KENNAMETAL®



Beyond™ Solid End Mills —

High-performance milling in a new dimension.

Solid End Milling

Tool Selection Guide **M2–M5**

Grades and Grade Descriptions **M6–M7**

High-Performance Solid Carbide End Mills **M8–M80**

HARVI — Titanium, Stainless Steel, and Steel M8–M30

KenFeed — High-Feed Machining M31–M34

Hard Steel Machining M35–M40

Aluminum Machining M41–M61

CFRP Machining M62–M68

Finishing Applications M69–M74, M111–M112

Roughing Applications M75–M80

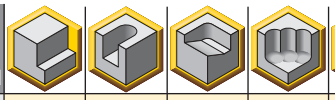
General Application Solid Carbide End Mills **M81–M105**

General Application Solid Carbide End Mills Portfolio Extension **M108–M110**

High-Performance Solid Carbide End Mills Portfolio Extension **M111–M113**



beyond *Beyond™ grade.		series	diameter (inch)	length of cut	flute Z	helix	internal coolant
HARVI I™*		HPHV	1/8–1 1/4	1.8–2 x D1	ZU=4	38°	
HARVI I*		UADE	1/4–1	1.5 x D1	ZU=4	38°	
HARVI I*		HPRSHV	1/2–1	1–1.2 x D1	ZU=4	38°	
HARVI I*		HPHVBN	1/8–1	1.5–4 x D1	ZU=4	38°	
HARVI II™*		UCDE	3/16–1	1.75–3.3 x D1	ZU=5	38°	
HARVI II*		UCDE	1/4–1	1.75–2 x D1	ZU=5	38°	
HARVI II		UGDE	1/4–1	3–5 x D1	ZU=5	43°	
HARVI I		HPHVT	1/2–1 1/4	1.25–1.8 x D1	ZU=4	38°	
HARVI II		UDDE	1/2–1	1.75–2.5 x D1	ZU=5	38°	
KenFeed™		KMDA	1/4–3/4	.05 x D1	ZU=6	20°	
KenFeed		KHDA	1/4–3/4	.03 x D1	ZU=6	20°	
Hard Steels		HPFDM	1/4–1	1.5–3.5 x D1	ZU=X	50°	
Hard Steels		HPRDM	3/16–3/4	1 x D1	ZU=X	45°	
Hard Steels Ball Nose		HPBNDM	1/8–3/4	1 x D1	ZU=4	15°	
Aluminum MaxiMet™		ABDF	3/16–1	2 x D1	ZU=2	45°	
Aluminum MaxiMet		ABDE	3/16–1	1.2–2 x D1	ZU=3	38°	
Aluminum MaxiMet		ABDF	1/4–1	1.25–1.5 x D1	ZU=2	45°	
Aluminum MaxiMet		ABDE	1/4–1	1.25–1.5 x D1	ZU=3	38°	
Aluminum		AADF	1/8–1	2–3.25 x D1	ZU=2	45°	
Aluminum		AADE	1/8–1	2–4 x D1	ZU=3	37°	
Aluminum		SFRHEC	1/4–1	2.25–3 x D1	ZU=3	37°	
CFRP		CCNC	1/4–1/2	3 x D1	ZU=X	25°	
CFRP		CDDC	1/4–1/2	3 x D1	ZU=6	25°	
CFRP		CBDB	1/4–1/2	3 x D1	ZU=X	15°	

	shank	center cutting	neck	P	M	K	N	S	H		product page(s)	cutting data page(s)
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		☑								☑ ☑	M63	M67
		☑								☑ ☑ ☑	M64	M67
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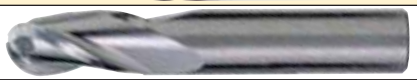
● first choice
○ alternate choice

beyond *Beyond™ grade.		series	diameter (inch)	length of cut	flute Z	helix	internal coolant
CFRP		CRBD	3/8–1/2	1.5–2 x D1	ZU=4	30°	
HP Finisher		HPFSS	1/8–3/4	2–4 x D1	ZU=3	35°	
HP Finisher		HPFSS	1/8–1	2–3.25 x D1	ZU=5	45°	
HP Finisher		HPFT	1/4–1	2.25–3 x D1	ZU=6	45°	
HP Rougher		HPRSS	1/4–3/4	2–3 x D1	ZU=3	35°	
HP Rougher		MDRHEC	5/16–3/4	2–2.6 x D1	ZU=4	25°	
HP Rougher		HPRST	1/4–1	1.5 x D1	ZU=X	45°	
GP		HEC	1/64–1	2–4 x D1	ZU=2	30°	
GOmill™		UEDE	5/64–1/2	1.25–2 x D1	ZU=3	38°	
GP		HEC	9/64–1	1.5–4 x D1	ZU=3	30°	
GOmill		UEDE	5/32–1/2	1.25–1.7 x D1	ZU=4	38°	
GP		HEC	1/64–1 1/4	1.6–2 x D1	ZU=4	30°	
GP		CRHEC	1/8–1	1.5–4 x D1	ZU=4	30°	
GP		HHEC	1/8–1	1.5–4 x D1	ZU=3	60°	
GOmill		UEBD	5/64–1/2	1.25–2 x D1	ZU=2	30°	
GP		BNEC	1/64–1	2–3 x D1	ZU=2	30°	
GOmill		UEBD	5/64–1/2	1.25–2 x D1	ZU=3	38°	
GP		BNEC	1/32–1/2	2–2.5 x D1	ZU=3	30°	
GP		BNEC	1/64–1	2–3 x D1	ZU=4	30°	
GP	General Application Portfolio Extension						
HP	High-Performance Portfolio Extension						

					shank	center cutting	neck	P	M	K	N	S	H						product page(s)	cutting data page(s)
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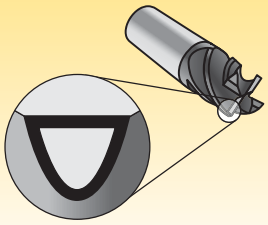
● first choice
○ alternate choice



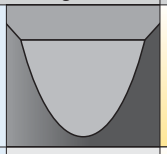
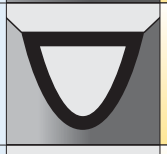
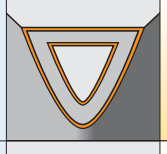
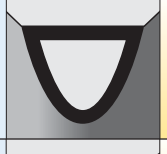
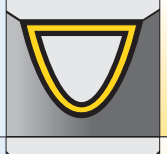
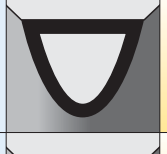
Coatings provide high-speed capability and are engineered for roughing to finishing.

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

wear resistance ⟷ toughness

Solid End Milling

Grade

Coating		Grade Description	05	10	15	20	25	30	35	40	45
K600		Carbide grade made from high-quality, micrograin materials for cutting all types of workpiece materials. Very high toughness ensures a controlled wear rate. The micrograin structure enables extremely sharp cutting edges.	N								
KCPM15		Coated carbide grade with thick PVD coating and optimized chemistry and process for increased wear resistance. Outstanding protection in milling stainless steel to mitigate crater, DOCN (depth-of-cut notching), and flank wear. Excellent performance up to 52 HRC. beyond	P M K								
KCN05		A pure, diamond-coated carbide for milling CFRP and graphite. It is a very tough and wear-resistant grade.	N								
KC610M		Coated fine-grain carbide with hard PVD coating (TiCN-TiN) particularly suitable for highly wear-resistant applications. Only use wet or with MQL (Minimum Quantity Lubrication).	P M N								
KC625M		Coated carbide grade with PVD (TiCN) coating. For universal use due to its high wear resistance and hardness. Only use wet or with MQL (Minimum Quantity Lubrication).	P K S								
KC633M		Coated carbide grade with PVD multilayer coating. KC633M is designed for dry milling most types of material, apart from the hardened variety. This grade is characterized by good hardness and wear resistance. It provides outstanding protection against cratering and abrasion.	P M S								
KC635M		Universal carbide grade with PVD coating (TiAlN). KC635M is a high-performance grade for finishing operations. This grade is characterized by high hardness and wear resistance.	P M K S								
KC639M		PVD (AlTiN) coated carbide on a submicron carbide substrate. This hard coating provides outstanding performance in milling hardened materials (58–65 HRC).	H								
KC643M		Coated fine-grain grade with PVD multilayer (AlTiN). KC643M is a very thin and hard PVD coating particularly suitable for cutting steel, cast iron, stainless steel (wet), and titanium (wet). This grade can be used for materials with hardness up to 52 HRC.	P M K S								
KC651M		Coated fine-grain carbide with thin and hard PVD coating (TiB_2) particularly suitable for machining aluminum, aluminum alloys, and for wear-resistant applications.	N								



Beyond™ Solid End Milling

High-Performance milling in a new dimension

Kennametal is pleased to announce KCPM15™ — the first Beyond grade for solid carbide end mills. KCPM15 features an improved high-performance carbide substrate with proprietary aluminum titanium nitride (AlTiN) PVD coating.

Features and Benefits

- Engineered to increase tool life and productivity by 30%.
- For use in milling steels and stainless steels.
- Improved resistance to cratering, flank wear, and depth-of-cut notching.

Workpiece Materials:

P	Steel
M	Stainless Steel
K	Cast Iron

Coating		Grade Description	
KCPM15	 AlTiN	Coated carbide grade with thick PVD coating and optimized chemistry and process for increased wear resistance. Outstanding protection in milling stainless steel to mitigate crater, DOCN (depth-of-cut notching), and flank wear. Excellent performance up to 52 HRC.	P M K

Conventional End Mill Cutting Edge

Conventional





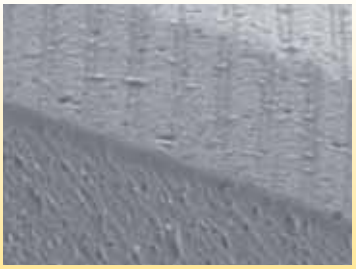


KCPM15 End Mill Cutting Edge

New KCPM15 grade







View: 1st and 2nd Relief.



HARVI™ Line Solid Carbide End Mills

Primary Application

HARVI takes high-performance roughing, semi-finishing, slotting, and profiling to the next level. The line is designed to provide maximum metal removal rates by achieving supreme surface conditions. A wide range of diameters and corner radii are available from stock.



NOTE: Unequal flute spacing.

Features and Benefits

Higher Productivity and Profitability

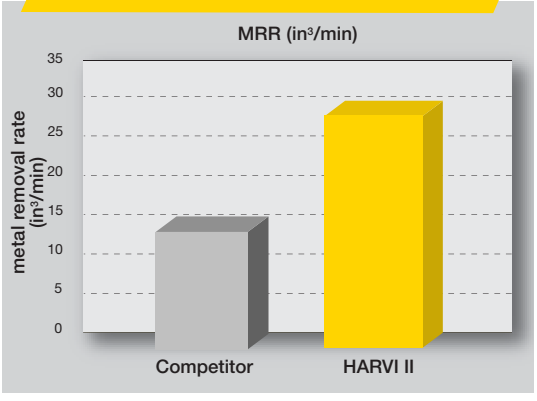
- Best suited for applications in the aerospace, medical, die and mold, automotive, and general engineering markets.
- Outstanding performance in stainless steel, titanium, INCONEL®, and other high-temperature alloys and steels.
- Increased metal removal rates in roughing and finishing operations.
- Excellent performance in both slotting and side milling operations.

Featured Application: Slotting an Engine Ring

Operation: Slotting
Customer: Aerospace manufacturer
Workpiece: Engine ring
Material: SST nickel-based alloy EZ3NCT25 (25% nickel, 13% chromium) at 245 HB
Solution: HARVI II™ 5-flute in KCPM15 (AlTiN coating)
Results: 90% increase in metal removal rate

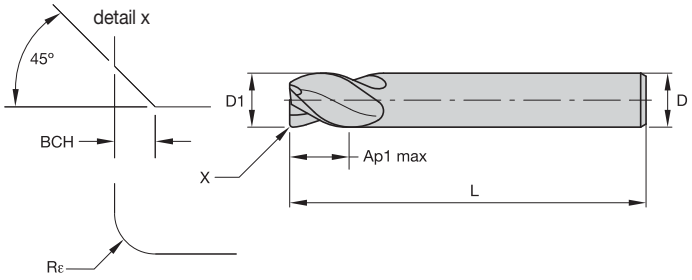
	COMPETITOR	HARVI II™
coating:	TiAlN	AlTiN
end mill:	4-flute .472" .04" radius	5-flute .472" .04" radius
material:	SST nickel-based alloy	SST nickel-based alloy
depth of cut (ap):	.44"	.44"
width of cut (ae):	.472"	.472"
speed (vc):	100 SFM	132 SFM
RPM (N):	800 RPM	1,060 RPM
feed rate (vf):	4.41 IPM	8.3 IPM
chip load per tooth (fz):	0.0014 IPT	0.0016 IPT
metal removal rate:	0.91 in³/min	1.73 in³/min

90% Productivity Increase!



- Center cutting.
- Unequal flute spacing minimizes chatter for smoother machining.

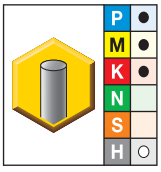


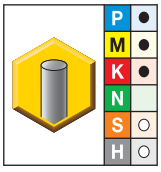


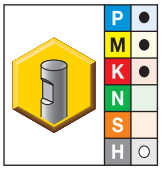


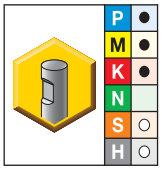
NEW!

beyond









● first choice
○ alternate choice

KCPM15	KC635M	KCPM15	KC635M	D1	D	Ap1 max	L	Rε	BCH
HPHV125S4025CH	–	–	–	1/8	1/8	1/4	1 1/2	–	.015
HPHV125S4025	–	–	–	1/8	1/8	1/4	1 1/2	–	–
HPHV125S4025LR015	–	–	–	1/8	1/8	1/4	2 1/2	.015	–
HPHV125S4025L	–	–	–	1/8	1/8	1/4	2 1/2	–	–
HPHV125S4050R015	–	–	–	1/8	1/8	1/2	2	.015	–
HPHV125S4050CH	–	–	–	1/8	1/8	1/2	2	–	.015
HPHV125S4050	–	–	–	1/8	1/8	1/2	2	–	–
HPHV125S4050LR015	–	–	–	1/8	1/8	1/2	2 1/2	.015	–
HPHV125S4050L	–	–	–	1/8	1/8	1/2	2 1/2	–	–
HPHV188S4031CH	–	–	–	3/16	3/16	5/16	1 1/2	–	.015
HPHV188S4031	–	–	–	3/16	3/16	5/16	1 1/2	–	–
HPHV188S4031LR015	–	–	–	3/16	3/16	5/16	2 1/2	.015	–
HPHV188S4031L	–	–	–	3/16	3/16	5/16	2 1/2	–	–
HPHV188S4063R015	–	–	–	3/16	3/16	5/8	2 1/4	.015	–
HPHV188S4063R030	–	–	–	3/16	3/16	5/8	2 1/4	.030	–
HPHV188S4063CH	–	–	–	3/16	3/16	5/8	2 1/4	–	.015
HPHV188S4063	–	–	–	3/16	3/16	5/8	2 1/4	–	–
HPHV188S4063LR015	–	–	–	3/16	3/16	5/8	2 1/2	.015	–
HPHV188S4063LR030	–	–	–	3/16	3/16	5/8	2 1/2	.030	–
HPHV188S4063L	–	–	–	3/16	3/16	5/8	2 1/2	–	–
HPHV250S4038R030	–	–	–	1/4	1/4	3/8	2	.030	–
HPHV250S4038CH	–	–	–	1/4	1/4	3/8	2	–	.015
HPHV250S4038	–	–	–	1/4	1/4	3/8	2	–	–
HPHV250S4038LR015	–	–	–	1/4	1/4	3/8	2 1/2	.015	–
HPHV250S4038LR030	–	–	–	1/4	1/4	3/8	2 1/2	.030	–
HPHV250S4038L	–	–	–	1/4	1/4	3/8	2 1/2	–	–
HPHV250S4050R015	–	–	–	1/4	1/4	1/2	2 1/2	.015	–
HPHV250S4050R030	–	–	–	1/4	1/4	1/2	2 1/2	.030	–
HPHV250S4050R060	–	–	–	1/4	1/4	1/2	2 1/2	.060	–
HPHV250S4050	–	–	–	1/4	1/4	1/2	2 1/2	–	–
HPHV250S4075R015	–	–	–	1/4	1/4	3/4	2 1/2	.015	–
HPHV250S4075R030	–	–	–	1/4	1/4	3/4	2 1/2	.030	–
HPHV250S4075R060	–	–	–	1/4	1/4	3/4	2 1/2	.060	–
HPHV250S4075CH	–	–	–	1/4	1/4	3/4	2 1/2	–	.015
HPHV250S4075	–	–	–	1/4	1/4	3/4	2 1/2	–	–
HPHV250S4100R015	–	–	–	1/4	1/4	1	3	.015	–

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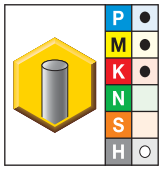

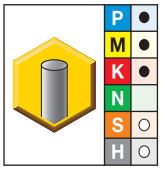

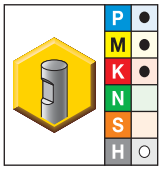

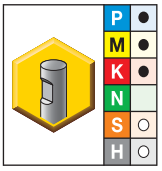

KCPM15	KC635M	KCPM15	KC635M	D1	D	Ap1 max	L	Rε	BCH
HPHV250S4100R030	–	–	–	1/4	1/4	1	3	.030	–
HPHV250S4100	–	–	–	1/4	1/4	1	3	–	–
HPHV250S4125R015	–	–	–	1/4	1/4	1 1/2	3 1/4	.015	–
HPHV250S4125R030	–	–	–	1/4	1/4	1 1/2	3 1/4	.030	–
HPHV250S4125CH	–	–	–	1/4	1/4	1 1/4	3 1/4	–	.015
HPHV250S4125	–	–	–	1/4	1/4	1 1/4	3 1/4	–	–
HPHV250S4175R015	–	–	–	1/4	1/4	1 3/4	4	.015	–
HPHV250S4175R030	–	–	–	1/4	1/4	1 3/4	4	.030	–
–	HPHV250S4175	–	–	1/4	1/4	1 3/4	4	–	–
HPHV312S4050R030	–	–	–	5/16	5/16	1/2	2	.030	–
HPHV312S4050CH	–	–	–	5/16	5/16	1/2	2	–	.015
HPHV312S4050	–	–	–	5/16	5/16	1/2	2	–	–
HPHV312S4050LR015	–	–	–	5/16	5/16	1/2	2 1/2	.015	–
HPHV312S4050LR030	–	–	–	5/16	5/16	1/2	2 1/2	.030	–
HPHV312S4050L	–	–	–	5/16	5/16	1/2	2 1/2	–	–
HPHV312S4075R015	–	–	–	5/16	5/16	3/4	2 1/2	.015	–
HPHV312S4075R030	–	–	–	5/16	5/16	3/4	2 1/2	.030	–
HPHV312S4075R060	–	–	–	5/16	5/16	3/4	2 1/2	.060	–
HPHV312S4075CH	–	–	–	5/16	5/16	3/4	2 1/2	–	.015
HPHV312S4075	–	–	–	5/16	5/16	3/4	2 1/2	–	–
HPHV312S4125R030	–	–	–	5/16	5/16	1 1/4	3 1/4	.030	–
–	–	–	HPHV312S4125	5/16	5/16	1 1/4	3 1/4	–	–
–	–	–	HPHV312S4163	5/16	5/16	1 5/8	4	–	–
HPHV375S4050R030	–	–	–	3/8	3/8	1/2	2	.030	–
HPHV375S4050CH	–	–	–	3/8	3/8	1/2	2	–	.020
HPHV375S4050	–	–	–	3/8	3/8	1/2	2	–	–
HPHV375S4050LR015	–	–	–	3/8	3/8	1/2	2 1/2	.015	–
HPHV375S4050LR030	–	–	–	3/8	3/8	1/2	2 1/2	.030	–
HPHV375S4050L	–	–	–	3/8	3/8	1/2	2 1/2	–	–
HPHV375S4088R015	–	–	–	3/8	3/8	7/8	2 1/2	.015	–
HPHV375S4088R030	–	–	–	3/8	3/8	7/8	2 1/2	.030	–
HPHV375S4088R060	–	–	–	3/8	3/8	7/8	2 1/2	.060	–
HPHV375S4088R090	–	–	–	3/8	3/8	7/8	2 1/2	.090	–
HPHV375S4088CH	–	–	–	3/8	3/8	7/8	2 1/2	–	.020
HPHV375S4088	–	–	–	3/8	3/8	7/8	2 1/2	–	–
HPHV375S4088LR015	–	–	–	3/8	3/8	7/8	3	.015	–
HPHV375S4088LR030	–	–	–	3/8	3/8	7/8	3	.030	–
HPHV375S4088LR060	–	–	–	3/8	3/8	7/8	3	.060	–
HPHV375S4088LR090	–	–	–	3/8	3/8	7/8	3	.090	–
HPHV375S4088L	–	–	–	3/8	3/8	7/8	3	–	–
HPHV375S4100R015	–	–	–	3/8	3/8	1	3	.015	–
HPHV375S4100R030	–	–	–	3/8	3/8	1	3	.030	–
HPHV375S4100R060	–	–	–	3/8	3/8	1	3	.060	–
HPHV375S4100	–	–	–	3/8	3/8	1	3	–	–
HPHV375S4125R015	–	–	–	3/8	3/8	1 1/4	3	.015	–
HPHV375S4125R030	–	–	–	3/8	3/8	1 1/4	3	.030	–

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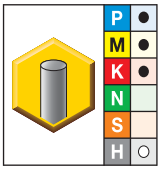

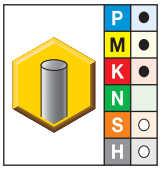

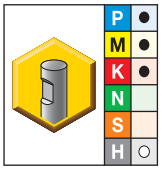

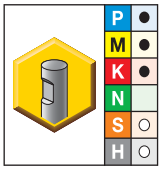

KCPM15	KC635M	KCPM15	KC635M	D1	D	Ap1 max	L	Rε	BCH
HPHV375S4125R060	–	–	–	3/8	3/8	1 1/4	3	.060	–
HPHV375S4125	–	–	–	3/8	3/8	1 1/4	3	–	–
HPHV375S4150R030	–	–	–	3/8	3/8	1 1/2	4	.030	–
HPHV375S4150R060	–	–	–	3/8	3/8	1 1/2	4	.060	–
HPHV375S4150	–	–	–	3/8	3/8	1 1/2	4	–	–
HPHV375S4250R030	–	–	–	3/8	3/8	2 1/2	4	.030	–
HPHV375S4250R060	–	–	–	3/8	3/8	2 1/2	4	.060	–
–	HPHV375S4250	–	–	3/8	3/8	2 1/2	4	–	–
HPHV438S4063CH	–	–	–	7/16	7/16	5/8	2 1/2	–	.020
–	HPHV438S4063	–	–	7/16	7/16	5/8	2 1/2	–	–
HPHV438S4088CH	–	–	–	7/16	7/16	7/8	2 1/2	–	.020
–	HPHV438S4088	–	–	7/16	7/16	7/8	2 1/2	–	–
HPHV438S4113R015	–	–	–	7/16	7/16	1 1/8	3 1/2	.015	–
–	HPHV438S4200	–	–	7/16	7/16	2	4	–	–
–	HPHV438S4300	–	–	7/16	7/16	3	5	–	–
–	–	HPHV500S4063R030	–	1/2	1/2	5/8	2 1/2	.030	–
–	–	HPHV500S4063R060	–	1/2	1/2	5/8	2 1/2	.060	–
–	–	HPHV500S4063	–	1/2	1/2	5/8	2 1/2	–	–
–	–	HPHV500S4063CH	–	1/2	1/2	5/8	2 1/2	–	.020
–	–	HPHV500S4063LR015	–	1/2	1/2	5/8	3	.015	–
–	–	HPHV500S4063LR030	–	1/2	1/2	5/8	3	.030	–
–	–	HPHV500S4063LR060	–	1/2	1/2	5/8	3	.060	–
–	–	HPHV500S4063L	–	1/2	1/2	5/8	3	–	–
–	–	HPHV500S4100R030	–	1/2	1/2	1	3	.030	–
–	–	HPHV500S4100R060	–	1/2	1/2	1	3	.060	–
–	–	HPHV500S4100CH	–	1/2	1/2	1	3	–	.020
–	–	HPHV500S4100	–	1/2	1/2	1	3	–	–
–	–	HPHV500S4125R015	–	1/2	1/2	1 1/4	3	.015	–
–	–	HPHV500S4125R030	–	1/2	1/2	1 1/4	3	.030	–
–	–	HPHV500S4125R060	–	1/2	1/2	1 1/4	3	.060	–
–	–	HPHV500S4125R090	–	1/2	1/2	1 1/4	3	.090	–
–	–	HPHV500S4125R120	–	1/2	1/2	1 1/4	3	.120	–
–	–	HPHV500S4125CH	–	1/2	1/2	1 1/4	3	–	.020
–	–	HPHV500S4125	–	1/2	1/2	1 1/4	3	–	–
–	–	HPHV500S4150R030	–	1/2	1/2	1 1/2	4	.030	–
–	–	HPHV500S4150R060	–	1/2	1/2	1 1/2	4	.060	–
–	–	HPHV500S4150CH	–	1/2	1/2	1 1/2	4	–	.020
–	–	HPHV500S4150	–	1/2	1/2	1 1/2	4	–	–
–	–	HPHV500S4163R030	–	1/2	1/2	1 5/8	4	.030	–
–	–	HPHV500S4163R060	–	1/2	1/2	1 5/8	4	.060	–
–	–	HPHV500S4163R120	–	1/2	1/2	1 5/8	4	.120	–
–	–	HPHV500S4163	–	1/2	1/2	1 5/8	4	–	–
–	–	HPHV500S4200R030	–	1/2	1/2	2	4	.030	–
–	–	–	HPHV500S4200R060	1/2	1/2	2	4	.060	–
–	–	HPHV500S4200CH	–	1/2	1/2	2	4	–	.020
–	–	HPHV500S4200	–	1/2	1/2	2	4	–	–

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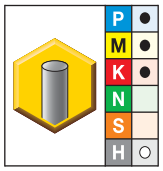

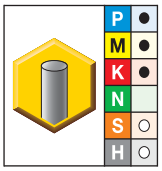

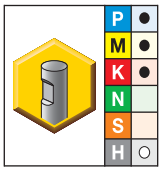

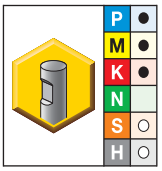

KCPM15	KC635M	KCPM15	KC635M	D1	D	Ap1 max	L	Rε	BCH
–	–	HPHV500S4250R030	–	1/2	1/2	2 1/2	4 1/2	.030	–
–	–	HPHV500S4250R060	–	1/2	1/2	2 1/2	4 1/2	.060	–
–	–	–	HPHV500S4250	1/2	1/2	2 1/2	4 1/2	–	–
–	–	HPHV500S4300R030	–	1/2	1/2	3	5	.030	–
–	–	HPHV500S4300R060	–	1/2	1/2	3	5	.060	–
–	–	–	HPHV500S4300	1/2	1/2	3	5	–	–
–	–	HPHV625S4075R060	–	5/8	5/8	3/4	3	.060	–
–	–	HPHV625S4075R120	–	5/8	5/8	3/4	3	.120	–
–	–	HPHV625S4075	–	5/8	5/8	3/4	3	–	–
–	–	HPHV625S4075CH	–	5/8	5/8	3/4	3	–	.020
–	–	HPHV625S4075LR015	–	5/8	5/8	3/4	3 1/2	.015	–
–	–	HPHV625S4075LR030	–	5/8	5/8	3/4	3 1/2	.030	–
–	–	HPHV625S4075LR060	–	5/8	5/8	3/4	3 1/2	.060	–
–	–	HPHV625S4075LR120	–	5/8	5/8	3/4	3 1/2	.120	–
–	–	HPHV625S4075L	–	5/8	5/8	3/4	3 1/2	–	–
–	–	HPHV625S4125R030	–	5/8	5/8	1 1/4	3 1/2	.030	–
–	–	HPHV625S4125R060	–	5/8	5/8	1 1/4	3 1/2	.060	–
–	–	HPHV625S4125R090	–	5/8	5/8	1 1/4	3 1/2	.090	–
–	–	HPHV625S4125R120	–	5/8	5/8	1 1/4	3 1/2	.120	–
–	–	HPHV625S4125CH	–	5/8	5/8	1 1/4	3 1/2	–	.020
–	–	HPHV625S4125	–	5/8	5/8	1 1/4	3 1/2	–	–
–	–	HPHV625S4163R030	–	5/8	5/8	1 5/8	3 1/2	.030	–
–	–	HPHV625S4163R120	–	5/8	5/8	1 5/8	3 1/2	.120	–
–	–	HPHV625S4163	HPHV625S4163	5/8	5/8	1 5/8	3 1/2	–	–
–	–	HPHV625S4163R060	HPHV625S4163R060	5/8	5/8	1 5/8	4 1/8	.060	–
–	–	–	HPHV625S4163CH	5/8	5/8	1 5/8	4 1/8	–	.020
–	–	HPHV625S4213R030	–	5/8	5/8	2 1/8	4	.030	–
–	–	HPHV625S4213R120	–	5/8	5/8	2 1/8	4	.120	–
–	–	HPHV625S4213	–	5/8	5/8	2 1/8	4	–	–
–	–	HPHV625S4225R060	–	5/8	5/8	2 1/4	5	.060	–
–	–	–	HPHV625S4225	5/8	5/8	2 1/4	5	–	–
–	–	–	HPHV625S4300	5/8	5/8	3	5 1/4	–	–
–	–	–	HPHV750S4088R030	3/4	3/4	7/8	3 1/2	.030	–
–	–	–	HPHV750S4088R060	3/4	3/4	7/8	3 1/2	.060	–
–	–	–	HPHV750S4088R120	3/4	3/4	7/8	3 1/2	.120	–
–	–	HPHV750S4088CH	–	3/4	3/4	7/8	3 1/2	–	.020
–	–	HPHV750S4088	–	3/4	3/4	7/8	3 1/2	–	–
–	–	HPHV750S4088LR030	–	3/4	3/4	7/8	4	.030	–
–	–	HPHV750S4088L	–	3/4	3/4	7/8	4	–	–
–	–	HPHV750S4150R015	–	3/4	3/4	1 1/2	4	.015	–
–	–	HPHV750S4150R030	–	3/4	3/4	1 1/2	4	.030	–
–	–	HPHV750S4150R060	–	3/4	3/4	1 1/2	4	.060	–
–	–	HPHV750S4150R090	–	3/4	3/4	1 1/2	4	.090	–
–	–	HPHV750S4150R120	–	3/4	3/4	1 1/2	4	.120	–
–	–	HPHV750S4150CH	–	3/4	3/4	1 1/2	4	–	.020
–	–	HPHV750S4150	–	3/4	3/4	1 1/2	4	–	–

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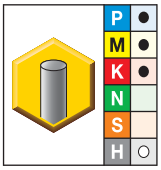
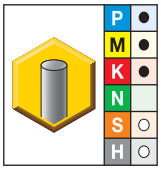
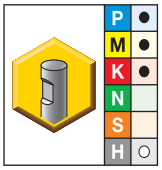
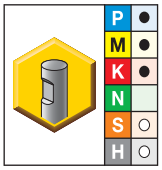








KCPM15	KC635M	KCPM15	KC635M	D1	D	Ap1 max	L	Rε	BCH
–	–	HPHV750S4163R030	–	3/4	3/4	1 5/8	4	.030	–
–	–	HPHV750S4163R060	–	3/4	3/4	1 5/8	4	.060	–
–	–	HPHV750S4163R120	–	3/4	3/4	1 5/8	4	.120	–
–	–	HPHV750S4163CH	–	3/4	3/4	1 5/8	4	–	.020
–	–	–	HPHV750S4163	3/4	3/4	1 5/8	4	–	–
–	–	HPHV750S4225R030	–	3/4	3/4	2 1/4	5	.030	–
–	–	HPHV750S4225R060	–	3/4	3/4	2 1/4	5	.060	–
–	–	HPHV750S4225CH	–	3/4	3/4	2 1/4	5	–	.020
–	–	HPHV750S4225	HPHV750S4225	3/4	3/4	2 1/4	5	–	–
–	–	–	HPHV750S4300R030	3/4	3/4	3	6	.030	–
–	–	–	HPHV750S4300R060	3/4	3/4	3	6	.060	–
–	–	HPHV750S4300CH	–	3/4	3/4	3	6	–	.020
–	–	HPHV750S4300	–	3/4	3/4	3	6	–	–
–	–	HPHV750S4400R030	–	3/4	3/4	4	6 1/4	.030	–
–	–	HPHV750S4400R060	–	3/4	3/4	4	6 1/4	.060	–
–	–		HPHV750S4400	3/4	3/4	4	6 1/4	–	–
–	–	HPHV1000S4150R030	–	1	1	1 1/2	4	.030	–
–	–	HPHV1000S4150R060	–	1	1	1 1/2	4	.060	–
–	–	HPHV1000S4150R090	–	1	1	1 1/2	4	.090	–
–	–	HPHV1000S4150R120	–	1	1	1 1/2	4	.120	–
–	–	HPHV1000S4150R250	–	1	1	1 1/2	4	.250	–
–	–	HPHV1000S4150CH	–	1	1	1 1/2	4	–	.020
–	–	HPHV1000S4150	–	1	1	1 1/2	4	–	–
–	–	HPHV1000S4200R030	–	1	1	2	4	.030	–
–	–	HPHV1000S4200R060	–	1	1	2	4	.060	–
–	–	HPHV1000S4200R120	–	1	1	2	4	.120	–
–	–	HPHV1000S4200R250	–	1	1	2	4	.250	–
–	–	–	HPHV1000S4200CH	1	1	2	5	–	.020
–	–	HPHV1000S4200	HPHV1000S4200	1	1	2	5	–	–
–	–	HPHV1000S4225R030	–	1	1	2 1/4	5	.030	–
–	–	HPHV1000S4225R060	–	1	1	2 1/4	5	.060	–
–	–	HPHV1000S4225CH	–	1	1	2 1/4	5	–	.020
–	–	HPHV1000S4225	–	1	1	2 1/4	5	–	–
–	–	HPHV1000S4263R030	–	1	1	2 5/8	5	.030	–
–	–	HPHV1000S4263CH	–	1	1	2 5/8	5	–	.020
–	–	HPHV1000S4263	–	1	1	2 5/8	5	–	–
–	–	HPHV1000S4300R030	–	1	1	3	6	.030	–
–	–	HPHV1000S4300R060	–	1	1	3	6	.060	–
–	–	HPHV1000S4300CH	HPHV1000S4300	1	1	3	6	–	–
–	–	HPHV1000S4400R030	–	1	1	4	7	.030	–
–	–	HPHV1000S4400R060	–	1	1	4	7	.060	–
–	–	HPHV1000S4400CH	–	1	1	4	7	–	.020
–	–	–	HPHV1000S4400	1	1	4	7	–	–
–	–	HPHV1250S4225R030	–	1 1/4	1 1/4	2 1/4	5	.030	–
–	–	HPHV1250S4225R120	–	1 1/4	1 1/4	2 1/4	5	.120	–
–		HPHV1250S4225CH	–	1 1/4	1 1/4	2 1/4	5	–	.020
–	–	–	HPHV1250S4225	1 1/4	1 1/4	2 1/4	5	–	–

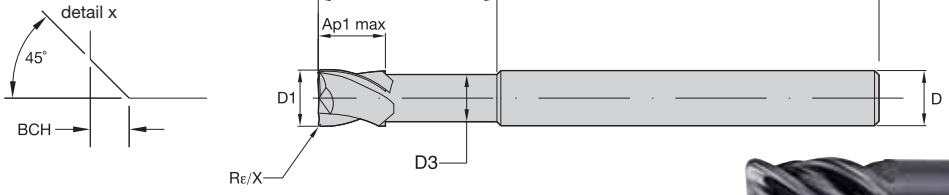
NOTE: For application data, see page M26.

End Mill Tolerances

D1	tolerance	D	tolerance h6
All	+.000/-.002"	≤1/8"	+0/-.00024"
		>1/8–1/4"	+0/-.00031"
		>1/4–3/8"	+0/-.00035"
		>3/8–23/32"	+0/-.00043"
		>23/32–1 3/16"	+0/-.00051"

- Center cutting.
- Unequal flute spacing minimizes chatter for smoother machining.

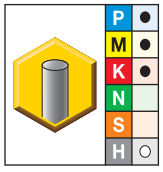


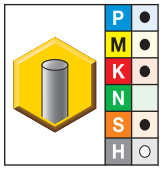




NEW!

beyond





● first choice
○ alternate choice

KCPM15	KC633M	D1	D	D3	Ap1 max	L3	L	Rε	BCH
UADE0250J4AQA	**UADE0250J4AQA**	1/4	1/4	.235	3/8	1 1/4	4	.015	—
UADE0250J4AQB	**UADE0250J4AQB**	1/4	1/4	.235	3/8	1 1/4	4	.030	—
—	**UADE0250J4AQCH**	1/4	1/4	.235	3/8	1 1/4	4	—	.016
—	**UADE0375J4AQC**	3/8	3/8	.353	1/2	1 7/8	4	.060	—
—	**UADE0375J4AQCH**	3/8	3/8	.353	1/2	1 7/8	4	—	.020
UADE0375J4AQA	**UADE0375J4AQA**	3/8	3/8	.345	1/2	2	4	.015	—
UADE0375J4AQB	**UADE0375J4AQB**	3/8	3/8	.345	1/2	2	4	.030	—
UADE0500J4AQB	**UADE0500J4AQB**	1/2	1/2	.470	5/8	2 1/4	4	.030	—
UADE0625J4AQB	**UADE0625J4AQB**	5/8	5/8	.587	3/4	2 1/4	4	.030	—
UADE0750J4AQB	**UADE0750J4AQB**	3/4	3/4	.700	1	2 1/4	4 1/2	.030	—
UADE0750J4BQB	**UADE0750J4BQB**	3/4	3/4	.700	1	3 1/4	5 1/2	.030	—
UADE1000J4BQB	**UADE1000J4BQB**	1	1	.939	1 1/8	3 1/4	5 1/2	.030	—

NOTE: For application data, see page M27.



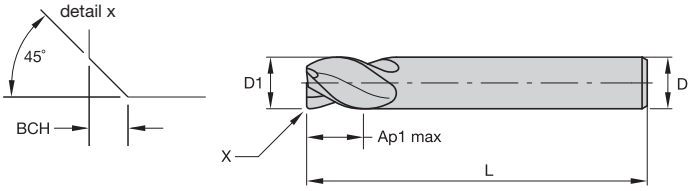
For Weldon® shank offering, please refer to www.kennametal.com/e-catalog.

End Mill Tolerances

D1	tolerance	D	tolerance h6
All	+.000/-.002"	≤1/8"	+0/-.00024"
		>1/8–1/4"	+0/-.00031"
		>1/4–3/8"	+0/-.00035"
		>3/8–23/32"	+0/-.00043"
		>23/32–1 3/16"	+0/-.00051"

- Kennametal standard dimensions.
- Center cutting.
- Unequal flute spacing minimizes chatter for smoother machining.

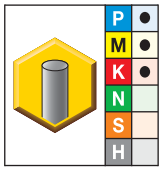






NEW!

beyond



● first choice
○ alternate choice

KCPM15	D1	D	Ap1 max	L	BCH
HPRSHV500S4600CH	1/2	1/2	5/8	6	.020
HPRSHV500S4600	1/2	1/2	5/8	6	—
HPRSHV625S4600CH	5/8	5/8	3/4	6	.020
HPRSHV625S4600	5/8	5/8	3/4	6	—
HPRSHV750S4600	3/4	3/4	1	6	—
HPRSHV750S4600CH	3/4	3/4	1	6	.020
HPRSHV750S4500CH	3/4	3/4	1	5	.020
HPRSHV1000S4600CH	1	1	1 1/8	6	.020
HPRSHV1000S4600	1	1	1 1/8	6	—
HPRSHV1000S4700CH	1	1	1 1/8	7	.020

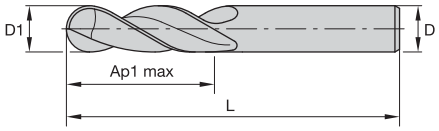
NOTE: For application data, see page M27.

End Mill Tolerances

D1	tolerance	D	tolerance h6
All	+.000/-.002"	≤1/8"	+0/-.00024"
		>1/8–1/4"	+0/-.00031"
		>1/4–3/8"	+0/-.00035"
		>3/8–23/32"	+0/-.00043"
		>23/32–1 3/16"	+0/-.00051"

- Center cutting.
- Unequal flute spacing minimizes chatter for smoother machining.

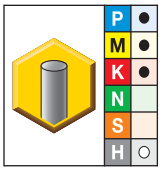


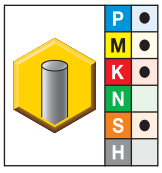


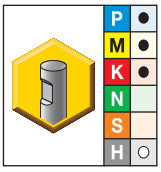


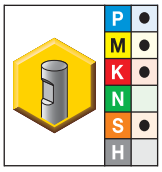
NEW!

beyond









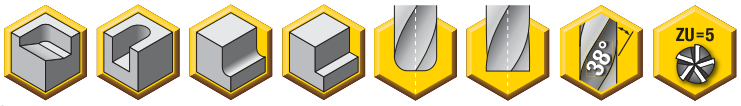
● first choice
○ alternate choice

KCPM15	KC633M	KCPM15	KC633M	D1	D	Ap1 max	L
HPHVBN125S4050	**HPHVBN125S4050**	–	–	1/8	1/8	1/2	2
–	**HPHVBN156S4050**	–	–	5/32	3/16	9/16	2
–	**HPHVBN094S4050**	–	–	3/32	1/8	3/16	1 1/2
HPHVBN188S4063	**HPHVBN188S4063**	–	–	3/16	3/16	5/8	2 1/4
HPHVBN250S4075	**HPHVBN250S4075**	–	–	1/4	1/4	3/4	2 1/2
HPHVBN312S4075	**HPHVBN312S4075**	–	–	5/16	5/16	3/4	2 1/2
HPHVBN375S4088	**HPHVBN375S4088**	–	–	3/8	3/8	7/8	2 1/2
HPHVBN438S4088	**HPHVBN438S4088**	–	–	7/16	7/16	7/8	2 1/2
–	–	**HPHVBN500S4100**	**HPHVBN500S4100**	1/2	1/2	1	3
–	–	**HPHVBN500S4125**	**HPHVBN500S4125**	1/2	1/2	1 1/4	3
–	–	**HPHVBN625S4125**	**HPHVBN625S4125**	5/8	5/8	1 1/4	3 1/2
–	–	**HPHVBN750S4150**	**HPHVBN750S4150**	3/4	3/4	1 1/2	4
–	–	**HPHVBN1000S4150**	**HPHVBN1000S4150**	1	1	1 1/2	4

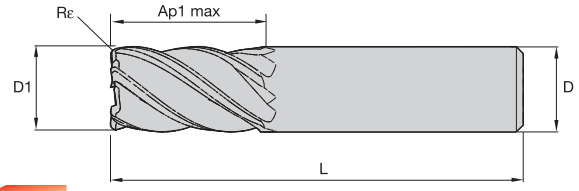
NOTE: For application data, see page M27.

End Mill Tolerances

D1	tolerance	D	tolerance h6
All	+.000/-.002"	≤1/8"	+0/-.00024"
		>1/8–1/4"	+0/-.00031"
		>1/4–3/8"	+0/-.00035"
		>3/8–23/32"	+0/-.00043"
		>23/32–1 3/16"	+0/-.00051"



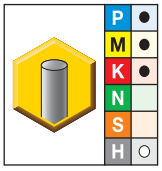
- Kennametal standard dimensions.
- Non-center cutting.
- Unequal flute spacing minimizes chatter for smoother machining.
- Single tool for both roughing and finishing operations for fewer setups.
- Five-flute geometry enables slotting up to 1 x D.

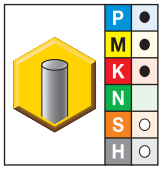


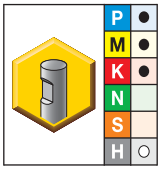


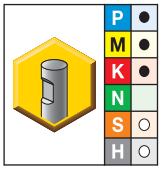
NEW!

beyond







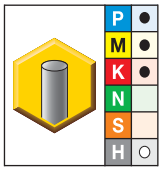


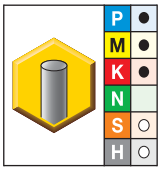
● first choice
○ alternate choice

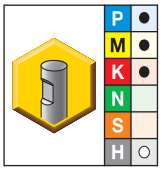
KCPM15	KC643M	KCPM15	KC643M	D1	D	Ap1 max	L	Rε
UCDE188J5BRA	UCDE188J5BRA	–	–	3/16	3/16	5/8	2 1/4	.015
UCDE188J5BRB	UCDE188J5BRB	–	–	3/16	3/16	5/8	2 1/4	.030
UCDE188J5BS	UCDE188J5BS	–	–	3/16	3/16	5/8	2 1/4	–
–	UCDE219J5BS	–	–	7/32	1/4	5/8	2 1/2	–
UCDE250J5BRA	UCDE250J5BRA	–	–	1/4	1/4	3/4	2 1/2	.015
UCDE250J5BRB	UCDE250J5BRB	–	–	1/4	1/4	3/4	2 1/2	.030
UCDE250J5BS	UCDE250J5BS	–	–	1/4	1/4	3/4	2 1/2	–
–	UCDE281J5BS	–	–	9/32	5/16	3/4	2 1/2	–
UCDE312J5BRA	UCDE312J5BRA	–	–	5/16	5/16	3/4	2 1/2	.015
UCDE312J5BRB	UCDE312J5BRB	–	–	5/16	5/16	3/4	2 1/2	.030
UCDE312J5BS	UCDE312J5BS	–	–	5/16	5/16	3/4	2 1/2	–
–	UCDE344J5BS	–	–	11/32	3/8	1	2 1/2	–
UCDE375J5BRA	UCDE375J5BRA	–	–	3/8	3/8	7/8	2 1/2	.015
UCDE375J5BRB	UCDE375J5BRB	–	–	3/8	3/8	7/8	2 1/2	.030
UCDE375J5BS	UCDE375J5BS	–	–	3/8	3/8	7/8	2 1/2	–
–	UCDE375J5CRA	–	–	3/8	3/8	1	3	.015
–	UCDE375J5CRB	–	–	3/8	3/8	1	3	.030
–	UCDE438J5BS	–	–	7/16	7/16	1	2 1/2	–
UCDE500J5BRA	UCDE500J5BRA	UCDE500K5BRA	UCDE500K5BRA	1/2	1/2	1 1/4	3	.015
UCDE500J5BRB	UCDE500J5BRB	UCDE500K5BRB	UCDE500K5BRB	1/2	1/2	1 1/4	3	.030
–	UCDE500J5BRD	–	–	1/2	1/2	1 1/4	3	.060
UCDE500J5BRF	UCDE500J5BRF	UCDE500K5BRF	UCDE500K5BRF	1/2	1/2	1 1/4	3	.120
UCDE500J5BS	UCDE500J5BS	UCDE500K5BS	UCDE500K5BS	1/2	1/2	1 1/4	3	–
–	UCDE562J5BRA	–	–	9/16	5/8	1 1/4	3 1/2	.015
–	UCDE562J5BRB	–	–	9/16	5/8	1 1/4	3 1/2	.030
–	UCDE562J5BS	–	–	9/16	5/8	1 1/4	3 1/2	–
–	UCDE625J5BRA	–	–	5/8	5/8	1 1/4	3 1/2	.015
UCDE625J5BRB	UCDE625J5BRB	UCDE625K5BRB	UCDE625K5BRB	5/8	5/8	1 1/4	3 1/2	.030
–	UCDE625J5BRD	–	–	5/8	5/8	1 1/4	3 1/2	.060
UCDE625J5BS	UCDE625J5BS	UCDE625K5BS	UCDE625K5BS	5/8	5/8	1 1/4	3 1/2	–
–	UCDE750J5BRA	–	–	3/4	3/4	1 1/2	4	.015
UCDE750J5BRB	UCDE750J5BRB	UCDE750K5BRB	UCDE750K5BRB	3/4	3/4	1 1/2	4	.030
UCDE750J5BRD	UCDE750J5BRD	–	–	3/4	3/4	1 1/2	4	.060
UCDE750J5BRE	UCDE750J5BRE	–	–	3/4	3/4	1 1/2	4	.090
UCDE750J5BRF	UCDE750J5BRF	UCDE750K5BRF	UCDE750K5BRF	3/4	3/4	1 1/2	4	.120
UCDE750J5BS	UCDE750J5BS	UCDE750K5BS	UCDE750K5BS	3/4	3/4	1 1/2	4	–
–	UCDE750J5CRB	–	–	3/4	3/4	1 5/8	4	.030
–	UCDE750J5CRD	–	–	3/4	3/4	1 5/8	4	.060

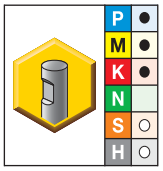
(continued)

(continued)









KCPM15	KC643M	KCPM15	KC643M	D1	D	Ap1 max	L	Rε
–	**UCDE750J5CRE**	–	–	3/4	3/4	1 5/8	4	.090
–	**UCDE750J5CRF**	–	–	3/4	3/4	1 5/8	4	.120
–	**UCDE750J5CS**	–	–	3/4	3/4	1 5/8	4	–
–	**UCDE1000J5BRA**	–	–	1	1	1 3/4	4 1/2	.015
UCDE1000J5BRB	**UCDE1000J5BRB**	**UCDE1000K5BRB**	**UCDE1000K5BRB**	1	1	1 3/4	4 1/2	.030
UCDE1000J5BRD	**UCDE1000J5BRD**	–	–	1	1	1 3/4	4 1/2	.060
UCDE1000J5BRE	**UCDE1000J5BRE**	–	–	1	1	1 3/4	4 1/2	.090
UCDE1000J5BRF	**UCDE1000J5BRF**	**UCDE1000K5BRF**	**UCDE1000K5BRF**	1	1	1 3/4	4 1/2	.120
UCDE1000J5BS	**UCDE1000J5BS**	**UCDE1000K5BS**	**UCDE1000K5BS**	1	1	1 3/4	4 1/2	–

NOTE: For application data, see page M28.

End Mill Tolerances

D1	tolerance	D	tolerance h6
All	+.000/-.002"	≤1/8"	+0/-.00024"
		>1/8–1/4"	+0/-.00031"
		>1/4–3/8"	+0/-.00035"
		>3/8–23/32"	+0/-.00043"
		>23/32–1 3/16"	+0/-.00051"

Carbide Recycling

Help preserve and protect our planet!

It's easy for your company to be environmentally conscious with the Kennametal Carbide Recycling Program.

By sending us your used carbide tools, you help preserve and protect the environment and ensure that these products are recycled responsibly. Kennametal accepts any coated or non-coated carbide items, including inserts, drills, reamers, and taps.

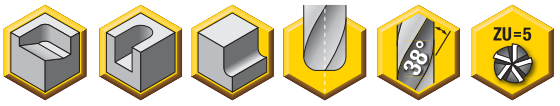


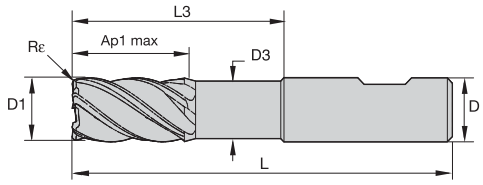
By using the Kennametal Carbide Recycling Program, you will receive:

- A partner who cares about a sustainable environment.
- Easy-to-use web portal to value your used carbide.
- Access to our popular Green Box™ options for carbide collection.
- Systematic and efficient disposal of carbide materials.
- Improved profitability.

Program is not currently available in all geographical areas.
For more information, please visit **www.kennametal.com/carbiderecycling.**

- Non-center cutting.
- Unequal flute spacing minimizes chatter for smoother machining.
- Single tool for both roughing and finishing operations for fewer setups.
- Five-flute geometry enables slotting up to 1 x D.

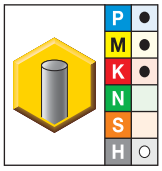


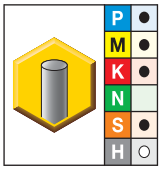


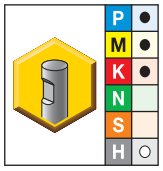


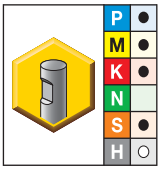
NEW!

beyond









● first choice
○ alternate choice

KCPM15	KC643M	KCPM15	KC643M	D1	D	D3	Ap1 max	L3	L	Rε
UCDE250J5ARA	**UCDE250J5ARA**	–	–	1/4	1/4	.235	1/2	1 1/4	4	.015
UCDE375J5ARA	**UCDE375J5ARA**	–	–	3/8	3/8	.353	7/8	1 7/8	4	.015
–	–	**UCDE500K5ARB**	**UCDE500K5ARB**	1/2	1/2	.470	1 1/4	2 1/4	4	.030
–	–	**UCDE625K5ARB**	**UCDE625K5ARB**	5/8	5/8	.588	1 1/4	2 1/4	4	.030
–	–	**UCDE750K5ARB**	**UCDE750K5ARB**	3/4	3/4	.705	1 1/2	3 1/4	5 1/2	.030
–	–	**UCDE1000K5ARB**	**UCDE1000K5ARB**	1	1	.940	1 3/4	3 1/4	5 1/2	.030

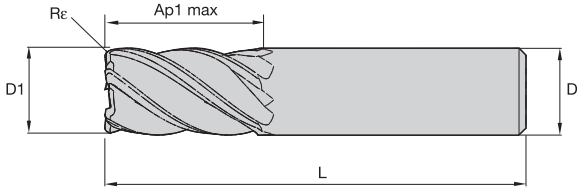
NOTE: For application data, see page M28.

End Mill Tolerances

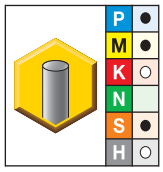
D1	tolerance	D	tolerance h6
All	+.000/-.002"	≤1/8"	+0/-.00024"
		>1/8–1/4"	+0/-.00031"
		>1/4–3/8"	+0/-.00035"
		>3/8–23/32"	+0/-.00043"
		>23/32–1 3/16"	+0/-.00051"

- Kennametal standard dimensions.
- Non-center cutting.
- Unequal flute spacing minimizes chatter for smoother machining.
- For finishing and semi-finishing applications.







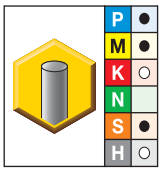


● first choice
○ alternate choice

KC643M	D1	D	Ap1 max	L	Rε
UGDE0250J5AE	1/4	1/4	3/4	2 1/2	–
UGDE0250J5ARA	1/4	1/4	3/4	2 1/2	.0156
UGDE0250J5ARB	1/4	1/4	3/4	2 1/2	.0313
UGDE0250J5BE	1/4	1/4	1 1/4	3	–
UGDE0250J5BRA	1/4	1/4	1 1/4	3	.0156
UGDE0250J5BRB	1/4	1/4	1 1/4	3	.0313
UGDE0312J5AE	5/16	5/16	15/16	3	–
UGDE0312J5ARA	5/16	5/16	15/16	3	.0156
UGDE0312J5ARB	5/16	5/16	15/16	3	.0313
UGDE0312J5BE	5/16	5/16	1 1/4	3 1/2	–
UGDE0312J5BRA	5/16	5/16	1 1/4	3 1/2	.0156
UGDE0312J5BRB	5/16	5/16	1 1/4	3 1/2	.0313
UGDE0375J5AE	3/8	3/8	1 1/8	4	–
UGDE0375J5ARA	3/8	3/8	1 1/8	4	.0156
UGDE0375J5ARB	3/8	3/8	1 1/8	4	.0313
UGDE0375J5ARC	3/8	3/8	1 1/8	4	.0625
UGDE0375J5BE	3/8	3/8	1 7/8	4	–
UGDE0375J5BRA	3/8	3/8	1 7/8	4	.0156
UGDE0375J5BRB	3/8	3/8	1 7/8	4	.0313
UGDE0375J5BRC	3/8	3/8	1 7/8	4	.0625
UGDE0500J5AE	1/2	1/2	1 1/2	4	–
UGDE0500J5ARA	1/2	1/2	1 1/2	4	.0156
UGDE0500J5ARB	1/2	1/2	1 1/2	4	.0313
UGDE0500J5ARC	1/2	1/2	1 1/2	4	.0625
UGDE0500J5BE	1/2	1/2	2 1/2	5	–
UGDE0500J5BRA	1/2	1/2	2 1/2	5	.0156
UGDE0500J5BRB	1/2	1/2	2 1/2	5	.0313
UGDE0500J5BRC	1/2	1/2	2 1/2	5	.0625
UGDE0625J5AE	5/8	5/8	1 7/8	5	–
UGDE0625J5ARA	5/8	5/8	1 7/8	5	.0156
UGDE0625J5ARB	5/8	5/8	1 7/8	5	.0313
UGDE0625J5ARC	5/8	5/8	1 7/8	5	.0625
UGDE0625J5ARD	5/8	5/8	1 7/8	5	.1250
UGDE0625J5BE	5/8	5/8	3 1/8	6	–
UGDE0625J5BRA	5/8	5/8	3 1/8	6	.0156
UGDE0625J5BRB	5/8	5/8	3 1/8	6	.0313

(continued)

(continued)



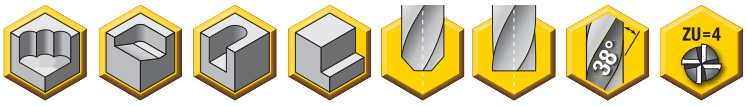
KC643M	D1	D	Ap1 max	L	Rε
UGDE0625J5BRC	5/8	5/8	3 1/8	6	.0625
UGDE0625J5BRD	5/8	5/8	3 1/8	6	.1250
UGDE0750J5AE	3/4	3/4	2 1/4	5	—
UGDE0750J5ARA	3/4	3/4	2 1/4	5	.0156
UGDE0750J5ARB	3/4	3/4	2 1/4	5	.0313
UGDE0750J5ARC	3/4	3/4	2 1/4	5	.0625
UGDE0750J5ARD	3/4	3/4	2 1/4	5	.1250
UGDE0750J5BE	3/4	3/4	3 3/4	7	—
UGDE0750J5BRA	3/4	3/4	3 3/4	7	.0156
UGDE0750J5BRB	3/4	3/4	3 3/4	7	.0313
UGDE0750J5BRC	3/4	3/4	3 3/4	7	.0625
UGDE0750J5BRD	3/4	3/4	3 3/4	7	.1250
UGDE1000J5AE	1	1	3	6	—
UGDE1000J5ARA	1	1	3	6	.0156
UGDE1000J5ARB	1	1	3	6	.0313
UGDE1000J5ARC	1	1	3	6	.0625
UGDE1000J5ARD	1	1	3	6	.1250
UGDE1000J5BE	1	1	5	7 1/2	—
UGDE1000J5BRA	1	1	5	7 1/2	.0156
UGDE1000J5BRB	1	1	5	7 1/2	.0313
UGDE1000J5BRC	1	1	5	7 1/2	.0625
UGDE1000J5BRD	1	1	5	7 1/2	.1250

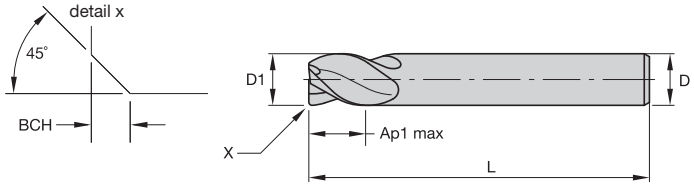
NOTE: For application data, see page M29.

End Mill Tolerances

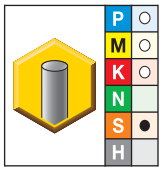
D1	tolerance	D	tolerance h6
All	+.000/-.002"	≤1/8"	+0/-.00024"
		>1/8–1/4"	+0/-.00031"
		>1/4–3/8"	+0/-.00035"
		>3/8–23/32"	+0/-.00043"
		>23/32–1 3/16"	+0/-.00051"

• Center cutting.









● first choice
○ alternate choice

KC643M	D1	D	Ap1 max	L	BCH
HPHVT500S4063CH	1/2	1/2	5/8	2 1/2	.020
HPHVT500S4063	1/2	1/2	5/8	2 1/2	—
HPHVT500S4125CH	1/2	1/2	1 1/4	3	.020
HPHVT500S4125	1/2	1/2	1 1/4	3	—
HPHVT625S4075	5/8	5/8	3/4	3	—
HPHVT625S4075CH	5/8	5/8	3/4	3	.020
HPHVT625S4125CH	5/8	5/8	1 1/4	3 1/2	.020
HPHVT625S4125	5/8	5/8	1 1/4	3 1/2	—
HPHVT750S4088CH	3/4	3/4	7/8	3 1/2	.020
HPHVT750S4088	3/4	3/4	7/8	3 1/2	—
HPHVT750S4150CH	3/4	3/4	1 1/2	4	.020
HPHVT750S4150	3/4	3/4	1 1/2	4	—
HPHVT1000S4150CH	1	1	1 1/2	4	.020
HPHVT1000S4150	1	1	1 1/2	4	—
HPHVT1250S4225CH	1 1/4	1 1/4	2 1/4	5	.020
HPHVT1250S4225	1 1/4	1 1/4	2 1/4	5	—

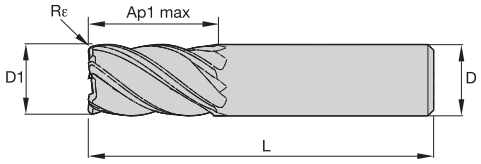
NOTE: For application data, see page M29.

End Mill Tolerances

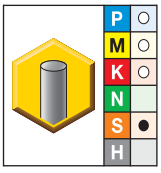
D1	tolerance	D	tolerance h6
All	+.000/-.002"	≤1/8"	+0/-.00024"
		>1/8–1/4"	+0/-.00031"
		>1/4–3/8"	+0/-.00035"
		>3/8–23/32"	+0/-.00043"
		>23/32–1 3/16"	+0/-.00051"

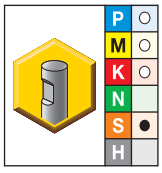
- Kennametal standard dimensions.
- Non-center cutting.
- Unequal flute spacing minimizes chatter for smoother machining.
- Single tool for both roughing and finishing operations for fewer setups.
- Optimized geometry for titanium machining.
- Five-flute geometry enables slotting up to 1 x D.











● first choice
○ alternate choice

KC643M	KC643M	D1	D	Ap1 max	L	Rε
UDDE500J5BRA	**UDDE500K5BRA**	1/2	1/2	1 1/4	3	.015
UDDE500J5BRB	**UDDE500K5BRB**	1/2	1/2	1 1/4	3	.030
UDDE500J5BRF	**UDDE500K5BRF**	1/2	1/2	1 1/4	3	.120
UDDE500J5BS	**UDDE500K5BS**	1/2	1/2	1 1/4	3	—
UDDE625J5BRB	**UDDE625K5BRB**	5/8	5/8	1 1/4	3 1/2	.030
UDDE625J5BS	**UDDE625K5BS**	5/8	5/8	1 1/4	3 1/2	—
UDDE750J5BRB	**UDDE750K5BRB**	3/4	3/4	1 1/2	4	.030
UDDE750J5BRF	**UDDE750K5BRF**	3/4	3/4	1 1/2	4	.120
UDDE750J5BS	**UDDE750K5BS**	3/4	3/4	1 1/2	4	—
UDDE1000J5BRB	**UDDE1000K5BRB**	1	1	1 3/4	4 1/2	.030
UDDE1000J5BRF	**UDDE1000K5BRF**	1	1	1 3/4	4 1/2	.120
UDDE1000J5BS	**UDDE1000K5BS**	1	1	1 3/4	4 1/2	—

NOTE: For application data, see page M30.

End Mill Tolerances

D1	tolerance	D	tolerance h6
All	+.000/-.002"	≤1/8"	+0/-.00024"
		>1/8–1/4"	+0/-.00031"
		>1/4–3/8"	+0/-.00035"
		>3/8–23/32"	+0/-.00043"
		>23/32–1 3/16"	+0/-.00051"

High-Performance Solid Carbide End Mills

SAFE-λOCK™
by HAIMER

In High-Performance Cutting (HPC), slow microcreeping can cause the cutting tool to be pulled out of the chuck, **turning high-quality workpieces to scrap.**

Be on the Safe Side with SAFE-λOCK™ in High-Performance Cutting (HPC)







Benefits

- Highly accurate clamping due to positive connection.
- No loss of accuracy.
- No pull out or spinning of the tool.
- No damage to the workpiece or machine.
- Groove on tool shank is directed so the tool will be pulled into the chuck (depending on direction of rotation).



Order Information

Kennametal high-performance end mills with a shank diameter of 1/2" and larger are available with **SAFE-λOCK™** technology, as a special tool, upon request. Please contact your local customer service location to receive a quote.

Features

- Form-closed clamping.
- High accuracy clamping.
- Helical grooves.

Functions

- No pull out.
- Excellent runout.
- Adjustable clamping length.

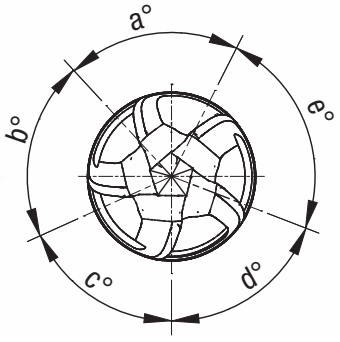
Benefits

- Reduce scrap rate.
- Higher tool life.
- No need to change NC program after regrinding.



Customized-Solution Example for Highest Metal Removal Rates





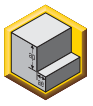
The HARVI II UDDE proprietary design with **unequal flute spacing** and unique core geometry for chatter-free machining enables slotting operations in titanium up to 1 x D.

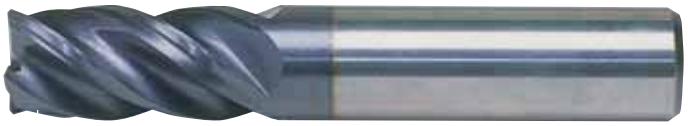


SAFE-λOCK™

The safety belt for high-performance solid carbide end mills provides a form-closed clamping with high accuracy and helical grooves for length adjustment.

HPHV





Material Group		Side Milling (A) and Slotting (B) A ap	A ae	B ap	KCPM15 Cutting Speed — vc SFM min	KCPM15 max	KC635M min	KC635M max	Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%. D1 — Diameter inch	1/8 0.125	3/16 0.188	1/4 0.250	5/16 0.313	3/8 0.375	7/16 0.438	1/2 0.500	5/8 0.625	3/4 0.750	1 1.000	1 1/4 1.250
P	1	1.25 x D	0.5 x D	1 x D	490	660	490	660	fz	0.0009	0.0014	0.0018	0.0023	0.0027	0.0031	0.0035	0.0039	0.0043	0.0050	0.0062
	2	1.25 x D	0.5 x D	1 x D	460	620	460	620	fz	0.0009	0.0014	0.0018	0.0023	0.0027	0.0031	0.0035	0.0039	0.0043	0.0050	0.0062
	3	1.25 x D	0.5 x D	1 x D	390	520	390	520	fz	0.0007	0.0011	0.0015	0.0020	0.0023	0.0026	0.0029	0.0034	0.0038	0.0046	0.0057
	4	1.25 x D	0.5 x D	0.75 x D	300	490	300	490	fz	0.0007	0.0010	0.0014	0.0018	0.0020	0.0023	0.0026	0.0030	0.0033	0.0039	0.0049
	5	1.25 x D	0.5 x D	1 x D	200	330	200	330	fz	0.0006	0.0009	0.0012	0.0016	0.0018	0.0021	0.0023	0.0027	0.0030	0.0036	0.0046
	6	1.25 x D	0.5 x D	0.75 x D	160	250	160	250	fz	0.0005	0.0008	0.0010	0.0013	0.0015	0.0017	0.0019	0.0022	0.0024	0.0028	0.0036
M	1	1.25 x D	0.5 x D	1 x D	260	330	260	330	fz	0.0007	0.0011	0.0015	0.0020	0.0023	0.0026	0.0029	0.0034	0.0038	0.0046	0.0057
	2	1.25 x D	0.5 x D	1 x D	200	260	200	260	fz	0.0006	0.0009	0.0012	0.0016	0.0018	0.0021	0.0023	0.0027	0.0030	0.0036	0.0046
	3	1.25 x D	0.5 x D	1 x D	200	260	200	260	fz	0.0005	0.0008	0.0010	0.0013	0.0015	0.0017	0.0019	0.0022	0.0024	0.0028	0.0036
K	1	1.25 x D	0.5 x D	1 x D	390	520	390	520	fz	0.0009	0.0014	0.0018	0.0023	0.0027	0.0031	0.0035	0.0039	0.0043	0.0050	0.0062
	2	1.25 x D	0.5 x D	1 x D	360	460	360	460	fz	0.0007	0.0011	0.0015	0.0020	0.0023	0.0026	0.0029	0.0034	0.0038	0.0046	0.0057
	3	1.25 x D	0.5 x D	1 x D	330	430	330	430	fz	0.0006	0.0009	0.0012	0.0016	0.0018	0.0021	0.0023	0.0027	0.0030	0.0036	0.0046
S	1	1.0 x D	0.3 x D	0.3 x D	—	—	160	300	fz	0.0007	0.0011	0.0015	0.0020	0.0023	0.0026	0.0029	0.0034	0.0038	0.0046	0.0057
	2	1.25 x D	0.5 x D	1 x D	—	—	160	260	fz	0.0006	0.0009	0.0012	0.0016	0.0018	0.0021	0.0023	0.0027	0.0030	0.0036	0.0046
	3	1.0 x D	0.3 x D	0.3 x D	—	—	70	130	fz	0.0004	0.0006	0.0008	0.0010	0.0012	0.0014	0.0016	0.0018	0.0020	0.0025	0.0031
	4	1.25 x D	0.5 x D	1 x D	—	—	150	210	fz	0.0005	0.0008	0.0011	0.0014	0.0017	0.0019	0.0022	0.0025	0.0028	0.0033	0.0042
H	1	1.25 x D	0.5 x D	0.75 x D	260	460	260	460	fz	0.0007	0.0010	0.0014	0.0018	0.0020	0.0023	0.0026	0.0030	0.0033	0.0039	0.0049

NOTE: These guidelines may require variations to achieve optimum results.
Lower value of cutting speed is used for high stock removal applications or for higher hardness (machinability) within group.
Higher value of cutting speed is used for finishing applications or for lower hardness (machinability) within group.
Above parameters are based on ideal conditions. For smaller taper machining centers, please adjust parameters accordingly on >1/2" diameter.

UADE • Extended Neck





Material Group		Side Milling (A) and Slotting (B) A ap	A ae	B ap	KCPM15 Cutting Speed — vc SFM min	KCPM15 max	KC633M min	KC633M max	Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%. D1 — Diameter inch	1/4 0.250	3/8 0.375	1/2 0.500	5/8 0.625	3/4 0.750	1 1.000
P	1	0.75 x D	0.5 x D	0.75 x D	500	650	500	650	fz	0.0018	0.0027	0.0035	0.0039	0.0043	0.0050
	2	0.75 x D	0.5 x D	0.75 x D	450	625	450	625	fz	0.0018	0.0027	0.0035	0.0039	0.0043	0.0050
	3	0.75 x D	0.5 x D	0.75 x D	400	525	400	525	fz	0.0015	0.0023	0.0029	0.0034	0.0038	0.0046
	4	0.75 x D	0.5 x D	0.5 x D	300	475	300	475	fz	0.0014	0.0020	0.0026	0.0030	0.0033	0.0039
	5	0.75 x D	0.5 x D	0.75 x D	200	325	200	325	fz	0.0012	0.0018	0.0023	0.0027	0.0030	0.0036
	6	0.75 x D	0.5 x D	0.5 x D	150	225	150	225	fz	0.0010	0.0015	0.0019	0.0022	0.0024	0.0028
M	1	0.75 x D	0.5 x D	0.75 x D	260	330	260	330	fz	0.0015	0.0023	0.0029	0.0034	0.0038	0.0046
	2	0.75 x D	0.5 x D	0.75 x D	200	260	200	260	fz	0.0012	0.0018	0.0023	0.0027	0.0030	0.0036
	3	0.75 x D	0.5 x D	0.75 x D	200	260	200	260	fz	0.0010	0.0015	0.0019	0.0022	0.0024	0.0028
K	1	0.75 x D	0.5 x D	0.75 x D	390	520	390	520	fz	0.0018	0.0027	0.0035	0.0039	0.0043	0.0050
	2	0.75 x D	0.5 x D	0.75 x D	360	460	360	460	fz	0.0015	0.0023	0.0029	0.0034	0.0038	0.0046
	3	0.75 x D	0.5 x D	0.75 x D	330	430	330	430	fz	0.0012	0.0018	0.0023	0.0027	0.0030	0.0036
S	1	0.75 x D	0.3 x D	0.3 x D	—	—	150	275	fz	0.0015	0.0023	0.0029	0.0034	0.0038	0.0046
	2	0.75 x D	0.5 x D	0.75 x D	—	—	160	260	fz	0.0012	0.0018	0.0023	0.0027	0.0030	0.0036
	3	0.75 x D	0.3 x D	0.3 x D	—	—	70	130	fz	0.0008	0.0012	0.0016	0.0018	0.0020	0.0025
	4	0.75 x D	0.5 x D	0.75 x D	—	—	150	210	fz	0.0011	0.0017	0.0022	0.0025	0.0028	0.0033
H	1	0.75 x D	0.5 x D	0.5 x D	260	450	260	450	fz	0.0014	0.0020	0.0026	0.0030	0.0033	0.0039

NOTE: Side milling applications — For longest reach (L3) tools, reduce ae by 30%.
Slot milling applications — For longest reach (L3) tools, reduce ap by 30%.
Lower value of cutting speed is used for high stock removal applications or for higher hardness (machinability) within group.
Higher value of cutting speed is used for finishing applications or for lower hardness (machinability) within group.
Above parameters are based on ideal conditions. For smaller taper machining centers, please adjust parameters accordingly on >1/2" diameter.

HPRSHV





Material Group		Side Milling (A) and Slotting (B) A ap	A ae	B ap	KCPM15 Cutting Speed — vc SFM min	max	Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%. D1 — Diameter inch	1/4 0.250	3/8 0.375	1/2 0.500	5/8 0.625	3/4 0.750	1 1.000
P	1	0.75 x D	0.5 x D	0.75 x D	500	650	fz	0.0018	0.0027	0.0035	0.0039	0.0043	0.0050
	2	0.75 x D	0.5 x D	0.75 x D	450	625	fz	0.0018	0.0027	0.0035	0.0039	0.0043	0.0050
	3	0.75 x D	0.5 x D	0.75 x D	400	525	fz	0.0015	0.0023	0.0029	0.0034	0.0038	0.0046
	4	0.75 x D	0.5 x D	0.5 x D	300	475	fz	0.0014	0.0020	0.0026	0.0030	0.0033	0.0039
	5	1.5 x D	0.5 x D	0.75 x D	200	325	fz	0.0012	0.0018	0.0023	0.0027	0.0030	0.0036
	6	0.75 x D	0.5 x D	0.5 x D	150	225	fz	0.0010	0.0015	0.0019	0.0022	0.0024	0.0028
M	1	0.75 x D	0.5 x D	0.75 x D	260	330	fz	0.0015	0.0023	0.0029	0.0034	0.0038	0.0046
	2	0.75 x D	0.5 x D	0.75 x D	200	260	fz	0.0012	0.0018	0.0023	0.0027	0.0030	0.0036
	3	0.75 x D	0.5 x D	0.75 x D	200	260	fz	0.0010	0.0015	0.0019	0.0022	0.0024	0.0028
K	1	0.75 x D	0.5 x D	0.75 x D	390	520	fz	0.0018	0.0027	0.0035	0.0039	0.0043	0.0050
	2	0.75 x D	0.5 x D	0.75 x D	360	460	fz	0.0015	0.0023	0.0029	0.0034	0.0038	0.0046
	3	0.75 x D	0.5 x D	0.75 x D	330	430	fz	0.0012	0.0018	0.0023	0.0027	0.0030	0.0036

NOTE: Slot milling applications — For longest reach (L3) tools, reduce ap by 30%.
Lower value of cutting speed is used for high stock removal applications or for higher hardness (machinability) within group.
Higher value of cutting speed is used for finishing applications or for lower hardness (machinability) within group.
Above parameters are based on ideal conditions. For smaller taper machining centers, please adjust parameters accordingly on >1/2" diameter.

HPHVBN





Material Group		Side Milling (A) and Slotting (B) A ap	A ae	B ap	KCPM15 Cutting Speed — vc SFM min	max	KC633M min	max	Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%. D1 — Diameter inch	1/8 0.125	3/16 0.188	1/4 0.250	5/16 0.313	3/8 0.375	7/16 0.438	1/2 0.500	5/8 0.625	3/4 0.750	1 1.000	1 1/4 1.250
P	1	1.25 x D	0.5 x D	1 x D	490	660	490	660	fz	0.0009	0.0014	0.0018	0.0023	0.0027	0.0031	0.0035	0.0039	0.0043	0.0050	0.0062
	2	1.25 x D	0.5 x D	1 x D	460	620	460	620	fz	0.0009	0.0014	0.0018	0.0023	0.0027	0.0031	0.0035	0.0039	0.0043	0.0050	0.0062
	3	1.25 x D	0.5 x D	1 x D	390	520	390	520	fz	0.0007	0.0011	0.0015	0.0020	0.0023	0.0026	0.0029	0.0034	0.0038	0.0046	0.0057
	4	1.25 x D	0.5 x D	0.75 x D	300	490	300	490	fz	0.0007	0.0010	0.0014	0.0018	0.0020	0.0023	0.0026	0.0030	0.0033	0.0039	0.0049
	5	1.25 x D	0.5 x D	1 x D	200	330	200	330	fz	0.0006	0.0009	0.0012	0.0016	0.0018	0.0021	0.0023	0.0027	0.0030	0.0036	0.0046
	6	1.25 x D	0.5 x D	0.75 x D	160	250	160	250	fz	0.0005	0.0008	0.0010	0.0013	0.0015	0.0017	0.0019	0.0022	0.0024	0.0028	0.0036
M	1	1.25 x D	0.5 x D	1 x D	260	330	260	330	fz	0.0007	0.0011	0.0015	0.0020	0.0023	0.0026	0.0029	0.0034	0.0038	0.0046	0.0057
	2	1.25 x D	0.5 x D	1 x D	200	260	200	260	fz	0.0006	0.0009	0.0012	0.0016	0.0018	0.0021	0.0023	0.0027	0.0030	0.0036	0.0046
	3	1.25 x D	0.5 x D	1 x D	200	260	200	260	fz	0.0005	0.0008	0.0010	0.0013	0.0015	0.0017	0.0019	0.0022	0.0024	0.0028	0.0036
K	1	1.25 x D	0.5 x D	1 x D	390	520	390	520	fz	0.0009	0.0014	0.0018	0.0023	0.0027	0.0031	0.0035	0.0039	0.0043	0.0050	0.0062
	2	1.25 x D	0.5 x D	1 x D	360	460	360	460	fz	0.0007	0.0011	0.0015	0.0020	0.0023	0.0026	0.0029	0.0034	0.0038	0.0046	0.0057
	3	1.25 x D	0.5 x D	1 x D	330	430	330	430	fz	0.0006	0.0009	0.0012	0.0016	0.0018	0.0021	0.0023	0.0027	0.0030	0.0036	0.0046
S	1	1.0 x D	0.3 x D	0.3 x D	—	—	160	300	fz	0.0007	0.0011	0.0015	0.0020	0.0023	0.0026	0.0029	0.0034	0.0038	0.0046	0.0057
	2	1.25 x D	0.5 x D	1 x D	—	—	160	260	fz	0.0006	0.0009	0.0012	0.0016	0.0018	0.0021	0.0023	0.0027	0.0030	0.0036	0.0046
	3	1.0 x D	0.3 x D	0.3 x D	—	—	70	130	fz	0.0004	0.0006	0.0008	0.0010	0.0012	0.0014	0.0016	0.0018	0.0020	0.0025	0.0031
	4	1.25 x D	0.5 x D	1 x D	—	—	150	210	fz	0.0005	0.0008	0.0011	0.0014	0.0017	0.0019	0.0022	0.0025	0.0028	0.0033	0.0042
H	1	1.25 x D	0.5 x D	0.75 x D	260	460	—	—	fz	0.0007	0.0010	0.0014	0.0018	0.0020	0.0023	0.0026	0.0030	0.0033	0.0039	0.0049

NOTE: These guidelines may require variations to achieve optimum results.
Lower value of cutting speed is used for high stock removal applications or for higher hardness (machinability) within group.
Higher value of cutting speed is used for finishing applications or for lower hardness (machinability) within group.
Above parameters are based on ideal conditions. For smaller taper machining centers, please adjust parameters accordingly on >1/2" diameter.

UCDE





Material Group		Side Milling (A) and Slotting (B) A ap	A ae	B ap	KCPM15/KC643M Cutting Speed — vc SFM min	max	Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%. D1 — Diameter inch	3/16 0.188	1/4 0.250	5/16 0.313	3/8 0.375	7/16 0.438	1/2 0.500	5/8 0.625	3/4 0.750	1 1.000
P	1	1.25 x D	0.5 x D	1 x D	490	660	fz	0.0014	0.0018	0.0023	0.0027	0.0031	0.0035	0.0039	0.0043	0.0050
	2	1.25 x D	0.5 x D	1 x D	460	620	fz	0.0014	0.0018	0.0023	0.0027	0.0031	0.0035	0.0039	0.0043	0.0050
	3	1.25 x D	0.5 x D	1 x D	390	520	fz	0.0011	0.0015	0.0020	0.0023	0.0026	0.0029	0.0034	0.0038	0.0046
	4	1.25 x D	0.5 x D	0.75 x D	300	490	fz	0.0010	0.0014	0.0018	0.0020	0.0023	0.0026	0.0030	0.0033	0.0039
	5	1.25 x D	0.5 x D	1 x D	200	330	fz	0.0009	0.0012	0.0016	0.0018	0.0021	0.0023	0.0027	0.0030	0.0036
	6	1.25 x D	0.5 x D	0.75 x D	160	250	fz	0.0008	0.0010	0.0013	0.0015	0.0017	0.0019	0.0022	0.0024	0.0028
M	1	1.25 x D	0.5 x D	1 x D	260	330	fz	0.0011	0.0015	0.0020	0.0023	0.0026	0.0029	0.0034	0.0038	0.0046
	2	1.25 x D	0.5 x D	1 x D	200	260	fz	0.0009	0.0012	0.0016	0.0018	0.0021	0.0023	0.0027	0.0030	0.0036
	3	1.25 x D	0.5 x D	1 x D	200	260	fz	0.0008	0.0010	0.0013	0.0015	0.0017	0.0019	0.0022	0.0024	0.0028
K	1	1.25 x D	0.5 x D	1 x D	390	520	fz	0.0014	0.0018	0.0023	0.0027	0.0031	0.0035	0.0039	0.0043	0.0050
	2	1.25 x D	0.5 x D	1 x D	360	460	fz	0.0011	0.0015	0.0020	0.0023	0.0026	0.0029	0.0034	0.0038	0.0046
	3	1.25 x D	0.5 x D	1 x D	330	430	fz	0.0009	0.0012	0.0016	0.0018	0.0021	0.0023	0.0027	0.0030	0.0036
S	1	1.0 x D	0.3 x D	0.3 x D	160	300	fz	0.0011	0.0015	0.0020	0.0023	0.0026	0.0029	0.0034	0.0038	0.0046
	2	1.25 x D	0.5 x D	1 x D	160	260	fz	0.0009	0.0012	0.0016	0.0018	0.0021	0.0023	0.0027	0.0030	0.0036
	3	1.0 x D	0.3 x D	0.3 x D	70	130	fz	0.0006	0.0008	0.0010	0.0012	0.0014	0.0016	0.0018	0.0020	0.0025
	4	1.25 x D	0.5 x D	1 x D	150	210	fz	0.0008	0.0011	0.0014	0.0017	0.0019	0.0022	0.0025	0.0028	0.0033
H	1	1.25 x D	0.5 x D	0.75 x D	260	460	fz	0.0010	0.0014	0.0018	0.0020	0.0023	0.0026	0.0030	0.0033	0.0039

UCDE • Extended Neck





Material Group		Side Milling (A) and Slotting (B) A ap	A ae	B ap	KCPM15/KC643M Cutting Speed — vc SFM min	max	Feed per Tooth — fz information is for side nilling (A). For slotting (B), reduce fz by 20%. D1 — Diameter inch	1/4 0.250	3/8 0.375	1/2 0.500	5/8 0.625	3/4 0.750	1 1.000
P	1	0.75 x D	0.5 x D	0.75 x D	490	660	fz	0.0018	0.0027	0.0035	0.0039	0.0043	0.0050
	2	0.75 x D	0.5 x D	0.75 x D	460	620	fz	0.0018	0.0027	0.0035	0.0039	0.0043	0.0050
	3	0.75 x D	0.5 x D	0.75 x D	390	520	fz	0.0015	0.0023	0.0029	0.0034	0.0038	0.0046
	4	0.75 x D	0.5 x D	0.5 x D	300	490	fz	0.0014	0.0020	0.0026	0.0030	0.0033	0.0039
	5	0.75 x D	0.5 x D	0.75 x D	200	330	fz	0.0012	0.0018	0.0023	0.0027	0.0030	0.0036
	6	0.75 x D	0.5 x D	0.5 x D	160	250	fz	0.0010	0.0015	0.0019	0.0022	0.0024	0.0028
M	1	0.75 x D	0.5 x D	0.75 x D	260	330	fz	0.0015	0.0023	0.0029	0.0034	0.0038	0.0046
	2	0.75 x D	0.5 x D	0.75 x D	200	260	fz	0.0012	0.0018	0.0023	0.0027	0.0030	0.0036
	3	0.75 x D	0.5 x D	0.75 x D	200	260	fz	0.0010	0.0015	0.0019	0.0022	0.0024	0.0028
K	1	0.75 x D	0.5 x D	0.75 x D	390	520	fz	0.0018	0.0027	0.0035	0.0039	0.0043	0.0050
	2	0.75 x D	0.5 x D	0.75 x D	360	460	fz	0.0015	0.0023	0.0029	0.0034	0.0038	0.0046
	3	0.75 x D	0.5 x D	0.75 x D	330	430	fz	0.0012	0.0018	0.0023	0.0027	0.0030	0.0036
S	1	0.75 x D	0.3 x D	0.3 x D	160	300	fz	0.0015	0.0023	0.0029	0.0034	0.0038	0.0046
	2	0.75 x D	0.5 x D	0.75 x D	160	260	fz	0.0012	0.0018	0.0023	0.0027	0.0030	0.0036
	3	0.75 x D	0.3 x D	0.3 x D	70	130	fz	0.0008	0.0012	0.0016	0.0018	0.0020	0.0025
	4	0.75 x D	0.5 x D	0.75 x D	150	210	fz	0.0011	0.0017	0.0022	0.0025	0.0028	0.0033
H	1	0.75 x D	0.5 x D	0.5 x D	260	460	fz	0.0014	0.0020	0.0026	0.0030	0.0033	0.0039

NOTE: These guidelines may require variations to achieve optimum results.
Lower value of cutting speed is used for high stock removal applications or for higher hardness (machinability) within group.
Higher value of cutting speed is used for finishing applications or for lower hardness (machinability) within group.
Above parameters are based on ideal conditions. For smaller taper machining centers, please adjust parameters accordingly on >1/2" diameter.

UGDE • 3 x D and 5 x D Lengths of Cut





Material Group		Side Milling (A)		KC643M		Feed per Tooth — fz information is for side milling (A).							
		A		Cutting Speed — vc SFM		D1 — Diameter							
		ap	ae	min	max	inch	1/4 0.250	5/16 0.313	3/8 0.375	1/2 0.500	5/8 0.625	3/4 0.750	1 1.000
P	1	Ap1 max	0.05 x D	490	1320	fz	0.00183	0.00234	0.0027	0.00345	0.00394	0.00428	0.00495
	2	Ap1 max	0.05 x D	460	1254	fz	0.00183	0.00234	0.0027	0.00345	0.00394	0.00428	0.00495
	3	Ap1 max	0.05 x D	390	1056	fz	0.00151	0.00195	0.00227	0.00293	0.00341	0.00379	0.00455
	4	Ap1 max	0.05 x D	300	990	fz	0.00137	0.00175	0.00203	0.0026	0.003	0.0033	0.0039
	5	Ap1 max	0.05 x D	200	660	fz	0.00123	0.00156	0.00182	0.00234	0.00273	0.00303	0.00364
	6	Ap1 max	0.05 x D	160	495	fz	0.00103	0.00131	0.00152	0.00194	0.00223	0.00243	0.00284
M	1	Ap1 max	0.05 x D	260	759	fz	0.00151	0.00195	0.00227	0.00293	0.00341	0.00379	0.00455
	2	Ap1 max	0.05 x D	200	528	fz	0.00123	0.00156	0.00182	0.00234	0.00273	0.00303	0.00364
	3	Ap1 max	0.05 x D	200	462	fz	0.00103	0.00131	0.00152	0.00194	0.00223	0.00243	0.00284
K	1	Ap1 max	0.05 x D	390	990	fz	0.00183	0.00234	0.0027	0.00345	0.00394	0.00428	0.00495
	2	Ap1 max	0.05 x D	360	858	fz	0.00151	0.00195	0.00227	0.00293	0.00341	0.00379	0.00455
	3	Ap1 max	0.05 x D	330	858	fz	0.00123	0.00156	0.00182	0.00234	0.00273	0.00303	0.00364
S	1	Ap1 max	0.05 x D	160	594	fz	0.00151	0.00195	0.00227	0.00293	0.00341	0.00379	0.00455
	2	Ap1 max	0.05 x D	160	264	fz	0.00081	0.00103	0.0012	0.00155	0.00181	0.00203	0.00245
	3	Ap1 max	0.05 x D	70	528	fz	0.00123	0.00156	0.00182	0.00234	0.00273	0.00303	0.00364
	4	Ap1 max	0.05 x D	150	396	fz	0.00107	0.00144	0.00167	0.00215	0.00251	0.00278	0.00334
H	1	Ap1 max	0.05 x D	260	462	fz	0.00137	0.00175	0.00203	0.0026	0.003	0.0033	0.0039

NOTE: For the above cutting data, do not exceed an overall ae of .031".
Lower value of cutting speed is used for high stock removal applications or for higher hardness (machinability) within group.
Higher value of cutting speed is used for finishing applications or for lower hardness (machinability) within group.
Above parameters are based on ideal conditions. For smaller taper machinining centers, please adjust parameters accordingly on >1/2" diameter.

HPHVT



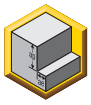




Material Group		Side Milling (A) and Slotting (B)			KC643M		Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%.					
		A		B	Cutting Speed — vc SFM		D1 — Diameter					
		ap	ae	ap	min	max	inch	1/2 0.500	5/8 0.625	3/4 0.750	1 1.000	1 1/4 1.250
P	5	1.25 x D	0.5 x D	1 x D	200	330	fz	0.0023	0.0027	0.0030	0.0036	0.0046
	6	1.25 x D	0.5 x D	0.75 x D	160	250	fz	0.0019	0.0022	0.0024	0.0028	0.0036
S	2	1.0 x D	0.3 x D	0.3 x D	160	260	fz	0.0029	0.0034	0.0038	0.0046	0.0031
	3	1.0 x D	0.3 x D	0.3 x D	70	130	fz	0.0016	0.0018	0.0020	0.0025	0.0046
	4	1.25 x D	0.5 x D	1 x D	150	210	fz	0.0022	0.0025	0.0028	0.0033	0.0042

NOTE: Lower value of cuting speed is used for high stock removal applications or for higher hardness (machinability) within group.
Higher value of cuting speed is used for finishing applications or for lower hardness (machinability) within group.
Above parameters are based on ideal conditions. For smaller taper machinining centers, please adjust parameters accordingly on >1/2" diameter.

UDDE





Material Group		Side Milling (A) and Slotting (B) A ap	A ae	B ap	KC643M Cutting Speed — vc SFM min	max	Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%. D1 — Diameter inch	1/4 0.250	3/8 0.375	1/2 0.500	5/8 0.625	3/4 0.750	1 1.000
P	5	1.25 x D	0.5 x D	1 x D	200	325	fz	0.0012	0.0018	0.0023	0.0027	0.0003	0.0036
	6	1.25 x D	0.5 x D	0.75 x D	150	225	fz	0.0010	0.0015	0.0019	0.0022	0.0024	0.0028
S	2	1.0 x D	0.3 x D	0.3 x D	70	130	fz	0.0008	0.0012	0.0016	0.0018	0.0020	0.0025
	3	1.25 x D	0.5 x D	1 x D	160	260	fz	0.0012	0.0018	0.0023	0.0027	0.0030	0.0036
	4	1.25 x D	0.5 x D	1 x D	150	210	fz	0.0011	0.0017	0.0022	0.0025	0.0028	0.0033

NOTE: These guidelines may require variations to achieve optimum results.
Lower value of cutting speed is used for high stock removal applications or for higher hardness (machinability) within group.
Higher value of cutting speed is used for finishing applications or for lower hardness (machinability) within group.
Above parameters are based on ideal conditions. For smaller taper machining centers, please adjust parameters accordingly on >1/2" diameter.

Looking for a product that's not shown in this catalog?
Check the Kennametal website!



Online product catalog available 24/7

Visit **http://www.kennametal.com/endmilling/** to browse our electronic catalog any time you're looking for Kennametal's best tooling solutions. It's fast, free, and always available. The online e-catalog is updated weekly with products and solutions for milling, turning, drilling, and tooling systems applications.



KenFeed™ End Mills for High-Feed Milling

Primary Application

Specifically engineered to machine hardened steel up to 67 HRC at extreme speeds and feeds.

- Unique tool with new 6-flute style for high productivity.
- Necked shanks provide extended reach in deep cavities.
- High feed rates up to .0230" per tooth on a 3/4" tool.
- Machine hardened materials at 2–3x the metal removal rate of competitive end mills.
- Wide range of cutting diameters: down to 6mm for small and medium pocket work.
- Innovative new geometry maximizes metal removal rates.
- High metal removal rates lower manufacturing costs.

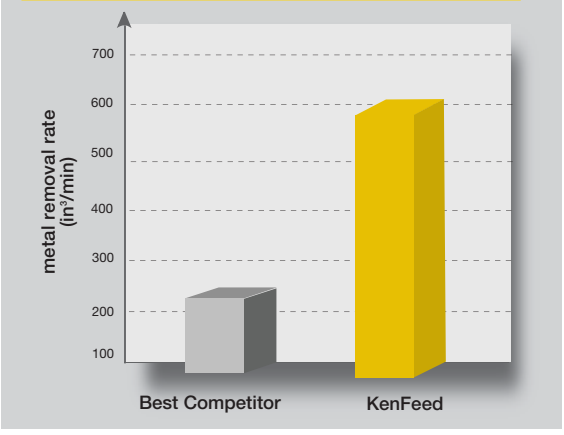


Featured Application: Milling a Mold

Operation: Pocket milling
Customer: Die and mold manufacturer
Workpiece: Mold
Material: AISI 4340 hardened steel (52 HRC)
Results: 3x better metal removal rate than competitive tool!
Machined at more than 3x faster feed!

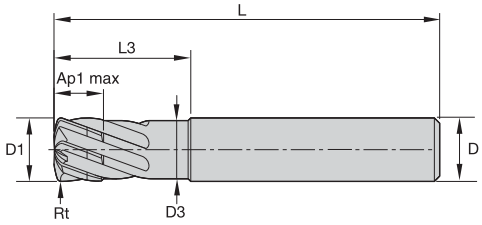
	COMPETITOR	KenFeed
tool:	4-flute H/P for die and mold	KMDA0500J6ANA
material:	medium-hardened steel	medium-hardened steel
surface speed:	400 SFM	530 SFM
feed per tooth:	.013"	.013"
depth of cut:	.031"	.023"
table feed:	170 in/min	600 in/min
metal removal rate:	1.4 in^3/min	3.7 in^3/min

Increased Metal Removal Rate by 191%

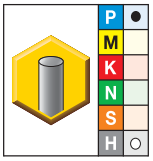


- Kennametal standard dimensions.
- Non-center cutting.
- High feed.









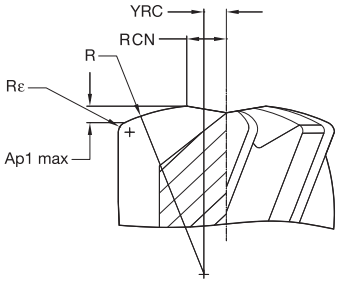
● first choice
○ alternate choice

KC639M	D1	D	D3	Ap1 max	L3	L	Rε
KMDA0250J6ANA	1/4	1/4	.211	.013	3/4	2 1/2	.016
KMDA0312J6ANA	5/16	5/16	.273	.017	1	3	.020
KMDA0375J6ANA	3/8	3/8	.336	.020	1 1/4	4	.023
KMDA0500J6ANA	1/2	1/2	.461	.027	1 1/2	4	.032
KMDA0625J6ANA	5/8	5/8	.586	.033	2	5	.040
KMDA0750J6ANA	3/4	3/4	.711	.040	2 1/2	5	.047

NOTE: For application data, see page M34.

End Mill Tolerances

D1	tolerance	D	tolerance h6
All	+.000/-.002"	≤1/8"	+0/-.00024"
		>1/8–1/4"	+0/-.00031"
		>1/4–3/8"	+0/-.00035"
		>3/8–23/32"	+0/-.00043"
		>23/32–1 3/16"	+0/-.00051"



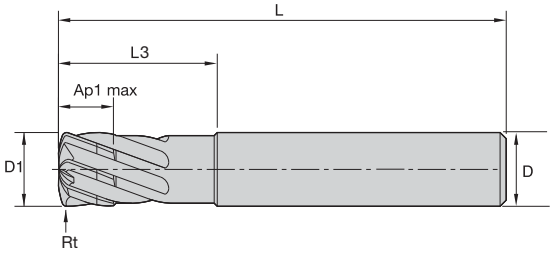
Programming Data

	geometrical parameters						ramping guide for circular and linear ramping						
							circular interpolation		linear ramping				
							optimal range of circle diameter for a single pass		calculated length per ramp angle				
catalog number	D1	Ap1 max	R	Rε	YRC	RCN	smallest	largest	1°	2°	3°	4°	5°
KMDA0250J6ANA	1/4	0.0133	0.250	0.0160	0.0313	0.0525	0.355	0.500	0.762	0.381	0.254	0.190	0.152
KMDA0312J6ANA	5/16	0.0166	0.313	0.0200	0.0391	0.0656	0.444	0.625	0.953	0.476	0.317	0.238	0.190
KMDA0375J6ANA	3/8	0.0200	0.375	0.0235	0.0469	0.0788	0.533	0.750	1.143	0.572	0.381	0.285	0.228
KMDA0500J6ANA	1/2	0.0266	0.500	0.0320	0.0625	0.1050	0.710	1.000	1.525	0.762	0.508	0.381	0.304
KMDA0625J6ANA	5/8	0.0333	0.625	0.0400	0.0781	0.1313	0.888	1.250	1.906	0.953	0.635	0.476	0.380
KMDA0750J6ANA	3/4	0.0399	0.750	0.0470	0.0938	0.1575	1.065	1.500	2.287	1.143	0.762	0.571	0.456
							recommended % of programmed feed rate to use while ramping		100%	70%	50%	30%	10%

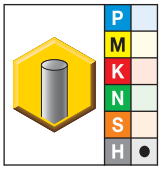
YRC = distance from centerline to the crown of the R radius.
RCN = distance from centerline to the start of the cutting edge. This dimension can also help determine the minimum circle size when helical ramping.
R = the head radius size.
Rε = the shoulder radius or radius at the corner of the cutter.

- Kennametal standard dimensions.
- Non-center cutting.
- High feed.









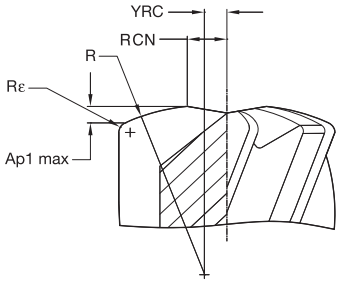
● first choice
○ alternate choice

KC639M	D1	D	Ap1 max	L3	L	Rε
KHDA0250J6ANA	1/4	1/4	.0082	.750	2 1/2	.016
KHDA0312J6ANA	5/16	5/16	.0103	1.000	3	.020
KHDA0375J6ANA	3/8	3/8	.0123	1.250	3 1/2	.020
KHDA0500J6ANA	1/2	1/2	.0164	1.500	4	.023
KHDA0625J6ANA	5/8	5/8	.0205	2.000	4 1/2	.032
KHDA0750J6ANA	3/4	3/4	.0250	2.500	5	.040

NOTE: For application data, see page M34.

