Copy Mills

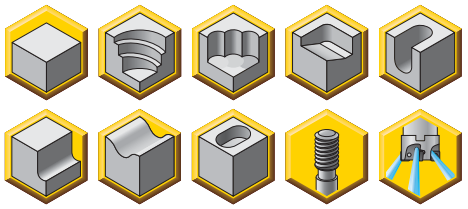
KenFeed™ 2X • The Ultimate and Innovative Concept for Applying the Latest High-Feed Milling Strategies

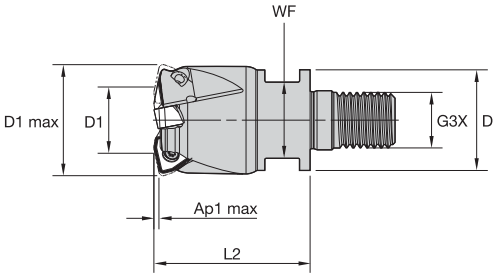
Primary Application

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

Features and Benefits

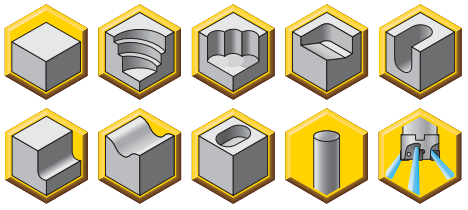
- Dramatically improves MRR using the latest milling strategies.
- Engineered to run up to 0,1 IPT.
- Ideal for pocketing, ramping, and helical interpolations. Z-plunge capabilities.
- First choice for deep cavities or from 3 x D.

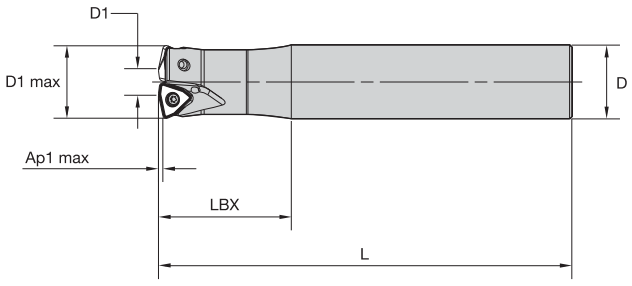




Screw-On End Mills • Inch

order number	catalog number	D1 max	D1	D	WF	G3X	L2	Ap1 max	Z	max RPM	insert 1	lbs
4109575	KF2X100W0902M12L138	1.000	.350	.827	.667	M12	1.380	.059	2	36600	WOEJ090512__	.20
4109576	KF2X125W0902M16L169	1.250	.622	1.142	.864	M16	1.690	.059	2	31000	WOEJ090512__	.46
4109577	KF2X125W0903M16L169	1.250	.622	1.142	.864	M16	1.690	.059	3	31000	WOEJ090512__	.45
4109578	KF2X150W0903M16L169	1.500	.869	1.142	.864	M16	1.691	.059	3	27500	WOEJ090512__	.52
4109579	KF2X150W0904M16L169	1.500	.869	1.142	.866	M16	1.691	.059	4	27400	WOEJ090512__	.51





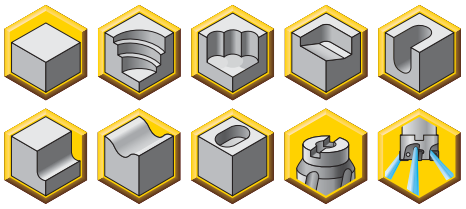
End Mills • Inch

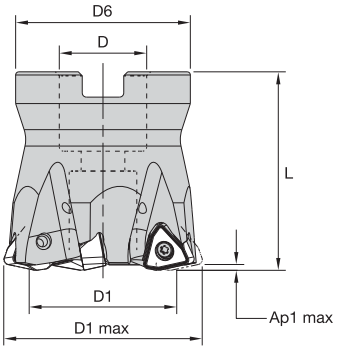
order number	catalog number	D1 max	D1	D	L	LBX	Ap1 max	Z	max RPM	insert 1	lbs
4109580	KF2X100W0902C100L600	1.000	.350	1.000	6.000	1.780	.059	2	36600	WOEJ090512__	1.15
4109581	KF2X100W0902C100L800	1.000	.350	1.000	8.000	1.780	.059	2	36600	WOEJ090512__	1.58
4109582	KF2X125W0903C125L600	1.250	.619	1.250	6.000	1.690	.059	3	31000	WOEJ090512__	1.84
4109593	KF2X125W0903C125L800	1.250	.622	1.250	8.000	1.690	.059	3	31000	WOEJ090512__	2.53
4109594	KF2X150W0903C125L600	1.500	.869	1.250	6.000	1.691	.059	3	27400	WOEJ090512__	1.94
4109595	KF2X150W0903C125L800	1.500	.869	1.250	8.000	1.691	.059	3	27400	WOEJ090512__	2.61

Spare Parts

D1 max	 insert screw	in. lbs.	 Torx Plus driver
1.000	MS2235	15	DT8IP
1.250	MS2235	15	DT8IP
1.500	MS2235	15	DT8IP

- Dramatically improves MRR using the latest milling strategies.
- Engineered to run up to 0,1 IPT.
- Ideal for pocketing, ramping, and helical interpolations. Z-plunge capabilities.
- First choice for deep cavities or from 3 x D.





Face Mills • Inch

order number	catalog number	D1 max	D1	D	D6	L	Ap1 max	Z	max RPM	insert 1	lbs
4109596	**KF2X150W0904S050L157**	1.500	.869	.500	1.417	1.571	.059	4	27400	WOEJ090512__	.40
4109597	**KF2X200W0905S075L157**	2.000	1.363	.750	1.772	1.575	.059	5	22900	WOEJ090512__	.71
4109598	**KF2X200W0906S075L157**	2.000	1.366	.750	1.732	1.570	.059	6	22900	WOEJ090512__	.69
4109599	**KF2X250W0906S075L175**	2.500	1.864	.750	1.732	1.750	.059	6	20000	WOEJ090512__	1.16
4109600	**KF2X300W0907S100L175**	3.000	2.362	1.000	2.189	1.750	.059	7	18000	WOEJ090512__	1.77

Spare Parts

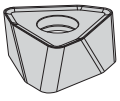
D1 max	insert screw	in. lbs.	Torx Plus driver	socket-head cap screw
1.500	**MS2235**	15.00	**DT8IP**	**S424**
2.000	**MS2235**	15.00	**DT8IP**	**S445**
2.500	**MS2235**	15.00	**DT8IP**	**S445**
3.000	**MS2235**	15.00	**DT8IP**	**S458**

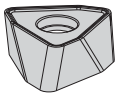
Insert Selection Guide

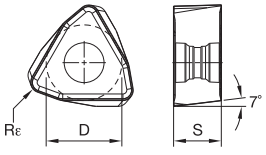
Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.S..GD	KC522M	**.S..GD**	**KCPK30**	.S..GD	KCPK30
P3–P4	.S..HD	KC522M	**.S..HD**	**KCPK30**	.S..HD	KCPK30
P5–P6	.S..HD	KC522M	**.S..HD**	**KCPK30**	.S..HD	KCPK30
M1–M2	.S..GD	KC522M	**.S..GD**	**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 0,1 IPT.
- HD geometry is the first choice for steels, high-strength steels, and cast iron.
- GD provides lower cutting forces, first choice for soft materials.


WOEJ-GD


WOEJ-HD



● first choice
○ alternate choice

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

WOEJ-GD

catalog number	D	Rε	S	cutting edges	KC522M	KC725M	KCK15	KCPK30
WOEJ090512SRGD	.350	.048	.213	6	●	●		●

WOEJ-HD

catalog number	D	Rε	S	cutting edges	KC522M	KC725M	KCK15	KCPK30
WOEJ090512SRHD	.351	.048	.215	6	●	●	●	●

Recommended Starting Speeds [SFM]

Group		KC522M			KC725M			KCK15			KCPK30		
P	1	1300	**1130**	1060	1030	**900**	840	–	–	–	1780	**1560**	1450
	2	1080	**950**	790	860	**760**	640	–	–	–	1100	**1000**	900
	3	1000	**840**	700	790	**670**	550	–	–	–	1000	**900**	820
	4	890	**730**	590	710	**590**	470	–	–	–	740	**690**	620
	5	730	**660**	590	590	**530**	470	–	–	–	1020	**910**	830
	6	650	**490**	400	520	**400**	310	–	–	–	620	**540**	–
M	1	800	**710**	650	670	**590**	540	–	–	–	820	**720**	620
	2	730	**620**	520	610	**520**	430	–	–	–	730	**640**	550
	3	550	**480**	370	460	**400**	310	–	–	–	570	**520**	460
K	1	900	**820**	720	–	–	–	1660	**1510**	1340	1160	**1050**	940
	2	710	**640**	590	–	–	–	1310	**1170**	1090	920	**830**	760
	3	590	**530**	480	–	–	–	1100	**980**	900	770	**690**	640
N	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
S	1	160	**140**	110	140	**120**	100	–	–	–	–	–	–
	2	160	**140**	110	140	**120**	100	–	–	–	–	–	–
	3	200	**160**	110	180	**140**	100	–	–	–	–	–	–
	4	280	**200**	140	240	**180**	120	–	–	–	–	–	–
H	1	470	**360**	280	–	–	–	–	–	–	–	–	–
	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 [IPT]

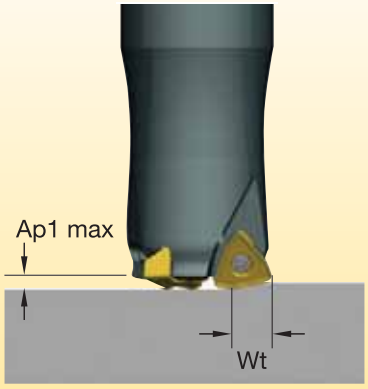
Light Machining	General Purpose	Heavy Machining

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.S..GD	.033	**.065**	.148	.024	**.046**	.095	.021	**.040**	.080	.020	**.037**	.074	.019	**.036**	.072	.S..GD
.S..HD	.033	**.090**	.162	.024	**.062**	.102	.021	**.053**	.085	.020	**.049**	.079	.019	**.048**	.077	.S..HD

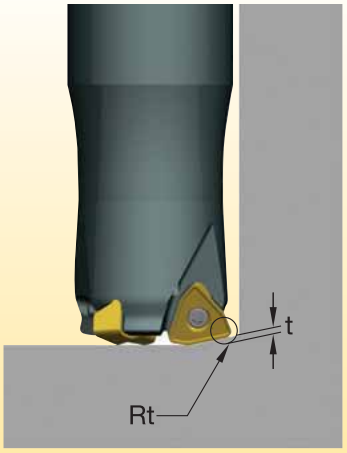
NOTE: Use “Light Machining” values as starting feed rate.

General Programming Information for Applying KenFeed 2X • IC09

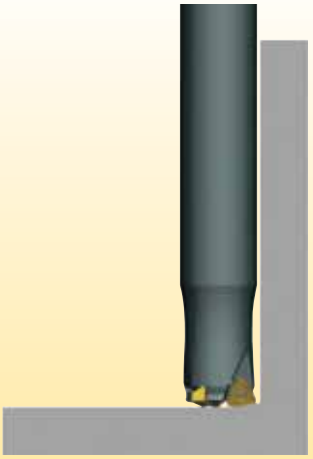
Rt	Wt	t
.110	.312	.045



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

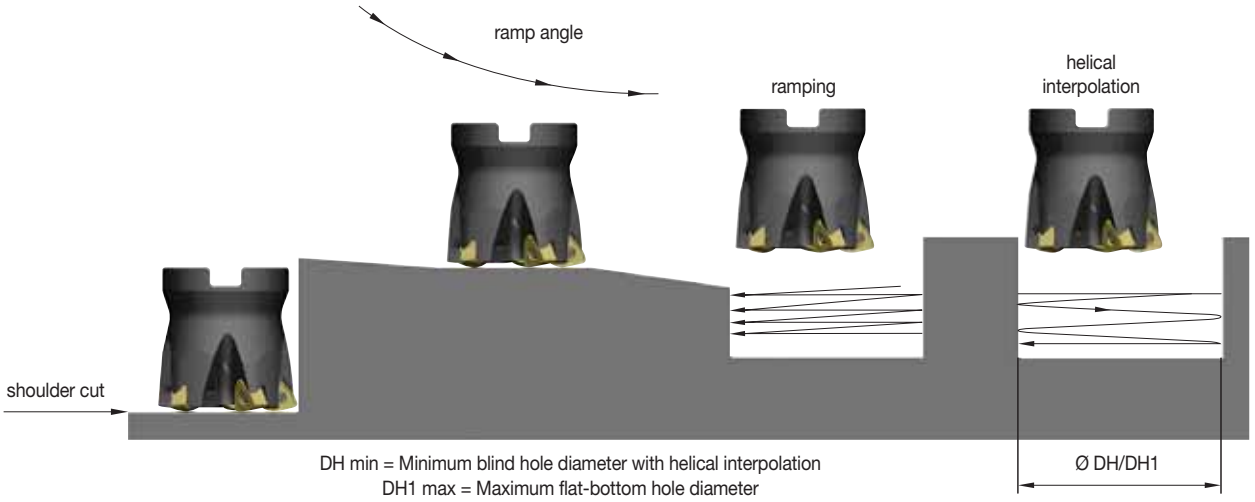


For CAM programming, the loads can be programmed as a toroidal tool type by using the Rt value as the insert radius.



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

Maximum Linear Ramping and Helical Interpolation from Solid



cutter type	catalog 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	**KF2X100W0902M12L138**	3.5°	5.2°	3.1°	1.291	1.35	2.0
	KF2X125W0902M16L169	1.9°	2.8°	1.7°	1.813	1.87	2.5
	KF2X125W0903M16L169	1.9°	2.8°	1.7°	1.813	1.87	2.5
	KF2X150W0903M16L169	1.4°	2.1°	1.2°	2.310	2.37	3.0
	KF2X150W0904M16L169	1.4°	2.1°	1.2°	2.310	2.37	3.0
End Mills	**KF2X100W0902C100L600**	3.5°	5.2°	3.1°	1.291	1.35	2.0
	KF2X100W0902C100L800	3.5°	5.2°	3.1°	1.291	1.35	2.0
	KF2X125W0903C125L600	1.9°	2.8°	1.7°	1.813	1.87	2.5
	KF2X125W0903C125L800	1.9°	2.8°	1.7°	1.813	1.87	2.5
	KF2X150W0903C125L600	1.4°	2.1°	1.2°	2.310	2.37	3.0
	KF2X150W0903C125L800	1.4°	2.1°	1.2°	2.310	2.37	3.0
Face Mills	**KF2X150W0904S050L157**	1.4°	2.1°	1.2°	2.310	2.37	3.0
	KF2X200W0905S075L157	1.0°	1.4°	0.8°	3.307	3.37	4.0
	KF2X200W0906S075L157	1.0°	1.4°	0.8°	3.307	3.37	4.0
	KF2X250W0906S075L175	0.7°	1.1°	0.6°	4.305	4.36	5.0
	KF2X300W0907S100L175	0.6°	1.0°	0.5°	5.303	5.36	6.0

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

Primary Application

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

Features and Benefits

Platform designed for pocketing, ramping, and helical interpolations.

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

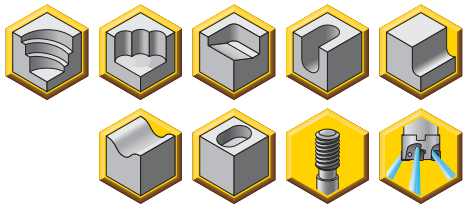
Excellent runout accuracy increases general performance and higher tool life.

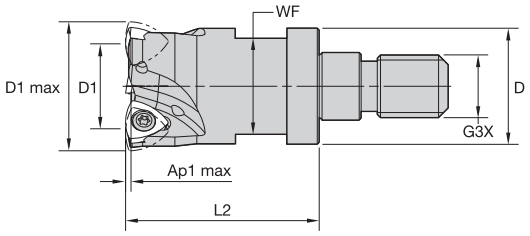
Just two topographies to cover all applications with easy selection.

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

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

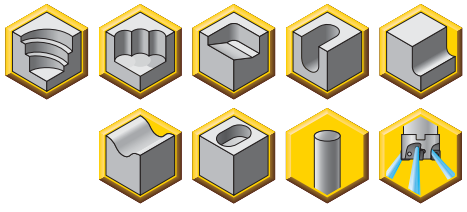
- Engineered to use with small machines and/or components using high-feed milling strategies.
- Fine-pitch cutters boost productivity; able to run up to 0,05 IPT.
- Pocketing, ramping, and helical interpolations.
- First choice above 3 x D applications.

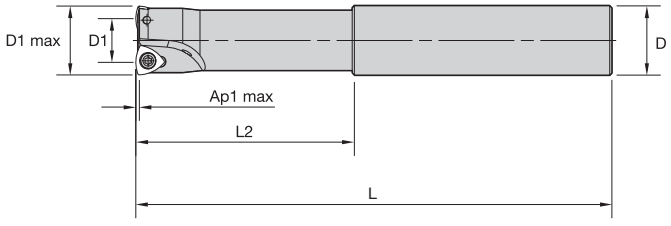




Screw-On End Mills • Inch

order number	catalog number	D1 max	D1	D	WF	G3X	L2	Ap1 max	Z	max ramp angle	max RPM	insert 1	lbs
3652852	KF063WP0302M08100	.625	.398	.512	.386	M8	1.000	.033	2	8.5°	25055	WP..0302..	.06
4138464	KF075WP0303M10118	.750	.490	.699	.589	M10	1.180	.040	3	5.3°	16700	WP..0302..	.12
4138465	KF100WP0304M12138	1.000	.708	.827	.667	M12	1.378	.040	4	3.0°	12500	WP..0302..	.21





End Mills • Inch

order number	catalog number	D1 max	D1	D	L	L2	Ap1 max	Z	max ramp angle	max RPM	insert 1	lbs
3652893	KF063WP0302C063L100	.625	.393	.625	3.362	1.000	.033	2	8.5°	20050	WP..0302..	.25
4138466	KF075WP0303C075L150	.750	.492	.750	4.500	1.391	.040	3	5.3°	16700	WP..0302..	.48
4138467	KF075WP0303C075L250	.750	.461	.750	6.000	2.394	.040	3	5.3°	16700	WP..0302..	.65
4138468	KF100WP0304C100L150	1.000	.740	1.000	4.800	1.391	.040	4	5.3°	12500	WP..0302..	.95
4138469	KF100WP0304C100L250	1.000	.740	1.000	6.000	2.359	.040	4	3.0°	12500	WP..0302..	1.18

Spare Parts

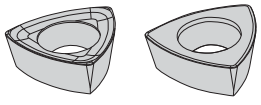
D1 max	 insert screw	in. lbs.	 Torx wrench
.625	192.416	8	FT7
.750	192.416	8	FT7
1.000	192.416	8	FT7

Insert Selection Guide

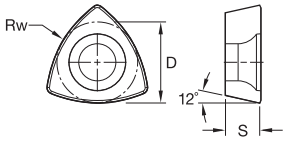
Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.LD..	KC522M	**.LD..**	**KCPK30**	.LD..	KCPK30
P3–P4	.LD..	KC522M	**.LD..**	**KCPK30**	.LD..	KCPK30
P5–P6	.LD..	KCPK30	**.LD..**	**KCPM20**	–	–
M1–M2	.LD..	KC522M	**.LD..**	**KC725M**	–	–
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 for high-feed milling process.
- Engineered to run up to 0,05 IPT. Boost productivity in small machines and/or components.
- LD first choice for majority of materials, providing lower cutting forces.
- LN geometry is the first choice for high-strength steel and hard machining up to 55 HRC.



WPGX-LD WPGX-LN



● first choice
○ alternate choice

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

WPGX-LD and -LN

catalog number	D	S	RW	cutting edges	KC510M	KC522M	KC725M	KCPM20	KCPK30
WPGX030204LD080	.217	.094	.315	3		●	●	●	●
WPGX030204LN080	.217	.094	.315	3	●				

Recommended Starting Speeds [SFM]

Material Group		KC510M			KC522M			KC725M			KCPM20			KCPK30		
P	1	–	–	–	1300	**1130**	1060	1030	**900**	840	2170	**1910**	1760	1780	**1560**	1450
	2	–	–	–	1080	**950**	790	860	**760**	640	1340	**1210**	1090	1100	**1000**	900
	3	–	–	–	1000	**840**	700	790	**670**	550	1210	**1090**	1000	1000	**900**	820
	4	960	**780**	660	890	**730**	590	710	**590**	470	910	**840**	760	740	**690**	620
	5	–	–	–	730	**660**	590	590	**530**	470	1090	**980**	900	1020	**910**	830
	6	–	–	–	650	**490**	400	520	**400**	310	760	**660**	570	620	**540**	–
M	1	–	–	–	800	**710**	650	670	**590**	540	880	**790**	680	820	**720**	620
	2	–	–	–	730	**620**	520	610	**520**	430	800	**700**	620	730	**640**	550
	3	–	–	–	550	**480**	370	460	**400**	310	640	**570**	490	570	**520**	460
K	1	1150	**1040**	940	900	**820**	720	–	–	–	1420	**1280**	1150	1160	**1050**	940
	2	910	**820**	760	710	**640**	590	–	–	–	1130	**1010**	920	920	**830**	760
	3	770	**680**	620	590	**530**	480	–	–	–	950	**840**	780	770	**690**	640
N	1	2520	**2240**	2060	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
S	1	–	–	–	160	**140**	110	140	**120**	100	–	–	–	–	–	–
	2	–	–	–	160	**140**	110	140	**120**	100	–	–	–	–	–	–
	3	–	–	–	200	**160**	110	180	**140**	100	–	–	–	–	–	–
	4	–	–	–	280	**200**	140	240	**180**	120	–	–	–	–	–	–
H	1	600	**500**	370	470	**360**	280	–	–	–	550	**460**	370	–	–	–
	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 [IPT]

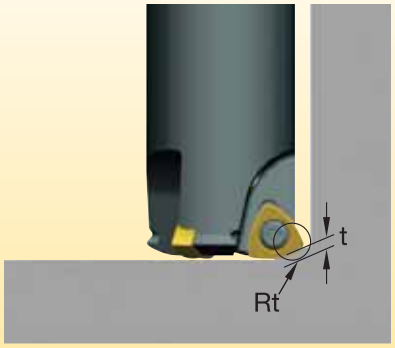
Light Machining	General Purpose	Heavy Machining

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.LD..	.027	**.070**	.121	.019	**.049**	.081	.017	**.042**	.068	.016	**.040**	.063	.015	**.039**	.062	.LD..
.LN..	.027	**.070**	.121	.019	**.049**	.081	.017	**.042**	.068	.016	**.040**	.063	.015	**.039**	.062	.LN..

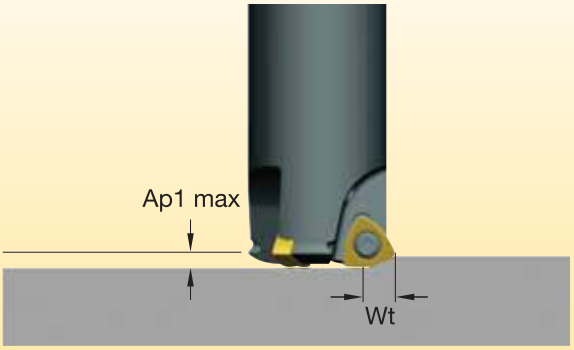
NOTE: Use “Light Machining” values as starting feed rate.

General Programming Information for Applying KenFeed Mini

Rt	Wt	t
.039	.094	.016



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



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

Rodeka™ • The New Round Insert Generation

Primary Application

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

Features and Benefits

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

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

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

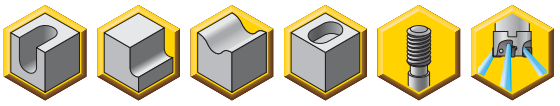
Unique anti-rotation feature for excellent stability with higher feed rates and cutting forces. User-friendly insert rotation.

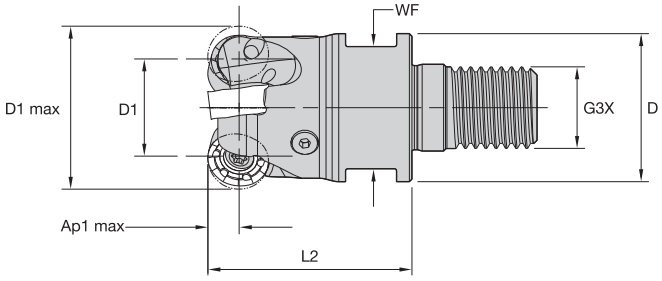
Three insert and topography styles to cover any type of component and application.

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

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

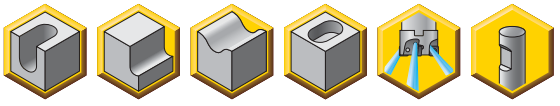
- Double-sided round insert with 12 indexable positions.
- Anti-rotation features enable higher cutting data and extra stability.
- Pocketing and profiling capabilities.

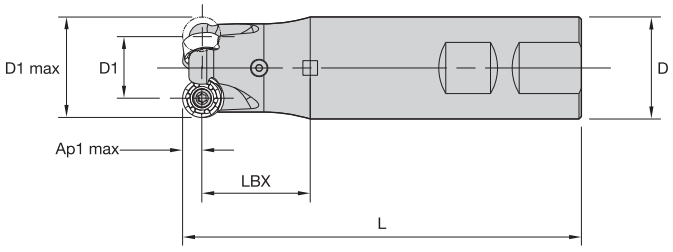




Screw-On End Mills

order number	catalog number	D1 max	D1	D	WF	G3X	L2	Ap1 max	Z	lbs	max RPM	insert 1
4178114	**KDR125R1203M16L150**	1.25	.778	1.142	.94	M16	1.50	.117	3	.37	39310	RN_J1204M0__
4178115	**KDR150R1203M16L150**	1.50	1.028	1.142	.94	M16	1.50	.117	3	.42	35890	RN_J1204M0__
4178116	**KDR150R1204M16L150**	1.50	1.028	1.142	.94	M16	1.50	.117	4	.42	35890	RN_J1204M0__





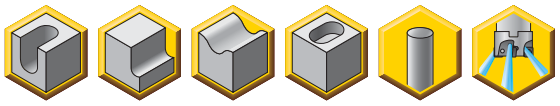
Weldon End Mills

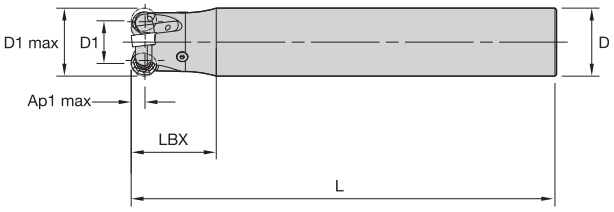
order number	catalog number	D1 max	D1	D	L	LBX	Ap1 max	Z	lbs	max RPM	insert 1
4178119	**KDR125R1202W100L200**	1.25	.778	1.00	4.28	2.00	.117	2	.86	39310	RN_J1204M0__

Spare Parts

D1 max	insert screw	in. lbs.	wrench
1.25	**193.492**	35	**170.025**
1.50	**193.492**	35	**170.025**

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





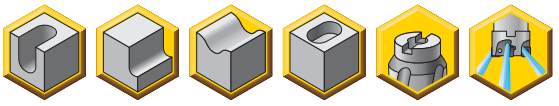
Cylindrical End Mills

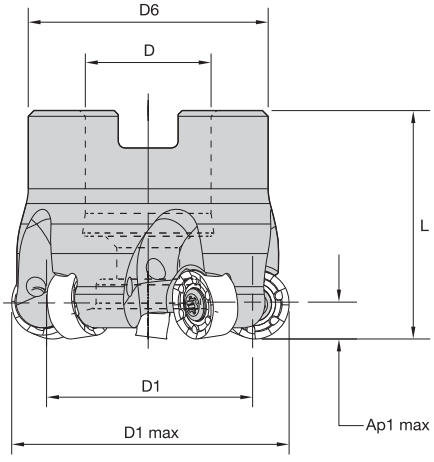
order number	catalog number	D1 max	D1	D	L	LBX	Ap1 max	Z	lbs	max RPM	insert 1
4178120	**KDR125R1202C125L900**	1.25	.778	1.25	9.00	1.50	.117	2	2.79	39310	RN_J1204M0__
4178121	**KDR150R1203C150L900**	1.50	1.028	1.50	9.00	1.50	.117	3	4.03	35890	RN_J1204M0__

Spare Parts

D1 max	insert screw	in. lbs.	wrench
1.25	**193.492**	35	**170.025**
1.50	**193.492**	35	**170.025**

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





Shell Mills

order number	catalog number	D1 max	D1	D	D6	L	Ap1 max	Z	lbs	max RPM	insert 1
4178122	**KDR150R1204S050L157**	1.50	1.028	.50	1.300	1.57	.117	4	.40	35890	RN_J1204M0__
4178123	**KDR200R1204S075L200**	2.00	1.528	.75	1.750	2.00	.117	4	1.01	31080	RN_J1204M0__
4178124	**KDR200R1205S075L200**	2.00	1.528	.75	1.750	2.00	.117	5	.97	31080	RN_J1204M0__
4178125	**KDR250R1207S075L200**	2.50	2.028	.75	1.750	2.00	.117	7	1.42	27800	RN_J1204M0__
4178126	**KDR300R1208S100L200**	3.00	2.528	1.00	2.189	2.00	.117	8	2.01	25370	RN_J1204M0__
4178127	**KDR400R1209S150L200**	4.00	3.528	1.50	3.380	2.00	.117	9	3.95	21970	RN_J1204M0__

Spare Parts

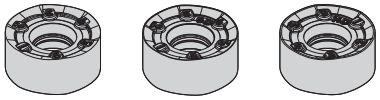
D1 max	 insert screw	in. lbs.	 socket-head cap screw	 socket-head cap screw with coolant groove	 wrench
1.50	**193.492**	35	**S422**	**S422CG**	**170.025**
2.00	**193.492**	35	**S445**	**S445CG**	**170.025**
2.50	**193.492**	35	**S445**	**S445CG**	**170.025**
3.00	**193.492**	35	**S458**	**S458CG**	**170.025**
4.00	**193.492**	35	**–**	**–**	**170.025**

Insert Selection Guide

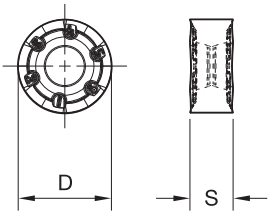
Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.E..LD	KCPK30	**.S..GD**	**KCPK30**	.S..HD	KCPK30
P3–P4	.S..GD	KC522M	**.S..HD**	**KCPM20**	.S..HD	KCPK30
P5–P6	.S..GD	KC522M	**.S..GD**	**KCPK30**	.S..HD	KCPM20
M1–M2	.E..LD	KC522M	**.E..LD**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

Indexable Inserts • RNGJ12....

