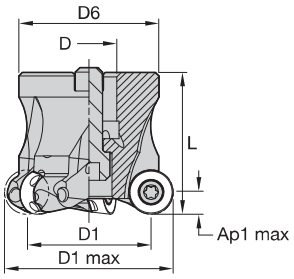
order number	catalogue number	D1 max	D1	D	D2	L2	G3X	DPM	Ap1 max	Z
5673768	7713VR10SA025Z3R35	25	15	21	24	35	M12	12,50	5,0	3
5673050	7713VR10SA032Z4R35	32	22	29	31	35	M16	17,00	5,0	4
5673341	7713VR10SA035Z5R35	35	25	29	34	35	M16	17,00	5,0	5

Spare Parts



D1 max	insert screw	Nm	Torx driver
20	D4007T	3,1	TB15
25	D4007T	3,1	TB15
32	D4008T	3,1	TB15
35	D4007T	3,1	TB15

- Copy/contour milling applications.
- Patented locking system prevents insert rotation during heavy machining.
- Positive flute design for excellent chip evacuation.



Shell Mills

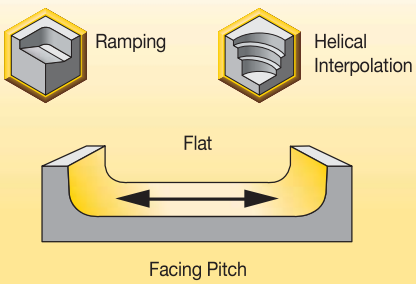
order number	catalogue number	D1 max	D1	D	D6	L	Ap1 max	Z
5672813	**7713VR10-A040Z05R**	40	30	16	36	40	5,0	5
5672625	**7713VR10-A042Z06R**	42	32	16	38	40	5,0	6
5673340	**7713VR10-A050Z06R**	50	40	22	41	40	5,0	6

Spare Parts

D1 max	insert screw	Nm	Torx driver	socket-head cap screw
40	**D4008T**	3,1	**TB15**	**M8 1.25 X 25 SHCS**
42	**D4007T**	3,1	**TB15**	**M8 1.25 X 25 SHCS**
50	**D4008T**	3,1	**TB15**	**M10 1.5 X 25 SHCS**
63	**D4008T**	3,1	**TB15**	**M10 1.5 X 25 SHCS**

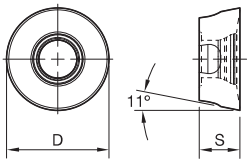
Technical Information (mm)

order number	catalogue number	dimension facing pitch	ramping angle	helical hole min	helical hole max	ap max helical/linear	max RPM
5672811	**7713VR10CA020Z2R40**	10	1,89	22	38	3,33	79500
5673047	**7713VR10CA025Z3R50**	15	5,22	32	48	3,33	64500
5673048	**7713VR10CA032Z4R70**	22	8,64	46	62	3,33	53500
5672813	**7713VR10-A040Z05R**	30	7,28	62	78	3,33	45500
5672625	**7713VR10-A042Z06R**	32	6,71	66	82	3,33	39500
5673340	**7713VR10-A050Z06R**	40	5,22	82	98	3,33	39500
5673768	**7713VR10SA025Z3R35**	15	5,22	32	48	3,33	64500
5673050	**7713VR10SA032Z4R35**	22	8,64	46	62	3,33	53500
5673341	**7713VR10SA035Z5R35**	25	7,20	52	68	3,33	50000



✦✦ first choice with coolant
✧✧ first choice without coolant
✦ alternate choice with coolant
✧ alternate choice without coolant

P1–P2	✧/✦	✧✧	✧/✦	
P3–P4		✦✦	✧/✦	
P5–P6			✦✦	✧/✦
M1–M2	✦✦	✧✧	✦	
M3	✦	✦	✦✦	
K1–K2		✧	✧/✦	
K3		✦	✧/✦	
N1				
N2				
S1	✦		✦✦	✦
S2	✦		✦✦	✦
S3	✦✦		✦	
S4	✦✦		✦	✦



