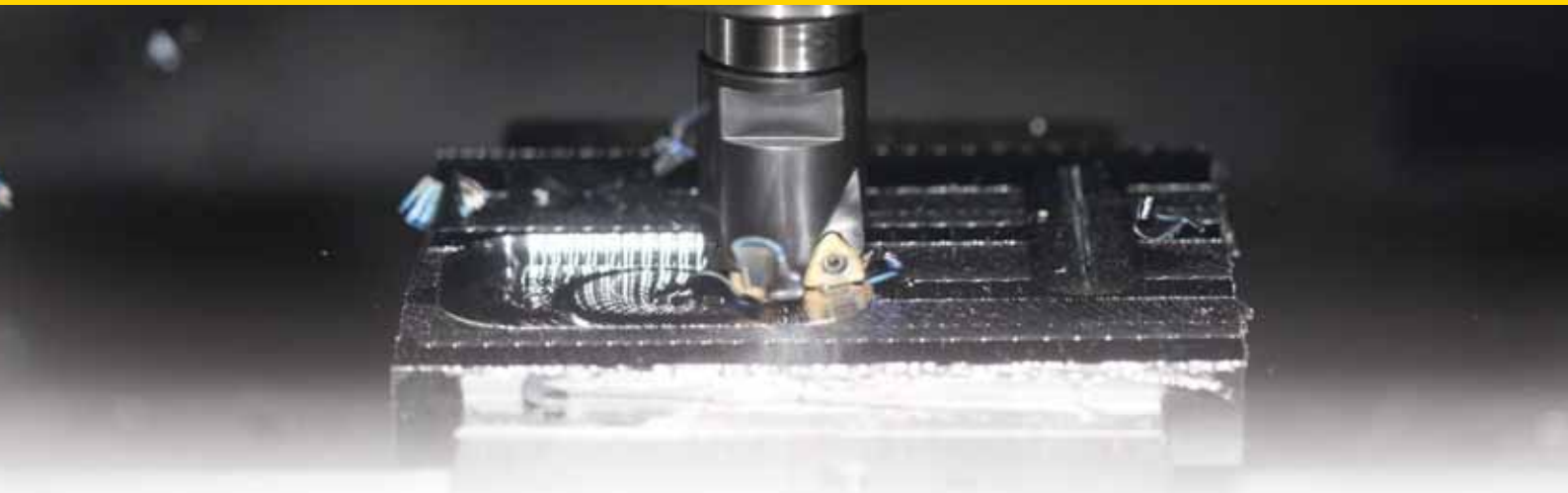
Copy Mills

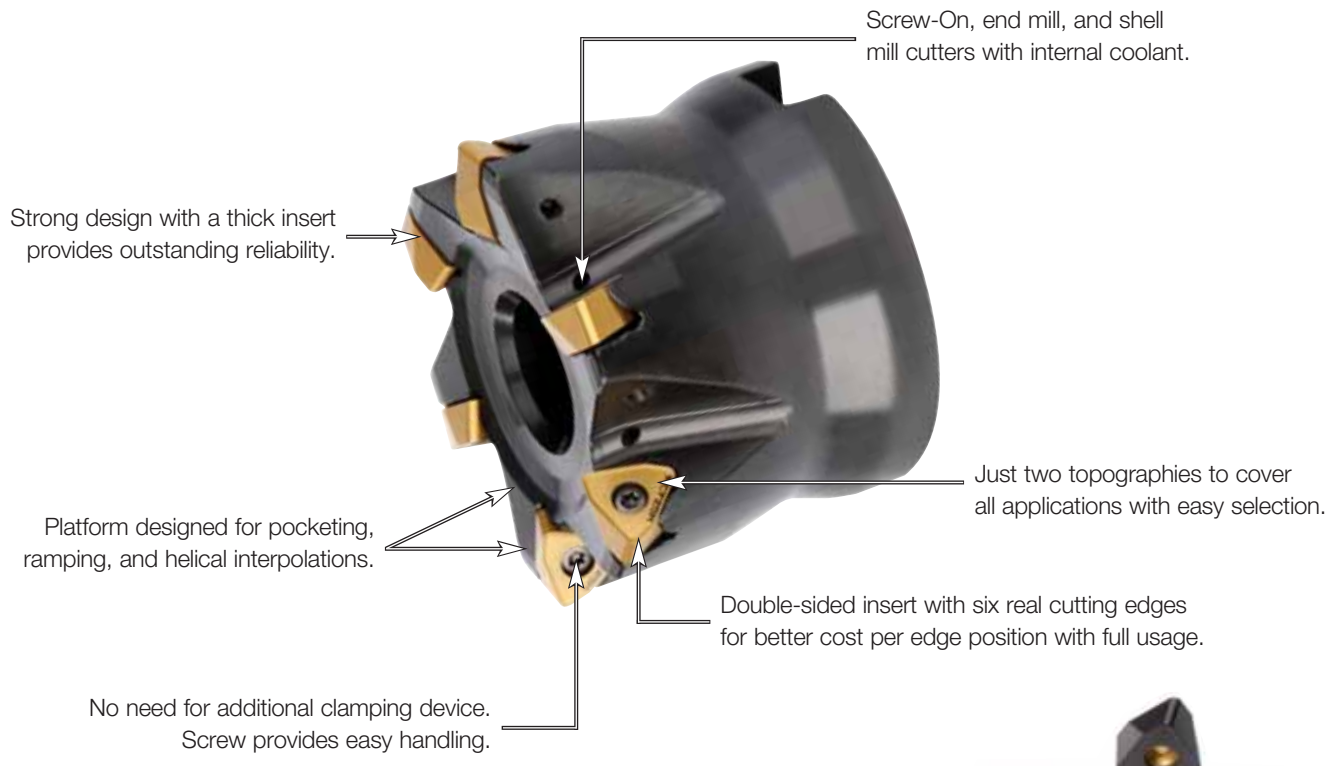


KenFeed™ 2X • The Ultimate and Innovative Concept for Applying the Latest High-Feed Milling Strategies

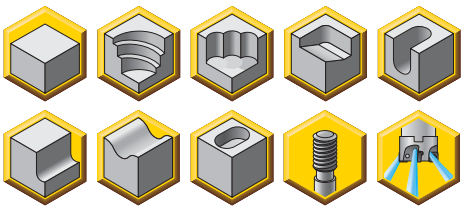
Primary Application

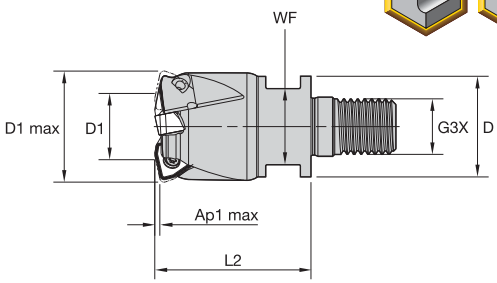
KenFeed 2X is a double-sided trigon insert with six cutting edges engineered to provide you a superior MRR and productivity through high-feed rates for roughing operations.

Features and Benefits



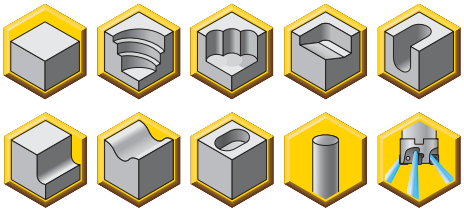
- Dramatically improves MRR using the latest milling strategies.
- Engineered to run up to 2,5mm fz.
- Ideal for pocketing, ramping, and helical interpolations. Z-plunge capabilities.
- First choice for deep cavities or from 3 x D.

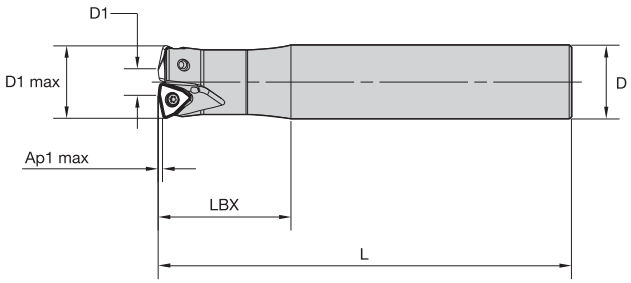


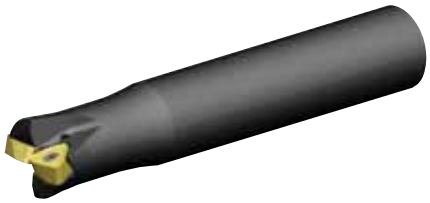


Screw-On End Mills • Metric

order number	catalogue number	D1 max	D1	D	WF	G3X	L2	Ap1 max	Z	kg	max RPM	insert 1
4113983	**KF2X25Z02M12WO09**	25	9	21	17	M12	35	1,5	2	0,09	37000	WOEJ090512__
4113984	**KF2X32Z03M16WO09**	32	16	29	22	M16	45	1,5	3	0,22	30900	WOEJ090512__
4113985	**KF2X35Z03M16WO09**	35	19	29	22	M16	45	1,5	3	0,24	29000	WOEJ090512__
4113986	**KF2X42Z04M16WO09**	42	26	29	22	M16	45	1,5	4	0,28	25800	WOEJ090512__







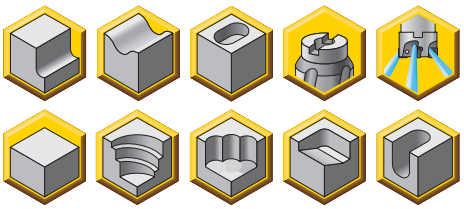
End Mills • Metric

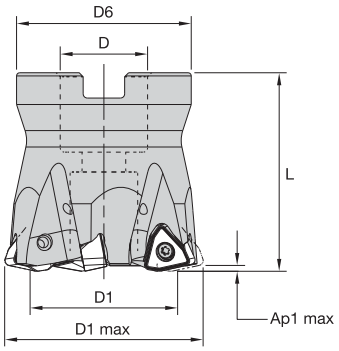
order number	catalogue number	D1 max	D1	D	L	LBX	Ap1 max	Z	kg	max RPM	insert 1
4113987	**KF2X25Z02A25WO09L140**	25	9	25	140	45	1,5	2	0,46	37000	WOEJ090512__
4113988	**KF2X25Z02A25WO09L200**	25	9	25	200	45	1,5	2	0,68	37000	WOEJ090512__
4113989	**KF2X25Z02A25WO09L300**	25	9	25	300	45	1,5	2	1,05	37000	WOEJ090512__
4113990	**KF2X28Z02A25WO09L200**	28	11	25	200	45	1,5	2	0,70	34000	WOEJ090512__
4113991	**KF2X32Z03A32WO09L150**	32	16	32	150	50	1,5	3	0,82	30900	WOEJ090512__
4113992	**KF2X32Z03A32WO09L200**	32	16	32	200	50	1,5	3	1,13	30900	WOEJ090512__
4113993	**KF2X32Z03A32WO09L300**	32	16	32	300	50	1,5	3	1,75	30900	WOEJ090512__
4113994	**KF2X35Z03A32WO09L200**	35	19	32	200	45	1,5	3	1,16	29000	WOEJ090512__

Spare Parts

D1 max	insert screw	Nm	Torx Plus driver
25	**MS2235**	1,0	**DT8IP**
28	**MS2235**	1,0	**DT8IP**
32	**MS2235**	1,0	**DT8IP**
35	**MS2235**	1,0	**DT8IP**
42	**MS2235**	1,0	**DT8IP**

- Dramatically improves MRR using the latest milling strategies.
- Engineered to run up to 2,5mm fz.
- Ideal for pocketing, ramping, and helical interpolations. Z-plunge capabilities.
- First choice for deep cavities or from 3 x D.





Face Mills • Metric

order number	catalogue number	D1 max	D1	D	D6	L	Ap1 max	Z	kg	max RPM	insert 1
4113995	**KF2X40Z04WO09**	40	24	22	37	40	1,5	4	0,18	26600	WOEJ090512__
4113996	**KF2X50Z05WO09**	50	34	22	44	50	1,5	5	0,39	23100	WOEJ090512__
4113997	**KF2X52Z05WO09**	52	36	22	44	50	1,5	5	0,42	22600	WOEJ090512__
4113998	**KF2X63Z05WO09**	63	47	22	60	50	1,5	5	0,76	20100	WOEJ090512__
4113999	**KF2X66Z06WO09**	66	50	27	60	50	1,5	6	0,78	19600	WOEJ090512__
4114000	**KF2X80Z07WO09**	80	64	27	60	50	1,5	7	1,07	17500	WOEJ090512__

Spare Parts



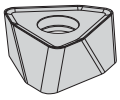

D1 max	insert screw	Nm	Torx Plus driver	socket-head cap screw	mounting screw
40	**MS2235**	1,0	**DT8IP**	**–**	**KLSSM22-39-CG**
50	**MS2235**	1,0	**DT8IP**	**125.025**	–
52	**MS2235**	1,0	**DT8IP**	**125.025**	–
63	**MS2235**	1,0	**DT8IP**	**125.025**	–
66	**MS2235**	1,0	**DT8IP**	**125.225**	–
80	**MS2235**	1,0	**DT8IP**	**125.230**	–

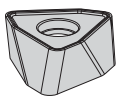
Insert Selection Guide

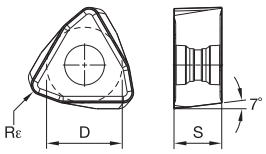
Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.S..GD	KC522M	**.S..GD**	**KCPK30**	.S..GD	KCPK30
P3–P4	.S..HD	KC522M	**.S..HD**	**KCPK30**	.S..HD	KCPK30
P5–P6	.S..HD	KC522M	**.S..HD**	**KCPK30**	.S..HD	KCPK30
M1–M2	.S..GD	KC522M	**.S..GD**	**KC725M**	.S..GD	KC725M
M3	.S..GD	KC725M	**.S..GD**	**KCPK30**	.S..HD	KCPK30
K1– K2	.S..HD	KCK15	**.S..HD**	**KCK15**	.S..HD	KCPK30
K3	.S..HD	KCK15	**.S..HD**	**KCK15**	.S..HD	KCPK30
N1–N2	–	–	**–**	**–**	–	–
N3	–	–	**–**	**–**	–	–
S1–S2	.S..GD	KC522M	**.S..GD**	**KC725M**	–	–
S3	.S..GD	KC725M	**.S..GD**	**KC725M**	–	–
S4	.S..GD	KC725M	**.S..GD**	**KC725M**	–	–
H1	.S..HD	KC522M	**–**	**–**	–	–

Indexable Inserts • WOEJ09....

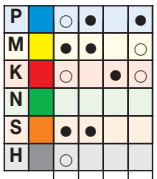
- Double-sided insert with six cutting edges.
- Unique and strong insert design that enables high-feed conditions, up to 2,5mm fz.
- HD geometry is the first choice for steels, high-strength steels, and cast iron.
- GD provides lower cutting forces, first choice for soft materials.


WOEJ-GD


WOEJ-HD



● first choice
○ alternate choice



WOEJ-GD and -HD

catalogue number	D	Rε	S	cutting edges	KC522M	KC725M	KCK15	KCPK30
WOEJ090512SRGD	8,90	1,20	5,40	6	●	●		●
WOEJ090512SRHD	8,90	1,20	5,50	6	●	●	●	●

Recommended Starting Speeds [m/min]

Material Group		KC522M			KC725M			KCK15			KCPK30		
P	1	395	**345**	325	315	**275**	255	–	–	–	545	**475**	440
	2	330	**290**	240	260	**230**	195	–	–	–	335	**305**	275
	3	305	**255**	215	240	**205**	170	–	–	–	305	**275**	250
	4	270	**225**	180	215	**180**	145	–	–	–	225	**210**	190
	5	225	**200**	180	180	**160**	145	–	–	–	310	**275**	255
	6	200	**150**	120	160	**120**	95	–	–	–	190	**165**	–
M	1	245	**215**	200	205	**180**	165	–	–	–	250	**220**	190
	2	225	**190**	160	185	**160**	130	–	–	–	225	**195**	170
	3	170	**145**	115	140	**120**	95	–	–	–	175	**160**	140
K	1	275	**250**	220	–	–	–	505	**460**	410	355	**320**	285
	2	215	**195**	180	–	–	–	400	**355**	330	280	**255**	230
	3	180	**160**	145	–	–	–	335	**300**	275	235	**210**	195
N	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
S	1	50	**45**	35	45	**35**	30	–	–	–	–	–	–
	2	50	**45**	35	45	**35**	30	–	–	–	–	–	–
	3	60	**50**	35	55	**45**	30	–	–	–	–	–	–
	4	85	**60**	45	75	**55**	35	–	–	–	–	–	–
H	1	145	**110**	85	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–

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

Recommended Starting Feeds [mm]

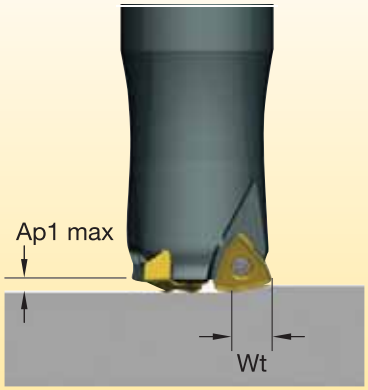
Light Machining	General Purpose	Heavy Machining

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.S..GD	0,82	**1,63**	3,33	0,61	**1,21**	2,43	0,53	**1,05**	2,11	0,50	**0,98**	1,97	0,49	**0,96**	1,92	.S..GD
.S..HD	0,82	**2,08**	3,39	0,61	**1,54**	2,47	0,53	**1,34**	2,14	0,50	**1,25**	2,00	0,49	**1,22**	1,95	.S..HD

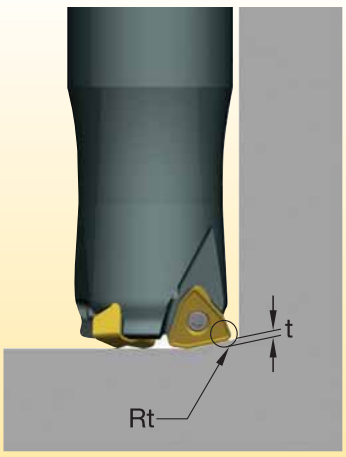
NOTE: Use “Light Machining” values as starting feed rate.

General Programming Information for Applying KenFeed 2X • IC09

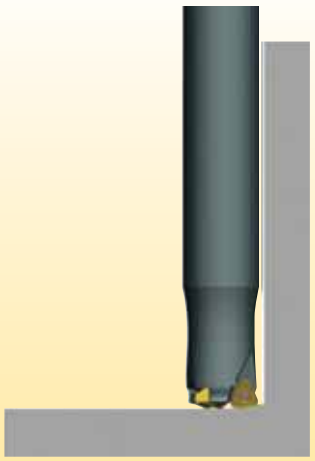
Rt	Wt	t
2.70	8.15	1.15



Small Ap1 values and higher feed rates generate lower cutting forces versus traditional milling strategies.

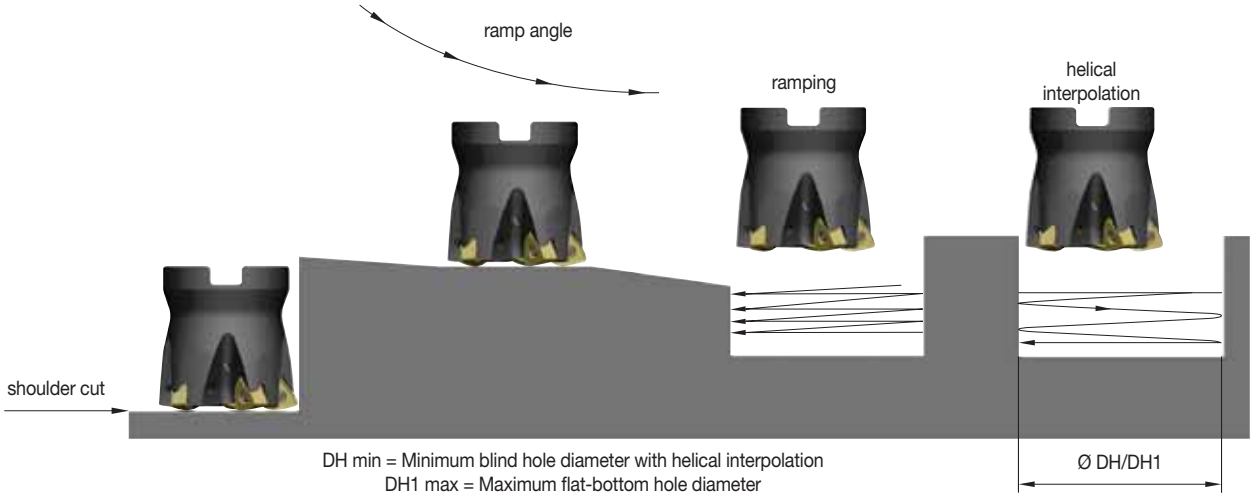


For CAM programming, the loads can be programmed as a toroidal tool type by using the Rt value as the insert radius.



Recommended when long overhang is necessary due to lower radial forces. Maximum L/D ratio of 10 x D.

Maximum Linear Ramping and Helical Interpolation from Solid



cutter type	catalogue number	recommended ramping angle (for continuous ramping process)	max ramp angle when Ap max (not for continuous ramping process)	max ramp angle for 360° helical interpolation	min hole diameter (DH min)	max flat-bottom hole diameter (DH1 max)	max diameter (no flat bottom)
Screw-On	**KF2X2X25Z02M12WO09**	3.6°	5.4°	3.1°	26,5	33,7	50
	KF2X32Z03M16WO09	1.8°	2.7°	1.7°	41,2	48,4	64
	KF2X35Z03M16WO09	1.6°	2.4°	1.4°	46,8	54,0	70
	KF2X42Z04M16WO09	1.2°	1.9°	0.8°	68,7	75,9	84
End Mills	**KF2X25Z02A25WO09L140**	3.6°	5.4°	3.1°	26,5	33,7	50
	KF2X25Z02A25WO09L200	3.6°	5.4°	3.1°	26,5	33,7	50
	KF2X25Z02A25WO09L300	3.6°	5.4°	3.1°	26,5	33,7	50
	KF2X28Z02A25WO09L200	3.1°	4.6°	2.5°	31,6	38,8	56
	KF2X32Z03A32WO09L150	1.8°	2.7°	1.7°	41,2	48,4	64
	KF2X32Z03A32WO09L200	1.8°	2.7°	1.7°	41,2	48,4	64
	KF2X32Z03A32WO09L300	1.8°	2.7°	1.7°	41,2	48,4	64
	KF2X35Z03A32WO09L200	1.6°	2.4°	1.4°	46,8	54,0	70
Face Mills	**KF2X40Z04WO09**	1.3°	2.0°	1.2°	56,4	63,6	80
	KF2X50Z05WO09	1.0°	1.5°	0.8°	76,7	83,9	100
	KF2X52Z05WO09	1.0°	1.4°	0.8°	80,7	87,9	104
	KF2X63Z05WO09	0.8°	1.2°	0.6°	102,7	109,9	126
	KF2X66Z06WO09	0.7°	1.1°	0.5°	108,7	115,9	132
	KF2X80Z07WO09	0.6°	0.9°	0.4°	136,6	143,8	160

KenFeed™ Mini • Small High-Feed Milling Cutters for Machining Small and Medium Components

Primary Application

Roughing operations through the latest milling strategies up to 55 HRC. Specially suited for small parts or machines with lower power capacity. **The KenFeed Mini delivers higher productivity with reduced tooling costs.**

Features and Benefits

Platform designed for pocketing, ramping, and helical interpolations.

Screw-On and shell mill cutters with internal coolant. Coolant holes: better chip evacuation and higher the tool life.

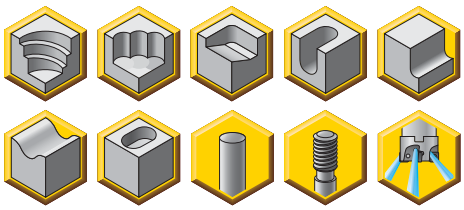
Excellent runout accuracy increases general performance and higher tool life.

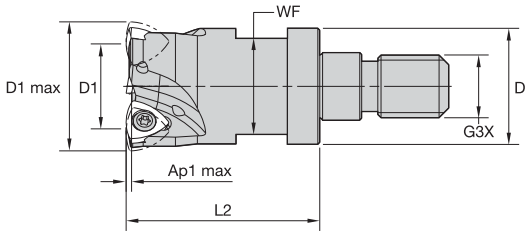
Just two topographies to cover all applications with easy selection.

Strong design capacity to support higher cutting forces and unstable situations.

Insert and body design with superior copy milling capabilities enable us to run the cutter with true ramping, profiling, and pocketing capabilities.

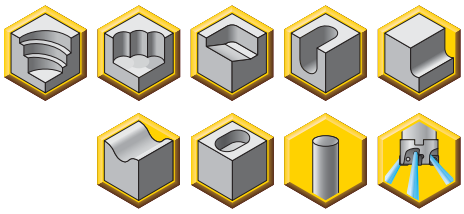
- Engineered to use with small machines and/or components using high-feed milling strategies.
- Fine-pitch cutters boost productivity; able to run up to 1,5mm fz.
- Pocketing, ramping, and helical interpolations.
- First choice above 3 x D applications.

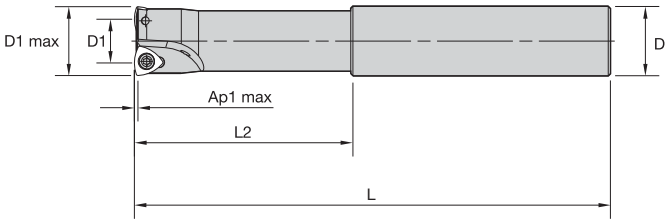




Screw-On End Mills • Metric

order number	catalogue number	D1 max	D1	D	WF	G3X	L2	Ap1 max	Z	max ramp angle	kg	max RPM	insert 1
3331550	16Y02R025M08SWP03	16	11	13	10	M8	25	0,8	2	7.0°	0,03	19900	WP..0302..
3651443	20Y03R030M10SWP03	20	14	18	15	M10	30	0,8	3	7.0°	0,06	15900	WP..0302..
4138429	25Y04R035M12SWP03	25	16	21	17	M12	35	1,0	4	3.3°	0,10	12700	WP..0302..
4138430	32Y05R043M16SWP03	32	22	29	24	M16	43	1,0	5	2.0°	0,23	9947	WP..0302..
4138431	35Y05R043M16SWP03	35	28	29	24	M16	43	1,0	5	1.8°	0,24	9090	WP..0302..





End Mills • Metric

order number	catalogue number	D1 max	D1	D	L	L2	Ap1 max	Z	max ramp angle	kg	max RPM	insert 1
3519052	16Y02R060A16SWP03	16	10	16	110	50	0,8	2	7.0°	0,14	12750	WP..0302..
4138432	16Y02R060A16SWP03L150	16	8	16	150	57	1,0	2	7.4°	0,20	15900	WP..0302..
4138443	20Y03R060A20SWP03L110	20	13	20	110	57	1,0	3	4.7°	0,22	15900	WP..0302..
4138444	20Y03R060A25SWP03L170	20	12	25	170	55	1,0	3	4.5°	0,53	15600	WP..0302..
4138445	25Y04R060A25SWP03L120	25	18	25	120	57	1,0	4	3.3°	0,39	12700	WP..0302..
4138446	25Y04R060A25SWP03L200	25	18	25	200	57	1,0	4	3.3°	0,69	12700	WP..0302..

Spare Parts

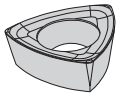
D1 max	insert screw	Nm	Torx wrench
16	192.416	1,0	FT7
20	192.416	1,0	FT7
25	192.416	1,0	FT7
32	192.416	1,0	FT7
35	192.416	1,0	FT7

Insert Selection Guide

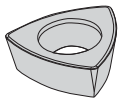
Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.LD..	KC522M	**.LD..**	**KCPK30**	.LD..	KCPK30
P3–P4	.LD..	KC522M	**.LD..**	**KCPK30**	.LD..	KCPK30
P5–P6	.LD..	KCPK30	**.LD..**	**KCPM20**	–	–
M1–M2	.LD..	KC522M	**.LD..**	**KC725M**	–	–
M3	.LD..	KC522M	**.LD..**	**KC725M**	–	–
K1–K2	.LN..	KC510M	**.LD..**	**KCPK30**	–	–
K3	.LN..	KC510M	**.LD..**	**KCPK30**	–	–
N1–N2	–	–	**–**	**–**	–	–
N3	–	–	**–**	**–**	–	–
S1–S2	.LD..	KC522M	**.LD..**	**KC725M**	–	–
S3	.LD..	KC725M	**.LD..**	**KC725M**	–	–
S4	.LD..	KC522M	**.LD..**	**KC725M**	–	–
H1	.LN..	KC510M	**.LN..**	**KC510M**	–	–

Indexable Insert • WPGX03...

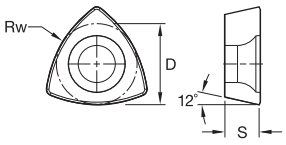
- Positive single-sided insert for lower cutting forces in high-feed milling processes.
- Engineered to run up to 1,5mm fz. Boost productivity in small machines and/or components.
- LD first choice for majority of materials, providing lower cutting forces.
- LN geometry is the first choice for high-strength steel and hard machining up to 55 HRC.



WPGX-LD



WPGX-LN



● first choice
○ alternate choice

		KC510M	KC522M	KC725M	KCPM20	KCPK30
P		○	○	●	●	●
M			●	●	○	○
K		○	○			○
N						
S			●	●		
H		●	○			

WPGX-LD and -LN

catalogue number	D	S	RW	cutting edges	KC510M	KC522M	KC725M	KCPM20	KCPK30
WPGX030204LD080	5,50	2,38	8,0	3		●	●	●	●
WPGX030204LN080	5,50	2,38	8,0	3	●				

Recommended Starting Speeds [m/min]

Material Group		KC510M			KC522M			KC725M			KCPM20			KCPK30		
P	1	–	–	–	395	**345**	325	315	**275**	255	660	**580**	535	545	**475**	440
	2	–	–	–	330	**290**	240	260	**230**	195	410	**370**	330	335	**305**	275
	3	–	–	–	305	**255**	215	240	**205**	170	370	**330**	305	305	**275**	250
	4	295	**240**	200	270	**225**	180	215	**180**	145	275	**255**	230	225	**210**	190
	5	–	–	–	225	**200**	180	180	**160**	145	330	**300**	275	310	**275**	255
	6	–	–	–	200	**150**	120	160	**120**	95	230	**200**	175	190	**165**	–
M	1	–	–	–	245	**215**	200	205	**180**	165	270	**240**	205	250	**220**	190
	2	–	–	–	225	**190**	160	185	**160**	130	245	**215**	190	225	**195**	170
	3	–	–	–	170	**145**	115	140	**120**	95	195	**175**	150	175	**160**	140
K	1	350	**315**	285	275	**250**	220	–	–	–	435	**390**	350	355	**320**	285
	2	275	**250**	230	215	**195**	180	–	–	–	345	**310**	280	280	**255**	230
	3	235	**205**	190	180	**160**	145	–	–	–	290	**255**	240	235	**210**	195
N	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
S	1	–	–	–	50	**45**	35	45	**35**	30	–	–	–	–	–	–
	2	–	–	–	50	**45**	35	45	**35**	30	–	–	–	–	–	–
	3	–	–	–	60	**50**	35	55	**45**	30	–	–	–	–	–	–
	4	–	–	–	85	**60**	45	75	**55**	35	–	–	–	–	–	–
H	1	190	**155**	110	145	**110**	85	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

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

Recommended Starting Feeds [mm]

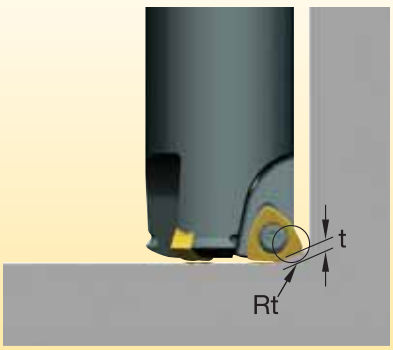
Light Machining	General Purpose	Heavy Machining

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.LD..	0,66	**1,67**	2,70	0,49	**1,23**	1,98	0,43	**1,07**	1,72	0,40	**1,00**	1,60	0,39	**0,98**	1,57	.LD..
.LN..	0,66	**1,67**	2,70	0,49	**1,23**	1,98	0,43	**1,07**	1,72	0,40	**1,00**	1,60	0,39	**0,98**	1,57	.LN..

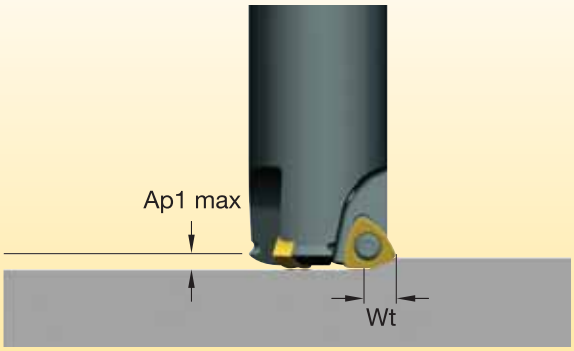
NOTE: Use “Light Machining” values as starting feed rate.

General Programming Information for Applying KenFeed Mini

Rt	Wt	t
1.00	2.40	0.40



For CAM programming, the loads can be programmed as a toroidal tool type by using the Rt value as the insert radius.



Small Ap1 values and higher feed rates generate lower cutting forces versus traditional milling strategies.

Rodeka™ • The New Round Insert Generation

Primary Application

Kennametal introduces a new and revolutionary double-sided round milling insert capable to run in multiple types of milling operations and workpiece materials, providing the latest double-sided insert technology to boost your productivity with the most efficient cost per edge.

Features and Benefits

Double-sided insert with up to 12 cutting edges for a more productive cutting process.

Screw-On, end mill, and shell mill cutters with internal coolant.

Higher clearance in bodies to permit pocketing, profiling, and 5-axis machining.

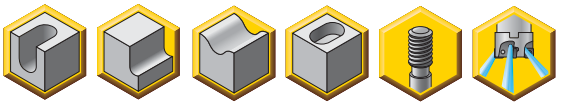
Unique anti-rotation feature for excellent stability with higher feed rates and cutting forces. User-friendly insert rotation.

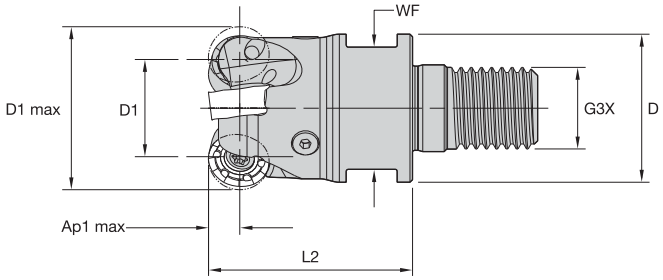
Three insert and topography styles to cover any type of component and application.

*To learn more, **scan here**.*

For instructions on how to scan, please see page xxix.

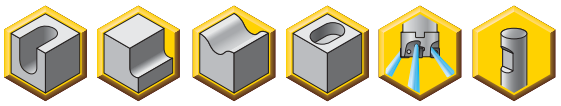
- Double-sided round inserts with 12 indexable positions.
- Anti-rotation features enable higher cutting data and extra stability.
- Pocketing and profiling capabilities.

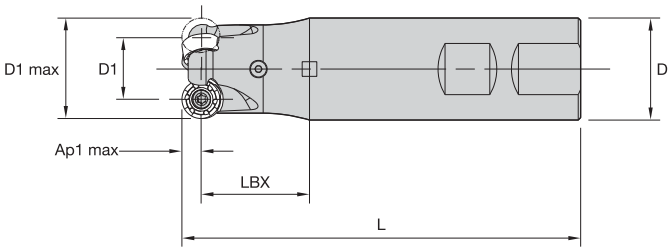




Screw-On End Mills

order number	catalogue number	D1 max	D1	D	WF	G3X	L2	Ap1 max	Z	kg	max RPM	insert 1
4147001	**KDR32Z03M16RN12**	32	20	29	24	M16	40	3,0	3	0,18	39160	RN_J1204M0__
4147002	**KDR35Z03M16RN12**	35	23	29	24	M16	40	3,0	3	0,20	37440	RN_J1204M0__
4147033	**KDR42Z04M16RN12**	42	30	29	24	M16	40	3,0	4	0,23	34180	RN_J1204M0__





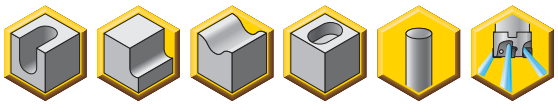
Weldon End Mills

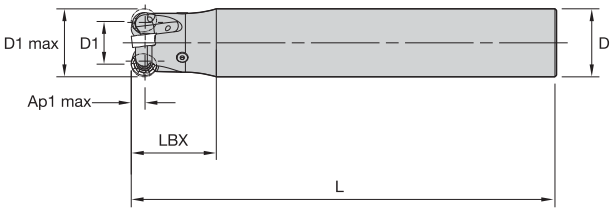
order number	catalogue number	D1 max	D1	D	L	LBX	Ap1 max	Z	kg	max RPM	insert 1
4147035	**KDR32Z03B32RN12**	32	20	32	125	40	3,0	3	0,64	39160	RN_J1204M0__

Spare Parts

D1 max	insert screw	Nm	wrench
32	**193.492**	4,0	**170.025**
35	**193.492**	4,0	**170.025**
42	**193.492**	4,0	**170.025**

- Double-sided round insert with 12 indexable positions.
- Anti-rotation feature enable higher cutting forces and extra stability.
- Pocketing and profiling capabilities.





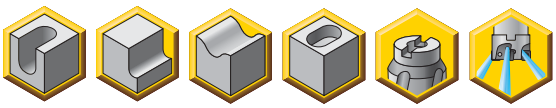
Cylindrical End Mills

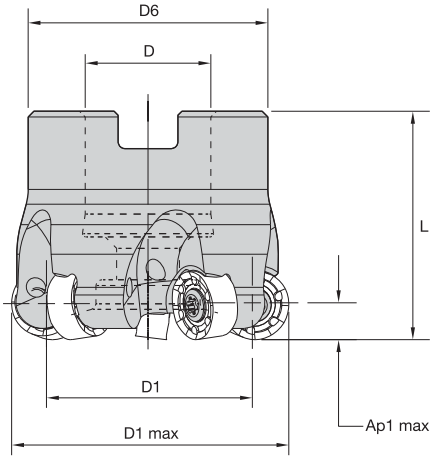
order number	catalogue number	D1 max	D1	D	L	LBX	Ap1 max	Z	kg	max RPM	insert 1
4147038	**KDR32Z02A32RN12L250**	32	20	32	250	40	3,0	2	1,41	39160	RN_J1204M0__
4147037	**KDR32Z03A32RN12L200**	32	20	32	200	40	3,0	3	1,10	39160	RN_J1204M0__

Spare Parts

D1 max	insert screw	Nm	wrench
32	**193.492**	4,0	**170.025**
35	**193.492**	4,0	**170.025**
42	**193.492**	4,0	**170.025**

- Double-sided round inserts with 12 indexable positions.
- Anti-rotation features enable higher cutting data and extra stability.
- Pocketing and profiling capabilities.





Shell Mills

order number	catalogue number	D1 max	D1	D	D6	L	Ap1 max	Z	kg	max RPM	insert 1
4147039	**KDR40Z04S16RN12**	40	28	16	38	40	3,0	4	0,21	35020	RN_J1204M0__
4147040	**KDR50Z04S22RN12**	50	38	22	42	40	3,0	4	0,81	31330	RN_J1204M0__
4147041	**KDR50Z05S22RN12**	50	38	22	42	40	3,0	5	0,81	31330	RN_J1204M0__
4147042	**KDR52Z05S22RN12**	52	40	22	49	50	3,0	5	0,81	30720	RN_J1204M0__
4147043	**KDR63Z05S22RN12**	63	51	22	49	50	3,0	5	0,81	27910	RN_J1204M0__
4147044	**KDR63Z07S22RN12**	63	51	22	49	50	3,0	7	0,81	27910	RN_J1204M0__
4147045	**KDR66Z07S27RN12**	66	54	27	60	50	3,0	7	0,81	27260	RN_J1204M0__
4147046	**KDR80Z06S27RN12**	80	68	27	60	50	3,0	6	1,07	24760	RN_J1204M0__
4147047	**KDR80Z08S27RN12**	80	68	27	60	50	3,0	8	0,81	24760	RN_J1204M0__
4147048	**KDR100Z07S32RN12**	100	88	32	78	50	3,0	7	1,57	22150	RN_J1204M0__
4147049	**KDR100Z09S32RN12**	100	88	32	78	50	3,0	9	1,56	22150	RN_J1204M0__

Spare Parts





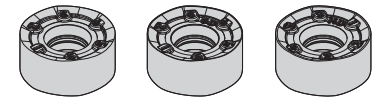
D1 max	insert screw	Nm	low-head cap screw	socket-head cap screw	coolant lock screw assembly	wrench
40	**193.492**	4,0	–	**MS1294**	–	**170.025**
50	**193.492**	4,0	**MS1336**	–	–	**170.025**
52	**193.492**	4,0	–	**MS1242**	–	**170.025**
63	**193.492**	4,0	–	**MS1242**	–	**170.025**
66	**193.492**	4,0	–	**MS2038**	–	**170.025**
80	**193.492**	4,0	–	**MS2038**	–	**170.025**
100	**193.492**	4,0	–	–	**MS2195C**	**170.025**

Insert Selection Guide

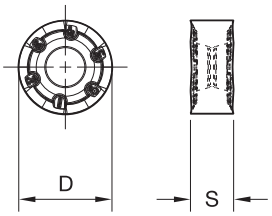
Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.E..LD	KCPK30	**.S..GD**	**KCPK30**	.S..HD	KCPK30
P3–P4	.S..GD	KC522M	**.S..HD**	**KCPM20**	.S..HD	KCPK30
P5–P6	.S..GD	KC522M	**.S..GD**	**KCPK30**	.S..HD	KCPM20
M1–M2	.E..LD	KC522M	**.E..LD**	**KC522M**	.S..GD	KC725M
M3	.E..LD	KC522M	**.S..GD**	**KCPK30**	.S..HD	KCPK30
K1–K2	.S..HD	KCK15	**.S..HD**	**KCK15**	.S..HD	KCPK30
K3	.S..HD	KCK15	**.S..HD**	**KCK15**	.S..HD	KCPK30
N1–N2	.F..LDJ	KC422M	**.F..LDJ**	**KC422M**	–	–
N3	.F..LDJ	KC422M	**.F..LDJ**	**KC422M**	–	–
S1–S2	.E..LD	KC725M	**.S..GD**	**KC725M**	.S..HD	KC725M
S3	.E..LD	KC725M	**.S..GD**	**KC725M**	.S..HD	KC725M
S4	.E..LD	KC725M	**.E..LD**	**KC725M**	.S..GD	KC725M
H1	.S..GD	KC522M	**.S..HD**	**KCPM20**	–	–

Indexable Inserts • RNGJ12....