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



RNGJ-LD RNGJ-GD RNGJ-HD



● first choice
○ alternate choice

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

RNGJ-LD

catalog number	D	S	hm	cutting edges	KC422M	KC522M	KC725M	KCK15	KCPM20	KCPK30
RNGJ1204M0ELD	.472	.187	.0015	12		●	●			●
RNGJ1204M0FLDJ	.472	.187	.0015	12	●					

RNGJ-GD

catalog number	D	S	hm	cutting edges	KC422M	KC522M	KC725M	KCK15	KCPM20	KCPK30
RNGJ1204M0SGD	.472	.187	.0034	12		●	●			●

RNGJ-HD

catalog number	D	S	hm	cutting edges	KC422M	KC522M	KC725M	KCK15	KCPM20	KCPK30
RNGJ1204M0SHD	.472	.187	.007	12			●	●	●	●

Recommended Starting Speeds [SFM]

Material Group		KC422M			KC522M			KC725M			KCK15			KCPM20			KCPK30		
P	1	–	–	–	1300	**1130**	1060	1030	**900**	840	–	–	–	2170	**1910**	1760	1780	**1560**	1450
	2	–	–	–	1080	**950**	790	860	**760**	640	–	–	–	1340	**1210**	1090	1100	**1000**	900
	3	–	–	–	1000	**840**	700	790	**670**	550	–	–	–	1210	**1090**	1000	1000	**900**	820
	4	–	–	–	890	**730**	590	710	**590**	470	–	–	–	910	**840**	760	740	**690**	620
	5	–	–	–	730	**660**	590	590	**530**	470	–	–	–	1090	**980**	900	1020	**910**	830
	6	–	–	–	650	**490**	400	520	**400**	310	–	–	–	760	**660**	570	620	**540**	–
M	1	–	–	–	800	**710**	650	670	**590**	540	–	–	–	880	**790**	680	820	**720**	620
	2	–	–	–	730	**620**	520	610	**520**	430	–	–	–	800	**700**	620	730	**640**	550
	3	–	–	–	550	**480**	370	460	**400**	310	–	–	–	640	**570**	490	570	**520**	460
K	1	–	–	–	900	**820**	720	–	–	–	1660	**1510**	1340	1420	**1280**	1150	1160	**1050**	940
	2	–	–	–	710	**640**	590	–	–	–	1310	**1170**	1090	1130	**1010**	920	920	**830**	760
	3	–	–	–	590	**530**	480	–	–	–	1100	**980**	900	950	**840**	780	770	**690**	640
N	1–2	4220	**3720**	3440	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3	3720	**3440**	3000	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
S	1	–	–	–	160	**140**	110	140	**120**	100	–	–	–	–	–	–	–	–	–
	2	–	–	–	160	**140**	110	140	**120**	100	–	–	–	–	–	–	–	–	–
	3	–	–	–	200	**160**	110	180	**140**	100	–	–	–	–	–	–	–	–	–
	4	–	–	–	280	**200**	140	240	**180**	120	–	–	–	–	–	–	–	–	–
H	1	–	–	–	470	**360**	280	–	–	–	–	–	–	550	**460**	370	–	–	–

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

Recommended Starting Feeds [IPT]

Light Machining	General Purpose	Heavy Machining

At .118 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	.004	**.007**	.012	.003	**.005**	.009	.003	**.005**	.008	.003	**.004**	.007	.002	**.004**	.007	.F..LDJ
.E..LD	.004	**.007**	.012	.003	**.005**	.009	.003	**.005**	.008	.003	**.004**	.007	.002	**.004**	.007	.E..LD
.S..GD	.009	**.016**	.028	.007	**.012**	.021	.006	**.010**	.018	.006	**.010**	.017	.006	**.009**	.016	.S..GD
.S..HD	.015	**.023**	.035	.011	**.017**	.026	.010	**.015**	.022	.009	**.014**	.021	.009	**.014**	.020	.S..HD

At .059 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	.005	**.009**	.016	.004	**.007**	.012	.004	**.006**	.010	.003	**.006**	.010	.003	**.005**	.010	.F..LDJ
.E..LD	.005	**.009**	.016	.004	**.007**	.012	.004	**.006**	.010	.003	**.006**	.010	.003	**.005**	.010	.E..LD
.S..GD	.012	**.021**	.038	.009	**.016**	.027	.008	**.013**	.024	.007	**.013**	.022	.007	**.012**	.022	.S..GD
.S..HD	.020	**.031**	.047	.015	**.023**	.034	.013	**.020**	.029	.012	**.018**	.027	.012	**.018**	.027	.S..HD

At .030 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	.007	**.013**	.022	.005	**.009**	.016	.005	**.008**	.014	.004	**.008**	.013	.004	**.007**	.013	.F..LDJ
.E..LD	.007	**.013**	.022	.005	**.009**	.016	.005	**.008**	.014	.004	**.008**	.013	.004	**.007**	.013	.E..LD
.S..GD	.017	**.029**	.052	.012	**.021**	.038	.011	**.018**	.032	.010	**.017**	.030	.010	**.017**	.029	.S..GD
.S..HD	.028	**.043**	.066	.021	**.031**	.047	.018	**.027**	.040	.017	**.025**	.037	.016	**.024**	.037	.S..HD

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

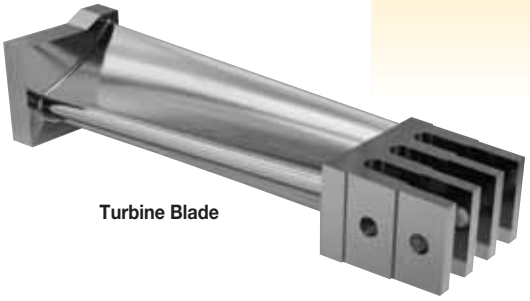
Rodeka 8 Turbine Blade Version

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

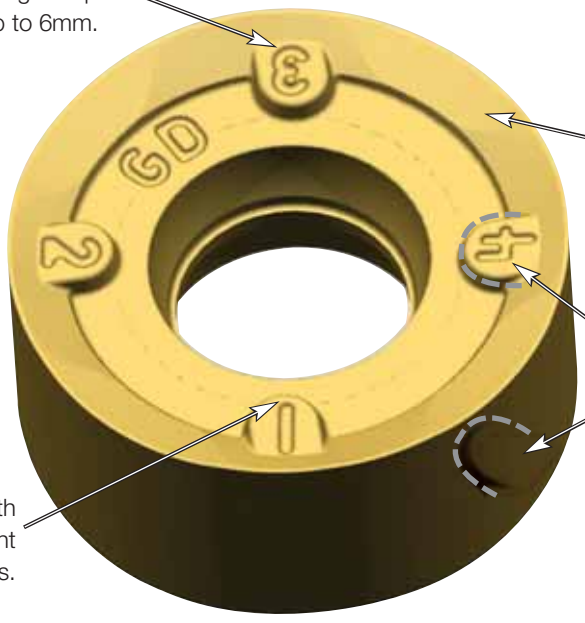
Power Plant

Steam Turbine

Rodeka 8



Turbine Blade



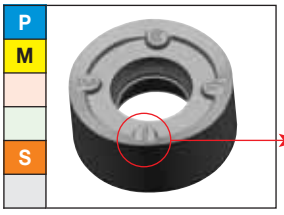
Four indexes per side, in total eight cutting edges. With higher Ap capabilities, up to 6mm.

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

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

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

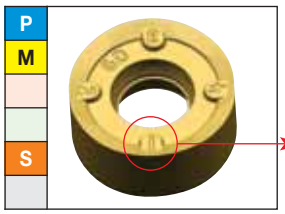
-LD



Light/Medium Machining

First choice for stainless steel and titanium machining.

-GD



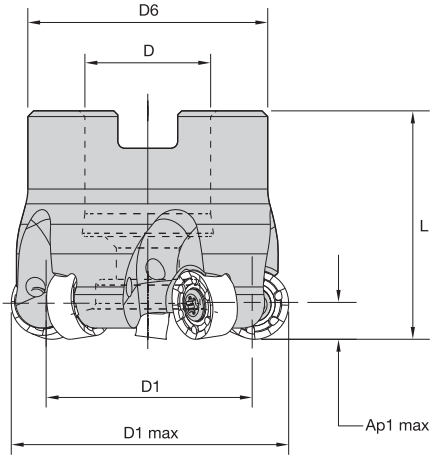
Medium/Heavy Machining

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

● first choice
○ alternate choice

Indexable Inserts

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



Shell Mills

MM#	catalog 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 mold industry up to 55 HRC.

Features and Benefits

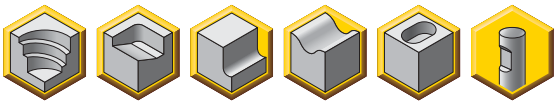
Platform Features

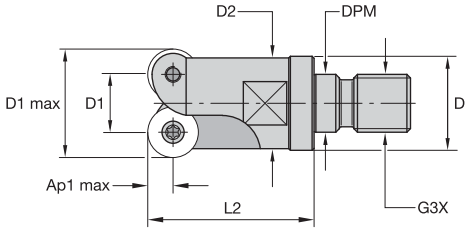
- Big draft clearance angle to improve the pocketing operations performance.
- Big clearance area in the bottom, superior ramping, and helical values.
- High accuracy and tight runout.

Value Proposition

- Real HSM capabilities: more teeth and close accuracy.
- Strongest and most rigid design for roughing operations.
- Addressed to the die and mold 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 mold manufacturing.





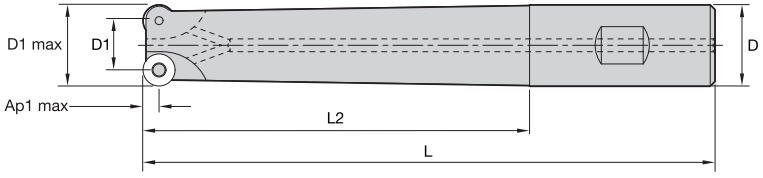
Screw-On End Mills • RD.X07 Inserts

order number	catalog number	D1 max	D1	D	D2	DPM	G3X	L2	Ap1 max	Z	max ramp angle	lbs	insert 1
2511327	**KDM050RD0702M08075**	.500	.224	.512	.453	.335	M8	1.102	.138	2	10.0°	.08	RD.X07T1..
2511345	**KDM063RD0702M08100**	.625	.349	.512	.559	.335	M8	1.000	.138	2	7.0°	.08	RD.X0702..
2511346	**KDM063RD0703M08100**	.625	.349	.512	.559	.335	M8	1.000	.138	3	7.0°	.08	RD.X0702..
2511347	**KDM075RD0703M10118**	.750	.474	.709	.740	.413	M10	1.180	.138	4	6.0°	.15	RD.X0702..
2511348	**KDM100RD0703M12138**	1.000	.724	.827	.929	.492	M12	1.380	.138	3	5.0°	.27	RD.X0702..
2511349	**KDM100RD0705M12138**	1.000	.724	.827	.929	.492	M12	1.380	.138	5	5.0°	.26	RD.X0702..

Spare Parts

D1 max	 insert screw	in. lbs.	 Torx wrench
.500	**193.364**	10	**FT7**
.625	**193.341**	10	**FT7**
.750	**193.341**	10	**FT7**
1.000	**193.341**	10	**FT7**

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



End Mills with Weldon® Shank • RD.X07 Inserts

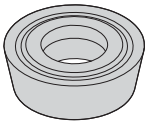
order number	catalog number	D1 max	D1	D	L	L2	Ap1 max	Z	max ramp angle	lbs	insert 1
2251715	**KDM050RD07W200**	.500	.224	.625	3.970	2.000	.138	1	10.0°	.26	RD.X07.
2251716	**KDM063RD07W200**	.625	.349	.625	3.970	2.000	.138	2	7.0°	.31	RD.X07.
2251717	**KDM075RD07W200**	.750	.474	.750	4.050	2.000	.138	3	6.0°	.44	RD.X07.
2251718	**KDM075RD07W400**	.750	.474	1.000	6.280	4.000	.138	3	4.0°	.90	RD.X07.
2251719	**KDM100RD07W200**	1.000	.724	1.000	4.280	2.000	.138	4	5.0°	.79	RD.X07.
2251720	**KDM100RD07W400**	1.000	.724	1.000	6.280	4.000	.138	4	3.0°	1.25	RD.X07.

Spare Parts

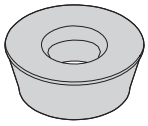
D1 max	 insert screw	in. lbs.	 Torx wrench
.500	**193.364**	10	**FT7**
.625	**193.364**	10	**FT7**
.750	**193.364**	10	**FT7**
1.000	**193.364**	10	**FT7**

Insert Selection Guide

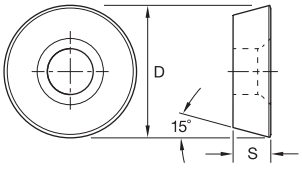
Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.F..LP	KC522M	**.F..LP**	**KC725M**	.S..LN	KC725M
P3–P4	.S..LN	KCPM20	**.S..LN**	**KC522M**	.S..LN	KC725M
P5–P6	.S..LN	KC522M	**.S..LN**	**KCPM20**	.S..LN	KCPM20
M1–M2	.F..LP	KC522M	**.F..LP**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



RDHX-LP



RDHX-LN
RDPX-LN



● first choice
○ alternate choice

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

RDHX-LP

catalog number	D	S	hm	KC510M	KC522M	KC725M	KCPM20	KTPK20
RDHX0702M0FLP	.276	.094	.001	●	●	●		

RDHX-LN

catalog number	D	S	hm	KC510M	KC522M	KC725M	KCPM20	KTPK20
RDHX07T1M0SLN	.276	.078	.002	●		●		
RDHX0702M0SLN	.276	.094	.003	●	●	●	●	
RDHX0702M0TLN	.276	.094	.003					●

RDPX-LN

catalog number	D	S	hm	KC510M	KC522M	KC725M	KCPM20	KTPK20
RDPX0702M0SLN	.275	.094	.002				●	

Recommended Starting Speeds [SFM]

Material Group		KC510M			KC522M			KC725M			KCPM20			KTPK20		
P	1	–	–	–	1300	**1130**	1060	1030	**900**	840	2170	**1910**	1760	1440	**1180**	1010
	2	–	–	–	1080	**950**	790	860	**760**	640	1340	**1210**	1090	890	**740**	620
	3	–	–	–	1000	**840**	700	790	**670**	550	1210	**1090**	1000	800	**670**	560
	4	960	**780**	660	890	**730**	590	710	**590**	470	910	**840**	760	600	**520**	430
	5	–	–	–	730	**660**	590	590	**530**	470	1090	**980**	900	830	**680**	580
	6	–	–	–	650	**490**	400	520	**400**	310	760	**660**	570	500	**410**	–
M	1	–	–	–	800	**710**	650	670	**590**	540	880	**790**	680	940	**770**	650
	2	–	–	–	730	**620**	520	610	**520**	430	800	**700**	620	850	**720**	600
	3	–	–	–	550	**480**	370	460	**400**	310	640	**570**	490	640	**530**	–
K	1	1150	**1040**	940	900	**820**	720	–	–	–	1420	**1280**	1150	910	**770**	640
	2	910	**820**	760	710	**640**	590	–	–	–	1130	**1010**	920	720	**590**	520
	3	770	**680**	620	590	**530**	480	–	–	–	950	**840**	780	600	**500**	420
N	1–2	2520	**2240**	2060	–	–	–	–	–	–	–	–	–	–	–	–
	3	2280	**2100**	1920	–	–	–	–	–	–	–	–	–	–	–	–
S	1	–	–	–	160	**140**	110	140	**120**	100	–	–	–	–	–	–
	2	–	–	–	160	**140**	110	140	**120**	100	–	–	–	–	–	–
	3	–	–	–	200	**160**	110	180	**140**	100	–	–	–	–	–	–
	4	–	–	–	280	**200**	140	240	**180**	120	–	–	–	–	–	–
H	1	630	**510**	360	470	**360**	280	–	–	–	550	**460**	370	–	–	–

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

Recommended Starting Feeds [IPT]

Light Machining	General Purpose	Heavy Machining

At .138 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	.003	**.005**	.014	.003	**.004**	.010	.002	**.003**	.009	.002	**.003**	.008	.002	**.003**	.008	.F..LP
.S..LN	.006	**.016**	.028	.004	**.012**	.020	.004	**.010**	.018	.003	**.010**	.016	.003	**.010**	.016	.S..LN
.T..LN	.007	**.017**	.028	.005	**.013**	.020	.004	**.011**	.018	.004	**.010**	.016	.004	**.010**	.016	.T..LN

At .069 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	.004	**.006**	.016	.003	**.005**	.012	.003	**.004**	.010	.002	**.004**	.009	.002	**.004**	.009	.F..LP
.S..LN	.007	**.019**	.032	.005	**.014**	.023	.004	**.012**	.020	.004	**.011**	.019	.004	**.011**	.018	.S..LN
.T..LN	.008	**.020**	.032	.006	**.015**	.023	.005	**.013**	.020	.005	**.012**	.019	.005	**.012**	.018	.T..LN

At .034 Axial Depth of Cut (ap)

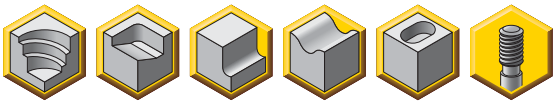
Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.F..LP	.005	**.008**	.021	.004	**.006**	.015	.003	**.005**	.013	.003	**.005**	.012	.003	**.005**	.012	.F..LP
.S..LN	.009	**.025**	.042	.006	**.018**	.031	.006	**.016**	.027	.005	**.015**	.025	.005	**.015**	.024	.S..LN
.T..LN	.010	**.026**	.042	.008	**.019**	.031	.007	**.017**	.027	.006	**.015**	.025	.006	**.015**	.024	.T..LN

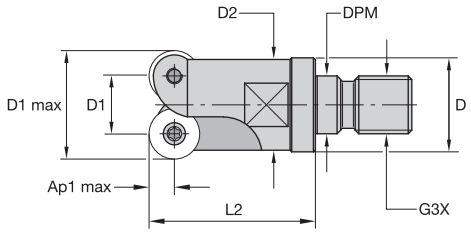
At .017 Axial Depth of Cut (ap)

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	.007	**.011**	.028	.005	**.008**	.021	.005	**.007**	.018	.004	**.007**	.017	.004	**.007**	.017	.F..LP
.S..LN	.012	**.034**	.059	.009	**.025**	.042	.008	**.022**	.036	.007	**.020**	.034	.007	**.020**	.033	.S..LN
.T..LN	.014	**.036**	.059	.010	**.026**	.042	.009	**.023**	.036	.008	**.021**	.034	.008	**.021**	.033	.T..LN

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

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

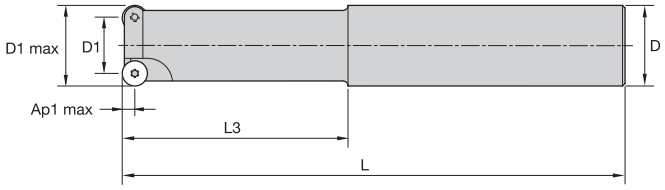




Screw-On End Mills • RD.X10 Inserts

order number	catalog number	D1 max	D1	D	D2	DPM	G3X	L2	Ap1 max	Z	max ramp angle	lbs	insert 1
2511350	**KDM075RD1002M10118**	.750	.356	.709	.768	.413	M10	1.180	.197	2	10.0°	1.59	RD.X1003M0S
2511351	**KDM100RD1002M12138**	1.000	.606	.827	.937	.492	M12	1.375	.197	2	6.0°	.26	RD.X1003M0S
2511352	**KDM100RD1003M12138**	1.000	.606	.827	.937	.492	M12	1.375	.197	3	6.0°	.25	RD.X1003M0S
2511463	**KDM150RD1004M16169**	1.500	1.106	1.142	1.319	.669	M16X2.0	1.690	.197	4	4.0°	.63	RD.X1003M0S

- Suitable for die and mold manufacturing.



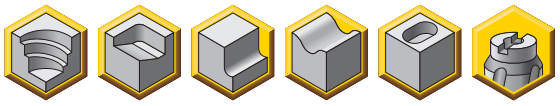
End Mills with Weldon® Shank • RD.X10 Inserts

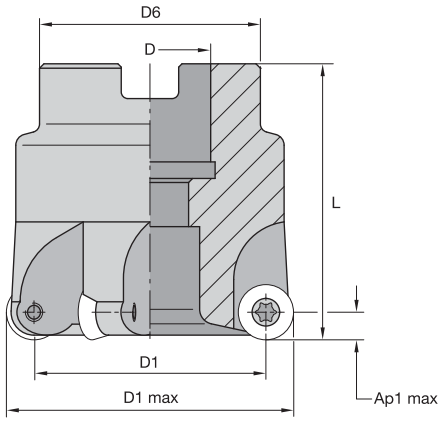
order number	catalog number	D1 max	D1	D	L	L3	Ap1 max	Z	max ramp angle	lbs	insert 1
2251721	**KDM075RD10W275**	.750	.356	.750	4.480	2.750	.197	2	10.0°	.53	RD.X10.
2251722	**KDM075RD10W475**	.750	.356	1.000	7.030	4.750	.197	2	10.0°	1.17	RD.X10.
2251753	**KDM100RD10W300**	1.000	.606	1.000	5.280	2.750	.197	2	6.0°	1.06	RD.X10.
2251754	**KDM100RD10W475**	1.000	.606	1.000	7.030	4.750	.197	2	6.0°	1.39	RD.X10.
2251755	**KDM125RD10W275**	1.250	.856	1.250	5.030	2.750	.197	3	4.0°	1.56	RD.X10.
2251756	**KDM125RD10W475**	1.250	.856	1.250	7.030	4.750	.197	3	4.0°	2.20	RD.X10.

Spare Parts

D1 max	 insert screw	in. lbs.	 Torx wrench
.750	**193.342**	30	**FT15**
1.000	**193.342**	30	**FT15**
1.250	**193.342**	30	**FT15**
1.500	**193.342**	30	**FT15**

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





Shell Mills • RD.X10 Inserts

order number	catalog number	D1 max	D1	D	D6	L	Ap1 max	Z	max ramp angle	lbs	insert 1
2251762	**KDM150RD10S050F**	1.500	1.106	.500	1.360	1.500	.197	5	4.0°	.66	RD..1003..
2251763	**KDM200RD10S075F**	2.000	1.606	.750	1.650	1.970	.197	7	4.0°	.99	RD..1003..

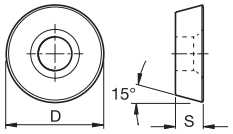
Spare Parts

D1 max	 insert screw	in. lbs.	 Torx wrench	 socket-head cap screw
1.500	**193.342**	30	**FT15**	**S424**
2.000	**193.342**	30	**FT15**	**S445**

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


RDHX-FLP RDPX-HP RDHX-GN RDPX-HN



● first choice
○ alternate choice

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

RDHX-FLP

catalog number	D	S	hm	K110M	KC510M	KC522M	KC725M	KCPM20	KCPK30	KTPK20
RDHX1003M0FLP	.394	.125	.001	●	●	●	●			

RDHX-GN

catalog number	D	S	hm	K110M	KC510M	KC522M	KC725M	KCPM20	KCPK30	KTPK20
RDHX1003M0SGN	.394	.125	.003		●	●	●			
RDHX1003M0TGN	.394	.125	.004							●

RDPX-HP

catalog number	D	S	hm	K110M	KC510M	KC522M	KC725M	KCPM20	KCPK30	KTPK20
RDPX1003M0SHP	.394	.125	.004			●	●	●	●	

RDPX-HN

catalog number	D	S	hm	K110M	KC510M	KC522M	KC725M	KCPM20	KCPK30	KTPK20
RDPX1003M0SHN	.394	.125	.005		●	●	●	●		

Recommended Starting Speeds [SFM]

Material Group		KC110M			KC510M			KC522M			KC725M		
P	1	–	–	–	–	–	–	1300	**1130**	1060	1030	**900**	840
	2	–	–	–	–	–	–	1080	**950**	790	860	**760**	640
	3	–	–	–	–	–	–	1000	**840**	700	790	**670**	550
	4	–	–	–	960	**780**	660	890	**730**	590	710	**590**	470
	5	–	–	–	–	–	–	730	**660**	590	590	**530**	470
	6	–	–	–	–	–	–	650	**490**	400	520	**400**	310
M	1	–	–	–	–	–	–	800	**710**	650	670	**590**	540
	2	–	–	–	–	–	–	730	**620**	520	610	**520**	430
	3	–	–	–	–	–	–	550	**480**	370	460	**400**	310
K	1	510	**480**	450	1150	**1040**	940	900	**820**	720	–	–	–
	2	450	**420**	390	910	**820**	760	710	**640**	590	–	–	–
	3	400	**350**	310	770	**680**	620	590	**530**	480	–	–	–
N	1–2	1980	**1860**	1770	2520	**2240**	2060	–	–	–	–	–	–
	3	1620	**1440**	1260	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	160	**140**	110	140	**120**	100
	2	–	–	–	–	–	–	160	**140**	110	140	**120**	100
	3	–	–	–	–	–	–	200	**160**	110	180	**140**	100
	4	–	–	–	–	–	–	280	**200**	140	240	**180**	120
H	1	–	–	–	630	**510**	360	470	**360**	280	–	–	–

Material Group		KCPM20			KCPK30			KTPK20		
P	1	2170	**1910**	1760	1780	**1560**	1450	1440	**1180**	1010
	2	1340	**1210**	1090	1100	**1000**	900	890	**740**	620
	3	1210	**1090**	1000	1000	**900**	820	800	**670**	560
	4	910	**840**	760	740	**690**	620	600	**520**	430
	5	1090	**980**	900	1020	**910**	830	830	**680**	580
	6	760	**660**	570	620	**540**	–	500	**410**	–
M	1	880	**790**	680	820	**720**	620	940	**770**	650
	2	800	**700**	620	730	**640**	550	850	**720**	600
	3	640	**570**	490	570	**520**	460	640	**530**	–
K	1	1420	**1280**	1150	1160	**1050**	940	910	**770**	640
	2	1130	**1010**	920	920	**830**	760	720	**590**	520
	3	950	**840**	780	770	**690**	640	600	**500**	420
N	1–2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–
H	1	550	**460**	370	–	–	–	–	–	–

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

Recommended Starting Feeds [IPT]

Light Machining	General Purpose	Heavy Machining

At .197 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	.003	**.007**	.014	.003	**.005**	.010	.002	**.004**	.009	.002	**.004**	.008	.002	**.004**	.008	.F..LP
.S..GN	.007	**.016**	.028	.005	**.012**	.020	.004	**.010**	.018	.004	**.009**	.016	.004	**.009**	.016	.S..GN
.T..GN	.007	**.017**	.028	.005	**.013**	.020	.004	**.011**	.018	.004	**.010**	.016	.004	**.010**	.016	.T..GN
.S..HP	.007	**.017**	.028	.005	**.013**	.020	.004	**.011**	.018	.004	**.010**	.016	.004	**.010**	.016	.S..HP
.S..HN	.007	**.017**	.028	.005	**.013**	.020	.004	**.011**	.018	.004	**.010**	.016	.004	**.010**	.016	.S..HN

At .098 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	.004	**.008**	.016	.003	**.006**	.012	.003	**.005**	.010	.002	**.005**	.009	.002	**.005**	.009	.F..LP
.F..GN	.004	**.008**	.016	.003	**.006**	.012	.003	**.005**	.010	.002	**.005**	.009	.002	**.005**	.009	.F..GN
.T..GN	.008	**.020**	.032	.006	**.015**	.023	.005	**.013**	.020	.005	**.012**	.019	.005	**.012**	.018	.T..GN
.S..GN	.008	**.020**	.032	.006	**.015**	.023	.005	**.013**	.020	.005	**.012**	.019	.005	**.012**	.018	.S..GN
.S..HP	.008	**.020**	.032	.006	**.015**	.023	.005	**.013**	.020	.005	**.012**	.019	.005	**.012**	.018	.S..HP

At .049 Axial Depth of Cut (ap)

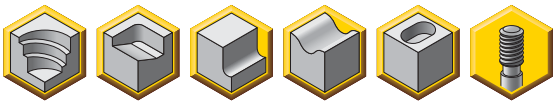
Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.F..LP	.005	**.010**	.021	.004	**.008**	.015	.003	**.007**	.013	.003	**.006**	.012	.003	**.006**	.012	.F..LP
.S..GN	.010	**.024**	.042	.008	**.018**	.031	.007	**.015**	.027	.006	**.014**	.025	.006	**.014**	.024	.S..GN
.T..GN	.010	**.026**	.042	.008	**.019**	.031	.007	**.017**	.027	.006	**.015**	.025	.006	**.015**	.024	.T..GN
.S..HP	.010	**.026**	.042	.008	**.019**	.031	.007	**.017**	.027	.006	**.015**	.025	.006	**.015**	.024	.S..HP
.S..HN	.010	**.026**	.042	.008	**.019**	.031	.007	**.017**	.027	.006	**.015**	.025	.006	**.015**	.024	.S..HN

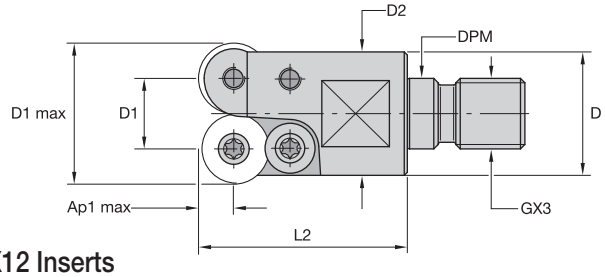
At .025 Axial Depth of Cut (ap)

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	.007	**.014**	.028	.005	**.010**	.021	.005	**.009**	.018	.004	**.008**	.017	.004	**.008**	.017	.F..LP
.S..GN	.014	**.033**	.059	.010	**.024**	.042	.009	**.021**	.036	.008	**.020**	.034	.008	**.019**	.033	.S..GN
.T..GN	.014	**.036**	.059	.010	**.026**	.042	.009	**.023**	.036	.008	**.021**	.034	.008	**.021**	.033	.T..GN
.S..HP	.014	**.036**	.059	.010	**.026**	.042	.009	**.023**	.036	.008	**.021**	.034	.008	**.021**	.033	.S..HP
.S..HN	.014	**.036**	.059	.010	**.026**	.042	.009	**.023**	.036	.008	**.021**	.034	.008	**.021**	.033	.S..HN

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

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





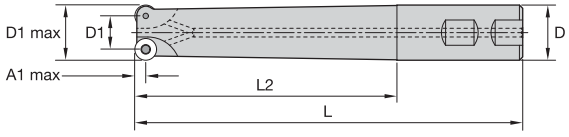
Screw-On End Mills • RD.X12 Inserts

order number	catalog number	D1 max	D1	D	D2	DPM	G3X	L2	Ap1 max	Z	max ramp angle	lbs	insert 1
2511464	**KDM100RD1202M12138**	1.000	.528	.827	.906	.492	M12	1.375	.236	2	10.0°	.24	RD.X12T3..
2511465	**KDM125RD1203M16169**	1.250	.778	1.142	1.327	.669	M16	1.690	.236	3	8.0°	.49	RD.X12T3..
2511466	**KDM150RD1204M16169**	1.500	1.028	1.142	1.591	.669	M16	1.690	.236	4	7.0°	.60	RD.X12T3..