ISO catalogue number	D	S	hm	CE	KCSM40	SP6519	X500	X700
Light Machining								
 **RPHT10T3M0E422X8**	10,00	3,96	0,03	8	–	5660778	–	–
General Machining								
 **RPHT10T3M0E422X4**	10,00	3,97	0,03	4	–	5659867	5660462	5665491
RPPT10T3M0E432X4	10,00	3,97	0,04	4	6201907	–	–	–
RPPT10T3M0E432X5	10,00	3,97	0,03	5	–	–	5894139	–

NOTE: CE: number of indexes
ap max recommendation to use all indexes of the insert:
..E422x8: ap recommended ≤ 1,5mm, ap max ≤ 2,5mm
..E422X4: ap recommended ≤ 2,5mm, ap max ≤ 5mm
..E432X4: ap recommended ≤ 2,5mm, ap max ≤ 5mm
..E432X5: ap recommended ≤ 2mm, ap max ≤ 3,5mm

Recommended Starting Feeds [mm]

Light Machining	General Purpose	Heavy Machining

At 5,00 Axial Depth of Cut (ap)

Insert Geometry	Recommended Starting Feed per Tooth (Fz) in Relation to % of Radial Engagement (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
422-X8	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	422-X8
432-X5	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	432-X5
422-X4	0,12	**0,29**	0,57	0,08	**0,21**	0,40	0,06	**0,16**	0,30	0,05	**0,14**	0,26	0,05	**0,13**	0,24	422-X4
432-X4	0,12	**0,29**	0,57	0,08	**0,21**	0,40	0,06	**0,16**	0,30	0,05	**0,14**	0,26	0,05	**0,13**	0,24	432-X4

At 2,50 Axial Depth of Cut (ap)

Insert Geometry	Recommended Starting Feed per Tooth (Fz) in Relation to % of Radial Engagement (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
422-X8	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	422-X8
432-X5	0,13	**0,34**	0,66	0,10	**0,24**	0,47	0,07	**0,18**	0,35	0,06	**0,16**	0,30	0,06	**0,15**	0,28	432-X5
422-X4	0,13	**0,34**	0,66	0,10	**0,24**	0,47	0,07	**0,18**	0,35	0,06	**0,16**	0,30	0,06	**0,15**	0,28	422-X4
432-X4	0,13	**0,34**	0,66	0,10	**0,24**	0,47	0,07	**0,18**	0,35	0,06	**0,16**	0,30	0,06	**0,15**	0,28	432-X4

At 2,00 Axial Depth of Cut (ap)

Insert Geometry	Recommended Starting Feed per Tooth (Fz) in Relation to % of Radial Engagement (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
422-X8	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	422-X8
432-X5	0,14	**0,37**	0,71	0,10	**0,26**	0,51	0,08	**0,20**	0,38	0,07	**0,17**	0,33	0,06	**0,16**	0,30	432-X5
422-X4	0,14	**0,37**	0,71	0,10	**0,26**	0,51	0,08	**0,20**	0,38	0,07	**0,17**	0,33	0,06	**0,16**	0,30	422-X4
432-X4	0,14	**0,37**	0,71	0,10	**0,26**	0,51	0,08	**0,20**	0,38	0,07	**0,17**	0,33	0,06	**0,16**	0,30	432-X4

At 1,50 Axial Depth of Cut (ap)

Insert Geometry	Recommended Starting Feed per Tooth (Fz) in Relation to % of Radial Engagement (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
422-X8	0,16	**0,41**	0,80	0,12	**0,30**	0,57	0,09	**0,22**	0,42	0,08	**0,19**	0,37	0,07	**0,18**	0,34	422-X8
432-X5	0,16	**0,41**	0,80	0,12	**0,30**	0,57	0,09	**0,22**	0,42	0,08	**0,19**	0,37	0,07	**0,18**	0,34	432-X5
422-X4	0,16	**0,41**	0,80	0,12	**0,30**	0,57	0,09	**0,22**	0,42	0,08	**0,19**	0,37	0,07	**0,18**	0,34	422-X4
432-X4	0,16	**0,41**	0,80	0,12	**0,30**	0,57	0,09	**0,22**	0,42	0,08	**0,19**	0,37	0,07	**0,18**	0,34	432-X4