- -FLDJ geometry is for non-ferrous metals.
- -LD geometry is the first choice for stainless steel and titanium machining at lower cutting forces.
- -GD geometry is for general use in steel and for stainless steel.
- -HD geometry is the first choice for heavy machining, high-strength steel and cast iron.



RNGJ-LD/-LDJ RNGJ-GD RNGJ-HD



● first choice
○ alternate choice

		KC422M	KC522M	KC725M	KCK15	KCPM20	KCPK30
P			○	●		●	●
M			●	●		○	○
K			○		●		○
N		●					
S			●	●			
H			○			○	

RNGJ-LD/-LDJ

catalogue number	D	S	hm	cutting edges	KC422M	KC522M	KC725M	KCK15	KCPM20	KCPK30
RNGJ1204M0ELD	12,00	4,75	0,04	12		●	●			●
RNGJ1204M0FLDJ	12,00	4,75	0,04	12	●					

RNGJ-GD

catalogue number	D	S	hm	cutting edges	KC422M	KC522M	KC725M	KCK15	KCPM20	KCPK30
RNGJ1204M0SGD	12,00	4,75	0,09	12		●	●			●

RNGJ-HD

catalogue number	D	S	hm	cutting edges	KC422M	KC522M	KC725M	KCK15	KCPM20	KCPK30
RNGJ1204M0SHD	12,00	4,75	0,19	12			●	●	●	●

Recommended Starting Speeds [m/min]

Material Group		KC422M			KC522M			KC725M			KCK15			KCPM20			KCPK30		
P	1	–	–	–	395	**345**	325	315	**275**	255	–	–	–	310	**580**	535	545	**475**	440
	2	–	–	–	330	**290**	240	260	**230**	195	–	–	–	275	**370**	330	335	**305**	275
	3	–	–	–	305	**255**	215	240	**205**	170	–	–	–	240	**330**	305	305	**275**	250
	4	–	–	–	270	**225**	180	215	**180**	145	–	–	–	175	**255**	230	225	**210**	190
	5	–	–	–	225	**200**	180	180	**160**	145	–	–	–	170	**300**	275	310	**275**	255
	6	–	–	–	200	**150**	120	160	**120**	95	–	–	–	105	**200**	175	190	**165**	–
M	1	–	–	–	245	**215**	200	205	**180**	165	–	–	–	190	**240**	205	250	**220**	190
	2	–	–	–	225	**190**	160	185	**160**	130	–	–	–	170	**215**	190	225	**195**	170
	3	–	–	–	170	**145**	115	140	**120**	95	–	–	–	105	**175**	150	175	**160**	140
K	1	–	–	–	275	**250**	220	–	–	–	505	**460**	410	220	**390**	350	355	**320**	285
	2	–	–	–	215	**195**	180	–	–	–	400	**355**	330	175	**310**	280	280	**255**	230
	3	–	–	–	180	**160**	145	–	–	–	335	**300**	275	155	**255**	240	235	**210**	195
N	1–2	1285	**1135**	1050	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3	1135	**1050**	915	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
S	1	–	–	–	50	**45**	35	45	**35**	30	–	–	–	–	–	–	–	–	–
	2	–	–	–	50	**45**	35	45	**35**	30	–	–	–	–	–	–	–	–	–
	3	–	–	–	60	**50**	35	55	**45**	30	–	–	–	–	–	–	–	–	–
	4	–	–	–	85	**60**	45	75	**55**	35	–	–	–	–	–	–	–	–	–
H	1	–	–	–	145	**110**	85	–	–	–	–	–	–	170	**140**	115	–	–	–

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

Recommended Starting Feeds [mm]

Light Machining	General Purpose	Heavy Machining

At 3,00 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50%–100%			
.F..LDJ	0,10	**0,18**	0,31	0,08	**0,13**	0,23	0,07	**0,11**	0,20	0,06	**0,11**	0,19	0,06	**0,11**	0,18	.F..LDJ
.E..LD	0,10	**0,18**	0,31	0,08	**0,13**	0,23	0,07	**0,11**	0,20	0,06	**0,11**	0,19	0,06	**0,11**	0,18	.E..LD
.S..GD	0,24	**0,40**	0,71	0,18	**0,30**	0,53	0,16	**0,26**	0,46	0,15	**0,25**	0,43	0,14	**0,24**	0,42	.S..GD
.S..HD	0,39	**0,58**	0,87	0,29	**0,43**	0,65	0,25	**0,38**	0,57	0,24	**0,35**	0,53	0,23	**0,35**	0,52	.S..HD

At 1,50 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50%–100%			
.F..LDJ	0,14	**0,23**	0,40	0,10	**0,17**	0,30	0,09	**0,15**	0,26	0,08	**0,14**	0,25	0,08	**0,14**	0,24	.F..LDJ
.E..LD	0,14	**0,23**	0,40	0,10	**0,17**	0,30	0,09	**0,15**	0,26	0,08	**0,14**	0,25	0,08	**0,14**	0,24	.E..LD
.S..GD	0,31	**0,53**	0,93	0,23	**0,40**	0,69	0,20	**0,34**	0,60	0,19	**0,32**	0,56	0,19	**0,32**	0,55	.S..GD
.S..HD	0,51	**0,76**	1,15	0,38	**0,57**	0,85	0,33	**0,50**	0,74	0,31	**0,46**	0,69	0,30	**0,45**	0,68	.S..HD

At 0,75 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50%–100%			
.F..LDJ	0,19	**0,32**	0,55	0,14	**0,24**	0,41	0,12	**0,21**	0,36	0,11	**0,19**	0,34	0,11	**0,19**	0,33	.F..LDJ
.E..LD	0,19	**0,32**	0,55	0,14	**0,24**	0,41	0,12	**0,21**	0,36	0,11	**0,19**	0,34	0,11	**0,19**	0,33	.E..LD
.S..GD	0,43	**0,72**	1,28	0,32	**0,54**	0,95	0,28	**0,47**	0,82	0,26	**0,44**	0,77	0,25	**0,43**	0,75	.S..GD
.S..HD	0,69	**1,04**	1,58	0,52	**0,78**	1,17	0,45	**0,68**	1,02	0,42	**0,63**	0,95	0,41	**0,62**	0,93	.S..HD

NOTE: Use “Light Machining” values as starting feed rate.

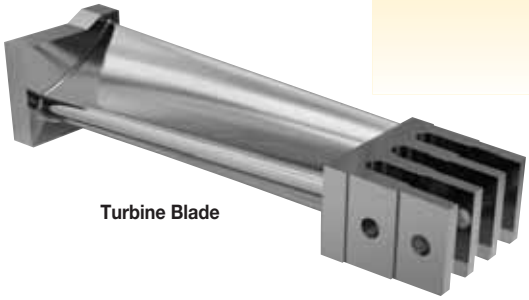
Rodeka 8 Turbine Blade Version

Revolutionary double-sided round insert engineered for turbine blade machining. Special geometries, insert styles, and dedicated cutter bodies have been developed to serve this demanding application.

Power Plant

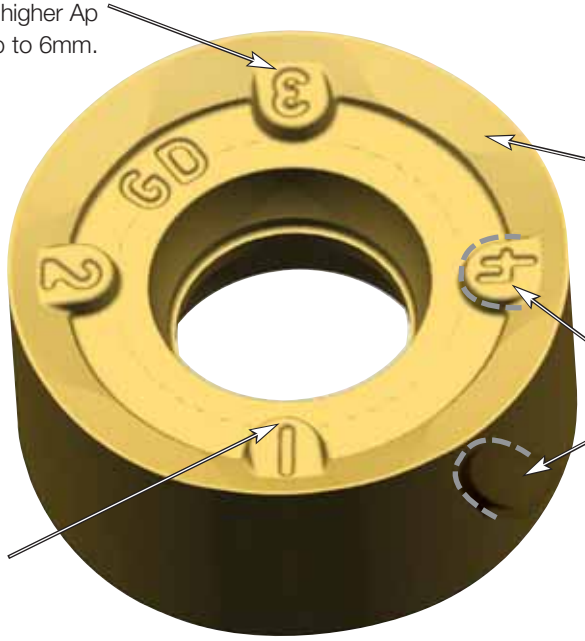
Steam Turbine

Rodeka 8



Turbine Blade

Four indexes per side, in total eight cutting edges. With higher Ap capabilities, up to 6mm.

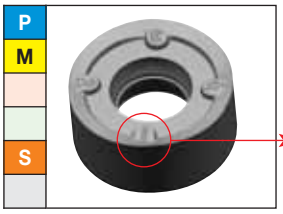


Specific high positive geometries with improved chip forming and higher tool life.

Insert location twisted by 45° between top and bottom side for equal performance over all eight cutting edges.

Unique anti-rotation feature with higher contact area for excellent stability, allowing higher feed rates.

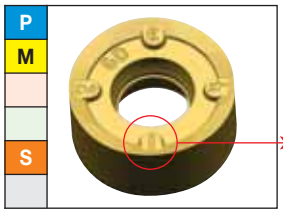
-LD



Light/Medium Machining

First choice for stainless steel and titanium machining.

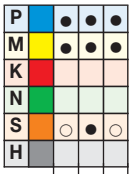
-GD



Medium/Heavy Machining

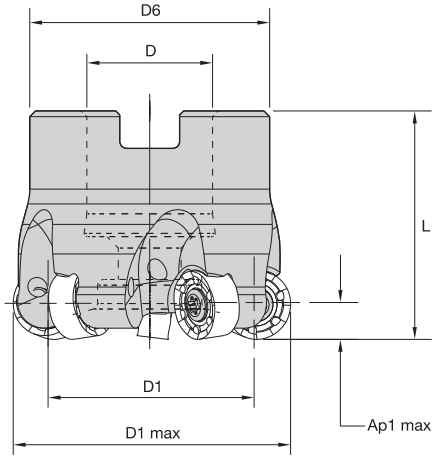
First choice for medium/heavy operations. Forged blades or "bad skin".

● first choice
○ alternate choice



Indexable Inserts

catalogue number	KC522M	KC725M	KCMP30
RNGJ1204M0ENLDJX	●	●	
RNGJ1204M0ENLDX			●
RNGJ1204M0SNGDJX	●	●	
RNGJ1204M0SNGDX			●



Shell Mills

MM#	catalogue number	D1 max	D1	D	D6	L	Ap1 max	Z
5104420	KDR40Z04S16RN12X	40	28	16	38	40	6	4
5104421	KDR50Z05S22RN12X	50	38	22	42	40	6	5
5104422	KDR50Z05S22RN12XL	50	38	22	49	40	6	5
5104423	KDR52Z05S22RN12X	52	40	22	42	40	6	5
5104424	KDR63Z06S22RN12X	63	51	22	49	40	6	6
5104425	KDR66Z06S27RN12X	66	54	27	60	40	6	6
5104426	KDR80Z07S27RN12X	80	68	27	60	50	6	7

KDM • Strong, Flexible, and Highly Accurate

Primary Application

Roughing and finishing milling operations on complex parts. First choice for die and mould industry up to 55 HRC.

Features and Benefits

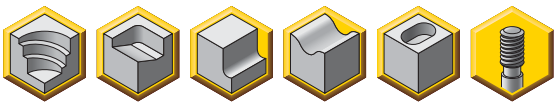
Platform Features

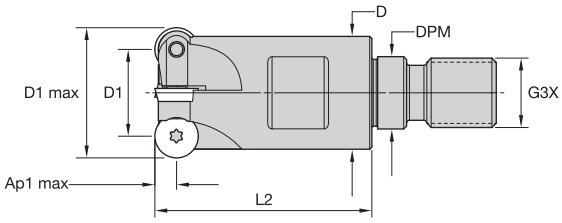
- Big draft clearance angle to improve the pocketing operations performance.
- Big clearance area in the bottom, superior ramping, and helical values.
- High accuracy and tight runout.

Value Proposition

- Real HSM capabilities: more teeth and close accuracy.
- Strongest and most rigid design for roughing operations.
- Addressed to the die and mould and general engineering markets, mainly.
- PSTS and ground inserts are offered through different inserts sizes.
- Shell mill, Weldon® and straight shank, and Screw-On body cutters.
- Multiple grades available; wide range of workpieces and applications.

- Engineered for maximum performance.
- High runout accuracy.
- Suitable for die and mould manufacturing.





Screw-On End Mills

order number	catalogue number	D1 max	D1	D	DPM	G3X	L2	Ap1 max	Z	max ramp angle	kg	insert 1
1888399	**12E03R020M06SRD05**	12	7	10	6,5	M6	20	2,5	3	9.5°	0,02	RD__0501____
1888402	**15E04R025M08SRD05**	15	10	13	8,5	M8	25	2,5	4	5.5°	0,03	RD__0501____
1888403	**20E05R030M10SRD05**	20	15	18	10,5	M10	30	2,5	5	3.5°	0,03	RD__0501____
1888404	**25E06R035M12SRD05**	25	20	21	12,5	M12	35	2,5	6	2.0°	0,03	RD__0501____

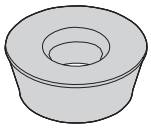
Spare Parts

D1 max	insert screw	Nm	Torx wrench
12	**193.340**	0,9	**FT6**
15	**193.340**	0,9	**FT6**
20	**193.340**	0,9	**FT6**
25	**193.340**	0,9	**FT6**

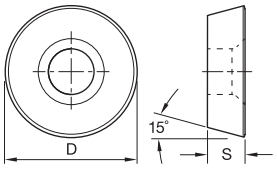
Insert Selection Guide

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.E..LN	KC522M	**.E..LN**	**KC522M**	.E..LN	KC725M
P3–P4	.E..LN	KC522M	**.E..LN**	**KC522M**	.E..LN	KC725M
P5–P6	.E..LN	KC522M	**.E..LN**	**KC522M**	.E..LN	KC725M
M1–M2	.E..LN	KC522M	**.E..LN**	**KC725M**	.E..LN	KC725M
M3	.E..LN	KC522M	**.E..LN**	**KC725M**	.E..LN	KC725M
K1–K2	.E..LN	KC510M	**.E..LN**	**KC510M**	.E..LN	KC510M
K3	.E..LN	KC510M	**.E..LN**	**KC510M**	.E..LN	KC510M
N1–N2	–	–	–	–	–	–
N3	–	–	–	–	–	–
S1–S2	–	–	–	–	–	–
S3	–	–	–	–	–	–
S4	–	–	–	–	–	–
H1	.E..LN	KC510M	**.E..LN**	**KC510M**	–	–

Indexable Round Inserts • RD.X05...



RDHX-LN



● first choice
○ alternate choice

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

RDHX-LN

catalogue number	D	S	hm	KC510M	KC522M	KC725M
RDHX0501M0ELN	5,00	1,50	0,04	●	●	●

Recommended Starting Speeds [m/min]

Material Group		KC510M			KC522M			KC725M		
P	1	–	–	–	395	**345**	325	315	**275**	255
	2	–	–	–	330	**290**	240	260	**230**	195
	3	–	–	–	305	**255**	215	240	**205**	170
	4	295	**240**	200	270	**225**	180	215	**180**	145
	5	–	–	–	225	**200**	180	180	**160**	145
	6	–	–	–	200	**150**	120	160	**120**	95
M	1	–	–	–	245	**215**	200	205	**180**	165
	2	–	–	–	225	**190**	160	185	**160**	130
	3	–	–	–	170	**145**	115	140	**120**	95
K	1	350	**315**	–	275	**250**	220	–	–	–
	2	275	**250**	230	215	**195**	180	–	–	–
	3	235	**205**	190	180	**160**	145	–	–	–
N	1–2	770	**685**	630	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–
H	1	190	**155**	110	145	**110**	85	–	–	–

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

Recommended Starting Feeds [mm]

Light Machining	General Purpose	Heavy Machining

At 2,50 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..LN	0,09	**0,27**	0,67	0,07	**0,20**	0,50	0,06	**0,17**	0,44	0,06	**0,16**	0,41	0,06	**0,16**	0,40	.E..LN

At 1,00 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..LN	0,12	**0,33**	0,84	0,09	**0,25**	0,63	0,08	**0,22**	0,55	0,07	**0,20**	0,51	0,07	**0,20**	0,50	.E..LN

At 0,50 Axial Depth of Cut (ap)

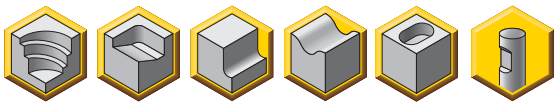
Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..LN	0,16	**0,45**	1,12	0,12	**0,33**	0,84	0,10	**0,29**	0,73	0,10	**0,27**	0,68	0,09	**0,27**	0,67	.E..LN

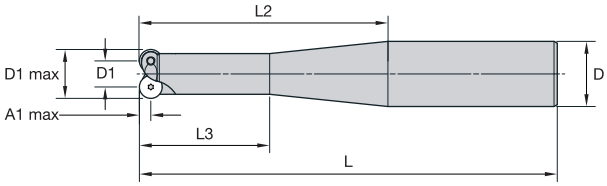
At 0,25 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..LN	0,22	**0,62**	1,56	0,16	**0,46**	1,15	0,14	**0,40**	1,00	0,13	**0,37**	0,94	0,13	**0,37**	0,92	.E..LN

NOTE: Use “Light Machining” values as starting feed rate.

• Suitable for die and mould manufacturing.

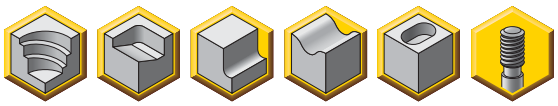


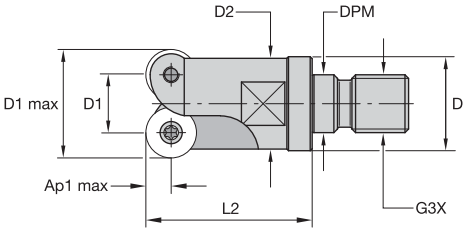


End Mills with Weldon® Shank • RD.X07 Inserts

order number	catalogue number	D1 max	D1	D	L	L2	L3	Ap1 max	Z	max ramp angle	kg	insert 1
1888453	**15E02R040B16SRD07**	15	8	16	90	40	40	3,5	2	4.5°	0,13	RD_X0702__
1888469	**15E02R060B16SRD07**	15	8	16	110	40	25	3,5	2	4.5°	0,15	RD_X0702__
1888465	**15E02R100B20SRD07**	15	8	20	152	100	40	3,5	2	4.5°	0,28	RD_X0702__
1888463	**15E02R120B25SRD07**	15	8	25	178	120	40	3,5	2	4.5°	0,45	RD_X0702__

• Engineered for high performance.
• High runout accuracy.
• Suitable for die and mould manufacturing.





Screw-On End Mills • RD.X07 Inserts

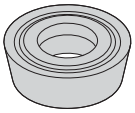
order number	catalogue number	D1 max	D1	D	D2	DPM	G3X	L2	Ap1 max	Z	max ramp angle	kg	insert 1
1888407	**12E02R018M06SRD07**	12	5	10	11	6,5	M6	18	3,5	2	9.5°	0,02	RD__07T1__
1888406	**12E02R028M08SRD07**	12	5	13	11	8,5	M8	28	3,5	2	9.5°	0,03	RD__0701__
1888409	**15E02R023M08SRD07**	15	8	13	13	8,5	M8	23	3,5	2	4.5°	0,03	RD__0702__
1888410	**15E03R023M08SRD07**	15	8	13	13	8,5	M8	23	3,5	3	4.5°	0,03	RD__0702__
1888411	**20E04R030M10SRD07**	20	13	18	18	10,5	M10	30	3,5	4	2.5°	0,07	RD__0702__
1888412	**25E05R035M12SRD07**	25	18	21	21	12,5	M12	35	3,5	5	3.5°	0,11	RD__0702__
1888413	**30E05R043M16SRD07**	30	23	29	26	17,0	M16	43	3,5	5	5.5°	0,22	RD__0702__
1888414	**35E06R043M16SRD07**	35	28	29	32	17,0	M16	43	3,5	6	4.5°	0,25	RD__0702__

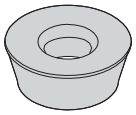
Spare Parts

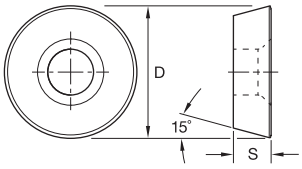
D1 max	insert screw	Nm	Torx wrench
12	**193.364**	1,0	**FT7**
15	**193.341**	1,0	**FT7**
20	**193.341**	1,0	**FT7**
25	**193.341**	1,0	**FT7**
30	**193.341**	1,0	**FT7**
35	**193.341**	1,0	**FT7**

Insert Selection Guide

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.F..LP	KC522M	**.F..LP**	**KC725M**	.S..LN	KC725M
P3–P4	.S..LN	KCPM20	**.S..LN**	**KC522M**	.S..LN	KC725M
P5–P6	.S..LN	KC522M	**.S..LN**	**KCPM20**	.S..LN	KCPM20
M1–M2	.F..LP	KC522M	**.F..LP**	**KC725M**	–	–
M3	.F..LP	KC725M	–	–	–	–
K1–K2	.F..LP	KC510M	**.S..LN**	**KC510M**	.S..LN	KC510M
K3	.S..LN	KC510M	**.S..LN**	**KC510M**	.S..LN	KC510M
N1–N2	.F..LP	KC510M	**.F..LP**	**KC510M**	.F..LP	KC510M
N3	.F..LP	KC510M	**.F..LP**	**KC510M**	.F..LP	KC510M
S1–S2	.F..LP	KC522M	**.F..LP**	**KC725M**	–	–
S3	.F..LP	KC725M	–	–	–	–
S4	.F..LP	KC725M	–	–	–	–
H1	.S..LN	KC510M	**.S..LN**	**KC510M**	.S..LN	KCPM20


RDHX-LP


RDHX-LN
RDPX-LN



● first choice
○ alternate choice

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

RDHX-LP

catalogue number	D	S	hm	KC510M	KC522M	KC725M	KCPM20	KTPK20
RDHX0702M0FLP	7,00	2,38	0,02	●	●	●		

RDHX-LN

catalogue number	D	S	hm	KC510M	KC522M	KC725M	KCPM20	KTPK20
RDHX07T1M0SLN	7,00	1,98	0,06	●		●		
RDHX0702M0SLN	7,00	2,38	0,06	●	●	●	●	
RDHX0702M0TLN	7,00	2,38	0,08					●

RDPX-LN

catalogue number	D	S	hm	KC510M	KC522M	KC725M	KCPM20	KTPK20
RDPX0702M0SLN	7,00	2,38	0,06				●	

Recommended Starting Speeds [m/min]

Material Group		KC510M			KC522M			KC725M			KCPM20			KTPK20		
P	1	–	–	–	395	**345**	325	315	**275**	255	660	**580**	535	440	**360**	310
	2	–	–	–	330	**290**	240	260	**230**	195	410	**370**	330	270	**225**	190
	3	–	–	–	305	**255**	215	240	**205**	170	370	**330**	305	245	**205**	170
	4	295	**240**	200	270	**225**	180	215	**180**	145	275	**255**	230	185	**160**	130
	5	–	–	–	225	**200**	180	180	**160**	145	330	**300**	275	255	**205**	175
	6	–	–	–	200	**150**	120	160	**120**	95	230	**200**	175	150	**125**	–
M	1	–	–	–	245	**215**	200	205	**180**	165	270	**240**	205	285	**235**	200
	2	–	–	–	225	**190**	160	185	**160**	130	245	**215**	190	260	**220**	185
	3	–	–	–	170	**145**	115	140	**120**	95	195	**175**	150	195	**160**	–
K	1	350	**315**	285	275	**250**	220	–	–	–	435	**390**	350	275	**235**	195
	2	275	**250**	230	215	**195**	180	–	–	–	345	**310**	280	220	**180**	160
	3	235	**205**	190	180	**160**	145	–	–	–	290	**255**	240	185	**150**	130
N	1–2	770	**685**	630	–	–	–	–	–	–	–	–	–	–	–	–
	3	695	**640**	585	–	–	–	–	–	–	–	–	–	–	–	–
S	1	–	–	–	50	**45**	35	45	**35**	30	–	–	–	–	–	–
	2	–	–	–	50	**45**	35	45	**35**	30	–	–	–	–	–	–
	3	–	–	–	60	**50**	35	55	**45**	30	–	–	–	–	–	–
	4	–	–	–	85	**60**	45	75	**55**	35	–	–	–	–	–	–
H	1	190	**155**	110	145	**110**	85	–	–	–	170	**140**	115	–	–	–

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

Recommended Starting Feeds [mm]

Light Machining	General Purpose	Heavy Machining

At 3,50 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.F..LP	0,08	**0,13**	0,33	0,06	**0,10**	0,25	0,06	**0,09**	0,22	0,05	**0,08**	0,20	0,05	**0,08**	0,20	.F..LP
.S..LN	0,14	**0,41**	0,68	0,11	**0,31**	0,51	0,09	**0,27**	0,44	0,09	**0,25**	0,41	0,09	**0,24**	0,41	.S..LN
.T..LN	0,17	**0,43**	0,68	0,13	**0,32**	0,51	0,11	**0,28**	0,44	0,10	**0,26**	0,41	0,10	**0,25**	0,41	.T..LN

At 1,75 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.F..LP	0,10	**0,15**	0,39	0,07	**0,12**	0,29	0,06	**0,10**	0,25	0,06	**0,09**	0,24	0,06	**0,09**	0,23	.F..LP
.S..LN	0,17	**0,47**	0,79	0,12	**0,35**	0,59	0,11	**0,31**	0,51	0,10	**0,29**	0,48	0,10	**0,28**	0,47	.S..LN
.T..LN	0,20	**0,49**	0,79	0,15	**0,37**	0,59	0,13	**0,32**	0,51	0,12	**0,30**	0,48	0,12	**0,29**	0,47	.T..LN

At 1,00 Axial Depth of Cut (ap)

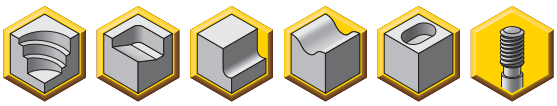
Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.F..LP	0,12	**0,19**	0,48	0,09	**0,14**	0,36	0,08	**0,12**	0,31	0,07	**0,12**	0,29	0,07	**0,11**	0,29	.F..LP
.S..LN	0,21	**0,58**	0,98	0,15	**0,44**	0,73	0,13	**0,38**	0,63	0,13	**0,36**	0,59	0,12	**0,35**	0,58	.S..LN
.T..LN	0,24	**0,61**	0,98	0,18	**0,45**	0,73	0,16	**0,40**	0,63	0,15	**0,37**	0,59	0,15	**0,36**	0,58	.T..LN

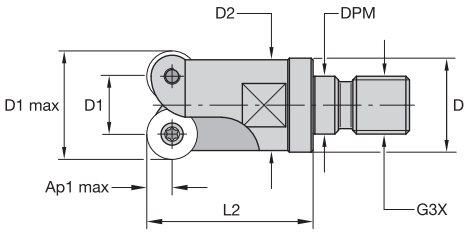
At 0,50 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.F..LP	0,16	**0,26**	0,65	0,12	**0,19**	0,49	0,11	**0,17**	0,42	0,10	**0,16**	0,40	0,10	**0,16**	0,39	.F..LP
.S..LN	0,28	**0,80**	1,33	0,21	**0,59**	0,99	0,18	**0,52**	0,86	0,17	**0,48**	0,81	0,17	**0,47**	0,79	.S..LN
.T..LN	0,33	**0,83**	1,33	0,25	**0,62**	0,99	0,22	**0,54**	0,86	0,20	**0,50**	0,81	0,20	**0,49**	0,79	.T..LN

NOTE: Use “Light Machining” values as starting feed rate.

- Engineered for maximum performance.
- High runout accuracy.
- Suitable for die and mould manufacturing.

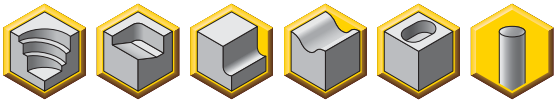


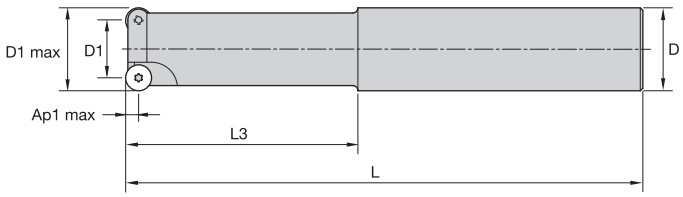


Screw-On End Mills • RD.X10 Inserts

order number	catalogue number	D1 max	D1	D	D2	DPM	G3X	L2	Ap1 max	Z	max ramp angle	kg	insert 1
1888415	**20E02R030M10SRD10**	20	10	18	18	10,5	M10	30	5,0	2	15.0°	0,07	RD_X1003__
1888416	**25E02R035M12SRD10**	25	15	21	21	12,5	M12	35	5,0	2	13.5°	0,03	RD_X1003__
1888417	**25E03R035M12SRD10**	25	15	21	21	12,5	M12	35	5,0	3	13.5°	0,11	RD_X1003__
1888418	**30E04R043M16SRD10**	30	20	29	25	17,0	M16	43	5,0	4	9.0°	0,20	RD_X1003__
1888419	**35E04R045M16SRD10**	35	25	29	33	17,0	M16	45	5,0	4	7.0°	0,03	RD_X1003__
1888420	**42E05R045M16SRD10**	42	32	29	38	17,0	M16	45	5,0	5	5.0°	0,29	RD_X1003__

- Suitable for die and mould manufacturing.

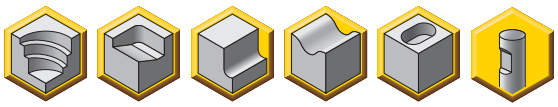


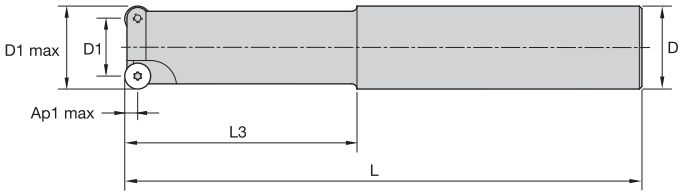


End Mills with Cylindrical Shank • RD.X10 Inserts

order number	catalogue number	D1 max	D1	D	L	L3	Ap1 max	Z	max ramp angle	kg	insert 1
1888457	**25E02R070A25SRD10**	25	15	25	180	70	5,0	2	15.0°	0,62	RD_X1003__
1888454	**32E03R090A32SRD10**	32	22	32	200	90	5,0	3	15.0°	0,20	RD_X1003__

• Suitable for die and mould manufacturing.





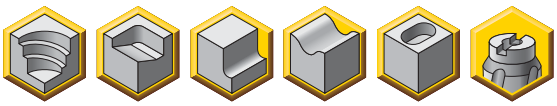
End Mills with Weldon® Shank • RD.X10 Inserts

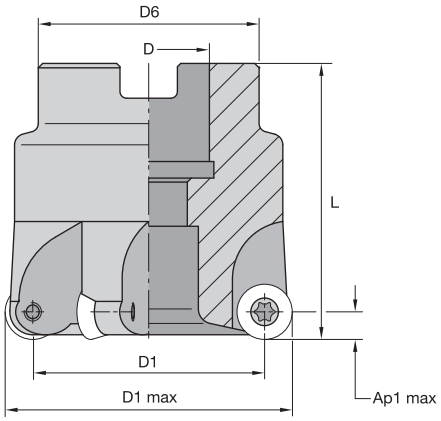
order number	catalogue number	D1 max	D1	D	L	L3	Ap1 max	Z	max ramp angle	kg	insert 1
1888468	**20E02R040B20SRD10**	20	10	20	112	40	5,0	2	15.0°	0,25	RD_X1003__
1888466	**20E02R060B20SRD10**	20	10	20	138	60	5,0	2	15.0°	0,31	RD_X1003__
1888464	**20E02R080B25SRD10**	20	10	25	158	60	5,0	2	15.0°	0,47	RD_X1003__
1888461	**20E02R100B25SRD10**	20	10	25	180	60	5,0	2	15.0°	0,53	RD_X1003__
1888460	**20E02R120B25SRD10**	20	10	25	180	60	5,0	2	15.0°	0,52	RD_X1003__

Spare Parts

D1 max	insert screw	Nm	Torx wrench
20	**193.342**	3,5	**FT15**
25	**193.342**	3,5	**FT15**
30	**193.342**	3,5	**FT15**
32	**193.342**	3,5	**FT15**
35	**193.342**	3,5	**FT15**
42	**193.342**	3,5	**FT15**

- Engineered for maximum performance.
- High runout accuracy.
- Suitable for die and mould manufacturing.





Shell Mills • RD.X10 Inserts

order number	catalogue number	D1 max	D1	D	D6	L	Ap1 max	Z	max ramp angle	kg	insert 1
3680970	**40A05RSMORD10**	40	30	16	32	40	5,0	5	5.3°	0,33	RD..1003MO..
3680972	**50A06RSMORD10**	50	40	22	42	50	5,0	6	5.0°	0,42	RD..1003MO..
1888180	**52A06RSMORD10**	52	42	22	42	50	5,0	6	3.0°	0,93	RD..1003MO..

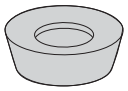
Spare Parts

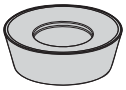
D1 max	 insert screw	Nm	 Torx wrench	 low-head cap screw	 socket-head cap screw
40	**193.342**	3,5	**FT15**	**–**	**MS1294**
50	**193.342**	3,5	**FT15**	**129.025**	**–**
52	**193.342**	3,5	**FT15**	**129.025**	**–**

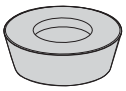
Insert Selection Guide

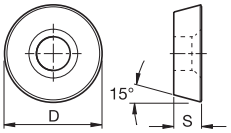
Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.F..LP	KC725M	**.S..HP**	**KC725M**	.S..HP	KC725M
P3–P4	.S..HP	KC522M	**.S..HP**	**KCPK30**	.S..HP	KCPK30
P5–P6	.S..HP	KC522M	**.S..HP**	**KCPM20**	.S..HN	KCPM20
M1–M2	.F..LP	KC725M	**.S..HP**	**KC725M**	–	–
M3	.S..HP	KC522M	**.S..HP**	**KC725M**	–	–
K1–K2	.S..GN	KC510M	**.S..HP**	**KCPK30**	.S..HP	KCPK30
K3	.S..GN	KC510M	**.S..HP**	**KCPK30**	.S..HP	KCPK30
N1–N2	.F..LP	K110M	**.F..LP**	**K110M**	.F..LP	KC510M
N3	.F..LP	K110M	**.F..LP**	**KC510M**	.F..LP	KC510M
S1–S2	–	–	**.S..HP**	**KC725M**	–	–
S3	–	–	**.S..HP**	**KC725M**	–	–
S4	–	–	**.S..HP**	**KC725M**	–	–
H1	.S..HN	KC510M	**.S..HN**	**KC510M**	.S..HN	KCPM20

Indexable Round Inserts • RD.X10...


RDHX-FLP


RDPX-HP


RDHX-GN
RDPX-HN



● first choice
○ alternate choice

		K110M	KC510M	KC522M	KC725M	KCPM20	KCPK30	KTPK20
P			○	○	●	●	●	●
M				●	●	○	○	
K			●	○		○	○	○
N		●	○					
S				●	●			
H			●					

RDHX-FLP

catalogue number	D	S	hm	K110M	KC510M	KC522M	KC725M	KCPM20	KCPK30	KTPK20
RDHX1003M0FLP	10,00	3,18	0,02	●	●	●	●			

RDHX-GN

catalogue number	D	S	hm	K110M	KC510M	KC522M	KC725M	KCPM20	KCPK30	KTPK20
RDHX1003M0SGN	10,00	3,18	0,08		●	●	●			
RDHX1003M0TGN	10,00	3,18	0,10							●

RDPX-HP

catalogue number	D	S	hm	K110M	KC510M	KC522M	KC725M	KCPM20	KCPK30	KTPK20
RDPX1003M0SHP	10,00	3,18	0,10			●	●	●	●	

RDPX-HN

catalogue number	D	S	hm	K110M	KC510M	KC522M	KC725M	KCPM20	KCPK30	KTPK20
RDPX1003M0SHN	10,00	3,18	0,12		●	●	●	●		

Recommended Starting Speeds [m/min]

Material Group		K110M			KC510M			KC522M			KC725M		
P	1	–	–	–	–	–	–	395	**345**	325	315	**275**	255
	2	–	–	–	–	–	–	330	**290**	240	260	**230**	195
	3	–	–	–	–	–	–	305	**255**	215	240	**205**	170
	4	–	–	–	295	**240**	200	270	**225**	180	215	**180**	145
	5	–	–	–	–	–	–	225	**200**	180	180	**160**	145
	6	–	–	–	–	–	–	200	**150**	120	160	**120**	95
M	1	–	–	–	–	–	–	245	**215**	200	205	**180**	165
	2	–	–	–	–	–	–	225	**190**	160	185	**160**	130
	3	–	–	–	–	–	–	170	**145**	115	140	**120**	95
K	1	155	**145**	135	350	**315**	285	275	**250**	220	–	–	–
	2	135	**130**	120	275	**250**	230	215	**195**	180	–	–	–
	3	120	**105**	95	235	**205**	190	180	**160**	145	–	–	–
N	1–2	605	**565**	540	770	**685**	630	–	–	–	–	–	–
	3	495	**440**	385	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	50	**45**	35	45	**35**	30
	2	–	–	–	–	–	–	50	**45**	35	45	**35**	30
	3	–	–	–	–	–	–	60	**50**	35	55	**45**	30
	4	–	–	–	–	–	–	85	**60**	45	75	**55**	35
H	1	–	–	–	190	**155**	110	145	**110**	85	–	–	–

Material Group		KCPM20			KCPK30			KTPK20		
P	1	660	**580**	535	545	**475**	440	440	**360**	310
	2	410	**370**	330	335	**305**	275	270	**225**	190
	3	370	**330**	305	305	**275**	250	245	**205**	170
	4	275	**255**	230	225	**210**	190	185	**160**	130
	5	330	**300**	275	310	**275**	255	255	**205**	175
	6	230	**200**	175	190	**165**	–	150	**125**	–
M	1	270	**240**	205	250	**220**	190	285	**235**	200
	2	245	**215**	190	225	**195**	170	260	**220**	185
	3	195	**175**	150	175	**160**	140	195	**160**	–
K	1	435	**390**	350	355	**320**	285	275	**235**	195
	2	345	**310**	280	280	**255**	230	220	**180**	160
	3	290	**255**	240	235	**210**	195	185	**150**	130
N	1–2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–
H	1	170	**140**	115	–	–	–	–	–	–

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

Recommended Starting Feeds [mm]

Light Machining	General Purpose	Heavy Machining

At 5,00 Axial Depth of Cut

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.F..LP	0,08	**0,17**	0,33	0,06	**0,13**	0,25	0,06	**0,11**	0,22	0,05	**0,10**	0,20	0,05	**0,10**	0,20	.F..LP
.S..GN	0,17	**0,40**	0,68	0,13	**0,30**	0,51	0,11	**0,26**	0,44	0,10	**0,24**	0,41	0,10	**0,24**	0,41	.S..GN
.T..GN	0,17	**0,43**	0,68	0,13	**0,32**	0,51	0,11	**0,28**	0,44	0,10	**0,26**	0,41	0,10	**0,25**	0,41	.T..GN
.S..HP	0,17	**0,43**	0,68	0,13	**0,32**	0,51	0,11	**0,28**	0,44	0,10	**0,26**	0,41	0,10	**0,25**	0,41	.S..HP
.S..HN	0,17	**0,43**	0,68	0,13	**0,32**	0,51	0,11	**0,28**	0,44	0,10	**0,26**	0,41	0,10	**0,25**	0,41	.S..HN

At 2,00 Axial Depth of Cut

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.F..LP	0,11	**0,21**	0,42	0,08	**0,16**	0,31	0,07	**0,14**	0,27	0,06	**0,13**	0,26	0,06	**0,13**	0,25	.F..LP
.S..GN	0,21	**0,50**	0,85	0,16	**0,38**	0,64	0,14	**0,33**	0,55	0,13	**0,31**	0,52	0,13	**0,30**	0,51	.S..GN
.T..GN	0,21	**0,53**	0,85	0,16	**0,40**	0,64	0,14	**0,35**	0,55	0,13	**0,32**	0,52	0,13	**0,32**	0,51	.T..GN
.S..HP	0,21	**0,53**	0,85	0,16	**0,40**	0,64	0,14	**0,35**	0,55	0,13	**0,32**	0,52	0,13	**0,32**	0,51	.S..HP
.S..HN	0,21	**0,53**	0,85	0,16	**0,40**	0,64	0,14	**0,35**	0,55	0,13	**0,32**	0,52	0,13	**0,32**	0,51	.S..HN

At 1,00 Axial Depth of Cut

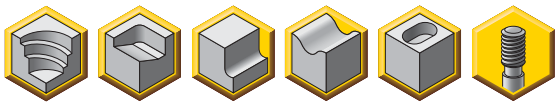
Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.F..LP	0,14	**0,28**	0,56	0,11	**0,21**	0,42	0,09	**0,18**	0,36	0,09	**0,17**	0,34	0,08	**0,17**	0,33	.F..LP
.S..GN	0,28	**0,67**	1,14	0,21	**0,50**	0,85	0,18	**0,44**	0,74	0,17	**0,41**	0,69	0,17	**0,40**	0,68	.S..GN
.T..GN	0,28	**0,71**	1,14	0,21	**0,53**	0,85	0,18	**0,46**	0,74	0,17	**0,43**	0,69	0,17	**0,42**	0,68	.T..GN
.S..HP	0,28	**0,71**	1,14	0,21	**0,53**	0,85	0,18	**0,46**	0,74	0,17	**0,43**	0,69	0,17	**0,42**	0,68	.S..HP
.S..HN	0,28	**0,71**	1,14	0,21	**0,53**	0,85	0,18	**0,46**	0,74	0,17	**0,43**	0,69	0,17	**0,42**	0,68	.S..HN

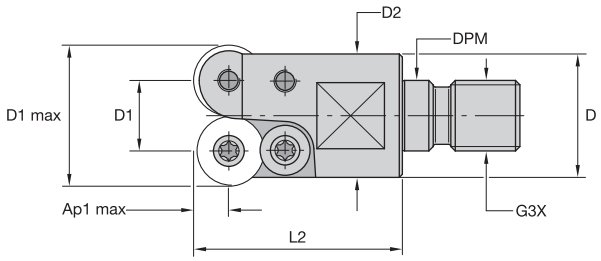
At 0,50 Axial Depth of Cut

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.F..LP	0,19	**0,38**	0,77	0,15	**0,29**	0,58	0,13	**0,25**	0,50	0,12	**0,23**	0,47	0,12	**0,23**	0,46	.F..LP
.S..GN	0,39	**0,93**	1,58	0,29	**0,69**	1,17	0,25	**0,60**	1,02	0,24	**0,56**	0,95	0,23	**0,55**	0,93	.S..GN
.T..GN	0,39	**0,98**	1,58	0,29	**0,73**	1,17	0,25	**0,64**	1,02	0,24	**0,59**	0,95	0,23	**0,58**	0,93	.T..GN
.S..HP	0,39	**0,98**	1,58	0,29	**0,73**	1,17	0,25	**0,64**	1,02	0,24	**0,59**	0,95	0,23	**0,58**	0,93	.S..HP
.S..HN	0,39	**0,98**	1,58	0,29	**0,73**	1,17	0,25	**0,64**	1,02	0,24	**0,59**	0,95	0,23	**0,58**	0,93	.S..HN

NOTE: Use “Light Machining” values as starting feed rate.

