



Copy Mills

KenFeed 2X • Double-Sided High-Feed Milling CuttersR2–R7
KenFeed Mini • Single-Sided Insert, Small High-Feed Milling CuttersR8–R11
Rodeka • Double-Sided Round Insert, IC12R12–R19
Rodeka IC12, 12 Cutting Edges	R13–R17
Rodeka 8, IC12 Turbine Blade Version	R18–R19
KDM Platform • Round Inserts, Particularly for the Die and Mould IndustryR20–R40
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KIPR and KSSR • Round Ceramic Milling CuttersR114–R123
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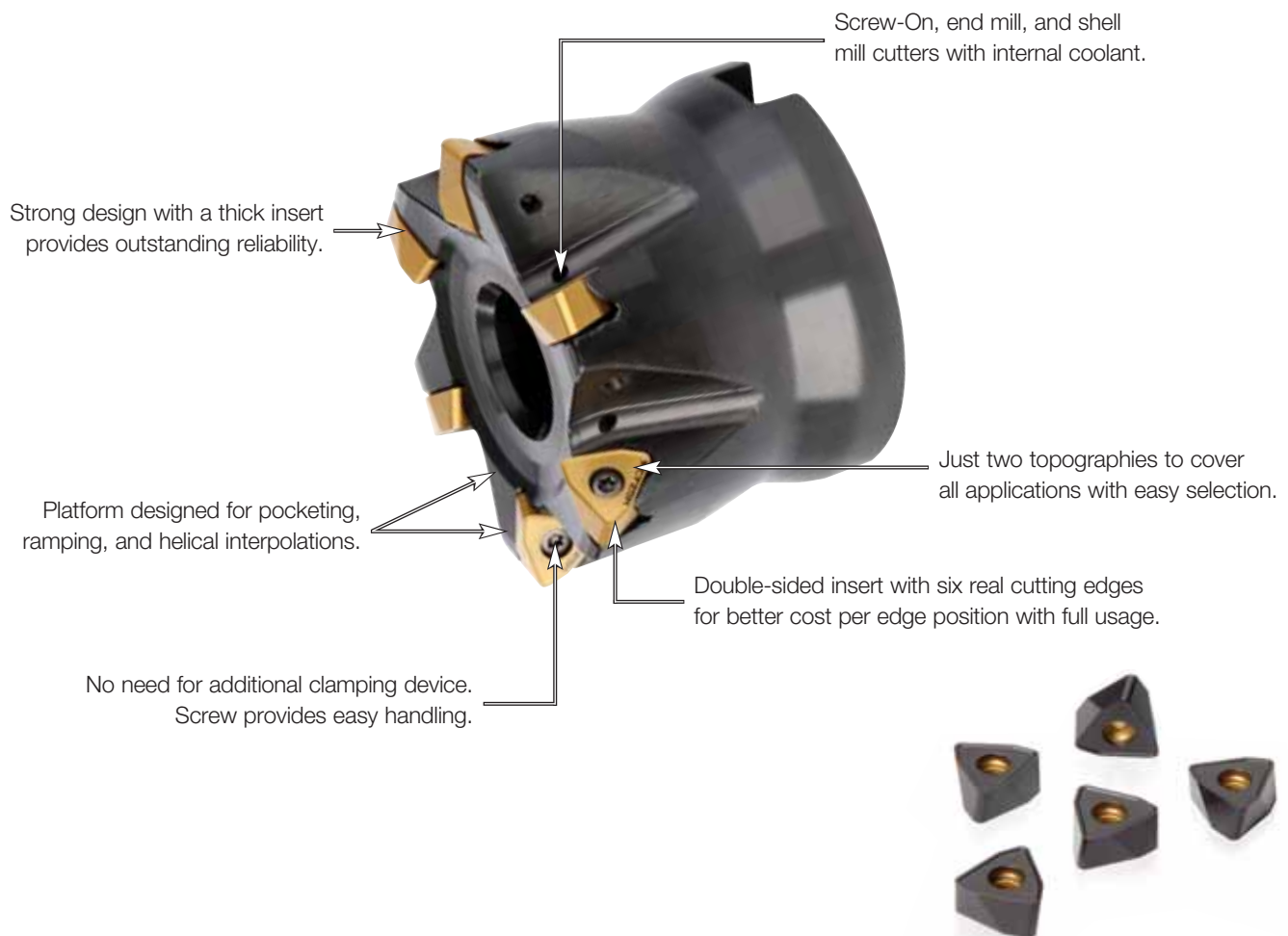


KenFeed™ 2X • The Ultimate and Innovative Concept for Applying the Latest High-Feed Milling Strategies

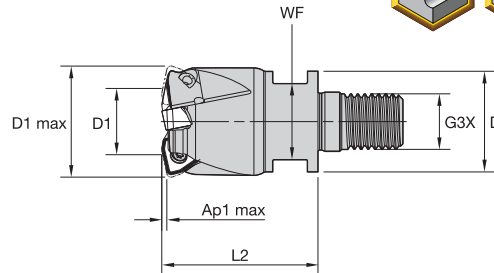
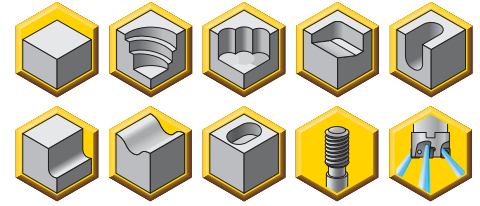
Primary Application

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

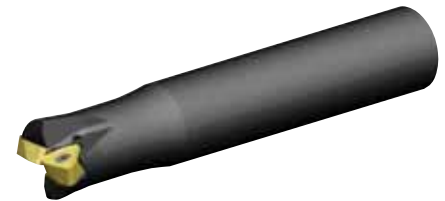
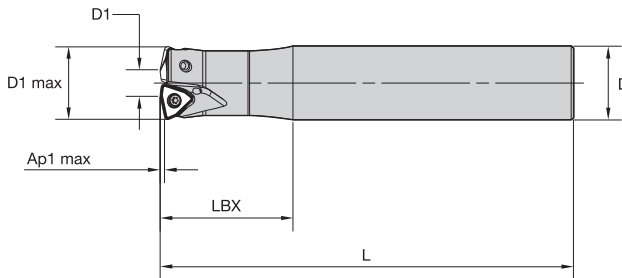
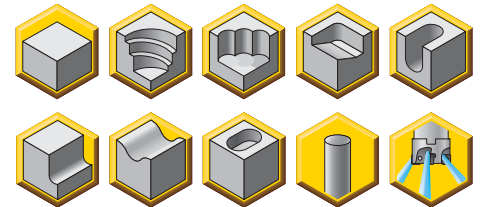


- Dramatically improves MRR using the latest milling strategies.
- Engineered to run up to 2,5mm fz.
- Ideal for pocketing, ramping, and helical interpolations. Z-plunge capabilities.
- First choice for deep cavities or from 3 x D.



■ 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

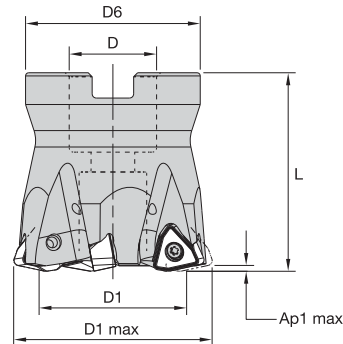
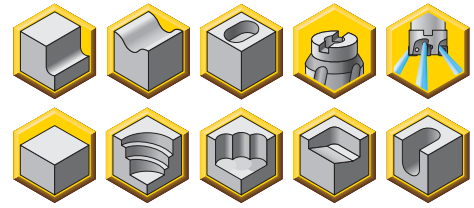
order number	catalogue number	D1 max	D1	D	L	LBX	Ap1 max	Z	kg	max RPM	insert 1
4113987	KF2X25Z02A25WO09L140	25	9	25	140	45	1,5	2	0,46	37000	WOEJ090512_
4113988	KF2X25Z02A25WO09L200	25	9	25	200	45	1,5	2	0,68	37000	WOEJ090512_
4113989	KF2X25Z02A25WO09L300	25	9	25	300	45	1,5	2	1,05	37000	WOEJ090512_
4113990	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	—



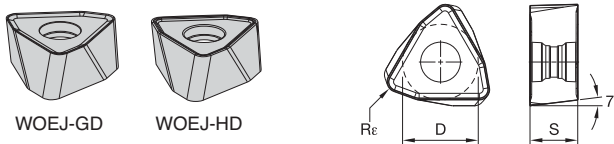
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Insert Selection Guide

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.



- first choice
- alternate choice

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

WOEJ-GD and -HD

catalogue number	D	Re	S	cutting edges
WOEJ090512SRGD	8,90	1,20	5,40	6
WOEJ090512SRHD	8,90	1,20	5,50	6

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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]

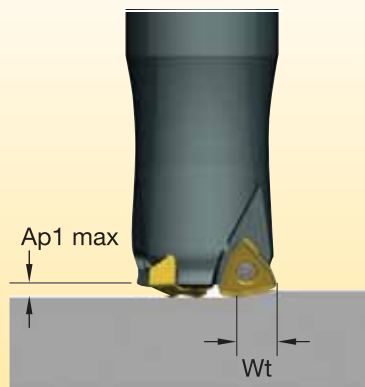
Light Machining	General Purpose	Heavy Machining
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Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50-100%			
.S..GD	0,82	1,63	3,33	0,61	1,21	2,43	0,53	1,05	2,11	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

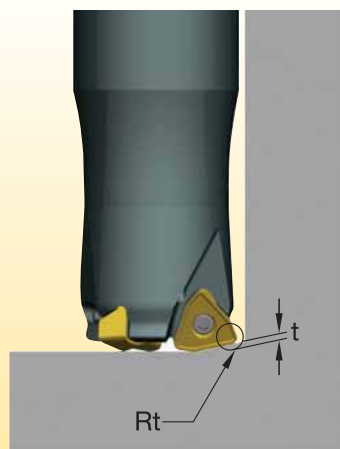
NOTE: Use "Light Machining" values as starting feed rate.

General Programming Information for Applying KenFeed 2X • IC09

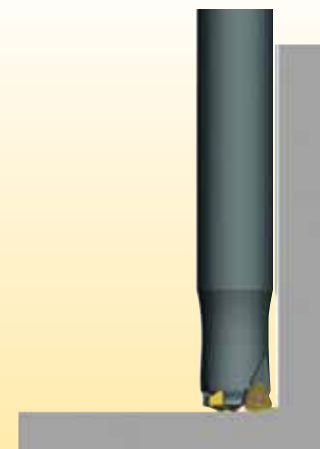
Rt	Wt	t
2.70	8.15	1.15



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

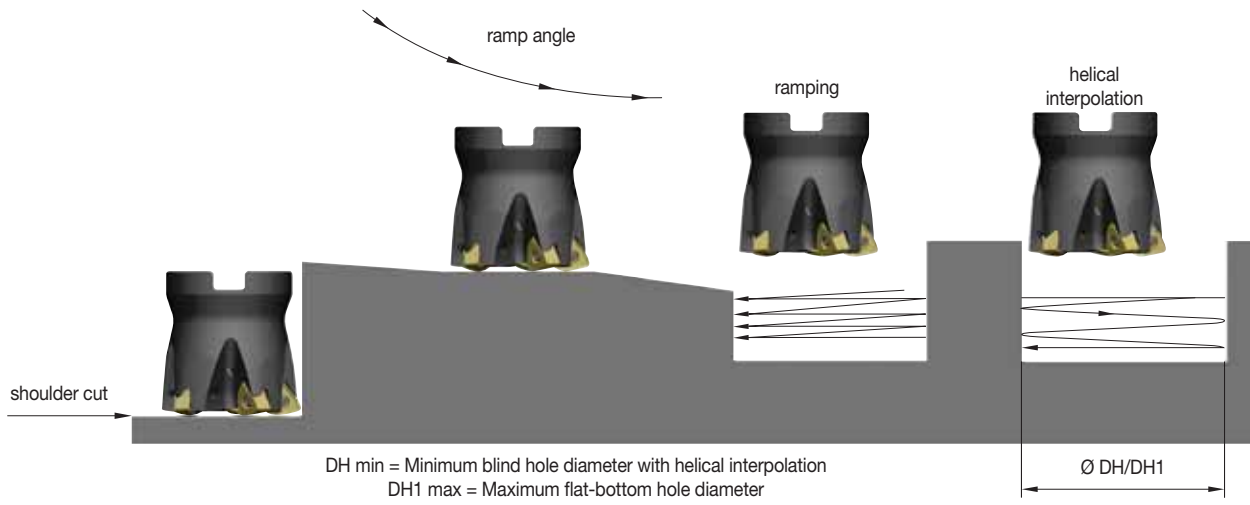


For CAM programming, the loads can be programmed as a toroidal tool type by using the Rt value as the insert radius.



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

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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
Face Mills	KF2X32Z03A32WO09L300	1.8°	2.7°	1.7°	41,2	48,4	64
	KF2X35Z03A32WO09L200	1.6°	2.4°	1.4°	46,8	54,0	70
	KF2X40Z04WO09	1.3°	2.0°	1.2°	56,4	63,6	80
Face Mills	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.

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

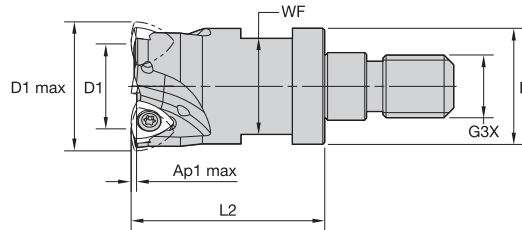
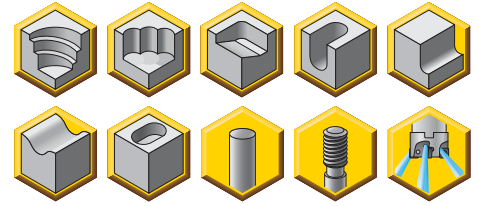
Just two topographies to cover all applications with easy selection.