Material Group		KCSM40			SP6519			X500			X700		
P	1	275	**240**	205	355	**260**	155	325	**240**	155	–	**–**	–
	2	240	**205**	160	310	**230**	140	290	**215**	140	–	**–**	–
	3	205	**180**	160	275	**200**	120	250	**185**	120	–	**–**	–
	4	180	**160**	145	210	**150**	90	190	**145**	90	–	**–**	–
	5	160	**145**	125	170	**125**	85	155	**120**	85	160	**125**	85
	6	125	**110**	90	145	**100**	60	130	**95**	60	140	**100**	60
M	1	275	220	180	325	**235**	140	300	**220**	140	310	**230**	140
	2	180	**145**	125	280	**205**	125	265	**190**	120	275	**205**	125
	3	145	**125**	110	235	**170**	100	215	**155**	95	230	**170**	100
K	1	–	**–**	–	355	**265**	170	310	**265**	205	–	**–**	–
	2	–	**–**	–	290	**210**	130	265	**215**	155	–	**–**	–
	3	–	**–**	–	265	**190**	120	205	**170**	120	–	**–**	–
N	1	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–
	2	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–
	3	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–
S	1	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–
	2	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–
	3	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–
	4	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–
H	1	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–
	2	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–
	3	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–

NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness increases, the speed should be decreased.

Dry

Wet

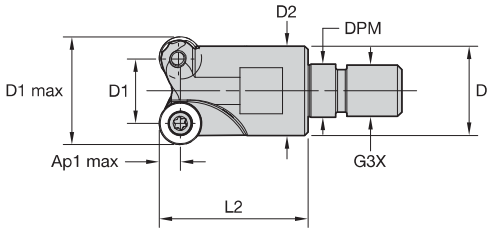
Material Group		KCSM40			SP6519			X500			X700		
P	1	–	–	–	285	**210**	125	260	**190**	125	–	–	–
	2	–	–	–	250	**185**	110	230	**170**	110	–	–	–
	3	–	–	–	220	**160**	95	200	**150**	95	–	–	–
	4	–	–	–	170	**120**	70	150	**115**	70	–	–	–
	5	165	**140**	115	135	**100**	70	125	**95**	70	130	**100**	70
	6	145	**105**	75	115	**80**	50	105	**75**	50	110	**80**	50
M	1	200	165	135	260	**190**	110	240	**175**	110	250	**185**	110
	2	170	**140**	115	225	**165**	100	210	**150**	95	220	**165**	100
	3	140	**105**	80	190	**135**	80	170	**125**	75	185	**135**	80
K	1	–	–	–	285	**210**	135	250	**210**	165	–	–	–
	2	–	–	–	230	**170**	105	210	**170**	125	–	–	–
	3	–	–	–	210	**150**	95	165	**135**	95	–	–	–
N	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
S	1	40	**30**	25	50	**40**	25	50	**30**	25	50	**40**	25
	2	40	**30**	25	50	**30**	20	45	**30**	20	45	**30**	20
	3	50	**40**	25	50	**40**	25	50	**40**	25	50	**40**	25
	4	55	**50**	30	75	**55**	35	70	**50**	30	70	**50**	35
H	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–

NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness increases, the speed should be decreased.

Dry

Wet

- Copy/contour milling applications.
- Patented locking system prevents insert rotation during heavy machining.
- Positive flute design for excellent chip evacuation.