Spare Parts

D1 max	 insert screw	in. lbs.	 Torx wrench	 clamp screw
1.000	**193.342**	30	**FT15**	**193.338**
1.250	**193.342**	30	**FT15**	**193.338**
1.500	**193.342**	30	**FT15**	**193.338**

- Suitable for die and mold manufacturing.



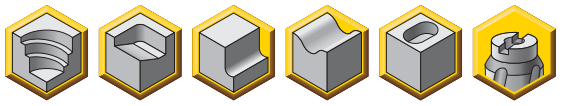
End Mills with Weldon® Shank • RD.X12 Inserts

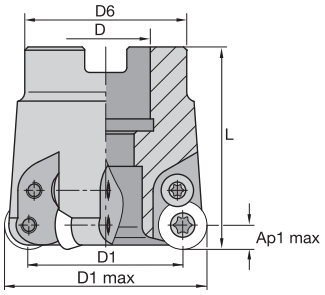
order number	catalog number	D1 max	D1	D	L	L2	Ap1 max	Z	max ramp angle	lbs	insert 1
2251757	**KDM100RD12W275**	1.000	.528	1.250	5.030	2.750	.236	2	10.0°	.99	RD.X12T3..
2251758	**KDM100RD12W475**	1.000	.528	1.250	7.030	4.750	.236	2	10.0°	1.65	RD.X12T3..
2251759	**KDM125RD12W375**	1.250	.778	1.250	6.030	3.750	.236	3	8.0°	1.87	RD.X12T3..
2251760	**KDM150RD12W275**	1.500	1.028	1.500	5.510	2.750	.236	3	7.0°	2.42	RD.X12T3..
2251761	**KDM150RD12W475**	1.500	1.028	1.500	7.506	4.750	.236	3	7.0°	3.31	RD.X12T3..

Spare Parts

D1 max	 insert screw	in. lbs.	 Torx wrench
1.000	**193.342**	30	**FT15**
1.250	**193.342**	30	**FT15**
1.500	**193.342**	30	**FT15**

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





Shell Mills • RD.X12 Inserts

order number	catalog number	D1 max	D1	D	D6	L	Ap1 max	Z	max ramp angle	lbs	insert 1
2251774	**KDM200RD12S075C**	2.000	1.528	.750	1.650	1.970	.236	3	5.0°	.99	RD.X12T3..
2251764	**KDM200RD12S075F**	2.000	1.528	.750	1.650	1.970	.236	5	5.0°	.99	RD.X12T3..
2251765	**KDM250RD12S100F**	2.500	2.028	1.000	2.070	1.970	.236	6	4.0°	1.39	RD.X12T3..
2251766	**KDM300RD12S100C**	3.000	2.528	1.000	2.070	1.970	.236	5	3.0°	2.20	RD.X12T3..
2251775	**KDM300RD12S100F**	3.000	2.528	1.000	2.070	1.970	.236	7	3.0°	2.20	RD.X12T3..
2251767	**KDM400RD12S125C**	4.000	3.528	1.250	2.750	1.970	.236	5	1.5°	3.75	RD.X12T3..
2251776	**KDM400RD12S125F**	4.000	3.528	1.250	2.750	1.970	.236	8	1.5°	3.75	RD.X12T3..

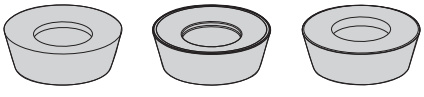
Spare Parts

D1 max	 insert screw	in. lbs.	 Torx wrench	 clamp screw	 socket-head cap screw
2.000	**193.342**	30	**FT15**	**193.338**	**S445**
2.500	**193.342**	30	**FT15**	**193.338**	**S458**
3.000	**193.342**	30	**FT15**	**193.338**	**–**
4.000	**193.342**	30	**FT15**	**193.338**	**–**

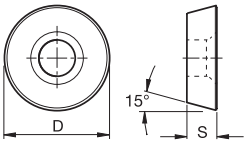
Insert Selection Guide

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

Indexable Round Inserts • KDM RD.X12...



RDHX-FLP RDPX-HP RDHX-GN RDPX-HN



● first choice
○ alternate choice

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

RDHX-FLP

catalog number	D	S	hm	K110M	KC510M	KC522M	KC525M	KC725M	KCPM20	KCPK30	KTPK20
RDHX12T3M0FLP	.472	.156	.001	●	●	●		●			

RDHX-GN

catalog number	D	S	hm	K110M	KC510M	KC522M	KC525M	KC725M	KCPM20	KCPK30	KTPK20
RDHX12T3M0SGN	.472	.156	.004		●	●	●	●			
RDHX12T3M0TGN	.472	.156	.005								●

RDPX-HP

catalog number	D	S	hm	K110M	KC510M	KC522M	KC525M	KC725M	KCPM20	KCPK30	KTPK20
RDPX12T3M0SHP	.472	.156	.005			●		●	●	●	

RDPX-HN

catalog number	D	S	hm	K110M	KC510M	KC522M	KC525M	KC725M	KCPM20	KCPK30	KTPK20
RDPX12T3M0SHN	.472	.156	.007		●	●		●	●		

Recommended Starting Speeds [SFM]

Material Group		KC110M			KC510M			KC522M			KC525M		
P	1	–	–	–	–	–	–	1300	**1130**	1060	860	**790**	710
	2	–	–	–	–	–	–	1080	**950**	790	710	**620**	590
	3	–	–	–	–	–	–	1000	**840**	700	620	**590**	550
	4	–	–	–	960	**780**	660	890	**730**	590	550	**520**	470
	5	–	–	–	–	–	–	730	**660**	590	590	**550**	520
	6	–	–	–	–	–	–	650	**490**	400	520	**470**	430
M	1	–	–	–	–	–	–	800	**710**	650	590	**550**	520
	2	–	–	–	–	–	–	730	**620**	520	520	**470**	430
	3	–	–	–	–	–	–	550	**480**	370	360	**310**	280
K	1	510	**480**	450	1150	**1040**	940	900	**820**	720	–	–	–
	2	450	**420**	390	910	**820**	760	710	**640**	590	–	–	–
	3	400	**350**	310	770	**680**	620	590	**530**	480	–	–	–
N	1–2	1980	**1860**	1770	2520	**2240**	2060	–	–	–	–	–	–
	3	1620	**1440**	1260	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	160	**140**	110	240	**220**	190
	2	–	–	–	–	–	–	160	**140**	110	240	**220**	190
	3	–	–	–	–	–	–	200	**160**	110	190	**180**	160
	4	–	–	–	–	–	–	280	**200**	140	240	**190**	160
H	1	–	–	–	630	**510**	360	470	**360**	280	–	–	–

Material Group		KC725M			KCPM20			KCPK30			KTPK20		
P	1	1030	**900**	840	2170	**1910**	1760	1780	**1560**	1450	1440	**1180**	1010
	2	860	**760**	640	1340	**1210**	1090	1100	**1000**	900	890	**740**	620
	3	790	**670**	550	1210	**1090**	1000	1000	**900**	820	800	**670**	560
	4	710	**590**	470	910	**840**	760	740	**690**	620	600	**520**	430
	5	590	**530**	470	1090	**980**	900	1020	**910**	830	830	**680**	580
	6	520	**400**	310	760	**660**	570	620	**540**	–	500	**410**	–
M	1	670	**590**	540	880	**790**	680	820	**720**	620	940	**770**	650
	2	610	**520**	430	800	**700**	620	730	**640**	550	850	**720**	600
	3	460	**400**	310	640	**570**	490	570	**520**	460	640	**530**	–
K	1	–	–	–	1420	**1280**	1150	1160	**1050**	940	910	**770**	640
	2	–	–	–	1130	**1010**	920	920	**830**	760	720	**590**	520
	3	–	–	–	950	**840**	780	770	**690**	640	600	**500**	420
N	1–2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
S	1	140	**120**	100	–	–	–	–	–	–	–	–	–
	2	140	**120**	100	–	–	–	–	–	–	–	–	–
	3	180	**140**	100	–	–	–	–	–	–	–	–	–
	4	240	**180**	120	–	–	–	–	–	–	–	–	–
H	1	–	–	–	550	**460**	370	–	–	–	–	–	–

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

Recommended Starting Feeds [IPT]

Light Machining	General Purpose	Heavy Machining

At .236 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	.003	**.007**	.014	.003	**.005**	.010	.002	**.004**	.009	.002	**.004**	.008	.002	**.004**	.008	.F..LP
.F..GN	.003	**.007**	.014	.003	**.005**	.010	.002	**.004**	.009	.002	**.004**	.008	.002	**.004**	.008	.F..GN
.T..GN	.007	**.017**	.028	.005	**.013**	.020	.004	**.011**	.018	.004	**.010**	.016	.004	**.010**	.016	.T..GN
.S..GN	.007	**.017**	.028	.005	**.013**	.020	.004	**.011**	.018	.004	**.010**	.016	.004	**.010**	.016	.S..GN
.S..HP	.007	**.017**	.028	.005	**.013**	.020	.004	**.011**	.018	.004	**.010**	.016	.004	**.010**	.016	.S..HP
.S..HN	.007	**.017**	.028	.005	**.013**	.020	.004	**.011**	.018	.004	**.010**	.016	.004	**.010**	.016	.S..HN

At .118 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	.004	**.008**	.016	.003	**.006**	.012	.003	**.005**	.010	.002	**.005**	.009	.002	**.005**	.009	.F..LP
.F..GN	.004	**.008**	.016	.003	**.006**	.012	.003	**.005**	.010	.002	**.005**	.009	.002	**.005**	.009	.F..GN
.T..GN	.008	**.020**	.032	.006	**.015**	.023	.005	**.013**	.020	.005	**.012**	.019	.005	**.012**	.018	.T..GN
.S..GN	.008	**.020**	.032	.006	**.015**	.023	.005	**.013**	.020	.005	**.012**	.019	.005	**.012**	.018	.S..GN
.S..HP	.008	**.020**	.032	.006	**.015**	.023	.005	**.013**	.020	.005	**.012**	.019	.005	**.012**	.018	.S..HP
.S..HN	.008	**.020**	.032	.006	**.015**	.023	.005	**.013**	.020	.005	**.012**	.019	.005	**.012**	.018	.S..HN

At .059 Axial Depth of Cut (ap)

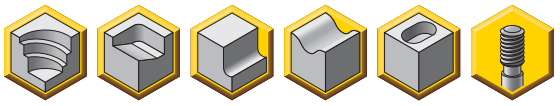
Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.F..LP	.005	**.010**	.021	.004	**.008**	.015	.003	**.007**	.013	.003	**.006**	.012	.003	**.006**	.012	.F..LP
.F..GN	.005	**.010**	.021	.004	**.008**	.015	.003	**.007**	.013	.003	**.006**	.012	.003	**.006**	.012	.F..GN
.T..GN	.010	**.026**	.042	.008	**.019**	.031	.007	**.017**	.027	.006	**.015**	.025	.006	**.015**	.024	.T..GN
.S..GN	.010	**.026**	.042	.008	**.019**	.031	.007	**.017**	.027	.006	**.015**	.025	.006	**.015**	.024	.S..GN
.S..HP	.010	**.026**	.042	.008	**.019**	.031	.007	**.017**	.027	.006	**.015**	.025	.006	**.015**	.024	.S..HP
.S..HN	.010	**.026**	.042	.008	**.019**	.031	.007	**.017**	.027	.006	**.015**	.025	.006	**.015**	.024	.S..HN

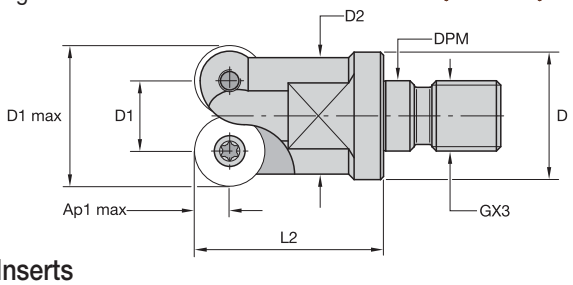
At .030 Axial Depth of Cut (ap)

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	.007	**.014**	.028	.005	**.010**	.021	.005	**.009**	.018	.004	**.008**	.017	.004	**.008**	.017	.F..LP
.F..GN	.007	**.014**	.028	.005	**.010**	.021	.005	**.009**	.018	.004	**.008**	.017	.004	**.008**	.017	.F..GN
.T..GN	.014	**.036**	.059	.010	**.026**	.042	.009	**.023**	.036	.008	**.021**	.034	.008	**.021**	.033	.T..GN
.S..GN	.014	**.036**	.059	.010	**.026**	.042	.009	**.023**	.036	.008	**.021**	.034	.008	**.021**	.033	.S..GN
.S..HP	.014	**.036**	.059	.010	**.026**	.042	.009	**.023**	.036	.008	**.021**	.034	.008	**.021**	.033	.S..HP
.S..HN	.014	**.036**	.059	.010	**.026**	.042	.009	**.023**	.036	.008	**.021**	.034	.008	**.021**	.033	.S..HN

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

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



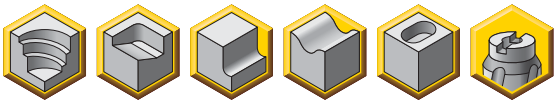


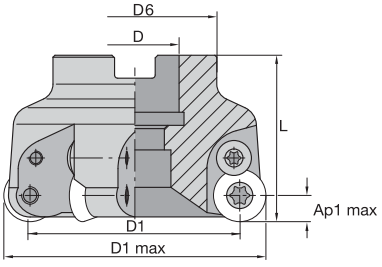
Screw-On End Mills • RD.X16 Inserts

order number	catalog number	D1 max	D1	D	D2	DPM	G3X	L2	Ap1 max	Z	max ramp angle	lbs	insert 1
2511467	**KDM125RD1602M16169**	1.250	.620	1.142	1.102	.669	M16	1.690	.315	2	15.0°	.45	RD.X1604..

Spare Parts

D1 max	insert screw	in. lbs.	Torx wrench
1.250	**193.343**	30	**FT20**





Shell Mills • RD.X16 Inserts

order number	catalog number	D1 max	D1	D	D6	L	Ap1 max	Z	max ramp angle	lbs	insert 1
2251768	**KDM200RD16S075F**	2.000	1.370	.750	1.650	1.970	.315	4	8.0°	.99	RD.X1604..
2251769	**KDM250RD16S100F**	2.500	1.870	1.000	2.070	1.970	.315	5	6.0°	1.61	RD.X1604..
2251770	**KDM300RD16S100F**	3.000	2.370	1.000	2.070	1.970	.315	6	4.0°	2.20	RD.X1604..
2251771	**KDM400RD16S125F**	4.000	3.370	1.250	2.750	2.170	.315	7	1.5°	4.30	RD.X1604..
2251772	**KDM500RD16S150F**	5.000	4.370	1.500	3.690	2.170	.315	8	–	7.28	RD.X1604..
2251773	**KDM600RD16S150F**	6.000	5.370	1.500	3.690	2.170	.315	9	–	9.92	RD.X1604..

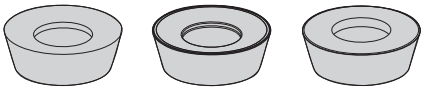
Spare Parts

D1 max	insert screw	in. lbs.	Torx wrench	clamp screw	socket-head cap screw
2.000	**193.343**	30	**FT20**	**193.383**	**S445**
2.500	**193.343**	30	**FT20**	**193.383**	**S458**
3.000	**193.343**	30	**FT20**	**193.383**	**–**
4.000	**193.343**	30	**FT20**	**193.383**	**–**
5.000	**193.343**	30	**FT20**	**193.383**	**–**
6.000	**193.343**	30	**FT20**	**193.383**	**–**

Insert Selection Guide

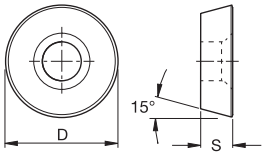
Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.F..LP	KC725M	**.S..GN**	**KC725M**	.S..HP	KC725M
P3–P4	.S..HP	KC522M	**.S..HP**	**KCPK30**	.S..HN	KC725M
P5–P6	.S..HP	KC522M	**.S..HP**	**KCPM20**	.S..HN	KCPM20
M1–M2	–	–	**.S..HP**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

Indexable Round Inserts • KDM RD.X16...


RDHX-FLP

RDPX-HP

RDHX-GN
RDPX-HN



● first choice
○ alternate choice

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

RDHX-FLP

catalog number	D	S	hm	KC510M	KC522M	KC725M	KCPM20	KCPK30
RDHX1604M0FLP	.630	.188	.001	●	●	●		

RDHX-GN

catalog number	D	S	hm	KC510M	KC522M	KC725M	KCPM20	KCPK30
RDHX1604M0SGN	.630	.188	.008	●	●	●		

RDPX-HP

catalog number	D	S	hm	KC510M	KC522M	KC725M	KCPM20	KCPK30
RDPX1604M0SHP	.630	.187	.005		●	●	●	●

RDPX-HN

catalog number	D	S	hm	KC510M	KC522M	KC725M	KCPM20	KCPK30
RDPX1604M0SHN	.630	.187	.008	●	●	●	●	

Recommended Starting Speeds [SFM]

Material Group		KC510M			KC522M			KC725M			KCPM20			KCPK30		
P	1	–	–	–	1300	**1130**	1060	1030	**900**	840	2170	**1910**	1760	1780	**1560**	1450
	2	–	–	–	1080	**950**	790	860	**760**	640	1340	**1210**	1090	1100	**1000**	900
	3	–	–	–	1000	**840**	700	790	**670**	550	1210	**1090**	1000	1000	**900**	820
	4	960	**780**	660	890	**730**	590	710	**590**	470	910	**840**	760	740	**690**	620
	5	–	–	–	730	**660**	590	590	**530**	470	1090	**980**	900	1020	**910**	830
	6	–	–	–	650	**490**	400	520	**400**	310	760	**660**	570	620	**540**	–
M	1	–	–	–	800	**710**	650	670	**590**	540	880	**790**	680	820	**720**	620
	2	–	–	–	730	**620**	520	610	**520**	430	800	**700**	620	730	**640**	550
	3	–	–	–	550	**480**	370	460	**400**	310	640	**570**	490	570	**520**	460
K	1	1150	**1040**	940	900	**820**	720	–	–	–	1420	**1280**	1150	1160	**1050**	940
	2	910	**820**	760	710	**640**	590	–	–	–	1130	**1010**	920	920	**830**	760
	3	770	**680**	620	590	**530**	480	–	–	–	950	**840**	780	770	**690**	640
N	1–2	2520	**2240**	2060	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
S	1	–	–	–	160	**140**	110	140	**120**	100	–	–	–	–	–	–
	2	–	–	–	160	**140**	110	140	**120**	100	–	–	–	–	–	–
	3	–	–	–	200	**160**	110	180	**140**	100	–	–	–	–	–	–
	4	–	–	–	280	**200**	140	240	**180**	120	–	–	–	–	–	–
H	1	630	**510**	360	470	**360**	280	–	–	–	550	**460**	370	–	–	–

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

Recommended Starting Feeds [IPT]

Light Machining	General Purpose	Heavy Machining

At .315 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	.003	**.007**	.014	.003	**.005**	.010	.002	**.004**	.009	.002	**.004**	.008	.002	**.004**	.008	.F..LP
.S..GN	.007	**.017**	.028	.005	**.013**	.020	.004	**.011**	.018	.004	**.010**	.016	.004	**.010**	.016	.S..GN
.S..HP	.007	**.017**	.028	.005	**.013**	.020	.004	**.011**	.018	.004	**.010**	.016	.004	**.010**	.016	.S..HP
.S..HN	.007	**.017**	.028	.005	**.013**	.020	.004	**.011**	.018	.004	**.010**	.016	.004	**.010**	.016	.S..HN

At .157 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	.004	**.008**	.016	.003	**.006**	.012	.003	**.005**	.010	.002	**.005**	.009	.002	**.005**	.009	.F..LP
.S..GN	.008	**.020**	.032	.006	**.015**	.023	.005	**.013**	.020	.005	**.012**	.019	.005	**.012**	.018	.S..GN
.S..HP	.008	**.020**	.032	.006	**.015**	.023	.005	**.013**	.020	.005	**.012**	.019	.005	**.012**	.018	.S..HP
.S..HN	.008	**.020**	.032	.006	**.015**	.023	.005	**.013**	.020	.005	**.012**	.019	.005	**.012**	.018	.S..HN

At .079 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	.005	**.010**	.021	.004	**.008**	.015	.003	**.007**	.013	.003	**.006**	.012	.003	**.006**	.012	.F..LP
.S..GN	.010	**.026**	.042	.008	**.019**	.031	.007	**.017**	.027	.006	**.015**	.025	.006	**.015**	.024	.S..GN
.S..HP	.010	**.026**	.042	.008	**.019**	.031	.007	**.017**	.027	.006	**.015**	.025	.006	**.015**	.024	.S..HP
.S..HN	.010	**.026**	.042	.008	**.019**	.031	.007	**.017**	.027	.006	**.015**	.025	.006	**.015**	.024	.S..HN

At .039 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	.007	**.014**	.028	.005	**.010**	.021	.005	**.009**	.018	.004	**.008**	.017	.004	**.008**	.017	.F..LP
.S..GN	.014	**.036**	.059	.010	**.026**	.042	.009	**.023**	.036	.008	**.021**	.034	.008	**.021**	.033	.S..GN
.S..HP	.014	**.036**	.059	.010	**.026**	.042	.009	**.023**	.036	.008	**.021**	.034	.008	**.021**	.033	.S..HP
.S..HN	.014	**.036**	.059	.010	**.026**	.042	.009	**.023**	.036	.008	**.021**	.034	.008	**.021**	.033	.S..HN

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

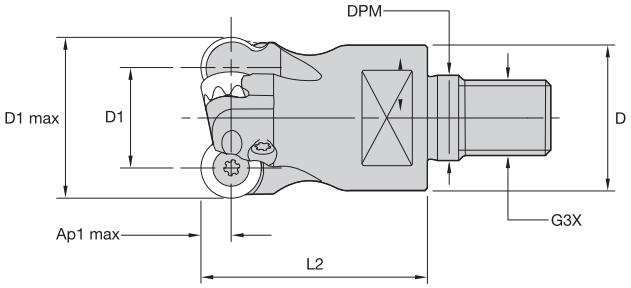
KSRM™ • Multipurpose Milling Cutters

Primary Application

Specially developed for machining titanium and stainless steel. KSRM platform enables you to pocket, profile, ramp, and plunge with up to .039" (1mm) 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.

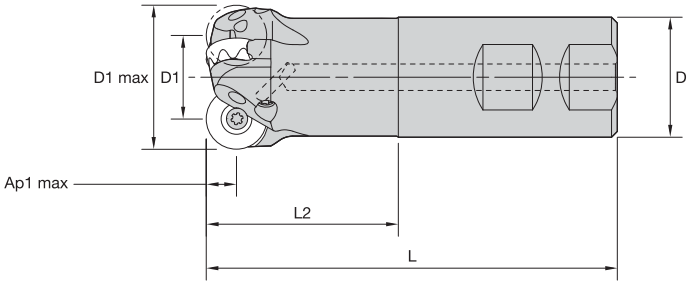


Screw-On End Mills

order number	catalog number	D1 max	D1	D	DPM	G3X	L2	Ap1 max	Z	max ramp angle	max RPM	lbs	insert 1
4042688	BMD125R1203M16L150	1.250	.778	1.142	.670	M16	1.500	.236	3	5.7°	43500	.35	RP..T1204M0...
4042690	BMD150R1204M16L150	1.500	1.028	1.142	.670	M16	1.500	.236	4	9.2°	39700	.41	RP..T1204M0...

Spare Parts

D1 max	 insert screw	in. lbs.	 anti-rotation screw	 Torx Plus driver
1.250	MS2077	20	MS-2225	DT15IP
1.500	MS2077	20	MS-2225	DT15IP



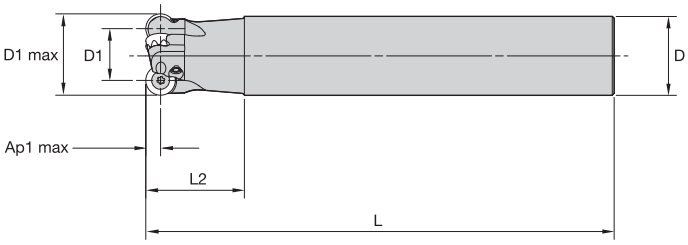
Weldon End Mills

order number	catalog number	D1 max	D1	D	L	L2	Ap1 max	Z	max ramp angle	max RPM	lbs	insert 1
4042691	BMD125R1203W125L200	1.250	.778	1.250	4.280	2.000	.236	3	5.7°	43500	1.17	RP..T1204M0...
3891915	BMD150R1204W150L200	1.500	1.028	1.500	4.690	2.000	.236	4	9.2°	39700	1.94	RP..T1204M0...

Spare Parts

D1 max	 insert screw	in. lbs.	 anti-rotation screw	 Torx Plus driver
1.250	MS2077	20	MS-2225	DT15IP
1.500	MS2077	20	MS-2225	DT15IP

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



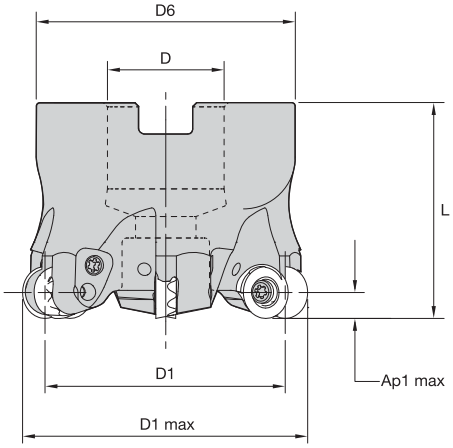
Cylindrical End Mills

order number	catalog number	D1 max	D1	D	L	L2	Ap1 max	Z	max ramp angle	max RPM	lbs	insert 1
4042692	**BMD125R1203C125L700**	1.250	.778	1.250	7.000	1.575	.236	3	5.7°	43500	2.11	RP..T1204M0…
4042713	**BMD150R1203C125L800**	1.500	1.028	1.250	8.000	1.575	.236	3	9.8°	39700	2.54	RP..T1204M0…

Spare Parts

D1 max	 insert screw	in. lbs.	 anti-rotation screw	 Torx Plus driver
1.250	**MS2077**	20	**MS-2225**	**DT15IP**
1.500	**MS2077**	20	**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	max RPM	lbs	insert 1
3891882	BMD150R1204S050L158	1.500	1.028	.500	1.440	1.575	.236	4	9.2°	39700	.47	RP..T1204M0...
4042714	BMD200R1203S075L200	2.000	1.528	.750	1.752	2.000	.236	3	10.5°	34400	1.02	RP..T1204M0...
4042715	BMD200R1205S075L200	2.000	1.528	.750	1.752	2.000	.236	5	7.7°	34400	1.01	RP..T1204M0...
4042716	BMD250R1207S100L200	2.500	2.028	1.000	2.190	2.000	.236	7	4.1°	30800	1.61	RP..T1204M0...
3885499	BMD300R1206S100L200	3.000	2.528	1.000	2.752	2.000	.236	6	5.7°	28100	2.44	RP..T1204M0...
4042717	BMD300R1208S100L200	3.000	2.528	1.000	2.752	2.000	.236	8	3.5°	28100	2.57	RP..T1204M0...
4042718	BMD400R1207S125L200	4.000	3.528	1.250	2.878	2.000	.236	7	3.3°	23800	3.23	RP..T1204M0...
4002349	BMD400R1209S125L200	4.000	3.528	1.250	2.878	2.000	.236	9	3.0°	23800	3.20	RP..T1204M0...

Spare Parts







D1 max	insert screw	in. lbs.	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
1.500	MS2077	20	MS-2225	S424	S422CG	–	–	DT15IP
2.000	MS2077	20	MS-2225	S446	S446CG	–	–	DT15IP
2.500	MS2077	20	MS-2225	S459	S459CG	–	–	DT15IP
3.000	MS2077	20	MS-2225	S459	S459CG	–	–	DT15IP
4.000	MS2077	20	MS-2225	–	–	S2162C	THW2M	DT15IP

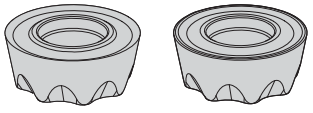
* Socket head cap screw with coolant groove sold separately as a spare part.