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

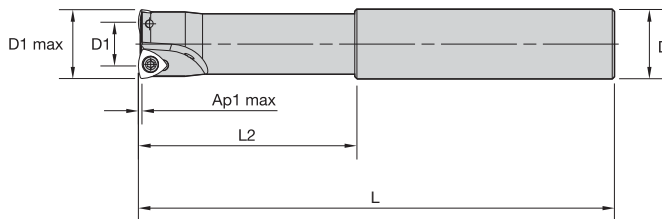
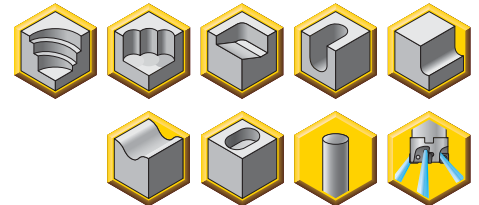


- Engineered to use with small machines and/or components using high-feed milling strategies.
- Fine-pitch cutters boost productivity; able to run up to 1,5mm fz.
- Pocketing, ramping, and helical interpolations.
- First choice above 3 x D applications.



■ 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



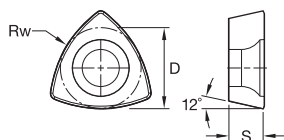
D1 max	insert screw	Nm	Torx wrench
16	192.416	1,0	FT7
20	192.416	1,0	FT7
25	192.416	1,0	FT7
32	192.416	1,0	FT7
35	192.416	1,0	FT7

■ 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.



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

● first choice
○ alternate choice

■ WPGX-LD and -LN

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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]

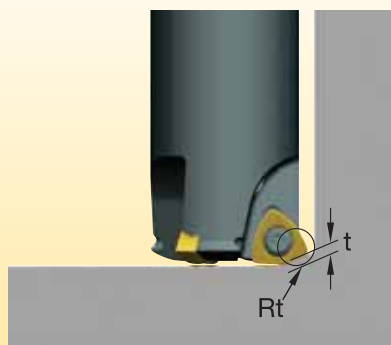
Light Machining	General Purpose	Heavy Machining
-----------------	-----------------	-----------------

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..

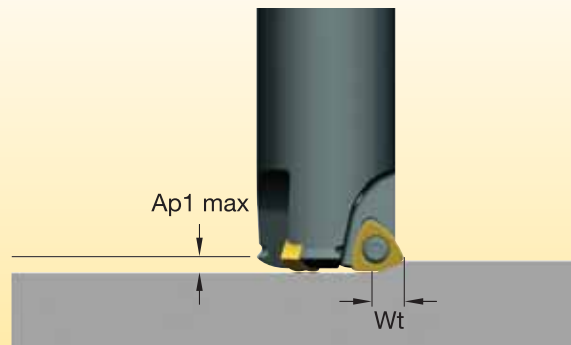
NOTE: Use "Light Machining" values as starting feed rate.

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.

Copy Mills



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.

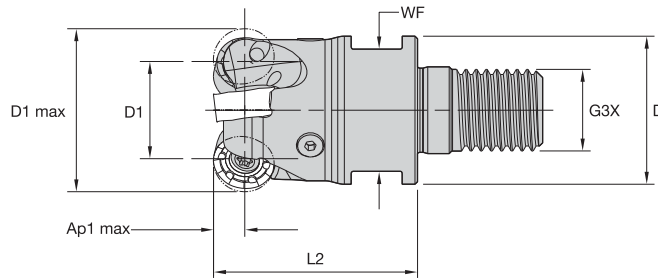
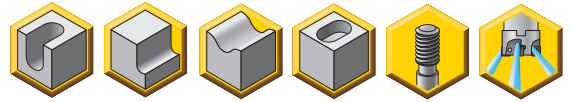
Unique anti-rotation feature for excellent stability with higher feed rates and cutting forces. User-friendly insert rotation.

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



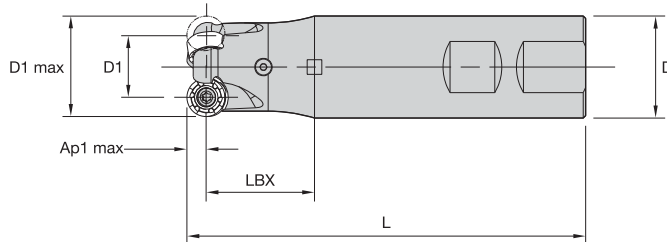
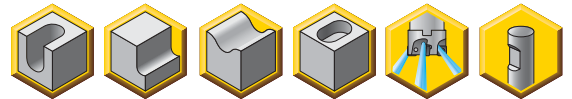
To learn more, *scan here.*
For instructions on how to scan, please see page xxix.

- 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

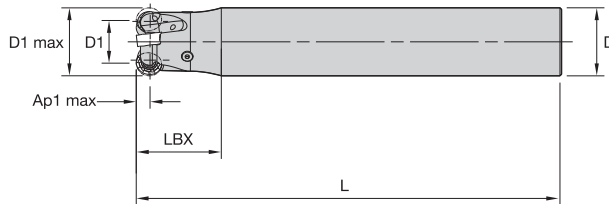
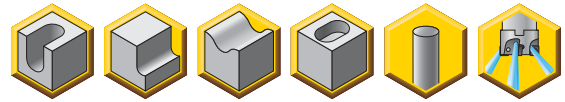
order number	catalogue number	D1 max	D1	D	L	LBX	Ap1 max	Z	kg	max RPM	insert 1
4147035	KDR32Z03B32RN12	32	20	32	125	40	3,0	3	0,64	39160	RN_J1204M0_

■ 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

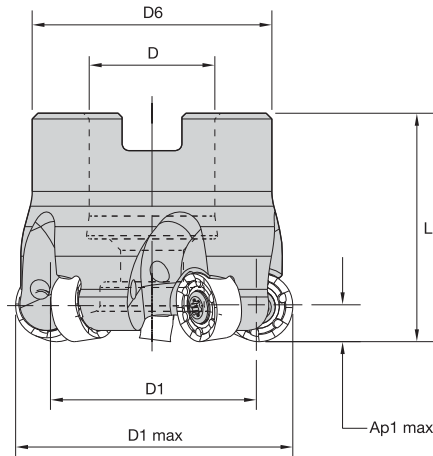
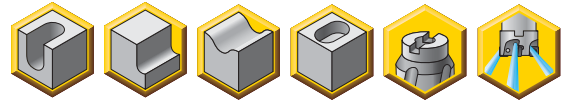


D1 max	insert screw	Nm	wrench
32	193.492	4,0	170.025
35	193.492	4,0	170.025
42	193.492	4,0	170.025



Copy Mills

- 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



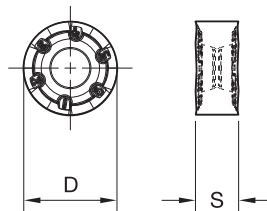
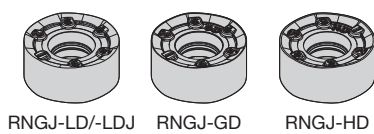
D1 max	insert screw	Nm	low-head cap screw	socket-head cap screw	coolant lock screw assembly	wrench
40	193.492	4,0	—	MS1294	—	170.025
50	193.492	4,0	MS1336	—	—	170.025
52	193.492	4,0	—	MS1242	—	170.025
63	193.492	4,0	—	MS1242	—	170.025
66	193.492	4,0	—	MS2038	—	170.025
80	193.492	4,0	—	MS2038	—	170.025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



● first choice
○ alternate choice

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

RNGJ-LD/-LDJ

catalogue number	D	S	hm	cutting edges					
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					
RNGJ1204M0SGD	12,00	4,75	0,09	12					

RNGJ-HD

catalogue number	D	S	hm	cutting edges					
RNGJ1204M0SHD	12,00	4,75	0,19	12					

Copy Mills

■ 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)

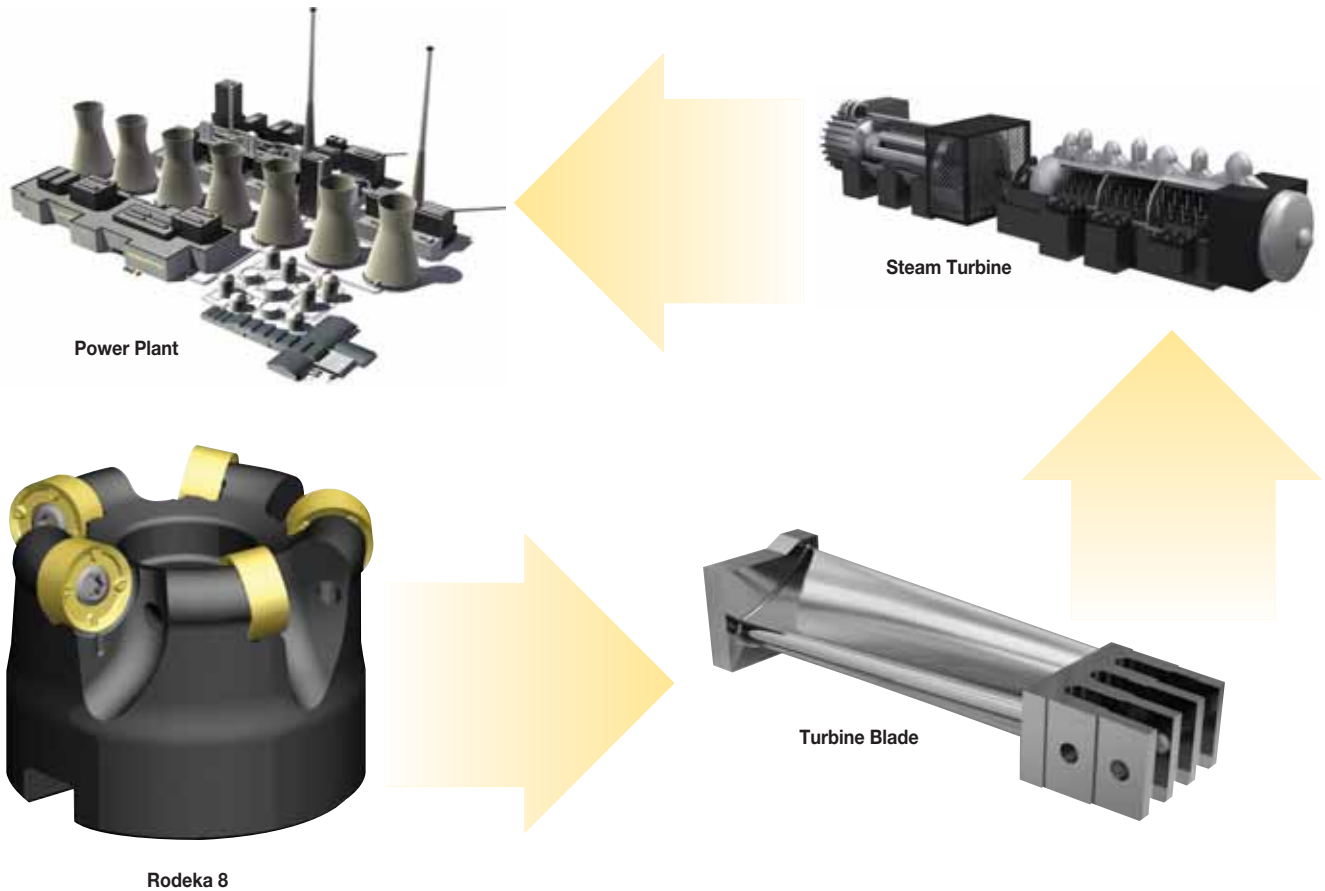
Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50%–100%			
.F..LDJ	0,19	0,32	0,55	0,14	0,24	0,41	0,12	0,21	0,36	0,11	0,19	0,34	0,11	0,19	0,33	.F..LDJ
.E..LD	0,19	0,32	0,55	0,14	0,24	0,41	0,12	0,21	0,36	0,11	0,19	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.

Copy Mills

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.

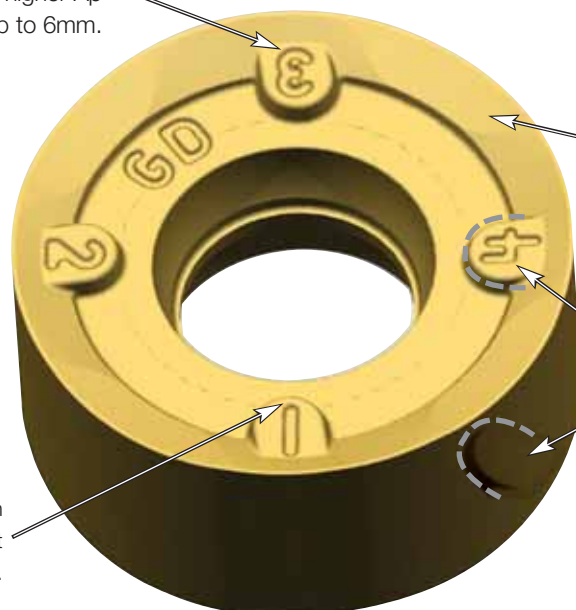


Four indexes per side, in total eight cutting edges. With higher A_p capabilities, up to 6mm.

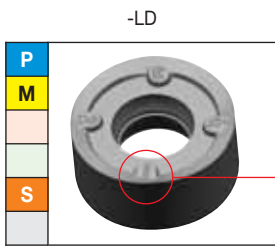
Specific high positive geometries with improved chip forming and higher tool life.

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

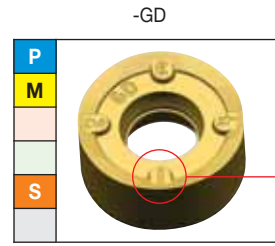
Unique anti-rotation feature with higher contact area for excellent stability, allowing higher feed rates.



Copy Mills



Light/Medium Machining
First choice for stainless steel and titanium machining.



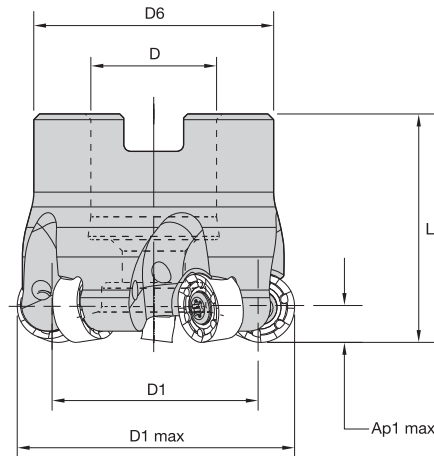
Medium/Heavy Machining
First choice for medium/heavy operations. Forged blades or "bad skin".