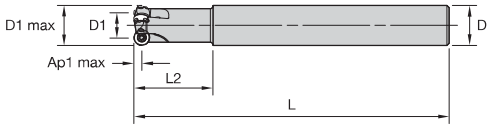


Screw-On End Mills

order number	catalogue number	D1 max	D1	D	D2	L2	G3X	DPM	Ap1 max	Z
5673052	7713VR12SA032Z3R35	32	20	29	31	35	M16	17,00	6,0	3
5673439	7713VR12SA040Z4R43	40	28	29	38	43	M16	17,00	6,0	4

Spare Parts

catalogue number	insert screw	Nm	Torx driver
7713VR12SA032Z3R35	D4008T	3,1	T15
7713VR12SA040Z4R43	D4008T	3,1	T15



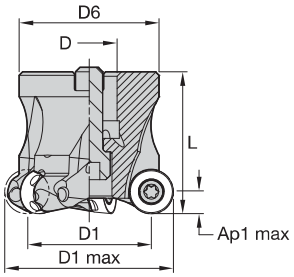
Cylindrical End Mills

order number	catalogue number	D1 max	D1	D	L	L2	Ap1 max	Z
5673830	7713VR12CA032Z3R70	32	20	32	250	70	6,0	3

Spare Parts

catalogue number	insert screw	Nm	Torx driver
7713VR12CA032Z3R70	D4008T	3,1	T15

- Copy/contour milling applications.
- Patented locking system prevents insert rotation during heavy machining.
- Positive flute design for excellent chip evacuation.



Shell Mills

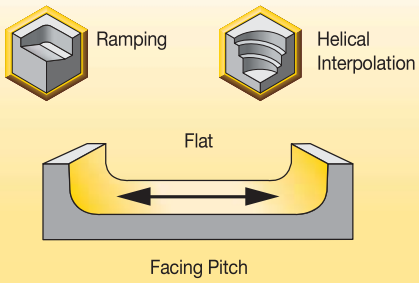
order number	catalogue number	D1 max	D1	D	D6	L	Ap1 max	Z
5672232	7713VR12-A040Z04R	40	28	16	34	40	6,0	4
5672233	7713VR12-A050Z05R	50	38	22	43	40	6,0	5
5673769	7713VR12-A052Z05R	52	40	22	45	40	6,0	5
5672234	7713VR12-A063Z06R	63	51	22	56	50	6,0	6
5672235	7713VR12-A066Z06R	66	54	27	56	50	6,0	6
5673829	7713VR12-A080Z08R	80	68	27	68	50	6,0	8

Spare Parts

catalogue number	insert screw	Nm	Torx driver	mounting screw
7713VR12-A040Z04R	D4010T	3,1	T15	M8 1.25 X 25 SHCS
7713VR12-A050Z05R	D4010T	3,1	T15	M10 1.5 X 25 SHCS
7713VR12-A052Z05R	D4010T	3,1	T15	M10 1.5 X 25 SHCS
7713VR12-A063Z06R	D4010T	3,1	T15	M10 1.5 X 25 SHCS
7713VR12-A066Z06R	D4010T	3,1	T15	M12 X 1.75 X 30 SHCS
7713VR12-A080Z08R	D4010T	3,1	T15	M12 X 1.75 X 30 SHCS

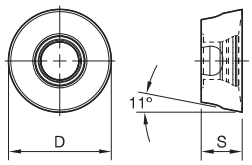
Technical Information (mm)

order number	catalogue number	dimension facing pitch	ramping angle	helical hole min–max		ap max helical/linear	max RPM
5673830	7713VR12CA032Z3R70	20	10,80	42	62	4,00	40000
5672232	7713VR12-A040Z04R	28	7,90	58	78	4,00	34000
5672233	7713VR12-A050Z05R	38	5,50	78	98	4,00	29000
5673769	7713VR12-A052Z05R	40	5,15	82	102	4,00	28500
5672234	7713VR12-A063Z06R	51	3,85	104	124	4,00	25000
5672235	7713VR12-A066Z06R	54	3,60	110	130	4,00	24500
5673829	7713VR12-A080Z08R	68	2,75	138	158	4,00	21500
5673052	7713VR12SA032Z3R35	20	10,80	42	62	4,00	40000
5673439	7713VR12SA040Z4R43	28	7,90	58	78	4,00	34000



✦✦ first choice with coolant
✧✧ first choice without coolant
✦ alternate choice with coolant
✧ alternate choice without coolant