Insert Selection Guide

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

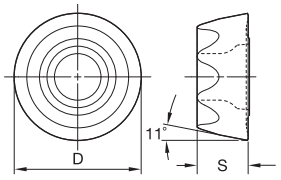
Indexable Round Inserts • KSRM

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



RPET-LE
RPET-GE

RPPT-GP



● first choice
○ alternate choice

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

RPET-LE

catalog number	.D	S	hm	cutting edges	KC422M	KC522M	KC725M	KCPM20	KCPK30
RPET1204M0ELEJ	.472	.188	.001	8	●	●	●		
RPET1204M0ELE	.472	.188	.002	8		●	●		●

RPET-GE

catalog number	D	S	hm	cutting edges	KC422M	KC522M	KC725M	KCPM20	KCPK30
RPET1204M0SGE	.472	.188	.004	8		●	●		●
RPET1204M0SGEJ	.472	.188	.005	8		●	●		

RPPT-GP

catalog number	D	S	hm	cutting edges	KC422M	KC522M	KC725M	KCPM20	KCPK30
RPPT1204M0SGP	.472	.188	.005	8			●	●	●

Recommended Starting Speeds [SFM]

Material Group		KC422M			KC522M			KC725M			KCPM20			KCPK30		
P	1	–	–	–	1300	**1130**	1060	1030	**900**	840	2170	**1910**	1760	1780	**1560**	1450
	2	–	–	–	1080	**950**	790	860	**760**	640	1340	**1210**	1090	1100	**1000**	900
	3	–	–	–	1000	**840**	700	790	**670**	550	1210	**1090**	1000	1000	**900**	820
	4	–	–	–	890	**730**	590	710	**590**	470	910	**840**	760	740	**690**	620
	5	–	–	–	730	**660**	590	590	**530**	470	1090	**980**	900	1020	**910**	830
	6	–	–	–	650	**490**	400	520	**400**	310	760	**660**	570	620	**540**	–
M	1	–	–	–	800	**710**	650	670	**590**	540	880	**790**	680	820	**720**	620
	2	–	–	–	730	**620**	520	610	**520**	430	800	**700**	620	730	**640**	550
	3	–	–	–	550	**480**	370	460	**400**	310	640	**570**	490	570	**520**	460
K	1	–	–	–	900	**820**	720	–	–	–	1420	**1280**	1150	1160	**1050**	940
	2	–	–	–	710	**640**	590	–	–	–	1130	**1010**	920	920	**830**	760
	3	–	–	–	590	**530**	480	–	–	–	950	**840**	780	770	**690**	640
N	1–2	4220	**3720**	3440	–	–	–	–	–	–	–	–	–	–	–	–
	3	3720	**3440**	3000	–	–	–	–	–	–	–	–	–	–	–	–
S	1	–	–	–	160	**140**	110	140	**120**	100	–	–	–	–	–	–
	2	–	–	–	160	**140**	110	140	**120**	100	–	–	–	–	–	–
	3	–	–	–	200	**160**	110	180	**140**	100	–	–	–	–	–	–
	4	–	–	–	280	**200**	140	240	**180**	120	–	–	–	–	–	–
H	1	–	–	–	470	**360**	280	–	–	–	550	**460**	370	–	–	–

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

Recommended Starting Feeds [IPT]

Light Machining	General Purpose	Heavy Machining

At .236 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	.003	**.005**	.008	.003	**.004**	.006	.002	**.003**	.005	.002	**.003**	.005	.002	**.003**	.005	.E..LEJ
.E..LE	.005	**.008**	.014	.004	**.006**	.010	.003	**.005**	.009	.003	**.005**	.008	.003	**.005**	.008	.E..LE
.S..GE	.007	**.017**	.028	.005	**.013**	.020	.004	**.011**	.018	.004	**.010**	.016	.004	**.010**	.016	.S..GE
.S..GP	.007	**.017**	.028	.005	**.013**	.020	.004	**.011**	.018	.004	**.010**	.016	.004	**.010**	.016	.S..GP

At .118 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	.004	**.006**	.009	.003	**.004**	.007	.003	**.004**	.006	.002	**.004**	.006	.002	**.003**	.006	.E..LEJ
.E..LE	.005	**.010**	.016	.004	**.007**	.012	.004	**.006**	.010	.003	**.006**	.009	.003	**.006**	.009	.E..LE
.S..GE	.008	**.020**	.032	.006	**.015**	.023	.005	**.013**	.020	.005	**.012**	.019	.005	**.012**	.018	.S..GE
.S..GP	.008	**.020**	.032	.006	**.015**	.023	.005	**.013**	.020	.005	**.012**	.019	.005	**.012**	.018	.S..GP

At .059 Axial Depth of Cut (ap)

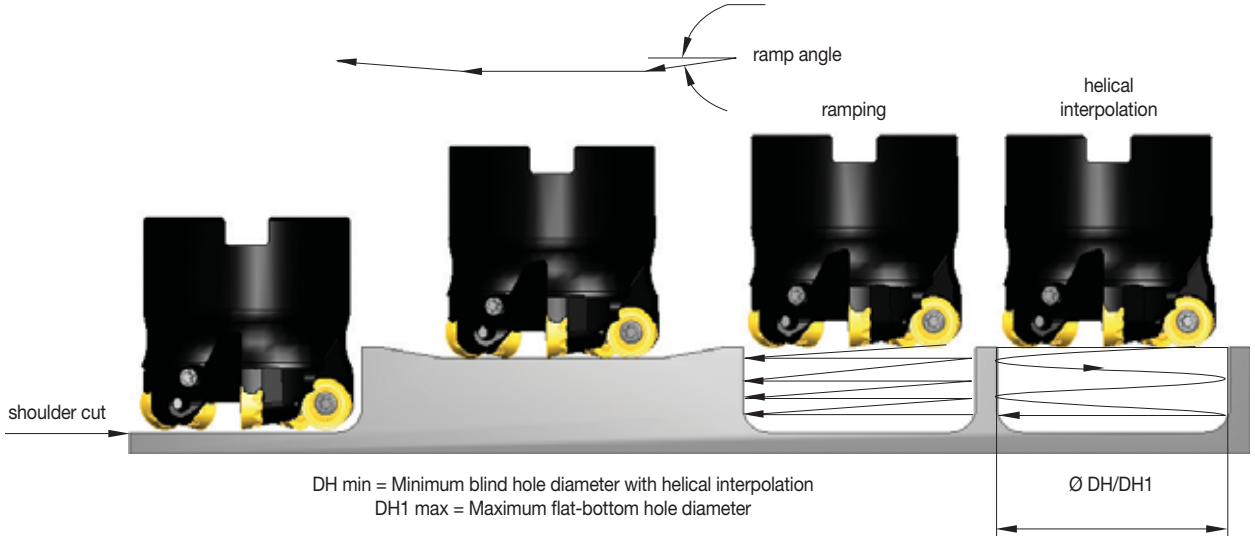
Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..LEJ	.005	**.008**	.012	.004	**.006**	.009	.003	**.005**	.008	.003	**.005**	.007	.003	**.005**	.007	.E..LEJ
.E..LE	.007	**.013**	.021	.005	**.009**	.015	.005	**.008**	.013	.004	**.008**	.012	.004	**.008**	.012	.E..LE
.S..GE	.010	**.026**	.042	.008	**.019**	.031	.007	**.017**	.027	.006	**.015**	.025	.006	**.015**	.024	.S..GE
.S..GP	.010	**.026**	.042	.008	**.019**	.031	.007	**.017**	.027	.006	**.015**	.025	.006	**.015**	.024	.S..GP

At .030 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	.007	**.010**	.017	.005	**.008**	.012	.005	**.007**	.011	.004	**.006**	.010	.004	**.006**	.010	.E..LEJ
.E..LE	.010	**.018**	.028	.007	**.013**	.021	.006	**.011**	.018	.006	**.011**	.017	.006	**.010**	.017	.E..LE
.S..GE	.014	**.036**	.059	.010	**.026**	.042	.009	**.023**	.036	.008	**.021**	.034	.008	**.021**	.033	.S..GE
.S..GP	.014	**.036**	.059	.010	**.026**	.042	.009	**.023**	.036	.008	**.021**	.034	.008	**.021**	.033	.S..GP

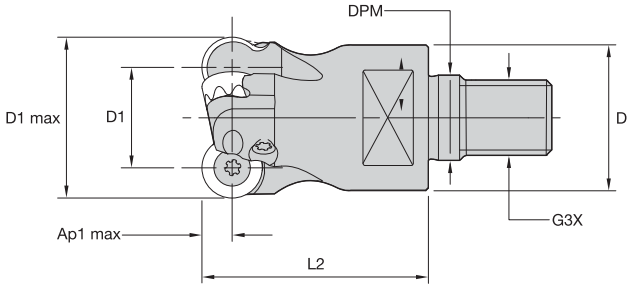
NOTE: Use “Light Machining” values as starting feed rate.

Maximum Linear Ramping and Helical Interpolation from Solid



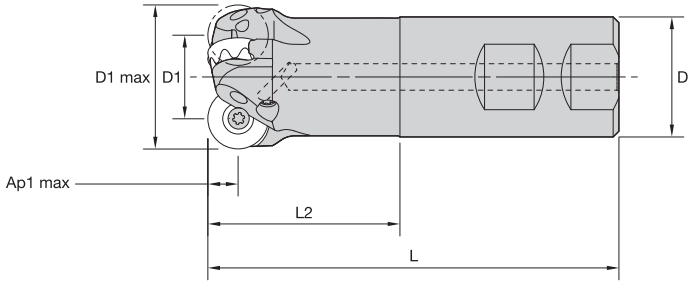
catalog number	max ramp angle	max plunging depth	min hole diameter (DH min)	max flat-bottom hole diameter (DH1 max)	max diameter (no flat bottom)
BMD125R1203M16L150	5.7°	0.061	1.719	2.028	2.5
BMD150R1204M16L150	9.2°	0.130	2.112	2.528	3.0
BMD125R1203W125L200	5.7°	0.061	1.719	2.028	2.5
BMD150R1204W150L200	9.2°	0.130	2.112	2.528	3.0
BMD125R1203C125L700	5.7°	0.061	1.719	2.028	2.5
BMD150R1203C125L800	9.8°	0.138	2.104	2.528	3.0
BMD150R1204S050L158	9.2°	0.130	2.112	2.528	3.0
BMD200R1203S075L200	10.5°	0.236	3.058	3.528	4.0
BMD200R1205S075L200	7.7°	0.173	3.074	3.528	4.0
BMD250R1207S100L200	4.1°	0.130	4.114	4.528	5.0
BMD300R1206S100L200	5.7°	0.228	5.048	5.528	6.0
BMD300R1208S100L200	3.5°	0.138	5.078	5.528	6.0
BMD400R1207S125L200	3.3°	0.189	7.068	7.528	8.0
BMD400R1209S125L200	3.0°	0.173	7.525	7.528	8.0

- 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	catalog number	D1 max	D1	D	DPM	G3X	L2	Ap1 max	Z	max ramp angle	max RPM	lbs	insert 1
4043037	BMD150R1603M16	1.500	.870	1.142	.670	M16	1.500	.315	3	9.9°	28000	.35	RP..T1605M0…



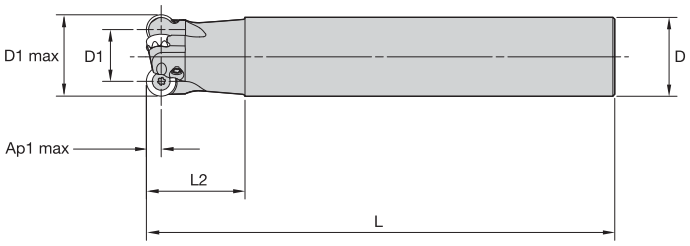
Weldon End Mills

order number	catalog number	D1 max	D1	D	L	L2	Ap1 max	Z	max ramp angle	max RPM	lbs	insert 1
4043038	BMD150R1603W125L200	1.500	.870	1.250	4.280	2.000	.315	3	9.9°	28000	1.24	RP..T1605M0…

Spare Parts

D1 max	insert screw	in. lbs.	anti-rotation screw	Torx Plus driver
1.500	MS-2071	35	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

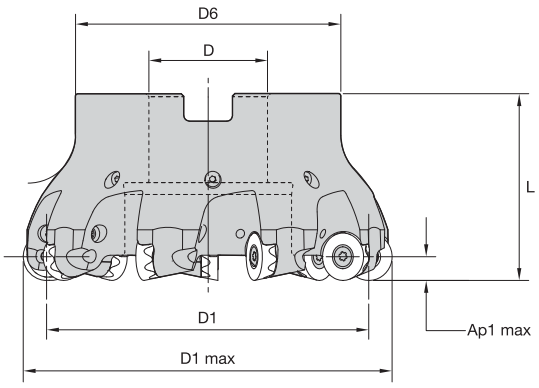
order number	catalog number	D1 max	D1	D	L	L2	Ap1 max	Z	max ramp angle	max RPM	lbs	insert 1
4043039	**BMD150R1602C125L800**	1.500	.870	1.250	8.000	1.500	.315	2	11.1°	28000	2.48	RP..T1605M0…

Spare Parts

D1 max	insert screw	in. lbs.	anti-rotation screw	Torx Plus driver
1.500	**MS-2071**	35	**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	catalog number	D1 max	D1	D	D6	L	Ap1 max	Z	max ramp angle	max RPM	lbs	insert 1
4043040	**BMD200R1603S075L200**	2.000	1.370	.750	1.752	2.000	.315	3	11.7°	24200	.82	RP..T1605M0...
4043041	**BMD200R1604S075L200**	2.000	1.370	.750	1.752	2.000	.315	4	9.7°	24200	.83	RP..T1605M0...
4043042	**BMD250R1605S100L200**	2.500	1.870	1.000	2.189	2.000	.315	5	11.7°	21700	1.43	RP..T1605M0...
4043053	**BMD300R1605S100L200**	3.000	2.370	1.000	2.750	2.000	.315	5	8.8°	19800	2.37	RP..T1605M0...
3997748	**BMD300R1607S100L200**	3.000	2.370	1.000	2.750	2.000	.315	7	6.8°	19800	2.38	RP..T1605M0...
4043054	**BMD400R1608S125L200**	4.000	3.370	1.250	2.875	2.000	.315	8	4.6°	16600	2.79	RP..T1605M0...
4043055	**BMD500R1609S150L250**	5.000	4.370	1.500	3.811	2.500	.315	9	4.2°	14500	5.86	RP..T1605M0...
4043056	**BMD600R1610S150L250**	6.000	5.370	1.500	3.811	2.500	.315	10	3.4°	13100	7.86	RP..T1605M0...

Spare Parts

D1 max	insert screw	in. lbs.	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
2.000	**MS-2071**	35	**MS-2225**	**S446**	**S446CG**	**–**	**–**	**DT15IP**
2.500	**MS-2071**	35	**MS-2225**	**S459**	**S459CG**	**–**	**–**	**DT15IP**
3.000	**MS-2071**	35	**MS-2225**	**S459**	**S459CG**	**–**	**–**	**DT15IP**
4.000	**MS-2071**	35	**MS-2225**	**–**	**–**	**S2162C**	**THW2M**	**DT15IP**
5.000	**MS-2071**	35	**MS-2225**	**–**	**–**	**S2163C**	**THW2M**	**DT15IP**
6.000	**MS-2071**	35	**MS-2225**	**–**	**–**	**S2163C**	**THW2M**	**DT15IP**

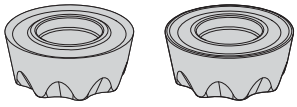
* Socket head cap screw with coolant groove sold separately as a spare part.

Insert Selection Guide

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

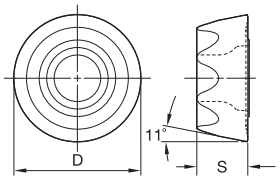
Indexable Round Inserts • KSRM

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



RPET-LE
RPET-GE

RPPT-HP



● first choice
○ alternate choice

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

RPET-LE

catalog number	D	S	hm	cutting edges	KC422M	KC522M	KC725M	KCPM20	KCPK30
RPET1605M0ELEJ	.630	.219	.001	8	●	●	●		
RPET1605M0ELE	.630	.219	.002	8		●	●		●

RPET-GE

catalog number	D	S	hm	cutting edges	KC422M	KC522M	KC725M	KCPM20	KCPK30
RPET1605M0SGE	.630	.219	.004	8		●	●		●
RPET1605M0SGEJ	.630	.219	.005	8		●	●		

RPPT-HP

catalog number	D	S	hm	cutting edges	KC422M	KC522M	KC725M	KCPM20	KCPK30
RPPT1605M0SHP	.630	.219	.007	8			●	●	●

Recommended Starting Speeds [SFM]

Material Group		KC422M			KC522M			KC725M			KCPM20			KCPK30		
P	1	–	–	–	1300	**1130**	1060	1030	**900**	840	2170	**1910**	1760	1780	**1560**	1450
	2	–	–	–	1080	**950**	790	860	**760**	640	1340	**1210**	1090	1100	**1000**	900
	3	–	–	–	1000	**840**	700	790	**670**	550	1210	**1090**	1000	1000	**900**	820
	4	–	–	–	890	**730**	590	710	**590**	470	910	**840**	760	740	**690**	620
	5	–	–	–	730	**660**	590	590	**530**	470	1090	**980**	900	1020	**910**	830
	6	–	–	–	650	**490**	400	520	**400**	310	760	**660**	570	620	**540**	–
M	1	–	–	–	800	**710**	650	670	**590**	540	880	**790**	680	820	**720**	620
	2	–	–	–	730	**620**	520	610	**520**	430	800	**700**	620	730	**640**	550
	3	–	–	–	550	**480**	370	460	**400**	310	640	**570**	490	570	**520**	460
K	1	–	–	–	900	**820**	720	–	–	–	1420	**1280**	1150	1160	**1050**	940
	2	–	–	–	710	**640**	590	–	–	–	1130	**1010**	920	920	**830**	760
	3	–	–	–	590	**530**	480	–	–	–	950	**840**	780	770	**690**	640
N	1–2	4220	**3720**	3440	–	–	–	–	–	–	–	–	–	–	–	–
	3	3720	**3440**	3000	–	–	–	–	–	–	–	–	–	–	–	–
S	1	–	–	–	160	**140**	110	140	**120**	100	–	–	–	–	–	–
	2	–	–	–	160	**140**	110	140	**120**	100	–	–	–	–	–	–
	3	–	–	–	200	**160**	110	180	**140**	100	–	–	–	–	–	–
	4	–	–	–	280	**200**	140	240	**180**	120	–	–	–	–	–	–
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 [IPT]

Light Machining	General Purpose	Heavy Machining

At .315 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	.003	**.006**	.009	.003	**.005**	.007	.002	**.004**	.006	.002	**.004**	.006	.002	**.004**	.005	.E..LEJ
.E..LE	.005	**.010**	.015	.004	**.008**	.011	.003	**.007**	.010	.003	**.006**	.009	.003	**.006**	.009	.E..LE
.S..GE	.007	**.017**	.028	.005	**.013**	.020	.004	**.011**	.018	.004	**.010**	.016	.004	**.010**	.016	.S..GE
.S..HP	.007	**.017**	.028	.005	**.013**	.020	.004	**.011**	.018	.004	**.010**	.016	.004	**.010**	.016	.S..HP

At .157 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	.004	**.007**	.011	.003	**.005**	.008	.003	**.005**	.007	.002	**.004**	.006	.002	**.004**	.006	.E..LEJ
.E..LE	.005	**.012**	.018	.004	**.009**	.013	.004	**.008**	.011	.003	**.007**	.011	.003	**.007**	.010	.E..LE
.S..GE	.008	**.020**	.032	.006	**.015**	.023	.005	**.013**	.020	.005	**.012**	.019	.005	**.012**	.018	.S..GE
.S..HP	.008	**.020**	.032	.006	**.015**	.023	.005	**.013**	.020	.005	**.012**	.019	.005	**.012**	.018	.S..HP

At .079 Axial Depth of Cut (ap)

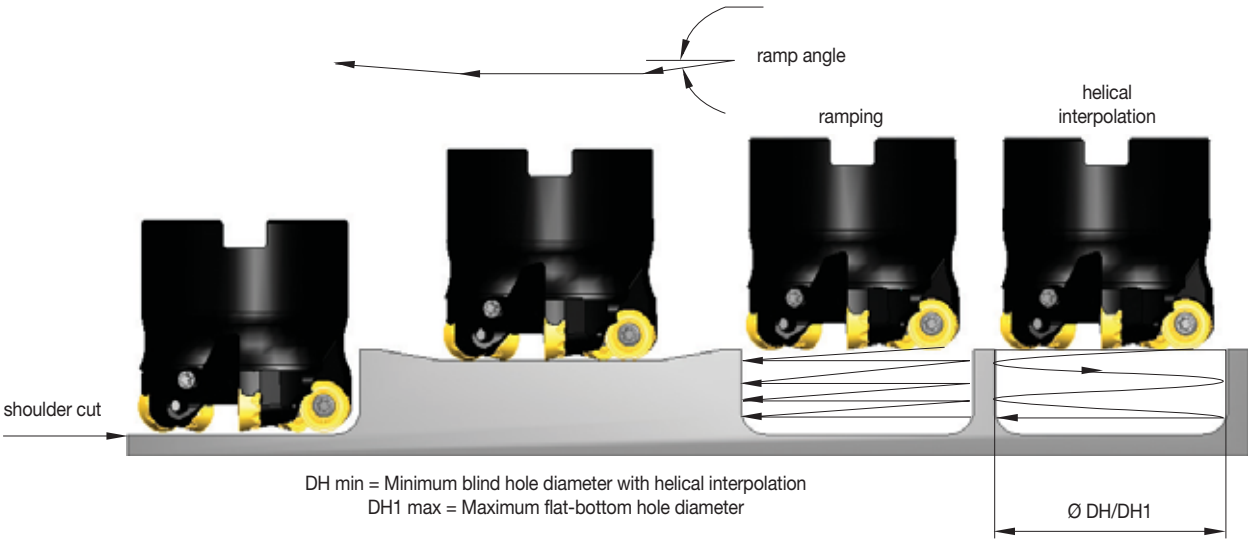
Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50%–100%			
.E..LEJ	.005	**.009**	.014	.004	**.007**	.010	.003	**.006**	.009	.003	**.006**	.008	.003	**.005**	.008	.E..LEJ
.E..LE	.007	**.015**	.023	.005	**.011**	.017	.005	**.010**	.015	.004	**.009**	.014	.004	**.009**	.014	.E..LE
.S..GE	.010	**.026**	.042	.008	**.019**	.031	.007	**.017**	.027	.006	**.015**	.025	.006	**.015**	.024	.S..GE
.S..HP	.010	**.026**	.042	.008	**.019**	.031	.007	**.017**	.027	.006	**.015**	.025	.006	**.015**	.024	.S..HP

At .039 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	.007	**.013**	.019	.005	**.009**	.014	.005	**.008**	.012	.004	**.008**	.011	.004	**.007**	.011	.E..LEJ
.E..LE	.010	**.021**	.032	.007	**.016**	.023	.006	**.014**	.020	.006	**.013**	.019	.006	**.012**	.019	.E..LE
.S..GE	.014	**.036**	.059	.010	**.026**	.042	.009	**.023**	.036	.008	**.021**	.034	.008	**.021**	.033	.S..GE
.S..HP	.014	**.036**	.059	.010	**.026**	.042	.009	**.023**	.036	.008	**.021**	.034	.008	**.021**	.033	.S..HP

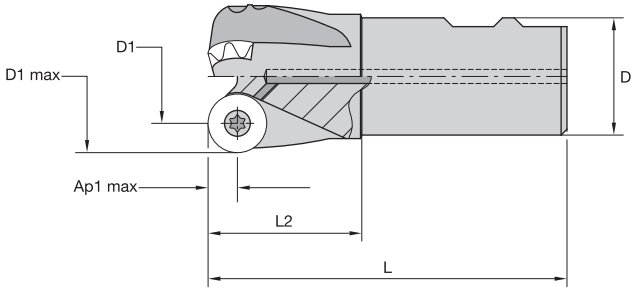
NOTE: Use “Light Machining” values as starting feed rate.

Maximum Linear Ramping and Helical Interpolation from Solid



catalog number	max ramp angle	max plunging depth	min hole diameter (DH min)	max flat-bottom hole diameter (DH1 max)	max diameter (no flat bottom)
BMD150R1603M16L150	9.9°	0.106	1.904	2.37	3.0
BMD150R1603W125L200	9.9°	0.106	1.904	2.37	3.0
BMD150R1602C125L800	11.0°	0.117	1.888	2.37	3.0
BMD200R1603S075L200	11.7°	0.217	2.776	3.37	4.0
BMD200R1604S075L200	9.7°	0.181	2.81	3.37	4.0
BMD250R1605S100L200	11.7°	0.315	3.744	4.37	5.0
BMD300R1605S100L200	8.8°	0.315	4.738	5.37	6.0
BMD300R1607S100L200	6.8°	0.245	4.768	5.37	6.0
BMD400R1608S125L200	4.6°	0.245	6.762	7.37	8.0
BMD500R1609S150L250	4.2°	0.295	8.744	9.37	10.0
BMD600R1610S150L250	3.4°	0.295	10.744	11.37	12.0

- Engineered for roughing with large depths of cut through positive geometries.
- Anti-rotation feature with six indexable positions.
- Excellent for long overhangs.



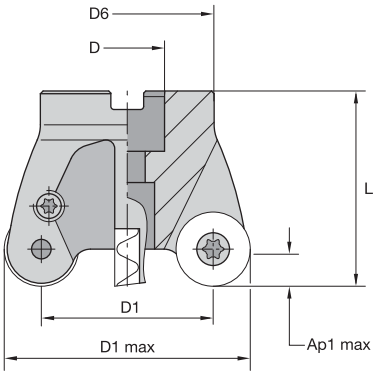
Weldon • End Mills

order number	catalog number	D1 max	D1	D	L	L2	Ap1 max	Z	max ramp angle	max RPM	lbs	insert 1
2610667	**BMD200R6403W150L200**	2.000	1.250	1.500	4.690	2.000	.375	3	0.60°	29000	2.15	RCG_64___

Spare Parts

D1 max	 insert screw	in. lbs.	 anti-rotation screw	 Torx wrench
2.000	**MS1162**	45	**S2160**	**TT25**

- Engineered for roughing with large depths of cut through positive geometry inserts.
- Anti-rotation feature with six indexable positions.
- Excellent for long overhangs.



Shell Mills

order number	catalog number	D1 max	D1	D	D6	L	Ap1 max	Z	max ramp angle	max RPM	lbs	insert 1
2610668	**BMD250R6404S075L200**	2.500	1.750	.750	1.750	2.000	.375	4	0.60°	26000	1.16	RCG_64___
2610670	**BMD300R6405S100L200**	3.000	2.250	1.000	2.190	2.000	.375	5	0.70°	22000	1.78	RCG_64___
2610672	**BMD400R6405S125L200**	4.000	3.250	1.250	2.875	2.000	.375	5	0.70°	18000	3.17	RCG_64___
2610683	**BMD400R6406S125L200**	4.000	3.250	1.250	2.875	2.000	.375	6	0.60°	18000	3.15	RCG_64___
2610684	**BMD500R6406S150L250**	5.000	4.250	1.500	3.810	2.500	.375	6	0.80°	15000	7.08	RCG_64___
2610685	**BMD500R6408S150L250**	5.000	4.250	1.500	3.810	2.500	.375	8	0.70°	15000	7.07	RCG_64___
2610686	**BMD600R6407S150L250**	6.000	5.250	1.500	3.810	2.500	.375	7	0.70°	14000	9.48	RCG_64___
2610687	**BMD600R6408S150L250**	6.000	5.250	1.500	3.810	2.500	.375	8	0.70°	14000	9.52	RCG_64___
2610688	**BMD800R6409S250L250**	8.000	7.250	2.500	5.000	2.500	.375	9	0.60°	12500	13.08	RCG_64___

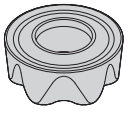
Spare Parts

D1 max	insert screw	in. lbs.	Torx wrench	anti-rotation screw	coolant lock screw assembly	socket-head cap screw with coolant groove	coolant cap assembly
2.500	**MS1162**	45	**TT25**	**S2160**	**–**	**S445CG**	**–**
3.000	**MS1162**	45	**TT25**	**S2160**	**–**	**S458CG**	**–**
4.000	**MS1162**	45	**TT25**	**S2160**	**S2162C**	**–**	**–**
5.000	**MS1162**	45	**TT25**	**S2160**	**S2163C**	**–**	**–**
6.000	**MS1162**	45	**TT25**	**S2160**	**S2163C**	**–**	**–**
8.000	**MS1162**	45	**TT25**	**S2160**	**–**	**–**	**MCC080001**

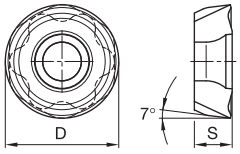
Insert Selection Guide

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

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



RCGT-LF
RCGT-GF
RCGT-HF



● first choice
○ alternate choice

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

RCGT-LF

catalog number	D	S	hm	cutting edges	KC522M	KC715M	KC725M	KCPK30
RCGT64ELF	.750	.250	.002	6	●	●	●	●

RCGT-GF

catalog number	D	S	hm	cutting edges	KC522M	KC715M	KC725M	KCPK30
RCGT64SGF	.750	.250	.004	6	●		●	

RCGT-HF

catalog number	D	S	hm	cutting edges	KC522M	KC715M	KC725M	KCPK30
RCGT64SHF	.750	.250	.010	6		●	●	●

Recommended Starting Speeds [SFM]

Material Group		KC522M			KC715M			KC725M			KCPK30		
P	1	1300	**1130**	1060	1340	**1180**	1090	1030	**900**	840	1780	**1560**	1450
	2	1080	**950**	790	830	**740**	670	860	**760**	640	1100	**1000**	900
	3	1000	**840**	700	740	**670**	610	790	**670**	550	1000	**900**	820
	4	890	**730**	590	560	**520**	470	710	**590**	470	740	**690**	620
	5	730	**660**	590	770	**680**	620	590	**530**	470	1020	**910**	830
	6	650	**490**	400	470	**410**	–	520	**400**	310	620	**540**	–
M	1	800	**710**	650	880	**770**	710	670	**590**	540	820	**720**	620
	2	730	**620**	520	–	**–**	–	610	**520**	430	730	**640**	550
	3	550	**480**	370	–	**–**	–	460	**400**	310	570	**520**	460
K	1	900	**820**	720	–	**–**	–	–	**–**	–	1160	**1050**	940
	2	710	**640**	590	–	**–**	–	–	**–**	–	920	**830**	760
	3	590	**530**	480	–	**–**	–	–	**–**	–	770	**690**	640
N	1–2	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–
	3	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–
S	1	160	**140**	110	–	**–**	–	140	**120**	100	–	**–**	–
	2	160	**140**	110	–	**–**	–	140	**120**	100	–	**–**	–
	3	200	**160**	110	–	**–**	–	180	**140**	100	–	**–**	–
	4	280	**200**	140	–	**–**	–	240	**180**	120	–	**–**	–
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 [IPT]

Light Machining	General Purpose	Heavy Machining

At .375 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	.004	**.007**	.013	.003	**.005**	.009	.002	**.004**	.008	.002	**.004**	.008	.002	**.004**	.008	.E..LF
.S..GF	.007	**.017**	.028	.005	**.013**	.020	.004	**.011**	.018	.004	**.010**	.016	.004	**.010**	.016	.S..GF
.S..HF	.007	**.017**	.028	.005	**.013**	.020	.004	**.011**	.018	.004	**.010**	.016	.004	**.010**	.016	.S..HF

At .188 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	.004	**.008**	.015	.003	**.006**	.011	.003	**.005**	.009	.003	**.005**	.009	.002	**.005**	.009	.E..LF
.S..GF	.008	**.020**	.032	.006	**.015**	.023	.005	**.013**	.020	.005	**.012**	.019	.005	**.012**	.018	.S..GF
.S..HF	.008	**.020**	.032	.006	**.015**	.023	.005	**.013**	.020	.005	**.012**	.019	.005	**.012**	.018	.S..HF

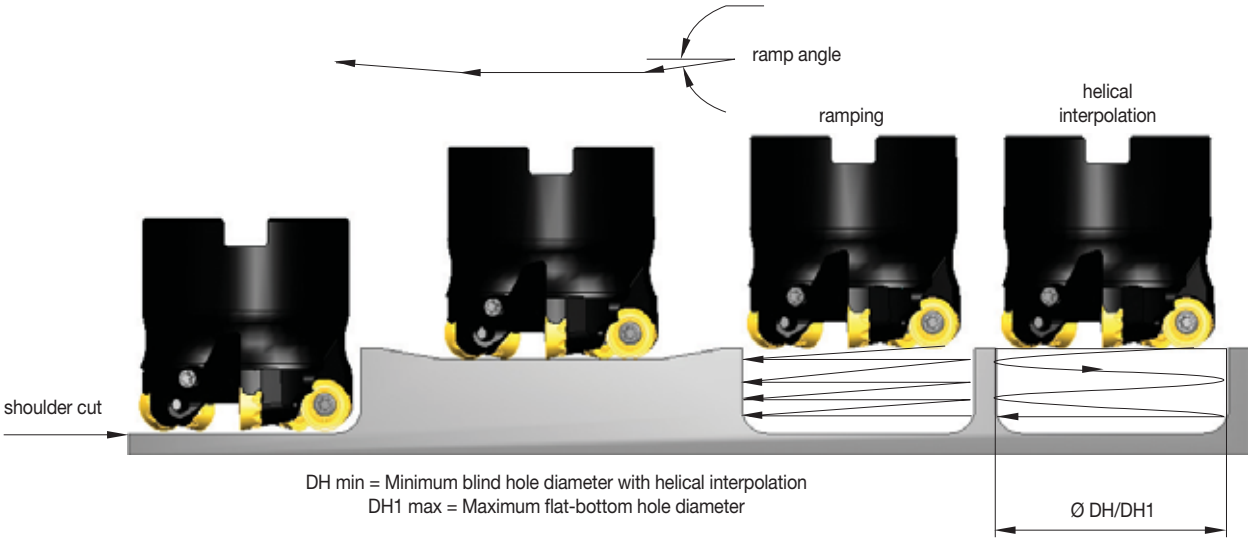
At .094 Axial Depth of Cut (ap)

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	.005	**.010**	.019	.004	**.008**	.014	.004	**.007**	.012	.003	**.006**	.012	.003	**.006**	.011	.E..LF
.S..GF	.010	**.026**	.042	.008	**.019**	.031	.007	**.017**	.027	.006	**.015**	.025	.006	**.015**	.024	.S..GF
.S..HF	.010	**.026**	.042	.008	**.019**	.031	.007	**.017**	.027	.006	**.015**	.025	.006	**.015**	.024	.S..HF

At .047 Axial Depth of Cut (ap)

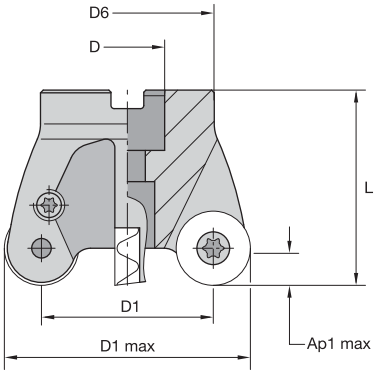
Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..LF	.007	**.014**	.027	.005	**.011**	.020	.005	**.009**	.017	.004	**.009**	.016	.004	**.008**	.015	.E..LF
.S..GF	.014	**.036**	.059	.010	**.026**	.042	.009	**.023**	.036	.008	**.021**	.034	.008	**.021**	.033	.S..GF
.S..HF	.014	**.036**	.059	.010	**.026**	.042	.009	**.023**	.036	.008	**.021**	.034	.008	**.021**	.033	.S..HF

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



insert IC	catalog number	max ramp angle (ra) when hx = .005"	max ramp angle (ra) when hx = .020"	max plunge radial depth (ae) when hx = .020"	min hole diameter	max flat-bottom hole diameter	max hole diameter (no flat bottom)
RCGX64	**BMD200R6403W150L200**	1.27°	0.70°	0.509	3.040	3.253	4.000
RCGX64	**BMD250R6404S075L200**	1.27°	0.59°	0.516	4.006	4.253	5.000
RCGX64	**BMD300R6405S100L200**	1.22°	0.70°	0.529	4.955	5.253	6.000
RCGX64	**BMD400R6405S125L200**	1.12°	0.67°	0.547	6.911	7.253	8.000
RCGX64	**BMD400R6406S125L200**	0.73°	0.64°	0.544	6.920	7.253	8.000
RCGX64	**BMD500R6406S150L250**	1.00°	0.75°	0.578	8.851	9.253	10.000
RCGX64	**BMD500R6408S150L250**	0.98°	0.68°	0.575	8.867	9.253	10.000
RCGX64	**BMD600R6407S150L250**	0.90°	0.69°	0.590	10.827	11.253	12.000
RCGX64	**BMD600R6408S150L250**	0.90°	0.67°	0.586	10.834	11.253	12.000
RCGX64	**BMD800R6409S250L250**	0.74°	0.59°	0.603	14.798	15.253	16.000

- Engineered for roughing with large depths of cut through positive geometry inserts.
- Anti-rotation feature with six indexable positions.
- Excellent for long overhangs.