● first choice
○ alternate choice

P	●	●	●
M	●	●	●
K	○	○	○
N	○	○	○
S	○	●	○
H	○	○	○
	KC522M	KC725M	KCMP30
	●	●	●
	●	●	●
	●	●	●

■ 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

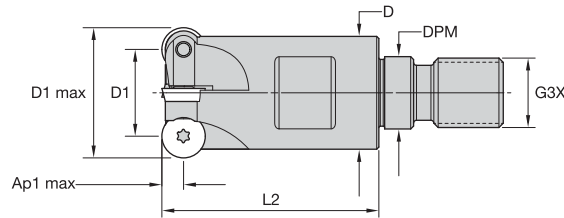
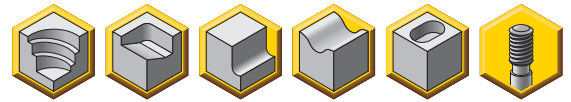
- Big draft clearance angle to improve the pocketing operations performance.
- Big clearance area in the bottom, superior ramping, and helical values.
- High accuracy and tight runout.

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

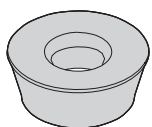


D1 max	insert screw	Nm	Torx wrench
12	193.340	0,9	FT6
15	193.340	0,9	FT6
20	193.340	0,9	FT6
25	193.340	0,9	FT6

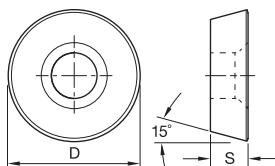
Insert Selection Guide

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	●	●	●



Copy Mills

■ 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
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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

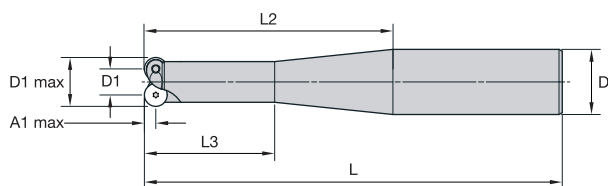
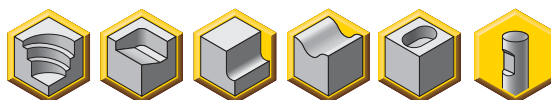
At 0,25 Axial Depth of Cut (ap)

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.



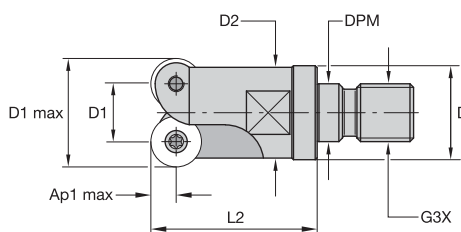
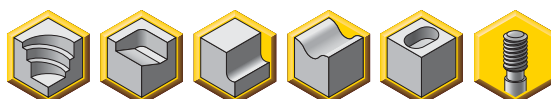
- Suitable for die and mould manufacturing.



■ 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



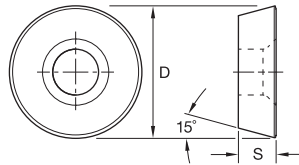
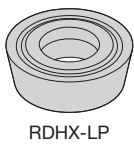
D1 max	insert screw	Nm	Torx wrench
12	193.364	1,0	FT7
15	193.341	1,0	FT7
20	193.341	1,0	FT7
25	193.341	1,0	FT7
30	193.341	1,0	FT7
35	193.341	1,0	FT7

Copy Mills

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

Indexable Round Inserts • RD.X07...



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

● first choice
○ alternate choice

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
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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

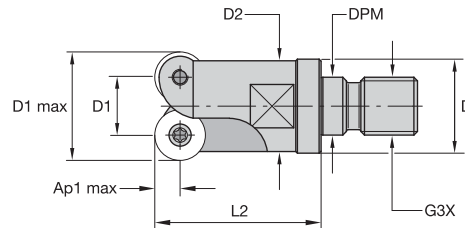
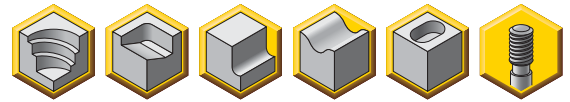
At 0,50 Axial Depth of Cut (ap)

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.

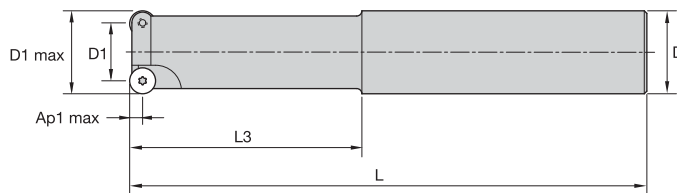
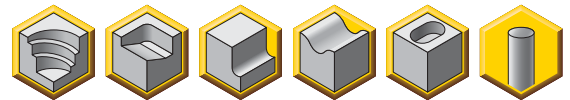
Copy Mills

- 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_

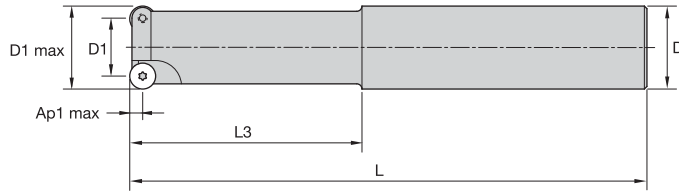
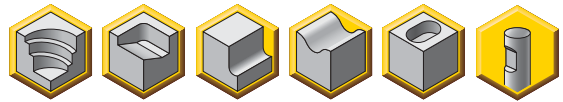
- Suitable for die and mould manufacturing.


■ 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_

Copy Mills

• 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

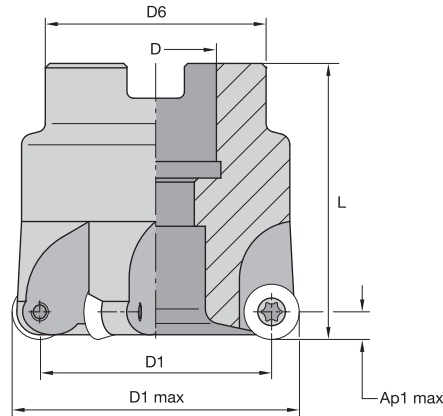
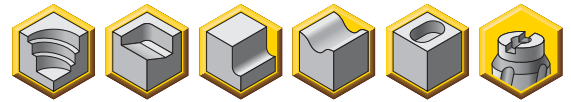


D1 max	insert screw	Nm	Torx wrench
20	193.342	3,5	FT15
25	193.342	3,5	FT15
30	193.342	3,5	FT15
32	193.342	3,5	FT15
35	193.342	3,5	FT15
42	193.342	3,5	FT15



Copy Mills

- 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

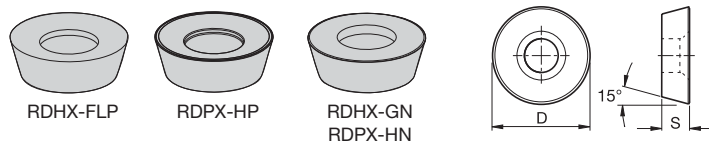


D1 max	insert screw	Nm	Torx wrench	low-head cap screw	socket-head cap screw
40	193.342	3,5	FT15	—	MS1294
50	193.342	3,5	FT15	129.025	—
52	193.342	3,5	FT15	129.025	—

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...



● first choice
○ alternate choice

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	○	●	●	●	○	○	○

Copy Mills

■ 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.

Copy Mills

■ Recommended Starting Feeds [mm]

Light Machining	General Purpose	Heavy Machining
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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

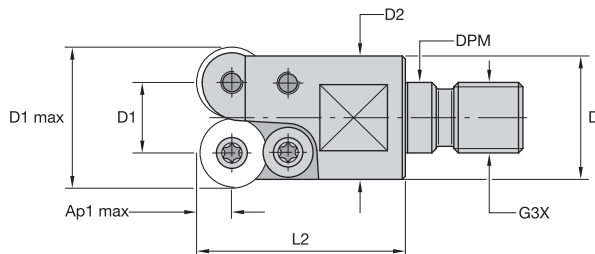
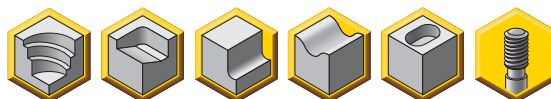
Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50-100%			
.F..LP	0,19	0,38	0,77	0,15	0,29	0,58	0,13	0,25	0,50	0,12	0,23	0,47	0,12	0,23	0,46	.F..LP
.S..GN	0,39	0,93	1,58	0,29	0,69	1,17	0,25	0,60	1,02	0,24	0,56	0,95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



Copy Mills

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



■ **Screw-On End Mills • RD.X12 Inserts**

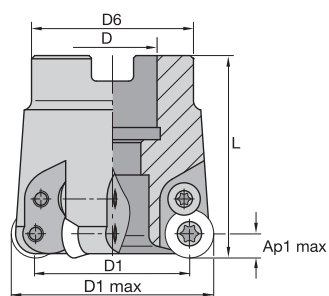
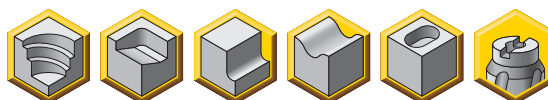
order number	catalogue number	D1 max	D1	D	D2	DPM	G3X	L2	Ap1 max	Z	max ramp angle	kg	insert 1
1888421	24E02R035M12SRD12	24	12	21	21	12,5	M12	35	6,0	2	15.0°	0,08	RD__12T3__
1888422	35E03R043M16SRD12	35	23	29	33	17,0	M16	43	6,0	3	11.0°	0,21	RD__12T3__
1888423	42E04R043M16SRD12	42	30	29	38	17,0	M16	43	6,0	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	—	—

Copy Mills

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

Indexable Round Inserts • RD.X12...



● first choice
○ alternate choice

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
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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)

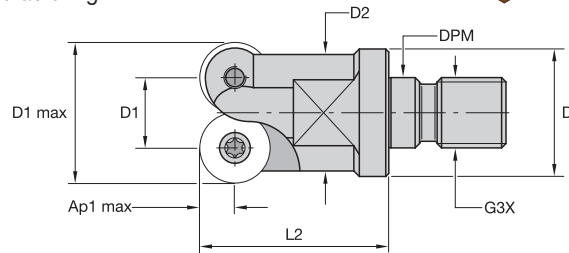
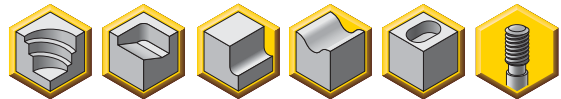
Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50-100%			
.F..LP	0,13	0,25	0,51	0,10	0,19	0,38	0,08	0,17	0,33	0,08	0,15	0,31	0,08	0,15	0,30	.F..LP
.F..GN	0,13	0,25	0,51	0,10	0,19	0,38	0,08	0,17	0,33	0,08	0,15	0,31	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

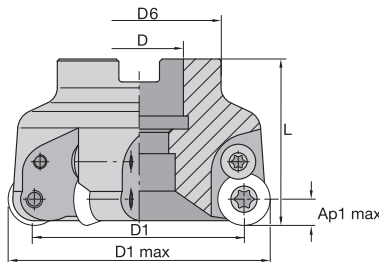
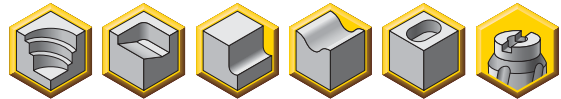
order number	catalogue number	D1 max	D1	D	D2	DPM	G3X	L2	Ap1 max	Z	max ramp angle	kg	insert 1
1888424	32E02R043M16SRD16	32	16	29	27	17,0	M16	43	8,0	2	15.0°	0,20	RD__1604__

■ 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_X1604M0__

■ Spare Parts



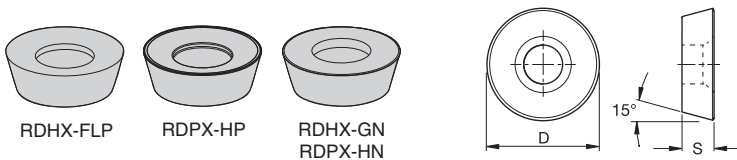
D1 max	insert screw	Nm	Torx wrench	clamp screw
50	193.343	6,0	FT20	193.383
52	193.343	6,0	FT20	193.383
63	193.343	6,0	FT20	193.383
66	193.343	6,0	FT20	193.383
80	193.343	6,0	FT20	193.383
100	193.343	6,0	FT20	193.383

Copy Mills

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

Indexable Round Inserts • KDM RD.X16...



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

● first choice
○ alternate choice

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
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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

Copy Mills

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.**

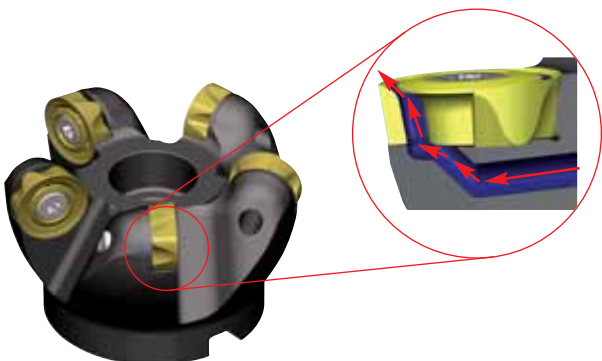
At Kennametal, innovation follows vision. Our revolutionary products and services are inspired by asking “what if?” The solutions that follow — like our Beyond BLAST through-coolant inserts — deliver remarkable results in the world’s most demanding machining environments.

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

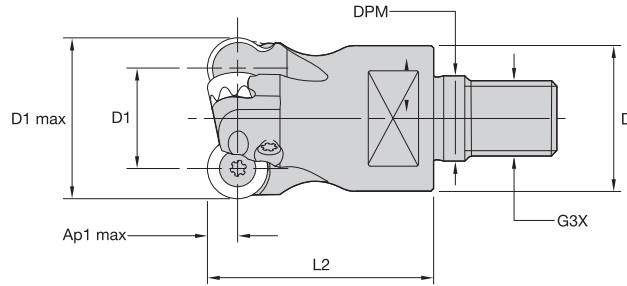
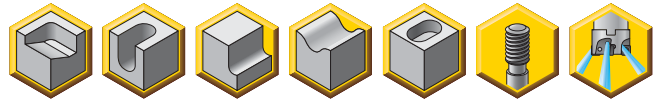
Primary Application

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.