End Mill Tolerances

D1	tolerance	D	tolerance h6
All	+.000/-.002"	≤1/8"	+0/-.00024"
		>1/8–1/4"	+0/-.00031"
		>1/4–3/8"	+0/-.00035"
		>3/8–23/32"	+0/-.00043"
		>23/32–1 3/16"	+0/-.00051"



Programming Data

	geometrical parameters						ramping guide for circular and linear ramping						
							circular interpolation		linear ramping				
catalog number	D1	Ap1 max	R	Rε	YRC	RCN	optimal range of circle diameter for a single pass smallest	optimal range of circle diameter for a single pass largest	calculated length per ramp angle 1°	2°	3°	4°	5°
KHDA0250J6ANA	1/4	0.0082	0.375	0.0160	0.0313	0.0550	0.360	0.500	0.470	0.235	0.157	0.117	0.094
KHDA0312J6ANA	5/16	0.0103	0.469	0.0200	0.0391	0.0688	0.450	0.625	0.588	0.294	0.196	0.147	0.117
KHDA0375J6ANA	3/8	0.0123	0.563	0.0240	0.0469	0.0825	0.540	0.750	0.706	0.353	0.235	0.176	0.141
KHDA0500J6ANA	1/2	0.0164	0.750	0.0320	0.0625	0.1100	0.720	1.000	0.941	0.470	0.313	0.235	0.188
KHDA0625J6ANA	5/8	0.0205	0.938	0.0400	0.0781	0.1375	0.900	1.250	1.176	0.588	0.392	0.294	0.235
KHDA0750J6ANA	3/4	0.0246	1.125	0.0470	0.0938	0.1650	1.080	1.500	1.411	0.705	0.470	0.352	0.282
							recommended % of programmed feed rate to use while ramping		100%	70%	50%	30%	10%

YRC = distance from centerline to the crown of the R radius.
RCN = distance from centerline to the start of the cutting edge. This dimension can also help determine the minimum circle size when helical ramping.
R = the head radius size.
Rε = the shoulder radius or radius at the corner of the cutter.

KMDA • Steels with Hardness <52 HRC





Material Group		3D Milling/Profiling ap	3D Milling/Profiling ae	KC639M Cutting Speed — vc SFM min	KC639M Cutting Speed — vc SFM max		D1 — Diameter 1/4 0.250	5/16 0.313	3/8 0.375	1/2 0.500	5/8 0.625	3/4 0.750
						inch						
P	4	0.05 x D	0.55 x D	528	594	fz	0.0130	0.0160	0.0190	0.0250	0.0260	0.0280
H	1	0.05 x D	0.55 x D	462	528	fz	0.0130	0.0160	0.0190	0.0250	0.0260	0.0280
	2	0.05 x D	0.55 x D	330	396	fz	0.0080	0.0090	0.0110	0.0150	0.0190	0.0230

KHDA • Steels with Hardness >52 HRC





Material Group		3D Milling/Profiling ap	3D Milling/Profiling ae	KC639M Cutting Speed — vc SFM min	KC639M Cutting Speed — vc SFM max		D1 — Diameter 1/4 0.250	5/16 0.313	3/8 0.375	1/2 0.500	5/8 0.625	3/4 0.750
						inch						
H	2	0.03 x D	0.55 x D	330	396	fz	0.0080	0.0090	0.0110	0.0150	0.0190	0.0230
	3	0.03 x D	0.55 x D	265	330	fz	0.0080	0.0090	0.0110	0.0150	0.0190	0.0230
	4	0.03 x D	0.55 x D	165	230	fz	0.0060	0.0080	0.0090	0.0130	0.0160	0.0190

NOTE: These guidelines may require variations to achieve optimum results.
Lower value of cutting speed is used for high stock removal applications or for higher hardness (machinability) within group.
Higher value of cutting speed is used for finishing applications or for lower hardness (machinability) within group.
Above parameters are based on ideal conditions. For smaller taper machining centers, please adjust parameters accordingly on >1/2" diameter.



Best-in-Class Performance for Machining Hard Materials

Using Kennametal Solid End Mills will:

- Reduce the number of tools needed.
- Offer excellent chip evacuation.
- Promote maximum productivity.
- Increase removal rates.
- Enable higher speeds.
- Ensure accuracy.
- Reduce manufacturing costs.
- Provide long tool life.

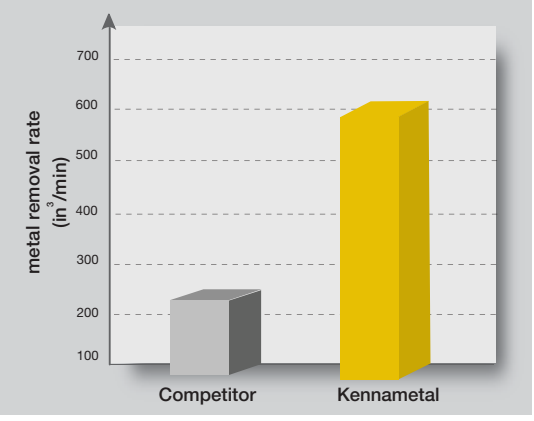


Featured Application KenFeed™: Milling a Mold

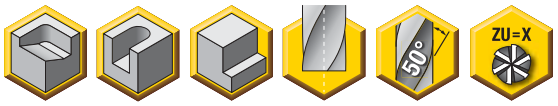
Operation: Pocket milling
Customer: Die and mold manufacturer
Workpiece: Mold
Material: AISI 4340 hardened steel (52 HRC)
Results: 3x better metal removal rate than competitive tool!
Machined at more than 3x faster feed!

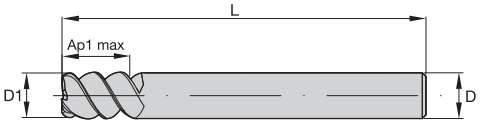
	COMPETITOR	KenFeed
tool:	4-flute H/P for die and mold	KMDA0500J6ANA
material:	medium-hardened steel	medium-hardened steel
surface speed:	400 SFM	530 SFM
feed per tooth:	.013"	.013"
depth of cut:	.031"	.023"
table feed:	170 in/min	600 in/min
metal removal rate:	1.4 in^3/min	3.7 in^3/min

Increased Metal Removal Rate by 191%

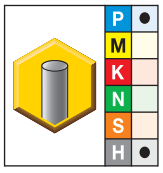


- Kennametal standard dimensions.
- Center cutting.









● first choice
○ alternate choice

KC633M	D1	D	Ap1 max	L	Z U
HPFDM250S4038	1/4	1/4	3/8	3	4
HPFDM250S4063	1/4	1/4	5/8	3	4
HPFDM250S4088	1/4	1/4	7/8	3	4
HPFDM312S4050	5/16	5/16	1/2	4	4
HPFDM312S4075	5/16	5/16	3/4	4	4
HPFDM312S4113	5/16	5/16	1 1/8	4	4
HPFDM375S4056	3/8	3/8	9/16	4	4
HPFDM375S5094	3/8	3/8	15/16	4	5
HPFDM375S5131	3/8	3/8	1 5/16	4	5
HPFDM500S4075	1/2	1/2	3/4	5	4
HPFDM500S6125	1/2	1/2	1 1/4	5	6
HPFDM500S6175	1/2	1/2	1 3/4	5	6
HPFDM625S4094	5/8	5/8	15/16	5	4
HPFDM625S6156	5/8	5/8	1 9/16	5	6
HPFDM625S6219	5/8	5/8	2 3/16	5	6
HPFDM750S4113	3/4	3/4	1 1/8	6	4
HPFDM750S6188	3/4	3/4	1 7/8	6	6
HPFDM750S6263	3/4	3/4	2 5/8	6	6
HPFDM1000S5150	1	1	1 1/2	6	5
HPFDM1000S6250	1	1	2 1/2	6	6
HPFDM1000S6350	1	1	3 1/2	6	6

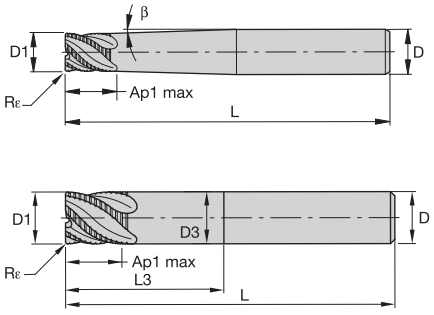
NOTE: For application data, see page M39.

End Mill Tolerances

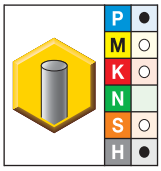
D1	tolerance	D	tolerance h6
All	+.000/-.002"	≤1/8"	+0/-.00024"
		>1/8–1/4"	+0/-.00031"
		>1/4–3/8"	+0/-.00035"
		>3/8–23/32"	+0/-.00043"
		>23/32–1 3/16"	+0/-.00051"

- Kennametal standard dimensions.
- Center cutting.
- Shallow-pitch profile.









● first choice
○ alternate choice

KC633M	D1	D	D3	Ap1 max	L3	L	Rε	β	Z U
HPRDM188S3019	3/16	1/4	—	3/16	—	3	.030	2.5	3
HPRDM250S4025	1/4	3/8	—	1/4	—	4	.030	2.5	4
HPRDM312S4031	5/16	3/8	—	5/16	—	4	.030	2.5	4
HPRDM375S4038	3/8	1/2	—	3/8	—	5	.030	2.5	4
HPRDM500S4050	1/2	5/8	—	1/2	—	5	.040	2.5	4
HPRDM625S6063	5/8	5/8	.59	5/8	1 7/8	5	.040	—	6
HPRDM750S6075	3/4	3/4	.71	3/4	2 1/4	6	.050	—	6

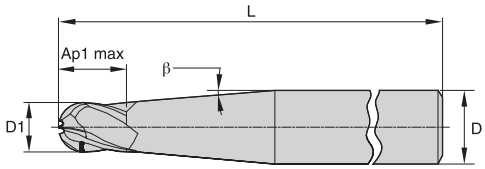
NOTE: For application data, see page M39.

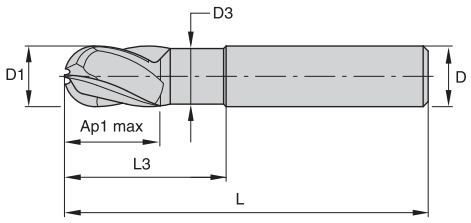
End Mill Tolerances

D1	tolerance	D	tolerance h6
All	+.000/-.002"	≤1/8"	+0/-.00024"
		>1/8–1/4"	+0/-.00031"
		>1/4–3/8"	+0/-.00035"
		>3/8–23/32"	+0/-.00043"
		>23/32–1 3/16"	+0/-.00051"

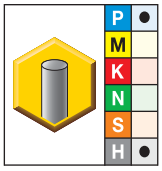
- Kennametal standard dimensions.
- Center cutting.











● first choice
○ alternate choice

KC633M	D1	D	D3	Ap1 max	L3	L	β
HPBNDM125S4013	1/8	1/4	—	1/8	1.56	3	2.5
HPBNDM188S4019	3/16	1/4	—	3/16	.90	3	2.5
HPBNDM250S4025	1/4	3/8	—	1/4	1.68	4	2.5
HPBNDM375S4038	3/8	1/2	—	3/8	1.81	5	2.5
HPBNDM500S4050	1/2	5/8	—	1/2	1.93	5	2.5
HPBNDM625S4063	5/8	5/8	.59	5/8	1.87	5	—
HPBNDM750S4075	3/4	3/4	.71	3/4	2.25	6	—

NOTE: For application data, see page M40.

End Mill Tolerances

D1	tolerance	D	tolerance h6
All	+.000/-.002"	≤1/8"	+0/-.00024"
		>1/8–1/4"	+0/-.00031"
		>1/4–3/8"	+0/-.00035"
		>3/8–23/32"	+0/-.00043"
		>23/32–1 3/16"	+0/-.00051"

HPFDM





Material Group		Side Milling (A) and Slotting (B) A ap	A ae	B ap	KC633M Cutting Speed — vc SFM min	max	Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%. D1 — Diameter inch	1/4 0.25	5/16 0.31	3/8 0.38	1/2 0.50	5/8 0.63	3/4 0.75	1 1.00
P	3	1 x D	0.4 x D	1 x D	390	520	fz	0.0017	0.0021	0.0025	0.0032	0.0037	0.0042	0.0050
P	4	1 x D	0.4 x D	0.75 x D	300	490	fz	0.0015	0.0019	0.0022	0.0029	0.0033	0.0036	0.0043
H	1	1 x D	0.4 x D	0.75 x D	260	460	fz	0.0015	0.0019	0.0022	0.0029	0.0033	0.0036	0.0043
H	2	1 x D	0.3 x D	0.5 x D	230	390	fz	0.0011	0.0014	0.0017	0.0021	0.0024	0.0027	0.0031
H	3	1 x D	0.15 x D	0.3 x D	200	300	fz	0.0009	0.0011	0.0013	0.0017	0.0020	0.0022	0.0027
H	4	1 x D	0.1 x D	0.15 x D	160	230	fz	0.0006	0.0008	0.0009	0.0011	0.0013	0.0015	0.0018

NOTE: These guidelines may require variations to achieve optimum results.
Lower value of cutting speed is used for high stock removal applications or for higher hardness (machinability) within group.
Higher value of cutting speed is used for finishing applications or for lower hardness (machinability) within group.
For better surface finish, reduce feed per tooth.

HPRDM





Material Group		Side Milling (A) and Slotting (B) A ap	A ae	B ap	KC633M Cutting Speed — vc SFM min	max	Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%. D1 — Diameter inch	5/32 0.156	3/16 0.188	1/4 0.250	5/16 0.313	3/8 0.375	1/2 0.500	5/8 0.625	3/4 0.750	1 1.000
P	3	0.8 x D	0.5 x D	0.75 x D	520	590	fz	0.0008	0.0009	0.0013	0.0017	0.0019	0.0026	0.0031	0.0038	0.0046
P	4	0.8 x D	0.5 x D	0.5 x D	460	520	fz	0.0007	0.0009	0.0012	0.0015	0.0017	0.0023	0.0027	0.0033	0.0039
P	5	0.8 x D	0.5 x D	0.75 x D	200	330	fz	0.0006	0.0008	0.0010	0.0013	0.0015	0.0021	0.0025	0.0030	0.0036
P	6	0.8 x D	0.4 x D	0.5 x D	160	260	fz	0.0005	0.0007	0.0009	0.0011	0.0013	0.0017	0.0020	0.0024	0.0028
M	1	0.8 x D	0.5 x D	0.75 x D	260	330	fz	0.0008	0.0009	0.0013	0.0017	0.0019	0.0026	0.0031	0.0038	0.0046
M	2	0.8 x D	0.5 x D	0.75 x D	200	260	fz	0.0006	0.0008	0.0010	0.0013	0.0015	0.0021	0.0025	0.0030	0.0036
M	3	0.8 x D	0.5 x D	0.75 x D	200	260	fz	0.0005	0.0007	0.0009	0.0011	0.0013	0.0017	0.0020	0.0024	0.0028
K	1	0.8 x D	0.5 x D	0.75 x D	390	520	fz	0.0009	0.0011	0.0016	0.0020	0.0023	0.0031	0.0035	0.0043	0.0050
K	2	0.8 x D	0.5 x D	0.75 x D	360	460	fz	0.0008	0.0009	0.0013	0.0017	0.0019	0.0026	0.0031	0.0038	0.0046
K	3	0.8 x D	0.5 x D	0.75 x D	330	430	fz	0.0006	0.0008	0.0010	0.0013	0.0015	0.0021	0.0025	0.0030	0.0036
S	1	0.8 x D	0.5 x D	0.75 x D	300	380	fz	0.0008	0.0009	0.0013	0.0017	0.0019	0.0026	0.0031	0.0038	0.0046
S	2	0.8 x D	0.5 x D	0.75 x D	300	380	fz	0.0008	0.0009	0.0013	0.0017	0.0019	0.0026	0.0031	0.0038	0.0046
S	3	0.8 x D	0.3 x D	0.3 x D	70	130	fz	0.0004	0.0005	0.0007	0.0009	0.0010	0.0014	0.0016	0.0020	0.0025
S	4	0.8 x D	0.3 x D	0.5 x D	150	210	fz	0.0005	0.0007	0.0009	0.0012	0.0014	0.0019	0.0023	0.0028	0.0033
H	1	0.8 x D	0.5 x D	0.5 x D	390	460	fz	0.0007	0.0009	0.0012	0.0015	0.0017	0.0023	0.0027	0.0033	0.0039
H	2	0.8 x D	0.3 x D	0.3 x D	260	430	fz	0.0005	0.0007	0.0009	0.0011	0.0013	0.0017	0.0020	0.0024	0.0028
H	3	0.8 x D	0.3 x D	0.3 x D	230	330	fz	0.0004	0.0005	0.0007	0.0009	0.0010	0.0014	0.0016	0.0019	0.0023

NOTE: These guidelines may require variations to achieve optimum results.
Lower value of cutting speed is used for high stock removal applications or for higher hardness (machinability) within group.
Higher value of cutting speed is used for finishing applications or for lower hardness (machinability) within group.
When using tools with six flutes, reduce slotting ap by 40%.
Above parameters are based on ideal conditions. For smaller taper machining centers, please adjust parameters accordingly on >1/2" diameter.

HPBNDM





Material Group		3D Milling/Profiling ap	3D Milling/Profiling ae	KC633M Cutting Speed — vc SFM min	KC633M Cutting Speed — vc SFM max	Feed per Tooth — Finishing D1 — Diameter inch	1/8 0.125	5/32 0.156	3/16 0.188	1/4 0.250	5/16 0.313	3/8 0.375	1/2 0.500	5/8 0.625	3/4 0.750
P	3	0.04 x D	0.04 x D	1360	1540	fz	0.0033	0.0042	0.0052	0.0070	0.0090	0.0105	0.0135	0.0157	0.0175
P	4	0.04 x D	0.04 x D	1190	1360	fz	0.0031	0.0039	0.0047	0.0063	0.0081	0.0093	0.0120	0.0139	0.0152
H	1	0.03 x D	0.03 x D	950	1330	fz	0.0033	0.0041	0.0050	0.0068	0.0086	0.0100	0.0128	0.0148	0.0163
H	2	0.03 x D	0.03 x D	670	1140	fz	0.0025	0.0031	0.0038	0.0051	0.0065	0.0075	0.0096	0.0110	0.0120
H	3	0.02 x D	0.02 x D	710	1060	fz	0.0021	0.0026	0.0032	0.0043	0.0054	0.0063	0.0082	0.0095	0.0107
H	4	0.02 x D	0.02 x D	590	830	fz	0.0014	0.0017	0.0021	0.0028	0.0036	0.0042	0.0054	0.0063	0.0070





Material Group		3D Milling/Profiling ap	3D Milling/Profiling ae	KC633M Cutting Speed — vc SFM min	KC633M Cutting Speed — vc SFM max	Feed per Tooth — Semi-Finishing D1 — Diameter inch	1/8 0.125	5/32 0.156	3/16 0.188	1/4 0.250	5/16 0.313	3/8 0.375	1/2 0.500	5/8 0.625	3/4 0.750
P	3	0.01 x D	0.05 x D	890	1000	fz	0.0022	0.0027	0.0033	0.0045	0.0059	0.0068	0.0088	0.0102	0.0114
P	4	0.01 x D	0.05 x D	780	890	fz	0.0020	0.0025	0.0030	0.0041	0.0053	0.0061	0.0078	0.0090	0.0099
H	1	0.07 x D	0.1 x D	660	920	fz	0.0025	0.0031	0.0038	0.0051	0.0066	0.0076	0.0098	0.0113	0.0124
H	2	0.05 x D	0.04 x D	530	910	fz	0.0022	0.0027	0.0033	0.0044	0.0057	0.0065	0.0084	0.0096	0.0105
H	3	0.03 x D	0.03 x D	570	860	fz	0.0019	0.0025	0.0030	0.0040	0.0051	0.0059	0.0076	0.0089	0.0100
H	4	0.03 x D	0.03 x D	480	670	fz	0.0013	0.0016	0.0020	0.0027	0.0034	0.0039	0.0051	0.0059	0.0066





Material Group		3D Milling/Profiling ap	3D Milling/Profiling ae	KC633M Cutting Speed — vc SFM min	KC633M Cutting Speed — vc SFM max	Feed per Tooth — Roughing D1 — Diameter inch	1/8 0.125	5/32 0.156	3/16 0.188	1/4 0.250	5/16 0.313	3/8 0.375	1/2 0.500	5/8 0.625	3/4 0.750
P	3	0.02 x D	0.01 x D	680	770	fz	0.0010	0.0012	0.0015	0.0020	0.0026	0.0030	0.0039	0.0046	0.0051
P	4	0.02 x D	0.01 x D	600	680	fz	0.0009	0.0011	0.0014	0.0018	0.0023	0.0027	0.0035	0.0040	0.0044
H	1	0.15 x D	0.01 x D	460	640	fz	0.0013	0.0017	0.0020	0.0028	0.0035	0.0041	0.0052	0.0060	0.0066
H	2	0.01 x D	0.75 x D	390	670	fz	0.0015	0.0019	0.0023	0.0031	0.0039	0.0045	0.0058	0.0067	0.0073
H	3	0.05 x D	0.05 x D	450	680	fz	0.0017	0.0021	0.0026	0.0035	0.0044	0.0052	0.0067	0.0078	0.0087
H	4	0.05 x D	0.05 x D	380	530	fz	0.0011	0.0014	0.0017	0.0023	0.0030	0.0034	0.0044	0.0052	0.0058

NOTE: These guidelines may require variations to achieve optimum results.



MaxiMet™ Carbide End Mills for High Metal Removal Rates and Superior Surface Finishes

Primary Application

Designed to significantly reduce machining time in aluminum! The innovative geometry designs include a wiper facet for superior surface finish on aluminum parts. MaxiMet takes roughing and finishing cuts with one tool.

Features and Benefits

Higher Productivity and Profitability

- Use only one tool for roughing and finishing operations.
- Slotting is effective up to full 1 x D axial depth. Side milling is effective up to 0.5 x D radial and 1.5 x D axial depth.
- Three-flute series uses unequal flute spacing for chatter-free performance.
- Effective in a full range of machine speeds.
- Multiple corner radii and extended neck configurations are available as standard.

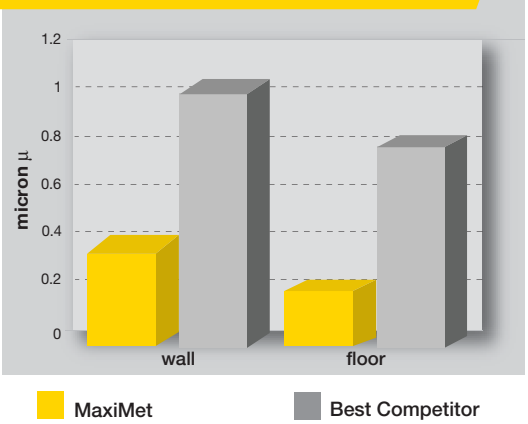


Featured Application: Machining a Block

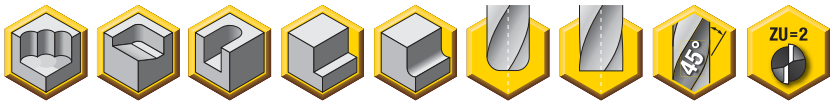
Operation: Slotting
Workpiece: Aluminum block
Material: 6061 aluminum
Solution: MaxiMet solid carbide end mill
Results: 100% better surface finish on walls and floor

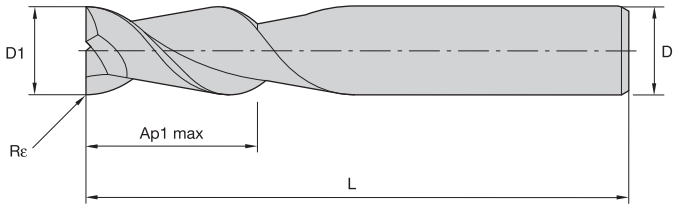
	COMPETITOR	MaxiMet
grade:	uncoated tools	uncoated tools
end mill:	5/8" 3-flute	5/8" 3-flute MaxiMet
material:	aluminum	aluminum
depth of cut (ap):	0.3150"	0.3150"
width of cut (ae):	0.3150"	0.3150"
speed (vc):	2,000 SFM	2,000 SFM
RPM (N):	12,000 RPM	12,000 RPM
feed rate (vf):	142 IPM	142 IPM
chip load per tooth (fz):	.004 IPT	.004 IPT
metal removal rate:	14 in^3/min	14 in^3/min

MaxiMet Delivered 100% Better Surface Finish!

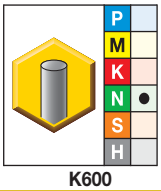


- Center cutting.
- Effective in thin wall applications.
- Wiper facet, special end gash, and flute geometry provide better surface finishes.
- Unique geometry delivers maximum metal removal rates.









● first choice
○ alternate choice

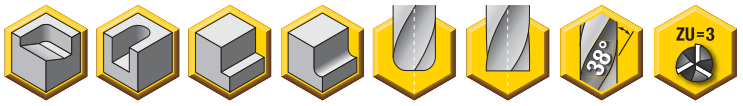
K600	D1	D	Ap1 max	L	Rε
ABDF0188J2ARA	3/16	3/16	3/8	2	.015
ABDF0188J2AS	3/16	3/16	3/8	2	—
ABDF0250J2ARA	1/4	1/4	1/2	2 1/2	.015
ABDF0250J2ARB	1/4	1/4	1/2	2 1/2	.030
ABDF0250J2AS	1/4	1/4	1/2	2 1/2	—
ABDF0312J2ARA	5/16	5/16	5/8	2 1/2	.015
ABDF0312J2ARB	5/16	5/16	5/8	2 1/2	.030
ABDF0312J2AS	5/16	5/16	5/8	2 1/2	—
ABDF0375J2ARB	3/8	3/8	3/4	2 1/2	.030
ABDF0375J2AS	3/8	3/8	3/4	2 1/2	—
ABDF0500J2ARB	1/2	1/2	1 1/4	3	.030
ABDF0500J2ARC	1/2	1/2	1 1/4	3	.060
ABDF0500J2ARE	1/2	1/2	1 1/4	3	.120
ABDF0500J2AS	1/2	1/2	1 1/4	3	—
ABDF0625J2AS	5/8	5/8	1 1/4	3 1/2	—
ABDF0625J2BRB	5/8	5/8	1 5/8	3 1/2	.030
ABDF0625J2BRC	5/8	5/8	1 5/8	3 1/2	.060
ABDF0625J2BRE	5/8	5/8	1 5/8	3 1/2	.120
ABDF0625J2BS	5/8	5/8	1 5/8	3 1/2	—
ABDF0750J2ARB	3/4	3/4	1 1/2	4	.030
ABDF0750J2ARC	3/4	3/4	1 1/2	4	.060
ABDF0750J2ARE	3/4	3/4	1 1/2	4	.120
ABDF0750J2AS	3/4	3/4	1 1/2	4	—
ABDF0750J2BRB	3/4	3/4	1 5/8	4	.030
ABDF0750J2BRC	3/4	3/4	1 5/8	4	.060
ABDF0750J2BRE	3/4	3/4	1 5/8	4	.120
ABDF0750J2BS	3/4	3/4	1 5/8	4	—
ABDF1000J2ARB	1	1	1 1/2	4	.030
ABDF1000J2ARC	1	1	1 1/2	4	.060
ABDF1000J2ARE	1	1	1 1/2	4	.120
ABDF1000J2AS	1	1	1 1/2	4	—
ABDF1000J2BRB	1	1	2	5	.030
ABDF1000J2BRC	1	1	2	5	.060
ABDF1000J2BRE	1	1	2	5	.120
ABDF1000J2BS	1	1	2	5	—

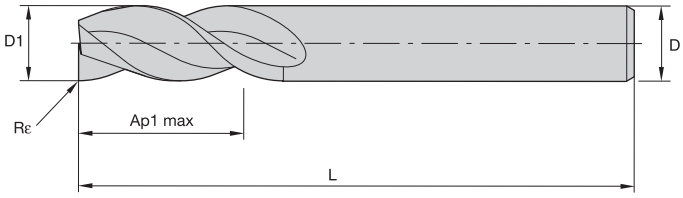
NOTE: For application data, see page M60.

End Mill Tolerances

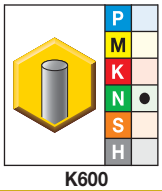
D1	tolerance h6	D	tolerance h6
<1/8"	+0/-.002"	<1/8"	+0/-.00024"
1/8–7/32"	+0/-.002"	1/8–7/32"	+0/-.00031"
1/4–3/8"	+0/-.00035"	1/4–3/8"	+0/-.00035"
13/32–11/16"	+0/-.00043"	13/32–11/16"	+0/-.00043"
23/32–1 3/16"	+0/-.00051"	23/32–1 3/16"	+0/-.00051"

- Center cutting.
- Effective in thin wall applications.
- Wiper facet, special end gash, and flute geometry provide better surface finishes.
- Unique geometry delivers maximum metal removal rates.









● first choice
○ alternate choice

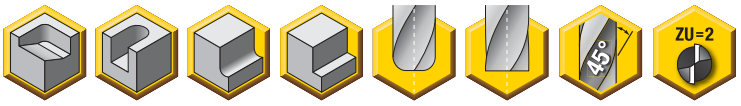
K600	D1	D	Ap1 max	L	Rε
ABDE0188J3ARA	3/16	3/16	7/32	2	.0150
ABDE0188J3AS	3/16	3/16	7/32	2	—
ABDE0250J3ARB	1/4	1/4	1/2	2 1/2	.0300
ABDE0250J3AS	1/4	1/4	1/2	2 1/2	—
ABDE0312J3ARB	5/16	5/16	5/8	2 1/2	.0300
ABDE0312J3AS	5/16	5/16	5/8	2 1/2	—
ABDE0375J3ARB	3/8	3/8	3/4	2 1/2	.0300
ABDE0375J3AS	3/8	3/8	3/4	2 1/2	—
ABDE0500J3ARB	1/2	1/2	1 1/4	3	.0300
ABDE0500J3ARC	1/2	1/2	1 1/4	3	.0600
ABDE0500J3ARE	1/2	1/2	1 1/4	3	.1200
ABDE0500J3AS	1/2	1/2	1 1/4	3	—
ABDE0625J3AS	5/8	5/8	1 1/4	3 1/2	—
ABDE0625J3BRB	5/8	5/8	1 5/8	3 1/2	.0300
ABDE0625J3BS	5/8	5/8	1 5/8	3 1/2	—
ABDE0750J3ARB	3/4	3/4	1 1/2	4	.0300
ABDE0750J3ARC	3/4	3/4	1 1/2	4	.0600
ABDE0750J3ARE	3/4	3/4	1 1/2	4	.1200
ABDE0750J3AS	3/4	3/4	1 1/2	4	—
ABDE0750J3BRB	3/4	3/4	1 5/8	4	.0300
ABDE0750J3BRC	3/4	3/4	1 5/8	4	.0600
ABDE0750J3BRE	3/4	3/4	1 5/8	4	.1200
ABDE0750J3BS	3/4	3/4	1 5/8	4	—
ABDE1000J3ARB	1	1	1 1/2	4	.0300
ABDE1000J3ARC	1	1	1 1/2	4	.0600
ABDE1000J3ARE	1	1	1 1/2	4	.1200
ABDE1000J3AS	1	1	1 1/2	4	—
ABDE1000J3BRB	1	1	2	5	.0300
ABDE1000J3BRC	1	1	2	5	.0600
ABDE1000J3BRE	1	1	2	5	.1200
ABDE1000J3BS	1	1	2	5	—

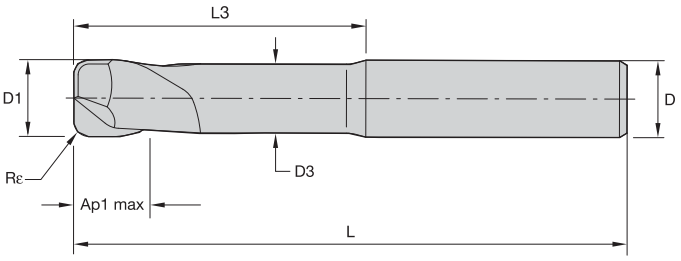
NOTE: For application data, see page M60.

End Mill Tolerances

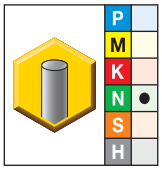
D1	tolerance h6	D	tolerance h6
<1/8"	+0/-.002"	<1/8"	+0/-.00024"
1/8–7/32"	+0/-.002"	1/8–7/32"	+0/-.00031"
1/4–3/8"	+0/-.00035"	1/4–3/8"	+0/-.00035"
13/32–11/16"	+0/-.00043"	13/32–11/16"	+0/-.00043"
23/32–1 3/16"	+0/-.00051"	23/32–1 3/16"	+0/-.00051"

- Kennametal standard dimensions.
- Center cutting.
- Effective in thin wall applications.
- Wiper facet, special end gash, and flute geometry provide better surface finishes.
- Unique geometry delivers maximum metal removal rates.









● first choice
○ alternate choice

K600	D1	D	D3	Ap1 max	Rε	L	L3
ABDF0250J2BQB	1/4	1/4	.235	3/8	0.03	4	1 1/8
ABDF0250J2CQB	1/4	1/4	.235	3/8	0.03	4	2 1/8
ABDF0250J2AQB	1/4	1/4	.235	3/8	0.03	4	3/4
ABDF0250J2BQ	1/4	1/4	.235	3/8	–	4	1 1/8
ABDF0250J2CQ	1/4	1/4	.235	3/8	–	4	2 1/8
ABDF0250J2AQ	1/4	1/4	.235	3/8	–	4	3/4
ABDF0312J2AQB	5/16	5/16	.294	7/16	0.03	4	1 1/8
ABDF0375J2AQB	3/8	3/8	.352	1/2	0.03	4	1 1/8
ABDF0375J2BQB	3/8	3/8	.352	1/2	0.03	4	2 1/8
ABDF0375J2AQ	3/8	3/8	.352	1/2	–	4	1 1/8
ABDF0375J2BQ	3/8	3/8	.352	1/2	–	4	2 1/8
ABDF0500J2BQB	1/2	1/2	.469	5/8	0.03	4	2 1/4
ABDF0500J2AQB	1/2	1/2	.469	5/8	0.03	4	1 3/8
ABDF0500J2BQC	1/2	1/2	.469	5/8	0.06	4	2 1/4
ABDF0500J2BQD	1/2	1/2	.469	5/8	0.09	4	2 1/4
ABDF0500J2AQE	1/2	1/2	.469	5/8	0.12	4	1 3/8
ABDF0500J2BQE	1/2	1/2	.469	5/8	0.12	4	2 1/4
ABDF0500J2BQ	1/2	1/2	.469	5/8	–	4	2 1/4
ABDF0500J2AQ	1/2	1/2	.469	5/8	–	4	1 3/8
ABDF0500J2CQB	1/2	1/2	.469	5/8	0.03	6	3 3/8
ABDF0500J2CQC	1/2	1/2	.469	5/8	0.06	6	3 3/8
ABDF0500J2CQD	1/2	1/2	.469	5/8	0.09	6	3 3/8
ABDF0500J2CQE	1/2	1/2	.469	5/8	0.12	6	3 3/8
ABDF0500J2CQ	1/2	1/2	.469	5/8	–	6	3 3/8
ABDF0625J2AQB	5/8	5/8	.587	3/4	0.03	4	1 5/8
ABDF0625J2AQ	5/8	5/8	.587	3/4	–	4	1 5/8
ABDF0625J2BQB	5/8	5/8	.587	3/4	0.03	6	3 3/8
ABDF0625J2BQE	5/8	5/8	.587	3/4	0.12	6	3 3/8
ABDF0625J2BQ	5/8	5/8	.587	3/4	–	6	3 3/8
ABDF0750J2AQB	3/4	3/4	.705	1	0.03	4	1 5/8
ABDF0750J2AQE	3/4	3/4	.705	1	0.12	4	1 5/8
ABDF0750J2AQ	3/4	3/4	.705	1	–	4	1 5/8
ABDF0750J2BQB	3/4	3/4	.705	1	0.03	6	2 1/2
ABDF0750J2CQB	3/4	3/4	.705	1	0.03	6	3 3/8

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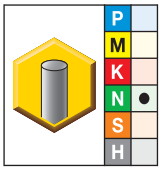

K600	D1	D	D3	Ap1 max	Rε	L	L3
ABDF0750J2BQC	3/4	3/4	.705	1	0.06	6	2 1/2
ABDF0750J2BQD	3/4	3/4	.705	1	0.09	6	2 1/2
ABDF0750J2BQE	3/4	3/4	.705	1	0.12	6	2 1/2
ABDF0750J2BQ	3/4	3/4	.705	1	—	6	2 1/2
ABDF0750J2CQ	3/4	3/4	.705	1	—	6	3 3/8
ABDF1000J2AQB	1	1	.940	1 1/4	0.03	5	2 3/8
ABDF1000J2AQE	1	1	.940	1 1/4	0.12	5	2 3/8
ABDF1000J2AQ	1	1	.940	1 1/4	—	5	2 3/8
ABDF1000J2BQB	1	1	.940	1 1/4	0.03	7	3 3/8
ABDF1000J2CQB	1	1	.940	1 1/4	0.03	7	4 3/8
ABDF1000J2BQE	1	1	.940	1 1/4	0.12	7	3 3/8
ABDF1000J2BQ	1	1	.940	1 1/4	—	7	3 3/8
ABDF1000J2CQ	1	1	.940	1 1/4	—	7	4 3/8

NOTE: For application data, see page M60.

End Mill Tolerances

D1	tolerance h6	D	tolerance h6
<1/8"	+0/-.002"	<1/8"	+0/-.00024"
1/8–7/32"	+0/-.002"	1/8–7/32"	+0/-.00031"
1/4–3/8"	+0/-.00035"	1/4–3/8"	+0/-.00035"
13/32–11/16"	+0/-.00043"	13/32–11/16"	+0/-.00043"
23/32–1 3/16"	+0/-.00051"	23/32–1 3/16"	+0/-.00051"

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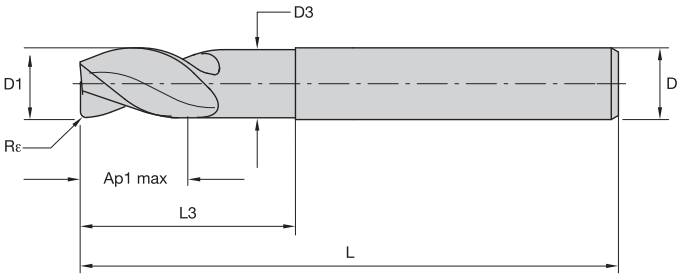
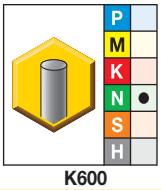
- Unique geometry delivers maximum metal removal rates.









● first choice
○ alternate choice

K600	D1	D	D3	Ap1 max	L	Rε	L3
ABDE0250J3CQ	1/4	1/4	.234	3/8	4	–	2 1/8
ABDE0250J3BQB	1/4	1/4	.234	3/8	4	0.03	1 1/8
ABDE0250J3BQ	1/4	1/4	.234	3/8	4	–	1 1/8
ABDE0250J3AQ	1/4	1/4	.234	3/8	4	–	3/4
ABDE0250J3AQB	1/4	1/4	.234	3/8	4	0.03	3/4
ABDE0250J3CQB	1/4	1/4	.234	3/8	4	0.03	2 1/8
ABDE0312J3AQB	5/16	5/16	.293	7/16	4	0.03	1 1/8
ABDE0375J3AQ	3/8	3/8	.351	1/2	4	–	1 1/8
ABDE0375J3BQ	3/8	3/8	.351	1/2	4	–	2 1/8
ABDE0375J3BQB	3/8	3/8	.351	1/2	4	0.03	2 1/8
ABDE0375J3AQB	3/8	3/8	.351	1/2	4	0.03	1 1/8
ABDE0500J3BQE	1/2	1/2	.469	5/8	4	0.12	2 1/4
ABDE0500J3AQB	1/2	1/2	.469	5/8	4	0.03	1 3/8
ABDE0500J3BQC	1/2	1/2	.469	5/8	4	0.06	2 1/4
ABDE0500J3BQB	1/2	1/2	.469	5/8	4	0.03	2 1/4
ABDE0500J3AQ	1/2	1/2	.469	5/8	4	–	1 3/8
ABDE0500J3BQ	1/2	1/2	.469	5/8	4	–	2 1/4
ABDE0500J3BQD	1/2	1/2	.469	5/8	4	0.09	2 1/4
ABDE0500J3AQE	1/2	1/2	.469	5/8	4	0.12	1 3/8
ABDE0500J3CQ	1/2	1/2	.469	5/8	6	–	3 3/8
ABDE0500J3CQC	1/2	1/2	.469	5/8	6	0.06	3 3/8
ABDE0500J3CQD	1/2	1/2	.469	5/8	6	0.09	3 3/8
ABDE0500J3CQE	1/2	1/2	.469	5/8	6	0.12	3 3/8
ABDE0500J3CQB	1/2	1/2	.469	5/8	6	0.03	3 3/8
ABDE0625J3AQB	5/8	5/8	.585	3/4	4	0.03	1 5/8
ABDE0625J3AQ	5/8	5/8	.585	3/4	4	–	1 5/8
ABDE0625J3BQE	5/8	5/8	.585	3/4	6	0.12	3 3/8
ABDE0625J3BQB	5/8	5/8	.585	3/4	6	0.03	3 3/8
ABDE0625J3BQ	5/8	5/8	.585	3/4	6	–	3 3/8
ABDE0750J3AQB	3/4	3/4	.705	1	4	0.03	1 5/8
ABDE0750J3AQ	3/4	3/4	.705	1	4	–	1 5/8
ABDE0750J3AQE	3/4	3/4	.705	1	4	0.12	1 5/8
ABDE0750J3CQB	3/4	3/4	.705	1	6	0.03	3 3/8
ABDE0750J3BQC	3/4	3/4	.705	1	6	0.06	2 1/2

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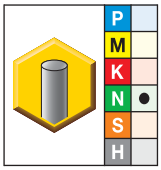


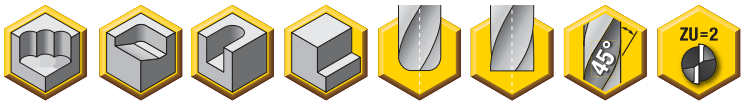
K600	D1	D	D3	Ap1 max	L	Rε	L3
ABDE0750J3BQE	3/4	3/4	.705	1	6	0.12	2 1/2
ABDE0750J3BQD	3/4	3/4	.705	1	6	0.09	2 1/2
ABDE0750J3CQ	3/4	3/4	.705	1	6	—	3 3/8
ABDE0750J3BQ	3/4	3/4	.705	1	6	—	2 1/2
ABDE0750J3BQB	3/4	3/4	.705	1	6	0.03	2 1/2
ABDE1000J3AQ	1	1	.940	1 1/4	5	—	2 3/8
ABDE1000J3AQB	1	1	.940	1 1/4	5	0.03	2 3/8
ABDE1000J3AQE	1	1	.940	1 1/4	5	0.12	2 3/8
ABDE1000J3CQB	1	1	.940	1 1/4	7	0.03	4 3/8
ABDE1000J3BQ	1	1	.940	1 1/4	7	—	3 3/8
ABDE1000J3CQ	1	1	.940	1 1/4	7	—	4 3/8
ABDE1000J3BQB	1	1	.940	1 1/4	7	0.03	3 3/8
ABDE1000J3BQE	1	1	.940	1 1/4	7	0.12	3 3/8

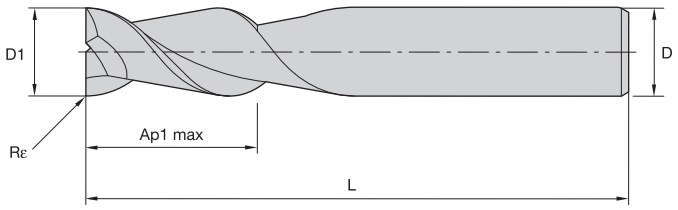
NOTE: For application data, see page M60.

End Mill Tolerances

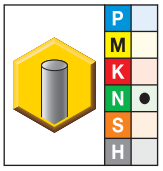
D1	tolerance h6	D	tolerance h6
<1/8"	+0/-.002"	<1/8"	+0/-.00024"
1/8–7/32"	+0/-.002"	1/8–7/32"	+0/-.00031"
1/4–3/8"	+0/-.00035"	1/4–3/8"	+0/-.00035"
13/32–11/16"	+0/-.00043"	13/32–11/16"	+0/-.00043"
23/32–1 3/16"	+0/-.00051"	23/32–1 3/16"	+0/-.00051"

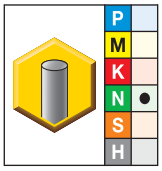
- Double rake flute form.
- Center cutting.

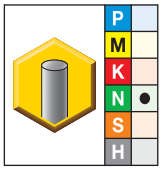












● first choice
○ alternate choice

K600	KC651M	KC625M	D1	D	Ap1 max	L	Rε
AADF125J2F	–	AADF125J2F	1/8	1/8	1/4	1 1/2	–
AADF0125J2A	AADF0125J2A	AADF0125J2A	1/8	1/8	1/4	2	–
AADF125J2G	–	AADF125J2G	1/8	1/8	3/8	1 1/2	–
AADF0125J2CRA	–	–	1/8	1/8	3/8	2	0.015
AADF0125J2CRB	–	–	1/8	1/8	3/8	2	0.03
AADF0125J2C	–	–	1/8	1/8	3/8	2	–
AADF0125J2BRA	AADF0125J2BRA	–	1/8	1/8	1/2	2	0.015
AADF0125J2B	AADF0125J2B	AADF0125J2B	1/8	1/8	1/2	2	–
AADF0125J2DRA	–	–	1/8	1/8	1/2	2 1/2	0.015
AADF0125J2DRB	–	–	1/8	1/8	1/2	2 1/2	0.03
AADF0125J2D	–	–	1/8	1/8	1/2	2 1/2	–
AADF0125J2ERA	–	–	1/8	1/8	3/4	2 1/2	0.015
AADF0125J2ERB	–	–	1/8	1/8	3/4	2 1/2	0.03
AADF0125J2E	–	–	1/8	1/8	3/4	2 1/2	–
AADF156J2A	–	AADF156J2A	5/32	3/16	9/16	2	–
AADF0188J2A	AADF0188J2A	AADF0188J2A	3/16	3/16	5/16	2	–
–	–	AADF188J2A	3/16	3/16	5/16	2	–
AADF0188J2CRA	–	–	3/16	3/16	5/16	2 1/2	0.015
AADF0188J2CRB	–	–	3/16	3/16	5/16	2 1/2	0.03
AADF0188J2C	–	–	3/16	3/16	5/16	2 1/2	–
–	–	AADF188J2F	3/16	3/16	9/16	2	–
AADF0188J2DRA	–	–	3/16	3/16	9/16	2 1/2	0.015
AADF0188J2DRB	–	–	3/16	3/16	9/16	2 1/2	0.03
AADF0188J2D	–	–	3/16	3/16	9/16	2 1/2	–
AADF0188J2BRA	AADF0188J2BRA	–	3/16	3/16	5/8	2	0.015
AADF0188J2B	AADF0188J2B	AADF0188J2B	3/16	3/16	5/8	2	–
AADF188J2E	–	–	3/16	3/16	3/4	2 1/2	–
AADF219J2A	–	AADF219J2A	7/32	1/4	3/4	2 1/2	–
AADF0250J2ARA	–	–	1/4	1/4	3/8	2	0.015
AADF0250J2ARB	AADF0250J2ARB	–	1/4	1/4	3/8	2	0.03
AADF0250J2A	AADF0250J2A	AADF0250J2A	1/4	1/4	3/8	2	–
AADF250J2H	–	AADF250J2H	1/4	1/4	3/8	2 1/2	–

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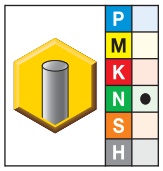

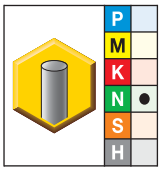

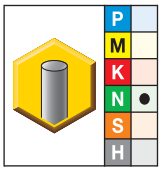

K600	KC651M	KC625M	D1	D	Ap1 max	L	R
AADF0250J2DRA	–	–	1/4	1/4	1/2	2 1/2	0.015
AADF0250J2DRB	–	–	1/4	1/4	1/2	2 1/2	0.03
AADF0250J2D	–	–	1/4	1/4	1/2	2 1/2	–
AADF0250J2ERA	–	–	1/4	1/4	5/8	2 1/2	0.015
AADF0250J2ERB	–	–	1/4	1/4	5/8	2 1/2	0.03
AADF0250J2E	–	–	1/4	1/4	5/8	2 1/2	–
AADF0250J2BRA	AADF0250J2BRA	–	1/4	1/4	3/4	2 1/2	0.015
AADF0250J2BRB	AADF0250J2BRB	–	1/4	1/4	3/4	2 1/2	0.03
AADF0250J2B	AADF0250J2B	AADF0250J2B	1/4	1/4	3/4	2 1/2	–
AADF0250J2FRA	–	–	1/4	1/4	1	3	0.015
AADF0250J2FRB	–	–	1/4	1/4	1	3	0.03
AADF0250J2F	–	–	1/4	1/4	1	3	–
AADF250J2I	–	AADF250J2I	1/4	1/4	1 1/8	3	–
AADF0250J2CRA	AADF0250J2CRA	–	1/4	1/4	1 1/4	3 1/4	0.015
AADF0250J2CRB	AADF0250J2CRB	–	1/4	1/4	1 1/4	3 1/4	0.03
AADF0250J2C	AADF0250J2C	AADF0250J2C	1/4	1/4	1 1/4	3 1/4	–
AADF0250J2GRA	–	–	1/4	1/4	1 3/4	4	0.015
AADF0250J2GRB	–	–	1/4	1/4	1 3/4	4	0.03
AADF0250J2G	–	–	1/4	1/4	1 3/4	4	–
–	–	AADF0312J2E	5/16	5/16	7/16	2	–
AADF0312J2ARB	AADF0312J2ARB	–	5/16	5/16	13/16	2 1/2	0.03
AADF0312J2A	AADF0312J2A	AADF0312J2A	5/16	5/16	13/16	2 1/2	–
–	–	AADF312J2A	5/16	5/16	13/16	2 1/2	–
AADF0312J2BRA	–	–	5/16	5/16	1	3	0.015
AADF0312J2BRB	–	–	5/16	5/16	1	3	0.03
AADF0312J2BRC	–	–	5/16	5/16	1	3	0.06
AADF0312J2B	–	–	5/16	5/16	1	3	–
AADF312J2C	–	–	5/16	5/16	1 1/8	3	–
–	–	AADF0312J2D	5/16	5/16	1 1/4	3 1/4	–
AADF0312J2ARC	AADF0312J2ARC	–	5/16	3/8	13/16	2 1/2	0.06
AADF344J2A	–	–	11/32	3/8	1	2 1/2	–
AADF0375J2ARA	–	–	3/8	3/8	1/2	2	0.015
AADF0375J2ARB	–	–	3/8	3/8	1/2	2	0.03
AADF0375J2A	AADF0375J2A	AADF0375J2A	3/8	3/8	1/2	2	–
AADF375J2F	–	AADF375J2J	3/8	3/8	1/2	2 1/2	–
AADF0375J2BRB	AADF0375J2BRB	–	3/8	3/8	7/8	2 1/2	0.03
AADF0375J2BRC	AADF0375J2BRC	–	3/8	3/8	7/8	2 1/2	0.06
AADF0375J2B	AADF0375J2B	AADF0375J2B	3/8	3/8	7/8	2 1/2	–
AADF0375J2DRA	–	–	3/8	3/8	1	3	0.015
AADF0375J2DRB	–	–	3/8	3/8	1	3	0.03
AADF0375J2DRC	–	–	3/8	3/8	1	3	0.06
AADF0375J2D	–	–	3/8	3/8	1	3	–
AADF375J2H	–	AADF375J2H	3/8	3/8	1 1/8	3	–
AADF0375J2ERA	–	–	3/8	3/8	1 1/4	3 1/2	0.015

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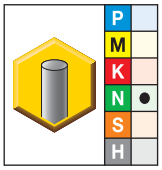

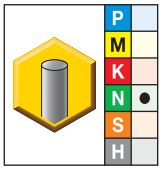

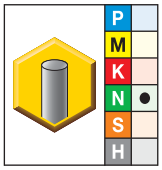

K600	KC651M	KC625M	D1	D	Ap1 max	L	Rε
AADF0375J2ERB	–	–	3/8	3/8	1 1/4	3 1/2	0.03
AADF0375J2ERC	–	–	3/8	3/8	1 1/4	3 1/2	0.06
AADF0375J2E	–	–	3/8	3/8	1 1/4	3 1/2	–
AADF0375J2CRA	–	–	3/8	3/8	1 1/2	4	0.015
AADF0375J2CRB	AADF0375J2CRB	–	3/8	3/8	1 1/2	4	0.03
AADF0375J2CRC	AADF0375J2CRC	–	3/8	3/8	1 1/2	4	0.06
AADF0375J2C	AADF0375J2C	AADF0375J2C	3/8	3/8	1 1/2	4	–
AADF375J2G	–	AADF375J2G	3/8	3/8	1 3/4	4	–
–	–	AADF0438J2A	7/16	7/16	7/8	2 1/2	–
–	–	AADF438J2A	7/16	7/16	7/8	2 1/2	–
AADF438J2B	–	–	7/16	7/16	2	4 1/2	–
AADF0500J2ARB	AADF0500J2ARB	–	1/2	1/2	5/8	2 1/2	0.03
AADF0500J2ARC	AADF0500J2ARC		1/2	1/2	5/8	2 1/2	0.06
AADF0500J2A	AADF0500J2A	AADF0500J2A	1/2	1/2	5/8	2 1/2	–
AADF0500J2ERA	–	–	1/2	1/2	5/8	3	0.015
AADF0500J2ERB	–	–	1/2	1/2	5/8	3	0.03
AADF0500J2ERC	–	–	1/2	1/2	5/8	3	0.06
AADF0500J2E	–	AADF500J2E	1/2	1/2	5/8	3	–
AADF0500J2FRA	–	–	1/2	1/2	1	3	0.015
AADF0500J2FRB	–	–	1/2	1/2	1	3	0.03
AADF0500J2FRC	–		1/2	1/2	1	3	0.06
AADF0500J2F	–	AADF0500J2F	1/2	1/2	1	3	–
AADF500J2F	–	AADF500J2F	1/2	1/2	1	3	–
AADF0500J2BRA	–	–	1/2	1/2	1 1/4	3	0.015
AADF0500J2BRB	AADF0500J2BRB	–	1/2	1/2	1 1/4	3	0.03
AADF0500J2BRC	AADF0500J2BRC	–	1/2	1/2	1 1/4	3	0.06
AADF0500J2BRE	AADF0500J2BRE	–	1/2	1/2	1 1/4	3	0.12
AADF500J2B	AADF0500J2B	AADF0500J2B	1/2	1/2	1 1/4	3	–
–	–	AADF0500J2K	1/2	1/2	1 1//2	4	–
AADF0500J2GRA	–	–	1/2	1/2	1 5/8	4	0.015
AADF0500J2GRB	–	–	1/2	1/2	1 5/8	4	0.03
AADF0500J2GRC	–	–	1/2	1/2	1 5/8	4	0.06
AADF0500J2G	–	–	1/2	1/2	1 5/8	4	–
AADF0500J2CRA	–	–	1/2	1/2	2	4	0.015
AADF0500J2CRB	AADF0500J2CRB	–	1/2	1/2	2	4	0.03
AADF0500J2CRC	AADF0500J2CRC	–	1/2	1/2	2	4	0.06
AADF0500J2C	AADF0500J2C	AADF0500J2C	1/2	1/2	2	4	–
AADF500J2L	–	AADF500J2L	1/2	1/2	2	4 1/2	–
AADF0500J2DRB	AADF0500J2DRB	–	1/2	1/2	2 1/2	5	0.03
AADF0500J2DRC	AADF0500J2DRC	–	1/2	1/2	2 1/2	5	0.06
AADF0500J2DRA		–	1/2	1/2	2 1/2	5	0.015
AADF0500J2D	AADF0500J2D	AADF0500J2D	1/2	1/2	2 1/2	5	–
AADF500J2J	–	AADF0500J2J	1/2	1/2	3	5	–
AADF0500J2HRA	–	–	1/2	1/2	3 1/8	6	0.015

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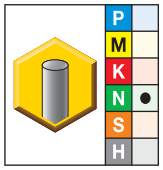

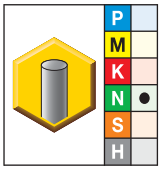

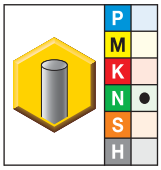

K600	KC651M	KC625M	D1	D	Ap1 max	L	Rε
AADF0500J2HRB	–	–	1/2	1/2	3 1/8	6	0.03
AADF0500J2HRC	–	–	1/2	1/2	3 1/8	6	0.06
AADF0500J2H	–	–	1/2	1/2	3 1/8	6	–
AADF0625J2C	–	AADF0625J2C	5/8	5/8	3/4	3	–
AADF0625J2CRA	–	–	5/8	5/8	3/4	3 1/2	0.015
AADF0625J2CRB	–	–	5/8	5/8	3/4	3 1/2	0.03
AADF0625J2CRC	–	–	5/8	5/8	3/4	3 1/2	0.06
–	–	AADF625J2C	5/8	5/8	3/4	3 1/2	–
AADF0625J2ARC	AADF0625J2ARC	–	5/8	5/8	1 1/4	3 1/2	0.06
AADF0625J2A	AADF0625J2A	AADF0625J2A	5/8	5/8	1 1/4	3 1/2	–
–	–	AADF625J2A	5/8	5/8	1 1/4	3 1/2	–
AADF0625J2DRA	–	–	5/8	5/8	1 5/8	3 1/2	0.015
AADF0625J2DRB	–	–	5/8	5/8	1 5/8	3 1/2	0.03
AADF0625J2DRC	–	–	5/8	5/8	1 5/8	3 1/2	0.06
AADF0625J2DRE	–	–	5/8	5/8	1 5/8	3 1/2	0.12
AADF0625J2D	–	AADF0625J2D	5/8	5/8	1 5/8	3 1/2	–
AADF0625J2ERA	–	–	5/8	5/8	2 1/8	4	0.015
AADF0625J2ERB	–	–	5/8	5/8	2 1/8	4	0.03
AADF0625J2ERC	–	–	5/8	5/8	2 1/8	4	0.06
AADF0625J2ERE	–	–	5/8	5/8	2 1/8	4	0.12
AADF0625J2E	–	–	5/8	5/8	2 1/8	4	–
AADF0625J2BRB	–	–	5/8	5/8	2 1/4	5	0.03
AADF0625J2BRC	AADF0625J2BRC	–	5/8	5/8	2 1/4	5	0.06
AADF625J2B	AADF0625J2B	–	5/8	5/8	2 1/4	5	–
AADF0625J2FRA	–	–	5/8	5/8	2 1/2	5	0.015
AADF0625J2FRB	–	–	5/8	5/8	2 1/2	5	0.03
AADF0625J2FRC	–	–	5/8	5/8	2 1/2	5	0.06
AADF0625J2F	–	–	5/8	5/8	2 1/2	5	–
–	–	AADF0625J2H	5/8	5/8	3	5 1/4	–
AADF0625J2GRA	–	–	5/8	5/8	3 1/4	6	0.015
AADF0625J2GRB	–	–	5/8	5/8	3 1/4	6	0.03
AADF0625J2GRC	–	–	5/8	5/8	3 1/4	6	0.06
AADF0625J2G	–	–	5/8	5/8	3 1/4	6	–
AADF0750J2A	AADF0750J2A	AADF0750J2A	3/4	3/4	7/8	3	–
AADF0750J2FRA	–	–	3/4	3/4	1	4	0.015
AADF0750J2FRB	–	–	3/4	3/4	1	4	0.03
AADF0750J2FRC	–	–	3/4	3/4	1	4	0.06
AADF0750J2F	–	AADF750J2F	3/4	3/4	1	4	–
AADF0750J2BRB	AADF0750J2BRB	–	3/4	3/4	1 1/2	4	0.03
AADF0750J2BRC	AADF0750J2BRC	–	3/4	3/4	1 1/2	4	0.06
AADF0750J2BRE	AADF0750J2BRE	–	3/4	3/4	1 1/2	4	0.12
AADF0750J2B	AADF0750J2B	AADF0750J2B	3/4	3/4	1 1/2	4	–
AADF0750J2ERA	–	–	3/4	3/4	1 5/8	4	0.015
AADF0750J2ERE	–	–	3/4	3/4	1 5/8	4	0.12

(continued)

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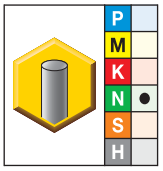
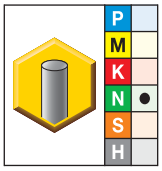
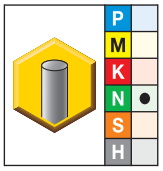






K600	KC651M	KC625M	D1	D	Ap1 max	L	Rε
–	–	AADF0750J2E	3/4	3/4	1 5/8	4	–
AADF0750J2CRA	–	–	3/4	3/4	2 1/4	5	0.015
AADF0750J2CRB	AADF0750J2CRB	–	3/4	3/4	2 1/4	5	0.03
AADF0750J2CRC	AADF0750J2CRC	–	3/4	3/4	2 1/4	5	0.06
AADF0750J2CRE	–	–	3/4	3/4	2 1/4	5	0.12
AADF0750J2C	AADF0750J2C	AADF0750J2C	3/4	3/4	2 1/4	5	–
–	–	AADF750J2C	3/4	3/4	2 1/4	5	–
AADF0750J2GRA	–	–	3/4	3/4	3 1/4	6	0.015
AADF0750J2GRB	–	–	3/4	3/4	3 1/4	6	0.03
AADF0750J2GRC	–	–	3/4	3/4	3 1/4	6	0.06
AADF0750J2GRD	–	–	3/4	3/4	3 1/4	6	0.09
AADF0750J2GRE	–	–	3/4	3/4	3 1/4	6	0.12
AADF750J2H	–	AADF0750J2H	3/4	3/4	4	6 1/4	–
AADF0750J2DRB	AADF0750J2DRB	–	3/4	3/4	3	5 1/4	0.03
AADF0750J2DRC	AADF0750J2DRC	–	3/4	3/4	3	5 1/4	0.06
AADF0750J2D	AADF0750J2D	AADF0750J2D	3/4	3/4	3	5 1/4	–
AADF1000J2FRA	–	–	1	1	1 1/4	4	0.015
AADF1000J2FRB	–	–	1	1	1 1/4	4	0.03
AADF1000J2FRC	–	–	1	1	1 1/4	4	0.06
AADF1000J2FRD	–	–	1	1	1 1/4	4	0.09
AADF1000J2FRE	–	–	1	1	1 1/4	4	0.12
AADF1000J2ARB	AADF1000J2ARB	–	1	1	1 1/2	4	0.03
AADF1000J2ARC	AADF1000J2ARC	–	1	1	1 1/2	4	0.06
AADF1000J2ARE	AADF1000J2ARE	–	1	1	1 1/2	4	0.12
AADF1000J2A	AADF1000J2A	AADF1000J2A	1	1	1 1/2	4	–
AADF1000J2DRA	–	–	1	1	2	5	0.015
AADF1000J2DRC	–	–	1	1	2	5	0.06
AADF1000J2DRD	–	–	1	1	2	5	0.09
AADF1000J2DRE	–	–	1	1	2	5	0.12
AADF1000J2D	–	–	1	1	2	5	–
AADF1000J2BRB	AADF1000J2BRB	–	1	1	2 1/4	5	0.03
AADF1000J2BRC	AADF1000J2BRC	–	1	1	2 1/4	5	0.06
AADF1000J2BRD	–	–	1	1	2 1/4	5	0.09
AADF1000J2BRE	–	–	1	1	2 1/4	5	0.12
AADF1000J2B	AADF1000J2B	AADF1000J2B	1	1	2 1/4	5	–
AADF1000J2GRA	–	–	1	1	2 5/8	6	0.015
AADF1000J2GRC	–	–	1	1	2 5/8	6	0.06
AADF1000J2GRD	–	–	1	1	2 5/8	6	0.09
AADF1000J2GRE	–	–	1	1	2 5/8	6	0.12
AADF1000J2CRB	AADF1000J2CRB	–	1	1	3	5	0.03
AADF1000J2CRC	AADF1000J2CRC	–	1	1	3	5	0.06
AADF1000J2C	AADF1000J2C	–	1	1	3	5	–
AADF1000J2ERA	–	–	1	1	3 1/4	6	0.015
AADF1000J2ERB	–	–	1	1	3 1/4	6	0.03
AADF1000J2ERC	–	–	1	1	3 1/4	6	0.06
AADF1000J2ERD	–	–	1	1	3 1/4	6	0.09
AADF1000J2ERE	–	–	1	1	3 1/4	6	0.12
AADF1000J2E	–	–	1	1	3 1/4	6	–
AADF1000J2H	–	–	1	1	4	6 1/2	–

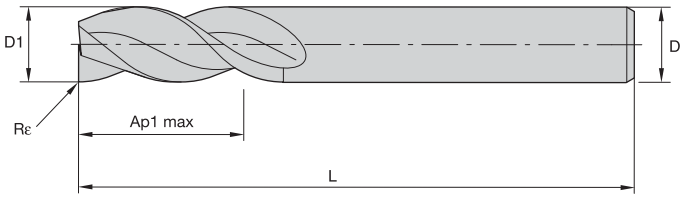
NOTE: For application data, see page M61.

End Mill Tolerances

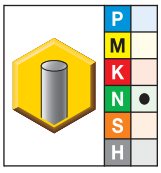
D1	tolerance h6	D	tolerance h6
<1/8"	+0/-.002"	<1/8"	+0/-.00024"
1/8–7/32"	+0/-.002"	1/8–7/32"	+0/-.00031"
1/4–3/8"	+0/-.00035"	1/4–3/8"	+0/-.00035"
13/32–11/16"	+0/-.00043"	13/32–11/16"	+0/-.00043"
23/32–1 3/16"	+0/-.00051"	23/32–1 3/16"	+0/-.00051"

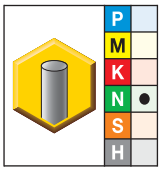
- Double rake flute form.
- Center cutting.

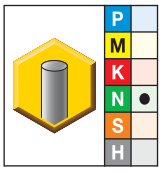












K600	KC625M	KC651M	D1	D	Ap1 max	L	Rε
AADE125J3G	AADE125J3G	–	1/8	1/8	1/4	1 1/2	–
AADE0125J3A	–	–	1/8	1/8	1/4	2	–
AADE0125J3ARA	–	–	1/8	1/8	1/4	2	.015
AADE125J3F	AADE125J3F	–	1/8	1/8	3/8	1 1/2	–
AADE0125J3CRA	–	–	1/8	1/8	3/8	2	.015
AADE0125J3C	–	–	1/8	1/8	3/8	2	–
AADE0125J3FRA	–	–	1/8	1/8	1/2	1 1/2	.010
AADE0125J3DRA	–	–	1/8	1/8	1/2	3	.015
AADE0125J3D	–	–	1/8	1/8	1/2	3	–
AADE0125J3E	–	–	1/8	1/8	3/4	3	–
AADE0125J3ERA	–	–	1/8	1/8	3/4	3	.015
AADE0188J3CRA	–	–	3/16	3/16	5/16	3	.015
AADE0188J3C	–	–	3/16	3/16	5/16	3	–
AADE188J3G	AADE188J3G	–	3/16	3/16	5/16	2	–
AADE188J3F	AADE188J3F	–	3/16	3/16	9/16	2	–
AADE0188J3DRA	–	–	3/16	3/16	9/16	3	.015
AADE0188J3D	–	–	3/16	3/16	9/16	3	–
AADE0188J3BRA	–	–	3/16	3/16	5/8	2	.010
AADE0188J3E	–	–	3/16	3/16	3/4	3	–
AADE0188J3ERA	–	–	3/16	3/16	3/4	3	.015
AADE0250J3ARA	–		1/4	1/4	3/8	2	.015
AADE0250J3ARB	–	AADE0250J3ARB	1/4	1/4	3/8	2	.030
AADE0250J3A	AADE0250J3A	AADE0250J3A	1/4	1/4	3/8	2	–
AADE0250J3HRB	AADE0250J3HRB	–	1/4	1/4	1/2	2	.018
AADE0250J3DRA	–	–	1/4	1/4	1/2	2 1/2	.015
AADE0250J3D	–	–	1/4	1/4	1/2	2 1/2	–
AADE0250J3ERA	–	–	1/4	1/4	5/8	2 1/2	.015
AADE0250J3E	–	–	1/4	1/4	5/8	2 1/2	–
AADE0250J3BRB	AADE0250J3BRB	AADE0250J3BRB	1/4	1/4	3/4	2 1/2	.030
AADE0250J3BRA	–	AADE0250J3BRA	1/4	1/4	3/4	2 1/2	.015
AADE0250J3B	AADE0250J3B	AADE0250J3B	1/4	1/4	3/4	2 1/2	–
AADE250J3B	AADE250J3B	–	1/4	1/4	3/4	2 1/2	–
AADE0250J3F	–	–	1/4	1/4	1	3	–
AADE0250J3FRA	–	–	1/4	1/4	1	3	.015
AADE250J3H	AADE250J3H	–	1/4	1/4	1 1/4	3	–
AADE0250J3CRB	–	AADE0250J3CRB	1/4	1/4	1 1/4	3 1/4	.030
AADE0250J3CRA	–	AADE0250J3CRA	1/4	1/4	1 1/4	3 1/4	.015
AADE0250J3C	AADE0250J3C	AADE0250J3C	1/4	1/4	1 1/4	3 1/4	–
AADE0250J3GRA	–	–	1/4	1/4	1 3/4	4	.015
AADE0250J3G	AADE0250J3G	–	1/4	1/4	1 3/4	4	–
AADE0250J3GRB	–	–	1/4	1/4	1 3/4	4	.030
AADE312J3C	AADE312J3C	–	5/16	5/16	7/16	2	–
AADE0312J3CRB	–	–	5/16	5/16	7/16	2	.030
AADE0312J3ERB	–	–	5/16	5/16	7/16	2	.018
AADE0312J3C	AADE0312J3C	–	5/16	5/16	7/16	2	–
AADE0312J3BRB	–	–	5/16	5/16	13/16	2 1/2	.018

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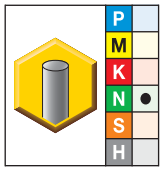

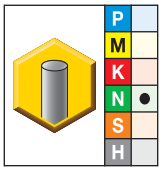

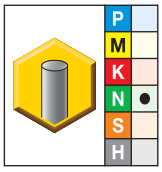

K600	KC625M	KC651M	D1	D	Ap1 max	L	Rε
AADE0312J3ARB	–	AADE0312J3ARB	5/16	5/16	13/16	2 1/2	.030
AADE0312J3ARC	–	AADE0312J3ARC	5/16	5/16	13/16	2 1/2	.060
AADE312J3A	AADE312J3A	AADE0312J3A	5/16	5/16	13/16	2 1/2	–
AADE0312J3BRA	–	–	5/16	5/16	1	3	.015
AADE0312J3B	–	–	5/16	5/16	1	3	–
AADE0312J3D	AADE0312J3D	–	5/16	5/16	1 1/4	3 1/4	–
AADE0312J3DRB	–	–	5/16	5/16	1 1/4	3 1/4	.030
AADE0375J3ARB	AADE0375J3ARB	–	3/8	3/8	1/2	2	.030
AADE0375J3A	AADE0375J3A	AADE0375J3A	3/8	3/8	1/2	2	–
–	AADE375J3A	–	3/8	3/8	1/2	2	–
AADE0375J3FRA	–	–	3/8	3/8	1/2	3	.015
AADE0375J3F	–	–	3/8	3/8	1/2	3	–
AADE0375J3GRA	–	–	3/8	3/8	3/4	2 1/2	.015
AADE0375J3G	–	–	3/8	3/8	3/4	2 1/2	–
–	AADE375J3B	–	3/8	3/8	7/8	2 1/2	–
AADE0375J3BRB	AADE0375J3BRB	AADE0375J3BRB	3/8	3/8	7/8	2 1/2	.030
AADE0375J3B	AADE0375J3B	AADE0375J3B	3/8	3/8	7/8	2 1/2	–
AADE0375J3BRC	–	AADE0375J3BRC	3/8	3/8	7/8	2 1/2	.060
AADE0375J3DRA	–	–	3/8	3/8	1	3	.015
AADE0375J3DRC	–	–	3/8	3/8	1	3	.060
AADE0375J3D	–	–	3/8	3/8	1	3	–
AADE0375J3DRB	–	–	3/8	3/8	1	3	.030
AADE375J3I	AADE375J3I	–	3/8	3/8	1 1/8	3	–
AADE0375J3E	–	–	3/8	3/8	1 1/4	3 1/2	–
AADE0375J3ERB	–	–	3/8	3/8	1 1/4	3 1/2	.030
AADE0375J3ERA	–	–	3/8	3/8	1 1/4	3 1/2	.015
AADE0375J3ERC	–	–	3/8	3/8	1 1/4	3 1/2	.060
AADE0375J3CRB	–	AADE0375J3CRB	3/8	3/8	1 1/2	4	.030
AADE0375J3C	AADE0375J3C	AADE0375J3C	3/8	3/8	1 1/2	4	–
AADE0375J3CRC	–	AADE0375J3CRC	3/8	3/8	1 1/2	4	.060
AADE0375J3H	–	–	3/8	3/8	2	4	–
AADE0375J3K	AADE0375J3K	–	3/8	3/8	2 1/2	4	–
AADE0375J3KRC	–	–	3/8	3/8	2 1/2	4	.060
AADE0375J3KRB	–	–	3/8	3/8	2 1/2	4	.030
AADE0375J3J	–	–	3/8	3/8	2 1/2	5	–
AADE438J3A	AADE438J3A	–	7/16	7/16	9/16	2 1/2	–
AADE0438J3ARB	–	–	7/16	7/16	7/8	2 1/2	.018
AADE0438J3A	AADE0438J3A	–	7/16	7/16	7/8	2 1/2	–
AADE438J3B	AADE438J3B	–	7/16	7/16	7/8	2 1/2	–
AADE438J3C	AADE438J3C	–	7/16	7/16	2	4	–
AADE0500J3A	AADE500J3A	AADE0500J3A	1/2	1/2	5/8	2 1/2	–
AADE0500J3ARC	–	AADE0500J3ARC	1/2	1/2	5/8	2 1/2	.060
AADE0500J3ARB	AADE0500J3ARB	AADE0500J3ARB	1/2	1/2	5/8	2 1/2	.030
AADE0500J3FRB	AADE0500J3FRB	–	1/2	1/2	1	3	.030
AADE0500J3F	AADE0500J3F	–	1/2	1/2	1	3	–
AADE0500J3FRA	–	–	1/2	1/2	1	3	.015
AADE0500J3FRC	–	–	1/2	1/2	1	3	.060
–	AADE500J3F	–	1/2	1/2	1	3	–

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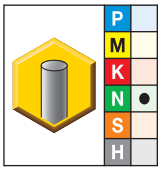

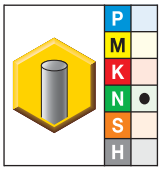

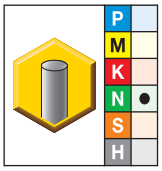

K600	KC625M	KC651M	D1	D	Ap1 max	L	Rε
AADE0500J3BRE	–	AADE0500J3BRE	1/2	1/2	1 1/4	3	.120
AADE0500J3BRC	–	AADE0500J3BRC	1/2	1/2	1 1/4	3	.060
AADE0500J3BRB	AADE0500J3BRB	AADE0500J3BRB	1/2	1/2	1 1/4	3	.030
AADE0500J3B	AADE0500J3B	AADE0500J3B	1/2	1/2	1 1/4	3	–
AADE0500J3BRA	–	–	1/2	1/2	1 1/4	3	.015
AADE0500J3KRB	–	–	1/2	1/2	1 1//2	4	.030
AADE0500J3KRC	–	–	1/2	1/2	1 1//2	4	.060
AADE0500J3K	AADE0500J3K	–	1/2	1/2	1 1//2	4	–
AADE0500J3GRB	–	–	1/2	1/2	1 5/8	4	.030
AADE0500J3G	–	–	1/2	1/2	1 5/8	4	–
AADE0500J3GRA	–	–	1/2	1/2	1 5/8	4	.015
AADE0500J3GRD	–	–	1/2	1/2	1 5/8	4	.090
AADE0500J3GRC	–	–	1/2	1/2	1 5/8	4	.060
AADE0500J3CRC	–	AADE0500J3CRC	1/2	1/2	2	4	.060
AADE0500J3CRA	–	–	1/2	1/2	2	4	.015
AADE0500J3CRB	–	AADE0500J3CRB	1/2	1/2	2	4	.030
AADE0500J3C	AADE0500J3C	AADE0500J3C	1/2	1/2	2	4	–
AADE500J3H	AADE500J3H	–	1/2	1/2	2	4 1/2	–
AADE0500J3DRB	–	AADE0500J3DRB	1/2	1/2	2 1/2	5	.030
AADE0500J3DRC	–	AADE0500J3DRC	1/2	1/2	2 1/2	5	.060
AADE0500J3D	AADE0500J3D	AADE0500J3D	1/2	1/2	2 1/2	5	–
AADE0500J3L	AADE0500J3L	–	1/2	1/2	3	5	–
AADE0500J3LRB	–	–	1/2	1/2	3	5	.030
AADE0500J3LRC	–	–	1/2	1/2	3	5	.060
AADE0500J3H	–	–	1/2	1/2	3 1/8	6	–
AADE625J3I	–	–	5/8	5/8	3/4	3	–
AADE0625J3IRC	–	–	5/8	5/8	3/4	3	.060
AADE0625J3IRD	–	–	5/8	5/8	3/4	3	.120
AADE0625J3C	–	–	5/8	5/8	3/4	3 1/2	–
AADE0625J3CRA	–	–	5/8	5/8	3/4	3 1/2	.015
AADE0625J3CRB	–	–	5/8	5/8	3/4	3 1/2	.030
AADE0625J3CRC	–	–	5/8	5/8	3/4	3 1/2	.060
AADE0625J3A	AADE0625J3A	AADE0625J3A	5/8	5/8	1 1/4	3 1/2	–
AADE0625J3ARC	–	AADE0625J3ARC	5/8	5/8	1 1/4	3 1/2	.060
AADE0625J3ARB	–	–	5/8	5/8	1 1/4	3 1/2	.030
AADE0625J3DRB	–	–	5/8	5/8	1 5/8	3 1/2	.030
AADE0625J3DRE	–	–	5/8	5/8	1 5/8	3 1/2	.120
AADE0625J3DRC	–	–	5/8	5/8	1 5/8	3 1/2	.060
AADE0625J3DRA	–	–	5/8	5/8	1 5/8	3 1/2	.015
AADE0625J3D	AADE0625J3D	–	5/8	5/8	1 5/8	3 1/2	–
AADE0625J3E	–	–	5/8	5/8	2 1/8	4	–
AADE0625J3B	AADE625J3B	AADE0625J3B	5/8	5/8	2 1/4	5	–
AADE0625J3BRC	–	AADE0625J3BRC	5/8	5/8	2 1/4	5	.060
AADE0625J3F	–	–	5/8	5/8	2 1/2	5	–
AADE0625J3FRE	–	–	5/8	5/8	2 1/2	5	.120
AADE0625J3HRC	–	–	5/8	5/8	3	5 1/4	.060
AADE0625J3H	AADE0625J3H	–	5/8	5/8	3	5 1/4	–
AADE0625J3G	–	–	5/8	5/8	3 1/4	6	–

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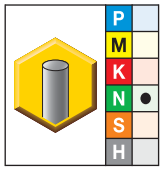

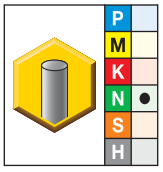

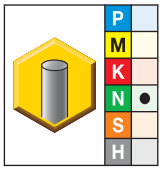

K600	KC625M	KC651M	D1	D	Ap1 max	L	Rε
AADE0750J3ARC	–	–	3/4	3/4	7/8	3	.060
AADE0750J3A	AADE0750J3A	AADE0750J3A	3/4	3/4	7/8	3	–
AADE0750J3ARB	–	–	3/4	3/4	7/8	3	.030
AADE0750J3ARD	–	–	3/4	3/4	7/8	3	.120
AADE750J3K	AADE750J3K	–	3/4	3/4	1	3	–
AADE0750J3FRD	–	–	3/4	3/4	1	4	.090
AADE0750J3F	–	–	3/4	3/4	1	4	–
AADE0750J3FRA	–	–	3/4	3/4	1	4	.015
AADE0750J3BRE	–	AADE0750J3BRE	3/4	3/4	1 1/2	4	.120
AADE0750J3B	AADE0750J3B	AADE0750J3B	3/4	3/4	1 1/2	4	–
–	AADE750J3B	–	3/4	3/4	1 1//2	4	–
AADE0750J3CRC	AADE0750J3CRC	AADE0750J3CRC	3/4	3/4	1 1//2	4	.030
AADE0750J3BRC	–	AADE0750J3BRC	3/4	3/4	1 1/2	4	.060
AADE0750J3BRB	–	AADE0750J3BRB	3/4	3/4	1 1/2	4	.030
AADE0750J3HRD	–	–	3/4	3/4	1 5/8	4	.090
AADE0750J3HRE	–	–	3/4	3/4	1 5/8	4	.120
AADE0750J3H	AADE0750J3H	–	3/4	3/4	1 5/8	4	–
AADE0750J3HRA	–	–	3/4	3/4	1 5/8	4	.015
AADE0750J3HRB	–	–	3/4	3/4	1 5/8	4	.030
AADE0750J3CRE	–	–	3/4	3/4	2 1/4	5	.120
AADE0750J3C	AADE0750J3C	AADE0750J3C	3/4	3/4	2 1/4	5	–
AADE0750J3CRD	–	–	3/4	3/4	2 1/4	5	.090
AADE0750J3CRB	–	AADE0750J3CRB	3/4	3/4	2 1/4	5	.030
AADE0750J3CRA	–	–	3/4	3/4	2 1/4	5	.015
–	AADE750J3C	–	3/4	3/4	2 1/4	5	–
AADE0750J3D	AADE0750J3D	AADE0750J3D	3/4	3/4	3	5 1/4	–
AADE0750J3DRB	–	AADE0750J3DRB	3/4	3/4	3	5 1/4	.030
AADE0750J3DRC	–	AADE0750J3DRC	3/4	3/4	3	5 1/4	.060
AADE0750J3G	–	–	3/4	3/4	3 1/4	6	–
AADE0750J3GRC	–	–	3/4	3/4	3 1/4	6	.060
AADE0750J3GRD	–	–	3/4	3/4	3 1/4	6	.090
AADE0750J3GRE	–	–	3/4	3/4	3 1/4	6	.120
AADE0750J3GRB	–	–	3/4	3/4	3 1/4	6	.030
AADE0750J3GRA	–	–	3/4	3/4	3 1/4	6	.015
AADE0750J3K	AADE0750J3K	–	3/4	3/4	4	6 1/4	–
AADE750J3J	AADE750J3J	–	3/4	3/4	4	6 1/2	–
AADE0750J3JRA	–	–	3/4	3/4	4	6 1/2	.015
AADE0750J3JRB	–	–	3/4	3/4	4	6 1/2	.030
AADE0750J3JRC	–	–	3/4	3/4	4	6 1/2	.060
AADE0750J3JRE	–	–	3/4	3/4	4	6 1/2	.120
AADE0750J3JRD	–	–	3/4	3/4	4	6 1/2	.090
AADE1000J3FRE	–	–	1	1	1 1/4	4	.120
AADE1000J3FRB	–	–	1	1	1 1/4	4	.030
AADE1000J3FRC	–	–	1	1	1 1/4	4	.060
AADE1000J3FRD	–	–	1	1	1 1/4	4	.090
AADE1000J3FRA	–	–	1	1	1 1/4	4	.015
AADE1000J3F	AADE1000J3F	–	1	1	1 1/4	4	–
AADE1000J3ARB	–	AADE1000J3ARB	1	1	1 1/2	4	.030
AADE1000J3ARC	–	AADE1000J3ARC	1	1	1 1/2	4	.060
AADE1000J3ARE	–	AADE1000J3ARE	1	1	1 1/2	4	.120
AADE1000J3A	AADE1000J3A	AADE1000J3A	1	1	1 1/2	4	–
AADE1000J3JRC	–		1	1	2	4	.060

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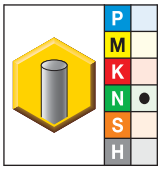
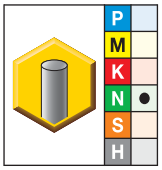
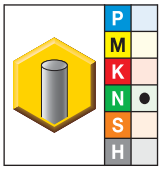






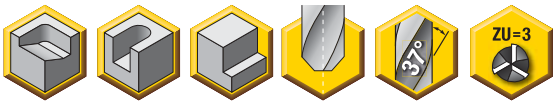
K600	KC625M	KC651M	D1	D	Ap1 max	L	Rε
AADE1000J3JRE	–	–	1	1	2	4	.120
AADE1000J3K	AADE1000J3K	–	1	1	2	4 1/2	–
AADE1000J3DRC	–	–	1	1	2	5	.060
AADE1000J3DRD	–	–	1	1	2	5	.090
AADE1000J3DRE	–	–	1	1	2	5	.120
AADE1000J3DRA	–	–	1	1	2	5	.015
AADE1000J3DRB	–	–	1	1	2	5	.030
AADE1000J3D	–	–	1	1	2	5	–
AADE1000J3BRC	–	AADE1000J3BRC	1	1	2 1/4	5	.060
AADE1000J3BRB	–	AADE1000J3BRB	1	1	2 1/4	5	.030
AADE1000J3B	AADE1000J3B	AADE1000J3B	1	1	2 1/4	5	–
AADE1000J3GRB	–	–	1	1	2 5/8	6	.030
AADE1000J3G	AADE1000J3G	–	1	1	2 5/8	6	–
AADE1000J3GRE	–	–	1	1	2 5/8	6	.120
AADE1000J3CRC	–	AADE1000J3CRC	1	1	3	5 1/2	.060
AADE1000J3CRB	–	AADE1000J3CRB	1	1	3	5 1/2	.030
AADE1000J3C	–	AADE1000J3C	1	1	3	5 1/2	–
AADE1000J3ERD	–	–	1	1	3 1/4	6	.090
AADE1000J3ERE	–	–	1	1	3 1/4	6	.120
AADE1000J3ERC	–	–	1	1	3 1/4	6	.060
AADE1000J3ERB	–	–	1	1	3 1/4	6	.030
AADE1000J3ERA	–	–	1	1	3 1/4	6	.015
AADE1000J3E	–	–	1	1	3 1/4	6	–
AADE1000J3I	AADE1000J3I	–	1	1	4	7	–
AADE1000J3HRD	–	–	1	1	4 1/8	7	.090
AADE1000J3HRB		–	1	1	4 1/8	7	.030
AADE1000J3H	–	–	1	1	4 1/8	7	–
AADE1000J3HRC	–	–	1	1	4 1/8	7	.060
AADE1000J3HRA	–	–	1	1	4 1/8	7	.015
AADE1000J3HRE	–	–	1	1	4 1/8	7	.120

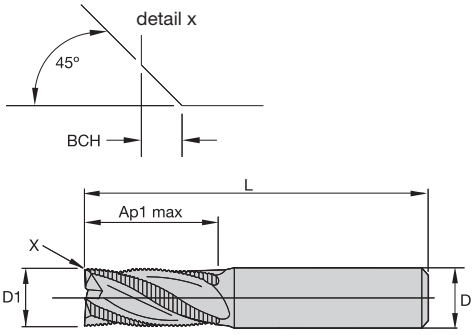
NOTE: For application data, see page C33.

End Mill Tolerances

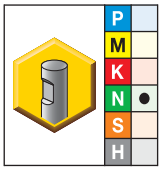
D1	tolerance h6	D	tolerance h6
<1/8"	+0/-.002"	<1/8"	+0/-.00024"
1/8–7/32"	+0/-.002"	1/8–7/32"	+0/-.00031"
1/4–3/8"	+0/-.00035"	1/4–3/8"	+0/-.00035"
13/32–11/16"	+0/-.00043"	13/32–11/16"	+0/-.00043"
23/32–1 3/16"	+0/-.00051"	23/32–1 3/16"	+0/-.00051"

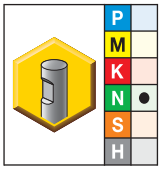
- Kennametal standard dimensions.
- Center cutting.
- Coarse pitch profile.











● first choice
○ alternate choice

K600	KC625M	D1	D	Ap1 max	L	BCH
SFRHEC250S3075	**SFRHEC250S3075**	1/4	1/4	3/4	2 1/2	.0236
SFRHEC312S3075	**SFRHEC312S3075**	5/16	5/16	3/4	2 1/2	.0236
SFRHEC375S3088	**SFRHEC375S3088**	3/8	3/8	7/8	2 1/2	.0236
SFRHEC500S3100	**SFRHEC500S3100**	1/2	1/2	1	3	.0394
SFRHEC500S3200	**SFRHEC500S3200**	1/2	1/2	2	4 1/2	.0394
SFRHEC625S3125	**SFRHEC625S3125**	5/8	5/8	1 1/4	3 1/2	.0394
SFRHEC625S3225	**SFRHEC625S3225**	5/8	5/8	2 1/4	5	.0394
SFRHEC750S3150	**SFRHEC750S3150**	3/4	3/4	1 1/2	4	.0394
SFRHEC750S3225	**SFRHEC750S3225**	3/4	3/4	2 1/4	5	.0394
SFRHEC100S3150	**SFRHEC100S3150**	1	1	1 1/2	4	.0394
SFRHEC100S3225	**SFRHEC100S3225**	1	1	2 1/4	5	.0394

NOTE: For application data, see page M61.

End Mill Tolerances

D1	d11	D	tolerance h6
<1/8"	-.0008/-.0031"	<1/8"	+0/-.00024"
1/8–7/32"	-.0012/-.0041"	1/8–7/32"	+0/-.00031"
1/4–3/8"	-.0016/-.0051"	1/4–3/8"	+0/-.00035"
13/32–11/16"	-.002/-.0063"	13/32–11/16"	+0/-.00043"
23/32–1-3/16"	-.0026/-.0077"	23/32–1-3/16"	+0/-.00051"



MaxiMet™

Superior Finishing

Designed to significantly reduce machining time in aluminum! The innovative geometry designs include a wiper facet for superior surface finish on aluminum parts. MaxiMet handles roughing and finishing cuts with one tool.

- Use only one tool for roughing and finishing operations.
- Slotting is effective up to full 1 x D axial depth; side milling is effective up to 0.5 x D radial, by 1.5 x D axial depth.
- Three-flute series uses unequal flute spacing for chatter-free performance.
- Effective in a full range of machine speeds.
- Multiple corner radii and extended neck configurations are available as standard.

Visit **www.kennametal.com** or contact your local Authorized Kennametal Distributor.

www.kennametal.com

KENNAMETAL®

ABDE... and ABDF ...



Material Group		Side Milling (A) and Slotting (B) A ap	A ae	B ap	K600 Cutting Speed — vc SFM min	max	Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%. D1 — Diameter inch	1/4 0.250	5/16 0.313	3/8 0.375	1/2 0.500	5/8 0.625	3/4 0.750	1 1.000
N	1	1 x D	0.5 x D	1 x D	1600	6500	fz	0.0023	0.0028	0.0034	0.0055	0.0065	0.0080	0.0095
N	2	1 x D	0.5 x D	1 x D	1600	4500	fz	0.0020	0.0025	0.0030	0.0050	0.0060	0.0070	0.0090



Material Group		Side Milling (A) and Slotting (B) A ap	A ae	B ap	K600 Cutting Speed — vc SFM min	max	Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%. D1 — Diameter inch	1/4 0.250	5/16 0.313	3/8 0.375	1/2 0.500	5/8 0.625	3/4 0.750	1 1.000
N	1	1 x D	0.5 x D	1 x D	1600	6500	fz	0.0023	0.0028	0.0034	0.0055	0.0065	0.0080	0.0095
N	2	1 x D	0.5 x D	1 x D	1600	4500	fz	0.0020	0.0025	0.0030	0.0050	0.0060	0.0070	0.0090

ABDF... & ABDE... with Neck



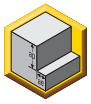
Material Group		Side Milling (A) and Slotting (B) A ap	A ae	B ap	K600 Cutting Speed — vc SFM min	max	Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%. D1 — Diameter inch	1/8 0.125	3/16 0.188	1/4 0.250	5/16 0.313	3/8 0.375	1/2 0.500	5/8 0.625	3/4 0.750	1 1.000
N	1	1 x D	0.5 x D	1 x D	1600	6500	fz	0.0011	0.0017	0.0023	0.0028	0.0034	0.0055	0.0065	0.0080	0.0095
N	2	1 x D	0.5 x D	1 x D	1600	4500	fz	0.0010	0.0015	0.0020	0.0025	0.0030	0.0050	0.0060	0.0070	0.0090



Material Group		Side Milling (A) and Slotting (B) A ap	A ae	B ap	K600 Cutting Speed — vc SFM min	max	Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%. D1 — Diameter inch	1/8 0.125	3/16 0.188	1/4 0.250	5/16 0.313	3/8 0.375	1/2 0.500	5/8 0.625	3/4 0.750	1 1.000
N	1	1 x D	0.5 x D	1 x D	1600	6500	fz	0.0011	0.0017	0.0023	0.0028	0.0034	0.0055	0.0065	0.0080	0.0095
N	2	1 x D	0.5 x D	1 x D	1600	4500	fz	0.0010	0.0015	0.0020	0.0025	0.0030	0.0050	0.0060	0.0070	0.0090

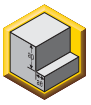
NOTE: These guidelines may require variations to achieve optimum results.
For longest reach (L3) tools, reduce ae by 30%.
For cutting aluminum with high silicon, coating is recommended.
ap for spindle with ceramic bearings, multiply by 0.5.
For better surface finish, reduce feed per tooth.
Above parameters are based on ideal conditions. For smaller taper machining centers, please adjust parameters accordingly on >1/2" diameter.

AADE and AADF





Material Group		Side Milling (A) and Slotting (B) A ap	A ae	B ap	K600/KC651M/ KC625M Cutting Speed — vc SFM min	max	Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%. D1 — Diameter inch	1/8 0.125	3/16 0.188	1/4 0.250	5/16 0.313	3/8 0.375	7/16 0.438	1/2 0.500	5/8 0.625	3/4 0.750	1 1.000
N	1	1 x D	0.5 x D	1.0 x D	1600	6500	fz	0.0011	0.0017	0.0023	0.0028	0.0034	0.0039	0.0055	0.0065	0.0080	0.0095
	2	1 x D	0.5 x D	1.0 x D	1600	4500	fz	0.0010	0.0015	0.0020	0.0025	0.0030	0.0035	0.0050	0.0060	0.0070	0.0090





Material Group		Side Milling (A) and Slotting (B) A ap	A ae	B ap	K600/KC651M/ KC625M Cutting Speed — vc SFM min	max	Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%. D1 — Diameter inch	1/8 0.125	3/16 0.188	1/4 0.250	5/16 0.313	3/8 0.375	7/16 0.438	1/2 0.500	5/8 0.625	3/4 0.750	1 1.000
N	1	1 x D	0.5 x D	1.0 x D	1600	6500	fz	0.0011	0.0017	0.0023	0.0028	0.0034	0.0039	0.0055	0.0065	0.0080	0.0095
	2	1 x D	0.5 x D	1.0 x D	1600	4500	fz	0.0010	0.0015	0.0020	0.0025	0.0030	0.0035	0.0050	0.0060	0.0070	0.0090

NOTE: These guidelines may require variations to achieve optimum results.
For cutting aluminum with high silicon, coating is recommended.
ap for spindle with ceramic bearings, multiply by 0.5.
For better surface finish, reduce feed per tooth.
Above parameters are based on ideal conditions. For smaller taper machining centers, please adjust parameters accordingly on >1/2" diameter.

SFRHEC





Material Group		Side Milling (A) and Slotting (B) A ap	A ae	B ap	K600/KC625M Cutting Speed — vc SFM min	max	Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%. D1 — Diameter inch	1/4 0.250	3/8 0.375	1/2 0.500	5/8 0.625	3/4 0.750	1 1.000
N	1	1.25 x D	0.5 x D	1 x D	1650	6500	fz	0.0028	0.0041	0.0055	0.0070	0.0085	0.0110
	2	1.25 x D	0.5 x D	1 x D	1650	5050	fz	0.0025	0.0037	0.0050	0.0060	0.0075	0.0010

NOTE: These guidelines may require variations to achieve optimum results.
For cutting aluminum with high silicon, coating is recommended.
ap for spindle with ceramic bearings, multiply by 0.5.
Above parameters are based on ideal conditions. For smaller taper machining centers, please adjust parameters accordingly on >1/2" diameter.



Go Beyond™ Traditional CFRP Milling Grades • Maximize Productivity with KCN05™ Solid Carbide Routers

Primary Application

Kennametal has the correct milling solutions engineered for machining difficult CFRP (Carbon-Fiber reinforced polymer) and non-ferrous components. KCN05 solid carbide router products provide excellent tool life and produce smooth finishes with improved edge quality. The unique geometries are free cutting, reduce heat generation, and provide high-quality machined surfaces.

Features and Benefits

Compression-Style Router

- Cutters are designed to provide high feed rates.
- Produce excellent quality edges on both sides on the material.
- Up-cut/down-cut geometry establishes stable cutting conditions.

Down-Cut-Style Router

- Intended for surface work.
- Great ramping capabilities for producing pockets.
- Geometry produces down forces to eliminate surface delamination.

Burr-Style Router

- Designed for trimming fiberglass and CFRP.
- Excellent temperature control.
- Good surface quality.

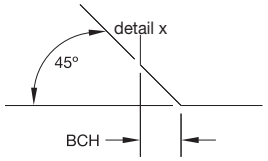
Ball-End-Style Router

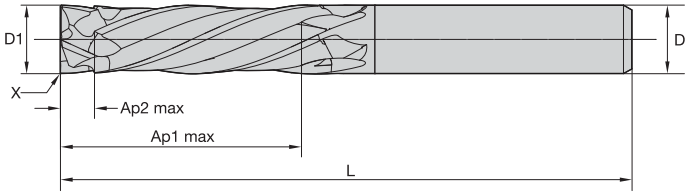
- Specially designed for slotting and profiling.
- Excellent tool life.

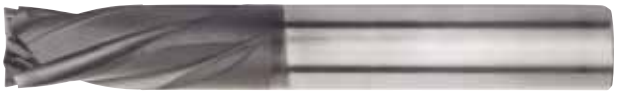


- Kennametal standard dimensions.
- Aerospace composites and fiberglass.
- Internal air coolant for ZU=4.









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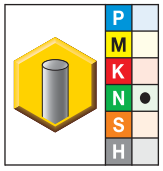


● first choice
○ alternate choice

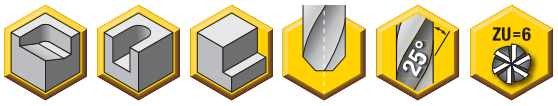
KCN05	D1	D	Ap1 max	Ap2 max	L	BCH	Z U
CCNC0250J3AH	1/4	1/4	3/4	.13	2 1/2	.005	3
CCNC0250J3BH	1/4	1/4	1 1/2	.13	4	.005	3
CCNC0375J4AH	3/8	3/8	3/4	.13	3 1/4	.005	4
CCNC0375J4BH	3/8	3/8	1 1/2	.13	4	.005	4
CCNC0500J4AH	1/2	1/2	3/4	.13	3 1/4	.005	4
CCNC0500J4BH	1/2	1/2	1 1/2	.13	4	.005	4

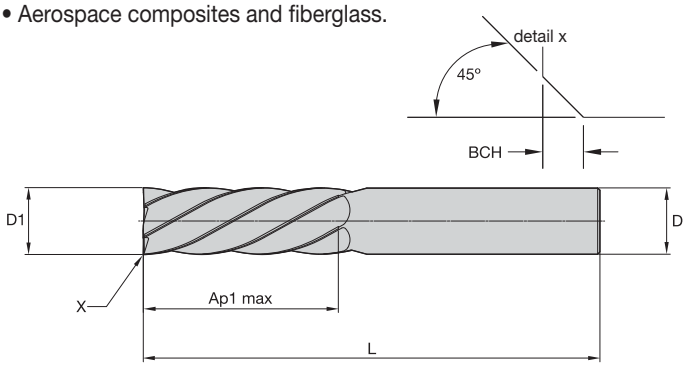
NOTE: For application data, see page M67.

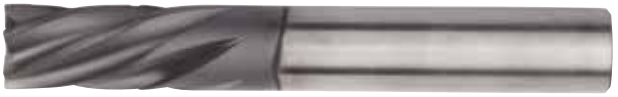
End Mill Tolerances

D1	tolerance	D	tolerance h6
All	+.000/-.003"	≤1/8"	+0/-.00024"
		>1/8–1/4"	+0/-.00031"
		>1/4–3/8"	+0/-.00035"
		>3/8–23/32"	+0/-.00043"
		>23/32–1 3/16"	+0/-.00051"

- Kennametal standard dimensions.
- Aerospace composites and fiberglass.