P1–P2	✧✧	✧/✦	
P3–P4	✦✦	✧/✦	
P5–P6		✦✦	✧/✦
M1–M2	✧✧	✦	
M3	✦	✦✦	
K1–K2	✧	✧/✦	
K3	✦	✧/✦	
N1			
N2			
S1		✦✦	✦
S2		✦✦	✦
S3		✦✦	
S4		✦	✦✦



ISO catalogue number	D	S	hm	CE	SP6519	X500	X700
Light Machining							
RPHT1204M0E422X4	12,00	4,76	0,04	4	–	5666015	–
RPHT1204M0E442X4	12,00	4,76	0,04	4	5659264	5660351	–
RPHT1204M0E442X5	12,00	4,76	0,04	5	5658324	5657681	–

General Machining							
RPPT1204M0E432X4	12,00	4,76	0,04	4	–	5970235	–
RPPT1204M0E432X5	12,00	4,76	0,04	5	–	5675038	5674803
RPHT1204M0TX4	12,00	4,76	0,10	4	–	5654371	–

NOTE: CE: number of indexes
ap max recommendation to use all indexes of the insert:
..E422X4: ap recommended ≤ 3,5mm, ap max ≤ 6mm
..E422X5: ap recommended ≤ 2,5mm, ap max ≤ 4mm
..E432X4: ap recommended ≤ 3,5mm, ap max ≤ 6mm
..E432X5: ap recommended ≤ 2,5mm, ap max ≤ 4mm
..MOTX4: ap recommended ≤ 3,5mm, ap max ≤ 6mm

Recommended Starting Feeds [mm]

Light Machining	General Purpose	Heavy Machining

At 6,00 Axial Depth of Cut (ap)

Insert Geometry	Recommended Starting Feed per Tooth (Fz) in Relation to % of Radial Engagement (ae)															Insert Geometry
	5%			10%			20%			30%			40–100%			
432–X5	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	432–X5
442–X4	0,23	**0,41**	0,66	0,17	**0,30**	0,47	0,13	**0,22**	0,35	0,11	**0,19**	0,31	0,10	**0,18**	0,28	442–X4
432–X4	0,23	**0,41**	0,66	0,17	**0,30**	0,47	0,13	**0,22**	0,35	0,11	**0,19**	0,31	0,10	**0,18**	0,28	432–X4
T–X4	0,23	**0,41**	0,66	0,17	**0,30**	0,47	0,13	**0,22**	0,35	0,11	**0,19**	0,31	0,10	**0,18**	0,28	T–X4

At 3,00 Axial Depth of Cut (ap)

Insert Geometry	Recommended Starting Feed per Tooth (Fz) in Relation to % of Radial Engagement (ae)															Insert Geometry
	5%			10%			20%			30%			40–100%			
432–X5	0,16	**0,49**	0,93	0,12	**0,35**	0,66	0,09	**0,26**	0,49	0,08	**0,23**	0,43	0,07	**0,21**	0,39	432–X5
442–X4	0,16	**0,49**	0,93	0,12	**0,35**	0,66	0,09	**0,26**	0,49	0,08	**0,23**	0,43	0,07	**0,21**	0,39	442–X4
432–X4	0,16	**0,49**	0,93	0,12	**0,35**	0,66	0,09	**0,26**	0,49	0,08	**0,23**	0,43	0,07	**0,21**	0,39	432–X4
T–X4	0,27	**0,68**	1,10	0,19	**0,49**	0,78	0,14	**0,36**	0,58	0,13	**0,32**	0,50	0,12	**0,29**	0,46	T–X4

At 2,50 Axial Depth of Cut (ap)