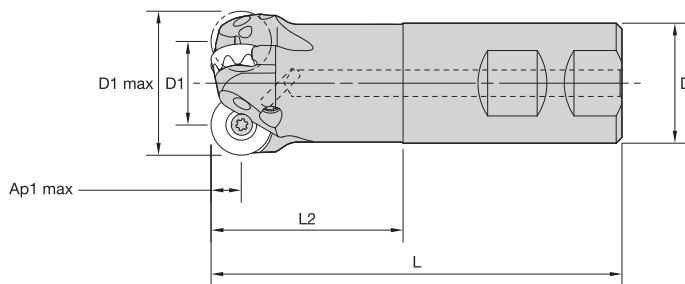
■ Screw-On End Mills

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

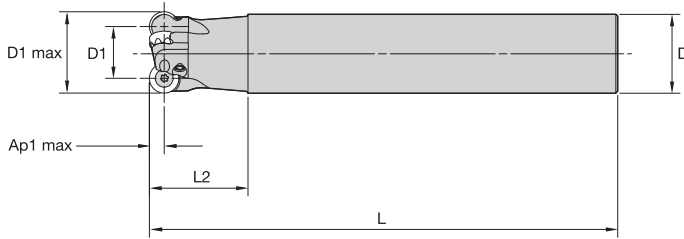
order number	catalogue number	D1 max	D1	D	L	L2	Ap1 max	Z	max ramp angle	kg	max RPM	insert 1
4043048	32A03R040B32RP12	32	20	32	101	40	6,0	3	6.0°	0,51	43400	RP.T1204M0...

■ 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

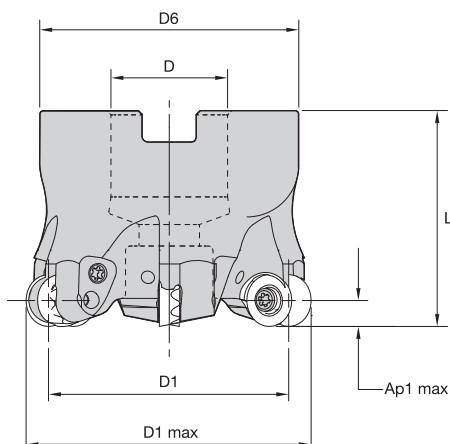


D1 max	insert screw	Nm	anti-rotation screw	Torx Plus driver
32	MS2077	2,3	MS-2225	DT15IP
35	MS2077	2,3	MS-2225	DT15IP



Copy Mills

- 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

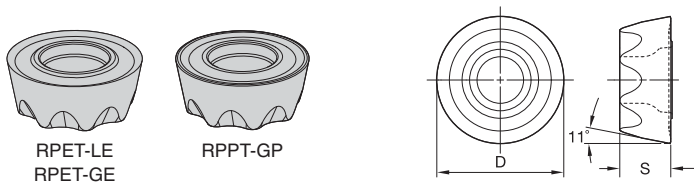
* Socket head cap screw with coolant groove sold separately as a spare part.

■ 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.



● first choice
○ alternate choice

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	○	○	○	○	○

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■ 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
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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

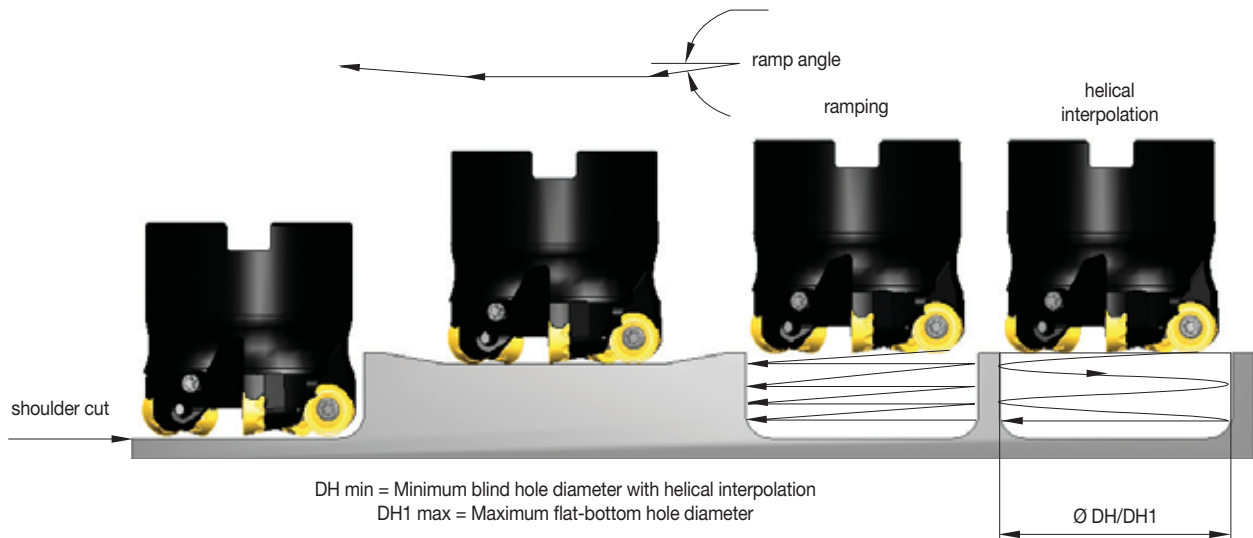
At 0,75 Axial Depth of Cut (ap)

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

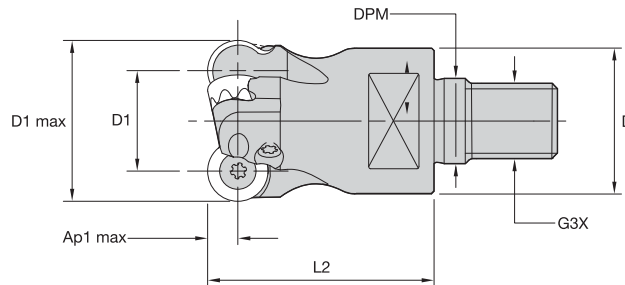


catalogue number	max ramp angle	max plunging depth	min hole diameter (DH min)	max flat-bottom hole diameter (DH1 max)	max hole diameter (flat bottom)
32E03R045M16RP12	6.0°	1,65	43,95	52	64
40E04R045M16RP12	9.0°	3,50	57,24	68	80
32A03R040B32RP12	6.0°	1,65	43,95	52	64
32A03R040A32RP12L190	6.0°	1,65	43,95	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



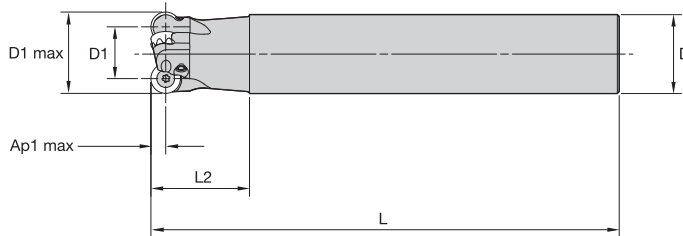
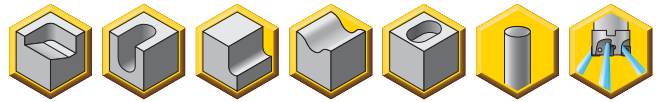
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- Engineered for titanium and stainless steel machining.
- Anti-rotation components feature eight indexable positions.
- Pocketing, ramping, plunging, and helical interpolation capabilities.



■ 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...



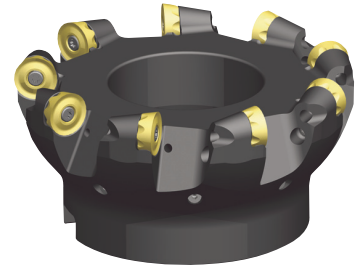
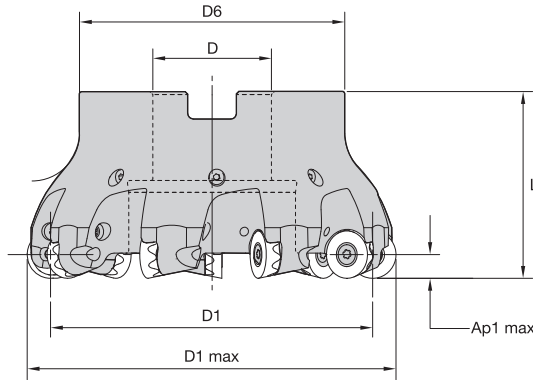
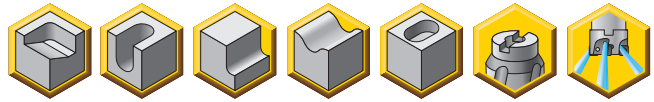
■ Cylindrical End Mills

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	catalog number	D1 max	D1	D	D6	L	Ap1 max	Z	max ramp angle	kg	max RPM	insert 1
4164868	50A05RS90RP16	50	34	22	42	50	8,0	4	9°	0,32	24400	RP.T1605M0..
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
50	MS-2071	4,0	MS-2225	MS1242	MS1242CG	—	—	DT15IP
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.

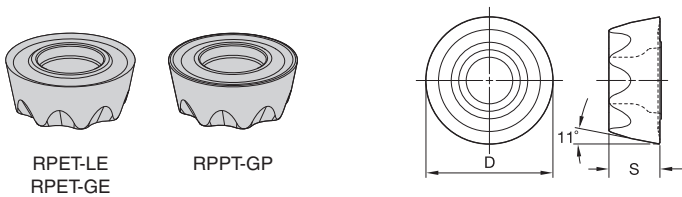
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Insert Selection Guide

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	—	—	—	—	—	—

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.



● first choice
○ alternate choice

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

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	○	○	○	○	○

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■ 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
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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)

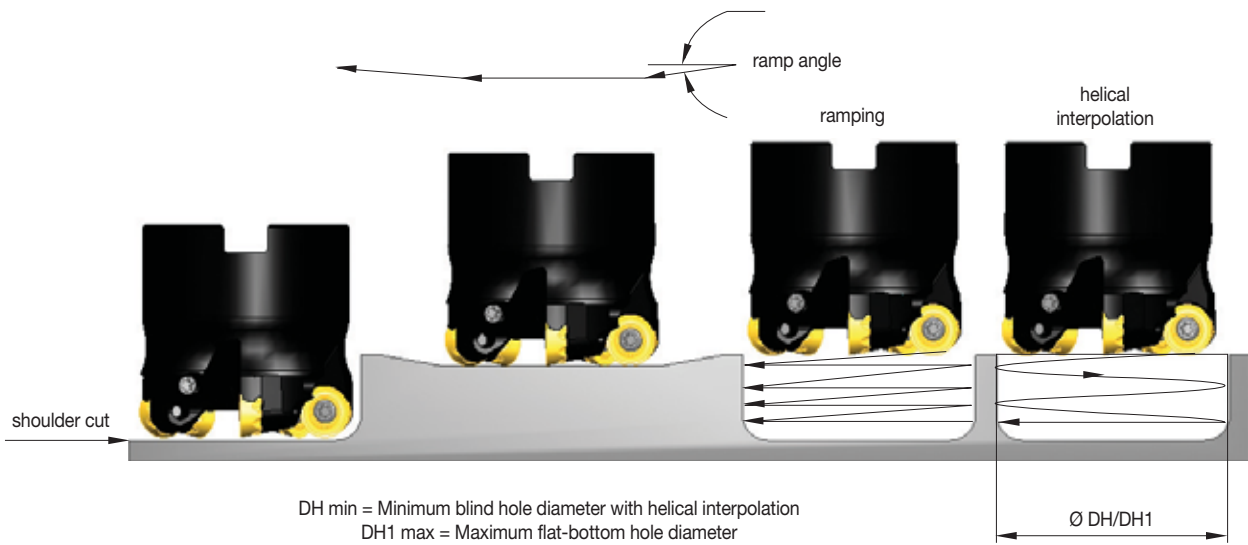
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Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50-100%			
.E..LEJ	0,13	0,23	0,34	0,10	0,17	0,26	0,08	0,15	0,22	0,08	0,14	0,21	0,08	0,14	0,20	.E..LEJ
.E..LE	0,18	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

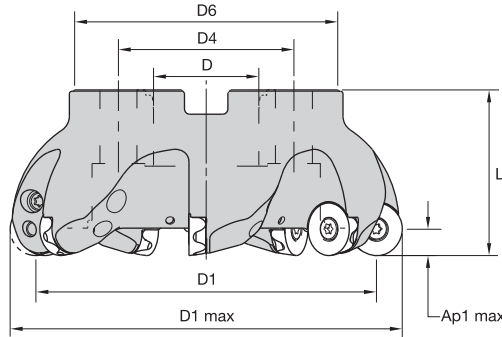
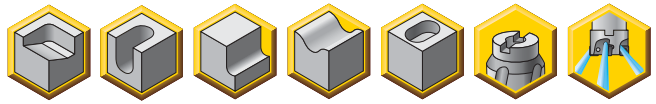
NOTE: Use "Light Machining" values as starting feed rate.

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	RCGT2006M0__
3095649	100B06RS90RC20C	100	80	32	—	80	63	10,0	6	0.90°	2,11	18000	RCGT2006M0__
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	—	—

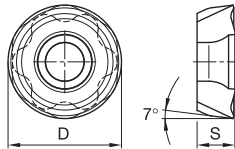
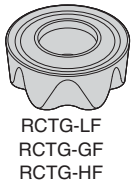
Copy Mills

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	—	—	—	—	—	—

Indexable Round Inserts • KSRM

- 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.