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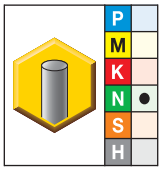


● first choice
○ alternate choice

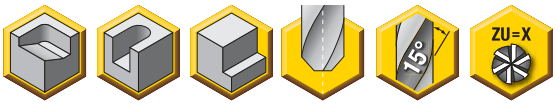
KCN05	D1	D	Ap1 max	L	BCH
CDDC0250J6AH	1/4	1/4	3/4	2 1/2	.010
CDDC0250J6BH	1/4	1/4	1 1/2	4	.010
CDDC0375J6AH	3/8	3/8	3/4	3 1/4	.010
CDDC0375J6BH	3/8	3/8	1 1/2	4	.010
CDDC0500J6AH	1/2	1/2	3/4	3 1/4	.010
CDDC0500J6BH	1/2	1/2	1 1/2	4	.010

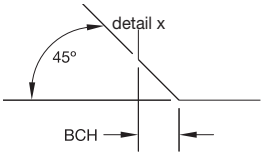
NOTE: For application data, see page M67.

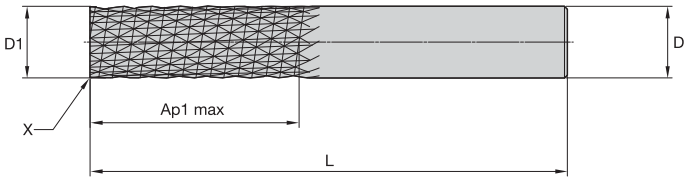
End Mill Tolerances

D1	tolerance	D	tolerance h6
All	+.000/-.003"	≤1/8"	+0/-.00024"
		>1/8–1/4"	+0/-.00031"
		>1/4–3/8"	+0/-.00035"
		>3/8–23/32"	+0/-.00043"
		>23/32–1 3/16"	+0/-.00051"

- Kennametal standard dimensions.
- Aerospace composites and fiberglass.









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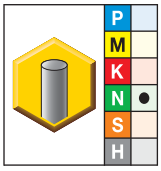
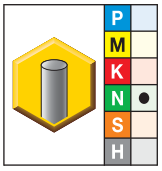


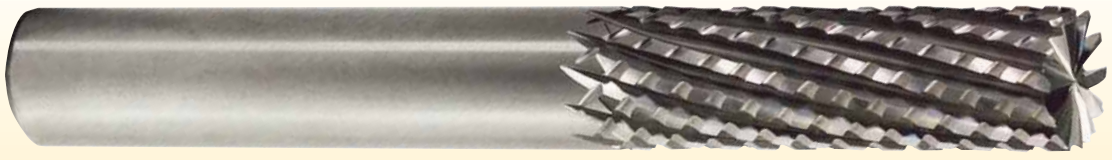


● first choice
○ alternate choice

K600	KCN05	D1	D	Ap1 max	L	BCH	Z U
CBDB0250JXAS	**CBDB0250JXAS**	1/4	1/4	3/4	2 1/2	.020	12
CBDB0250JXBS	**CBDB0250JXBS**	1/4	1/4	1 1/2	4	.020	12
CBDB0375JXAS	**CBDB0375JXAS**	3/8	3/8	3/4	3 1/4	.035	12
CBDB0375JXBS	**CBDB0375JXBS**	3/8	3/8	1 1/2	4	.035	12
CBDB0500JXAS	**CBDB0500JXAS**	1/2	1/2	3/4	3 1/4	.045	12
CBDB0500JXBS	**CBDB0500JXBS**	1/2	1/2	1 1/2	4	.045	12

NOTE: For application data, see page M67.
12 RHS/RHC flutes. 10 LHS/RHC flutes, 6 end teeth.
For tolerance table, see page M64.

Additional point styles are available upon request:



End Mill End Cutting



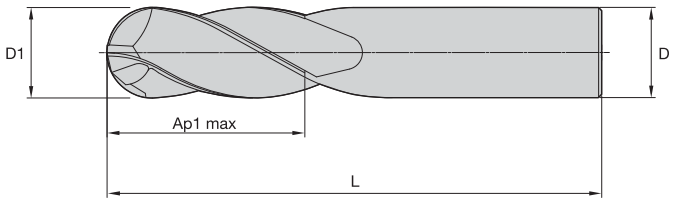
Drill-Point Cutting



Non-End Cutting

- Kennametal standard dimensions.
- Aerospace composites and fiberglass.







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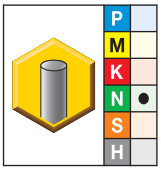


● first choice
○ alternate choice

KCN05	D1	D	Ap1 max	L
CRBD0375J4AR	3/8	3/8	3/4	3 1/4
CRBD0500J4AR	1/2	1/2	3/4	3 1/4

NOTE: For application data, see page M68.
For tolerance table, see page M64.

Solid End Milling Application Videos

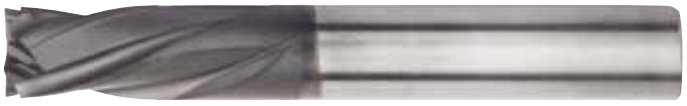
Check out our new KennametalSolutions Channel on YouTube!
You can find application videos for our solid end milling products there.
Just go to: **www.youtube.com/KennametalSolutions.**





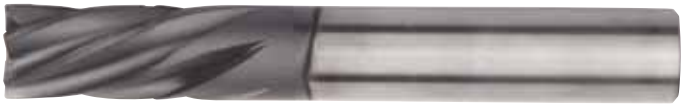


Compression-Style Router • CCNC • Inch



Material Group		A		beyond KCN05		Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 10%.			
				Cutting Speed — vc SFM		D1 — Diameter			
		ap	ae	min	max	frac	1/4	3/8	1/2
N	5	Ap1 max	0.5 x D	330	500	fz	0.0007	0.0012	0.0014

Down-Cut Router • CDDC • Inch



Material Group		A		beyond KCN05		Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 10%.			
				Cutting Speed — vc SFM		D1 — Diameter			
		ap	ae	min	max	frac	1/4	3/8	1/2
N	5	Ap1 max	1 x D	330	500	fz	0.018	0.030	0.036

Burr-Style Router • CBDB • Inch



Material Group		A		B	K600		beyond KCN05		Feed per Revolution — Inch per revolution (IPR) information is for side milling (A). For slotting (B), reduce IPR by 10%.			
					Cutting Speed — vc SFM				D1 — Diameter			
		ap	ae	ap	min	max	min	max	frac	1/4	3/8	1/2
N	5	Ap1 max	0.2 x D	1 x D	265	400	330	500	IPR	0.0059	0.0098	0.0118

NOTE: Lower value of cutting speed is used for high stock removal applications or for higher hardness (machinability) within group.
Higher value of cutting speed is used for finishing applications or for lower hardness (machinability) within group.
Above parameters are based on ideal conditions. For smaller taper machining centers, please adjust parameters accordingly on >1/2" diameter.

Ball-Nose-Style Router • CRBD • Inch

Material Group		A		beyond KCN05		Feed per Tooth — Finishing		
				Cutting Speed — vc SFM		D1 — Diameter		
		ap	ae	min	max	frac	3/8	1/2
N	5	0.04 x D	0.04 x D	1370	1540	fz	0.011	0.013

Material Group		A		beyond KCN05		Feed per Tooth — Semi-Finishing		
				Cutting Speed — vc SFM		D1 — Diameter		
		ap	ae	min	max	frac	3/8	1/2
N	5	0.1 x D	0.05 x D	900	1000	fz	0.007	0.008

Material Group		A		beyond KCN05		Feed per Tooth — Roughing		
				Cutting Speed — vc SFM		D1 — Diameter		
		ap	ae	min	max	frac	3/8	1/2
N	5	0.2 x D	0.1 x D	690	770	fz	0.0030	0.0037

NOTE: Lower value of cutting speed is used for high stock removal applications or for higher hardness (machinability) within group.
Higher value of cutting speed is used for finishing applications or for lower hardness (machinability) within group.
Above parameters are based on ideal conditions. For smaller taper machining centers, please adjust parameters accordiongly on >1/2" diameter.

High-Performance Solid Carbide End Mills • Finishing

Features and Benefits

- Best surface finish.
- 5-/6-flute portfolio.
- Multiple helix offering.
- Multiflute finisher.

Applications:



Side Milling



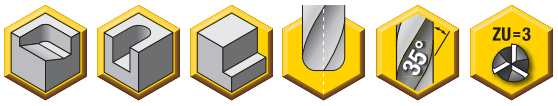
Slotting

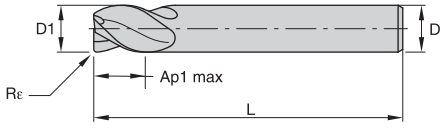
Workpiece Materials:

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

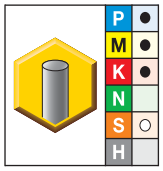


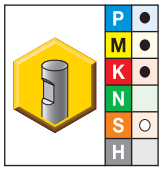
• Center cutting.











● first choice
○ alternate choice

KC635M	KC635M	D1	D	Ap1 max	L	Rε
HPFSS125S3050	**–**	1/8	1/8	1/2	1 1/2	.010
HPFSS125S3025	**–**	1/8	1/8	1/4	1 1/2	.010
HPFSS188S3056	**–**	3/16	3/16	9/16	2	.010
HPFSS188S3031	**–**	3/16	3/16	5/16	2	.010
HPFSS250S3038	**–**	1/4	1/4	3/8	2	.020
HPFSS250S3050	**–**	1/4	1/4	1/2	2	.020
HPFSS250S3075	**–**	1/4	1/4	3/4	2 1/2	.020
HPFSS312S3044	**–**	5/16	5/16	7/16	2	.020
HPFSS312S3081	**–**	5/16	5/16	13/16	2 1/2	.020
HPFSS375S3050	**–**	3/8	3/8	1/2	2	.020
HPFSS375S3088	**–**	3/8	3/8	7/8	2 1/2	.020
–	**HPFSS500S3063**	1/2	1/2	5/8	2 1/2	.030
–	**HPFSS500S3125**	1/2	1/2	1 1/4	3	.030
–	**HPFSS625S3075**	5/8	5/8	3/4	3	.030
–	**HPFSS625S3163**	5/8	5/8	1 5/8	4	.030
–	**HPFSS750S3088**	3/4	3/4	7/8	3	.030
–	**HPFSS750S3163**	3/4	3/4	1 5/8	4	.030

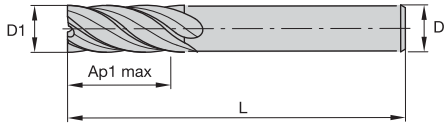
NOTE: For application data, see page M73.

End Mill Tolerances

D1	tolerance	D	tolerance h6
All	+.000/-.002"	≤1/8"	+0/-.00024"
		>1/8–1/4"	+0/-.00031"
		>1/4–3/8"	+0/-.00035"
		>3/8–23/32"	+0/-.00043"
		>23/32–1 3/16"	+0/-.00051"

- Kennametal standard dimensions.
- Center cutting.

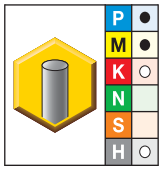


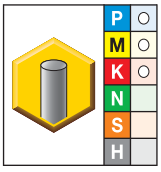


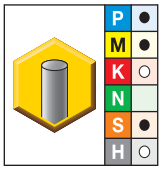


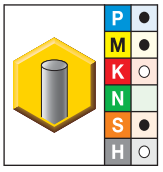
NEW!

beyond









● first choice
○ alternate choice

KCPM15	K600	KC625M	KC635M	D1	D	Ap1 max	L
–	HPFSS125S5025	HPFSS125S5025	HPFSS125S5025	1/8	1/8	1/4	1 1/2
–	HPFSS125S5050	HPFSS125S5050	HPFSS125S5050	1/8	1/8	1/2	1 1/2
–	HPFSS156S5056	HPFSS156S5056	HPFSS156S5056	5/32	3/16	9/16	2
–	HPFSS188S5031	HPFSS188S5031	HPFSS188S5031	3/16	3/16	5/16	2
HPFSS188S5056	–	–	HPFSS188S5056	3/16	3/16	9/16	2
–	HPFSS188S5063	HPFSS188S5063	–	3/16	3/16	5/8	2
–	HPFSS219S5075	HPFSS219S5075	HPFSS219S5075	7/32	1/4	3/4	2 1/2
HPFSS250S5038	–	–	HPFSS250S5038	1/4	1/4	3/8	2
–	HPFSS250S5050	HPFSS250S5050	HPFSS250S5050	1/4	1/4	1/2	2
HPFSS250S5075	HPFSS250S5075	HPFSS250S5075	HPFSS250S5075	1/4	1/4	3/4	2 1/2
HPFSS250S5125	HPFSS250S5125	HPFSS250S5125	HPFSS250S5125	1/4	1/4	1 1/4	4
–	HPFSS281S5081	–	–	9/32	5/16	13/16	2 1/2
–	–	–	HPFSS312S5044	5/16	5/16	7/16	2
–	HPFSS312S5050	HPFSS312S5050	–	5/16	5/16	1/2	2
–	HPFSS312S5081	HPFSS312S5081	HPFSS312S5081	5/16	5/16	13/16	2 1/2
–	HPFSS312S5125	HPFSS312S5125	HPFSS312S5125	5/16	5/16	1 1/4	4
–	HPFSS344S5088	HPFSS344S5088	–	11/32	3/8	7/8	2 1/2
HPFSS375S5050	–	–	HPFSS375S5050	3/8	3/8	1/2	2
–	HPFSS375S5063	HPFSS375S5063	–	3/8	3/8	5/8	2
HPFSS375S5088	HPFSS375S5088	HPFSS375S5088	HPFSS375S5088	3/8	3/8	7/8	2 1/2
HPFSS375S5150	HPFSS375S5150	HPFSS375S5150	HPFSS375S5150	3/8	3/8	1 1/2	4
–	HPFSS406S5100	HPFSS406S5100	–	13/32	7/16	1	2 1/2
–	HPFSS438S5063	HPFSS438S5063	–	7/16	7/16	5/8	2 1/2
–	HPFSS438S5088	HPFSS438S5088	–	7/16	7/16	7/8	2 1/2
–	HPFSS438S5200	HPFSS438S5200	–	7/16	7/16	2	4

NOTE: For application data, see page M73.



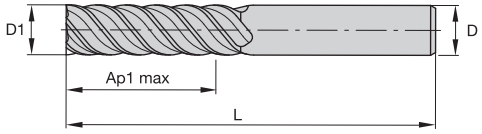
For Weldon® shank offering, please refer to www.kennametal.com/e-catalog.

End Mill Tolerances

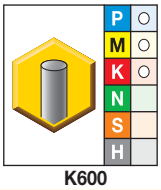
D1	tolerance	D	tolerance h6
All	+.000/-.002"	≤1/8"	+0/-.00024"
		>1/8–1/4"	+0/-.00031"
		>1/4–3/8"	+0/-.00035"
		>3/8–23/32"	+0/-.00043"
		>23/32–1 3/16"	+0/-.00051"

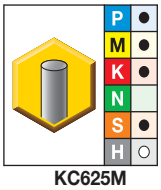
- Kennametal standard dimensions.
- Center cutting.

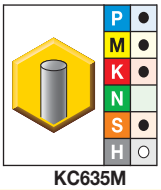












● first choice
○ alternate choice

K600	KC625M	KC635M	D1	D	Ap1 max	L
–	–	HPFT188S6063	3/16	3/16	5/8	2
HPFT250S6038	HPFT250S6038	HPFT250S6038	1/4	1/4	3/8	2
HPFT250S6075	HPFT250S6075	HPFT250S6075	1/4	1/4	3/4	2 1/2
–	HPFT250S6112	HPFT250S6113	1/4	1/4	1 1/8	3
HPFT312S6081	HPFT312S6081	HPFT312S6081	5/16	5/16	13/16	2 1/2
HPFT312S6112	HPFT312S6112	–	5/16	5/16	1 1/8	3
–	HPFT375S6050	HPFT375S6050	3/8	3/8	1/2	2
HPFT375S6088	HPFT375S6088	HPFT375S6088	3/8	3/8	7/8	2 1/2
HPFT375S6112	HPFT375S6112	HPFT375S6113	3/8	3/8	1 1/8	3
–	HPFT438S6088	HPFT438S6088	7/16	7/16	7/8	2 1/2
–	HPFT438S6200	–	7/16	7/16	2	4
–	HPFT500S6063	HPFT500S6063	1/2	1/2	5/8	2 1/2
HPFT500S6100	HPFT500S6100	HPFT500S6100	1/2	1/2	1	3
HPFT500S6200	HPFT500S6200	HPFT500S6200	1/2	1/2	2	4 1/2
HPFT500S6300	HPFT500S6300	HPFT500S6300	1/2	1/2	3	5
HPFT625S6075	HPFT625S6075	–	5/8	5/8	3/4	3
HPFT625S6125	HPFT625S6125	HPFT625S6125	5/8	5/8	1 1/4	3 1/2
HPFT625S6300	HPFT625S6300	HPFT625S6300	5/8	5/8	3	5
HPFT625S6225	HPFT625S6225	HPFT625S6225	5/8	5/8	2 1/4	5
–	HPFT750S6088	HPFT750S6088	3/4	3/4	7/8	3 1/2
HPFT750S6150	HPFT750S6150	HPFT750S6150	3/4	3/4	1 1//2	4
HPFT750S6225	HPFT750S6225	HPFT750S6225	3/4	3/4	2 1/4	5
HPFT750S6300	HPFT750S6300	HPFT750S6300	3/4	3/4	3	5 1/4
HPFT750S6400	HPFT750S6400	HPFT750S6400	3/4	3/4	4	6 1/4
–	HPFT1000S6150	HPFT1000S6150	1	1	1 1//2	4
–	–	HPFT1000S6225	1	1	2 1/4	5
HPFT1000S6300	–	–	1	1	3	5 1/2
–	–	HPFT1000S6400	1	1	4	6 1/2

NOTE: For application data, see page M74.

End Mill Tolerances

D1	tolerance	D	tolerance h6
All	+.000/-.002"	≤1/8"	+0/-.00024"
		>1/8–1/4"	+0/-.00031"
		>1/4–3/8"	+0/-.00035"
		>3/8–23/32"	+0/-.00043"
		>23/32–1 3/16"	+0/-.00051"

HPFSS 3-Flute • With Radius • Soft Steels and Stainless Steels





Material Group		Side Milling (A) and Slotting (B) A ap	A ae	B ap	KC635M Cutting Speed — vc SFM min	KC635M Cutting Speed — vc SFM max	Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%. D1 — Diameter inch	1/8 0.125	3/16 0.188	1/4 0.250	5/16 0.313	3/8 0.375	7/16 0.438	1/2 0.500	5/8 0.625	3/4 0.750	1 1.000	1 1/4 1.250
P	1	1 x D	0.5 x D	0.5 x D	500	650	fz	0.0009	0.0014	0.0018	0.0023	0.0027	0.0031	0.0035	0.0039	0.0043	0.0050	0.0062
	2	1 x D	0.5 x D	0.5 x D	450	625	fz	0.0009	0.0014	0.0018	0.0023	0.0027	0.0031	0.0035	0.0039	0.0043	0.0050	0.0062
	3	1 x D	0.5 x D	0.5 x D	400	525	fz	0.0007	0.0011	0.0015	0.0020	0.0023	0.0026	0.0029	0.0034	0.0038	0.0046	0.0057
	4	1 x D	0.5 x D	0.5 x D	350	475	fz	0.0007	0.0010	0.0014	0.0018	0.0020	0.0023	0.0026	0.0030	0.0033	0.0039	0.0049
	5	1 x D	0.5 x D	0.5 x D	200	325	fz	0.0006	0.0009	0.0012	0.0016	0.0018	0.0021	0.0023	0.0027	0.0030	0.0036	0.0046
	6	1 x D	0.5 x D	0.5 x D	150	225	fz	0.0005	0.0008	0.0010	0.0013	0.0015	0.0017	0.0019	0.0022	0.0024	0.0028	0.0036
M	1	1 x D	0.5 x D	0.5 x D	250	325	fz	0.0007	0.0011	0.0015	0.0020	0.0023	0.0026	0.0029	0.0034	0.0038	0.0046	0.0057
	2	1 x D	0.5 x D	0.5 x D	190	260	fz	0.0006	0.0009	0.0012	0.0016	0.0018	0.0021	0.0023	0.0027	0.0030	0.0036	0.0046
	3	1 x D	0.5 x D	0.5 x D	200	260	fz	0.0005	0.0008	0.0010	0.0013	0.0015	0.0017	0.0019	0.0022	0.0024	0.0028	0.0036
K	1	1 x D	0.5 x D	0.5 x D	400	525	fz	0.0009	0.0014	0.0018	0.0023	0.0027	0.0031	0.0035	0.0039	0.0043	0.0050	0.0062
	2	1 x D	0.5 x D	0.5 x D	360	460	fz	0.0007	0.0011	0.0015	0.0020	0.0023	0.0026	0.0029	0.0034	0.0038	0.0046	0.0057
	3	1 x D	0.5 x D	0.5 x D	330	430	fz	0.0006	0.0009	0.0012	0.0016	0.0018	0.0021	0.0023	0.0027	0.0030	0.0036	0.0046
S	1	1 x D	0.3 x D	0.3 x D	150	275	fz	0.0007	0.0011	0.0015	0.0020	0.0023	0.0026	0.0029	0.0034	0.0038	0.0046	0.0057
	2	1 x D	0.3 x D	0.3 x D	150	275	fz	0.0007	0.0011	0.0015	0.0020	0.0023	0.0026	0.0029	0.0034	0.0038	0.0046	0.0057
	3	1 x D	0.3 x D	0.3 x D	65	125	fz	0.0004	0.0006	0.0008	0.0010	0.0012	0.0014	0.0016	0.0018	0.0020	0.0025	0.0031
	4	1 x D	0.5 x D	0.5 x D	150	220	fz	0.0005	0.0008	0.0011	0.0014	0.0017	0.0019	0.0022	0.0025	0.0028	0.0033	0.0042

NOTE: These guidelines may require variations to achieve optimum results.

HPFSS 5-Flute • Soft Steels and Stainless Steels




Material Group		Side Milling ap	Side Milling ae	KCPM15 KC635M Cutting Speed — vc SFM min	KCPM15 KC635M Cutting Speed — vc SFM max	KC625M min	KC625M max	KC600 min	KC600 max	Feed per Tooth — fz information is for side milling. D1 — Diameter inch	1/8 0.125	3/16 0.188	1/4 0.250	5/16 0.313	3/8 0.375	1/2 0.500	5/8 0.625	3/4 0.750	1 1.000
P	1	1.5 x D	0.15 x D	500	650	400	520	200	260	fz	0.0009	0.0014	0.0018	0.0023	0.0027	0.0035	0.0039	0.0043	0.0050
	2	1.5 x D	0.15 x D	450	625	360	500	180	250	fz	0.0009	0.0014	0.0018	0.0023	0.0027	0.0035	0.0039	0.0043	0.0050
	3	1.5 x D	0.1 x D	400	525	320	420	160	210	fz	0.0007	0.0011	0.0015	0.0020	0.0023	0.0029	0.0034	0.0038	0.0046
	4	1.5 x D	0.1 x D	300	475	240	380	—	—	fz	0.0007	0.0010	0.0014	0.0018	0.0020	0.0026	0.0030	0.0033	0.0039
	5	1.5 x D	0.1 x D	200	325	160	260	—	—	fz	0.0006	0.0009	0.0012	0.0016	0.0018	0.0023	0.0027	0.0030	0.0036
	6	1.5 x D	0.1 x D	150	225	120	180	—	—	fz	0.0005	0.0008	0.0010	0.0013	0.0015	0.0019	0.0022	0.0024	0.0028
M	1	1.5 x D	0.15 x D	260	330	208	264	104	132	fz	0.0007	0.0011	0.0015	0.0020	0.0023	0.0029	0.0034	0.0038	0.0046
	2	1.5 x D	0.1 x D	200	260	160	208	—	—	fz	0.0006	0.0009	0.0012	0.0016	0.0018	0.0023	0.0027	0.0030	0.0036
	3	1.5 x D	0.1 x D	200	260	160	208	—	—	fz	0.0005	0.0008	0.0010	0.0013	0.0015	0.0019	0.0022	0.0024	0.0028
K	1	1.5 x D	0.15 x D	390	520	312	416	156	208	fz	0.0009	0.0014	0.0018	0.0023	0.0027	0.0035	0.0039	0.0043	0.0050
	2	1.5 x D	0.15 x D	360	460	288	368	—	—	fz	0.0007	0.0011	0.0015	0.0020	0.0023	0.0029	0.0034	0.0038	0.0046
	3	1.5 x D	0.1 x D	330	430	264	344	—	—	fz	0.0006	0.0009	0.0012	0.0016	0.0018	0.0023	0.0027	0.0030	0.0036
S	1	1.5 x D	0.1 x D	150	275	120	220	—	—	fz	0.0007	0.0011	0.0015	0.0020	0.0023	0.0029	0.0034	0.0038	0.0046
	2	1.5 x D	0.1 x D	150	275	120	220	—	—	fz	0.0007	0.0011	0.0015	0.0020	0.0023	0.0029	0.0034	0.0038	0.0046
	3	1.5 x D	0.15 x D	70	130	56	104	—	—	fz	0.0004	0.0006	0.0008	0.0010	0.0012	0.0016	0.0018	0.0020	0.0025
	4	1.5 x D	0.15 x D	150	210	120	168	—	—	fz	0.0005	0.0008	0.0011	0.0014	0.0017	0.0022	0.0025	0.0028	0.0033
H	1	1.5 x D	0.1 x D	260	450	208	360	—	—	fz	0.0007	0.0010	0.0014	0.0018	0.0020	0.0026	0.0030	0.0033	0.0039

NOTE: Lower value of cutting speed is used for high stock removal applications or for higher hardness (machinability) within group.
Higher value of cutting speed is used for finishing applications or for lower hardness (machinability) within group.
Above parameters are based on ideal conditions. For smaller taper machining centers, please adjust parameters accordingly on >1/2" diameter.

HPFT • 6-Flute



Material Group		Side Milling		KC635M		KC625M		K600		Feed per Tooth — fz information is for side milling.									
				Cutting Speed — vc SFM						D1 — Diameter									
		ap	ae	min	max	min	max	min	max	inch	1/8 0.125	3/16 0.188	1/4 0.250	5/16 0.313	3/8 0.375	1/2 0.500	5/8 0.625	3/4 0.750	1 1.000
P	1	1 x D	0.5 x D	590	720	472	576	236	288	fz	0.0009	0.0014	0.0018	0.0023	0.0027	0.0035	0.0039	0.0043	0.0050
	2	1 x D	0.5 x D	520	660	416	528	208	264	fz	0.0009	0.0014	0.0018	0.0023	0.0027	0.0035	0.0039	0.0043	0.0050
	3	1 x D	0.5 x D	520	590	416	472	208	236	fz	0.0007	0.0011	0.0015	0.0020	0.0023	0.0029	0.0034	0.0038	0.0046
	4	1 x D	0.5 x D	460	520	368	416	—	—	fz	0.0007	0.0010	0.0014	0.0018	0.0020	0.0026	0.0030	0.0033	0.0039
	5	1 x D	0.5 x D	200	330	160	264	—	—	fz	0.0006	0.0009	0.0012	0.0016	0.0018	0.0023	0.0027	0.0030	0.0036
	6	1 x D	0.5 x D	160	260	128	208	—	—	fz	0.0005	0.0008	0.0010	0.0013	0.0015	0.0019	0.0022	0.0024	0.0028
M	1	1 x D	0.5 x D	260	330	208	264	104	132	fz	0.0007	0.0011	0.0015	0.0020	0.0023	0.0029	0.0034	0.0038	0.0046
	2	1 x D	0.5 x D	200	260	160	208	—	—	fz	0.0006	0.0009	0.0012	0.0016	0.0018	0.0023	0.0027	0.0030	0.0036
	3	1 x D	0.5 x D	200	260	160	208	—	—	fz	0.0005	0.0008	0.0010	0.0013	0.0015	0.0019	0.0022	0.0024	0.0028
K	1	1 x D	0.5 x D	390	520	312	514	156	208	fz	0.0009	0.0014	0.0018	0.0023	0.0027	0.0035	0.0039	0.0043	0.0050
	2	1 x D	0.5 x D	360	460	288	460	—	—	fz	0.0007	0.0011	0.0015	0.0020	0.0023	0.0029	0.0034	0.0038	0.0046
	3	1 x D	0.5 x D	330	430	264	344	—	—	fz	0.0006	0.0009	0.0012	0.0016	0.0018	0.0023	0.0027	0.0030	0.0036
S	1	1 x D	0.5 x D	300	380	240	304	—	—	fz	0.0007	0.0011	0.0015	0.0020	0.0023	0.0029	0.0034	0.0038	0.0046
	2	1 x D	0.5 x D	70	130	56	104	—	—	fz	0.0004	0.0006	0.0008	0.0010	0.0012	0.0016	0.0018	0.0020	0.0025
	3	1 x D	0.5 x D	160	260	128	208	—	—	fz	0.0006	0.0009	0.0012	0.0016	0.0018	0.0023	0.0027	0.0030	0.0036
	4	1 x D	0.5 x D	150	210	120	168	—	—	fz	0.0005	0.0008	0.0011	0.0014	0.0017	0.0022	0.0025	0.0028	0.0033
H	1	1 x D	0.5 x D	330	460	264	368	—	—	fz	0.0007	0.0010	0.0014	0.0018	0.0020	0.0026	0.0030	0.0033	0.0039

NOTE: These guidelines may require variations to achieve optimum results.
Lower value of cutting speed is used for high stock removal applications or for higher hardness (machinability) within group.
Higher value of cutting speed is used for finishing applications or for lower hardness (machinability) within group.
For tools 2 x D<LOC< 3 x D, ae = 0.25 x D; for tools with LOC longer than 3 x D, ae = 0.1 x D.

High-Performance Solid Carbide End Mills • Roughing

Features and Benefits

- Highest metal removal rates.
- Innovative roughing geometries.
- Different radius styles.



Applications:



Side Milling

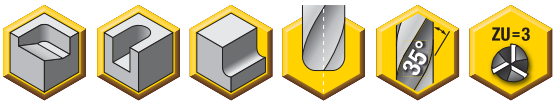


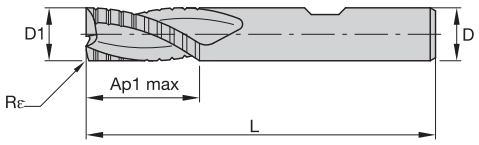
Slotting

Workpiece Materials:

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

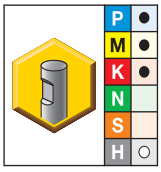
- Kennametal standard dimensions.
- Center cutting.
- Chipbreaker profile.







beyond



● first choice
○ alternate choice

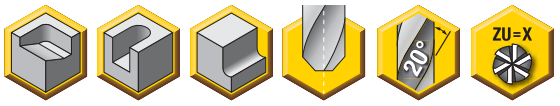
KCPM15	D1	D	Ap1 max	L	Rε
HPRSS250S3075	1/4	1/4	3/4	2 1/2	.020
HPRSS375S3100	3/8	3/8	1	2 1/2	.020
HPRSS500S3125	1/2	1/2	1 1/4	3	.030
HPRSS625S3163	5/8	5/8	1 5/8	3 1/2	.030
HPRSS750S3163	3/4	3/4	1 5/8	4	.030

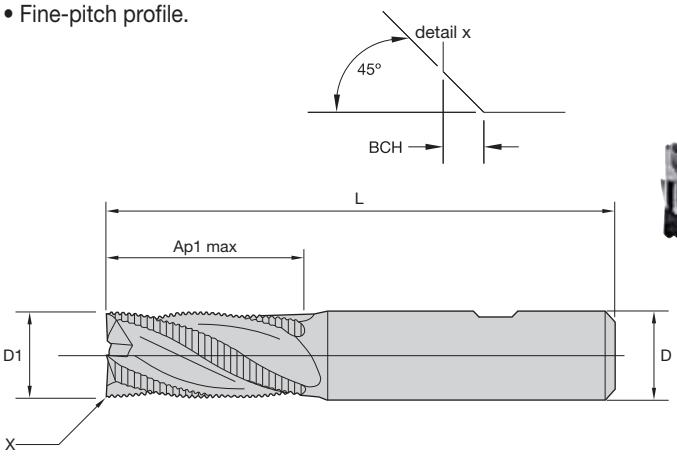
NOTE: For application data, see page M79.

End Mill Tolerances

D1	d11	D	tolerance h6
<1/8"	-.0008/-.0031"	<1/8"	+0/-.00024"
1/8–7/32"	-.0012/-.0041"	1/8–7/32"	+0/-.00031"
1/4–3/8"	-.0016/-.0051"	1/4–3/8"	+0/-.00035"
13/32–11/16"	-.002/-.0063"	13/32–11/16"	+0/-.00043"
23/32–1 3/16"	-.0026/-.0077"	23/32–1 3/16"	+0/-.00051"

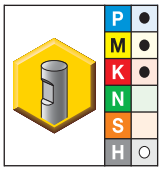
- Center cutting.
- Fine-pitch profile.

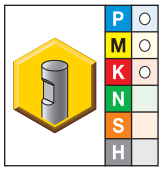


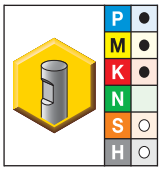




beyond







● first choice
○ alternate choice

KCPM15	K600	KC625M	D1	D	Ap1 max	L	BCH	Z U
MDRHEC312S4081	–	–	5/16	5/16	13/16	2 1/2	.012	4
MDRHEC375S4038	MDRHEC375S4038	–	3/8	3/8	1/2	2	.020	4
MDRHEC375S4088	MDRHEC375S4088	–	3/8	3/8	7/8	2 1/2	.020	4
MDRHEC500S4050	MDRHEC500S4050	MDRHEC500S4050	1/2	1/2	1/2	2 1/2	–	4
MDRHEC500S4100	MDRHEC500S4100	MDRHEC500S4100	1/2	1/2	1	3	.020	4
MDRHEC625S4063	MDRHEC625S4063	MDRHEC625S4063	5/8	5/8	5/8	3	–	4
MDRHEC625S4125	MDRHEC625S4125	MDRHEC625S4125	5/8	5/8	1 1/4	3 1/2	–	4
MDRHEC750S4075	MDRHEC750S4075	MDRHEC750S4075	3/4	3/4	3/4	3 1/2	–	4
MDRHEC750S4150	MDRHEC750S4150	MDRHEC750S4150	3/4	3/4	1 1//2	4	–	4
–	–	MDRHEC100S5100	1	1	1	3 1/2	–	5
–	MDRHEC100S5150	MDRHEC100S5150	1	1	1 1//2	4	–	5

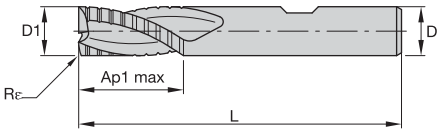
NOTE: For application data, see page M79.

End Mill Tolerances

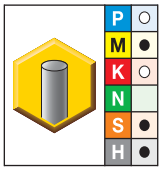
D1	d11	D	tolerance h6
<1/8"	-.0008/-.0031"	<1/8"	+0/-.00024"
1/8–7/32"	-.0012/-.0041"	1/8–7/32"	+0/-.00031"
1/4–3/8"	-.0016/-.0051"	1/4–3/8"	+0/-.00035"
13/32–11/16"	-.002/-.0063"	13/32–11/16"	+0/-.00043"
23/32–1 3/16"	-.0026/-.0077"	23/32–1 3/16"	+0/-.00051"

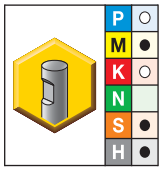
- Kennametal standard dimensions.
- Center cutting.
- Shallow-pitch profile.











● first choice
○ alternate choice

KC643M	KC643M	D1	D	Ap1 max	L	Rε	Z U
HPRST250S4038	–	1/4	1/4	3/8	2	.030	4
HPRST250S4075	–	1/4	1/4	3/4	2 1/2	.030	4
HPRST375S4050	–	3/8	3/8	1/2	2	.030	4
HPRST375S4088	–	3/8	3/8	7/8	2 1/2	.030	4
–	**HPRST500S4063**	1/2	1/2	5/8	2 1/2	.040	4
–	**HPRST500S4125**	1/2	1/2	1 1/4	3	.040	4
–	**HPRST625S4075**	5/8	5/8	3/4	3	.040	4
–	**HPRST625S6125**	5/8	5/8	1 1/4	3 1/2	.040	6
–	**HPRST625S4125**	5/8	5/8	1 1/4	3 1/2	.040	4
–	**HPRST750S4088**	3/4	3/4	7/8	3 1/2	.050	4
–	**HPRST750S6150**	3/4	3/4	1 1/2	4	.050	6
–	**HPRST750S4150**	3/4	3/4	1 1/2	4	.050	4
–	**HPRST1000S4150**	1	1	1 1/2	4	.050	4
–	**HPRST1000S6150**	1	1	1 1/2	4	.050	6

NOTE: For application data, see page M80.

End Mill Tolerances

D1	d11	D	tolerance h6
<1/8"	-.0008/-.0031"	<1/8"	+0/-.00024"
1/8–7/32"	-.0012/-.0041"	1/8–7/32"	+0/-.00031"
1/4–3/8"	-.001/-.0051"	1/4–3/8"	+0/-.00035"
13/32–11/16"	-.002/-.0063"	13/32–11/16"	+0/-.00043"
23/32–1 3/16"	-.0026/-.0077"	23/32–1 3/16"	+0/-.00051"

HPRSS





Material Group		Side Milling (A) and Slotting (B) A ap	A ae	B ap	KCPM15 Cutting Speed — vc SFM min	max	Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%. D1 — Diameter inch	1/4 0.250	5/16 0.313	3/8 0.375	1/2 0.500	5/8 0.625	3/4 0.750	1 1.000
P	1	1 x D	0.5 x D	0.75 x D	500	650	fz	0.0018	0.0023	0.0027	0.0035	0.0039	0.0043	0.0050
	2	1 x D	0.5 x D	0.75 x D	450	625	fz	0.0018	0.0023	0.0027	0.0035	0.0039	0.0043	0.0050
	3	1 x D	0.5 x D	0.75 x D	400	525	fz	0.0015	0.0020	0.0023	0.0029	0.0034	0.0038	0.0046
	4	1 x D	0.4 x D	0.3 x D	350	475	fz	0.0014	0.0018	0.0020	0.0026	0.0030	0.0033	0.0039
	5	1 x D	0.5 x D	0.75 x D	200	325	fz	0.0012	0.0016	0.0018	0.0023	0.0027	0.0030	0.0036
	6	1 x D	0.4 x D	0.3 x D	150	225	fz	0.0010	0.0013	0.0015	0.0019	0.0022	0.0024	0.0028
M	1	1 x D	0.5 x D	0.75 x D	250	325	fz	0.0015	0.0020	0.0023	0.0029	0.0034	0.0038	0.0046
	2	1 x D	0.5 x D	0.75 x D	190	260	fz	0.0012	0.0016	0.0018	0.0023	0.0027	0.0030	0.0036
	3	1 x D	0.5 x D	0.75 x D	200	260	fz	0.0010	0.0013	0.0015	0.0019	0.0022	0.0024	0.0028
K	1	1 x D	0.5 x D	0.75 x D	400	525	fz	0.0018	0.0023	0.0027	0.0035	0.0039	0.0043	0.0050
	2	1 x D	0.5 x D	0.75 x D	360	460	fz	0.0015	0.0020	0.0023	0.0029	0.0034	0.0038	0.0046
	3	1 x D	0.5 x D	0.75 x D	330	430	fz	0.0012	0.0016	0.0018	0.0023	0.0027	0.0030	0.0036
H	1	1 x D	0.4 x D	0.3 x D	300	450	fz	0.0014	0.0018	0.0020	0.0026	0.0030	0.0033	0.0039

MDRHEC





Material Group		Side Milling (A) and Slotting (B) A ap	A ae	B ap	KCPM15 Cutting Speed — vc SFM min	max	KC625M min	max	K600 min	max	Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%. D1 — Diameter inch	1/4 0.250	5/16 0.313	3/8 0.375	1/2 0.500	5/8 0.625	3/4 0.750	1 1,000
P	1	1 x D	0.5 x D	0.5 x D	500	650	400	520	200	260	fz	0.0015	0.0019	0.0022	0.0028	0.0032	0.0034	0.0040
	2	1 x D	0.5 x D	0.5 x D	450	625	360	500	180	250	fz	0.0015	0.0019	0.0022	0.0028	0.0032	0.0034	0.0040
	3	1 x D	0.4 x D	0.5 x D	400	525	320	420	—	—	fz	0.0012	0.0016	0.0018	0.0023	0.0027	0.0030	0.0036
	4	1 x D	0.3 x D	0.4 x D	350	475	280	380	—	—	fz	0.0011	0.0014	0.0016	0.0021	0.0024	0.0026	0.0031
	5	1 x D	0.4 x D	0.5 x D	200	325	160	260	—	—	fz	0.0010	0.0013	0.0015	0.0019	0.0022	0.0024	0.0029
M	1	1 x D	0.4 x D	0.5 x D	250	325	200	260	100	130	fz	0.0012	0.0016	0.0018	0.0023	0.0027	0.0030	0.0036
	2	1 x D	0.4 x D	0.5 x D	190	260	152	208	—	—	fz	0.0010	0.0013	0.0015	0.0019	0.0022	0.0024	0.0029
	3	1 x D	0.4 x D	0.5 x D	200	260	160	208	—	—	fz	0.0008	0.0011	0.0012	0.0016	0.0018	0.0019	0.0023
K	1	1 x D	0.5 x D	0.5 x D	400	525	320	420	160	210	fz	0.0015	0.0019	0.0022	0.0028	0.0032	0.0034	0.0040
	2	1 x D	0.4 x D	0.5 x D	360	460	288	368	—	—	fz	0.0012	0.0016	0.0018	0.0023	0.0027	0.0030	0.0036
	3	1 x D	0.4 x D	0.5 x D	330	430	264	344	—	—	fz	0.0010	0.0013	0.0015	0.0019	0.0022	0.0024	0.0029
S	1	1 x D	0.4 x D	0.5 x D	—	—	120	220	—	—	fz	0.0012	0.0016	0.0018	0.0023	0.0027	0.0030	0.0036
	2	1 x D	0.4 x D	0.5 x D	—	—	128	220	—	—	fz	0.0010	0.0013	0.0015	0.0019	0.0022	0.0024	0.0029
H	1	1 x D	0.3 x D	0.4 x D	260	460	208	368	—	—	fz	0.0011	0.0014	0.0016	0.0021	0.0024	0.0026	0.0031

NOTE: These guidelines may require variations to achieve optimum results.
Lower value of cutting speed is used for high stock removal applications or for higher hardness (machinability) within group.
Higher value of cutting speed is used for finishing applications or for lower hardness (machinability) within group.
Above parameters are based on ideal conditions. For smaller taper machining centers, please adjust parameters accordingly on >1/2" diameter.

HPRST





Material Group		Side Milling (A) and Slotting (B)			KC643M		Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%.						
		A		B	Cutting Speed — vc SFM		D1 — Diameter						
		ap	ae	ap	min	max	inch	1/4 0.250	3/8 0.375	1/2 0.500	5/8 0.625	3/4 0.750	1 1.000
P	3	1 x D	0.5 x D	0.5 x D	390	520	fz	0.0013	0.0019	0.0026	0.0031	0.0038	0.0046
	4	1 x D	0.3 x D	0.4 x D	360	490	fz	0.0012	0.0017	0.0023	0.0027	0.0033	0.0039
	5	1 x D	0.5 x D	0.5 x D	200	330	fz	0.0010	0.0015	0.0021	0.0025	0.0030	0.0036
	6	1 x D	0.3 x D	0.4 x D	160	250	fz	0.0009	0.0013	0.0017	0.0020	0.0024	0.0028
M	1	1 x D	0.5 x D	0.5 x D	260	330	fz	0.0013	0.0019	0.0026	0.0031	0.0038	0.0046
	2	1 x D	0.5 x D	0.5 x D	200	260	fz	0.0010	0.0015	0.0021	0.0025	0.0030	0.0036
	3	1 x D	0.5 x D	0.5 x D	200	260	fz	0.0009	0.0013	0.0017	0.0020	0.0024	0.0028
K	1	1 x D	0.5 x D	0.5 x D	390	520	fz	0.0016	0.0023	0.0031	0.0035	0.0043	0.0050
	2	1 x D	0.5 x D	0.5 x D	360	460	fz	0.0013	0.0019	0.0026	0.0031	0.0038	0.0046
	3	1 x D	0.5 x D	0.5 x D	330	430	fz	0.0010	0.0015	0.0021	0.0025	0.0030	0.0036
S	1	1 x D	0.3 x D	0.3 x D	160	300	fz	0.0013	0.0019	0.0026	0.0031	0.0038	0.0046
	2	1 x D	0.3 x D	0.3 x D	70	130	fz	0.0007	0.0010	0.0014	0.0016	0.0020	0.0025
	3	1 x D	0.4 x D	0.4 x D	160	260	fz	0.0010	0.0015	0.0021	0.0025	0.0030	0.0036
	4	1 x D	0.4 x D	0.4 x D	150	210	fz	0.0009	0.0014	0.0019	0.0023	0.0028	0.0033
H	1	1 x D	0.3 x D	0.3 x D	260	460	fz	0.0012	0.0017	0.0023	0.0027	0.0033	0.0039
	2	1 x D	0.2 x D	0.2 x D	230	390	fz	0.0009	0.0013	0.0017	0.0020	0.0024	0.0028
	3	0.8 x D	0.2 x D	0.2 x D	200	300	fz	0.0004	0.0005	0.0007	0.0009	0.0010	0.0014

NOTE: These guidelines may require variations to achieve optimum results.
Lower value of cutting speed is used for high stock removal applications or for higher hardness (machinability) within group.
Higher value of cutting speed is used for finishing applications or for lower hardness (machinability) within group.
For rougher tool with six flutes, use ap in slotting, reduce by 40%.



General Application Solid Carbide End Mills

Features and Benefits

- Wide range of diameters.
- Short, regular, long, and extra-long overall length.
- Different coatings.



Applications:



Side Milling



Slotting



3-D Milling

Workpiece Materials:

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



GOmill™ • The Economical Milling Cutter Line

Primary Application

The GOmill line is specifically engineered to work on short length-of-cut applications in multiple workpiece materials, like soft and hard steels up to 48 HRC, stainless steels, high-temperature alloys, and cast iron. With the very short overall length and soft cutting geometries, the line is made to conform to the growing market of millturn machines.

The 3-flute sharp and 4-flute chamfer versions support roughing, semi-finishing, and finishing applications. The 3-flute ball nose tool supports roughing and semi-finishing applications. The 2-flute ball nose version requires finishing applications. All three geometries work in slotting as well as side milling applications up to 1 x D depth of cut.

Features and Benefits

- Unequal flute spacing.
- AlTiN coating.
- Short overall tool length.
- Positive rake angle.
- Better surface finish and tool life.
- Universal usage on multiple workpiece materials.
- Higher cutting conditions, higher productivity, lower price due to less carbide.
- Lower power consumption.



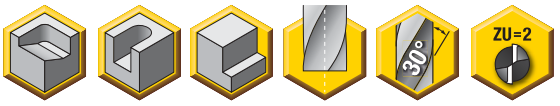
Portfolio:

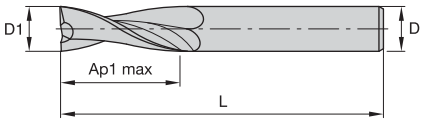
- 4-flute square end, chamfer corner, 5/32–1/2".
- 3-flute square end, sharp corner, 5/64–1/2".
- 3-flute ball nose, 5/64–1/2".
- 2-flute ball nose, 5/64–1/2".

Functions:

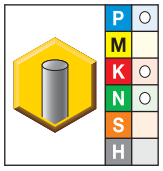
- Less vibrations.
- Optimum combination of hardness and toughness.
- Extremely stable.
- Soft cutting.

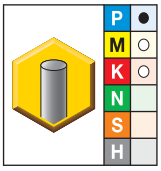
- Kennametal standard dimensions.
- Center cutting.

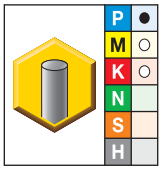


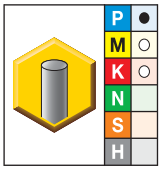












● first choice
○ alternate choice

K600	KC610M	KC625M	KC635M	D1	D	Ap1 max	L
HEC016S2	HEC016S2	HEC16S2	–	1/64	1/8	1/32	1 1/2
HEC031S2	HEC031S2	HEC31S2	HEC031S2	1/32	1/8	5/64	1 1/2
HEC047S2	HEC047S2	–	–	3/64	1/8	7/64	1 1/2
–	–	HEC47S2	–	3/64	1/8	1/8	1 1/2
HEC47S2013	–	–	–	3/64	1/8	1/8	1 1/2
–	HEC062S2013	HEC63S2013	HEC062S2013	1/16	1/8	1/8	1 1/2
HEC062S2	HEC062S2	HEC63S2018	HEC062S2	1/16	1/8	3/16	1 1/2
HEC63S2	–	HEC63S2	–	1/16	1/8	1/2	2
HEC078S2	HEC078S2	HEC78S2	–	5/64	1/8	3/16	1 1/2
–	HEC094S2018	HEC94S2018	HEC094S2018	3/32	1/8	3/16	1 1/2
HEC094S2	HEC094S2	HEC94S2	HEC094S2	3/32	1/8	3/8	1 1/2
HEC094S2063	HEC094S2063	–	HEC094S2063	3/32	1/8	5/8	2
HEC109S2	HEC109S2	HEC109S2	–	7/64	1/8	3/8	1 1/2
HEC125S2025	HEC125S2025	HEC125S2025	HEC125S2025	1/8	1/8	1/4	1 1/2
HEC125S2	HEC125S2	HEC125S2	HEC125S2	1/8	1/8	1/2	1 1/2
HEC125S2075	HEC125S2075	HEC125S2075	HEC125S2075	1/8	1/8	3/4	2 1/4
HEC125S2100	HEC125S2100	HEC125S2100	HEC125S2100	1/8	1/8	1	3
HEC141S2	HEC141S2	–	–	9/64	3/16	9/16	2
HEC156S2031	HEC156S2031	HEC156S2031	HEC156S2031	5/32	3/16	5/16	2
HEC156S2	HEC156S2	HEC156S2	HEC156S2	5/32	3/16	9/16	2
–	HEC172S2	–	–	11/64	3/16	5/8	2
HEC188S2031	HEC188S2031	HEC188S2031	HEC188S2031	3/16	3/16	5/16	1 1/2
HEC188S2	HEC188S2	HEC188S2	HEC188S2	3/16	3/16	5/8	2
HEC188S2075	HEC188S2075	HEC188S2075	HEC188S2075	3/16	3/16	3/4	2 1/2
HEC188S2113	HEC188S2113	HEC188S2113	HEC188S2113	3/16	3/16	1 1/8	3
HEC203S2	HEC203S2	–	–	13/64	1/4	5/8	2 1/2
HEC219S2044	HEC219S2044	HEC219S2044	HEC219S2044	7/32	1/4	7/16	2
HEC219S2	HEC219S2	HEC219S2	HEC219S2	7/32	1/4	5/8	2 1/2
HEC234S2	HEC234S2	–	–	15/64	1/4	3/4	2 1/2
HEC250S2050	HEC250S2050	HEC250S2050	HEC250S2050	1/4	1/4	1/2	2
HEC250S2	HEC250S2	HEC250S2	HEC250S2	1/4	1/4	3/4	2 1/2
HEC250S2113	HEC250S2113	HEC250S2113	HEC250S2113	1/4	1/4	1 1/8	3
HEC250S2150	HEC250S2150	HEC250S2150	HEC250S2150	1/4	1/4	1 1//2	4
HEC266S2	HEC266S2	–	–	17/64	5/16	3/4	2 1/2
HEC281S2	HEC281S2	–	HEC281S2	9/32	5/16	3/4	2 1/2
HEC297S2	HEC297S2	–	–	19/64	5/16	13/16	2 1/2
HEC312S2050	HEC312S2050	–	HEC312S2050	5/16	5/16	1/2	2
HEC312S2	HEC312S2	HEC312S2	HEC312S2	5/16	5/16	13/16	2 1/2
HEC312S2113	HEC312S2113	–	HEC312S2113	5/16	5/16	1 1/8	3
HEC312S2163	HEC312S2163	HEC312S2163	HEC312S2163	5/16	5/16	1 5/8	4
HEC328S2	HEC328S2	–	–	21/64	3/8	1	2 1/2
HEC344S2	HEC344S2	HEC344S2	–	11/32	3/8	1	2 1/2

(continued)

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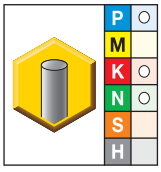
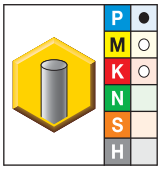
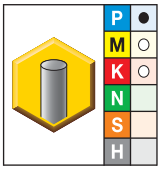
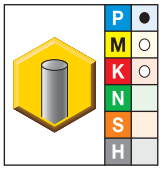








K600	KC610M	KC625M	KC635M	D1	D	Ap1 max	L
HEC375S2063	HEC375S2063	–	HEC375S2063	3/8	3/8	5/8	2
HEC375S2088	HEC375S2088	HEC375S2088	HEC375S2088	3/8	3/8	7/8	2 1/2
HEC375S2	HEC375S2	–	HEC375S2	3/8	3/8	1	2 1/2
HEC375S2113	HEC375S2113	HEC375S2113	HEC375S2113	3/8	3/8	1 1/8	3
HEC375S2175	HEC375S2175	–	HEC375S2175	3/8	3/8	1 3/4	4
–	HEC391S2100	–	–	25/64	7/16	1	2 3/4
–	HEC406S2100	–	–	13/32	7/16	1	2 3/4
HEC438S2063	HEC438S2063	–	HEC438S2063	7/16	7/16	5/8	2 1/2
HEC438S2	HEC438S2	HEC438S2	HEC438S2	7/16	7/16	1	2 1/2
HEC438S2200	HEC438S2200	HEC438S2200	HEC438S2200	7/16	7/16	2	4
–	HEC469S2	–	–	15/32	1/2	1	3
HEC500S2063	HEC500S2063	HEC500S2063	HEC500S2063	1/2	1/2	5/8	2 1/2
HEC500S2	HEC500S2	HEC500S2	HEC500S2	1/2	1/2	1	3
HEC500S2200	HEC500S2200	HEC500S2200	HEC500S2200	1/2	1/2	2	4
HEC500S2200L	–	–	–	1/2	1/2	2	4 1/2
HEC500S2300	HEC500S2300	HEC500S2300	HEC500S2300	1/2	1/2	3	6
HEC562S2075	HEC562S2075	–	–	9/16	9/16	3/4	3
HEC562S2125	HEC562S2125	–	HEC562S2125	9/16	9/16	1 1/4	3 1/2
HEC562S2225	HEC562S2225	–	HEC562S2225	9/16	9/16	2 1/4	5
HEC625S2075	HEC625S2075	HEC625S2075	HEC625S2075	5/8	5/8	3/4	3
HEC625S2	HEC625S2	HEC625S2	HEC625S2	5/8	5/8	1 1/4	3 1/2
HEC625S2225	HEC625S2225	–	HEC625S2225	5/8	5/8	2 1/4	5
HEC625S2400	–	HEC625S2400	HEC625S2400	5/8	5/8	4	7
HEC688S2	HEC688S2	–	–	11/16	3/4	1 3/8	4
HEC750S2100	HEC750S2100	HEC750S2100	HEC750S2100	3/4	3/4	1	3
HEC750S2	HEC750S2	HEC750S2	HEC750S2	3/4	3/4	1 1//2	4
HEC750S2225	HEC750S2225	–	HEC750S2225	3/4	3/4	2 1/4	5
HEC750S2300	HEC750S2300	HEC750S2300	HEC750S2300	3/4	3/4	3	6
HEC750S2400	–	–	HEC750S2400	3/4	3/4	4	7
HEC875S2	HEC875S2	HEC875S2	–	7/8	7/8	1 1//2	4
–	–	–	HEC875S2225	7/8	7/8	2 1/4	5
–	–	HEC1000S2	–	1	1	1 1//2	4
HEC100S2	HEC100S2	–	HEC100S2	1	1	1 1/2	4
HEC100S2225	HEC100S2225	–	HEC100S2225	1	1	2 1/4	5
–	HEC100S2300	–	HEC100S2300	1	1	3	6
HEC100S2400	–	–	HEC100S2400	1	1	4	7

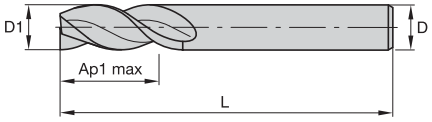
NOTE: For application data, see page M99.

End Mill Tolerances

D1	tolerance	D	tolerance h6
All	+.000/-.002"	≤1/8"	+0/-.00024"
		>1/8–1/4"	+0/-.00031"
		>1/4–3/8"	+0/-.00035"
		>3/8–23/32"	+0/-.00043"
		>23/32–1 3/16"	+0/-.00051"

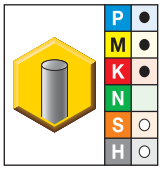
- Kennametal standard dimensions.
- Center cutting.
- Unequal flute spacing minimizes chatter for smoother machining.
- Single tool for both roughing and finishing operations for fewer setups.

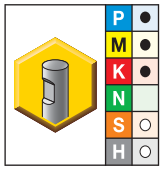






GOmill





● first choice
○ alternate choice

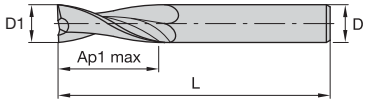
KC643M	KC643M	D1	D	Ap1 max	L
UEDE0078J3AS	**UEDE0078K3AS**	5/64	1/4	5/32	1 1/2
UEDE0094J3AS	**UEDE0094K3AS**	3/32	1/4	5/32	1 1/2
UEDE0125J3AS	**UEDE0125K3AS**	1/8	1/4	13/64	1 1/2
UEDE0156J3AS	**UEDE0156K3AS**	5/32	1/4	17/64	1 1/2
UEDE0188J3AS	**UEDE0188K3AS**	3/16	1/4	19/64	1 1/2
UEDE0250J3AS	**UEDE0250K3AS**	1/4	1/4	21/64	1 1/2
UEDE0312J3AS	**UEDE0312K3AS**	5/16	5/16	27/64	1 3/4
UEDE0375J3AS	**UEDE0375K3AS**	3/8	3/8	31/64	2
UEDE0437J3AS	**UEDE0437K3AS**	7/16	7/16	9/16	2 5/32
UEDE0500J3AS	**UEDE0500K3AS**	1/2	1/2	5/8	2 5/32

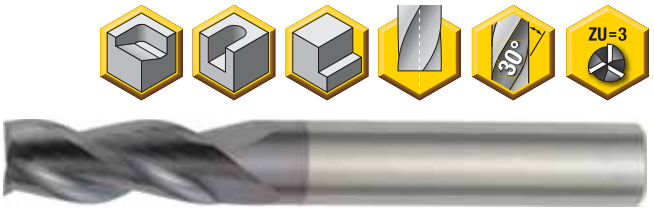
NOTE: For application data, see page M101.

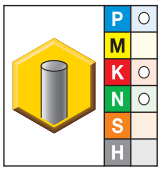
End Mill Tolerances

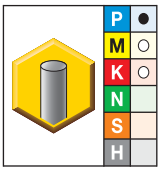
D1	tolerance	D	tolerance h6
All	+.000/-.002"	≤1/8"	+0/-.00024"
		>1/8–1/4"	+0/-.00031"
		>1/4–3/8"	+0/-.00035"
		>3/8–23/32"	+0/-.00043"
		>23/32–1 3/16"	+0/-.00051"

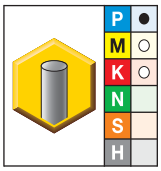
- Kennametal standard dimensions.
- Center cutting.

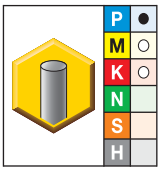












● first choice
○ alternate choice

K600	KC610M	KC625M	KC635M	D1	D	Ap1 max	L	Rε
–	HEC031S3	–	–	1/32	1/8	5/64	1 1/2	–
HEC047S3	HEC047S3	–	–	3/64	1/8	7/64	1 1/2	–
HEC062S3	HEC062S3	–	–	1/16	1/8	3/16	1 1/2	–
HEC094S3	HEC094S3	–	–	3/32	1/8	3/8	1 1/2	–
HEC109S3	HEC109S3	–	–	7/64	1/8	3/8	1 1/2	–
HEC125S3	HEC125S3	–	–	1/8	1/8	1/2	1 1/2	–
HEC125S350R10	–	HEC125S350R10	HEC125S350R10	1/8	1/8	1/2	1 1/2	.010
HEC125S325R10	–	HEC125S325R10	HEC125S325R10	1/8	1/8	1/4	1 1/2	.010
HEC141S3	HEC141S3	–	–	9/64	3/16	9/16	2	–
HEC156S3	HEC156S3	–	–	5/32	3/16	9/16	2	–
HEC156S356R10	–	–	HEC156S356R10	5/32	5/32	9/16	2	.010
HEC188S356R10	–	HEC188S331R10	HEC188S331R10	3/16	3/16	5/16	2	.010
HEC188S3	HEC188S3	–	–	3/16	3/16	5/8	2	–
HEC188S363R10	–	HEC188S363R10	HEC188S363R10	3/16	3/16	5/8	2	.010
–	HEC203S3	–	–	13/64	1/4	5/8	2 1/2	–
HEC219S375R20	–	HEC219S375R20	HEC219S375R20	7/32	1/4	3/4	2 1/2	.020
HEC219S3	HEC219S3	–	–	7/32	1/4	5/8	2 1/2	–
HEC250S350R20	–	HEC250S350R20	HEC250S350R20	1/4	1/4	1/2	2	.020
HEC250S3	HEC250S3	–	–	1/4	1/4	3/4	2 1/2	–
HEC250S375R20	–	HEC250S375R20	HEC250S375R20	1/4	1/4	3/4	2 1/2	.020
–	–	HEC281S381R20	HEC281S381R20	9/32	5/16	13/16	2 1/2	.020
HEC281S3	HEC281S3	–	–	9/32	5/16	3/4	2 1/2	–
HEC312S350R20	–	HEC312S350R20	HEC312S350R20	5/16	5/16	1/2	2	.020
HEC312S381R20	–	HEC312S381R20	HEC312S381R20	5/16	5/16	13/16	2 1/2	.020
HEC312S3	HEC312S3	–	–	5/16	5/16	13/16	2 1/2	–
–	HEC328S3	–	–	21/64	3/8	1	2 1/2	–
HEC344S388R20	–	–	–	11/32	11/32	7/8	2 1/2	.020
HEC344S3	HEC344S3	–	–	11/32	3/8	1	2 1/2	–
HEC375S3	HEC375S3	–	–	3/8	3/8	1	2 1/2	–
HEC375S3113	HEC375S3113	–	–	3/8	3/8	1 1/8	3	–
HEC375S350R20	–	HEC375S350R20	HEC375S350R20	3/8	3/8	1/2	2	.020
HEC375S388R20	–	HEC375S388R20	HEC375S388R20	3/8	3/8	7/8	2 1/2	.020
HEC375S3088	HEC375S3088	–	–	3/8	3/8	7/8	2 1/2	–
–	HEC406S3	–	–	13/32	7/16	1	2 1/2	–
HEC438S3	HEC438S3	–	–	7/16	7/16	1	2 1/2	–
–	–	HEC438S363R20	HEC438S363R20	7/16	7/16	5/8	2 1/2	.020
HEC438S388R20	–	–	HEC438S388R20	7/16	7/16	7/8	2 1/2	.020
HEC500S3	HEC500S3	–	–	1/2	1/2	1	3	–
HEC500S3200	HEC500S3200	–	–	1/2	1/2	2	4	–
HEC563S3113	–	–	–	9/16	9/16	1 1/8	3 1/2	–
HEC625S3	HEC625S3	–	–	5/8	5/8	1 1/4	3 1/2	–
HEC688S3138	–	–	–	11/16	3/4	1 3/8	4	–
HEC750S3	HEC750S3	–	–	3/4	3/4	1 1/2	4	–
HEC750S3225	HEC750S3225	–	–	3/4	3/4	2 1/4	5	–
HEC100S3	HEC100S3	–	–	1	1	1 1/2	4	–
HEC100S3225	HEC100S3225	–	–	1	1	2 1/4	5	–

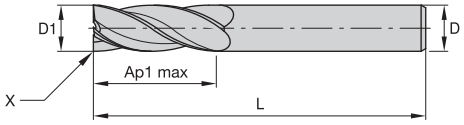
NOTE: For application data, see page M99.

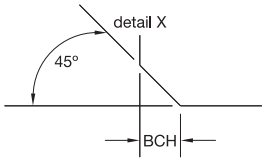
End Mill Tolerances

D1	tolerance	D	tolerance h6
All	+.000/-0.002"	≤1/8"	+0/-.00024"
		>1/8–1/4"	+0/-.00031"
		>1/4–3/8"	+0/-.00035"
		>3/8–23/32"	+0/-.00043"
		>23/32–1 3/16"	+0/-.00051"

- Kennametal standard dimensions.
- Center cutting.
- Unequal flute spacing minimizes chatter for smoother machining.
- Single tool for both roughing and finishing operations for fewer setups.

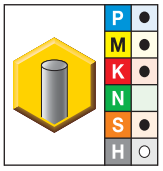


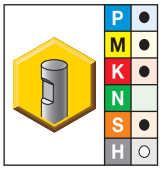






GOmill





● first choice
○ alternate choice

KC643M	KC643M	D1	D	Ap1 max	L	BCH
UEDE0156J4AH	**UEDE0156K4AH**	5/32	1/4	17/64	1 1/2	.016
UEDE0188J4AH	**UEDE0188K4AH**	3/16	1/4	19/64	1 1/2	.016
UEDE0250J4AH	**UEDE0250K4AH**	1/4	1/4	21/64	1 1/2	.016
UEDE0312J4AH	**UEDE0312K4AH**	5/16	5/16	27/64	1 3/4	.016
UEDE0375J4AH	**UEDE0375K4AH**	3/8	3/8	31/64	2	.020
UEDE0437J4AH	**UEDE0437K4AH**	7/16	7/16	9/16	2 5/32	.020
UEDE0500J4AH	**UEDE0500K4AH**	1/2	1/2	5/8	2 5/32	.020

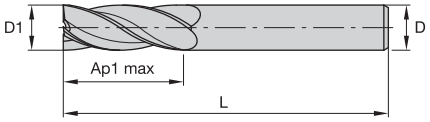
NOTE: For application data, see page M101.

End Mill Tolerances

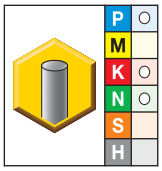
D1	tolerance	D	tolerance h6
All	+.000/-.002"	≤1/8"	+0/-.00024"
		>1/8–1/4"	+0/-.00031"
		>1/4–3/8"	+0/-.00035"
		>3/8–23/32"	+0/-.00043"
		>23/32–1 3/16"	+0/-.00051"

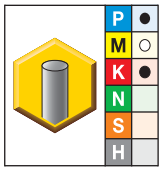
- Kennametal standard dimensions.
- Center cutting.

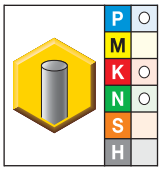


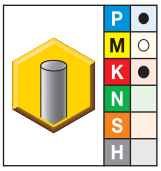










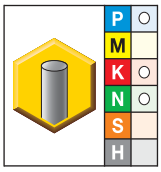


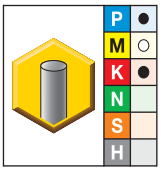
● first choice
○ alternate choice

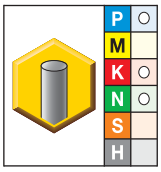
K600	KC610M	KC625M	KC635M	D1	D	Ap1 max	L
HEC016S4	HEC016S4	–	–	1/64	1/8	1/32	1 1/2
HEC031S4	HEC031S4	–	HEC031S4	1/32	1/8	5/64	1 1/2
HEC047S4	HEC047S4	–	–	3/64	1/8	7/64	1 1/2
HEC062S4013	HEC062S4013	–	HEC062S4013	1/16	1/8	1/8	1 1/2
HEC062S4	HEC062S4	–	HEC062S4	1/16	1/8	3/16	1 1/2
HEC062S4050	–	HEC062S4050	–	1/16	1/8	1/2	2
HEC078S4	HEC078S4	–	–	5/64	1/8	3/16	1 1/2
HEC094S4018	HEC094S4018	–	HEC094S4018	3/32	1/8	3/16	1 1/2
HEC094S4	HEC094S4	–	HEC094S4	3/32	1/8	3/8	1 1/2
HEC094S4063	HEC094S4063	–	HEC094S4063	3/32	1/8	5/8	2
HEC109S4	HEC109S4	–	–	7/64	1/8	3/8	1 1/2
HEC125S4025	HEC125S4025	–	HEC125S4025	1/8	1/8	1/4	1 1/2
HEC125S4	HEC125S4	–	HEC125S4	1/8	1/8	1/2	1 1/2
HEC125S4075	HEC125S4075	–	HEC125S4075	1/8	1/8	3/4	2 1/4
HEC125S4100	HEC125S4100	–	HEC125S4100	1/8	1/8	1	3
HEC141S4	HEC141S4	–	–	9/64	3/16	9/16	2
HEC156S4031	HEC156S4031	–	HEC156S4031	5/32	3/16	5/16	2
HEC156S4	HEC156S4	–	HEC156S4	5/32	3/16	9/16	2
HEC172S4	HEC172S4	–	–	11/64	3/16	5/8	2
HEC188S4	HEC188S4	–	HEC188S4	3/16	3/16	5/8	2
HEC188S4031	HEC188S4031	–	HEC188S4031	3/16	3/16	3/4	1 1/2
HEC188S4075	HEC188S4075	–	HEC188S4075	3/16	3/16	3/4	2 1/2
HEC188S4113	HEC188S4113	–	HEC188S4113	3/16	3/16	1 1/8	3
HEC203S4	HEC203S4	–	–	13/64	1/4	5/8	2 1/2
HEC219S4044	HEC219S4044	–	HEC219S4044	7/32	1/4	7/16	2
HEC219S4	HEC219S4	–	HEC219S4	7/32	1/4	5/8	2 1/2
HEC234S4	HEC234S4	–	–	15/64	1/4	3/4	2 1/2
HEC250S4038	–	–	–	1/4	1/4	3/8	2
HEC250S4050	HEC250S4050	–	HEC250S4050	1/4	1/4	1/2	2
HEC250S4	HEC250S4	HEC250S4	HEC250S4	1/4	1/4	3/4	2 1/2
HEC250S4113	HEC250S4113	–	HEC250S4113	1/4	1/4	1 1/8	3
HEC250S4150	HEC250S4150	–	HEC250S4150	1/4	1/4	1 1/2	4
HEC250S4150L	–	–	HEC250S4150L	1/4	1/4	1 1/2	6
HEC266S4	HEC266S4	–	–	17/64	5/16	3/4	2 1/2
HEC281S4	HEC281S4	–	HEC281S4	9/32	5/16	3/4	2 1/2
HEC297S4	HEC297S4	–	–	19/64	5/16	13/16	2 1/2
HEC313S4044	–	–	–	5/16	5/16	7/16	2
HEC312S4050	HEC312S4050	–	HEC312S4050	5/16	5/16	1/2	2
HEC312S4	HEC312S4	–	HEC312S4	5/16	5/16	13/16	2 1/2
HEC312S4113	HEC312S4113	–	HEC312S4113	5/16	5/16	1 1/8	3
HEC312S4163	HEC312S4163	–	HEC312S4163	5/16	5/16	1 5/8	4
–	HEC328S4	–	–	21/64	3/8	1	2 1/2
HEC344S4	HEC344S4	–	–	11/32	3/8	1	2 1/2
HEC360S4	HEC360S4	–	–	23/64	3/8	1	2 1/2

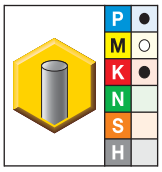
(continued)

(continued)









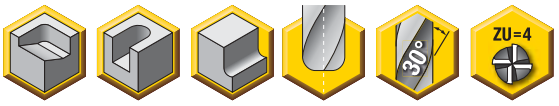
K600	KC610M	KC625M	KC635M	D1	D	Ap1 max	L
HEC375S4063	HEC375S4063	–	HEC375S4063	3/8	3/8	5/8	2
HEC375S4088	HEC375S4088	HEC375S4088	HEC375S4088	3/8	3/8	7/8	2 1/2
HEC375S4	HEC375S4	–	HEC375S4	3/8	3/8	1	2 1/2
HEC375S4100	–	HEC375S4100	HEC375S4100	3/8	3/8	1	4
HEC375S4113	HEC375S4113	–	HEC375S4113	3/8	3/8	1 1/8	3
HEC375S4150L	–	–	HEC375S4150L	3/8	3/8	1 1/2	6
HEC375S4175	HEC375S4175	–	HEC375S4175	3/8	3/8	1 3/4	4
–	HEC391S4100	–	–	25/64	7/16	1	2 3/4
–	HEC406S4100	–	–	13/32	7/16	1	2 3/4
–	HEC422S4100	–	–	27/64	7/16	1	2 3/4
HEC438S4063	HEC438S4063	–	HEC438S4063	7/16	7/16	5/8	2 1/2
HEC438S4088	–	–	–	7/16	7/16	7/8	2 1/2
HEC438S4	HEC438S4	–	HEC438S4	7/16	7/16	1	2 1/2
HEC438S4100	HEC438S4100	–	HEC438S4100	7/16	7/16	1	2 3/4
HEC438S4200	HEC438S4200	–	HEC438S4200	7/16	7/16	2	4 1/2
HEC438S4600	HEC438S4600	–	–	7/16	7/16	3	6
HEC453S4100	–	–	–	29/64	1/2	1	3
–	HEC469S4	–	–	15/32	1/2	1	3
–	HEC484S4	–	–	31/64	1/2	1	3
HEC500S4063	HEC500S4063	–	HEC500S4063	1/2	1/2	5/8	2 1/2
HEC500S4	HEC500S4	HEC500S4	HEC500S4	1/2	1/2	1	3
HEC500S4100	–	HEC500S4100	HEC500S4100	1/2	1/2	1	4
HEC500S4200	HEC500S4200	–	HEC500S4200	1/2	1/2	2	4
HEC500S4450	HEC500S4450	–	–	1/2	1/2	2	4 1/2
HEC500S4300	HEC500S4300	–	HEC500S4300	1/2	1/2	3	6
HEC562S4075	HEC562S4075	–	–	9/16	9/16	3/4	3
HEC562S4125	HEC562S4125	–	HEC562S4125	9/16	9/16	1 1/4	3 1/2
HEC562S4225	HEC562S4225	–	HEC562S4225	9/16	9/16	2 1/4	5
HEC625S4075	HEC625S4075	–	HEC625S4075	5/8	5/8	3/4	3
HEC625S4	HEC625S4	–	HEC625S4	5/8	5/8	1 1/4	3 1/2
HEC625S4225	HEC625S4225	–	HEC625S4225	5/8	5/8	2 1/4	5
HEC625S4400	–	–	HEC625S4400	5/8	5/8	4	7
HEC688S4	HEC688S4	–	–	11/16	3/4	1 3/8	4
HEC750S4100	HEC750S4100	–	HEC750S4100	3/4	3/4	1	3
HEC750S4	HEC750S4	HEC750S4	HEC750S4	3/4	3/4	1 1/2	4
HEC750S4225	HEC750S4225	–	HEC750S4225	3/4	3/4	2 1/4	5
HEC750S4300	HEC750S4300	–	HEC750S4300	3/4	3/4	3	6
HEC750S4400	–	–	HEC750S4400	3/4	3/4	4	7
HEC875S4	HEC875S4	–	–	7/8	7/8	1 1/2	4
HEC875S4225	–	–	HEC875S4225	7/8	7/8	2 1/4	5
HEC100S4	HEC100S4	–	HEC100S4	1	1	1 1/2	4
HEC100S4225	HEC100S4225	–	HEC100S4225	1	1	2 1/4	5
HEC100S4300	HEC100S4300	–	HEC100S4300	1	1	3	6
HEC100S4400	–	–	HEC100S4400	1	1	4	7
HEC1250S4200	–	–	HEC1250S4200	1 1/4	1 1/4	2	4 1/2

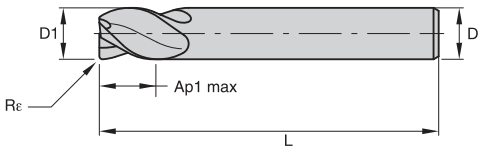
NOTE: For application data, see page M100.

End Mill Tolerances

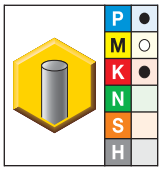
D1	tolerance	D	tolerance h6
All	+.000/-.002"	≤1/8"	+0/-.00024"
		>1/8–1/4"	+0/-.00031"
		>1/4–3/8"	+0/-.00035"
		>3/8–23/32"	+0/-.00043"
		>23/32–1 3/16"	+0/-.00051"

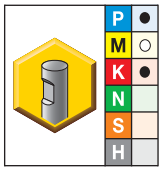
- Kennametal standard dimensions.
- Center cutting.











● first choice
○ alternate choice

KC635M	KC635M	D1	D	Ap1 max	L	Rε
CRHEC125S4R15	–	1/8	1/8	1/2	1 1/2	.015
CRHEC125S4R20	–	1/8	1/8	1/2	1 1/2	.020
CRHEC188S4R15	–	3/16	3/16	5/8	2	.015
CRHEC188S4R20	–	3/16	3/16	5/8	2	.020
CRHEC188S4R30	–	3/16	3/16	5/8	2	.030
CRHEC250S4R15	–	1/4	1/4	3/4	2 1/2	.015
CRHEC250S4R20	–	1/4	1/4	3/4	2 1/2	.020
CRHEC250S4R30	–	1/4	1/4	3/4	2 1/2	.030
CRHEC250S4R45	–	1/4	1/4	3/4	2 1/2	.045
CRHEC312S4R15	–	5/16	5/16	13/16	2 1/2	.015
CRHEC312S4R20	–	5/16	5/16	13/16	2 1/2	.020
CRHEC312S4R30	–	5/16	5/16	13/16	2 1/2	.030
CRHEC312S4R45	–	5/16	5/16	13/16	2 1/2	.045
–	CRHEC375S4R15	3/8	3/8	1	2 1/2	.015
–	CRHEC375S4R20	3/8	3/8	1	2 1/2	.020
–	CRHEC375S4R30	3/8	3/8	1	2 1/2	.030
–	CRHEC375S4R45	3/8	3/8	1	2 1/2	.045
–	CRHEC500S4R15	1/2	1/2	1	3	.015
–	CRHEC500S4R20	1/2	1/2	1	3	.020
–	CRHEC500S4R30	1/2	1/2	1	3	.030
–	CRHEC500S4R45	1/2	1/2	1	3	.045
–	CRHEC500S4R60	1/2	1/2	1	3	.060
–	CRHEC625S4R15	5/8	5/8	1 1/4	3 1/2	.015
–	CRHEC625S4R30	5/8	5/8	1 1/4	3 1/2	.030
–	CRHEC625S4R60	5/8	5/8	1 1/4	3 1/2	.060
–	CRHEC625S4R90	5/8	5/8	1 1/4	3 1/2	.090
–	CRHEC750S4R15	3/4	3/4	1 1/2	4	.015
–	CRHEC750S4R20	3/4	3/4	1 1/2	4	.020
–	CRHEC750S4R30	3/4	3/4	1 1/2	4	.030
–	CRHEC750S4R60	3/4	3/4	1 1/2	4	.060
–	CRHEC750S4R90	3/4	3/4	1 1/2	4	.090
–	CRHEC750S4R125	3/4	3/4	1 1/2	4	.125
–	CRHEC100S4R15	1	1	1 1/2	4	.015
–	CRHEC100S4R30	1	1	1 1/2	4	.030
–	CRHEC100S4R60	1	1	1 1/2	4	.060
–	CRHEC100S4R90	1	1	1 1/2	4	.090
–	CRHEC100S4R125	1	1	1 1/2	4	.125

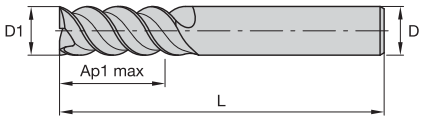
NOTE: For application data, see page M102.

End Mill Tolerances

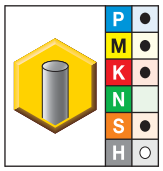
D1	tolerance	D	tolerance h6
All	+.000/-.002"	≤1/8"	+0/-.00024"
		>1/8–1/4"	+0/-.00031"
		>1/4–3/8"	+0/-.00035"
		>3/8–23/32"	+0/-.00043"
		>23/32–1 3/16"	+0/-.00051"

- Kennametal standard dimensions.
- Center cutting.









● first choice
○ alternate choice

KC635M	D1	D	Ap1 max	L
HHEC125S3	1/8	1/4	1/2	2 1/2
HHEC188S3	3/16	1/4	5/8	2 1/2
HHEC250S3	1/4	1/4	3/4	2 1/2
HHEC312S3	5/16	5/16	13/16	2 1/2
HHEC375S3	3/8	3/8	7/8	2 1/2
HHEC438S3	7/16	7/16	1	3
HHEC500S3	1/2	1/2	1	3
HHEC562S3	9/16	9/16	1 1/4	3 1/2
HHEC625S3	5/8	5/8	1 1/4	3 1/2
HHEC750S3	3/4	3/4	1 1/2	4
HHEC100S3	1	1	1 1/2	4

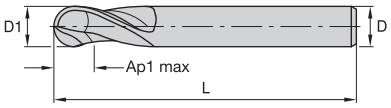
NOTE: For application data, see page M102.

End Mill Tolerances

D1	tolerance	D	tolerance h6
All	+.000/-.002"	≤1/8"	+0/-.00024"
		>1/8–1/4"	+0/-.00031"
		>1/4–3/8"	+0/-.00035"
		>3/8–23/32"	+0/-.00043"
		>23/32–1 3/16"	+0/-.00051"

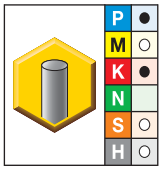
- Kennametal standard dimensions.
- Center cutting.
- Single tool for both semi-finishing and finishing operations for fewer setups.







GOmill



● first choice
○ alternate choice

KC643M	D1	D	Ap1 max	L
UEBD0078J2A	5/64	1/4	5/32	1 1/2
UEBD0094J2A	3/32	1/4	5/32	1 1/2
UEBD0125J2A	1/8	1/4	13/64	1 1/2
UEBD0156J2A	5/32	1/4	17/64	1 1/2
UEBD0188J2A	3/16	1/4	19/64	1 1/2
UEBD0250J2A	1/4	1/4	21/64	1 1/2
UEBD0312J2A	5/16	5/16	27/64	1 3/4
UEBD0375J2A	3/8	3/8	31/64	2
UEBD0437J2A	7/16	7/16	9/16	2 5/32
UEBD0500J2A	1/2	1/2	5/8	2 5/32

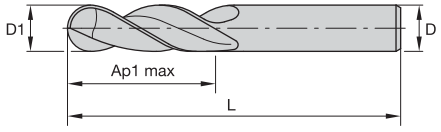
NOTE: For application data, see page M103.

End Mill Tolerances

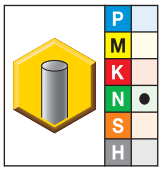
D1	tolerance	D	tolerance h6
All	+.000/-.002"	≤1/8"	+0/-.00024"
		>1/8–1/4"	+0/-.00031"
		>1/4–3/8"	+0/-.00035"
		>3/8–23/32"	+0/-.00043"
		>23/32–1 3/16"	+0/-.00051"

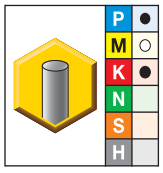
- Kennametal standard dimensions.
- Center cutting.

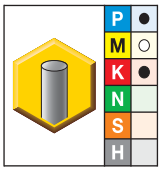










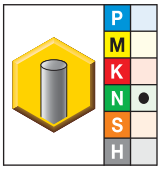


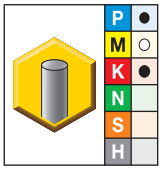
● first choice
○ alternate choice

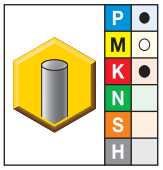
K600	KC610M	KC635M	D1	D	Ap1 max	L
BNEC016S2	BNEC016S2	–	1/64	1/8	1/32	1 1/2
BNEC031S2	BNEC031S2	BNEC031S2	1/32	1/8	5/64	1 1/2
BNEC047S2	BNEC047S2	–	3/64	1/8	1/8	1 1/2
BNEC062S2	BNEC062S2	BNEC062S2	1/16	1/8	3/16	1 1/2
BNEC078S2	BNEC078S2	–	5/64	1/8	3/16	1 1/2
BNEC094S2018	BNEC094S2018	BNEC094S2018	3/32	1/8	3/16	1 1/2
BNEC094S2	BNEC094S2	BNEC094S2	3/32	1/8	3/8	1 1/2
BNEC109S2	BNEC109S2	–	7/64	1/8	3/8	1 1/2
BNEC125S2025	BNEC125S2025	BNEC125S2025	1/8	1/8	1/4	1 1/2
BNEC125S2	BNEC125S2	BNEC125S2	1/8	1/8	1/2	1 1/2
BNEC125S2075	BNEC125S2075	BNEC125S2075	1/8	1/8	3/4	2 1/4
BNEC125S2075L	BNEC125S2075L	BNEC125S2075L	1/8	1/8	3/4	3
BNEC156S2031	BNEC156S2031	BNEC156S2031	5/32	3/16	5/16	2
BNEC156S2	BNEC156S2	BNEC156S2	5/32	3/16	9/16	2
BNEC188S2031	BNEC188S2031	BNEC188S2031	3/16	3/16	5/16	1 1/2
BNEC188S2	BNEC188S2	BNEC188S2	3/16	3/16	5/8	2
BNEC188S2075	BNEC188S2075	BNEC188S2075	3/16	3/16	3/4	2 1/2
BNEC188S2100	BNEC188S2100	BNEC188S2100	3/16	3/16	1	4
BNEC188S2300	BNEC188S2300	–	3/16	3/16	1 1/8	3
BNEC219S2	BNEC219S2	–	7/32	1/4	5/8	2 1/2
BNEC250S2050	BNEC250S2050	BNEC250S2050	1/4	1/4	1/2	2
BNEC250S2	BNEC250S2	BNEC250S2	1/4	1/4	3/4	2 1/2
BNEC250S2113	BNEC250S2113	BNEC250S2113	1/4	1/4	1 1/8	3
BNEC250S2150	BNEC250S2150	BNEC250S2150	1/4	1/4	1 1/2	4
BNEC250S2150L	BNEC250S2150L	BNEC250S2150L	1/4	1/4	1 1/2	6
BNEC312S2050	BNEC312S2050	BNEC312S2050	5/16	5/16	1/2	2
BNEC312S2	BNEC312S2	BNEC312S2	5/16	5/16	13/16	2 1/2
–	BNEC312S2113	BNEC312S2113	5/16	5/16	1 1/8	3
BNEC312S2150	BNEC312S2150	BNEC312S2150	5/16	5/16	1 1/2	6
BNEC375S2063	BNEC375S2063	BNEC375S2063	3/8	3/8	5/8	2
BNEC375S2088	BNEC375S2088	BNEC375S2088	3/8	3/8	7/8	2 1/2
BNEC375S2113	BNEC375S2113	BNEC375S2113	3/8	3/8	1 1/8	3
BNEC375S2175	BNEC375S2175	BNEC375S2175	3/8	3/8	1 3/4	4
BNEC375S2300L	BNEC375S2300L	BNEC375S2300L	3/8	3/8	3	6
BNEC406S2100	BNEC406S2100	–	13/32	7/16	1	2 1/2
BNEC438S2100	BNEC438S2100	BNEC438S2100	7/16	7/16	1	2 1/2
BNEC500S2063	BNEC500S2063	BNEC500S2063	1/2	1/2	5/8	2 1/2
BNEC500S2	BNEC500S2	BNEC500S2	1/2	1/2	1	3
BNEC500S2150	BNEC500S2150	BNEC500S2150	1/2	1/2	1 1/2	6
BNEC500S2200	BNEC500S2200	BNEC500S2200	1/2	1/2	2	4

(continued)

(continued)







K600	KC610M	KC635M	D1	D	Ap1 max	L
BNEC500S2300	**BNEC500S2300**	**BNEC500S2300**	1/2	1/2	3	6
BNEC562S2	**BNEC562S2**	**BNEC562S2**	9/16	9/16	1 1/4	3 1/2
BNEC625S2	**BNEC625S2**	**BNEC625S2**	5/8	5/8	1 1/4	3 1/2
BNEC625S2225	**–**	**–**	5/8	5/8	2 1/4	5
BNEC625S2300	**BNEC625S2300**	**BNEC625S2300**	5/8	5/8	3	6
BNEC750S2100	**BNEC750S2100**	**BNEC750S2100**	3/4	3/4	1	3
BNEC750S2	**BNEC750S2**	**BNEC750S2**	3/4	3/4	1 1/2	4
BNEC750S2200	**BNEC750S2200**	**BNEC750S2200**	3/4	3/4	2	6
BNEC750S2225	**–**	**–**	3/4	3/4	2 1/4	5
BNEC750S2600	**BNEC750S2600**	**–**	3/4	3/4	3	6
–	**BNEC875S2**	**BNEC875S2**	7/8	7/8	1 1/2	4
BNEC100S2	**BNEC100S2**	**BNEC100S2**	1	1	1 1/2	4
BNEC100S2225	**–**	**–**	1	1	2 1/4	5
BNEC100S2300	**BNEC100S2300**	**BNEC100S2300**	1	1	3	6

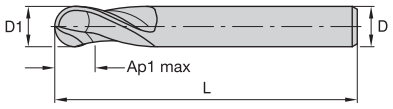
NOTE: For application data, see page M104.

End Mill Tolerances

D1	tolerance	D	tolerance h6
All	+.000/-.003"	≤1/8"	+0/-.00024"
		>1/8–1/4"	+0/-.00031"
		>1/4–3/8"	+0/-.00035"
		>3/8–23/32"	+0/-.00043"
		>23/32–1 3/16"	+0/-.00051"

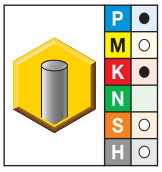
- Kennametal standard dimensions.
- Center cutting.
- Unequal flute spacing minimizes chatter for smoother machining.
- Single tool for both roughing and semi-finishing operations for fewer setups.







GOmill



● first choice
○ alternate choice

KC643M	D1	D	Ap1 max	L
UEBD0078J3A	5/64	1/4	5/32	1 1/2
UEBD0094J3A	3/32	1/4	5/32	1 1/2
UEBD0125J3A	1/8	1/4	13/64	1 1/2
UEBD0156J3A	5/32	1/4	17/64	1 1/2
UEBD0188J3A	3/16	1/4	19/64	1 1/2
UEBD0250J3A	1/4	1/4	21/64	1 1/2
UEBD0312J3A	5/16	5/16	27/64	1 3/4
UEBD0375J3A	3/8	3/8	31/64	2
UEBD0437J3A	7/16	7/16	9/16	2 5/32
UEBD0500J3A	1/2	1/2	5/8	2 5/32

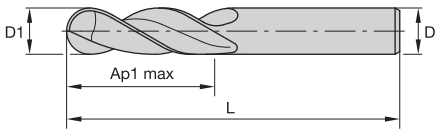
NOTE: For application data, see page M103.

End Mill Tolerances

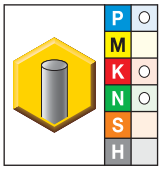
D1	tolerance	D	tolerance h6
All	+.000/-.002"	≤1/8"	+0/-.00024"
		>1/8–1/4"	+0/-.00031"
		>1/4–3/8"	+0/-.00035"
		>3/8–23/32"	+0/-.00043"
		>23/32–1 3/16"	+0/-.00051"

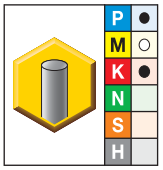
- Kennametal standard dimensions.
- Center cutting.











● first choice
○ alternate choice

K600	KC610M	D1	D	Ap1 max	L
BNEC031S3	**BNEC031S3**	1/32	1/8	5/64	1 1/2
—	**BNEC062S3**	1/16	1/8	3/16	1 1/2
BNEC094S3	**BNEC094S3**	3/32	1/8	3/8	1 1/2
—	**BNEC109S3**	7/64	1/8	3/8	1 1/2
BNEC125S3	**BNEC125S3**	1/8	1/8	1/2	1 1/2
BNEC188S3	**BNEC188S3**	3/16	3/16	5/8	2
BNEC250S3	**BNEC250S3**	1/4	1/4	3/4	2 1/2
—	**BNEC312S3**	5/16	5/16	13/16	2 1/2
BNEC375S3088	**BNEC375S3088**	3/8	3/8	7/8	2 1/2
BNEC500S3	**BNEC500S3**	1/2	1/2	1	3

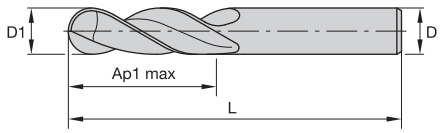
NOTE: For application data, see page M104.

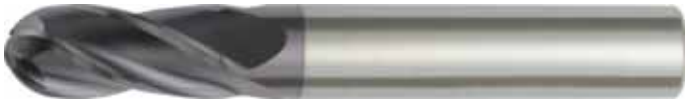
End Mill Tolerances

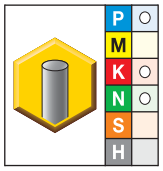
D1	tolerance	D	tolerance h6
All	+.000/-.002"	≤1/8"	+0/-.00024"
		>1/8–1/4"	+0/-.00031"
		>1/4–3/8"	+0/-.00035"
		>3/8–23/32"	+0/-.00043"
		>23/32–1 3/16"	+0/-.00051"

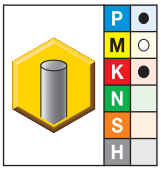
- Kennametal standard dimensions.
- Center cutting.

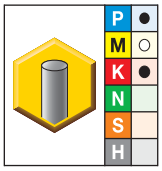


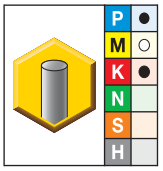










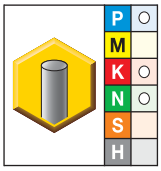


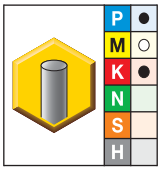
● first choice
○ alternate choice

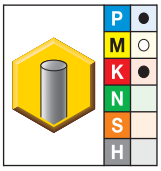
K600	KC610M	KC625M	KC635M	D1	D	Ap1 max	L
–	BNEC016S4	–	–	1/64	1/8	1/32	1 1/2
BNEC031S4	BNEC031S4	–	BNEC031S4	1/32	1/8	5/64	1 1/2
BNEC047S4	BNEC047S4	–	–	3/64	1/8	1/8	1 1/2
BNEC062S4	BNEC062S4	–	BNEC062S4	1/16	1/8	3/16	1 1/2
BNEC078S4O	–	–	–	5/64	1/8	3/16	1 1/2
BNEC078S4	BNEC078S4	–	–	5/64	1/8	3/16	1 1/2
BNEC094S4018	BNEC094S4018	–	BNEC094S4018	3/32	1/8	3/16	1 1/2
BNEC094S4	BNEC094S4	–	BNEC094S4	3/32	1/8	3/8	1 1/2
BNEC109S4O	–	–	–	7/64	1/8	3/8	1 1/2
BNEC109S4	BNEC109S4	–	–	7/64	1/8	3/8	1 1/2
BNEC125S4025	BNEC125S4025	–	BNEC125S4025	1/8	1/8	1/4	1 1/2
BNEC125S4	BNEC125S4	–	BNEC125S4	1/8	1/8	1/2	1 1/2
BNEC125S4075	BNEC125S4075	–	BNEC125S4075	1/8	1/8	3/4	2 1/4
BNEC125S4075L	BNEC125S4075L	–	BNEC125S4075L	1/8	1/8	3/4	3
BNEC125S4300	BNEC125S4300	–	–	1/8	1/8	1	3
BNEC141S4	BNEC141S4	–	–	9/64	3/16	5/16	2
BNEC141S4O	–	–	–	9/64	3/16	9/16	2
BNEC156S4031	BNEC156S4031	–	BNEC156S4031	5/32	3/16	5/16	2
BNEC156S4	BNEC156S4	–	BNEC156S4	5/32	3/16	9/16	2
BNEC172S4	BNEC172S4	–	–	11/64	3/16	5/16	2
BNEC172S4O	–	–	–	11/64	3/16	5/8	2
BNEC188S4031	BNEC188S4031	–	BNEC188S4031	3/16	3/16	5/16	1 1/2
BNEC188S4	BNEC188S4	–	BNEC188S4	3/16	3/16	5/8	2
BNEC188S4075	BNEC188S4075	–	BNEC188S4075	3/16	3/16	3/4	2 1/2
BNEC188S4100	BNEC188S4100	–	BNEC188S4100	3/16	3/16	1	4
BNEC188S4300	BNEC188S4300	–	–	3/16	3/16	1 1/8	3
BNEC203S4	BNEC203S4	–	–	13/64	1/4	5/8	2 1/2
BNEC219S4044	–	BNEC219S4044	–	7/32	1/4	7/16	2
BNEC219S4	BNEC219S4	–	–	7/32	1/4	5/8	2 1/2
BNEC219S4O	–	–	–	7/32	1/4	5/8	2 1/2
BNEC234S4	BNEC234S4	–	–	15/64	1/4	3/4	2 1/2
BNEC250S4050	BNEC250S4050	–	BNEC250S4050	1/4	1/4	1/2	2
BNEC250S4	BNEC250S4	–	BNEC250S4	1/4	1/4	3/4	2 1/2
BNEC250S4113	BNEC250S4113	–	BNEC250S4113	1/4	1/4	1 1/8	3
BNEC250S4150	BNEC250S4150	–	BNEC250S4150	1/4	1/4	1 1/2	4
BNEC250S4150L	BNEC250S4150L	–	BNEC250S4150L	1/4	1/4	1 1/2	6

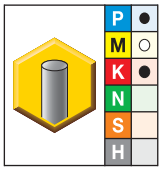
(continued)

(continued)









K600	KC610M	KC625M	KC635M	D1	D	Ap1 max	L
BNEC266S4	**BNEC266S4**	**–**	**–**	17/64	5/16	3/4	2 1/2
BNEC281S4	**BNEC281S4**	**–**	**–**	9/32	5/16	3/4	2 1/2
BNEC312S4050	**BNEC312S4050**	**–**	**BNEC312S4050**	5/16	5/16	1/2	2
BNEC312S4	**BNEC312S4**	**–**	**BNEC312S4**	5/16	5/16	13/16	2 1/2
BNEC312S4113	**BNEC312S4113**	**–**	**BNEC312S4113**	5/16	5/16	1 1/8	3
BNEC312S4150	**BNEC312S4150**	**–**	**BNEC312S4150**	5/16	5/16	1 1/2	6
BNEC312S4400	**BNEC312S4400**	**–**	**–**	5/16	5/16	1 5/8	4
–	**BNEC344S4**	**–**	**–**	11/32	3/8	1	2 1/2
BNEC375S4050	**–**	**–**	**–**	3/8	3/8	1/2	2
BNEC375S4063	**BNEC375S4063**	**–**	**BNEC375S4063**	3/8	3/8	5/8	2
BNEC375S4088	**BNEC375S4088**	**–**	**BNEC375S4088**	3/8	3/8	7/8	2 1/2
BNEC375S4	**BNEC375S4**	**–**	**BNEC375S4**	3/8	3/8	1	2 1/2
BNEC375S4113	**BNEC375S4113**	**–**	**BNEC375S4113**	3/8	3/8	1 1/8	3
BNEC375S4175	**BNEC375S4175**	**–**	**BNEC375S4175**	3/8	3/8	1 3/4	4
BNEC375S4300L	**BNEC375S4300L**	**–**	**BNEC375S4300**	3/8	3/8	3	6
BNEC406S4100	**BNEC406S4100**	**–**	**–**	13/32	7/16	1	2 1/2
BNEC438S4063	**–**	**BNEC438S4063**	**–**	7/16	7/16	5/8	2 1/2
BNEC438S4100	**BNEC438S4100**	**–**	**BNEC438S4100**	7/16	7/16	1	2 1/2
BNEC500S4063	**BNEC500S4063**	**–**	**BNEC500S4063**	1/2	1/2	5/8	2 1/2
BNEC500S4	**BNEC500S4**	**–**	**BNEC500S4**	1/2	1/2	1	3
BNEC500S4150	**BNEC500S4150**	**–**	**BNEC500S4150**	1/2	1/2	1 1/2	6
BNEC500S4200	**BNEC500S4200**	**–**	**BNEC500S4200**	1/2	1/2	2	4
BNEC500S4450	**BNEC500S4450**	**–**	**–**	1/2	1/2	2	4 1/2
BNEC500S4300	**BNEC500S4300**	**–**	**BNEC500S4300**	1/2	1/2	3	6
BNEC562S4	**BNEC562S4**	**–**	**BNEC562S4**	9/16	9/16	1 1/4	3 1/2
–	**–**	**BNEC625S4075**	**BNEC625S4075**	5/8	5/8	3/4	3
BNEC625S4	**BNEC625S4**	**–**	**BNEC625S4**	5/8	5/8	1 1/4	3 1/2
BNEC625S4225	**–**	**–**	**–**	5/8	5/8	2 1/4	5
BNEC625S4300	**BNEC625S4300**	**–**	**BNEC625S4300**	5/8	5/8	3	6
BNEC750S4100	**BNEC750S4100**	**–**	**BNEC750S4100**	3/4	3/4	1	3
BNEC750S4	**BNEC750S4**	**–**	**BNEC750S4**	3/4	3/4	1 1/2	4
BNEC750S4200	**BNEC750S4200**	**–**	**BNEC750S4200**	3/4	3/4	2	6
BNEC750S4600	**BNEC750S4600**	**–**	**–**	3/4	3/4	3	6
BNEC750S4300	**–**	**–**	**–**	3/4	3/4	3	6
BNEC875S4	**BNEC875S4**	**–**	**BNEC875S4**	7/8	7/8	1 1/2	4
BNEC100S4	**BNEC100S4**	**–**	**BNEC100S4**	1	1	1 1/2	4
BNEC100S4225	**–**	**BNEC100S4225**	**–**	1	1	2 1/4	5
BNEC100S4300	**BNEC100S4300**	**–**	**BNEC100S4300**	1	1	3	6

NOTE: For application data, see page M105.