- Engineered for maximum performance.
- High runout accuracy.
- Suitable for die and mould manufacturing.





Screw-On End Mills • RD.X12 Inserts

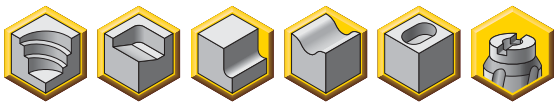
order number	catalogue number	D1 max	D1	D	D2	DPM	G3X	L2	Ap1 max	Z	max ramp angle	kg	insert 1
1888421	**24E02R035M12SRD12**	24	12	21	21	12,5	M12	35	6,0	2	15.0°	0,08	RD__12T3____
1888422	**35E03R043M16SRD12**	35	23	29	33	17,0	M16	43	6,0	3	11.0°	0,21	RD__12T3____
1888423	**42E04R043M16SRD12**	42	30	29	38	17,0	M16	43	6,0	4	11.0°	0,25	RD__12T3____

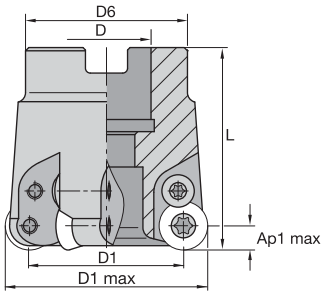
Spare Parts



D1 max	insert screw	Nm	Torx wrench	clamp screw
24	**193.342**	3,5	**FT15**	**193.338**
35	**193.342**	3,5	**FT15**	**193.338**
42	**193.342**	3,5	**FT15**	**193.338**

- Engineered for maximum performance.
- High runout accuracy.
- Suitable for die and mould manufacturing.





Shell Mills • RD.X12 Inserts

order number	catalogue number	D1 max	D1	D	D6	L	Ap1 max	Z	max ramp angle	kg	insert 1
3680971	**40A04RSMORD12**	40	28	16	32	45	6,0	4	8.8°	0,34	RD.X12T3MO..
3649673	**50A05RSMORD12**	50	38	22	42	50	6,0	5	6.1°	0,40	RD.X12T3MO..
1888182	**52A05RSMORD12**	52	40	22	42	50	6,0	5	4.5°	0,45	RD.X12T3MO..
3681014	**63A06RSMORD12**	63	51	27	48	50	6,0	6	2.8°	0,71	RD.X12T3MO..
1888205	**66A06RSMORD12**	66	54	27	50	50	6,0	6	3.5°	0,75	RD.X12T3MO..
1888200	**80A07RSMORD12**	80	68	27	50	50	6,0	7	2.5°	1,00	RD.X12T3MO..

Spare Parts

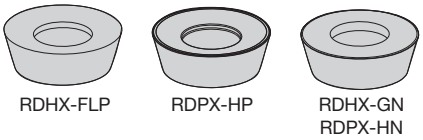




D1 max	insert screw	Nm	Torx wrench	clamp screw	low-head cap screw	socket-head cap screw
40	**193.342**	3,5	**FT15**	**193.338**	**–**	**MS1294**
50	**193.342**	3,5	**FT15**	**193.338**	**129.025**	**–**
52	**193.342**	3,5	**FT15**	**193.338**	**129.025**	**–**
63	**193.342**	3,5	**FT15**	**193.338**	**129.025**	**–**
66	**193.342**	3,5	**FT15**	**193.338**	**–**	**MS2038**
80	**193.342**	3,5	**FT15**	**193.338**	**–**	**–**

Insert Selection Guide

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.F..LP	KC725M	**.S..HP**	**KC725M**	.S..HP	KC725M
P3–P4	.S..HP	KC522M	**.S..HP**	**KCPK30**	.S..HP	KCPK30
P5–P6	.S..HP	KC522M	**.S..HP**	**KCPM20**	.S..HN	KCPM20
M1–M2	–	–	**.S..HP**	**KC725M**	–	–
M3	–	–	**.S..HP**	**KC725M**	–	–
K1–K2	.S..HN	KC510M	**.S..HP**	**KCPK30**	.S..HP	KCPK30
K3	.S..HN	KC510M	**.S..HP**	**KCPK30**	.S..HP	KCPK30
N1–N2	.F..LP	K110M	**.F..LP**	**KC510M**	.F..LP	KC510M
N3	.F..LP	KC510M	**.F..LP**	**KC510M**	.F..GN	KC510M
S1–S2	–	–	**.S..HP**	**KC725M**	–	–
S3	–	–	**.S..HP**	**KC725M**	–	–
S4	–	–	**.S..HP**	**KC725M**	–	–
H1	.S..HN	KC510M	**.S..HN**	**KC510M**	.S..HN	KCPM20



● first choice
○ alternate choice

		K110M	KC510M	KC522M	KC525M	KC725M	KCPM20	KCPK30	KTPK20
P			○	○	●	●	●	●	●
M					●	○	●	○	○
K			●	○			○	○	○
N		●	○						
S					●	○	●		
H			●						

RDHX-FLP

catalogue number	D	S	hm	K110M	KC510M	KC522M	KC525M	KC725M	KCPM20	KCPK30	KTPK20
RDHX12T3M0FLP	12,00	3,97	0,02	●	●	●		●			

RDHX-GN

catalogue number	D	S	hm	K110M	KC510M	KC522M	KC525M	KC725M	KCPM20	KCPK30	KTPK20
RDHX12T3M0SGN	12,00	3,97	0,11		●	●	●	●			
RDHX12T3M0TGN	12,00	3,97	0,13								●

RDPX-HP

catalogue number	D	S	hm	K110M	KC510M	KC522M	KC525M	KC725M	KCPM20	KCPK30	KTPK20
RDPX12T3M0SHP	12,00	3,97	0,13			●		●	●	●	

RDPX-HN

catalogue number	D	S	hm	K110M	KC510M	KC522M	KC525M	KC725M	KCPM20	KCPK30	KTPK20
RDPX12T3M0SHN	12,00	3,97	0,17		●	●		●	●		

Recommended Starting Speeds [m/min]

Material Group		K110M			KC510M			KC522M			KC525M		
P	1	–	–	–	–	–	–	395	**345**	325	260	**240**	215
	2	–	–	–	–	–	–	330	**290**	240	215	**190**	180
	3	–	–	–	–	–	–	305	**255**	215	190	**180**	170
	4	–	–	–	295	**240**	200	270	**225**	180	170	**160**	145
	5	–	–	–	–	–	–	225	**200**	180	180	**170**	160
	6	–	–	–	–	–	–	200	**150**	120	160	**145**	130
M	1	–	–	–	–	–	–	245	**215**	200	180	**170**	160
	2	–	–	–	–	–	–	225	**190**	160	160	**145**	130
	3	–	–	–	–	–	–	170	**145**	115	110	**95**	85
K	1	155	**145**	135	350	**315**	285	275	**250**	220	–	–	–
	2	135	**130**	120	275	**250**	230	215	**195**	180	–	–	–
	3	120	**105**	95	235	**205**	190	180	**160**	145	–	–	–
N	1–2	605	**565**	540	770	**685**	630	–	–	–	–	–	–
	3	495	**440**	385	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	50	**45**	35	75	**65**	60
	2	–	–	–	–	–	–	50	**45**	35	75	**65**	60
	3	–	–	–	–	–	–	60	**50**	35	60	**55**	50
	4	–	–	–	–	–	–	85	**60**	45	75	**60**	50
H	1	–	–	–	190	**155**	110	145	**110**	85	–	–	–

Material Group		KC725M			KCPM20			KCPK30			KTPK20		
P	1	315	**275**	255	660	**580**	535	545	**475**	440	440	**360**	310
	2	260	**230**	195	410	**370**	330	335	**305**	275	270	**225**	190
	3	240	**205**	170	370	**330**	305	305	**275**	250	245	**205**	170
	4	215	**180**	145	275	**255**	230	225	**210**	190	185	**160**	130
	5	180	**160**	145	330	**300**	275	310	**275**	255	255	**205**	175
	6	160	**120**	95	230	**200**	175	190	**165**	–	150	**125**	–
M	1	205	**180**	165	270	**240**	205	250	**220**	190	285	**235**	200
	2	185	**160**	130	245	**215**	190	225	**195**	170	260	**220**	185
	3	140	**120**	95	195	**175**	150	175	**160**	140	195	**160**	–
K	1	–	–	–	435	**390**	350	355	**320**	285	275	**235**	195
	2	–	–	–	345	**310**	280	280	**255**	230	220	**180**	160
	3	–	–	–	290	**255**	240	235	**210**	195	185	**150**	130
N	1–2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
S	1	45	**35**	30	–	–	–	–	–	–	–	–	–
	2	45	**35**	30	–	–	–	–	–	–	–	–	–
	3	55	**45**	30	–	–	–	–	–	–	–	–	–
	4	75	**55**	35	–	–	–	–	–	–	–	–	–
H	1	–	–	–	170	**140**	115	–	–	–	–	–	–

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

Recommended Starting Feeds [mm]

Light Machining	General Purpose	Heavy Machining

At 6,00 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.F..LP	0,08	**0,17**	0,33	0,06	**0,13**	0,25	0,06	**0,11**	0,22	0,05	**0,10**	0,20	0,05	**0,10**	0,20	.F..LP
.F..GN	0,08	**0,17**	0,33	0,06	**0,13**	0,25	0,06	**0,11**	0,22	0,05	**0,10**	0,20	0,05	**0,10**	0,20	.F..GN
.T..GN	0,17	**0,43**	0,68	0,13	**0,32**	0,51	0,11	**0,28**	0,44	0,10	**0,26**	0,41	0,10	**0,25**	0,41	.T..GN
.S..GN	0,17	**0,43**	0,68	0,13	**0,32**	0,51	0,11	**0,28**	0,44	0,10	**0,26**	0,41	0,10	**0,25**	0,41	.S..GN
.S..HP	0,17	**0,43**	0,68	0,13	**0,32**	0,51	0,11	**0,28**	0,44	0,10	**0,26**	0,41	0,10	**0,25**	0,41	.S..HP
.S..HN	0,17	**0,43**	0,68	0,13	**0,32**	0,51	0,11	**0,28**	0,44	0,10	**0,26**	0,41	0,10	**0,25**	0,41	.S..HN

At 3,00 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.F..LP	0,10	**0,19**	0,39	0,07	**0,14**	0,29	0,06	**0,13**	0,25	0,06	**0,12**	0,24	0,06	**0,12**	0,23	.F..LP
.F..GN	0,10	**0,19**	0,39	0,07	**0,14**	0,29	0,06	**0,13**	0,25	0,06	**0,12**	0,24	0,06	**0,12**	0,23	.F..GN
.T..GN	0,20	**0,49**	0,79	0,15	**0,37**	0,59	0,13	**0,32**	0,51	0,12	**0,30**	0,48	0,12	**0,29**	0,47	.T..GN
.S..GN	0,20	**0,49**	0,79	0,15	**0,37**	0,59	0,13	**0,32**	0,51	0,12	**0,30**	0,48	0,12	**0,29**	0,47	.S..GN
.S..HP	0,20	**0,49**	0,79	0,15	**0,37**	0,59	0,13	**0,32**	0,51	0,12	**0,30**	0,48	0,12	**0,29**	0,47	.S..HP
.S..HN	0,20	**0,49**	0,79	0,15	**0,37**	0,59	0,13	**0,32**	0,51	0,12	**0,30**	0,48	0,12	**0,29**	0,47	.S..HN

At 1,50 Axial Depth of Cut (ap)

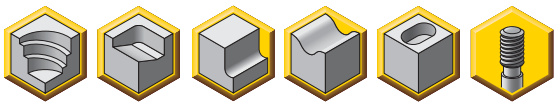
Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.F..LP	0,13	**0,25**	0,51	0,10	**0,19**	0,38	0,08	**0,17**	0,33	0,08	**0,15**	0,31	0,08	**0,15**	0,30	.F..LP
.F..GN	0,13	**0,25**	0,51	0,10	**0,19**	0,38	0,08	**0,17**	0,33	0,08	**0,15**	0,31	0,08	**0,15**	0,30	.F..GN
.T..GN	0,26	**0,64**	1,04	0,19	**0,48**	0,77	0,17	**0,42**	0,67	0,16	**0,39**	0,63	0,15	**0,38**	0,61	.T..GN
.S..GN	0,26	**0,64**	1,04	0,19	**0,48**	0,77	0,17	**0,42**	0,67	0,16	**0,39**	0,63	0,15	**0,38**	0,61	.S..GN
.S..HP	0,26	**0,64**	1,04	0,19	**0,48**	0,77	0,17	**0,42**	0,67	0,16	**0,39**	0,63	0,15	**0,38**	0,61	.S..HP
.S..HN	0,26	**0,64**	1,04	0,19	**0,48**	0,77	0,17	**0,42**	0,67	0,16	**0,39**	0,63	0,15	**0,38**	0,61	.S..HN

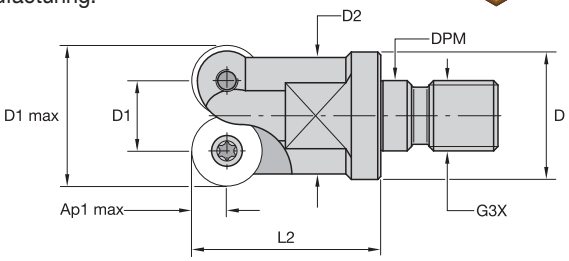
At 0,75 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.F..LP	0,18	**0,35**	0,69	0,13	**0,26**	0,52	0,11	**0,23**	0,45	0,11	**0,21**	0,42	0,10	**0,21**	0,41	.F..LP
.F..GN	0,18	**0,35**	0,69	0,13	**0,26**	0,52	0,11	**0,23**	0,45	0,11	**0,21**	0,42	0,10	**0,21**	0,41	.F..GN
.T..GN	0,35	**0,88**	1,42	0,26	**0,66**	1,05	0,23	**0,57**	0,92	0,21	**0,54**	0,86	0,21	**0,52**	0,84	.T..GN
.S..GN	0,35	**0,88**	1,42	0,26	**0,66**	1,05	0,23	**0,57**	0,92	0,21	**0,54**	0,86	0,21	**0,52**	0,84	.S..GN
.S..HP	0,35	**0,88**	1,42	0,26	**0,66**	1,05	0,23	**0,57**	0,92	0,21	**0,54**	0,86	0,21	**0,52**	0,84	.S..HP
.S..HN	0,35	**0,88**	1,42	0,26	**0,66**	1,05	0,23	**0,57**	0,92	0,21	**0,54**	0,86	0,21	**0,52**	0,84	.S..HN

NOTE: Use “Light Machining” values as starting feed rate.

- Engineered for maximum performance.
- High runout accuracy.
- Suitable for die and mould manufacturing.





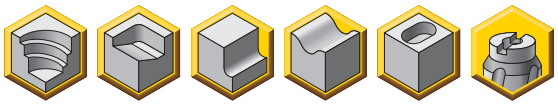
Screw-On End Mills • RD.X16 Inserts

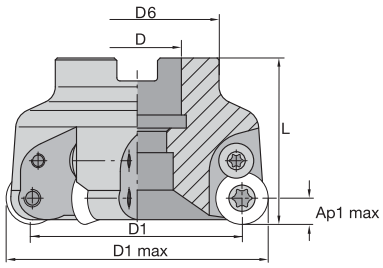
order number	catalogue number	D1 max	D1	D	D2	DPM	G3X	L2	Ap1 max	Z	max ramp angle	kg	insert 1
1888424	**32E02R043M16SRD16**	32	16	29	27	17,0	M16	43	8,0	2	15.0°	0,20	RD__1604____

Spare Parts

D1 max	insert screw	Nm	Torx wrench
32	**193.343**	6,0	**FT20**

- Engineered for maximum performance.
- High runout accuracy.
- Suitable for die and mould manufacturing.





Shell Mills • RD.X16 Inserts

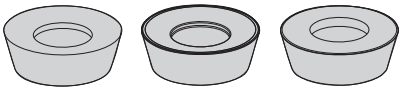
order number	catalogue number	D1 max	D1	D	D6	L	Ap1 max	Z	max ramp angle	kg	insert 1
3681013	**50A04RSMORD16**	50	34	22	42	50	8,0	4	8.5°	0,32	RD_X1604M0__
1888196	**52A04RSMORD16**	52	36	22	42	50	8,0	4	8.2°	0,32	RD_X1604M0__
3681015	**63A05RSMORD16**	63	47	22	48	50	8,0	5	5.5°	0,55	RD_X1604M0__
1888209	**66A05RSMORD16**	66	50	27	50	50	8,0	5	4.0°	0,55	RD_X1604M0__
1888204	**80A06RSMORD16**	80	64	27	50	50	8,0	6	3.0°	0,87	RD_X1604M0__
1888197	**100B07RSMORD16**	100	84	32	60	55	8,0	7	2.0°	1,37	RD_X1604MO__

Spare Parts

D1 max	insert screw	Nm	Torx wrench	clamp screw
50	**193.343**	6,0	**FT20**	**193.383**
52	**193.343**	6,0	**FT20**	**193.383**
63	**193.343**	6,0	**FT20**	**193.383**
66	**193.343**	6,0	**FT20**	**193.383**
80	**193.343**	6,0	**FT20**	**193.383**
100	**193.343**	6,0	**FT20**	**193.383**

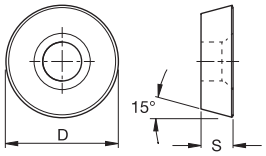
Insert Selection Guide

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.F..LP	KC725M	**.S..GN**	**KC725M**	.S..HP	KC725M
P3–P4	.S..HP	KC522M	**.S..HP**	**KCPK30**	.S..HN	KC725M
P5–P6	.S..HP	KC522M	**.S..HP**	**KCPM20**	.S..HN	KCPM20
M1–M2	–	–	**.S..HP**	**KC725M**	–	–
M3	–	–	**.S..HP**	**KC725M**	–	–
K1–K2	.S..HN	KC510M	**.S..HP**	**KCPK30**	.S..HP	KCPK30
K3	.S..HN	KC510M	**.S..HP**	**KCPK30**	.S..HP	KCPK30
N1–N2	.F..LP	KC510M	**.F..LP**	**KC510M**	.F..LP	KC510M
N3	.F..LP	KC510M	**.F..LP**	**KC510M**	.F..LP	KC510M
S1–S2	–	–	**.S..HP**	**KC725M**	–	–
S3	–	–	**.S..HP**	**KC725M**	–	–
S4	–	–	**.S..HP**	**KC725M**	–	–
H1	.S..GN	KC510M	**.S..HN**	**KC510M**	.S..HN	KCPM20


RDHX-FLP

RDPX-HP

RDHX-GN
RDPX-HN



● first choice
○ alternate choice

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

RDHX-FLP

catalogue number	D	S	hm	KC510M	KC522M	KC725M	KCPM20	KCPK30
RDHX1604M0FLP	16,00	4,76	0,02	●	●	●		

RDHX-GN

catalogue number	D	S	hm	KC510M	KC522M	KC725M	KCPM20	KCPK30
RDHX1604M0SGN	16,00	4,76	0,21	●	●	●		

RDPX-HP

catalogue number	D	S	hm	KC510M	KC522M	KC725M	KCPM20	KCPK30
RDPX1604M0SHP	16,00	4,76	0,14		●	●	●	●

RDPX-HN

catalogue number	D	S	hm	KC510M	KC522M	KC725M	KCPM20	KCPK30
RDPX1604M0SHN	16,00	4,76	0,21	●	●	●	●	

Recommended Starting Speeds [m/min]

Material Group		KC510M			KC522M			KC725M			KCPM20			KCPK30		
P	1	–	–	–	395	**345**	325	315	**275**	255	660	**580**	535	545	**475**	440
	2	–	–	–	330	**290**	240	260	**230**	195	410	**370**	330	335	**305**	275
	3	–	–	–	305	**255**	215	240	**205**	170	370	**330**	305	305	**275**	250
	4	295	**240**	200	270	**225**	180	215	**180**	145	275	**255**	230	225	**210**	190
	5	–	–	–	225	**200**	180	180	**160**	145	330	**300**	275	310	**275**	255
	6	–	–	–	200	**150**	120	160	**120**	95	230	**200**	175	190	**165**	–
M	1	–	–	–	245	**215**	200	205	**180**	165	270	**240**	205	250	**220**	190
	2	–	–	–	225	**190**	160	185	**160**	130	245	**215**	190	225	**195**	170
	3	–	–	–	170	**145**	115	140	**120**	95	195	**175**	150	175	**160**	140
K	1	350	**315**	285	275	**250**	220	–	–	–	435	**390**	350	355	**320**	285
	2	275	**250**	230	215	**195**	180	–	–	–	345	**310**	280	280	**255**	230
	3	235	**205**	190	180	**160**	145	–	–	–	290	**255**	240	235	**210**	195
N	1–2	770	**685**	630	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
S	1	–	–	–	50	**45**	35	45	**35**	30	–	–	–	–	–	–
	2	–	–	–	50	**45**	35	45	**35**	30	–	–	–	–	–	–
	3	–	–	–	60	**50**	35	55	**45**	30	–	–	–	–	–	–
	4	–	–	–	85	**60**	45	75	**55**	35	–	–	–	–	–	–
H	1	190	**155**	110	145	**110**	85	–	–	–	170	**140**	115	–	–	–

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

Recommended Starting Feeds [mm]

Light Machining	General Purpose	Heavy Machining

At 8,00 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.F..LP	0,08	**0,17**	0,33	0,06	**0,13**	0,25	0,06	**0,11**	0,22	0,05	**0,10**	0,20	0,05	**0,10**	0,20	.F..LP
.S..GN	0,17	**0,43**	0,68	0,13	**0,32**	0,51	0,11	**0,28**	0,44	0,10	**0,26**	0,41	0,10	**0,25**	0,41	.S..GN
.S..HP	0,17	**0,43**	0,68	0,13	**0,32**	0,51	0,11	**0,28**	0,44	0,10	**0,26**	0,41	0,10	**0,25**	0,41	.S..HP
.S..HN	0,17	**0,43**	0,68	0,13	**0,32**	0,51	0,11	**0,28**	0,44	0,10	**0,26**	0,41	0,10	**0,25**	0,41	.S..HN

At 4,00 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.F..LP	0,10	**0,19**	0,39	0,07	**0,14**	0,29	0,06	**0,13**	0,25	0,06	**0,12**	0,24	0,06	**0,12**	0,23	.F..LP
.S..GN	0,20	**0,49**	0,79	0,15	**0,37**	0,59	0,13	**0,32**	0,51	0,12	**0,30**	0,48	0,12	**0,29**	0,47	.S..GN
.S..HP	0,20	**0,49**	0,79	0,15	**0,37**	0,59	0,13	**0,32**	0,51	0,12	**0,30**	0,48	0,12	**0,29**	0,47	.S..HP
.S..HN	0,20	**0,49**	0,79	0,15	**0,37**	0,59	0,13	**0,32**	0,51	0,12	**0,30**	0,48	0,12	**0,29**	0,47	.S..HN

At 2,00 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.F..LP	0,13	**0,25**	0,51	0,10	**0,19**	0,38	0,08	**0,17**	0,33	0,08	**0,15**	0,31	0,08	**0,15**	0,30	.F..LP
.S..GN	0,26	**0,64**	1,04	0,19	**0,48**	0,77	0,17	**0,42**	0,67	0,16	**0,39**	0,63	0,15	**0,38**	0,61	.S..GN
.S..HP	0,26	**0,64**	1,04	0,19	**0,48**	0,77	0,17	**0,42**	0,67	0,16	**0,39**	0,63	0,15	**0,38**	0,61	.S..HP
.S..HN	0,26	**0,64**	1,04	0,19	**0,48**	0,77	0,17	**0,42**	0,67	0,16	**0,39**	0,63	0,15	**0,38**	0,61	.S..HN

At 1,00 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.F..LP	0,18	**0,35**	0,69	0,13	**0,26**	0,52	0,11	**0,23**	0,45	0,11	**0,21**	0,42	0,10	**0,21**	0,41	.F..LP
.S..GN	0,35	**0,88**	1,42	0,26	**0,66**	1,05	0,23	**0,57**	0,92	0,21	**0,54**	0,86	0,21	**0,52**	0,84	.S..GN
.S..HP	0,35	**0,88**	1,42	0,26	**0,66**	1,05	0,23	**0,57**	0,92	0,21	**0,54**	0,86	0,21	**0,52**	0,84	.S..HP
.S..HN	0,35	**0,88**	1,42	0,26	**0,66**	1,05	0,23	**0,57**	0,92	0,21	**0,54**	0,86	0,21	**0,52**	0,84	.S..HN

NOTE: Use “Light Machining” values as starting feed rate.

More than just the right tool • the ultimate solution.

That's **Beyond BLAST.**™

That's **Different Thinking.**

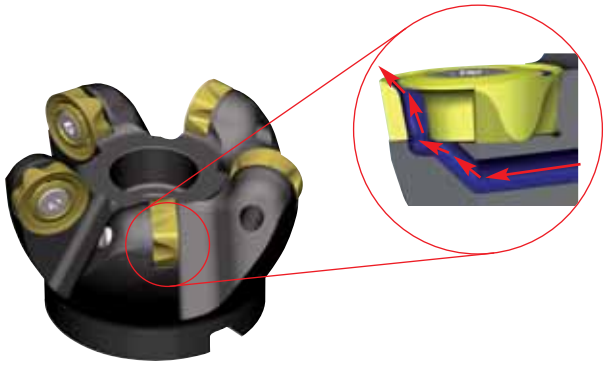
At Kennametal, innovation follows vision. Our revolutionary products and services are inspired by asking "what if?" The solutions that follow — like our Beyond BLAST through-coolant inserts — deliver remarkable results in the world's most demanding machining environments.

A cutting-edge insert that delivers coolant precisely at the cutting edge. Now that's Different Thinking. That's Kennametal.

To learn more about your productivity gains using Beyond BLAST technology, visit www.kennametal.com.

Milling

- Beyond BLAST technology uses low-pressure conditions to offer many of the high-pressure performance benefits.
- Delivers superior performance on titanium, using either high- or low-pressure coolant systems.
- Effective thermal management results in reduced cutting temperatures, improved lubricity, superior chip control, and longer tool life.
- Beyond BLAST for milling increases tool life by up to 100% compared with conventional coolant delivery systems.



beyond™ BLAST™

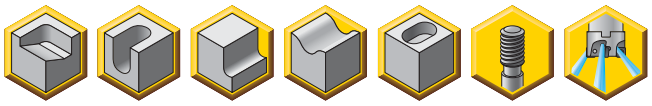
KSRM™ • Multipurpose Milling Cutters

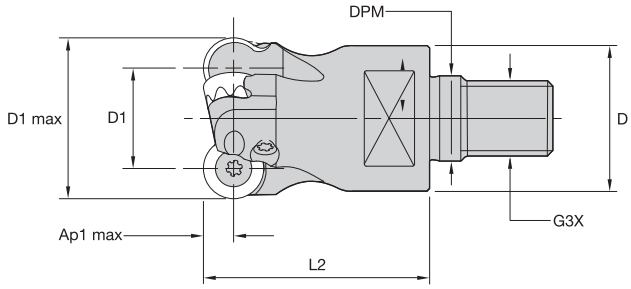
Primary Application

Specially developed for machining titanium and stainless steel. KSRM platform enables you to pocket, profile, ramp, and plunge with up to 1mm (.039") fz with consistent performance, providing outstanding metal removal rates with the lowest cutting forces in roughing applications.

Features and Benefits

- Engineered for titanium and stainless steel machining.
- Anti-rotation components feature eight indexable positions.
- Pocketing, ramping, plunging, and helical interpolation capabilities.





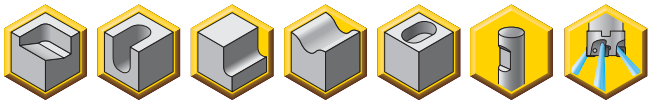
Screw-On End Mills

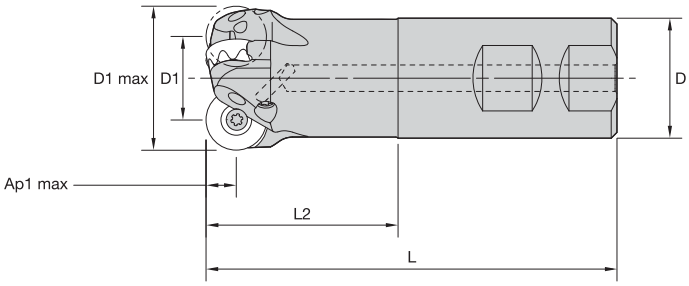
order number	catalogue number	D1 max	D1	D	DPM	G3X	L2	Ap1 max	Z	max ramp angle	max RPM	kg	insert 1
4043046	32E03R045M16RP12	32	20	29	17,0	M16	45	6,0	3	6°	43400	0,18	RP.T1204M0…
4043047	40E04R045M16RP12	40	28	29	17,0	M16	45	6,0	4	9°	38800	0,21	RP.T1204M0…

Spare Parts



D1 max	insert screw	Nm	anti-rotation screw	Torx Plus driver
32	MS2077	2,3	MS-2225	DT15IP
40	MS2077	2,3	MS-2225	DT15IP





Weldon End Mills

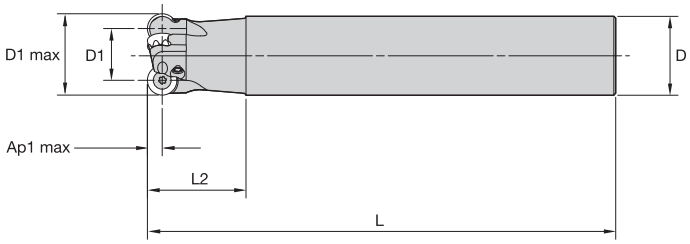
order number	catalogue number	D1 max	D1	D	L	L2	Ap1 max	Z	max ramp angle	kg	max RPM	insert 1
4043048	32A03R040B32RP12	32	20	32	101	40	6,0	3	6.0°	0,51	43400	RP.T1204M0…

Spare Parts



D1 max	insert screw	Nm	anti-rotation screw	Torx Plus driver
32	MS2077	2,3	MS-2225	DT15IP

- Engineered for titanium and stainless steel machining.
- Anti-rotation components feature eight indexable positions.
- Pocketing, ramping, plunging, and helical interpolation capabilities.



Cylindrical End Mills

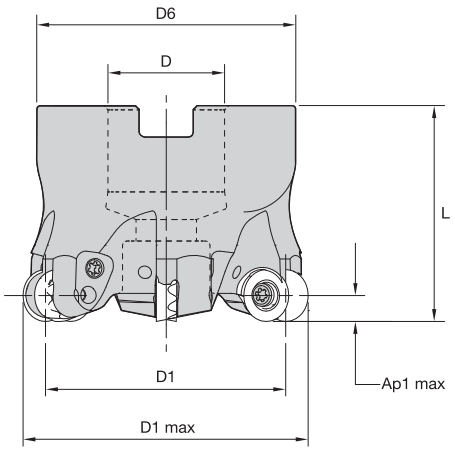
order number	catalogue number	D1 max	D1	D	L	L2	Ap1 max	Z	max ramp angle	kg	max RPM	insert 1
4043049	**32A03R040A32RP12L190**	32	20	32	190	40	6,0	3	6.0°	1,05	43400	RP_T1204M0__
4177164	**35E03R050A32RP12L200**	35	23	32	200	50	6,0	3	5.5°	1,11	41400	RP_T1204M0__
4177052	**35E04R050A32RP12L200**	35	23	32	200	50	6,0	4	7.0°	1,11	41400	RP_T1204M0__

Spare Parts



D1 max	insert screw	Nm	anti-rotation screw	Torx Plus driver
32	**MS2077**	2,3	**MS-2225**	**DT15IP**
35	**MS2077**	2,3	**MS-2225**	**DT15IP**

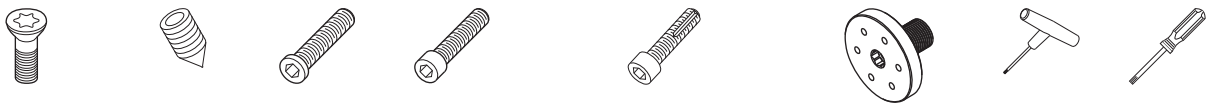
- Engineered for titanium and stainless steel machining.
- Anti-rotation components feature eight indexable positions.
- Pocketing, ramping, plunging, and helical interpolation capabilities.



Face Mills

order number	catalogue number	D1 max	D1	D	D6	L	Ap1 max	Z	max ramp angle	kg	max RPM	insert 1
4043050	40A04RS90RP12	40	28	16	38	40	6,0	4	9.0°	0,21	38800	RP.T1204M0…
4177163	42A04RS90RP12	42	30	16	38	40	6,0	4	10.0°	0,22	37800	RP.T1204M0..
4043051	50A04RS90RP12	50	38	22	42	40	6,0	4	10.8°	0,26	34700	RP.T1204M0...
4043052	50A05RS90RP12	50	38	22	42	40	6,0	5	7.9°	0,26	34700	RP.T1204M0...
3891914	52A05RS90RP12	52	40	22	49	50	6,0	5	10.2°	0,50	34000	RP.T1204M0…
4043063	63A05RS90RP12	63	51	22	49	50	6,0	5	7.7°	0,56	30900	RP.T1204M0…
4025498	63A07RS90RP12	63	51	22	49	50	6,0	7	2.6°	0,56	30900	RP.T1204M0…
4005063	66A06RS90RP12	66	54	27	60	50	6,0	6	6.6°	0,74	30200	RP.T1204M0…
4043064	80A06RS90RP12	80	68	27	60	50	6,0	6	5.1°	0,95	27300	RP.T1204M0…
4024763	80A08RS90RP12	80	68	27	60	50	6,0	8	4.1°	0,96	27300	RP.T1204M0…
4043065	100B07RS90RP12	100	88	32	78	50	6,0	7	4.0°	1,39	24000	RP.T1204M0…
4027389	100B09RS90RP12	100	88	32	78	50	6,0	9	3.1°	1,39	24000	RP.T1204M0…

Spare Parts



D1 max	insert screw	Nm	anti-rotation screw	low-head cap screw	socket-head cap screw	socket-head cap screw with coolant groove *	coolant lock screw assembly	T-handle hex wrench	Torx Plus driver
40	MS2077	2,3	MS-2225	–	MS1294	MS1294CG	–	–	DT15IP
42	MS2077	2,3	MS-2225	–	MS1294	MS1294CG	–	–	DT15IP
50	MS2077	2,3	MS-2225	MS1336	–	MS2072CG	–	–	DT15IP
52	MS2077	2,3	MS-2225	–	MS1242	MS1242CG	–	–	DT15IP
63	MS2077	2,3	MS-2225	–	MS1242	MS1242CG	–	–	DT15IP
66	MS2077	2,3	MS-2225	–	MS2038	MS2038CG	–	–	DT15IP
80	MS2077	2,3	MS-2225	–	MS2038	MS2038CG	–	–	DT15IP
100	MS2077	2,3	MS-2225	–	–	–	MS2195C	THW2M	DT15IP

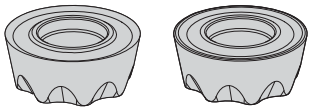
* Socket head cap screw with coolant groove sold separately as a spare part.

Insert Selection Guide

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.E..LE	KC725M	**.S..GE**	**KC725M**	.S..GP	KC725M
P3–P4	.E..LE	KCPK30	**.S..GE**	**KCPK30**	.S..GP	KCPK30
P5–P6	.S..GE	KCPK30	**.S..GP**	**KCPK30**	.S..GP	KCPM20
M1–M2	.E..LE	KC725M	**.E..LE**	**KC725M**	.S..GE	KC725M
M3	.E..LE	KCPK30	**.E..LE**	**KCPK30**	.S..GE	KCPK30
K1–K2	–	–	**.S..GP**	**KCPK30**	–	–
K3	–	–	**.S..GP**	**KCPK30**	–	–
N1–N2	.E..LEJ	KC422M	**.E..LEJ**	**KC422M**	.E..LEJ	KC422M
N3	.E..LEJ	KC422M	**.E..LEJ**	**KC422M**	.E..LEJ	KC422M
S1–S2	.E..LE	KC725M	**.S..GE**	**KC725M**	.S..GP	KC725M
S3	.E..LE	KC725M	**.S..GE**	**KC725M**	.S..GP	KC725M
S4	.E..LE	KC725M	**.E..LE**	**KC725M**	.S..GE	KC725M
H1	–	–	**–**	**–**	–	–

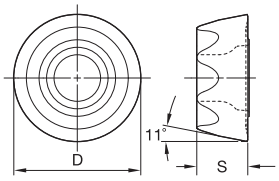
Indexable Round Inserts • KSRM

- SGE and ELE are the first choice for titanium machining.
- SGE geometry is the first choice for medium and heavy applications.
- ELE is the first choice for lower cutting forces to avoid built-up edge.