- 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	○	●	●

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■ 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)

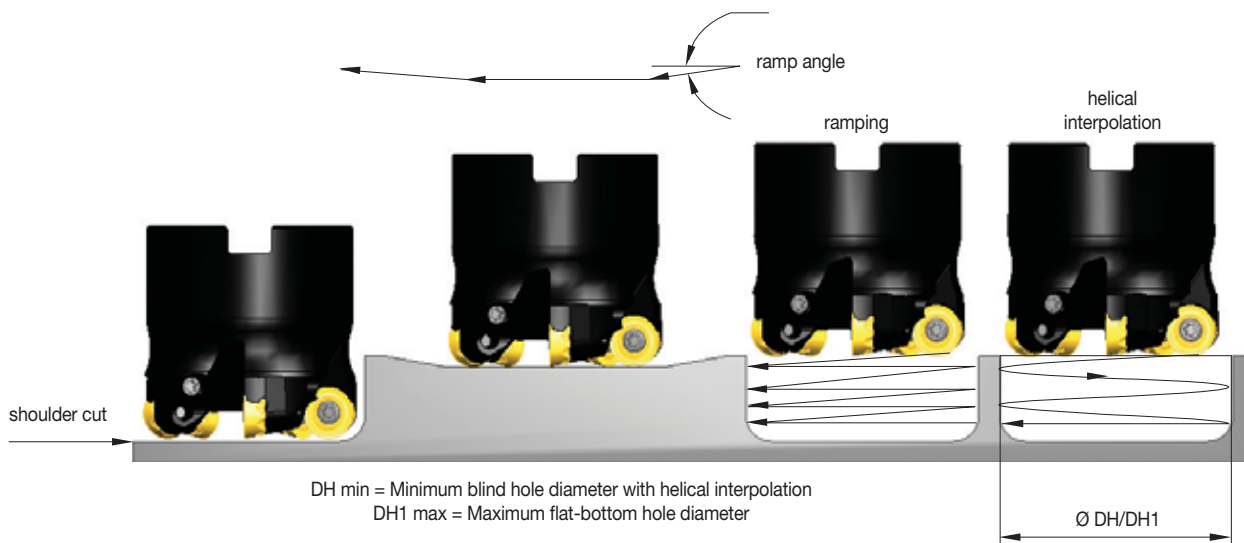
Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50-100%			
.E..LF	0,14	0,26	0,48	0,10	0,19	0,36	0,09	0,17	0,31	0,08	0,16	0,29	0,08	0,16	0,29	.E..LF
.S..GF	0,26	0,64	1,04	0,19	0,48	0,77	0,17	0,42	0,67	0,16	0,39	0,63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

Copy Mills



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

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





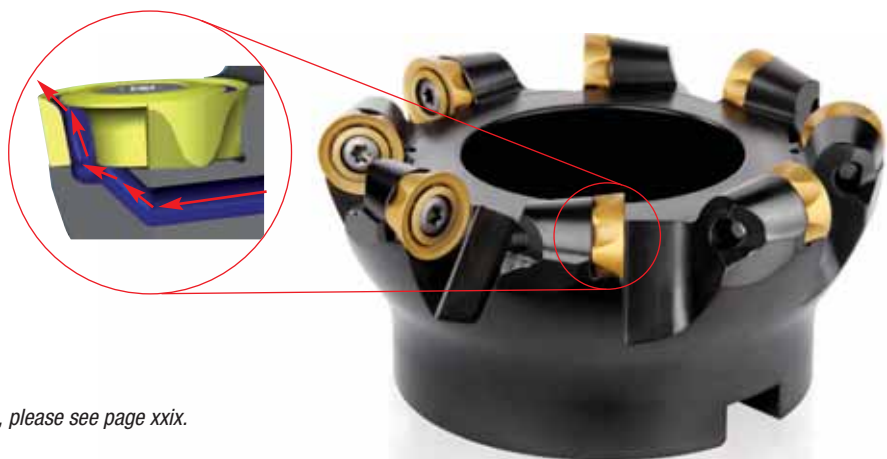
Beyond BLAST™ KSRM™ • Next Generation Round Inserts with Through Coolant

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.

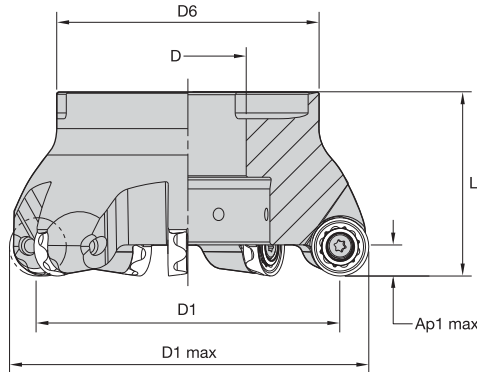
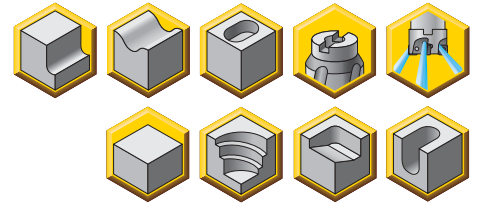
Features and Benefits

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.

- 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

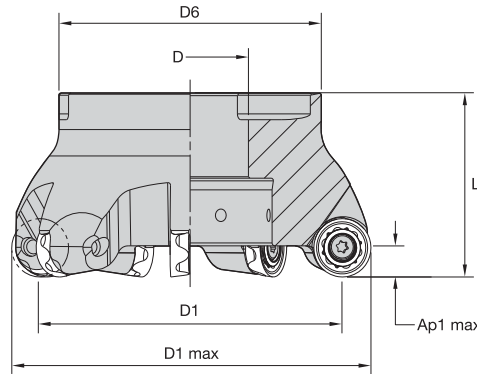
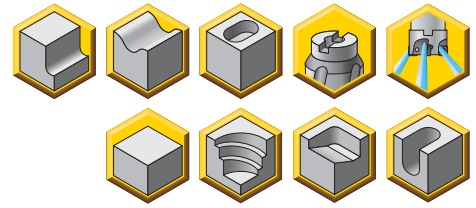
order number	catalogue number	D1 max	D1	D	D6	L	Ap1 max	Z	kg	max RPM	insert 1
4109173	KSRM63A04RC20BB	63	43	22	50	50	10,0	4	0,54	21900	RCGX2006M0_
4109174	KSRM80A05RC20BB	80	60	27	60	50	10,0	5	0,83	18500	RCGX2006M0_
4109175	KSRM100B05RC20BB	100	80	32	80	50	10,0	5	1,45	16000	RCGX2006M0_
4109176	KSRM100B06RC20BB	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	—

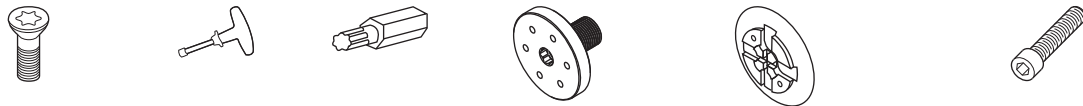
- Use PCT technology; coolant through the insert.
- Engineered to provide the maximum performance in titanium machining.
- Anti-rotation feature allows up to six indexable rotations.
- Pocketing, ramping, plunging, and helical interpolation capabilities.



■ 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_

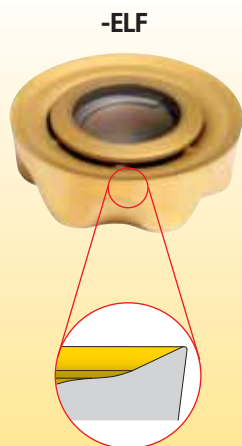
■ Spare Parts



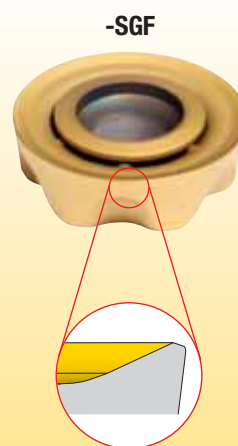
D1 max	insert screw	Nm	universal bit torque driver	drive bit	coolant lock screw assembly	coolant shower plate assembly	socket-head cap screw with coolant groove
80	MS1162	5,0	KPTW45	BT25L50	—	—	MS2190CG
100	MS1162	5,0	KPTW45	BT25L50	MS2220C	—	—
125	MS1162	5,0	KPTW45	BT25L50	—	—	—
160	MS1162	5,0	KPTW45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

Best-in-Class Performance Booster in Machining Titanium

Copy Mills



Geometry for light and medium machining



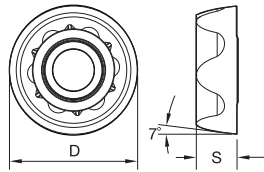
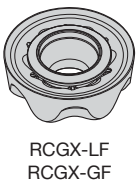
Geometry for medium and heavy machining

■ 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.



beyond BLAST™

- first choice
- alternate choice

P	●
M	○
K	○
N	○
S	●
H	○

■ RCGX-LF and -GF

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

Copy Mills

■ 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

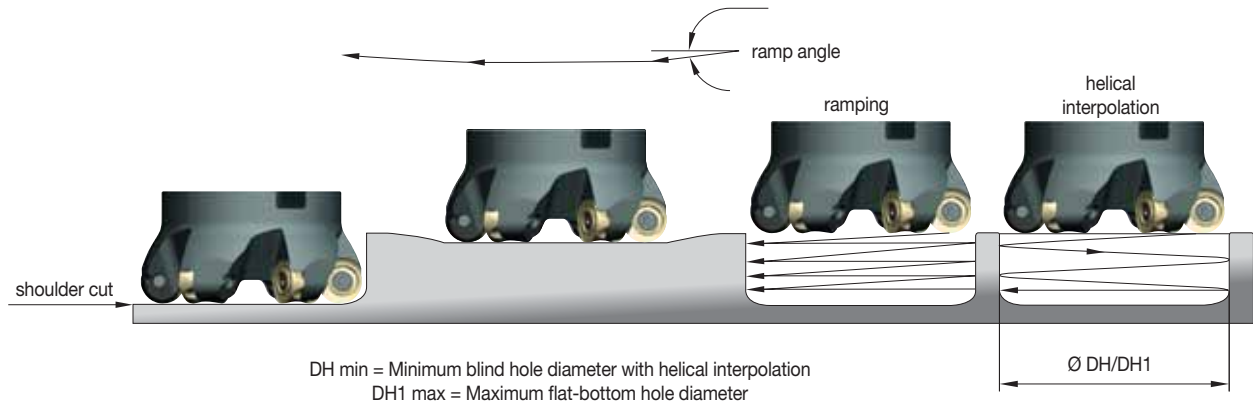
At 1,25 Axial Depth of Cut (ap)

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.

Copy Mills

■ Ramping and Helical Interpolation Values from Solid



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 $\pm 0,01\text{mm}$.
- Improved geometries for roughing and finishing operations.
- Smaller diameters from 6mm to replace SCEM, setting a more productive machining process.

Superior Productivity

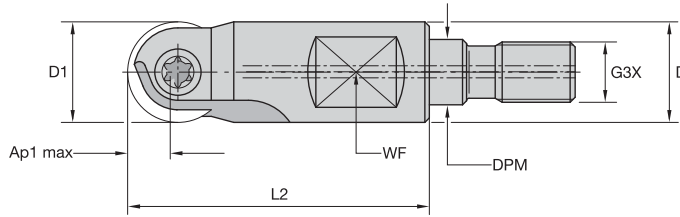
- Due to the new helical geometry, we obtain better surface quality.
- New ultra-grain grade for outstanding tool life.
- Diameters 6mm and 8mm natural replacement for SEM tools.
- Better cost per edge.

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.



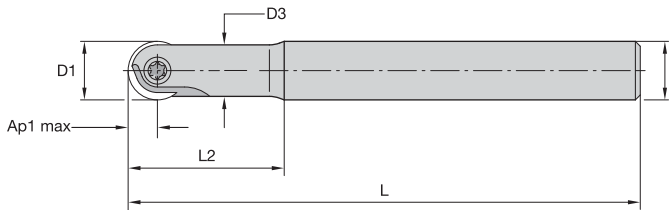
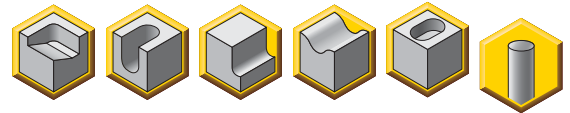
- Available diameters: 12–25mm.
- High precision and runout accuracy.
- Suitable for roughing and finishing operations.



■ 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

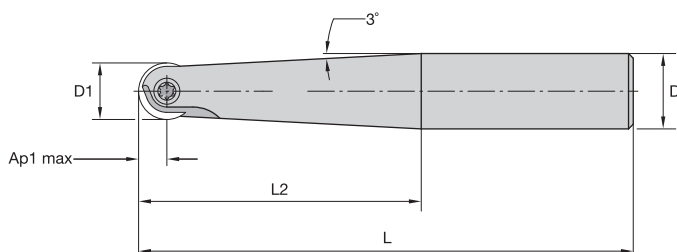
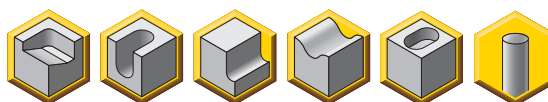
order number	catalogue number	D1	D	D3	L	L2	Ap1 max	Z	Z U	coolant supply	max ramp angle	max RPM	insert 1
1918676	KDMB12R130A12SN	12	12	11	130	32	6,0	1	2	No	3.0°	40000	KDMB12..
1918677	KDMB12R150A12SN	12	12	11	150	46	6,0	1	2	No	3.0°	40000	KDMB12..
1918678	KDMB16R140A16SN	16	16	14	140	35	8,0	1	2	No	3.0°	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..