Shell Mills

order number	catalog number	D1 max	D1	D	D6	L	Ap1 max	Z	max ramp angle	max RPM	lbs	insert 1
2610689	**BMD300R8603S075L200**	3.000	2.000	.750	1.750	2.000	.500	3	0.90°	15500	1.22	RCGT86___
2610691	**BMD400R8605S125L250**	4.000	3.000	1.250	2.875	2.500	.500	5	0.80°	12000	4.01	RCGT86___
2610697	**BMD500R8606S150L250**	5.000	4.000	1.500	3.810	2.500	.500	6	0.80°	9000	6.62	RCGT86___
2610694	**BMD600R8607S150L250**	6.000	5.000	1.500	3.810	2.500	.500	7	0.80°	8800	8.63	RCGT86___
2610696	**BMD800R8608S250L250**	8.000	7.000	2.500	5.000	2.500	.500	8	0.70°	8500	11.81	RCGT86___

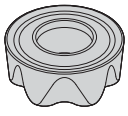
Spare Parts

D1 max	insert screw	in. lbs.	Torx wrench	anti-rotation screw	coolant lock screw assembly	coolant cap assembly	socket-head cap screw with coolant groove
3.000	**MS1162**	45	**TT25**	**S2160**	**–**	**–**	**S445CG**
4.000	**MS1162**	45	**TT25**	**S2160**	**S2164C**	**–**	**–**
5.000	**MS1162**	45	**TT25**	**S2160**	**S2163C**	**–**	**–**
6.000	**MS1162**	45	**TT25**	**S2160**	**S2163C**	**–**	**–**
8.000	**MS1162**	45	**TT25**	**S2160**	**–**	**MCC080001**	**–**

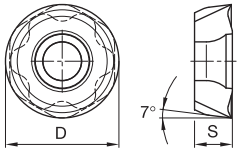
Insert Selection Guide

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

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



RCGT-LF
RCGT-GF
RCGT-HF



● first choice
○ alternate choice

		KC522M	KC715M	KC725M	KCPK30
P		○	●	●	●
M		●		●	○
K		○			○
N		○			
S		●		●	
H					

RCGT-LF

catalog number	D	S	hm	cutting edges	KC522M	KC715M	KC725M	KCPK30
RCGT86ELF	1.000	.375	.002	6	●	●	●	●

RCGT-GF

catalog number	D	S	hm	cutting edges	KC522M	KC715M	KC725M	KCPK30
RCGT86SGF	1.000	.375	.004	6	●		●	

RCGT-HF

catalog number	D	S	hm	cutting edges	KC522M	KC715M	KC725M	KCPK30
RCGT86SHF	1.000	.375	.010	6		●	●	●

Recommended Starting Speeds [SFM]

Material Group		KC522M			KC715M			KC725M			KCPK30		
P	1	1300	**1130**	1060	1340	**1180**	1090	1030	**900**	840	1780	**1560**	1450
	2	1080	**950**	790	830	**740**	670	860	**760**	640	1100	**1000**	900
	3	1000	**840**	700	740	**670**	610	790	**670**	550	1000	**900**	820
	4	890	**730**	590	560	**520**	470	710	**590**	470	740	**690**	620
	5	730	**660**	590	770	**680**	620	590	**530**	470	1020	**910**	830
	6	650	**490**	400	470	**410**	–	520	**400**	310	620	**540**	–
M	1	800	**710**	650	880	**770**	710	670	**590**	540	820	**720**	620
	2	730	**620**	520	–	**–**	–	610	**520**	430	730	**640**	550
	3	550	**480**	370	–	**–**	–	460	**400**	310	570	**520**	460
K	1	900	**820**	720	–	**–**	–	–	**–**	–	1160	**1050**	940
	2	710	**640**	590	–	**–**	–	–	**–**	–	920	**830**	760
	3	590	**530**	480	–	**–**	–	–	**–**	–	770	**690**	640
N	1–2	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–
	3	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–
S	1	160	**140**	110	–	**–**	–	140	**120**	100	–	**–**	–
	2	160	**140**	110	–	**–**	–	140	**120**	100	–	**–**	–
	3	200	**160**	110	–	**–**	–	180	**140**	100	–	**–**	–
	4	280	**200**	140	–	**–**	–	240	**180**	120	–	**–**	–
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 [IPT]

Light Machining	General Purpose	Heavy Machining

At .500 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	.004	**.007**	.013	.003	**.005**	.009	.002	**.004**	.008	.002	**.004**	.008	.002	**.004**	.008	.E..LF
.S..GF	.007	**.017**	.028	.005	**.013**	.020	.004	**.011**	.018	.004	**.010**	.016	.004	**.010**	.016	.S..GF
.S..HF	.007	**.017**	.028	.005	**.013**	.020	.004	**.011**	.018	.004	**.010**	.016	.004	**.010**	.016	.S..HF

At .250 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	.004	**.008**	.015	.003	**.006**	.011	.003	**.005**	.009	.003	**.005**	.009	.002	**.005**	.009	.E..LF
.S..GF	.008	**.020**	.032	.006	**.015**	.023	.005	**.013**	.020	.005	**.012**	.019	.005	**.012**	.018	.S..GF
.S..HF	.008	**.020**	.032	.006	**.015**	.023	.005	**.013**	.020	.005	**.012**	.019	.005	**.012**	.018	.S..HF

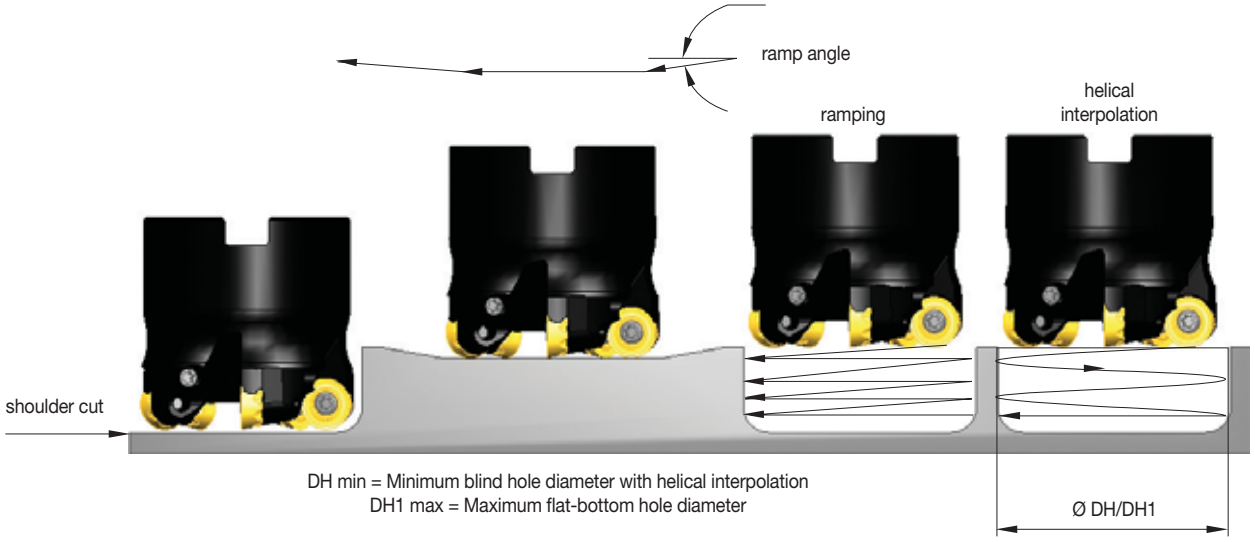
At .125 Axial Depth of Cut (ap)

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	.005	**.010**	.019	.004	**.008**	.014	.004	**.007**	.012	.003	**.006**	.012	.003	**.006**	.011	.E..LF
.S..GF	.010	**.026**	.042	.008	**.019**	.031	.007	**.017**	.027	.006	**.015**	.025	.006	**.015**	.024	.S..GF
.S..HF	.010	**.026**	.042	.008	**.019**	.031	.007	**.017**	.027	.006	**.015**	.025	.006	**.015**	.024	.S..HF

At .063 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	.007	**.014**	.027	.005	**.011**	.020	.005	**.009**	.017	.004	**.009**	.016	.004	**.008**	.015	.E..LF
.S..GF	.014	**.036**	.059	.010	**.026**	.042	.009	**.023**	.036	.008	**.021**	.034	.008	**.021**	.033	.S..GF
.S..HF	.014	**.036**	.059	.010	**.026**	.042	.009	**.023**	.036	.008	**.021**	.034	.008	**.021**	.033	.S..HF

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



insert IC	catalog number	max ramp angle (ra) when hx = .005"	max ramp angle (ra) when hx = .020"	max plunge radial depth (ae) when hx = .020"	min hole diameter	max flat-bottom hole diameter	max hole diameter (no flat bottom)
RCGX86	**BMD300R8603S075L200**	1.35°	0.89°	0.690	4.622	5.004	6.000
RCGX86	**BMD400R8605S125L250**	1.27°	0.83°	0.721	6.576	7.004	8.000
RCGX86	**BMD500R8606S150L250**	1.17°	0.80°	0.741	8.526	9.004	10.000
RCGX86	**BMD600R8607S150L250**	1.08°	0.78°	0.762	10.485	11.004	12.000
RCGX86	**BMD800R8608S250L250**	0.92°	0.73°	0.790	14.424	15.004	16.000

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.

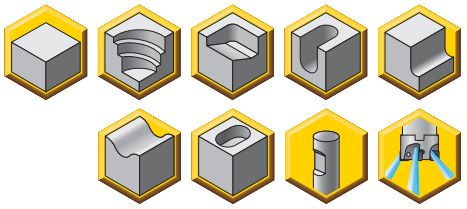
Features and Benefits

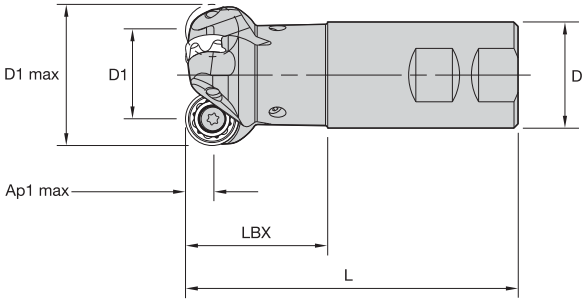
Platform Features	Benefits
Channeling coolant through the insert.	Increase productivity, tool life, and chip control.
Anti-rotation feature with six indexes.	Superior productivity and better insert utilization/cost per edge.
High positive topography with strong cutting edges.	Long tool life and better 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 enables up to six indexables rotations.
- Pocketing, ramping, plunging, and helical interpolations capabilities.





beyond BLAST™

Weldon End Mills • Inch

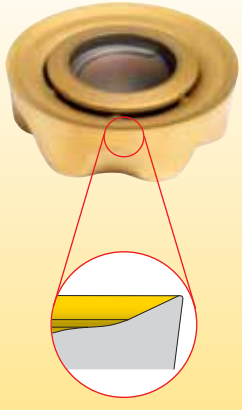
order number	catalog number	D1 max	D1	D	L	LBX	Ap1 max	Z	max RPM	insert 1	lbs
4109182	KSRM200R64BB03W150L200	2.000	1.250	1.500	4.690	2.000	.375	3	20100	RCGX64__	2.06

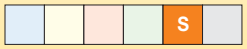
Spare Parts

D1 max	insert screw	in. lbs.	universal bit torque driver	drive bit
2.000	MS1162	45	KPTW45	BT25L50

Best-in-Class Performance Booster in Machining Titanium

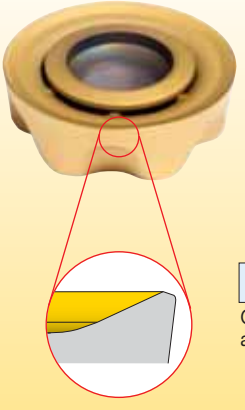
-ELF

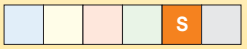




Geometry for light and medium machining

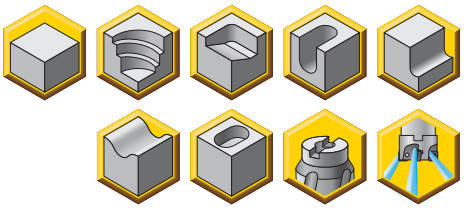
-SGF

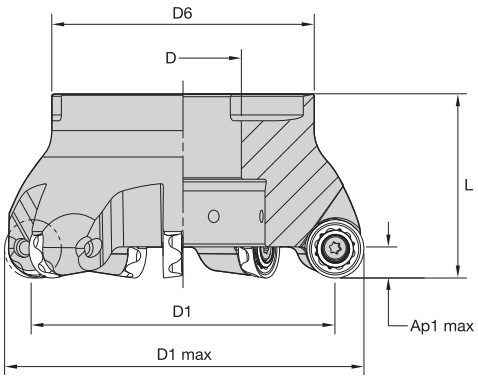




Geometry for medium and heavy machining

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





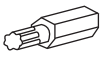
beyond BLAST™

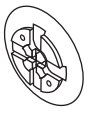
Face Mills • Inch

order number	catalog number	D1 max	D1	D	D6	L	Ap1 max	Z	max RPM	insert 1	lbs
4109183	**KSRM250R64BB04S075L200**	2.500	1.750	.750	1.750	2.000	.375	4	17000	RCGX64__	1.08
4109184	**KSRM300R64BB05S100L200**	3.000	2.250	1.000	2.750	2.000	.375	5	15000	RCGX64__	2.24
4109185	**KSRM400R64BB05S125L200**	4.000	3.250	1.250	2.875	2.000	.375	5	12400	RCGX64__	3.20
4109186	**KSRM400R64BB06S125L200**	4.000	3.250	1.250	2.875	2.000	.375	6	12400	RCGX64__	3.23
4109187	**KSRM500R64BB06S150L250**	5.000	4.250	1.500	3.811	2.500	.375	6	10900	RCGX64__	6.77
4109188	**KSRM500R64BB08S150L250**	5.000	4.250	1.500	3.811	2.500	.375	8	10900	RCGX64__	6.80
4109189	**KSRM600R64BB07S150L250**	6.000	5.250	1.500	3.811	2.500	.375	7	9800	RCGX64__	9.28
4109190	**KSRM600R64BB08S150L250**	6.000	5.250	1.500	3.811	2.500	.375	8	9800	RCGX64__	9.22
4109191	**KSRM800R64BB09S250L250**	8.000	7.250	2.500	5.000	2.500	.375	9	8300	RCGX64__	12.08

Spare Parts







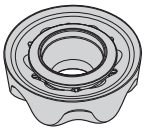

D1 max	insert screw	in. lbs.	universal bit torque driver	drive bit	coolant lock screw assembly	coolant shower plate assembly	socket-head cap screw with coolant groove
2.500	**MS1162**	45	**KPTW45**	**BT25L50**	**–**	**–**	**S445CG**
3.000	**MS1162**	45	**KPTW45**	**BT25L50**	**–**	**–**	**S458CG**
4.000	**MS1162**	45	**KPTW45**	**BT25L50**	**S2162C**	**–**	**–**
5.000	**MS1162**	45	**KPTW45**	**BT25L50**	**S2163C**	**–**	**–**
6.000	**MS1162**	45	**KPTW45**	**BT25L50**	**S2163C**	**–**	**–**
8.000	**MS1162**	45	**KPTW45**	**BT25L50**	**–**	**MCC080001**	**–**

Insert Selection Guide

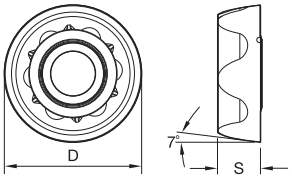
Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	–	–	–	–	–	–
P3–P4	–	–	–	–	–	–
P5–P6	–	–	–	–	–	–
M1–M2	–	–	–	–	–	–
M3	–	–	–	–	–	–
K1–K2	–	–	–	–	–	–
K3	–	–	–	–	–	–
N1–N2	–	–	–	–	–	–
N3	–	–	–	–	–	–
S1–S2	–	–	–	–	–	–
S3	–	–	–	–	–	–
S4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

Indexable Ground Insert • BB KSRM

- ELF geometry for lower cutting forces to avoid built-up edge.
- SGF in the first choice for higher chip load and heavy applications.



RCGX-LF
RCGX-GF



beyond BLAST™

● first choice
○ alternate choice

RCGX-LF and -GF

catalog number	D	S	hm	cutting edges	KC725M
RCGX64ELF	.750	.250	.003	6	●
RCGX64SGF	.750	.250	.004	6	●

Recommended Starting Speeds [SFM]

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	240	**180**	120
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 [IPT]

Light Machining	General Purpose	Heavy Machining

At .375 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	.007	**.014**	.020	.005	**.010**	.015	.004	**.009**	.013	.004	**.008**	.012	.004	**.008**	.012	.E..LF
.S..GF	.007	**.017**	.028	.005	**.013**	.020	.004	**.011**	.018	.004	**.010**	.016	.004	**.010**	.016	.S..GF

At .188 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	.008	**.016**	.024	.006	**.012**	.017	.005	**.010**	.015	.005	**.010**	.014	.005	**.009**	.014	.E..LF
.S..GF	.008	**.020**	.032	.006	**.015**	.023	.005	**.013**	.020	.005	**.012**	.019	.005	**.012**	.018	.S..GF

At .094 Axial Depth of Cut (ap)

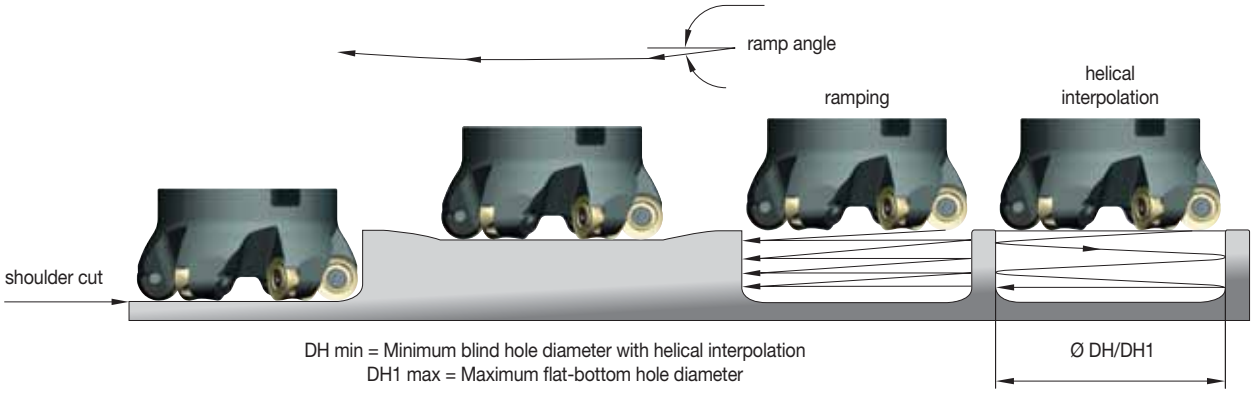
Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..LF	.010	**.021**	.031	.008	**.015**	.023	.007	**.013**	.020	.006	**.013**	.019	.006	**.012**	.018	.E..LF
.S..GF	.010	**.026**	.042	.008	**.019**	.031	.007	**.017**	.027	.006	**.015**	.025	.006	**.015**	.024	.S..GF

At .047 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	.014	**.029**	.043	.010	**.021**	.031	.009	**.018**	.027	.008	**.017**	.025	.008	**.017**	.025	.E..LF
.S..GF	.014	**.036**	.059	.010	**.026**	.042	.009	**.023**	.036	.008	**.021**	.034	.008	**.021**	.033	.S..GF

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

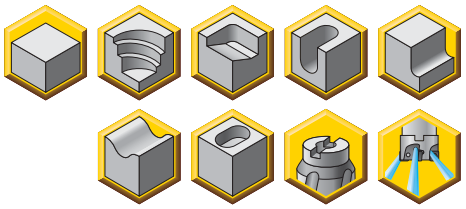
Ramping and Helical Interpolation Values from Solid

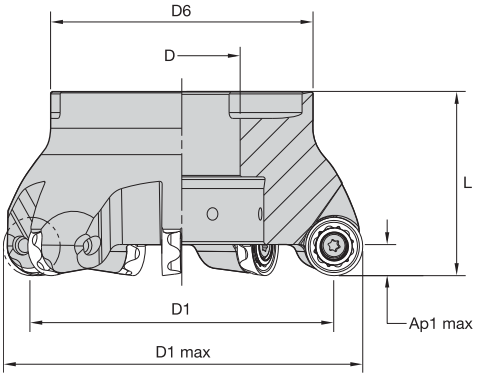


Round Insert RCGX64

insert IC	catalog 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)
RCGX64	**KSRM200R64BB03W150L200**	1.27°	0.025	0.045	2.989	3.253	4.000
RCGX64	**KSRM250R64BB04S075L200**	1.27°	0.035	0.058	3.939	4.253	5.000
RCGX64	**KSRM300R64BB05S100L200**	1.22°	0.044	0.068	4.904	5.253	6.000
RCGX64	**KSRM400R64BB05S125L200**	1.12°	0.060	0.084	6.850	7.253	8.000
RCGX64	**KSRM400R64BB06S125L200**	0.73°	0.039	0.083	6.921	7.253	8.000
RCGX64	**KSRM500R64BB06S150L250**	1.00°	0.071	0.094	8.818	9.253	10.000
RCGX64	**KSRM500R64BB08S150L250**	0.98°	0.069	0.092	8.823	9.253	10.000
RCGX64	**KSRM600R64BB07S150L250**	0.90°	0.079	0.101	10.795	11.253	12.000
RCGX64	**KSRM600R64BB08S150L250**	0.90°	0.079	0.100	10.796	11.253	12.000
RCGX64	**KSRM800R64BB09S250L250**	0.74°	0.091	0.111	14.766	15.253	16.000

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





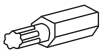
beyond BLAST™

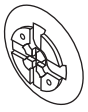
Face Mills • Inch

order number	catalog number	D1 max	D1	D	D6	L	Ap1 max	Z	max RPM	insert 1	lbs
4109138	**KSRM300R86BB03S075L200**	3.000	2.000	.750	1.750	2.000	.500	3	15500	RCGX86__	1.30
4109139	**KSRM400R86BB05S125L250**	4.000	3.000	1.250	2.875	2.500	.500	5	12000	RCGX86__	3.76
4109140	**KSRM500R86BB06S150L250**	5.000	4.000	1.500	3.812	2.500	.500	6	9000	RCGX86__	6.22
4109141	**KSRM600R86BB07S150L250**	6.000	5.000	1.500	3.812	2.500	.500	7	8800	RCGX86__	8.47
4109142	**KSRM800R86BB08S250L250**	8.000	7.000	2.500	5.000	2.500	.500	8	8500	RCGX86__	11.21

Spare Parts







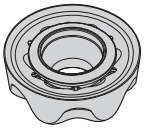

D1 max	insert screw	in. lbs.	universal bit torque driver	drive bit	coolant lock screw assembly	coolant shower plate assembly	socket-head cap screw with coolant groove
3.000	**MS1162**	45	**KPTW45**	**BT25L50**	**–**	**–**	**S445CG**
4.000	**MS1162**	45	**KPTW45**	**BT25L50**	**S2164C**	**–**	**–**
5.000	**MS1162**	45	**KPTW45**	**BT25L50**	**S2163C**	**–**	**–**
6.000	**MS1162**	45	**KPTW45**	**BT25L50**	**S2163C**	**–**	**–**
8.000	**MS1162**	45	**KPTW45**	**BT25L50**	**–**	**MCC080001**	**–**

Insert Selection Guide

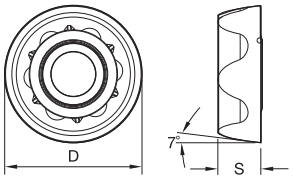
Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	–	–	–	–	–	–
P3–P4	–	–	–	–	–	–
P5–P6	–	–	–	–	–	–
M1–M2	–	–	–	–	–	–
M3	–	–	–	–	–	–
K1–K2	–	–	–	–	–	–
K3	–	–	–	–	–	–
N1–N2	–	–	–	–	–	–
N3	–	–	–	–	–	–
S1–S2	–	–	–	–	–	–
S3	–	–	–	–	–	–
S4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

Indexable Ground Insert • BB KSRM RCGX86...

- ELF geometry for lower cutting forces to avoid built-up edge.
- SGF in the first choice for higher chip load and heavy applications.



RCGX-LF
RCGX-GF



beyond BLAST™

● first choice
○ alternate choice

P	M	K	N	S	H
				●	

RCGX-LF and -GF

catalog number	D	S	hm	cutting edges	KC725M
RCGX86ELF	1.000	.375	.003	6	●
RCGX86SGF	1.000	.375	.004	6	●

Recommended Starting Speeds [SFM]

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	240	**180**	120
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 [IPT]

Light Machining	General Purpose	Heavy Machining

At .500 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	.007	**.014**	.020	.005	**.010**	.015	.004	**.009**	.013	.004	**.008**	.012	.004	**.008**	.012	.E..LF
.S..GF	.007	**.017**	.028	.005	**.013**	.020	.004	**.011**	.018	.004	**.010**	.016	.004	**.010**	.016	.S..GF

At .250 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	.008	**.016**	.024	.006	**.012**	.017	.005	**.010**	.015	.005	**.010**	.014	.005	**.009**	.014	.E..LF
.S..GF	.008	**.020**	.032	.006	**.015**	.023	.005	**.013**	.020	.005	**.012**	.019	.005	**.012**	.018	.S..GF

At .125 Axial Depth of Cut (ap)

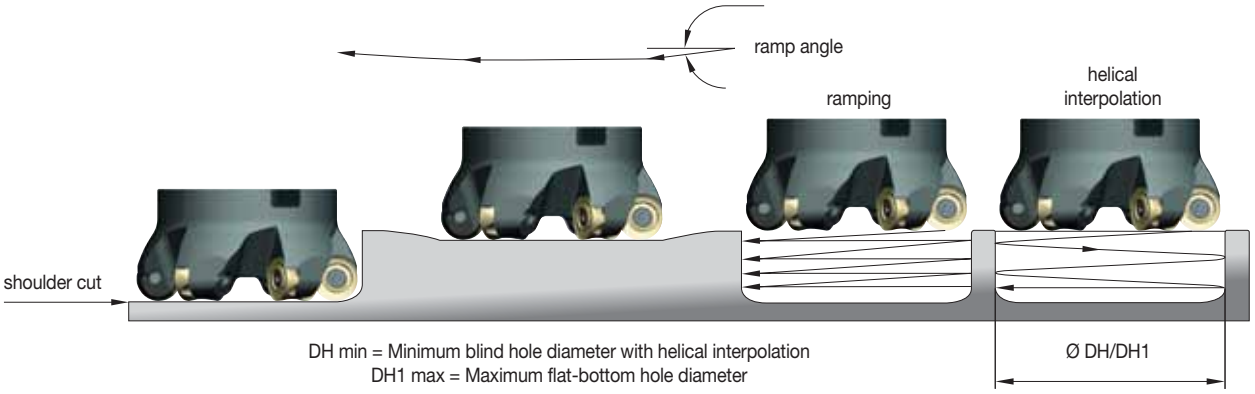
Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..LF	.010	**.021**	.031	.008	**.015**	.023	.007	**.013**	.020	.006	**.013**	.019	.006	**.012**	.018	.E..LF
.S..GF	.010	**.026**	.042	.008	**.019**	.031	.007	**.017**	.027	.006	**.015**	.025	.006	**.015**	.024	.S..GF

At .063 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	.014	**.029**	.043	.010	**.021**	.031	.009	**.018**	.027	.008	**.017**	.025	.008	**.017**	.025	.E..LF
.S..GF	.014	**.036**	.059	.010	**.026**	.042	.009	**.023**	.036	.008	**.021**	.034	.008	**.021**	.033	.S..GF

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

Ramping and Helical Interpolation Values from Solid



Round Insert RCGX86

insert IC	catalog 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)
RCGX86	**KSRM300R86BB03S075L200**	1.35°	0.043	0.072	4.606	5.004	6.000
RCGX86	**KSRM400R86BB05S125L250**	1.27°	0.062	0.093	6.528	7.004	8.000
RCGX86	**KSRM500R86BB06S150L250**	1.17°	0.076	0.108	8.477	9.004	10.000
RCGX86	**KSRM600R86BB07S150L250**	1.08°	0.089	0.120	10.438	11.004	12.000
RCGX86	**KSRM800R86BB08S250L250**	0.92°	0.108	0.136	10.388	11.004	12.000

KDMB™ and KDMT™ • Indexable Copy Insert Platform

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 .0004".
- Improved geometries for roughing and finishing operations.
- Smaller diameters from .25" to replace SCEM, setting a more productive machining process.