RPET-LE
RPET-GE

RPPT-GP



● first choice
○ alternate choice

	KC422M	KC522M	KC725M	KCPM20	KCPK30
P		○	●	●	●
M			●	●	○	○
K			○		○	○
N	●					
S			●	●		
H						

RPET-LE

catalogue number	D	S	hm	cutting edges	KC422M	KC522M	KC725M	KCPM20	KCPK30
RPET1204M0ELEJ	12,00	4,76	0,03	8	●	●	●		
RPET1204M0ELE	12,00	4,76	0,05	8		●	●		●

RPET-GE

catalogue number	D	S	hm	cutting edges	KC422M	KC522M	KC725M	KCPM20	KCPK30
RPET1204M0SGE	12,00	4,76	0,10	8		●	●		●
RPET1204M0SGEJ	12,00	4,76	0,11	8		●	●		

RPPT-GP

catalogue number	D	S	hm	cutting edges	KC422M	KC522M	KC725M	KCPM20	KCPK30
RPPT1204M0SGP	12,00	4,76	0,13	8			●	●	●

Recommended Starting Speeds [m/min]

Material Group		KC422M			KC522M			KC725M			KCPM20			KCPK30		
P	1	–	–	–	395	**345**	325	315	**275**	255	660	**580**	535	545	**475**	440
	2	–	–	–	330	**290**	240	260	**230**	195	410	**370**	330	335	**305**	275
	3	–	–	–	305	**255**	215	240	**205**	170	370	**330**	305	305	**275**	250
	4	–	–	–	270	**225**	180	215	**180**	145	275	**255**	230	225	**210**	190
	5	–	–	–	225	**200**	180	180	**160**	145	330	**300**	275	310	**275**	255
	6	–	–	–	200	**150**	120	160	**120**	95	230	**200**	175	190	**165**	–
M	1	–	–	–	245	**215**	200	205	**180**	165	270	**240**	205	250	**220**	190
	2	–	–	–	225	**190**	160	185	**160**	130	245	**215**	190	225	**195**	170
	3	–	–	–	170	**145**	115	140	**120**	95	195	**175**	150	175	**160**	140
K	1	–	–	–	275	**250**	220	–	–	–	435	**390**	350	355	**320**	285
	2	–	–	–	215	**195**	180	–	–	–	345	**310**	280	280	**255**	230
	3	–	–	–	180	**160**	145	–	–	–	290	**255**	240	235	**210**	195
N	1–2	1285	**1135**	1050	–	–	–	–	–	–	–	–	–	–	–	–
	3	1135	**1050**	915	–	–	–	–	–	–	–	–	–	–	–	–
S	1	–	–	–	50	**45**	35	45	**35**	30	–	–	–	–	–	–
	2	–	–	–	50	**45**	35	45	**35**	30	–	–	–	–	–	–
	3	–	–	–	60	**50**	35	55	**45**	30	–	–	–	–	–	–
	4	–	–	–	85	**60**	45	75	**55**	35	–	–	–	–	–	–
H	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

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

Recommended Starting Feeds [mm]

Light Machining	General Purpose	Heavy Machining

At 6,00 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..LEJ	0,08	**0,13**	0,20	0,06	**0,09**	0,15	0,06	**0,08**	0,13	0,05	**0,08**	0,12	0,05	**0,08**	0,12	.E..LEJ
.E..LE	0,12	**0,21**	0,34	0,09	**0,16**	0,26	0,08	**0,14**	0,22	0,07	**0,13**	0,21	0,07	**0,13**	0,20	.E..LE
.S..GE	0,17	**0,43**	0,68	0,13	**0,32**	0,51	0,11	**0,28**	0,44	0,10	**0,26**	0,41	0,10	**0,25**	0,41	.S..GE
.S..GP	0,17	**0,43**	0,68	0,13	**0,32**	0,51	0,11	**0,28**	0,44	0,10	**0,26**	0,41	0,10	**0,25**	0,41	.S..GP

At 3,00 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..LEJ	0,10	**0,14**	0,23	0,07	**0,11**	0,17	0,06	**0,09**	0,15	0,06	**0,09**	0,14	0,06	**0,09**	0,14	.E..LEJ
.E..LE	0,14	**0,25**	0,39	0,10	**0,18**	0,29	0,09	**0,16**	0,26	0,09	**0,15**	0,24	0,08	**0,15**	0,24	.E..LE
.S..GE	0,20	**0,49**	0,79	0,15	**0,37**	0,59	0,13	**0,32**	0,51	0,12	**0,30**	0,48	0,12	**0,29**	0,47	.S..GE
.S..GP	0,20	**0,49**	0,79	0,15	**0,37**	0,59	0,13	**0,32**	0,51	0,12	**0,30**	0,48	0,12	**0,29**	0,47	.S..GP

At 1,50 Axial Depth of Cut (ap)

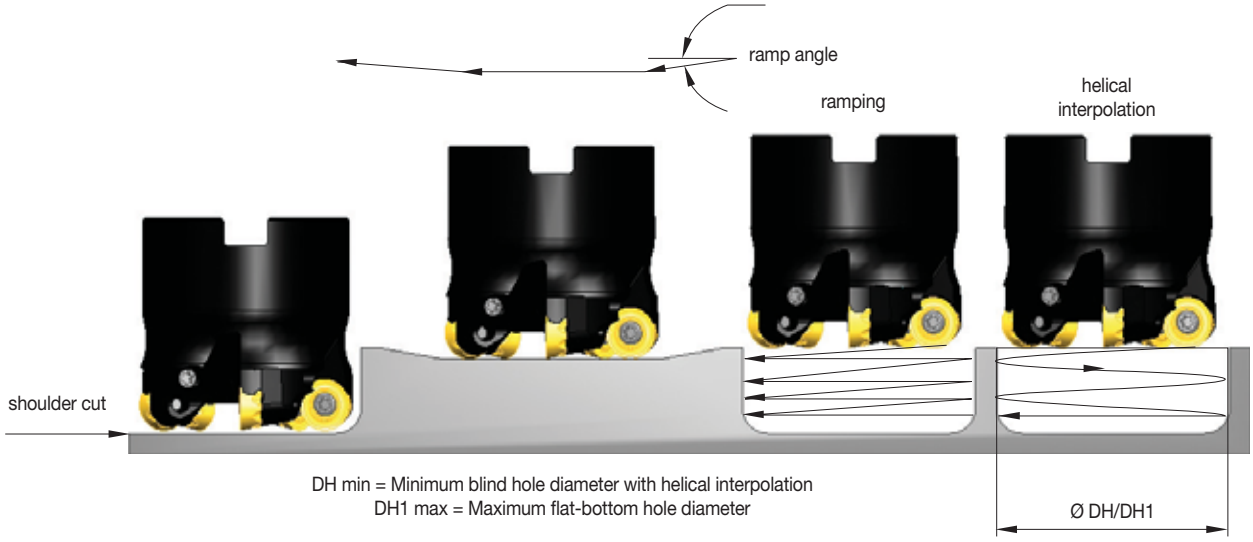
Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..LEJ	0,13	**0,19**	0,30	0,10	**0,14**	0,23	0,08	**0,12**	0,20	0,08	**0,12**	0,19	0,08	**0,11**	0,18	.E..LEJ
.E..LE	0,18	**0,32**	0,52	0,14	**0,24**	0,39	0,12	**0,21**	0,34	0,11	**0,20**	0,31	0,11	**0,19**	0,31	.E..LE
.S..GE	0,26	**0,64**	1,04	0,19	**0,48**	0,77	0,17	**0,42**	0,67	0,16	**0,39**	0,63	0,15	**0,38**	0,61	.S..GE
.S..GP	0,26	**0,64**	1,04	0,19	**0,48**	0,77	0,17	**0,42**	0,67	0,16	**0,39**	0,63	0,15	**0,38**	0,61	.S..GP

At 0,75 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..LEJ	0,18	**0,26**	0,41	0,13	**0,19**	0,31	0,11	**0,17**	0,27	0,11	**0,16**	0,25	0,10	**0,15**	0,25	.E..LEJ
.E..LE	0,25	**0,44**	0,71	0,19	**0,33**	0,53	0,16	**0,29**	0,46	0,15	**0,27**	0,43	0,15	**0,26**	0,42	.E..LE
.S..GE	0,35	**0,88**	1,42	0,26	**0,66**	1,05	0,23	**0,57**	0,92	0,21	**0,54**	0,86	0,21	**0,52**	0,84	.S..GE
.S..GP	0,35	**0,88**	1,42	0,26	**0,66**	1,05	0,23	**0,57**	0,92	0,21	**0,54**	0,86	0,21	**0,52**	0,84	.S..GP

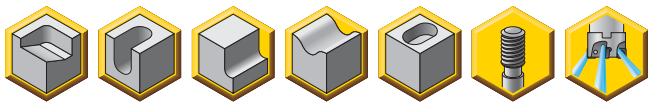
NOTE: Use “Light Machining” values as starting feed rate.

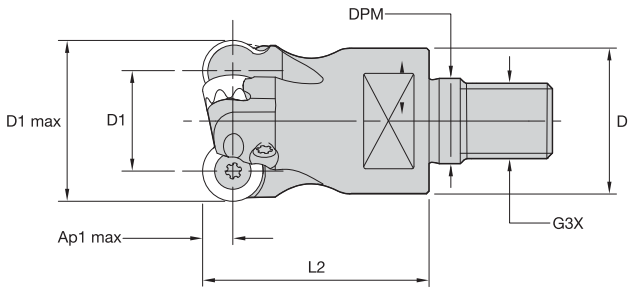
Maximum Linear Ramping and Helical Interpolation from Solid



catalogue number	max ramp angle	max plunging depth	min hole diameter (DH min)	max flat-bottom hole diameter (DH1 max)	max hole diameter (flat bottom)
32E03R045M16RP12	6.0°	1,65	43,95	52	64
40E04R045M16RP12	9.0°	3,50	57,24	68	80
32A03R040B32RP12	6.0°	1,65	43,95	52	64
32A03R040A32RP12L190	6.0°	1,65	43,95	52	64
40A04RS90RP12	9.0°	3,50	57,24	68	80
50A04RS90RP12	10.8°	6,00	76,04	88	100
50A05RS90RP12	7.9°	4,40	76,50	88	100
52A05RS90RP12	10.2°	6,00	80,05	92	104
63A05RS90RP12	7.7°	6,00	102,02	114	126
63A07RS90RP12	2.6°	2,10	105,08	114	126
66A06RS90RP12	6.6°	5,50	108,14	120	132
80A06RS90RP12	5.1°	5,50	136,04	148	160
80A08RS90RP12	4.1°	4,40	136,58	148	160
100B07RS90RP12	4.0°	5,70	176,04	188	200
100B09RS90RP12	3.1°	4,40	176,55	188	200

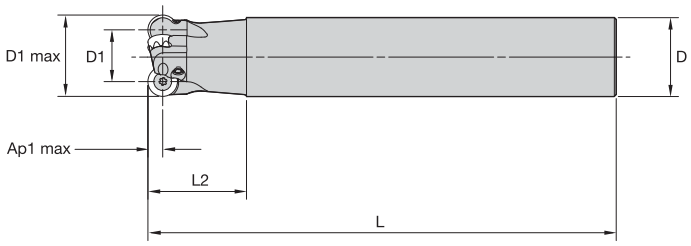
- Engineered for titanium and stainless steel machining.
- Anti-rotation components feature eight indexable positions.
- Pocketing, ramping, plunging, and helical interpolation capabilities.





Screw-On End Mills

order number	catalogue number	D1 max	D1	D	DPM	G3X	L2	Ap1 max	Z	max ramp angle	kg	max RPM	insert 1
4042581	**40E03R045M16RP16**	40	24	29	17,0	M16	45	8,0	3	8.4°	0,19	27300	RP..T1605M0…



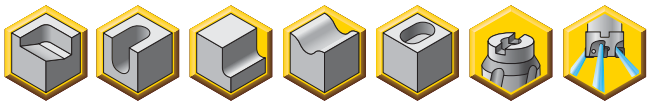
Cylindrical End Mills

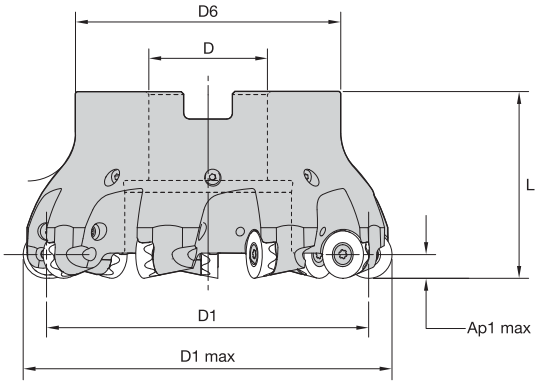
order number	catalogue number	D1 max	D1	D	L	L2	Ap1 max	Z	max ramp angle	kg	max RPM	insert 1
4042582	**40E02R040A32RP16L200**	40	24	32	200	40	8,0	2	11.1°	1,13	27300	RP..T1605M0…

Spare Parts

D1 max	insert screw	Nm	anti-rotation screw	Torx Plus driver
40	**MS-2071**	4,0	**MS-2225**	**DT15IP**

- Engineered for titanium and stainless steel machining.
- Anti-rotation components feature eight indexable positions.
- Pocketing, ramping, plunging, and helical interpolation capabilities.





Face Mills

order number	catalogue number	D1 max	D1	D	D6	L	Ap1 max	Z	max ramp angle	kg	max RPM	insert 1
4042693	**52A04RS90RP16**	52	36	22	49	50	8,0	4	11°	0,42	23900	RP..T1605M0…
4042694	**63A04RS90RP16**	63	47	22	49	50	8,0	4	12°	0,50	21700	RP..T1605M0…
4042695	**63A06RS90RP16**	63	47	22	49	50	8,0	6	4°	0,51	21700	RP..T1605M0…
4042696	**80A05RS90RP16**	80	64	27	60	50	8,0	5	8°	0,87	19200	RP..T1605M0…
4042697	**80A07RS90RP16**	80	64	27	60	50	8,0	7	5°	0,90	19200	RP..T1605M0…
4042698	**100B06RS90RP16**	100	84	32	78	50	8,0	6	6°	1,29	16700	RP..T1605M0…
4042699	**100B08RS90RP16**	100	84	32	78	50	8,0	8	5°	1,29	16700	RP..T1605M0…
4042700	**125B09RS90RP16**	125	109	40	90	63	8,0	9	4°	2,48	14700	RP..T1605M0…

Spare Parts

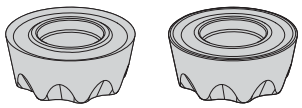
D1 max	insert screw	Nm	anti-rotation screw	socket-head cap screw	socket-head cap screw with coolant groove *	coolant lock screw assembly	T-handle hex wrench	Torx Plus driver
52	**MS-2071**	4,0	**MS-2225**	**MS1242**	**MS1242CG**	**–**	**–**	**DT15IP**
63	**MS-2071**	4,0	**MS-2225**	**MS1242**	**MS1242CG**	**–**	**–**	**DT15IP**
80	**MS-2071**	4,0	**MS-2225**	**MS2038**	**MS2038CG**	**–**	**–**	**DT15IP**
100	**MS-2071**	4,0	**MS-2225**	**–**	**–**	**MS2195C**	**THW2M**	**DT15IP**
125	**MS-2071**	4,0	**MS-2225**	**–**	**–**	**MS2187C**	**THW2M**	**DT15IP**

* Socket head cap screw with coolant groove sold separately as a spare part.

Insert Selection Guide

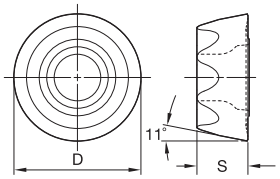
Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.E..LE	KC725M	**.S..GE**	**KC725M**	.S..HP	KC725M
P3–P4	.E..LE	KCPK30	**.S..GE**	**KCPK30**	.S..HP	KCPK30
P5–P6	.S..GE	KCPK30	**.S..HP**	**KCPK30**	.S..HP	KCPM20
M1–M2	.E..LE	KC725M	**.E..LE**	**KC725M**	.S..GE	KC725M
M3	.E..LE	KCPK30	**.E..LE**	**KCPK30**	.S..GE	KCPK30
K1–K2	–	–	**.S..HP**	**KCPK30**	–	–
K3	–	–	**.S..HP**	**KCPK30**	–	–
N1–N2	.E..LEJ	KC422M	**.E..LEJ**	**KC422M**	.E..LEJ	KC422M
N3	.E..LEJ	KC422M	**.E..LEJ**	**KC422M**	.E..LEJ	KC422M
S1–S2	.E..LE	KC725M	**.S..GE**	**KC725M**	.S..HP	KC725M
S3	.E..LE	KC725M	**.S..GE**	**KC725M**	.S..HP	KC725M
S4	.E..LE	KC725M	**.S..GE**	**KC725M**	.S..GE	KC725M
H1	–	–	**–**	**–**	–	–

- SGE and ELE are the first choice for titanium machining.
- SGE geometry is the first choice for medium and heavy applications.
- ELE is the first choice for lower cutting forces to avoid built-up edge.

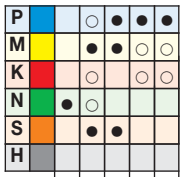


RPET-LE
RPET-GE

RPPT-GP



● first choice
○ alternate choice



RPET-LE

catalogue number	D	S	hm	cutting edges	KC422M	KC522M	KC725M	KCPM20	KCPK30
RPET1605M0ELEJ	16,00	5,56	0,03	8	●	●	●		
RPET1605M0ELE	16,00	5,56	0,05	8		●	●		●

RPET-GE

catalogue number	D	S	hm	cutting edges	KC422M	KC522M	KC725M	KCPM20	KCPK30
RPET1605M0SGE	16,00	5,56	0,10	8		●	●		●
RPET1605M0SGEJ	16,00	5,56	0,11	8		●	●		

RPPT-HP

catalogue number	D	S	hm	cutting edges	KC422M	KC522M	KC725M	KCPM20	KCPK30
RPPT1605M0SHP	16,00	5,56	0,18	8			●	●	●

Recommended Starting Speeds [m/min]

Material Group		KC422M			KC522M			KC725M			KCPM20			KCPK30		
P	1	–	–	–	395	**345**	325	315	**275**	255	660	**580**	535	545	**475**	440
	2	–	–	–	330	**290**	240	260	**230**	195	410	**370**	330	335	**305**	275
	3	–	–	–	305	**255**	215	240	**205**	170	370	**330**	305	305	**275**	250
	4	–	–	–	270	**225**	180	215	**180**	145	275	**255**	230	225	**210**	190
	5	–	–	–	225	**200**	180	180	**160**	145	330	**300**	275	310	**275**	255
	6	–	–	–	200	**150**	120	160	**120**	95	230	**200**	175	190	**165**	–
M	1	–	–	–	245	**215**	200	205	**180**	165	270	**240**	205	250	**220**	190
	2	–	–	–	225	**190**	160	185	**160**	130	245	**215**	190	225	**195**	170
	3	–	–	–	170	**145**	115	140	**120**	95	195	**175**	150	175	**160**	140
K	1	–	–	–	275	**250**	220	–	–	–	435	**390**	350	355	**320**	285
	2	–	–	–	215	**195**	180	–	–	–	345	**310**	280	280	**255**	230
	3	–	–	–	180	**160**	145	–	–	–	290	**255**	240	235	**210**	195
N	1–2	1285	**1135**	1050	–	–	–	–	–	–	–	–	–	–	–	–
	3	1135	**1050**	915	–	–	–	–	–	–	–	–	–	–	–	–
S	1	–	–	–	50	**45**	35	45	**35**	30	–	–	–	–	–	–
	2	–	–	–	50	**45**	35	45	**35**	30	–	–	–	–	–	–
	3	–	–	–	60	**50**	35	55	**45**	30	–	–	–	–	–	–
	4	–	–	–	85	**60**	45	75	**55**	35	–	–	–	–	–	–
H	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

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

Recommended Starting Feeds [mm]

Light Machining	General Purpose	Heavy Machining

At 8,00 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..LEJ	0,08	**0,15**	0,23	0,06	**0,11**	0,17	0,06	**0,10**	0,15	0,05	**0,09**	0,14	0,05	**0,09**	0,14	.E..LEJ
.E..LE	0,12	**0,26**	0,38	0,09	**0,19**	0,29	0,08	**0,17**	0,25	0,07	**0,16**	0,23	0,07	**0,15**	0,23	.E..LE
.S..GE	0,17	**0,43**	0,68	0,13	**0,32**	0,51	0,11	**0,28**	0,44	0,10	**0,26**	0,41	0,10	**0,25**	0,41	.S..GE
.S..HP	0,17	**0,43**	0,68	0,13	**0,32**	0,51	0,11	**0,28**	0,44	0,10	**0,26**	0,41	0,10	**0,25**	0,41	.S..HP

At 4,00 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..LEJ	0,10	**0,17**	0,26	0,07	**0,13**	0,20	0,06	**0,11**	0,17	0,06	**0,11**	0,16	0,06	**0,10**	0,16	.E..LEJ
.E..LE	0,14	**0,30**	0,44	0,10	**0,22**	0,33	0,09	**0,19**	0,29	0,09	**0,18**	0,27	0,08	**0,18**	0,27	.E..LE
.S..GE	0,20	**0,49**	0,79	0,15	**0,37**	0,59	0,13	**0,32**	0,51	0,12	**0,30**	0,48	0,12	**0,29**	0,47	.S..GE
.S..HP	0,20	**0,49**	0,79	0,15	**0,37**	0,59	0,13	**0,32**	0,51	0,12	**0,30**	0,48	0,12	**0,29**	0,47	.S..HP

At 2,00 Axial Depth of Cut (ap)

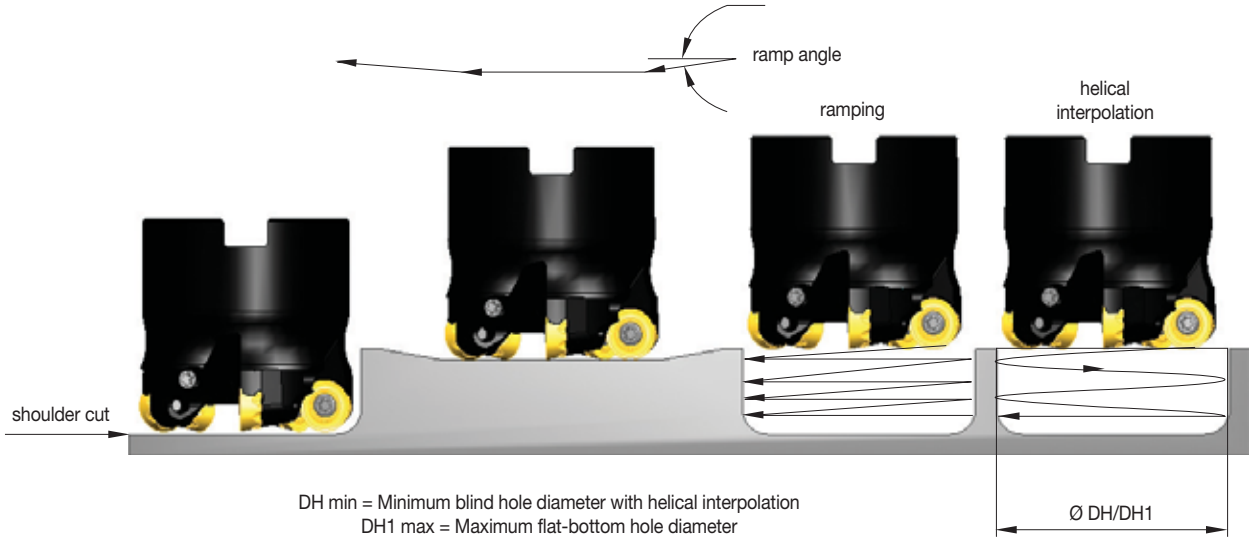
Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..LEJ	0,13	**0,23**	0,34	0,10	**0,17**	0,26	0,08	**0,15**	0,22	0,08	**0,14**	0,21	0,08	**0,14**	0,20	.E..LEJ
.E..LE	0,18	**0,39**	0,58	0,14	**0,29**	0,43	0,12	**0,25**	0,38	0,11	**0,24**	0,35	0,11	**0,23**	0,35	.E..LE
.S..GE	0,26	**0,64**	1,04	0,19	**0,48**	0,77	0,17	**0,42**	0,67	0,16	**0,39**	0,63	0,15	**0,38**	0,61	.S..GE
.S..HP	0,26	**0,64**	1,04	0,19	**0,48**	0,77	0,17	**0,42**	0,67	0,16	**0,39**	0,63	0,15	**0,38**	0,61	.S..HP

At 1,00 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..LEJ	0,18	**0,31**	0,47	0,13	**0,23**	0,35	0,11	**0,20**	0,30	0,11	**0,19**	0,28	0,10	**0,19**	0,28	.E..LEJ
.E..LE	0,25	**0,53**	0,80	0,19	**0,40**	0,59	0,16	**0,35**	0,52	0,15	**0,32**	0,48	0,15	**0,32**	0,47	.E..LE
.S..GE	0,35	**0,88**	1,42	0,26	**0,66**	1,05	0,23	**0,57**	0,92	0,21	**0,54**	0,86	0,21	**0,52**	0,84	.S..GE
.S..HP	0,35	**0,88**	1,42	0,26	**0,66**	1,05	0,23	**0,57**	0,92	0,21	**0,54**	0,86	0,21	**0,52**	0,84	.S..HP

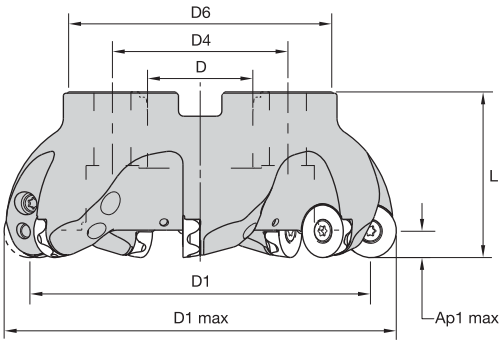
NOTE: Use “Light Machining” values as starting feed rate.

Maximum Linear Ramping and Helical Interpolation from Solid



catalogue number	max ramp angle	max plunging depth	min hole diameter (DH min)	max flat-bottom hole diameter (DH1 max)	max diameter (no flat bottom)
40E03R045M16RP16	8.3°	2,6	52.4	64	80
40E02R040A32RP16L200	11.1°	3,3	51,2	64	80
52A04RS90RP16	10.7°	5,25	73,14	88	104
63A04RS90RP16	11.8°	8,0	94,05	110	126
63A06RS90RP16	4.3°	3,07	97,71	110	126
80A05RS90RP16	8.2°	8,0	128,02	144	160
80A07RS90RP16	4.5°	4,5	129,89	144	160
100B06RS90RP16	6.1°	8,0	168,01	184	200
100B08RS90RP16	4.7°	6,22	168,58	184	200
125B09RS90RP16	4,3°	7,5	218,08	234	250

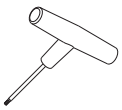
- Diameter range from 63–200mm.
- Engineered for roughing titanium with large depths of cut through positive geometry inserts.
- Anti-rotation feature allows up to six indexable rotations.

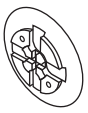


Face Mills

order number	catalogue number	D1 max	D1	D	D4	D6	L	Ap1 max	Z	max ramp angle	kg	max RPM	insert 1
3095646	**63A04RS90RC20C**	63	43	22	–	50	50	10,0	4	0.80°	0,62	26000	RCGT2006M0___
3095647	**80A05RS90RC20C**	80	60	27	–	60	50	10,0	5	0.80°	0,89	22000	RCGT2006M0___
3095648	**100B05RS90RC20C**	100	80	32	–	80	63	10,0	5	0.80°	2,16	18000	RCGT2006MO___
3095649	**100B06RS90RC20C**	100	80	32	–	80	63	10,0	6	0.90°	2,11	18000	RCGT2006MO___
3095650	**125B06RS90RC20C**	125	105	40	–	90	63	10,0	6	0.60°	2,96	15000	RCGT2006M0___
3095651	**160C07RS90RC20C**	160	140	40	67	100	63	10,0	7	0.50°	3,90	14000	RCGT2006M0___
3095652	**160C08RS90RC20C**	160	140	40	67	100	63	10,0	8	0.50°	3,87	14000	RCGT2006M0___
3095653	**200C09RS90RC20C**	200	180	60	102	130	63	10,0	9	0.40°	5,77	12500	RCGT2006M0___

Spare Parts

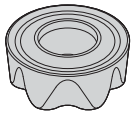


D1 max	insert screw	Nm	Torx wrench	anti-rotation screw	coolant cap assembly	SHCS with coolant groove	coolant lock screw assembly
63	**MS1162**	5,0	**TT25**	**S2160**	**–**	**MS1242CG**	**–**
80	**MS1162**	5,0	**TT25**	**S2160**	**–**	**MS2190CG**	**–**
100	**MS1162**	5,0	**TT25**	**S2160**	**–**	**–**	**MS2188C**
125	**MS1162**	5,0	**TT25**	**S2160**	**–**	**–**	**MS2187C**
160	**MS1162**	5,0	**TT25**	**S2160**	**MCCM16001**	**–**	**–**
200	**MS1162**	5,0	**TT25**	**S2160**	**MCC080001**	**–**	**–**

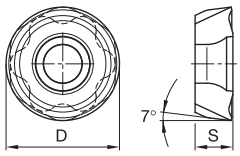
Insert Selection Guide

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.E..LF	KC725M	**.S..GF**	**KC725M**	.S..HF	KC725M
P3–P4	.S..GF	KC522M	**.S..GF**	**KC725M**	.S..HF	KCPK30
P5–P6	.S..GF	KC522M	**.S..HF**	**KCPK30**	.S..HF	KCPK30
M1–M2	.E..LF	KC725M	**.S..GF**	**KC725M**	.S..HF	KC725M
M3	.E..LF	KC725M	**.S..GF**	**KC725M**	.S..HF	KCPK30
K1–K2	–	–	**.S..HF**	**KCPK30**	–	–
K3	–	–	**.S..HF**	**KCPK30**	–	–
N1–N2	–	–	**–**	**–**	–	–
N3	–	–	**–**	**–**	–	–
S1–S2	.E..LF	KC725M	**.S..GF**	**KC725M**	.S..HF	KC725M
S3	.E..LF	KC725M	**.S..GF**	**KC725M**	.S..HF	KC725M
S4	.E..LF	KC725M	**.S..GF**	**KC725M**	.S..HF	KC725M
H1	–	–	**–**	**–**	–	–

- ELF is the first choice for lower cutting forces to avoid build-up edge.
- SGF is for general purpose in roughing applications.
- SHF is the first choice for heavy duty.



RCTG-LF
RCTG-GF
RCTG-HF



● first choice
○ alternate choice

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

RCTG-LF

catalogue number	D	S	hm	cutting edges	KC522M	KC725M	KCPK30
RCGT2006M0ELF	20,00	6,35	0,04	6		●	

RCTG-GF

catalogue number	D	S	hm	cutting edges	KC522M	KC725M	KCPK30
RCGT2006M0SGF	20,00	6,35	0,10	6	●	●	

RCTG-HF

catalogue number	D	S	hm	cutting edges	KC522M	KC725M	KCPK30
RCGT2006M0SHF	20,00	6,35	0,25	6		●	●

Recommended Starting Speeds [m/min]

Material Group		KC522M			KC725M			KCPK30		
P	1	395	**345**	325	315	**275**	255	545	**475**	440
	2	330	**290**	240	260	**230**	195	335	**305**	275
	3	305	**255**	215	240	**205**	170	305	**275**	250
	4	270	**225**	180	215	**180**	145	225	**210**	190
	5	225	**200**	180	180	**160**	145	310	**275**	255
	6	200	**150**	120	160	**120**	95	190	**165**	–
M	1	245	**215**	200	205	**180**	165	250	**220**	190
	2	225	**190**	160	185	**160**	130	225	**195**	170
	3	170	**145**	115	140	**120**	95	175	**160**	140
K	1	–	**–**	–	–	**–**	–	355	**320**	285
	2	–	**–**	–	–	**–**	–	280	**255**	230
	3	–	**–**	–	–	**–**	–	235	**210**	195
N	1–2	–	**–**	–	–	**–**	–	–	**–**	–
	3	–	**–**	–	–	**–**	–	–	**–**	–
S	1	50	**45**	35	45	**35**	30	–	**–**	–
	2	50	**45**	35	45	**35**	30	–	**–**	–
	3	60	**50**	35	55	**45**	30	–	**–**	–
	4	85	**60**	45	75	**55**	35	–	**–**	–
H	1	–	**–**	–	–	**–**	–	–	**–**	–

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

Recommended Starting Feeds [mm]

Light Machining	General Purpose	Heavy Machining

At 10,00 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..LF	0,09	**0,17**	0,32	0,07	**0,13**	0,24	0,06	**0,11**	0,21	0,05	**0,10**	0,19	0,05	**0,10**	0,19	.E..LF
.S..GF	0,17	**0,43**	0,68	0,13	**0,32**	0,51	0,11	**0,28**	0,44	0,10	**0,26**	0,41	0,10	**0,25**	0,41	.S..GF
.S..HF	0,17	**0,43**	0,68	0,13	**0,32**	0,51	0,11	**0,28**	0,44	0,10	**0,26**	0,41	0,10	**0,25**	0,41	.S..HF

At 5,00 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..LF	0,10	**0,20**	0,37	0,08	**0,15**	0,27	0,07	**0,13**	0,24	0,06	**0,12**	0,22	0,06	**0,12**	0,22	.E..LF
.S..GF	0,20	**0,49**	0,79	0,15	**0,37**	0,59	0,13	**0,32**	0,51	0,12	**0,30**	0,48	0,12	**0,29**	0,47	.S..GF
.S..HF	0,20	**0,49**	0,79	0,15	**0,37**	0,59	0,13	**0,32**	0,51	0,12	**0,30**	0,48	0,12	**0,29**	0,47	.S..HF

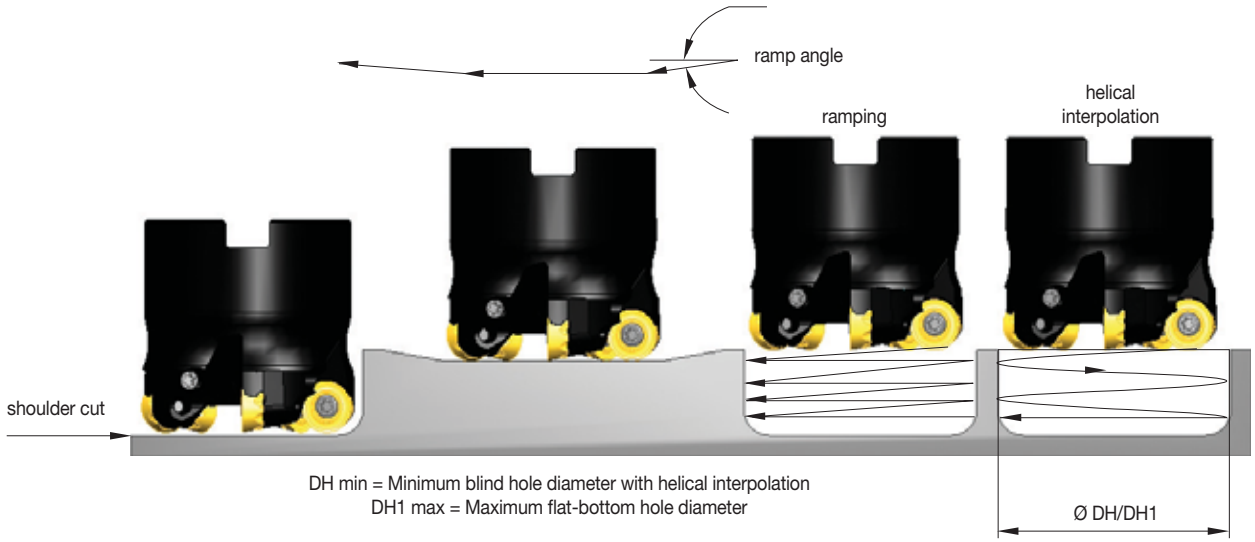
At 2,50 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..LF	0,14	**0,26**	0,48	0,10	**0,19**	0,36	0,09	**0,17**	0,31	0,08	**0,16**	0,29	0,08	**0,16**	0,29	.E..LF
.S..GF	0,26	**0,64**	1,04	0,19	**0,48**	0,77	0,17	**0,42**	0,67	0,16	**0,39**	0,63	0,15	**0,38**	0,61	.S..GF
.S..HF	0,26	**0,64**	1,04	0,19	**0,48**	0,77	0,17	**0,42**	0,67	0,16	**0,39**	0,63	0,15	**0,38**	0,61	.S..HF

At 1,25 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..LF	0,19	**0,35**	0,66	0,14	**0,27**	0,49	0,12	**0,23**	0,43	0,11	**0,22**	0,40	0,11	**0,21**	0,39	.E..LF
.S..GF	0,35	**0,88**	1,42	0,26	**0,66**	1,05	0,23	**0,57**	0,92	0,21	**0,54**	0,86	0,21	**0,52**	0,84	.S..GF
.S..HF	0,35	**0,88**	1,42	0,26	**0,66**	1,05	0,23	**0,57**	0,92	0,21	**0,54**	0,86	0,21	**0,52**	0,84	.S..HF

NOTE: Use “Light Machining” values as starting feed rate.



insert IC	catalogue number	max ramp angle (ra) when hx = .127mm	max ramp angle (ra) when hx = .5mm	max plunge radial depth (ae) when hx = .5mm	min hole diameter	max flat-bottom hole diameter	max hole diameter (no flat bottom)
RCGX2006	**63A04RS90RC20C**	1.29°	0.79°	13.61	99.48	106.08	126.00
RCGX2006	**80A05RS90RC20C**	1.23°	0.80°	14.35	131.61	140.08	160.00
RCGX2006	**100B05RS90RC20C**	1.17°	0.84°	15.24	170.31	180.08	200.00
RCGX2006	**100B06RS90RC20C**	1.15°	0.89°	15.16	170.09	180.08	200.00
RCGX2006	**125B06RS90RC20C**	1.06°	0.63°	15.50	219.05	230.08	250.00
RCGX2006	**160C07RS90RC20C**	0.92°	0.50°	14.95	220.23	230.08	250.00
RCGX2006	**160C08RS90RC20C**	0.92°	0.49°	14.90	290.34	300.08	320.00
RCGX2006	**200C09RS90RC20C**	0.79°	0.41°	15.03	290.01	300.08	320.00

Beyond BLAST™ KSRM™ • Next Generation Round Inserts with Through Coolant

Primary Application

Specially developed for machining titanium. Beyond BLAST KSRM platform boosts your productivity with its new and revolutionary technology, PCT (Precision Coolant Technology), enabling consistent performance and providing outstanding metal removal rates and longer tool life.

Features and Benefits

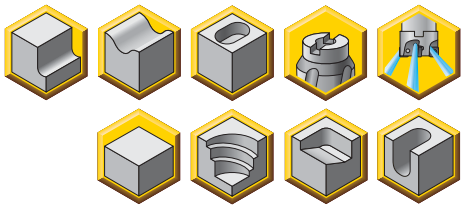
Platform Features	Functions
Channeling coolant through the insert.	Increase productivity, tool life, and chip control.
Anti-rotation feature with six indexes.	Superior productivity and better insert utilization/cost per edge.
High positive topography with strong cutting edges.	Long tool life and better MRR.
High clearance on the cutters and inserts.	Able to convert all milling applications.

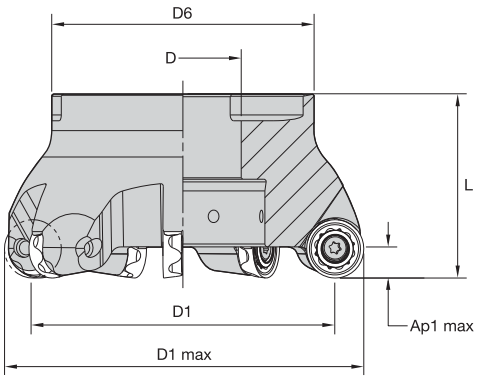
*To learn more, **scan here**.*

For instructions on how to scan, please see page xxix.

beyond BLAST™

- Use PCT technology; coolant through the insert.
- Engineered to provide the maximum performance in titanium machining.
- Anti-rotation feature allows up to six indexable rotations.
- Pocketing, ramping, plunging, and helical interpolation capabilities.





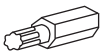
beyond BLAST™

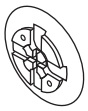
Face Mills • Metric

order number	catalogue number	D1 max	D1	D	D6	L	Ap1 max	Z	kg	max RPM	insert 1
4109173	**KSRM63A04RC20BB**	63	43	22	50	50	10,0	4	0,54	21900	RCGX2006M0__
4109174	**KSRM80A05RC20BB**	80	60	27	60	50	10,0	5	0,83	18500	RCGX2006M0__
4109175	**KSRM100B05RC20BB**	100	80	32	80	50	10,0	5	1,45	16000	RCGX2006M0__
4109176	**KSRM100B06RC20BB**	100	80	32	80	50	10,0	6	1,43	16000	RCGX2006M0__
4109177	**KSRM125B06RC20BB**	125	105	40	90	63	10,0	6	2,90	14000	RCGX2006M0__
4109178	**KSRM125B07RC20BB**	125	105	40	90	63	10,0	7	2,90	14000	RCGX2006M0__
4109179	**KSRM160C07RC20BB**	160	140	40	90	63	10,0	7	3,34	12100	RCGX2006M0__
4109180	**KSRM160C08RC20BB**	160	140	40	90	63	10,0	8	3,30	12100	RCGX2006M0__
4109181	**KSRM200C09RC20BB**	200	180	60	130	63	10,0	9	5,49	10700	RCGX2006M0__

Spare Parts








D1 max	insert screw	Nm	universal bit torque driver	drive bit	coolant lock screw assembly	coolant shower plate assembly	socket-head cap screw with coolant groove
63	**MS1162**	5,0	**KPTW45**	**BT25L50**	–	–	**MS1234CG**
80	**MS1162**	5,0	**KPTW45**	**BT25L50**	–	–	**MS2190CG**
100	**MS1162**	5,0	**KPTW45**	**BT25L50**	**MS2195C**	–	–
125	**MS1162**	5,0	**KPTW45**	**BT25L50**	**MS2187C**	–	–
160	**MS1162**	5,0	**KPTW45**	**BT25L50**	–	**MCCM16001**	–
200	**MS1162**	5,0	**KPTW45**	**BT25L50**	–	**MCC080001**	–

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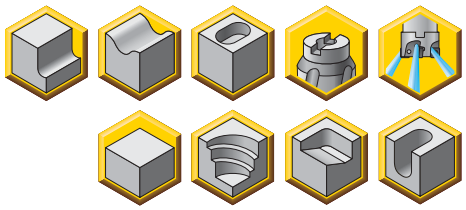
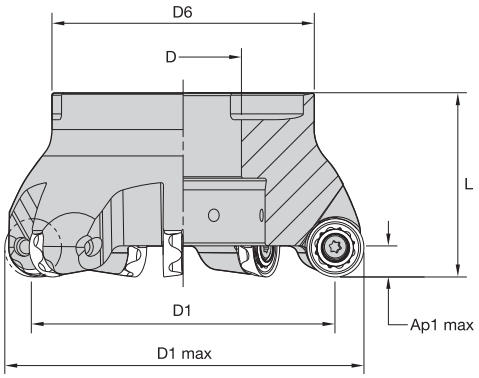
- Anti-rotation feature allows up to six indexable rotations.
- Pocketing, ramping, plunging, and helical interpolation capabilities.





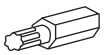
beyond BLAST™

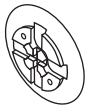
Face Mills • JIS (Japanese Industry Standard)

order number	catalogue number	D1 max	D1	D	D6	L	Ap1 max	Z	kg	max RPM	insert 1
4137791	**KSRM80A05RC20BB-J**	80	60	25	56	50	10,0	5	0,84	18500	RCGX2006M0__
4137792	**KSRM100B06RC20BB-J**	100	80	32	73	50	10,0	6	1,26	16000	RCGX2006M0__
4137793	**KSRM125B07RC20BB-J**	125	105	38	97	63	10,0	7	3,03	14000	RCGX2006M0__
4137794	**KSRM160B08RC20BB-J**	160	140	51	127	63	10,0	8	5,22	12100	RCGX2006M0__
4137795	**KSRM200C09RC20BB-J**	200	180	48	130	63	10,0	9	6,06	10700	RCGX2006M0__

Spare Parts



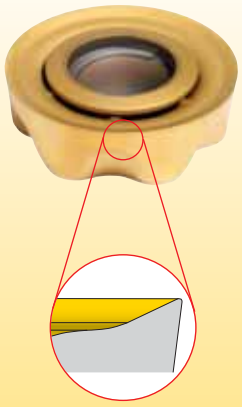


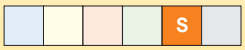



D1 max	insert screw	Nm	universal bit torque driver	drive bit	coolant lock screw assembly	coolant shower plate assembly	socket-head cap screw with coolant groove
80	**MS1162**	5,0	**KPTW45**	**BT25L50**	–	–	**MS2190CG**
100	**MS1162**	5,0	**KPTW45**	**BT25L50**	**MS2220C**	–	–
125	**MS1162**	5,0	**KPTW45**	**BT25L50**	–	–	–
160	**MS1162**	5,0	**KPTW45**	**BT25L50**	–	–	–
200	**MS1162**	5,0	**KPTW45**	**BT25L50**	–	**MCC080001**	–

Best-in-Class Performance Booster in Machining Titanium

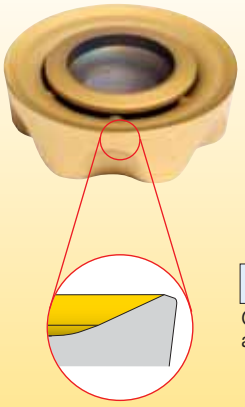
-ELF

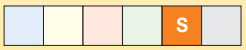




Geometry for light and medium machining

-SGF





Geometry for medium and heavy machining

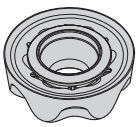
Copy Mills

Insert Selection Guide

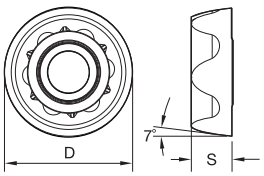
Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	–	–	–	–	–	–
P3–P4	–	–	–	–	–	–
P5–P6	–	–	–	–	–	–
M1–M2	–	–	–	–	–	–
M3	–	–	–	–	–	–
K1–K2	–	–	–	–	–	–
K3	–	–	–	–	–	–
N1–N2	–	–	–	–	–	–
N3	–	–	–	–	–	–
S1–S2	–	–	–	–	–	–
S3	–	–	–	–	–	–
S4	.E..LF	KC725M	**.S..GF**	**KC725M**	.S..GF	KC725M
H1	–	–	–	–	–	–

Indexable Insert • BB KSRM

- Revolutionary concept of channeling coolant through the insert.
- Engineered to provide the maximum performance in titanium machining.
- ELF geometry for lower cutting forces to avoid built-up edge.
- SGF in the first choice for higher chip load and heavy applications.