Insert Geometry	Recommended Starting Feed per Tooth (Fz) in Relation to % of Radial Engagement (ae)															Insert Geometry
	5%			10%			20%			30%			40–100%			
432–X5	0,17	**0,52**	1,00	0,12	**0,37**	0,71	0,09	**0,28**	0,53	0,08	**0,24**	0,46	0,07	**0,22**	0,42	432–X5
442–X4	0,17	**0,52**	1,00	0,12	**0,37**	0,71	0,09	**0,28**	0,53	0,08	**0,24**	0,46	0,07	**0,22**	0,42	442–X4
432–X4	0,17	**0,52**	1,00	0,12	**0,37**	0,71	0,09	**0,28**	0,53	0,08	**0,24**	0,46	0,07	**0,22**	0,42	432–X4
T–X4	0,29	**0,73**	1,18	0,21	**0,52**	0,84	0,15	**0,39**	0,62	0,13	**0,34**	0,54	0,12	**0,31**	0,49	T–X4

At 1,50 Axial Depth of Cut (ap)

Insert Geometry	Recommended Starting Feed per Tooth (Fz) in Relation to % of Radial Engagement (ae)															Insert Geometry
	5%			10%			20%			30%			40–100%			
432–X5	0,21	**0,64**	1,23	0,15	**0,46**	0,87	0,11	**0,34**	0,65	0,10	**0,30**	0,56	0,09	**0,27**	0,51	432–X5
442–X4	0,21	**0,64**	1,23	0,15	**0,46**	0,87	0,11	**0,34**	0,65	0,10	**0,30**	0,56	0,09	**0,27**	0,51	442–X4
432–X4	0,21	**0,64**	1,23	0,15	**0,46**	0,87	0,11	**0,34**	0,65	0,10	**0,30**	0,56	0,09	**0,27**	0,51	432–X4
T–X4	0,35	**0,90**	1,47	0,25	**0,64**	1,03	0,19	**0,47**	0,76	0,17	**0,41**	0,66	0,15	**0,38**	0,60	T–X4

Material Group		SP6519			X500			X700		
P	1	355	**260**	155	325	**240**	155	–	–	–
	2	310	**230**	140	290	**215**	140	–	–	–
	3	275	**200**	120	250	**185**	120	–	–	–
	4	210	**150**	90	190	**145**	90	–	–	–
	5	170	**125**	85	155	**120**	85	160	**125**	85
	6	145	**100**	60	130	**95**	60	140	**100**	60
M	1	325	**235**	140	300	**220**	140	310	**230**	140
	2	280	**205**	125	265	**190**	120	275	**205**	125
	3	235	**170**	100	215	**155**	95	230	**170**	100
K	1	355	**265**	170	310	**265**	205	–	–	–
	2	290	**210**	130	265	**215**	155	–	–	–
	3	265	**190**	120	205	**170**	120	–	–	–
N	1	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–
H	1	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–

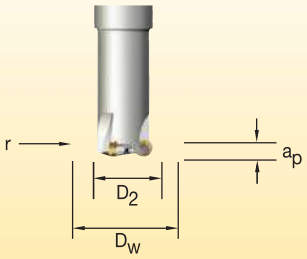
Material Group		KCSM40			SP6519			X500			X700		
P	1	–	–	–	285	**210**	125	260	**190**	125	–	–	–
	2	–	–	–	250	**185**	110	230	**170**	110	–	–	–
	3	–	–	–	220	**160**	95	200	**150**	95	–	–	–
	4	–	–	–	170	**120**	70	150	**115**	70	–	–	–
	5	165	**140**	115	135	**100**	70	125	**95**	70	130	**100**	70
	6	145	**105**	75	115	**80**	50	105	**75**	50	110	**80**	50
M	1	200	165	135	260	**190**	110	240	**175**	110	250	**185**	110
	2	170	**140**	115	225	**165**	100	210	**150**	95	220	**165**	100
	3	140	**105**	80	190	**135**	80	170	**125**	75	185	**135**	80
K	1	–	–	–	285	**210**	135	250	**210**	165	–	–	–
	2	–	–	–	230	**170**	105	210	**170**	125	–	–	–
	3	–	–	–	210	**150**	95	165	**135**	95	–	–	–
N	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
S	1	40	**30**	25	50	**40**	25	50	**30**	25	50	**40**	25
	2	40	**30**	25	50	**30**	20	45	**30**	20	45	**30**	20
	3	50	**40**	25	50	**40**	25	50	**40**	25	50	**40**	25
	4	55	**50**	30	75	**55**	35	70	**50**	30	70	**50**	35
H	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–

NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness increases, the speed should be decreased.