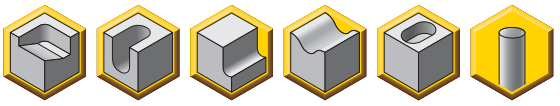
Superior Productivity

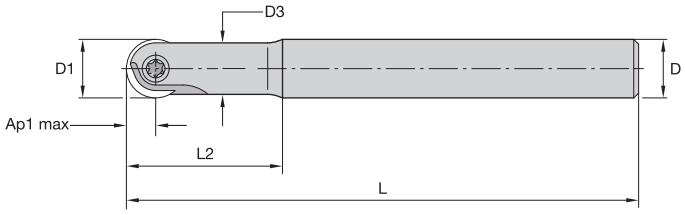
- Due to the new helical geometry, we obtain better surface quality.
- New ultra-grain grade for outstanding tool life.
- Diameters .250" and .312" natural replacement for SEM tools.
- Better cost per edge.

Usability and Flexibility

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

- Cutting diameter ranges from .375–1.250".
- Ball nose finishers for 3-dimensional milling applications.
- Suitable for roughing and finishing operations.





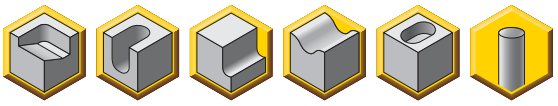
Necked End Mills • Steel Shank

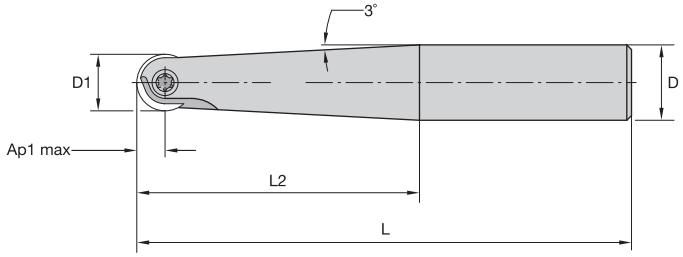
order number	catalog number	D1	D	D3	L	L2	Ap1 max	Z	Z U	max ramp angle	max RPM	lbs	insert 1
2877812	**KDMB0375R354A038SN**	.375	.500	.335	3.543	1.378	.188	1	2	3.0°	40000	.07	KDMB0375..
2878434	**KDMB0500R512A050SN**	.500	.500	.413	5.120	1.260	.250	1	2	3.0°	40000	.22	KDMB0500..
2878433	**KDMB0500R591A050SN**	.500	.500	.413	5.906	1.810	.250	1	2	3.0°	40000	.22	KDMB0500..
2878435	**KDMB0625R551A063SN**	.625	.625	.551	5.512	1.420	.313	1	2	3.0°	40000	.44	KDMB0625..
2878436	**KDMB0625R630A063SN**	.625	.625	.551	6.299	2.090	.313	1	2	3.0°	40000	.44	KDMB0625..
2878437	**KDMB0750R630A075SN**	.750	.750	.709	6.281	1.753	.375	1	2	3.0°	40000	.88	KDMB0750..
2878438	**KDMB0750R689A075SN**	.750	.750	.709	6.890	2.362	.375	1	2	3.0°	40000	.88	KDMB0750..
2878439	**KDMB0750R827A075SN**	.750	.750	.709	8.268	2.360	.375	1	2	3.0°	40000	.99	KDMB0750..
2878440	**KDMB1000R630A100SN**	1.000	1.000	.882	6.299	1.770	.500	1	2	3.0°	40000	1.32	KDMB1000..
2878441	**KDMB1000R748A100SN**	1.000	1.000	.882	7.480	2.760	.500	1	2	3.0°	40000	1.54	KDMB1000..
2878442	**KDMB1250R689A125SN**	1.250	1.250	1.126	6.890	2.205	.625	1	2	3.0°	40000	2.20	KDMB1250..
2878443	**KDMB1250R827A125SN**	1.250	1.250	1.126	8.268	3.150	.625	1	2	3.0°	40000	2.57	KDMB1250..

Spare Parts

D1	 insert screw	in. lbs.	 Torx wrench
.375	**193.394**	27	**KT15**
.500	**193.393**	35	**KT20**
.625	**193.392**	44	**KT20**
.750	**193.391**	53	**KT20**
1.000	**193.390**	58	**KT30**
1.250	**193.389**	58	**KT30**

- Cutting diameter ranges from .312–1.250".
- Ball nose finishers for 3-dimensional milling applications.
- Suitable for roughing and finishing operations.
- Tapered version ideal for 5-axis applications.





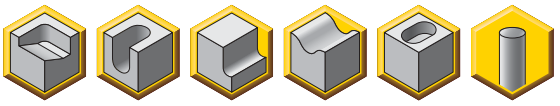
Tapered End Mills • Steel Shank

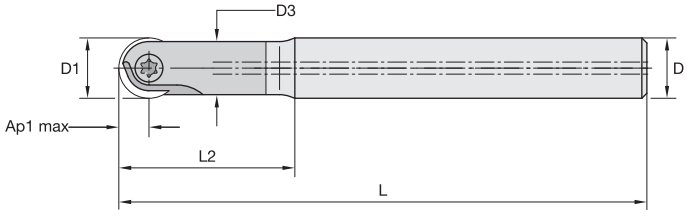
order number	catalog number	D1	D	L	L2	Ap1 max	Z	Z U	max ramp angle	max RPM	lbs	insert 1
2878444	**KDMB0312R551A031ST**	.312	.500	5.510	1.970	.156	1	2	3.0°	40000	.25	KDMB0312..
2878445	**KDMB0375R591A038ST**	.375	.500	5.910	1.380	.188	1	2	3.0°	40000	.29	KDMB0375..
2878446	**KDMB0500R630A050ST**	.500	.625	6.300	2.360	.250	1	2	3.0°	40000	.47	KDMB0500..
2878447	**KDMB0625R689A063ST**	.625	.750	6.890	2.640	.313	1	2	3.0°	40000	.76	KDMB0625..
2878448	**KDMB0750R748A075ST**	.750	1.000	7.480	3.150	.375	1	2	3.0°	40000	1.41	KDMB0750..
2878449	**KDMB1000R827A100ST**	1.000	1.476	8.270	3.940	.500	1	2	3.0°	40000	2.45	KDMB1000..
2878450	**KDMB1250R945A125ST**	1.250	1.500	9.450	4.840	.625	1	2	3.0°	40000	3.82	KDMB1250..

Spare Parts

D1	 insert screw	in. lbs.	 Torx wrench
.313	**193.395**	18	**KT8**
.375	**193.394**	27	**KT15**
.500	**193.393**	35	**KT20**
.625	**193.392**	44	**KT20**
.750	**193.391**	53	**KT20**
1.000	**193.390**	58	**KT30**
1.250	**193.389**	58	**KT30**

- Cutting diameter ranges from .250–1.250".
- Ball nose finishers for 3-dimensional milling applications.
- Suitable for roughing and finishing operations.





Necked End Mills • Carbide Shank

order number	catalog number	D1	D	D3	L	L2	Ap1 max	Z	Z	U	coolant supply	max ramp angle	max RPM	insert 1
4177170	**KDMB025R394A025HN**	.250	.250	.211	3.937	1.575	.125	1	2		No	3.0°	40000	KDMB0250..
4177171	**KDMB025R591A025HN**	.250	.250	.211	5.906	2.756	.125	1	2		No	3.0°	40000	KDMB0250..
4177172	**KDMB025R788A025HN**	.250	.250	.211	7.874	3.937	.125	1	2		No	3.0°	40000	KDMB0250..
4177243	**KDMB025R788A025HNS**	.250	.250	.211	7.874	.551	.125	1	2		No	3.0°	40000	KDMB0250..
4177167	**KDMB025R394A038HN**	.250	.375	.213	3.937	1.599	.125	1	2		No	3.0°	40000	KDMB0250..
4177244	**KDMB0312R788A031HN**	.312	.312	.276	7.874	3.955	.156	1	2		No	3.0°	40000	KDMB0312..
4177168	**KDMB0312R394A038HN**	.312	.375	.276	3.937	1.032	.156	1	2		No	3.0°	40000	KDMB0312..
4177169	**KDMB0312R591A038HN**	.312	.375	.276	5.906	1.623	.156	1	2		No	3.0°	40000	KDMB0312..
2879403	**KDMB0375R472A038HNC**	.375	.375	.350	4.730	1.310	.375	1	2		Yes	3.0°	30000	KDMB0375..
2879404	**KDMB0375R591A038HNC**	.375	.375	.350	5.910	1.900	.188	1	2		Yes	3.0°	30000	KDMB0375..
2879405	**KDMB0500R472A050HNC**	.500	.500	.420	4.730	1.392	.188	1	2		Yes	3.0°	40000	KDMB0500..
2879406	**KDMB0500R630A050HNC**	.500	.500	.420	6.300	1.982	.313	1	2		Yes	3.0°	40000	KDMB0500..
2879407	**KDMB0625R551A063HNC**	.625	.625	.560	5.520	1.572	.313	1	2		Yes	3.0°	40000	KDMB0625..
2879408	**KDMB0625R689A063HNC**	.625	.625	.560	6.890	2.163	.250	1	2		Yes	3.0°	40000	KDMB0625..
2879409	**KDMB0750R551A075HNC**	.750	.750	.710	5.520	1.950	.250	1	2		Yes	3.0°	40000	KDMB0750..
2879410	**KDMB0750R827A075HNC**	.750	.750	.710	8.270	2.362	.500	1	2		Yes	3.0°	40000	KDMB0750..
2879411	**KDMB1000R630A100HNC**	1.000	1.000	.890	6.307	2.370	.375	1	2		Yes	3.0°	30000	KDMB1000..
2879412	**KDMB1000R906A100HNC**	1.000	1.000	.890	8.270	3.539	.500	1	2		Yes	3.0°	30000	KDMB1000..
2879413	**KDMB1250R748A125HNC**	1.250	1.250	1.130	7.480	2.554	.625	1	2		Yes	3.0°	30000	KDMB1250..
2879414	**KDMB1250R945A125HNC**	1.250	1.250	1.130	9.450	4.129	.625	1	2		Yes	3.0°	30000	KDMB1250..

Spare Parts

D1	insert screw	in. lbs.	Torx wrench
.250	**MS2236**	18	**KT6**
.312	**193.395**	18	**KT8**
.375	**193.394**	27	**KT15**
.500	**193.393**	35	**KT20**
.625	**193.392**	44	**KT20**
.750	**193.391**	53	**KT20**
1.000	**193.390**	58	**KT30**
1.250	**193.389**	58	**KT30**

Insert Selection Guide

KDMB Ball Nose Platform • .250"

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.E..GP	KC515M	**.E..GP**	**KC515M**	.E..GP	KC515M
P3–P4	.E..GP	KC515M	**.E..GP**	**KC515M**	.E..GP	KC515M
P5–P6	.E..GP	KC515M	**.E..GP**	**KC515M**	.E..GP	KC515M
M1–M2	.E..GP	KC515M	**.E..GP**	**KC515M**	–	–
M3	.E..GP	KC515M	**.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..GP**	**KC515M**	–	–
H1	.E..GP	KC515M	**.E..GP**	**KC515M**	–	–

KDMB Ball Nose Platform • .312"

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.E..GP	KC515M	**.E..GP**	**KC515M**	.E..GP	KC515M
P3–P4	.E..GP	KC505M	**.E..GP**	**KC515M**	.E..GP	KC515M
P5–P6	.E..GP	KC505M	**.E..GP**	**KC515M**	.E..GP	KC515M
M1–M2	.E..GP	KC515M	**.E..GP**	**KC515M**	–	–
M3	.E..GP	KC515M	**.E..GP**	**KC515M**	–	–
K1–K2	.E..GP	KC515M	**–**	**–**	–	–
K3	.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..GP	KC515M

KDMB Ball Nose Platform • .375"

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.E..GP	KC515M	**.E..GP**	**KC515M**	.E..GP	KC515M
P3–P4	.E..GP	KC505M	**.E..GP**	**KC515M**	.E..GP	KC515M
P5–P6	.E..GP	KC505M	**.E..GP**	**KC515M**	.E..GP	KC515M
M1–M2	.E..GP	KC515M	**.E..GP**	**KC515M**	–	–
M3	.E..GP	KC515M	**.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..GP	KC515M

KDMB Ball Nose Platform • .500"

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	KC515M

KDMB Ball Nose Platform • .625"

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..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**	.E..HC	KC530M
H1	.E..GP	KC505M	**.E..GP**	**KC505M**	.E..GP	KC515M

KDMB Ball Nose Platform • .750"

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	KC515M

Insert Selection Guide

KDMB Ball Nose Platform • 1.00"

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	KC515M

KDMB Ball Nose Platform • 1.25"

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.E..GP	KC515M	**.E..GP**	**KC515M**	.E..GP	KC515M
P3–P4	.E..GP	KC505M	**.E..GP**	**KC515M**	.E..GP	KC515M
P5–P6	.E..GP	KC505M	**.E..GP**	**KC515M**	.E..GP	KC515M
M1–M2	.E..GP	KC515M	**.E..GP**	**KC515M**	–	–
M3	.E..GP	KC515M	**.E..GP**	**KC515M**	–	–
K1–K2	.E..GP	KC515M	–	–	–	–
K3	.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..GP	KC515M

Insert Style

HC Geometry:

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

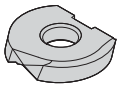
GP Geometry:

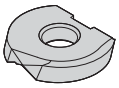
High-precision insert with helical geometry for semi-finishing and finishing of steel up to 63 HRC, cast steel, and high-temperature alloys.

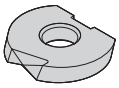
GN Geometry:

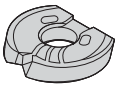
Geometry with extremely solid cutting edge for roughing cast steel, high-temperature alloys, and hardened steel up to 60 HRC.

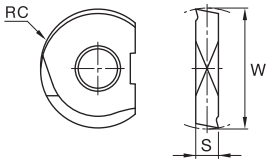
roughing, rest material **semi-finishing, finishing** **finishing**


KDMB-LD


KDMB-GP


KDMB-GN


KDMB-HC



● first choice
○ alternate choice

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

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

catalog number	W	S	RC	hm	K115M	KC505M	KC515M	KC530M
KDMB0250M0ERLD	.250	.063	.125	.002	●			
KDMB0312M0ERLD	.313	.079	.156	.002	●			
KDMB0375M0ERLD	.375	.098	.188	.002	●			
KDMB0500M0ERLD	.500	.098	.250	.002	●			
KDMB0625M0ERLD	.625	.118	.313	.002	●			
KDMB0750M0ERLD	.750	.118	.375	.002	●			
KDMB1000M0ERLD	1.000	.158	.500	.002	●			
KDMB1250M0ERLD	1.250	.197	.625	.002	●			

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

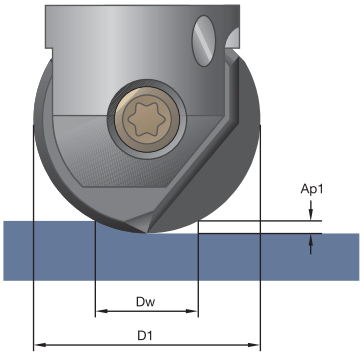
catalog number	W	S	RC	hm	K115M	KC505M	KC515M	KC530M
KDMB0250M0ERGP	.250	.063	.125	.002			●	
KDMB0312M0ERGP	.312	.079	.156	.002		●		
KDMB0375M0ERGP	.375	.098	.188	.002		●	●	
KDMB0500M0ERGP	.500	.098	.250	.002		●		
KDMB0625M0ERGP	.625	.118	.313	.002		●	●	
KDMB0750M0ERGP	.750	.118	.375	.002		●	●	
KDMB1000M0ERGP	1.000	.158	.500	.002		●	●	
KDMB1250M0ERGP	1.250	.197	.625	.002		●	●	

KDMB-GN • High Precision • Extremely Solid Cutting Edge

catalog number	W	S	RC	hm	K115M	KC505M	KC515M	KC530M
KDMB0500M0ERGN	.500	.098	.250	.003			●	
KDMB0750M0ERGN	.750	.118	.375	.003			●	
KDMB1000M0ERGN	1.000	.158	.500	.003			●	

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

catalog number	W	S	RC	hm	K115M	KC505M	KC515M	KC530M
KDMB0500M0ERHC	.500	.098	.250	.004				●
KDMB0625M0ERHC	.625	.118	.313	.004				●
KDMB0750M0ERHC	.750	.118	.375	.004				●
KDMB1000M0ERHC	1.000	.158	.500	.004				●



KDMB Ball Nose • .250"

	Working Diameter (Dw) at Axial Depth of Cut (ap)			
D1 max	0.125	0.050	0.025	0.013
0.250	0.250	0.200	0.150	0.109

KDMB Ball Nose • .312"

	Working Diameter (Dw) at Axial Depth of Cut (ap)			
D1 max	0.156	0.047	0.031	0.016
0.313	0.313	0.223	0.188	0.136

KDMB Ball Nose • .375"

	Working Diameter (Dw) at Axial Depth of Cut (ap)			
D1 max	0.188	0.056	0.038	0.019
0.375	0.375	0.268	0.225	0.163

KDMB Ball Nose • .500"

	Working Diameter (Dw) at Axial Depth of Cut (ap)			
D1 max	0.250	0.075	0.050	0.025
0.500	0.500	0.357	0.300	0.218

KDMB Ball Nose • .625"

	Working Diameter (Dw) at Axial Depth of Cut (ap)			
D1 max	0.313	0.094	0.063	0.031
0.625	0.625	0.446	0.375	0.272

KDMB Ball Nose • .750"

	Working Diameter (Dw) at Axial Depth of Cut (ap)			
D1 max	0.375	0.113	0.075	0.038
0.750	0.750	0.536	0.450	0.327

KDMB Ball Nose • 1.00"

	Working Diameter (Dw) at Axial Depth of Cut (ap)			
D1 max	0.500	0.150	0.100	0.050
1.000	1.000	0.714	0.600	0.436

KDMB Ball Nose • 1.25"

	Working Diameter (Dw) at Axial Depth of Cut (ap)			
D1 max	0.625	0.188	0.125	0.063
1.250	1.250	0.893	0.750	0.545

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

Recommended Starting Speeds [SFM]

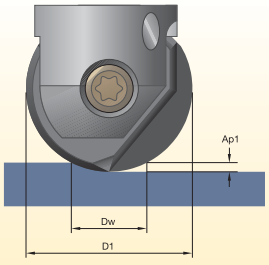
Material Group		K115M			KC505M			KC515M			KC530M		
P	1	–	–	–	–	–	–	1080	**960**	840	900	**780**	660
	2	–	–	–	–	–	–	1020	**900**	780	780	**660**	540
	3	–	–	–	–	–	–	900	**780**	660	660	**600**	540
	4	–	–	–	1180	**860**	710	780	**660**	540	600	**540**	480
	5	–	–	–	1180	**860**	710	660	**540**	420	540	**480**	420
	6	–	–	–	1140	**780**	620	540	**420**	360	420	**360**	300
M	1	–	–	–	–	–	–	1080	**900**	780	900	**720**	600
	2	–	–	–	–	–	–	900	**720**	540	600	**480**	420
	3	–	–	–	–	–	–	720	**600**	480	480	**420**	360
K	1	720	**600**	480	–	–	–	1440	**1080**	720	–	–	–
	2	600	**480**	360	–	–	–	1080	**840**	600	–	–	–
	3	360	**300**	240	–	–	–	480	**360**	240	–	–	–
N	1–2	1440	**1080**	720	–	–	–	–	–	–	–	–	–
	3	960	**720**	600	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
	4	300	**230**	160	–	–	–	–	–	–	260	**200**	170
H	1	–	–	–	860	**670**	550	550	**400**	310	260	**200**	170

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

Calculating Working Diameter and Resulting Surface Speed

Case 1:

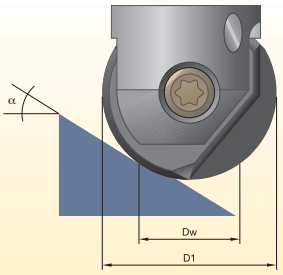
It is important to consider the effective diameter (Dw) when using light depths of cut in order to properly calculate RPM values. Use the following formula when machining flat surfaces or inclinations of 10° or less to find the Dw value. Then, use this for RPM calculations, as opposed to using the overall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



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

Case 2:

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



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

$$vceff = vc \times k$$

Recommended Starting Feeds [IPT] • Ball Nose Insert Size .250"

Light Machining	General Purpose	Heavy Machining

At .125 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	.005	**.007**	.012	.004	**.005**	.009	.003	**.004**	.008	.003	**.004**	.007	.003	**.004**	.007	.E..LD
.E..GP	.005	**.007**	.012	.004	**.005**	.009	.003	**.004**	.008	.003	**.004**	.007	.003	**.004**	.007	.E..GP

At .050 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	.006	**.008**	.015	.004	**.006**	.011	.004	**.005**	.010	.004	**.005**	.009	.004	**.005**	.009	.E..LD
.E..GP	.006	**.008**	.015	.004	**.006**	.011	.004	**.005**	.010	.004	**.005**	.009	.004	**.005**	.009	.E..GP

At .025 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	.008	**.011**	.020	.006	**.008**	.015	.005	**.007**	.013	.005	**.007**	.012	.005	**.007**	.012	.E..LD
.E..GP	.008	**.011**	.020	.006	**.008**	.015	.005	**.007**	.013	.005	**.007**	.012	.005	**.007**	.012	.E..GP

At .013 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	.011	**.016**	.028	.008	**.012**	.020	.007	**.010**	.018	.007	**.009**	.016	.006	**.009**	.016	.E..LD
.E..GP	.011	**.016**	.028	.008	**.012**	.020	.007	**.010**	.018	.007	**.009**	.016	.006	**.009**	.016	.E..GP

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

Recommended Starting Feeds [IPT] • Ball Nose Insert Size .312"

Light Machining	General Purpose	Heavy Machining

At .156 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	.005	**.007**	.012	.004	**.005**	.009	.003	**.004**	.008	.003	**.004**	.007	.003	**.004**	.007	.E..LD
.E..GP	.005	**.007**	.012	.004	**.005**	.009	.003	**.004**	.008	.003	**.004**	.007	.003	**.004**	.007	.E..GP

At .047 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	.007	**.009**	.017	.005	**.007**	.012	.004	**.006**	.011	.004	**.006**	.010	.004	**.006**	.010	.E..LD
.E..GP	.007	**.009**	.017	.005	**.007**	.012	.004	**.006**	.011	.004	**.006**	.010	.004	**.006**	.010	.E..GP

At .031 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	.008	**.011**	.020	.006	**.008**	.015	.005	**.007**	.013	.005	**.007**	.012	.005	**.007**	.012	.E..LD
.E..GP	.008	**.011**	.020	.006	**.008**	.015	.005	**.007**	.013	.005	**.007**	.012	.005	**.007**	.012	.E..GP

At .016 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	.011	**.016**	.028	.008	**.012**	.020	.007	**.010**	.018	.007	**.009**	.016	.006	**.009**	.016	.E..LD
.E..GP	.011	**.016**	.028	.008	**.012**	.020	.007	**.010**	.018	.007	**.009**	.016	.006	**.009**	.016	.E..GP

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

Recommended Starting Feeds [IPT] • Ball Nose Insert Size .375"

Light Machining	General Purpose	Heavy Machining

At .188 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	.005	**.007**	.012	.004	**.005**	.009	.003	**.004**	.008	.003	**.004**	.007	.003	**.004**	.007	.E..LD
.E..GP	.005	**.007**	.012	.004	**.005**	.009	.003	**.004**	.008	.003	**.004**	.007	.003	**.004**	.007	.E..GP

At .056 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	.007	**.009**	.017	.005	**.007**	.012	.004	**.006**	.011	.004	**.006**	.010	.004	**.006**	.010	.E..LD
.E..GP	.007	**.009**	.017	.005	**.007**	.012	.004	**.006**	.011	.004	**.006**	.010	.004	**.006**	.010	.E..GP

At .038 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	.008	**.011**	.020	.006	**.008**	.015	.005	**.007**	.013	.005	**.007**	.012	.005	**.007**	.012	.E..LD
.E..GP	.008	**.011**	.020	.006	**.008**	.015	.005	**.007**	.013	.005	**.007**	.012	.005	**.007**	.012	.E..GP

At .019 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	.011	**.016**	.028	.008	**.012**	.020	.007	**.010**	.018	.007	**.009**	.016	.006	**.009**	.016	.E..LD
.E..GP	.011	**.016**	.028	.008	**.012**	.020	.007	**.010**	.018	.007	**.009**	.016	.006	**.009**	.016	.E..GP

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

Recommended Starting Feeds [IPT] • Ball Nose Insert Size .500"

Light Machining	General Purpose	Heavy Machining

At .250 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	.005	**.007**	.012	.004	**.005**	.009	.003	**.004**	.008	.003	**.004**	.007	.003	**.004**	.007	.E..LD
.E..GP	.005	**.007**	.012	.004	**.005**	.009	.003	**.004**	.008	.003	**.004**	.007	.003	**.004**	.007	.E..GP
.E..GN	.007	**.010**	.018	.005	**.008**	.013	.004	**.007**	.011	.004	**.006**	.011	.004	**.006**	.011	.E..GN
.E..HC	.007	**.014**	.024	.005	**.010**	.018	.004	**.009**	.015	.004	**.008**	.014	.004	**.008**	.014	.E..HC

At .075 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	.007	**.009**	.017	.005	**.007**	.012	.004	**.006**	.011	.004	**.006**	.010	.004	**.006**	.010	.E..LD
.E..GP	.007	**.009**	.017	.005	**.007**	.012	.004	**.006**	.011	.004	**.006**	.010	.004	**.006**	.010	.E..GP
.E..GN	.009	**.014**	.025	.007	**.011**	.019	.006	**.009**	.016	.006	**.009**	.015	.006	**.008**	.015	.E..GN
.E..HC	.009	**.019**	.034	.007	**.014**	.025	.006	**.012**	.021	.006	**.011**	.020	.006	**.011**	.020	.E..HC

At .050 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	.008	**.011**	.020	.006	**.008**	.015	.005	**.007**	.013	.005	**.007**	.012	.005	**.007**	.012	.E..LD
.E..GP	.008	**.011**	.020	.006	**.008**	.015	.005	**.007**	.013	.005	**.007**	.012	.005	**.007**	.012	.E..GP
.E..GN	.011	**.017**	.030	.008	**.013**	.022	.007	**.011**	.019	.007	**.010**	.018	.007	**.010**	.018	.E..GN
.E..HC	.011	**.023**	.041	.008	**.017**	.030	.007	**.015**	.026	.007	**.014**	.024	.007	**.013**	.023	.E..HC

At .025 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	.011	**.016**	.028	.008	**.012**	.020	.007	**.010**	.018	.007	**.009**	.016	.006	**.009**	.016	.E..LD
.E..GP	.011	**.016**	.028	.008	**.012**	.020	.007	**.010**	.018	.007	**.009**	.016	.006	**.009**	.016	.E..GP
.E..GN	.016	**.024**	.042	.012	**.017**	.031	.010	**.015**	.026	.009	**.014**	.025	.009	**.014**	.024	.E..GN
.E..HC	.016	**.032**	.057	.012	**.023**	.041	.010	**.020**	.035	.009	**.019**	.033	.009	**.018**	.032	.E..HC

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

Recommended Starting Feeds [IPT] • Ball Nose Insert Size .625"

Light Machining	General Purpose	Heavy Machining

At .313 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	.005	**.007**	.012	.004	**.005**	.009	.003	**.004**	.008	.003	**.004**	.007	.003	**.004**	.007	.E..LD
.E..GP	.005	**.007**	.012	.004	**.005**	.009	.003	**.004**	.008	.003	**.004**	.007	.003	**.004**	.007	.E..GP
.E..HC	.007	**.014**	.024	.005	**.010**	.018	.004	**.009**	.015	.004	**.008**	.014	.004	**.008**	.014	.E..HC

At .094 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	.007	**.009**	.017	.005	**.007**	.012	.004	**.006**	.011	.004	**.006**	.010	.004	**.006**	.010	.E..LD
.E..GP	.007	**.009**	.017	.005	**.007**	.012	.004	**.006**	.011	.004	**.006**	.010	.004	**.006**	.010	.E..GP
.E..HC	.009	**.019**	.034	.007	**.014**	.025	.006	**.012**	.021	.006	**.011**	.020	.006	**.011**	.020	.E..HC

At .063 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	.008	**.011**	.020	.006	**.008**	.015	.005	**.007**	.013	.005	**.007**	.012	.005	**.007**	.012	.E..LD
.E..GP	.008	**.011**	.020	.006	**.008**	.015	.005	**.007**	.013	.005	**.007**	.012	.005	**.007**	.012	.E..GP
.E..HC	.011	**.023**	.041	.008	**.017**	.030	.007	**.015**	.026	.007	**.014**	.024	.007	**.013**	.023	.E..HC

At .031 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	.011	**.016**	.028	.008	**.012**	.020	.007	**.010**	.018	.007	**.009**	.016	.006	**.009**	.016	.E..LD
.E..GP	.011	**.016**	.028	.008	**.012**	.020	.007	**.010**	.018	.007	**.009**	.016	.006	**.009**	.016	.E..GP
.E..HC	.016	**.032**	.057	.012	**.023**	.041	.010	**.020**	.035	.009	**.019**	.033	.009	**.018**	.032	.E..HC