RCGX-LF
RCGX-GF



beyond BLAST™

● first choice
○ alternate choice

P	
M	
K	
N	
S	●
H	

RCGX-LF and -GF

catalogue number	D	S	hm	cutting edges	KC725M
RCGX2006M0ELF	20,00	6,35	0,08	6	●
RCGX2006M0SGF	20,00	6,35	0,10	6	●

Recommended Starting Speeds [m/min]

Material Group		KC725M		
P	1	–	–	–
	2	–	–	–
	3	–	–	–
	4	–	–	–
	5	–	–	–
	6	–	–	–
M	1	–	–	–
	2	–	–	–
	3	–	–	–
K	1	–	–	–
	2	–	–	–
	3	–	–	–
N	1	–	–	–
	2	–	–	–
S	1	–	–	–
	2	–	–	–
	3	–	–	–
	4	75	**55**	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.

Recommended Starting Feeds [mm]

Light Machining	General Purpose	Heavy Machining

At 10,00 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..LF	0,17	**0,36**	0,54	0,13	**0,27**	0,40	0,11	**0,24**	0,35	0,10	**0,22**	0,33	0,10	**0,22**	0,32	.E..LF
.S..GF	0,17	**0,43**	0,67	0,13	**0,32**	0,50	0,11	**0,28**	0,44	0,10	**0,26**	0,41	0,10	**0,25**	0,40	.S..GF

At 5,00 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..LF	0,20	**0,42**	0,62	0,15	**0,31**	0,46	0,13	**0,27**	0,40	0,12	**0,25**	0,38	0,12	**0,25**	0,37	.E..LF
.S..GF	0,20	**0,49**	0,78	0,15	**0,37**	0,58	0,13	**0,32**	0,50	0,12	**0,30**	0,47	0,12	**0,29**	0,46	.S..GF

At 2,50 Axial Depth of Cut (ap)

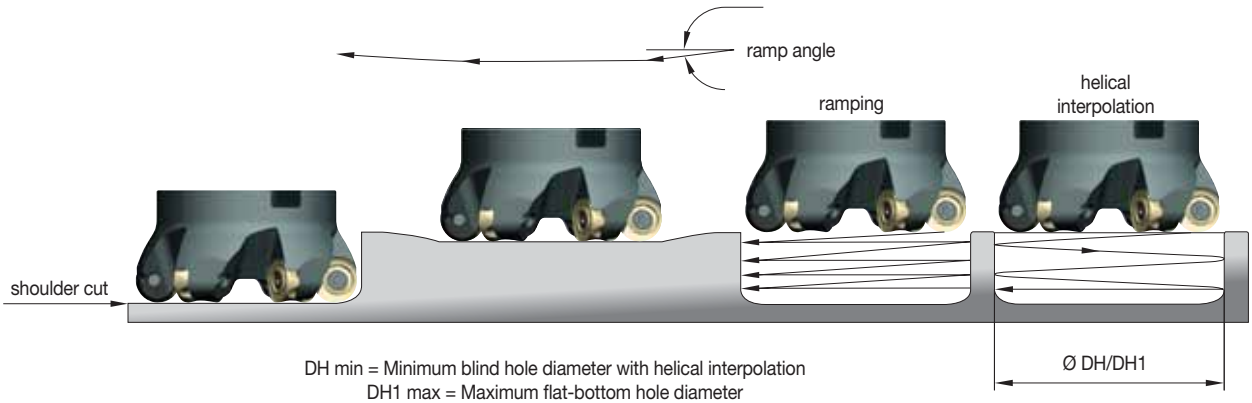
Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..LF	0,26	**0,55**	0,81	0,19	**0,41**	0,61	0,17	**0,36**	0,53	0,16	**0,33**	0,49	0,15	**0,33**	0,48	.E..LF
.S..GF	0,26	**0,64**	1,02	0,19	**0,48**	0,76	0,17	**0,42**	0,66	0,16	**0,39**	0,62	0,15	**0,38**	0,60	.S..GF

At 1,25 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..LF	0,35	**0,75**	1,12	0,26	**0,56**	0,83	0,23	**0,49**	0,72	0,21	**0,46**	0,67	0,21	**0,45**	0,66	.E..LF
.S..GF	0,35	**0,88**	1,40	0,26	**0,66**	1,04	0,23	**0,57**	0,90	0,21	**0,54**	0,84	0,21	**0,52**	0,83	.S..GF

NOTE: Use “Light Machining” values as starting feed rate.

Ramping and Helical Interpolation Values from Solid



DH min = Minimum blind hole diameter with helical interpolation
DH1 max = Maximum flat-bottom hole diameter

insert IC	catalogue number	max ramp angle	max ramp depth	max plunging depth	min hole diameter (DH min)	max flat-bottom hole diameter (DH1 max)	max diameter (no flat bottom)
RCGX2006	**KSRM63A04RC20BB**	1,29°	0,88	1,45	97,99	106,08	126,00
RCGX2006	**KSRM80A05RC20BB**	1,23°	1,19	1,82	130,70	140,08	160,00
RCGX2006	**KSRM100B05RC20BB**	1,17°	1,53	2,16	169,53	180,08	200,00
RCGX2006	**KSRM100B06RC20BB**	1,15°	1,51	2,13	169,61	180,08	200,00
RCGX2006	**KSRM125B06RC20BB**	1,06°	1,84	2,44	218,61	230,08	250,00
RCGX2006	**KSRM125B07RC20BB**	1,05°	1,81	2,41	218,68	230,08	250,00
RCGX2006	**KSRM160C07RC20BB**	0,92°	2,15	2,71	287,75	300,08	320,00
RCGX2006	**KSRM160C08RC20BB**	0,92°	2,14	2,69	287,78	300,08	320,00
RCGX2006	**KSRM200C09RC20BB**	0,79°	2,40	2,90	367,16	380,08	400,00
RCGX2006	**KSRM80A05RC20BB-J**	1,23°	1,19	1,82	130,70	140,08	160,00
RCGX2006	**KSRM100B06RC20BB-J**	1,15°	1,51	2,13	169,61	180,08	200,00
RCGX2006	**KSRM125B07RC20BB-J**	1,05°	1,81	2,41	218,68	230,08	250,00
RCGX2006	**KSRM160C08RC20BB-J**	0,92°	2,14	2,69	287,78	300,08	320,00
RCGX2006	**KSRM200C09RC20BB-J**	0,79°	2,40	2,90	367,16	380,08	400,00

KDMB™ and KDMT™ • Indexable Copy Insert Platforms

Primary Application

Ball nose and toroidal styles for roughing and finishing operations. Engineered with the ultimate technologies and supported with a wide range of diameters and insert styles, this platform provides exceptional performance and productivity. The new High-Feed insert style provides the highest metal removal rates for roughing applications.

Features and Benefits

Longer Tool Life and Improved Geometries

- Longer tool life for finishing operations, up to 63 HRC.
- High-accuracy inserts and holders: overall runout ± 0,01mm.
- Improved geometries for roughing and finishing operations.
- Smaller diameters from 6mm to replace SCEM, setting a more productive machining process.

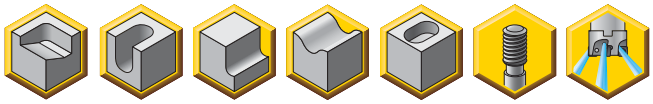
Superior Productivity

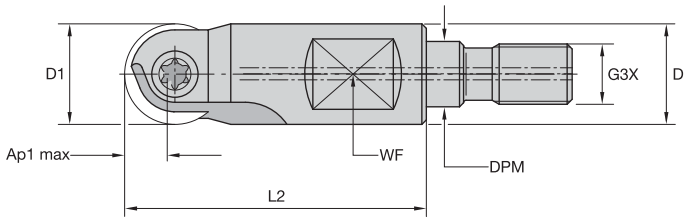
- Due to the new helical geometry, we obtain better surface quality.
- New ultra-grain grade for outstanding tool life.
- Diameters 6mm and 8mm natural replacement for SEM tools.
- Better cost per edge.

Usability and Flexibility

- Wide diameter range, from 6–32mm, enables it to be applied across a wide range of machining conditions.
- Many workpiece materials are possible — from hardened steel to aluminium.
- Large holder style offering: screw-on, cylindrical, and tapered steel and carbide holders.

- Available diameters: 12–25mm.
- High precision and runout accuracy.
- Suitable for roughing and finishing operations.

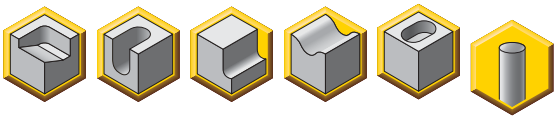


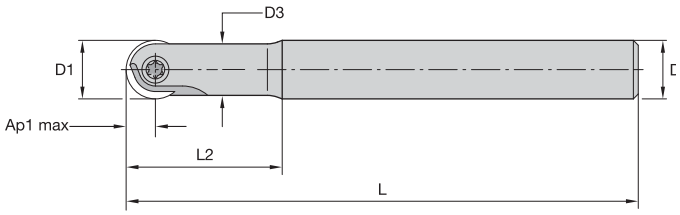


Screw-On End Mills

order number	catalogue number	D1	D	DPM	G3X	L2	Ap1 max	Z	Z U	max ramp angle	max RPM	insert 1
1918651	**KDMB12R026M08SN**	12	13	8,5	M8	26	6,0	1	2	3.0°	40000	KDMB12..
1918652	**KDMB16R026M08SN**	16	13	8,5	M8	26	8,0	1	2	3.0°	40000	KDMB16..
1918663	**KDMB20R030M10SN**	20	18	10,5	M10	30	10,0	1	2	3.0°	40000	KDMB20..
1918664	**KDMB25R040M12SN**	25	21	12,5	M12	40	12,5	1	2	3.0°	30000	KDMB25..

- Available diameters: 12–32mm.
- High precision and runout accuracy.
- Can be used with heat shrink technology, h6 shank tolerance.
- Suitable for roughing and finishing operations.





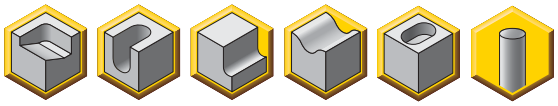
Necked End Mills • Cylindrical Shank • Steel

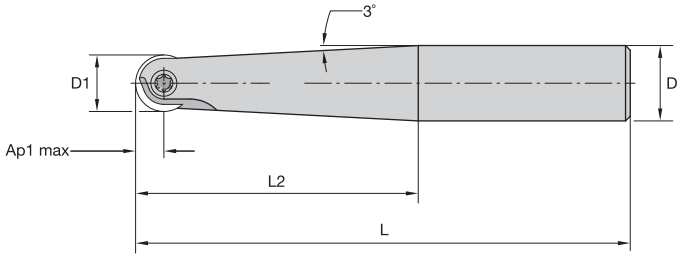
order number	catalogue number	D1	D	D3	L	L2	Ap1 max	Z	Z U	coolant supply	max ramp angle	max RPM	insert 1
1918676	**KDMB12R130A12SN**	12	12	11	130	32	6,0	1	2	No	3.0°	40000	KDMB12..
1918677	**KDMB12R150A12SN**	12	12	11	150	46	6,0	1	2	No	3.0°	40000	KDMB12..
1918678	**KDMB16R140A16SN**	16	16	14	140	35	8,0	1	2	No	3.0°	40000	KDMB16..
1918679	**KDMB16R160A16SN**	16	16	14	160	53	8,0	1	2	No	3.0°	40000	KDMB16..
1918680	**KDMB20R160A20SN**	20	20	18	160	45	10,0	1	2	No	3.0°	40000	KDMB20..
1918681	**KDMB20R175A20SN**	20	20	18	175	61	10,0	1	2	No	3.0°	40000	KDMB20..
1918682	**KDMB25R160A25SN**	25	25	22	160	45	12,5	1	2	No	3.0°	40000	KDMB25..
1918683	**KDMB25R190A25SN**	25	25	22	190	70	12,5	1	2	No	3.0°	40000	KDMB25..
1918684	**KDMB32R175A32SN**	32	32	29	175	56	16,0	1	2	No	3.0°	40000	KDMB32..
1918685	**KDMB32R210A32SN**	32	32	29	210	80	16,0	1	2	No	3.0°	40000	KDMB32..

Spare Parts

D1	insert screw	Nm	Torx wrench
12	**193.393**	4,0	**KT20**
16	**193.392**	5,0	**KT20**
20	**193.391**	6,0	**KT20**
25	**193.390**	6,5	**KT30**
32	**193.389**	6,5	**KT30**

- Available diameters: 8–25mm.
- High precision and runout accuracy.
- Can be used with heat shrink technology, h6 shank tolerance.
- Suitable for roughing and finishing operations.
- Tapered version ideal for 5-axis applications.





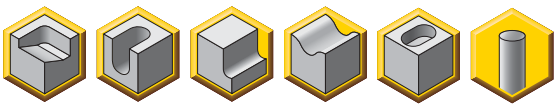
Tapered End Mills • Cylindrical Shank • Steel

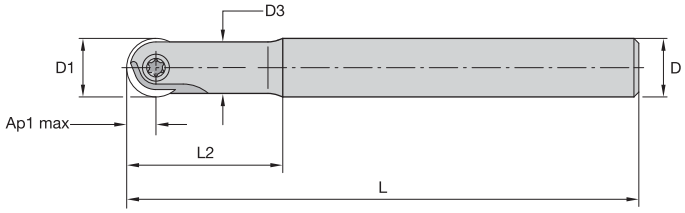
order number	catalogue number	D1	D	L	L2	Ap1 max	Z	Z U	coolant supply	max ramp angle	max RPM	insert 1
1918669	**KDMB08R140A08ST**	8	12	140	50	4,0	1	2	No	3.0°	40000	KDMB08..
1918670	**KDMB10R150A10ST**	10	12	150	34	5,0	1	2	No	3.0°	40000	KDMB10..
1918671	**KDMB12R160A12ST**	12	16	160	60	6,0	1	2	No	3.0°	40000	KDMB12..
1918672	**KDMB16R175A16ST**	16	20	175	67	8,0	1	2	No	3.0°	40000	KDMB16..
1918673	**KDMB20R190A20ST**	20	25	190	80	10,0	1	2	No	3.0°	40000	KDMB20..
1918674	**KDMB25R210A25ST**	25	32	210	100	12,5	1	2	No	3.0°	40000	KDMB25..

Spare Parts

D1	 insert screw	Nm	 Torx wrench
8	**193.395**	2,0	**KT8**
10	**193.394**	3,0	**KT15**
12	**193.393**	4,0	**KT20**
16	**193.392**	5,0	**KT20**
20	**193.391**	6,0	**KT20**
25	**193.390**	6,5	**KT30**

- Available diameters: 6–32mm.
- High precision and runout accuracy.
- Can be used with heat shrink technology, h6 shank tolerance.
- Suitable for roughing and finishing operations.





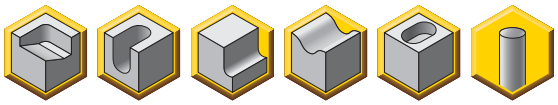
Necked End Mills • Cylindrical Shank • Carbide

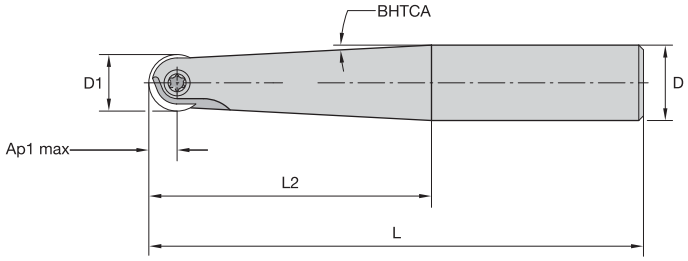
order number	catalogue number	D1	D	D3	L2	L	Ap1 max	Z	Z U	coolant supply	max ramp angle	max RPM	insert 1
3700622	**KDMB06R100A06HN**	6	6	5,8	20	100	3,0	1	2	No	3.0°	40000	KDM.06..
3964191	**KDMB06R150A06HN**	6	6	5,8	70	150	3,0	1	2	No	3.0°	40000	KDM.06..
3964192	**KDMB06R200A06HN**	6	6	5,8	100	200	3,0	1	2	No	3.0°	40000	KDM.06..
1918704	**KDMB08R100A08HN**	8	8	7,0	25	100	4,0	1	2	No	3.0°	40000	KDM.08..
1918705	**KDMB08R150A08HN**	8	8	7,0	40	150	4,0	1	2	No	3.0°	40000	KDM.08..
2877242	**KDMB10R120A10HNC**	10	10	8,8	34	120	5,0	1	2	Yes	3.0°	40000	KDMB10..
2877373	**KDMB10R150A10HNC**	10	10	8,8	49	150	5,0	1	2	Yes	3.0°	40000	KDMB10..
2877374	**KDMB12R120A12HNC**	12	12	10,5	35	120	6,0	1	2	Yes	3.0°	40000	KDMB12..
2877375	**KDMB12R160A12HNC**	12	12	10,5	50	160	6,0	1	2	Yes	3.0°	40000	KDMB12..
2877376	**KDMB16R140A16HNC**	16	16	14,0	40	140	8,0	1	2	Yes	3.0°	40000	KDMB16..
2877377	**KDMB16R175A16HNC**	16	16	14,0	55	175	8,0	1	2	Yes	3.0°	40000	KDMB16..
2877378	**KDMB20R140A20HNC**	20	20	18,0	50	140	10,0	1	2	Yes	3.0°	40000	KDMB20..
2877379	**KDMB20R190A20HNC**	20	20	18,0	75	190	10,0	1	2	Yes	3.0°	40000	KDMB20..
2877380	**KDMB25R160A25HNC**	25	25	22,4	60	160	12,5	1	2	Yes	3.0°	30000	KDMB25..
2877381	**KDMB25R210A25HNC**	25	25	22,4	90	210	12,5	1	2	Yes	3.0°	30000	KDMB25..
2877382	**KDMB32R190A32HNC**	32	32	28,6	65	190	16,0	1	2	Yes	3.0°	30000	KDMB32..
2877383	**KDMB32R240A32HNC**	32	32	28,6	105	240	16,0	1	2	Yes	3.0°	30000	KDMB32..

Spare Parts

D1	insert screw	Nm	Torx wrench
6	**MS2236**	1,7	**KT6**
8	**193.395**	2,0	**KT8**
10	**193.394**	3,0	**KT15**
12	**193.393**	4,0	**KT20**
16	**193.392**	5,0	**KT20**
20	**193.391**	6,0	**KT20**
25	**193.390**	6,5	**KT30**
32	**193.389**	6,5	**KT30**

- Available diameters: 6–16mm.
- High precision and runout accuracy.
- Can be used with heat shrink technology, h6 shank tolerance.
- Suitable for roughing and finishing operations.
- Tapered version ideal for 5-axis applications.





Tapered End Mills • Cylindrical Shank • Carbide

order number	catalogue number	D1	D	BHTCA	L2	L	Ap1 max	Z	Z U	coolant supply	max ramp angle	max RPM	insert 1
3964257	**KDMB06R90A08HN**	6	8	1.8°	40	90	3,0	1	2	No	3.0°	40000	KDM.06..
3964258	**KDMB08R100A10HN**	8	10	1.3°	60	100	4,0	1	2	No	3.0°	40000	KDM.08..
3964259	**KDMB08R150A10HN**	8	10	1.0°	90	150	4,0	1	2	No	3.0°	40000	KDM.08..
3964260	**KDMB10R100A12HNC**	10	12	1.3°	60	100	5,0	1	2	Yes	3.0°	40000	KDMB10..
3964261	**KDMB10R150A12HNC**	10	12	1.0°	90	150	5,0	1	2	Yes	3.0°	40000	KDMB10..
3964262	**KDMB12R120A16HNC**	12	16	2.0°	70	120	6,0	1	2	Yes	3.0°	40000	KDMB12..
3964263	**KDMB12R150A16HNC**	12	16	1.5°	90	150	6,0	1	2	Yes	3.0°	40000	KDMB12..
3964264	**KDMB16R140A20HNC**	16	20	2.0°	70	140	8,0	1	2	Yes	3.0°	40000	KDMB16..
3964265	**KDMB16R175A20HNC**	16	20	1.5°	90	175	8,0	1	2	Yes	3.0°	40000	KDMB16..

Spare Parts

D1	insert screw	Nm	Torx wrench
6	**MS2236**	1,0	**KT6**
8	**193.395**	1,7	**KT8**
10	**193.394**	3,0	**KT15**
12	**193.393**	4,0	**KT20**
16	**193.392**	5,0	**KT20**

Insert Selection Guide

KDMB Ball Nose Platform • 6mm

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.E..GP	KC515M	**.E..GP**	**KC515M**	–	–
P3–P4	.E..GP	KC505M	**.E..GP**	**KC515M**	–	–
P5–P6	.E..GP	KC505M	**.E..GP**	**KC515M**	–	–
M1–M2	.E..GP	KC515M	–	–	–	–
M3	.E..GP	KC515M	–	–	–	–
K1–K2	.E..GP	KC515M	**.E..GP**	**KC515M**	–	–
K3	.E..GP	KC515M	**.E..GP**	**KC515M**	–	–
N1–N2	.E..LD	K115M	**.E..LD**	**K115M**	–	–
N3	.E..LD	K115M	**.E..LD**	**K115M**	–	–
S1–S2	–	–	–	–	–	–
S3	–	–	–	–	–	–
S4	.E..LD	K115M	**.E..GP**	**KC515M**	–	–
H1	.E..GP	KC505M	**.E..GP**	**KC505M**	.E..GN	KC505M

KDMB Ball Nose Platform • 8mm

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.E..GP	KC515M	**.E..GP**	**KC515M**	.E..GN	KC530M
P3–P4	.E..GP	KC505M	**.E..GP**	**KC515M**	.E..GN	KC515M
P5–P6	.E..GP	KC505M	**.E..GP**	**KC515M**	.E..GN	KC530M
M1–M2	.E..GP	KC515M	**.E..GN**	**KC530M**	–	–
M3	.E..GP	KC515M	**.E..GN**	**KC530M**	–	–
K1–K2	.E..GP	KC515M	**.E..GN**	**KC515M**	.E..GN	KC515M
K3	.E..GP	KC515M	**.E..GN**	**KC515M**	.E..GN	KC515M
N1–N2	.E..LD	K115M	**.E..LD**	**K115M**	–	–
N3	.E..LD	K115M	**.E..LD**	**K115M**	–	–
S1–S2	–	–	–	–	–	–
S3	–	–	–	–	–	–
S4	.E..LD	K115M	**.E..GP**	**KC515M**	–	–
H1	.E..GP	KC505M	**.E..GP**	**KC505M**	.E..GN	KC505M

KDMB Ball Nose Platform • 10mm

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.E..GP	KC515M	**.E..GP**	**KC515M**	.E..GN	KC515M
P3–P4	.E..GP	KC505M	**.E..GP**	**KC515M**	.E..GN	KC515M
P5–P6	.E..GP	KC505M	**.E..GP**	**KC515M**	.E..GN	KC530M
M1–M2	.E..GP	KC515M	**.E..GN**	**KC530M**	.E..GN	KC530M
M3	.E..GP	KC515M	**.E..GN**	**KC530M**	.E..GN	KC530M
K1–K2	.E..GP	KC515M	**.E..GN**	**KC515M**	.E..GN	KC515M
K3	.E..GP	KC515M	**.E..GN**	**KC515M**	.E..GN	KC515M
N1–N2	.E..LD	K115M	**.E..LD**	**K115M**	–	–
N3	.E..LD	K115M	**.E..LD**	**K115M**	–	–
S1–S2	–	–	–	–	–	–
S3	–	–	–	–	–	–
S4	.E..LD	K115M	**.E..GP**	**KC515M**	–	–
H1	.E..GP	KC505M	**.E..GP**	**KC505M**	.E..GN	KC505M

KDMB Ball Nose Platform • 12mm

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.E..GP	KC515M	**.E..GP**	**KC515M**	.E..HC	KC530M
P3–P4	.E..GP	KC505M	**.E..GP**	**KC515M**	.E..HC	KC530M
P5–P6	.E..GP	KC505M	**.E..GP**	**KC515M**	.E..HC	KC530M
M1–M2	.E..GP	KC515M	**.E..HC**	**KC530M**	.E..HC	KC530M
M3	.E..GP	KC515M	**.E..HC**	**KC530M**	.E..HC	KC530M
K1–K2	.E..GP	KC515M	**.E..GN**	**KC515M**	.E..GN	KC515M
K3	.E..GP	KC515M	**.E..GN**	**KC515M**	.E..GN	KC515M
N1–N2	.E..LD	K115M	**.E..LD**	**K115M**	–	–
N3	.E..LD	K115M	**.E..LD**	**K115M**	–	–
S1–S2	–	–	–	–	–	–
S3	–	–	–	–	–	–
S4	.E..LD	K115M	**.E..GP**	**KC515M**	.E..HC	KC530M
H1	.E..GP	KC505M	**.E..GP**	**KC505M**	.E..GN	KC505M

KDMB Ball Nose Platform • 16mm

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.E..GP	KC515M	**.E..GP**	**KC515M**	.E..HC	KC530M
P3–P4	.E..GP	KC505M	**.E..GP**	**KC515M**	.E..HC	KC530M
P5–P6	.E..GP	KC505M	**.E..GP**	**KC515M**	.E..HC	KC530M
M1–M2	.E..GP	KC515M	**.E..HC**	**KC530M**	.E..HC	KC530M
M3	.E..GP	KC515M	**.E..HC**	**KC530M**	.E..HC	KC530M
K1–K2	.E..GP	KC515M	**.E..GN**	**KC515M**	.E..GN	KC515M
K3	.E..GP	KC515M	**.E..GN**	**KC515M**	.E..GN	KC515M
N1–N2	.E..LD	K115M	**.E..LD**	**K115M**	–	–
N3	.E..LD	K115M	**.E..LD**	**K115M**	–	–
S1–S2	–	–	–	–	–	–
S3	–	–	–	–	–	–
S4	.E..LD	K115M	**.E..GP**	**KC515M**	.E..HC	KC530M
H1	.E..GP	KC505M	**.E..GP**	**KC505M**	.E..GN	KC505M

KDMB Ball Nose Platform • 20mm

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.E..GP	KC515M	**.E..GP**	**KC515M**	.E..HC	KC530M
P3–P4	.E..GP	KC505M	**.E..GP**	**KC515M**	.E..HC	KC530M
P5–P6	.E..GP	KC505M	**.E..GP**	**KC515M**	.E..HC	KC530M
M1–M2	.E..GP	KC515M	**.E..HC**	**KC530M**	.E..HC	KC530M
M3	.E..GP	KC515M	**.E..HC**	**KC530M**	.E..HC	KC530M
K1–K2	.E..GP	KC515M	**.E..GN**	**KC515M**	.E..GN	KC515M
K3	.E..GP	KC515M	**.E..GN**	**KC515M**	.E..GN	KC515M
N1–N2	.E..LD	K115M	**.E..LD**	**K115M**	–	–
N3	.E..LD	K115M	**.E..LD**	**K115M**	–	–
S1–S2	–	–	–	–	–	–
S3	–	–	–	–	–	–
S4	.E..LD	K115M	**.E..GP**	**KC515M**	.E..HC	KC530M
H1	.E..GP	KC505M	**.E..GP**	**KC505M**	.E..GN	KC505M

Insert Selection Guide

KDMB Ball Nose Platform • 25mm

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.E..GP	KC515M	**.E..GP**	**KC515M**	.E..HC	KC530M
P3–P4	.E..GP	KC505M	**.E..GP**	**KC515M**	.E..HC	KC530M
P5–P6	.E..GP	KC505M	**.E..GP**	**KC515M**	.E..HC	KC530M
M1–M2	.E..GP	KC515M	**.E..HC**	**KC530M**	.E..HC	KC530M
M3	.E..GP	KC515M	**.E..HC**	**KC530M**	.E..HC	KC530M
K1–K2	.E..GP	KC515M	**.E..GN**	**KC515M**	.E..GN	KC515M
K3	.E..GP	KC515M	**.E..GN**	**KC515M**	.E..GN	KC515M
N1–N2	.E..LD	K115M	**.E..LD**	**K115M**	–	–
N3	.E..LD	K115M	**.E..LD**	**K115M**	–	–
S1–S2	–	–	**–**	**–**	–	–
S3	–	–	**–**	**–**	–	–
S4	.E..LD	K115M	**.E..GP**	**KC515M**	.E..HC	KC530M
H1	.E..GP	KC505M	**.E..GP**	**KC505M**	.E..GN	KC505M

KDMB Ball Nose Platform • 32mm

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.E..GP	KC515M	**.E..GP**	**KC515M**	.E..HC	KC530M
P3–P4	.E..GP	KC505M	**.E..GP**	**KC515M**	.E..HC	KC530M
P5–P6	.E..GP	KC505M	**.E..GP**	**KC515M**	.E..HC	KC530M
M1–M2	.E..GP	KC515M	**.E..HC**	**KC530M**	.E..HC	KC530M
M3	.E..GP	KC515M	**.E..HC**	**KC530M**	.E..HC	KC530M
K1–K2	.E..GP	KC515M	**.E..GN**	**KC515M**	.E..GN	KC515M
K3	.E..GP	KC515M	**.E..GN**	**KC515M**	.E..GN	KC515M
N1–N2	.E..LD	K115M	**.E..LD**	**K115M**	–	–
N3	.E..LD	K115M	**.E..LD**	**K115M**	–	–
S1–S2	–	–	**–**	**–**	–	–
S3	–	–	**–**	**–**	–	–
S4	.E..LD	K115M	**.E..GP**	**KC515M**	.E..HC	KC530M
H1	.E..GP	KC505M	**.E..GP**	**KC505M**	.E..GN	KC505M

Insert Style

HC Geometry:

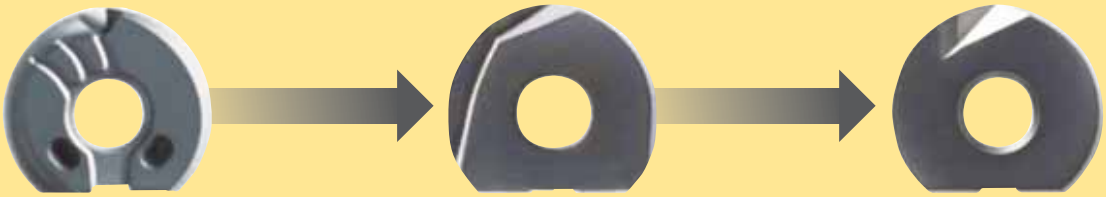
PSTS geometry with chipbreaker for roughing. Semi-finishing and rest material of steel, cast steel, and high-temperature alloys.

GP Geometry:

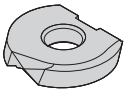
High-precision insert with helical geometry for semi-finishing and finishing of steel up to 63 HRC, cast steel, and high-temperature alloys.

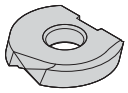
GN Geometry:

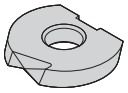
Geometry with extremely solid cutting edge for roughing cast steel, high-temperature alloys, and hardened steel up to 60 HRC.

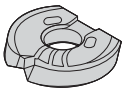


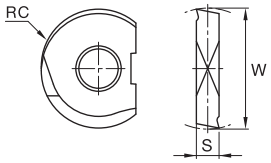
roughing, rest material **semi-finishing, finishing** **finishing**


KDMB-LD


KDMB-GP


KDMB-GN


KDMB-HC



● first choice
○ alternate choice

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

KDMB-LD • High-Precision Positive Geometry • Non-Ferrous and Titanium

catalogue number	W	S	RC	hm	K115M	KC505M	KC515M	KC530M
KDMB06M0ERLD	6,00	1,60	3,0	0,08	●			
KDMB08M0ERLD	8,00	2,00	4,0	0,05	●			
KDMB10M0ERLD	10,00	2,50	5,0	0,08	●			
KDMB12M0ERLD	12,00	2,50	6,0	0,08	●			
KDMB16M0ERLD	16,00	3,00	8,0	0,05	●			
KDMB20M0ERLD	20,00	3,00	10,0	0,08	●			
KDMB25M0ERLD	25,00	4,00	12,5	0,05	●			
KDMB32M0ERLD	32,00	5,00	16,0	0,05	●			

KDMB-GP • High-Precision Helical Geometry and Lower Cutting Forces

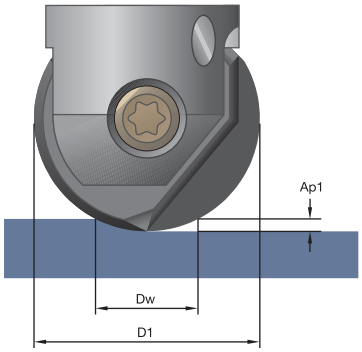
catalogue number	W	S	RC	hm	K115M	KC505M	KC515M	KC530M
KDMB06M0ERGP	6,00	1,60	3,0	0,06		●	●	
KDMB08M0ERGP	8,00	2,00	4,0	0,08		●	●	
KDMB10M0ERGP	10,00	2,50	5,0	0,08		●	●	
KDMB12M0ERGP	12,00	2,50	6,0	0,06		●	●	
KDMB16M0ERGP	16,00	3,00	8,0	0,06		●	●	
KDMB20M0ERGP	20,00	3,00	10,0	0,06		●	●	
KDMB25M0ERGP	25,00	4,00	12,5	0,08		●	●	
KDMB32M0ERGP	32,00	5,00	16,0	0,08		●	●	

KDMB-GN • High Precision • Extremely Solid Cutting Edge

catalogue number	W	S	RC	hm	K115M	KC505M	KC515M	KC530M
KDMB06M0ERGN	6,00	1,60	3,0	0,08		●		
KDMB08M0ERGN	8,00	2,00	4,0	0,08		●	●	●
KDMB10M0ERGN	10,00	2,50	5,0	0,08		●	●	●
KDMB12M0ERGN	12,00	2,50	6,0	0,08		●	●	●
KDMB16M0ERGN	16,00	3,00	8,0	0,08		●	●	●
KDMB20M0ERGN	20,00	3,00	10,0	0,08		●	●	●
KDMB25M0ERGN	25,00	4,00	12,5	0,08		●	●	●
KDMB32M0ERGN	32,00	5,00	16,0	0,08		●	●	●

KDMB-HC • PSTS Insert Developed • Roughing and Rest Material Operations

catalogue number	W	S	RC	hm	K115M	KC505M	KC515M	KC530M
KDMB12M0ERHC	12,00	2,50	6,0	0,10				●
KDMB16M0ERHC	16,00	3,00	8,0	0,10				●
KDMB20M0ERHC	20,00	3,00	10,0	0,10				●
KDMB25M0ERHC	25,00	4,00	12,5	0,10				●
KDMB32M0ERHC	32,00	5,00	16,0	0,10				●



KDMB Ball Nose • 6mm

	Working Diameter (Dw) at Axial Depth of Cut (ap)			
D1 max	**3,00**	**1,50**	**0,50**	**0,25**
6,00	6,00	5,20	3,32	2,40

KDMB Ball Nose • 8mm

	Working Diameter (Dw) at Axial Depth of Cut (ap)			
D1 max	**4,00**	**1,50**	**0,50**	**0,25**
8,00	8,00	6,24	3,87	2,78

KDMB Ball Nose • 10mm

	Working Diameter (Dw) at Axial Depth of Cut (ap)			
D1 max	**5,00**	**2,00**	**1,00**	**0,50**
10,00	10,00	8,00	6,00	4,36

KDMB Ball Nose • 12mm

	Working Diameter (Dw) at Axial Depth of Cut (ap)			
D1 max	**6,00**	**2,00**	**1,00**	**0,50**
12,00	12,00	8,94	6,63	4,80

KDMB Ball Nose • 16mm

	Working Diameter (Dw) at Axial Depth of Cut (ap)			
D1 max	**8,00**	**3,00**	**1,50**	**0,75**
16,00	16,00	12,49	9,33	6,76

KDMB Ball Nose • 20mm

	Working Diameter (Dw) at Axial Depth of Cut (ap)			
D1 max	**10,00**	**3,00**	**1,50**	**0,75**
20,00	20,00	14,28	10,54	7,60

KDMB Ball Nose • 25mm

	Working Diameter (Dw) at Axial Depth of Cut (ap)			
D1 max	**12,50**	**5,00**	**2,00**	**1,00**
25,00	25,00	20,00	13,56	9,80

KDMB Ball Nose • 32mm

	Working Diameter (Dw) at Axial Depth of Cut (ap)			
D1 max	**16,00**	**5,00**	**2,00**	**1,00**
32,00	32,00	23,24	15,49	11,14

NOTE: Working diameter (Dw) or effective diameter has to be considered when calculating appropriate RPM.

Recommended Starting Speeds [m/min]

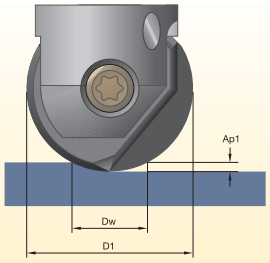
Material Group		K115M			KC505M			KC515M			KC530M		
P	1	–	–	–	–	–	–	330	**295**	255	275	**240**	200
	2	–	–	–	–	–	–	310	**275**	240	240	**200**	165
	3	–	–	–	–	–	–	275	**240**	200	200	**185**	165
	4	–	–	–	360	**260**	215	240	**200**	165	185	**165**	145
	5	–	–	–	360	**260**	215	200	**165**	130	165	**145**	130
	6	–	–	–	350	**240**	190	165	**130**	110	130	**110**	90
M	1	–	–	–	–	–	–	330	**275**	240	275	**220**	185
	2	–	–	–	–	–	–	275	**220**	165	185	**145**	130
	3	–	–	–	–	–	–	220	**185**	145	145	**130**	110
K	1	220	**185**	145	–	–	–	440	**330**	220	–	–	–
	2	185	**145**	110	–	–	–	330	**255**	185	–	–	–
	3	110	**90**	75	–	–	–	145	**110**	75	–	–	–
N	1–2	440	**330**	220	–	–	–	–	–	–	–	–	–
	3	295	**220**	185	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
	4	90	**70**	50	–	–	–	90	**70**	50	80	**60**	50
H	1	–	–	–	260	**205**	170	170	**120**	95	–	–	–

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

Calculating Working Diameter and Resulting Surface Speed

Case 1:

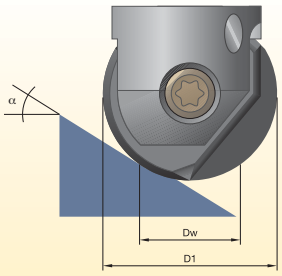
It is important to consider the effective diameter (Dw) when using light depths of cut in order to properly calculate RPM values. Use the following formula when machining flat surfaces or inclinations of 10° or less to find the Dw value. Then, use this for RPM calculations, as opposed to using the overall insert diameter (D1).



$$Dw = \sqrt{D1^2-(D1-2Ap1)^2}$$

Case 2:

When machining inclinations between 11° and 55°, further modification of vc is required. Apply factor "k" from the given formula to calculate the correct vc (vceff). This corrected value is then used to calculate the proper RPM for the tool.



$$k = \frac{1}{\sin\left[\alpha + \arccos\left(1-(2\,(Ap1/D1))\right)\right]}$$

$$vceff = vc \times k$$

Recommended Starting Feeds [mm] • Ball Nose Insert Size 6mm

Light Machining	General Purpose	Heavy Machining

At 3,00 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..LD	0,12	**0,17**	0,29	0,09	**0,13**	0,22	0,08	**0,11**	0,19	0,07	**0,10**	0,18	0,07	**0,10**	0,18	.E..LD
.E..GP	0,14	**0,20**	0,34	0,11	**0,15**	0,25	0,09	**0,13**	0,22	0,09	**0,12**	0,21	0,08	**0,12**	0,20	.E..GP
.E..GN	0,17	**0,25**	0,34	0,13	**0,19**	0,25	0,11	**0,17**	0,22	0,10	**0,16**	0,21	0,10	**0,15**	0,20	.E..GN

At 1,50 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..LD	0,14	**0,19**	0,34	0,10	**0,14**	0,25	0,09	**0,13**	0,22	0,08	**0,12**	0,21	0,08	**0,12**	0,20	.E..LD
.E..GP	0,16	**0,23**	0,39	0,12	**0,17**	0,29	0,11	**0,15**	0,26	0,10	**0,14**	0,24	0,10	**0,14**	0,23	.E..GP
.E..GN	0,20	**0,29**	0,39	0,15	**0,22**	0,29	0,13	**0,19**	0,26	0,12	**0,18**	0,24	0,12	**0,18**	0,23	.E..GN

At 0,50 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..LD	0,21	**0,30**	0,53	0,16	**0,23**	0,40	0,14	**0,20**	0,35	0,13	**0,18**	0,32	0,13	**0,18**	0,32	.E..LD
.E..GP	0,26	**0,36**	0,62	0,19	**0,27**	0,46	0,17	**0,24**	0,40	0,16	**0,22**	0,38	0,15	**0,22**	0,37	.E..GP
.E..GN	0,31	**0,46**	0,62	0,23	**0,35**	0,46	0,20	**0,30**	0,40	0,19	**0,28**	0,38	0,18	**0,28**	0,37	.E..GN

At 0,25 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..LD	0,30	**0,42**	0,74	0,22	**0,31**	0,55	0,19	**0,27**	0,48	0,18	**0,26**	0,45	0,18	**0,25**	0,44	.E..LD
.E..GP	0,36	**0,50**	0,86	0,27	**0,38**	0,64	0,23	**0,33**	0,56	0,22	**0,31**	0,52	0,21	**0,30**	0,51	.E..GP
.E..GN	0,43	**0,64**	0,86	0,32	**0,48**	0,64	0,28	**0,42**	0,56	0,26	**0,39**	0,52	0,25	**0,38**	0,51	.E..GN

NOTE: Use “Light Machining” values as starting feed rate.