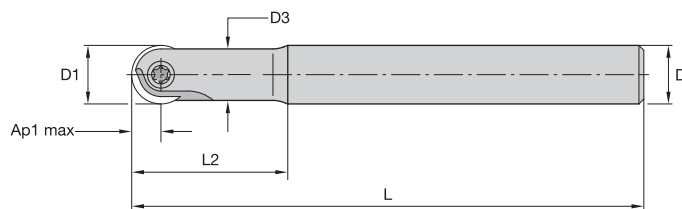
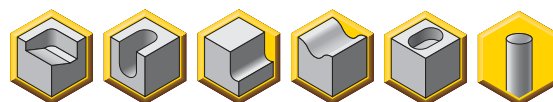
■ Spare Parts



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

Copy Mills

- 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

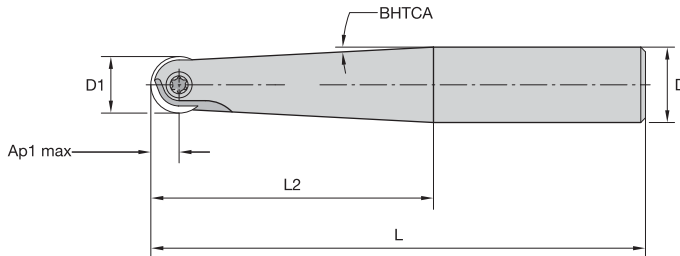
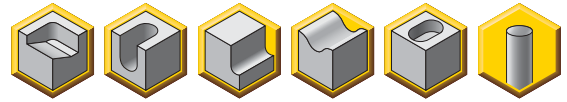


D1	insert screw	Nm	Torx wrench
6	MS2236	1,7	KT6
8	193.395	2,0	KT8
10	193.394	3,0	KT15
12	193.393	4,0	KT20
16	193.392	5,0	KT20
20	193.391	6,0	KT20
25	193.390	6,5	KT30
32	193.389	6,5	KT30



Copy Mills

- 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

Copy Mills

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

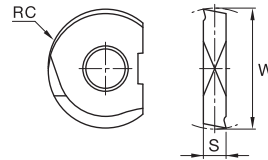
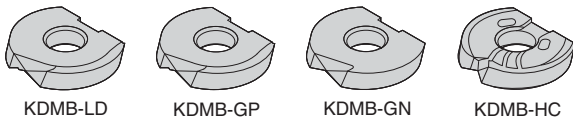


semi-finishing, finishing



finishing

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

● first choice
 ○ alternate choice

■ 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	●	●	●	●

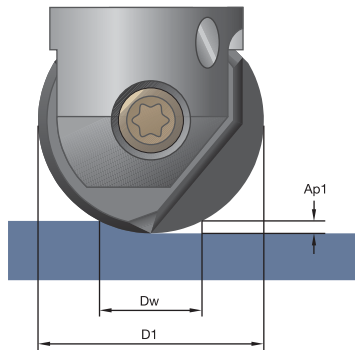
■ KDMB-GN • High Precision • Extremely Solid Cutting Edge

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

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

■ KDMB Ball Nose • 8mm

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

■ KDMB Ball Nose • 10mm

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

■ KDMB Ball Nose • 12mm

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

■ KDMB Ball Nose • 16mm

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

■ KDMB Ball Nose • 20mm

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

■ KDMB Ball Nose • 25mm

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

■ KDMB Ball Nose • 32mm

D1 max	Working Diameter (Dw) at Axial Depth of Cut (ap)			
	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	—	—	—

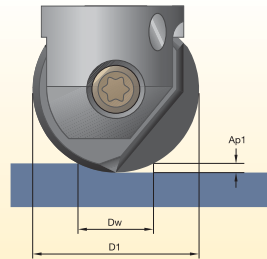
 NOTE: FIRST choice starting speeds are in **bold** type.

As the average chip thickness value increases, the speed should be decreased.

Calculating Working Diameter and Resulting Surface Speed

Case 1:

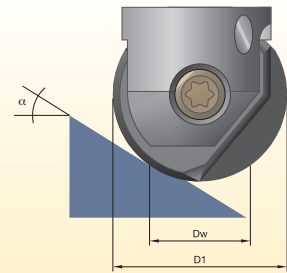
It is important to consider the effective diameter (Dw) when using light depths of cut in order to properly calculate RPM values. Use the following formula when machining flat surfaces or inclinations of 10° or less to find the Dw value. Then, use this for RPM calculations, as opposed to using the overall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



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

$$v_{ceff} = v_c \times k$$

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

Light Machining	General Purpose	Heavy Machining
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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.



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

Light Machining	General Purpose	Heavy Machining
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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.



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

Light Machining	General Purpose	Heavy Machining
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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.



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

Light Machining	General Purpose	Heavy Machining
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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
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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
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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
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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.



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

Light Machining	General Purpose	Heavy Machining
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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)

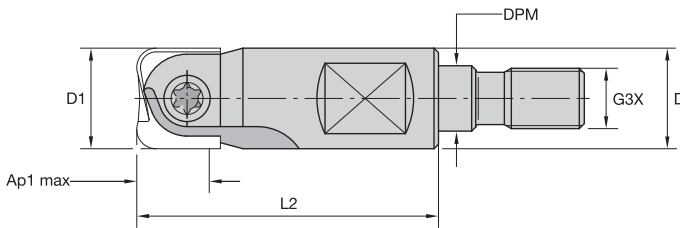
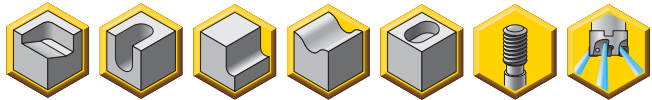
Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50-100%			
.E..LD	0,34	0,48	0,85	0,25	0,36	0,63	0,22	0,31	0,55	0,21	0,29	0,51	0,20	0,29	0,50	.E..LD
.E..GP	0,41	0,58	1,02	0,31	0,43	0,76	0,27	0,38	0,66	0,25	0,35	0,62	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.



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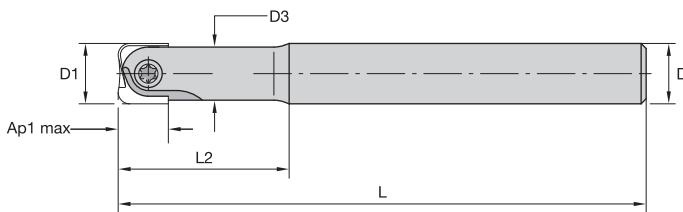
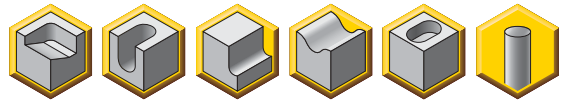
- Available diameters: 12–25mm.
- High precision and runout accuracy.
- Suitable for roughing and finishing operations.
- Works with toroidal and High-Feed inserts.



■ 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.

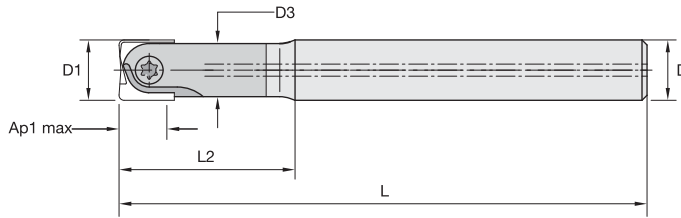


Copy Mills

■ 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



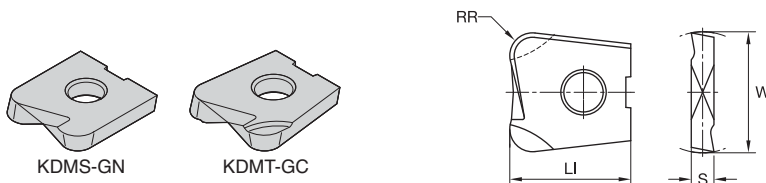
D1	insert screw	Nm	Torx wrench
10	193.394	3,0	KT15
12	193.393	4,0	KT20
16	193.392	5,0	KT20
20	193.391	6,0	KT20
25	193.390	6,5	KT30
32	193.389	6,5	KT30

Copy Mills

■ 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...



● 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	●

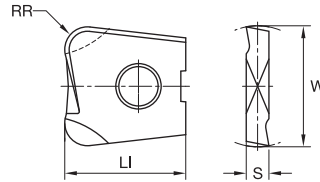
NOTE: Ap1 max is equal to LI.
Insert diameter 6mm and 8mm use KDMB holder type. See pages R65–R68.

Copy Mills

■ 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.



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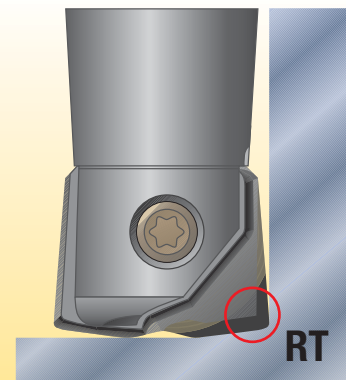
Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50-100%			
.E..GC	0,12	0,25	0,34	0,09	0,19	0,25	0,08	0,17	0,22	0,07	0,16	0,21	0,07	0,15	0,20	.E..GC
.E..GN	0,17	0,25	0,34	0,12	0,19	0,25	0,11	0,17	0,22	0,10	0,16	0,21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

Copy Mills

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

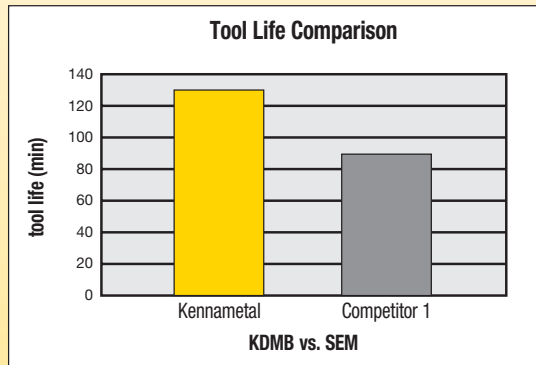
Tool: KDMB06R100A06HN

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.

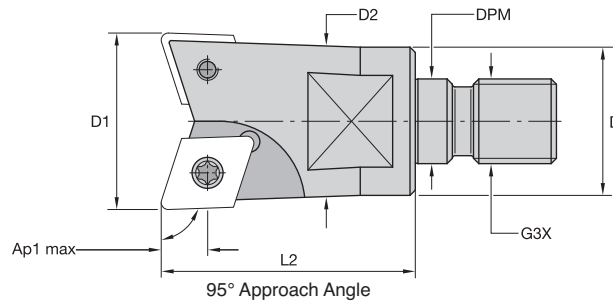
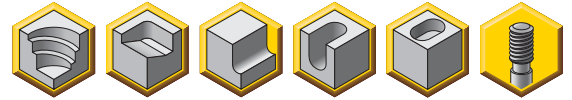
Features and Benefits

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.

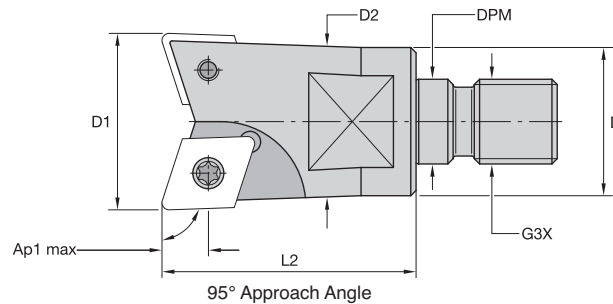


- Rhombic-style inserts for reduced cutting forces.
- Wide range of applications.
- Better surface quality.



■ 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

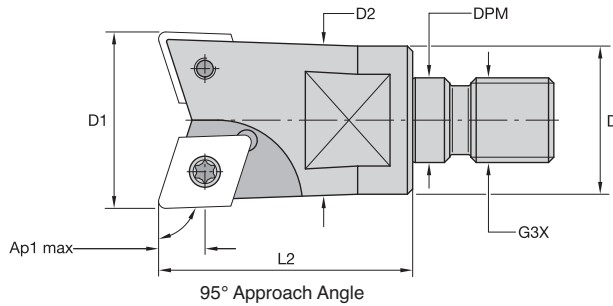
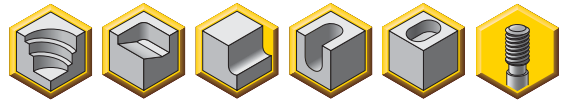
order number	catalogue number	D1	D	D2	DPM	G3X	L2	Ap1 max	Z	kg	insert 1
1888446	13Y01R020M08SXD06	13	13	11	8,5	M8	20	1,0	1	0,03	XD_X06021
1888447	16Y02R025M08SXD06	16	13	14	8,5	M8	25	1,0	2	0,03	XD_X06021
1888448	20Y03R030M10SXD06	20	18	18	10,5	M10	30	1,0	3	0,06	XD_X06021
1888449	25Y03R035M12SXD06	25	21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

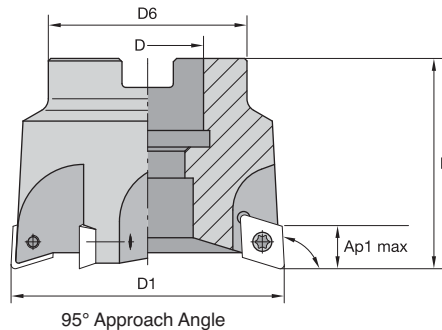
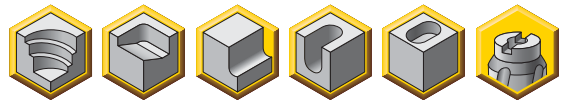
- Rhombic-style inserts for reduced cutting forces.
- Wide range of applications.
- Improved surface quality.



■ 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.



■ 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

Copy Mills

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

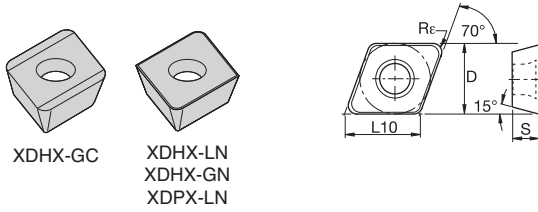
Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1-P2	.S..LN	KC522M	.S..LN	KC725M	.S..LN	KC725M
P3-P4	.S..LN	KC510M	.S..LN	KC522M	.S..LN	KC522M
P5-P6	.S..LN	KC510M	.S..LN	KC522M	.S..LN	KC522M
M1-M2	.E..GC	KC510M	.S..LN	KC725M	—	—
M3	.E..GC	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.



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

● first choice
○ alternate choice

■ 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	○	○	○	○	○	○	○	○

Copy Mills

■ 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
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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.