Dry

Wet

7713VR Technical Information



Working Diameter:

Formula to evaluate the correct working diameter based on axial depth of cut (ap).

$$D_w = D_2 + 2 \times \sqrt{r^2 - (r - a_p)^2}$$

where:

D_w = Working diameter
D_2 = Diameter of cutter insert centre to centre
r = Insert radius
a_p = Axial depth of cut

where:

f_z = Feed per tooth
h_m = Average chip thickness
r = Insert radius
a_e = Radial depth of cut
a_p = Axial depth of cut

Formula to find programmed feed rate based on radial engagement and axial depth of cut.

$$f_z = \frac{h_m}{\frac{\sqrt{r^2-(r-a_e)^2}}{r} \times \frac{\sqrt{r^2-(r-a_p)^2}}{r}}$$

Formula to calculate the average chip thickness hm in relation with radial engagement and depth of cut.

$$h_m = f_z \times \frac{\sqrt{r^2-(r-a_e)^2}}{r} \times \frac{\sqrt{r^2-(r-a_p)^2}}{r}$$

Simplified formulas to evaluate h_m and f_z based on radial engagement or depth of cut.

Calculation of the average chip thickness in relation with the D.O.C. (Axial)

Formula: Programme Feed Rate (f_z)

$$f_z = h_m \times \sqrt{\frac{d}{a_p}}$$

h_m = Average chip thickness
a_p = Depth of cut
f_z = Feed per tooth
d = Insert diameter

Formula: Average Chip Thickness (h_m)

$$h_m = f_z \times \sqrt{\frac{a_e}{d}}$$

Calculation of the average chip thickness in relation with the a_e (Radial Engagement) if a_e is less than 50% of diameter

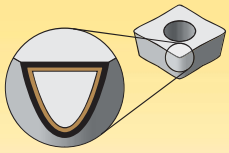
Formula: Programme Feed Rate (f_z)

$$f_z = h_m \times \sqrt{\frac{d}{a_e}}$$

h_m = Average chip thickness
a_e = Radial engagement
f_z = Feed per tooth
d = Cutter diameter

Formula: Average Chip Thickness (h_m)

$$h_m = f_z \times \sqrt{\frac{d}{a_p}}$$

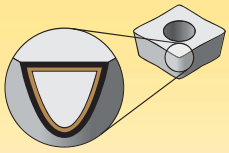


Coatings provide high-speed capability and are engineered for finishing to heavy roughing.

P	Steel
M	Stainless Steel
K	Cast Iron
N	Non-Ferrous
S	High-Temp Alloys
H	Hardened Materials

Grades

Coating	Grade Description	wear resistance ⟷ toughness	05	10	15	20	25	30	35	40	45
GH2	Uncoated, fine grained carbide grade with good strength. GH2 is suitable for machining of aluminium and non-ferrous materials. Also good choice for cast iron for medium toughness requirements. This grade can be used both wet and dry and is designed for light and general machining.	K									
		N									
		S									
KC410M	PVD, TiB_2 coating on grade KC410M is extremely hard and provides very good wear characteristics at higher cutting speeds. KC410M resists built-up edge, can help reduce burring, and generates excellent surface finishes. The grade is best suited for aluminium with <10% silicon and other non-ferrous materials.	N									
KC422M	The PVD TiB_2 coating is very wear resistant. Together with hard coating and a tough substrate, this is an excellent combination for medium to roughing applications in aluminium <10% silicon and other non-ferrous materials.	N									
KC510M	Coated carbide grade with a TiAiN coating (PVD). KC510M is a highly wear-resistant grade primarily for use in milling aluminium and high-temperature alloys in light applications. Can also be used for machining of steel and hardened steel.	P									
		N									
		S									
		H									
KC520M	Coated carbide grade with TiAlN coating (PVD). KC520M is a carbide grade developed specifically for general machining of ductile cast iron. This grade can be used with or without coolant.	K									
KC522M	Coated carbide grade with a AlTiN (PVD) coating. KC522M is engineered to provide better performance in general machining of high-temperature alloys and stainless steel. KC522M resists breakage and offers improved wear resistance and increased strength.	P									
		M									
		K									
		S									