End Mill Tolerances

D1	tolerance	D	tolerance h6
All	+.000/-.002"	≤1/8"	+0/-.00024"
		>1/8–1/4"	+0/-.00031"
		>1/4–3/8"	+0/-.00035"
		>3/8–23/32"	+0/-.00043"
		>23/32–1 3/16"	+0/-.00051"

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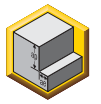



Material Group		Side Milling (A) and Slotting (B) A ap	A ae	B ap	K600 min	K600 max	KC610M KC625M TiCN min	KC610M KC625M TiCN max	KC635M TiAlN min	KC635M TiAlN max	Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%. D1 — Diameter inch	1/16 0.06	1/8 0.13	1/4 0.250	3/8 0.38	1/2 0.50	5/8 0.63	3/4 0.75	1 1.00
					Cutting Speed — vc SFM														
P	1	1 x D	0.1 x D	0.25 x D	200	265	390	525	490	660	fz	0.0003	0.0007	0.0015	0.0022	0.0028	0.0032	0.0034	0.0040
	2	1 x D	0.1 x D	0.25 x D	185	250	370	500	460	620	fz	0.0003	0.0007	0.0015	0.0022	0.0028	0.0032	0.0034	0.0040
	3	1 x D	0.1 x D	0.25 x D	—	—	310	416	390	520	fz	0.0003	0.0006	0.0012	0.0018	0.0023	0.0027	0.0030	0.0036
	4	1 x D	0.1 x D	0.25 x D	—	—	240	400	300	490	fz	0.0002	0.0005	0.0011	0.0016	0.0021	0.0024	0.0026	0.0031
M	1	1 x D	0.1 x D	0.25 x D	—	—	210	265	260	330	fz	0.0002	0.0006	0.0012	0.0018	0.0023	0.0027	0.0030	0.0036
	2	1 x D	0.1 x D	0.25 x D	—	—	160	210	200	260	fz	0.0003	0.0005	0.0010	0.0015	0.0019	0.0022	0.0024	0.0029
K	1	1 x D	0.1 x D	0.25 x D	155	210	310	415	390	520	fz	0.0004	0.0007	0.0015	0.0022	0.0028	0.0032	0.0034	0.0040
	2	1 x D	0.1 x D	0.25 x D	—	—	290	370	360	460	fz	0.0003	0.0006	0.0012	0.0018	0.0023	0.0027	0.0030	0.0036
N	1	1 x D	0.1 x D	0.25 x D	1640	6550	—	—	—	—	fz	0.0003	0.0007	0.0015	0.0022	0.0028	0.0032	0.0034	0.0040
	2	1 x D	0.1 x D	0.25 x D	1640	4900	—	—	—	—	fz	0.0003	0.0006	0.0012	0.0018	0.0024	0.0027	0.0030	0.0037
	5	1 x D	0.1 x D	0.25 x D	820	2450	—	—	—	—	fz	0.0002	0.0005	0.0010	0.0015	0.0019	0.0022	0.0024	0.0029
	6	1 x D	0.1 x D	0.25 x D	330	1650	—	—	—	—	fz	0.0005	0.0010	0.0020	0.0030	0.0040	0.0050	0.0060	0.0081

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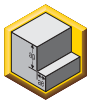



Material Group		Side Milling (A) and Slotting (B) A ap	A ae	B ap	K600 min	K600 max	KC610M TiCN min	KC610M TiCN max	Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%. D1 — Diameter inch	1/16 0.06	1/8 0.13	1/4 0.250	3/8 0.38	1/2 0.50	5/8 0.63	3/4 0.75	1 1.00
					Cutting Speed — vc SFM												
P	1	1 x D	0.1 x D	0.25 x D	200	265	390	525	fz	0.0003	0.0007	0.0015	0.0022	0.0028	0.0032	0.0034	0.0040
	2	1 x D	0.1 x D	0.25 x D	185	250	370	500	fz	0.0003	0.0007	0.0015	0.0022	0.0028	0.0032	0.0034	0.0040
	3	1 x D	0.1 x D	0.25 x D	—	—	310	416	fz	0.0003	0.0006	0.0012	0.0018	0.0023	0.0027	0.0030	0.0036
	4	1 x D	0.1 x D	0.25 x D	—	—	240	400	fz	0.0002	0.0005	0.0011	0.0016	0.0021	0.0024	0.0026	0.0031
M	1	1 x D	0.1 x D	0.25 x D	—	—	210	265	fz	0.0002	0.0006	0.0012	0.0018	0.0023	0.0027	0.0030	0.0036
	2	1 x D	0.1 x D	0.25 x D	—	—	160	210	fz	0.0003	0.0005	0.0010	0.0015	0.0019	0.0022	0.0024	0.0029
K	1	1 x D	0.1 x D	0.25 x D	155	210	310	415	fz	0.0004	0.0007	0.0015	0.0022	0.0028	0.0032	0.0034	0.0040
	2	1 x D	0.1 x D	0.25 x D	—	—	290	370	fz	0.0003	0.0006	0.0012	0.0018	0.0023	0.0027	0.0030	0.0036
N	1	1 x D	0.1 x D	0.25 x D	1640	6550	—	—	fz	0.0003	0.0007	0.0015	0.0022	0.0028	0.0032	0.0034	0.0040
	2	1 x D	0.1 x D	0.25 x D	1640	4900	—	—	fz	0.0003	0.0006	0.0012	0.0018	0.0024	0.0027	0.0030	0.0037
	5	1 x D	0.1 x D	0.25 x D	820	2450	—	—	fz	0.0002	0.0005	0.0010	0.0015	0.0019	0.0022	0.0024	0.0029
	6	1 x D	0.1 x D	0.25 x D	330	1650	—	—	fz	0.0005	0.0010	0.0020	0.0030	0.0040	0.0050	0.0060	0.0081

NOTE: These guidelines may require variations to achieve optimum results.
Lower value of cutting speed is used for high stock removal applications or for higher hardness (machinability) within group.
Higher value of cutting speed is used for finishing applications or for lower hardness (machinability) within group.
Above parameters are based on ideal conditions. For smaller taper machining centers, please adjust parameters accordngly on >1/2" diameter.
For long lengths, reduce fz by 20%.

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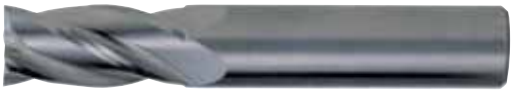

Material Group		Side Milling (A) and Slotting (B)			K600		KC610M KC625M TiCN		KC635M TiAlN		Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%.								
		A		B	Cutting Speed — vc SFM		Cutting Speed — vc SFM		Cutting Speed — vc SFM		D1 — Diameter								
		ap	ae	ap	min	max	min	max	min	max	inch	1/16 0.06	1/8 0.13	1/4 0.250	3/8 0.38	1/2 0.50	5/8 0.63	3/4 0.75	1 1.00
P	1	1 x D	0.1 x D	0.25 x D	200	265	390	525	490	660	fz	0.0003	0.0007	0.0015	0.0022	0.0028	0.0032	0.0034	0.0040
	2	1 x D	0.1 x D	0.25 x D	185	250	370	500	460	620	fz	0.0003	0.0007	0.0015	0.0022	0.0028	0.0032	0.0034	0.0040
	3	1 x D	0.1 x D	0.25 x D	—	—	310	416	390	520	fz	0.0003	0.0006	0.0012	0.0018	0.0023	0.0027	0.0030	0.0036
	4	1 x D	0.1 x D	0.25 x D	—	—	240	400	300	490	fz	0.0002	0.0005	0.0011	0.0016	0.0021	0.0024	0.0026	0.0031
M	1	1 x D	0.1 x D	0.25 x D	—	—	210	265	260	330	fz	0.0002	0.0006	0.0012	0.0018	0.0023	0.0027	0.0030	0.0036
	2	1 x D	0.1 x D	0.25 x D	—	—	160	210	200	260	fz	0.0003	0.0005	0.0010	0.0015	0.0019	0.0022	0.0024	0.0029
K	1	1 x D	0.1 x D	0.25 x D	155	210	310	415	390	520	fz	0.0004	0.0007	0.0015	0.0022	0.0028	0.0032	0.0034	0.0040
	2	1 x D	0.1 x D	0.25 x D	—	—	290	370	360	460	fz	0.0003	0.0006	0.0012	0.0018	0.0023	0.0027	0.0030	0.0036
N	1	1 x D	0.1 x D	0.25 x D	1640	6550	—	—	—	—	fz	0.0003	0.0007	0.0015	0.0022	0.0028	0.0032	0.0034	0.0040
	2	1 x D	0.1 x D	0.25 x D	1640	4900	—	—	—	—	fz	0.0003	0.0006	0.0012	0.0018	0.0024	0.0027	0.0030	0.0037
	5	1 x D	0.1 x D	0.25 x D	820	2450	—	—	—	—	fz	0.0002	0.0005	0.0010	0.0015	0.0019	0.0022	0.0024	0.0029
	6	1 x D	0.1 x D	0.25 x D	330	1650	—	—	—	—	fz	0.0005	0.0010	0.0020	0.0030	0.0040	0.0050	0.0060	0.0081

NOTE: Lower value of cutting speed is used for high stock removal applications or for higher hardness (machinability) within group.
Higher value of cutting speed is used for finishing applications or for lower hardness (machinability) within group.
Above parameters are based on ideal conditions. For smaller taper machining centers, please adjust parameters accordngly on >1/2" diameter.
For long lengths, reduce fz by 20%.
These guidelines may require variations to achieve optimum results.

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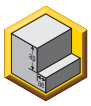
GOmill





Material Group		Side Milling (A) and Slotting (B) A ap	A ae	B ap	KC643M Cutting Speed — vc SFM min	max	Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%. D1 — Diameter inch	5/64 0.08	1/8 0.13	5/32 0.16	1/4 0.250	5/16 0.31	3/8 0.38	1/2 0.50
P	1	1.5 x D	0.5 x D	1 x D	495	660	fz	0.00054	0.00088	0.00111	0.00183	0.00234	0.00270	0.00345
	2	1.5 x D	0.5 x D	1 x D	462	627	fz	0.00054	0.00088	0.00111	0.00183	0.00234	0.00270	0.00345
	3	1.5 x D	0.5 x D	1 x D	396	528	fz	0.00044	0.00072	0.00091	0.00151	0.00195	0.00227	0.00293
	4	1.5 x D	0.5 x D	0.75 x D	297	495	fz	0.00041	0.00066	0.00084	0.00137	0.00175	0.00203	0.00260
	5	1.5 x D	0.5 x D	1 x D	198	330	fz	0.00037	0.00059	0.00075	0.00123	0.00156	0.00182	0.00234
	6	1.5 x D	0.5 x D	0.75 x D	165	248	fz	0.00031	0.00050	0.00063	0.00103	0.00131	0.00152	0.00194
M	1	1.5 x D	0.5 x D	1 x D	297	380	fz	0.00044	0.00072	0.00091	0.00151	0.00195	0.00227	0.00293
	2	1.5 x D	0.5 x D	1 x D	198	264	fz	0.00037	0.00059	0.00075	0.00123	0.00156	0.00182	0.00234
	3	1.5 x D	0.5 x D	1 x D	198	231	fz	0.00031	0.00050	0.00063	0.00103	0.00131	0.00152	0.00194
K	1	1.5 x D	0.5 x D	1 x D	396	495	fz	0.00054	0.00088	0.00111	0.00183	0.00234	0.00270	0.00345
	2	1.5 x D	0.5 x D	1 x D	363	429	fz	0.00044	0.00072	0.00091	0.00151	0.00195	0.00227	0.00293
	3	1.5 x D	0.5 x D	1 x D	330	429	fz	0.00037	0.00059	0.00075	0.00123	0.00156	0.00182	0.00234
S	1	1.5 x D	0.3 x D	0.3 x D	165	297	fz	0.00044	0.00072	0.00091	0.00151	0.00195	0.00227	0.00293
	2	1.5 x D	0.3 x D	0.3 x D	82,5	132	fz	0.00024	0.00039	0.00050	0.00081	0.00103	0.00120	0.00155
	3	1.5 x D	0.5 x D	1 x D	198	264	fz	0.00037	0.00059	0.00075	0.00123	0.00156	0.00182	0.00234
	4	1.5 x D	0.5 x D	1 x D	165	198	fz	0.00028	0.00048	0.00062	0.00107	0.00144	0.00167	0.00215
H	1	1.5 x D	0.5 x D	0.75 x D	264	140	fz	0.00041	0.00066	0.00084	0.00137	0.00175	0.00203	0.00260

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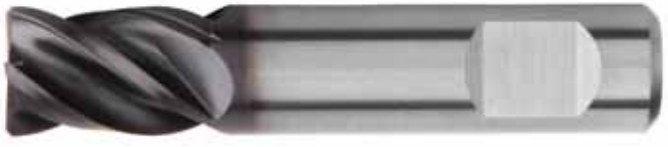
GOmill

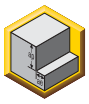




Material Group		Side Milling (A) and Slotting (B) A ap	A ae	B ap	KC643M Cutting Speed — vc SFM min	max	Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%. D1 — Diameter inch	5/32 0.16	1/4 0.250	5/16 0.31	3/8 0.38	1/2 0.50
P	1	1.5 x D	0.5 x D	1 x D	495	660	fz	0.00111	0.00183	0.00234	0.00270	0.00345
	2	1.5 x D	0.5 x D	1 x D	462	627	fz	0.00111	0.00183	0.00234	0.00270	0.00345
	3	1.5 x D	0.5 x D	1 x D	396	528	fz	0.00091	0.00151	0.00195	0.00227	0.00293
	4	1.5 x D	0.5 x D	0.75 x D	297	495	fz	0.00084	0.00137	0.00175	0.00203	0.00260
	5	1.5 x D	0.5 x D	1 x D	198	330	fz	0.00075	0.00123	0.00156	0.00182	0.00234
	6	1.5 x D	0.5 x D	0.75 x D	165	248	fz	0.00063	0.00103	0.00131	0.00152	0.00194
M	1	1.5 x D	0.5 x D	1 x D	297	380	fz	0.00091	0.00151	0.00195	0.00227	0.00293
	2	1.5 x D	0.5 x D	1 x D	198	264	fz	0.00075	0.00123	0.00156	0.00182	0.00234
	3	1.5 x D	0.5 x D	1 x D	198	231	fz	0.00063	0.00103	0.00131	0.00152	0.00194
K	1	1.5 x D	0.5 x D	1 x D	396	495	fz	0.00111	0.00183	0.00234	0.00270	0.00345
	2	1.5 x D	0.5 x D	1 x D	363	429	fz	0.00091	0.00151	0.00195	0.00227	0.00293
	3	1.5 x D	0.5 x D	1 x D	330	429	fz	0.00075	0.00123	0.00156	0.00182	0.00234
S	1	1.5 x D	0.3 x D	0.3 x D	165	297	fz	0.00091	0.00151	0.00195	0.00227	0.00293
	2	1.5 x D	0.3 x D	0.3 x D	82,5	132	fz	0.00050	0.00081	0.00103	0.00120	0.00155
	3	1.5 x D	0.5 x D	1 x D	198	264	fz	0.00075	0.00123	0.00156	0.00182	0.00234
	4	1.5 x D	0.5 x D	1 x D	165	198	fz	0.00062	0.00107	0.00144	0.00167	0.00215
H	1	1.5 x D	0.5 x D	0.75 x D	264	140	fz	0.00084	0.00137	0.00175	0.00203	0.00260

NOTE: These guidelines may require variations to achieve optimum results.
Lower value of cutting speed is used for high stock removal applications or for higher hardness (machinability) within group.
Higher value of cutting speed is used for finishing applications or for lower hardness (machinability) within group.
Above parameters are based on ideal conditions. For smaller taper machining centers, please adjust parameters accordingly on >1/2" diameter.

CRHEC





Material Group		Side Milling (A) and Slotting (B) A ap	A ae	B ap	KC635M Cutting Speed — vc SFM min	max	Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%. D1 — Diameter inch	1/8 0.13	3/16 0.19	1/4 0.250	5/16 0.31	3/8 0.38	1/2 0.50	5/8 0.63	3/4 0.75	1 1.000
P	1	1 x D	0.1 x D	0.5 x D	490	660	fz	0.0007	0.0011	0.0015	0.0019	0.0022	0.0028	0.0032	0.0034	0.004
	2	1 x D	0.1 x D	0.5 x D	460	620	fz	0.0007	0.0011	0.0015	0.0019	0.0022	0.0028	0.0032	0.0034	0.004
	3	1 x D	0.1 x D	0.5 x D	390	520	fz	0.0006	0.0009	0.0012	0.0016	0.0018	0.0023	0.0027	0.003	0.0036
	4	1 x D	0.1 x D	0.5 x D	300	490	fz	0.0005	0.0008	0.0011	0.0014	0.0016	0.0021	0.0024	0.0026	0.0031
M	1	1 x D	0.1 x D	0.5 x D	260	330	fz	0.0006	0.0009	0.0012	0.0016	0.0018	0.0023	0.0027	0.003	0.0036
	2	1 x D	0.1 x D	0.5 x D	200	260	fz	0.0005	0.0007	0.001	0.0013	0.0015	0.0019	0.0022	0.0024	0.0029
K	1	1 x D	0.1 x D	0.5 x D	390	520	fz	0.0007	0.0011	0.0015	0.0019	0.0022	0.0028	0.0032	0.0034	0.004
	2	1 x D	0.1 x D	0.5 x D	360	460	fz	0.0006	0.0009	0.0012	0.0016	0.0018	0.0023	0.0027	0.003	0.0036

HHEC





Material Group		Side Milling (A) and Slotting (B) A ap	A ae	B ap	KC635M Cutting Speed — vc m/min min	max	Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%. D1 — Diameter inch	1/8 0.13	3/16 0.19	1/4 0.250	5/16 0.31	3/8 0.38	1/2 0.50	5/8 0.63	3/4 0.75	1 1.00
P	3	1.5 x D	0.3 x D	0.5 x D	394	525	fz	0.0006	0.0009	0.0012	0.0016	0.0018	0.0023	0.0027	0.0030	0.0040
	4	1.5 x D	0.3 x D	0.3 x D	295	492	fz	0.0005	0.0008	0.0011	0.0014	0.0016	0.0021	0.0024	0.0026	0.0035
	5	1.5 x D	0.3 x D	0.5 x D	197	328	fz	0.0005	0.0007	0.0010	0.0013	0.0015	0.0019	0.0022	0.0024	0.0032
	6	1.5 x D	0.3 x D	0.3 x D	164	246	fz	0.0004	0.0006	0.0008	0.0011	0.0012	0.0016	0.0018	0.0019	0.0026
M	1	1.5 x D	0.3 x D	0.5 x D	262	328	fz	0.0006	0.0009	0.0012	0.0016	0.0018	0.0023	0.0027	0.0030	0.0040
	2	1.5 x D	0.3 x D	0.5 x D	197	262	fz	0.0005	0.0007	0.0010	0.0013	0.0015	0.0019	0.0022	0.0024	0.0032
	3	1.5 x D	0.3 x D	0.5 x D	197	262	fz	0.0004	0.0006	0.0008	0.0011	0.0012	0.0016	0.0018	0.0019	0.0026
K	1	1.5 x D	0.3 x D	0.5 x D	394	525	fz	0.0007	0.0011	0.0015	0.0019	0.0022	0.0028	0.0032	0.0034	0.0046
	2	1.5 x D	0.3 x D	0.5 x D	361	459	fz	0.0006	0.0009	0.0012	0.0016	0.0018	0.0023	0.0027	0.0030	0.0040
	3	1.5 x D	0.3 x D	0.5 x D	328	426	fz	0.0005	0.0007	0.0010	0.0013	0.0015	0.0019	0.0022	0.0024	0.0032
S	1	1.5 x D	0.3 x D	0.3 x D	164	295	fz	0.0006	0.0009	0.0012	0.0016	0.0018	0.0023	0.0027	0.0030	0.0040
	2	1.5 x D	0.3 x D	0.3 x D	66	131	fz	0.0003	0.0005	0.0006	0.0008	0.0010	0.0012	0.0015	0.0016	0.0022
	3	1.5 x D	0.3 x D	0.5 x D	164	262	fz	0.0005	0.0007	0.0010	0.0013	0.0015	0.0019	0.0022	0.0024	0.0032
	4	1.5 x D	0.3 x D	0.3 x D	148	213	fz	0.0004	0.0006	0.0009	0.0012	0.0013	0.0017	0.0020	0.0022	0.0030
H	1	1.5 x D	0.3 x D	0.5 x D	262	459	fz	0.0005	0.0008	0.0011	0.0014	0.0016	0.0021	0.0024	0.0026	0.0035

NOTE: These guidelines may require variations to achieve optimum results.
Lower value of cutting speed is used for high stock removal applications or for higher hardness (machinability) within group.
Higher value of cutting speed is used for finishing applications or for lower hardness (machinability) within group.
Above parameters are based on ideal conditions. For smaller taper machining centers, please adjust parameters accordingly on >1/2" diameter.

UEBD • 2-Flute

GOmill



Material Group		Side Milling (A) and Slotting (B) A ap	A ae	B ap	KC643M Cutting Speed – vc SFM min	max	Feed per Tooth – fz information is for side milling (A). For slotting (B), reduce fz by 20%. D1 – Diameter inch	5/64 0.08	1/8 0.13	5/32 0.16	1/4 0.25	5/16 0.31	3/8 0.38	1/2 0.50
P	1	1.5 x D	0.5 x D	1 x D	495	660	fz	0.00054	0.00088	0.00011	0.00183	0.00234	0.00270	0.00345
	2	1.5 x D	0.5 x D	1 x D	462	627	fz	0.00054	0.00088	0.00011	0.00183	0.00234	0.00270	0.00345
	3	1.5 x D	0.5 x D	1 x D	396	528	fz	0.00044	0.00072	0.00091	0.00151	0.00195	0.00227	0.00293
	4	1.5 x D	0.5 x D	0.75 x D	297	495	fz	0.00041	0.00066	0.00084	0.00137	0.00175	0.00203	0.00260
	5	1.5 x D	0.5 x D	1 x D	198	330	fz	0.00037	0.00059	0.00075	0.00123	0.00156	0.00182	0.00234
	6	1.5 x D	0.5 x D	0.75 x D	165	247,5	fz	0.00031	0.00050	0.00063	0.00103	0.00131	0.00152	0.00194
M	1	1.5 x D	0.5 x D	1 x D	297	379,5	fz	0.00044	0.00072	0.00091	0.00151	0.00195	0.00227	0.00293
	2	1.5 x D	0.5 x D	1 x D	198	264	fz	0.00037	0.00059	0.00075	0.00123	0.00156	0.00182	0.00234
	3	1.5 x D	0.5 x D	1 x D	198	231	fz	0.00031	0.00050	0.00063	0.00103	0.00131	0.00152	0.00194
K	1	1.5 x D	0.5 x D	1 x D	396	495	fz	0.00054	0.00088	0.00011	0.00183	0.00234	0.00270	0.00345
	2	1.5 x D	0.5 x D	1 x D	363	429	fz	0.00044	0.00072	0.00091	0.00151	0.00195	0.00227	0.00293
	3	1.5 x D	0.5 x D	1 x D	330	429	fz	0.00037	0.00059	0.00075	0.00123	0.00156	0.00182	0.00234
S	1	1.5 x D	0.3 x D	0.3 x D	165	297	fz	0.00044	0.00072	0.00091	0.00151	0.00195	0.00227	0.00293
	2	1.5 x D	0.3 x D	0.3 x D	82,5	132	fz	0.00024	0.00039	0.00050	0.00081	0.00103	0.00120	0.00155
	3	1.5 x D	0.5 x D	1 x D	198	264	fz	0.00037	0.00059	0.00075	0.00123	0.00156	0.00182	0.00234
	4	1.5 x D	0.5 x D	1 x D	165	198	fz	0.00028	0.00048	0.00062	0.00170	0.00144	0.00167	0.00215
H	1	1.5 x D	0.5 x D	0.75 x D	264	140	fz	0.00041	0.00066	0.00084	0.00137	0.00175	0.00203	0.00260

UEBD • 3-Flute

GOmill



Material Group		Side Milling (A) and Slotting (B) A ap	A ae	B ap	KC643M Cutting Speed – vc SFM min	max	Feed per Tooth – fz information is for side milling (A). For slotting (B), reduce fz by 20%. D1 – Diameter inch	5/64 0.08	1/8 0.13	5/32 0.16	1/4 0.25	5/16 0.31	3/8 0.38	1/2 0.50
P	1	1.5 x D	0.5 x D	1 x D	495	660	fz	0.00054	0.00088	0.00011	0.00183	0.00234	0.00270	0.00345
	2	1.5 x D	0.5 x D	1 x D	462	627	fz	0.00054	0.00088	0.00011	0.00183	0.00234	0.00270	0.00345
	3	1.5 x D	0.5 x D	1 x D	396	528	fz	0.00044	0.00072	0.00091	0.00151	0.00195	0.00227	0.00293
	4	1.5 x D	0.5 x D	0.75 x D	297	495	fz	0.00041	0.00066	0.00084	0.00137	0.00175	0.00203	0.00260
	5	1.5 x D	0.5 x D	1 x D	198	330	fz	0.00037	0.00059	0.00075	0.00123	0.00156	0.00182	0.00234
	6	1.5 x D	0.5 x D	0.75 x D	165	247,5	fz	0.00031	0.00050	0.00063	0.00103	0.00131	0.00152	0.00194
M	1	1.5 x D	0.5 x D	1 x D	297	379,5	fz	0.00044	0.00072	0.00091	0.00151	0.00195	0.00227	0.00293
	2	1.5 x D	0.5 x D	1 x D	198	264	fz	0.00037	0.00059	0.00075	0.00123	0.00156	0.00182	0.00234
	3	1.5 x D	0.5 x D	1 x D	198	231	fz	0.00031	0.00050	0.00063	0.00103	0.00131	0.00152	0.00194
K	1	1.5 x D	0.5 x D	1 x D	396	495	fz	0.00054	0.00088	0.00011	0.00183	0.00234	0.00270	0.00345
	2	1.5 x D	0.5 x D	1 x D	363	429	fz	0.00044	0.00072	0.00091	0.00151	0.00195	0.00227	0.00293
	3	1.5 x D	0.5 x D	1 x D	330	429	fz	0.00037	0.00059	0.00075	0.00123	0.00156	0.00182	0.00234
S	1	1.5 x D	0.3 x D	0.3 x D	165	297	fz	0.00044	0.00072	0.00091	0.00151	0.00195	0.00227	0.00293
	2	1.5 x D	0.3 x D	0.3 x D	82,5	132	fz	0.00024	0.00039	0.00050	0.00081	0.00103	0.00120	0.00155
	3	1.5 x D	0.5 x D	1 x D	198	264	fz	0.00037	0.00059	0.00075	0.00123	0.00156	0.00182	0.00234
	4	1.5 x D	0.5 x D	1 x D	165	198	fz	0.00028	0.00048	0.00062	0.00170	0.00144	0.00167	0.00215
H	1	1.5 x D	0.5 x D	0.75 x D	264	140	fz	0.00041	0.00066	0.00084	0.00137	0.00175	0.00203	0.00260

NOTE: These guidelines may require variations to achieve optimum results.
Lower value of cutting speed is used for high stock removal applications or for higher hardness (machinability) within group.
Higher value of cutting speed is used for finishing applications or for lower hardness (machinability) within group.
Above parameters are based on ideal conditions. For smaller taper machining centers, please adjust parameters accordingly on >12mm diameter.

BNEC • 2-Flute



Material Group		Side Milling (A) and Slotting (B) A ap	A ae	B ap	K600 Cutting Speed — vc SFM min	K600 max	KC610M min	KC610M max	KC635M min	KC635M max	Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%. D1 — Diameter inch	1/16 0.063	1/8 0.125	1/4 0.250	3/8 0.375	1/2 0.500	5/8 0.625	3/4 0.750	1 1.000
P	1	1–1.5 x D	0.1 x D	0.25 x D	200	265	390	525	490	660	fz	0.0003	0.0007	0.0015	0.0022	0.0028	0.0032	0.0034	0.004
	2	1–1.5 x D	0.1 x D	0.25 x D	185	250	370	500	460	620	fz	0.0003	0.0006	0.0012	0.0018	0.0023	0.0027	0.003	0.0036
	3	1–1.5 x D	0.1 x D	0.25 x D	—	—	310	416	390	520	fz	0.0002	0.0005	0.0011	0.0016	0.0021	0.0024	0.0026	0.0031
	4	1–1.5 x D	0.1 x D	0.25 x D	—	—	240	400	300	490	fz	0.0002	0.0006	0.0012	0.0018	0.0023	0.0027	0.003	0.0036
M	1	1–1.5 x D	0.1 x D	0.25 x D	—	—	210	265	260	330	fz	0.0003	0.0005	0.001	0.0015	0.0019	0.0022	0.0024	0.0029
	2	1–1.5 x D	0.1 x D	0.25 x D	—	—	160	210	200	260	fz	0.0004	0.0007	0.0015	0.0022	0.0028	0.0032	0.0034	0.004
K	1	1–1.5 x D	0.1 x D	0.25 x D	155	210	310	415	390	520	fz	0.0003	0.0006	0.0012	0.0018	0.0023	0.0027	0.003	0.0036
	2	1–1.5 x D	0.1 x D	0.25 x D	—	—	290	370	360	460	fz	0.0003	0.0007	0.0015	0.0022	0.0028	0.0032	0.0034	0.004
N	1	1–1.5 x D	0.1 x D	0.25 x D	1640	6550	—	—	—	—	fz	0.0003	0.0006	0.0012	0.0018	0.0024	0.0027	0.003	0.0037
	2	1–1.5 x D	0.1 x D	0.25 x D	1640	4900	—	—	—	—	fz	0.0002	0.0005	0.001	0.0015	0.0019	0.0022	0.0024	0.0029
	5	1–1.5 x D	0.1 x D	0.25 x D	820	2450	—	—	—	—	fz	0.0005	0.001	0.002	0.003	0.004	0.005	0.006	0.0081
	6	1–1.5 x D	0.1 x D	0.25 x D	330	1650	—	—	—	—	fz	0.0005	0.0010	0.0020	0.0030	0.0040	0.0050	0.0060	0.0081

BNEC • 3-Flute



Material Group		Side Milling (A) and Slotting (B) A ap	A ae	B ap	K600 Cutting Speed — vc SFM min	K600 max	KC610M min	KC610M max	Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%. D1 — Diameter inch	1/16 0.063	1/8 0.125	3/16 0.188	1/4 0.250	5/16 0.313	3/8 0.375	1/2 0.500	5/8 0.625	3/4 0.750	1 1.000
P	1	1–1.5 x D	0.1 x D	0.25 x D	200	265	390	525	fz	0.0003	0.0007	0.0011	0.0015	0.0019	0.0022	0.0028	0.0032	0.0034	0.0040
	2	1–1.5 x D	0.1 x D	0.25 x D	185	250	370	500	fz	0.0003	0.0007	0.0011	0.0015	0.0019	0.0022	0.0028	0.0032	0.0034	0.0040
	3	1–1.5 x D	0.1 x D	0.25 x D	—	—	310	416	fz	0.0003	0.0006	0.0009	0.0012	0.0016	0.0018	0.0023	0.0027	0.0030	0.0036
	4	1–1.5 x D	0.1 x D	0.25 x D	—	—	240	400	fz	0.0002	0.0005	0.0008	0.0011	0.0014	0.0016	0.0021	0.0024	0.0026	0.0031
M	1	1–1.5 x D	0.1 x D	0.25 x D	—	—	210	265	fz	0.0002	0.0006	0.0009	0.0012	0.0016	0.0018	0.0023	0.0027	0.0030	0.0036
	2	1–1.5 x D	0.1 x D	0.25 x D	—	—	160	210	fz	0.0003	0.0005	0.0007	0.0010	0.0013	0.0015	0.0019	0.0022	0.0024	0.0029
K	1	1–1.5 x D	0.1 x D	0.25 x D	155	210	310	415	fz	0.0004	0.0007	0.0011	0.0015	0.0019	0.0022	0.0028	0.0032	0.0034	0.0040
	2	1–1.5 x D	0.1 x D	0.25 x D	—	—	290	370	fz	0.0003	0.0006	0.0009	0.0012	0.0016	0.0018	0.0023	0.0027	0.0030	0.0036
N	1	1–1.5 x D	0.1 x D	0.25 x D	1640	6550	—	—	fz	0.0003	0.0007	0.0011	0.0015	0.0019	0.0022	0.0028	0.0032	0.0034	0.0040
	2	1–1.5 x D	0.1 x D	0.25 x D	1640	4900	—	—	fz	0.0003	0.0006	0.0009	0.0012	0.0016	0.0018	0.0024	0.0027	0.0030	0.0037
	5	1–1.5 x D	0.1 x D	0.25 x D	820	2450	—	—	fz	0.0002	0.0005	0.0007	0.0010	0.0013	0.0015	0.0019	0.0022	0.0024	0.0029
	6	1–1.5 x D	0.1 x D	0.25 x D	330	1650	—	—	fz	0.0005	0.0010	0.0015	0.0020	0.0025	0.0030	0.0040	0.0050	0.0060	0.0081

NOTE: These guidelines may require variations to achieve optimum results.
Lower value of cutting speed is used for high stock removal applications or for higher hardness (machinability) within group.
Higher value of cutting speed is used for finishing applications or for lower hardness (machinability) within group.
Above parameters are based on ideal conditions. For smaller taper machining centers, please adjust parameters accordngly on >1/2" diameter.
For long lengths, reduce fz by 20%.

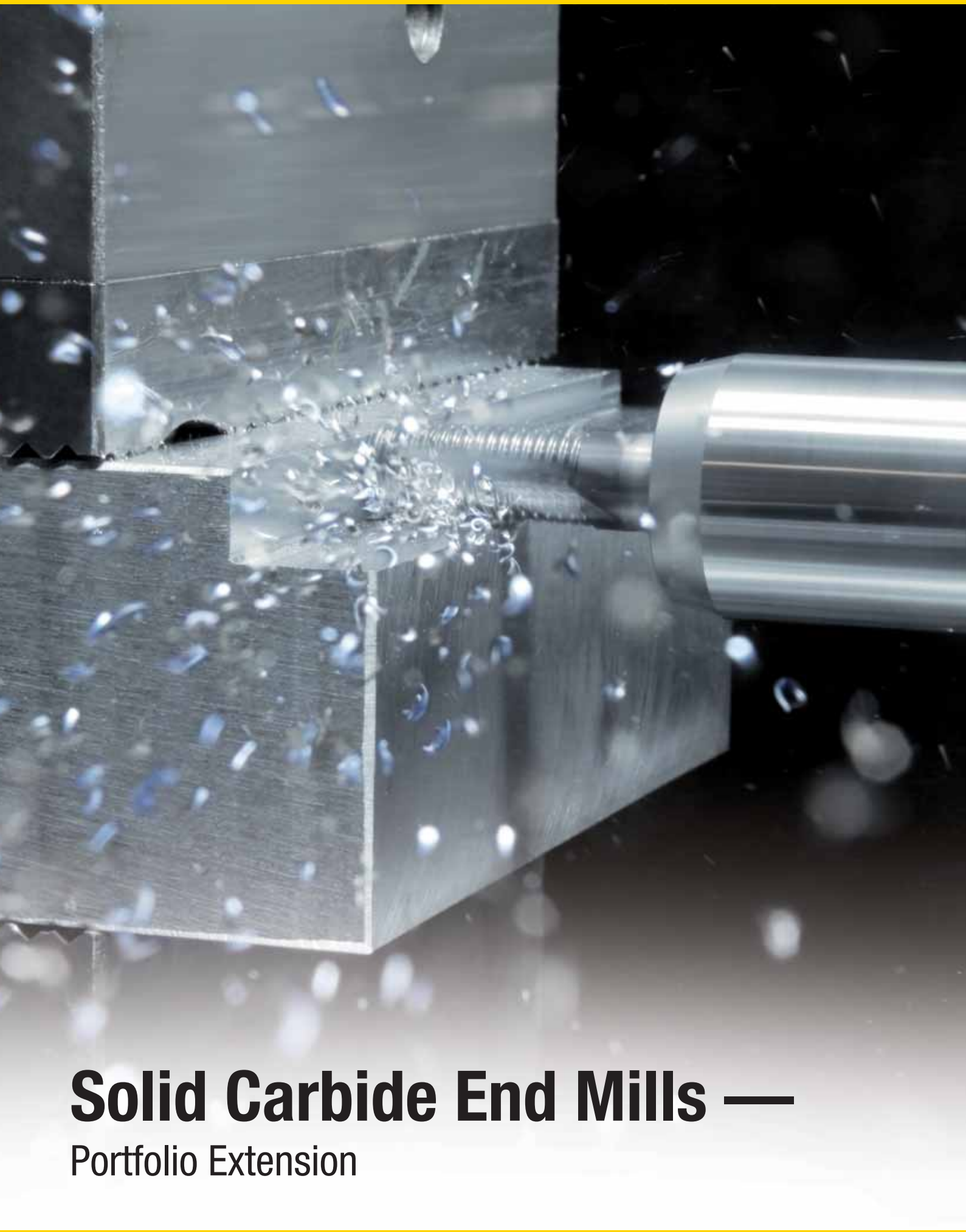
BNEC• 4-Flute



Material Group		Side Milling (A) and Slotting (B)			K600		KC610M KC625M		KC635M		Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%.								
		A		B	Cutting Speed — vc SFM						D1 — Diameter								
		ap	ae	ap	min	max	min	max	min	max	inch	1/16 0.063	1/8 0.125	1/4 0.250	3/8 0.375	1/2 0.500	5/8 0.625	3/4 0.750	1 1.000
P	1	1–1.5 x D	0.1 x D	0.25 x D	200	265	390	525	490	660	fz	0.0003	0.0007	0.0015	0.0022	0.0028	0.0032	0.0034	0.0040
	2	1–1.5 x D	0.1 x D	0.25 x D	185	250	370	500	460	620	fz	0.0003	0.0007	0.0015	0.0022	0.0028	0.0032	0.0034	0.0040
	3	1–1.5 x D	0.1 x D	0.25 x D	—	—	310	416	390	520	fz	0.0003	0.0006	0.0012	0.0018	0.0023	0.0027	0.0030	0.0036
	4	1–1.5 x D	0.1 x D	0.25 x D	—	—	240	400	300	490	fz	0.0002	0.0005	0.0011	0.0016	0.0021	0.0024	0.0026	0.0031
M	1	1–1.5 x D	0.1 x D	0.25 x D	—	—	210	265	260	330	fz	0.0002	0.0006	0.0012	0.0018	0.0023	0.0027	0.0030	0.0036
	2	1–1.5 x D	0.1 x D	0.25 x D	—	—	160	210	200	260	fz	0.0003	0.0005	0.0010	0.0015	0.0019	0.0022	0.0024	0.0029
K	1	1–1.5 x D	0.1 x D	0.25 x D	155	210	310	415	390	520	fz	0.0004	0.0007	0.0015	0.0022	0.0028	0.0032	0.0034	0.0040
	2	1–1.5 x D	0.1 x D	0.25 x D	—	—	290	370	360	460	fz	0.0003	0.0006	0.0012	0.0018	0.0023	0.0027	0.0030	0.0036
N	1	1–1.5 x D	0.1 x D	0.25 x D	1640	6550	—	—	—	—	fz	0.0003	0.0007	0.0015	0.0022	0.0028	0.0032	0.0034	0.0040
	2	1–1.5 x D	0.1 x D	0.25 x D	1640	4900	—	—	—	—	fz	0.0003	0.0006	0.0012	0.0018	0.0024	0.0027	0.0030	0.0037
	5	1–1.5 x D	0.1 x D	0.25 x D	820	2450	—	—	—	—	fz	0.0002	0.0005	0.0010	0.0015	0.0019	0.0022	0.0024	0.0029
	6	1–1.5 x D	0.1 x D	0.25 x D	330	1650	—	—	—	—	fz	0.0005	0.0010	0.0020	0.0030	0.0040	0.0050	0.0060	0.0081

NOTE: These guidelines may require variations to achieve optimum results.
Lower value of cutting speed is used for high stock removal applications or for higher hardness (machinability) within group.
Higher value of cutting speed is used for finishing applications or for lower hardness (machinability) within group.
Above parameters are based on ideal conditions. For smaller taper machining centers, please adjust parameters accordngly on >1/2" diameter.
For long lengths, reduce fz by 20%.

KENNAMETAL



Solid Carbide End Mills —

Portfolio Extension

Solid End Milling Portfolio Extension

General Application Solid Carbide End Mills Portfolio Extension M108–M110

HECL • 2-Flute, Long-Reach M108

BNECL • Ball Nose, Long-Reach M109

GADC • 6-Flute M110

High-Performance Solid Carbide End Mills Portfolio Extension M111–M113

FMDE • 5-Flute M111

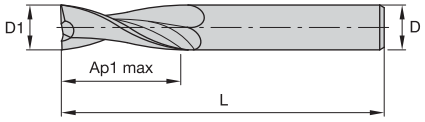
HPFF • 6-Flute M112

HARVI • UABE • 4-Flute, Ball Nose M113

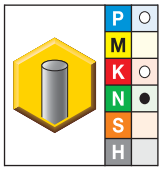


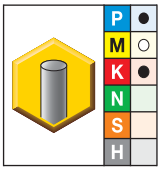
- Kennametal standard dimensions.
- Center cutting.











● first choice
○ alternate choice

K600	KC625M	D1	D	Ap1 max	L
HECL125S2075	**HECL125S2075**	1/8	1/8	3/4	3
HECL188S2100	**HECL188S2100**	3/16	3/16	1	4
HECL250S2100	**HECL250S2100**	1/4	1/4	1	4
HECL250S2150	–	1/4	1/4	1 1/2	6
HECL312S2100	**HECL312S2100**	5/16	5/16	1	4
HECL312S2150	**HECL312S2150**	5/16	5/16	1 1/2	6
HECL375S2100	**HECL375S2100**	3/8	3/8	1	4
HECL375S2300	**HECL375S2300**	3/8	3/8	3	6
HECL438S2100	–	7/16	7/16	1	4
HECL500S2100	**HECL500S2100**	1/2	1/2	1	4
HECL500S2150	**HECL500S2150**	1/2	1/2	1 1/2	6
–	**HECL625S2200**	5/8	5/8	2	6
–	**HECL750S2200**	3/4	3/4	2	6

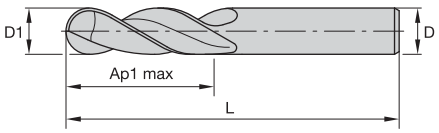
NOTE: For application data, see page M114.

End Mill Tolerances

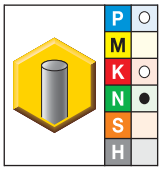
D1	tolerance	D	tolerance h6
All	+.000/-.003"	≤1/8"	+0/-.00024"
		>1/8–1/4"	+0/-.00031"
		>1/4–3/8"	+0/-.00035"
		>3/8–23/32"	+0/-.00043"
		>23/32–1 3/16"	+0/-.00051"

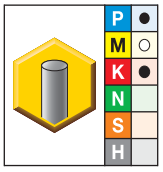
- Kennametal standard dimensions.
- Center cutting.











● first choice
○ alternate choice

K600	KC625M	D1	D	Ap1 max	L
BNECL125S2075	**BNECL125S2075**	1/8	1/8	3/4	3
BNECL188S2100	**BNECL188S2100**	3/16	3/16	1	4
BNECL250S2100	**BNECL250S2100**	1/4	1/4	1	3
BNECL250S2150	**BNECL250S2150**	1/4	1/4	1 1/2	6
BNECL312S2100	**BNECL312S2100**	5/16	5/16	1	4
BNECL312S2150	**–**	5/16	5/16	1 1/2	6
BNECL375S2100	**BNECL375S2100**	3/8	3/8	1	4
BNECL375S2150	**BNECL375S2150**	3/8	3/8	1 1/2	6
–	**BNECL375S2300**	3/8	3/8	3	6
–	**BNECL438S2300**	7/16	7/16	3	6
BNECL500S2100	**BNECL500S2100**	1/2	1/2	1	4
BNECL500S2150	**BNECL500S2150**	1/2	1/2	1 1/2	6
–	**BNECL750S2200**	3/4	3/4	2	6

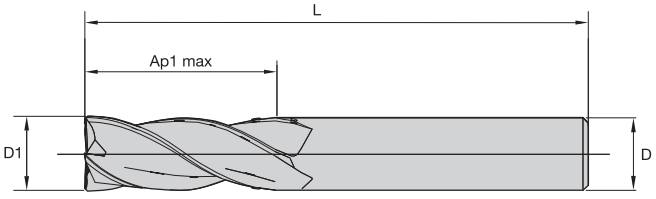
NOTE: For application data, see page M114.

End Mill Tolerances

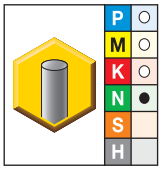
D1	tolerance	D	tolerance h6
All	+.000/-.003"	≤1/8"	+0/-.00024"
		>1/8–1/4"	+0/-.00031"
		>1/4–3/8"	+0/-.00035"
		>3/8–23/32"	+0/-.00043"
		>23/32–1 3/16"	+0/-.00051"

• Center cutting.









● first choice
○ alternate choice

K600	D1	D	Ap1 max	L
GADC0250J6ASA	1/4	1/4	3/4	2 1/2
GADC0313J6ASA	5/16	5/16	13/16	2 1/2
GADC0375J6ASA	3/8	3/8	7/8	2 1/2
GADC0375J6CSB	3/8	3/8	1 1/8	3
GADC0438J6ASC	7/16	7/16	2	4 1/2
GADC0500J6ASA	1/2	1/2	1	3

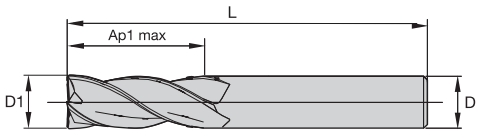
NOTE: For application data, see page M115.

End Mill Tolerances

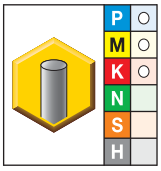
D1	tolerance	D	tolerance h6
All	+.000/-.002"	≤1/8"	+0/-.00024"
		>1/8–1/4"	+0/-.00031"
		>1/4–3/8"	+0/-.00035"
		>3/8–23/32"	+0/-.00043"
		>23/32–1 3/16"	+0/-.00051"

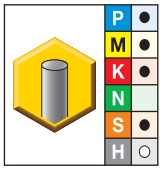
- Kennametal standard dimensions.
- Center cutting.

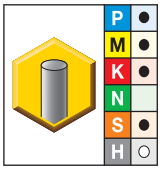












● first choice
○ alternate choice

K600	KC625M	KC633M	D1	D	Ap1 max	L
FMDE0125J5ASA	FMDE0125J5ASA	FMDE0125J5ASA	1/8	1/8	1/2	1 1/2
FMDE0188J5ASA	FMDE0188J5ASA	FMDE0188J5ASA	3/16	3/16	5/8	2
FMDE0250J5ASA	FMDE0250J5ASA	FMDE0250J5ASA	1/4	1/4	3/8	2
FMDE0250J5BSB	FMDE0250J5BSB	FMDE0250J5BSB	1/4	1/4	3/4	2 1/2
FMDE0250J5CSC	FMDE0250J5CSC	FMDE0250J5CSC	1/4	1/4	1 1/4	4
FMDE0313J5ASA	FMDE0313J5ASA	FMDE0313J5ASA	5/16	5/16	7/16	2
FMDE0313J5BSB	FMDE0313J5BSB	–	5/16	5/16	13/16	2 1/2
FMDE0313J5CSC	–	–	5/16	5/16	1 1/4	4
FMDE0375J5ASA	FMDE0375J5ASA	FMDE0375J5ASA	3/8	3/8	1/2	2
FMDE0375J5BSB	FMDE0375J5BSB	FMDE0375J5BSB	3/8	3/8	7/8	2 1/2
FMDE0375J5CSC	FMDE0375J5CSC	–	3/8	3/8	1 1//2	4
FMDE0500J5ASA	FMDE0500J5ASA	–	1/2	1/2	5/8	2 1/2
FMDE0500J5BSB	FMDE0500J5BSB	FMDE0500J5BSB	1/2	1/2	1	3
FMDE0500J5CSC	FMDE0500J5CSC	FMDE0500J5CSC	1/2	1/2	1 1/4	3
FMDE0500J5DSD	FMDE0500J5DSD	FMDE0500J5DSD	1/2	1/2	2	4 1/2
FMDE0625J5ASA	FMDE0625J5ASA	–	5/8	5/8	3/4	3
FMDE0625J5BSB	FMDE0625J5BSB	–	5/8	5/8	1 1/4	3 1/2
FMDE0625J5CSC	FMDE0625J5CSC	–	5/8	5/8	2 1/4	5
–	FMDE0750J5ASA	–	3/4	3/4	1	3
FMDE0750J5BSB	FMDE0750J5BSB	FMDE0750J5BSB	3/4	3/4	1 1//2	4
FMDE0750J5CSC	FMDE0750J5CSC	FMDE0750J5CSC	3/4	3/4	2 1/4	5
–	FMDE1000J5ASA	–	1	1	2 1/4	5

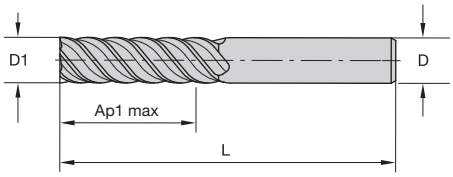
NOTE: For application data, see page M115.

End Mill Tolerances

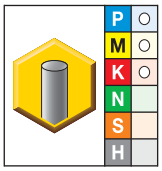
D1	tolerance	D	tolerance h6
All	+.000/-.002"	≤1/8"	+0/-.00024"
		>1/8–1/4"	+0/-.00031"
		>1/4–3/8"	+0/-.00035"
		>3/8–23/32"	+0/-.00043"
		>23/32–1 3/16"	+0/-.00051"

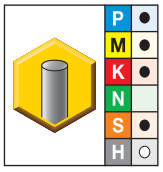
- Kennametal standard dimensions.
- Center cutting.

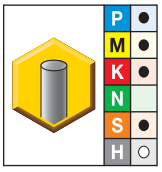












● first choice
○ alternate choice

K600	KC625M	KC635M	D1	D	Ap1 max	L	Z U
–	–	HPFF125S4050	1/8	1/8	1/2	1 1/2	4
HPFF250S6038	HPFF250S6038	HPFF250S6038	1/4	1/4	3/8	2	6
HPFF250S6075	HPFF250S6075	HPFF250S6075	1/4	1/4	3/4	2 1/2	6
HPFF250S6113	HPFF250S6113	HPFF250S6113	1/4	1/4	1 1/8	3	6
HPFF312S6081	HPFF312S6081	HPFF312S6081	5/16	5/16	13/16	2 1/2	6
HPFF312S6113	HPFF312S6113	HPFF312S6113	5/16	5/16	1 1/8	3	6
HPFF375S6050	HPFF375S6050	HPFF375S6050	3/8	3/8	1/2	2	6
HPFF375S6088	HPFF375S6088	HPFF375S6088	3/8	3/8	7/8	2 1/2	6
HPFF375S6113	HPFF375S6113	HPFF375S6113	3/8	3/8	1 1/8	3	6
HPFF500S6063	HPFF500S6063	HPFF500S6063	1/2	1/2	5/8	2 1/2	6
HPFF500S6100	HPFF500S6100	HPFF500S6100	1/2	1/2	1	3	6
HPFF500S6200	HPFF500S6200	HPFF500S6200	1/2	1/2	2	4 1/2	6
–	–	HPFF625S6075	5/8	5/8	3/4	3	6
HPFF625S6125	HPFF625S6125	HPFF625S6125	5/8	5/8	1 1/4	3 1/2	6
HPFF625S6225	HPFF625S6225	HPFF625S6225	5/8	5/8	2 1/4	5	6
HPFF750S6100	HPFF750S6100	–	3/4	3/4	1	3 1/2	6
HPFF750S6150	HPFF750S6150	HPFF750S6150	3/4	3/4	1 1//2	4	6
HPFF750S6225	HPFF750S6225	HPFF750S6225	3/4	3/4	2 1/4	5	6
HPFF100S6225	–	–	1	1	2 1/4	5	6

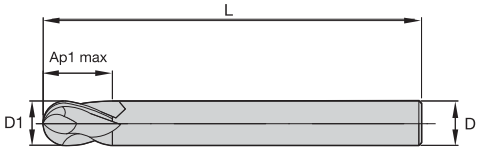
NOTE: For application data, see page M116.

End Mill Tolerances

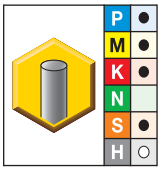
D1	tolerance	D	tolerance h6
All	+.000/-.002"	≤1/8"	+0/-.00024"
		>1/8–1/4"	+0/-.00031"
		>1/4–3/8"	+0/-.00035"
		>3/8–23/32"	+0/-.00043"
		>23/32–1 3/16"	+0/-.00051"

- Kennametal standard dimensions.
- Unequal flute spacing minimizes chatter for smoother machining.
- Center cutting.









● first choice
○ alternate choice

KC633M	D1	D	Ap1 max	L
UABE0250J4BLA	1/4	1/4	3/8	4
UABE0375J4BLA	3/8	3/8	1/2	4
UABE0500J4BLA	1/2	1/2	5/8	5
UABE0625J4BLA	5/8	5/8	3/4	6
UABE0750J4BLA	3/4	3/4	1	6

NOTE: For application data, see page M116.

End Mill Tolerances

D1	tolerance	D	tolerance h6
All	+.000/-.002"	≤1/8"	+0/-.00024"
		>1/8–1/4"	+0/-.00031"
		>1/4–3/8"	+0/-.00035"
		>3/8–23/32"	+0/-.00043"
		>23/32–1 3/16"	+0/-.00051"

HECL• 2-Flute

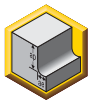




Material Group		Side Milling (A) and Slotting (B) A ap	A ae	B ap	K600 Cutting Speed — vc SFM min	K600 max	KC625M min	KC625M max	Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%. D1 — Diameter inch	1/16 0,06	1/8 0,13	3/16 0,19	1/4 0,25	5/16 0,31	3/8 0,38	7/16 0,44	1/2 0,50	5/8 0,63	3/4 0,75	1 1,00
P	1	1–1.5 x D	0.1 x D	0.25 x D	200	265	390	525	fz	0.0003	0.0007	0.0011	0.0015	0.0019	0.0022	0.0025	0.0028	0.0032	0.0034	0.004
	2	1–1.5 x D	0.1 x D	0.25 x D	185	250	370	500	fz	0.0003	0.0007	0.0011	0.0015	0.0019	0.0022	0.0025	0.0028	0.0032	0.0034	0.004
	3	1–1.5 x D	0.1 x D	0.25 x D	–	–	310	416	fz	0.0003	0.0006	0.0009	0.0012	0.0016	0.0018	0.0021	0.0023	0.0027	0.003	0.0036
	4	1–1.5 x D	0.1 x D	0.25 x D	–	–	240	400	fz	0.0002	0.0005	0.0008	0.0011	0.0014	0.0016	0.0019	0.0021	0.0024	0.0026	0.0031
M	1	1–1.5 x D	0.1 x D	0.25 x D	–	–	210	265	fz	0.0002	0.0006	0.0009	0.0012	0.0016	0.0018	0.0021	0.0023	0.0027	0.003	0.0036
	2	1–1.5 x D	0.1 x D	0.25 x D	–	–	160	210	fz	0.0003	0.0005	0.0007	0.001	0.0013	0.0015	0.0017	0.0019	0.0022	0.0024	0.0029
K	1	1–1.5 x D	0.1 x D	0.25 x D	155	210	310	415	fz	0.0004	0.0007	0.0011	0.0015	0.0019	0.0022	0.0025	0.0028	0.0032	0.0034	0.004
	2	1–1.5 x D	0.1 x D	0.25 x D	–	–	290	370	fz	0.0003	0.0006	0.0009	0.0012	0.0016	0.0018	0.0021	0.0023	0.0027	0.003	0.0036
N	1	1–1.5 x D	0.1 x D	0.25 x D	1640	6550	–	–	fz	0.0003	0.0007	0.0011	0.0015	0.0019	0.0022	0.0025	0.0028	0.0032	0.0034	0.004
	2	1–1.5 x D	0.1 x D	0.25 x D	1640	4900	–	–	fz	0.0003	0.0006	0.0009	0.0012	0.0016	0.0018	0.0021	0.0024	0.0027	0.003	0.0037
	5	1–1.5 x D	0.1 x D	0.25 x D	820	2450	–	–	fz	0.0002	0.0005	0.0007	0.001	0.0013	0.0015	0.0017	0.0019	0.0022	0.0024	0.0029
	6	1–1.5 x D	0.1 x D	0.25 x D	330	1650	–	–	fz	0.0005	0.001	0.0015	0.002	0.0025	0.003	0.0035	0.004	0.005	0.006	0.0081

NOTE: These guidelines may require variations to achieve optimum results.
Lower value of cutting speed is used for high stock removal applications or for higher hardness (machinability) within group.
Higher value of cutting speed is used for finishing applications or for lower hardness (machinability) within group.
Above parameters are based on ideal conditions. For smaller taper machining centers, please adjust parameters accordingly on >1/2" diameter.

BNECL • 2-Flute

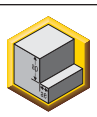


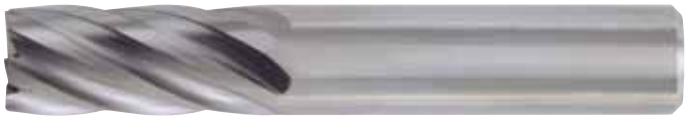


Material Group		Side Milling (A) and Slotting (B) A ap	A ae	B ap	K600 Cutting Speed — vc SFM min	K600 max	KC610M min	KC610M max	KC635M min	KC635M max	Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%. D1 — Diameter inch	1/16 0.0003	1/8 0.0007	1/4 0.0015	3/8 0.0022	1/2 0.0028	5/8 0.0032	3/4 0.0034	1 0.004
P	1	1–1.5 x D	0.1 x D	0.25 x D	200	265	390	525	490	660	fz	0.0003	0.0007	0.0015	0.0022	0.0028	0.0032	0.0034	0.004
	2	1–1.5 x D	0.1 x D	0.25 x D	185	250	370	500	460	620	fz	0.0003	0.0006	0.0012	0.0018	0.0023	0.0027	0.003	0.0036
	3	1–1.5 x D	0.1 x D	0.25 x D	–	–	310	416	390	520	fz	0.0002	0.0005	0.0011	0.0016	0.0021	0.0024	0.0026	0.0031
	4	1–1.5 x D	0.1 x D	0.25 x D	–	–	240	400	300	490	fz	0.0002	0.0006	0.0012	0.0018	0.0023	0.0027	0.003	0.0036
M	1	1–1.5 x D	0.1 x D	0.25 x D	–	–	210	265	260	330	fz	0.0003	0.0005	0.001	0.0015	0.0019	0.0022	0.0024	0.0029
	2	1–1.5 x D	0.1 x D	0.25 x D	–	–	160	210	200	260	fz	0.0004	0.0007	0.0015	0.0022	0.0028	0.0032	0.0034	0.004
K	1	1–1.5 x D	0.1 x D	0.25 x D	155	210	310	415	390	520	fz	0.0003	0.0006	0.0012	0.0018	0.0023	0.0027	0.003	0.0036
	2	1–1.5 x D	0.1 x D	0.25 x D	–	–	290	370	360	460	fz	0.0003	0.0007	0.0015	0.0022	0.0028	0.0032	0.0034	0.004
N	1	1–1.5 x D	0.1 x D	0.25 x D	1640	6550	–	–	–	–	fz	0.0003	0.0006	0.0012	0.0018	0.0024	0.0027	0.003	0.0037
	2	1–1.5 x D	0.1 x D	0.25 x D	1640	4900	–	–	–	–	fz	0.0002	0.0005	0.001	0.0015	0.0019	0.0022	0.0024	0.0029
	5	1–1.5 x D	0.1 x D	0.25 x D	820	2450	–	–	–	–	fz	0.0005	0.001	0.002	0.003	0.004	0.005	0.006	0.0081
	6	1–1.5 x D	0.1 x D	0.25 x D	330	1650	–	–	–	–	fz	0.0005	0.0010	0.0020	0.0030	0.0040	0.0050	0.0060	0.0081

NOTE: Lower value of cutting speed is used for high stock removal applications or for higher hardness (machinability) within group.
Higher value of cutting speed is used for finishing applications or for lower hardness (machinability) within group.
Above parameters are based on ideal conditions. For smaller taper machining centers, please adjust parameters accordngly on >1/2" diameter.
For long lengths, reduce fz by 20%.

GADC





Material Group		Side Milling (A) and Slotting (B) A ap	A ae	B ap	K600 Cutting Speed — vc SFM min	max	Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%. D1 — Diameter inch	1/16 0.063	1/8 0.125	3/16 0.188	1/4 0.250	5/16 0.313	3/8 0.375	7/16 0.438	1/2 0.500	5/8 0.625	3/4 0.750	1 1.000
P	1	1 x D	0.1 x D	0.25 x D	200	265	fz	0.0003	0.0007	0.0011	0.0015	0.0019	0.0022	0.0025	0.0028	0.0032	0.0034	0.0040
	2	1 x D	0.1 x D	0.25 x D	185	250	fz	0.0003	0.0007	0.0011	0.0015	0.0019	0.0022	0.0025	0.0028	0.0032	0.0034	0.0040
M	1	1 x D	0.1 x D	0.25 x D	100	135	fz	0.0002	0.0006	0.0009	0.0012	0.0016	0.0018	0.0021	0.0023	0.0027	0.003	0.0036
K	1	1 x D	0.1 x D	0.25 x D	155	210	fz	0.0004	0.0007	0.0011	0.0015	0.0019	0.0022	0.0025	0.0028	0.0032	0.0034	0.0040
N	5	1 x D	0.1 x D	0.25 x D	820	2450	fz	0.0002	0.0005	0.0007	0.0010	0.0013	0.0015	0.0017	0.0019	0.0022	0.0024	0.0029
	6	1 x D	0.1 x D	0.25 x D	330	1650	fz	0.0005	0.0010	0.0015	0.0020	0.0025	0.0030	0.0035	0.0040	0.0050	0.0060	0.0081

NOTE: These guidelines may require variations to achieve optimum results.
Lower value of cutting speed is used for high stock removal applications or for higher hardness (machinability) within group.
Higher value of cutting speed is used for finishing applications or for lower hardness (machinability) within group.
Above parameters are based on ideal conditions. For smaller taper machining centers, please adjust parameters accordingly on >1/2" diameter.

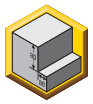
FMDE • 5-Flute




Material Group		Side Milling ap	ae	KC633M Cutting Speed — vc SFM min	max	KC625M min	max	KC600 min	max	D1 — Diameter inch	1/8 0.125	3/16 0.188	1/4 0.250	5/16 0.313	3/8 0.375	1/2 0.500	5/8 0.625	3/4 0.750	1 1.000
P	1	1.5 x D	0.15 x D	500	650	400	520	200	260	fz	0.0009	0.0014	0.0018	0.0023	0.0027	0.0035	0.0039	0.0043	0.0050
	2	1.5 x D	0.15 x D	450	625	360	500	180	250	fz	0.0009	0.0014	0.0018	0.0023	0.0027	0.0035	0.0039	0.0043	0.0050
	3	1.5 x D	0.1 x D	400	525	320	420	160	210	fz	0.0007	0.0011	0.0015	0.0020	0.0023	0.0029	0.0034	0.0038	0.0046
	4	1.5 x D	0.1 x D	300	475	240	380	—	—	fz	0.0007	0.0010	0.0014	0.0018	0.0020	0.0026	0.0030	0.0033	0.0039
	5	1.5 x D	0.1 x D	200	325	160	260	—	—	fz	0.0006	0.0009	0.0012	0.0016	0.0018	0.0023	0.0027	0.0030	0.0036
	6	1.5 x D	0.1 x D	150	225	120	180	—	—	fz	0.0005	0.0008	0.0010	0.0013	0.0015	0.0019	0.0022	0.0024	0.0028
M	1	1.5 x D	0.15 x D	260	330	208	264	104	132	fz	0.0007	0.0011	0.0015	0.0020	0.0023	0.0029	0.0034	0.0038	0.0046
	2	1.5 x D	0.1 x D	200	260	160	208	—	—	fz	0.0006	0.0009	0.0012	0.0016	0.0018	0.0023	0.0027	0.0030	0.0036
	3	1.5 x D	0.1 x D	200	260	160	208	—	—	fz	0.0005	0.0008	0.0010	0.0013	0.0015	0.0019	0.0022	0.0024	0.0028
K	1	1.5 x D	0.15 x D	390	520	312	416	156	208	fz	0.0009	0.0014	0.0018	0.0023	0.0027	0.0035	0.0039	0.0043	0.0050
	2	1.5 x D	0.15 x D	360	460	288	368	—	—	fz	0.0007	0.0011	0.0015	0.0020	0.0023	0.0029	0.0034	0.0038	0.0046
	3	1.5 x D	0.1 x D	330	430	264	344	—	—	fz	0.0006	0.0009	0.0012	0.0016	0.0018	0.0023	0.0027	0.0030	0.0036
S	1	1.5 x D	0.1 x D	150	275	120	220	—	—	fz	0.0007	0.0011	0.0015	0.0020	0.0023	0.0029	0.0034	0.0038	0.0046
	2	1.5 x D	0.1 x D	150	275	120	220	—	—	fz	0.0007	0.0011	0.0015	0.0020	0.0023	0.0029	0.0034	0.0038	0.0046
	3	1.5 x D	0.15 x D	70	130	56	104	—	—	fz	0.0004	0.0006	0.0008	0.0010	0.0012	0.0016	0.0018	0.0020	0.0025
	4	1.5 x D	0.15 x D	150	210	120	168	—	—	fz	0.0005	0.0008	0.0011	0.0014	0.0017	0.0022	0.0025	0.0028	0.0033
H	1	1.5 x D	0.1 x D	260	450	208	360	—	—	fz	0.0007	0.0010	0.0014	0.0018	0.0020	0.0026	0.0030	0.0033	0.0039

NOTE: Lower value of cutting speed is used for high stock removal applications or for higher hardness (machinability) within group.
Higher value of cutting speed is used for finishing applications or for lower hardness (machinability) within group.
Above parameters are based on ideal conditions. For smaller taper machining centers, please adjust parameters accordingly on >1/2" diameter.

HPFF • 6-Flute





Material Group		Side Milling		KC635M		KC625M		K600		D1 — Diameter									
				Cutting Speed — vc SFM															
		ap	ae	min	max	min	max	min	max	inch	1/8 0.125	3/16 0.188	1/4 0.250	5/16 0.313	3/8 0.375	1/2 0.500	5/8 0.625	3/4 0.750	1 1.000
P	1	1 x D	0.5 x D	590	720	472	576	236	288	fz	0.0009	0.0014	0.0018	0.0023	0.0027	0.0035	0.0039	0.0043	0.0050
	2	1 x D	0.5 x D	520	660	416	528	208	264	fz	0.0009	0.0014	0.0018	0.0023	0.0027	0.0035	0.0039	0.0043	0.0050
	3	1 x D	0.5 x D	520	590	416	472	208	236	fz	0.0007	0.0011	0.0015	0.0020	0.0023	0.0029	0.0034	0.0038	0.0046
	4	1 x D	0.5 x D	460	520	368	416	—	—	fz	0.0007	0.0010	0.0014	0.0018	0.0020	0.0026	0.0030	0.0033	0.0039
	5	1 x D	0.5 x D	200	330	160	264	—	—	fz	0.0006	0.0009	0.0012	0.0016	0.0018	0.0023	0.0027	0.0030	0.0036
	6	1 x D	0.5 x D	160	260	128	208	—	—	fz	0.0005	0.0008	0.0010	0.0013	0.0015	0.0019	0.0022	0.0024	0.0028
M	1	1 x D	0.5 x D	260	330	208	264	104	132	fz	0.0007	0.0011	0.0015	0.0020	0.0023	0.0029	0.0034	0.0038	0.0046
	2	1 x D	0.5 x D	200	260	160	208	—	—	fz	0.0006	0.0009	0.0012	0.0016	0.0018	0.0023	0.0027	0.0030	0.0036
	3	1 x D	0.5 x D	200	260	160	208	—	—	fz	0.0005	0.0008	0.0010	0.0013	0.0015	0.0019	0.0022	0.0024	0.0028
K	1	1 x D	0.5 x D	390	520	312	514	156	208	fz	0.0009	0.0014	0.0018	0.0023	0.0027	0.0035	0.0039	0.0043	0.0050
	2	1 x D	0.5 x D	360	460	288	460	—	—	fz	0.0007	0.0011	0.0015	0.0020	0.0023	0.0029	0.0034	0.0038	0.0046
	3	1 x D	0.5 x D	330	430	264	344	—	—	fz	0.0006	0.0009	0.0012	0.0016	0.0018	0.0023	0.0027	0.0030	0.0036
S	1	1 x D	0.5 x D	300	380	240	304	—	—	fz	0.0007	0.0011	0.0015	0.0020	0.0023	0.0029	0.0034	0.0038	0.0046
	2	1 x D	0.5 x D	70	130	56	104	—	—	fz	0.0004	0.0006	0.0008	0.0010	0.0012	0.0016	0.0018	0.0020	0.0025
	3	1 x D	0.5 x D	160	260	128	208	—	—	fz	0.0006	0.0009	0.0012	0.0016	0.0018	0.0023	0.0027	0.0030	0.0036
	4	1 x D	0.5 x D	150	210	120	168	—	—	fz	0.0005	0.0008	0.0011	0.0014	0.0017	0.0022	0.0025	0.0028	0.0033
H	1	1 x D	0.5 x D	330	460	264	368	—	—	fz	0.0007	0.0010	0.0014	0.0018	0.0020	0.0026	0.0030	0.0033	0.0039

NOTE: Lower value of cutting speed is used for high stock removal applications or for higher hardness (machinability) within group.
Higher value of cutting speed is used for finishing applications or for lower hardness (machinability) within group.
For tools 2 x D<LOC< 3 x D, ae=0.25 x D; for tools with LOC longer than 3 x D, ae=0.1 x D.
These guidelines may require variations to achieve optimum results.

UABE







Material Group		Side Milling (A) and Slotting (B)			KCPM15/ KC633M		Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%.												
		A		B	Cutting Speed — vc SFM		D1 — Diameter												
		ap	ae	ap	min	max	inch	1/8 0.125	3/16 0.188	1/4 0.250	5/16 0.313	3/8 0.375	7/16 0.438	1/2 0.500	5/8 0.625	3/4 0.750	1 1.000	1 1/4 1.250
P	1	1.25 x D	0.5 x D	1 x D	490	660	fz	0.0009	0.0014	0.0018	0.0023	0.0027	0.0031	0.0035	0.0039	0.0043	0.0050	0.0062
	2	1.25 x D	0.5 x D	1 x D	460	620	fz	0.0009	0.0014	0.0018	0.0023	0.0027	0.0031	0.0035	0.0039	0.0043	0.0050	0.0062
	3	1.25 x D	0.5 x D	1 x D	390	520	fz	0.0007	0.0011	0.0015	0.0020	0.0023	0.0026	0.0029	0.0034	0.0038	0.0046	0.0057
	4	1.25 x D	0.5 x D	0.75 x D	300	490	fz	0.0007	0.0010	0.0014	0.0018	0.0020	0.0023	0.0026	0.0030	0.0033	0.0039	0.0049
	5	1.25 x D	0.5 x D	1 x D	200	330	fz	0.0006	0.0009	0.0012	0.0016	0.0018	0.0021	0.0023	0.0027	0.0030	0.0036	0.0046
	6	1.25 x D	0.5 x D	0.75 x D	160	250	fz	0.0005	0.0008	0.0010	0.0013	0.0015	0.0017	0.0019	0.0022	0.0024	0.0028	0.0036
M	1	1.25 x D	0.5 x D	1 x D	260	330	fz	0.0007	0.0011	0.0015	0.0020	0.0023	0.0026	0.0029	0.0034	0.0038	0.0046	0.0057
	2	1.25 x D	0.5 x D	1 x D	200	260	fz	0.0006	0.0009	0.0012	0.0016	0.0018	0.0021	0.0023	0.0027	0.0030	0.0036	0.0046
	3	1.25 x D	0.5 x D	1 x D	200	260	fz	0.0005	0.0008	0.0010	0.0013	0.0015	0.0017	0.0019	0.0022	0.0024	0.0028	0.0036
K	1	1.25 x D	0.5 x D	1 x D	390	520	fz	0.0009	0.0014	0.0018	0.0023	0.0027	0.0031	0.0035	0.0039	0.0043	0.0050	0.0062
	2	1.25 x D	0.5 x D	1 x D	360	460	fz	0.0007	0.0011	0.0015	0.0020	0.0023	0.0026	0.0029	0.0034	0.0038	0.0046	0.0057
	3	1.25 x D	0.5 x D	1 x D	330	430	fz	0.0006	0.0009	0.0012	0.0016	0.0018	0.0021	0.0023	0.0027	0.0030	0.0036	0.0046
S	1	1.0 x D	0.3 x D	0.3 x D	160	300	fz	0.0007	0.0011	0.0015	0.0020	0.0023	0.0026	0.0029	0.0034	0.0038	0.0046	0.0057
	2	1.25 x D	0.5 x D	1 x D	160	260	fz	0.0006	0.0009	0.0012	0.0016	0.0018	0.0021	0.0023	0.0027	0.0030	0.0036	0.0046
	3	1.0 x D	0.3 x D	0.3 x D	70	130	fz	0.0004	0.0006	0.0008	0.0010	0.0012	0.0014	0.0016	0.0018	0.0020	0.0025	0.0031
	4	1.25 x D	0.5 x D	1 x D	150	210	fz	0.0005	0.0008	0.0011	0.0014	0.0017	0.0019	0.0022	0.0025	0.0028	0.0033	0.0042
H	1	1.25 x D	0.5 x D	0.75 x D	260	460	fz	0.0007	0.0010	0.0014	0.0018	0.0020	0.0023	0.0026	0.0030	0.0033	0.0039	0.0049

NOTE: These guidelines may require variations to achieve optimum results.
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Higher value of cutting speed is used for finishing applications or for lower hardness (machinability) within group.
Above parameters are based on ideal conditions. For smaller taper machining centers, please adjust parameters accordingly on >1/2" diameter.



High-Performance Milling Chucks

- Heavy- and fine-milling capabilities.
- Prebalanced G6.3 @ 20,000 RPM — six threaded M6 holes to accept set screws for fine balancing.
- Heavy milling — tighten locknut until O-ring on back face of locknut just touches the flange on the chuck body to achieve runout .0004" 3 x D1.
- Fine milling — tighten as above, then back the locknut off 1/8–1/4 turn to achieve runout .0002" 3 x D1.
- Sub-zero heat treatment for material stability.
- Through-the-toolholder coolant capability using stop screw as sealing device.
- 3/8" axial adjustment stop screw.

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FACE MILLS

See Section O for more details.

- **Dodeka™ Series Platform**
- **MEGA Series Platform**
- **Beyond BLAST™ KSSM™ 45º**
- **KSSM 45º**
- **KSOM™ and KSOM Mini**
- **Fix-Perfect™ Series Platform**
- **HexaCut™ Series Platform**
- **KSSR™ 6º**
- **KCMS™ Cartridge Milling System**
- **KSCM™ PCD AluMill™**
- **Fix-Perfect 0º Aluminum**
- **Chamfer Mills (60º, 45º, 30º)**

SHOULDER MILLS

See Section P for more details.

- **Mill 1-10™ Platform**
- **Mill 1-14™ Platform**
- **Mill 1-18™ Platform**
- **Mill 1-25™ Platform**
- **KSSM™ Platform**
- **KSSM-KSSP, Helical Cutters Platform**
- **KFSR™ Helical Platform**



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SLOTTING CUTTERS
See Section Q for more details.

KTMS™ T-Slot Platform

KVNS™ Platform

SN Platform

LN Platform

KSSM™ Platform

COPY MILLS
See Section R for more details.

KenFeed™ 2X

KenFeed Mini

Rodeka™ Platform

KDM Platform

KSRM™ Platform

Beyond BLAST™ KSRM Platform

KDMB™ and KDMT™ Platforms

Z-Axis • Plunge Milling Cutters

KDMR™ • Multifunction Cutters

KIPR™ and KSSP™ • Round Ceramic Milling Cutters

THREAD MILLS
See Section S for more details.

Indexable End Mills

- Weldon® Shank • TM25
- Conical Thread • TMT25
- Mini Thread Mills • STN
- Tapered Thread • STN

Indexable Inserts



The Most Advanced Milling Solutions in the Industry

For unsurpassed quality, value, and performance, you can trust Kennametal to provide the most comprehensive line of reliable metalcutting tools. Whatever your indexable milling product requirements, be assured that you will find the appropriate solution in this all-inclusive, easy-to-use guide.

For every milling application, workpiece, or equipment need, we offer the best tools on the market, designed to reduce your machining time, provide superior surface finishes, and outperform the competition.

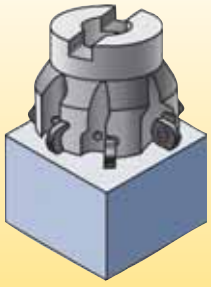
Identify material to be machined:
Each tool has a material grid marked with a letter indicating the materials that can be machined.

● first choice
○ alternate choice

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

Choose your application:
- Face Milling
- Chamfer Milling
- Shoulder Milling
- Slotting
- Copy Milling
- Ceramic Milling
- Thread Milling

Face Mills



Dodeka™ Mini • High-Feed — **Tool name**



Illustration of the product

Ap1: .064"
Cutting Edges: 12
Dia: 1–3"

k = 75° — **Lead angle**

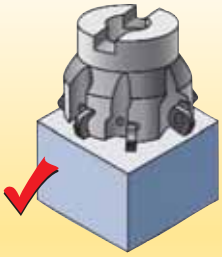
Pages: O4–O5

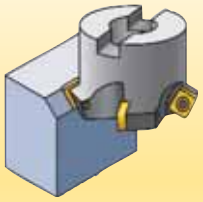
Location of introduction detail, tool bodies, inserts, and cutting data

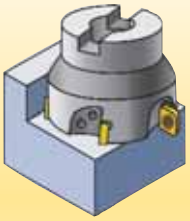
Select tool based on maximum depth of cut and diameter required:
Information is given in this area to provide specific detail as a quick reference.

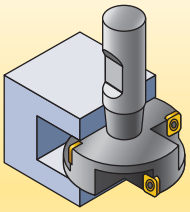
How to Navigate the 2013 Catalog

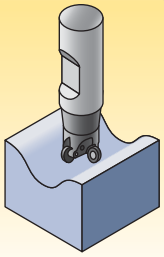
Step 1 • Select Application

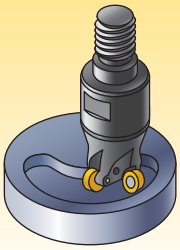

Face Milling

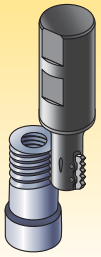

Chamfer Milling


Shoulder Milling (End Milling)


Slotting


Copy Milling

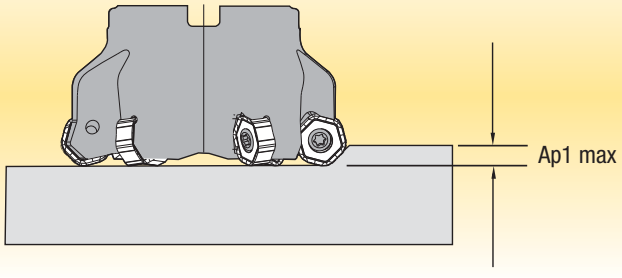

Ceramic Milling


Thread Milling

Step 2 • Select Workpiece Material

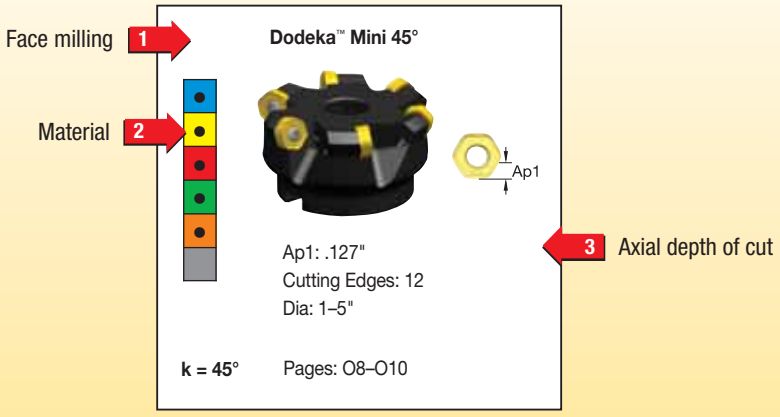
ISO Description		● first choice ○ alternate choice	Material Group	
Steel	P	●	P1–P2	Carbon steels
			P3–P4	Alloy steels and tool steels
			P5–P6	Ferritic, martensitic, and PH stainless steels
Stainless Steel	M	●	M1–M2	Austenitic stainless steels
			M3	Duplex stainless steels (ferritic and austenitic mixture)
Cast Iron	K		K1–K2	Gray, ductile, CGI, and malleable cast irons >80 KSI
			K3	Ductile, CGI, and malleable cast irons >80 KSI
Non-Ferrous Materials	N		N1–N2	Aluminum alloys <12.2% Si
			N3	Aluminum alloys >12.2% Si
High-Temp Alloys	S	●	S1–S2	Iron- and cobalt-based heat-resistant alloys
			S3	Nickel-based heat-resistant alloys
			S4	Alpha-Beta titanium alloys
Hardened Materials	H	○	H1	Hardened steels and irons

Step 3 • Select a Maximum Axial Depth of Cut (Ap)

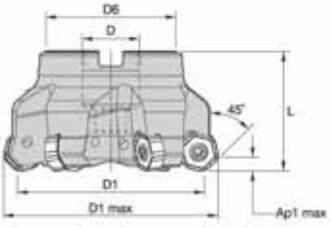


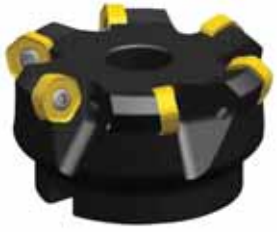
How to Navigate the 2013 Catalog *(continued)*

Step 4 • Select Milling Cutter from Application Selector



Select the Cutter





Dodeka Mini 45° • Shell Mills

order number	catalog number	D1	D1 max	D	D6	L	Ap1 max	Z	lbs	max RPM
4130426	KSHR150HN4345M3	1.500	1.822	.500	1.440	1.575	.127	4	.57	16700
4130427	KSHR150HN4345F3	1.500	1.822	.500	1.440	1.575	.127	5	.56	16700
4130428	KSHR200HN4345C3	2.000	2.321	.750	1.750	1.575	.127	4	.93	12500
4130429	KSHR200HN4345M3	2.000	2.321	.750	1.750	1.575	.127	5	.93	12500
4130430	KSHR200HN4345F3	2.000	2.321	.750	1.750	1.575	.127	6	.97	12500
4130431	KSHR250HN4345C3	2.500	2.821	.750	1.750	1.575	.127	4	1.20	10000
4130432	KSHR250HN4345M3	2.500	2.821	.750	1.750	1.575	.127	6	1.27	10000
4130493	KSHR250HN4345F3	2.500	2.821	.750	1.750	1.575	.127	8	1.29	10000
4130494	KSHR300HN4345C4	3.000	3.321	1.000	2.189	1.750	.127	5	1.90	8300
4130495	KSHR300HN4345M4	3.000	3.321	1.000	2.189	1.750	.127	8	2.09	8300

4

Step 5 • Insert Selection Guide

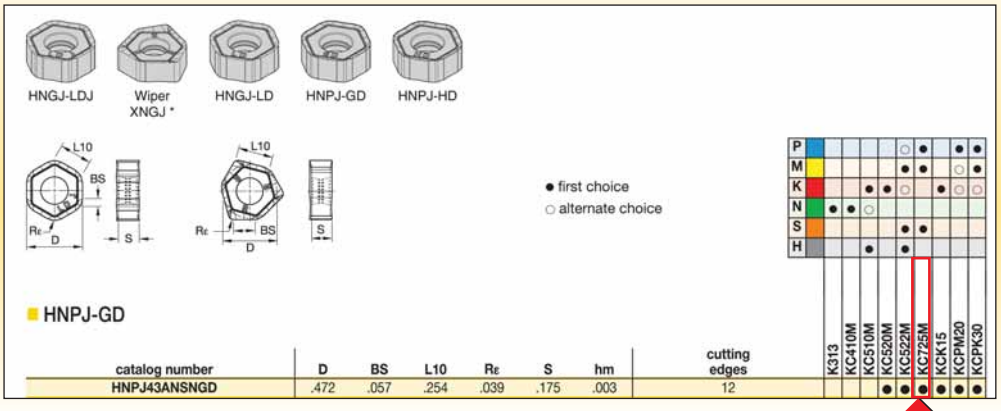
Insert Selection Guide

Material Group	Light Machining Geometry	Light Machining Grade	General Purpose Geometry	General Purpose Grade	Heavy Machining Geometry	Heavy Machining Grade
P1–P2	.E..LD	KC725M	.S..GD	KC725M	.S..HD	KC725M
P3–P4	.E..LD	KCPK30	.S..GD	KCPK30	.S..HD	KCPK30
P5–P6	.E..LD	KCPM20	.S..GD	KCPM20	.S..HD	KCPM20
M1–M2	.E..LD	KC725M	.S..GD	KC725M	.S..HD	KC725M
M3	.E..LD	KCPK30	.S..GD	KCPK30	.S..HD	KCPK30
K1–K2	.E..LD	KCK15	.S..GD	KCK15	.S..HD	KCK15
K3	.E..LD	KCPK30	.S..GD	KCPK30	.S..HD	KCPK30
N1–N2	.F..LDJ	K313	.F..LDJ	KC410M	.E..LD	KC510M
N3	.F..LDJ	KC410M	.E..LD	KC510M	.E..LD	KC510M
S1–S2	.E..LD	KC725M	.S..GD	KC725M	.S..HD	KC725M
S3	.E..LD	KC725M	.S..GD	KC725M	.S..HD	KC725M
S4	.S..GD	KC725M	.S..HD	KC725M	–	–
H1	.E..LD	KC510M	.S..GD	KC522M	–	–

5

How to Navigate the 2013 Catalog *(continued)*

Step 6 • Insert Chart, Providing the Inserts and Grades



HNPJ-GD

catalog number	D	BS	L10	Rε	S	hm	cutting edges
HNPJ43ANSNGD	.472	.057	.254	.039	.175	.003	12

6

Step 7 • Defining the Feed per Tooth

Geometry (S.GD)
20% radial width of cut, follow arrows for value.
% = radial width of cut (Ae) ÷ cutter diameter (D1)
Using a round or ball nose insert, consider the axial depth of cut; see separate chart on the cutter page.

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) 10%			20%			30%			40%			50–100%			Insert Geometry
.F..LDJ	.005	**.010**	.019	.004	**.007**	.014	.003	**.006**	.012	.003	**.006**	.012	.003	**.006**	.011	.F..LDJ
.E..LD	.005	**.014**	.029	.004	**.011**	.021	.003	**.009**	.019	.003	**.009**	.017	.003	**.008**	.017	.E..LD
7 .S..GD	.010	**.022**	.038	.007	**.016**	.028	.006	**.014**	.024	.006	**.013**	.022	.006	**.013**	.022	.S..GD
.S..HD	.010	**.024**	.039	.007	**.018**	.029	.006	**.015**	.025	.006	**.014**	.023	.006	**.014**	.023	.S..HD

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

7

Always consider starting with the "Light Machining" value. Once established, increase the feed per tooth from the chart.
These are minimum values and can be increased when the application has been proven.
Light Machining — Low Feed Rate, High Speed
General Purpose — Normal Feed, Normal Speed
Heavy Machining — Higher Feed, Reduced Speed

Step 8 • Recommended Starting Speeds [SFM]

8

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

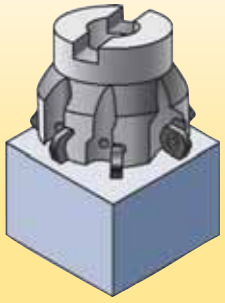
Choose the Application

- Face Milling
- Chamfer Milling
- Shoulder Milling
- Slotting
- Copy Milling
- Ceramic Milling
- Thread Milling

● first choice
○ alternate choice

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

Face Mills



Dodeka™ Mini • High-Feed



Ap1: .064"
Cutting Edges: 12
Dia: 1–3"
k = 75° Pages: O4–O5

Dodeka™ Mini 45°



Ap1: .127"
Cutting Edges: 12
Dia: 1–5"
k = 45° Pages: O8–O10

Dodeka™ Mini 30° • Heavy Duty



Ap1: .174"
Cutting Edges: 12
Dia: 1.5–5"
k = 30° Page: O13

Dodeka™ • High-Feed • 75°



Ap1: .087"
Cutting Edges: 12
Dia: 2–6"
k = 75° Page: O16

Dodeka™



Ap1: .178"
Cutting Edges: 12
Dia: 2–12"
k = 45° Page: O19

Dodeka MAX™



Ap1: .315"
Cutting Edges: 12
Dia: 3–12"
k = 45° Page: O24

MEGA 45° • Heavy Duty



Ap1: .675"
Cutting Edges: 4
Dia: 5–12"
k = 45° Page: O30

MEGA 15 • Heavy Duty



Ap1: .238"
Cutting Edges: 4
Dia: 5–12"
k = 75° Page: O36

MEGA 60 • Heavy Duty



Ap1: .840"
Cutting Edges: 4
Dia: 5–12"
k = 30° Page: O38

MEGA 90 • Heavy Duty



Ap1: 1.0"
Cutting Edges: 4
Dia: 5–12"
k = 0° Page: O41

Beyond BLAST™ KSSM 45°



Ap1: .260"
Cutting Edges: 4
Dia: 2–8"
k = 45° Page: O46

KSSM™ 45°



Ap1: .260"
Cutting Edges: 4
Dia: 1.26–7.87"
k = 45° Pages: O50–O51

KSOM™ Mini



Ap1: .138" (8 cutting edges)
Ap2: .354" (4 cutting edges)
Dia: 1.25–6"
k = 47° Pages: O58–O59

KSOM™



Ap1: .197" (8 cutting edges)
Ap2: .461" (4 cutting edges)
Dia: 2.5–6"
k = 47° Page: O64

Fix-Perfect™ • Finisher



Ap1: .040"
Cutting Edges: 4
Dia: 4–8"
k = 60° Page: O70

Fix-Perfect™ 20° • Cast Iron • IC 12



Ap1: .232" (8 cutting edges)
Ap2: .374" (4 cutting edges)
Dia: 2–10"
k = 20° Page: O74

Fix-Perfect™ 0° • Cast Iron • IC 12



Ap1: .236" (8 cutting edges)
Ap1: .394" (4 cutting edges)
Dia: 2–6"
k = 0° Page: O78

Fix-Perfect™ 20° • Cast Iron • IC 15



Ap1: .256" (8 cutting edges)
Ap2: .374" (4 cutting edges)
Dia: 2–10"
k = 20° Page: O82

HexaCut™ 45° • Cast Iron



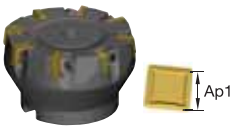
Ap1: .256"
Cutting Edges: 12
Dia: 3.15–12"
k = 45° Page: O89

HexaCut™ 30° • Cast Iron



Ap1: .315"
Cutting Edges: 12
Dia: 3.15–12"
k = 30° Page: O94

KSSR™ • Left and Right Hand



Ap1: .197"
Cutting Edges: 8
Dia: 2.5–10"
k = 6° Pages: O102–O103

KCMS™ • Cartridge Milling System



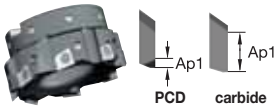
26 alternative cartridges
NOTE: See cartridges for Ap1 value
Dia: 5–12"
Variable Pages: O110–O111

KSCM™ AluMill™



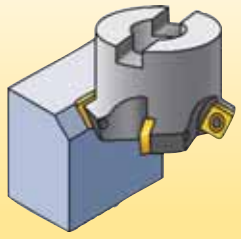
Ap1: .118"
Cutting Edge: 1
Dia: 2.5–12"
k = 0° Pages: O113–O114

Fix-Perfect™ 0° • Aluminum



Ap1: .205" (PCD)
Ap1: .374" (carbide)
Cutting Edges: 4
Dia: 1.5–8"
k = 0° Pages: O123–O125

Chamfer Mills



Chamfer Mill • End Mills 60° • SDEB



Ap1: .137"
Cutting Edges: 4
Dia: .46–.75"
k = 60° Pages: O130–O131

Chamfer Mill • End Mills 45° • SDEB



Ap1: .195"
Cutting Edges: 4
Dia: .46–1.20"
k = 45° Page: O130

Chamfer Mill • End Mills 30° • SDEB



Ap1: .136"
Cutting Edges: 4
Dia: .46–.75"
k = 30° Page: O131

Chamfer Mill • End Mills 45° • SEHW43



Ap1: .221"
Cutting Edges: 4
Dia: 1.50–1.97"
k = 45° Page: O134

Chamfer Mill • Bridgeport 45° • SEHW43

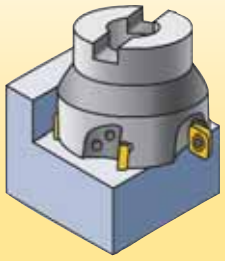


Ap1: .221"
Cutting Edges: 4
Dia: 1.97"
k = 45° Page: O135

● first choice
○ alternate choice

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

Shoulder Mills



Mill 1-10™



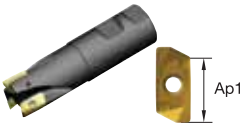
Ap1: .396"
Cutting Edges: 2
Dia: .500–4.00"
k = 0°
Pages: P3–P7

Mill 1-10™ Helical



Ap1: .70–1.80"
Cutting Edges: 2
Dia: .750–2.00"
k = 0°
Pages: P13–P16

Mill 1-14™



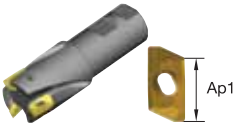
Ap1: .551–.580"
Cutting Edges: 2
Dia: .625–4.00"
k = 0°
Pages: P23–P27

Mill 1-14™ Helical



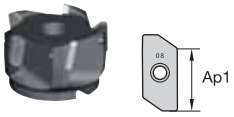
Ap1: 1.10–2.13"
Cutting Edges: 2
Dia: 1.25–2.50"
k = 0°
Pages: P35–P37

Mill 1-18™



Ap1: .64–.71"
Cutting Edges: 2
Dia: .97–8.00"
k = 0°
Pages: P47–P52

Mill 1-25™



Ap1: .98"
Cutting Edges: 2
Dia: 1.50–5.00"
k = 0°
Pages: P59–P62

KSSM™ 0° IC 10



Ap1: .259"
Cutting Edges: 4
Dia: .750–3.0"
k = 0°
Pages: P67–P69

KSSM™ 0° IC 12



Ap1: .361"
Cutting Edges: 4
Dia: 2.00–10.00"
k = 0°
Page: P73

KSSM™ • Helical 0° IC 12



Ap1: 1.691–4.110"
Cutting Edges: 4
Dia: 2.00–3.00"
k = 0°
Pages: P79–P81

KSSM™ 0° • IC 15



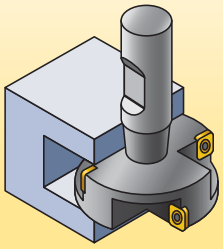
Ap1: .484"
Cutting Edges: 4
Dia: 2.00–8.00"
k = 0°
Page: P86

KFSR™



Ap1: .925–1.770"
Cutting Edges: 2
Dia: 3.00–4.00"
k = 0°
Page: P91

Slotting



T-Slot Cutter




Ap1: 9–22mm
Cutting Edges: 4
Dia: 21–50mm
k = 0° Page: Q3

KVNS™ A2™ Slotting Cutters




Ap1: .063–.245"
Cutting Edge: 1
Dia: 2.5–10"
k = 0° Pages: Q9–Q10

0° SN Slotting Cutters




B min = .161–.187"
Cutting Edges: 4
Dia: 3–6"
k = 0° Page: Q15

0° LN Slotting Cutters




B min = .250–.500"
Cutting Edges: 4
Dia: 2.5–8"
k = 0° Pages: Q19–Q20

KSSM™ Slotting Cutters • IC 10




B min = .551–.709"
Cutting Edges: 4
Dia: 4–12"
k = 0° Pages: Q27–Q35

KSSM™ Slotting Cutters • IC 12

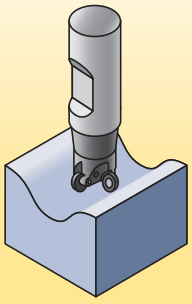



B min = .709–.917"
Cutting Edges: 4
Dia: 5–12"
k = 0° Pages: Q39–Q50

● first choice
○ alternate choice

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

Copy Mills



KenFeed™ 2X Series



Ap1: .059"
Cutting Edges: 6
Dia: 1–3"
HF Pages: R3–R4

KenFeed™ Mini



Ap1: .033–.040"
Cutting Edges: 3
Dia: .625–1"
HF Page: R9

KDR Rodeka™ IC 12



Ap1: .117"/.236"
Cutting Edges: 12/8
Dia: 1.25–4"
Round Pages: R13–R15, R19

KDM • RD.X07...



Ap1: .138"
Dia: .5–1"
Round Pages: R21–R22

KDM • RD.X10...



Ap1: .197"
Dia: .75–2"
Round Pages: R25–R26

KDM • RD.X12...



Ap1: .236"
Dia: 1–4"
Round Pages: R30–R31

KDM • RD.X16...



Ap1: .315"
Dia: 1.25–6"
Round Page: R35

KSRM™ • RP.T12



Ap1: .236"
Dia: 1.25–4"
Round Pages: R39–R41

KSRM™ • RP.T16



Ap1: .315"
Dia: 1.5-6"
Round Pages: R45–R47

KSRM™ • IC 3/4"



Ap1: .375"
Dia: 2–8"
Round Pages: R51–R52

KSRM™ • IC 1.0"



Ap1: .50"
Dia: 3–8"
Round Page: R56

Beyond BLAST™ • KSRM™ • IC 3/4"



Ap1: .375"
Dia: 2–8"
Round Pages: R61–R62

Beyond BLAST™ • KSRM™ • IC 1.0"



Ap1: .50"
Dia: 3–8"
Round Page: R66

Ball Nose End Mills • KDMB™



Ap1: .125–.625"
Dia: .25–1.25"
Pages: R71–R73

Ball Nose End Mills • KDMT™



Ap1: .118–.236"
Dia: .5–1"
Page: R87

KDMT™ High-Feed



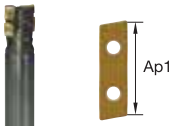
Ap1: up to .04"
Dia: .5–.75"
HF Page: R88

Z-Axis Plunge Mill



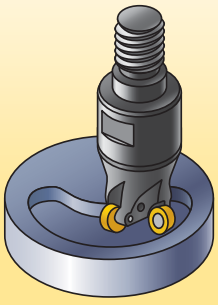
Ap1: .433"
Dia: 1.25–6"
k = 1.5° Pages: R93–R96

KDMR • Muliti-Functional



Ap1: up to 2.126"
Ap2: up to .374"
Dia: 6.3–1.984"
k = 0° Page: R103

Ceramic Mills



Ceramic Mills • RP



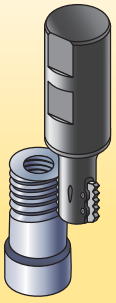
Ap1: .125–.250"
Dia: .625–4.00"
Round Pages: R109–R111

Ceramic Mills • RN



Ap1: .249"
Dia: 2.00–4.00"
Round Page: R115

Thread Mills



Thread Mills



Inserts:
Long: STN 16, STN 27
Normal: STN 11, STN 16, STN 27
Mini: STN 10
Dia: .354–1.46"
Page: S9

Thread Mills • Tapered Thread



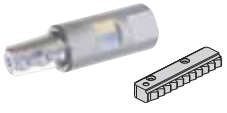
Inserts:
STN 11, STN 16, STN 27
Dia: .390–1.654"
Page: S10

Thread Mills



Inserts: TM25
Dia: .670–1.18"
Page: S4

Conical Thread Mills



Inserts: TM25
Dia: .550–1.100"
Page: S5

How Do Catalog Numbers Work?