Recommended Starting Feeds [mm] • Ball Nose Insert Size 8mm

Light Machining	General Purpose	Heavy Machining

At 4,00 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..LD	0,12	**0,17**	0,29	0,09	**0,13**	0,22	0,08	**0,11**	0,19	0,07	**0,10**	0,18	0,07	**0,10**	0,18	.E..LD
.E..GP	0,14	**0,20**	0,35	0,11	**0,15**	0,26	0,09	**0,13**	0,23	0,09	**0,12**	0,21	0,08	**0,12**	0,21	.E..GP
.E..GN	0,17	**0,25**	0,43	0,13	**0,19**	0,32	0,11	**0,17**	0,28	0,10	**0,16**	0,26	0,10	**0,15**	0,25	.E..GN

At 1,50 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..LD	0,15	**0,21**	0,38	0,11	**0,16**	0,28	0,10	**0,14**	0,24	0,09	**0,13**	0,23	0,09	**0,13**	0,22	.E..LD
.E..GP	0,18	**0,26**	0,45	0,14	**0,19**	0,34	0,12	**0,17**	0,29	0,11	**0,16**	0,27	0,11	**0,15**	0,27	.E..GP
.E..GN	0,22	**0,33**	0,55	0,16	**0,24**	0,41	0,14	**0,21**	0,36	0,13	**0,20**	0,33	0,13	**0,20**	0,33	.E..GN

At 0,50 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..LD	0,24	**0,35**	0,61	0,18	**0,26**	0,45	0,16	**0,23**	0,39	0,15	**0,21**	0,37	0,15	**0,21**	0,36	.E..LD
.E..GP	0,29	**0,41**	0,73	0,22	**0,31**	0,54	0,19	**0,27**	0,47	0,18	**0,25**	0,44	0,18	**0,25**	0,43	.E..GP
.E..GN	0,35	**0,53**	0,88	0,26	**0,39**	0,66	0,23	**0,34**	0,57	0,21	**0,32**	0,54	0,21	**0,31**	0,52	.E..GN

At 0,25 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..LD	0,34	**0,48**	0,85	0,25	**0,36**	0,63	0,22	**0,31**	0,55	0,21	**0,29**	0,51	0,20	**0,29**	0,50	.E..LD
.E..GP	0,41	**0,58**	1,02	0,31	**0,43**	0,76	0,27	**0,38**	0,66	0,25	**0,35**	0,62	0,24	**0,34**	0,60	.E..GP
.E..GN	0,49	**0,74**	1,23	0,37	**0,55**	0,92	0,32	**0,48**	0,80	0,30	**0,45**	0,75	0,29	**0,44**	0,73	.E..GN

NOTE: Use “Light Machining” values as starting feed rate.

Recommended Starting Feeds [mm] • Ball Nose Insert Size 10mm

Light Machining	General Purpose	Heavy Machining

At 5,00 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..LD	0,12	**0,17**	0,29	0,09	**0,13**	0,22	0,08	**0,11**	0,19	0,07	**0,10**	0,18	0,07	**0,10**	0,18	.E..LD
.E..GP	0,14	**0,20**	0,35	0,11	**0,15**	0,26	0,09	**0,13**	0,23	0,09	**0,12**	0,21	0,08	**0,12**	0,21	.E..GP
.E..GN	0,17	**0,27**	0,47	0,13	**0,20**	0,35	0,11	**0,17**	0,31	0,10	**0,16**	0,29	0,10	**0,16**	0,28	.E..GN

At 2,00 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..LD	0,15	**0,21**	0,37	0,11	**0,16**	0,27	0,10	**0,14**	0,24	0,09	**0,13**	0,22	0,09	**0,13**	0,22	.E..LD
.E..GP	0,18	**0,25**	0,44	0,13	**0,19**	0,33	0,12	**0,16**	0,29	0,11	**0,15**	0,27	0,11	**0,15**	0,26	.E..GP
.E..GN	0,21	**0,33**	0,59	0,16	**0,25**	0,44	0,14	**0,22**	0,38	0,13	**0,20**	0,36	0,13	**0,20**	0,35	.E..GN

At 1,00 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..LD	0,20	**0,28**	0,49	0,15	**0,21**	0,37	0,13	**0,18**	0,32	0,12	**0,17**	0,30	0,12	**0,17**	0,29	.E..LD
.E..GP	0,24	**0,33**	0,59	0,18	**0,25**	0,44	0,15	**0,22**	0,38	0,14	**0,20**	0,36	0,14	**0,20**	0,35	.E..GP
.E..GN	0,28	**0,45**	0,78	0,21	**0,33**	0,58	0,18	**0,29**	0,51	0,17	**0,27**	0,48	0,17	**0,27**	0,47	.E..GN

At 0,50 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..LD	0,27	**0,38**	0,67	0,20	**0,29**	0,50	0,18	**0,25**	0,44	0,17	**0,23**	0,41	0,16	**0,23**	0,40	.E..LD
.E..GP	0,33	**0,46**	0,81	0,24	**0,34**	0,60	0,21	**0,30**	0,53	0,20	**0,28**	0,49	0,19	**0,28**	0,48	.E..GP
.E..GN	0,39	**0,62**	1,08	0,29	**0,46**	0,81	0,25	**0,40**	0,70	0,24	**0,37**	0,66	0,23	**0,37**	0,64	.E..GN

NOTE: Use "Light Machining" values as starting feed rate.

Recommended Starting Feeds [mm] • Ball Nose Insert Size 12mm

Light Machining	General Purpose	Heavy Machining

At 6,00 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..LD	0,12	**0,17**	0,29	0,09	**0,13**	0,22	0,08	**0,11**	0,19	0,07	**0,10**	0,18	0,07	**0,10**	0,18	.E..LD
.E..GP	0,14	**0,20**	0,35	0,11	**0,15**	0,26	0,09	**0,13**	0,23	0,09	**0,12**	0,21	0,08	**0,12**	0,21	.E..GP
.E..GN	0,17	**0,27**	0,47	0,13	**0,20**	0,35	0,11	**0,17**	0,31	0,10	**0,16**	0,29	0,10	**0,16**	0,28	.E..GN
.E..HC	0,17	**0,33**	0,59	0,13	**0,25**	0,44	0,11	**0,22**	0,38	0,10	**0,20**	0,36	0,10	**0,20**	0,35	.E..HC

At 2,00 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..LD	0,16	**0,22**	0,39	0,12	**0,17**	0,29	0,10	**0,15**	0,26	0,10	**0,14**	0,24	0,09	**0,13**	0,23	.E..LD
.E..GP	0,19	**0,27**	0,47	0,14	**0,20**	0,35	0,12	**0,18**	0,31	0,12	**0,16**	0,29	0,11	**0,16**	0,28	.E..GP
.E..GN	0,23	**0,36**	0,63	0,17	**0,27**	0,47	0,15	**0,23**	0,41	0,14	**0,22**	0,38	0,14	**0,21**	0,38	.E..GN
.E..HC	0,23	**0,45**	0,79	0,17	**0,34**	0,59	0,15	**0,29**	0,51	0,14	**0,27**	0,48	0,14	**0,27**	0,47	.E..HC

At 1,00 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..LD	0,21	**0,30**	0,53	0,16	**0,23**	0,40	0,14	**0,20**	0,35	0,13	**0,18**	0,32	0,13	**0,18**	0,32	.E..LD
.E..GP	0,26	**0,36**	0,64	0,19	**0,27**	0,48	0,17	**0,24**	0,41	0,16	**0,22**	0,39	0,15	**0,22**	0,38	.E..GP
.E..GN	0,31	**0,48**	0,85	0,23	**0,36**	0,64	0,20	**0,32**	0,55	0,19	**0,30**	0,52	0,18	**0,29**	0,51	.E..GN
.E..HC	0,31	**0,61**	1,07	0,23	**0,45**	0,79	0,20	**0,40**	0,69	0,19	**0,37**	0,65	0,18	**0,36**	0,63	.E..HC

At 0,50 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..LD	0,30	**0,42**	0,74	0,22	**0,31**	0,55	0,19	**0,27**	0,48	0,18	**0,26**	0,45	0,18	**0,25**	0,44	.E..LD
.E..GP	0,36	**0,50**	0,88	0,27	**0,38**	0,66	0,23	**0,33**	0,57	0,22	**0,31**	0,54	0,21	**0,30**	0,53	.E..GP
.E..GN	0,43	**0,67**	1,18	0,32	**0,50**	0,88	0,28	**0,44**	0,77	0,26	**0,41**	0,72	0,25	**0,40**	0,70	.E..GN
.E..HC	0,43	**0,84**	1,48	0,32	**0,63**	1,10	0,28	**0,55**	0,96	0,26	**0,51**	0,89	0,25	**0,50**	0,88	.E..HC

NOTES: Use "Light Machining" values as starting feed rate.

Recommended Starting Feeds [mm] • Ball Nose Insert Size 16mm

Light Machining	General Purpose	Heavy Machining

At 8,00 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..LD	0,12	**0,17**	0,29	0,09	**0,13**	0,22	0,08	**0,11**	0,19	0,07	**0,10**	0,18	0,07	**0,10**	0,18	.E..LD
.E..GP	0,14	**0,20**	0,35	0,11	**0,15**	0,26	0,09	**0,13**	0,23	0,09	**0,12**	0,21	0,08	**0,12**	0,21	.E..GP
.E..GN	0,17	**0,27**	0,47	0,13	**0,20**	0,35	0,11	**0,17**	0,31	0,10	**0,16**	0,29	0,10	**0,16**	0,28	.E..GN
.E..HC	0,17	**0,33**	0,59	0,13	**0,25**	0,44	0,11	**0,22**	0,38	0,10	**0,20**	0,36	0,10	**0,20**	0,35	.E..HC

At 3,00 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..LD	0,15	**0,21**	0,38	0,11	**0,16**	0,28	0,10	**0,14**	0,24	0,09	**0,13**	0,23	0,09	**0,13**	0,22	.E..LD
.E..GP	0,18	**0,26**	0,45	0,14	**0,19**	0,34	0,12	**0,17**	0,29	0,11	**0,16**	0,27	0,11	**0,15**	0,27	.E..GP
.E..GN	0,22	**0,34**	0,60	0,16	**0,26**	0,45	0,14	**0,22**	0,39	0,13	**0,21**	0,37	0,13	**0,2**	0,36	.E..GN
.E..HC	0,22	**0,43**	0,75	0,16	**0,32**	0,56	0,14	**0,28**	0,49	0,13	**0,26**	0,46	0,13	**0,26**	0,45	.E..HC

At 1,50 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..LD	0,20	**0,29**	0,50	0,15	**0,21**	0,38	0,13	**0,19**	0,33	0,12	**0,18**	0,31	0,12	**0,17**	0,30	.E..LD
.E..GP	0,24	**0,34**	0,60	0,18	**0,26**	0,45	0,16	**0,22**	0,39	0,15	**0,21**	0,37	0,15	**0,21**	0,36	.E..GP
.E..GN	0,29	**0,46**	0,81	0,22	**0,34**	0,60	0,19	**0,30**	0,52	0,18	**0,28**	0,49	0,17	**0,27**	0,48	.E..GN
.E..HC	0,29	**0,58**	1,01	0,22	**0,43**	0,75	0,19	**0,37**	0,66	0,18	**0,35**	0,61	0,17	**0,34**	0,60	.E..HC

At 0,75 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..LD	0,28	**0,40**	0,7	0,21	**0,30**	0,52	0,18	**0,26**	0,45	0,17	**0,24**	0,42	0,17	**0,24**	0,41	.E..LD
.E..GP	0,34	**0,48**	0,84	0,25	**0,36**	0,62	0,22	**0,31**	0,54	0,20	**0,29**	0,51	0,20	**0,28**	0,50	.E..GP
.E..GN	0,40	**0,64**	1,12	0,30	**0,47**	0,83	0,26	**0,41**	0,72	0,25	**0,39**	0,68	0,24	**0,38**	0,66	.E..GN
.E..HC	0,40	**0,80**	1,40	0,30	**0,59**	1,04	0,26	**0,52**	0,90	0,25	**0,48**	0,85	0,24	**0,47**	0,83	.E..HC

NOTE: Use "Light Machining" values as starting feed rate.

Recommended Starting Feeds [mm] • Ball Nose Insert Size 20mm

Light Machining	General Purpose	Heavy Machining

At 10,00 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..LD	0,12	**0,17**	0,33	0,09	**0,13**	0,25	0,08	**0,11**	0,22	0,07	**0,10**	0,20	0,07	**0,10**	0,20	.E..LD
.E..GP	0,14	**0,20**	0,40	0,11	**0,15**	0,30	0,09	**0,13**	0,26	0,09	**0,12**	0,24	0,08	**0,12**	0,24	.E..GP
.E..GN	0,17	**0,27**	0,54	0,13	**0,20**	0,40	0,11	**0,17**	0,35	0,10	**0,16**	0,33	0,10	**0,16**	0,32	.E..GN
.E..HC	0,17	**0,33**	0,67	0,13	**0,25**	0,50	0,11	**0,22**	0,44	0,10	**0,20**	0,41	0,10	**0,20**	0,40	.E..HC

At 3,00 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..LD	0,17	**0,23**	0,47	0,12	**0,18**	0,35	0,11	**0,15**	0,31	0,10	**0,14**	0,29	0,10	**0,14**	0,28	.E..LD
.E..GP	0,20	**0,28**	0,56	0,15	**0,21**	0,42	0,13	**0,18**	0,37	0,12	**0,17**	0,34	0,12	**0,17**	0,34	.E..GP
.E..GN	0,24	**0,37**	0,75	0,18	**0,28**	0,56	0,16	**0,24**	0,49	0,15	**0,23**	0,46	0,14	**0,22**	0,45	.E..GN
.E..HC	0,24	**0,47**	0,94	0,18	**0,35**	0,70	0,16	**0,31**	0,61	0,15	**0,29**	0,57	0,14	**0,28**	0,56	.E..HC

At 1,50 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..LD	0,22	**0,32**	0,64	0,17	**0,24**	0,48	0,15	**0,21**	0,41	0,14	**0,19**	0,39	0,13	**0,19**	0,38	.E..LD
.E..GP	0,27	**0,38**	0,77	0,20	**0,29**	0,57	0,18	**0,25**	0,50	0,16	**0,23**	0,47	0,16	**0,23**	0,46	.E..GP
.E..GN	0,32	**0,51**	1,02	0,24	**0,38**	0,76	0,21	**0,33**	0,66	0,20	**0,31**	0,62	0,19	**0,30**	0,61	.E..GN
.E..HC	0,32	**0,64**	1,28	0,24	**0,48**	0,95	0,21	**0,41**	0,83	0,20	**0,39**	0,78	0,19	**0,38**	0,76	.E..HC

At 0,75 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..LD	0,31	**0,44**	0,89	0,23	**0,33**	0,66	0,20	**0,29**	0,57	0,19	**0,27**	0,54	0,19	**0,26**	0,53	.E..LD
.E..GP	0,37	**0,53**	1,06	0,28	**0,40**	0,79	0,24	**0,34**	0,69	0,23	**0,32**	0,64	0,22	**0,32**	0,63	.E..GP
.E..GN	0,45	**0,71**	1,43	0,33	**0,53**	1,06	0,29	**0,46**	0,92	0,27	**0,43**	0,86	0,27	**0,42**	0,84	.E..GN
.E..HC	0,45	**0,89**	1,79	0,33	**0,66**	1,32	0,29	**0,57**	1,15	0,27	**0,54**	1,07	0,27	**0,53**	1,05	.E..HC

NOTE: Use “Light Machining” values as starting feed rate.

Recommended Starting Feeds [mm] • Ball Nose Insert Size 25mm

Light Machining	General Purpose	Heavy Machining

At 12,50 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..LD	0,12	**0,17**	0,29	0,09	**0,13**	0,22	0,08	**0,11**	0,19	0,07	**0,10**	0,18	0,07	**0,10**	0,18	.E..LD
.E..GP	0,14	**0,20**	0,35	0,11	**0,15**	0,26	0,09	**0,13**	0,23	0,09	**0,12**	0,21	0,08	**0,12**	0,21	.E..GP
.E..GN	0,17	**0,27**	0,47	0,13	**0,20**	0,35	0,11	**0,17**	0,31	0,10	**0,16**	0,29	0,10	**0,16**	0,28	.E..GN
.E..HC	0,17	**0,33**	0,59	0,13	**0,25**	0,44	0,11	**0,22**	0,38	0,10	**0,20**	0,36	0,10	**0,20**	0,35	.E..HC

At 5,00 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..LD	0,15	**0,21**	0,37	0,11	**0,16**	0,27	0,10	**0,14**	0,24	0,09	**0,13**	0,22	0,09	**0,13**	0,22	.E..LD
.E..GP	0,18	**0,25**	0,44	0,13	**0,19**	0,33	0,12	**0,16**	0,29	0,11	**0,15**	0,27	0,11	**0,15**	0,26	.E..GP
.E..GN	0,21	**0,33**	0,59	0,16	**0,25**	0,44	0,14	**0,22**	0,38	0,13	**0,20**	0,36	0,13	**0,20**	0,35	.E..GN
.E..HC	0,21	**0,42**	0,73	0,16	**0,31**	0,55	0,14	**0,27**	0,48	0,13	**0,26**	0,45	0,13	**0,25**	0,44	.E..HC

At 2,00 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..LD	0,22	**0,31**	0,54	0,16	**0,23**	0,40	0,14	**0,20**	0,35	0,13	**0,19**	0,33	0,13	**0,18**	0,32	.E..LD
.E..GP	0,26	**0,37**	0,65	0,20	**0,28**	0,48	0,17	**0,24**	0,42	0,16	**0,23**	0,40	0,16	**0,22**	0,39	.E..GP
.E..GN	0,31	**0,49**	0,87	0,23	**0,37**	0,65	0,20	**0,32**	0,56	0,19	**0,30**	0,53	0,19	**0,29**	0,52	.E..GN
.E..HC	0,31	**0,62**	1,09	0,23	**0,46**	0,81	0,20	**0,40**	0,70	0,19	**0,38**	0,66	0,19	**0,37**	0,65	.E..HC

At 1,00 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..LD	0,30	**0,43**	0,75	0,23	**0,32**	0,56	0,20	**0,28**	0,49	0,18	**0,26**	0,46	0,18	**0,26**	0,45	.E..LD
.E..GP	0,36	**0,51**	0,90	0,27	**0,38**	0,67	0,24	**0,33**	0,59	0,22	**0,31**	0,55	0,22	**0,31**	0,54	.E..GP
.E..GN	0,43	**0,69**	1,21	0,32	**0,51**	0,90	0,28	**0,45**	0,78	0,26	**0,42**	0,73	0,26	**0,41**	0,71	.E..GN
.E..HC	0,43	**0,86**	1,51	0,32	**0,64**	1,12	0,28	**0,56**	0,98	0,26	**0,52**	0,91	0,26	**0,51**	0,89	.E..HC

NOTE: Use “Light Machining” values as starting feed rate.

Recommended Starting Feeds [mm] • Ball Nose Insert Size 32mm

Light Machining	General Purpose	Heavy Machining

At 16,00 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..LD	0,12	**0,17**	0,29	0,09	**0,13**	0,22	0,08	**0,11**	0,19	0,07	**0,10**	0,18	0,07	**0,10**	0,18	.E..LD
.E..GP	0,14	**0,20**	0,35	0,11	**0,15**	0,26	0,09	**0,13**	0,23	0,09	**0,12**	0,21	0,08	**0,12**	0,21	.E..GP
.E..GN	0,17	**0,27**	0,47	0,13	**0,20**	0,35	0,11	**0,17**	0,31	0,10	**0,16**	0,29	0,10	**0,16**	0,28	.E..GN
.E..HC	0,17	**0,33**	0,59	0,13	**0,25**	0,44	0,11	**0,22**	0,38	0,10	**0,20**	0,36	0,10	**0,20**	0,35	.E..HC

At 5,00 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..LD	0,16	**0,23**	0,40	0,12	**0,17**	0,30	0,11	**0,15**	0,26	0,10	**0,14**	0,25	0,10	**0,14**	0,24	.E..LD
.E..GP	0,20	**0,28**	0,48	0,15	**0,21**	0,36	0,13	**0,18**	0,32	0,12	**0,17**	0,30	0,12	**0,17**	0,29	.E..GP
.E..GN	0,23	**0,37**	0,65	0,18	**0,28**	0,48	0,15	**0,24**	0,42	0,14	**0,22**	0,39	0,14	**0,22**	0,39	.E..GN
.E..HC	0,23	**0,46**	0,81	0,18	**0,34**	0,60	0,15	**0,30**	0,53	0,14	**0,28**	0,49	0,14	**0,28**	0,48	.E..HC

At 2,00 Axial Depth of Cut (ap)

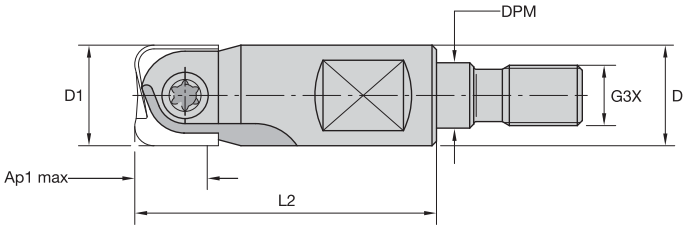
Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..LD	0,24	**0,35**	0,61	0,18	**0,26**	0,45	0,16	**0,23**	0,39	0,15	**0,21**	0,37	0,15	**0,21**	0,36	.E..LD
.E..GP	0,29	**0,41**	0,73	0,22	**0,31**	0,54	0,19	**0,27**	0,47	0,18	**0,25**	0,44	0,18	**0,25**	0,43	.E..GP
.E..GN	0,35	**0,55**	0,97	0,26	**0,41**	0,73	0,23	**0,36**	0,63	0,21	**0,34**	0,59	0,21	**0,33**	0,58	.E..GN
.E..HC	0,35	**0,69**	1,22	0,26	**0,52**	0,91	0,23	**0,45**	0,79	0,21	**0,42**	0,74	0,21	**0,41**	0,72	.E..HC

At 1,00 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..LD	0,34	**0,48**	0,85	0,25	**0,36**	0,63	0,22	**0,31**	0,55	0,21	**0,29**	0,51	0,20	**0,29**	0,50	.E..LD
.E..GP	0,41	**0,58**	1,02	0,31	**0,43**	0,76	0,27	**0,38**	0,66	0,25	**0,35**	0,62	0,24	**0,34**	0,60	.E..GP
.E..GN	0,49	**0,77**	1,36	0,37	**0,58**	1,01	0,32	**0,50**	0,88	0,30	**0,47**	0,82	0,29	**0,46**	0,80	.E..GN
.E..HC	0,49	**0,97**	1,71	0,37	**0,72**	1,26	0,32	**0,63**	1,10	0,30	**0,59**	1,03	0,29	**0,57**	1,01	.E..HC

NOTE: Use “Light Machining” values as starting feed rate.

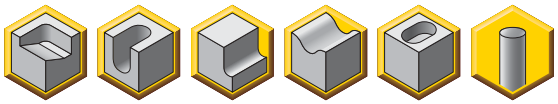
- Available diameters: 12–25mm.
- High precision and runout accuracy.
- Suitable for roughing and finishing operations.
- Works with toroidal and High-Feed inserts.

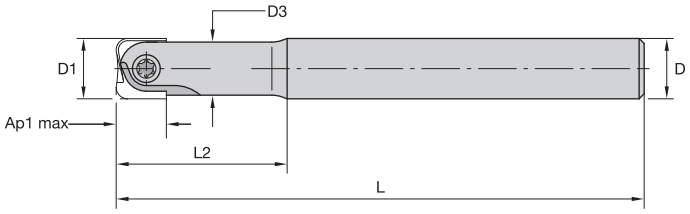


Screw-On End Mills

order number	catalogue number	D1	D	DPM	G3X	L2	Ap1 max	Z	Z U	max ramp angle	max RPM	insert 1
1918665	**KDMT12R028M08SN**	12	13	8,5	M8	28	3,0	1	2	3.0°	40000	KDM.12..
1918666	**KDMT16R028M08SN**	16	13	8,5	M8	28	4,0	1	2	3.0°	40000	KDM.16..
1918667	**KDMT20R032M10SN**	20	18	10,5	M10	32	5,0	1	2	3.0°	40000	KDM.20..
1918668	**KDMT25R042M12SN**	25	21	12,5	M12	42	6,0	1	2	3.0°	30000	KDM.25..

- Available diameters: 12–32mm.
- High precision and runout accuracy.
- Can be used with the heat shrink technology, h6 shank tolerance.
- Suitable for roughing and finishing operations.
- Works with toroidal and High-Feed inserts.

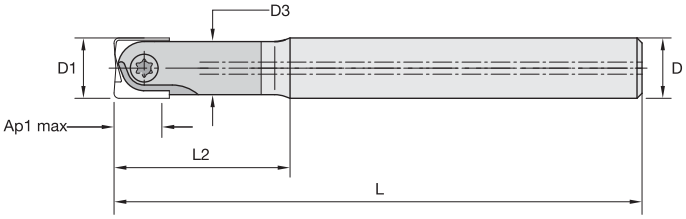




Necked End Mills • Cylindrical Shank • Steel

order number	catalogue number	D1	D	D3	L	L2	Ap1 max	Z	Z U	max ramp angle	max RPM	insert 1
1918690	**KDMT12R130A12SN**	12	12	10,5	132	34	3,0	1	2	3.0°	40000	KDM.12..
1918691	**KDMT12R150A12SN**	12	12	10,5	152	48	3,0	1	2	3.0°	40000	KDM.12..
1918692	**KDMT16R140A16SN**	16	16	14,0	142	40	4,0	1	2	3.0°	40000	KDM.16..
1918693	**KDMT16R160A16SN**	16	16	14,0	162	57	4,0	1	2	3.0°	40000	KDM.16..
1918694	**KDMT20R160A20SN**	20	20	18,0	162	47	5,0	1	2	3.0°	40000	KDM.20..
1918695	**KDMT20R175A20SN**	20	20	18,0	177	63	5,0	1	2	3.0°	40000	KDM.20..
1918696	**KDMT25R160A25SN**	25	25	22,4	162	47	6,0	1	2	3.0°	40000	KDM.25..
1918697	**KDMT25R190A25SN**	25	25	22,4	192	72	6,0	1	2	3.0°	40000	KDM.25..
1918698	**KDMT32R175A32SN**	32	32	28,6	177	58	8,0	1	2	3.0°	40000	KDM.32..
1918699	**KDMT32R210A32SN**	32	32	28,6	212	82	8,0	1	2	3.0°	40000	KDM.32..

- Available diameters: 10–32mm.
- High precision and runout accuracy.
- Can be used with the heat shrink technology, h6 shank tolerance.
- Suitable for roughing and finishing operations.
- Works with toroidal and High-Feed inserts.



Necked End Mills • Carbide Shank with Through Coolant

order number	catalogue number	D1	D	D3	L	L2	Ap1 max	Z	Z U	max ramp angle	max RPM	insert 1
3964255	**KDMT10R120A10HNC**	10	10	9	122	37	2,5	1	2	3.0°	40000	KDM.10..
3964256	**KDMT10R150A10HNC**	10	10	9	152	52	2,5	1	2	3.0°	40000	KDM.10..
2877384	**KDMT12R120A12HNC**	12	12	11	122	37	3,0	1	2	3.0°	40000	KDM.12..
2877385	**KDMT12R160A12HNC**	12	12	11	162	52	3,0	1	2	3.0°	40000	KDM.12..
2877386	**KDMT16R140A16HNC**	16	16	14	142	42	4,0	1	2	3.0°	40000	KDM.16..
2877387	**KDMT16R175A16HNC**	16	16	14	177	57	4,0	1	2	3.0°	40000	KDM.16..
2877388	**KDMT20R140A20HNC**	20	20	18	142	52	5,0	1	2	3.0°	40000	KDM.20..
2877389	**KDMT20R190A20HNC**	20	20	18	192	77	5,0	1	2	3.0°	40000	KDM.20..
2877390	**KDMT25R160A25HNC**	25	25	22	162	62	6,0	1	2	3.0°	30000	KDM.25..
2877391	**KDMT25R210A25HNC**	25	25	22	212	92	6,0	1	2	3.0°	30000	KDM.25..
2877392	**KDMT32R190A32HNC**	32	32	29	192	67	8,0	1	2	3.0°	30000	KDM.32..
2877453	**KDMT32R240A32HNC**	32	32	29	242	107	8,0	1	2	3.0°	30000	KDM.32..

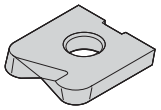
Spare Parts

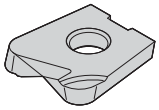
D1	insert screw	Nm	Torx wrench
10	**193.394**	3,0	**KT15**
12	**193.393**	4,0	**KT20**
16	**193.392**	5,0	**KT20**
20	**193.391**	6,0	**KT20**
25	**193.390**	6,5	**KT30**
32	**193.389**	6,5	**KT30**

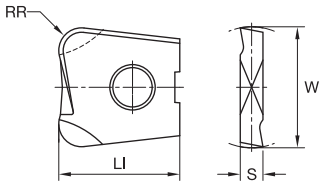
Insert Selection Guide

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.E..GC	KC515M	**.E..GC**	**KC515M**	.E..GN	KC515M
P3–P4	.E..HC	KC505M	**.E..GN**	**KC515M**	.E..GN	KC515M
P5–P6	.E..HC	KC505M	**.E..GN**	**KC515M**	.E..GN	KC515M
M1–M2	–	–	**.E..GC**	**KC515M**	–	–
M3	–	–	**.E..GC**	**KC515M**	–	–
K1–K2	.E..GN	KC515M	**.E..GN**	**KC515M**	.E..GN	KC515M
K3	.E..GN	KC515M	**.E..GN**	**KC515M**	.E..GN	KC515M
N1–N2	–	–	–	–	–	–
N3	–	–	–	–	–	–
S1–S2	–	–	–	–	–	–
S3	–	–	–	–	–	–
S4	–	–	**.E..GC**	**KC515M**	–	–
H1	.E..HC	KC505M	**.E..HC**	**KC505M**	.E..GN	KC515M

Indexable Inserts • KDMS... • KDMT...


KDMS-GN


KDMT-GC



● first choice
○ alternate choice

P	●
M	○
K	○
N	
S	
H	●

KDMS-GN • Precision Insert • 90° Capabilities

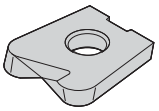
catalogue number	LI	W	S	RR	hm	KC515M
KDMS0806ERGN	9,50	8,00	2,00	0,6	0,08	●
KDMS1008ERGN	11,50	10,00	2,50	0,8	0,08	●
KDMS1210ERGN	14,00	12,00	2,50	1,0	0,08	●
KDMS1613ERGN	16,00	16,00	3,00	1,3	0,08	●
KDMS2016ERGN	18,00	20,00	3,00	1,6	0,08	●
KDMS2520ERGN	23,50	25,00	4,00	2,0	0,08	●
KDMS3220ERGN	28,00	32,00	5,00	2,0	0,08	●

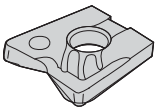
NOTE: Ap1 max is equal to LI.
Insert diameter 6mm and 8mm use KDMB holder type. See pages R65–R68.

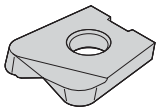
KDMT-GC • High-Tolerance Helical Geometry • Finishing Lower Cutting Forces

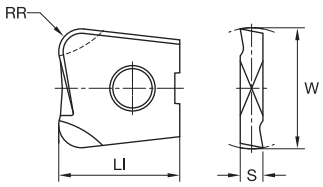
catalogue number	LI	W	S	RR	hm	KC515M
KDMT0605ERGC	8,00	6,00	1,60	0,5	0,05	●
KDMT0810ERGC	9,50	8,00	2,00	1,0	0,05	●
KDMT1010ERGC	11,50	10,00	2,50	1,0	0,05	●
KDMT1210ERGC	14,00	12,00	2,50	1,0	0,08	●
KDMT1610ERGC	16,00	16,00	3,00	1,0	0,08	●
KDMT2010ERGC	18,00	20,00	3,00	1,0	0,08	●
KDMT2510ERGC	23,50	25,00	4,00	1,0	0,08	●

NOTE: Ap1 max is equal to RR.
Insert diameter 6mm and 8mm use KDMB holder type. See pages R65–R68.


KDMT-GN


KDMT-HC


KDMT-HF



● first choice
○ alternate choice

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

KDMT-GN • High-Precision Insert • Semi-Finishing and Finishing

catalogue number	LI	W	S	RR	hm	K115M	KC505M	KC515M
KDMT0806ERGN	9,50	8,00	2,00	0,6	0,07			●
KDMT1008ERGN	11,50	10,00	2,50	0,8	0,07			●
KDMT1210ERGN	14,00	12,00	2,50	1,0	0,08			●
KDMT1220ERGN	14,00	12,00	2,50	2,0	0,08			●
KDMT1610ERGN	16,00	16,00	3,00	1,0	0,08			●
KDMT1630ERGN	16,00	16,00	3,00	3,0	0,08			●
KDMT2010ERGN	18,00	20,00	3,00	1,0	0,08			●
KDMT2040ERGN	18,00	20,00	3,00	4,0	0,08			●
KDMT2510ERGN	23,50	25,00	4,00	1,0	0,08			●

NOTE: Ap1 max is equal to RR.
Insert diameter 6mm and 8mm use KDMB holder type. See pages R65–R68.

KDMT-HC • New Geometry for Semi-Finishing and Finishing with Coolant and Air Flow Grooves

catalogue number	LI	W	S	RR	hm	K115M	KC505M	KC515M
KDMT1010ERHC	11,50	10,00	2,50	1,0	0,10		●	
KDMT1210ERHC	14,00	12,00	2,50	1,0	0,10		●	
KDMT1610ERHC	16,00	16,00	3,00	1,0	0,10		●	
KDMT2010ERHC	18,00	20,00	3,00	1,0	0,10		●	

NOTE: Ap1 max is equal to RR.
Insert diameter 6mm and 8mm use KDMB holder type. See pages R65–R68.

KDMT-HF • Geometry Developed • High-Feed Machining up to 55 HRC

catalogue number	LI	W	S	RT	hm	K115M	KC505M	KC515M
KDMT0604SRHF	8,00	6,00	1,60	0,8	0,08			●
KDMT0806SRHF	9,50	8,00	2,00	1,0	0,08			●
KDMT1008SRHF	11,50	10,00	2,50	1,0	0,08	●		●
KDMT1210SRHF	14,00	12,00	2,50	1,0	0,08	●		●
KDMT1615SRHF	16,00	16,00	3,00	1,5	0,08	●		●
KDMT2020SRHF	18,00	20,00	3,00	2,0	0,08	●		●

NOTE: RT= Programming Radius
Insert diameter 6mm and 8mm use KDMB holder type. See pages R65–R68.

Recommended Starting Speeds [m/min]

Material Group		K115M			KC505M			KC515M		
P	1	–	–	–	–	–	–	330	**295**	255
	2	–	–	–	–	–	–	310	**275**	240
	3	–	–	–	–	–	–	275	**240**	200
	4	–	–	–	360	**260**	215	240	**200**	165
	5	–	–	–	360	**260**	215	200	**165**	130
	6	–	–	–	350	**240**	190	165	**130**	110
M	1	–	–	–	–	–	–	330	**275**	240
	2	–	–	–	–	–	–	275	**220**	165
	3	–	–	–	–	–	–	220	**185**	145
K	1	220	**185**	145	–	–	–	440	**330**	220
	2	185	**145**	110	–	–	–	330	**255**	185
	3	110	**90**	75	–	–	–	145	**110**	75
N	1–2	440	**330**	220	–	–	–	–	–	–
	3	295	**220**	185	–	–	–	–	–	–
S	1	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–
	4	90	**70**	50	–	–	–	–	–	–
H	1	–	–	–	260	**205**	170	170	**120**	95

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

Recommended Starting Feeds [mm]

Light Machining	General Purpose	Heavy Machining

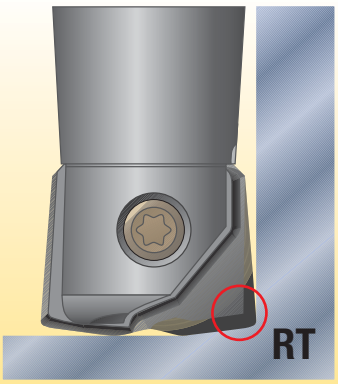
Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..GC	0,12	**0,25**	0,34	0,09	**0,19**	0,25	0,08	**0,17**	0,22	0,07	**0,16**	0,21	0,07	**0,15**	0,20	.E..GC
.E..GN	0,17	**0,25**	0,34	0,12	**0,19**	0,25	0,11	**0,17**	0,22	0,10	**0,16**	0,21	0,10	**0,15**	0,20	.E..GN
.E..HC	0,17	**0,25**	0,34	0,13	**0,19**	0,25	0,11	**0,17**	0,22	0,10	**0,16**	0,21	0,10	**0,15**	0,20	.E..HC

NOTE: Use “Light Machining” values as starting feed rate.

Application Advice for KDMT-HF Insert Style

For CAM programming, the tools can be programmed as a toroidal tool type requiring the diameter and the RT values only.

insert type	metric			
	Ap max	diameter	RT	max fz
KDMT0604SRHF	0,4	6	0,8	1
KDMT0806SRHF	0,5	8	1	1,3
KDMT1008SRHF	0,5	10	1	1,3
KDMT1210SRHF	0,6	12	1	1,3
KDMT1615SRHF	0,8	16	1,5	1,5
KDMT2020SRHF	1	20	2	1,5



Data for Face Milling, Pocketing, and Profiling Operations

Starting Values

tool diameter	Ø6	Ø8	Ø10	Ø12	Ø16	Ø20
Ap max (mm)	0,4	0,5	0,5	0,6	0,8	1
fz recommended for 45 HRC (approximately)	0,4	0,45	0,45	0,5	0,55	0,65
fz recommended for 55 HRC (approximately)	0,3	0,35	0,35	0,4	0,5	0,55
fz recommended for general purpose	0,5	0,55	0,55	0,65	0,7	0,8

NOTE: Use two effective teeth for feed calculations.
For materials above 45 HRC, we recommend to adjust the Ae max to 55% of cutting diameter.
Steel shanks for roughing operations are recommended.

Proven Solutions:

KDMB™ Indexable Milling Cutter vs. Solid Carbide End Mills

1.

Workpiece:
Forging die

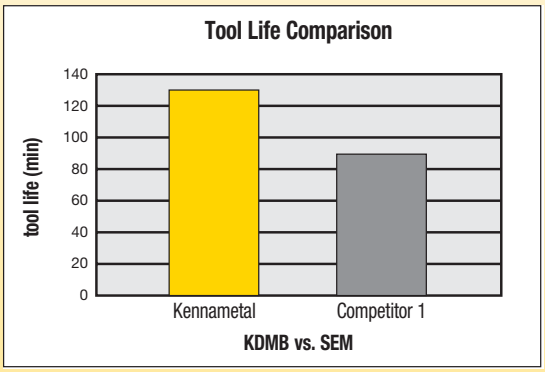
Material:
X38 CrMoV 5 3 (1.2367)

Size:
154mm x 115mm x 80mm

Machine:
Vertical milling machine center

Kennametal
Tool: KDMB06R100A06HN
Insert: KDMB06M0ERGN KC505M

Competitor 1
Solid Carbide End Mill
Ø 6 R3



Cutting data:
vc = 250 m/min (825 SFM)
Ap = 0,28mm (.099")
ae = 1,32mm (.052")
fz = 0,131mm (.0052")

Superior Productivity:
Higher tool life and cost per piece

2.

Workpiece:
Pressing die component

Material:
1.2479 (D2)

Size:
410mm x 320mm x 210mm

Machine:
Vertical milling machine

Kennametal
Tool: KDMB06R100A06HN
Insert: KDMB06M0ERGP KC515M

Competitor 1
Solid Carbide End Mill
Ø 6 R3

Cost Performance Ratio:
Costs for diameter 6mm

MMC:
solid carbide end mill +
2 x regrinding

Reference: 100%

KMT:
3 x inserts +
3 x toolholder share:

Cost savings: 31.15%

KMM™ Rhombic Platform

Primary Application

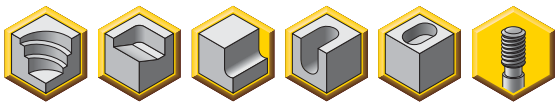
First choice for finishing operations in deep applications for complex parts. Specially suitable for the die and mould market.

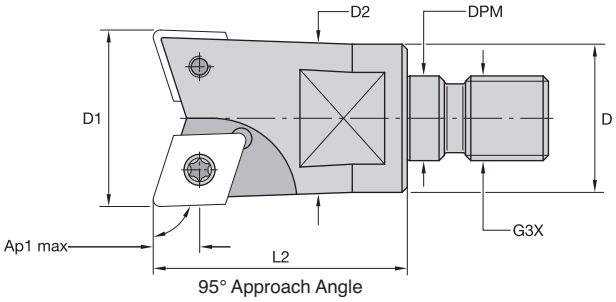
Features and Benefits

Platform Features

- Better surface finish and accuracy.
- Ideal for semi-finishing and finishing operations with small diameters.
- Capable of machining up to 55 HRC.
- PSTS and ground inserts are offered through different insert sizes.
- For small part machining with long overhangs.
- Big draft clearance angle, to improve the pocketing operations performance.
- High accuracy and tight runout.
- Ideal for HSM speed machine.

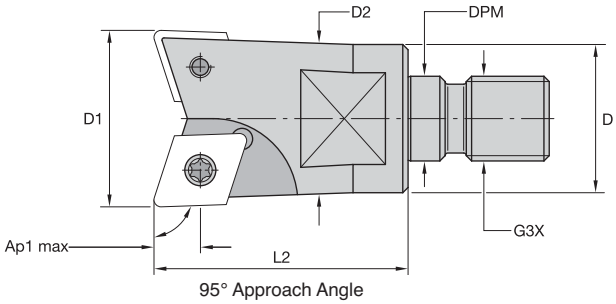
- Rhombic-style inserts for reduced cutting forces.
- Wide range of applications.
- Better surface quality.