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

Recommended Starting Feeds [IPT] • Ball Nose Insert Size .750"

Light Machining	General Purpose	Heavy Machining

At .375 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	.005	**.007**	.012	.004	**.005**	.009	.003	**.004**	.008	.003	**.004**	.007	.003	**.004**	.007	.E..LD
.E..GP	.005	**.007**	.012	.004	**.005**	.009	.003	**.004**	.008	.003	**.004**	.007	.003	**.004**	.007	.E..GP
.E..GN	.007	**.010**	.018	.005	**.008**	.013	.004	**.007**	.011	.004	**.006**	.011	.004	**.006**	.011	.E..GN
.E..HC	.007	**.014**	.024	.005	**.010**	.018	.004	**.009**	.015	.004	**.008**	.014	.004	**.008**	.014	.E..HC

At .113 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	.007	**.009**	.017	.005	**.007**	.012	.004	**.006**	.011	.004	**.006**	.010	.004	**.006**	.010	.E..LD
.E..GP	.007	**.009**	.017	.005	**.007**	.012	.004	**.006**	.011	.004	**.006**	.010	.004	**.006**	.010	.E..GP
.E..GN	.009	**.014**	.025	.007	**.011**	.019	.006	**.009**	.016	.006	**.009**	.015	.006	**.008**	.015	.E..GN
.E..HC	.009	**.019**	.034	.007	**.014**	.025	.006	**.012**	.021	.006	**.011**	.020	.006	**.011**	.020	.E..HC

At .075 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	.008	**.011**	.020	.006	**.008**	.015	.005	**.007**	.013	.005	**.007**	.012	.005	**.007**	.012	.E..LD
.E..GP	.008	**.011**	.020	.006	**.008**	.015	.005	**.007**	.013	.005	**.007**	.012	.005	**.007**	.012	.E..GP
.E..GN	.011	**.017**	.030	.008	**.013**	.022	.007	**.011**	.019	.007	**.010**	.018	.007	**.010**	.018	.E..GN
.E..HC	.011	**.023**	.041	.008	**.017**	.030	.007	**.015**	.026	.007	**.014**	.024	.007	**.013**	.023	.E..HC

At .038 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	.011	**.016**	.028	.008	**.012**	.020	.007	**.010**	.018	.007	**.009**	.016	.006	**.009**	.016	.E..LD
.E..GP	.011	**.016**	.028	.008	**.012**	.020	.007	**.010**	.018	.007	**.009**	.016	.006	**.009**	.016	.E..GP
.E..GN	.016	**.024**	.042	.012	**.017**	.031	.010	**.015**	.026	.009	**.014**	.025	.009	**.014**	.024	.E..GN
.E..HC	.016	**.032**	.057	.012	**.023**	.041	.010	**.020**	.035	.009	**.019**	.033	.009	**.018**	.032	.E..HC

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

Recommended Starting Feeds [IPT] • Ball Nose Insert Size 1.00"

Light Machining	General Purpose	Heavy Machining

At .500 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	.005	**.007**	.012	.004	**.005**	.009	.003	**.004**	.008	.003	**.004**	.007	.003	**.004**	.007	.E..LD
.E..GP	.005	**.007**	.012	.004	**.005**	.009	.003	**.004**	.008	.003	**.004**	.007	.003	**.004**	.007	.E..GP
.E..GN	.007	**.010**	.018	.005	**.008**	.013	.004	**.007**	.011	.004	**.006**	.011	.004	**.006**	.011	.E..GN
.E..HC	.007	**.014**	.024	.005	**.010**	.018	.004	**.009**	.015	.004	**.008**	.014	.004	**.008**	.014	.E..HC

At .150 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	.007	**.009**	.017	.005	**.007**	.012	.004	**.006**	.011	.004	**.006**	.010	.004	**.006**	.010	.E..LD
.E..GP	.007	**.009**	.017	.005	**.007**	.012	.004	**.006**	.011	.004	**.006**	.010	.004	**.006**	.010	.E..GP
.E..GN	.009	**.014**	.025	.007	**.011**	.019	.006	**.009**	.016	.006	**.009**	.015	.006	**.008**	.015	.E..GN
.E..HC	.009	**.019**	.034	.007	**.014**	.025	.006	**.012**	.021	.006	**.011**	.020	.006	**.011**	.020	.E..HC

At .100 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	.008	**.011**	.020	.006	**.008**	.015	.005	**.007**	.013	.005	**.007**	.012	.005	**.007**	.012	.E..LD
.E..GP	.008	**.011**	.020	.006	**.008**	.015	.005	**.007**	.013	.005	**.007**	.012	.005	**.007**	.012	.E..GP
.E..GN	.011	**.017**	.030	.008	**.013**	.022	.007	**.011**	.019	.007	**.010**	.018	.007	**.010**	.018	.E..GN
.E..HC	.011	**.023**	.041	.008	**.017**	.030	.007	**.015**	.026	.007	**.014**	.024	.007	**.013**	.023	.E..HC

At .050 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	.011	**.016**	.028	.008	**.012**	.020	.007	**.010**	.018	.007	**.009**	.016	.006	**.009**	.016	.E..LD
.E..GP	.011	**.016**	.028	.008	**.012**	.020	.007	**.010**	.018	.007	**.009**	.016	.006	**.009**	.016	.E..GP
.E..GN	.016	**.024**	.042	.012	**.017**	.031	.010	**.015**	.026	.009	**.014**	.025	.009	**.014**	.024	.E..GN
.E..HC	.016	**.032**	.057	.012	**.023**	.041	.010	**.020**	.035	.009	**.019**	.033	.009	**.018**	.032	.E..HC

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

Recommended Starting Feeds [IPT] • Ball Nose Insert Size 1.25"

Light Machining	General Purpose	Heavy Machining

At .625 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	.005	**.007**	.012	.004	**.005**	.009	.003	**.004**	.008	.003	**.004**	.007	.003	**.004**	.007	.E..LD
.E..GP	.005	**.007**	.012	.004	**.005**	.009	.003	**.004**	.008	.003	**.004**	.007	.003	**.004**	.007	.E..GP

At .188 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	.007	**.009**	.017	.005	**.007**	.012	.004	**.006**	.011	.004	**.006**	.010	.004	**.006**	.010	.E..LD
.E..GP	.007	**.009**	.017	.005	**.007**	.012	.004	**.006**	.011	.004	**.006**	.010	.004	**.006**	.010	.E..GP

At .125 Axial Depth of Cut (ap)

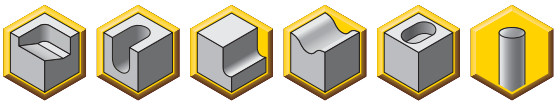
Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..LD	.008	**.011**	.020	.006	**.008**	.015	.005	**.007**	.013	.005	**.007**	.012	.005	**.007**	.012	.E..LD
.E..GP	.008	**.011**	.020	.006	**.008**	.015	.005	**.007**	.013	.005	**.007**	.012	.005	**.007**	.012	.E..GP

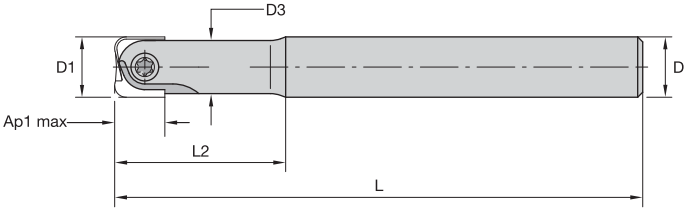
At .063 Axial Depth of Cut (ap)

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	.011	**.016**	.028	.008	**.012**	.020	.007	**.010**	.018	.007	**.009**	.016	.006	**.009**	.016	.E..LD
.E..GP	.011	**.016**	.028	.008	**.012**	.020	.007	**.010**	.018	.007	**.009**	.016	.006	**.009**	.016	.E..GP

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

- Cutting diameter ranges from .500–1.000".
- High precision and runout accuracy.
- Can be used with the heat shrink technology, h6 shank tolerance.
- Suitable for roughing and finishing operations.
- Works with toroidal and High-Feed inserts.





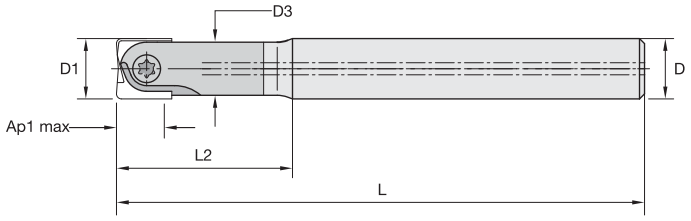
Necked End Mills • Cylindrical Shank • Steel

order number	catalog number	D1	D	D3	L	L2	Ap1 max	Z	Z U	max ramp angle	max RPM	lbs	insert 1
2957828	**KDMT0500R512A050SN**	.500	.500	.420	5.120	1.339	.118	1	2	3.0°	40000	.22	KDMT0500..
2957829	**KDMT0500R591A050SN**	.500	.500	.420	5.909	1.890	.118	1	2	3.0°	40000	.22	KDMT0500..
2957830	**KDMT0625R551A063SN**	.625	.625	.560	5.510	1.496	.157	1	2	3.0°	40000	.44	KDMT0625..
2957831	**KDMT0625R630A063SN**	.625	.625	.560	6.300	2.165	.157	1	2	3.0°	40000	.44	KDMT0625..
2957832	**KDMT0750R630A075SN**	.750	.750	.710	6.300	1.850	.197	1	2	3.0°	40000	.88	KDMT0750..
2958143	**KDMT0750R827A075SN**	.750	.750	.710	8.270	2.362	.197	1	2	3.0°	40000	.88	KDMT0750..
2958144	**KDMT1000R630A100SN**	1.000	1.000	.890	6.300	1.850	.236	1	2	3.0°	40000	1.32	KDMT1000..
2958145	**KDMT1000R748A100SN**	1.000	1.000	.890	7.480	2.835	.236	1	2	3.0°	40000	1.54	KDMT1000..
2958146	**KDMT1000R906A100SN**	1.000	1.000	.890	9.059	3.150	.236	1	2	3.0°	40000	1.76	KDMT1000..

Spare Parts

D1	 insert screw	in. lbs.	 Torx wrench
.500	**193.393**	35	**KT20**
.625	**193.392**	44	**KT20**
.750	**193.391**	53	**KT20**
1.000	**193.390**	58	**KT30**

- Cutting diameter ranges from .500–1.000".
- 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

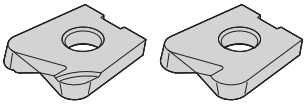
order number	catalog number	D1	D	D3	L	L2	Ap1 max	Z	Z	U	max ramp angle	max RPM	lbs	insert 1
2878452	**KDMT0500R472A050HNC**	.500	.500	.420	4.803	1.457	.118	1	2		3.0°	40000	.39	KDMT0500..
2878733	**KDMT0500R630A050HNC**	.500	.500	.420	6.378	2.047	.118	1	2		3.0°	40000	.53	KDMT0500..
2878734	**KDMT0625R551A063HNC**	.625	.625	.560	5.590	1.496	.157	1	2		3.0°	40000	.43	KDMT0625..
2878735	**KDMT0625R689A063HNC**	.625	.625	.560	6.969	2.244	.157	1	2		3.0°	40000	.89	KDMT0625..
2878736	**KDMT0750R551A075HNC**	.750	.750	.710	5.590	2.047	.197	1	2		3.0°	40000	1.03	KDMT0750..
2878737	**KDMT0750R748A075HNC**	.750	.750	.710	7.559	3.032	.197	1	2		3.0°	40000	1.46	KDMT0750..
2878738	**KDMT1000R630A100HNC**	1.000	1.000	.890	6.378	2.441	.236	1	2		3.0°	30000	2.01	KDMT1000..
2878739	**KDMT1000R827A100HNC**	1.000	1.000	.890	8.347	3.622	.236	1	2		3.0°	30000	2.68	KDMT1000..

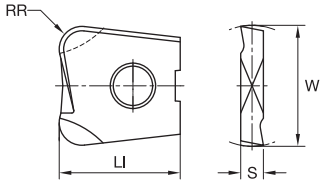
Spare Parts

D1	insert screw	in. lbs.	Torx wrench
.500	**193.393**	35	**KT20**
.625	**193.392**	44	**KT20**
.750	**193.391**	53	**KT20**
1.000	**193.390**	58	**KT30**

Insert Selection Guide

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.E..GC	KC515M	**.E..GC**	**KC515M**	.E..GN	KC515M
P3–P4	.E..GN	KC515M	**.E..GN**	**KC515M**	.E..GN	KC515M
P5–P6	.E..GN	KC515M	**.E..GN**	**KC515M**	.E..GN	KC515M
M1–M2	–	–	**.E..GN**	**KC515M**	–	–
M3	–	–	**.E..GN**	**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	–	–	–	–	–	–
H1	–	–	**.E..GN**	**KC515M**	–	–


KDMT-GC KDMT-GN



● first choice
○ alternate choice

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

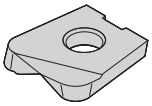
catalog number	LI	W	S	RR	hm	KC515M
KDMT05004ERGC	.550	.500	.098	.063	.003	●
KDMT05002ERGC	.550	.500	.098	.032	.003	●
KDMT06254ERGC	.625	.625	.118	.063	.003	●
KDMT06252ERGC	.625	.625	.118	.032	.003	●
KDMT07502ERGC	.700	.750	.118	.032	.003	●
KDMT07504ERGC	.700	.750	.118	.063	.003	●
KDMT10004ERGC	.925	1.000	.157	.063	.003	●
KDMT10008ERGC	.925	1.000	.157	.125	.003	●
KDMT10002ERGC	.925	1.000	.157	.032	.003	●

NOTE: Ap1 max = RR

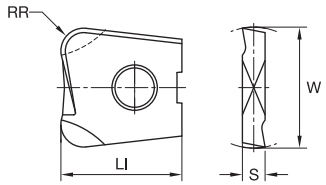
KDMT-GN • High-Precision Insert • Semi-Finishing and Finishing

catalog number	LI	W	S	RR	hm	KC515M
KDMT05004ERGN	.550	.500	.098	.063	.003	●
KDMT05002ERGN	.550	.500	.098	.032	.003	●
KDMT06252ERGN	.625	.625	.118	.032	.003	●
KDMT06254ERGN	.625	.625	.118	.063	.003	●
KDMT07502ERGN	.700	.750	.118	.032	.003	●
KDMT07504ERGN	.700	.750	.118	.063	.003	●
KDMT10004ERGN	.925	1.000	.157	.063	.003	●
KDMT10008ERGN	.925	1.000	.157	.125	.003	●
KDMT10002ERGN	.925	1.000	.157	.032	.003	●

NOTE: Ap1 max = RR



KDMT-HF



● first choice
○ alternate choice

P	●	
M	○	
K	○	
N		
S		
H	●	

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

catalog number	LI	W	S	RT	hm	KC515M
KDMT0500SRHF	.550	.500	.098	.045	.003	●
KDMT0625SRHF	.630	.625	.118	.050	.003	●
KDMT0750SRHF	.710	.750	.118	.080	.003	●

NOTE: RT = Programming Radius

Recommended Starting Speeds and Feeds

Recommended Starting Speeds [SFM]

Material Group		KC515M		
P	1	1080	**960**	840
	2	1020	**900**	780
	3	900	**780**	660
	4	780	**660**	540
	5	660	**540**	420
	6	540	**420**	360
M	1	1080	**900**	780
	2	900	**720**	540
	3	720	**600**	480
K	1	1440	**1080**	720
	2	1080	**840**	600
	3	480	**360**	240
N	1–2	–	**–**	–
	3	–	**–**	–
S	1	–	**–**	–
	2	–	**–**	–
	3	–	**–**	–
	4	–	**–**	–
H	1	550	**400**	310

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

Recommended Starting Feeds [IPT]

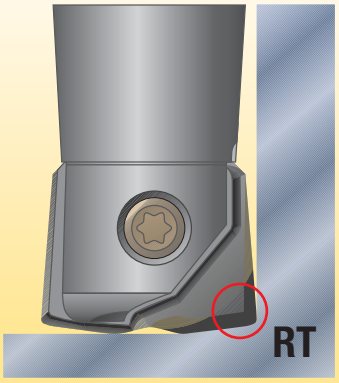
Light Machining	General Purpose	Heavy Machining

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)																Insert Geometry
	10%			20%			30%			40%			50–100%				
.E..GC	.007	**.010**	.014	.005	**.008**	.010	.004	**.007**	.009	.004	**.006**	.008	.004	**.006**	.008		.E..GC
.E..GN	.007	**.010**	.014	.005	**.008**	.010	.004	**.007**	.009	.004	**.006**	.008	.004	**.006**	.008		.E..GN

NOTE: Use “Light Machining” values as starting feed rate.
For plunging in Z-axis, use the 50–100% values (no chip thinning).

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	inch			
	Ap max	diameter	RT	max fz
KDMT0500SRHF	0.025	0.500	0.045	0.050
KDMT0625SRHF	0.030	0.625	0.050	0.050
KDMT0750SRHF	0.040	0.750	0.080	0.050

Data for Face Milling, Pocketing, and Profiling Operations

Starting Values

tool diameter	Ø.500"	Ø.625"	Ø.750"
Ap max (mm)	0.024	0.031	0.039
fz recommended for 45 HRC (approximately)	0.020	0.022	0.026
fz recommended for 55 HRC (approximately)	0.016	0.020	0.022
fz recommended for general purpose	0.026	0.028	0.031

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.

Z-Axis Plunge Mill

Primary Application

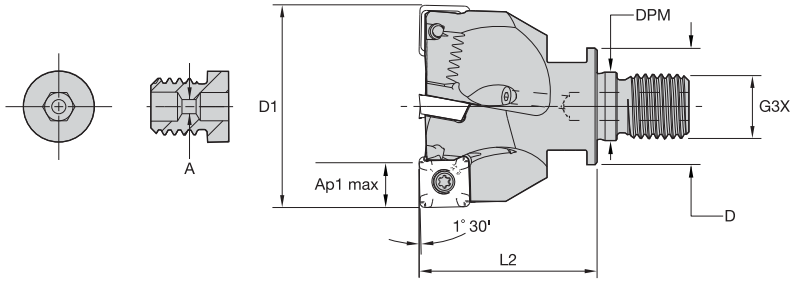
Specifically engineered to eliminate vibration and improve metal removal rates in roughing applications.
Ideally suited for rough slotting applications in aerospace, general engineering, die and mold, and power generation.

Features and Benefits

Platform Features

- Nine coolant nozzle sizes enable customized 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 .433" stepover.
- Unique coolant delivery.
- Chip control when slotting.

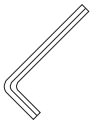


Screw-On End Mills

order number	catalog number	D1	D	DPM	G3X	L2	Ap1 max	Z	max RPM	lbs	insert 1
3449167	**KTSZR125SD430CM16A02**	1.250	1.142	.669	M16	1.750	.433	2	25800	.33	SD_T43_PD_N__Z
3449168	**KTSZR150SD430CM16A03**	1.500	1.142	.669	M16	1.750	.433	3	23550	.40	SD_T43_PD_N__Z
3449169	**KTSZR200SD430CM16A04**	2.000	1.142	.669	M16	1.750	.433	4	20400	.62	SD_T43_PD_N__Z

Spare Parts



D1	insert screw	in. lbs.	Torx Plus driver	coolant nozzle screw	T-handle hex wrench
1.250	**MS2197**	35	**DT15IP**	**MS2191C20**	**THW2M**
1.500	**MS2197**	35	**DT15IP**	**MS2191C20**	**THW2M**
2.000	**MS2197**	35	**DT15IP**	**MS2191C20**	**THW2M**

Coolant Screw Detail

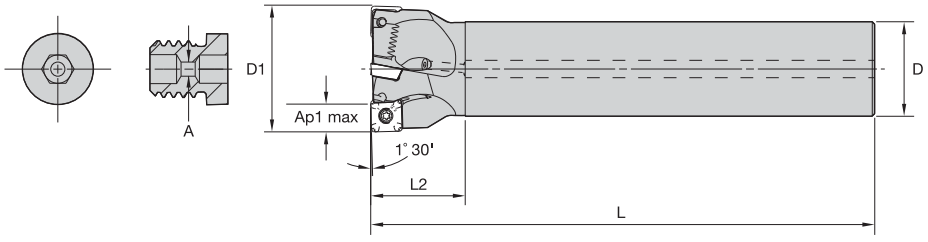
order number	catalog number	A
3400611	**MS2191C00**	–
3400612	**MS2191C06**	.024
3400613	**MS2191C08**	.032
3400614	**MS2191C10**	.039
3400616	**MS2191C12**	.047
3400617	**MS2191C14**	.055
3400618	**MS2191C16**	.063
3400619	**MS2191C18**	.071
3400620	**MS2191C20**	.079

Coolant Nozzle Key

order number	catalog number	drive size
1993552	**THW2M**	2 MM

NOTE: Check the Spare Parts table for the coolant hole size that is incorporated in the cutters.
If you need an alternative, there are eight other variants to choose from to increase or decrease the pressure.
Example: MS2191C12 is a .047" (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 .433" stepover.
- Unique coolant delivery.
- Chip control when slotting.

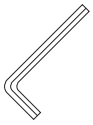


End Mills

order number	catalog number	D1	D	L	L2	Ap1 max	Z	max RPM	lbs	insert 1
3064601	**KISZR125SD430C4A02**	1.250	1.000	8.000	1.500	.433	2	25800	1.59	SD_T43_PD_N__Z
3107215	**KISZR150SD430C5A03**	1.500	1.250	8.000	1.500	.433	3	23550	2.47	SD_T43_PD_N__Z
3107216	**KISZR200SD430C6A04**	2.000	1.500	8.000	1.500	.433	4	20450	3.72	SD_T43_PD_N__Z

Spare Parts






D1	insert screw	in. lbs.	Torx Plus driver	T-handle hex wrench	coolant nozzle screw
1.250	**MS2197**	35	**DT15IP**	**THW2M**	**MS2191C20**
1.500	**MS2197**	35	**DT15IP**	**THW2M**	**MS2191C20**
2.000	**MS2197**	35	**DT15IP**	**THW2M**	**MS2191C20**

Coolant Screw Detail

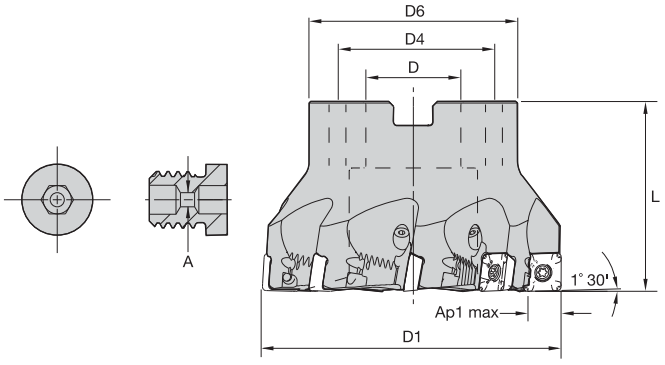
order number	catalog number	A
3400611	**MS2191C00**	–
3400612	**MS2191C06**	.024
3400613	**MS2191C08**	.032
3400614	**MS2191C10**	.039
3400616	**MS2191C12**	.047
3400617	**MS2191C14**	.055
3400618	**MS2191C16**	.063
3400619	**MS2191C18**	.071
3400620	**MS2191C20**	.079

Coolant Nozzle Key

order number	catalog number	drive size
1993552	**THW2M**	2 MM

NOTE: Check the Spare Parts table for the coolant hole size that is incorporated in the cutters.
If you need an alternative, there are eight other variants to choose from to increase or decrease the pressure.
Example: MS2191C12 is a .047" (1,20mm) hole. All coolant nozzles are interchangeable with the original that is supplied with the cutter, which gives flexibility with coolant flow.

- Easy cutting.
- Four cutting edges.
- Consumes less power.
- Suitable for a wide variety of workpiece materials.
- Up to .433" stepover.
- Fast and easy insert indexing.
- Unique coolant delivery.
- Chip control when slotting.

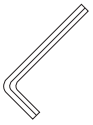


Shell Mills

order number	catalog number	D1	D	D6	L	Ap1 max	Z	max RPM	lbs	insert 1
3054849	KSSZR200SD430C3A04	2.000	.750	1.664	1.750	.433	4	20450	.66	SD_T43_PD_N__Z
3064755	KSSZR200SD430M3A05	2.000	.750	1.664	1.750	.433	5	20450	.72	SD_T43_PD_N__Z
3448592	KSSZR250SD430C3A05	2.500	.750	1.664	1.750	.433	5	18290	.98	SD_T43_PD_N__Z
3448913	KSSZR250SD430M3A06	2.500	.750	1.664	1.750	.433	6	18290	1.03	SD_T43_PD_N__Z
3064493	KSSZR300SD430C4A05	3.000	1.000	2.190	2.000	.433	5	16700	1.94	SD_T43_PD_N__Z
3064602	KSSZR300SD430M4A06	3.000	1.000	2.190	2.000	.433	6	16700	1.96	SD_T43_PD_N__Z
3064902	KSSZR300SD430F4A07	3.000	1.000	2.190	2.000	.433	7	16700	1.97	SD_T43_PD_N__Z
3448914	KSSZR400SD430C5A07	4.000	1.250	2.880	2.500	.433	7	14460	4.23	SD_T43_PD_N__Z
3448915	KSSZR400SD430M5A08	4.000	1.250	2.880	2.500	.433	8	14460	4.34	SD_T43_PD_N__Z
3066674	KSSZR400SD430F5A09	4.000	1.250	2.880	2.500	.433	9	14460	4.41	SD_T43_PD_N__Z
3448916	KSSZR400SD430C6A07	4.000	1.500	3.375	2.500	.433	7	14460	4.51	SD_T43_PD_N__Z
3448917	KSSZR400SD430M6A08	4.000	1.500	3.375	2.500	.433	8	14460	4.64	SD_T43_PD_N__Z
3448918	KSSZR400SD430F6A09	4.000	1.500	3.375	2.500	.433	9	14460	4.72	SD_T43_PD_N__Z
3448919	KSSZR500SD430C6A08	5.000	1.500	3.810	2.500	.433	8	12940	7.23	SD_T43_PD_N__Z
3448920	KSSZR500SD430M6A09	5.000	1.500	3.810	2.500	.433	9	12940	7.40	SD_T43_PD_N__Z
3448921	KSSZR500SD430F6A10	5.000	1.500	3.810	2.500	.433	10	12940	7.43	SD_T43_PD_N__Z
3066673	KSSZR600SD430C6A09	6.000	1.500	3.810	2.500	.433	9	11800	9.09	SD_T43_PD_N__Z
3448922	KSSZR600SD430M6A10	6.000	1.500	3.810	2.500	.433	10	11800	9.17	SD_T43_PD_N__Z
3448923	KSSZR600SD430F6A12	6.000	1.500	3.810	2.500	.433	12	11800	9.36	SD_T43_PD_N__Z

Spare Parts



D1	insert screw	in. lbs.	Torx Plus wrench	coolant nozzle screw	T-handle hex wrench	coolant lock screw assembly	socket-head cap screw with coolant groove
2.000	MS2197	35.0	DT15IP	MS2191C10	THW2M	–	S445CG
2.000	MS2197	35.0	DT15IP	MS2191C12	THW2M	–	S445CG
2.500	MS2197	35.0	DT15IP	MS2191C10	THW2M	–	S445CG
3.000	MS2197	35.0	DT15IP	MS2191C10	THW2M	–	S458CG
3.000	MS2197	35.0	DT15IP	MS2191C08	THW2M	–	S458CG
4.000	MS2197	35.0	DT15IP	MS2191C10	THW2M	S2162C	–
4.000	MS2197	35.0	DT15IP	MS2191C10	THW2M	S2163C	–
5.000	MS2197	35.0	DT15IP	MS2191C10	THW2M	S2163C	–
5.000	MS2197	35.0	DT15IP	MS2191C08	THW2M	S2163C	–
6.000	MS2197	35.0	DT15IP	MS2191C08	THW2M	S2163C	–
6.000	MS2197	35.0	DT15IP	MS2191C10	THW2M	S2163C	–

Coolant Screw Detail

order number	catalog number	A
3400611	MS2191C00	–
3400612	MS2191C06	.024
3400613	MS2191C08	.032
3400614	MS2191C10	.039
3400616	MS2191C12	.047
3400617	MS2191C14	.055
3400618	MS2191C16	.063
3400619	MS2191C18	.071
3400620	MS2191C20	.079

Coolant Nozzle Key

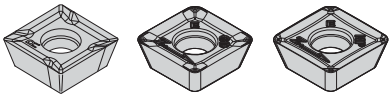
order number	catalog number	drive size
1993552	THW2M	2 MM

NOTE: Check the Spare Parts table for the coolant hole size that is incorporated in the cutters.
If you need an alternative, there are eight other variants to choose from to increase or decrease the pressure.
Example: MS2191C12 is a .047" (1,20mm) hole. All coolant nozzles are interchangeable with the original that is supplied with the cutter, which gives flexibility with coolant flow.