Each character in our catalog number signifies a specific trait of that product. Use the following key columns and corresponding images to easily identify which attributes apply.



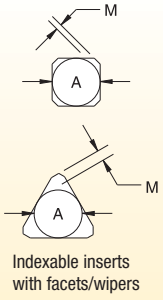
H — Insert Shape

A	Parallelogram	85°
C	Rhomboid	80°
E		75°
H	Hexagon	120°
L	Rectangular	90°
O	Octagon	135°
R	Round	—
S	Square	90°
T	Triangular	60°
X	Kennametal Standard Form	

N — Insert Clearance Angle

A	3°
B	5°
C	7°
D	15°
E	20°
F	25°
G	30°
N	0°
P	11°

G — Tolerance Class



Indexable inserts with facets/wipers

Indexable inserts with corner radii

Insert thickness

tolerance class	tolerance on "A"	tolerance on "M"	tolerance on "T"	tolerance class	tolerance on "A"	tolerance on "M"	tolerance on "T"
A	.001	.0002	.001	J	.002–.005*	.0002	.001
B	.001	.0002	.005	K	.002–.005*	.0005	.001
C	.001	.0005	.001	L	.002–.005*	.001	.001
D	.001	.0005	.005	M	.002–.005*	.003–.008*	.005
E	.001	.001	.001	N	.002–.005*	.003–.008*	.001
F	.0005	.0002	.001	P**	.0015	.0015	.0015
G	.001	.001	.005	U	.003–.010*	.005–.015*	.005
H	.0005	.0005	.001	—	—	—	—

*See table below for tolerances according to insert size and class.
**Kennametal standard only.

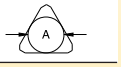
A	tolerances on "A"		tolerances on "M"	
	classes J, K, L, M, N	class U	classes M & N	class U
.1875–.3937	.002	.003	.003	.005
.4375–.5625	.003	.005	.005	.008
.5906–.8125	.004	.007	.006	.011
.8661–1.188	.005	.010	.007	.015
1.250–1.378	.006	.010	.008	.015

J — Geometry and Clamping Type

symbol	hole	shape of hole	chipbreaker	shape of insert's section
N	without		without	
R			single sided	
F			double sided	
A	with	cylindrical hole	without	
M			single sided	
G			double sided	
W		partly cylindrical hole, 40–60° countersink	without	
T			single sided	
Q		partly cylindrical hole, 40–60° double countersink	without	
U			double sided	
B		partly cylindrical hole, 70–90° countersink	without	
H			single sided	
C		partly cylindrical hole, 70–90° double countersink	without	
J			double sided	
X	special design			

5 — Size

A	symbol
1.000	8
.750	6
.625	5
.500	4
.375	3
.250	2



inscribed circle "A"

For shapes A, L, and X, see position #1; use length of leading cutting edge in increments of 1/4".

3 — Thickness



insert thickness

T	in 1/16"
.0938	1.5
.125	2
.1562	2.5
.1875	3
.2188	3.5
.2500	4
.3125	5

By referencing this easy-to-use guide, you can identify the correct product to meet your needs.



HNGJ535ENLD

5	E	N	—	L	D	
Corner Configuration	Cutting Edge Form	Insert Hand	Facet Width	Edge Prep Size	Rake Face Angle	Added Info

Cutting Edge Form

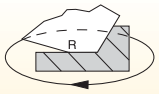
F Sharp

E Honed

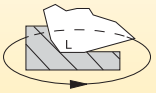
T T-land

S Honed T-land

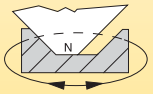
Insert Hand



direction of cutter rotation



direction of cutter rotation



direction of cutter rotation

Facet Width

.0312	2
.0469	3
.0625	4
.0938	6

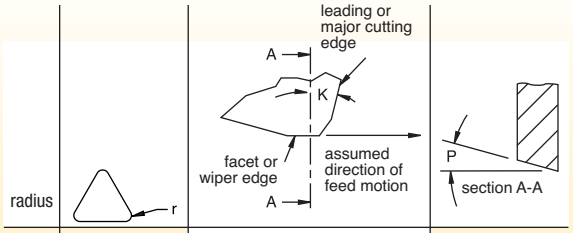
Facet width is number of 1/64" increments (1/32" for old styles).

Edge Prep Size

L = Light — sharp or lightly honed and/or T-land
G = General — medium hone and/or T-land
H = Heavy — large hone and/or T-land

Added Info

J = Polished rake face
P = Partial T-land
W = Wiper/radiused facet



radius	r
0	.004
0.5	.008
1	1/64
2	1/32
3	3/64
4	1/16
5	5/64
6	3/32
7	7/64
8	1/8

If letter is replaced by number(s), refer to table for radius "r".

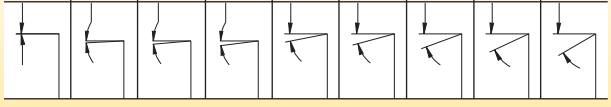
lead angle K

A	45°
D	handed 30°
K	neutral 30°
E	handed 15°
L	neutral 15°
P	0°

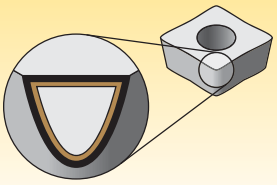
wiper edge clearance P

A	3°
B	5°
C	7°
D	15°
E	20°
F	25°
G	30°
N	0°
P	11°

N	A	B	C	P	D	E	F	G
0° or less	3°	5°	7°	11°	15°	20°	25°	30°



Nominal or average angle of rake on insert face at leading cutting edge before edge prep and before installation.



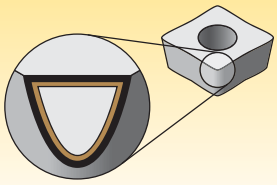
Coatings provide high-speed capability and are engineered for finishing to heavy roughing.

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

wear resistance ⟷ toughness

Grade

Coating	Grade Description	05	10	15	20	25	30	35	40	45
KMF	KMF is an uncoated carbide grade, fine grained substrate for machining of high-temperature alloys and non-ferrous materials.				K N S	K N S	K N			
K115M	A premium uncoated carbide grade designed for high edge wear resistance in non-ferrous and cast iron materials. Coolant use recommended.		K N	K N	N					
K313	An uncoated carbide grade suitable for machining cast iron, high-temperature alloys, and non-ferrous materials. This grade can be used both wet and dry and is designed for light and general machining.		K N S	K N S	K N	S				
K110M	A universal uncoated carbide grade for machining non-ferrous materials for use in light and general machining. K110M can be used with or without coolant.		K N S	K N S	K N					
K125M	An uncoated carbide grade particularly suitable for dry maching of steel. Its primary use is in light and general machining.				P	P	P			
KC410M	An extremely hard TiB_2-PVD-coated grade that provides very good wear characteristics at higher cutting speeds. KC410M resists edge build up, can help reduce burring, and generates excellent surface finishes. This grade is best suited for aluminum with <10% silicon and other non-ferrous materials.				N	N	N			
KC422M	A very wear resistant TiB_2-PVD-coated grade. Its hard coating and tough substrate make KC422M an excellent choice for medium to roughing applications in aluminum with <10% silicon and other non-ferrous materials.				N	N	N			
KC505M	A highly wear-resistant TiAlN-PVD-coated grade primarily for light machining in steel and hardened steel.		P	P						
										H



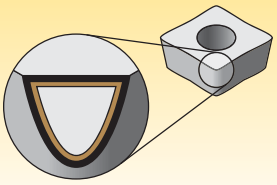
Coatings provide high-speed capability and are engineered for finishing to heavy roughing.

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

wear resistance ⟷ toughness

Grade

Coating	Grade Description	05	10	15	20	25	30	35	40	45
KC510M	A highly wear-resistant TiAiN-PVD-coated carbide grade primarily for use in milling aluminum and high-temperature alloys in light applications. Can also be used for machining steel and hardened steel.	P	P							
		N	N	N						
		S	S							
		H	H							
KC514M	A thicker TiAlN-PVD-coated carbide grade that combines high wear-resistance with good toughness. KC514M is primarily for light to medium machining of cast irons and can be used wet or dry.									
		K		K	K	K				
KC515M	A K10 substrate premium grade with built-in wear resistance and a TiAlN coating for extended life during finishing applications. Used in ball nose finishing and back draft inserts for the die and mold industry and is capable of running at moderate to high cutting speeds.	P	P	P						
		M	M							
		K	K							
KC520M	A TiAlN-PVD-coated carbide grade developed specifically for general machining of ductile cast iron and can be used with or without coolant.									
		K		K	K	K				
KC522M	AlTiN-PVD-coated carbide grade engineered to provide better performance in general machining of high-temperature alloys and stainless steel. KC522M resists breakage and offers improved wear resistance and increased strength.	P			P	P				
		M			M	M	M			
		K				K	K	K		
		S			S	S	S			
KC524M	A thicker coated TiAlN-PVD-coated carbide grade combining good wear-resistance and high toughness. It is primarily for general machining of all cast irons and can be used wet or dry.									
		K			K	K	K	K		
KC525M	A new universal TiAlN-PVD-coated carbide grade primarily for use in light and general machining of milling steel, stainless steel, and high-temperature alloys. KC525M can be used with or without coolant.	P			P	P	P			
		M			M	M	M			
		S			S	S	S			
KC527M	A TiAlN-PVD-coated carbide grade ideal for medium milling applications in steel and high strength ductile cast irons. For best results, use dry, but can be used wet.	P			P	P	P			
		K			K	K	K			



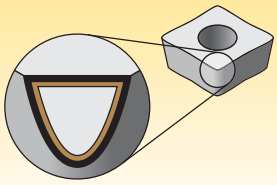
Coatings provide high-speed capability and are engineered for finishing to heavy roughing.

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

wear resistance ⟷ toughness

Grade

Coating	Grade Description	05	10	15	20	25	30	35	40	45
KC530M	A premium TiAlN-PVD-coated carbide grade enabling extended tool life at moderate feeds and high cutting speeds. First choice for milling in all steels, including die and mold steels, and is recommended for use without coolant.	P, M								
KC537M	A tough, general-purpose TiAlN-PVD-coated carbide grade for medium to heavy milling applications for use in all steels and cast irons. KC537M can be used either wet or dry.	P, M, K								
KC5410	An extremely hard TiB_2-PVD-coated grade that provides very good wear characteristics at high cutting speeds and is best suited for machining aluminum with <10% silicon and other non-ferrous materials. KC5410 resists built-up edge, can help reduce the burring effect, and will generate excellent surface finishes.	N								
KC610M	A high-performance, TiN-TiCN-TiN-PVD-coated carbide grade characterized by good hardness and wear resistance for milling all types of material and is the first choice for steel. KC610M should be used with coolant or minimal lubrication.	P, M, K, S								
KC620M	A TiN-PVD-coated carbide grade suitable for machining cast iron, non-ferrous materials, and aluminum alloys that can be used for wet or dry machining.	P, K, N								
KC635M	A high-performance, TiAlN-PVD-coated grade characterized by high hardness and wear resistance. KC635M is suitable for cutting hard materials up to 65 HRC and is first choice for stainless steel.	P, M, K, H								
KCPM20	KCPM20 is a multilayered TiN-MT-TiCN-Al_2O_3-CVD-coated carbide grade with advanced Beyond™ post-coat treatment. The substrate is a well-balanced combination of wear resistance and toughness. KCPM20 is primarily for light and general machining of steels and stainless steels or roughing of cast irons.	P, M, K								
KC715M	KC715M has a deformed substrate and PVD coating that can handle high temperatures and higher surface speeds making it ideal for dry machining. KC715M is primarily for use in light and general machining of steel, stainless steel, and cast steel.	P								



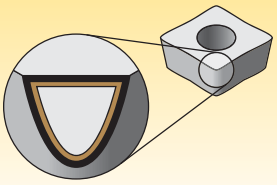
Coatings provide high-speed capability and are engineered for finishing to heavy roughing.

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

wear resistance ⟷ toughness

Grade

Coating	Grade Description	05	10	15	20	25	30	35	40	45
KC720M	A TiAlN-TiN-PVD-coated carbide grade engineered to provide balanced wear and deformation resistance in combination with excellent breakage resistance.									
KC725M	A high-performance TiAlN-PVD-coated carbide grade for milling steel, stainless steel, and ductile cast iron. The good thermal shock resistance of the substrate makes this grade ideal for both wet and dry machining. KC725M is primarily for use in general and heavy machining.									
KC730M	A TiN-PVD-coated carbide grade with a tough substrate and is recommended for general milling with moderate speeds. KC730M can be used wet or dry.									
KC735M	A TiN-PVD-coated carbide grade offering an unusual combination of high toughness and wear resistance. Even under extreme toughness requirements, KC735M achieves outstanding results in general and heavy machining applications and is suitable for dry and wet machining.									
KCK15	A multilayered TiN-MT-TiCN-Al_2O_3-CVD-coated carbide grade with advanced Beyond™ post-coat treatment. KCK15 is a wear-resistant grade with balanced toughness for general milling of cast irons at higher speeds. Best results in dry but can also be used wet.									
KTPK20	A multilayered TiAlN-AlCrN-PVD-coated cermet. This tough cermet is primarily for use in light and general machining of steel, stainless steel, and cast iron and performs best dry.									
KCPK30	A multilayered TiN-TiCN-Al_2O_3-CVD-coated carbide grade with advanced Beyond™ post-coat treatment and a very tough substrate. KCPK30 has a wide application area in general and rough milling of steels and cast irons. It performs best dry but can also be used wet.									
KCMP30	A multilayered TiN-TiCN-Al_2O_3-CVD-coated carbide grade with advanced Beyond™ post-coat treatment and a very tough substrate. KCMP30 has a wide application area in general and rough milling of steels. It performs best dry but can also be used wet.									



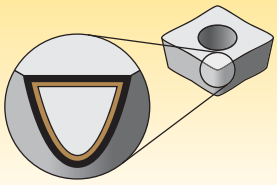
Coatings provide high-speed capability and are engineered for finishing to heavy roughing.

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

wear resistance ⟷ toughness

Grade

Coating	Grade Description	05	10	15	20	25	30	35	40	45
KC907M	A TiN-MT-TiCN-Al_2O_3-CVD-coated carbide grade with a very hard substrate providing excellent wear resistance. Primarily for use in light cuts and finishing of cast iron.	K	K	K						
KC914M	A TiN-TiCN-Al_2O_3-ZrCN-CVD-coated carbide grade ideal for light to medium cutting of gray cast iron at high speeds that performs best dry.	K		K	K					
KC917M	A wear-resistant multilayered TiN-TiCN-Al_2O_3-CVD-coated carbide grade with balanced toughness for general milling of cast irons at high speeds. Best results achieved when used with coolant but can also be used dry.	K		K	K	K				
KC924M	A multilayered TiN-TiCN-Al_2O_3-CVD-coated carbide grade with good toughness for medium to heavy milling of all cast irons. Best results when machining dry, but can be used wet.	K			K	K	K			
KC927M	A multilayered TiN-TiCN-Al_2O_3-TiN-CVD-coated carbide grade with a tough substrate used for medium machining of all steels and ductile cast irons. Best results when machining dry but can be used wet.	P M K				P M K	P M K			
KYSM10	KYSM10 — previously KY2100 — has good mechanical shock resistance combined with edge wear resistance and is used for general-purpose machining of high-temperature alloys. KYSM10 can also be used for machining steel and stainless steel.	M S		M S	M S					
KY3500	A ceramic cutting material based on micro-grain Si_3N_4 primarily for use in light to general machining of gray cast iron and ferritic ductile cast iron. Dry machining is preferred while using this grade.	K			K	K	K	K		
KYHS10	KYHS10 — previously KY4300 — is an Al_2O_3 matrix reinforced with SiC whiskers for excellent toughness suited for machining high-temperature and ferrous alloys with a high Brinell hardness.	K S H		K	K	K				



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

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

wear resistance ⟷ toughness

Grade

Coating	Grade Description	05	10	15	20	25	30	35	40	45
KYSP30	Combines excellent wear properties, fracture toughness, and thermal shock resistance for general purpose to finish machining of high-temperature alloys. KYSP30 provides superior depth-of-cut notch resistance compared to whisker ceramics.	S								
KYS30	KYS30 is the latest in the line of α/βSiAlON grades for general purpose to finish machining of high-temperature alloys. This grade provides excellent wear characteristics, with better toughness and thermal shock resistance than whisker ceramics. KYS30 also gives improved thermal stability.	S								
KB1340	A PCBN cutting material with micrograin structure for light to general machining of gray cast iron and hard materials. The grade has good wear resistance and is ideal for finishing.	K								
KD1410	A PCD-tip brazed to carbide for machining aluminum with a very high silicon content, abrasive non-ferrous materials, and fiber-reinforced plastics. KD1410 can be used at very high cutting speeds, even where good surface finishes are required. This grade can be used both wet or dry but is suggested to use coolant where good surface finishes are required.	N								
KD1415	PCD-tip brazed to carbide for general machining of aluminum with a low silicon content, non-ferrous heavy metals, and plastics. KD1415 can be used at high cutting speeds and for continuous cutting, even where outstanding surface finishes are required. KD1415 is suitable for wet and dry machining.	N								
KD1420	A varied-grain, PCD-brazed tip grade suited for machining low silicon aluminum, non-ferrous heavy metals, and plastics. It can be used for high cutting speeds where outstanding surface finishes are required and is suitable for dry and wet machining.	N								

Grade Conversion by Name Only
KSSR™ — Face Mill Platform
HexaCut™ — Face Mill Platform
Machining cast iron only.
Inserts are the same; only the grade name changes.

old TN grade names	NEW grade name
TN2510	KC914M
TN5505	KC907M
TN5515	KC917M
TN5520	KC924M
TN6510	KC514M
TN6520	KC524M
TN6525	KC527M
TN6540	KC537M
TN7525	KC927M



Face Mills

Dodeka Series • Performance Booster (12 True Edges per Insert) O2–O26

Dodeka Mini O4–O15

Dodeka O16–O22

Dodeka MAX O24–O26

MEGA Series • Heavy-Duty Machining O28–O43

MEGA 45° O28–O33

MEGA 15 . . . . . O36–O37

MEGA 60 . . . . . O38–O40

MEGA 90 . . . . . O41–O43

Beyond BLAST KSSM 45° • First Choice for Machining Titanium O44–O48

KSSM 45° • Conventional Machining O49–O54

KSOM Mini • KSOM • Best-in-Class Free-Cutting Face Mills O56–O67

Fix-Perfect Series O68–O85

Fix-Perfect Finisher • Cast Iron O70–O72

Fix-Perfect 20° • Cast Iron O74–O77, O82–O85

Fix-Perfect 0° • Cast Iron O78–O81

HexaCut Series O86–O99

HexaCut 45° • Cast Iron O89–O93

HexaCut 30° • Cast Iron O94–O99

KSSR 6° • Cast Iron • Roughing and Finishing (6° Lead) O100–O107

KCMS Cartridge Milling System O108–O111

KSCM PCD AluMill O112–O121

Fix-Perfect 0° Aluminum O122–O128

Chamfer Mills (60°, 45°, 30°) O129–O137



Dodeka™ Series • Leader in Advanced Face Milling Applications

Primary Application

Dodeka, Dodeka Mini, and Dodeka MAX™ are the most comprehensive face milling boosters on the market today. Twelve true cutting edges per insert mean low cost per edge and high productivity. With Beyond™ premium milling grades, you will see up to 30% higher Metal Removal Rates (MRR), 25% lower cutting forces due to real soft cutting action, and up to 35% better tool life in light to heavy machining.

Features and Benefits

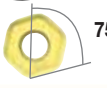
Dodeka Mini Series • Most comprehensive face milling booster in the market, up to Ap1 max = .174"

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

Dodeka Mini High-Feed



12 True Cutting Edges



75° lead

Insert HNGJ43
HNPJ43

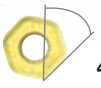
Ap1 max = .064"

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

Dodeka Mini 45°



12 True Cutting Edges



45° lead

Insert HNGJ43
HNPJ43

Ap1 max = .127"

Best-in-class leader in face milling up to Ap1 max = .127". Excellent choice for near net shape strategies and driven tools.

Dodeka Mini 30°



12 True Cutting Edges



30° lead

Insert HNGJ43
HNPJ43

Ap1 max = .174"

Achieve a higher axial depth-of-cut capabiltiy up to Ap1 = .174" with standard Dodeka Mini inserts.



Dodeka™ Mini Series

insert size HN.J43
Ap1 max = .174"
page O4–O15

Dodeka™

insert size HN.J535
Ap1 max = .178"
page O16–O22

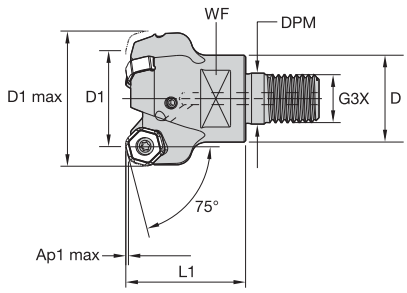
Dodeka MAX™

insert size HN.J75
Ap1 max = .315"
page O24–O26

P M K N S — *Capable in all material groups • Excellent results in machining titanium*

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







Dodeka Mini High-Feed 75° • Screw-On End Mills

order number	catalog number	D1	D1 max	D	DPM	G3X	L1	WF	Ap1 max	Z	lbs	max RPM
4136401	**KSHRHF100D02M16HN43**	1.000	1.518	1.142	.669	M16	1.250	.866	.064	2	.39	19800
4136402	**KSHRHF100D03M16HN43**	1.000	1.518	1.142	.669	M16	1.250	.866	.064	3	.36	19800
4136403	**KSHRHF125D03M16HN43**	1.250	1.768	1.142	.669	M16	1.500	.866	.065	3	.50	17600
4136404	**KSHRHF125D04M16HN43**	1.250	1.768	1.142	.669	M16	1.500	.866	.065	4	.52	17600
4136405	**KSHRHF150D04M16HN43**	1.500	2.018	1.142	.669	M16	1.500	.866	.065	4	.58	15800
4136406	**KSHRHF150D05M16HN43**	1.500	2.018	1.142	.669	M16	1.500	.866	.065	5	.59	15800

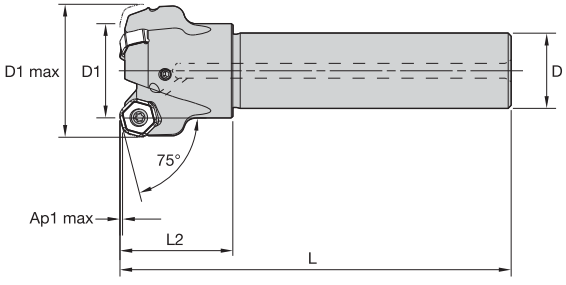
Spare Parts





D1	insert screw	in. lbs.	wrench
1.000	**193.492**	31	**170.025**
1.250	**193.492**	31	**170.025**
1.500	**193.492**	31	**170.025**







Dodeka Mini High-Feed 75° • Cylindrical End Mills

order number	catalog number	D1	D1 max	D	L	L2	Ap1 max	Z	lbs	max RPM
4136407	**KSHRHF100D02C075HN43L480**	1.000	1.518	.750	4.800	1.250	.064	2	.73	19800
4136408	**KSHRHF100D03C075HN43L480**	1.000	1.518	.750	4.800	1.250	.064	3	.69	19800
4136409	**KSHRHF125D03C100HN43L520**	1.250	1.768	1.000	5.200	1.500	.065	3	1.27	17600
4136410	**KSHRHF125D04C100HN43L520**	1.250	1.768	1.000	5.200	1.500	.065	4	1.28	17600

Spare Parts

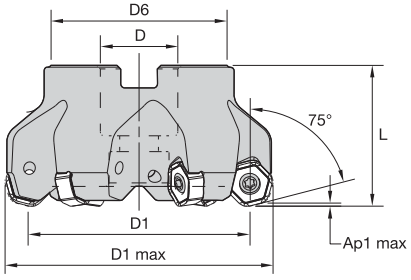




D1	insert screw	in. lbs.	wrench
1.000	**193.492**	31	**170.025**
1.250	**193.492**	31	**170.025**

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







Dodeka Mini High-Feed 75° • Shell Mills

order number	catalog number	D1	D1 max	D	D6	L	Ap1 max	Z	lbs	max RPM
4136411	**KSHRHF150HN43F3**	1.500	2.018	.750	1.750	1.575	.065	5	.75	16700
4136412	**KSHRHF200HN43M3**	2.000	2.517	.750	1.750	1.575	.065	5	1.10	12500
4136413	**KSHRHF250HN43M3**	2.500	3.017	.750	1.750	1.575	.065	6	1.49	10000
4136414	**KSHRHF300HN43M4**	3.000	3.517	1.000	2.189	1.750	.065	8	2.21	8300

Spare Parts

D1	 insert screw	in. lbs.	 socket-head cap screw	 wrench
1.500	**193.492**	31	**S445**	170.025
2.000	**193.492**	31	**S445**	170.025
2.500	**193.492**	31	**S445**	170.025
3.000	**193.492**	31	**S458**	170.025

Dodeka Mini High-Feed



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

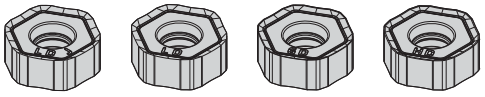
Chip thinning effect due to lead angle 14.5°. Tremendous enlargement of feed rate and Metal Removal Rate (MRR).

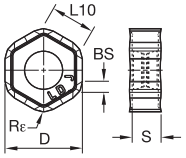
Up to 40% shorter machining cycle time.

Insert Selection Guide

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.E..LD	KC725M	**.S..GD**	**KC725M**	.S..HD	KC725M
P3–P4	.E..LD	KCPK30	**.S..GD**	**KCPK30**	.S..HD	KCPK30
P5–P6	.E..LD	KCPM20	**.S..GD**	**KCPM20**	.S..HD	KCPM20
M1–M2	.E..LD	KC725M	**.S..GD**	**KC725M**	.S..HD	KC725M
M3	.E..LD	KCPK30	**.S..GD**	**KCPK30**	.S..HD	KCPK30
K1–K2	.E..LD	KCK15	**.S..GD**	**KCK15**	.S..HD	KCK15
K3	.E..LD	KCPK30	**.S..GD**	**KCPK30**	.S..HD	KCPK30
N1–N2	.F..LDJ	K313	**.F..LDJ**	**KC410M**	.E..LD	KC510M
N3	.F..LDJ	KC410M	**.E..LD**	**KC510M**	.E..LD	KC510M
S1–S2	.E..LD	KC725M	**.S..GD**	**KC725M**	.S..HD	KC725M
S3	.E..LD	KC725M	**.S..GD**	**KC725M**	.S..HD	KC725M
S4	.S..GD	KC725M	**.S..HD**	**KC725M**	–	–
H1	–	–	**–**	**–**	–	–

Indexable Inserts


HNGJ-LDJ HNGJ-LD HNPJ-GD HNPJ-HD



● first choice
○ alternate choice

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

Face Mills

HNGJ-LDJ

catalog number	D	BS	L10	Rε	S	hm	cutting edges	K313	KC410M	KC510M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30
HNGJ43ANFNLDJ	.472	.060	.254	.039	.176	.001	12	●	●							

HNGJ-LD

catalog number	D	BS	L10	Rε	S	hm	cutting edges	K313	KC410M	KC510M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30
HNGJ43ANENLD	.472	.060	.254	.039	.176	.002	12			●	●	●	●	●	●	●
HNGJ438ANENLD	.472	–	.253	.126	.177	.002	12				●	●	●	●	●	●

HNPJ-GD

catalog number	D	BS	L10	Rε	S	hm	cutting edges	K313	KC410M	KC510M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30
HNPJ43ANSNGD	.472	.057	.254	.039	.175	.003	12				●	●	●	●	●	●

HNPJ-HD

catalog number	D	BS	L10	Rε	S	hm	cutting edges	K313	KC410M	KC510M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30
HNPJ43ANSNHD	.472	.057	.254	.039	.173	.006	12				●	●	●	●	●	●
HNPJ438ANSNHD	.472	–	.253	.126	.174	.004	12				●	●	●	●	●	●

Recommended Starting Speeds [SFM]

Material Group		K313			KC410M			KC510M			KC520M			KC522M		
P	1	–	–	–	–	–	–	–	–	–	–	–	–	1300	**1130**	1060
	2	–	–	–	–	–	–	–	–	–	–	–	–	1080	**950**	790
	3	–	–	–	–	–	–	–	–	–	–	–	–	1000	**840**	700
	4	–	–	–	–	–	–	960	**780**	660	–	–	–	890	**730**	590
	5	–	–	–	–	–	–	–	–	–	–	–	–	730	**660**	590
	6	–	–	–	–	–	–	–	–	–	–	–	–	650	**490**	400
M	1	–	–	–	–	–	–	–	–	–	–	–	–	800	**710**	650
	2	–	–	–	–	–	–	–	–	–	–	–	–	730	**620**	520
	3	–	–	–	–	–	–	–	–	–	–	–	–	550	**480**	370
K	1	–	–	–	–	–	–	1150	**1040**	940	1060	**960**	850	900	**820**	720
	2	–	–	–	–	–	–	910	**820**	760	830	**740**	700	710	**640**	590
	3	–	–	–	–	–	–	770	**680**	620	700	**620**	560	590	**530**	480
N	1–2	3130	**2740**	2350	4790	**4260**	3920	2520	**2240**	2060	–	–	–	–	–	–
	3	–	–	–	4260	**3920**	3600	2280	**2100**	1920	–	–	–	–	–	–
S	1	–	–	–	–	–	–	–	–	–	–	–	–	160	**140**	110
	2	–	–	–	–	–	–	–	–	–	–	–	–	160	**140**	110
	3	–	–	–	–	–	–	–	–	–	–	–	–	200	**160**	110
	4	–	–	–	–	–	–	–	–	–	–	–	–	280	**200**	140
H	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

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

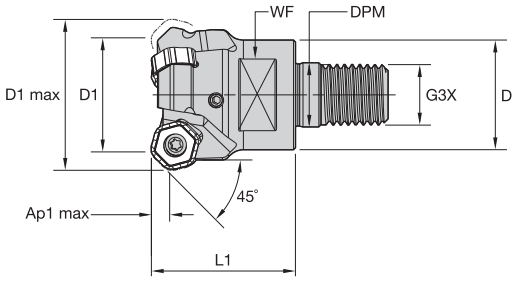
Light Machining	General Purpose	Heavy Machining

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	.013	**.027**	.055	.010	**.019**	.039	.008	**.017**	.034	.008	**.016**	.032	.008	**.015**	.031	.F..LDJ
.E..LD	.013	**.040**	.086	.010	**.029**	.060	.008	**.025**	.051	.008	**.024**	.047	.008	**.023**	.046	.E..LD
.S..GD	.027	**.060**	.104	.019	**.043**	.071	.017	**.037**	.060	.016	**.034**	.056	.015	**.033**	.054	.S..GD
.S..HD	.027	**.070**	.121	.019	**.049**	.081	.017	**.042**	.068	.016	**.040**	.063	.015	**.039**	.062	.S..HD

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

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







Dodeka Mini 45° • Screw-On End Mills

order number	catalog number	D1	D1 max	D	DPM	G3X	L1	WF	Ap1 max	Z	lbs	max RPM
4130252	**KSHR100D02M16HN06**	1.000	1.322	1.142	.669	M16	1.250	.866	.127	2	.32	19800
4130383	**KSHR100D03M16HN06**	1.000	1.322	1.142	.669	M16	1.250	.866	.127	3	.29	19800
4130384	**KSHR125D03M16HN06**	1.250	1.572	1.142	.669	M16	1.500	.866	.127	3	.43	17600
4130385	**KSHR125D04M16HN06**	1.250	1.572	1.142	.669	M16	1.500	.866	.127	4	.42	17600
4130386	**KSHR150D04M16HN06**	1.500	1.822	1.142	.669	M16	1.500	.866	.127	4	.51	15800
4130387	**KSHR150D05M16HN06**	1.500	1.822	1.142	.669	M16	1.500	.866	.127	5	.51	15800

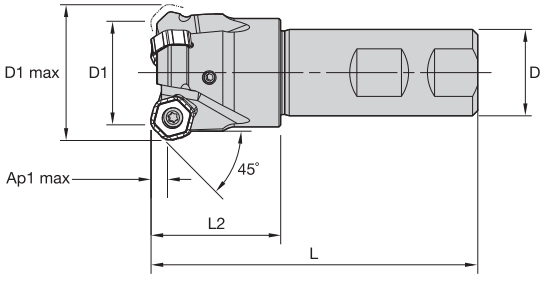
Spare Parts





D1	insert screw	in. lbs.	wrench
1.000	**193.492**	31	**170.025**
1.250	**193.492**	31	**170.025**
1.500	**193.492**	31	**170.025**







Dodeka Mini 45° • Weldon® End Mills

order number	catalog number	D1	D1 max	D	L	L2	Ap1 max	Z	lbs	max RPM
4130514	**KSHR100D02W075HN06**	1.000	1.322	.750	3.280	1.250	.127	2	.46	19800
4130515	**KSHR100D03W075HN06**	1.000	1.322	.750	3.280	1.250	.127	3	.44	19800
4130516	**KSHR125D03W100HN06**	1.250	1.572	1.000	3.780	1.500	.127	3	.88	17600
4130517	**KSHR125D04W100HN06**	1.250	1.572	1.000	3.780	1.500	.127	4	.89	17600

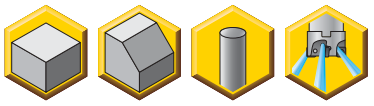
Spare Parts

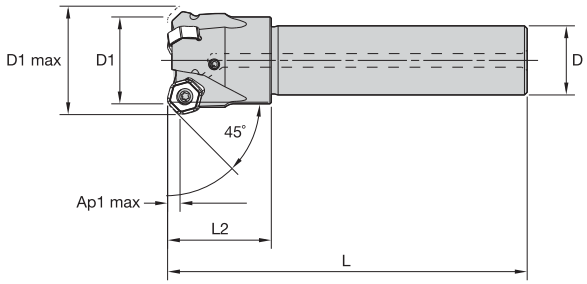




D1	insert screw	in. lbs.	wrench
1.000	**193.492**	31	**170.025**
1.250	**193.492**	31	**170.025**

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







Dodeka Mini 45° • Cylindrical End Mills

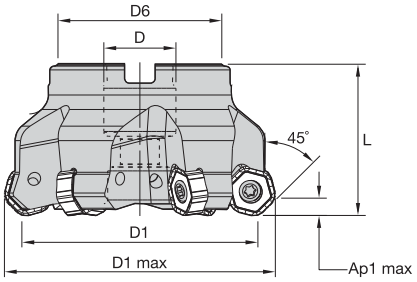
order number	catalog number	D1	D1 max	D	L	L2	Ap1 max	Z	lbs	max RPM
4130518	**KSHR100D02C075HN06L480**	1.000	1.322	.750	4.800	1.250	.127	2	.64	19800
4130519	**KSHR100D03C075HN06L480**	1.000	1.322	.750	4.800	1.250	.127	3	.62	19800
4130522	**KSHR100D02C100HN06L800**	1.000	1.322	1.000	8.000	1.250	.127	2	1.66	19800
4130533	**KSHR100D03C100HN06L800**	1.000	1.322	1.000	8.000	1.250	.127	3	1.64	19800
4130520	**KSHR125D03C100HN06L520**	1.250	1.572	1.000	5.200	1.500	.127	3	1.19	17600
4130521	**KSHR125D04C100HN06L520**	1.250	1.572	1.000	5.200	1.500	.127	4	1.20	17600

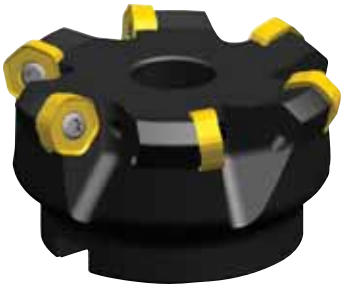
Spare Parts

D1	 insert screw	in. lbs.	 wrench
1.000	**193.492**	31	**170.025**
1.250	**193.492**	31	**170.025**

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







Dodeka Mini 45° • Shell Mills

order number	catalog number	D1	D1 max	D	D6	L	Ap1 max	Z	lbs	max RPM
4130426	**KSHR150HN4345M3**	1.500	1.822	.500	1.440	1.575	.127	4	.57	16700
4130427	**KSHR150HN4345F3**	1.500	1.822	.500	1.440	1.575	.127	5	.56	16700
4130428	**KSHR200HN4345C3**	2.000	2.321	.750	1.750	1.575	.127	4	.93	12500
4130429	**KSHR200HN4345M3**	2.000	2.321	.750	1.750	1.575	.127	5	.93	12500
4130430	**KSHR200HN4345F3**	2.000	2.321	.750	1.750	1.575	.127	6	.97	12500
4130431	**KSHR250HN4345C3**	2.500	2.821	.750	1.750	1.575	.127	4	1.20	10000
4130432	**KSHR250HN4345M3**	2.500	2.821	.750	1.750	1.575	.127	6	1.27	10000
4130493	**KSHR250HN4345F3**	2.500	2.821	.750	1.750	1.575	.127	8	1.29	10000
4130494	**KSHR300HN4345C4**	3.000	3.321	1.000	2.189	1.750	.127	5	1.90	8300
4130495	**KSHR300HN4345M4**	3.000	3.321	1.000	2.189	1.750	.127	8	2.09	8300
4130496	**KSHR300HN4345F4**	3.000	3.321	1.000	2.189	1.750	.127	10	2.07	8300
4130497	**KSHR400HN4345C6**	4.000	4.321	1.500	3.661	1.750	.127	6	3.48	6300
4130498	**KSHR400HN4345M6**	4.000	4.321	1.500	3.661	1.750	.127	9	3.66	6300
4130499	**KSHR400HN4345F6**	4.000	4.321	1.500	3.661	1.750	.127	12	3.62	6300
4130500	**KSHR500HN4345C6**	5.000	5.320	1.500	3.652	2.380	.127	8	6.38	5000
4130501	**KSHR500HN4345M6**	5.000	5.320	1.500	3.652	2.380	.127	12	6.59	5000
4130502	**KSHR500HN4345F6**	5.000	5.320	1.500	3.652	2.380	.127	16	6.70	5000

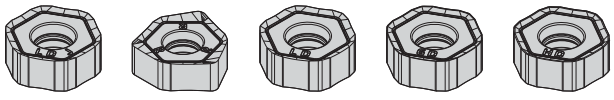
Spare Parts

D1	 insert screw	in. lbs.	 wrench	 socket-head cap screw	 coolant lock screw assembly
1.500	**193.492**	31	**170.025**	**S424**	**–**
2.000	**193.492**	31	**170.025**	**S445**	**–**
2.500	**193.492**	31	**170.025**	**S445**	**–**
3.000	**193.492**	31	**170.025**	**S458**	**–**
4.000	**193.492**	31	**170.025**	**–**	**S2165C**
5.000	**193.492**	31	**170.025**	**–**	**S2163C**

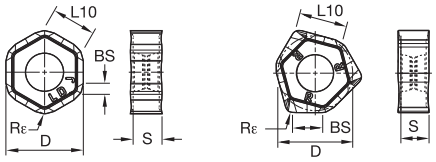
Insert Selection Guide

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.E..LD	KC725M	**.S..GD**	**KC725M**	.S..HD	KC725M
P3–P4	.E..LD	KCPK30	**.S..GD**	**KCPK30**	.S..HD	KCPK30
P5–P6	.E..LD	KCPM20	**.S..GD**	**KCPM20**	.S..HD	KCPM20
M1–M2	.E..LD	KC725M	**.S..GD**	**KC725M**	.S..HD	KC725M
M3	.E..LD	KCPK30	**.S..GD**	**KCPK30**	.S..HD	KCPK30
K1–K2	.E..LD	KCK15	**.S..GD**	**KCK15**	.S..HD	KCK15
K3	.E..LD	KCPK30	**.S..GD**	**KCPK30**	.S..HD	KCPK30
N1–N2	.F..LDJ	K313	**.F..LDJ**	**KC410M**	.E..LD	KC510M
N3	.F..LDJ	KC410M	**.E..LD**	**KC510M**	.E..LD	KC510M
S1–S2	.E..LD	KC725M	**.S..GD**	**KC725M**	.S..HD	KC725M
S3	.E..LD	KC725M	**.S..GD**	**KC725M**	.S..HD	KC725M
S4	.S..GD	KC725M	**.S..HD**	**KC725M**	–	–
H1	.E..LD	KC510M	**.S..GD**	**KC522M**	–	–

Indexable Inserts



HNGJ-LDJ | Wiper XNGJ * | HNGJ-LD | HNPJ-GD | HNPJ-HD



● first choice
○ alternate choice

	K313	KC410M	KC510M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30
P					○	●		●	●
M					●	●		○	●
K				●	●	○		●	○	○
N	●	●	○						
S						●	●			
H				●		●				

Face Mills

HNGJ-LDJ/XNGJ-LDJ

catalog number	D	BS	L10	Rε	S	hm	cutting edges	K313	KC410M	KC510M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30
HNGJ43ANFNLDJ	.472	.060	.254	.039	.176	.001	12	●	●							
XNGJ43ANFNLDJ3W	.472	.189	.283	.063	.178	.001	3	●	●							

* For Wiper insert XNGJ, 3 left-hand (LH) and 3 right-hand (RH) wiper edges per insert.

HNGJ-LD/XNGJ-LD

catalog number	D	BS	L10	Rε	S	hm	cutting edges	K313	KC410M	KC510M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30
HNGJ43ANENLD	.472	.060	.254	.039	.176	.002	12			●	●	●	●	●	●	●
HNGJ438ANENLD	.472	–	.253	.126	.177	.002	12				●	●	●	●	●	●
XNGJ43ANENLD3W	.472	.189	.283	.063	.178	.002	3			●	●	●	●	●	●	●

* For Wiper insert XNGJ, 3 left-hand (LH) and 3 right-hand (RH) wiper edges per insert.

HNPJ-GD

catalog number	D	BS	L10	Rε	S	hm	cutting edges	K313	KC410M	KC510M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30
HNPJ43ANSNGD	.472	.057	.254	.039	.175	.003	12				●	●	●	●	●	●

HNPJ-HD

catalog number	D	BS	L10	Rε	S	hm	cutting edges	K313	KC410M	KC510M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30
HNPJ43ANSNHD	.472	.057	.254	.039	.173	.006	12				●	●	●	●	●	●
HNPJ438ANSNHD	.472	–	.253	.126	.174	.004	12				●	●	●	●	●	●

Recommended Starting Speeds [SFM]

Material Group		K313			KC410M			KC510M			KC520M			KC522M		
P	1	–	–	–	–	–	–	–	–	–	–	–	–	1300	**1130**	1060
	2	–	–	–	–	–	–	–	–	–	–	–	–	1080	**950**	790
	3	–	–	–	–	–	–	–	–	–	–	–	–	1000	**840**	700
	4	–	–	–	–	–	–	960	**780**	660	–	–	–	890	**730**	590
	5	–	–	–	–	–	–	–	–	–	–	–	–	730	**660**	590
	6	–	–	–	–	–	–	–	–	–	–	–	–	650	**490**	400
M	1	–	–	–	–	–	–	–	–	–	–	–	–	800	**710**	650
	2	–	–	–	–	–	–	–	–	–	–	–	–	730	**620**	520
	3	–	–	–	–	–	–	–	–	–	–	–	–	550	**480**	370
K	1	–	–	–	–	–	–	1150	**1040**	940	1060	**960**	850	900	**820**	720
	2	–	–	–	–	–	–	910	**820**	760	830	**740**	700	710	**640**	590
	3	–	–	–	–	–	–	770	**680**	620	700	**620**	560	590	**530**	480
N	1–2	3130	**2740**	2350	4790	**4260**	3920	2520	**2240**	2060	–	–	–	–	–	–
	3	–	–	–	4260	**3920**	3600	2280	**2100**	1920	–	–	–	–	–	–
S	1	–	–	–	–	–	–	–	–	–	–	–	–	160	**140**	110
	2	–	–	–	–	–	–	–	–	–	–	–	–	160	**140**	110
	3	–	–	–	–	–	–	–	–	–	–	–	–	200	**160**	110
	4	–	–	–	–	–	–	–	–	–	–	–	–	280	**200**	140
H	1	–	–	–	–	–	–	630	**510**	360	–	–	–	470	**360**	280
	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

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

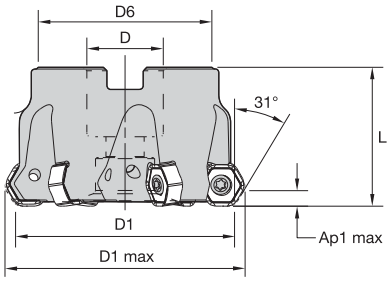
Light Machining	General Purpose	Heavy Machining

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	**.010**	.019	.004	**.007**	.014	.003	**.006**	.012	.003	**.006**	.012	.003	**.006**	.011	.F..LDJ
.E..LD	.005	**.014**	.029	.004	**.011**	.021	.003	**.009**	.019	.003	**.009**	.017	.003	**.008**	.017	.E..LD
.S..GD	.010	**.022**	.038	.007	**.016**	.028	.006	**.014**	.024	.006	**.013**	.022	.006	**.013**	.022	.S..GD
.S..HD	.010	**.024**	.039	.007	**.018**	.029	.006	**.015**	.025	.006	**.014**	.023	.006	**.014**	.023	.S..HD

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

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







Dodeka Mini 30° • Shell Mills

order number	catalog number	D1	D1 max	D	D6	L	Ap1 max	Z	lbs	max RPM
4136389	**KSHRHD150HN43M2**	1.500	1.744	.500	1.440	1.575	.174	4	.48	16700
4136390	**KSHRHD150HN43F2**	1.500	1.744	.500	1.440	1.575	.174	5	.48	16700
4136391	**KSHRHD200HN43C3**	2.000	2.242	.750	1.750	1.575	.174	4	.85	12500
4136392	**KSHRHD200HN43M3**	2.000	2.242	.750	1.750	1.575	.174	5	.87	12500
4136393	**KSHRHD250HN43C3**	2.500	2.743	.750	1.750	1.575	.174	4	1.17	10000
4136394	**KSHRHD250HN43M3**	2.500	2.743	.750	1.750	1.575	.174	6	1.21	10000
4136395	**KSHRHD300HN43C4**	3.000	3.241	1.000	2.189	1.750	.174	5	1.86	8300
4136396	**KSHRHD300HN43M4**	3.000	3.241	1.000	2.189	1.750	.174	8	1.96	8300
4136397	**KSHRHD400HN43C6**	4.000	4.243	1.500	3.661	1.750	.174	6	3.36	6300
4136398	**KSHRHD400HN43M6**	4.000	4.243	1.500	3.661	1.750	.174	9	3.51	6300
4136399	**KSHRHD500HN43C6**	5.000	5.240	1.500	3.652	2.380	.175	8	6.31	5000
4136400	**KSHRHD500HN43M6**	5.000	5.240	1.500	3.652	2.380	.175	12	6.53	5000

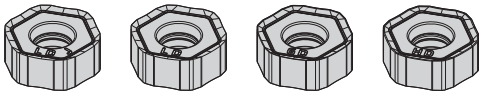
Spare Parts

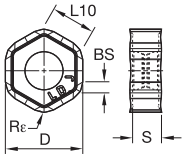
D1	 insert screw	in. lbs.	 wrench	 socket-head cap screw	 coolant lock screw assembly
1.500	**193.492**	31	**170.025**	**S424**	**–**
2.000	**193.492**	31	**170.025**	**S445**	**–**
2.500	**193.492**	31	**170.025**	**S445**	**–**
3.000	**193.492**	31	**170.025**	**S458**	**–**
4.000	**193.492**	31	**170.025**	**–**	**S2165C**
5.000	**193.492**	31	**170.025**	**–**	**S2163C**

Insert Selection Guide

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.E..LD	KC725M	**.S..GD**	**KC725M**	.S..HD	KC725M
P3–P4	.E..LD	KCPK30	**.S..GD**	**KCPK30**	.S..HD	KCPK30
P5–P6	.E..LD	KCPM20	**.S..GD**	**KCPM20**	.S..HD	KCPM20
M1–M2	.E..LD	KC725M	**.S..GD**	**KC725M**	.S..HD	KC725M
M3	.E..LD	KCPK30	**.S..GD**	**KCPK30**	.S..HD	KCPK30
K1–K2	.E..LD	KCK15	**.S..GD**	**KCK15**	.S..HD	KCK15
K3	.E..LD	KCPK30	**.S..GD**	**KCPK30**	.S..HD	KCPK30
N1–N2	.F..LDJ	K313	**.F..LDJ**	**KC410M**	.E..LD	KC510M
N3	.F..LDJ	KC410M	**.E..LD**	**KC510M**	.E..LD	KC510M
S1–S2	.E..LD	KC725M	**.S..GD**	**KC725M**	.S..HD	KC725M
S3	.E..LD	KC725M	**.S..GD**	**KC725M**	.S..HD	KC725M
S4	.S..GD	KC725M	**.S..HD**	**KC725M**	–	–
H1	–	–	**–**	**–**	–	–

Indexable Inserts


HNGJ-LDJ HNGJ-LD HNPJ-GD HNPJ-HD



● first choice
○ alternate choice

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

HNGJ-LDJ

catalog number	D	BS	L10	Rε	S	hm	cutting edges	K313	KC410M	KC510M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30
HNGJ43ANFNLDJ	.472	.060	.254	.039	.176	.001	12	●	●							

HNGJ-LD

catalog number	D	BS	L10	Rε	S	hm	cutting edges	K313	KC410M	KC510M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30
HNGJ43ANENLD	.472	.060	.254	.039	.176	.002	12			●	●	●	●	●	●	●
HNGJ438ANENLD	.472	–	.253	.126	.177	.002	12				●	●	●	●	●	●

HNPJ-GD

catalog number	D	BS	L10	Rε	S	hm	cutting edges	K313	KC410M	KC510M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30
HNPJ43ANSNGD	.472	.057	.254	.039	.175	.003	12				●	●	●	●	●	●

HNPJ-HD

catalog number	D	BS	L10	Rε	S	hm	cutting edges	K313	KC410M	KC510M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30
HNPJ43ANSNHD	.472	.057	.254	.039	.173	.006	12				●	●	●	●	●	●
HNPJ438ANSNHD	.472	–	.253	.126	.174	.004	12				●	●	●	●	●	●

Recommended Starting Speeds [SFM]

Material Group		K313			KC410M			KC510M			KC520M			KC522M		
P	1	–	–	–	–	–	–	–	–	–	–	–	–	1300	**1130**	1060
	2	–	–	–	–	–	–	–	–	–	–	–	–	1080	**950**	790
	3	–	–	–	–	–	–	–	–	–	–	–	–	1000	**840**	700
	4	–	–	–	–	–	–	960	**780**	660	–	–	–	890	**730**	590
	5	–	–	–	–	–	–	–	–	–	–	–	–	730	**660**	590
	6	–	–	–	–	–	–	–	–	–	–	–	–	650	**490**	400
M	1	–	–	–	–	–	–	–	–	–	–	–	–	800	**710**	650
	2	–	–	–	–	–	–	–	–	–	–	–	–	730	**620**	520
	3	–	–	–	–	–	–	–	–	–	–	–	–	550	**480**	370
K	1	–	–	–	–	–	–	1150	**1040**	940	1060	**960**	850	900	**820**	720
	2	–	–	–	–	–	–	910	**820**	760	830	**740**	700	710	**640**	590
	3	–	–	–	–	–	–	770	**680**	620	700	**620**	560	590	**530**	480
N	1–2	3130	**2740**	2350	4790	**4260**	3920	2520	**2240**	2060	–	–	–	–	–	–
	3	–	–	–	4260	**3920**	3600	2280	**2100**	1920	–	–	–	–	–	–
S	1	–	–	–	–	–	–	–	–	–	–	–	–	160	**140**	110
	2	–	–	–	–	–	–	–	–	–	–	–	–	160	**140**	110
	3	–	–	–	–	–	–	–	–	–	–	–	–	200	**160**	110
	4	–	–	–	–	–	–	–	–	–	–	–	–	280	**200**	140
H	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

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

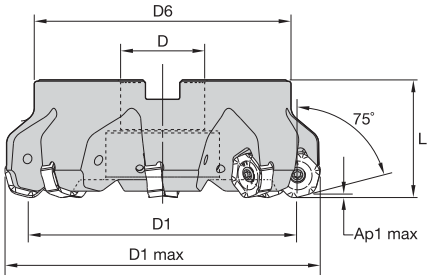
NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness increases, the speed should be decreased.

Recommended Starting Feeds [IPT]

Light Machining	General Purpose	Heavy Machining

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	**.008**	.016	.003	**.006**	.012	.003	**.005**	.010	.002	**.005**	.009	.002	**.005**	.009	.F..LDJ
.E..LD	.004	**.012**	.024	.003	**.009**	.017	.003	**.008**	.015	.002	**.007**	.014	.002	**.007**	.014	.E..LD
.S..GD	.008	**.017**	.028	.006	**.013**	.021	.005	**.011**	.018	.005	**.010**	.017	.005	**.010**	.016	.S..GD
.S..HD	.008	**.020**	.032	.006	**.015**	.023	.005	**.013**	.020	.005	**.012**	.019	.005	**.012**	.018	.S..HD

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





Dodeka High-Feed 75° • Shell Mills

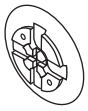
order number	catalog number	D1	D1 max	D	D6	L	Ap1 max	Z	lbs	max RPM
4047419	**KSHRHF200HN5315C3**	2.000	2.746	.750	1.750	1.595	.087	4	1.13	11300
4047420	**KSHRHF250HN5315C3**	2.500	3.245	.750	2.144	1.595	.087	5	1.60	8900
4047421	**KSHRHF300HN5315C4**	3.000	3.745	1.000	2.346	1.770	.087	6	2.23	7400
4047422	**KSHRHF400HN5315C5**	4.000	4.744	1.250	3.819	1.770	.087	8	3.91	5800
4047583	**KSHRHF500HN5315C6**	5.000	6.081	1.500	3.810	2.400	.087	9	6.87	4700
4047584	**KSHRHF600HN5315C8**	6.000	8.081	2.000	4.880	2.400	.087	12	10.51	4000

Spare Parts







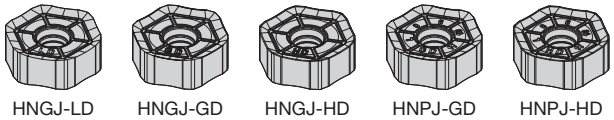


D1	insert screw	in. lbs.	wrench	socket-head cap screw	socket-head cap screw with coolant groove	coolant lock screw	coolant lock screw	coolant shower plate
2.000	**193.492**	31	**170.025**	**S445**	**S445CG**	–	–	–
2.500	**193.492**	31	**170.025**	**S445**	**S445CG**	–	–	–
3.000	**193.492**	31	**170.025**	**S458**	**S458CG**	–	–	–
4.000	**193.492**	31	**170.025**	–	–	**S2162C**	–	–
5.000	**193.492**	31	**170.025**	–	–	–	**420.201**	**470.240**
6.000	**193.492**	31	**170.025**	–	–	–	**420.241**	**470.241**

Insert Selection Guide

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.E..LD	KC725M	**.S..GD**	**KC725M**	.S..GD	KC725M
P3–P4	.E..LD	KCPK30	**.S..GD**	**KCPK30**	.S..GD	KCPK30
P5–P6	.E..LD	KCPM20	**.S..GD**	**KCPM20**	.S..HD	KCPM20
M1–M2	.E..LD	KC725M	**.S..GD**	**KC725M**	.S..GD	KC725M
M3	.S..GD	KCPK30	**.S..HD**	**KCPK30**	.S..HD	KCPK30
K1–K2	.E..LD	KCK15	**.S..GD**	**KCK15**	.S..GD	KCK15
K3	.S..GD	KCPK30	**.S..HD**	**KCPK30**	.S..HD	KCPK30
N1–N2	.F..LDJ	KC410M	**.F..LDJ**	**KC410M**	.F..LDJ	KC410M
N3	.F..LDJ	KC410M	**.F..LDJ**	**KC410M**	.F..LDJ	KC410M
S1–S2	.S..GD	KC725M	**.S..GD**	**KC725M**	.S..HD	KC725M
S3	.S..GD	KC725M	**.S..HD**	**KC725M**	.S..HD	KC725M
S4	.S..GD	KC725M	**.S..HD**	**KC725M**	–	–
H1	–	–	**–**	**–**	–	–

Indexable Inserts



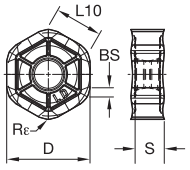
HNGJ-LD
HNGJ-LDJ

HNGJ-GD

HNGJ-HD

HNPJ-GD

HNPJ-HD



beyond

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

● first choice
○ alternate choice

Face Mills

HNGJ-LD and -LDJ

catalog number	D	S	L10	BS	Rε	hm	cutting edges	KC410M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30
HNGJ535ANENLD	.625	.219	.338	.071	.047	.002	12		●	●	●	●	●	●
HNGJ535ANFNLDJ	.625	.219	.338	.071	.047	.001	12	●						

HNGJ-GD

catalog number	D	S	L10	BS	Rε	hm	cutting edges	KC410M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30
HNGJ535ANSNGD	.625	.219	.338	.071	.047	.002	12				●	●	●	●

HNGJ-HD

catalog number	D	S	L10	BS	Rε	hm	cutting edges	KC410M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30
HNGJ535ANSNHD	.625	.215	.338	.065	.047	.002	12		●		●	●	●	●
HNGJ53511ANSNHD	.625	.214	.334	–	.171	.002	12		●		●	●	●	●

HNPJ-GD

catalog number	D	S	L10	BS	Rε	hm	cutting edges	KC410M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30
HNPJ535ANSNGD	.625	.219	.338	.071	.047	.004	12		●	●	●	●		●

HNPJ-HD

catalog number	D	S	L10	BS	Rε	hm	cutting edges	KC410M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30
HNPJ535ANSNHD	.625	.215	.338	.065	.047	.007	12		●	●	●	●		●
HNPJ53511ANSNHD	.625	.214	.334	–	.171	.005	12			●	●	●		●

Recommended Starting Speeds [SFM]

Material Group		KC410M			KC520M			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	–	–	–	–	–	–	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	–	–	–	1060	**960**	850	900	**820**	720	–	–	–
	2	–	–	–	830	**740**	700	710	**640**	590	–	–	–
	3	–	–	–	700	**620**	560	590	**530**	480	–	–	–
N	1–2	4790	**4260**	3920	–	–	–	–	–	–	–	–	–
	3	4260	**3920**	3600	–	–	–	–	–	–	–	–	–
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	–	–	–	–	–	–	–	–	–	–	–	–

Material Group		KCK15			KCPM20			KCPK30		
P	1	–	–	–	2170	**1910**	1760	1780	**1560**	1450
	2	–	–	–	1340	**1210**	1090	1100	**1000**	900
	3	–	–	–	1210	**1090**	1000	1000	**900**	820
	4	–	–	–	910	**840**	760	740	**690**	620
	5	–	–	–	1090	**980**	900	1020	**910**	830
	6	–	–	–	760	**660**	570	620	**540**	–
M	1	–	–	–	880	**790**	680	820	**720**	620
	2	–	–	–	800	**700**	620	730	**640**	550
	3	–	–	–	640	**570**	490	570	**520**	460
K	1	1660	**1510**	1340	1420	**1280**	1150	1160	**1050**	940
	2	1310	**1170**	1090	1130	**1010**	920	920	**830**	760
	3	1100	**980**	900	950	**840**	780	770	**690**	640
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.

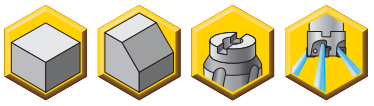
Recommended Starting Feeds [IPT]

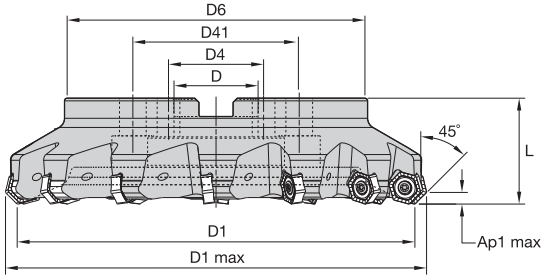
Light Machining	General Purpose	Heavy Machining

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.F..LDJ	.013	**.027**	.055	.010	**.019**	.039	.008	**.017**	.034	.008	**.016**	.032	.008	**.015**	.031	.F..LDJ
.E..LD	.013	**.040**	.086	.010	**.029**	.060	.008	**.025**	.051	.008	**.024**	.047	.008	**.023**	.046	.E..LD
.S..GD	.022	**.058**	.106	.017	**.041**	.072	.014	**.036**	.061	.013	**.033**	.057	.013	**.032**	.056	.S..GD
.S..HD	.022	**.070**	.121	.017	**.049**	.081	.014	**.042**	.068	.013	**.040**	.063	.013	**.039**	.062	.S..HD

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

- Twelve cutting edges per insert.
- Through-coolant on cutters <4" diameter.
  5" diameter cutters and above do not have through-coolant.
- Soft cutting action.







Dodeka 45° • Shell Mills

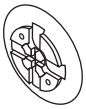
order number	catalog number	D1	D1 max	D	D4	D41	D6	L	Ap1 max	Z	lbs	max RPM
3326850	KSHR200HN5345C3	2.000	2.434	.750	–	–	1.593	1.570	.178	4	.81	12500
3326851	KSHR200HN5345M3	2.000	2.434	.750	–	–	1.593	1.570	.178	5	.82	12500
3747124	KSHR250HN5345XC3	2.500	2.933	.750	–	–	1.986	1.570	.177	5	1.25	10000
3326852	KSHR250HN5345C3	2.500	2.933	.750	–	–	1.986	1.570	.178	6	1.32	10000
3326923	KSHR250HN5345M3	2.500	2.933	.750	–	–	1.986	1.570	.178	7	1.34	10000
3747125	KSHR300HN5345XC4	3.000	3.433	1.000	–	–	2.189	1.750	.177	5	1.86	8300
3326924	KSHR300HN5345C4	3.000	3.433	1.000	–	–	2.189	1.750	.178	6	1.79	8300
3326925	KSHR300HN5345M4	3.000	3.433	1.000	–	–	2.032	1.750	.178	9	1.97	8300
3747126	KSHR400HN5345XC5	4.000	4.232	1.250	–	–	2.722	1.750	.177	6	3.17	6300
3326926	KSHR400HN5345C5	4.000	4.432	1.250	–	–	2.722	1.750	.178	8	2.93	6300
3326927	KSHR400HN5345M5	4.000	4.432	1.250	–	–	2.722	1.750	.178	11	3.14	6300
3747127	KSHR500HN5345XC6	5.000	5.431	1.500	–	–	3.652	2.380	.177	8	6.20	5000
3326928	KSHR500HN5345C6	5.000	5.431	1.500	–	–	3.652	2.380	.178	10	5.94	5000
3326929	KSHR500HN5345M6	5.000	5.431	1.500	–	–	3.652	2.380	.178	14	6.21	5000
3747128	KSHR600HN5345XC8	6.000	6.432	2.000	–	–	4.722	2.380	.177	10	9.01	4100
3326930	KSHR600HN5345C8	6.000	6.432	2.000	–	–	4.722	2.380	.178	12	9.10	4100
3326931	KSHR600HN5345M8	6.000	6.432	2.000	–	–	4.722	2.380	.178	16	9.36	4100
3494648	KSHR800HN5345C10	8.000	8.432	2.500	4.000	–	5.118	2.380	.177	16	13.14	3130
3494649	KSHR1000HN5345C10	10.000	10.433	2.500	4.000	–	7.120	2.380	.177	20	24.52	2510
3494650	KSHR1200HN5345C10	12.000	12.433	2.500	4.000	7.000	9.016	3.150	.177	24	42.66	2090

Spare Parts









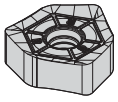
D1	insert screw	in. lbs.	wrench	socket-head cap screw	socket-head cap screw with coolant groove	coolant lock screw assembly	coolant lock screw	coolant shower plate
2.000	193.492	31	170.025	S445	S445CG	–	–	–
2.500	193.492	31	170.025	S445	S445CG	–	–	–
3.000	193.492	31	170.025	S458	S458CG	–	–	–
4.000	193.492	31	170.025	–	–	S2162C	–	–
5.000	193.492	31	170.025	–	–	–	420.201	470.240
6.000	193.492	31	170.025	–	–	–	420.241	470.241
8.000	193.492	31	170.025	–	–	–	–	470.242
10.000	193.492	31	170.025	–	–	–	–	470.243
12.000	193.492	31	170.025	–	–	–	–	470.244

NOTE: Please order all spare parts separately.

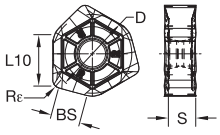
Insert Selection Guide

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.E..LD	KC725M	**.S..GD**	**KC725M**	.S..GD	KC725M
P3–P4	.E..LD	KCPK30	**.S..GD**	**KCPK30**	.S..GD	KCPK30
P5–P6	.E..LD	KCPM20	**.S..GD**	**KCPM20**	.S..HD	KCPM20
M1–M2	.E..LD	KC725M	**.S..GD**	**KC725M**	.S..GD	KC725M
M3	.S..GD	KCPK30	**.S..HD**	**KCPK30**	.S..HD	KCPK30
K1–K2	.E..LD	KCK15	**.S..GD**	**KCK15**	.S..GD	KCK15
K3	.S..GD	KCPK30	**.S..HD**	**KCPK30**	.S..HD	KCPK30
N1–N2	.F..LDJ	KC410M	**.F..LDJ**	**KC410M**	.F..LDJ	KC410M
N3	.F..LDJ	KC410M	**.F..LDJ**	**KC410M**	.F..LDJ	KC410M
S1–S2	.S..GD	KC725M	**.S..GD**	**KC725M**	.S..HD	KC725M
S3	.S..GD	KC725M	**.S..HD**	**KC725M**	.S..HD	KC725M
S4	.S..GD	KC725M	**.S..HD**	**KC725M**	–	–
H1	–	–	**–**	**–**	–	–

Indexable Inserts • Dodeka • XNGJ • Finishing



XNGJ-LDJ3W *
XNGJ-GD3W *



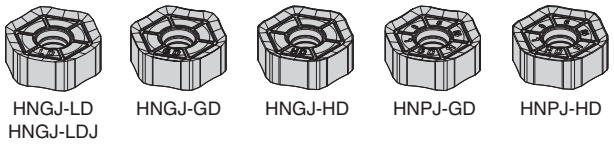
● first choice
○ alternate choice

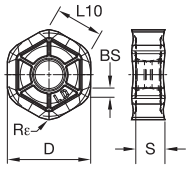
P			●		●	●
M			●		○	○
K				●	○	○
N		●				
S			●			
H						

XNGJ-LDJ3W and -GD3W

catalog number	D	S	L10	BS	Rε	cutting edges	KC410M	KC725M	KCK15	KCPM20	KCPK30
XNGJ535ANFNLDJ3W	.625	.217	.377	.230	.063	3	●				
XNGJ535ANSNGD3W	.625	.217	.377	.230	.063	3		●	●	●	●

* 3 left-hand (LH) and 3 right-hand (RH) wiper edges per insert.





beyond

● first choice
○ alternate choice

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

HNGJ-LD and -LDJ

catalog number	D	S	L10	BS	Rε	hm	cutting edges	KC410M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30
HNGJ535ANENLD	.625	.219	.338	.071	.047	.002	12		●	●	●	●	●	●
HNGJ535ANFNLDJ	.625	.219	.338	.071	.047	.001	12	●						

HNGJ-GD

catalog number	D	S	L10	BS	Rε	hm	cutting edges	KC410M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30
HNGJ535ANSNGD	.625	.219	.338	.071	.047	.002	12				●	●	●	●

HNGJ-HD

catalog number	D	S	L10	BS	Rε	hm	cutting edges	KC410M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30
HNGJ535ANSNHD	.625	.215	.338	.065	.047	.002	12		●		●	●	●	●
HNGJ53511ANSNHD	.625	.214	.334	—	.171	.002	12		●		●	●	●	●

HNPJ-GD

catalog number	D	S	L10	BS	Rε	hm	cutting edges	KC410M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30
HNPJ535ANSNGD	.625	.219	.338	.071	.047	.004	12		●	●	●	●		●

HNPJ-HD

catalog number	D	S	L10	BS	Rε	hm	cutting edges	KC410M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30
HNPJ535ANSNHD	.625	.215	.338	.065	.047	.007	12		●	●	●	●		●
HNPJ53511ANSNHD	.625	.214	.334	—	.171	.005	12			●	●	●		●

Recommended Starting Speeds [SFM]

Material Group		KC410M			KC520M			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	–	–	–	–	–	–	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	–	–	–	1060	**960**	850	900	**820**	720	–	–	–
	2	–	–	–	830	**740**	700	710	**640**	590	–	–	–
	3	–	–	–	700	**620**	560	590	**530**	480	–	–	–
N	1–2	4790	**4260**	3920	–	–	–	–	–	–	–	–	–
	3	4260	**3920**	3600	–	–	–	–	–	–	–	–	–
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	–	–	–	–	–	–	–	–	–	–	–	–

Material Group		KCK15			KCPM20			KCPK30		
P	1	–	–	–	2170	**1910**	1760	1780	**1560**	1450
	2	–	–	–	1340	**1210**	1090	1100	**1000**	900
	3	–	–	–	1210	**1090**	1000	1000	**900**	820
	4	–	–	–	910	**840**	760	740	**690**	620
	5	–	–	–	1090	**980**	900	1020	**910**	830
	6	–	–	–	760	**660**	570	620	**540**	–
M	1	–	–	–	880	**790**	680	820	**720**	620
	2	–	–	–	800	**700**	620	730	**640**	550
	3	–	–	–	640	**570**	490	570	**520**	460
K	1	1660	**1510**	1340	1420	**1280**	1150	1160	**1050**	940
	2	1310	**1170**	1090	1130	**1010**	920	920	**830**	760
	3	1100	**980**	900	950	**840**	780	770	**690**	640
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%			
.F..LDJ	.005	**.010**	.019	.004	**.007**	.014	.003	**.006**	.012	.003	**.006**	.012	.003	**.006**	.011	.F..LDJ
.E..LD	.005	**.014**	.029	.004	**.011**	.021	.003	**.009**	.019	.003	**.009**	.017	.003	**.008**	.017	.E..LD
.S..GD	.008	**.020**	.035	.006	**.015**	.026	.005	**.013**	.022	.005	**.012**	.021	.005	**.012**	.020	.S..GD
.S..HD	.008	**.024**	.039	.006	**.018**	.029	.005	**.015**	.025	.005	**.014**	.023	.005	**.014**	.023	.S..HD

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

Looking for a product that's not shown in this catalog?

Check the Kennametal website!



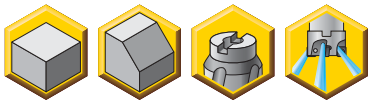
Indexable Milling

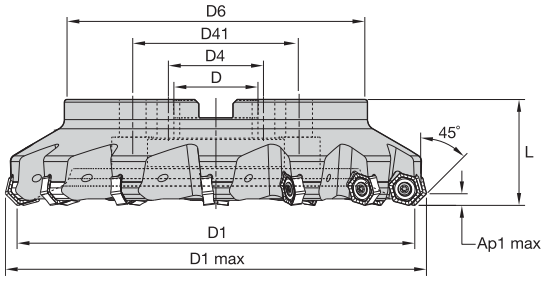
Online product catalog available 24/7

Visit **http://www.kennametal.com/milling/** to browse our electronic catalog any time you're looking for Kennametal's best tooling solutions. It's fast, free, and always available. The online e-catalog is updated weekly with products and solutions for milling, turning, holemaking, and tooling systems applications.

KENNAMETAL

- Twelve cutting edges per insert.
- 25% lower cutting forces.
- Laser-hardened pocket seats.







Dodeka MAX 45° • Shell Mills

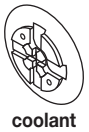
order number	catalog number	D1	D1 max	D	D4	D41	D6	L	Ap1 max	Z	lbs	max RPM
4057578	**KSHR300HN7545M4**	3.000	3.682	1.000	–	–	2.188	1.750	.315	4	2.14	8300
4057579	**KSHR400HN7545M5**	4.000	4.682	1.250	–	–	2.875	1.750	.315	5	3.18	6300
4057580	**KSHR500HN7545M6**	5.000	5.682	1.500	–	–	3.812	2.375	.315	6	6.40	5000
4057581	**KSHR600HN7545M8**	6.000	6.682	2.000	–	–	5.000	2.375	.315	9	9.87	4100
4057575	**KSHR800HN7545C10**	8.000	8.682	2.500	4.000	–	5.000	2.375	.315	10	13.51	3130
4057582	**KSHR800HN7545M10**	8.000	8.682	2.500	4.000	–	5.000	2.375	.315	12	13.55	3130
4057576	**KSHR1000HN7545C10**	10.000	10.682	2.500	4.000	–	6.963	2.375	.315	12	25.80	2510
4057583	**KSHR1000HN7545M10**	10.000	10.682	2.500	4.000	–	6.963	2.375	.315	14	13.55	2510
4057577	**KSHR1200HN7545C10**	12.000	12.681	2.500	4.000	7.000	9.016	3.150	.315	14	42.06	2090
4057584	**KSHR1200HN7545M10**	12.000	12.681	2.500	4.000	7.000	9.016	3.150	.315	18	42.03	2090

Spare Parts







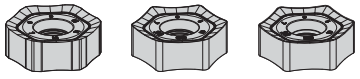


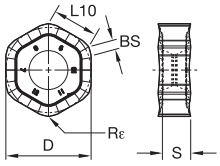
D1	insert screw	in. lbs.	Torx Plus wrench	socket-head cap screw	socket-head cap screw with coolant groove	coolant lock screw assembly	coolant lock screw	coolant shower plate
3.000	**193.531**	71	**TTP25**	**S458**	**S458CG**	–	–	–
4.000	**193.531**	71	**TTP25**	–	–	**S2162C**	–	–
5.000	**193.531**	71	**TTP25**	–	–	–	**420.201**	**470.240**
6.000	**193.531**	71	**TTP25**	–	–	–	**420.241**	**470.241**
8.000	**193.531**	71	**TTP25**	–	–	–	–	**470.242**
10.000	**193.531**	71	**TTP25**	–	–	–	–	**470.243**
12.000	**193.531**	71	**TTP25**	–	–	–	–	**470.244**

Insert Selection Guide

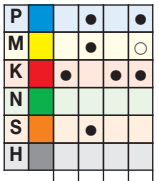
Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.E..GD	KC725M	**.S..GD**	**KC725M**	.S..HD	KC725M
P3–P4	.E..GD	KCPK30	**.S..GD**	**KCPK30**	.S..HD	KCPK30
P5–P6	.E..GD	KCPK30	**.S..GD**	**KCPK30**	.S..HD	KCPK30
M1–M2	.E..GD	KC725M	**.S..GD**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

Indexable Inserts


HNGJ-GD HNPJ-GD HNPJ-HD



● first choice
○ alternate choice



HNGJ-GD

catalog number	D	S	L10	BS	Rε	hm	cutting edges	KC520M	KC725M	KCK15	KCPK30
HNGJ75ANENGD	.875	.292	.505	.074	.047	.002	12		●	●	●

HNPJ-GD

catalog number	D	S	L10	BS	Rε	hm	cutting edges	KC520M	KC725M	KCK15	KCPK30
HNPJ755ANSNGD	.88	.30	.51	–	.1	.01	12	●	●	●	●

HNPJ-HD

catalog number	D	S	L10	BS	Rε	hm	cutting edges	KC520M	KC725M	KCK15	KCPK30
HNPJ75ANSNHD	.875	.288	.505	.074	.047	.010	12	●	●	●	●
HNPJ755ANSNHD	.875	.292	.505	–	.079	.009	12	●	●	●	●
HNPJ759ANSNHD	.875	.289	.505	–	.138	.009	12	●	●	●	●

Recommended Starting Speeds [SFM]

Material Group		KC520M			KC725M			KCK15			KCPK30		
P	1	–	–	–	1030	**900**	840	–	–	–	1780	**1560**	1450
	2	–	–	–	860	**760**	640	–	–	–	1100	**1000**	900
	3	–	–	–	790	**670**	550	–	–	–	1000	**900**	820
	4	–	–	–	710	**590**	470	–	–	–	740	**690**	620
	5	–	–	–	590	**530**	470	–	–	–	1020	**910**	830
	6	–	–	–	520	**400**	310	–	–	–	620	**540**	–
M	1	–	–	–	670	**590**	540	–	–	–	820	**720**	620
	2	–	–	–	610	**520**	430	–	–	–	730	**640**	550
	3	–	–	–	460	**400**	310	–	–	–	570	**520**	460
K	1	1060	**960**	850	–	–	–	1660	**1510**	1340	1160	**1050**	940
	2	830	**740**	700	–	–	–	1310	**1170**	1090	920	**830**	760
	3	700	**620**	560	–	–	–	1100	**980**	900	770	**690**	640
N	1–2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
S	1	–	–	–	140	**120**	100	–	–	–	–	–	–
	2	–	–	–	140	**120**	100	–	–	–	–	–	–
	3	–	–	–	180	**140**	100	–	–	–	–	–	–
	4	–	–	–	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%			
.E..GD	.007	**.014**	.027	.005	**.011**	.020	.004	**.009**	.017	.004	**.009**	.016	.004	**.008**	.016	.E..GD
.S..GD	.010	**.018**	.034	.007	**.014**	.025	.006	**.012**	.022	.006	**.011**	.020	.006	**.011**	.020	.S..GD
.S..HD	.010	**.024**	.039	.007	**.018**	.029	.006	**.015**	.025	.006	**.014**	.023	.006	**.014**	.023	.S..HD

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



KM4X™

The Next Generation Spindle Interface for Heavy-Duty Machining!

KM4X is designed to take on your most aggressive machining jobs. This next generation KM spindle interface should be your first choice for heavy-duty machining applications. It's especially suited for large structural components, like titanium aerospace components.

We engineered these rotating and static tool adapters to handle 3x more bending capacity than similar competitive models.

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MEGA 45° • Superior Heavy-Duty Milling

Primary Application

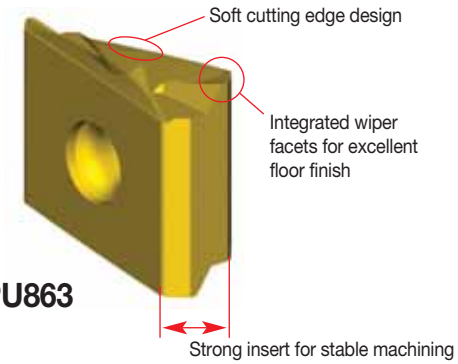
With four true cutting edges per heavy-duty MEGA 45° insert, you know you are getting the low cost per edge and high productivity you need and have come to expect from Kennametal. The soft cutting edge design enables 30% lower cutting forces, and the carbide shim provides protection to the cutter body. Choose MEGA 45° inserts for all of your steel and cast iron indexable milling needs.

Features and Benefits

Features	Benefits
Four true cutting edges per heavy-duty MEGA 45° insert.	Low cost per edge and high productivity.
Soft cutting edge design.	30% lower cutting forces.
Up to 30% increased Metal Removal Rates (MRR).	Performance leader in steel and cast iron materials.
Carbide pocket shims.	Excellent cutter body protection.

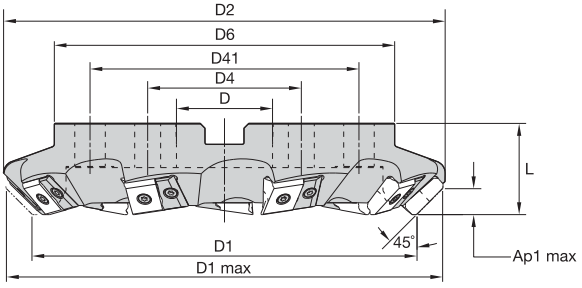


4 True Cutting Edges



LNPU863

- Four cutting edges per insert.
- Ap1 max = .675".
- Up to 30% higher metal removal rate (MRR).
- Cutter body protection with carbide shims.





MEGA45 • Shell Mills

order number	catalog number	D1	D1 max	D	D2	D4	D41	D6	L	Ap1 max	Z	lbs	max RPM
4032274	**MEGA45D500LN863M6**	5.000	6.391	1.500	6.700	—	—	3.810	2.375	.675	6	9.18	12520
4032276	**MEGA45D600LN863M8**	6.000	7.392	2.000	7.600	—	—	5.000	2.375	.675	7	12.11	11430
4105176	**MEGA45D800LN863C10**	8.000	9.392	2.500	9.550	4.000	—	6.500	2.375	.675	7	18.89	9890
4032277	**MEGA45D800LN863M10**	8.000	9.392	2.500	9.550	4.000	—	6.500	2.375	.675	9	19.86	9890
4105177	**MEGA45D1000LN863C10**	10.000	11.392	2.500	11.500	4.000	7.000	8.858	2.375	.675	9	28.04	8850
4032278	**MEGA45D1000LN863M10**	10.000	11.392	2.500	11.500	4.000	7.000	8.858	2.375	.675	11	29.05	8850
4105178	**MEGA45D1200LN863C10**	12.000	13.392	2.500	13.500	4.000	7.000	8.858	3.150	.675	10	47.50	8080
4032279	**MEGA45D1200LN863M10**	12.000	13.392	2.500	13.500	4.000	7.000	8.858	3.150	.675	13	48.82	8080

Spare Parts

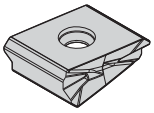
D1	insert screw	in. lbs.	shim	universal bit torque driver	drive bit
5.000	**MS1162**	45	**SM-906**	**DTQ3054**	**BTQT25**
6.000	**MS1162**	45	**SM-906**	**DTQ3054**	**BTQT25**
8.000	**MS1162**	45	**SM-906**	**DTQ3054**	**BTQT25**
10.000	**MS1162**	45	**SM-906**	**DTQ3054**	**BTQT25**
12.000	**MS1162**	45	**SM-906**	**DTQ3054**	**BTQT25**

NOTE: Shim screw: MS1162.

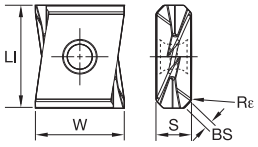
Insert Selection Guide

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.S..HD	KC725M	**.S..HD**	**KC725M**	.S..HD	KCPK30
P3–P4	.S..HD	KC725M	**.S..HD**	**KCPK30**	.S..HD	KCPK30
P5–P6	.S..HD	KCPK30	**.S..HD**	**KCPK30**	.S..HD	KCPK30
M1–M2	–	–	–	–	–	–
M3	–	–	–	–	–	–
K1–K2	.S..HD	KC520M	**.S..HD**	**KCK15**	.S..HD	KCPK30
K3	.S..HD	KCK15	**.S..HD**	**KCPK30**	.S..HD	KCPK30
N1–N2	–	–	–	–	–	–
N3	–	–	–	–	–	–
S1–S2	–	–	–	–	–	–
S3	–	–	–	–	–	–
S4	–	–	–	–	–	–
H1	–	–	–	–	–	–

Indexable Inserts



LNPU-HD



beyond

P			●		●
M					
K		●		●	○
N					
S					
H					

● first choice
○ alternate choice

LNPU-HD

catalog number	LI	BS	W	Rε	S	hm	cutting edges	KC520M	KC725M	KCK15	KCPK30
LNPU863ANSRHD	1.142	.088	.985	.047	.394	.009	4	●	●	●	●

Recommended Starting Speeds [SFM]

Material Group		KC520M			KC725M			KCK15			KCPK30		
P	1	–	–	–	1030	**900**	840	–	–	–	1780	**1560**	1450
	2	–	–	–	860	**760**	640	–	–	–	1100	**1000**	900
	3	–	–	–	790	**670**	550	–	–	–	1000	**900**	820
	4	–	–	–	710	**590**	470	–	–	–	740	**690**	620
	5	–	–	–	590	**530**	470	–	–	–	1020	**910**	830
	6	–	–	–	520	**400**	310	–	–	–	620	**540**	–
M	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
K	1	1060	**960**	850	–	–	–	1660	**1510**	1340	1160	**1050**	940
	2	830	**740**	700	–	–	–	1310	**1170**	1090	920	**830**	760
	3	700	**620**	560	–	–	–	1100	**980**	900	770	**690**	640
N	1–2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–	–	–	–
H	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–

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

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..HD	.010	**.022**	.039	.007	**.016**	.029	.006	**.014**	.025	.006	**.013**	.023	.006	**.013**	.023	.S..HD

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

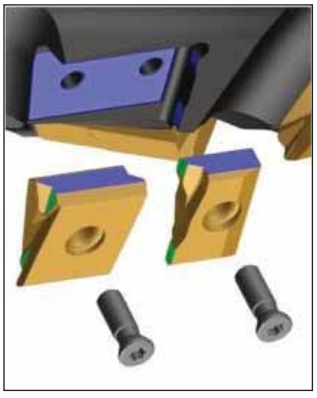


MEGA 45° Lead Angle

Can't Beat That Milling

Defined contact areas at the insert, carbide shim, and cutter body guarantees best tool life and reliability in heavy-duty conditions.

- Carbide shim for cutter body protection.
- Ap1 max — .67".



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www.kennametal.com

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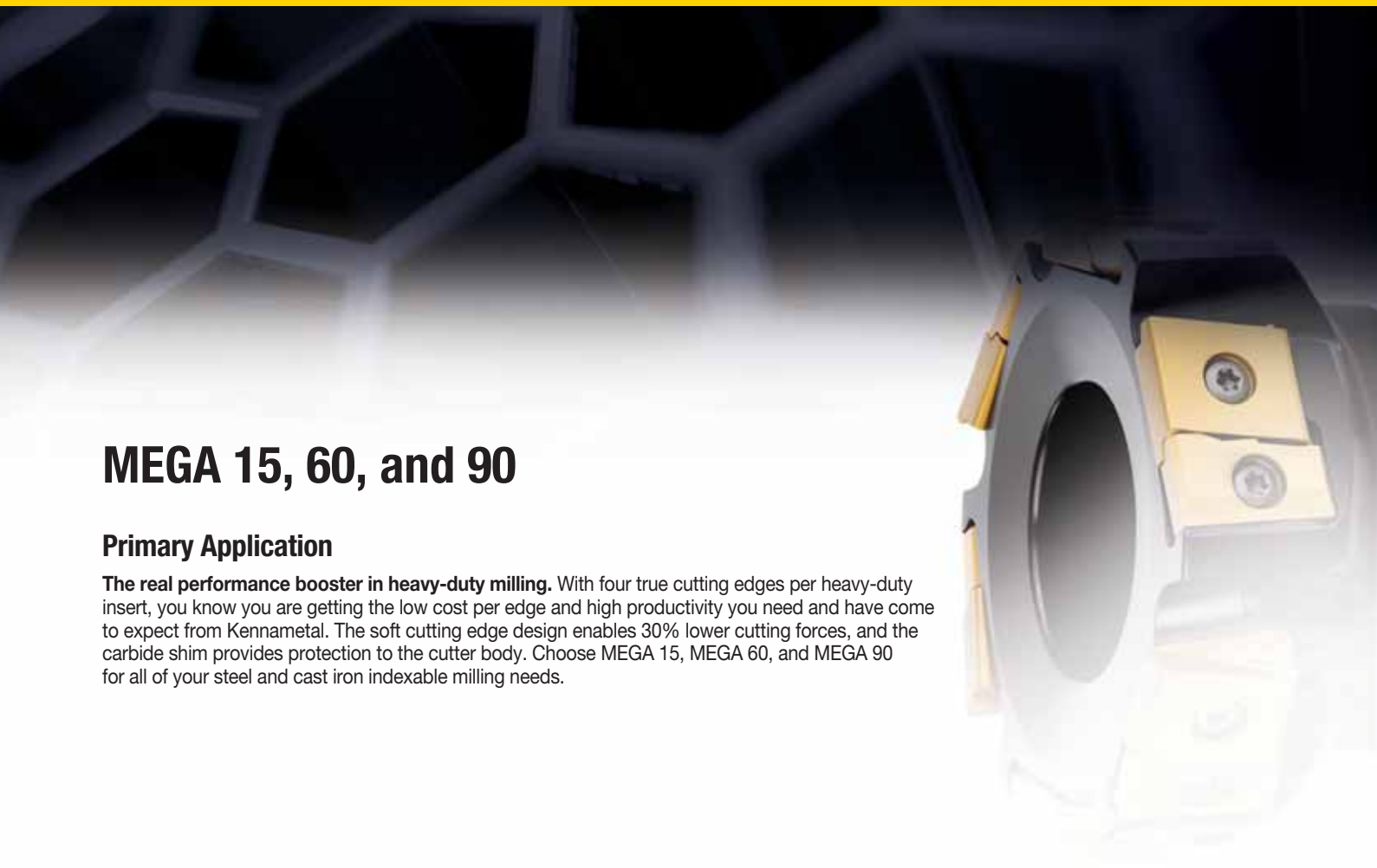


MEGA 15, 60, and 90

Primary Application

The real performance booster in heavy-duty milling. With four true cutting edges per heavy-duty insert, you know you are getting the low cost per edge and high productivity you need and have come to expect from Kennametal. The soft cutting edge design enables 30% lower cutting forces, and the carbide shim provides protection to the cutter body. Choose MEGA 15, MEGA 60, and MEGA 90 for all of your steel and cast iron indexable milling needs.

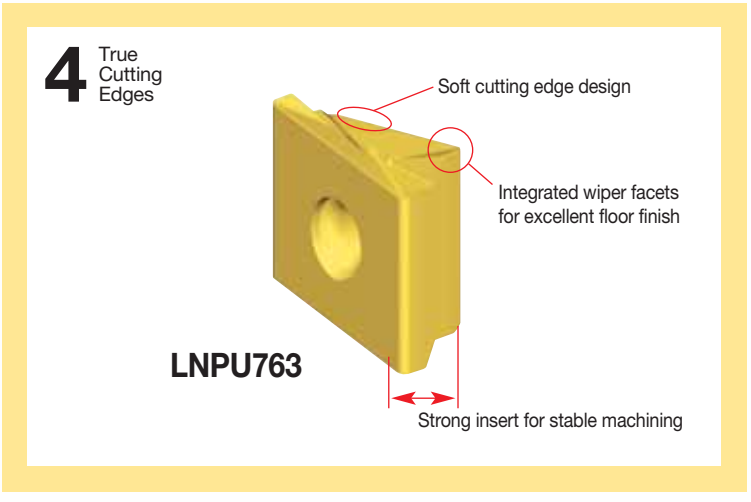
Features and Benefits

Features

- Four true cutting edges per heavy-duty insert.
- One insert style for MEGA 15, MEGA 60, and MEGA 90.
- Soft cutting edge design.
- Up to 30% increased Metal Removal Rates (MRR).
- Carbide pocket shims.

Benefits

- Low cost per edge and high productivity.
- Maximum flexibility to address application needs.
- 30% lower cutting forces.
- Performance leader in steel and cast iron materials.
- Excellent cutter body protection.





One Insert Style for MEGA 15, MEGA 60, and MEGA 90

MEGA 15

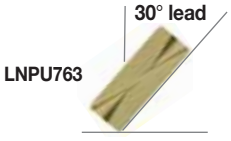




Ap1 max = .240"

MEGA 60

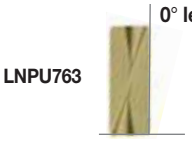




Ap1 max = .843"

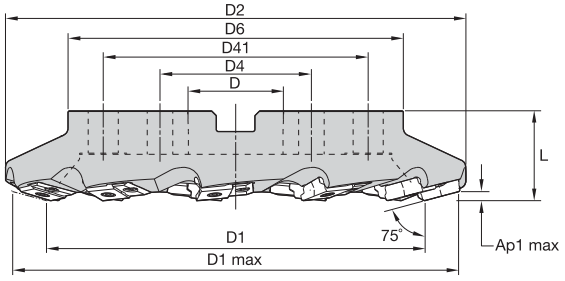
MEGA 90





Ap1 max = 1.002"

- Four cutting edges per insert.
- Ap1 max = .240".
- High-Feed capability.
- Cutter body protection with carbide shims.





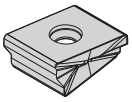
MEGA15 • High-Feed • Shell Mills

order number	catalog number	D1	D1 max	D2	D	D4	D41	D6	L	Ap1 max	Z	lbs	max RPM
4162225	**MEGA15D500LN763M6**	5.000	6.858	7.362	1.500	–	–	3.810	2.375	.240	6	9.32	9130
4162226	**MEGA15D600LN763M8**	6.000	7.855	8.346	2.000	–	–	5.000	2.375	.239	7	12.18	8330
4162227	**MEGA15D800LN76M10**	8.000	9.850	10.354	2.500	4.000	–	6.500	2.375	.239	9	21.10	7210
4162228	**MEGA15D1000LN76M10**	10.000	11.847	12.165	2.500	4.000	7.000	8.858	2.375	.238	11	30.92	6450
4162229	**MEGA15D1200LN76M10**	12.000	13.845	14.252	2.500	4.000	7.000	8.858	3.150	.238	13	47.73	5890

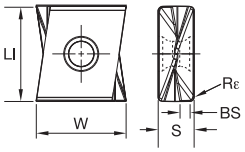
NOTE: For spare parts, see page O38.

Insert Selection Guide

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.S..HD	KC725M	**.S..HD**	**KC725M**	.S..HD	KCPK30
P3–P4	.S..HD	KC725M	**.S..HD**	**KCPK30**	.S..HD	KCPK30
P5–P6	.S..HD	KCPK30	**.S..HD**	**KCPK30**	.S..HD	KCPK30
M1–M2	–	–	**–**	**–**	–	–
M3	–	–	**–**	**–**	–	–
K1–K2	.S..HD	KC520M	**.S..HD**	**KCK15**	.S..HD	KCPK30
K3	.S..HD	KCK15	**.S..HD**	**KCPK30**	.S..HD	KCPK30
N1–N2	–	–	**–**	**–**	–	–
N3	–	–	**–**	**–**	–	–
S1–S2	–	–	**–**	**–**	–	–
S3	–	–	**–**	**–**	–	–
S4	–	–	**–**	**–**	–	–
H1	–	–	**–**	**–**	–	–



LNPU-HD



beyond

P			●		●
M					
K		●		●	○
N					
S					
H					

● first choice
○ alternate choice

LNPU-HD

catalog number	Ll	BS	W	Rε	S	hm	cutting edges	KC520M	KC725M	KCK15	KCPK30
LNPU763PNSRHD	1.043	.091	.985	.047	.394	.009	4	●	●	●	●

Recommended Starting Speeds and Feeds

Recommended Starting Speeds [SFM]

Material Group		KC520M			KC725M			KCK15			KCPK30		
P	1	–	–	–	1030	**900**	840	–	–	–	1780	**1560**	1450
	2	–	–	–	860	**760**	640	–	–	–	1100	**1000**	900
	3	–	–	–	790	**670**	550	–	–	–	1000	**900**	820
	4	–	–	–	710	**590**	470	–	–	–	740	**690**	620
	5	–	–	–	590	**530**	470	–	–	–	1020	**910**	830
	6	–	–	–	520	**400**	310	–	–	–	620	**540**	–
M	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
K	1	1060	**960**	850	–	–	–	1660	**1510**	1340	1160	**1050**	940
	2	830	**740**	700	–	–	–	1310	**1170**	1090	920	**830**	760
	3	700	**620**	560	–	–	–	1100	**980**	900	770	**690**	640
N	1–2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–	–	–	–
H	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–

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

Recommended Starting Feeds [IPT]

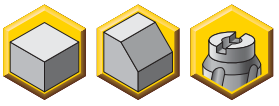
Light Machining	General Purpose	Heavy Machining

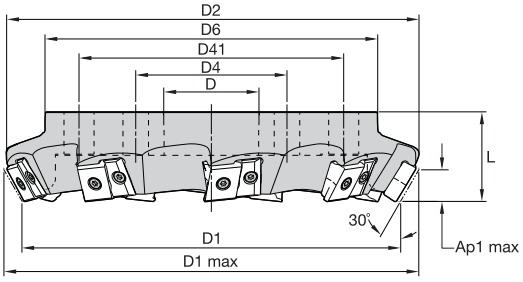
Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.S..HD	.027	**.062**	.099	.019	**.044**	.067	.017	**.038**	.058	.016	**.036**	.053	.015	**.035**	.052	.S..HD

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

Face Mills

- Four cutting edges per insert.
- Ap1 max = .843".
- Up to 30% higher metal removal rate (MRR).
- Cutter body protection with carbide shims.



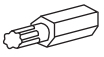




MEGA60 • Shell Mills

order number	catalog number	D1	D1 max	D	D2	D4	D41	D6	L	Ap1 max	Z	lbs	max RPM
4147496	**MEGA60D500LN76M6**	5.000	5.982	1.500	6.181	—	—	3.810	2.375	.843	6	8.030	11040
4147497	**MEGA60D600LN76M8**	6.000	6.982	2.000	7.126	—	—	5.000	2.375	.842	7	11.070	10080
4147498	**MEGA60D800LN76C10**	8.000	8.981	2.500	8.976	4.000	—	6.500	2.375	.842	7	17.590	8720
4147499	**MEGA60D800LN76M10**	8.000	8.891	2.500	8.976	4.000	—	6.500	2.375	.842	9	17.830	8720
4147500	**MEGA60D1000LN76C10**	10.000	10.981	2.500	10.984	4.000	7.000	8.858	2.375	.842	9	26.830	7800
4147501	**MEGA60D1000LN76M10**	10.000	10.981	2.500	10.984	4.000	7.000	8.858	2.375	.842	11	27.110	7800
4147502	**MEGA60D1200LN76C10**	12.000	12.981	2.500	12.953	4.000	7.000	8.858	3.150	.841	10	41.680	7120
4147523	**MEGA60D1200LN76M10**	12.000	12.981	2.500	12.953	4.000	7.000	8.858	3.150	.841	13	41.920	7120

Spare Parts

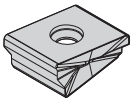
D1	 insert screw	in. lbs.	 shim	 universal bit torque driver	 drive bit
5.000	**MS1162**	45	**SM-906**	**DTQ3054**	**BTQT25**
6.000	**MS1162**	45	**SM-906**	**DTQ3054**	**BTQT25**
8.000	**MS1162**	45	**SM-906**	**DTQ3054**	**BTQT25**
10.000	**MS1162**	45	**SM-906**	**DTQ3054**	**BTQT25**
12.000	**MS1162**	45	**SM-906**	**DTQ3054**	**BTQT25**

NOTE: Shim screw: MS1162.

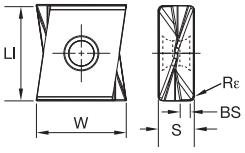
Insert Selection Guide

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.S..HD	KC725M	**.S..HD**	**KC725M**	.S..HD	KCPK30
P3–P4	.S..HD	KC725M	**.S..HD**	**KCPK30**	.S..HD	KCPK30
P5–P6	.S..HD	KCPK30	**.S..HD**	**KCPK30**	.S..HD	KCPK30
M1–M2	–	–	–	–	–	–
M3	–	–	–	–	–	–
K1–K2	.S..HD	KC520M	**.S..HD**	**KCK15**	.S..HD	KCPK30
K3	.S..HD	KCK15	**.S..HD**	**KCPK30**	.S..HD	KCPK30
N1–N2	–	–	–	–	–	–
N3	–	–	–	–	–	–
S1–S2	–	–	–	–	–	–
S3	–	–	–	–	–	–
S4	–	–	–	–	–	–
H1	–	–	–	–	–	–

Indexable Inserts



LNPU-HD



beyond

● first choice
○ alternate choice

P		●		●
M				
K	●		●	○
N				
S				
H				

Face Mills

LNPU-HD

catalog number	LI	BS	W	Rε	S	hm	cutting edges	KC520M	KC725M	KCK15	KCPK30
LNPU763PNSRHD	1.043	.091	.985	.047	.394	.009	4	●	●	●	●

Recommended Starting Speeds [SFM]

Material Group		KC520M			KC725M			KCK15			KCPK30		
P	1	–	–	–	1030	**900**	840	–	–	–	1780	**1560**	1450
	2	–	–	–	860	**760**	640	–	–	–	1100	**1000**	900
	3	–	–	–	790	**670**	550	–	–	–	1000	**900**	820
	4	–	–	–	710	**590**	470	–	–	–	740	**690**	620
	5	–	–	–	590	**530**	470	–	–	–	1020	**910**	830
	6	–	–	–	520	**400**	310	–	–	–	620	**540**	–
M	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
K	1	1060	**960**	850	–	–	–	1660	**1510**	1340	1160	**1050**	940
	2	830	**740**	700	–	–	–	1310	**1170**	1090	920	**830**	760
	3	700	**620**	560	–	–	–	1100	**980**	900	770	**690**	640
N	1–2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–	–	–	–
H	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–

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

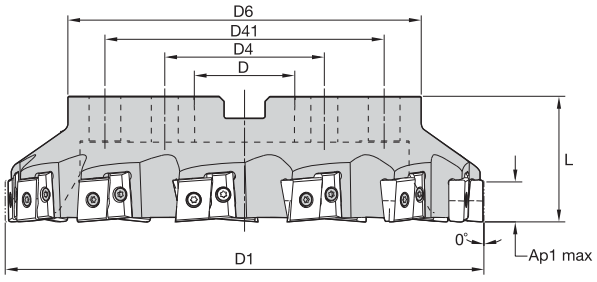
Recommended Starting Feeds [IPT]

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..HD	.008	**.020**	.032	.006	**.015**	.023	.005	**.013**	.020	.005	**.012**	.019	.005	**.012**	.018	.S..HD

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

- Four cutting edges per insert.
- Ap1 max = 1".
- Up to 30% higher metal removal rate (MRR).
- Cutter body protection with carbide shims.