Screw-On End Mills • XDHX04

order number	catalogue number	D1	D	D2	DPM	G3X	L2	Ap1 max	Z	kg	insert 1
1888436	10Y02R020M06SXD04	10	10	9	6,5	M6	20	1,0	2	0,01	XD_X0401
1888439	10Y02R035M08SXD04	10	13	9	8,5	M8	35	1,0	2	0,03	XD_X0401
1888440	12Y02R020M06SXD04	12	10	11	6,5	M6	20	1,0	2	0,02	XD_X0401
1888441	12Y02R025M08SXD04	12	13	11	8,5	M8	25	1,0	2	0,03	XD_X0401
1888443	12Y02R035M08SXD04	12	13	11	8,5	M8	35	1,0	2	0,04	XD_X0401
1888444	15Y03R025M08SXD04	15	13	14	8,5	M8	25	1,0	3	0,03	XD_X0401



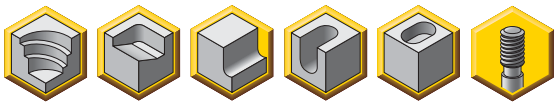
Screw-On End Mills • XDHX06

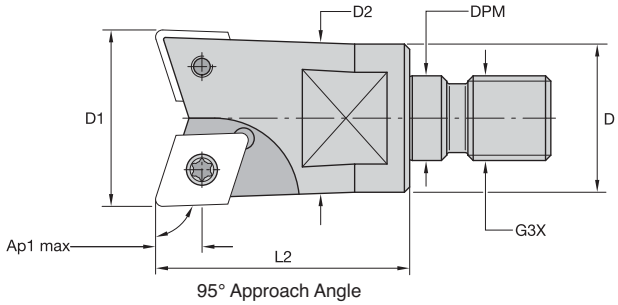
order number	catalogue number	D1	D	D2	DPM	G3X	L2	Ap1 max	Z	kg	insert 1
1888446	13Y01R020M08SXD06	13	13	11	8,5	M8	20	1,0	1	0,03	XD_X06021
1888447	16Y02R025M08SXD06	16	13	14	8,5	M8	25	1,0	2	0,03	XD_X06021
1888448	20Y03R030M10SXD06	20	18	18	10,5	M10	30	1,0	3	0,06	XD_X06021
1888449	25Y03R035M12SXD06	25	21	23	12,5	M12	35	1,0	3	0,10	XD_X06021

Spare Parts

D1	insert screw	Nm	Torx wrench
10	193.340	0,5	FT6
12	193.340	0,5	FT6
13	193.341	1,0	FT7
15	193.340	0,5	FT6
16	193.341	1,0	FT7
20	193.341	1,0	FT7
25	193.341	1,0	FT7

- Rhombic-style inserts for reduced cutting forces.
- Wide range of applications.
- Improved surface quality.



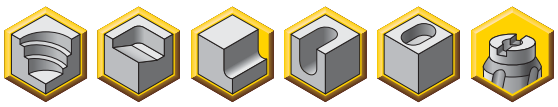


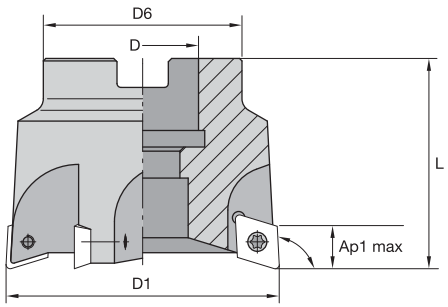
95° Approach Angle

Screw-On End Mills • XDHX10

order number	catalogue number	D1	D	D2	DPM	G3X	L2	Ap1 max	Z	kg	insert 1
1880650	**25Y02R036M12SXD10**	25	21	22	12,5	M12	36	1,0	2	0,90	XD_X10T310
1880651	**35Y03R043M16SXD10**	35	29	32	17,0	M16	43	1,0	3	0,23	XD_X10T310
1880652	**42Y04R043M16SXD10**	42	29	39	17,0	M16	43	1,0	4	0,02	XD_X10T310

- Rhombic-style inserts for reduced cutting forces.
- Wide range of applications.
- Improved surface quality.
- First choice for long overhangs.





95° Approach Angle

Shell Mills • XDHX10

order number	catalogue number	D1	D	D6	L	Ap1 max	Z	kg	insert 1
1888194	**52A05RS95XD10**	52	22	42	50	1,0	5	1,40	XD_X10T3

Spare Parts

D1	insert screw	Nm	Torx wrench
25	**193.342**	2,0	**FT15**
35	**193.342**	2,0	**FT15**
42	**193.342**	2,0	**FT15**
52	**193.342**	2	**FT15**

Insert Selection Guide

XD_X04, IC04mm

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.E..LN	KC525M	**.E..LN**	**KC525M**	–	–
P3–P4	.E..LN	KTPK20	**.E..LN**	**KC510M**	–	–
P5–P6	.E..LN	KTPK20	**.E..LN**	**KC510M**	–	–
M1–M2	–	–	**–**	**–**	–	–
M3	–	–	**–**	**–**	–	–
K1–K2	.E..LN	KTPK20	**.E..LN**	**KC510M**	.E..LN	KC510M
K3	.E..LN	KTPK20	**.E..LN**	**KC510M**	.E..LN	KC510M
N1–N2	–	–	**–**	**–**	–	–
N3	–	–	**–**	**–**	–	–
S1–S2	–	–	**–**	**–**	–	–
S3	–	–	**–**	**–**	–	–
S4	–	–	**–**	**–**	–	–
H1	.E..LN	KC510M	**.E..LN**	**KC510M**	–	–

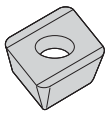
XD_X06, IC06mm

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.S..LN	KC522M	**.S..LN**	**KC725M**	.S..LN	KC725M
P3–P4	.S..LN	KC510M	**.S..LN**	**KC522M**	.S..LN	KC522M
P5–P6	.S..LN	KC510M	**.S..LN**	**KC522M**	.S..LN	KC522M
M1–M2	.E..GC	KC510M	**.S..LN**	**KC725M**	–	–
M3	.E..GC	KC510M	**.S..LN**	**KC725M**	–	–
K1–K2	.S..LN	KC510M	**.S..LN**	**KC510M**	.S..LN	KC510M
K3	.S..LN	KC510M	**.S..LN**	**KC510M**	.S..LN	KC510M
N1–N2	.E..GC	K110M	**.E..GC**	**KC510M**	–	–
N3	.E..GC	K110M	**.E..GC**	**KC510M**	–	–
S1–S2	–	–	**–**	**–**	–	–
S3	–	–	**–**	**–**	–	–
S4	–	–	**–**	**–**	–	–
H1	.S..LN	KC510M	**.S..LN**	**KC510M**	.S..LN	KC522M

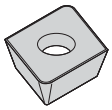
XD_X10, IC10mm

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.S..GN	KC522M	**.S..GN**	**KC522M**	.S..GN	KC525M
P3–P4	.S..GN	KC510M	**.S..GN**	**KC522M**	.S..GN	KC522M
P5–P6	.S..GN	KC510M	**.S..GN**	**KC522M**	.S..GN	KC522M
M1–M2	.E..GC	KC522M	**–**	**–**	–	–
M3	.E..GC	KC522M	**–**	**–**	–	–
K1–K2	.T..GN	KTPK20	**.S..GN**	**KC510M**	.S..GN	KC510M
K3	.T..GN	KTPK20	**.S..GN**	**KC510M**	.S..GN	KC510M
N1–N2	.E..GC	K110M	**.E..GC**	**KC510M**	–	–
N3	.E..GC	K110M	**.E..GC**	**KC510M**	–	–
S1–S2	–	–	**–**	**–**	–	–
S3	–	–	**–**	**–**	–	–
S4	.E..GC	KC522M	**–**	**–**	–	–
H1	.S..GN	KC510M	**.S..GN**	**KC510M**	.S..GN	KC522M

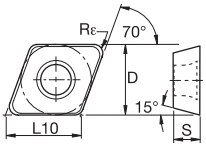
- Rhombic-style inserts for reduced cutting forces.
- Wide range of applications.
- Better surface quality.



XDHX-GC



XDHX-LN
XDHX-GN
XDPX-LN



● first choice
○ alternate choice

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

XDHX-GC

catalogue number	D	S	L10	Rε	hm	cutting edges	K110M	KC510M	KC522M	KC525M	KC725M	KCPM20	KCPK30	KTPK20
XDHX060210EGC	6,50	2,38	6,89	1,0	0,04	2	●	●						
XDHX10T310EGC	10,00	3,88	10,64	1,0	0,04	2	●	●	●					

XDHX-LN

catalogue number	D	S	L10	Rε	hm	cutting edges	K110M	KC510M	KC522M	KC525M	KC725M	KCPM20	KCPK30	KTPK20
XDHX040105ELN	4,00	1,59	4,26	0,5	0,03	2								●
XDHX040110ELN	4,00	1,59	4,26	1,0	0,03	2		●		●				
XDHX060210SLN	6,50	2,38	6,92	1,0	0,06	2		●	●		●			

XDHX-GN

catalogue number	D	S	L10	Rε	hm	cutting edges	K110M	KC510M	KC522M	KC525M	KC725M	KCPM20	KCPK30	KTPK20
XDHX10T310SGN	10,00	3,97	10,64	1,0	0,09	2		●	●	●				
XDHX10T310TGN	10,00	3,97	10,64	1,0	0,10	2								●

XDPX-LN

catalogue number	D	S	L10	Rε	hm	cutting edges	K110M	KC510M	KC522M	KC525M	KC725M	KCPM20	KCPK30	KTPK20
XDPX10T310SLN	10,00	3,97	10,65	1,0	0,06	2		●				●	●	
XDPX060210SLN	6,51	2,38	6,92	1,0	0,06	2		●				●	●	

Recommended Starting Speeds [m/min]

Material Group		K110M			KC510M			KC522M			KC525M		
P	1	–	–	–	–	–	–	395	**345**	325	260	**240**	215
	2	–	–	–	–	–	–	330	**290**	240	215	**190**	180
	3	–	–	–	–	–	–	305	**255**	215	190	**180**	170
	4	–	–	–	295	**240**	200	270	**225**	180	170	**160**	145
	5	–	–	–	–	–	–	225	**200**	180	180	**170**	160
	6	–	–	–	–	–	–	200	**150**	120	160	**145**	130
M	1	–	–	–	–	–	–	245	**215**	200	180	**170**	160
	2	–	–	–	–	–	–	225	**190**	160	160	**145**	130
	3	–	–	–	–	–	–	170	**145**	115	110	**95**	85
K	1	130	**120**	115	350	**315**	285	275	**250**	220	–	–	–
	2	115	**105**	100	275	**250**	230	215	**195**	180	–	–	–
	3	100	**90**	80	235	**205**	190	180	**160**	145	–	–	–
N	1–2	505	**475**	450	770	**685**	630	–	–	–	–	–	–
	3	410	**365**	320	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	50	**45**	35	75	**65**	60
	2	–	–	–	–	–	–	50	**45**	35	75	**65**	60
	3	–	–	–	–	–	–	60	**50**	35	60	**55**	50
	4	–	–	–	–	–	–	85	**60**	45	75	**60**	50
H	1	–	–	–	190	**155**	110	145	**110**	85	–	–	–

Material Group		KCPM20			KCPK30			KTPK20			KC725M		
P	1	660	**580**	535	545	**475**	440	440	**360**	310	315	**275**	255
	2	410	**370**	330	335	**305**	275	270	**225**	190	260	**230**	195
	3	370	**330**	305	305	**275**	250	245	**205**	170	240	**205**	170
	4	275	**255**	230	225	**210**	190	185	**160**	130	215	**180**	145
	5	330	**300**	275	310	**275**	255	255	**205**	175	180	**160**	145
	6	230	**200**	175	190	**165**	–	150	**125**	–	160	**120**	95
M	1	270	**240**	205	250	**220**	190	285	**235**	200	205	**180**	165
	2	245	**215**	190	225	**195**	170	260	**220**	185	185	**160**	130
	3	195	**175**	150	175	**160**	140	195	**160**	–	140	**120**	95
K	1	435	**390**	350	355	**320**	285	275	**235**	195	–	–	–
	2	345	**310**	280	280	**255**	230	220	**180**	160	–	–	–
	3	290	**255**	240	235	**210**	195	185	**150**	130	–	–	–
N	1–2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	–	–	–	45	**35**	30
	2	–	–	–	–	–	–	–	–	–	45	**35**	30
	3	–	–	–	–	–	–	–	–	–	55	**45**	30
	4	–	–	–	–	–	–	–	–	–	75	**55**	35
H	1	170	**140**	115	–	–	–	–	–	–	–	–	–

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

Recommended Starting Feeds [mm]

Light Machining	General Purpose	Heavy Machining

XDHX04

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..LN	0,09	**0,25**	0,50	0,06	**0,19**	0,38	0,06	**0,16**	0,33	0,05	**0,15**	0,31	0,05	**0,15**	0,30	.E..LN

XDHX06

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..GC	0,09	**0,29**	0,59	0,06	**0,22**	0,44	0,06	**0,19**	0,38	0,05	**0,18**	0,36	0,05	**0,18**	0,35	.E..GC
.S..LN	0,14	**0,43**	0,68	0,11	**0,32**	0,51	0,09	**0,28**	0,45	0,09	**0,26**	0,42	0,09	**0,25**	0,41	.S..LN

XDHX10

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..GC	0,09	**0,29**	0,59	0,06	**0,22**	0,44	0,06	**0,19**	0,38	0,05	**0,18**	0,36	0,05	**0,18**	0,35	.E..GC
.T..GN	0,17	**0,43**	0,68	0,13	**0,32**	0,51	0,11	**0,28**	0,45	0,10	**0,26**	0,42	0,10	**0,25**	0,41	.T..GN
.S..GN	0,17	**0,43**	0,68	0,13	**0,32**	0,51	0,11	**0,28**	0,45	0,10	**0,26**	0,42	0,10	**0,25**	0,41	.S..GN

NOTE: Use “Light Machining” values as starting feed rate.

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KENNAMETAL

Z-Axis Plunge Mill

Primary Application

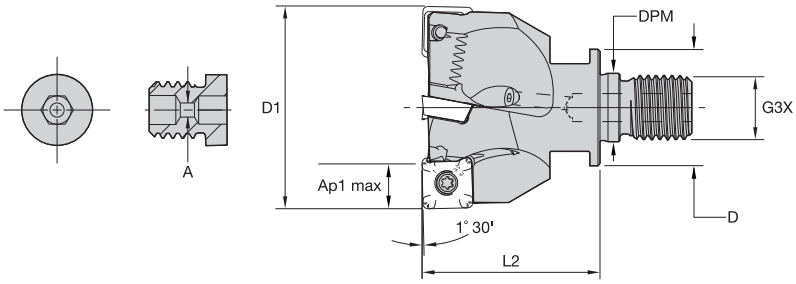
Specifically engineered to eliminate vibration and improve metal removal rates in roughing applications.
Ideally suited for rough slotting applications in aerospace, general engineering, die and mould, and power generation.

Features and Benefits

Platform Features

- Nine coolant nozzle sizes enable customised flow by machine tool.
- Unique design is unmatched for chip evacuation.
- Improved performance at a reduced cost per cutting edge.
- Positive geometry lowers cutting force and reduces power requirements, enabling higher feed rates.
- Chip control when slotting.
- Fast and easy insert indexing.

- Most stable cutting due to force directions.
- Excellent for long reach applications.
- Extended tool life.
- Suitable for a wide variety of workpiece materials.
- Up to 11mm stepover.
- Unique coolant delivery.
- Chip control when slotting.

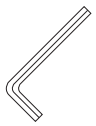


Screw-On End Mills

order number	catalogue number	D1	D	DPM	G3X	L2	Ap1 max	Z	kg	max RPM	insert 1
3111542	**32M2R050M16SSD12PL**	32	29	17,0	M16	50	11,0	2	0,17	25690	SD_T12_PD_N__Z
3450644	**40M2R050M16SSD12PL**	40	29	17,0	M16	50	11,0	2	0,27	22980	SD_T12_PD_N__Z
3064110	**40M3R050M16SSD12PL**	40	29	17,0	M16	50	11,0	3	0,23	22980	SD_T12_PD_N__Z
3450643	**50M4R050M16SSD12PL**	50	29	17,0	M16	50	11,0	4	0,31	20610	SD_T12_PD_N__Z

Spare Parts



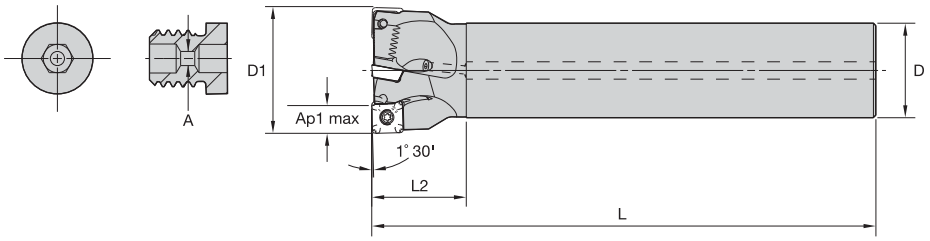
D1	insert screw	Nm	Torx Plus driver	coolant nozzle screw	T-handle hex wrench
32	**MS2197**	4,0	**DT15IP**	**MS2191C20**	**THW2M**
40	**MS2197**	4,0	**DT15IP**	**MS2191C20**	**THW2M**
50	**MS2197**	4,0	**DT15IP**	**MS2191C20**	**THW2M**

Coolant Screw Detail

order number	catalogue number	A
3400611	**MS2191C00**	–
3400612	**MS2191C06**	0,600
3400613	**MS2191C08**	0,800
3400614	**MS2191C10**	1,000
3400616	**MS2191C12**	1,200
3400617	**MS2191C14**	1,400
3400618	**MS2191C16**	1,600
3400619	**MS2191C18**	1,800
3400620	**MS2191C20**	2,000

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, which gives flexibility with coolant flow.

- Most stable cutting due to force directions.
- Excellent for long reach applications.
- Extended tool life.
- Suitable for a wide variety of workpiece materials.
- Up to 11mm stepover.
- Unique coolant delivery.
- Chip control when slotting.

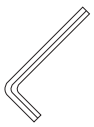


End Mills

order number	catalogue number	D1	D	L	L2	Ap1 max	Z	kg	max RPM	insert 1
3402143	**32M2R040A25SSD12PL**	32	25	200	40	11,0	2	0,69	25690	SD_T1204_PD_N_Z
3402144	**40M3R040A32SSD12PL**	40	32	200	40	11,0	3	1,14	22980	SD_T1204_PD_N_Z
3402145	**50M4R040A40SSD12PL**	50	40	200	40	11,0	4	1,80	20610	SD_T1204_PD_N_Z

Spare Parts





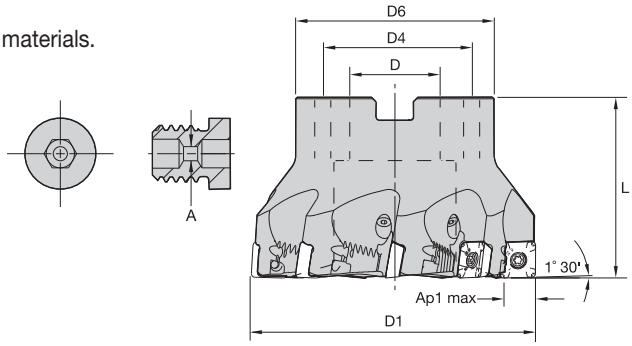

D1	insert screw	Nm	Torx Plus driver	T-handle hex wrench	coolant nozzle screw
32	**MS2197**	4,0	**DT15IP**	**THW2M**	**MS2191C20**
40	**MS2197**	4,0	**DT15IP**	**THW2M**	**MS2191C20**
50	**MS2197**	4,0	**DT15IP**	**THW2M**	**MS2191C20**

Coolant Screw Detail

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

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, which gives flexibility with coolant flow.

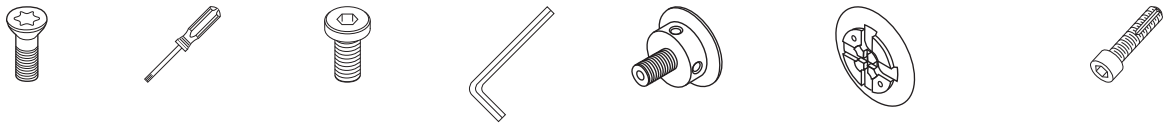
- Most stable cutting due to force directions.
- Excellent for long reach applications.
- Extended tool life.
- Suitable for a wide variety of workpiece materials.
- Up to 11mm stepover.
- Unique coolant delivery.
- Chip control when slotting.



Shell Mills

order number	catalogue number	D1	D	D4	D6	L	Ap1 max	Z	kg	max RPM	insert 1
3055230	50A04RS90SD12PL	50	22	—	42	50	11,0	4	0,3	20600	SD_T1204PD_N__Z
3063843	50A05RS90SD12PL	50	22	—	42	50	11,0	5	0,4	20600	SD_T1204PD_N__Z
3120265	63A05RS90SD12PL	63	22	—	50	50	11,0	5	0,5	18300	SD_T1204PD_N__Z
3120266	63A06RS90SD12PL	63	22	—	50	50	11,0	6	0,6	18300	SD_T1204PD_N__Z
3120267	80A05RS90SD12PL	80	27	—	60	50	11,0	5	1,0	16300	SD_T1204PD_N__Z
3120268	80A06RS90SD12PL	80	27	—	60	50	11,0	6	1,0	16300	SD_T1204PD_N__Z
3120269	80A07RS90SD12PL	80	27	—	60	50	11,0	7	1,0	16300	SD_T1204PD_N__Z
3120270	100B07RS90SD12PL	100	32	—	80	63	11,0	7	2,1	14600	SD_T1204PD_N__Z
3120271	100B08RS90SD12PL	100	32	—	80	63	11,0	8	2,1	14600	SD_T1204PD_N__Z
3120272	100B09RS90SD12PL	100	32	—	80	63	11,0	9	2,2	14600	SD_T1204PD_N__Z
3120573	125B08RS90SD12PL	125	40	—	90	63	11,0	8	3,0	13000	SD_T1204PD_N__Z
3120574	125B09RS90SD12PL	125	40	—	90	63	11,0	9	3,1	13000	SD_T1204PD_N__Z
3120575	125B10RS90SD12PL	125	40	—	90	63	11,0	10	3,1	13000	SD_T1204PD_N__Z
3120576	160C09RS90SD12PL	160	40	67	90	63	11,0	9	3,2	11500	SD_T1204PD_N__Z
3120577	160C10RS90SD12PL	160	40	67	90	63	11,0	10	3,2	11500	SD_T1204PD_N__Z
3120578	160C12RS90SD12PL	160	40	67	90	63	11,0	12	3,3	11500	SD_T1204PD_N__Z

Spare Parts



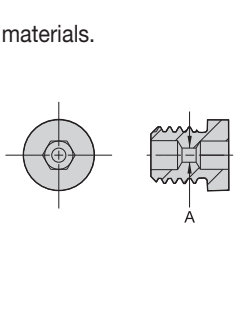
D1	insert screw	Nm	Torx Plus driver	coolant nozzle screw	T-handle hex wrench	coolant lock screw assembly	coolant shower plate assembly	socket-head cap screw with coolant groove
50	MS2197	4,0	DT15IP	MS2191C12	THW2M	—	—	MS1242CG
63	MS2197	4,0	DT15IP	MS2191C12	THW2M	—	—	MS1242CG
80	MS2197	4,0	DT15IP	MS2191C12	THW2M	—	—	MS2038CG
100	MS2197	4,0	DT15IP	MS2191C10	THW2M	MS2189C	—	—
125	MS2197	4,0	DT15IP	MS2191C10	THW2M	MS2187C	—	—
160	MS2197	4,0	DT15IP	MS2191C20	THW2M	—	MCCM16001	—

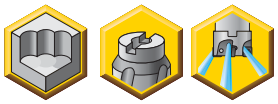
Coolant Screw Detail

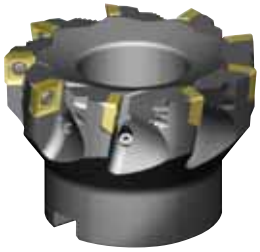
order number	catalogue number	A
3400611	MS2191C00	—
3400612	MS2191C06	0,6
3400613	MS2191C08	0,8
3400614	MS2191C10	1,0
3400616	MS2191C12	1,2
3400617	MS2191C14	1,4
3400618	MS2191C16	1,6
3400619	MS2191C18	1,8
3400620	MS2191C20	2,0

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, which gives flexibility with coolant flow.

- Most stable cutting due to force directions.
- Excellent for long reach applications.
- Extended tool life.
- Suitable for a wide variety of workpiece materials.
- Up to 11mm stepover.
- Unique coolant delivery.
- Chip control when slotting.
- Metric cutter diameters with inch bore sizes.





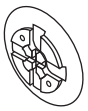
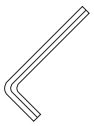


Shell Mills • Coarse Pitch • Japanese Industry Standard (JIS)

order number	catalogue number	D1	D mm	D in	D6	L	Ap1 max	Z	kg	max RPM	insert 1
3640178	**80A05RS90SD12PL-J**	80	25,400	1.000	60	50	11	5	1,05	16300	SD_T1204_PD_N__Z
3640179	**80A06RS90SD12PL-J**	80	25,400	1.000	60	50	11	6	1,06	16300	SD_T1204_PD_N__Z
3640180	**80A07RS90SD12PL-J**	80	25,400	1.000	60	50	11	7	1,06	16300	SD_T1204_PD_N__Z
3640181	**100B07RS90SD12PL-J**	100	31,750	1.250	80	63	11	7	2,14	14600	SD_T1204_PD_N__Z
3640182	**100B08RS90SD12PL-J**	100	31,750	1.250	80	63	11	8	2,21	14600	SD_T1204_PD_N__Z
3640293	**100B09RS90SD12PL-J**	100	31,750	1.250	80	63	11	9	2,25	14600	SD_T1204_PD_N__Z
3640294	**125B08RS90SD12PL-J**	125	38,100	1.500	90	63	11	8	2,79	13000	SD_T1204_PD_N__Z
3640295	**125B09RS90SD12PL-J**	125	38,100	1.500	90	63	11	9	2,85	13000	SD_T1204_PD_N__Z
3640296	**125B10RS90SD12PL-J**	125	38,100	1.500	90	63	11	10	2,88	13000	SD_T1204_PD_N__Z
3640297	**160B09RS90SD12PL-J**	160	50,800	2.000	90	63	11	9	3,69	11500	SD_T1204_PD_N__Z
3640298	**160B10RS90SD12PL-J**	160	50,800	2.000	90	63	11	10	3,69	11500	SD_T1204_PD_N__Z
3640299	**160B12RS90SD12PL-J**	160	50,800	2.000	90	63	11	12	3,76	11500	SD_T1204_PD_N__Z

Spare Parts




D1	insert screw	Nm	Torx Plus driver	coolant nozzle screw	coolant lock screw assembly	T-handle hex wrench	socket-head cap screw with coolant groove
80	**MS2197**	4,0	**DT15IP**	**MS2191C12**	**–**	**THW2M**	**MS2038CG**
80	**MS2197**	4,0	**DT15IP**	**MS2191C10**	**–**	**THW2M**	**MS2038CG**
100	**MS2197**	4,0	**DT15IP**	**MS2191C10**	**MS2220C**	**THW2M**	**–**
125	**MS2197**	4,0	**DT15IP**	**MS2191C08**	**–**	**THW2M**	**–**
125	**MS2197**	4,0	**DT15IP**	**MS2191C10**	**–**	**THW2M**	**–**
160	**MS2197**	4,0	**DT15IP**	**MS2191C20**	**–**	**THW2M**	**–**

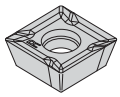
Coolant Screw Detail

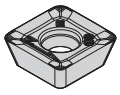
order number	catalogue number	A
3400611	**MS2191C00**	–
3400612	**MS2191C06**	0,6
3400613	**MS2191C08**	0,8
3400614	**MS2191C10**	1,0
3400616	**MS2191C12**	1,2
3400617	**MS2191C14**	1,4
3400618	**MS2191C16**	1,6
3400619	**MS2191C18**	1,8
3400620	**MS2191C20**	2,0

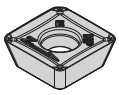
NOTE: Check the Spare Parts table for the coolant hole size that is incorporated in the cutters.
If you need an alternative, there are eight other variants to choose from to increase or decrease the pressure.
Example: MS2191C12 is a 1,20mm hole. All coolant nozzles are interchangeable with the original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

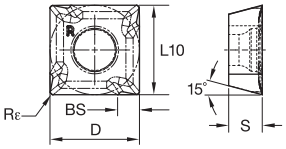
Insert Selection Guide

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.E..GDZ	KC725M	**.S..GDZ**	**KC725M**	.E..HPZ	KC725M
P3–P4	.S..GDZ	KCPK30	**.E..HPZ**	**KCPK30**	.S..HPZ	KCPK30
P5–P6	.S..GDZ	KCPK30	**.E..HPZ**	**KCPM20**	.S..HPZ	KCPM20
M1–M2	.E..GDZ	KC725M	**.S..GDZ**	**KC725M**	.E..HPZ	KC725M
M3	.S..GDZ	KCPK30	**.E..HPZ**	**KCPK30**	.S..HPZ	KCPK30
K1–K2	.E..GDZ	KCPK30	**.S..GDZ**	**KCPK30**	.E..HPZ	KCPK30
K3	.S..GDZ	KCPK30	**.E..HPZ**	**KCPK30**	.S..HPZ	KCPK30
N1–N2	.F..LE	KC410M	**.F..LE**	**KC410M**	.F..LE	KC410M
N3	–	–	**–**	**–**	–	–
S1–S2	.E..GDZ	KC725M	**.S..GDZ**	**KC725M**	.E..HPZ	KC725M
S3	.S..GDZ	KC725M	**.E..HPZ**	**KC725M**	.S..HPZ	KC725M
S4	.E..HPZ	KC725M	**.S..HPZ**	**KC725M**	–	–
H1	–	–	**–**	**–**	–	–

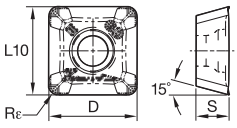

SDCT-LE


SDET-GDZ

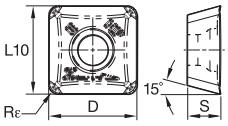

SDPT-HPZ



SDLT-LE



SDET-GDZ



SDPT-HPZ

● first choice
○ alternate choice

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

SDCT-LE

catalogue number	L10	S	BS	Rε	hm	cutting edges	KC410M	KC522M	KC725M	KCPM20	KCPK30
SDCT120412PDFRLE	12,70	4,76	2,70	1,2	0,02	4	●				
SDCT120412PDFLLE	12,70	4,76	2,70	1,2	0,02	4	●				

SDET-GDZ

catalogue number	L10	S	Rε	hm	cutting edges	KC410M	KC522M	KC725M	KCPM20	KCPK30
SDET120412PDENGDZ	12,70	4,76	1,2	0,06	4		●	●		●
SDET120412PDSNGDZ	12,70	4,76	1,2	0,13	4		●	●		●

SDPT-HPZ

catalogue number	D	L10	S	Rε	hm	cutting edges	KC410M	KC522M	KC725M	KCPM20	KCPK30
SDPT120412PDENHPZ	12,70	12,70	4,76	1,2	0,08	4		●	●	●	●
SDPT120412PDSNHPZ	12,70	12,70	4,76	1,2	0,15	4		●	●	●	●

Recommended Starting Speeds [m/min]

Material Group		KC410M			KC522M			KC725M			KCPM20			KCPK30		
P	1	–	–	–	395	**345**	325	315	**275**	255	660	**580**	535	545	**475**	440
	2	–	–	–	330	**290**	240	260	**230**	195	410	**370**	330	335	**305**	275
	3	–	–	–	305	**255**	215	240	**205**	170	370	**330**	305	305	**275**	250
	4	–	–	–	270	**225**	180	215	**180**	145	275	**255**	230	225	**210**	190
	5	–	–	–	225	**200**	180	180	**160**	145	330	**300**	275	310	**275**	255
	6	–	–	–	200	**150**	120	160	**120**	95	230	**200**	175	190	**165**	–
M	1	–	–	–	245	**215**	200	205	**180**	165	270	**240**	205	250	**220**	190
	2	–	–	–	225	**190**	160	185	**160**	130	245	**215**	190	225	**195**	170
	3	–	–	–	170	**145**	115	140	**120**	95	195	**175**	150	175	**160**	140
K	1	–	–	–	275	**250**	220	–	–	–	435	**390**	350	355	**320**	285
	2	–	–	–	215	**195**	180	–	–	–	345	**310**	280	280	**255**	230
	3	–	–	–	180	**160**	145	–	–	–	290	**255**	240	235	**210**	195
N	1–2	1460	**1300**	1195	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
S	1	–	–	–	50	**45**	35	45	**35**	30	–	–	–	–	–	–
	2	–	–	–	50	**45**	35	45	**35**	30	–	–	–	–	–	–
	3	–	–	–	60	**50**	35	55	**45**	30	–	–	–	–	–	–
	4	–	–	–	85	**60**	45	75	**55**	35	–	–	–	–	–	–
H	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

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

Recommended Starting Feeds [mm]

Light Machining	General Purpose	Heavy Machining

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.F..LE	–	–	–	–	–	–	–	–	–	–	–	–	0,05	**0,10**	0,20	.F..LE
.E..GDZ	–	–	–	–	–	–	–	–	–	–	–	–	0,09	**0,25**	0,41	.E..GDZ
.S..GDZ	–	–	–	–	–	–	–	–	–	–	–	–	0,10	**0,25**	0,41	.S..GDZ
.E..HPZ	–	–	–	–	–	–	–	–	–	–	–	–	0,10	**0,25**	0,41	.E..HPZ
.S..HPZ	–	–	–	–	–	–	–	–	–	–	–	–	0,10	**0,25**	0,41	.S..HPZ

NOTE: Use “Light Machining” values as starting feed rate.

Z-Axis

Best Machining Practices

When finishing a workpiece, you sometimes have to use a Z-axis solution versus a conventional end mill solution to get the best results.

When the length-to-diameter ratio protrudes farther than 3:1, you will need to use a Z-axis solution. This is when the end mill starts to vibrate and the surface finish and noise are unacceptable.

When vibration occurs, the feed rates are compromised, which normally slows down the production of the workpiece.

Programming

At this point, there is very little software for this type of application on the market. We suggest that a simple macro is created for this type of application, which can be recalled and the “X” and “Y” movement changed.

The process can be repeated, so the cutter can be removed from the workpiece in the rapid (G00) movement. Tool life will be improved by not allowing the insert to rub on the retract path.

Slotting

There are several differing ways to machine a slot in a component using the Z-axis cutter solution.

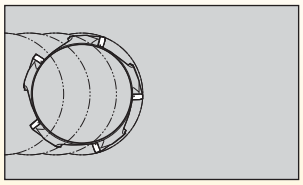


Figure 1

This shows the typical way of machining a slot. The movements are feeding down and straight back up (Z+) in the same axis and will have a negative impact on the insert radii (cutting edge) that could lead to premature failure of the nose radii. When looking at the component, it will show the rapid travel in the Z+ direction. This will highlight the spiral of the insert/cutter operating at a high feed. It looks similar to an oil groove spiralling upwards.

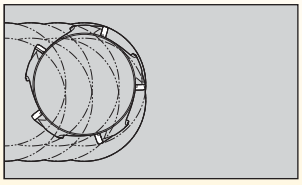


Figure 2

Using a cutter that is smaller than the slot width allows the insert/cutter to be removed from the material when (G00) rapid motion is retracting from the component. Because this type of cutter can be used across various types of machines, assume a 50mm (2.00") diameter cutter is being used to machine a slot of 63mm (2.50") wide on a vertical 3-axis machine.

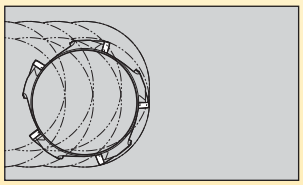


Figure 3

Align the cutter with the centre of the slot on the component and define the stepover that's required. Move the Y-axis into a position for the first cut, take the first pass to a depth in the Z-axis, and when it reaches the bottom of the slot, program a 2-axis move to retract the cutting edge for the workpiece.

The 2-axis move will move the Z-axis in a positive direction at 45° (.010") away from the component, and the Y-axis will move away from the workpiece by the same amount at the same angle. Now the cutter can be retracted from the component, and the insert will not rub on the retract move.

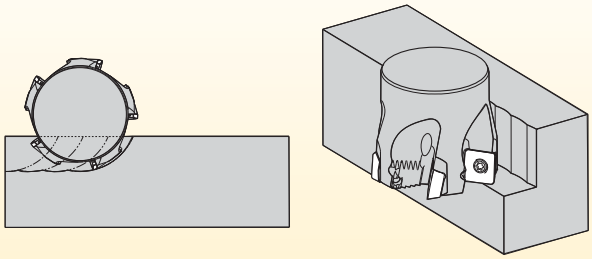
Move the cutter to the left of the slot to define the new position and make the cut. When reaching the base, a 3-axis move will need to be made. Again, the Z-axis will be in a positive direction at 45° (.010"), and the corresponding Y-axis will move away the same respective amount from the wall.

The insert/cutter has now moved away from the workpiece, and the rapid Z+ can take place. Repeat the process on the other side of the slot, remembering the X-axis move needs to be moving the other way.

NOTE: When starting the process, it's better to start at the centre of the slot. After the slot has been defined, you no longer need to put the cutter on the center path. Passes from both sides create the slot width and enable clearance for the subsequent moves, so the insert/cutter can be moved away from the side walls of the material.

(continued)

Z-Axis *(continued)*

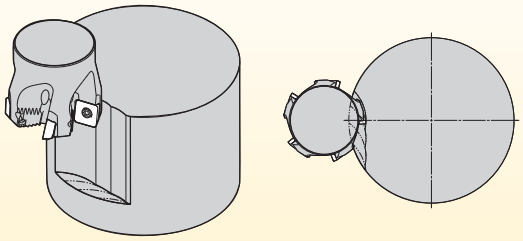


Linear Plunge Milling

Entering the cutter along a parallel axis, the radial width of cut needs to be defined because the cutter might need to move away from the workpiece material.

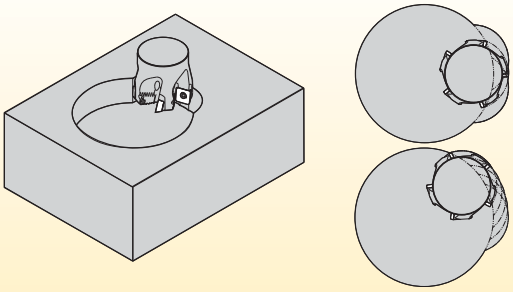
If the radial width of cut takes more than 60% of the cutter diameter, it is more difficult to remove the insert/cutter because the machine program wants to move the cutter upwards to (G00) Z+. When taking more than 60% of the cutter diameter, the material is enveloping the cutter and is difficult to remove because a cusp has been created.

It is suggested to make the radial width of cut 50% of the cutter diameter to allow the insert/cutter to be removed without any problems.



External Profiling

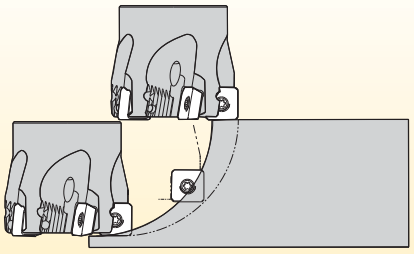
This artwork represents the typical application for this type of process. Move into the cut and follow the external profile of the workpiece. When moving the cutter back to the start position, it's always advisable to move the insert from contacting the workpiece. This should be done with a 2- or 3-axis move (use .010") at 0,25mm. All axes moving in a Z+ direction will stop the rubbing in the retract move.



Internal Profiling

When taking the first pass of a depth, there is also a need to move the insert/cutter away from the material on the retract motion. Each of the passes that follow should adopt the same method on the retract move.

Follow the cutter path until the component has been finished.



Machining Around a Radii

This artwork shows the cutter taking a larger radial width of cut. When moving down in the Z-axis, the insert could start to take a larger radial width of cut. Typical application could be the manufacture of a turbine blade from a rectangular piece of material. Always remember that it's advisable to move the insert/cutter away from the material on the retract motion.

Screw-On Milling Cutter Adaptors

The Complete Solution to Milling

Features and Benefits

- High metal removal rates.
- High runout accuracy.
- Maximum performance capability.
- Optimising productivity with long reach and short overhang to support all types of applications.
- Cutter is kept on centre for precision and maximum performance compared to Weldon® shank system.
- Ability to extend with standard offering extensions and reducers.
- Ground face contact for rigidity and accuracy.

Experience the advantages at your Authorised Kennametal Distributor or at **www.kennametal.com**.

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KENNAMETAL®

KDMR™ • Multifunction Cutter

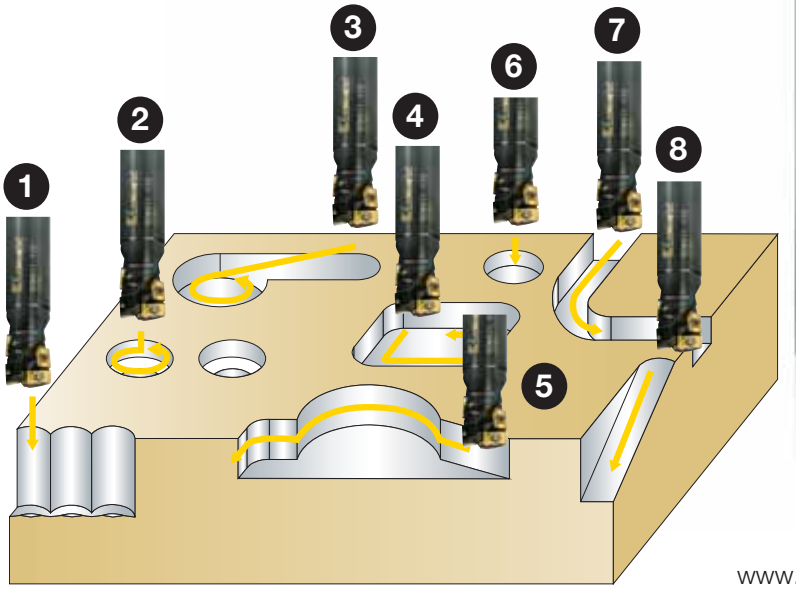
Primary Application

An extensive offering of versatile mills that can also drill.