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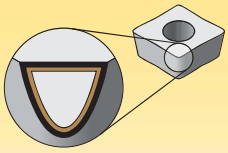
Grades

wear resistance ⟷ toughness

Coating	Grade Description		05	10	15	20	25	30	35	40	45
KC725M	Coated carbide grade with an advanced PVD TiAlN coating. KC725M is a high-performance grade for milling steel, stainless steel, and ductile cast iron. The good thermal shock resistance of the substrate makes this grade ideal for both wet and dry machining. Primarily for use in general and heavy machining.	P						■	■	■	
		M						■	■	■	
		S						■	■	■	
KCK15	Coated carbide grade with CVD multilayer coating (TiN/MT TiCN/Al_2O_3) and advanced Beyond™ post-coat treatment. KCK15 is a wear-resistant grade with balanced toughness for general milling of cast irons at higher speeds. Best results in dry, but can also be used wet.										
		K		■	■	■					
KCPK30	Coated carbide grade with CVD multilayer (TiN/TiCN/Al_2O_3) and advanced Beyond™ post-coat treatment. Substrate is very tough. KCPK30 has a wide application area in general and roughing milling of steels and cast irons. Performs best dry, but can also be used wet.	P					■	■	■	■	
		K					■	■	■	■	
KCPM40	Coated carbide grade with an advanced PVD TiAlN/AlCrN coating. Tough substrate with excellent capability at higher temperatures. KCPM40™ is the first choice for milling steel and stainless steel. Good thermal shock resistance makes this grade ideal for both wet and dry machining. Primarily for use in general and heavy machining.	P					■	■	■	■	
		M					■	■	■	■	
KCSM40	Coated carbide grade with an advanced PVD TiAlN/TiN coating. Premium substrate with newly developed binder composition. KCSM40 is a high-performance grade for titanium, super alloys, and stainless steel. High thermal shock resistance of the substrate makes this grade ideal for wet machining. First choice for roughing and unsuitable cutting conditions.										
		M					■	■	■	■	
		S					■	■	■	■	
KY3500	A ceramic cutting material based on micro-grain Si_3N_4 primarily for use in light to general machining of grey cast iron and ferritic ductile cast iron. Dry machining is preferred while using this grade.										
		K				■	■	■	■		



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Grades

Coating	Grade Description		wear resistance ← 05 10 15 20 25 30 35 40 45 → toughness
SC3025	Coated carbide grade with CVD multilayer coating (TiN/TiCN/Al_2O_3). SC3025 is a wear-resistant grade with balanced toughness for general milling of cast irons at higher speeds. Best results when using dry, but can also be used wet.	K	
SC6525	Coated carbide grade with CVD multi-layer (TiN/TiCN/Al_2O_3). Tough substrate with good speed capability. SC6525 has a wide application area in general and roughing milling of steels, stainless steels, and cast irons. Performs best dry, but can also be used wet.	P, M, K	
SP6519	Coated carbide grade with PVD TiAlN nano-composite coating on a tough substrate. Primarily for use in general and heavy machining, dry and wet.	P, M, K, N, S, H	
X400	Coated carbide grade with thick PVD TiAlN nanocomposite on X-Grade™ technology substrate. With excellent toughness, good choice for difficult cutting conditions on alloyed and hardened steels. Usable in combination with high feeds.	P, H	
X500	CVD TiN/TiCN/TiN coated carbide on tough substrate (X-Grade™ technology). For difficult applications with heavy impacts, vibrations, or unstable conditions. High stability against thermal cracks. Excellent grade for high-temperature alloys, stainless steels, and titanium.	P, M, S	
X700	PVD TiAlN nano-coating on premium substrate (X-Grade™ technology). Milling of stainless steel, super alloys, and titanium with medium applications.	M, S	