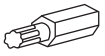




MEGA90 • Shell Mills

order number	catalog number	D1	D	D4	D41	D6	L	Ap1 max	Z	lbs	max RPM
4136381	**MEGA90D500LN76M6**	5.000	1.500	—	—	3.810	2.375	1.002	6	6.86	9990
4136382	**MEGA90D600LN76M8**	6.000	2.000	—	—	5.000	2.375	1.002	7	10.23	9120
4136383	**MEGA90D800LN76C10**	8.000	2.500	4.000	—	6.500	2.375	1.002	7	15.32	7890
4136384	**MEGA90D800LN76M10**	8.000	2.500	4.000	—	6.500	2.375	1.002	9	15.42	7890
4136385	**MEGA90D1000LN76C10**	10.000	2.500	4.000	—	6.500	2.375	1.002	9	22.48	7060
4136386	**MEGA90D1000LN76M10**	10.000	2.500	4.000	—	6.500	2.375	1.002	11	22.66	7060
4136387	**MEGA90D1200LN76C10**	12.000	2.500	4.000	7.000	8.858	3.150	1.002	10	38.12	6440
4136388	**MEGA90D1200LN76M10**	12.000	2.500	4.000	7.000	8.858	3.150	1.002	13	38.21	6440

Spare Parts

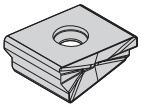
D1	 insert screw	in. lbs.	 shim	 universal bit torque driver	 drive bit
5.000	**MS1162**	45	**SM-906**	**DTQ3054**	**BTQT25**
6.000	**MS1162**	45	**SM-906**	**DTQ3054**	**BTQT25**
8.000	**MS1162**	45	**SM-906**	**DTQ3054**	**BTQT25**
10.000	**MS1162**	45	**SM-906**	**DTQ3054**	**BTQT25**
12.000	**MS1162**	45	**SM-906**	**DTQ3054**	**BTQT25**

NOTE: Shim screw: MS1162

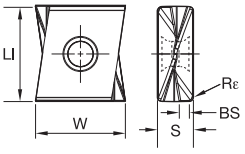
Insert Selection Guide

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.S..HD	KC725M	**.S..HD**	**KC725M**	.S..HD	KCPK30
P3–P4	.S..HD	KC725M	**.S..HD**	**KCPK30**	.S..HD	KCPK30
P5–P6	.S..HD	KCPK30	**.S..HD**	**KCPK30**	.S..HD	KCPK30
M1–M2	–	–	–	–	–	–
M3	–	–	–	–	–	–
K1–K2	.S..HD	KC520M	**.S..HD**	**KCK15**	.S..HD	KCPK30
K3	.S..HD	KCK15	**.S..HD**	**KCPK30**	.S..HD	KCPK30
N1–N2	–	–	–	–	–	–
N3	–	–	–	–	–	–
S1–S2	–	–	–	–	–	–
S3	–	–	–	–	–	–
S4	–	–	–	–	–	–
H1	–	–	–	–	–	–

Indexable Inserts



LNPU-HD



beyond

● first choice
○ alternate choice

P	M	K	N	S	H
●		●			
●		○			

Face Mills

LNPU-HD

catalog number	LI	BS	W	Rε	S	hm	cutting edges	KC520M	KC725M	KCK15	KCPK30
LNPU763PNSRHD	1.043	.091	.985	.047	.394	.009	4	●	●	●	●

Recommended Starting Speeds [SFM]

Material Group		KC520M			KC725M			KCK15			KCPK30		
P	1	–	–	–	860	**750**	700	–	–	–	1485	**1300**	1210
	2	–	–	–	720	**630**	530	–	–	–	920	**830**	750
	3	–	–	–	660	**560**	460	–	–	–	830	**750**	680
	4	–	–	–	590	**490**	390	–	–	–	620	**575**	520
	5	–	–	–	490	**440**	390	–	–	–	850	**760**	690
	6	–	–	–	430	**330**	260	–	–	–	520	**450**	–
M	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
K	1	880	**800**	710	–	–	–	1380	**1255**	1115	965	**875**	780
	2	690	**620**	580	–	–	–	1095	**975**	910	770	**690**	630
	3	580	**520**	470	–	–	–	920	**815**	750	645	**575**	530
N	1–2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–	–	–	–
H	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–

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

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..HD	.007	**.017**	.028	.005	**.013**	.020	.004	**.011**	.018	.004	**.010**	.016	.004	**.010**	.016	.S..HD

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



Beyond BLAST™ • KSSM™ 45

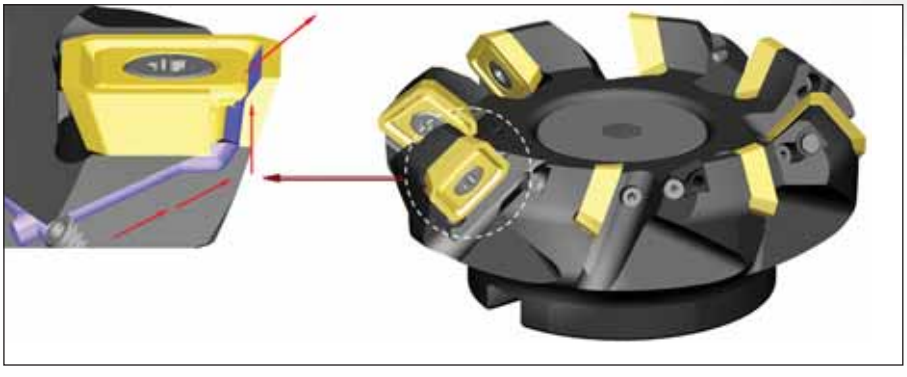
More than just the right tool — the ultimate solution.

Primary Application

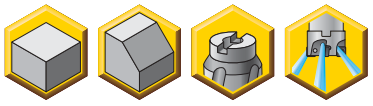
The Beyond BLAST KSSM 45° utilizes Precision Coolant Technology (PCT) to aggressively apply coolant directly to the cutting area. Not only does this reduce heat at the cutting edge, but it also assists with reducing tool and chip friction, increasing chip evacuation, and relieving shear stress. Because the Beyond BLAST technology can be applied in low-pressure conditions, there is no need to invest in additional equipment. It's so easy to convert from conventional to Beyond BLAST technology, it can be done directly on the floor — virtually eliminating costly downtime. See what the performance leader can do for your titanium machining.

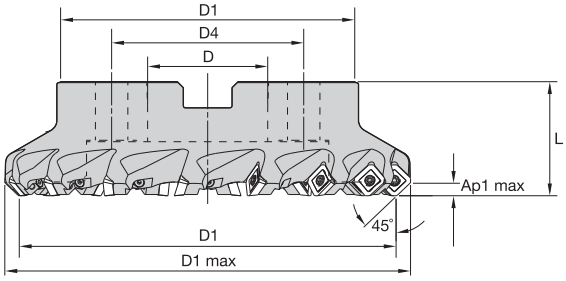
Features and Benefits

Features	Benefits
PCT — Precision Coolant Technology.	Coolant delivery exactly to the cutting area.
Increased heat transfer.	Less tool/chip friction and shear stress.
Improved chip control.	True internal coolant assists chip evacuation.
Beyond BLAST also works with regular low-pressure conditions.	No need for investments in high-pressure equipment.
Easy to convert from conventional to Beyond BLAST Technology.	Shop-floor-proven handling reduces costly downtime.
Up to 100% better tool life.	Performance leader in machining titanium.



- Precision Coolant Technology (PCT).
- Coolant delivery exactly to cutting area.
- Increased heat transfer.
- Improved chip control.
- Productivity booster for machining titanium.







beyond BLAST™

BB Shell Mills 45°

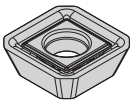
order number	catalog number	D1	D1 max	D	D4	D6	L	Ap1 max	Z	lbs	max RPM
4137742	**KSSISR200SE443BB45M3**	2.000	2.546	.750	–	1.750	1.750	.260	4	1.04	18300
4137773	**KSSISR250SE443BB45M4**	2.500	3.044	1.000	–	2.188	1.750	.260	5	1.70	16300
4137774	**KSSISR300SE443BB45M4**	3.000	3.542	1.000	–	2.188	1.750	.260	6	2.08	14900
4137775	**KSSISR400SE443BB45M5**	4.000	4.540	1.250	–	2.875	2.000	.260	7	4.02	12900
4147540	**KSSISR400SE443BB45F5**	4.000	4.540	1.250	–	2.875	2.000	.260	10	4.10	12900
4137776	**KSSISR500SE443BB45M6**	5.000	5.538	1.500	–	3.812	2.380	.260	8	7.48	11500
4147541	**KSSISR500SE443BB45F6**	5.000	5.538	1.500	–	3.812	2.380	.260	12	7.62	11500
4137777	**KSSISR600SE443BB45M8**	6.000	6.537	2.000	–	5.000	2.380	.260	10	11.89	10500
4147542	**KSSISR600SE443BB45F8**	6.000	6.537	2.000	–	5.000	2.380	.260	14	12.04	10500
4137778	**KSSISR800SE443BB45M10**	8.000	8.536	2.500	4.000	6.125	2.380	.260	12	16.05	9100
4147543	**KSSISR800SE443BB45F10**	8.000	8.536	2.500	4.000	6.125	2.380	.260	16	16.30	9100

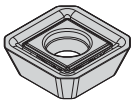
Spare Parts

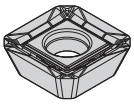
D1	insert screw	in. lbs.	Torx Plus driver	socket-head cap screw	coolant lock screw assembly	coolant shower plate assembly
2.000	**MS2078**	35.00	**DT15IP**	**S445**	–	–
2.500	**MS2078**	35.00	**DT15IP**	**S458**	–	–
3.000	**MS2078**	35.00	**DT15IP**	**S458**	–	–
4.000	**MS2078**	35.00	**DT15IP**	–	**S2162C**	–
5.000	**MS2078**	35.00	**DT15IP**	–	**S2163C**	–
6.000	**MS2078**	35.00	**DT15IP**	–	**S2192C**	–
8.000	**MS2078**	35.00	**DT15IP**	–	–	**MCC080001**

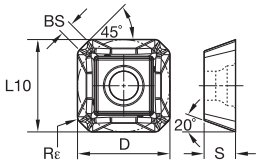
Insert Selection Guide

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..GD2	KC725M	**.E..GN**	**KC725M**	.S..GN	KC725M
H1	–	–	–	–	–	–


SECX-ENGN


SECX-SNGN


SECX-GD2



beyond BLAST™

● first choice
○ alternate choice

P M K N S H

SECX-GN

catalog number	D	BS	L10	Rε	S	hm	cutting edges	KC725M
SECX443AEEN7GN	.55	.07	.55	.04	.19	.0025	4	●
SECX443AESN7GN	.55	.07	.55	.04	.19	.0030	4	●

SECX-GD2

catalog number	D	BS	L10	Rε	S	hm	cutting edges	KC725M
SECX443AEEN7GD2	.55	.07	.55	.04	.19	.0025	4	●

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	–	–	–
	3	–	–	–
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

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..GD2	.007	**.010**	.014	.005	**.008**	.011	.004	**.007**	.009	.004	**.006**	.009	.004	**.006**	.008	.E..GD2
.E..GN	.007	**.010**	.014	.005	**.008**	.011	.004	**.007**	.009	.004	**.006**	.009	.004	**.006**	.008	.E..GN
.S..GN	.008	**.012**	.018	.006	**.009**	.013	.005	**.008**	.011	.005	**.007**	.011	.005	**.007**	.010	.S..GN

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



KSSM™ 45°

Primary Application

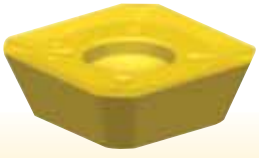
Universal face mill for conventional machining.

Features and Benefits

- Insert SE.T1404.
- Ap1 max = .260".
- Four true cutting edges.
- Pocket seat protection with carbide shims.
- Easy handling and rapid insert change.

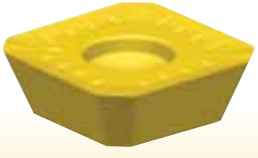


-LD2



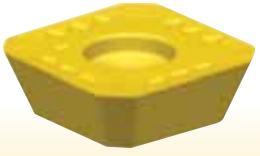
For light machining and semi-finishing, light edge prep.

-GP2



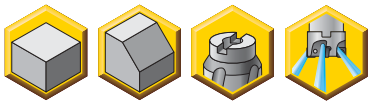
For medium roughing, medium edge prep.

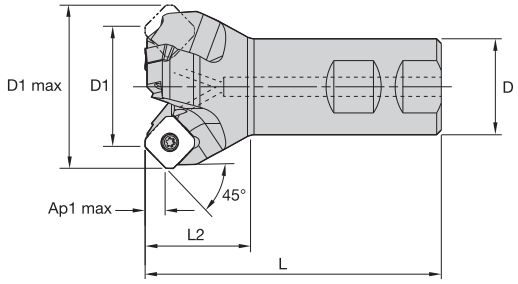
-GB2



For heavy roughing, strongest edge protection.

- Consumes less power.
- Rapid insert changes.







KSSM 45° • Weldon® End Mills

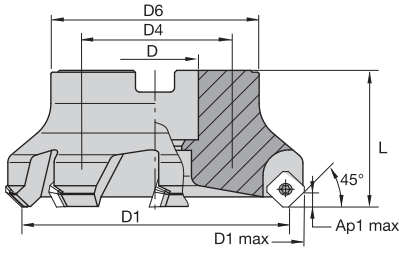
order number	catalog number	D1	D1 max	D	L	L2	Ap1 max	Z	lbs	max RPM
1817940	**KISR126SE44345M**	1.260	1.812	1.250	3.855	1.575	.260	2	1.2	28000
1817941	**KISR157SE44345M**	1.575	2.124	1.250	3.855	1.575	.260	3	1.3	26000
1817942	**KISR197SE44345M**	1.969	2.515	1.250	3.855	1.575	.260	4	1.5	22500
1817953	**KISR248SE44345M**	2.480	3.024	1.250	3.855	1.575	.260	5	1.9	20200

Spare Parts

D1	 insert screw	in. lbs.	 Torx Plus driver
1.260	**MS2078**	35	**DT15IP**
1.575	**MS2078**	35	**DT15IP**
1.969	**MS2078**	35	**DT15IP**
2.480	**MS2078**	35	**DT15IP**

- Consumes less power.
- Rapid insert changes.



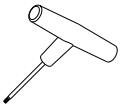


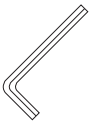


KSSM 45° • Shell Mills

order number	catalog number	D1	D1 max	D	D4	D6	L	Ap1 max	Z	lbs	max RPM
1817866	**KSSISR197SE44345C3**	1.970	2.515	.750	–	1.750	1.575	.260	3	.9	22500
1817867	**KSSISR197SE44345M3**	1.970	2.515	.750	–	1.750	1.575	.260	4	.9	22500
1817868	**KSSISR248SE44345C4**	2.480	3.024	1.000	–	2.190	1.575	.260	4	1.3	20200
1817869	**KSSISR248SE44345M4**	2.480	3.024	1.000	–	2.190	1.575	.260	5	1.3	20200
1817870	**KSSISR315SE44345C4**	3.150	3.691	1.000	–	2.190	1.969	.260	4	2.2	18000
1817871	**KSSISR315SE44345M4**	3.150	3.691	1.000	–	2.190	1.969	.260	6	2.2	18000
1817872	**KSSISR394SE44345C5**	3.940	4.477	1.250	–	2.880	1.969	.260	5	3.6	16000
1817933	**KSSISR394SE44345M5**	3.940	4.477	1.250	–	2.880	1.969	.260	7	3.6	16000
1817934	**KSSISR492SE44345C6**	4.920	5.460	1.500	–	3.810	2.480	.260	6	6.5	14400
1817935	**KSSISR492SE44345M6**	4.920	5.460	1.500	–	3.810	2.480	.260	8	6.6	14400
1817936	**KSSISR630SE44345C6**	6.300	6.836	1.500	–	3.810	2.480	.260	7	9.9	12500
1817937	**KSSISR630SE44345M6**	6.300	6.836	1.500	–	3.810	2.480	.260	10	10.0	12500
1817938	**KSSISR787SE44345C10**	7.870	8.410	2.500	4.000	6.125	2.480	.260	8	13.2	11300
1817939	**KSSISR787SE44345M10**	7.870	8.410	2.500	4.000	6.125	2.480	.260	12	13.4	11300

Spare Parts

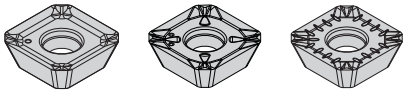


D1	insert screw	in. lbs.	Torx Plus driver	shim	shim screw	hex driver	in. lbs.	socket-head cap screw	low-head cap screw
1.970	**MS2078**	35.0	**DT15IP**	–	–	–	–	**S2043**	–
2.480	**MS2078**	35.0	**DT15IP**	–	–	–	–	–	**S2044**
3.150	**MS2078**	35.0	**DT15IP**	**SM455**	**SRS3**	**DH35M**	40.0	–	–
3.940	**MS2078**	35.0	**DT15IP**	**SM455**	**SRS3**	**DH35M**	40.0	–	–
4.920	**MS2078**	35.0	**DT15IP**	**SM455**	**SRS3**	**DH35M**	40.0	–	–
6.300	**MS2078**	35.0	**DT15IP**	**SM455**	**SRS3**	**DH35M**	40.0	–	–
7.870	**MS2078**	35.0	**DT15IP**	**SM455**	**SRS3**	**DH35M**	40.0	–	–

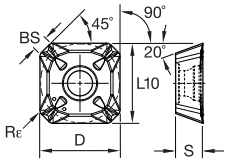
Insert Selection Guide

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.E..LD2	KC725M	**.E..GP2**	**KC725M**	.E..GB2	KC725M
P3–P4	.E..GP2	KCPK30	**.E..GB2**	**KCPK30**	.S..GP2	KCPK30
P5–P6	.E..GB2	KCPM20	**.S..GP2**	**KCPM20**	.S..GB2	KCPM20
M1–M2	.E..GP2	KC725M	**.E..GB2**	**KC725M**	.S..GP2	KC725M
M3	.E..GB2	KCPK30	**.S..GP2**	**KCPK30**	.S..GB2	KCPK30
K1–K2	.E..GP2	KCK15	**.E..GB2**	**KCK15**	.S..GP2	KCK15
K3	.E..GB2	KCPK30	**.S..GP2**	**KCPK30**	.S..GB2	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..LD2	KC725M	**.E..GP2**	**KC725M**	.E..GB2	KC725M
S3	.E..GP2	KC725M	**.E..GB2**	**KC725M**	.S..GP2	KC725M
S4	.S..GP2	KC725M	**.S..GB2**	**KC725M**	–	–
H1	–	–	**–**	**–**	–	–

Indexable Inserts



SECT-LE SECT-LD2 SEKT-GP2



SECT/SEKT/SEPT

beyond

● first choice
○ alternate choice

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

Face Mills

SECT-LE

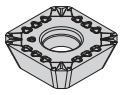
catalog number	D	S	L10	BS	Rε	hm	cutting edges	KC410M	KC520M	KC725M	KCK15	KCPM20	KCPK30	KY3500
SECT443AEFN7LE	.551	.188	.551	.104	.039	.001	4	●						

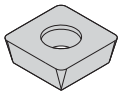
SECT-LD2

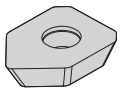
catalog number	D	S	L10	BS	Rε	hm	cutting edges	KC410M	KC520M	KC725M	KCK15	KCPM20	KCPK30	KY3500
SECT443AEEN7LD2	.551	.188	.551	.104	.039	.002	4			●		●		

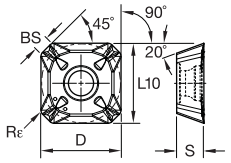
SEKT-GP2

catalog number	D	S	L10	BS	Rε	hm	cutting edges	KC410M	KC520M	KC725M	KCK15	KCPM20	KCPK30	KY3500
SEKT443AEEN7GP2	.551	.188	.551	.104	.039	.002	4		●	●	●	●	●	
SEKT443AESN7GP2	.551	.188	.551	.104	.039	.004	4		●	●	●	●	●	

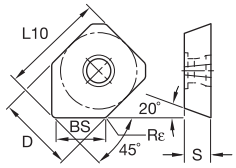

SEPT-GB2


SECW-GN


SECW-GNW



SECT/SEKT/SEPT



SECW-GNW

beyond

● first choice
○ alternate choice

		KC410M	KC520M	KC725M	KCK15	KCPM20	KCPK30	KY3500
P				●		●	●	
M				●		○	○	
K			●		●	○	○	●
N	●							
S				●				
H								

SEPT-GB2

catalog number	D	S	L10	BS	Rε	hm	cutting edges	KC410M	KC520M	KC725M	KCK15	KCPM20	KCPK30	KY3500
SEPT443AEEN7GB2	.551	.188	.551	.104	.039	.003	4		●	●	●	●	●	
SEPT443AESN7GB2	.551	.188	.551	.104	.039	.005	4		●	●	●	●	●	

SECW-GN

catalog number	D	S	L10	BS	Rε	hm	cutting edges	KC410M	KC520M	KC725M	KCK15	KCPM20	KCPK30	KY3500
SECW443AESN7GN	.551	.188	.551	.104	.039	.006	4							●

SECW-GNW

catalog number	D	S	L10	BS	Rε	hm	cutting edges	KC410M	KC520M	KC725M	KCK15	KCPM20	KCPK30	KY3500
SECW443AEEN22GNW	.551	.188	.325	.325	.063	.002	2		●	●				

Recommended Starting Speeds [SFM]

Material Group		KC410M			KC520M			KC725M			KCK15		
P	1	–	–	–	–	–	–	1030	**900**	840	–	–	–
	2	–	–	–	–	–	–	860	**760**	640	–	–	–
	3	–	–	–	–	–	–	790	**670**	550	–	–	–
	4	–	–	–	–	–	–	710	**590**	470	–	–	–
	5	–	–	–	–	–	–	590	**530**	470	–	–	–
	6	–	–	–	–	–	–	520	**400**	310	–	–	–
M	1	–	–	–	–	–	–	670	**590**	540	–	–	–
	2	–	–	–	–	–	–	610	**520**	430	–	–	–
	3	–	–	–	–	–	–	460	**400**	310	–	–	–
K	1	–	–	–	1060	**960**	850	–	–	–	1660	**1510**	1340
	2	–	–	–	830	**740**	700	–	–	–	1310	**1170**	1090
	3	–	–	–	700	**620**	560	–	–	–	1100	**980**	900
N	1–2	4790	**4260**	3920	–	–	–	–	–	–	–	–	–
	3	4260	**3920**	3600	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	140	**120**	100	–	–	–
	2	–	–	–	–	–	–	140	**120**	100	–	–	–
	3	–	–	–	–	–	–	180	**140**	100	–	–	–
	4	–	–	–	–	–	–	240	**180**	120	–	–	–
H	1	–	–	–	–	–	–	–	–	–	–	–	–

Material Group		KCPM20			KCPK30			KY3500		
P	1	2170	**1910**	1760	1780	**1560**	1450	–	–	–
	2	1340	**1210**	1090	1100	**1000**	900	–	–	–
	3	1210	**1090**	1000	1000	**900**	820	–	–	–
	4	910	**840**	760	740	**690**	620	–	–	–
	5	1090	**980**	900	1020	**910**	830	–	–	–
	6	760	**660**	570	620	**540**	–	–	–	–
M	1	880	**790**	680	820	**720**	620	–	–	–
	2	800	**700**	620	730	**640**	550	–	–	–
	3	640	**570**	490	570	**520**	460	–	–	–
K	1	1420	**1280**	1150	1160	**1050**	940	3170	**2880**	2560
	2	1130	**1010**	920	920	**830**	760	2510	**2240**	2090
	3	950	**840**	780	770	**690**	640	2110	**1870**	1720
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%			
.F..LE	.005	**.010**	.019	.004	**.007**	.014	.003	**.006**	.012	.003	**.006**	.012	.003	**.006**	.011	.F..LE
.E..LD2	.005	**.011**	.020	.004	**.008**	.015	.003	**.007**	.013	.003	**.006**	.012	.003	**.006**	.012	.E..LD2
.E..GP2	.007	**.011**	.022	.005	**.009**	.016	.004	**.007**	.014	.004	**.007**	.013	.004	**.007**	.013	.E..GP2
.E..GB2	.008	**.013**	.023	.006	**.010**	.017	.005	**.008**	.015	.005	**.008**	.014	.005	**.008**	.014	.E..GB2
.S..GP2	.010	**.015**	.026	.007	**.011**	.019	.006	**.010**	.017	.006	**.009**	.016	.006	**.009**	.015	.S..GP2
.S..GB2	.010	**.018**	.028	.007	**.013**	.021	.006	**.011**	.018	.006	**.011**	.017	.006	**.010**	.016	.S..GB2
.S..GN	.010	**.019**	.029	.007	**.014**	.021	.006	**.012**	.019	.006	**.011**	.017	.006	**.011**	.017	.S..GN

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



More than just the right tool • the ultimate solution.

That's **Beyond BLAST.**™

That's **Different Thinking.**

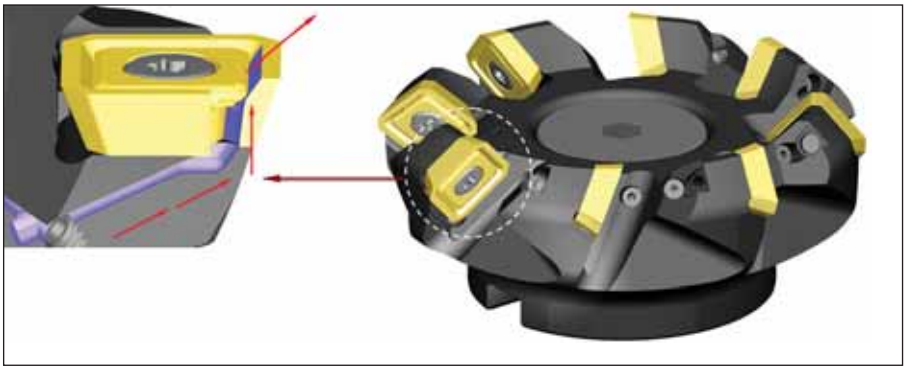
At Kennametal, innovation follows vision. Our revolutionary products and services are inspired by asking "what if?" The solutions that follow — like our Beyond BLAST through-coolant inserts — deliver remarkable results in the world's most demanding machining environments.

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

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

Milling

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



beyond™ BLAST™



KSOM™ Mini • KSOM™

Primary Application

Super soft cutting due to super positive rake face.

Features and Benefits

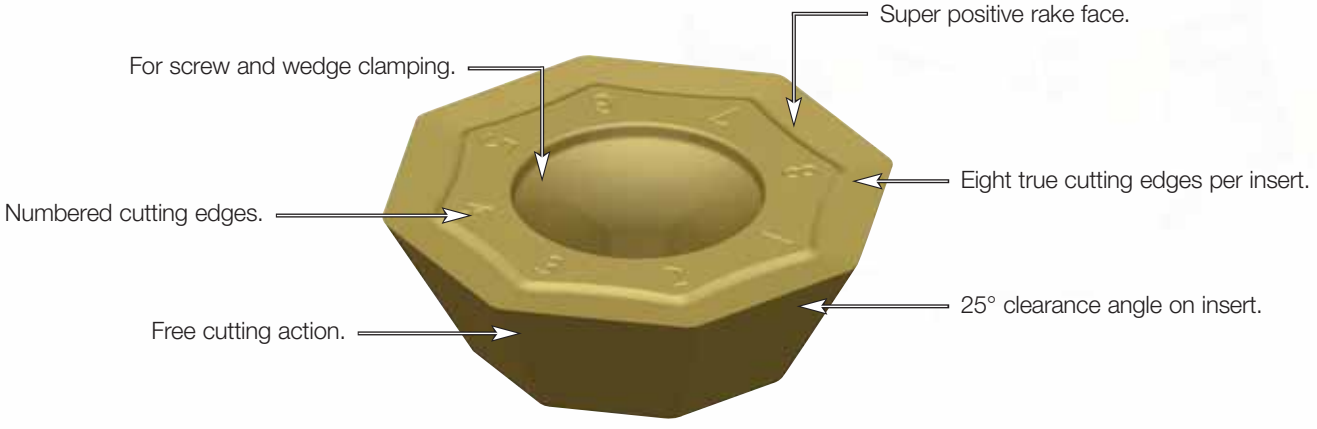
Features

- KSOM Mini: insert OFKT53/OFPT53.
- KSOM: insert OFKT64/OFPT64.
- KSOM Mini: Ap1 max = .138" (8 indexes); Ap2 max = .354" (4 indexes).
- KSOM: Ap1 max =.197" (8 indexes); Ap2 max = .461" (4 indexes).

Benefits

- Low cutting forces deliver higher feed capability.
- Excellent performance in stainless steel and super alloys.
- First choice solution in machining turbochargers.

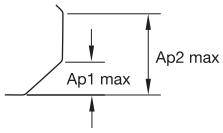


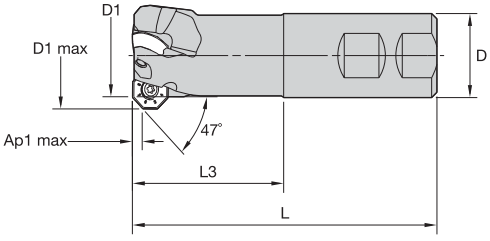


Insert OF.T53/OF.T64

- Eight cutting edges per insert.
- Super soft cutting.









Ap1 max = .138" (8 edges)
Ap2 max = .354" (4 edges), reduce feed rate by 40%

KSOM Mini • Weldon® End Mills

order number	catalog number	D1	D1 max	D	L	Ap1 max	Z	max ramp angle	lbs	max RPM
3093625	**KSOM125OF5345M3**	1.250	1.610	.750	3.047	.138	2	11.0°	.53	20050
3093601	**KSOM125OF5345F3**	1.250	1.610	.750	3.047	.138	3	11.0°	.49	20050
3093624	**KSOM125OF5345M5**	1.250	1.610	1.250	4.530	.138	2	11.0°	1.45	20050
3093600	**KSOM125OF5345F5**	1.250	1.610	1.250	4.530	.138	3	11.0°	1.45	20050
3093627	**KSOM150OF5345M3**	1.500	1.856	.750	3.047	.138	3	8.0°	.60	16710
3093623	**KSOM150OF5345F3**	1.500	1.856	.750	3.047	.138	4	8.0°	.56	16710
3093626	**KSOM150OF5345M5**	1.500	1.856	1.250	4.530	.138	3	8.0°	1.51	16710
3093602	**KSOM150OF5345F5**	1.500	1.856	1.250	4.530	.138	4	8.0°	1.53	16710

Spare Parts

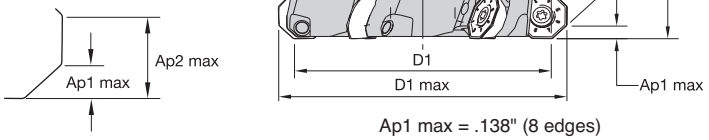




D1	insert screw	in. lbs.	Torx Plus wrench
1.250	**193.433**	53	**TTP15**
1.500	**193.433**	53	**TTP15**

- Eight cutting edges per insert.
- Super soft cutting.







Ap1 max = .138" (8 edges)
Ap2 max = .354" (4 edges), reduce feed rate by 40%

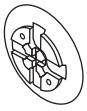
KSOM Mini • Shell Mills

order number	catalog number	D1	D1 max	D	D6	L	Ap1 max	Z	max ramp angle	lbs	max RPM
3093634	**KSOM200OF5345M3**	2.000	2.350	.750	1.593	1.570	.138	4	5.2°	.85	12530
3093628	**KSOM200OF5345F3**	2.000	2.350	.750	1.593	1.570	.138	6	5.2°	.92	12530
3093635	**KSOM250OF5345M3**	2.500	2.846	.750	1.986	1.570	.138	5	3.8°	1.38	10030
3093629	**KSOM250OF5345F3**	2.500	2.846	.750	1.986	1.570	.138	7	3.8°	1.48	10030
3093636	**KSOM300OF5345M4**	3.000	3.343	1.000	2.031	1.750	.138	6	3.0°	1.88	8350
3093630	**KSOM300OF5345F4**	3.000	3.343	1.000	2.031	1.750	.138	9	3.0°	2.00	8350
3093637	**KSOM400OF5345M5**	4.000	4.340	1.250	2.722	1.750	.138	7	2.1°	2.77	6270
3093631	**KSOM400OF5345F5**	4.000	4.340	1.250	2.722	1.750	.138	10	2.1°	3.21	6270
3093638	**KSOM500OF5345M6**	5.000	5.340	1.500	3.652	2.380	.138	8	1.6°	5.63	5010
3093632	**KSOM500OF5345F6**	5.000	5.340	1.500	3.652	2.380	.138	12	1.6°	6.07	5010
3093639	**KSOM600OF5345M8**	6.000	6.336	2.000	4.722	2.380	.138	10	1.3°	8.75	4180
3093633	**KSOM600OF5345F8**	6.000	6.336	2.000	4.722	2.380	.138	16	1.3°	9.19	4180

Spare Parts





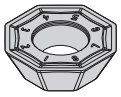



D1	insert screw	in. lbs.	Torx Plus wrench	socket-head cap screw	coolant lock screw	coolant lock screw	coolant shower plate
2.000	**193.433**	53	**TTP15**	**S445**	**–**	**–**	**–**
2.500	**193.433**	53	**TTP15**	**S445**	**–**	**–**	**–**
3.000	**193.433**	53	**TTP15**	**S458**	**–**	**–**	**–**
4.000	**193.433**	53	**TTP15**	**–**	**S2162C**	**–**	**–**
5.000	**193.433**	53	**TTP15**	**–**	**–**	**420.201**	**470.240**
6.000	**193.433**	53	**TTP15**	**–**	**–**	**420.241**	**470.241**

Insert Selection Guide

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.E..LB	KC725M	**.E..GB**	**KC725M**	.S..HB	KC725M
P3–P4	.E..LB	KCPK30	**.E..GB**	**KCPK30**	.S..HB	KCPK30
P5–P6	.E..GB	KCPK30	**.E..GB**	**KCPM20**	.S..HB	KCPM20
M1–M2	.E..LB	KC725M	**.E..GB**	**KC725M**	.S..HB	KC725M
M3	.E..LB	KCPK30	**.E..GB**	**KCPK30**	.S..HB	KCPK30
K1–K2	.E..LB	KCK15	**.E..GB**	**KCK15**	.S..HB	KCK15
K3	.E..LB	KCPK30	**.E..GB**	**KCPK30**	.S..HB	KCPK30
N1–N2	.F..LBJ	KC410M	**.F..LBJ**	**KC410M**	.F..LNJ	KC410M
N3	.F..LBJ	KC410M	**.F..LNJ**	**KC410M**	.E..LBJ	KC422M
S1–S2	.E..LB	KC725M	**.E..GB**	**KC725M**	.S..HB	KC725M
S3	.E..LB	KC725M	**.E..GB**	**KC725M**	.S..HB	KC725M
S4	.E..GB	KC725M	**.S..HB**	**KC725M**	–	–
H1	–	–	**–**	**–**	–	–

Indexable Inserts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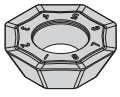
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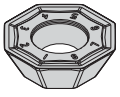
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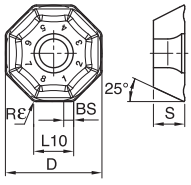


beyond

● first choice
○ alternate choice

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

OFKT-LNJ

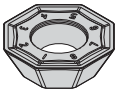
catalog number	D	S	L10	BS	Rε	hm	cutting edges	KC410M	KC422M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30
OFKT53AFFN4LNJ	.579	.197	.236	–	.031	.001	8	●							

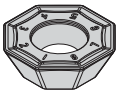
OFKT-LBJ

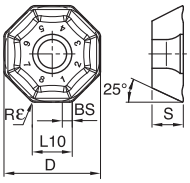
catalog number	D	S	L10	BS	Rε	hm	cutting edges	KC410M	KC422M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30
OFKT53AFFN4LBJ	.579	.197	.236	–	.031	.001	8	●							
OFKT53AFEN4LBJ	.579	.197	.236	–	.031	.001	8		●						

OFKT-LB

catalog number	D	S	L10	BS	Rε	hm	cutting edges	KC410M	KC422M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30
OFKT53AFEN6LB	.579	.197	.236	.048	.031	.004	8				●	●	●		●
OFKT53AFSN6LB	.579	.197	.236	.048	.031	.009	8			●	●	●			●


OF.T-GB


OF.T- HB



beyond

● first choice
○ alternate choice

		KC410M	KC422M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30
P					○	●		●	●
M					●	●		○	○
K				●	○		●	○	○
N		●	●						
S					●	●			
H									

OFKT-GB

catalog number	D	S	L10	BS	Rε	hm	cutting edges	KC410M	KC422M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30
OFKT53AFEN4GB	.579	.197	.236	—	.031	.006	8			●	●	●	●	●	●

OFKT-HB

catalog number	D	S	L10	BS	Rε	hm	cutting edges	KC410M	KC422M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30
OFKT53AFSN4HB	.579	.197	.236	—	.031	.008	8				●	●		●	●

OFPT-GB

catalog number	D	S	L10	BS	Rε	hm	cutting edges	KC410M	KC422M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30
OFPT53AFEN4GB	.579	.197	.236	—	.031	.006	8			●		●	●	●	●

OFPT- HB

catalog number	D	S	L10	BS	Rε	hm	cutting edges	KC410M	KC422M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30
OFPT53AFSN4HB	.579	.197	.236	—	.031	.008	8			●		●	●	●	●

Recommended Starting Speeds [SFM]

Material Group		KC410M			KC422M			KC520M			KC522M		
P	1	–	–	–	–	–	–	–	–	–	1300	**1130**	1060
	2	–	–	–	–	–	–	–	–	–	1080	**950**	790
	3	–	–	–	–	–	–	–	–	–	1000	**840**	700
	4	–	–	–	–	–	–	–	–	–	890	**730**	590
	5	–	–	–	–	–	–	–	–	–	730	**660**	590
	6	–	–	–	–	–	–	–	–	–	650	**490**	400
M	1	–	–	–	–	–	–	–	–	–	800	**710**	650
	2	–	–	–	–	–	–	–	–	–	730	**620**	520
	3	–	–	–	–	–	–	–	–	–	550	**480**	370
K	1	–	–	–	–	–	–	1060	**960**	850	900	**820**	720
	2	–	–	–	–	–	–	830	**740**	700	710	**640**	590
	3	–	–	–	–	–	–	700	**620**	560	590	**530**	480
N	1–2	4790	**4260**	3920	4220	**3720**	3440	–	–	–	–	–	–
	3	4260	**3920**	3600	3720	**3440**	3000	–	–	–	–	–	–
S	1	–	–	–	–	–	–	–	–	–	160	**140**	110
	2	–	–	–	–	–	–	–	–	–	160	**140**	110
	3	–	–	–	–	–	–	–	–	–	200	**160**	110
	4	–	–	–	–	–	–	–	–	–	280	**200**	140
H	1	–	–	–	–	–	–	–	–	–	–	–	–

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

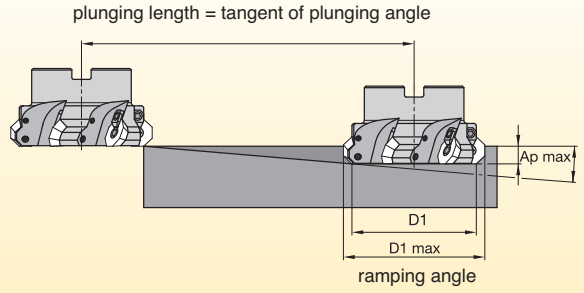
Light Machining	General Purpose	Heavy Machining

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)																Insert Geometry
	10%			20%			30%			40%			50–100%				
.F..LBJ	.005	**.010**	.019	.004	**.007**	.014	.003	**.006**	.012	.003	**.006**	.012	.003	**.006**	.011	.F..LBJ
.F..LNJ	.005	**.010**	.019	.004	**.007**	.014	.003	**.006**	.012	.003	**.006**	.012	.003	**.006**	.011	.F..LNJ
.E..LBJ	.005	**.011**	.020	.004	**.008**	.015	.003	**.007**	.013	.003	**.007**	.012	.003	**.006**	.012	.E..LBJ
.E..LB	.010	**.014**	.024	.007	**.011**	.017	.006	**.009**	.015	.006	**.009**	.014	.006	**.009**	.014	.E..LB
.S..LB	.010	**.024**	.037	.007	**.017**	.027	.006	**.015**	.023	.006	**.014**	.021	.006	**.014**	.021	.S..LB
.E..GB	.010	**.020**	.029	.007	**.015**	.021	.006	**.013**	.018	.006	**.012**	.017	.006	**.012**	.017	.E..GB
.S..HB	.010	**.022**	.039	.007	**.017**	.029	.006	**.014**	.025	.006	**.013**	.023	.006	**.013**	.023	.S..HB

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

KSOM Mini Application • OF.T06L5

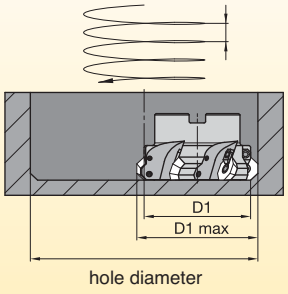
Ramping



Inch Version

D1 inch	D1 max inch	Ap max inch	ramping angle (°)	ramping length inch
1.25	1.61	.354	11,0	1.82
1.50	1.85	.354	8,0	2.52
2.00	2.35	.354	5,2	3.89
2.50	2.85	.354	3,8	5.34
3.00	3.34	.354	3,0	6.76
4.00	4.34	.354	2,1	9.66
5.00	5.34	.354	1,6	12.69
6.00	6.34	.354	1,3	15.61

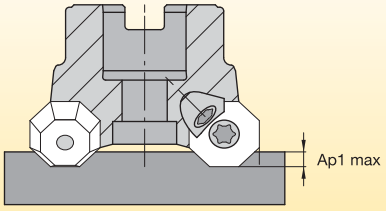
Helical Interpolation



Inch Version

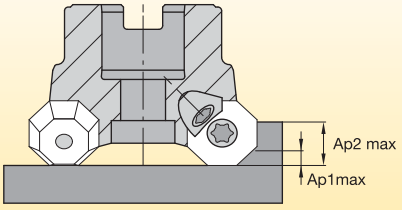
D1 inch	D1 max inch	hole diameter min inch	hole diameter max inch	Ap/rev inch
1.25	1.61	2.41	3.20	.185
1.50	1.85	2.91	3.69	.185
2.00	2.35	3.90	4.68	.185
2.50	2.85	4.93	5.68	.185
3.00	3.34	5.89	6.68	.185
4.00	4.34	7.89	8.67	.185
5.00	5.34	9.89	10.67	.185
6.00	6.34	11.89	12.67	.185

Plunging



max plunging depth	inch
Ap1 max	.13

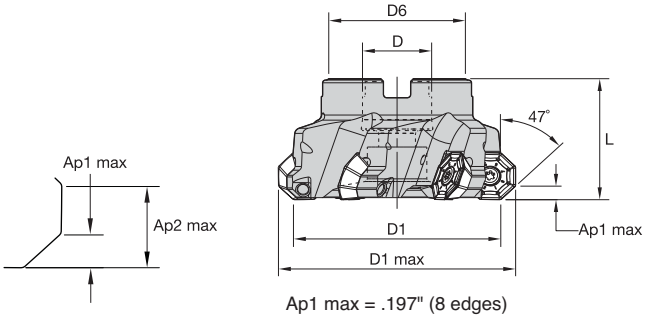
Face Milling



max DOC Ap	inch	chipload (fz)
Ap1 max	.14	1 x fx
Ap2 max	.35	0,6 x fz

- Eight cutting edges per insert.
- Super soft cutting







Ap1 max = .197" (8 edges)
Ap2 max = .461" (4 edges), reduce feed rate by 40%

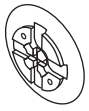
KSOM • Shell Mills

order number	catalog number	D1	D1 max	D	D6	L	Ap1 max	Z	max ramp angle	lbs	max RPM
3093645	**KSOM250OF6445M3**	2.500	2.945	.750	1.986	1.750	.197	4	5.5°	1.47	10100
3093640	**KSOM250OF6445F3**	2.500	2.945	.750	1.986	1.750	.197	5	5.5°	1.29	10100
3093646	**KSOM300OF6445M4**	3.000	3.441	1.000	2.031	1.750	.197	4	4.2°	1.83	7900
3093641	**KSOM300OF6445F4**	3.000	3.441	1.000	2.031	1.750	.197	6	4.2°	1.68	7900
3093647	**KSOM400OF6445M5**	4.000	4.436	1.250	2.722	1.750	.197	5	2.9°	2.69	6300
3093642	**KSOM400OF6445F5**	4.000	4.436	1.250	2.722	1.750	.197	8	2.9°	2.79	6300
3093648	**KSOM500OF6445M6**	5.000	5.433	1.500	3.652	2.380	.197	6	2.2°	5.54	5000
3093643	**KSOM500OF6445F6**	5.000	5.433	1.500	3.652	2.380	.197	10	2.2°	5.94	5000
3093649	**KSOM600OF6445M8**	6.000	6.431	2.000	4.722	2.380	.197	7	1.8°	8.51	3900
3093644	**KSOM600OF6445F8**	6.000	6.431	2.000	4.722	2.380	.197	12	1.8°	8.66	3900

Spare Parts





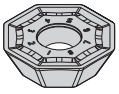
D1	insert screw	in. lbs.	Torx Plus wrench	socket-head cap screw	coolant lock screw assembly	coolant lock screw	coolant shower plate
2.500	**193.409**	53	**TTP20**	**S445**	**–**	**–**	**–**
3.000	**193.409**	53	**TTP20**	**S458**	**–**	**–**	**–**
4.000	**193.409**	53	**TTP20**	**–**	**S2162C**	**–**	**–**
5.000	**193.409**	53	**TTP20**	**–**	**–**	**420.201**	**470.240**
6.000	**193.409**	53	**TTP20**	**–**	**–**	**420.241**	**470.241**

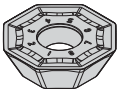
NOTE: Coolant clamping screw and coolant cap must be purchased separately.

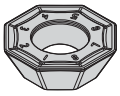
Insert Selection Guide

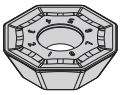
Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.E..LB	KC725M	**.E..GB**	**KC725M**	.S..HB	KC725M
P3–P4	.E..LB	KCPK30	**.E..GB**	**KCPK30**	.S..HB	KCPK30
P5–P6	.E..LB	KCPK30	**.E..GB**	**KCPK30**	.S..HB	KCPK30
M1–M2	.E..LB	KC725M	**.E..GB**	**KC725M**	.S..HB	KC725M
M3	.E..LB	KCPK30	**.E..GB**	**KCPK30**	.S..HB	KCPK30
K1–K2	.E..LB	KCK15	**.E..GB**	**KCK15**	.S..HB	KCK15
K3	.E..LB	KCPK30	**.E..GB**	**KCPK30**	.S..HB	KCPK30
N1–N2	.F..LNJ	KC410M	**.F..LNJ**	**KC410M**	.F..LNJ	KC410M
N3	.F..LNJ	KC410M	**.F..LNJ**	**KC410M**	.F..LNJ	KC410M
S1–S2	.E..LB	KC725M	**.E..GB**	**KC725M**	.S..HB	KC725M
S3	.E..LB	KC725M	**.E..GB**	**KC725M**	.S..HB	KC725M
S4	.E..GB	KC725M	**.S..HB**	**KC725M**	–	–
H1	–	–	**–**	**–**	–	–

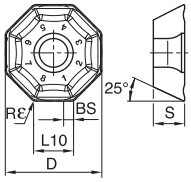
Indexable Inserts


OF.T-LNJ


OF.T-LB


OF.T-GB


OF.T- HB



● first choice
○ alternate choice

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

OFKT-LNJ

catalog number	D	S	L10	BS	Rε	hm	cutting edges	KC410M	KC520M	KC522M	KC725M	KCK15	KCPK30
OFKT64AFFN6LNJ	.736	.236	.295	–	.047	.001	8	●					

OFKT-LB

catalog number	D	S	L10	BS	Rε	hm	cutting edges	KC410M	KC520M	KC522M	KC725M	KCK15	KCPK30
OFKT64AFEN6LB	.736	.236	.295	.083	.047	.004	8		●	●	●	●	●
OFKT64AFSN6LB	.736	.236	.295	.083	.047	.009	8				●		●

OFKT-GB

catalog number	D	S	L10	BS	Rε	hm	cutting edges	KC410M	KC520M	KC522M	KC725M	KCK15	KCPK30
OFKT64AFEN6GB	.736	.236	.295	–	.047	.006	8		●	●	●		●

OFKT-HB

catalog number	D	S	L10	BS	Rε	hm	cutting edges	KC410M	KC520M	KC522M	KC725M	KCK15	KCPK30
OFKT64AFSN6HB	.736	.236	.295	–	.047	.008	8		●	●	●	●	●

OFPT-GB

catalog number	D	S	L10	BS	Rε	hm	cutting edges	KC410M	KC520M	KC522M	KC725M	KCK15	KCPK30
OFPT64AFEN6GB	.736	.236	.295	–	.047	.006	8		●	●	●	●	●

OFPT- HB

catalog number	D	S	L10	BS	Rε	hm	cutting edges	KC410M	KC520M	KC522M	KC725M	KCK15	KCPK30
OFPT64AFSN6HB	.736	.236	.295	–	.047	.008	8		●	●	●	●	●

Recommended Starting Speeds [SFM]

Material Group		KC410M			KC520M			KC522M		
P	1	–	–	–	–	–	–	1300	**1130**	1060
	2	–	–	–	–	–	–	1080	**950**	790
	3	–	–	–	–	–	–	1000	**840**	700
	4	–	–	–	–	–	–	890	**730**	590
	5	–	–	–	–	–	–	730	**660**	590
	6	–	–	–	–	–	–	650	**490**	400
M	1	–	–	–	–	–	–	800	**710**	650
	2	–	–	–	–	–	–	730	**620**	520
	3	–	–	–	–	–	–	550	**480**	370
K	1	–	–	–	1060	**960**	850	900	**820**	720
	2	–	–	–	830	**740**	700	710	**640**	590
	3	–	–	–	700	**620**	560	590	**530**	480
N	1–2	4790	**4260**	3920	–	–	–	–	–	–
	3	4260	**3920**	3600	–	–	–	–	–	–
S	1	–	–	–	–	–	–	160	**140**	110
	2	–	–	–	–	–	–	160	**140**	110
	3	–	–	–	–	–	–	200	**160**	110
	4	–	–	–	–	–	–	280	**200**	140
H	1	–	–	–	–	–	–	–	–	–

Material Group		KC725M			KCK15			KCPK30		
P	1	1030	**900**	840	–	–	–	1780	**1560**	1450
	2	860	**760**	640	–	–	–	1100	**1000**	900
	3	790	**670**	550	–	–	–	1000	**900**	820
	4	710	**590**	470	–	–	–	740	**690**	620
	5	590	**530**	470	–	–	–	1020	**910**	830
	6	520	**400**	310	–	–	–	620	**540**	–
M	1	670	**590**	540	–	–	–	820	**720**	620
	2	610	**520**	430	–	–	–	730	**640**	550
	3	460	**400**	310	–	–	–	570	**520**	460
K	1	–	–	–	1660	**1510**	1340	1160	**1050**	940
	2	–	–	–	1310	**1170**	1090	920	**830**	760
	3	–	–	–	1100	**980**	900	770	**690**	640
N	1–2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–
S	1	140	**120**	100	–	–	–	–	–	–
	2	140	**120**	100	–	–	–	–	–	–
	3	180	**140**	100	–	–	–	–	–	–
	4	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]

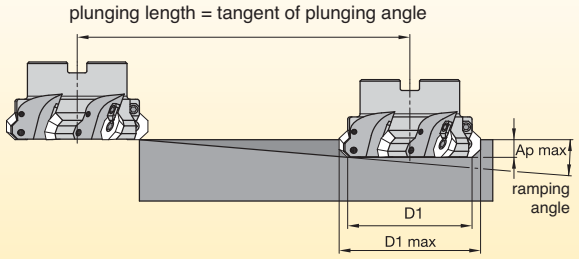
Light Machining	General Purpose	Heavy Machining

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.F..LNJ	.005	**.010**	.019	.004	**.007**	.014	.003	**.006**	.012	.003	**.006**	.012	.003	**.006**	.011	.F..LNJ
.E..LB	.010	**.014**	.024	.007	**.011**	.017	.006	**.009**	.015	.006	**.009**	.014	.006	**.009**	.014	.E..LB
.S..LB	.010	**.024**	.037	.007	**.017**	.027	.006	**.015**	.023	.006	**.014**	.021	.006	**.014**	.021	.S..LB
.E..GB	.010	**.020**	.029	.007	**.015**	.021	.006	**.013**	.018	.006	**.012**	.017	.006	**.012**	.017	.E..GB
.S..HB	.010	**.024**	.039	.007	**.017**	.029	.006	**.015**	.025	.006	**.014**	.023	.006	**.014**	.023	.S..HB

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

KSOM Mini Application • OF.T07L6

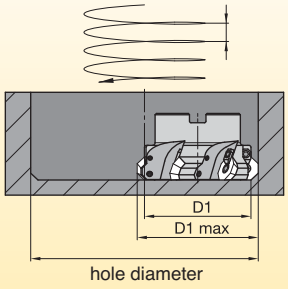
Ramping



Inch Version

D1 inch	D1 max inch	Ap max inch	ramping angle (°)	ramping length inch
2.50	2.94	.46	5.5	4.78
3.00	3.44	.46	4.2	6.27
4.00	4.43	.46	2.9	9.09
5.00	5.43	.46	2.2	11.99
6.00	6.43	.46	1.8	14.65

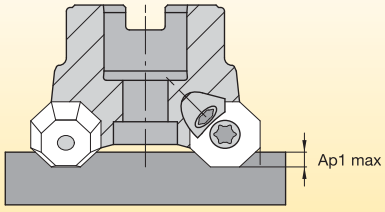
Helical Interpolation



Inch Version

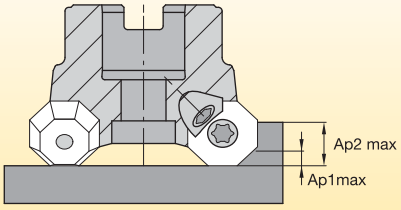
D1 inch	D1 max inch	hole diameter		Ap/rev inch
		min inch	max inch	
2.50	2.94	4.872	5.748	.248
3.00	3.44	5.868	6.744	.248
4.00	4.43	7.863	8.739	.248
5.00	5.43	9.859	10.736	.248
6.00	6.43	11.857	12.733	.248

Plunging



max plunging depth	inch
Ap1 max	.17

Face Milling



max DOC Ap	inch	chipload (fz)
Ap1 max	.20	1 x fx
Ap2 max	.46	0,6 x fz



Fix-Perfect™ Cast Iron Rougher and Finisher

Primary Application

Performance booster in machining cast iron materials. Based on workpiece requirements, Fix-Perfect covers all face- and shoulder-milling applications when machining cast iron materials with best-in-class productivity. Eight true cutting edges per insert deliver low cost per edge and best CPP ceramic inserts available as standard line items.

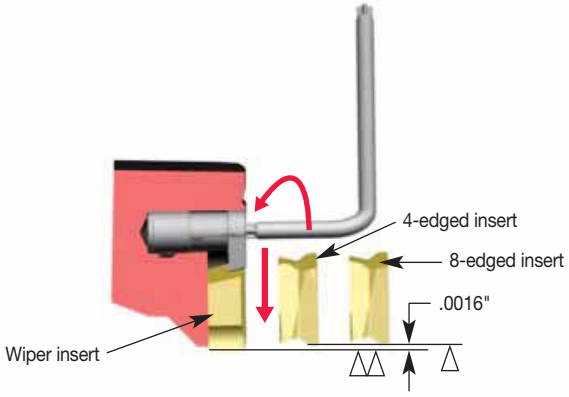
Features and Benefits

Fix-Perfect Cast Iron 20° and 0° Roughing and Finishing in One Tool

- Innovative tangential insert clamping.
- First choice for high feed rates.
- Protection of non-cutting edges.
- Adjustable element for fine finishing with wiper inserts.
- PCBN-tipped wiper inserts available for excellent floor finish.
- Micro-precise runout setup.

Fix-Perfect Cast Iron Finisher Best-in-Class Fine-Finishing Concept

- Rigid and stable cutter design.
- High-precision pocket seat.
- Perfect axial runout without insert adjustment.
- Reliable, excellent floor finish and flatness.
- Easy handling and low-cost cutter setup.





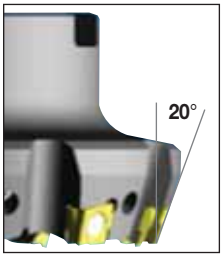
Fix-Perfect™ Finisher



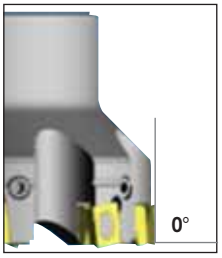
Fix-Perfect Cast Iron

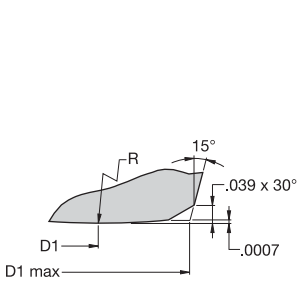
Fix-Perfect Cast Iron 20° and 0°

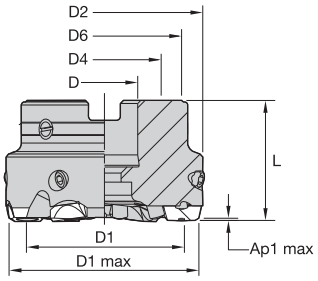
Fix-Perfect 20°



Fix-Perfect 0°







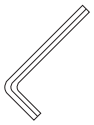


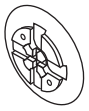
Finishing Face Mills • Coarse Pitch

order number	catalog number	D1	D1 max	D	D2	D4	D6	L	Ap1 max	Z	lbs	max RPM
1925488	**100B08RP00MD10CUF**	3.547	4.000	1.250	4.079	—	3.307	1.750	.040	8	3.70	12550
1925489	**125B10RP00MD10CUF**	4.547	5.000	1.500	5.079	—	4.100	2.380	.040	10	7.70	10050
1925490	**160B12RP00MD10CUF**	5.547	6.000	2.000	6.079	—	5.500	2.380	.040	12	12.60	8350
1925491	**200C14RP00MD10CUF**	7.547	8.000	2.500	8.079	4.000	7.087	2.380	.040	14	20.90	6250

Spare Parts





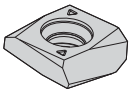
D1	clamp stud	clamp screw	in. lbs.	hex wrench	coolant lock screw assembly	coolant lock screw	coolant shower plate
4.000	**410.085**	**420.060**	45	**170.003**	**420.162**	**—**	**—**
5.000	**410.085**	**420.060**	45	**170.003**	**—**	**420.201**	**470.240**
6.000	**410.085**	**420.060**	45	**170.003**	**—**	**420.241**	**470.241**
8.000	**410.085**	**420.060**	45	**170.003**	**—**	**—**	**470.242**

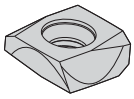
NOTE: Please order spare parts separately.
Left-hand cutters are available as non-stock standards.
Torque wrench (KTW45) and 3mm hex bit (69709922164) may be purchased separately to ensure proper torque setting.

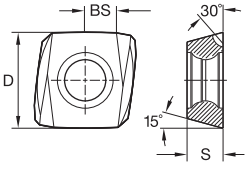
Insert Selection Guide

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	.F..GD4W	KC520M	**.F..GD4W**	**KC520M**	.F..GD4W	KC520M
K3	.E..GD4W	KC520M	**.E..GD4W**	**KC520M**	.E..GD4W	KC520M
N1–N2	–	–	–	–	–	–
N3	–	–	–	–	–	–
S1–S2	–	–	–	–	–	–
S3	–	–	–	–	–	–
S4	–	–	–	–	–	–
H1	–	–	–	–	–	–

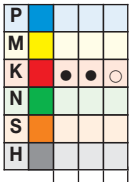
Indexable Inserts • Fix-Perfect • MDHX1004... Right Hand


MDHX-GD


MDHX-GD4W



● first choice
○ alternate choice



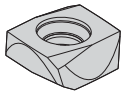
Face Mills

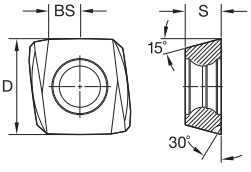
MDHX-GD • Right Hand

catalog number	D	S	BS	hm	cutting edges	K110M	KC520M	KTPK20
MDHX1004ZDERGD	.500	.187	.031	.002	4	●	●	●

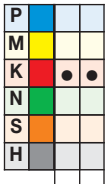
MDHX-GD4W • Right Hand

catalog number	D	S	BS	hm	cutting edges	K110M	KC520M	KTPK20
MDHX1004ZDERGD4W	.500	.187	.167	.002	4	●	●	●
MDHX1004ZDFRGD4W	.500	.187	.167	.001	4	●	●	●


MDHX-GD4W
Left Hand



● first choice
○ alternate choice



MDHX-GD4W • Left Hand

catalog number	L10	S	BS	hm	cutting edges	K110M	KC520M
MDHX1004ZDFLGD4W	.425	.187	.167	.001	4	●	●

Recommended Starting Speeds [SFM]

Material Group		K110M			KC520M			KTPK20		
P	1	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–
	5	–	–	–	–	–	–	–	–	–
	6	–	–	–	–	–	–	–	–	–
M	1	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–
K	1	510	**480**	450	1060	**960**	850	910	**770**	640
	2	450	**420**	390	830	**740**	700	720	**590**	520
	3	400	**350**	310	700	**620**	560	600	**500**	420
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]

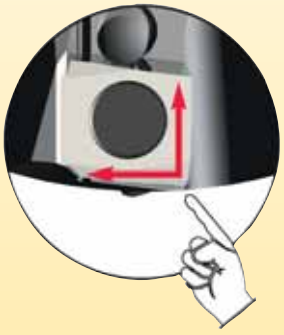
Light Machining	General Purpose	Heavy Machining

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.F..GD4W	.004	**.005**	.007	.003	**.004**	.005	.003	**.003**	.004	.003	**.003**	.004	.003	**.003**	.004	.F..GD4W
.E..GD4W	.005	**.006**	.008	.004	**.005**	.006	.003	**.004**	.005	.003	**.004**	.005	.003	**.004**	.005	.E..GD4W
.E..GD	.005	**.006**	.008	.004	**.005**	.006	.003	**.004**	.005	.003	**.004**	.005	.003	**.004**	.005	.E..GD

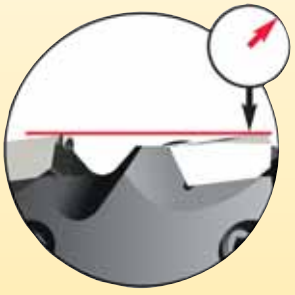
NOTE: Use “Light Machining” values as starting feed rate.

Insert Loading Procedure

1. Clean insert and insert pocket seat.
2. Load insert — push insert against pin and axial pocket wall.
3. Tighten screw to a torque of 45 in. lbs.
4. Check the axial runout.
5. Do not exceed the maximum recommended RPM.



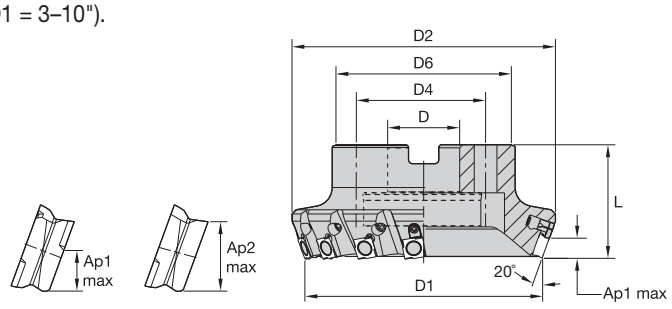




tool diameter (inch)	maximum axial runout	maximum RPM
4.00	.0004	12750
5.00	.0004	10200
6.00	.0015	7950
8.00	.0015	6350

- Eight cutting edges per insert.
- Rough and finish in one operation.
- Tangential mounted inserts deliver higher feed rates.
- Adjustable pockets (D1 = 3–10").







Ap1 max: .232" (8 edges)
Ap2 max: .374" (4 edges), reduce feed rate by 30%

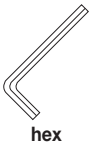
Fix-Perfect 20° • Shell Mills

order number	catalog number	D1	D	D2	D4	D6	L	Ap1 max	Z	Z ADJ	lbs	max RPM
1724429	**50A04RP70SP12CUFP**	2.000	.750	2.504	—	1.750	1.750	.232	4	0	1.24	8595
1724378	**50A05RP70SP12CUFP**	2.000	.750	2.504	—	1.750	1.750	.232	5	0	1.19	8595
1724430	**63A05RP70SP12CUFP**	2.500	.750	2.988	—	1.750	1.750	.232	5	0	1.66	6876
1724432	**80A06RP70SP12C1WUFP**	3.000	1.000	3.504	—	2.190	1.750	.232	6	1	2.21	5730
1724380	**80A08RP70SP12C2WUFP**	3.000	1.000	3.504	—	2.190	1.750	.232	8	2	2.43	5730
1724391	**100B12RP70SP12C3WUFP**	4.000	1.500	4.488	—	2.880	1.750	.232	12	3	3.10	4298
1532258	**100B08RP70SP12C2WUFP**	4.000	1.500	4.488	—	2.880	1.750	.232	8	2	3.30	4298
1532257	**125B10RP70SP12C2WUFP**	5.000	1.500	5.504	—	3.810	2.375	.232	10	2	6.50	3438
1724393	**125B15RP70SP12C3WUFP**	5.000	1.500	5.504	—	3.810	2.375	.232	15	3	6.50	3438
1724434	**160B12RP70SP12C3WUFP**	6.000	2.000	6.504	—	4.882	2.375	.232	12	3	10.10	2865
1724395	**160B18RP70SP12C3WUFP**	6.000	2.000	6.504	—	4.882	2.375	.232	18	3	10.10	2865
1532255	**200C16RP70SP12C4WUFP**	8.000	2.500	8.504	4.000	5.120	2.375	.232	16	4	14.10	2149
1724396	**200C24RP70SP12C4WUFP**	8.000	2.500	8.504	4.000	5.120	2.375	.232	24	4	15.20	2149
1532254	**250C20RP70SP12C4WUFP**	10.000	2.500	10.504	4.000	7.120	2.375	.232	20	4	29.30	1719

Spare Parts





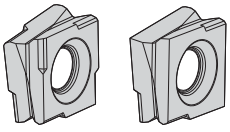

D1	adjusting element	adjusting element screw	Torx wrench	clamp stud	set screw	hex wrench	in. lbs.	socket-head cap screw
2.000	—	—	—	**410.081**	**121.612**	**170.003**	45	**S445**
2.500	—	—	—	**410.081**	**121.612**	**170.003**	45	**S445**
3.000	**479.100**	**193.300**	**KT9**	**410.081**	**121.612**	**170.003**	45	**S458**
4.000	**479.100**	**193.300**	**KT9**	**410.081**	**121.612**	**170.003**	45	—
5.000	**479.100**	**193.300**	**KT9**	**410.081**	**121.612**	**170.003**	45	—
6.000	**479.100**	**193.300**	**KT9**	**410.081**	**121.612**	**170.003**	45	—
8.000	**479.100**	**193.300**	**KT9**	**410.081**	**121.612**	**170.003**	45	—
10.000	**479.100**	**193.300**	**KT9**	**410.081**	**121.612**	**170.003**	45	—

NOTE: Please order spare parts separately.
Torque wrench (KTW45) and 3mm hex bit (69709922164) may be purchased separately to ensure proper torque setting.

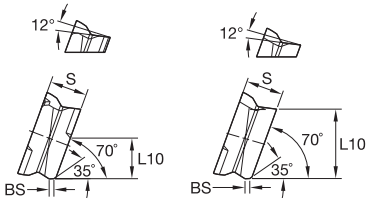
Insert Selection Guide

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	.E..GP	KC520M	**.E..GP**	**KCK15**	.S..GP	KCK15
K3	.E..GP	KCPK30	**.S..GP**	**KCPK30**	.S..GP	KCPK30
N–N2	–	–	–	–	–	–
N3	–	–	–	–		–
S1–S2	–	–	–	–	–	–
S3	–	–	–	–	–	–
S4	–	–	–	–	–	–
H1	–	–	–	–	–	–

Indexable Inserts • SPHX1205... • Roughing



SPHX-GP SPHX-GP4S



SPHX-GP SPHX-GP4S

● first choice
○ alternate choice

P						
M						
K	●	●	○	○	●	
N						
S						
H						

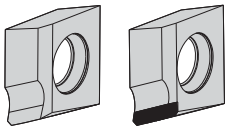
Face Mills

SPHX-GP • Roughing

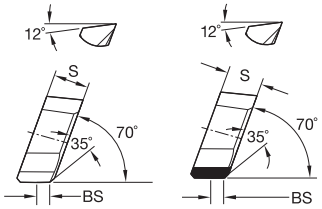
catalog number	L10	S	BS	hm	cutting edges	KC520M	KCK15	KTPK20	KCPK30	KY3500
SPHX1205ZCELGP	.213	.217	.028	.002	8	●	●			
SPHX1205ZCTRGP	.213	.217	.028	.009	8			●		
SPHX1205ZCTRGPK	.213	.217	.028	.009	8					●
SPHX1205ZCTLGPK	.213	.217	.028	.009	8					●
SPHX1205ZCERGP	.213	.217	.028	.002	8	●	●		●	
SPHX1205ZCSRGP	.213	.217	.028	.006	8		●		●	

SPHX-GP4S • Roughing

catalog number	L10	S	BS	hm	cutting edges	KC520M	KCK15	KTPK20	KCPK30	KY3500
SPHX1205ZCERGP4S	.395	.217	.028	.002	4	●	●			
SPHX1205ZCTRGP4SK	.396	.217	.028	.009	4					●



SPHX-W -GN | SPHX-W -GNT1W



SPHX-W -GN | SPHX-W -GNT1W

● first choice
○ alternate choice

P					
M					
K	●	●	●	●	
N					
S					
H					

SPHX-W • Finishing • GN

catalog number	L10	S	BS	hm	cutting edges	KB1340	KC520M	KCK15	KY3500
SPHX1205ZCFRGN1W	.394	.217	.079	.001	1		●	●	
SPHX1205ZCFLGN1W	.394	.217	.079	.001	1			●	
SPHX1205ZCERGNT1W	.394	.217	.079	.001	1	●			
SPHX1205ZCFRGN1WK	.394	.217	.079	.001	1				●

SPHX-W • Finishing • GP

catalog number	L10	S	BS	hm	cutting edges	KB1340	KC520M	KCK15	KY3500
SPHX1205ZCER-GP1W	.394	.217	.079	.001	1		●	●	
SPHX1205ZCTR-GP1WK	.394	.217	—	.009	1				●

NOTE: SPHX-W: Wiper Facet BS = .08".

Recommended Starting Speeds [SFM]

Material Group		KB1340			KC520M			KCK15		
P	1	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–
	5	–	–	–	–	–	–	–	–	–
	6	–	–	–	–	–	–	–	–	–
M	1	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–
K	1	5400	**3600**	1920	1060	**960**	850	1660	**1510**	1340
	2	–	–	–	830	**740**	700	1310	**1170**	1090
	3	–	–	–	700	**620**	560	1100	**980**	900
N	1–2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–
H	1	–	–	–	–	–	–	–	–	–

Material Group		KTPK20			KCPK30			KY3500		
P	1	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–
	5	–	–	–	–	–	–	–	–	–
	6	–	–	–	–	–	–	–	–	–
M	1	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–
K	1	910	**770**	640	1160	**1050**	940	3170	**2880**	2560
	2	720	**590**	520	920	**830**	760	2510	**2240**	2090
	3	600	**500**	420	770	**690**	640	2110	**1870**	1720
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.
KY3500™ can be used for machining of low tensile ductile irons (e.g., 65-45-12).

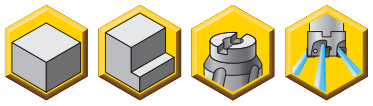
Recommended Starting Feeds [IPT]

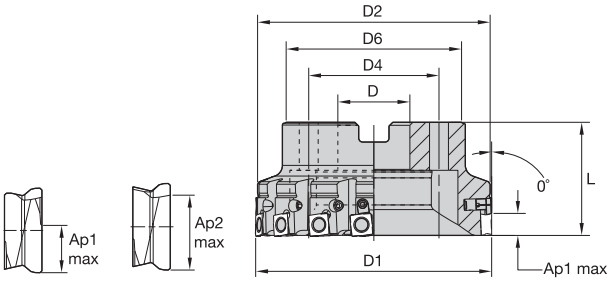
Light Machining	General Purpose	Heavy Machining

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..GP	.005	**.010**	.019	.004	**.007**	.014	.003	**.007**	.012	.003	**.006**	.011	.003	**.006**	.011	.E..GP
.T..GP	.007	**.017**	.034	.005	**.013**	.025	.005	**.011**	.021	.004	**.010**	.020	.004	**.010**	.020	.T..GP
.S..GP	.007	**.016**	.032	.005	**.012**	.023	.004	**.010**	.020	.004	**.010**	.019	.004	**.009**	.018	.S..GP

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

- Eight cutting edges per insert.
- Rough and finish in one operation.
- Tangential mounted inserts deliver higher feed rates.
- Adjustable pockets (D1 = 3–6").







Ap1 max = .236" (8 edges)
Ap2 max = .394" (4 edges), reduce feed rate by 30%

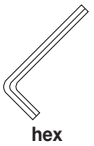
Fix-Perfect 0° • Shell Mills

order number	catalog number	D1	D	D2	D6	L	Ap1 max	Z	Z ADJ	lbs	max RPM
1724407	**50A04RP90SP12CUFP**	2.000	.750	1.929	1.750	1.750	.236	4	0	.93	8595
1514498	**50A05RP90SP12CUFP**	2.000	.750	1.929	1.750	1.750	.236	5	0	.93	8595
1724409	**63A05RP90SP12CUFP**	2.500	.750	2.433	1.750	1.750	.236	5	0	1.24	6876
1724417	**80A06RP90SP12C1WUFP**	3.000	1.000	2.906	2.190	1.750	.236	6	1	1.81	5730
1724339	**80A08RP90SP12C2WUFP**	3.000	1.000	2.906	2.190	1.750	.236	8	2	1.90	5730
1724419	**100B08RP90SP12C2WUFP**	4.000	1.500	3.906	2.882	1.750	.236	8	2	2.60	4298
1724351	**100B12RP90SP12C3WUFP**	4.000	1.500	3.906	2.882	1.750	.236	12	3	2.86	3130
1724421	**125B10RP90SP12C2WUFP**	5.000	1.500	4.906	3.811	2.375	.236	10	2	6.30	3438
1724353	**125B15RP90SP12C3WUFP**	5.000	1.500	4.906	3.811	2.375	.236	15	3	6.40	3438
1724424	**160B12RP90SP12C3WUFP**	6.000	2.000	5.906	4.882	2.375	.236	12	3	9.10	2865
1724355	**160B18RP90SP12C3WUFP**	6.000	2.000	5.906	4.882	2.375	.236	18	3	9.20	2865

Spare Parts





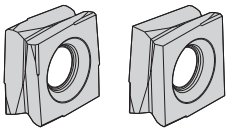



D1	adjusting element	Torx wrench	clamp stud	set screw	hex wrench	in. lbs.	socket-head cap screw
2.000	**–**	**–**	**410.081**	**121.612**	**170.003**	45	**S446**
2.500	**–**	**–**	**410.081**	**121.612**	**170.003**	45	**S445**
3.000	**479.100**	**KT9**	**410.081**	**121.612**	**170.003**	45	**S458**
4.000	**479.100**	**KT9**	**410.081**	**121.612**	**170.003**	45	**–**
5.000	**479.100**	**KT9**	**410.081**	**121.612**	**170.003**	45	**–**
6.000	**479.100**	**KT9**	**410.081**	**121.612**	**170.003**	45	**–**

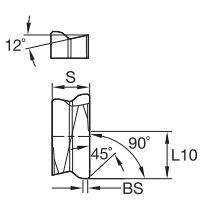
NOTE: Please order spare parts separately.
Torque wrench (KTW45) and 3mm hex bit (69709922164) can be purchased separately to ensure proper torque setting.

Insert Selection Guide

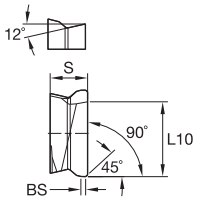
Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	–	–	–	–	–	–
P3–P4	–	–	–	–	–	–
P5–P6	–	–	–	–	–	–
M1–M2	–	–	–	–	–	–
M3	–	–	–	–	–	–
K1–K2	.E..GPB	KC520M	**.E..GPB**	**KCK15**	.S..GPB	KCK15
K3	.E..GPB	KCPK30	**.S..GPB**	**KCPK30**	.S..GPB	KCPK30
N1–N2	–	–	–	–	–	–
N3	–	–	–	–	–	–
S1–S2	–	–	–	–	–	–
S3	–	–	–	–	–	–
S4	–	–	–	–	–	–
H1	–	–	–	–	–	–



SPHX-GPB SPHX-GP4S

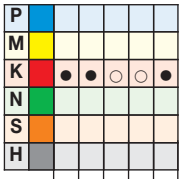


SPHX-GPB



SPHX-GP4S

● first choice
○ alternate choice

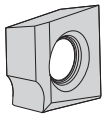


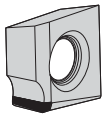
SPHX-GPB • Roughing

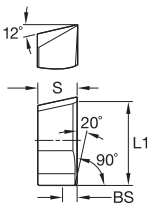
catalog number	L10	S	BS	hm	cutting edges	KC520M	KCK15	KTPK20	KCPK30	KY3500
SPHX1205PCERGPB	.259	.217	.028	.001	8	●	●		●	
SPHX1205PCTRGPBK	.259	.217	.028	.009	8					●
SPHX1205PCSRGPB	.259	.217	.028	.006	8		●		●	
SPHX1205PCTRGPB	.259	.217	.028	.009	8			●		
SPHX1205PCTLGPBK	.259	.217	.028	.009	8					●

SPHX-GP4S • Roughing

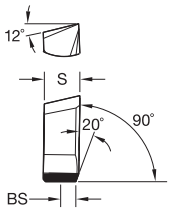
catalog number	L10	S	BS	hm	cutting edges	KC520M	KCK15	KTPK20	KCPK30	KY3500
SPHX1205PCERGP4SB	.436	.217	.028	.001	4	●	●			
SPHX1205PCTRGP4SBK	.436	.217	.028	.009	4					●


SPHX-GN1WB
SPHX-GN1WBK


SPHX-GNT1WB



SPHX-GN1WB
SPHX-GN1WBK



SPHX-GNT1WB

● first choice
○ alternate choice

		KB1340	KC520M	KCK15	KTPK20	KCPK30	KY3500
P							
M							
K		●	●	●	○	○	●
N							
S							
H							

SPHX-W • Finishing • GN

catalog number	L1	S	BS	hm	cutting edges	KB1340	KC520M	KCK15	KTPK20	KCPK30	KY3500
SPHX1205PCFLGN1WB	.433	.217	.079	.001	1			●			
SPHX1205PCERGN1WB	.433	.205	.079	.002	1					●	
SPHX1205PCERGNT1WB	.433	.217	.079	.001	1	●					
SPHX1205PCFRGN1WBK	.433	.205	.079	.001	1						●
SPHX1205PCFRGN1WB	.433	.205	.079	.001	1		●	●	●		

SPHX-W • Finishing • GP

catalog number	L1	S	hm	cutting edges	KB1340	KC520M	KCK15	KTPK20	KCPK30	KY3500
SPHX1205PCER-GP1WB	.433	.217	.001	1		●	●			
SPHX1205PCTR-GP1WBK	.433	.217	.009	1						●

NOTE: SPHX-W-GP: Wiper Facet BS = .08".

Recommended Starting Speeds [SFM]

Material Group		KB1340			KC520M			KCK15		
P	1	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–
	5	–	–	–	–	–	–	–	–	–
	6	–	–	–	–	–	–	–	–	–
M	1	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–
K	1	4500	**3000**	1600	880	**800**	710	1380	**1255**	1115
	2	–	–	–	690	**620**	580	1095	**975**	910
	3	–	–	–	580	**520**	470	920	**815**	750
N	1–2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–
H	1	–	–	–	–	–	–	–	–	–

Material Group		KTPK20			KCPK30			KY3500		
P	1	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–
	5	–	–	–	–	–	–	–	–	–
	6	–	–	–	–	–	–	–	–	–
M	1	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–
K	1	760	**640**	530	965	**875**	780	2640	**2400**	2130
	2	600	**490**	430	770	**690**	630	2090	**1870**	1740
	3	500	**420**	350	645	**575**	530	1760	**1560**	1430
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.
KY3500™ can be used for machining of low tensile ductile irons (e.g., 65-45-12).

Recommended Starting Feeds [IPT]

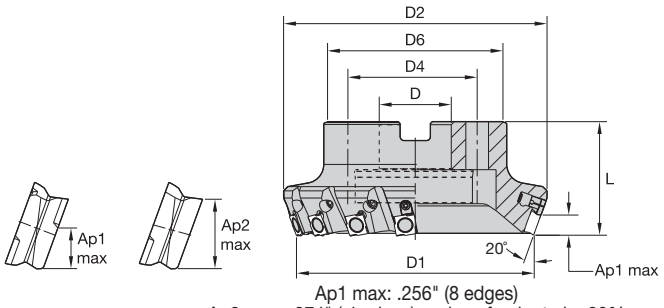
Light Machining	General Purpose	Heavy Machining

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..GPB	.003	**.008**	.016	.003	**.006**	.012	.002	**.005**	.010	.002	**.005**	.010	.002	**.005**	.010	.E..GPB
.T..GPB	.007	**.014**	.030	.005	**.011**	.022	.004	**.009**	.019	.004	**.009**	.018	.004	**.008**	.017	.T..GPB
.S..GPB	.007	**.013**	.027	.005	**.010**	.020	.004	**.008**	.017	.004	**.008**	.016	.004	**.008**	.016	.S..GPB

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

- Eight cutting edges per insert.
- Rough and finish in one operation.
- Tangential mounted inserts deliver higher feed rates.
- Adjustable pockets.





Ap1 max: .256" (8 edges)
Ap2 max: .374" (4 edges), reduce feed rate by 30%



Fix-Perfect 20° • Shell Mills

order number	catalog number	D1	D	D2	D4	D6	L	Ap1 max	Z	Z ADJ	lbs	max RPM
1806847	**125B08RP70SP15C2WUFP**	5.000	1.500	5.559	—	3.807	2.375	.256	8	2	7.000	3500
1806848	**160B10RP70SP15C2WUFP**	6.000	2.000	6.559	—	4.877	2.375	.256	10	2	10.400	2800
1806849	**200C12RP70SP15C2WUFP**	8.000	2.500	8.555	4.000	5.117	2.375	.256	12	2	14.500	2100

Spare Parts



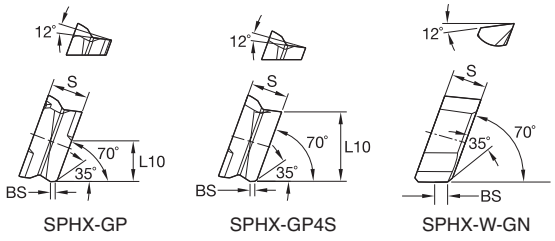
D1	adjusting element	adjusting element screw	Torx wrench	clamp stud	clamp screw	hex wrench	in. lbs.
5.000	**479.100**	**193.300**	**KT9**	**410.084**	**121.616**	**170.003**	45.000
6.000	**479.100**	**193.300**	**KT9**	**410.084**	**121.616**	**170.003**	45.000
8.000	**479.100**	**193.300**	**KT9**	**410.084**	**121.616**	**170.003**	45.000

NOTE: Please order spare parts separately.
Torque wrench (KTW45) and 3mm hex bit (69709922164) may be purchased separately to ensure proper torque setting.

Insert Selection Guide

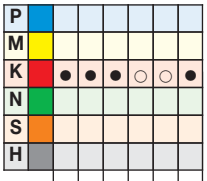
Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	–	–	–	–	–	–
P3–P4	–	–	–	–	–	–
P5–P6	–	–	–	–	–	–
M1–M2	–	–	–	–	–	–
M3	–	–	–	–	–	–
K1–K2	.E..GP	KC520M	**.E..GP**	**KCK15**	.S..GP	KCK15
K3	.E..GP	KCPK30	**.S..GP**	**KCPK30**	.S..GP	KCPK30
N1–N2	–	–	–	–	–	–
N3	–	–	–	–	–	–
S1–S2	–	–	–	–	–	–
S3	–	–	–	–	–	–
S4	–	–	–	–	–	–
H1	–	–	–	–	–	–


SPHX-GP SPHX-GP4S SPHX-W-GN



SPHX-GP SPHX-GP4S SPHX-W-GN

● first choice
○ alternate choice



SPHX-GP

catalog number	L10	S	BS	hm	cutting edges	K110M	KC520M	KCK15	KTPK20	KCPK30	KY3500
SPHX15T6ZCERGP	.257	.260	.047	.001	8		●	●		●	
SPHX15T6ZCSRGP	.257	.260	.047	.005	8	●				●	
SPHX15T6ZCTRGP	.256	.260	.047	.009	8				●		
SPHX15T6ZCTRGPK	.256	.260	.047	.009	8						●

SPHX-GP4S

catalog number	L10	S	BS	hm	cutting edges	K110M	KC520M	KCK15	KTPK20	KCPK30	KY3500
SPHX15T6ZCERGP4S	.492	.260	.047	.002	4			●			
SPHX15T6ZCTRGP4SK	.493	.260	.047	.009	4						●

SPHX-W-GN • Finishing

catalog number	L10	S	hm	cutting edges	K110M	KC520M	KCK15	KTPK20	KCPK30	KY3500
SPHX15T6ZCFRGN1W	.433	.260	.001	1			●			
SPHX15T6ZCFRGN1WK	.433	.260	.001	1						●

Recommended Starting Speeds [SFM]

Material Group		K110M			KC520M			KCK15		
P	1	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–
	5	–	–	–	–	–	–	–	–	–
	6	–	–	–	–	–	–	–	–	–
M	1	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–
K	1	510	**480**	450	1060	**960**	850	1660	**1510**	1340
	2	450	**420**	390	830	**740**	700	1310	**1170**	1090
	3	400	**350**	310	700	**620**	560	1100	**980**	900
N	1–2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–
H	1	–	–	–	–	–	–	–	–	–

Material Group		KTPK20			KCPK30			KY3500		
P	1	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–
	5	–	–	–	–	–	–	–	–	–
	6	–	–	–	–	–	–	–	–	–
M	1	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–
K	1	910	**770**	640	1160	**1050**	940	3170	**2880**	2560
	2	720	**590**	520	920	**830**	760	2510	**2240**	2090
	3	600	**500**	420	770	**690**	640	2110	**1870**	1720
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.
KY3500™ can be used for machining of low tensile ductile irons (e.g., 65-45-12).

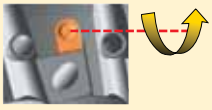
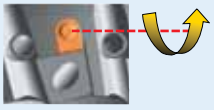
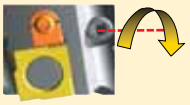
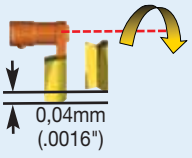
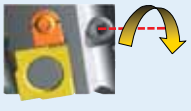
Recommended Starting Feeds [IPT]

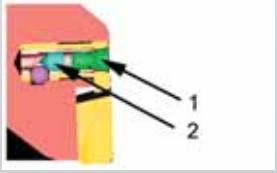
Light Machining	General Purpose	Heavy Machining

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..GP	.005	**.010**	.019	.004	**.007**	.014	.003	**.007**	.012	.003	**.006**	.011	.003	**.006**	.011	.E..GP
.T..GP	.007	**.017**	.034	.005	**.013**	.025	.005	**.011**	.021	.004	**.010**	.020	.004	**.010**	.020	.T..GP
.S..GP	.007	**.016**	.032	.005	**.012**	.023	.004	**.010**	.020	.004	**.010**	.019	.004	**.009**	.018	.S..GP

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

Introduction to Fitting Cutting Bodies

procedures:	roughing		roughing/finishing	
	 fixed pocket	 adjustable pocket	 fixed pocket	 adjustable pocket
1 Reset adjusting element T x T9	–		–	
2 Insert roughing insert Tighten SW 3 M_{An} = 44 in. lbs.				–
3 Tighten adjusting element gently	–		–	–
4 Insert finishing insert and pre-tighten SW 3 M_{VG} = 9 in. lbs.	–	–	–	
5 The finishing insert is positioned .0016" in front of the highest roughing insert	–	–	–	 0,04mm (.0016")
6 Tighten the finishing insert M_{An} = 44 in. lbs.	–	–	–	



NOTE: This process must be repeated whenever an indexable insert is changed. The ball is loose.

Changing the adjusting element

1. Remove the taper screw (1).
2. Loosen the SW 1,5 screw (2).
3. Remove the adjusting element.

ATTENTION: The maximum permissible cutting speed of the milling cutter heads is vc max = 3000 SFM. Only use original parts when clamping the indexable inserts.



HexaCut™ Series

Primary Application

The Kennametal HexaCut face milling program is specifically engineered for rough and semi-finish face milling of cast, ductile, and compacted graphite iron. Twelve cutting edges drastically reduce your cost per edge and increase tool life. Shorter setup times and excellent cutter accuracy allow you to apply the HexaCut program to the most demanding jobs. One ceramic and eight carbide grades with six insert geometries deliver high feed rates and will enable you to reach optimum horsepower.

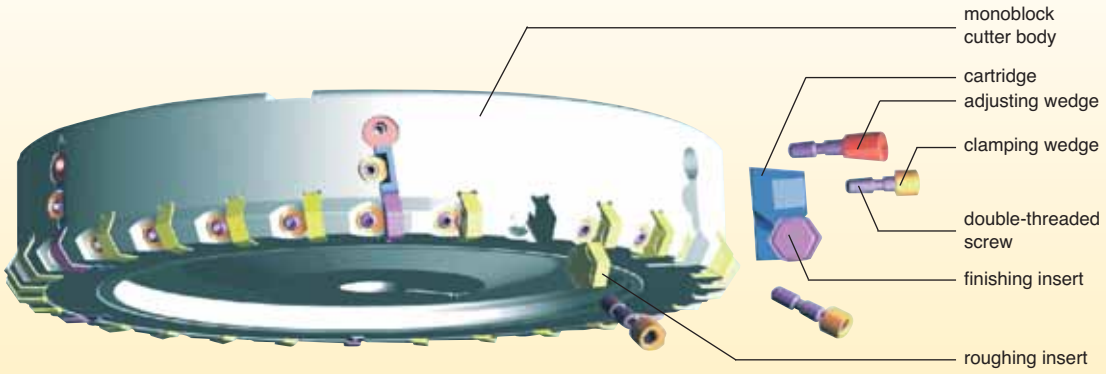
Features and Benefits

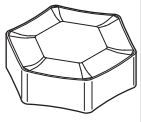
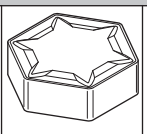
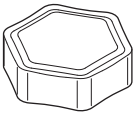
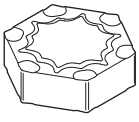
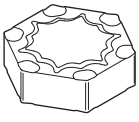
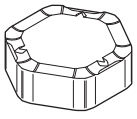
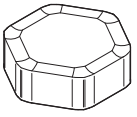
Tailor-Made Platform for Machining Automotive Components in Cast Iron Materials

- First choice for machining GCI and CGI materials.
- 45° lead cutter bodies engineered with fixed pockets for roughing applications up to Ap1 max = .256".
- 30° lead cutter bodies engineered with fixed and adjustable pockets for roughing and combined roughing/finishing applications up to Ap1 max = 8mm.
- Fine pitch cutter density for best productivity in machining cast iron materials.
- Comprehensive standard offering of different insert geometries to match every application for light, medium, and heavy machining.
- Easy handling and cutter body setup.
- Twelve true cutting edges per insert for low cost per edge and excellent CPP.
- Split case design with adapter flange available as preferred engineered solution standard for D1 = 10" and D1 = 12".



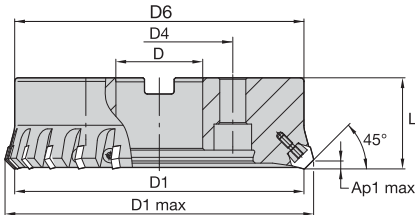
HexaCut 60° Cutter Body Design with Fixed and Adjustable Pocket Seats



			▼ = roughing indexable insert						▼▼ = finishing indexable insert
									
Recommended combination of standard indexable inserts and geometries			HNGX 090516 -MR Z = 12	HNGX 090508 -MH Z = 12	HNGX 090520 -ML Z = 12	HNGX 090520 -MM Z = 12	HNGX 090504 -MM Z = 12	HNGF 090504 -MT Z = 6+6	HNGF 090504 -MF Z = 12
Operation	Lead	Ap max							
▼	45°	.256"	■ OR	■ OR	■ OR	■			
▼	30°	.315"	■ OR	■ OR	■ OR	■			
▼▼	30°	.040"			■ OR	■ OR	■		■
▼/▼▼	30°	.315"	■ OR	■ OR	■ OR	■		■	

NOTE: Z = number of cutting edges

- Monoblock cutter design.
- Twelve cutting edges per insert.
- High feed rates.
- CGI milling solution.





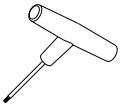
HexaCut Shell Mills • Monoblock Cutter Design • Right Hand

order number	catalog number	D1	D1 max	D	D4	L	Ap1 max	Z	lbs	max RPM
2402837	**K315A10RF45HN09C**	3.150	3.500	1.000	—	1.970	.256	10	3.50	3900
2402838	**K400B14RF45HN09C**	4.000	4.500	1.250	—	1.970	.256	14	5.00	3400
2402839	**K500B18RF45HN09C**	5.000	5.500	2.000	—	2.380	.256	18	10.00	3000
2402840	**K600B22RF45HN09C**	6.000	6.500	2.500	—	2.380	.256	22	16.30	2600
2402841	**K800C28RF45HN09C**	8.000	8.500	2.500	4.000	2.380	.256	28	32.50	2300

NOTE: Split case design with adapter flange for D1 = 10" and D1 = 12" can be ordered as preferred engineered solution standard.

Spare Parts



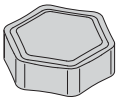


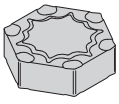
D1	wedge	wedge screw	in. lbs.	wrench
3.150	**12748358200**	**12748600900**	62	**12148044900**
4.000	**12748358200**	**12748600900**	62	**12148044900**
5.000	**12748358200**	**12748600900**	62	**12148044900**
6.000	**12748358200**	**12748600900**	62	**12148044900**
8.000	**12748358200**	**12748600900**	62	**12148044900**

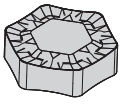
Insert Selection Guide

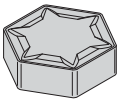
Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	–	–	–	–	–	–
P3–P4	–	–	–	–	–	–
P5–P6	–	–	–	–	–	–
M1–M2	–	–	–	–	–	–
M3	–	–	–	–	–	–
K1–K2	...ML	KCK15	**...MM**	**KC917M**	...MR	KC917M
K3	...MM	KCK15	**...MM**	**KCK15**	...MR	KCPK30
N1–N2	–	–	–	–	–	–
N3	–	–	–	–	–	–
S1–S2	–	–	–	–	–	–
S3	–	–	–	–	–	–
S4	–	–	–	–	–	–
H1	–	–	–	–	–	–

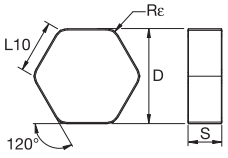
Indexable Inserts • HexaCut • HN..0905...


HNGX-ML


HNGX-MM


HNGX-MCI


HNGX-MH



HNGX/HNPX

● first choice
○ alternate choice

P	
M	
K	●
N	
S	
H	

HNGX-ML

catalog number	D	S	L10	Rε	hm	cutting edges	KCK15	KCPK30	KC514M	KC524M	KC907M	KC914M	KC917M	KC924M	KY3500
HNGX5355ML	.638	.219	.368	.079	.002	12	●		●	●	●		●	●	

HNGX-MM

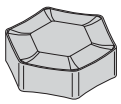
catalog number	D	S	L10	Rε	hm	cutting edges	KCK15	KCPK30	KC514M	KC524M	KC907M	KC914M	KC917M	KC924M	KY3500
HNGX5351MM	.638	.219	.368	.016	.004	12					●		●		
HNGX5355MM	.638	.219	.368	.079	.004	12	●				●	●	●		
HNGX5358MM	.638	.219	.368	.118	.004	12			●	●					

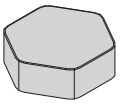
HNGX-MCI

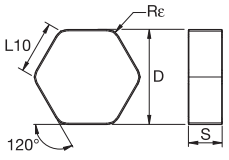
catalog number	D	S	L10	Rε	hm	cutting edges	KCK15	KCPK30	KC514M	KC524M	KC907M	KC914M	KC917M	KC924M	KY3500
HNGX090530MCI	.638	.219	.368	.118	.004	12							●		

HNGX-MH

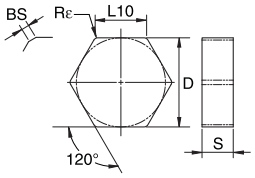
catalog number	D	S	L10	Rε	hm	cutting edges	KCK15	KCPK30	KC514M	KC524M	KC907M	KC914M	KC917M	KC924M	KY3500
HNGX5352MH	.638	.219	.368	.032	.002	12	●	●			●	●	●	●	


HNGX-MR


HNEN-SN



HNGX/HNPX



HNEN

● first choice
○ alternate choice

| | | |

Recommended Starting Speeds [SFM]

Material Group		KCK15			KCPK30			KC514M			KC524M			KC907M		
P	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	5	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	6	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
M	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
K	1	1660	**1510**	1340	1160	**1050**	940	1570	**1150**	830	1470	**1050**	750	1600	**1190**	1000
	2	1310	**1170**	1090	920	**830**	760	1380	**920**	680	1280	**820**	620	1260	**980**	820
	3	1100	**980**	900	770	**690**	640	1100	**850**	660	980	**730**	520	980	**820**	660
N	1–2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
H	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

Material Group		KC914M			KC917M			KC924M			KY3500		
P	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–	–	–	–
	5	–	–	–	–	–	–	–	–	–	–	–	–
	6	–	–	–	–	–	–	–	–	–	–	–	–
M	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
K	1	1370	**1180**	980	1180	**980**	780	1150	**900**	660	3170	**2880**	2560
	2	1180	**980**	820	980	**780**	660	900	**720**	580	2510	**2240**	2090
	3	980	**820**	660	780	**660**	520	720	**580**	460	2110	**1870**	1720
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%			
...ML	.005	**.008**	.017	.004	**.006**	.013	.003	**.005**	.011	.003	**.005**	.010	.003	**.005**	.010	...ML
...MM	.010	**.017**	.026	.007	**.012**	.019	.006	**.011**	.016	.006	**.010**	.015	.006	**.010**	.015	...MM
...MR	.010	**.019**	.028	.007	**.014**	.021	.006	**.012**	.018	.006	**.011**	.017	.006	**.011**	.017	...MR
...MCI	.010	**.019**	.030	.007	**.014**	.022	.006	**.012**	.019	.006	**.011**	.018	.006	**.011**	.018	...MCI
...MH	.008	**.017**	.027	.006	**.012**	.020	.005	**.011**	.017	.005	**.010**	.016	.005	**.010**	.016	...MH

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

Adjustment Instructions

Before Being Used for the First Time

- The milling cutter must be carefully cleaned of anti-corrosive materials, dust, etc.
- The milling cutter should only be washed when all components have been dismantled.
- Only the double-threaded screws of the clamping or adjusting wedge should be lubricated with copper grease; all other components must have clean metallic surfaces.
- A torque wrench is recommended to tighten the double-threaded screws.
- When fitting indexable inserts on the milling cutter, ensure that they are inserted in the correct position in a clean insert seat and that they are held in position during clamping.