Features and Benefits

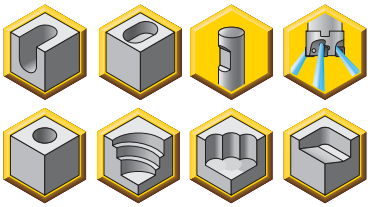
Platform Features

- Just two grades needed for a wide variety of materials.
- Reduced shank for machining down a side wall.
- Metric and inch sizes available.
- Reduced shank diameters for access down long side walls.
- Extensive product portfolio.
- Use compressed air when drilling for improved chip evacuation.
- Full two-edge line with improved stability.
- Lower cutting resistance and long shank types are available.
- New grade provides stability and longer tool life.
- Good chip evacuation, even when slant milling and drilling.



1. Vertical Milling/Plunging
2. Helical Milling
3. Ramping and Helical Milling
4. Pocketing
5. Shouldering/Profiling
6. Drilling
7. Slotting
8. Ramping

- Low cutting forces.
- Reduced shank diameters for access down long side walls.
- Excellent chip evacuation, even when machining on an angle.
- When drilling, use (1) as the effective number of teeth (ZU).
- Milling to the maximum axial depth of (Ap2), we have (2) effective teeth.



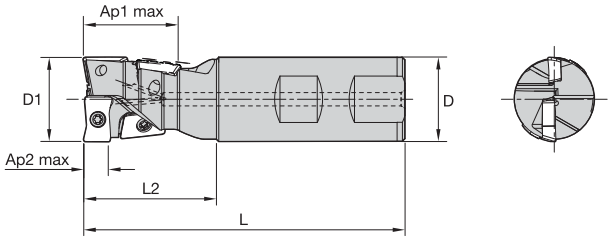


Fig. 5

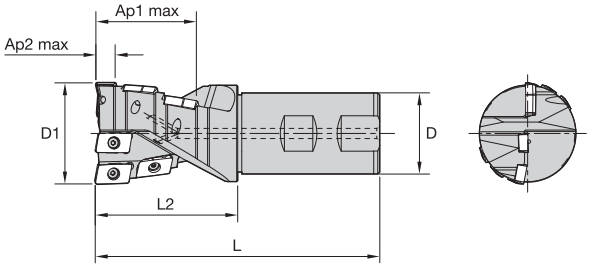


Fig. 6

Weldon® Shank • Metric

order number	catalogue number	D1	D	L	L2	Ap1 max	Ap2 max	Z	Z U	figure	kg	insert 1	insert 2
3587022	**KDMR16S1680WL**	16	16	80	31	19	4,5	4	2	FIG 5	0,11	GOMT08T208ERLD	JOMT08T208ERLF
3587055	**KDMR17S1680WL**	17	16	80	31	19	4,5	4	2	FIG 6	0,12	GOMT08T208ERLD	JOMT08T208ERLF
3587059	**KDMR20S2085WL**	20	20	85	35	22	6,0	4	2	FIG 5	0,23	GOMT100308ERLD	JOMT100308ERLF
3587062	**KDMR21S2085WL**	21	20	85	35	22	6,0	4	2	FIG 6	0,25	GOMT100308ERLD	JOMT100308ERLF
3587066	**KDMR25S2595WL**	25	25	95	40	28	7,5	4	2	FIG 5	0,33	GOMT13T308ERLD	JOMT13T308ERLF
3587069	**KDMR26S2595WL**	26	25	95	40	28	7,5	4	2	FIG 6	0,35	GOMT13T308ERLD	JOMT13T308ERLF
3587071	**KDMR32S32110WL**	32	32	110	50	36	9,5	4	2	FIG 5	0,58	GOMT160408ERLD	JOMT160408ERLF
3587075	**KDMR33S32110WL**	33	32	110	50	36	9,5	4	2	FIG 6	0,60	GOMT160408ERLD	JOMT160408ERLF
3587078	**KDMR40S32130WL**	40	32	130	55	42	7,5	7	2	FIG 6	0,88	GOMT13T308ERLD	JOMT13T308ERLF
3587082	**KDMR50S40140WL**	50	40	140	70	54	9,5	7	2	FIG 6	1,43	GOMT160408ERLD	JOMT160408ERLF

Spare Parts



D1	insert screw	Nm	Torx driver	anti-seize lube
16	**MS2211**	3,5	**DT6**	**ASL3GT**
17	**MS2211**	0,5	**DT6**	**ASL3GT**
20	**MS2212**	0,5	**DT8**	**ASL3GT**
21	**MS2212**	1,2	**DT8**	**ASL3GT**
25	**MS2213**	1,2	**DT10**	**ASL3GT**
26	**MS2213**	2,0	**DT10**	**ASL3GT**
32	**MS2214**	2,0	**DT15**	**ASL3GT**
33	**MS2214**	3,5	**DT15**	**ASL3GT**
40	**MS2213**	3,5	**DT10**	**ASL3GT**
50	**MS2214**	2,0	**DT15**	**ASL3GT**

NOTE: Axial depth of cut above (Ap2) value, use (1) as the effective number of teeth.
See separate chart for drilling depths.
Use compressed air when drilling for improved chip evacuation.

- Low cutting forces.
- Reduced shank diameters for access down long side walls.
- Excellent chip evacuation, even machining on an angle.
- When drilling, use (1) as the effective number of teeth (ZU).
- Milling to the maximum axial depth of (Ap2), we have (2) effective teeth.

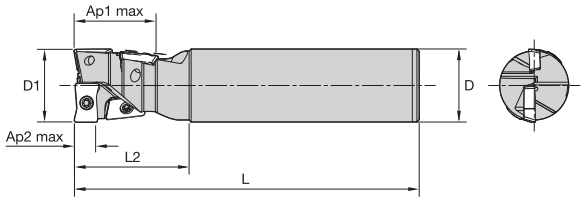


Fig. 1

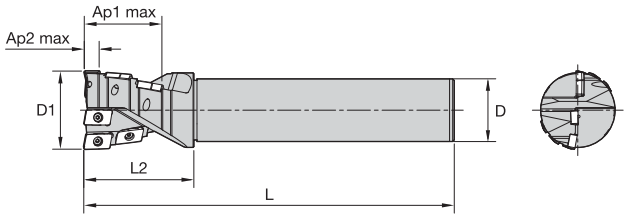


Fig. 2

Standard Length

order number	catalogue number	D1	D	L	L2	Ap1 max	Ap2 max	Z	Z U	figure	kg	insert 1	insert 2
3587019	KDMR16S16	16	16	120	31	19	4,5	4	2	FIG 1	0,22	GOMT08T208ERLD	JOMT08T208ERLF
3587053	KDMR17S16	17	16	120	31	19	4,5	4	2	FIG 1	0,20	GOMT08T208ERLD	JOMT08T208ERLF
3587056	KDMR20S20	20	20	130	35	22	6,0	4	2	FIG 1	0,37	GOMT100308ERLD	JOMT100308ERLF
3587060	KDMR21S20	21	20	130	35	22	6,0	4	2	FIG 1	0,37	GOMT100308ERLD	JOMT100308ERLF
3587063	KDMR25S25	25	25	140	40	28	7,5	4	2	FIG 1	0,57	GOMT13T308ERLD	JOMT13T308ERLF
3587067	KDMR26S25	26	25	140	40	28	7,5	4	2	FIG 1	0,55	GOMT13T308ERLD	JOMT13T308ERLF
3587070	KDMR32S32	32	32	150	50	36	9,5	4	2	FIG 1	0,93	GOMT160408ERLD	JOMT160408ERLF
3587074	KDMR33S32	33	32	150	50	36	9,5	4	2	FIG 1	0,95	GOMT160408ERLD	JOMT160408ERLF
3587077	KDMR40S32	40	32	160	55	42	7,5	7	2	FIG 2	1,08	GOMT13T308ERLD	JOMT13T308ERLF
3587080	KDMR50S40	50	40	170	70	54	9,5	7	2	FIG 2	1,64	GOMT160408ERLD	JOMT160408ERLF

Long Length Cutters

order number	catalogue number	D1	D	L	L2	Ap1 max	Ap2 max	Z	Z U	figure	kg	insert 1	insert 2
3587020	KDMR16S16140L	16	16	140	51	19	4,5	4	2	FIG 1	0,24	GOMT08T208ERLD	JOMT08T208ERLF
3587057	KDMR20S20150L	20	20	150	53	22	6,0	4	2	FIG 1	0,43	GOMT100308ERLD	JOMT100308ERLF
3587064	KDMR25S25170L	25	25	170	70	28	7,5	4	2	FIG 1	0,67	GOMT13T308ERLD	JOMT13T308ERLF
3587072	KDMR32S32180L	32	32	180	80	36	9,5	4	2	FIG 1	1,09	GOMT160408ERLD	JOMT160408ERLF

Spare Parts

D1	insert screw	Nm	Torx driver	anti-seize lube
16	MS2211	0,5	DT6	ASL3GT
17	MS2211	0,5	DT6	ASL3GT
20	MS2212	1,2	DT8	ASL3GT
21	MS2212	1,2	DT8	ASL3GT
25	MS2213	2,0	DT10	ASL3GT
26	MS2213	2,0	DT10	ASL3GT
32	MS2214	3,5	DT15	ASL3GT
33	MS2214	3,5	DT15	ASL3GT
40	MS2213	2,0	DT10	ASL3GT
50	MS2214	–	DT15	ASL3GT

NOTE: Axial depth of cut above (Ap2) value, use (1) as the effective number of teeth.
See separate chart for drilling depths.
Use compressed air when drilling for improved chip evacuation.

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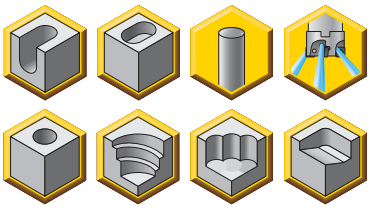
- When drilling, use (1) as the effective number of teeth (ZU).
- Milling to the maximum axial depth of (Ap2), we have (2) effective teeth.



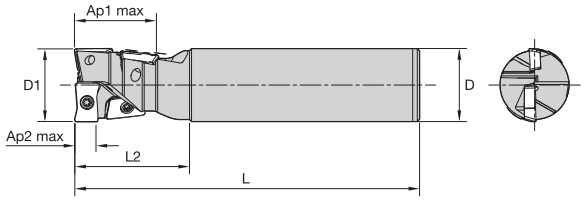


Fig. 1

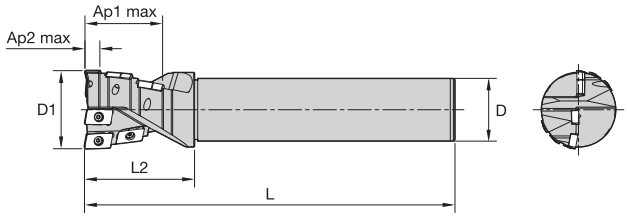


Fig.2

Long Shank

order number	catalogue number	D1	D	L	L2	Ap1 max	Ap2 max	Z	Z U	figure	kg	insert 1	insert 2
3587021	**KDMR16S16190**	16	16	190	61	19	4,5	4	2	FIG 1	0,32	GOMT08T208ERLD	JOMT08T208ERLF
3587054	**KDMR17S16190**	17	16	190	31	19	4,5	4	2	FIG 1	0,34	GOMT08T208ERLD	JOMT08T208ERLF
3587058	**KDMR20S20200**	20	20	200	63	22	6,0	4	2	FIG 1	0,54	GOMT100308ERLD	JOMT100308ERLF
3587061	**KDMR21S20200**	21	20	200	35	22	6,0	4	2	FIG 1	0,58	GOMT100308ERLD	JOMT100308ERLF
3587065	**KDMR25S25220**	25	25	220	80	28	7,5	4	2	FIG 1	0,85	GOMT13T308ERLD	JOMT13T308ERLF
3587068	**KDMR26S25220**	26	25	220	40	28	7,5	4	2	FIG 1	0,88	GOMT13T308ERLD	JOMT13T308ERLF
3587073	**KDMR32S32230**	32	32	230	90	36	9,5	4	2	FIG 1	1,40	GOMT160408ERLD	JOMT160408ERLF
3587076	**KDMR33S32230**	33	32	230	50	36	9,5	4	2	FIG 1	1,38	GOMT160408ERLD	JOMT160408ERLF
3587079	**KDMR40S32240**	40	32	240	55	42	7,5	7	2	FIG 2	1,57	GOMT13T308ERLD	JOMT13T308ERLF
3587081	**KDMR50S40250**	50	40	250	70	54	9,5	7	2	FIG 2	2,47	GOMT160408ERLD	JOMT160408ERLF

Spare Parts

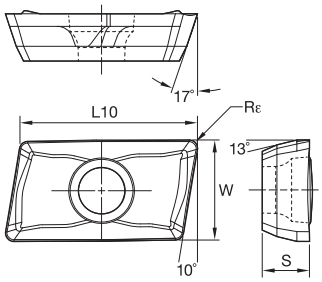
D1	insert screw	Nm	Torx driver	anti-seize lube
16	**MS2211**	3,5	**DT6**	**ASL3GT**
17	**MS2211**	0,5	**DT6**	**ASL3GT**
20	**MS2212**	0,5	**DT8**	**ASL3GT**
21	**MS2212**	1,2	**DT8**	**ASL3GT**
25	**MS2213**	1,2	**DT10**	**ASL3GT**
26	**MS2213**	2,0	**DT10**	**ASL3GT**
32	**MS2214**	2,0	**DT15**	**ASL3GT**
33	**MS2214**	3,5	**DT15**	**ASL3GT**
40	**MS2213**	3,5	**DT10**	**ASL3GT**
50	**MS2214**	2,0	**DT15**	**ASL3GT**

NOTE: Axial depth of cut above (Ap2) value, use (1) as the effective number of teeth.
See separate chart for drilling depths.
Use compressed air when drilling for improved chip evacuation.

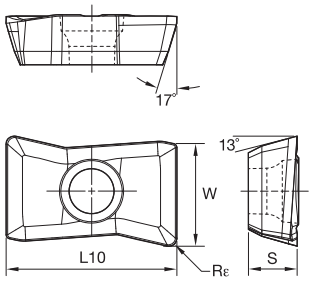
Insert Selection Guide

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.LD/.LF	KC720M	**.LD/.LF**	**KC720M**	.LD/.LF	KC720M
P3–P4	.LD/.LF	KC720M	**.LD/.LF**	**KC720M**	.LD/.LF	KC720M
P5–P6	.LD/.LF	KC720M	**.LD/.LF**	**KC720M**	.LD/.LF	KC720M
M1–M2	.LD/.LF	KC720M	**.LD/.LF**	**KC720M**	.LD/.LF	KC720M
M3	.LD/.LF	KC720M	**.LD/.LF**	**KC720M**	.LD/.LF	KC720M
K1–K2	.LD/.LF	KC505M	**.LD/.LF**	**KC505M**	.LD/.LF	KC505M
K3	.LD/.LF	KC505M	**.LD/.LF**	**KC505M**	.LD/.LF	KC505M
N1–N2	–	–	–	–	–	–
N3	–	–	–	–	–	–
S1–S2	–	–	–	–	–	–
S3	–	–	–	–	–	–
S4	–	–	–	–	–	–
H1	–	–	–	–	–	–

Indexable Insert • JOMT-LF • GOMT-LD



JOMT-LF



GOMT-LD

● first choice
○ alternate choice

JOMT • Side Insert

catalogue number	S	W	L10	Rε	hm	cutting edges	KC505M	KC720M
JOMT08T208ERLF	2,78	5,14	8,50	0,8	0,06	2	●	●
JOMT100308ERLF	3,18	6,42	10,20	0,8	0,06	2	●	●
JOMT13T308ERLF	3,70	8,05	13,20	0,8	0,06	2	●	●
JOMT160408ERLF	4,76	9,67	16,70	0,8	0,06	2	●	●

GOMT • Centre Insert

catalogue number	S	W	L10	Rε	hm	cutting edges	KC505M	KC720M
GOMT08T208ERLD	2,78	5,21	8,70	0,8	0,06	2	●	●
GOMT100308ERLD	3,30	6,56	10,70	0,8	0,06	2	●	●
GOMT13T308ERLD	3,85	8,36	13,20	0,8	0,06	2	●	●
GOMT160408ERLD	4,76	10,03	16,70	0,8	0,06	2	●	●

Recommended Starting Speeds [m/min]

Material Group		KC505M			KC720M		
P	1	–	–	–	260	**240**	215
	2	–	–	–	240	**215**	190
	3	–	–	–	215	**190**	170
	4	360	**260**	215	190	**180**	170
	5	360	**260**	215	170	**145**	120
	6	350	**240**	190	120	**95**	95
M	1	–	–	–	240	**215**	190
	2	–	–	–	190	**170**	145
	3	–	–	–	145	**120**	95
K	1	190	**170**	150	–	–	–
	2	175	**155**	135	–	–	–
	3	115	**95**	75	–	–	–
N	1–2	–	–	–	–	–	–
	3	–	–	–	–	–	–
S	1	–	–	–	–	–	–
	2	–	–	–	–	–	–
	3	–	–	–	–	–	–
	4	–	–	–	–	–	–
H	1	–	–	–	–	–	–

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

Recommended Starting Feeds [mm]

Light Machining	General Purpose	Heavy Machining

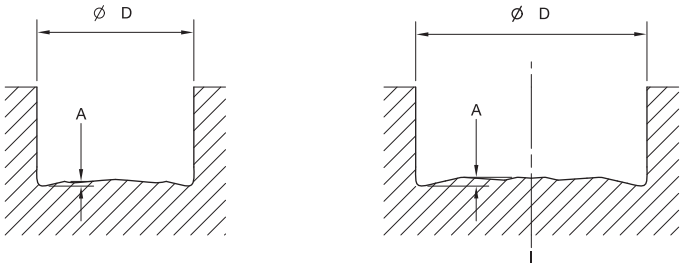
Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.LD/.LF	0,14	**0,34**	0,51	0,11	**0,25**	0,38	0,09	**0,22**	0,33	0,09	**0,21**	0,31	0,05	**0,20**	0,30	.LD/.LF

NOTE: Use “Light Machining” values as starting feed rate.

Insert Cross Reference

end mill	applicable insert for each cutter diameter			
D1	side insert	quantity	centre insert	quantity
Ø 16	**JOMT08T208ERLF**	3	**GOMT08T208ERLD**	1
Ø 17	**JOMT08T208ERLF**	3	**GOMT08T208ERLD**	1
Ø 20	**JOMT100308ERLF**	3	**GOMT100308ERLD**	1
Ø 21	**JOMT100308ERLF**	3	**GOMT100308ERLD**	1
Ø 25	**JOMT13T308ERLF**	3	**GOMT13T308ERLD**	1
Ø 26	**JOMT13T308ERLF**	3	**GOMT13T308ERLD**	1
Ø 32	**JOMT160408ERLF**	3	**GOMT160408ERLD**	1
Ø 33	**JOMT160408ERLF**	3	**GOMT160408ERLD**	1
Ø 40	**JOMT13T308ERLF**	6	**GOMT13T308ERLD**	1
Ø 50	**JOMT160408ERLF**	6	**GOMT160408ERLD**	1

Drilled Hole Bottom Shape



Ø 16–Ø 33 Ø 40, Ø 50

drilled hole bottom shape						
cutting diameter	Ø 16, Ø 17	Ø 20, Ø 21	Ø 25, Ø 26	Ø 32, Ø 33	Ø 40	Ø 50
A (mm)	0,50	0,64	0,85	1,12	1,54	1,65

Drilling

- Calculate the drilling feeds based on (1) effective tooth.
- Use compressed air during drilling routine.
- When drilling sticky materials, use the peck drill routine.
- For stainless steel machining, use coolant.

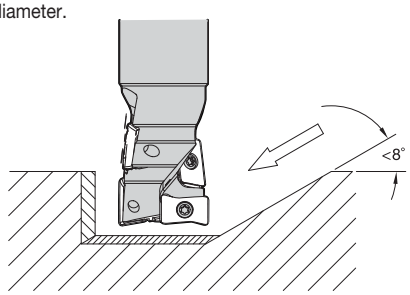
drilling	
cutting diameter	maximum depth (mm)
Ø 16	13
Ø 17	13
Ø 20	17
Ø 21	17
Ø 25	22
Ø 26	22
Ø 32	25
Ø 33	25
Ø 40	25
Ø 50	25

Recommended Cutting Data by Operation and Workpiece Material

workpiece material	feed fates (mm/tooth)		grade
	drilling	profile/slotting	
steel	0,08–0,12	0,05–0,25	KC720M
stainless steel	0,08–0,15	0,05–0,15	KC720M
cast iron	0,05–0,20	0,05–0,25	KC505M

Ramping

- Ramping angle not to exceed 8°.
- Ramping axial depth of cut not to exceed 50% of the cutter diameter.
- Use compressed air for chip evacuation when machining.



Maximum 8° ramp angle

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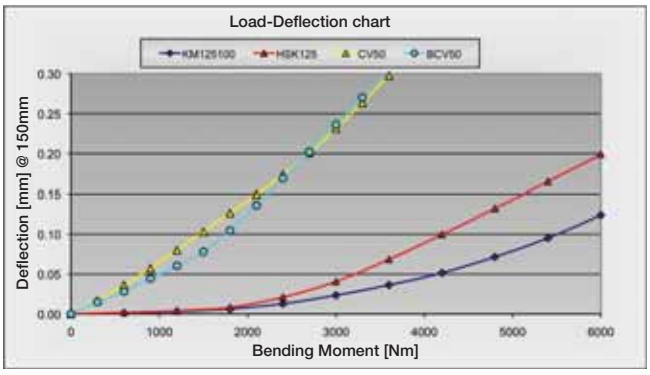

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The Kennametal ceramic milling platform has been specifically engineered to machine high-temperature alloys, PH series, stainless steel, and hardened materials. With excellent productivity through the massive reduction of machining time, Kennametal ceramics can run more than 10 times faster than comparable carbide grades.

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- Engineering to provide outstanding metal removal rates and productivity in nickel-based and/or cobalt-based alloys, stellites, stainless steel, and PH series through HSM.
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- Improved insert clearance and thickness tolerance to increase overall performance.
- New clamping system design provides higher spare part tool life and reliability and higher RPM.

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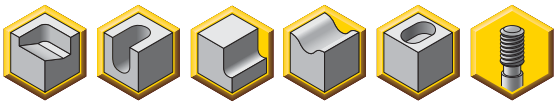
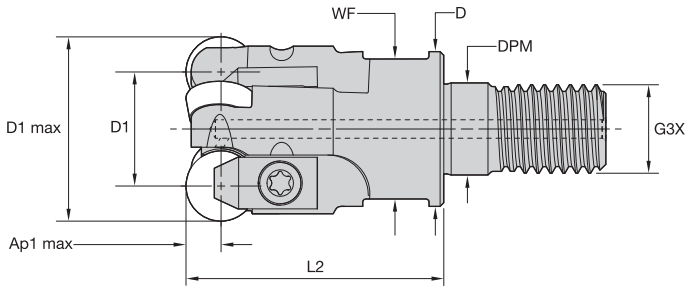
- Three grades and three insert sizes available to cover a wide range of applications.
- Wide diameter range with shell mills, end mills, and Screw-On cutters from diameter 16mm.
- High clearance on the cutters for superior ramping capacities.
- Through-coolant option in all the cutters. Only for air use.

- For machining high-temp alloys, PH stainless, stainless steels, and hardened materials.
- Excellent productivity through massive reduction of machining time.
- Face milling, pocketing, and ramping capabilities.
- Through-body coolant delivery for internal air supply only.





Screw-On End Mills

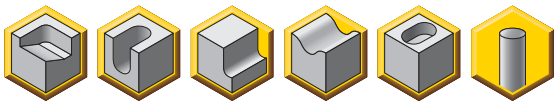
order number	catalogue number	D1 max	D1	D	DPM	G3X	L2	WF	Ap1 max	Z	max ramp angle	kg	max RPM	insert 1
4052782	**KIPR020RP09MF02**	20	11	18	10,5	M10	30	14	4,8	2	13.0°	0,05	23040	RP_N0903___
4052781	**KIPR020RP06MF03**	20	14	18	10,5	M10	30	14	3,2	3	10.0°	0,05	33325	RP_N0602___
4052843	**KIPR025RP09MF03**	25	16	21	12,5	M12	35	18	4,8	3	8.0°	0,08	20610	RP_N0903___
3101753	**KIPR032RP12MF03**	32	20	29	17,0	M16	45	22	6,3	3	4.2°	0,18	20420	RP_N1204___

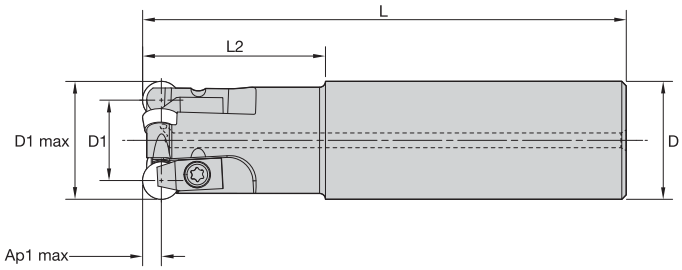
Spare Parts




D1 max	clamp	clamp screw	Nm	Torx driver	Torx driver
20	**KCI1**	**191.924**	1,9	**DT9**	**–**
20	**KCI2**	**191.725**	3,5	**DT15**	**–**
25	**KCI2**	**191.725**	3,5	**DT15**	**–**
32	**KCI3M**	**193.409**	6,0	**–**	**TTP20**

- For machining high-temp alloys, PH stainless, stainless steels, and hardened materials.
- Excellent productivity through massive reduction of machining time.
- Face milling, pocketing, and ramping capabilities.
- Through-body coolant delivery for internal air supply only.





Cylindrical End Mills

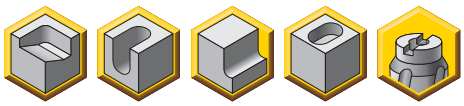
order number	catalogue number	D1 max	D1	D	L	L2	Ap1 max	Z	max ramp angle	kg	max RPM	insert 1
3617418	**KIPR016RP06CF02**	16	10	16	75	26	3,2	2	14.0°	0,10	37260	RP_N0602___
4052780	**KIPR020RP09CF02**	20	11	20	82	31	4,8	2	13.0°	0,16	23040	RP_N0903___
3617416	**KIPR020RP06CF03**	20	14	20	82	31	3,2	3	10.0°	0,17	33325	RP_N0602___
3617415	**KIPR025RP09CF03**	25	16	25	96	39	4,8	3	8.0°	0,30	20610	RP_N0903___
3101754	**KIPR032RP12CF03**	32	20	32	110	50	6,3	3	4.2°	0,56	20420	RP_N1204___
3101755	**KIPR040RP12CF04**	40	28	32	110	49	6,3	4	2.8°	0,61	18260	RP_N1204___

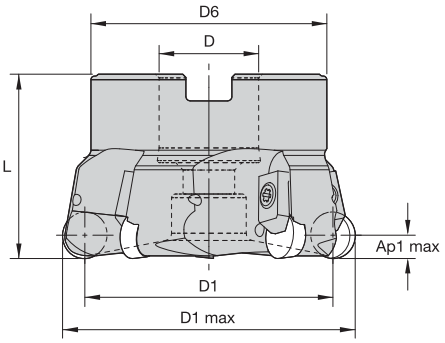
Spare Parts




D1 max	clamp	clamp screw	Nm	Torx driver	Torx driver
16	**KCI1**	**191.924**	1,9	**DT9**	**–**
20	**KCI1**	**191.924**	1,9	**DT9**	**–**
20	**KCI2**	**191.725**	3,5	**DT15**	**–**
25	**KCI2**	**191.725**	3,5	**DT15**	**–**
32	**KCI3M**	**193.409**	6,0	**–**	**TTP20**
40	**KCI3M**	**193.409**	6,0	**–**	**TTP20**

- For machining high-temp alloys, PH stainless, stainless steels, and hardened materials.
- Excellent productivity through massive reduction of machining time.
- Face milling, pocketing, and ramping capabilities.
- Through-body coolant delivery for internal air supply only.





Shell Mills

order number	catalogue number	D1 max	D1	D	D6	L	Ap1 max	Z	max ramp angle	kg	max RPM	insert 1
3101756	**KSSR050RP12CF04**	50	37	16	44	50	6,3	4	2.0°	0,41	16340	RP_N1204___
3101757	**KSSR063RP12CF04**	63	50	22	50	50	6,3	4	1.4°	0,69	14550	RP_N1204___
3101758	**KSSR080RP12CF05**	80	67	27	60	50	6,3	5	1.0°	1,09	12900	RP_N1204___
3101759	**KSSR100RP12CF06**	100	87	32	80	50	6,3	6	.8°	1,84	11550	RP_N1204___

Spare Parts



D1 max	clamp	clamp screw	Nm	Torx Plus wrench
50	**KCI3M**	**193.409**	6,0	**TTP20**
63	**KCI3M**	**193.409**	6,0	**TTP20**
80	**KCI3M**	**193.409**	6,0	**TTP20**
100	**KCI3M**	**193.409**	6,0	**TTP20**

Insert Selection Guide

RPGN06... High Temp

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	–	–	–	–	–	–
P3–P4	–	–	–	–	–	–
P5–P6	..E	KYSP30	**..E**	**KYSP30**	..E	KYSP30
M1–M2	–	–	–	–	–	–
M3	..E	KYSM10	**..E**	**KYSM10**	..E	KYSM10
K1–K2	–	–	–	–	–	–
K3	–	–	–	–	–	–
N1–N2	–	–	–	–	–	–
N3	–	–	–	–	–	–
S1–S2	..E	KYSP30	**..E**	**KYSP30**	..E	KYSP30
S3	..E	KYSP30	**..E**	**KYHS10**	..E	KYHS10
S4	–	–	–	–	–	–
H1	..E	KYHS10	**..E**	**KYHS10**	–	–

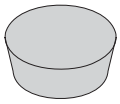
RPGN09... High Temp

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	–	–	–	–	–	–
P3–P4	–	–	–	–	–	–
P5–P6	..E	KYSP30	**..E**	**KYSP30**	..E	KYSP30
M1–M2	–	–	–	–	–	–
M3	..E	KYSM10	**..E**	**KYSM10**	..E	KYSM10
K1–K2	–	–	–	–	–	–
K3	–	–	–	–	–	–
N1–N2	–	–	–	–	–	–
N3	–	–	–	–	–	–
S1–S2	..E	KYSP30	**..E**	**KYSP30**	..E	KYSP30
S3	..E	KYSP30	**..E**	**KYHS10**	..E	KYHS10
S4	–	–	–	–	–	–
H1	..E	KYHS10	**..E**	**KYHS10**	–	–

RPGN12... High Temp

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	–	–	–	–	–	–
P3–P4	–	–	–	–	–	–
P5–P6	..E	KYSP30	**..E**	**KYSP30**	..E	KYSP30
M1–M2	–	–	–	–	–	–
M3	..E	KYSM10	**..E**	**KYSM10**	..E	KYSM10
K1–K2	–	–	–	–	–	–
K3	–	–	–	–	–	–
N1–N2	–	–	–	–	–	–
N3	–	–	–	–	–	–
S1–S2	..E	KYSP30	**..E**	**KYSP30**	..E	KYSP30
S3	..E	KYSP30	**..E**	**KYHS10**	..E	KYHS10
S4	–	–	–	–	–	–
H1	..E	KYHS10	**..E**	**KYHS10**	–	–

Indexable Ceramic Inserts • KIPR-RP • KSSR-RP



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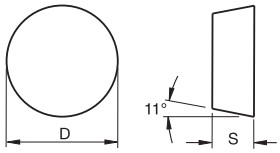
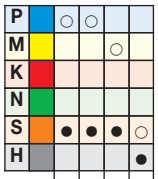


● first choice
○ alternate choice



Copy Mills

RPGN

catalogue number	D	S	KYS30	KYSP30	KYSM10	KYHS10
RPGN060200E	6,35	2,38	●	●	●	●
RPGN090300E	9,53	3,18	●	●	●	●
RPGN090300T01020	9,53	3,18	●			
RPGN120400E	12,70	4,76	●	●	●	●
RPGN120400T01020	12,70	4,76	●			

NOTE: A — Use these tools with the appropriate equipment/machines. Machines have to be covered for safety reasons: Hot flowing chips and loud noises are involved, which is common during the milling process.

B — Use only air flows as coolant method.

C — Higher RPMs are involved; use balanced toolholder for higher tool life and safer operation.

D — Consider increasing the fz in hard machining when smaller ap are applied.

Recommended Starting Speeds [m/min]

Material Group		KYHS10			KYSM10			KYSP30			KYS30		
P	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–	–	–	–
	5	–	–	–	1205	**975**	725	915	**730**	550	–	–	–
	6	–	–	–	1205	**975**	725	915	**730**	550	–	–	–
M	1	–	–	–	1205	**975**	725	–	–	–	–	–	–
	2	–	–	–	1140	**915**	–	–	–	–	–	–	–
	3	–	–	–	840	**730**	–	–	–	–	–	–	–
K	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
N	1–2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
S	1	510	**400**	295	1065	**870**	675	805	**660**	510	805	**660**	510
	2	510	**400**	295	1065	**870**	675	805	**660**	510	805	**660**	510
	3	730	**620**	510	1550	**1260**	970	1170	**950**	730	1170	**950**	730
	4	–	–	–	–	–	–	–	–	–	–	–	–
H	1	365	**310**	240	–	–	–	–	–	–	–	–	–

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

Recommended Starting Feeds [mm] • RPGN06..

Light Machining	General Purpose	Heavy Machining

At 3,18 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
..E	0,12	**0,13**	0,14	0,09	**0,10**	0,11	0,08	**0,09**	0,09	0,07	**0,08**	0,09	0,07	**0,08**	0,09	..E

At 1,59 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
..E	0,14	**0,15**	0,17	0,10	**0,11**	0,13	0,09	**0,10**	0,11	0,09	**0,09**	0,10	0,08	**0,09**	0,10	..E

At 0,79 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
..E	0,18	**0,20**	0,22	0,14	**0,15**	0,16	0,12	**0,13**	0,14	0,11	**0,12**	0,13	0,11	**0,12**	0,13	..E

At 0,40 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
..E	0,25	**0,27**	0,30	0,19	**0,20**	0,22	0,16	**0,18**	0,20	0,15	**0,17**	0,18	0,15	**0,16**	0,18	..E

NOTE: Use “Light Machining” values as starting feed rate.

Recommended Starting Feeds [mm] • RPGN09..

Light Machining	General Purpose	Heavy Machining

At 4,76 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
..E	0,12	**0,13**	0,14	0,09	**0,10**	0,11	0,08	**0,09**	0,09	0,07	**0,08**	0,09	0,07	**0,08**	0,09	..E

At 2,38 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
..E	0,14	**0,15**	0,17	0,10	**0,11**	0,13	0,09	**0,10**	0,11	0,09	**0,09**	0,10	0,08	**0,09**	0,10	..E

At 1,19 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
..E	0,18	**0,20**	0,22	0,14	**0,15**	0,16	0,12	**0,13**	0,14	0,11	**0,12**	0,13	0,11	**0,12**	0,13	..E

At 0,60 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
..E	0,25	**0,27**	0,30	0,19	**0,20**	0,22	0,16	**0,18**	0,20	0,15	**0,17**	0,18	0,15	**0,16**	0,18	..E

Recommended Starting Feeds [mm] • RPGN12..

At 6,35 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
..E	0,12	**0,13**	0,14	0,09	**0,10**	0,11	0,08	**0,09**	0,09	0,07	**0,08**	0,09	0,07	**0,08**	0,09	..E

At 3,18 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
..E	0,14	**0,15**	0,17	0,10	**0,11**	0,13	0,09	**0,10**	0,11	0,09	**0,09**	0,10	0,08	**0,09**	0,10	..E

At 1,59 Axial Depth of Cut (ap)

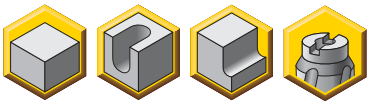
Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
..E	0,18	**0,20**	0,22	0,14	**0,15**	0,16	0,12	**0,13**	0,14	0,11	**0,12**	0,13	0,11	**0,12**	0,13	..E

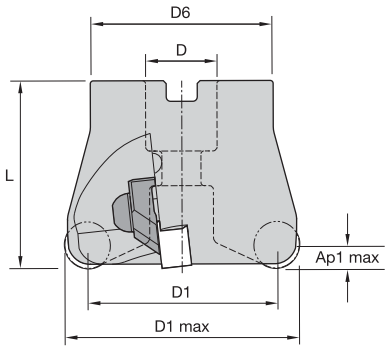
At 0,79 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
..E	0,25	**0,27**	0,30	0,19	**0,20**	0,22	0,16	**0,18**	0,20	0,15	**0,17**	0,18	0,15	**0,16**	0,18	..E

NOTE: Use “Light Machining” values as starting feed rate.

- First choice for face milling high-temp alloys and hardened materials up to 60 HRC.
- Excellent productivity through massive reduction of machining time.





Shell Mills • RNGN 1207

order number	catalogue number	D1 max	D1	D	D6	L	Ap1 max	Z	kg	max RPM	insert 1
3101760	**KSSR050RN12CF03**	50	37	16	42	50	6,0	3	0,38	20500	RNGN120700
3101761	**KSSR063RN12CF04**	63	50	22	54	50	6,0	4	0,60	16600	RNGN120700
3101762	**KSSR080RN12CF05**	80	67	27	64	50	6,0	5	0,96	13500	RNGN120700
3101763	**KSSR100RN12CF06**	100	87	32	84	50	6,0	6	1,53	11200	RNGN120700
3101764	**KSSR125RN12CF07**	125	112	40	94	63	6,0	7	2,70	9000	RNGN120700
3101765	**KSSR160RN12CF09**	160	147	40	114	63	6,0	9	4,85	7000	RNGN120700

Spare Parts

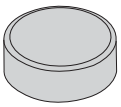



D1 max	clamp	clamp screw	washer	Nm	Torx wrench
50	**555.205**	**MS1221**	**191.279**	9,0	**TT25**
63	**555.205**	**MS1221**	**191.279**	9,0	**TT25**
80	**555.205**	**MS1221**	**191.279**	9,0	**TT25**
100	**555.205**	**MS1221**	**191.279**	9,0	**TT25**
125	**555.205**	**MS1221**	**191.279**	9,0	**TT25**
160	**555.205**	**MS1221**	**191.279**	9,0	**TT25**

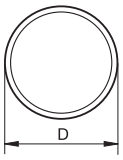
Insert Selection Guide

Material Group	Light Machining Geometry	Light Machining Grade	General Purpose Geometry	General Purpose Grade	Heavy Machining Geometry	Heavy Machining Grade
P1–P2	–	–	–	–	–	–
P3–P4	–	–	–	–	–	–
P5–P6	–	–	**..T..**	**KY2100 / KYSM10**	–	–
M1–M2	–	–	–	–	–	–
M3	..T..	KY2100 / KYSM10	**..T..**	**KY2100 / KYSM10**	..T..	KY2100 / KYSM10
K1–K2	–	–	–	–	–	–
K3	–	–	–	–	–	–
N1–N2	–	–	–	–	–	–
N3	–	–	–	–		–
S1–S2	..E	KY4300 / KYHS10	**..T..**	**KYS30**	..T..	KY2100 / KYSM10
S3	..T..	KYS30	**..T..**	**KYS30**	..T..	KY4300 / KYHS10
S4	–	–	–	–	–	–
H1	..E	KY4300 / KYHS10	**..T..**	**KY4300 / KYHS10**	–	–

Indexable Ceramic Inserts • KIPR-RP • KSSR-RP • KSSR-RN



RNGN



● first choice
○ alternate choice

	KYS30	KY2100	KY4300
P		●	
M		●	
K			
N			
S	●		●
H			●

RNGN

catalogue number	D	S	KYS30	KY2100	KY4300
RNGN120700E	12,70	7,94	●	●	●
RNGN120700T01020	12,70	7,94	●	●	●

NOTE: A — Use these tools with the appropriate equipment/machines. Machines have to be covered for safety reasons: Hot flowing chips and loud noises are involved, which is common during the milling process.

B — Use only air flows as coolant method.

C — Higher RPMs are involved; use balanced toolholder for higher tool life and safer operation.

D — Consider increasing the fz in hard machining when smaller ap are applied.

Recommended Starting Speeds [m/min]

Material Group		KY4300			KY2100			KYS30		
P	1	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–
	5	–	–	–	–	–	–	–	–	–
	6	–	–	–	–	–	–	–	–	–
M	1	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–
K	1	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–
N	1–2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–
S	1	510	**400**	295	1065	**870**	675	805	**660**	510
	2	510	**400**	295	1065	**870**	675	805	**660**	510
	3	730	**620**	510	1550	**1260**	970	1170	**950**	730
	4	–	–	–	–	–	–	–	–	–
H	1	365	**310**	240	–	–	–	–	–	–

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

Recommended Starting Feeds [mm]

Light Machining	General Purpose	Heavy Machining

At 6,35 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
..E	0,09	**0,10**	0,11	0,07	**0,08**	0,09	0,06	**0,07**	0,07	0,06	**0,06**	0,07	0,06	**0,06**	0,07	..E
..T..	0,17	**0,26**	0,28	0,13	**0,19**	0,21	0,11	**0,17**	0,19	0,10	**0,16**	0,17	0,10	**0,16**	0,17	..T..

At 3,18 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
..E	0,11	**0,12**	0,13	0,08	**0,09**	0,10	0,07	**0,08**	0,09	0,07	**0,07**	0,08	0,07	**0,07**	0,08	..E
..T..	0,20	**0,30**	0,33	0,15	**0,22**	0,25	0,13	**0,20**	0,21	0,12	**0,18**	0,20	0,12	**0,18**	0,20	..T..

At 1,59 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
..E	0,14	**0,16**	0,17	0,11	**0,12**	0,13	0,09	**0,10**	0,11	0,09	**0,10**	0,10	0,09	**0,09**	0,10	..E
..T..	0,26	**0,39**	0,43	0,19	**0,29**	0,32	0,17	**0,26**	0,28	0,16	**0,24**	0,26	0,15	**0,23**	0,26	..T..

At 0,79 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
..E	0,20	**0,21**	0,23	0,15	**0,16**	0,18	0,13	**0,14**	0,15	0,12	**0,13**	0,14	0,12	**0,13**	0,14	..E
..T..	0,35	**0,54**	0,59	0,26	**0,40**	0,44	0,23	**0,35**	0,38	0,21	**0,33**	0,36	0,21	**0,32**	0,35	..T..

NOTE: Use “Light Machining” values as starting feed rate.