Copy Mills

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Z-Axis Plunge Mill

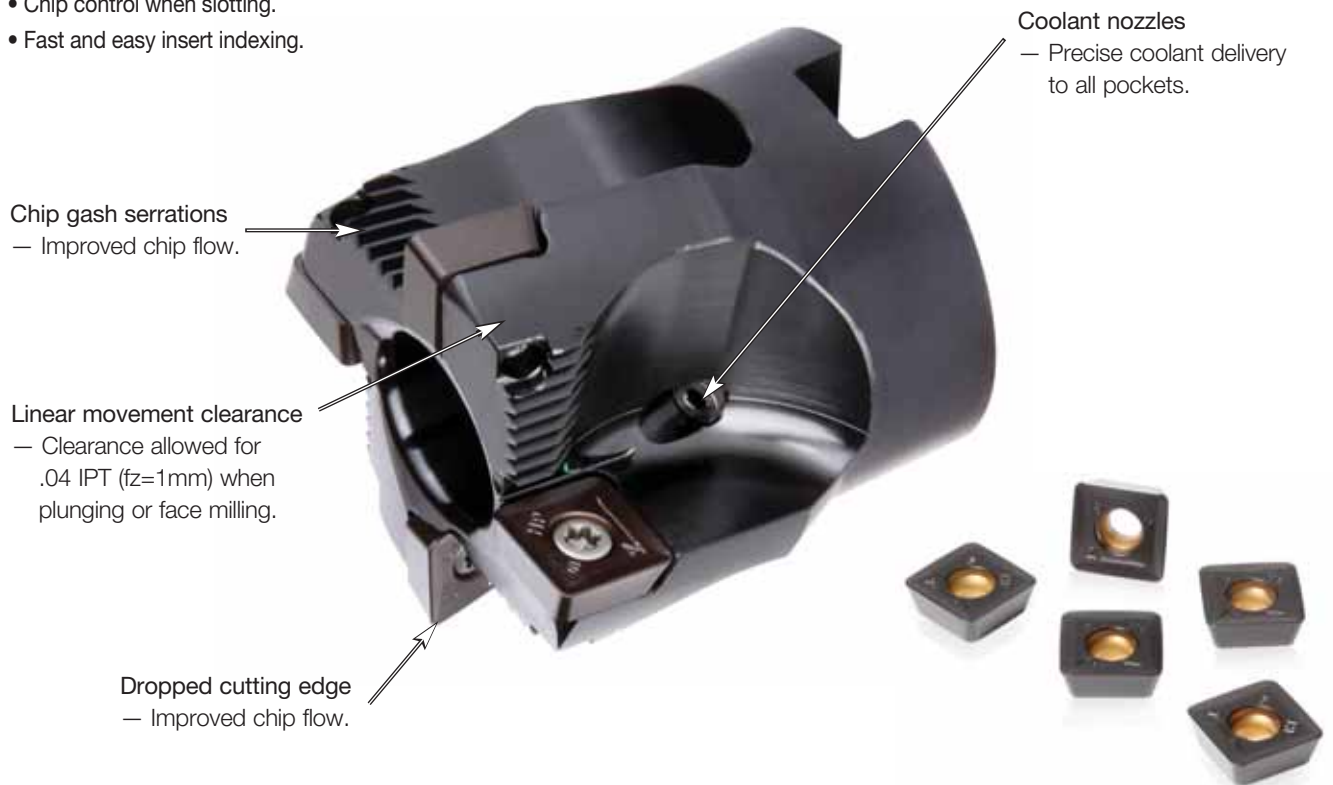
Primary Application

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.

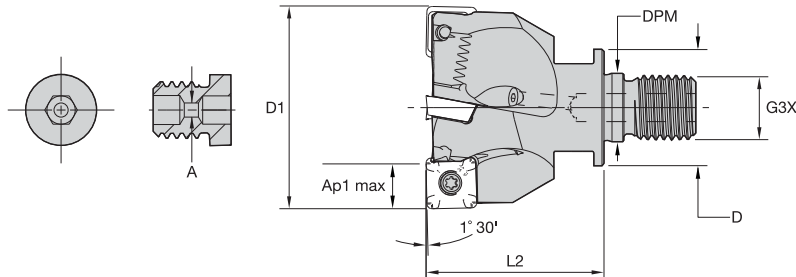
Features and Benefits

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.



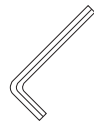
- Most stable cutting due to force directions.
- Excellent for long reach applications.
- Extended tool life.
- Suitable for a wide variety of workpiece materials.
- Up to 11mm stepover.
- Unique coolant delivery.
- Chip control when slotting.



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

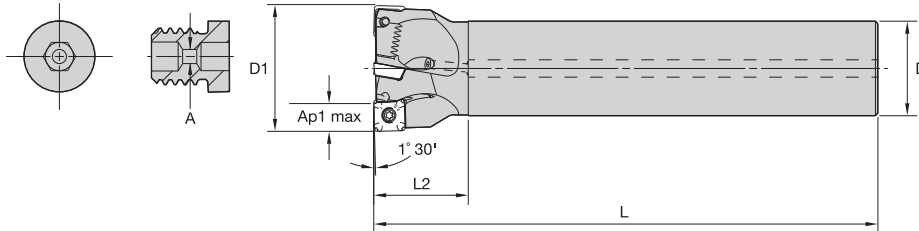
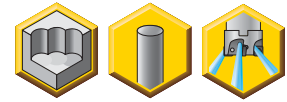
Coolant Screw Detail

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.



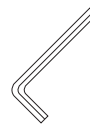
- Most stable cutting due to force directions.
- Excellent for long reach applications.
- Extended tool life.
- Suitable for a wide variety of workpiece materials.
- Up to 11mm stepover.
- Unique coolant delivery.
- Chip control when slotting.



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

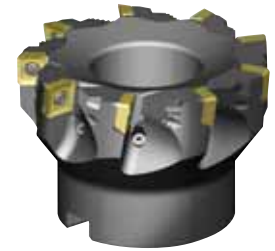
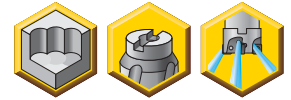
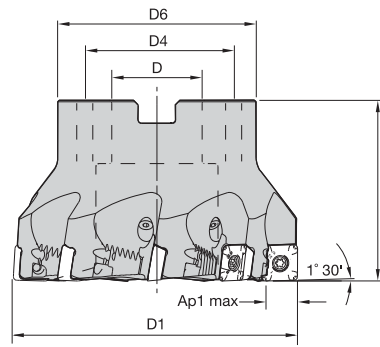
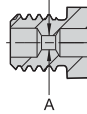
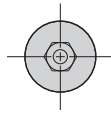
Coolant Screw Detail

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.

Copy Mills

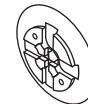
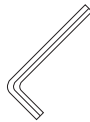
- Most stable cutting due to force directions.
- Excellent for long reach applications.
- Extended tool life.
- Suitable for a wide variety of workpiece materials.
- Up to 11mm stepover.
- Unique coolant delivery.
- Chip control when slotting.



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



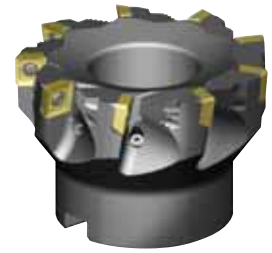
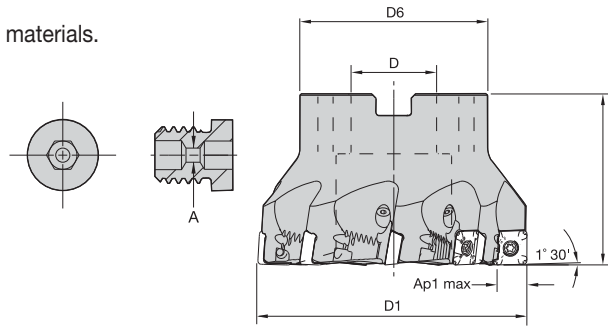
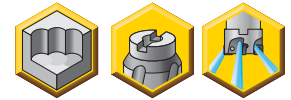
D1	insert screw	Nm	Torx Plus driver	coolant nozzle screw	T-handle hex wrench	coolant lock screw assembly	coolant shower plate assembly	socket-head cap screw with coolant groove
50	MS2197	4,0	DT15IP	MS2191C12	THW2M	—	—	MS1242CG
63	MS2197	4,0	DT15IP	MS2191C12	THW2M	—	—	MS1242CG
80	MS2197	4,0	DT15IP	MS2191C12	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	D			L	Ap1 max	Z	kg	max RPM	insert 1	
		D1	mm	in							D6
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**

Copy Mills

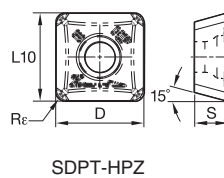
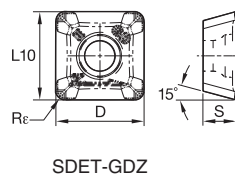
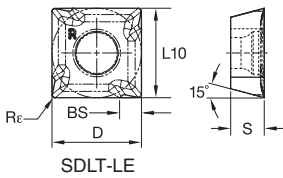
order number	catalogue number	A
3400611	MS2191C00	—
3400612	MS2191C06	0,6
3400613	MS2191C08	0,8
3400614	MS2191C10	1,0
3400616	MS2191C12	1,2
3400617	MS2191C14	1,4
3400618	MS2191C16	1,6
3400619	MS2191C18	1,8
3400620	MS2191C20	2,0

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	—	—	—	—	—	—

Indexable Inserts • KSSZR 90° • Z-Axis



● first choice
○ alternate choice

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

SDCT-LE

catalogue number	L10	S	BS	Re	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	Re	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	Re	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.



Copy Mills

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.

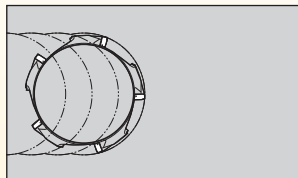


Figure 1

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.

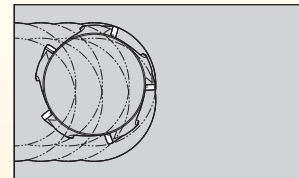


Figure 2

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.

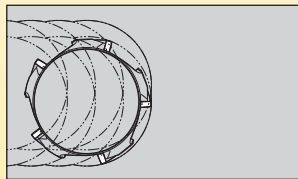


Figure 3

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.

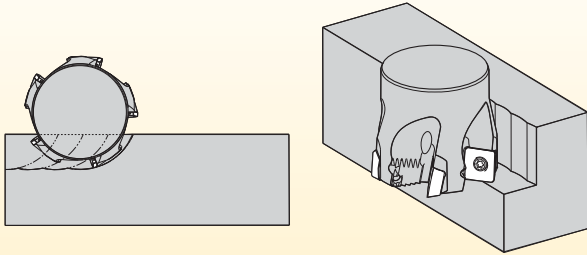
Move the cutter to the left of the slot to define the new position and make the cut. When reaching the base, a 3-axis move will need to be made. Again, the Z-axis will be in a positive direction at 45° (.010"), and the corresponding Y-axis will move away the same respective amount from the wall.

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)

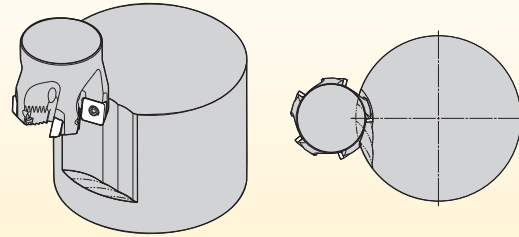


Linear Plunge Milling

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.

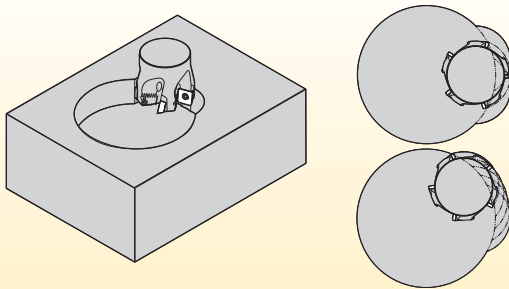
If the radial width of cut takes more than 60% of the cutter diameter, it is more difficult to remove the insert/cutter because the machine program wants to move the cutter upwards to (G00) Z+. When taking more than 60% of the cutter diameter, the material is enveloping the cutter and is difficult to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



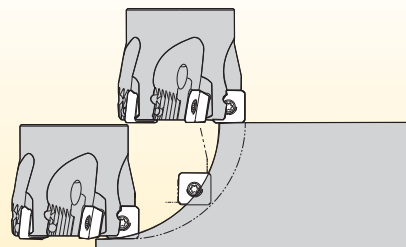
External Profiling

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.



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- Maximum performance capability.
- Optimising productivity with long reach and short overhang to support all types of applications.
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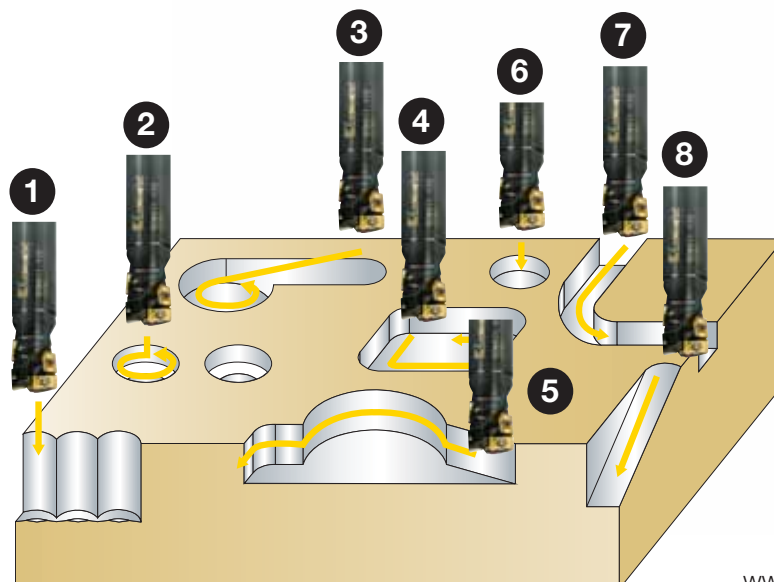
Features and Benefits

Platform Features

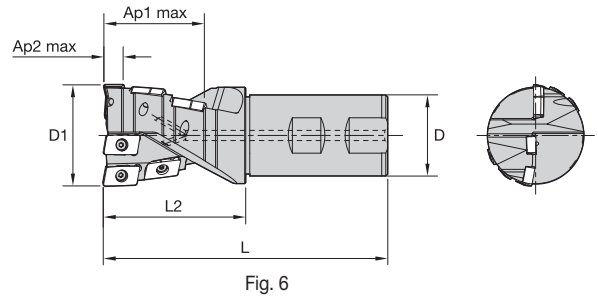
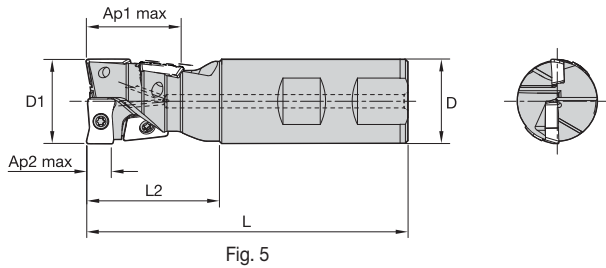
- Just two grades needed for a wide variety of materials.
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- Metric and inch sizes available.
- Reduced shank diameters for access down long side walls.
- Extensive product portfolio.
- Use compressed air when drilling for improved chip evacuation.
- 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 (Ap_2), we have (2) effective teeth.