For 45° Roughing Mills without Anvils

- The double-threaded screws on the clamping wedges for the indexable inserts are first pre-tightened to approximately 17 in. lbs. and then tightened to a final torque of 62 in. lbs.

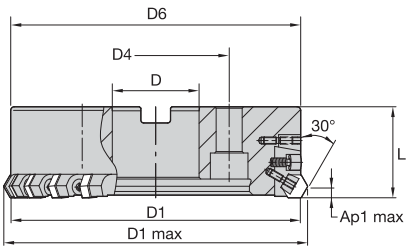
ATTENTION

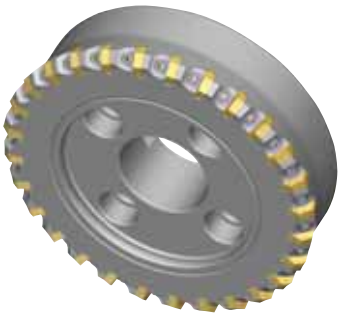
At each tool adjustment, the body, indexable inserts, and spare parts must be checked and replaced, if necessary. Before each tool use, the double-threaded screws of the indexable inserts and the stops must be tightened in the specified order to a torque of 62 in. lbs. In addition, even if the cartridges have not been adjusted, the double-threaded screws of the adjusting wedges must be checked to see if these have been tightened to a torque of 26 in. lbs. If not, they must be re-tightened to this torque.

NOTE: The tools must only be used in accordance with their function. We accept no liability for their improper use. Changes of any kind and/or printing errors are not valid grounds for claims.



- Monoblock cutter design.
- Twelve cutting edges per insert.
- High feed rates.
- CGI milling solution.





HexaCut Shell Mills • Monoblock Cutter Design with Adjustable Pockets • Right Hand

order number	catalog number	D1	D1 max	D	D4	D6	L	Ap1 max	Z	Z ADJ	lbs	max RPM
2430830	**K315A62RF60HN09C**	3.150	3.490	1.000	—	3.150	2.000	.315	8	2	3.50	3900
2430832	**K400B82RF60HN09C**	4.000	4.340	1.250	—	4.000	2.000	.315	10	2	8.00	3400
2430924	**K500B123RF60HN09C**	5.000	5.340	1.500	—	5.000	2.380	.315	15	3	10.00	3000
2430931	**K600B164RF60HN09C**	6.000	6.340	2.000	—	6.000	2.380	.315	20	4	15.80	2600
2430973	**K800C205RF60HN09C**	8.000	8.340	2.500	4.000	8.000	2.380	.315	25	5	25.00	2300

NOTE: Split case design with adapter flange for D1 = 10" and D1 = 12" can be ordered as preferred engineered solution standard.

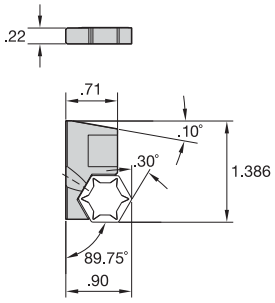
Spare Parts

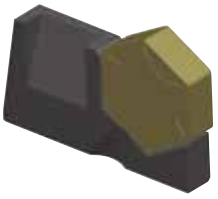
D1	clamp wedge	axial adjustment wedge	wedge screw	in. lbs.	wrench 3mm
3.150	**12748358200**	**12748308500**	**12748600900**	**62**	**12148044900**
4.000	**12748358200**	**12748308500**	**12748600900**	**62**	**12148044900**
5.000	**12748358200**	**12748308500**	**12748600900**	**62**	**12148044900**
6.000	**12748358200**	**12748308500**	**12748600900**	**62**	**12148044900**
8.000	**12748358200**	**12748308500**	**12748600900**	**62**	**12148044900**

Roughing:

For a cutting depth of <.315" and an achievable surface finish of RA >125.

Roughing insert: HNGX090516-MR, HNGX090508-MH, HNGX090520-MM, or HNGX090520-ML in all insert seats.





order number	catalog number
2018164	12748500200

NOTE: Cartridges need to be ordered separately. Number of adjustable pockets (Z ADJ) is related to cutting diameter.

Roughing/Finishing:

a) For a cutting depth of <.315" and an achievable surface finish of RA 125.

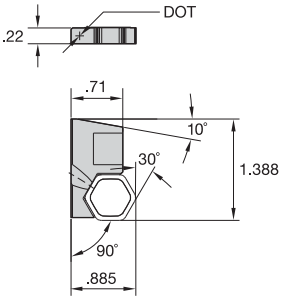
Roughing insert: HNGX090516-MR, HNGX090508-MH,HNGX090520 MM, HNGX090520-ML in the fixed insert seats.

Finishing insert: HNGF090504-MT in the finishing cartridge.

b) For a cutting depth of <.040" and an achievable surface finish of RA 63.

Roughing insert: HNGX090504-MM, HNGX090520-MM, or HNGX090520-ML in the fixed insert seats.

Finishing insert: HNGF090504-MF in the finishing cartridge.





order number	catalog number
2018166	12748500400

NOTE: Cartridges need to be ordered separately. Number of adjustable pockets (Z ADJ) is related to cutting diameter.

Roughing/Finishing Corrected (Reduced Axial Cutting Force):

a) For a cutting depth of <.315" and an achievable surface finish of RA 125.

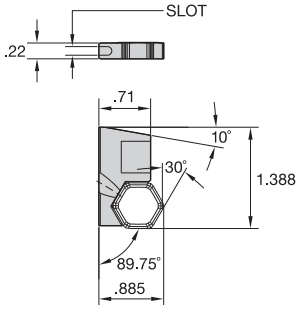
Roughing insert: HNGX090516-MR, HNGX090508-MH, HNGX090520-MM, or HNGX090520-ML in the fixed insert seats.

Finishing insert: HNGF090504-MT in the finishing cartridge.

b) For a cutting depth of <.040" and an achievable surface finish of RA 63.

Roughing insert: HNGX090504-MM, HNGX090520-MM, HNGX090520-ML, in the fixed insert seats.

Finishing insert: HNGF090504-MF in the finishing cartridge.





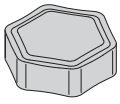
order number	catalog number
2033468	12748503400

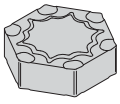
NOTE: Cartridges need to be ordered separately. Number of adjustable pockets (Z ADJ) is related to cutting diameter.

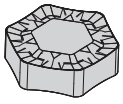
Insert Selection Guide

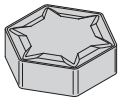
Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	–	–	–	–	–	–
P3–P4	–	–	–	–	–	–
P5–P6	–	–	–	–	–	–
M1–M2	–	–	–	–	–	–
M3	–	–	–	–	–	–
K1–K2	...ML	KCK15	**...MM**	**KC917M**	...MR	KC917M
K3	...MM	KCK15	**...MM**	**KCK15**	...MR	KCPK30
N1–N2	–	–	–	–	–	–
N3	–	–	–	–	–	–
S1–S2	–	–	–	–	–	–
S3	–	–	–	–	–	–
S4	–	–	–	–	–	–
H1	–	–	–	–	–	–

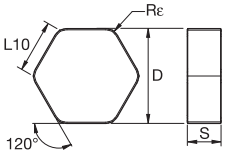
Indexable Inserts


HNGX-ML


HNGX-MM

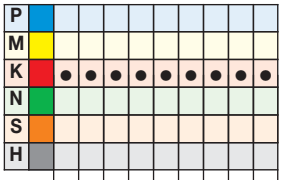

HNGX-MCI


HNGX-MH



HNGX/HNPX

● first choice
○ alternate choice



Face Mills

HNGX-ML

catalog number	D	S	L10	Rε	hm	cutting edges	KCK15	KCPK30	KC514M	KC524M	KC907M	KC914M	KC917M	KC924M	KY3500
HNGX5355ML	.638	.219	.368	.079	.002	12	●		●	●	●		●	●	

HNGX-MM

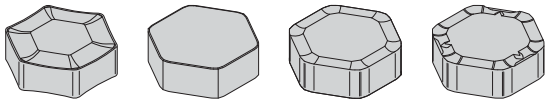
catalog number	D	S	L10	Rε	hm	cutting edges	KCK15	KCPK30	KC514M	KC524M	KC907M	KC914M	KC917M	KC924M	KY3500
HNGX5351MM	.638	.219	.368	.016	.004	12					●		●		
HNGX5355MM	.638	.219	.368	.079	.004	12	●				●	●	●		
HNGX5358MM	.638	.219	.368	.118	.004	12			●	●					

HNGX-MCI

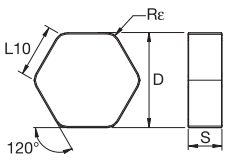
catalog number	D	S	L10	Rε	hm	cutting edges	KCK15	KCPK30	KC514M	KC524M	KC907M	KC914M	KC917M	KC924M	KY3500
HNGX090530MCI	.638	.219	.368	.118	.004	12							●		

HNGX-MH

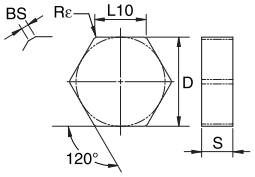
catalog number	D	S	L10	Rε	hm	cutting edges	KCK15	KCPK30	KC514M	KC524M	KC907M	KC914M	KC917M	KC924M	KY3500
HNGX5352MH	.638	.219	.368	.032	.002	12	●	●			●	●	●	●	



HNGX-MR HNEN-SN HNGF-MF HNGF-MT



HNGX/HNPX



HNEN

● first choice
○ alternate choice

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

HNGX-MR

catalog number	D	S	L10	Rε	hm	cutting edges	KCK15	KCPK30	KC514M	KC524M	KC907M	KC914M	KC917M	KC924M	KY3500
HNGX5354MR	.638	.219	.368	.063	.004	12	●	●	●	●	●	●	●	●	
HNGX5358MR	.638	.219	.368	.118	.004	12	●						●		

HNEN-SN

catalog number	D	S	L10	Rε	hm	cutting edges	KCK15	KCPK30	KC514M	KC524M	KC907M	KC914M	KC917M	KC924M	KY3500
HNEN090508S	.625	.219	.361	.031	.008	12									●
HNEN0905ANSN	.625	.222	.361	—	.008	12									●
HNEN0905XNSN	.638	.219	.368	—	.008	12									●

HNGF-MF

catalog number	D	S	L10	Rε	hm	cutting edges	KCK15	KCPK30	KC514M	KC524M	KC907M	KC914M	KC917M	KC924M	KY3500
HNGF5351MF	.625	.219	.361	.016	.001	12			●		●	●	●	●	
HNGF5353MF	.625	.219	.361	.047	.001	12	●								

HNGF-MT

catalog number	D	S	L10	Rε	hm	cutting edges	KCK15	KCPK30	KC514M	KC524M	KC907M	KC914M	KC917M	KC924M	KY3500
HNGF5351MT	.625	.219	.361	.016	.001	6					●	●	●	●	
HNGF5353MT	.625	.219	.361	.047	.001	6	●								

HNPX-MCI

catalog number	D	S	L10	BS	Rε	hm	cutting edges	KCK15	KCPK30	KC514M	KC524M	KC907M	KC914M	KC917M	KC924M	KY3500
HNPX5358MCI	.638	.219	.368	—	.118	.004	12							●		

HNPX-MH

catalog number	D	S	L10	BS	Rε	hm	cutting edges	KCK15	KCPK30	KC514M	KC524M	KC907M	KC914M	KC917M	KC924M	KY3500
HNPX5352MH	.638	.219	.368	—	.031	.002	12							●		

HNPX-MR

catalog number	D	S	L10	BS	Rε	hm	cutting edges	KCK15	KCPK30	KC514M	KC524M	KC907M	KC914M	KC917M	KC924M	KY3500
HNPX5354MR	.638	.219	.368	—	.06	.004	12			●	●			●		
HNPX5358MR	.638	.219	.368	—	.12	.004	12			●	●			●		

Recommended Starting Speeds [SFM]

Material Group		KCK15			KCPK30			KC514M			KC524M			KC907M		
P	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	5	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	6	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
M	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
K	1	1660	**1510**	1340	1160	**1050**	940	1570	**1150**	830	1470	**1050**	750	1600	**1190**	1000
	2	1310	**1170**	1090	920	**830**	760	1380	**920**	680	1280	**820**	620	1260	**980**	820
	3	1100	**980**	900	770	**690**	640	1100	**850**	660	980	**730**	520	980	**820**	660
N	1–2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
H	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

Material Group		KC914M			KC917M			KC924M			KY3500		
P	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–	–	–	–
	5	–	–	–	–	–	–	–	–	–	–	–	–
	6	–	–	–	–	–	–	–	–	–	–	–	–
M	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
K	1	1370	**1180**	980	1180	**980**	780	1150	**900**	660	3170	**2880**	2560
	2	1180	**980**	820	980	**780**	660	900	**720**	580	2510	**2240**	2090
	3	980	**820**	660	780	**660**	520	720	**580**	460	2110	**1870**	1720
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.

Face Mills

Recommended Starting Feeds [IPT]

Light Machining	General Purpose	Heavy Machining

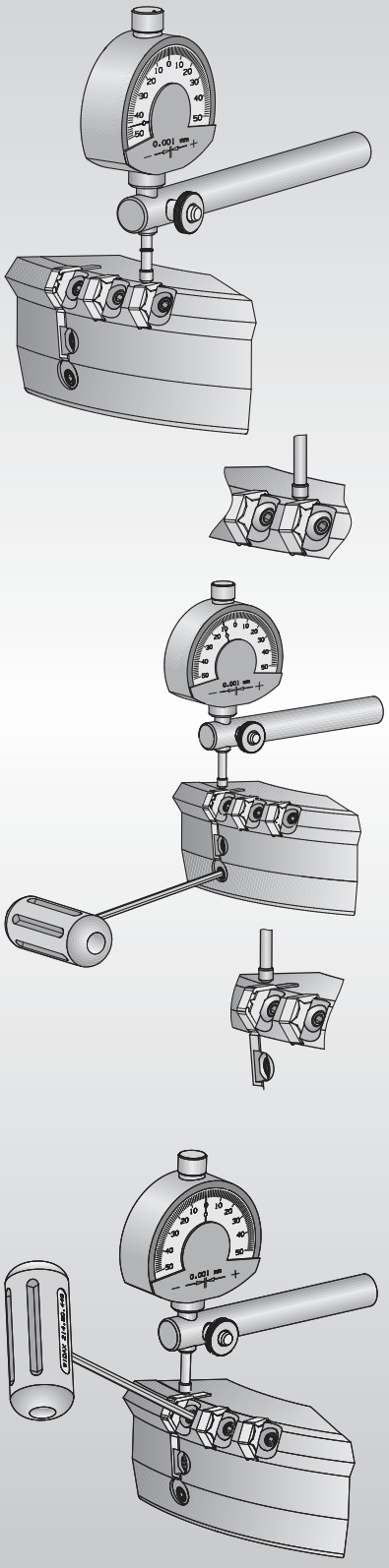
Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
...ML	.004	**.007**	.012	.003	**.005**	.009	.003	**.004**	.008	.003	**.004**	.008	.003	**.004**	.007	...ML
...MM	.008	**.013**	.018	.006	**.010**	.014	.005	**.008**	.012	.005	**.008**	.011	.005	**.008**	.011	...MM
...MR	.008	**.017**	.023	.006	**.012**	.017	.005	**.011**	.015	.005	**.010**	.014	.005	**.010**	.014	...MR
...MCI	.008	**.017**	.026	.006	**.012**	.019	.005	**.011**	.016	.005	**.010**	.015	.005	**.010**	.015	...MCI
...MH	.007	**.014**	.021	.005	**.010**	.015	.004	**.009**	.013	.004	**.008**	.012	.004	**.008**	.012	...MH

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

Insert setting procedure

This procedure is to be used on all 30° lead roughing/finishing mills using the unmarked roughing cartridge, the finishing cartridge (marked ●) and the corrected edge cartridge (marked ▬). These steps must be followed when adjusting the cutters for finishing inserts.

1. Clean all insert pockets.
2. Mount all wedges and cartridges. Torque the cartridge lock wedge screw to 26 in. lbs.
3. Mount all inserts, making sure they are seated properly in the pocket, and torque the insert lock wedge screws to 26 in. lbs.
4. Torque the wedge screws for all fixed pocket inserts to 62 in. lbs.
5. Loosen the cartridge insert wedge screw and the cartridge lock wedge screw.
6. Pressing the insert into the cartridge pocket, adjust the cartridge to .008–.012" below the fixed pocket inserts.
7. Torque the insert lock wedge screw and the cartridge lock wedge screw to 26 in. lbs.
8. Adjust the axial position to .0010–.0015" above the fixed pocket inserts.
9. Loosen the cartridge insert lock wedge screws and then re-torque to 26 in. lbs.
10. Adjust the axial position to the final dimension, .0015–.0020" above the highest fixed pocket insert.
11. Torque the insert lock wedge screws and the cartridge lock wedge screws to 62 in. lbs.
12. Conduct a final check of the axial runout and position.





The NEW KSSR™ 6°

Primary Application

Kennametal's new line of KSSR 6° inserts are versatile, easy-to-use, and right- or left-hand neutral, making them ideal for automotive machining operations or any other industry that relies on transfer line manufacturing. Available in carbide and ceramic grades for applications in cast and ductile irons and alloy steels, choose KSSR 6° inserts for all your fine and coarse pitch styles.

Features and Benefits

KSSR 6° Features

- Available in metric, JIS, and inch products, diameters from 2.5–10".
- Fine and coarse pitch styles.
- Easy-to-use and to adjust with shorter setup time.
- New wiper inserts in carbide and ceramic will provide excellent surface quality.

Improved Versatility

- Proven solution on the automotive segment.
- Right- and left-hand cutters, ideal for transfer lines.
- Premium grades in carbide and ceramic for applications in cast and ductile irons and alloy steels.
- Inserts are neutral and can be used for right- or left-hand cutting.

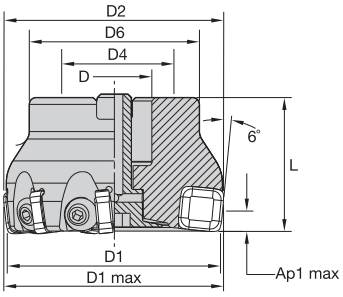


Unrivaled Benefits

- Capability: .20" maximum depth of cut.
- Excellent accuracy:

  Radial = +/- .0001"
  Axial = adjustable +/- .0001"
- Inserts have eight true cutting edges.

- Eight cutting edges per insert.
- Fast and easy insert indexing.
- Highest feed rates.
- CGI specialist.

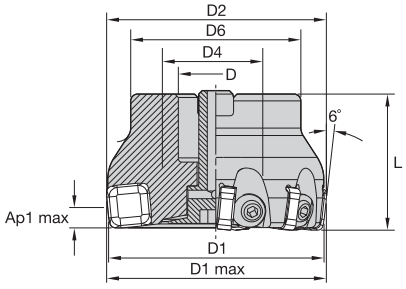




KSSR 6° • Shell Mills • Right Hand

order number	catalog number	D1	D1 max	D	D2	D4	D6	L	Ap1 max	Z	lbs	max RPM
3119002	KSSR2506SN434C3	2.500	2.579	.750	2.520	—	1.770	1.500	.200	6	1.1	7500
2476832	KSSR250SN434M3	2.500	2.579	.750	2.520	—	1.770	1.500	.200	9	1.1	7500
3119103	KSSR3008SN434C4	3.000	3.079	1.000	3.017	—	2.200	1.750	.200	8	2.0	6300
2476963	KSSR300SN434M4	3.000	3.079	1.000	3.017	—	2.200	1.750	.200	11	2.0	6300
3119104	KSSR40010SN434C5	4.000	4.079	1.250	4.014	—	2.870	1.750	.200	10	3.3	4700
2476964	KSSR400SN434M5	4.000	4.079	1.250	4.014	—	2.870	1.750	.200	15	3.1	4700
3119105	KSSR50012SN434C6	5.000	5.079	1.500	5.011	4.000	3.820	2.380	.200	12	7.5	3800
2476965	KSSR500SN434M6	5.000	5.079	1.500	5.011	—	3.820	2.380	.200	18	7.3	3800
3119106	KSSR60014SN434C8	6.000	6.079	2.000	6.010	4.000	4.880	2.380	.200	14	10.3	3100
2476966	KSSR600SN434M8	6.000	6.079	2.000	6.010	—	4.880	2.380	.200	23	10.1	3100
3119107	KSSR80020SN434C10	8.000	8.079	2.500	8.008	—	5.120	2.380	.200	20	14.1	2300
2476967	KSSR800SN434M10	8.000	8.079	2.500	8.008	4.000	5.120	2.380	.200	30	13.9	2300
3119108	KSSR100024SN434C10	10.000	10.079	2.500	10.007	—	5.120	2.380	.200	24	21.1	1900
2476968	KSSR1000SN434M10	10.000	10.079	2.500	10.007	4.000	5.120	2.380	.200	36	20.9	1900

- Eight cutting edges per insert.
- Fast and easy insert indexing.
- High feed rates.
- CGI milling solution.



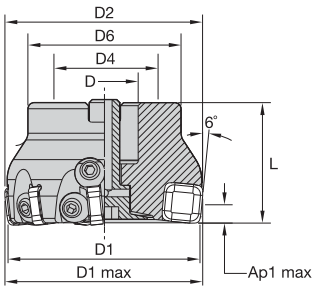


KSSR 6° • Shell Mills • Left Hand

order number	catalog number	D1	D1 max	D	D2	D4	D6	L	Ap1 max	Z	lbs	max RPM
3119109	KSSL2506SN434C3	2.500	2.579	.750	2.520	—	1.770	1.500	.200	6	1.10	7500
3119110	KSSL3008SN434C4	3.000	3.079	1.000	3.017	—	2.200	1.750	.200	8	1.98	6300
3119111	KSSL40010SN434C5	4.000	4.079	1.250	4.014	—	2.870	1.750	.200	10	3.30	4700
3119112	KSSL50012SN434C6	5.000	5.079	1.500	5.011	—	3.820	2.380	.200	12	7.48	3800
3119113	KSSL60014SN434C8	6.000	6.079	2.000	6.010	—	4.880	2.380	.200	14	10.34	3100
3119114	KSSL80020SN434C10	8.000	8.079	2.500	8.008	4.000	5.120	2.380	.200	20	14.08	2300
3119115	KSSL100024SN434C10	10.000	10.079	2.500	10.007	4.000	5.120	2.380	.200	24	21.12	1900

- Eight cutting edges per insert.
- New wiper inserts in carbide and ceramic.





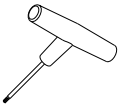


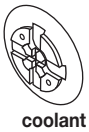
KSSR 6° • Shell Mills • Adjustable Pockets • Right and Left Hand

order number	catalog number	D1	D1 max	D	D2	D4	D6	L	Ap1 max	Z	Z ADJ	lbs	max RPM
	right hand												
4005103	KSSR250SN434M3W1	2.500	2.582	.750	2.453	—	1.772	1.500	.197	9	1	1.20	7500
4005104	KSSR300SN434M4W2	3.000	3.082	1.000	2.948	—	2.205	1.750	.197	11	2	2.04	6300
4005105	KSSR400SN434M5W3	4.000	4.082	1.250	3.943	—	2.874	1.750	.197	15	3	3.27	4700
4005106	KSSR500SN434M6W3	5.000	5.082	1.500	4.940	—	3.819	2.380	.197	18	3	7.16	3800
4005107	KSSR600SN434M8W3	6.000	6.081	2.000	5.937	—	4.882	2.380	.197	23	3	10.10	3100
4005108	KSSR800SN434M10W4	8.000	8.081	2.500	7.935	4.000	5.118	2.380	.197	30	4	14.28	2300
4005109	KSSR1000SN434M10W4	10.000	10.081	2.500	9.933	4.000	5.118	2.380	.197	36	4	21.38	1900
	left hand												
4005110	KSSL250SN434M3W1	2.500	2.582	.750	2.453	—	1.772	1.500	.197	9	1	1.20	7500
4005111	KSSL300SN434M4W2	3.000	3.082	1.000	2.948	—	2.205	1.750	.197	11	2	2.04	6300
4005112	KSSL400SN434M5W3	4.000	4.082	1.250	3.943	—	2.874	1.750	.197	15	3	3.27	4700
4005113	KSSL500SN434M6W3	5.000	5.082	1.500	4.940	—	3.819	2.380	.197	18	3	7.16	3800
4005114	KSSL600SN434M8W3	6.000	6.081	2.000	5.937	—	4.882	2.380	.197	23	3	10.10	3100
4005115	KSSL800SN434M10W4	8.000	8.081	2.500	7.935	4.000	5.118	2.380	.197	30	4	14.28	2300
4005116	KSSL1000SN434M10W4	10.000	10.081	2.500	9.933	4.000	5.118	2.380	.197	36	4	21.38	1900

Spare Parts





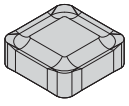
D1	clamp wedge	wedge screw	in. lbs.	wrench	coolant screw	coolant screw	coolant cap
2.500	12748358200	12748600900	62	12148044900	420.101	—	—
3.000	12748358200	12748600900	62	12148044900	420.121	—	—
4.000	12748358200	12748600900	62	12148044900	420.162	—	—
5.000	12748358200	12748600900	62	12148044900	420.201	420.201	470.232
6.000	12748358200	12748600900	62	12148044900	420.241	420.241	470.241
8.000	12748358200	12748600900	62	12148044900	—	—	470.242
10.000	12748358200	12748600900	62	12148044900	—	—	470.243

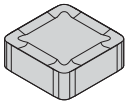
NOTE: Coolant screw and coolant cap must be ordered separately.
2466094 and 2466095 are non-stock standards.

Insert Selection Guide

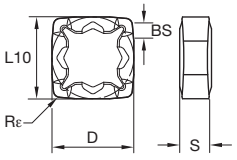
Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	–	–	–	–	–	–
P3–P4	–	–	–	–	–	–
P5–P6	–	–	–	–	–	–
M1–M2	–	–	–	–	–	–
M3	–	–	–	–	–	–
K1–K2	.E..LD	KC917M	**.S..GP**	**KC917M**	.S..HE	KC524M
K3	.E..LD	KC917M	**.S..GP**	**KC524M**	.S..HE	KC524M
N1–N2	–	–	–	–	–	–
N3	–	–	–	–	–	–
S1–S2	–	–	–	–	–	–
S3	–	–	–	–	–	–
S4	–	–	–	–	–	–
H1	–	–	–	–	–	–

Indexable Inserts • KSSR • SNXF 1204...


SNXF-LD


SNXF-GP


SNXF-HE



SNXF

● first choice
○ alternate choice

P						
M						
K	●	●	●	●	●	
N						
S						
H						

Face Mills

SNXF-LD

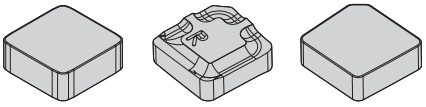
catalog number	D	S	L10	BS	Rε	hm	cutting edges	KC514M	KC524M	KC914M	KC917M	KY3500
SNXF433ENLD	.500	.180	.500	–	.047	.001	8	●	●		●	
SNXF43ZNENLD	.500	.174	.500	–	.063	.002	8	●	●	●	●	

SNXF-GP

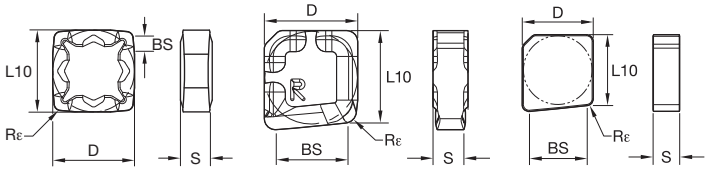
catalog number	D	S	L10	BS	Rε	hm	cutting edges	KC514M	KC524M	KC914M	KC917M	KY3500
SNXF433SNGP	.500	.184	.500	–	.047	.002	8	●	●		●	
SNXF43ZNSNGP	.500	.184	.500	.040	.047	.003	8	●	●		●	

SNXF-HE

catalog number	D	S	L10	BS	Rε	hm	cutting edges	KC514M	KC524M	KC914M	KC917M	KY3500
SNXF433SNHE	.500	.183	.500	–	.047	.002	8		●		●	
SNXF43ZNSNHE	.500	.183	.500	.039	.047	.002	8	●	●		●	



SNXF-SN XNXF-LDW XNXF-ENW



SNXF XNXF-LDW XNXF-ENW

● first choice
○ alternate choice

P					
M					
K	●	●	●	●	
N					
S					
H					

SNXF-SN

catalog number	D	S	L10	BS	Rε	hm	cutting edges	KC907M	KC914M	KC917M	KY3500
SNXF433AMSN	.500	.187	.500	—	.047	.008	8				●
SNXF43ZNAMSN	.500	.187	.500	.039	.047	.008	8				●

XNXF-LDW

catalog number	D	S	L10	BS	Rε	hm	cutting edges	KC907M	KC914M	KC917M	KY3500
XNXF43ZNENLDW	.500	.174	.500	.374	.063	.001	2	●	●	●	

XNXF-ENW

catalog number	D	S	L10	BS	Rε	hm	cutting edges	KC907M	KC914M	KC917M	KY3500
XNXF43ZNENW	.500	.188	.500	.374	.047	.008	2				●

Recommended Starting Speeds [SFM]

Material Group		KC514M			KC524M			KC907M		
P	1	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–
	5	–	–	–	–	–	–	–	–	–
	6	–	–	–	–	–	–	–	–	–
M	1	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–
K	1	1570	**1150**	830	1470	**1050**	750	1600	**1190**	1000
	2	1380	**920**	680	1280	**820**	620	1260	**980**	820
	3	1100	**850**	660	980	**730**	520	980	**820**	660
N	1–2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–
H	1	–	–	–	–	–	–	–	–	–

Material Group		KC914M			KC917M			KY3500		
P	1	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–
	5	–	–	–	–	–	–	–	–	–
	6	–	–	–	–	–	–	–	–	–
M	1	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–
K	1	1370	**1180**	980	1180	**980**	780	3170	**2880**	2560
	2	1180	**980**	820	980	**780**	660	2510	**2240**	2090
	3	980	**820**	660	780	**660**	520	2110	**1870**	1720
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

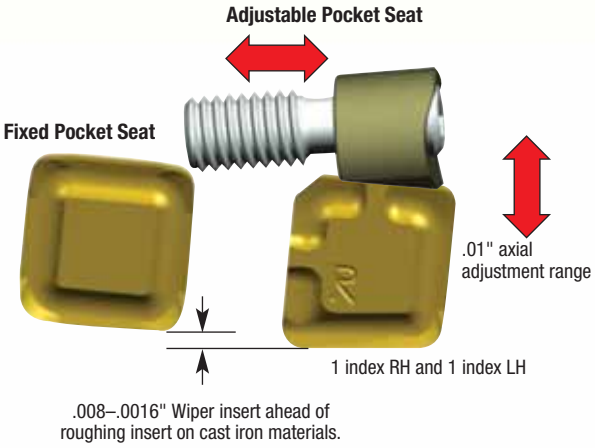
Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..LD	.004	**.007**	.012	.003	**.005**	.009	.002	**.005**	.008	.002	**.004**	.007	.002	**.004**	.007	.E..LD
.S..GP	.006	**.010**	.022	.005	**.008**	.016	.004	**.007**	.014	.004	**.006**	.013	.004	**.006**	.013	.S..GP
.S..HE	.006	**.012**	.026	.005	**.009**	.019	.004	**.008**	.017	.004	**.007**	.016	.004	**.007**	.015	.S..HE

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



KSSR™ 6°
Adjustable Pockets

- Clamping and adjustment wedge with double thread screw.
- Eight true cutting edges.
- Wiper insert ahead of roughing insert on cast iron materials.
- Wiper insert can also be loaded into cutters with only fixed pockets.



Visit **www.kennametal.com** or contact your local Authorized Kennametal Distributor.

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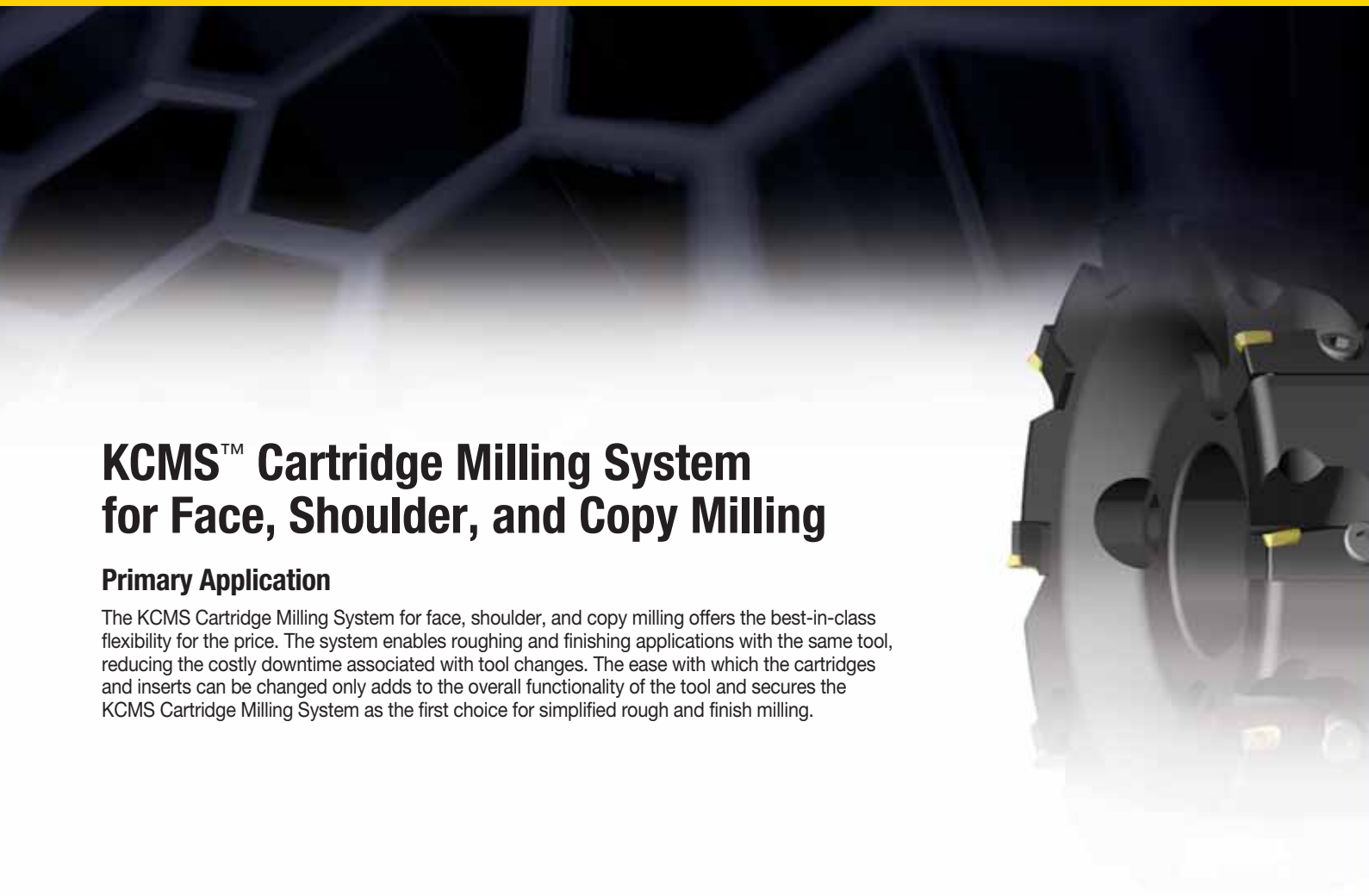


KCMS™ Cartridge Milling System for Face, Shoulder, and Copy Milling

Primary Application

The KCMS Cartridge Milling System for face, shoulder, and copy milling offers the best-in-class flexibility for the price. The system enables roughing and finishing applications with the same tool, reducing the costly downtime associated with tool changes. The ease with which the cartridges and inserts can be changed only adds to the overall functionality of the tool and secures the KCMS Cartridge Milling System as the first choice for simplified rough and finish milling.

Features and Benefits

Features	Benefits
Roughing and finishing solution with the same tool.	Adjustable pockets in combination with quick cartridge stop feature.
Easy change of cartridges with different insert styles and lead angles.	Best-in-class flexibility for less money.
Quick cartridge stop feature.	Ready to go in a minute with excellent runout and no adjustment for roughing.
Easy runout adjustment.	For finishing operations to obtain a perfect floor finish.



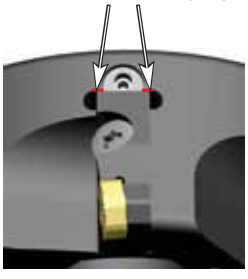
KCMS™ Key Features — Roughing and Finishing with the Same Tool



Standard Offering
D1 = 5–12" (125–315mm)

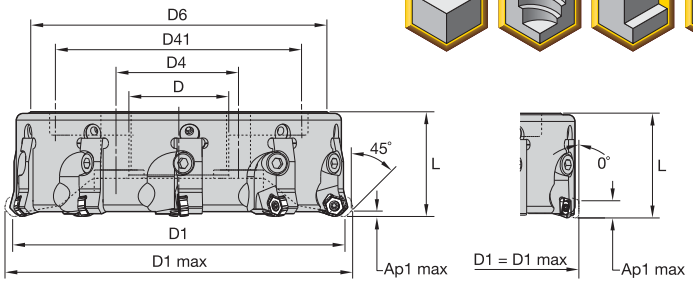
• Axial adjustment wedge.

• Quick cartridge stop.
• Ready to go in a minute with no adjustment for roughing.



- Roughing and finishing with one single tool.
- Quick cartridge stop feature.
- Easy runout adjustment.
- Easy change of cartridges with different insert styles and lead angles.





KCMS Cartridge Milling System • Shell Mills

order number	catalog number	D1	D	D4	D41	D6	L	number of cartridges	lbs
4137949	KCMS500Z06ADJ	5.000	1.500	–	–	4.252	2.480	6	8.200
4137950	KCMS500Z08ADJ	5.000	1.500	–	–	4.252	2.480	8	7.550
4137952	KCMS600Z08ADJ	6.000	2.000	–	–	5.394	2.480	8	10.610
4138283	KCMS600Z12ADJ	6.000	2.000	–	–	5.394	3.150	12	13.460
4138284	KCMS800Z10ADJ	8.000	2.500	4.000	–	7.008	2.480	10	19.280
4138285	KCMS800Z14ADJ	8.000	2.500	4.000	–	7.008	3.150	14	28.030
4138286	KCMS1000Z12ADJ	10.000	2.500	4.000	–	8.992	2.480	12	30.680
4138287	KCMS1000Z18ADJ	10.000	2.500	4.000	–	8.992	2.480	18	29.440
4138288	KCMS1200Z16ADJ	12.000	2.500	4.000	7.000	11.260	3.150	16	53.190
4138289	KCMS1200Z22ADJ	12.000	2.500	4.000	7.000	11.260	3.150	22	50.420

Spare Parts • Diameter 5.000–12.000"







cartridge screw	in. lbs.	wedge	adjusting screw
MS1294	177	12748308500	12748600900

NOTE: Mounting screw S-391 for KCMS5800Z14ADJ (order number 4138285).

Cartridges

order number	catalog number	insert style	master platform *	insert screw I.D. drive size	Ap max
4160408	KCMS-AD1505CA	AD.T1505	–	T15	.551
4160406	KCMS-AP1003CA	AP.T1003	–	T8	.315
4160407	KCMS-AP1604CA	AP.T263	–	T15	.590
4160403	KCMS-ED10CA	EC10/ED10	Mill 1-10	7 IP	.393
3648533	KCMS-ED14CA	EC14/ED14	Mill 1-14	9 IP	.551
4160404	KCMS-ED18CA	EC18/ED18	Mill 1-18	15 IP	.708
4160280	KCMS-HN06CA	HN.J43/XNGJ43	Dodeka Mini	T15	.126
4160282	KCMS-HN06HDCA	HN.J43	Dodeka Mini	T15	.173
4160281	KCMS-HN06HFCA	HN.J43	Dodeka Mini	T15	.062
4160393	KCMS-HN09CA	HN.J535/XNGJ0905	Dodeka	T15	.177
4160394	KCMS-HN09HFCA	HN.J535	Dodeka	T15	.078
4160402	KCMS-MDHX10CA	MDHX1004	Fix-Perfect Finisher	T20	.028
2511343	KCMS-OF06CA	OF.T53	KSOM Mini	15 IP	.354
2245926	KCMS-OF07CA	OF.T64	KSOM	20 IP	.433
4160409	KCMS-RP1204CA	RP.T1204	KSRM Daisy	15 IP	.236
4160410	KCMS-RP1605CA	RP.T1605	KSRM Daisy	15 IP	.315
2266872	KCMS-SD12CA	SD.T43	KSSM90	15 IP	.362
4160395	KCMS-SE1203CA	SE.N42/SE.R42	–	T20	.236
4160396	KCMS-SE1204CA	SE.N43/SE.R43	–	T20	.236
2267054	KCMS-SE14CA	SE.T443/SECW443	KSSM45	15 IP	.259
4160397	KCMS-SE1504CA	SE.N53/SE.R53	–	T20	.354
4160405	KCMS-SP10CA	SP.T3125	KSSM90	9 IP	.259
4160398	KCMS-SP1203CA	SP.N42	–	T20	.354
4160399	KCMS-SP1504CA	SP.N53	–	T20	.472
4160400	KCMS-TP1603CA	TP.N32	–	T20	.472
4160401	KCMS-TP2204CA	TP.N43/TP.R43	–	T20	.708

* For all details regarding insert offering and cutting conditions, please refer to the master platforms.

	 KCMS-MDHX10CA	 KCMS-HN06HFCA	 KCMS-HN06CA	 KCMS-HN06HDCA	 KCMS-HN09HFCA	 KCMS-HN09CA	 KCMS-OF06CA	 KCMS-OF07CA	 KCMS-SE14CA
	order number 4160402	order number 4160281	order number 4160280	order number 4160282	order number 4160394	order number 4160393	order number 2511343	order number 2245926	order number 2267054
D1	D1 max	D1 max	D1 max	D1 max	D1 max	D1 max	D1 max	D1 max	D1 max
5.000	5.000	5.433	5.307	5.157	5.665	5.354	5.256	5.354	5.472
6.000	6.000	6.811	6.685	6.535	7.043	6.732	6.634	6.732	6.850
8.000	8.000	8.386	8.260	8.110	8.618	8.307	8.209	8.307	8.425
10.000	10.000	10.354	10.228	10.079	10.587	10.276	10.177	10.276	10.394
12.000	12.000	12.913	12.787	12.638	13.146	12.835	12.736	12.835	12.953

	 KCMS-ED10CA	 KCMS-ED14CA	 KCMS-ED18CA	 KCMS-AP1003CA	 KCMS-AD1505CA	 KCMS-AP1604CA	 KCMS-SP10CA	 KCMS-SD12CA
	order number 4160403	order number 3648533	order number 4160404	order number 4160406	order number 4160408	order number 4160407	order number 4160405	order number 2266872
D1	D1 max	D1 max	D1 max	D1 max	D1 max	D1 max	D1 max	D1 max
5.000	5.000	5.000	5.000	5.000	5.000	5.000	5.000	5.000
6.000	6.000	6.000	6.000	6.000	6.000	6.000	6.000	6.000
8.000	8.000	8.000	8.000	8.000	8.000	8.000	8.000	8.000
10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000	10.000
12.000	12.000	12.000	12.000	12.000	12.000	12.000	12.000	12.000

	 KCMS-RP1204CA	 KCMS-RP1605CA	 KCMS-SE1203CA	 KCMS-SE1204CA	 KCMS-SE1504CA	 KCMS-SP1203CA	 KCMS-SP1504CA	 KCMS-TP1603CA	 KCMS-TP2204CA
	order number 4160409	order number 4160410	order number 4160395	order number 4160396	order number 4160397	order number 4160398	order number 4160399	order number 4160400	order number 4160401
D1	D1 max	D1 max	D1 max	D1 max	D1 max	D1 max	D1 max	D1 max	D1 max
5.000	5.000	5.000	5.472	5.472	5.630	5.181	5.244	5.000	5.000
6.000	6.000	6.000	6.850	6.850	7.008	6.559	6.622	6.000	6.000
8.000	8.000	8.000	8.425	8.425	8.583	8.134	8.197	8.000	8.000
10.000	10.000	10.000	10.393	10.393	10.551	10.102	10.165	10.000	10.000
12.000	12.000	12.000	12.953	12.953	13.110	12.661	12.724	12.000	12.000

NOTE: Please order KCMS cutter bodies and cartridges separately.
KCMS-RN1204CA: Cartridge for Rodeka™, IC12 with 12 cutting edge indexes.
KCMS-WO0905CA: Cartridge for KenFeed 2X, High-Feed platform with 6 effective cutting edges per insert.



KSCM™ AluMill™

Primary Application

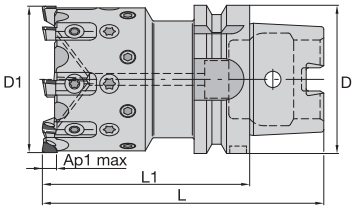
The KSCM AluMill face milling program is specifically engineered to deliver best-in-class performance in high-volume aluminum machining operations. Runs at higher speeds with no chatter while still easy to adjust. The new PCD KD1420™ grade provides long tool life, and with the Kennametal Blue Box™ program for reconditioning worn cartridges, you can reduce your inventory costs as well!

Features and Benefits

- Anti-vibration cutter design.
- Best rigidity for high feed rates.
- Unique dovetail wedge clamping design.
- No radial movement of cartridges.
- Centrifugal force protection cartridge design.
- Integrated chip gash into cartridge.
- Quick setup and easy adjust concept.
- Flexible cartridge configuration.
- No burr cartridges for fine finishing.
- Blue Box service.



- Productivity booster in aluminum face milling.
- Rough and finish in one operation.
- Precision balanceable cutter bodies produce mirror-finish surfaces.

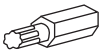




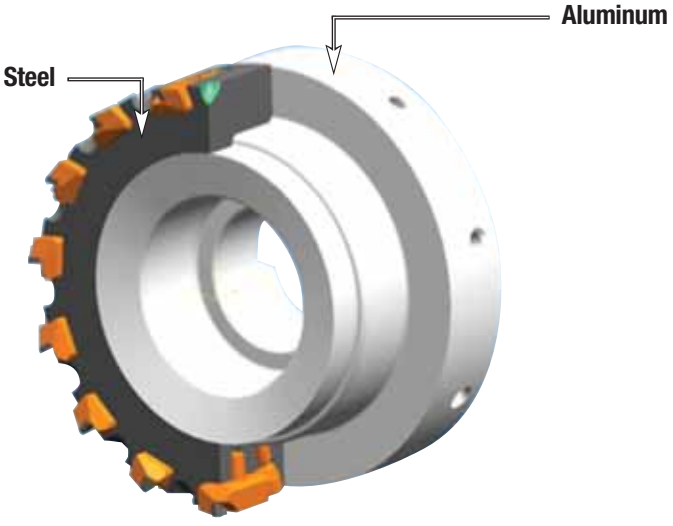
KSCM AluMill • Monoblock HSK63A

order number	catalog number	CSMS system size	D1	D	L	L1	Z	Z ADJ	lbs	max RPM
2982053	**KSCM63R08CAH63A090U**	HSK63A	2.500	2.480	5.000	3.750	8	8	4.3	37900

Spare Parts

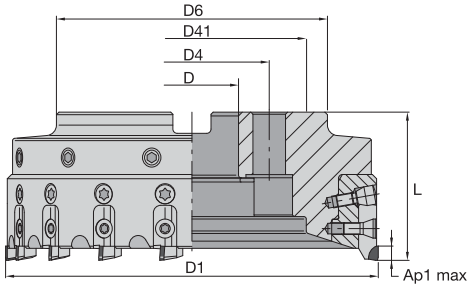
D1	 insert screw	 insert screw	 drive bit	 flat point socket set screw
2.500	**193.464**	**193.465**	**170.279**	**193.461**

NOTE: Ap1 max is dependent on the cartridge configuration; see the values listed under the cartridges.



- Productivity booster in aluminum face milling.
- Rough and finish in one operation.
- Precision balanceable cutter bodies produce mirror-finish surfaces.





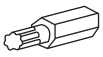


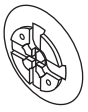
KSCM AluMill • Shell Mills

order number	catalog number	D1	D	D4	D41	D6	L	Z	Z ADJ	lbs	max RPM
2982054	**KSCM80R10CAB27U**	3.000	1.000	–	–	2.461	2.000	10	10	2.7	29800
2982055	**KSCM100R12CAB32U**	4.000	1.500	–	–	3.823	2.000	12	12	3.5	23800
2982056	**KSCM125R16CAB40U**	5.000	1.500	–	–	3.772	2.380	16	16	5.5	19100
2982057	**KSCM160R18CAB40U**	6.000	2.000	–	–	5.197	2.380	18	18	8.0	14900
2982058	**KSCM200R24CAB60U**	8.000	2.500	4.000	–	6.654	2.380	24	24	11.6	11900
2982059	**KSCM250R30CAB60U**	10.000	2.500	4.000	–	6.516	2.380	30	30	17.3	9500
2982060	**KSCM315R36CAB60U**	12.000	2.500	4.000	7.000	10.236	3.150	36	36	31.0	7500

NOTE: For Ap1 max values, please see O117.

Spare Parts

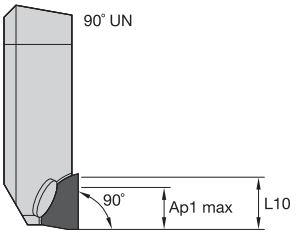



D1	cartridge screw	drive bit	coolant lock screw	coolant shower plate	balancing screw
3.000	**193.465**	**170.279**	**420.020**	**–**	**193.460**
4.000	**193.465**	**170.279**	**420.041**	**–**	**193.461**
5.000	**193.465**	**170.279**	**420.042**	**–**	**193.462**
6.000	**193.465**	**170.279**	**420.043**	**470.370**	**193.462**
8.000	**193.465**	**170.279**	**–**	**470.371**	**193.462**
10.000	**193.465**	**170.279**	**–**	**470.372**	**193.463**
12.000	**193.465**	**170.279**	**–**	**470.373**	**193.463**

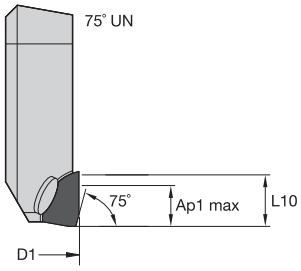
NOTE: All cutters are bimetallic except the 3.00" diameter.
Dependent on the cartridge configuration; see the values listed under the cartridges.
Please order KSCM cutter bodies and cartridges separately.

Cartridge Selection Guide

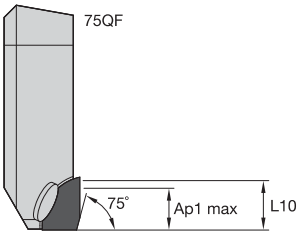
Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	–	–	–	–	–	–
P3–P4	–	–	–	–	–	–
P5–P6	–	–	–	–	–	–
M1–M2	–	–	–	–	–	–
M3	–	–	–	–	–	–
K1–K2	–	–	–	–	–	–
K3	–	–	–	–	–	–
N1–N2	..CA90..	KD1420	**..CA90..**	**KD1420**	..CA90..	KD1420
N3	..CA90..	KD1420	**..CA90..**	**KD1420**	..CA90..	KD1420
S1–S2	–	–	–	–	–	–
S3	–	–	–	–	–	–
S4	–	–	–	–	–	–
H1	–	–	–	–	–	–



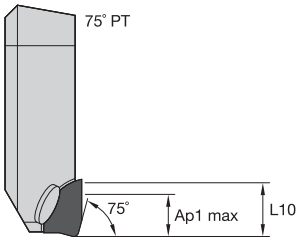
-90° UN
Ap1 max = .118"



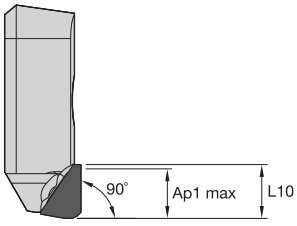
-75° UN
Ap1 max = .118"



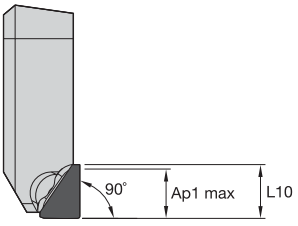
-75° QF
Ap1 max = .118"



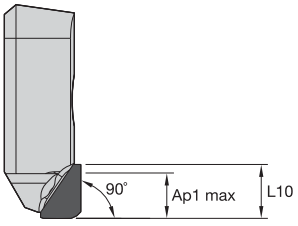
-75° PT
Ap1 max = .118"



-90° UNBF (Burr free)
Ap1 max = .118"



-90° QF
Ap1 max = .118"



-90° UNQFBF (Burr free)
Ap1 max = .118"

cartridge combination	ratio	max ap	surface quality
UN	–	.118	Rz 2 - Rz 4
UN + QF	3:1	.118	Rz 1,5 - Rz 2,5
PT + UN	X:1	.118	Rz 3,2 - Rz 17

● first choice
○ alternate choice

P	
M	
K	
N	●
S	
H	

order number	catalog number	KRI ANSI	L10	hm	KD1420
2884919	**KSCMCA75PT**	15	.240	.0008	●
2884918	**KSCMCA75QF**	15	.240	.0008	●
2884902	**KSCMCA75UN**	15	.240	.0008	●
2884915	**KSCMCA90UN**	0	.240	.0008	●
4170410	**KSCMCA90UNBF**	0	.242	.0008	●
4170408	**KSCMCA90QF**	0	.244	.0008	●
4170411	**KSCMCA90QFBF**	0	.244	.0008	●

NOTE: KSCMA: Blanks without PCD segment, if cutter is not fully loaded with cartridges.
For low horsepower machines and cutter configurations with less number of effective teeth.

Recommended Starting Speeds [SFM]

Material Group		KD1420		
P	1	–	–	–
	2	–	–	–
	3	–	–	–
	4	–	–	–
	5	–	–	–
	6	–	–	–
M	1	–	–	–
	2	–	–	–
	3	–	–	–
K	1	–	–	–
	2	–	–	–
	3	–	–	–
N	1–2	15780	**13800**	11760
	3	6300	**5880**	5520
S	1	–	–	–
	2	–	–	–
	3	–	–	–
	4	–	–	–
H	1	–	–	–
	2	–	–	–
	3	–	–	–

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

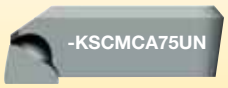
Recommended Starting Feeds [IPT]

Light Machining	General Purpose	Heavy Machining

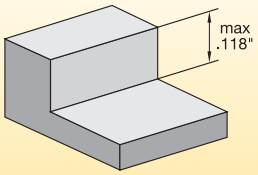
Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
..CA75../..CA90..	.003	**.007**	.011	.003	**.005**	.008	.002	**.004**	.007	.002	**.004**	.006	.002	**.004**	.006	..CA75../..CA90..

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

Tool Configuration • Universal Cartridge

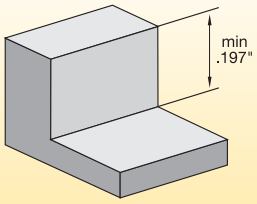


Face milling cutter fitted entirely with universal cartridges



Depth of Cut:
max .118"

Surface Quality:
Rz2 - Rz4

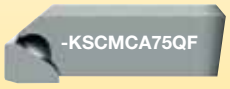


Contouring:
PCD cutting edge length = .197"

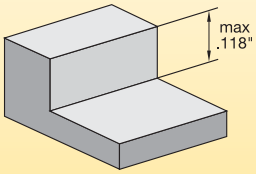
Tool Configuration • Universal Cartridge



+ Finishing Cartridge

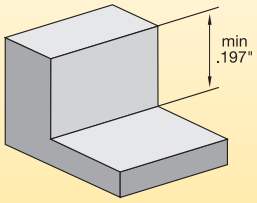


Fitting the face milling cutter with universal and finishing cartridges in a ratio of approximately 3:1



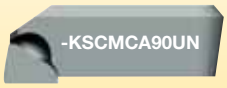
Depth of Cut:
max .118"

Surface Quality:
Rz1,5 - Rz2,5

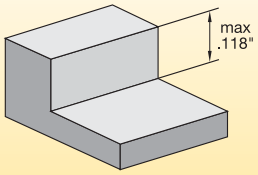


Contouring:
PCD cutting edge length = .197"

Tool Configuration • Edge Cartridge

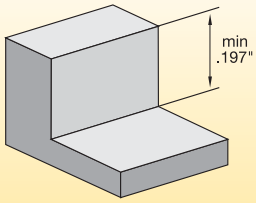


Fitting the face milling cutter entirely with edge cartridges



Depth of Cut:
max .118"

Surface Quality:
Rz2 - Rz4

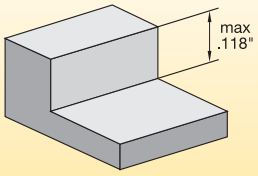


Contouring:
PCD cutting edge length = .197"

Tool Configuration • Cartridge for Defined Surfaces

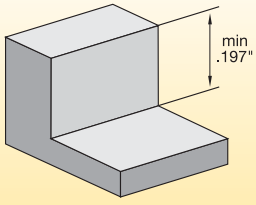


Fitting the face milling cutter entirely with cartridges for defined surfaces



Depth of Cut:
max .118"

Surface Quality:
Rz3,2 - Rz17



Contouring:
PCD cutting edge length = .197"

Tool Configuration • Universal Cartridge, 75° Face Milling







1. Insert cartridges into the body.
2. Screw in the clamping screws (RH), and tighten to 88 in. lbs.
3. Screw in the adjusting screws (RH), and tighten to 26 in. lbs.
4. Determine which cartridge is in the highest axial position.
5. By turning the adjusting screws to the right, adjust the remaining cartridges for even running. Max permitted runout error 3 µm.

Tool Configuration • Universal Cartridge + Finishing Cartridge (Ratio Approx. 3:1), 75°







1. Insert universal cartridges at ratio of approximately 4:1 in the body. Make sure they are evenly distributed!
2. Screw in the clamping screws (RH), and tighten to 88 in. lbs.
3. Screw in the adjusting screws (RH), and tighten to 26 in. lbs.
4. Determine which cartridge is in the highest axial position.
5. By turning the adjusting screws to the right, adjust the remaining cartridges for even running. Max permitted runout error 3 µm.
6. Insert finishing cartridges as described in Steps 1–5 but with an axial advance of .0003" + .0008". Max permitted runout error of 3 µm with finishing cartridges.

Tool Configuration • Edge Cartridges, 90° Shoulder Milling







1. Insert cartridges into the body.
2. Screw in the clamping screws (RH), and tighten to 88 in. lbs.
3. Screw in the adjusting screws (RH), and tighten to 26 in. lbs.
4. Determine which cartridge is in the highest axial position.
5. By turning the adjusting screws to the right, adjust the remaining cartridges for even running. Max permitted runout error 3 µm.

Tool Configuration • Cartridge for Defined Surface, 75°



1. Insert cartridges into the body.
2. Screw in the clamping screws (RH), and tighten to 7 ft. lbs.
3. Screw in the adjusting screws (RH), and tighten to 26 in. lbs.



4. Determine which cartridge is in the highest axial position.
5. By turning the adjusting screws to the right, adjust the remaining cartridges for even running. Max permitted runout error 3 µm.





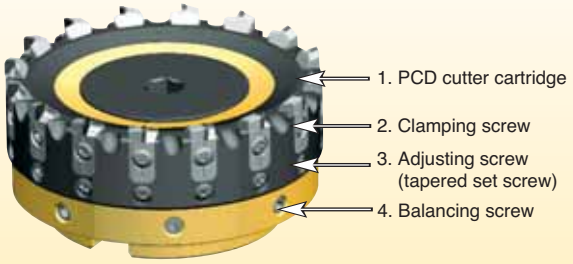
NOTE:

The process must be repeated when the cartridges are changed. To dismantle, remove the adjusting element (Part 3), clamping screw (Part 2), and cartridge (Part 1).

Instruction for Mounting the Face Milling Cutter on the Appropriate Toolholder

User Information:

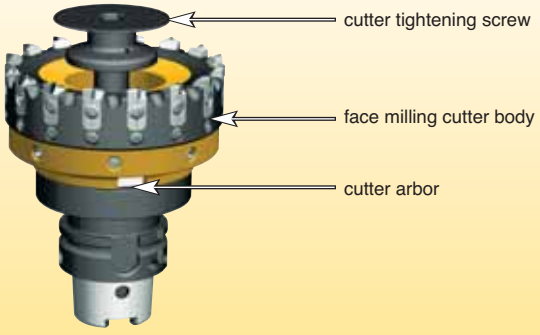
- Tools conform to EN ISO 15641.
- Absolute cleanliness must be observed when assembling the face milling cutter.
- An optimum cutting result will only be achieved by adjusting and balancing the complete tool system (face milling cutter + toolholder).
- Balancing is achieved with the aid of the balancing screws. Quality class G2.5 DIN-ISO 1940.
- The balancing screw must not protrude above the body.
- The balancing and adjustment screws have an adhesive coating according to DIN 267, Part 28. If, after repeated use, the coating is no longer adequate to secure the screws, the screws must be replaced.
- The maximum permitted operating speed (quoted on the tool) must not be exceeded.
- The maximum permitted operating speed is only permitted with clamping systems manufactured by Kennametal in accordance with DIN 69982 Form B with enlarged plane bearing surface. Reduce the operating speed if clamping systems with increased projection length or made by other manufacturers are used.
- Tools and fittings are to be serviced and repaired by Kennametal.
- Screws sealed with lacquer have been adjusted by the manufacturer, and must not be moved.



Instructions for Fitting the Cutter Cartridge • Tool Construction

When mounting the face milling cutter (dimensions similar to DIN 8030 Form B), place the body of the face milling cutter on the arbor. Ensure that the contact faces are clean. Screw in the cutter fastening bolt (RH) and tighten with the appropriate torque.

Tightening torque for the central cutter tightening screw:
M20 (adapter diameter 40): **184 ft. lbs.**
M16 (adapter diameter 32): **110 ft. lbs.**
M12 (adapter diameter 27): **59 ft. lbs.**

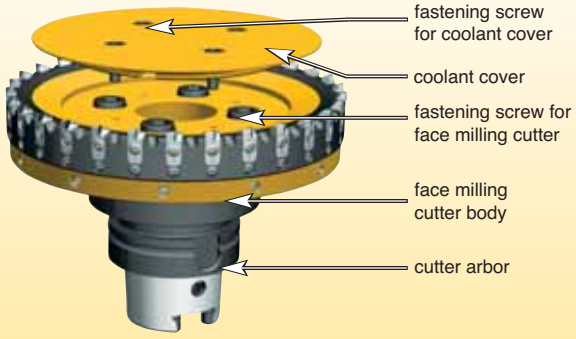


Mounting the Face Milling Cutter (Dimensions Similar to DIN 8030 Form C)

Place the body of the face milling cutter on the arbor. Ensure that the contact faces are clean. Screw in the fastening bolt (RH) and tighten with the appropriate torque. Put the aluminum coolant cover in place and fasten with the Torx fastening screws.

Tightening torque for the face milling cutter fastening screws:
M20: 184 ft. lbs.
M16: 81 ft. lbs.
M12: 36 ft. lbs.

Tightening torque for the coolant cover fastening screws:
M8: 13 ft. lbs.



KSCM AluMill
Reconditioning Service



New Supply

On request, the face mill will be delivered with cartridges already mounted and adjusted.



Service Level • PCD Insert Reconditioning

Reconditioning of PCD cartridges up to three times.

- **Tool diameter and length remain constant.**



Face mill will be delivered with exchanged cartridges already mounted, adjusted, and balanced.





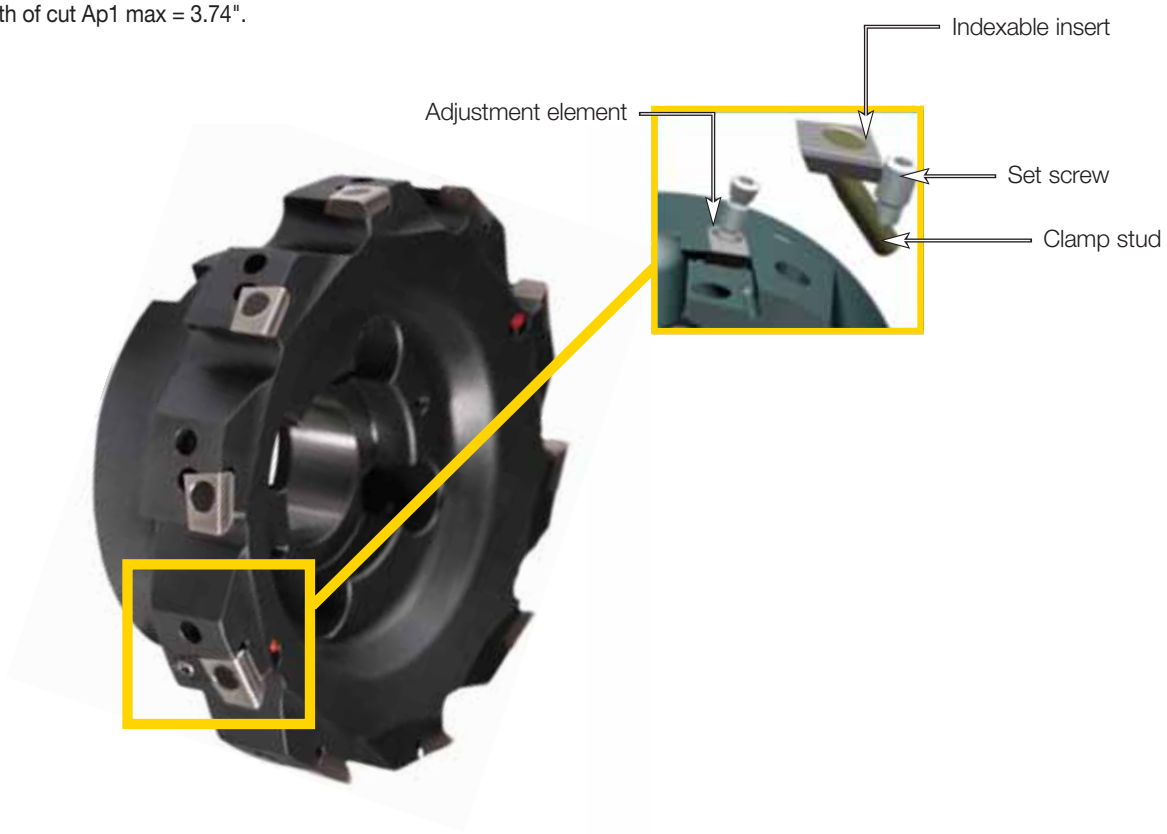
Fix-Perfect™ 0° Aluminum

Primary Application

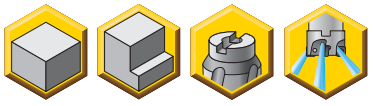
The Fix-Perfect 0° is excellent in machining aluminum and non-ferrous materials.
24° positive rake provides free cutting action while producing superior finishes and flatness.

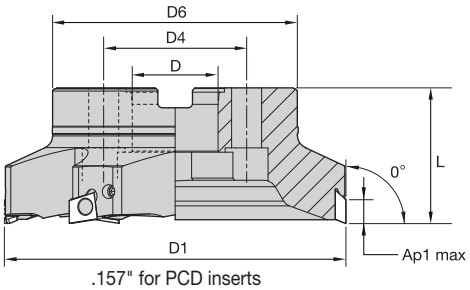
Features and Benefits

- True 0° shoulder achievable.
- Roughing and finishing in one tool.
- Full safety first insert clamping.
- Easy adjustable pocket seats for fine finishing (PM, HPM, HSM Line).
- Achievable floor surface quality: Ra = 0.5.
- Real soft cutting action.
- Axial depth of cut Ap1 max = 3.74".



- Excellent for milling aluminum and non-ferrous materials.
- Good choice for thin-wall or poorly fixtured workpieces.
- 24° positive rake enables free cutting action.
- Produces excellent finish and flatness.
- Maximum speed is 6,500 SFM.





.157" for PCD inserts
.374" for carbide inserts

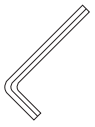


Fix-Perfect • Shell Mills • M Line • Fixed Pockets

order number	catalog number	D1	D	D4	D6	L	Ap1 max	Z	lbs	max RPM
2235052	**50A03RP90BG15CUM**	2.000	.750	—	1.750	1.570	.374	3	.90	12530
2235053	**63A03RP90BG15CUM**	2.500	.750	—	1.750	1.570	.374	3	1.10	10030
2235054	**80A03RP90BG15CUM**	3.000	1.000	—	2.189	1.750	.374	3	1.60	8350
2235055	**100B04RP90BG15CUM**	4.000	1.250	—	2.880	1.750	.374	4	2.80	6270
2235056	**125B05RP90BG15CUM**	5.000	1.500	—	3.810	2.380	.374	5	5.40	5010
2235057	**160B06RP90BG15CUM**	6.000	2.000	—	4.880	2.380	.374	6	8.50	4180

Spare Parts

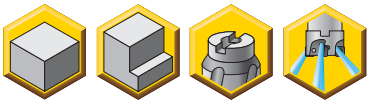


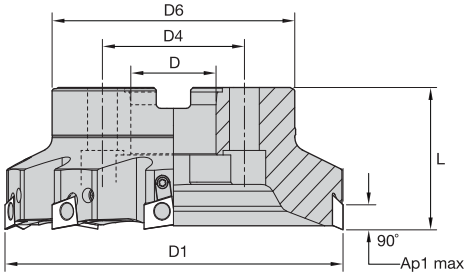



D1	clamp stud	set screw	hex wrench	in. lbs.	socket-head cap screw
2.000	**410.083**	**420.060**	**170.003**	45	**S446**
2.500	**410.083**	**420.060**	**170.003**	45	**S445**
3.000	**410.083**	**420.060**	**170.003**	45	**S458**
4.000	**410.083**	**420.060**	**170.003**	45	**—**
5.000	**410.083**	**420.060**	**170.003**	45	**—**
6.000	**410.083**	**420.060**	**170.003**	45	**—**

NOTE: Please order spare parts separately.
Torque wrench (KTW45) and 3mm hex bit (69709922164) may be purchased separately to ensure proper torque setting.

- Produces excellent surface finish and flatness.
- High-speed machining.





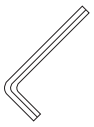


Fix-Perfect • Shell Mills • PM Line • Fixed and Adjustable Pockets

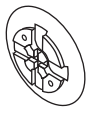
order number	catalog number	D1	D	D4	D6	L	Ap1 max	Z	Z ADJ	lbs	max RPM
1803174	**40A02RP90BG15CUPM**	1.500	.500	–	1.250	1.570	.375	2	0	.49	33418
1803175	**50A03RP90BG15CUPM**	2.000	.750	–	1.750	1.570	.375	3	0	.84	25063
1803177	**63A04RP90BG15C1WUPM**	2.500	.750	–	1.750	1.570	.375	4	1	1.17	22750
1803178	**80A05RP90BG15C1WUPM**	3.000	1.000	–	2.032	1.750	.375	5	1	1.85	16710
1805715	**80A06RP90BG15C2WUPM**	3.000	1.000	–	2.032	1.750	.375	6	2	1.85	16710
1803179	**100B06RP90BG15C2WUPM**	4.000	1.250	–	2.724	1.750	.375	6	2	3.22	12500
1805716	**100B08RP90BG15C2WUPM**	4.000	1.250	–	2.724	1.750	.375	8	2	3.22	12500
1806466	**160B10RP90BG15C2WUPM**	6.000	2.000	–	4.880	2.375	.394	10	2	9.26	8500
1806467	**200C12RP90BG15C3WUPM**	8.000	2.500	4.000	5.118	2.375	.375	12	3	13.03	6500

Spare Parts



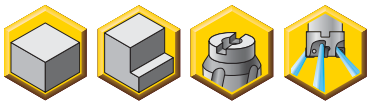


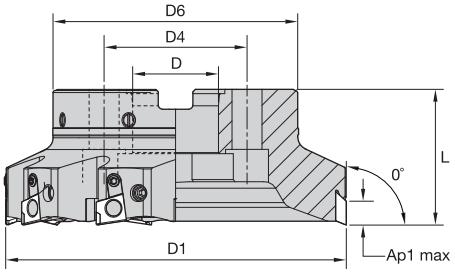


D1	Torx wrench	clamp stud	set screw	hex wrench	in. lbs.	socket-head cap screw	coolant lock screw	coolant lock screw	coolant shower plate
1.500	**KT15**	**410.083**	**420.060**	**170.003**	45	**S425**	**420.081**	–	–
2.000	**KT15**	**410.083**	**420.060**	**170.003**	45	**S446**	**420.101**	–	–
2.500	**KT15**	**410.083**	**420.060**	**170.003**	45	**S445**	**420.101**	–	–
3.000	**KT15**	**410.083**	**420.060**	**170.003**	45	**S458**	**420.121**	–	–
4.000	**KT15**	**410.083**	**420.060**	**170.003**	45	–	**420.161**	–	–
6.000	**KT15**	**410.083**	**420.060**	**170.003**	45	–	–	**420.241**	**470.241**
8.000	**KT15**	**410.083**	**420.060**	**170.003**	45	–	–	–	**470.242**

NOTE: Please order spare parts separately.
For all diameters: adjusting element screw **193.337**.
If the adjusting element needs to be replaced, please return the cutter to the Kennametal Service Center.
Torque wrench (KTW45) and 3mm hex bit (69709922164) may be purchased separately to ensure proper torque setting.

- Produces excellent surface finish and flatness.
- High-speed machining.







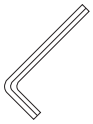
Fix-Perfect • Shell Mills • HPM Line • All Pockets Adjustable

order number	catalog number	D1	D	D4	D6	L	Ap1 max	Z	Z ADJ	lbs	max RPM
1805720	**63A04RP90BG15C4WUHPM**	2.500	.750	—	1.750	1.570	.375	4	4	1.17	20051
1805745	**80A05RP90BG15C5WUHPM**	3.000	1.000	—	2.190	1.750	.375	5	5	1.83	16710
1805746	**100B06RP90BG15C6WUHPM**	4.000	1.250	—	2.911	1.750	.375	6	6	1.30	12500

Spare Parts









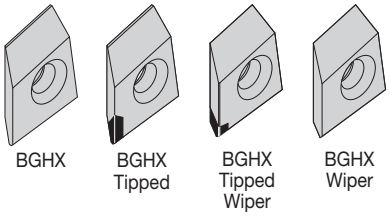
D1	adjusting element screw	Torx wrench	clamp stud	set screw	hex wrench	in. lbs.	socket-head cap screw	coolant lock screw
2.500	**193.326**	**KT15**	**410.083**	**420.060**	**170.003**	45	**S445**	**420.101**
3.000	**193.326**	**KT15**	**410.083**	**420.060**	**170.003**	45	**S458**	**420.121**
4.000	**193.326**	**KT15**	**410.083**	**420.060**	**170.003**	45	**—**	**420.161**

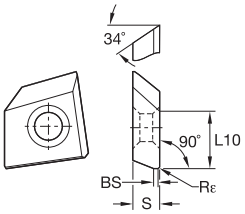
NOTE: Please order spare parts separately.
For all diameters: adjusting element screw **193.326**.
If the adjusting element needs to be replaced, please return the cutter to the Kennametal Service Center.
Cutters with 4" have an aluminum body.
Torque wrench (KTW45) and 3mm hex bit (69709922164) may be purchased separately to ensure proper torque setting.

Insert Selection Guide

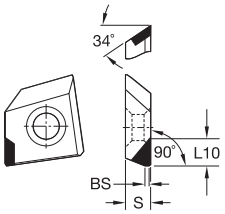
Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	–	–	–	–	–	–
P3–P4	–	–	–	–	–	–
P5–P6	–	–	–	–	–	–
M1–M2	–	–	–	–	–	–
M3	–	–	–	–	–	–
K1–K2	–	–	–	–	–	–
K3	–	–	–	–	–	–
N1–N2	.F..GG	K110M	**.F..GG**	**KC510M**	.T..GG	KC510M
N3	.F..GG	KC510M	**.T..GG**	**KC510M**	.T..GG	KC510M
S1–S2	–	–	–	–	–	–
S3	–	–	–	–	–	–
S4	–	–	–	–	–	–
H1	–	–	–	–	–	–

Indexable Inserts • Fix-Perfect • BGHX15L5...

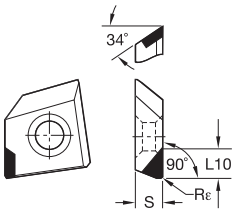




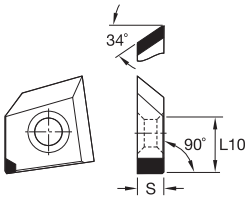
BGHX



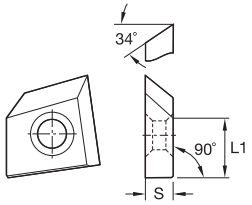
BGHX Tipped



BGHX Tipped with RE



BGHX Tipped Wiper



BGHX Wiper

● first choice
○ alternate choice

P	
M	
K	
N	● ● ● ●
S	
H	

Face Mills

BGHX-GG • Roughing

catalog number	L10	S	BS	Rε	hm	cutting edges	K110M	KC510M	KD1410	KD1415
BGHX15L5PCELGGT	.236	.197	.035	–	.001	1				●
BGHX15L5PCERGGT	.205	.197	.035	–	.001	1			●	●
BGHX15L5PCERGGTM	.098	.197	.047	–	.001	1			●	
BGHX15L5PCFLGG	.413	.197	.048	–	.001	2	●	●		
BGHX15L5PCFRGG	.413	.197	.048	–	.001	2	●	●		
BGHX15L5PCSRLET	.320	.197	.035	–	.001	1			●	●
BGHX15L5PCTRGG	.413	.197	.048	–	.001	2	●	●		
BGHX15L5PCTRHET	.236	.197	.035	–	.001	1			●	

BGHX-ET • Roughing with Radius

catalog number	L10	S	BS	Rε	hm	cutting edges	K110M	KC510M	KD1410	KD1415
BGHX15L504ERGET	.205	.197	–	.016	.001	1				●
BGHX15L504PCFRGG	.413	.197	.047	.016	.001	2	●			
BGHX15L508PCFRGG	.413	.197	.047	.031	.001	2	●	●		
BGHX15L515PCFRGG	.413	.197	.047	.059	.001	2	●	●		

BGHX-ET • Finishing

catalog number	LI	S	BS	hm	cutting edges	K110M	KC510M	KD1410	KD1415
BGHX15L5PCERGGT1W	.413	.197	.078	.001	1				●
BGHX15L5PCFRGG1W	.413	.197	.078	.001	1	●	●		
BGHX15L5PCTRGG1W	.413	.197	.078	.001	1	●	●		

Recommended Starting Speeds [SFM]

Material Group		K110M			KC510M			KD1410			KD1415		
P	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–	–	–	–
	5	–	–	–	–	–	–	–	–	–	–	–	–
	6	–	–	–	–	–	–	–	–	–	–	–	–
M	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
K	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
N	1–2	1650	**1550**	1475	2100	**1870**	1720	13150	**11500**	9800	13150	**11500**	9800
	3	1350	**1200**	1050	1900	**1750**	1600	5250	**4900**	4600	5250	**4900**	4600
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]

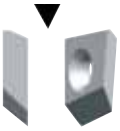
Light Machining	General Purpose	Heavy Machining

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.S..LET	.003	**.007**	.014	.003	**.005**	.010	.002	**.004**	.009	.002	**.004**	.008	.002	**.004**	.008	.S..LET
.F..GG	.003	**.007**	.014	.003	**.005**	.010	.002	**.004**	.009	.002	**.004**	.008	.002	**.004**	.008	.F..GG
.E..GGT	.003	**.007**	.014	.003	**.005**	.010	.002	**.004**	.009	.002	**.004**	.008	.002	**.004**	.008	.E..GGT
.T..GG	.003	**.007**	.014	.003	**.005**	.010	.002	**.004**	.009	.002	**.004**	.008	.002	**.004**	.008	.T..GG
.T..HET	.003	**.007**	.014	.003	**.005**	.010	.002	**.004**	.009	.002	**.004**	.008	.002	**.004**	.008	.T..HET

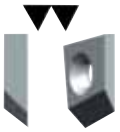
NOTE: Use “Light Machining” values as starting feed rate.

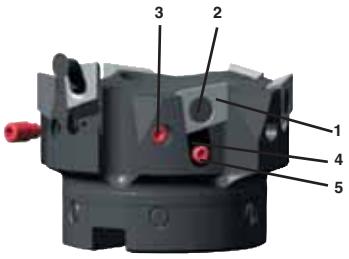
Introduction to Fitting Cutting Bodies

Roughing indexable inserts
BGHX15L5PC..GG.

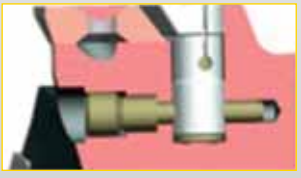


Finishing indexable inserts
BGHX15L5PC..GG.1W





Clean dust, grease, etc., from the insert seat, insert (1), and clamp stud (2).

PM	HPM/HSM	PM/HPM/HSM
1 Loosen the adjusting element (4).  Loosen the adjusting screw (5).	Loosen the adjusting element (4).  Loosen the adjusting screw (5).	Loosen the adjusting element (4).  Loosen the adjusting screw (5).
2 Insert the indexable inserts and tighten with the clamping screw (3) 44 in. lbs.  ATTENTION: Ensure that the insert is correctly positioned in the insert seat.	Insert the indexable inserts and pre-tighten with the clamping screw (3) 13 in. lbs.  ATTENTION: Ensure that the insert is correctly positioned in the insert seat. Determine which cutting body is the highest on the axis.	Insert the indexable inserts and pre-tighten with the clamping screw (3) 9 in. lbs.  ATTENTION: Ensure that the insert is correctly positioned in the insert seat. Determine which cutting body is the highest on the axis.
3 Tension the adjusting element (4) by tightening the adjusting screw (5) to the specified torque of 4.5 in. -lbs. 	Extract by .0008" the insert that is axially the highest by turning the adjusting screw (5).  Adjust the remaining inserts to the desired runout with maximum travel of the inserts .008".	Adjust the finishing indexable insert(s) to the desired projection, preferably .0015" by turning the adjusting screw (5).  ATTENTION: Ensure that the insert is correctly positioned in the insert seat.
 **Adjustment element to be replaced by Kennametal Service Center only.**	**4** Clamp the insert by tightening the clamping screw (3) to the specified torque of 44 in. lbs. 	Clamp the insert by tightening the clamping screw (3) to the specified torque of 44 in. lbs. 

Chamfer Mills



Primary Application

Countersinking and external/internal chamfer milling.

Features and Benefits

- One insert style fits into all pockets to cover 60°, 45°, and 30° chamfering.
- Soft cutting action.
- Chamfer milling front and back.

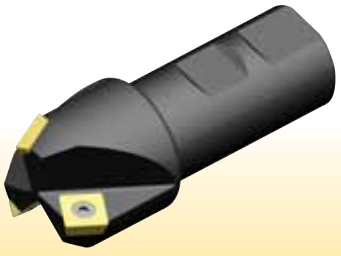
60° lead angle



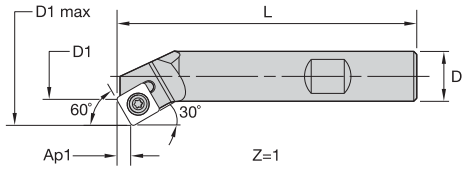
45° lead angle

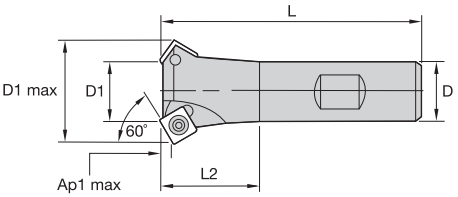


30° lead angle



• Countersinking and chamfering front and back.







End Mills • 60° Lead

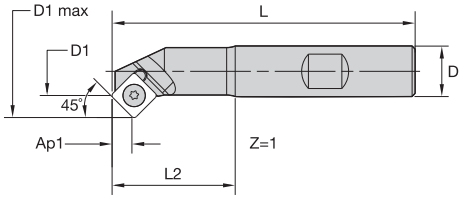
order number	catalog number	D1	D1 max	D	L	L2	Ap1 max	Z	max RPM	insert 1
1023681	**KIPR046SD2660**	.460	.981	.500	3.000	1.220	.136	1	11000	SDEB2.61.52
1023680	**KIPR075SD2660**	.750	1.271	.750	3.250	1.220	.137	2	10500	SDEB2.61.52

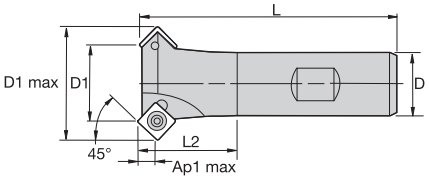
Spare Parts

D1	insert screw	in. lbs.	Torx wrench
.460	**MS1369**	10	**DT8**
.750	**MS1369**	10	**DT8**

Face Mills

• Countersinking and chamfering front and back.







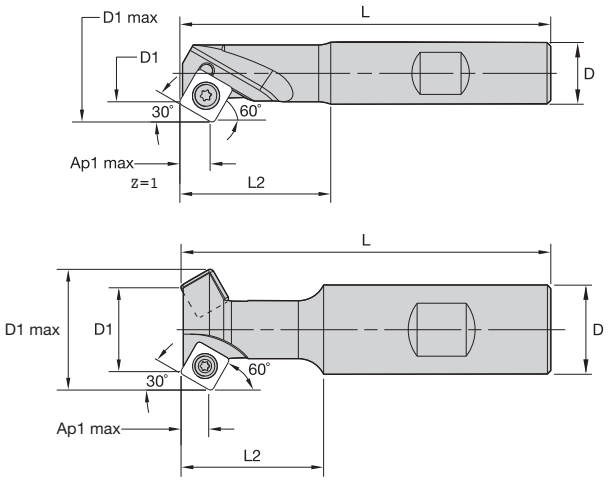
End Mills • 45° Lead

order number	catalog number	D1	D1 max	D	L	L2	Ap1 max	Z	max RPM	insert 1
1023679	**KIPR046SD2645**	.460	.897	.500	3.000	1.220	.196	1	11000	SDEB2.61.52
1023676	**KIPR070SD2645**	.700	1.137	.750	3.250	1.220	.195	2	10500	SDEB2.61.52
1023677	**KIPR095SD2645**	.950	1.387	.750	3.250	1.220	.196	2	10000	SDEB2.61.52
1023678	**KIPR120SD2645**	1.200	1.660	.750	3.250	1.220	.195	2	9750	SDEB2.61.52

Spare Parts

D1	insert screw	in. lbs.	Torx wrench
.460	**MS1369**	10	**DT8**
.700	**MS1369**	10	**DT8**
.950	**MS1369**	10	**DT8**
1.200	**MS1369**	10	**DT8**

• Countersinking and chamfering front and back.





End Mills • 30° Lead

order number	catalog number	D1	D1 max	D	L	L2	Ap1 max	Z	max RPM	insert 1
1023675	**KIPR046SD2630**	.460	.787	.500	3.000	1.220	.244	1	11000	SDEB2.61.52
1023674	**KIPR075SD2630**	.750	1.077	.750	3.250	1.220	.245	2	10500	SDEB2.61.52

Spare Parts

D1	 insert screw	in. lbs.	 Torx wrench
.460	**MS1405**	10	**DT8**
.750	**MS1369**	10	**DT8**

Insert Selection Guide

Chamfer Mills • 60°

Material Group	Light Machining Geometry	Light Machining Grade	General Purpose Geometry	General Purpose Grade	Heavy Machining Geometry	Heavy Machining Grade
P1–P2	SDEB	KC725M	**SDEB**	**KC725M**	SDEB	KCPK30
P3–P4	SDEB	KC725M	**SDEB**	**KCPK30**	SDEB	KCPK30
P5–P6	SDEB	KCPK30	**SDEB**	**KCPK30**	SDEB	KCPK30
M1–M2	SDEB	KC725M	**SDEB**	**KC725M**	SDEB	KCPK30
M3	SDEB	KC725M	**SDEB**	**KCPK30**	SDEB	KCPK30
K1–K2	SDEB	KC520M	**SDEB**	**KC520M**	SDEB	KCPK30
K3	SDEB	KC520M	**SDEB**	**KCPK30**	SDEB	KCPK30
N1–N2	–	–	–	–	–	–
N3	–	–	–	–	–	–
S1–S2	SDEB	KC725M	**SDEB**	**KC725M**	SDEB	KC725M
S3	SDEB	KC725M	**SDEB**	**KC725M**	SDEB	KC725M
S4	SDEB	KC725M	**SDEB**	**KC725M**	SDEB	KC725M
H1	–	–	–	–	–	–

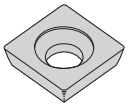
Chamfer Mills • 30°

Material Group	Light Machining Geometry	Light Machining Grade	General Purpose Geometry	General Purpose Grade	Heavy Machining Geometry	Heavy Machining Grade
P1–P2	SDEB	KC725M	**SDEB**	**KC725M**	SDEB	KCPK30
P3–P4	SDEB	KC725M	**SDEB**	**KCPK30**	SDEB	KCPK30
P5–P6	SDEB	KCPK30	**SDEB**	**KCPK30**	SDEB	KCPK30
M1–M2	SDEB	KC725M	**SDEB**	**KC725M**	SDEB	KCPK30
M3	SDEB	KC725M	**SDEB**	**KCPK30**	SDEB	KCPK30
K1–K2	SDEB	KC520M	**SDEB**	**KC520M**	SDEB	KCPK30
K3	SDEB	KC520M	**SDEB**	**KCPK30**	SDEB	KCPK30
N1–N2	–	–	–	–	–	–
N3	–	–	–	–	–	–
S1–S2	SDEB	KC725M	**SDEB**	**KC725M**	SDEB	KC725M
S3	SDEB	KC725M	**SDEB**	**KC725M**	SDEB	KC725M
S4	SDEB	KC725M	**SDEB**	**KC725M**	SDEB	KC725M
H1	–	–	–	–	–	–

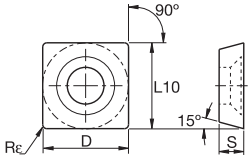
Chamfer Mills • 45°

Material Group	Light Machining Geometry	Light Machining Grade	General Purpose Geometry	General Purpose Grade	Heavy Machining Geometry	Heavy Machining Grade
P1–P2	SDEB	KC725M	**SDEB**	**KC725M**	SDEB	KCPK30
P3–P4	SDEB	KC725M	**SDEB**	**KCPK30**	SDEB	KCPK30
P5–P6	SDEB	KCPK30	**SDEB**	**KCPK30**	SDEB	KCPK30
M1–M2	SDEB	KC725M	**SDEB**	**KC725M**	SDEB	KCPK30
M3	SDEB	KC725M	**SDEB**	**KCPK30**	SDEB	KCPK30
K1–K2	SDEB	KC520M	**SDEB**	**KC520M**	SDEB	KCPK30
K3	SDEB	KC520M	**SDEB**	**KCPK30**	SDEB	KCPK30
N1–N2	–	–	–	–	–	–
N3	–	–	–	–	–	–
S1–S2	SDEB	KC725M	**SDEB**	**KC725M**	SDEB	KC725M
S3	SDEB	KC725M	**SDEB**	**KC725M**	SDEB	KC725M
S4	SDEB	KC725M	**SDEB**	**KC725M**	SDEB	KC725M
H1	–	–	–	–	–	–

Indexable Inserts



SDEB



● first choice
○ alternate choice

P		●	●
M		●	○
K	●		○
N			
S		●	
H			

SDEB

catalog number	D	S	L10	Rε	hm	cutting edges	KC520M	KC725M	KCPK30
SDEB26150	.327	.094	.327	.004	.002	4	●	●	
SDEB26151	.327	.094	.327	.016	.003	4	●	●	●
SDEB26152	.327	.094	.327	.031	.002	4	●	●	●

Recommended Starting Speeds [SFM]

Material Group		KC520M			KC725M			KCPK30		
P	1	–	–	–	1030	**900**	840	1780	**1560**	1450
	2	–	–	–	860	**760**	640	1100	**1000**	900
	3	–	–	–	790	**670**	550	1000	**900**	820
	4	–	–	–	710	**590**	470	740	**690**	620
	5	–	–	–	590	**530**	470	1020	**910**	830
	6	–	–	–	520	**400**	310	620	**540**	-
M	1	–	–	–	670	**590**	540	820	**720**	620
	2	–	–	–	610	**520**	430	730	**640**	550
	3	–	–	–	460	**400**	310	570	**520**	460
K	1	1060	**960**	850	–	–	–	1160	**1050**	940
	2	830	**740**	700	–	–	–	920	**830**	760
	3	700	**620**	560	–	–	–	770	**690**	640
N	1–2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–
S	1	–	–	–	140	**120**	100	–	–	–
	2	–	–	–	140	**120**	100	–	–	–
	3	–	–	–	180	**140**	100	–	–	–
	4	–	–	–	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

Chamfer Mills • 60°

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
SDEB	.007	**.026**	.053	.005	**.019**	.038	.005	**.016**	.033	.004	**.015**	.031	.004	**.015**	.030	SDEB

Chamfer Mills • 45°

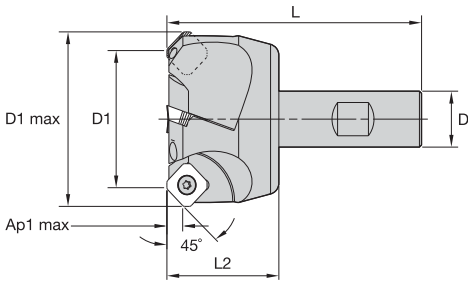
Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
SDEB	.005	**.018**	.037	.004	**.013**	.027	.003	**.012**	.023	.003	**.011**	.022	.003	**.011**	.021	SDEB

Chamfer Mills • 30°

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
SDEB	.004	**.015**	.030	.003	**.011**	.022	.003	**.009**	.019	.003	**.009**	.018	.002	**.009**	.017	SDEB

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

• High-shear end mills.





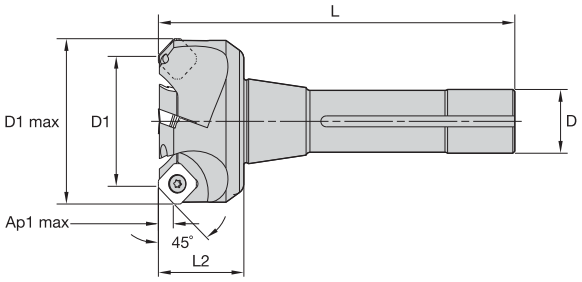
End Mills • 45° Lead

order number	catalog number	D1	D1 max	D	L	L2	Ap1 max	Z	max RPM	insert 1
1025514	**KISR150SE4453**	1.500	1.750	.750	3.605	1.575	.221	3	21700	SEHW43A6
1025515	**KISR197SE4453**	1.970	2.200	.750	3.605	1.575	.221	4	19400	SEHW43A6

Spare Parts

D1	 insert screw	in. lbs.	 Torx wrench
1.500	**MS1374**	35	**TT15**
1.970	**MS1129**	35	**TT15**

- Four cutting edges per insert.
- Countersinking and chamfering front and back.
- Generous chip clearance.
- Smooth, quiet cutting.





End Mills • Bridgeport Shank • 1/2

order number	catalog number	CSMS system size	D1	D1 max	L	L2	Ap1 max	Z	max RPM	insert 1
1025099	**KISBR197SE445**	R8	1.970	2.222	5.305	1.257	.221	4	19400	**SEHW43A6**

Spare Parts

D1	insert screw	in. lbs.	Torx wrench
1.970	**MS1129**	35	**TT15**

Carbide Recycling

Help preserve and protect our planet!

It's easy for your company to be environmentally conscious with the Kennametal Carbide Recycling Program.

By sending us your used carbide tools, you help preserve and protect the environment and ensure that these products are recycled responsibly. Kennametal accepts any coated or non-coated carbide items, including inserts, drills, reamers, and taps.



By using the Kennametal Carbide Recycling Program, you will receive:

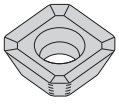
- A partner who cares about a sustainable environment.
- Easy-to-use web portal to value your used carbide.
- Access to our popular Green Box™ options for carbide collection.
- Systematic and efficient disposal of carbide materials.
- Improved profitability.

Program is not currently available in all geographical areas.
For more information, please visit **www.kennametal.com/carbiderecycling.**

Insert Selection Guide

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	SEHT	KC725M	**SEHT**	**KC725M**	SEHT-T	KCPK30
P3–P4	SEHT	KC725M	**SEHT-T**	**KCPK30**	SEHT-T	KCPK30
P5–P6	SEHT-T	KCPK30	**SEHT-T**	**KCPK30**	SEHT-T	KCPK30
M1–M2	SEHT	KC725M	**SEHT**	**KC725M**	SEHT-T	KCPK30
M3	SEHT	KC725M	**SEHT-T**	**KCPK30**	SEHT-T	KCPK30
K1–K2	SEHW	KC520M	**SEHW**	**KC520M**	SEHW-T	KCPK30
K3	SEHW	KC520M	**SEHW-T**	**KCPK30**	SEHW-T	KCPK30
N1–N2	–	–	–	–	–	–
N3	–	–	–	–	–	–
S1–S2	SEHT	KC725M	**SEHT**	**KC725M**	SEHT-T	KC725M
S3	SEHT	KC725M	**SEHT**	**KC725M**	SEHT-T	KC725M
S4	SEHT	KC725M	**SEHT-T**	**KC725M**	SEHT-T	KC725M
H1	–	–	–	–	–	–

Indexable Inserts • KISR/KISBR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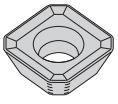
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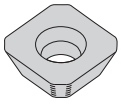
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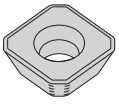
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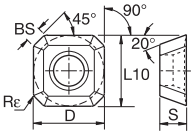

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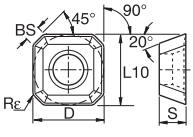

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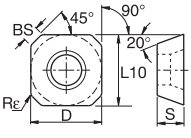

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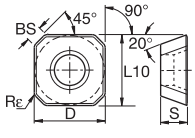


SEHW43A6T

● first choice
○ alternate choice

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

Face Mills

SEHT

catalog number	D	S	L10	BS	Rε	hm	cutting edges	KC510M	KC520M	KC725M	KCK15	KCPK30
SEHT43A6	.500	.188	.500	.106	.039	.002	4	●		●		

SEHT-T

catalog number	D	S	L10	BS	Rε	hm	cutting edges	KC510M	KC520M	KC725M	KCK15	KCPK30
SEHT43A6T	.500	.188	.500	.106	.039	.006	4			●		●

SEHW

catalog number	D	S	L10	BS	Rε	hm	cutting edges	KC510M	KC520M	KC725M	KCK15	KCPK30
SEHW43A6	.500	.188	.500	.106	.039	.003	4	●	●	●	●	●

SEHW-T

catalog number	D	S	L10	BS	Rε	hm	cutting edges	KC510M	KC520M	KC725M	KCK15	KCPK30
SEHW43A6T	.500	.188	.500	.106	.039	.006	4		●	●	●	●

Recommended Starting Speeds [SFM]

Material Group		KC510M			KC520M			KC725M			KCK15			KCPK30		
P	1	–	–	–	–	–	–	1030	**900**	840	–	–	–	1780	**1560**	1450
	2	–	–	–	–	–	–	860	**760**	640	–	–	–	1100	**1000**	900
	3	–	–	–	–	–	–	790	**670**	550	–	–	–	1000	**900**	820
	4	–	–	–	–	–	–	710	**590**	470	–	–	–	740	**690**	620
	5	–	–	–	–	–	–	590	**530**	470	–	–	–	1020	**910**	830
	6	–	–	–	–	–	–	520	**400**	310	–	–	–	620	**540**	–
M	1	–	–	–	–	–	–	670	**590**	540	–	–	–	820	**720**	620
	2	–	–	–	–	–	–	610	**520**	430	–	–	–	730	**640**	550
	3	–	–	–	–	–	–	460	**400**	310	–	–	–	570	**520**	460
K	1	–	–	–	1060	**960**	850	–	–	–	1660	**1510**	1340	1160	**1050**	940
	2	–	–	–	830	**740**	700	–	–	–	1310	**1170**	1090	920	**830**	760
	3	–	–	–	700	**620**	560	–	–	–	1100	**980**	900	770	**690**	640
N	1–2	2520	**2240**	2060	–	–	–	–	–	–	–	–	–	–	–	–
	3	2280	**2100**	1920	–	–	–	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	140	**120**	100	–	–	–	–	–	–
	2	–	–	–	–	–	–	140	**120**	100	–	–	–	–	–	–
	3	–	–	–	–	–	–	180	**140**	100	–	–	–	–	–	–
	4	–	–	–	–	–	–	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%			
SEH.	.005	**.018**	.037	.004	**.013**	.027	.003	**.012**	.023	.003	**.011**	.022	.003	**.011**	.021	SEH.