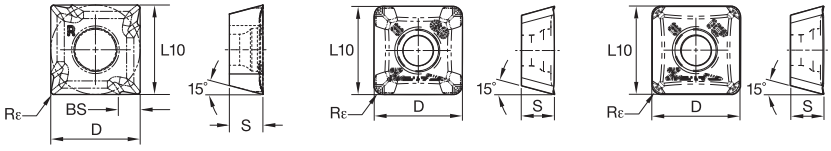
Insert Selection Guide

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	.F..LE	KC410M	**.F..LE**	**KC410M**	.F..LE	KC410M
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



SDCT-LE SDET-GDZ SDPT-HPZ



SDCT-LE SDET-GDZ SDPT-HPZ

● first choice
○ alternate choice

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

SDCT-LE

catalog number	L10	S	BS	Rε	hm	cutting edges	KC410M	KC522M	KC725M	KCPM20	KCPK30
SDCT433PDFR8LE	.500	.188	.106	.047	.001	4	●				
SDCT433PDFL8LE	.500	.188	.106	.047	.001	4	●				

SDET-GDZ

catalog number	L10	S	Rε	hm	cutting edges	KC410M	KC522M	KC725M	KCPM20	KCPK30
SDET433PDENGDZ	.500	.188	.047	.003	4		●	●		●
SDET433PDSNGDZ	.500	.188	.047	.005	4		●	●		●

SDPT-HPZ

catalog number	D	L10	S	Rε	hm	cutting edges	KC410M	KC522M	KC725M	KCPM20	KCPK30
SDPT433PDENHPZ	.500	.500	.188	.047	.003	4		●	●	●	●
SDPT433PDSNHPZ	.500	.500	.188	.047	.006	4		●	●	●	●

Recommended Starting Speeds [SFM]

Material Group		KC410M			KC522M			KC725M			KCPM20			KCPK30		
P	1	–	**–**	–	1300	**1130**	1060	1030	**900**	840	2170	**1910**	1760	1780	**1560**	1450
	2	–	**–**	–	1080	**950**	790	860	**760**	640	1340	**1210**	1090	1100	**1000**	900
	3	–	**–**	–	1000	**840**	700	790	**670**	550	1210	**1090**	1000	1000	**900**	820
	4	–	**–**	–	890	**730**	590	710	**590**	470	910	**840**	760	740	**690**	620
	5	–	**–**	–	730	**660**	590	590	**530**	470	1090	**980**	900	1020	**910**	830
	6	–	**–**	–	650	**490**	400	520	**400**	310	760	**660**	570	620	**540**	–
M	1	–	**–**	–	800	**710**	650	670	**590**	540	880	**790**	680	820	**720**	620
	2	–	**–**	–	730	**620**	520	610	**520**	430	800	**700**	620	730	**640**	550
	3	–	**–**	–	550	**480**	370	460	**400**	310	640	**570**	490	570	**520**	460
K	1	510	**480**	450	900	**820**	720	–	**–**	–	1420	**1280**	1150	1160	**1050**	940
	2	450	**420**	390	710	**640**	590	–	**–**	–	1130	**1010**	920	920	**830**	760
	3	400	**350**	310	590	**530**	480	–	**–**	–	950	**840**	780	770	**690**	640
N	1–2	1980	**1860**	1770	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–
	3	1620	**1440**	1260	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–
S	1	–	**–**	–	160	**140**	110	140	**120**	100	–	**–**	–	–	**–**	–
	2	–	**–**	–	160	**140**	110	140	**120**	100	–	**–**	–	–	**–**	–
	3	–	**–**	–	200	**160**	110	180	**140**	100	–	**–**	–	–	**–**	–
	4	–	**–**	–	280	**200**	140	240	**180**	120	–	**–**	–	–	**–**	–
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 [IPT]

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	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–	.002	**.004**	.008	.F..LE
.E..GDZ	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–	.004	**.010**	.016	.E..GDZ
.S..GDZ	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–	.004	**.010**	.016	.S..GDZ
.E..HPZ	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–	.004	**.010**	.016	.E..HPZ
.S..HPZ	–	**–**	–	–	**–**	–	–	**–**	–	–	**–**	–	.004	**.010**	.016	.S..HPZ

NOTE: Use “Light Machining” values as starting feed rate.
For plunging in Z-Axis, use the 50–100% values (no chip thinning).

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.

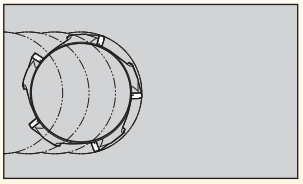


Figure 1

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 spiraling upwards.

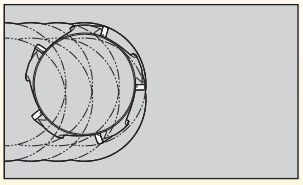


Figure 2

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 2.00" (50mm) diameter cutter is being used to machine a slot of 2.50" (63mm) wide on a vertical 3-axis machine.

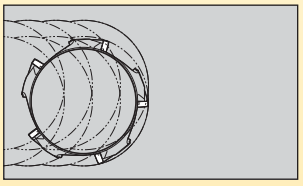


Figure 3

Align the cutter with the center 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.

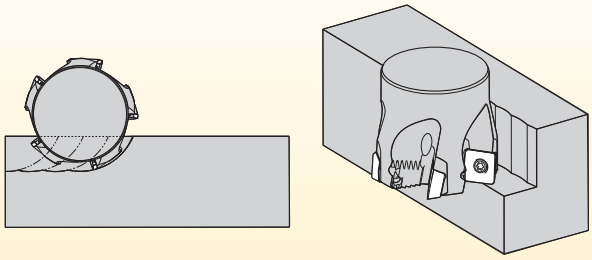
Move the cutter to the left of the slot to define the new position and make the cut. When reaching the base, a 3-axis move will need to be made. Again, the Z-axis will be in a positive direction at 45° (.010"), and the corresponding Y-axis will move away the same respective amount from the wall.

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 center 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)*

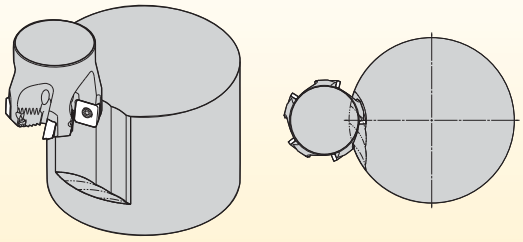


Linear Plunge Milling

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.

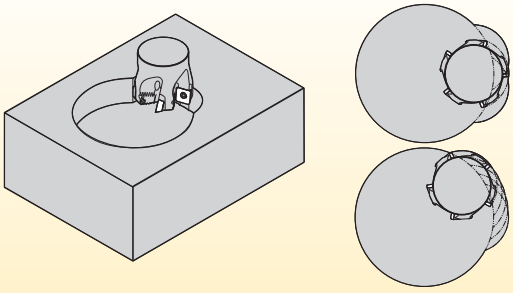
If the radial width of cut takes more than 60% of the cutter diameter, it is more difficult to remove the insert/cutter because the machine program wants to move the cutter upwards to (G00) Z+. When taking more than 60% of the cutter diameter, the material is enveloping the cutter and is difficult to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

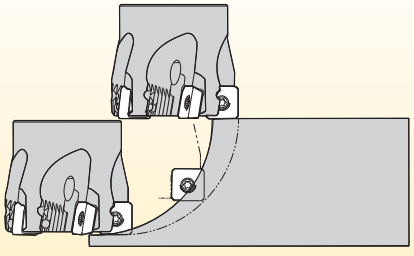
This artwork represents the typical application for this type of process. Move into the cut and follow the external profile of the workpiece. When moving the cutter back to the start position, it's always advisable to move the insert from contacting the workpiece. This should be done with a 2- or 3-axis 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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Features and Benefits

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

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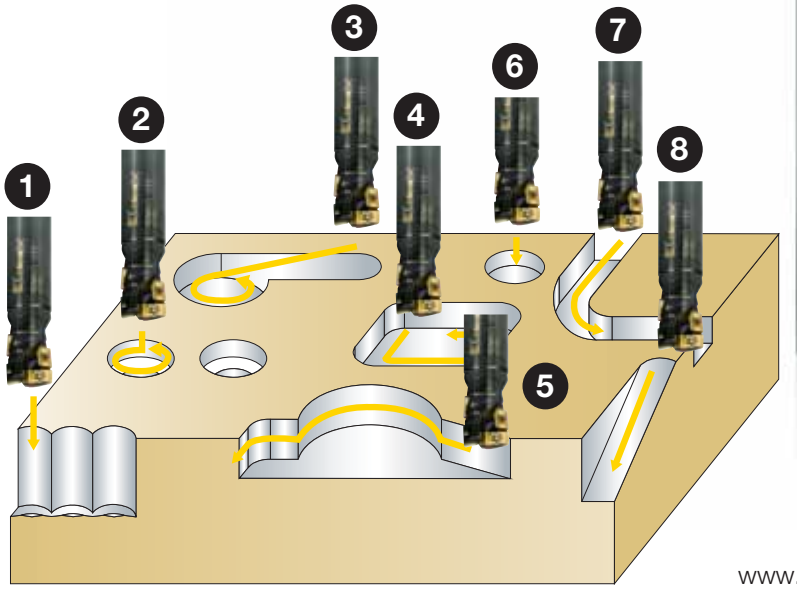
Primary Application

An extensive offering of versatile mills that can also drill.

Features and Benefits

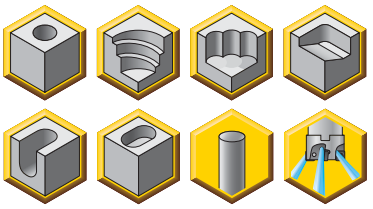
Platform Features

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



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

- Low cutting forces.
- Reduced shank diameters for access down long side walls.
- Excellent chip evacuation, even 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.



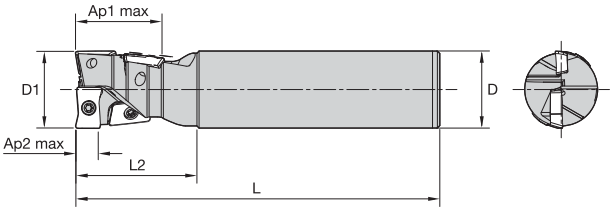


Fig. 3

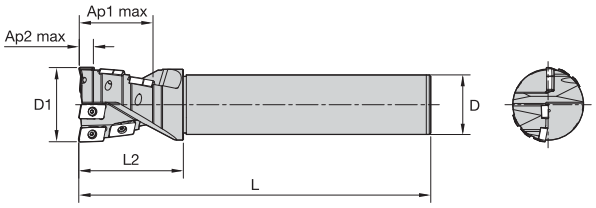


Fig. 4

Standard Length

order number	catalog number	D1	D	L	L2	Ap1 max	Ap2 max	Z	Z	U	figure	lbs	insert 1	insert 2
3578351	**KDMR625S625MT08**	.630	.625	4.699	1.195	.748	.177	4	2		FIG 3	.49	GOMT08T208ERLD	JOMT08T208ERLF
3578352	**KDMR787S750MT10**	.787	.750	5.091	1.350	.866	.236	4	2		FIG 3	.82	GOMT100308ERLD	JOMT100308ERLF
3578443	**KDMR1000S100MT13**	1.000	1.000	5.486	1.549	1.102	.295	4	2		FIG 3	1.15	GOMT13T308ERLD	JOMT13T308ERLF
3578444	**KDMR1250S125MT16**	1.250	1.250	5.858	1.921	1.417	.374	4	2		FIG 3	1.80	GOMT160408ERLD	JOMT160408ERLF
3578445	**KDMR1500S125MT13**	1.500	1.250	6.260	2.126	1.654	.295	7	2		FIG 4	2.25	GOMT13T308ERLD	JOMT13T308ERLF
3578446	**KDMR2000S150MT16**	1.984	1.500	6.649	2.712	2.126	.374	7	2		FIG 4	3.86	GOMT160408ERLD	JOMT160408ERLF

Spare Parts

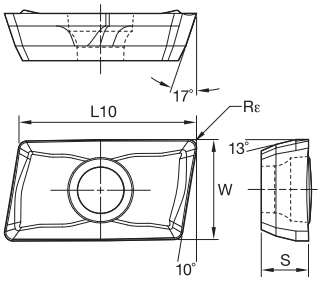
D1	 insert screw	 Torx driver	 anti-seize lube
.630	**MS2211**	**DT6**	**ASL3GT**
.787	**MS2212**	**DT8**	**ASL3GT**
1.000	**MS2213**	**DT10**	**ASL3GT**
1.250	**MS2214**	**DT15**	**ASL3GT**
1.500	**MS2213**	**DT10**	**ASL3GT**
1.984	**MS2214**	**DT15**	**ASL3GT**

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

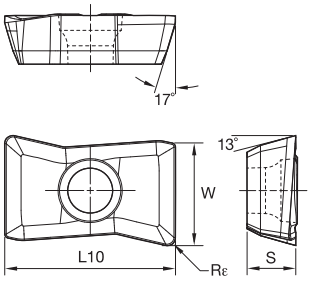
Insert Selection Guide

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 • KDMR • JOMT-LF • GOMT-LD

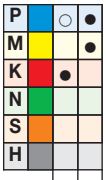


JOMT-LF



GOMT-LD

● first choice
○ alternate choice



JOMT • Side Insert

catalog number	S	W	L10	Rε	hm	cutting edges	KC505M	KC720M
JOMT08T208ERLF	.109	.202	.335	.031	.002	2	●	●
JOMT100308ERLF	.125	.253	.402	.031	.002	2	●	●
JOMT160408ERLF	.188	.381	.657	.031	.002	2	●	●
JOMT13T308ERLF	.146	.317	.520	.031	.002	2	●	●

GOMT • Center Insert

catalog number	S	W	L10	Rε	hm	cutting edges	KC505M	KC720M
GOMT13T308ERLD	.152	.329	.520	.031	.002	2	●	●
GOMT08T208ERLD	.109	.205	.343	.031	.002	2	●	●
GOMT100308ERLD	.130	.258	.421	.031	.002	2	●	●
GOMT160408ERLD	.188	.395	.657	.031	.002	2	●	●

Recommended Starting Speeds [SFM]

Material Group		KC505M			KC720M		
P	1	–	–	–	860	**790**	710
	2	–	–	–	790	**710**	630
	3	–	–	–	710	**630**	550
	4	1180	**860**	710	630	**590**	550
	5	1180	**860**	710	550	**470**	400
	6	1140	**780**	620	400	**310**	310
M	1	–	–	–	780	**710**	630
	2	–	–	–	630	**550**	470
	3	–	–	–	470	**400**	310
K	1	620	**560**	490	–	–	–
	2	575	**510**	440	–	–	–
	3	375	**310**	245	–	–	–
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 [IPT]

Light Machining	General Purpose	Heavy Machining

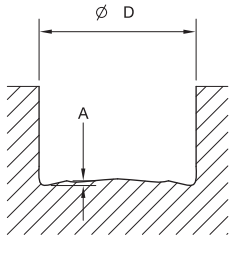
Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.LD/.LF	.006	**.014**	.020	.004	**.010**	.015	.004	**.009**	.013	.003	**.008**	.012	.002	**.008**	.012	.LD/.LF

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

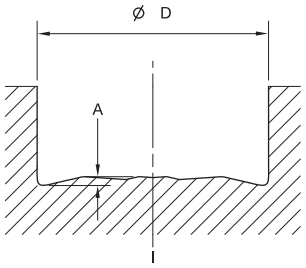
Insert Cross Reference

end mill	applicable insert for each cutter diameter			
D1	side insert	quantity	center insert	quantity
.630	**JOMT08T208ERLF**	3	**GOMT08T208ERLD**	1
.787	**JOMT100308ERLF**	3	**GOMT100308ERLD**	1
1.000	**JOMT13T308ERLF**	3	**GOMT13T308ERLD**	1
1.250	**JOMT160408ERLF**	3	**GOMT160408ERLD**	1
1.500	**JOMT13T308ERLF**	6	**GOMT13T308ERLD**	1
1.984	**JOMT160408ERLF**	6	**GOMT160408ERLD**	1

Drilled Hole Bottom Shape



Ø.625, Ø 1.299"



Ø1.299, Ø 2.000"

drilled hole bottom shape						
cutting diameter	Ø .630"	Ø .787"	Ø 1.000"	Ø 1.250"	Ø 1.500"	Ø 1.984"
A (inch)	.020"	.027"	.034"	.045"	.061"	.065"

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.

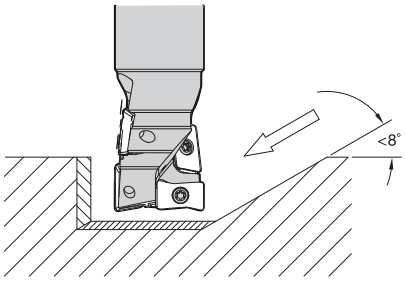
drilling	
cutting diameter	maximum depth (inch)
Ø .630	.511
Ø .787	.511
Ø 1.000	.866
Ø 1.250	1.000
Ø 1.500	1.000
Ø 1.984	1.000

Recommended Cutting Data by Operation and Workpiece Material

workpiece material	feed rates (in/tooth)		grade
	drilling	profile/slotting	
steel	.003~.005	.002~.010	KC720M
stainless steel	.003~.006	.002~.006	KC720M
cast iron	.002~.008	.002~.010	KC505M

Ramping

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



Maximum 8° ramp angle

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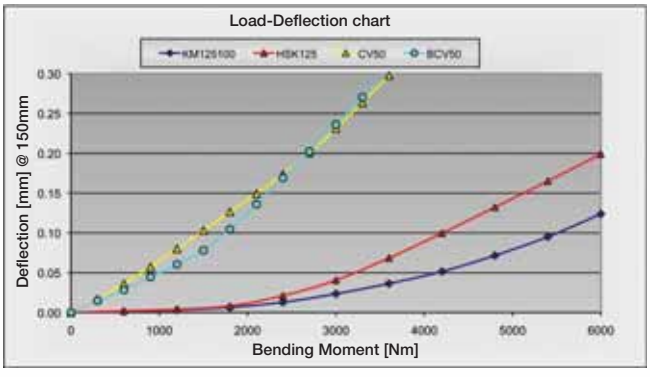
The Latest Innovation in Spindle Interface Technology!

Dramatically increase your metal removal rates when machining high-temperature alloys!

Features and Benefits

- Run jobs at significantly faster feeds and speeds than is achievable with other spindle interfaces.
- Unique use of clamping force and interference level increases clamping capability 2–3 times.
- You experience lower cost of ownership, increased throughput, and superior results.



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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

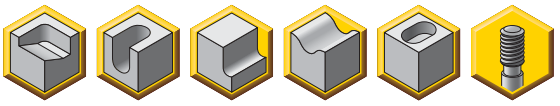
Unbeatable Productivity

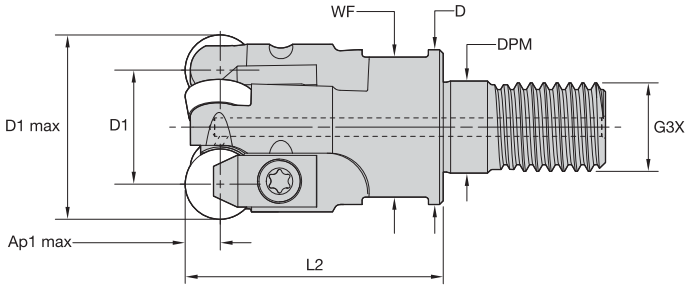
- Engineering to provide outstanding metal removal rates and productivity in nickel-based and/or cobalt-based alloys, stellites, stainless steel, and PH series through HSM.
- High axial and radial runout accuracy.
- Improved insert clearance and thickness tolerance to increase overall performance.
- 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 .625".
- 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.





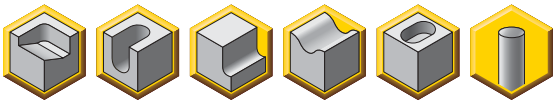
Screw-On End Mills

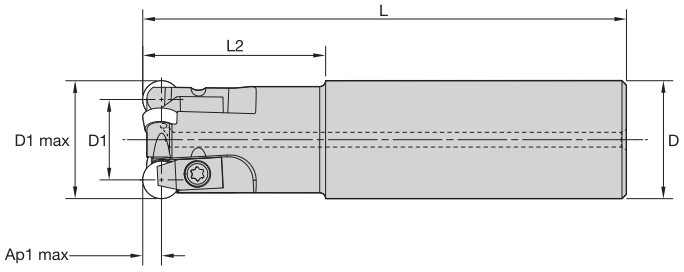
order number	catalog number	D1 max	D1	D	DPM	G3X	L2	WF	Ap1 max	Z	max ramp angle	max RPM	lbs	insert 1
3760369	**KIPR100RP32M1203**	1.000	.625	.827	.492	M12	1.250	.709	.188	3	8.0°	20450	.17	RP_32_
3760370	**KIPR125RP43M1603**	1.250	.750	1.142	.669	M16	1.500	.866	.250	3	2.5°	21000	.32	RP_43_

Spare Parts

D1 max	clamp	clamp screw	in. lbs.	Torx driver	Torx Plus wrench
					
1.000	**KCI2**	**191.725**	31	**DT15**	**–**
1.250	**KCI3M**	**193.409**	53	**–**	**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.





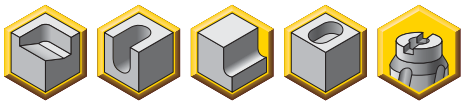
Cylindrical End Mills

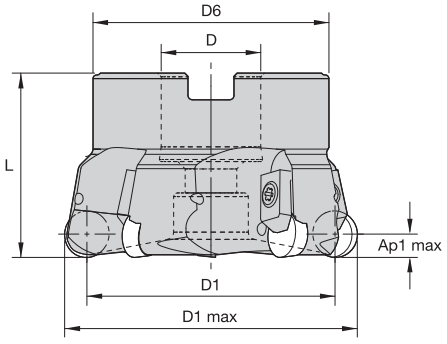
order number	catalog number	D1 max	D1	D	L	L2	Ap1 max	Z	max ramp angle	max RPM	lbs	insert 1
3759533	**KIPR062RP21229**	.625	.375	.625	2.950	1.021	.125	2	12.0°	37400	.21	RP_2150_
3759534	**KIPR075RP21332**	.750	.500	.750	3.200	1.192	.125	3	10.0°	34150	.33	RP_2150_
3759535	**KIPR100RP32438**	1.000	.625	1.000	3.800	1.556	.188	3	8.0°	20450	.70	RP_32_
1873486	**KIPR125RP43540**	1.250	.761	1.250	4.000	1.610	.249	3	4.3°	21000	1.09	RP_43_
1775726	**KIPR125RP43555**	1.250	.761	1.250	5.500	3.110	.249	3	4.3°	21000	1.54	RP_43_
1775728	**KIPR150RP43655**	1.500	1.009	1.500	5.500	3.500	.249	3	3.0°	19500	2.28	RP_43_

Spare Parts

D1 max	clamp	clamp screw	in. lbs.	Torx driver	Torx Plus wrench
.625	**KCI1**	**191.924**	17	**DT9**	**–**
.750	**KCI1**	**191.924**	17	**DT9**	**–**
1.000	**KCI2**	**191.725**	31	**DT15**	**–**
1.250	**KCI3M**	**193.409**	55	**–**	**TTP20**
1.500	**KCI3M**	**193.409**	55	**–**	**TTP20**

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





Shell Mills

order number	catalog number	D1 max	D1	D	D6	L	Ap1 max	Z	max ramp angle	max RPM	lbs	insert 1
1942350	**KSSR200RP430C3**	2.000	1.505	.750	1.750	2.000	.249	3	3.0°	16000	.96	RP_43_
1942586	**KSSR200RP430F3**	2.000	1.505	.750	1.750	2.000	.249	4	3.0°	16000	.89	RP_43_
1942587	**KSSR250RP430C3**	2.500	2.003	.750	1.750	2.000	.249	4	2.0°	14500	1.31	RP_43_
1942589	**KSSR300RP430C4**	3.000	2.501	1.000	2.190	2.000	.249	5	2.0°	13500	1.92	RP_43_
1942607	**KSSR400RP430C5**	4.000	3.501	1.250	2.880	2.000	.249	6	1.5°	11500	3.53	RP_43_

Spare Parts

D1 max	clamp	clamp screw	in. lbs.	Torx Plus wrench
2.000	**KCI3M**	**193.409**	55	**TTP20**
2.500	**KCI3M**	**193.409**	55	**TTP20**
3.000	**KCI3M**	**193.409**	55	**TTP20**
4.000	**KCI3M**	**193.409**	55	**TTP20**

Insert Selection Guide

RPGN06... High Temp

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

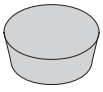
RPGN09... High Temp

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

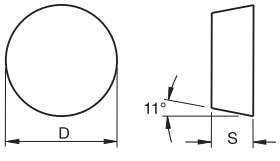
RPGN12... High Temp

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

Indexable Ceramic Inserts • KIPR-RP • KSSR-RP



RPGN



● first choice
○ alternate choice

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

RPGN

catalog number	D	S	KYS30	KYSP30	KYSM10	KYHS10
RPG2150E	.250	.094	●	●	●	●
RPG32E	.375	.125	●	●	●	●
RPG32T0420	.375	.125	●			
RPG43E	.500	.188	●	●	●	●
RPG43T0420	.500	.188	●			

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

B — Use only air flow 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 [SFM]

Material Group		KYHS10			KYSM10			KYSP30			KYS30		
P	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–	–	–	–
	5	–	–	–	3960	**3200**	2380	3000	**2400**	1800	–	–	–
	6	–	–	–	3960	**3200**	2380	3000	**2400**	1800	–	–	–
M	1	–	–	–	3960	**3200**	2380	–	–	–	–	–	–
	2	–	–	–	3740	**3000**	–	–	–	–	–	–	–
	3	–	–	–	2760	**2400**	–	–	–	–	–	–	–
K	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
N	1–2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
S	1	1680	**1320**	960	3490	**2860**	2220	2640	**2160**	1680	2640	**2160**	1680
	2	1680	**1320**	960	3490	**2860**	2220	2640	**2160**	1680	2640	**2160**	1680
	3	2400	**2040**	1680	5080	**4130**	3180	3840	**3120**	2400	3840	**3120**	2400
	4	–	–	–	–	–	–	–	–	–	–	–	–
H	1	1200	**1020**	780	–	–	–	–	–	–	–	–	–

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

Recommended Starting Feeds [IPT] • RPGN06..

Light Machining	General Purpose	Heavy Machining

At .125 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	.005	**.005**	.006	.004	**.004**	.004	.003	**.003**	.004	.003	**.003**	.003	.003	**.003**	.003	..E

At .063 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	.005	**.006**	.007	.004	**.004**	.005	.004	**.004**	.004	.003	**.004**	.004	.003	**.004**	.004	..E

At .031 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	.007	**.008**	.009	.005	**.006**	.006	.005	**.005**	.006	.004	**.005**	.005	.004	**.005**	.005	..E

At .016 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	.010	**.011**	.012	.007	**.008**	.009	.006	**.007**	.008	.006	**.007**	.007	.006	**.006**	.007	..E

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

Recommended Starting Feeds [IPT] • RPGN09..

Light Machining	General Purpose	Heavy Machining

At .188 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	.005	**.005**	.006	.004	**.004**	.004	.003	**.003**	.004	.003	**.003**	.003	.003	**.003**	.003	..E

At .094 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	.005	**.006**	.007	.004	**.004**	.005	.004	**.004**	.004	.003	**.004**	.004	.003	**.004**	.004	..E

At .047 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	.007	**.008**	.009	.005	**.006**	.006	.005	**.005**	.006	.004	**.005**	.005	.004	**.005**	.005	..E

At .023 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	.010	**.011**	.012	.007	**.008**	.009	.006	**.007**	.008	.006	**.007**	.007	.006	**.006**	.007	..E

Recommended Starting Feeds [IPT] • RPGN12..

At .250 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	.005	**.005**	.006	.004	**.004**	.004	.003	**.003**	.004	.003	**.003**	.003	.003	**.003**	.003	..E

At .125 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	.005	**.006**	.007	.004	**.004**	.005	.004	**.004**	.004	.003	**.004**	.004	.003	**.004**	.004	..E

At .063 Axial Depth of Cut (ap)

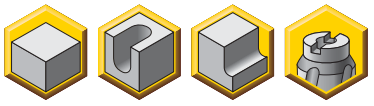
Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
..E	.007	**.008**	.009	.005	**.006**	.006	.005	**.005**	.006	.004	**.005**	.005	.004	**.005**	.005	..E

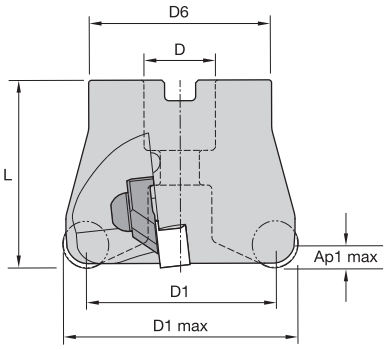
At .031 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
..E	.010	**.011**	.012	.007	**.008**	.009	.006	**.007**	.008	.006	**.007**	.007	.006	**.006**	.007	..E

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

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





Shell Mills • RNGN 1207

order number	catalog number	D1 max	D1	D	D6	L	Ap1 max	Z	max RPM	lbs	insert 1
1775730	**KDNR200RN40C3**	2.000	1.501	.750	44,450	2.000	.249	3	13700	.90	RNG45__
1775731	**KDNR250RN40C3**	2.500	2.000	.750	49,530	2.000	.249	4	12300	1.20	RNG45__
1775753	**KDNR300RN40C4**	3.000	2.499	1.000	66,680	2.000	.249	5	11200	1.80	RNG45__
1775754	**KDNR400RN40C5**	4.000	3.496	1.250	73,150	2.000	.249	6	9700	3.50	RNG45__

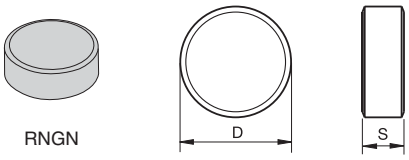
Spare Parts

D1 max	clamp	clamp screw	washer	in. lbs.	Torx wrench
2.000	**KCI4**	**MS1221**	**191.279**	65	**TT25**
2.500	**KCI4**	**MS1221**	**191.279**	65	**TT25**
3.000	**KCI4**	**MS1221**	**191.279**	65	**TT25**
4.000	**KCI4**	**MS1221**	**191.279**	65	**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



● first choice
○ alternate choice

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

RNGN

catalog number	D	S	KYS30	KY2100	KY4300
RNG45E	.500	.313	●	●	●
RNG45T0420	.500	.313	●	●	●

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

Material Group		KYS30			KY2100			KY4300		
P	1	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–
	5	–	–	–	3960	**3200**	2380	–	–	–
	6	–	–	–	3960	**3200**	2380	–	–	–
M	1	–	–	–	3960	**3200**	2380	–	–	–
	2	–	–	–	3740	**3000**	–	–	–	–
	3	–	–	–	2760	**2400**	–	–	–	–
K	1	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–
N	1–2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–
S	1	2640	**2160**	1680	3490	**2860**	2220	1680	**1320**	960
	2	2640	**2160**	1680	3490	**2860**	2220	1680	**1320**	960
	3	3840	**3120**	2400	5080	**4130**	3180	2400	**2040**	1680
	4	–	–	–	–	–	–	–	–	–
H	1	–	–	–	–	–	–	1200	**1020**	780

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

Recommended Starting Feeds [IPT] • RNGN45..

Light Machining	General Purpose	Heavy Machining

At .250 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	.004	**.004**	.005	.003	**.003**	.003	.002	**.003**	.003	.002	**.003**	.003	.002	**.002**	.003	..E
..T..	.007	**.010**	.011	.005	**.008**	.009	.004	**.007**	.007	.004	**.006**	.007	.004	**.006**	.007	..T..

At .125 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	.004	**.005**	.005	.003	**.004**	.004	.003	**.003**	.003	.003	**.003**	.003	.003	**.003**	.003	..E
..T..	.008	**.012**	.013	.006	**.009**	.010	.005	**.008**	.009	.005	**.007**	.008	.005	**.007**	.008	..T..

At .063 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	.006	**.006**	.007	.004	**.005**	.005	.004	**.004**	.004	.003	**.004**	.004	.003	**.004**	.004	..E
..T..	.010	**.016**	.017	.008	**.012**	.013	.007	**.010**	.011	.006	**.010**	.010	.006	**.009**	.010	..T..

At .031 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	.008	**.009**	.009	.006	**.006**	.007	.005	**.006**	.006	.005	**.005**	.006	.005	**.005**	.006	..E
..T..	.014	**.022**	.024	.010	**.016**	.018	.009	**.014**	.015	.008	**.013**	.014	.008	**.013**	.014	..T..

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