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 (Ap_2) 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 (Ap_2), we have (2) effective teeth.

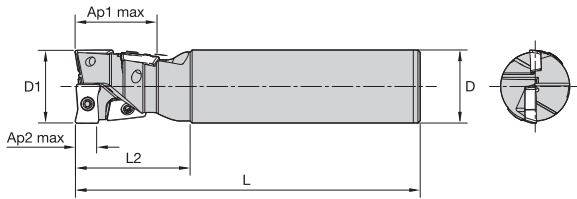


Fig. 1

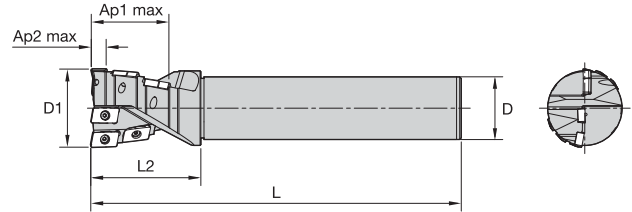


Fig. 2

■ **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**



Copy Mills

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 (Ap_2) 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.

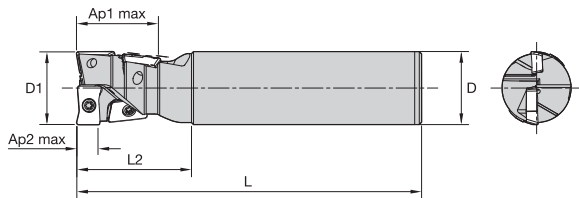


Fig. 1

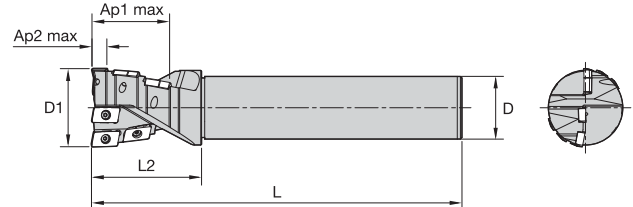


Fig. 2

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

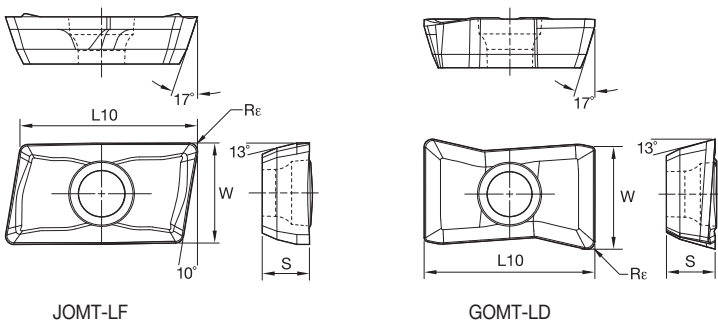
NOTE: Axial depth of cut above (Ap2) value, use (1) as the effective number of teeth.
 See separate chart for drilling depths.
 Use compressed air when drilling for improved chip evacuation.

Copy Mills

■ 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



● first choice
○ alternate choice

P	●	●
M	●	●
K	●	●
N	○	○
S	○	○
H	○	○

■ JOMT • Side Insert

Copy Mills

catalogue number	S	W	L10	Re	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	Re	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

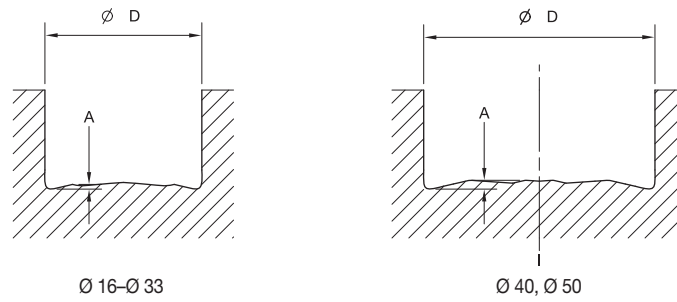
NOTE: Use "Light Machining" values as starting feed rate.

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

Copy Mills

■ Drilled Hole Bottom Shape



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.

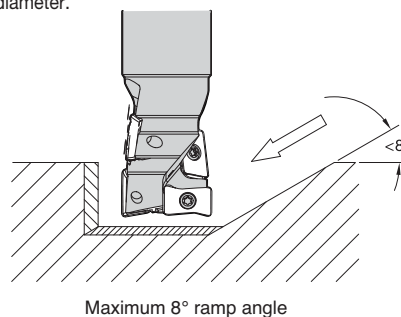
drilling	
cutting diameter	maximum depth (mm)
Ø 16	13
Ø 17	13
Ø 20	17
Ø 21	17
Ø 25	22
Ø 26	22
Ø 32	25
Ø 33	25
Ø 40	25
Ø 50	25

■ Recommended Cutting Data by Operation and Workpiece Material

workpiece material	feed rates (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.



Copy Mills

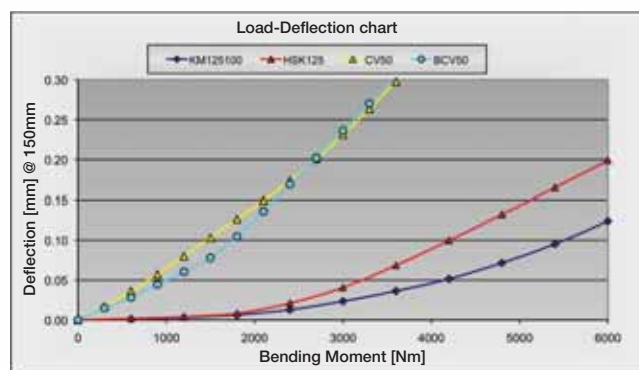


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**The Latest Innovation in Spindle Interface Technology!
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- Run jobs at significantly faster feeds and speeds than is achievable with other spindle interfaces.
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KIPR™ and KSSR™ • Ceramic Milling Cutters

Primary Application

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.

Features and Benefits

Unbeatable Productivity

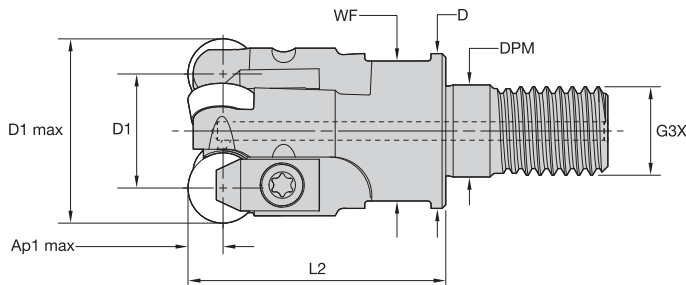
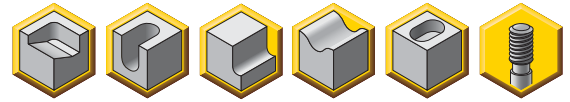
- Engineering to provide outstanding metal removal rates and productivity in nickel-based and/or cobalt-based alloys, stellites, stainless steel, and PH series through HSM.
- High axial and radial runout accuracy.
- Improved insert clearance and thickness tolerance to increase overall performance.
-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

Usability and Offering

- 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__

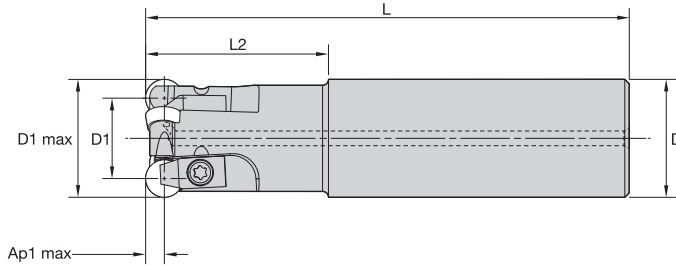
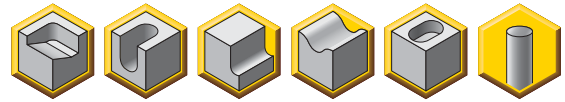
■ Spare Parts



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__

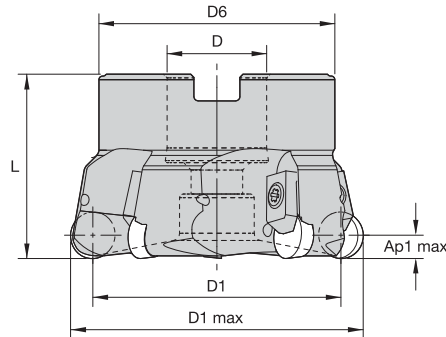
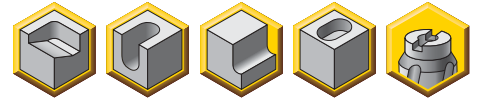
■ Spare Parts



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

Copy Mills

- 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	KYS30	..E	KYS30	..E	KYS30
S3	..E	KYS30	..E	KYS30	..E	KYS30
S4	—	—	—	—	—	—
H1	..E	KYHS10	..E	KYHS10	—	—

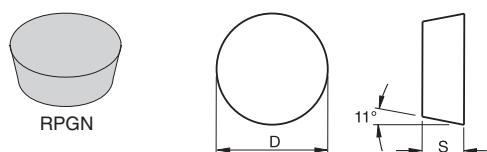
RPGN09... High Temp

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	KYS30	..E	KYS30	..T	KYS30
S3	..E	KYS30	..T	KYS30	..T	KYS30
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	KYS30	..E	KYS30	..T	KYS30
S3	..E	KYS30	..T	KYS30	..T	KYS30
S4	—	—	—	—	—	—
H1	..E	KYHS10	..E	KYHS10	—	—

Indexable Ceramic Inserts • KIPR-RP • KSSR-RP



● first choice
○ alternate choice

	P	M	K	N	S	H
KYS30	○	○	○	○	●	●
KYSP30	○	○	○	○	●	●
KYSM10	○	○	○	○	●	●
KYHS10	○	○	○	○	●	●

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	0,17	0,09	0,10	0,13	0,08	0,09	0,11	0,07	0,08	0,10	0,07	0,08	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	0,14	0,15	0,20	0,10	0,11	0,15	0,09	0,10	0,13	0,09	0,09	0,12	0,08	0,09	0,12	..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	0,26	0,14	0,15	0,19	0,12	0,13	0,17	0,11	0,12	0,16	0,11	0,12	0,15	..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	0,35	0,19	0,20	0,26	0,16	0,18	0,23	0,15	0,17	0,22	0,15	0,16	0,21	..E

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

Copy Mills

■ 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	0,17	0,09	0,10	0,13	0,08	0,09	0,11	0,07	0,08	0,10	0,07	0,08	0,10	..E
..T	0,17	0,20	0,26	0,13	0,15	0,19	0,11	0,13	0,17	0,10	0,12	0,16	0,10	0,12	0,15	..T

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	0,20	0,10	0,11	0,15	0,09	0,10	0,13	0,09	0,09	0,12	0,08	0,09	0,12	..E
..T	0,20	0,24	0,30	0,15	0,18	0,22	0,13	0,15	0,19	0,12	0,14	0,18	0,12	0,14	0,18	..T

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	0,26	0,14	0,15	0,19	0,12	0,13	0,17	0,11	0,12	0,16	0,11	0,12	0,15	..E
..T	0,26	0,31	0,39	0,19	0,23	0,29	0,17	0,20	0,25	0,16	0,19	0,24	0,15	0,19	0,23	..T

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	0,35	0,19	0,20	0,26	0,16	0,18	0,23	0,15	0,17	0,22	0,15	0,16	0,21	..E
..T	0,35	0,42	0,53	0,26	0,32	0,40	0,23	0,28	0,35	0,21	0,26	0,32	0,21	0,25	0,32	..T

■ 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	0,17	0,09	0,10	0,13	0,08	0,09	0,11	0,07	0,08	0,10	0,07	0,08	0,10	..E
..T	0,17	0,26	0,29	0,13	0,20	0,22	0,11	0,17	0,19	0,10	0,16	0,18	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	0,14	0,15	0,20	0,10	0,11	0,15	0,09	0,10	0,13	0,09	0,09	0,12	0,08	0,09	0,12	..E
..T	0,20	0,31	0,33	0,15	0,23	0,25	0,13	0,20	0,22	0,12	0,19	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	0,18	0,20	0,26	0,14	0,15	0,19	0,12	0,13	0,17	0,11	0,12	0,16	0,11	0,12	0,15	..E
..T	0,26	0,40	0,44	0,19	0,30	0,33	0,17	0,26	0,29	0,16	0,24	0,27	0,15	0,24	0,26	..T

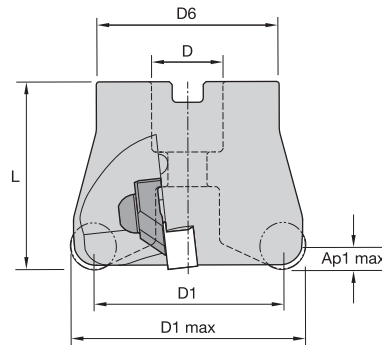
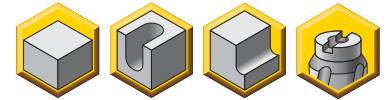
At 0,79 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50-100%			
..E	0,25	0,27	0,35	0,19	0,20	0,26	0,16	0,18	0,23	0,15	0,17	0,22	0,15	0,16	0,21	..E
..T	0,35	0,55	0,60	0,26	0,41	0,45	0,23	0,36	0,39	0,21	0,33	0,37	0,21	0,33	0,36	..T

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

Copy Mills

- 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

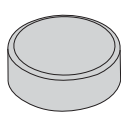


D1 max	clamp	clamp screw	washer	Nm	Torx wrench
50	555.205	MS1221	191.279	9,0	TT25
63	555.205	MS1221	191.279	9,0	TT25
80	555.205	MS1221	191.279	9,0	TT25
100	555.205	MS1221	191.279	9,0	TT25
125	555.205	MS1221	191.279	9,0	TT25
160	555.205	MS1221	191.279	9,0	TT25

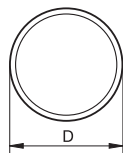
■ Insert Selection Guide

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	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



D



S

● first choice
○ alternate choice

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.



Copy Mills

■ 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
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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.