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



Shoulder Mills

Mill 1-10 Platform P2–P20

Mill 1-10, 0° Shoulder Milling Cutters P2–P12

Mill 1-10, 0° Helical Shoulder Milling Cutters P13–P20

Mill 1-14 Platform P22–P44

Mill 1-14, 0° Indexable Shoulder Milling, Single Inserts Row. P22–P32

Mill 1-14, 0° Helical Shoulder Milling Cutters P34–P44

Mill 1-18 Platform P46–P57

Mill 1-18, 0° Shoulder Milling Cutters, Increased Axial Depth of Cut P46–P57

Mill 1-25 Platform P58–P64

Mill 1-25, 0° Machining Non-Ferrous Material P58–P64

KSSM P66–P77, P86–P88

KSSM10, 0° Shoulder Milling Cutter, Small Depth of Cut P66–P72

KSSM12, 0° Shoulder Milling Cutter, Medium Depth of Cut P73–P77

KSSM15, 0° Shoulder Indexable Milling Cutter, Increased Depth of Cut P86–P88

KSSM-KSSP, Helical Cutters P78–P84

KSSP, 0° Helical Cutters, End Milling, Shell Mills, Integral Shank P78–P84

KFSR Helical Platform P90–P95

KFSR, 0° Helical Cutters, Serrated Inserts P90–P95



Mill 1-10™ • High-Performance Shoulder Milling Platform

Primary Application

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

Features and Benefits

Versatility

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

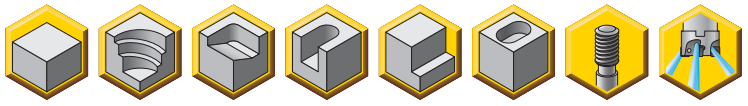
Advantages

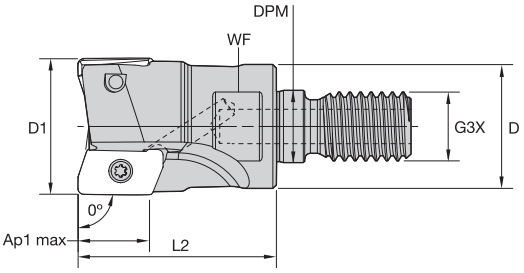
- Optimized soft cutting edge.
- Elliptical edge generates 0° wall.
- Increased ramping capability due to state of the art insert and cutter body design.
- Innovative chip gash design for excellent chip evacuation and perfect cutter body stability.
- All pockets are machined into heat-treated materials, guaranteeing best-in-class runout and pocket strength.
- Inserts feature innovative margin along the main cutting edge, corner nose radius, and wiper facet for perfect edge stability.



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

- Aggressive ramping rates.
- Generates superior surface finish.
- Mill 0° walls.
- High RPM capabilities.







End Mills • Screw-On

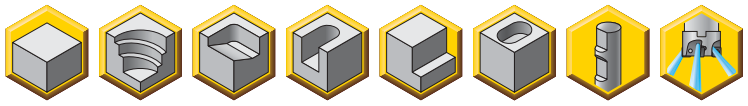
order number	catalog number	D1	D	DPM	G3X	L2	WF	Ap1 max	Z	max ramp angle	lbs	max RPM
3742470	**M1D062E1002CM08**	.625	.512	.335	M8	1.000	.392	.396	2	9.5°	.05	53000
3742471	**M1D075E1002CM10**	.750	.709	.413	M10	1.100	.589	.398	2	6.5°	.09	45900
3742472	**M1D075E1003CM10**	.750	.709	.413	M10	1.100	.589	.398	3	6.5°	.10	45900
3742513	**M1D100E1003CM12**	1.000	.827	.492	M12	1.250	.667	.395	3	4.0°	.19	39700
3742514	**M1D100E1004CM12**	1.000	.827	.492	M12	1.250	.667	.395	4	4.0°	.18	39700
3742515	**M1D125E1004CM16**	1.250	1.142	.669	M16	1.500	.864	.392	4	2.5°	.38	35500
3742516	**M1D125E1005CM16**	1.250	1.142	.669	M16	1.500	.864	.392	5	2.5°	.38	35500
3742517	**M1D150E1006CM16**	1.500	1.142	.669	M16	1.500	.864	.390	6	2.0°	.46	32400

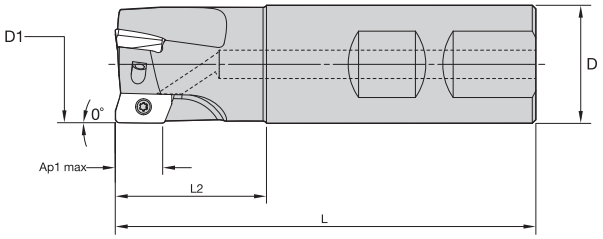
Spare Parts

D1	 insert screw	in. lbs.	 Torx Plus wrench
.625	**MS2205**	9.0	**F7IP**
.750	**MS2205**	9.0	**F7IP**
1.000	**MS2205**	9.0	**F7IP**
1.250	**MS2205**	9.0	**F7IP**
1.500	**MS2205**	9.0	**F7IP**

NOTE: Standard milling cutters will accept insert nose radii up to .078" without modification.

- Aggressive ramping rates.
- Generates superior surface finish.
- Mill 0° walls.
- High RPM capabilities.







End Mills • Weldon® Shank

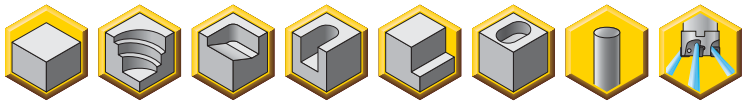
order number	catalog number	D1	D	L	L2	Ap1 max	Z	max ramp angle	lbs	max RPM
3742552	**M1D062E1002W075L100**	.625	.750	3.030	1.000	.396	2	9.5°	.28	50300
3742553	**M1D075E1002W075L110**	.750	.750	3.130	1.100	.398	2	6.5°	.30	45900
3742554	**M1D075E1003W075L110**	.750	.750	3.130	1.100	.398	3	6.5°	.30	45900
3897781	**M1D100E1003W075L125**	1.000	.750	3.280	1.250	.395	3	4.0°	.40	39700
3897782	**M1D100E1004W075L125**	1.000	.750	3.280	1.250	.395	4	4.0°	.40	39700
3742555	**M1D100E1003W100L125**	1.000	1.000	3.530	1.250	.395	3	4.0°	.65	39700
3742556	**M1D100E1004W100L125**	1.000	1.000	3.530	1.250	.395	4	4.0°	.64	39700
3742557	**M1D125E1004W125L160**	1.250	1.250	3.880	1.600	.392	4	2.5°	1.12	35500
3742558	**M1D125E1005W125L160**	1.250	1.250	3.880	1.600	.392	5	2.5°	1.11	35500

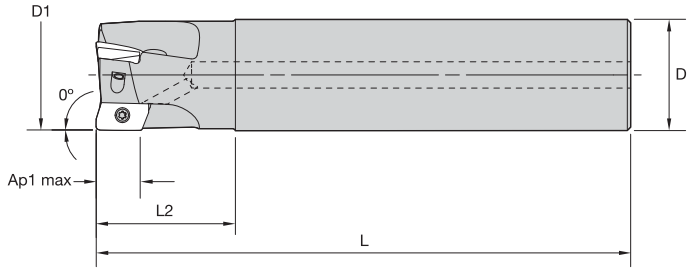
Spare Parts

D1	insert screw	in. lbs.	Torx Plus driver
.625	**MS2205**	9.0	**DT7IP**
.750	**MS2205**	9.0	**DT7IP**
1.000	**MS2205**	9.0	**DT7IP**
1.250	**MS2205**	9.0	**DT7IP**

NOTE: Standard milling cutters will accept insert nose radii up to .078" without modification.

- Aggressive ramping rates.
- Generates superior surface finish.
- Mill 0° walls.
- High RPM capabilities.







End Mills • Cylindrical Shank

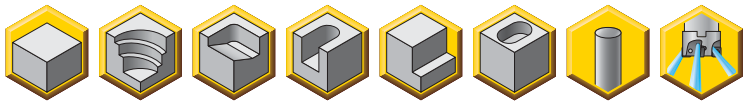
order number	catalog number	D1	D	L	L2	Ap1 max	Z	max ramp angle	lbs	max RPM
3742518	**M1D050E1001C062L350**	.500	.625	3.500	.800	.404	1	11.5°	.25	56500
3742536	**M1D062E1002C062L670**	.625	.625	6.700	.999	.396	2	9.5°	.49	50300
3742519	**M1D062E1002C075L400**	.625	.750	4.000	1.000	.396	2	9.5°	.40	50300
3742520	**M1D075E1002C075L450**	.750	.750	4.500	1.100	.398	2	6.5°	.46	45900
3742538	**M1D075E1002C075L670**	.750	.750	6.700	1.250	.398	2	6.5°	.70	45900
3742521	**M1D075E1003C075L450**	.750	.750	4.500	1.100	.398	3	6.5°	.46	45900
3742540	**M1D075E1003C075L670**	.750	.750	6.700	1.250	.398	3	6.5°	.71	45900
3742542	**M1D088E1003C075L670**	.875	.750	6.700	1.250	.396	3	5.0°	.74	42600
3897779	**M1D100E1003C075L480**	1.000	.750	4.800	1.250	.395	3	4.0°	.58	39700
3897780	**M1D100E1004C075L480**	1.000	.750	4.800	1.250	.395	4	4.0°	.58	39700
3742522	**M1D100E1003C100L480**	1.000	1.000	4.800	1.250	.395	3	4.0°	.92	39700
3742543	**M1D100E1003C100L800**	1.000	1.000	8.000	1.600	.395	3	4.0°	1.59	39700
3742533	**M1D100E1004C100L480**	1.000	1.000	4.800	1.250	.395	4	4.0°	.92	39700
3742545	**M1D100E1004C100L800**	1.000	1.000	8.000	1.600	.395	4	4.0°	1.59	39700
3742547	**M1D110E1004C100L800**	1.100	1.000	8.000	1.600	.394	4	3.3°	1.64	38000
3742534	**M1D125E1004C125L520**	1.250	1.250	5.200	1.600	.392	4	2.5°	1.57	35500
3742548	**M1D125E1004C125L800**	1.250	1.250	8.000	1.900	.392	4	2.5°	2.48	35500
3742535	**M1D125E1005C125L520**	1.250	1.250	5.200	1.600	.392	5	2.5°	1.57	35500
3742550	**M1D125E1005C125L800**	1.250	1.250	8.000	1.900	.392	5	2.5°	2.48	35500

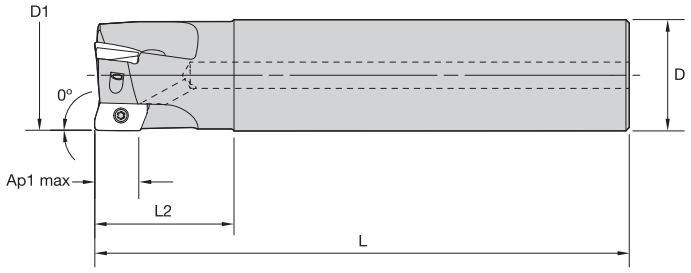
Spare Parts

D1	 insert screw	in. lbs.	 Torx Plus driver
.500	**MS2205**	9.0	**DT7IP**
.625	**MS2205**	9.0	**DT7IP**
.750	**MS2205**	9.0	**DT7IP**
.875	**MS2205**	9.0	**DT7IP**
1.000	**MS2205**	9.0	**DT7IP**
1.100	**MS2205**	9.0	**DT7IP**
1.250	**MS2205**	9.0	**DT7IP**

NOTE: Standard milling cutters will accept insert nose radii up to .078" without modification.

- Aggressive ramping rates.
- Generates superior surface finish.
- Mill 0° walls.
- High RPM capabilities.







End Mills • Cylindrical Shank • Long Length

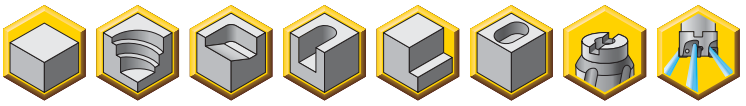
order number	catalog number	D1	D	L	L2	Ap1 max	Z	max ramp angle	lbs	max RPM
3742537	**M1D062E1002C062L670R**	.625	.625	6.688	.987	.396	2	8.0°	.49	50300
3742539	**M1D075E1002C075L670R**	.750	.750	6.689	1.239	.387	2	5.3°	.70	45900
3742541	**M1D075E1003C075L670R**	.750	.750	6.689	1.239	.387	3	5.3°	.71	45900
3742544	**M1D100E1003C100L800R**	1.000	1.000	7.989	1.589	.385	3	3.0°	1.59	39700
3742546	**M1D100E1004C100L800R**	1.000	1.000	7.989	1.589	.384	4	3.0°	1.59	39700
3742549	**M1D125E1004C125L800R**	1.250	1.250	7.989	1.889	.382	4	2.0°	2.48	35500
3742551	**M1D125E1005C125L800R**	1.250	1.250	7.989	1.889	.382	5	2.0°	2.48	35500

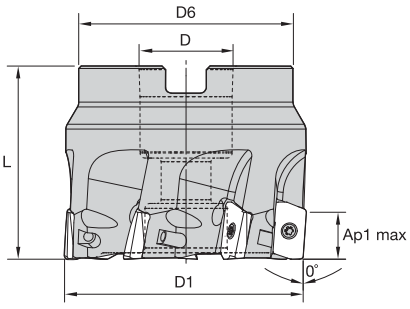
Spare Parts

D1	insert screw	in. lbs.	Torx Plus driver
.625	**MS2205**	9.0	**DT7IP**
.750	**MS2205**	9.0	**DT7IP**
1.000	**MS2205**	9.0	**DT7IP**
1.250	**MS2205**	9.0	**DT7IP**

NOTE: For inserts with corner nose radii 2.4 and 3.1.

- Aggressive ramping rates.
- Generates superior surface finish.
- Mill 0° walls.
- High RPM capabilities.







End Mills • Shell Mills

order number	catalog number	D1	D	D6	L	Ap1 max	Z	max ramp angle	lbs	max RPM
3745039	**M1D150E1004S075L157**	1.500	.750	1.420	1.575	.391	4	2.0°	.46	32400
3745040	**M1D150E1006S075L157**	1.500	.750	1.420	1.575	.391	6	2.0°	.49	32400
3745041	**M1D200E1005S075L157**	2.000	.750	1.750	1.575	.389	5	1.5°	.92	28100
3745042	**M1D200E1008S075L157**	2.000	.750	1.750	1.575	.389	8	1.5°	.89	28100
3745043	**M1D250E1006S075L157**	2.500	.750	1.750	1.575	.389	6	1.0°	1.29	25100
3745045	**M1D250E1009S075L157**	2.500	.750	1.750	1.575	.389	9	1.0°	1.26	25100
3745047	**M1D300E1008S100L175**	3.000	1.000	2.190	1.750	.389	8	0.80°	2.08	22900
3745048	**M1D300E1010S100L175**	3.000	1.000	2.190	1.750	.389	10	0.80°	2.07	22900
3745049	**M1D400E1008S150L200**	4.000	1.500	3.380	2.000	.389	8	0.50°	3.82	19800
3745050	**M1D400E1012S150L200**	4.000	1.500	3.380	2.000	.389	12	0.50°	3.81	19800

Spare Parts

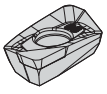
D1	 insert screw	in. lbs.	 Torx Plus driver	 socket-head cap screw
1.500	**MS2205**	9.0	**DT7IP**	**S445**
2.000	**MS2205**	9.0	**DT7IP**	**S445**
2.500	**MS2205**	9.0	**DT7IP**	**S445**
3.000	**MS2205**	9.0	**DT7IP**	**S458**
4.000	**MS2205**	9.0	**DT7IP**	**—**

NOTE: Standard milling cutters will accept insert nose radii up to .078" without modification.

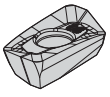
Insert Selection Guide

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.E..LD	KC725M	**.E..HD**	**KC725M**	.S..GD	KC725M
P3–P4	.E..LD	KCPK30	**.E..HD**	**KCPK30**	.S..GD	KCPK30
P5–P6	.E..HD	KC522M	**.S..GE**	**KCPK30**	.S..GD	KCPK30
M1–M2	.E..LD	KC725M	**.E..HD**	**KC725M**	.S..GE	KC725M
M3	.E..LD	KC725M	**.E..HD**	**KC725M**	.S..GE	KC725M
K1–K2	.E..LD	KCK15	**.E..HD**	**KCK15**	.S..GD	KCK15
K3	.E..LD	KC520M	**.E..HD**	**KC520M**	.S..GD	KC520M
N1–N2	.F..LDJ	KC410M	**.E..LDJ**	**KC422M**	.E..LD	KC522M
N3	.F..LDJ	KC410M	**.F..LDJ**	**KC410M**	.E..LD	KC510M
S1–S2	.E..LD	KC522M	**.E..HD**	**KC725M**	.S..GE	KC725M
S3	.E..LD	KC522M	**.E..HD**	**KC725M**	.S..GE	KC725M
S4	.E..HD	KC725M	**.S..GE**	**KC725M**	–	–
H1	.S..GE	KCPK30	**.S..GE**	**KCPK30**	–	–

Indexable Inserts



EDCT-PCD



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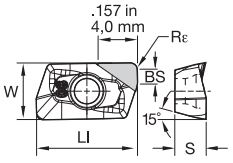

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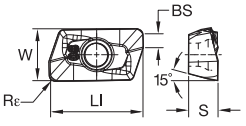


beyond

● first choice
○ alternate choice

	K313	KC410M	KC422M	KC510M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30	KD1410
P						○	●		●	●	
M						●	●		○	○	
K				●	●	○		●	○	○	
N	●	●	●								●
S						●	●				
H				●		●			○	○	

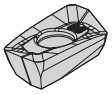
Shoulder Mills

EDCT-PCD

catalog number	LI	W	S	BS	Rε	hm	cutting edges	K313	KC410M	KC422M	KC510M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30	KD1410
EC1004FR-PCD	.474	.266	.148	.083	.016	.001	1											●
EC1008FR-PCD	.474	.265	.148	.067	.031	.001	1											●

EDCT-F.LDJ

catalog number	LI	W	S	BS	Rε	hm	cutting edges	K313	KC410M	KC422M	KC510M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30	KD1410
EC1002FLDJ	.474	.266	.148	.090	.008	.001	2	●	●									
EC1004FLDJ	.474	.266	.148	.078	.016	.001	2	●	●									
EC1008FLDJ	.474	.265	.148	.067	.031	.001	2	●	●									
EC1012FLDJ	.475	.265	.148	.051	.047	.001	2	●	●									
EC1016FLDJ	.475	.265	.148	.036	.062	.001	2	●	●									
EC1020FLDJ	.475	.265	.148	.019	.079	.001	2	●	●									
EC1024FLDJ	.475	.265	.148	.004	.094	.001	2	●	●									
EC1031FLDJ	.453	.264	.148	–	.122	.001	2	●	●									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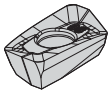
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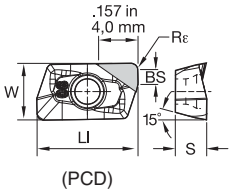

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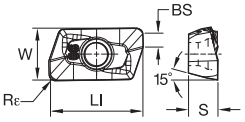


beyond

● first choice
○ alternate choice

	K313	KC410M	KC422M	KC510M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30	KD1410
P						○	●		●	●	
M						●	●		○	○	
K				●	●	○		●	○	○	
N	●	●	●								●
S						●	●				
H				●		●			○	○	

EDCT-E.LDJ

catalog number	LI	W	S	BS	Rε	hm	cutting edges	K313	KC410M	KC422M	KC510M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30	KD1410
EC1004ELDJ	.474	.266	.148	.078	.016	.001	2			●								
EC1008ELDJ	.474	.265	.148	.067	.031	.001	2			●								
EC1012ELDJ	.475	.265	.148	.051	.047	.001	2			●								
EC1016ELDJ	.475	.265	.148	.036	.062	.001	2			●								
EC1020ELDJ	.475	.265	.148	.019	.079	.001	2			●								
EC1024ELDJ	.475	.265	.148	.004	.094	.001	2			●								
EC1031ELDJ	.453	.264	.148	—	.122	.001	2			●								

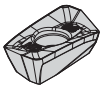
EDCT-LD

catalog number	LI	W	S	BS	Rε	hm	cutting edges	K313	KC410M	KC422M	KC510M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30	KD1410
EC1002ELD	.474	.266	.148	.090	.008	.002	2						●	●		●	●	
EC1004ELD	.474	.266	.148	.078	.016	.002	2				●	●	●	●		●	●	
EC1008ELD	.474	.265	.148	.067	.031	.002	2				●	●	●	●	●	●	●	
EC1012ELD	.475	.265	.148	.051	.047	.002	2					●	●	●			●	
EC1016ELD	.475	.265	.148	.036	.062	.002	2					●	●	●			●	
EC1020ELD	.475	.265	.148	.019	.079	.002	2						●	●			●	
EC1024ELD	.475	.265	.148	.004	.094	.002	2						●	●			●	
EC1031ELD	.453	.264	.148	—	.122	.002	2					●	●	●		●	●	

Insert Selection Guide

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.E..LD	KC725M	**.E..HD**	**KC725M**	.S..GD	KC725M
P3–P4	.E..LD	KCPK30	**.E..HD**	**KCPK30**	.S..GD	KCPK30
P5–P6	.E..HD	KC522M	**.S..GE**	**KCPK30**	.S..GD	KCPK30
M1–M2	.E..LD	KC725M	**.E..HD**	**KC725M**	.S..GE	KC725M
M3	.E..LD	KC725M	**.E..HD**	**KC725M**	.S..GE	KC725M
K1–K2	.E..LD	KCK15	**.E..HD**	**KCK15**	.S..GD	KCK15
K3	.E..LD	KC520M	**.E..HD**	**KC520M**	.S..GD	KC520M
N1–N2	.F..LDJ	KC410M	**.E..LDJ**	**KC422M**	.E..LD	KC522M
N3	.F..LDJ	KC410M	**.F..LDJ**	**KC410M**	.E..LD	KC510M
S1–S2	.E..LD	KC522M	**.E..HD**	**KC725M**	.S..GE	KC725M
S3	.E..LD	KC522M	**.E..HD**	**KC725M**	.S..GE	KC725M
S4	.E..HD	KC725M	**.S..GE**	**KC725M**	–	–
H1	.S..GE	KCPK30	**.S..GE**	**KCPK30**	–	–

Indexable Inserts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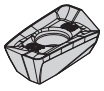
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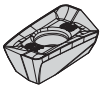
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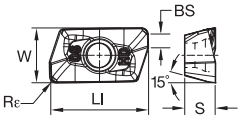


beyond

● first choice
○ alternate choice

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

EDPT-E.HD

catalog number	LI	W	S	BS	Rε	hm	cutting edges	K313	KC410M	KC422M	KC510M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30	KD1410
EP1004EHD	.474	.266	.148	.082	.016	.003	2					●	●	●	●		●	
EP1008EHD	.474	.265	.148	.067	.031	.003	2					●	●	●	●		●	
EP1010EHD	.474	.265	.148	.059	.039	.003	2						●	●	●		●	
EP1012EHD	.475	.265	.148	.051	.047	.003	2					●	●	●	●		●	
EP1016EHD	.475	.265	.148	.036	.062	.003	2					●	●	●	●		●	
EP1020EHD	.475	.265	.148	.019	.079	.003	2							●			●	
EP1024EHD	.475	.265	.148	.004	.094	.003	2							●			●	
EP1031EHD	.453	.264	.148	–	.122	.003	2					●	●	●			●	

EDPT-S.GE

catalog number	LI	W	S	BS	Rε	hm	cutting edges	K313	KC410M	KC422M	KC510M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30	KD1410
EP1004SGE	.474	.266	.148	.082	.016	.005	2						●	●			●	
EP1008SGE	.474	.265	.148	.067	.031	.005	2						●	●			●	
EP1012SGE	.475	.265	.148	.051	.047	.005	2						●	●			●	
EP1016SGE	.475	.265	.148	.036	.062	.005	2						●	●			●	
EP1031SGE	.453	.264	.148	–	.122	.005	2						●	●			●	

EDPT-S.GD

catalog number	LI	W	S	BS	Rε	hm	cutting edges	K313	KC410M	KC422M	KC510M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30	KD1410
EP1004SGD	.474	.266	.148	.082	.016	.005	2					●		●	●		●	
EP1008SGD	.474	.265	.148	.067	.031	.005	2					●		●	●		●	
EP1012SGD	.475	.265	.148	.051	.047	.005	2					●		●	●		●	
EP1016SGD	.475	.265	.148	.036	.062	.005	2					●		●	●		●	

Recommended Starting Speeds and Feeds [SFM]

Material Group		K313			KC410M			KC422M			KC510M			KC520M			KC522M		
P	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1080	**940**	880
	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	900	**790**	660
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	830	**700**	580
	4	–	–	–	–	–	–	–	–	–	800	**650**	550	–	–	–	740	**610**	490
	5	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	610	**550**	490
	6	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	540	**410**	330
M	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	670	**590**	540
	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	610	**520**	430
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	460	**400**	310
K	1	620	**550**	490	–	–	–	–	–	–	960	**870**	780	880	**800**	710	750	**680**	600
	2	–	–	–	–	–	–	–	–	–	760	**680**	630	690	**620**	580	590	**530**	490
	3	–	–	–	–	–	–	–	–	–	640	**570**	520	580	**520**	470	490	**440**	400
N	1–2	2610	**2280**	1960	3990	**3550**	3270	3520	**3100**	2870	2100	**1870**	1720	–	–	–	–	–	–
	3	–	–	–	3550	**3270**	3000	3100	**2870**	2500	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	130	**120**	90
	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	130	**120**	90
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	170	**130**	90
	4	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	230	**170**	120
H	1	–	–	–	–	–	–	–	–	–	525	**425**	300	–	–	–	390	**300**	230

Material Group		KC725M			KCK15			KCPM20			KCPK30			KD1410		
P	1	860	**750**	700	–	–	–	1810	**1590**	1470	1485	**1300**	1210	–	–	–
	2	720	**630**	530	–	–	–	1120	**1010**	910	920	**830**	750	–	–	–
	3	660	**560**	460	–	–	–	1010	**910**	830	830	**750**	680	–	–	–
	4	590	**490**	390	–	–	–	760	**700**	630	620	**575**	520	–	–	–
	5	490	**440**	390	–	–	–	910	**820**	750	850	**760**	690	–	–	–
	6	430	**330**	260	–	–	–	630	**550**	475	520	**450**	–	–	–	–
M	1	560	**490**	450	–	–	–	730	**655**	570	680	**600**	515	–	–	–
	2	510	**430**	360	–	–	–	670	**580**	520	610	**530**	460	–	–	–
	3	380	**330**	260	–	–	–	530	**475**	410	475	**430**	380	–	–	–
K	1	–	–	–	1380	**1255**	1115	1180	**1070**	960	965	**875**	780	–	–	–
	2	–	–	–	1095	**975**	910	940	**840**	770	770	**690**	630	–	–	–
	3	–	–	–	920	**815**	750	790	**700**	650	645	**575**	530	–	–	–
N	1–2	–	–	–	–	–	–	–	–	–	–	–	–	9030	**8040**	7400
	3	–	–	–	–	–	–	–	–	–	–	–	–	7490	**5470**	4440
S	1	115	**100**	80	–	–	–	–	–	–	–	–	–	–	–	–
	2	115	**100**	80	–	–	–	–	–	–	–	–	–	–	–	–
	3	150	**115**	80	–	–	–	–	–	–	–	–	–	–	–	–
	4	200	**150**	100	–	–	–	–	–	–	–	–	–	–	–	–
H	1	–	–	–	–	–	–	460	**380**	310	–	–	–	–	–	–

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

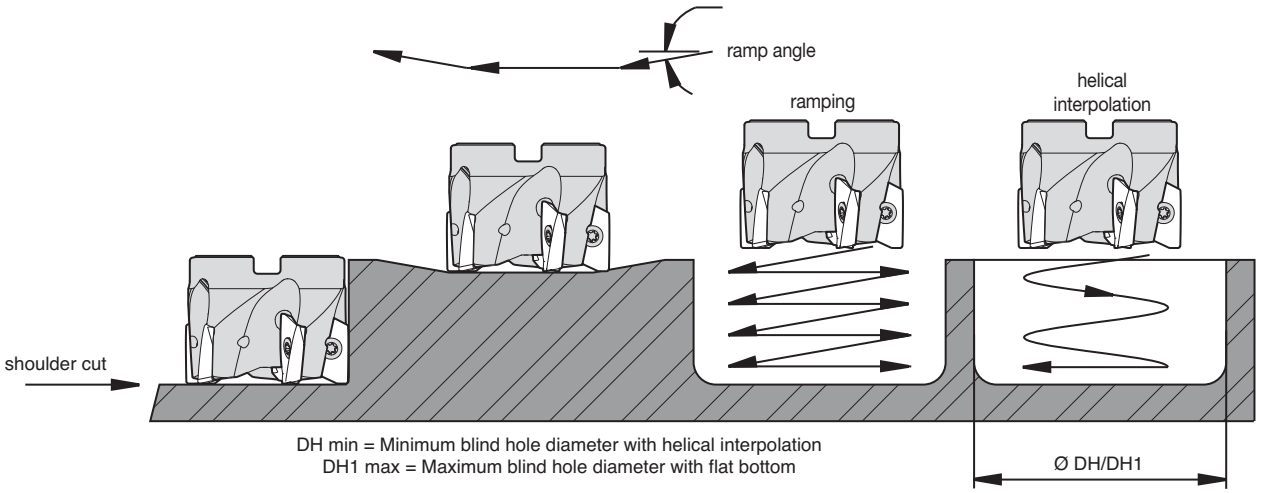
Recommended Starting Feeds [IPT]

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%			
.F..LDJ	.003	**.005**	.009	.003	**.004**	.007	.002	**.003**	.006	.002	**.003**	.006	.002	**.003**	.006	.F..LDJ
.F..-PCD	.003	**.007**	.009	.003	**.005**	.007	.002	**.004**	.006	.002	**.004**	.006	.002	**.004**	.006	.F..-PCD
.E..LDJ	.003	**.007**	.012	.003	**.005**	.009	.002	**.005**	.008	.002	**.004**	.007	.002	**.004**	.007	.E..LDJ
.E..LD	.004	**.007**	.012	.003	**.005**	.009	.002	**.005**	.008	.002	**.004**	.007	.002	**.004**	.007	.E..LD
.S..GE	.007	**.008**	.014	.005	**.006**	.010	.004	**.005**	.009	.004	**.005**	.008	.004	**.005**	.008	.S..GE
.S..GD	.007	**.008**	.014	.005	**.006**	.010	.004	**.005**	.009	.004	**.005**	.008	.004	**.005**	.008	.S..GD
.E..HD	.007	**.010**	.015	.005	**.008**	.011	.004	**.007**	.010	.004	**.006**	.009	.004	**.006**	.009	.E..HD

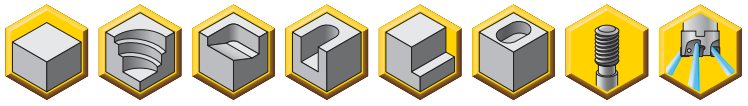
NOTE: Use “Light Machining” values as starting feed rate.

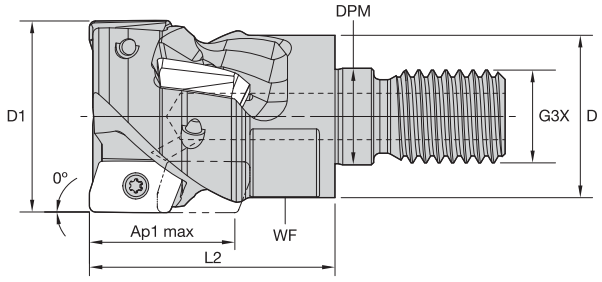
Application Examples



insert style	cutting diameter	max ramp angle to non-cutting corner tangent	max ramp angle to steel body interference	min hole diameter (DH min)	min flat-bottom hole diameter (DH1 min)	max diameter (no flat bottom)
Mill-1, 10mm	0.500	not recommended	not recommended	not recommended	not recommended	not recommended
Mill-1, 10mm	0.625	9.9°	12.5°	0.758	1.121	1.250
Mill-1, 10mm	0.750	6.8°	9.7°	0.998	1.367	1.500
Mill-1, 10mm	0.875	5.1°	6.8°	1.248	1.617	1.750
Mill-1, 10mm	1.000	4.1°	5.1°	1.498	1.867	2.000
Mill-1, 10mm	1.100	3.5°	4.3°	1.698	2.067	2.200
Mill-1, 10mm	1.250	2.9°	3.4°	1.999	2.367	2.500
Mill-1, 10mm	1.500	2.2°	2.4°	2.499	2.867	3.000
Mill-1, 10mm	2.000	1.2°	1.6°	3.509	3.876	4.000
Mill-1, 10mm	2.500	1.2°	1.2°	4.509	4.876	5.000
Mill-1, 10mm	3.000	0.9°	1.0°	5.509	5.876	6.000
Mill-1, 10mm	4.000	0.7°	0.7°	7.509	7.876	8.000

- Aggressive ramping rates.
- Generates superior surface finish.
- Mill 0° walls.







Helical End Mills • Screw-On

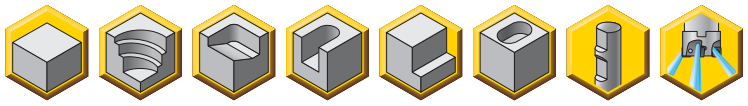
order number	catalog number	D1	D	DPM	G3X	L2	WF	Ap1 max	Z	Z U	max ramp angle	lbs	max RPM
3746104	**M1HR075ED10M10Z2L110C4**	.750	.698	.413	M10	1.289	.589	.745	4	2	6.5°	.09	38000
3746105	**M1HR100ED10M12Z2L130C4**	1.000	.827	.492	M12	1.289	.667	.740	4	2	4.0°	.16	32900
3746106	**M1HR125ED10M16Z2L160C4**	1.250	1.142	.669	M16	1.614	.943	.735	4	2	2.5°	.43	29400
3746107	**M1HR125ED10M16Z3L160C6**	1.250	1.142	.669	M16	1.614	.943	.735	6	3	2.5°	.40	29400

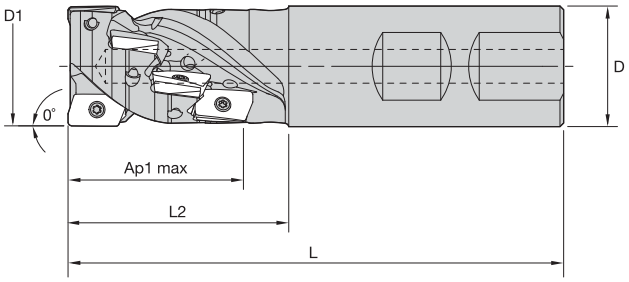
Spare Parts

D1	 insert screw	in. lbs.	 Torx Plus wrench
.750	**MS2205**	9.0	**F7IP**
1.000	**MS2205**	9.0	**F7IP**
1.250	**MS2205**	9.0	**F7IP**

NOTE: Standard milling cutters will accept insert nose radii up to .078" without modification.

- Aggressive ramping rates.
- Generates superior surface finish.
- Mill 0° walls.







Helical End Mills • Weldon® Shank

order number	catalog number	D1	D	L	L2	Ap1 max	Z	Z U	max ramp angle	lbs	max RPM
3746093	**M1HR075ED10W075Z2L140C6**	.750	.750	3.422	1.392	1.093	6	2	6.5°	.30	38000
3746097	**M1HR100ED10W100Z2L180C8**	1.000	1.000	4.071	1.790	1.432	8	2	4.0°	.64	32900
3746098	**M1HR125ED10W125Z2L210C10**	1.250	1.250	4.371	2.090	1.764	10	2	2.5°	1.16	29400
3746099	**M1HR125ED10W125Z3L210C15**	1.250	1.250	4.371	2.090	1.764	15	3	2.5°	1.08	29400

Spare Parts

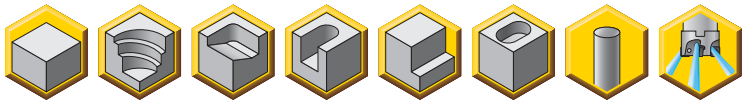


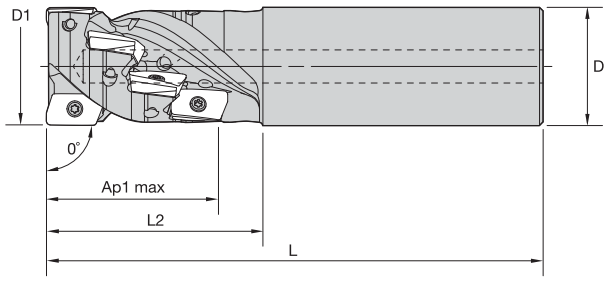


D1	insert screw	in. lbs.	Torx Plus driver
.750	**MS2205**	9.0	**DT7IP**
1.000	**MS2205**	9.0	**DT7IP**
1.250	**MS2205**	9.0	**DT7IP**

NOTE: Standard milling cutters will accept insert nose radii up to .078" without modification.

- Aggressive ramping rates.
- Generates superior surface finish.
- Mill 0° walls.







Helical End Mills • Cylindrical Shank

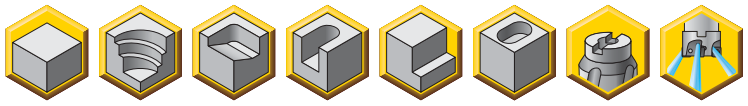
order number	catalog number	D1	D	L	L2	Ap1 max	Z	Z U	max ramp angle	lbs	max RPM
3746100	**M1HR075ED10C075Z2L110C4**	.750	.750	4.406	1.053	.745	4	2	6.5°	1.04	38000
3746101	**M1HR100ED10C100Z2L110C4**	1.000	1.000	4.800	1.053	.740	4	2	4.0°	.89	32900
3746102	**M1HR125ED10C125Z2L110C4**	1.250	1.250	5.200	1.053	.735	4	2	2.5°	1.59	29400
3746103	**M1HR125ED10C125Z3L110C6**	1.250	1.250	5.200	1.053	.735	6	3	2.5°	1.90	29400

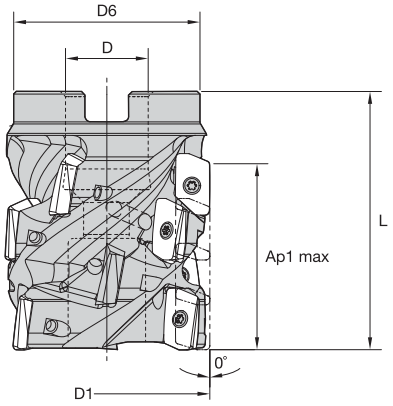
Spare Parts

D1	 insert screw	in. lbs.	 Torx Plus driver
.750	**MS2205**	9.0	**DT7IP**
1.000	**MS2205**	9.0	**DT7IP**
1.250	**MS2205**	9.0	**DT7IP**

NOTE: Standard milling cutters will accept insert nose radii up to .078" without modification.

- Aggressive ramping rates.
- Generates superior surface finish.
- Mill 0° walls.







Helical End Mills • Shell Mills

order number	catalog number	D1	D	D6	L	Ap1 max	Z	Z U	max ramp angle	lbs	max RPM
3746108	**M1HR150ED10S075Z3L200C12**	1.500	.750	1.421	2.000	1.417	12	3	2.0°	.56	26900
3746109	**M1HR150ED10S075Z5L200C20**	1.500	.750	1.420	2.000	1.417	20	5	2.0°	.51	26900
3746110	**M1HR200ED10S075Z3L240C15**	2.000	.750	1.750	2.400	1.745	15	3	1.5°	1.47	23300
3746111	**M1HR200ED10S075Z5L240C25**	2.000	.750	1.750	2.400	1.745	25	5	1.5°	1.31	23300

Spare Parts

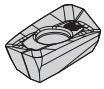
D1	 insert screw	in. lbs.	 Torx Plus driver
1.500	**MS2205**	9.0	**DT7IP**
2.000	**MS2205**	9.0	**DT7IP**

NOTE: Standard milling cutters will accept insert nose radii up to .078" without modification.

Insert Selection Guide

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.E..LD	KC725M	**.E..HD**	**KC725M**	.S..GD	KC725M
P3–P4	.E..LD	KCPK30	**.E..HD**	**KCPK30**	.S..GD	KCPK30
P5–P6	.E..HD	KC522M	**.S..GE**	**KCPK30**	.S..GD	KCPK30
M1–M2	.E..LD	KC725M	**.E..HD**	**KC725M**	.S..GE	KC725M
M3	.E..LD	KC725M	**.E..HD**	**KC725M**	.S..GE	KC725M
K1–K2	.E..LD	KCK15	**.E..HD**	**KCK15**	.S..GD	KCK15
K3	.E..LD	KC520M	**.E..HD**	**KC520M**	.S..GD	KC520M
N1–N2	.F..LDJ	KC410M	**.F..LDJ**	**KC410M**	.E..LD	KC510M
N3	.F..LDJ	KC410M	**.F..LDJ**	**KC410M**	.E..LD	KC510M
S1–S2	.E..LD	KC522M	**.E..HD**	**KC725M**	.S..GE	KC725M
S3	.E..LD	KC522M	**.E..HD**	**KC725M**	.S..GE	KC725M
S4	.E..HD	KC725M	**.S..GE**	**KC725M**	–	–
H1	–	–	**–**	**–**	–	–

Indexable Inserts



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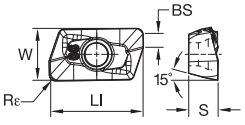


beyond

● first choice
○ alternate choice

	K313	KC410M	KC422M	KC510M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30	KD1410
P						○	●		●	●	
M						●	●		○	○	
K				●	●	○		●	○	○	
N	●	●	●								●
S						●	●				
H											

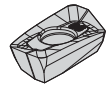
EDCT-F.LDJ

catalog number	LI	W	S	BS	Rε	hm	cutting edges	K313	KC410M	KC422M	KC510M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30	KD1410
EC1002FLDJ	.474	.266	.148	.090	.008	.001	2	●	●									
EC1004FLDJ	.474	.266	.148	.078	.016	.001	2	●	●									
EC1008FLDJ	.474	.265	.148	.067	.031	.001	2	●	●									
EC1012FLDJ	.475	.265	.148	.051	.047	.001	2	●	●									
EC1016FLDJ	.475	.265	.148	.036	.062	.001	2	●	●									
EC1020FLDJ	.475	.265	.148	.019	.079	.001	2	●	●									
EC1024FLDJ	.475	.265	.148	.004	.094	.001	2	●	●									
EC1031FLDJ	.453	.264	.148	–	.122	.001	2	●	●									

Insert Selection Guide

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.E..LD	KC725M	**.E..HD**	**KC725M**	.S..GD	KC725M
P3–P4	.E..LD	KCPK30	**.E..HD**	**KCPK30**	.S..GD	KCPK30
P5–P6	.E..HD	KC522M	**.S..GE**	**KCPK30**	.S..GD	KCPK30
M1–M2	.E..LD	KC725M	**.E..HD**	**KC725M**	.S..GE	KC725M
M3	.E..LD	KC725M	**.E..HD**	**KC725M**	.S..GE	KC725M
K1–K2	.E..LD	KCK15	**.E..HD**	**KCK15**	.S..GD	KCK15
K3	.E..LD	KC520M	**.E..HD**	**KC520M**	.S..GD	KC520M
N1–N2	.F..LDJ	KC410M	**.F..LDJ**	**KC410M**	.E..LD	KC510M
N3	.F..LDJ	KC410M	**.F..LDJ**	**KC410M**	.E..LD	KC510M
S1–S2	.E..LD	KC522M	**.E..HD**	**KC725M**	.S..GE	KC725M
S3	.E..LD	KC522M	**.E..HD**	**KC725M**	.S..GE	KC725M
S4	.E..HD	KC725M	**.S..GE**	**KC725M**	–	–
H1	–	–	**–**	**–**	–	–

Indexable Inserts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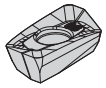
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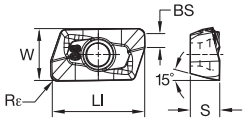


beyond

● first choice
○ alternate choice

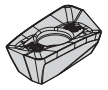
	K313	KC410M	KC422M	KC510M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30	KD1410
P						○	●		●	●	
M						●	●		○	○	
K					●	●	○		●	○	○
N	●	●	●								●
S						●	●				
H											

EDCT-E.LDJ

catalog number	LI	W	S	BS	Rε	hm	cutting edges	K313	KC410M	KC422M	KC510M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30	KD1410
EC1004ELDJ	.474	.266	.148	.078	.016	.001	2			●								
EC1008ELDJ	.474	.265	.148	.067	.031	.001	2			●								
EC1012ELDJ	.475	.265	.148	.051	.047	.001	2			●								
EC1016ELDJ	.475	.265	.148	.036	.062	.001	2			●								
EC1020ELDJ	.475	.265	.148	.019	.079	.001	2			●								
EC1024ELDJ	.475	.265	.148	.004	.094	.001	2			●								
EC1031ELDJ	.453	.264	.148	–	.122	.001	2			●								

EDCT-LD

catalog number	LI	W	S	BS	Rε	hm	cutting edges	K313	KC410M	KC422M	KC510M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30	KD1410
EC1002ELD	.474	.266	.148	.090	.008	.002	2						●	●		●	●	
EC1004ELD	.474	.266	.148	.078	.016	.002	2				●	●	●	●		●	●	
EC1008ELD	.474	.265	.148	.067	.031	.002	2				●	●	●	●	●	●	●	
EC1012ELD	.475	.265	.148	.051	.047	.002	2					●	●	●			●	
EC1016ELD	.475	.265	.148	.036	.062	.002	2					●	●	●			●	
EC1020ELD	.475	.265	.148	.019	.079	.002	2						●	●			●	
EC1024ELD	.475	.265	.148	.004	.094	.002	2						●	●			●	
EC1031ELD	.453	.264	.148	–	.122	.002	2					●	●	●		●	●	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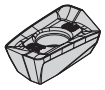
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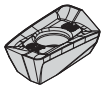
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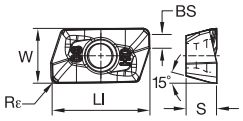

beyond

● first choice
○ alternate choice

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

EDPT-E.HD

catalog number	LI	W	S	BS	Rε	hm	cutting edges	K313	KC410M	KC422M	KC510M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30	KD1410
EP1004EHD	.474	.266	.148	.082	.016	.003	2					●	●	●	●		●	
EP1008EHD	.474	.265	.148	.067	.031	.003	2					●	●	●	●		●	
EP1010EHD	.474	.265	.148	.059	.039	.003	2						●	●	●		●	
EP1012EHD	.475	.265	.148	.051	.047	.003	2					●	●	●	●		●	
EP1016EHD	.475	.265	.148	.036	.062	.003	2					●	●	●	●		●	
EP1020EHD	.475	.265	.148	.019	.079	.003	2							●			●	
EP1024EHD	.475	.265	.148	.004	.094	.003	2							●			●	
EP1031EHD	.453	.264	.148	—	.122	.003	2					●	●	●			●	

EDPT-S.GE

catalog number	LI	W	S	BS	Rε	hm	cutting edges	K313	KC410M	KC422M	KC510M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30	KD1410
EP1004SGE	.474	.266	.148	.082	.016	.005	2						●	●			●	
EP1008SGE	.474	.265	.148	.067	.031	.005	2						●	●			●	
EP1012SGE	.475	.265	.148	.051	.047	.005	2						●	●			●	
EP1016SGE	.475	.265	.148	.036	.062	.005	2						●	●			●	
EP1031SGE	.453	.264	.148	—	.122	.005	2						●	●			●	

EDPT-S.GD

catalog number	LI	W	S	BS	Rε	hm	cutting edges	K313	KC410M	KC422M	KC510M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30	KD1410
EP1004SGD	.474	.266	.148	.082	.016	.005	2					●		●	●		●	
EP1008SGD	.474	.265	.148	.067	.031	.005	2					●		●	●		●	
EP1012SGD	.475	.265	.148	.051	.047	.005	2					●		●	●		●	
EP1016SGD	.475	.265	.148	.036	.062	.005	2					●		●	●		●	

Recommended Starting Speeds and Feeds [SFM]

Material Group		K313			KC410M			KC422M			KC510M			KC520M		
P	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–	800	**650**	550	–	–	–
	5	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	6	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
M	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
K	1	620	**550**	490	–	–	–	–	–	–	960	**870**	780	880	**800**	710
	2	–	–	–	–	–	–	–	–	–	760	**680**	630	690	**620**	580
	3	–	–	–	–	–	–	–	–	–	640	**570**	520	580	**520**	470
N	1–2	2610	**2280**	1960	3990	**3550**	3270	3520	**3100**	2870	2100	**1870**	1720	–	–	–
	3	–	–	–	3550	**3270**	3000	3100	**2870**	2500	–	–	–	–	–	–
S	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
H	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

Material Group		KC522M			KC725M			KCK15			KCPM20			KCPK30		
P	1	1080	**940**	880	860	**750**	700	–	–	–	1810	**1590**	1470	1485	**1300**	1210
	2	900	**790**	660	720	**630**	530	–	–	–	1120	**1010**	910	920	**830**	750
	3	830	**700**	580	660	**560**	460	–	–	–	1010	**910**	830	830	**750**	680
	4	740	**610**	490	590	**490**	390	–	–	–	760	**700**	630	620	**575**	520
	5	610	**550**	490	490	**440**	390	–	–	–	910	**820**	750	850	**760**	690
	6	540	**410**	330	430	**330**	260	–	–	–	630	**550**	475	520	**450**	–
M	1	670	**590**	540	560	**490**	450	–	–	–	730	**655**	570	680	**600**	515
	2	610	**520**	430	510	**430**	360	–	–	–	670	**580**	520	610	**530**	460
	3	460	**400**	310	380	**330**	260	–	–	–	530	**475**	410	475	**430**	380
K	1	750	**680**	600	–	–	–	1380	**1255**	1115	1180	**1070**	960	965	**875**	780
	2	590	**530**	490	–	–	–	1095	**975**	910	940	**840**	770	770	**690**	630
	3	490	**440**	400	–	–	–	920	**815**	750	790	**700**	650	645	**575**	530
N	1–2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
S	1	130	**120**	90	115	**100**	80	–	–	–	–	–	–	–	–	–
	2	130	**120**	90	115	**100**	80	–	–	–	–	–	–	–	–	–
	3	170	**130**	90	150	**115**	80	–	–	–	–	–	–	–	–	–
	4	230	**170**	120	200	**150**	100	–	–	–	–	–	–	–	–	–
H	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

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

Shoulder Mills

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..LDJ	.003	**.005**	.009	.003	**.004**	.007	.002	**.003**	.006	.002	**.003**	.006	.002	**.003**	.006	.F..LDJ
.E..LDJ	.003	**.007**	.012	.003	**.005**	.009	.002	**.005**	.008	.002	**.004**	.007	.002	**.004**	.007	.E..LDJ
.E..LD	.004	**.007**	.012	.003	**.005**	.009	.002	**.005**	.008	.002	**.004**	.007	.002	**.004**	.007	.E..LD
.S..GE	.007	**.008**	.014	.005	**.006**	.010	.004	**.005**	.009	.004	**.005**	.008	.004	**.005**	.008	.S..GE
.S..GD	.007	**.008**	.014	.005	**.006**	.010	.004	**.005**	.009	.004	**.005**	.008	.004	**.005**	.008	.S..GD
.E..HD	.007	**.010**	.015	.005	**.008**	.011	.004	**.007**	.010	.004	**.006**	.009	.004	**.006**	.009	.E..HD

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



LOIS™ — Mill 1-14™

Load Optimized Insert Spacing with an Unmatched Soft Cutting Action

Boost productivity in all your complex contour milling and full slotting operations!

- Reduced cutting forces.
- Balanced cut.
- Reduced power fluctuation.
- Coolant through tool for machining exotic materials.
- Versatile cutting strategies:
  - Slot
  - Profile
  - Plunge
  - Ramp

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KENNAMETAL®

Mill 1-14™

Primary Application

Mill 1-14 is a versatile, functional cutter system for a range of cutting tasks. Mill 1-14 cutters can be used for profiling, slotting, ramping, helical interpolation, circular interpolation, and other milling applications. It's a single tool with multi-functional benefits. The Mill 1-14 inserts also are specially designed to add cutting versatility. Innovative micro-geometry features contribute greatly to enhanced performance, various rake angles, negative T-land, and small hone. Results include significantly reduced cycle times and lower cutting forces. Test results in producing 0° walls have proven excellent as well; try GD2 geometry.

Features and Benefits

Features

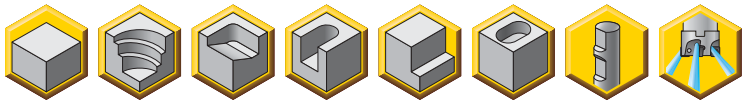
- Insert geometries and grades for most workpiece materials.
- Insert radii from .016" (0,15mm) up to .157" (4mm).
- Axial depth of cut up to .551" (14mm).
- Beyond™ grade technology.

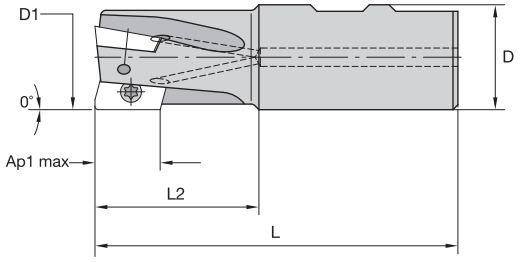
Benefits

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



- Aggressive ramping angles.
- Generates superior surface finish.
- Mill 0° walls.
- High RPM capabilities.







End Mills • Weldon® Shank

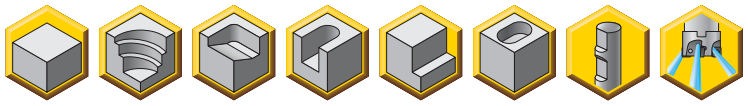
order number	catalog number	D1	D	L	L2	Ap1 max	Z	max ramp angle	lbs	max RPM
2624243	**M1D062E1401W075L150**	.625	.750	3.530	1.500	.580	1	25.0°	.31	8000
2623856	**M1D075E1402W075L175**	.750	.750	3.780	1.750	.580	2	18.0°	.35	49600
2624245	**M1D088E1402W100L175**	.875	1.000	4.030	1.750	.580	2	13.2°	.66	43500
2624189	**M1D097E1403W100L175**	.970	1.000	4.030	1.750	.580	3	10.9°	.69	40100
2479507	**M1D100E1403W075L175**	1.000	.750	3.780	1.750	.575	3	10.4°	.46	39200
2623857	**M1D100E1402W100L175**	1.000	1.000	4.030	1.750	.580	2	10.4°	.71	39200
2624199	**M1D100E1403W100L175R**	1.000	1.000	4.010	1.730	.580	3	10.4°	.70	39200
2479508	**M1D100E1403W100L175**	1.000	1.000	4.030	1.750	.580	3	10.4°	.71	39200
2623858	**M1D125E1403W100L225**	1.250	1.000	4.530	2.250	.571	3	7.2°	.94	33400
2479512	**M1D125E1404W100L225**	1.250	1.000	4.530	2.250	.571	4	7.2°	.97	33400
2624201	**M1D125E1404W125L225R**	1.250	1.250	4.510	2.230	.570	4	7.2°	1.25	33400
2479506	**M1D125E1404W125L225**	1.250	1.250	4.530	2.250	.570	4	7.2°	1.25	33400
2624194	**M1D150E1404W125L225**	1.500	1.250	4.530	2.250	.567	4	5.5°	1.49	29600
2624271	**M1D150E1405W125L225R**	1.500	1.250	4.510	2.230	.555	5	5.5°	1.53	29600
2623859	**M1D150E1405W125L225**	1.500	1.250	4.530	2.250	.567	5	5.5°	1.53	29600

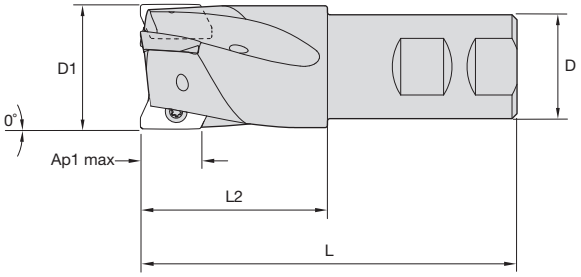
Spare Parts

D1	insert screw	in. lbs.	Torx Plus driver
.625	**MS2167**	20.0	**DT9IP**
.750	**MS2167**	20.0	**DT9IP**
.875	**MS2166**	20.0	**DT9IP**
.970	**MS2166**	20.0	**DT9IP**
1.000	**MS2166**	20.0	**DT9IP**
1.250	**MS2166**	20.0	**DT9IP**
1.500	**MS2166**	20.0	**DT9IP**

NOTE: Standard milling cutters will accept insert nose radii up to .078" without modification.
1 x M1D100E1403W100L175**R** is an example of a cutter that is relieved to accept inserts with a .122" corner radius.

- Aggressive ramping angles.
- Generates superior surface finish.
- Mill 0° walls.
- High RPM capabilities.







End Mills • Reduced Weldon® Shank

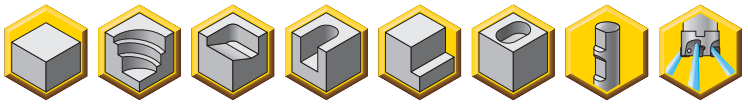
order number	catalog number	D1	D	L	L2	Ap1 max	Z	max ramp angle	lbs	max RPM
2479507	**M1D100E1403W075L175**	1.000	.750	3.780	1.750	.575	3	10.4°	.46	39200
2623858	**M1D125E1403W100L225**	1.250	1.000	4.530	2.250	.571	3	7.2°	.94	33400
2479512	**M1D125E1404W100L225**	1.250	1.000	4.530	2.250	.571	4	7.2°	.97	33400
2624194	**M1D150E1404W125L225**	1.500	1.250	4.530	2.250	.567	4	5.5°	1.49	29600
2624271	**M1D150E1405W125L225R**	1.500	1.250	4.510	2.230	.555	5	5.5°	1.53	29600
2623859	**M1D150E1405W125L225**	1.500	1.250	4.530	2.250	.567	5	5.5°	1.53	29600

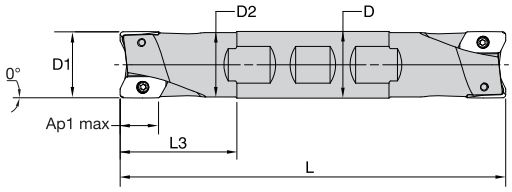
Spare Parts

D1	 insert screw	in. lbs.	 Torx Plus driver
1.000	**MS2166**	20.0	**DT9IP**
1.250	**MS2166**	20.0	**DT9IP**
1.500	**MS2166**	20.0	**DT9IP**

NOTE: Standard milling cutters will accept insert nose radii up to .078" without modification.

- Aggressive ramping angles.
- Generates superior surface finish.
- Mill 0° walls.
- High RPM capabilities.

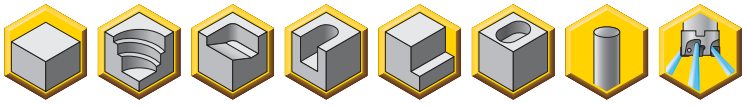


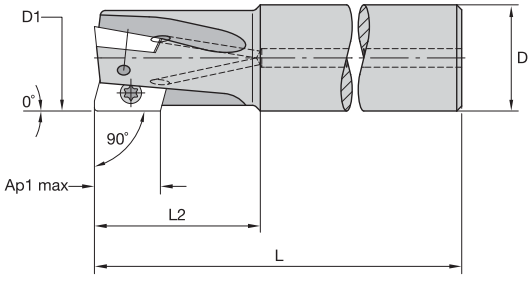




End Mills • Weldon® Shank • Double Ended

order number	catalog number	D1	D	D2	L	L3	Ap1 max	Z	max ramp angle	lbs	max RPM
2624188	**M1D075E1402W075L175DE**	.750	.750	.681	5.530	1.750	.551	2	18.0°	.53	49600
2624191	**M1D100E1403W100L175DE**	1.000	1.000	.965	5.780	1.750	.551	3	10.4°	1.01	39200



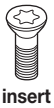




End Mills • Cylindrical Shank

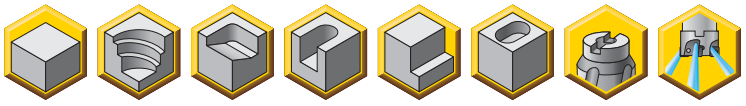
order number	catalog number	D1	D	L	L2	Ap1 max	Z	max ramp angle	lbs	max RPM
2624187	**M1D075E1402C075L650**	.750	.750	6.500	1.750	.580	2	18.0°	.66	49600
2624197	**M1D075E1402C075L800**	.750	.750	8.000	1.750	.580	2	18.0°	.82	49600
2624198	**M1D100E1402C100L1000**	1.000	1.000	10.000	1.750	.580	2	10.4°	1.96	39200
2624190	**M1D100E1403C100L750**	1.000	1.000	7.500	1.750	.580	3	10.4°	1.44	39200
2624200	**M1D125E1403C125L1000**	1.250	1.250	10.000	2.250	.570	3	7.2°	3.07	33400
2624192	**M1D125E1404C125L800**	1.250	1.250	8.000	2.250	.570	4	7.2°	2.43	33400
2624202	**M1D150E1404C125L1000**	1.500	1.250	10.000	2.250	.570	4	5.5°	3.32	29600
2624250	**M1D150E1405C125L800**	1.500	1.250	8.000	2.250	.570	5	5.5°	2.70	29600

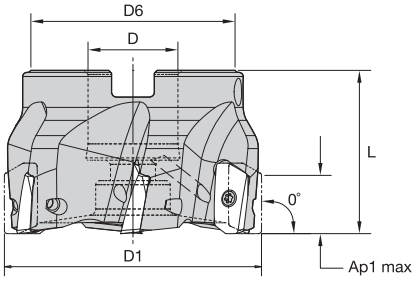
Spare Parts

D1	 insert screw	in. lbs.	 Torx Plus driver
.750	**MS2167**	20.0	**DT9IP**
1.000	**MS2166**	20.0	**DT9IP**
1.250	**MS2166**	20.0	**DT9IP**
1.500	**MS2166**	20.0	**DT9IP**

NOTE: Standard milling cutters will accept insert nose radii up to .078" without modification.

- Aggressive ramping angles.
- Generates superior surface finish.
- Mill 0° walls.
- High RPM capabilities.







Shell Mills

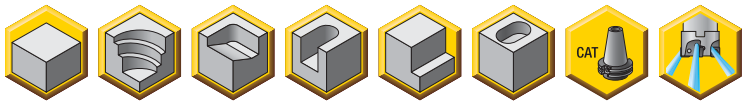
order number	catalog number	D1	D	D6	L	Ap1 max	Z	max ramp angle	lbs	max RPM
2479509	**M1D125E1404S050L157**	1.250	.500	1.204	1.575	.570	4	7.2°	.28	33400
2624255	**M1D150E1405S075L157**	1.500	.750	1.414	1.575	.570	5	5.5°	.38	29600
2624270	**M1D200E1405S075L157**	2.000	.750	1.750	1.575	.560	5	3.7°	.71	24700
2479510	**M1D200E1406S075L157**	2.000	.750	1.750	1.575	.560	6	3.7°	.68	24700
2624274	**M1D250E1405S075L157**	2.500	.750	1.750	1.575	.560	5	2.8°	1.17	21700
2624254	**M1D250E1407S075L157**	2.500	.750	1.750	1.575	.560	7	2.8°	1.15	21700
2624277	**M1D300E1406S100L175**	3.000	1.000	2.188	1.750	.560	6	2.3°	1.86	19600
2624275	**M1D300E1408S100L175**	3.000	1.000	2.188	1.750	.560	8	2.3°	1.92	19600
2624279	**M1D400E1408S150L200**	4.000	1.500	3.625	2.000	.560	8	1.6°	3.52	16700
2624278	**M1D400E1410S150L200**	4.000	1.500	3.625	2.000	.560	10	1.6°	3.70	16700

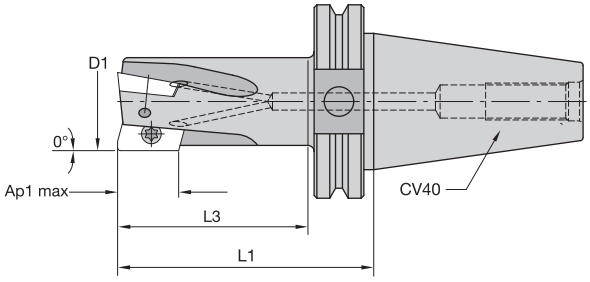
Spare Parts

D1	insert screw	in. lbs.	Torx Plus driver	coolant lock screw	set screw	socket-head cap screw with coolant groove
1.250	**MS2166**	20.0	**DT9IP**	**–**	**–**	**S422CG**
1.500	**MS2166**	20.0	**DT9IP**	**–**	**–**	**S445CG**
2.000	**MS2166**	20.0	**DT9IP**	**–**	**–**	**S445CG**
2.500	**MS2166**	20.0	**DT9IP**	**–**	**–**	**S445CG**
3.000	**MS2166**	20.0	**DT9IP**	**–**	**–**	**S2044CG**
4.000	**MS2166**	20.0	**DT9IP**	**KLS15C**	**MS1297**	**–**

NOTE: Standard milling cutters will accept insert nose radii up to .078" without modification.

- Aggressive ramping angles.
- Generates superior surface finish.
- Mill 0° walls.
- High RPM capabilities.







End Mills • Steep Taper CV40

order number	catalog number	CSMS system size	D1	L1	L3	Ap1 max	Z	max ramp angle	lbs	max RPM
2624246	**M1D100E1403CV40L300**	CV40	1.000	3.000	1.500	.580	3	10.4°	2.40	39200
2624248	**M1D125E1404CV40L300**	CV40	1.250	3.000	1.500	.570	4	7.2°	2.52	33400
2624253	**M1D150E1405CV40L300**	CV40	1.500	3.000	1.625	.570	5	5.5°	2.69	29600

Spare Parts

D1	 insert screw	in. lbs.	 Torx Plus driver
1.000	**MS2166**	20.0	**DT9IP**
1.250	**MS2166**	20.0	**DT9IP**
1.500	**MS2166**	20.0	**DT9IP**

Carbide Recycling

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By sending us your used carbide tools, you help preserve and protect the environment and ensure that these products are recycled responsibly. Kennametal accepts any coated or non-coated carbide items, including inserts, drills, reamers, and taps.



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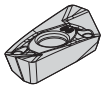
- A partner who cares about a sustainable environment.
- Easy-to-use web portal to value your used carbide.
- Access to our popular Green Box™ options for carbide collection.
- Systematic and efficient disposal of carbide materials.
- Improved profitability.

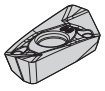
Program is not currently available in all geographical areas.
For more information, please visit **www.kennametal.com/carbiderecycling.**

Insert Selection Guide

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.E..GD	KC725M	**.S..GE**	**KC725M**	.S..GD2	KC725M
P3–P4	.S..GE	KCPK30	**.S..GD2**	**KCPK30**	.E..HD	KCPK30
P5–P6	.E..GD	KCPM20	**.S..GE**	**KCPM20**	.E..HD	KCPK30
M1–M2	.E..GD	KC725M	**.S..GE**	**KC725M**	.S..GD2	KC725M
M3	.S..GE	KCPK30	**.S..GD2**	**KCPK30**	.E..HD	KCPK30
K1–K2	.S..GD2	KC520M	**.E..HD**	**KC520M**	.E..HD	KCK15
K3	.S..GE	KCPK30	**.S..GD2**	**KCPK30**	.E..HD	KCPK30
N1–N2	.F..LDJ	KC410M	**.F..LDJ**	**KC410M**	.F..LDJ	KC410M
N3	.F..LDJ	KC410M	**.E..LDJ**	**KC422M**	.E..LDJ	KC422M
S1–S2	.E..GD	KC725M	**.S..GE**	**KC725M**	.S..GD2	KC725M
S3	.S..GE	KC725M	**.S..GD2**	**KC725M**	.E..HD	KC725M
S4	.S..GD2	KC725M	**.E..HD**	**KC725M**	–	–
H1	.S..GE	KC522M	**.E..HD**	**KC522M**	–	–

Indexable Inserts


EDCT-F.LDJ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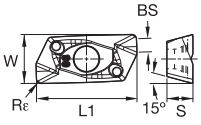


beyond

● first choice
○ alternate choice

	KC410M	KC422M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30
P				○	●		●	●
M				●	●		○	○
K			●	○		●	○	○
N	●	●						
S				●	●			
H				○			○	

EDCT-F.LDJ

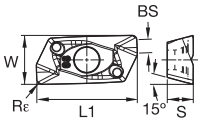
catalog number	LI	W	S	BS	Rε	hm	cutting edges	KC410M	KC422M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30
EC1402FLDJ	.687	.334	.177	.124	.008	.001	2	●							
EC1404FLDJ	.687	.334	.177	.116	.016	.001	2	●							
EC1408FLDJ	.688	.334	.177	.101	.031	.001	2	●							
EC1412FLDJ	.688	.333	.177	.085	.047	.001	2	●							
EC1416FLDJ	.688	.333	.177	.070	.062	.001	2	●							
EC1431FLDJ	.689	.331	.177	.010	.122	.001	2	●							
EC1440FLDJ	.651	.329	.177	–	.157	.001	2	●							

EDCT-E.LDJ

catalog number	LI	W	S	BS	Rε	hm	cutting edges	KC410M	KC422M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30
EC1404ELDJ	.687	.334	.177	.116	.016	.001	2		●						
EC1408ELDJ	.688	.334	.177	.101	.031	.001	2		●						
EC1412ELDJ	.688	.333	.177	.085	.047	.001	2		●						
EC1416ELDJ	.688	.333	.177	.070	.062	.001	2		●						
EC1424ELDJ	.689	.332	.177	.039	.094	.001	2		●						
EC1431ELDJ	.689	.331	.177	.010	.122	.001	2		●						
EC1440ELDJ	.651	.329	.177	–	.157	.001	2		●						


EDCT-LD


EDCT-E.GD



beyond

● first choice
○ alternate choice

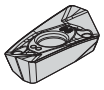
	KC410M	KC422M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30
P				○	●		●	●
M				●	●		○	○
K			●	○		●	○	○
N	●	●						
S				●	●			
H				○			○	

EDCT-LD

catalog number	LI	W	S	BS	Rε	hm	cutting edges	KC410M	KC422M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30
EC1404ELD	.687	.334	.177	.116	.016	.002	2				●				
EC1408ELD	.688	.334	.177	.101	.031	.002	2				●				
EC1412ELD	.688	.333	.177	.085	.047	.002	2				●				
EC1416ELD	.688	.333	.177	.070	.062	.002	2				●				
EC1431ELD	.689	.331	.177	.010	.122	.002	2				●				

EDCT-E.GD

catalog number	LI	W	S	BS	Rε	hm	cutting edges	KC410M	KC422M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30
EC1404EGD	.687	.334	.177	.116	.016	.002	2					●		●	
EC1408EGD	.688	.334	.177	.101	.031	.002	2					●		●	
EC1412EGD	.688	.333	.177	.085	.047	.002	2					●			
EC1416EGD	.688	.333	.177	.070	.062	.002	2					●			
EC1431EGD	.689	.331	.177	.010	.122	.002	2					●		●	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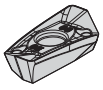
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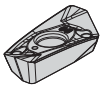
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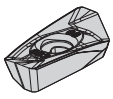
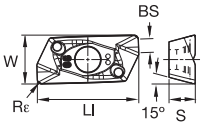

EDPT-S.GD2



beyond

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

● first choice
○ alternate choice

EDPT-E.HD

catalog number	Ll	W	S	BS	Rε	hm	cutting edges	KC410M	KC422M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30
EP1404EHD	.687	.330	.177	.116	.016	.003	2			●	●	●	●		●
EP1408EHD	.688	.330	.177	.101	.031	.003	2			●	●	●	●		●
EP1412EHD	.688	.329	.177	.085	.047	.003	2			●	●	●	●		●
EP1416EHD	.688	.329	.177	.070	.062	.003	2			●	●	●	●		●
EP1420EHD	.688	.329	.177	.054	.079	.003	2				●	●			●
EP1424EHD	.689	.328	.177	.039	.094	.003	2				●	●			●
EP1431EHD	.689	.327	.177	.010	.122	.003	2				●	●			●
EP1440EHD	.651	.325	.177	—	.157	.003	2				●	●			●

EDPT-S.GE

catalog number	Ll	W	S	BS	Rε	hm	cutting edges	KC410M	KC422M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30
EP1404SGE	.686	.323	.175	.110	.016	.005	2				●	●		●	●
EP1408SGE	.686	.322	.175	.094	.031	.005	2				●	●		●	●
EP1412SGE	.687	.320	.175	.078	.047	.005	2				●	●			●
EP1416SGE	.687	.320	.175	.062	.062	.005	2				●	●			●
EP1431SGE	.687	.318	.175	.005	.122	.005	2				●	●		●	●

EDPT-S.GD

catalog number	Ll	W	S	BS	Rε	hm	cutting edges	KC410M	KC422M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30
EP1408SGD	.688	.330	.177	.101	.031	.004	2			●		●			●
EP1412SGD	.688	.329	.177	.085	.047	.004	2			●		●			●
EP1416SGD	.688	.329	.177	.070	.062	.004	2			●		●			●

EDPT-S.GD2

catalog number	Ll	W	S	BS	Rε	hm	cutting edges	KC410M	KC422M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30
EP1408SGD2	.688	.330	.177	.103	.031	.004	2			●		●			●

Recommended Starting Speeds and Feeds [SFM]

Material Group		KC410M			KC422M			KC520M			KC522M		
P	1	–	–	–	–	–	–	–	–	–	1080	**940**	880
	2	–	–	–	–	–	–	–	–	–	900	**790**	660
	3	–	–	–	–	–	–	–	–	–	830	**700**	580
	4	–	–	–	–	–	–	–	–	–	740	**610**	490
	5	–	–	–	–	–	–	–	–	–	610	**550**	490
	6	–	–	–	–	–	–	–	–	–	540	**410**	330
M	1	–	–	–	–	–	–	–	–	–	670	**590**	540
	2	–	–	–	–	–	–	–	–	–	610	**520**	430
	3	–	–	–	–	–	–	–	–	–	460	**400**	310
K	1	–	–	–	–	–	–	880	**800**	710	750	**680**	600
	2	–	–	–	–	–	–	690	**620**	580	590	**530**	490
	3	–	–	–	–	–	–	580	**520**	470	490	**440**	400
N	1–2	3990	**3550**	3270	3520	**3100**	2870	–	–	–	–	–	–
	3	3550	**3270**	3000	3100	**2870**	2500	–	–	–	–	–	–
S	1	–	–	–	–	–	–	–	–	–	130	**120**	90
	2	–	–	–	–	–	–	–	–	–	130	**120**	90
	3	–	–	–	–	–	–	–	–	–	170	**130**	90
	4	–	–	–	–	–	–	–	–	–	230	**170**	120
H	1	–	–	–	–	–	–	–	–	–	390	**300**	230

Material Group		KC725M			KCK15			KCPM20			KCPK30		
P	1	860	**750**	700	–	–	–	1810	**1590**	1470	1485	**1300**	1210
	2	720	**630**	530	–	–	–	1120	**1010**	910	920	**830**	750
	3	660	**560**	460	–	–	–	1010	**910**	830	830	**750**	680
	4	590	**490**	390	–	–	–	760	**700**	630	620	**575**	520
	5	490	**440**	390	–	–	–	910	**820**	750	850	**760**	690
	6	430	**330**	260	–	–	–	630	**550**	475	520	**450**	–
M	1	560	**490**	450	–	–	–	730	**655**	570	680	**600**	515
	2	510	**430**	360	–	–	–	670	**580**	520	610	**530**	460
	3	380	**330**	260	–	–	–	530	**475**	410	475	**430**	380
K	1	–	–	–	1380	**1255**	1115	1180	**1070**	960	965	**875**	780
	2	–	–	–	1095	**975**	910	940	**840**	770	770	**690**	630
	3	–	–	–	920	**815**	750	790	**700**	650	645	**575**	530
N	1–2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
S	1	115	**100**	80	–	–	–	–	–	–	–	–	–
	2	115	**100**	80	–	–	–	–	–	–	–	–	–
	3	150	**115**	80	–	–	–	–	–	–	–	–	–
	4	200	**150**	100	–	–	–	–	–	–	–	–	–
H	1	–	–	–	–	–	–	460	**380**	310	–	–	–

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

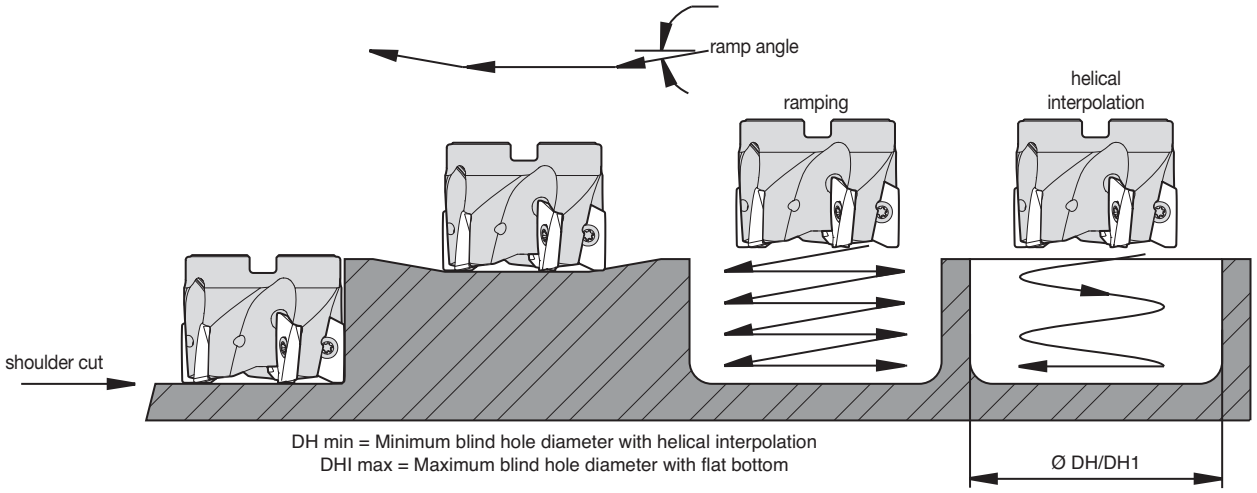
Recommended Starting Feeds [IPT]

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%			
.F..LDJ	.003	**.007**	.009	.003	**.005**	.007	.002	**.004**	.006	.002	**.004**	.006	.002	**.004**	.006	.F..LDJ
.E..LDJ	.003	**.008**	.014	.003	**.006**	.011	.002	**.005**	.009	.002	**.005**	.009	.002	**.005**	.008	.E..LDJ
.E..LD	.004	**.008**	.014	.003	**.006**	.010	.002	**.005**	.009	.002	**.005**	.008	.002	**.005**	.008	.E..LD
.E..GD	.005	**.011**	.017	.004	**.008**	.013	.003	**.007**	.011	.003	**.007**	.010	.003	**.006**	.010	.E..GD
.S..GE	.007	**.014**	.020	.005	**.010**	.015	.004	**.009**	.013	.004	**.008**	.012	.004	**.008**	.012	.S..GE
.S..GD	.007	**.014**	.021	.005	**.010**	.015	.004	**.009**	.013	.004	**.008**	.012	.004	**.008**	.012	.S..GD
.S..GD2	.007	**.016**	.024	.005	**.012**	.017	.004	**.010**	.015	.004	**.010**	.014	.004	**.009**	.014	.S..GD2
.E..HD	.007	**.017**	.028	.005	**.013**	.020	.004	**.011**	.018	.004	**.010**	.016	.004	**.010**	.016	.E..HD

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

Application Examples



insert style	cutting diameter	max ramp angle	min hole diameter (DH min)	max flat-bottom hole diameter (DH1 max)	max diameter (no flat bottom)
Mill-1, 14mm	.625	25°	.625	1.065	1.25
Mill-1, 14mm	.750	18°	.869	1.130	1.50
Mill-1, 14mm	.875	13°	1.113	1.562	1.75
Mill-1, 14mm	.970	11°	1.300	1.752	1.94
Mill-1, 14mm	1.000	10°	1.360	1.812	2.00
Mill-1, 14mm	1.250	7°	1.862	2.312	2.50
Mill-1, 14mm	1.500	6°	2.361	2.812	3.00
Mill-1, 14mm	1.250	7°	1.873	2.322	2.50
Mill-1, 14mm	1.500	5°	2.370	2.822	3.00
Mill-1, 14mm	2.000	4°	3.368	3.822	4.00
Mill-1, 14mm	2.500	3°	4.367	4.822	5.00
Mill-1, 14mm	3.000	2°	5.366	5.822	6.00
Mill-1, 14mm	4.000	2°	7.366	7.822	8.00

NOTE: Max ramp angle decreases as nose radius increases.



Mill 1-10™

Carbon-Fiber's Finest

**The Kennametal Mill 1-10 Indexable Milling Series —
Face Milling, up to 100% Engagement with PCD Inserts**

Ideal for applications utilizing Carbon-Fiber Reinforced Polymer (CFRP).

- Aggressive ramping rates, high RPM capabilities, and a superior surface finish — time after time.
- Varying axial depth of cut meets a wide range of applications.
- No material breakout or burr formation upon entry or exit of the workpiece.



Choose the Mill 1-10 to mill 90° walls.

Visit **www.kennametal.com** or contact your local Authorized Kennametal Distributor.

www.kennametal.com

KENNAMETAL®



Mill 1-14™ Helical Cutters

Primary Application

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

Features and Benefits

Functions

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

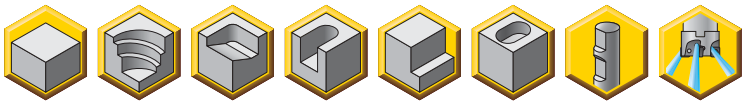
Benefits

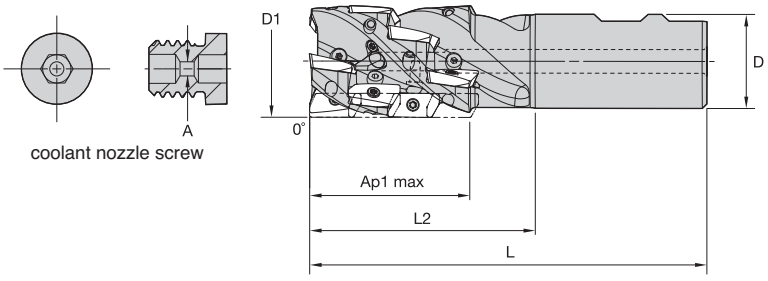
- Increases depth of cut.
- Consistent, focused coolant flow.
- Built for performance, accuracy, and versatility.





- Aggressive ramping rates.
- Generates superior surface finish.
- Mill 0° walls.
- Axial support pins.
- Unique coolant nozzles.







Helical End Mills • Weldon® Shank • Slot and Profile

order number	catalog number	D1	D	L	L2	Ap1 max	Z	Z U	max ramp angle	lbs	max RPM
3732889	M1HR125E14W125Z2L200C4	1.250	1.250	4.280	2.000	1.096	4	2	5.4°	1.10	31100
3732892	M1HR150E14W125Z3L300C12	1.500	1.250	5.280	3.000	2.130	12	3	4.0°	1.41	28400
3732890	M1HR150E14W125Z3L200C6	1.500	1.250	4.280	2.000	1.089	6	3	4.0°	1.20	28400
3732891	M1HR150E14W125Z3L250C9	1.500	1.250	4.780	2.500	1.609	9	3	4.0°	1.32	28400
3732935	M1HR200E14W150Z3L300C12	2.000	1.500	5.690	3.001	2.105	12	3	2.7°	2.62	24600

Spare Parts

D1	insert screw	in. lbs.	Torx Plus driver	pin	coolant nozzle screw
1.250	MS2148	20.0	DT9IP	ASPM07001802	MS2191C20
1.500	MS2148	20.0	DT9IP	ASPM07001802	MS2191C20
2.000	MS2148	20.0	DT9IP	ASPM07001802	MS2191C20

NOTE: Standard milling cutters will accept insert nose radii up to .078" without modification.

Optional Coolant Nozzle Screws

NEW!

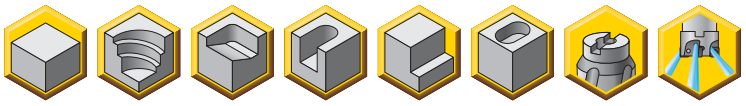
order number	catalog number	A
3400611	MS2191C00	–
3400612	MS2191C06	.024
3400613	MS2191C08	.032
3400614	MS2191C10	.039
3400616	MS2191C12	.047
3400617	MS2191C14	.055
3400618	MS2191C16	.063
3400619	MS2191C18	.071
3400620	MS2191C20	.079

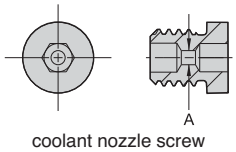
Coolant Nozzle Key

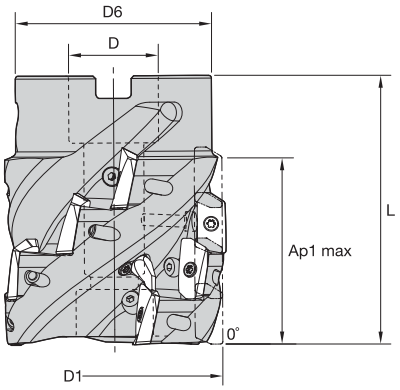
order number	catalog number	drive size
1993552	THW2M	2 MM

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 this is a .047" hole. All coolant nozzles are interchangeable with the original that is supplied with the cutter which gives flexibility with coolant flow.

- Aggressive ramping rates.
- Generates superior surface finish.
- Mill 0° walls.
- Axial support pins.
- Unique coolant nozzles.









Helical Shell Mills • Slot and Profile

order number	catalog number	D1	D	D6	L	Ap1 max	Z	Z U	max ramp angle	lbs	max RPM
3732933	**M1HR200E14S075Z3L200C6**	2.000	.750	1.750	2.000	1.077	6	3	2.7°	1.01	24600
3732934	**M1HR200E14S075Z3L250C9**	2.000	.750	1.750	2.500	1.591	9	3	2.7°	1.29	24600
3732936	**M1HR250E14S100Z3L200C6**	2.500	1.000	2.190	2.000	1.064	6	3	1.9°	1.81	22000
3732937	**M1HR250E14S100Z3L250C9**	2.500	1.000	2.190	2.500	1.572	9	3	1.9°	2.28	22000
3732938	**M1HR250E14S100Z4L250C12**	2.500	1.000	2.190	2.500	1.572	12	4	1.9°	2.10	22000
3732939	**M1HR250E14S100Z3L300C12**	2.500	1.000	2.190	3.000	2.080	12	3	1.9°	2.62	22000

Spare Parts

order number	Z	insert screw	in. lbs.	Torx Plus driver	pin	socket-head cap screw	coolant nozzle screw
3732933	6	**MS2148PKG**	20.0	**DT9IP**	**ASPM07001802**	**S447**	**MS2191C20**
3732934	9	**MS2148PKG**	20.0	**DT9IP**	**ASPM07001802**	**S449**	**MS2191C16**
3732936	6	**MS2148PKG**	20.0	**DT9IP**	**ASPM07001802**	**S460**	**MS2191C20**
3732937	9	**MS2148PKG**	20.0	**DT9IP**	**ASPM07001802**	**S462**	**MS2191C20**
3732939	12	**MS2148PKG**	20.0	**DT9IP**	**ASPM07001802**	**S464**	**MS2191C16**
3732938	12	**MS2148PKG**	20.0	**DT9IP**	**ASPM07001802**	**S462**	**MS2191C16**

NOTE: Standard milling cutters will accept insert nose radii up to .078" without modification.

Helical Shell Mills • Profile Only

order number	catalog number	D1	D	D6	L	Ap1 max	Z	Z U	max ramp angle	lbs	max RPM
3786638	**M1HR250E14S100Z5L300C20**	2.500	1.000	2.190	3.000	2.079	20	5	1.9°	2.40	22000

Spare Parts • Profile Only

D1	insert screw	in. lbs.	Torx Plus driver	pin	socket-head cap screw	coolant nozzle screw
2.500	**MS2148PKG**	20.0	**DT9IP**	**ASPM07001802**	**S464**	**MS2191C16**

NOTE: Standard milling cutters will accept insert nose radii up to .078" without modification.

Optional Coolant Nozzle Screws

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

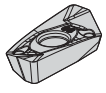
order number	catalog number	drive size
1993552	THW2M	2 MM

NOTE: Check the Spare Parts column 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 this 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..GD	KC725M	**.S..GE**	**KC725M**	.S..GD2	KC725M
P3–P4	.S..GE	KCPK30	**.S..GD2**	**KCPK30**	.E..HD	KCPK30
P5–P6	.E..GD	KCPM20	**.S..GE**	**KCPM20**	.E..HD	KCPK30
M1–M2	.E..GD	KC725M	**.S..GE**	**KC725M**	.S..GD2	KC725M
M3	.S..GE	KCPK30	**.S..GD2**	**KCPK30**	.E..HD	KCPK30
K1–K2	.S..GD2	KC520M	**.E..HD**	**KC520M**	.E..HD	KCK15
K3	.S..GE	KCPK30	**.S..GD2**	**KCPK30**	.E..HD	KCPK30
N1–N2	.F..LDJ	KC410M	**.F..LDJ**	**KC410M**	.F..LDJ	KC410M
N3	.F..LDJ	KC410M	**.E..LDJ**	**KC422M**	.E..LDJ	KC422M
S1–S2	.E..GD	KC725M	**.S..GE**	**KC725M**	.S..GD2	KC725M
S3	.S..GE	KC725M	**.S..GD2**	**KC725M**	.E..HD	KC725M
S4	.S..GD2	KC725M	**.E..HD**	**KC725M**	–	–
H1	–	–	–	–	–	–

Indexable Inserts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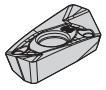
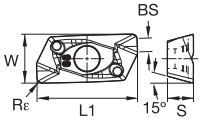

EDCT-E.LDJ



beyond

● first choice
○ alternate choice

	KC410M	KC422M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30
P				○	●		●	●
M				●	●		○	○
K			●	○		●	○	○
N	●	●						
S				●	●			
H								

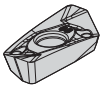
EDCT-F.LDJ

catalog number	LI	W	S	BS	Rε	hm	cutting edges	KC410M	KC422M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30
EC1402FLDJ	.687	.334	.177	.124	.008	.001	2	●							
EC1404FLDJ	.687	.334	.177	.116	.016	.001	2	●							
EC1408FLDJ	.688	.334	.177	.101	.031	.001	2	●							
EC1412FLDJ	.688	.333	.177	.085	.047	.001	2	●							
EC1416FLDJ	.688	.333	.177	.070	.062	.001	2	●							
EC1431FLDJ	.689	.331	.177	.010	.122	.001	2	●							
EC1440FLDJ	.651	.329	.177	–	.157	.001	2	●							

EDCT-E.LDJ

catalog number	LI	W	S	BS	Rε	hm	cutting edges	KC410M	KC422M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30
EC1404ELDJ	.687	.334	.177	.116	.016	.001	2		●						
EC1408ELDJ	.688	.334	.177	.101	.031	.001	2		●						
EC1412ELDJ	.688	.333	.177	.085	.047	.001	2		●						
EC1416ELDJ	.688	.333	.177	.070	.062	.001	2		●						
EC1424ELDJ	.689	.332	.177	.039	.094	.001	2		●						
EC1431ELDJ	.689	.331	.177	.010	.122	.001	2		●						
EC1440ELDJ	.651	.329	.177	–	.157	.001	2		●						


EDCT-LD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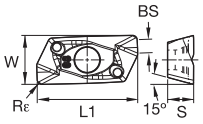


beyond

● first choice
○ alternate choice

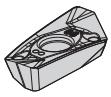
P				○	●		●	●
M				●	●		○	○
K			●	○		●	○	○
N	●	●						
S				●	●			
H								

EDCT-LD

catalog number	LI	W	S	BS	Rε	hm	cutting edges	KC410M	KC422M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30
EC1404ELD	.687	.334	.177	.116	.016	.002	2				●				
EC1408ELD	.688	.334	.177	.101	.031	.002	2				●				
EC1412ELD	.688	.333	.177	.085	.047	.002	2				●				
EC1416ELD	.688	.333	.177	.070	.062	.002	2				●				
EC1431ELD	.689	.331	.177	.010	.122	.002	2				●				

EDCT-E.GD

catalog number	LI	W	S	BS	Rε	hm	cutting edges	KC410M	KC422M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30
EC1404EGD	.687	.334	.177	.116	.016	.002	2					●		●	
EC1408EGD	.688	.334	.177	.101	.031	.002	2					●		●	
EC1412EGD	.688	.333	.177	.085	.047	.002	2					●			
EC1416EGD	.688	.333	.177	.070	.062	.002	2					●			
EC1431EGD	.689	.331	.177	.010	.122	.002	2					●		●	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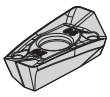
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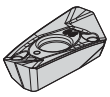
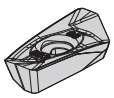

EDPT-S.GD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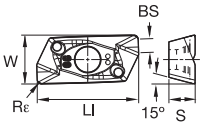


beyond

● first choice
○ alternate choice

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

EDPT-E.HD

catalog number	LI	W	S	BS	Rε	hm	cutting edges	KC410M	KC422M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30
EP1404EHD	.687	.330	.177	.116	.016	.003	2			●	●	●	●		●
EP1408EHD	.688	.330	.177	.101	.031	.003	2			●	●	●	●		●
EP1412EHD	.688	.329	.177	.085	.047	.003	2			●	●	●	●		●
EP1416EHD	.688	.329	.177	.070	.062	.003	2			●	●	●	●		●
EP1420EHD	.688	.329	.177	.054	.079	.003	2				●	●			●
EP1424EHD	.689	.328	.177	.039	.094	.003	2				●	●			●
EP1431EHD	.689	.327	.177	.010	.122	.003	2				●	●			●
EP1440EHD	.651	.325	.177	—	.157	.003	2				●	●			●

EDPT-S.GE

catalog number	LI	W	S	BS	Rε	hm	cutting edges	KC410M	KC422M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30
EP1404SGE	.686	.323	.175	.110	.016	.005	2				●	●		●	●
EP1408SGE	.686	.322	.175	.094	.031	.005	2				●	●		●	●
EP1412SGE	.687	.320	.175	.078	.047	.005	2				●	●			●
EP1416SGE	.687	.320	.175	.062	.062	.005	2				●	●			●
EP1431SGE	.687	.318	.175	.005	.122	.005	2				●	●		●	●

EDPT-S.GD

catalog number	LI	W	S	BS	Rε	hm	cutting edges	KC410M	KC422M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30
EP1408SGD	.688	.330	.177	.101	.031	.004	2			●		●			●
EP1412SGD	.688	.329	.177	.085	.047	.004	2			●		●			●
EP1416SGD	.688	.329	.177	.070	.062	.004	2			●		●			●

EDPT-S.GD2

catalog number	LI	W	S	BS	Rε	hm	cutting edges	KC410M	KC422M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30
EP1408SGD2	.688	.330	.177	.103	.031	.004	2			●		●			●

Recommended Starting Speeds and Feeds [SFM]

Material Group		KC410M			KC422M			KC520M			KC522M		
P	1	–	–	–	–	–	–	–	–	–	1080	**940**	880
	2	–	–	–	–	–	–	–	–	–	900	**790**	660
	3	–	–	–	–	–	–	–	–	–	830	**700**	580
	4	–	–	–	–	–	–	–	–	–	740	**610**	490
	5	–	–	–	–	–	–	–	–	–	610	**550**	490
	6	–	–	–	–	–	–	–	–	–	540	**410**	330
M	1	–	–	–	–	–	–	–	–	–	670	**590**	540
	2	–	–	–	–	–	–	–	–	–	610	**520**	430
	3	–	–	–	–	–	–	–	–	–	460	**400**	310
K	1	–	–	–	–	–	–	880	**800**	710	750	**680**	600
	2	–	–	–	–	–	–	690	**620**	580	590	**530**	490
	3	–	–	–	–	–	–	580	**520**	470	490	**440**	400
N	1–2	3990	**3550**	3270	3520	**3100**	2870	–	–	–	–	–	–
	3	3580	**3270**	3000	3100	**2870**	2500	–	–	–	–	–	–
S	1	–	–	–	–	–	–	–	–	–	130	**120**	90
	2	–	–	–	–	–	–	–	–	–	130	**120**	90
	3	–	–	–	–	–	–	–	–	–	170	**130**	90
	4	–	–	–	–	–	–	–	–	–	230	**170**	120
H	1	–	–	–	–	–	–	–	–	–	–	–	–

Material Group		KC725M			KCK15			KCPM20			KCPK30		
P	1	860	**750**	700	–	–	–	1810	**1590**	1470	1485	**1300**	1210
	2	720	**630**	530	–	–	–	1120	**1010**	910	920	**830**	750
	3	660	**560**	460	–	–	–	1010	**910**	830	830	**750**	680
	4	590	**490**	390	–	–	–	760	**700**	630	620	**575**	520
	5	490	**440**	390	–	–	–	910	**820**	750	850	**760**	690
	6	430	**330**	260	–	–	–	630	**550**	475	520	**450**	–
M	1	560	**490**	450	–	–	–	730	**655**	570	680	**600**	515
	2	510	**430**	360	–	–	–	670	**580**	520	610	**530**	460
	3	380	**330**	260	–	–	–	530	**475**	410	475	**430**	380
K	1	–	–	–	1380	**1255**	1115	1180	**1070**	960	965	**875**	780
	2	–	–	–	1095	**975**	910	940	**840**	770	770	**690**	630
	3	–	–	–	920	**815**	750	790	**700**	650	645	**575**	530
N	1–2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
S	1	115	**100**	80	–	–	–	–	–	–	–	–	–
	2	115	**100**	80	–	–	–	–	–	–	–	–	–
	3	150	**115**	80	–	–	–	–	–	–	–	–	–
	4	200	**150**	100	–	–	–	–	–	–	–	–	–
H	1	–	–	–	–	–	–	–	–	–	–	–	–

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

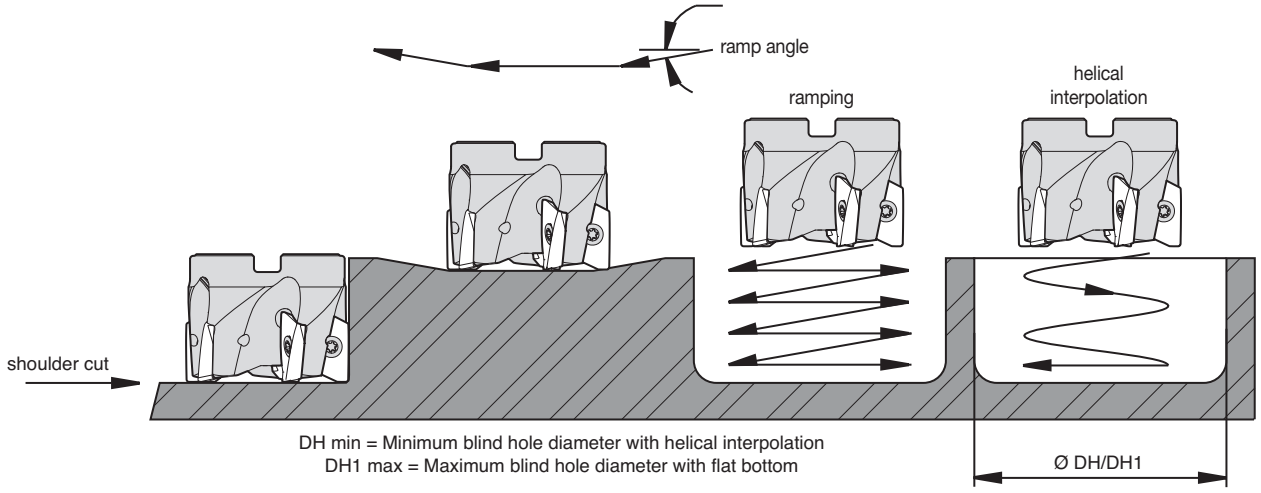
Recommended Starting Feeds [IPT]

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..LDJ	.003	**.007**	.009	.003	**.005**	.007	.002	**.004**	.006	.002	**.004**	.006	.002	**.004**	.006	.F..LDJ
.E..LDJ	.003	**.008**	.014	.003	**.006**	.011	.002	**.005**	.009	.002	**.005**	.009	.002	**.005**	.008	.E..LDJ
.E..LD	.004	**.008**	.014	.003	**.006**	.010	.002	**.005**	.009	.002	**.005**	.008	.002	**.005**	.008	.E..LD
.E..GD	.005	**.011**	.017	.004	**.008**	.013	.003	**.007**	.011	.003	**.007**	.010	.003	**.006**	.010	.E..GD
.S..GE	.007	**.014**	.020	.005	**.010**	.015	.004	**.009**	.013	.004	**.008**	.012	.004	**.008**	.012	.S..GE
.S..GD	.007	**.014**	.021	.005	**.010**	.015	.004	**.009**	.013	.004	**.008**	.012	.004	**.008**	.012	.S..GD
.S..GD2	.007	**.016**	.024	.005	**.012**	.017	.004	**.010**	.015	.004	**.010**	.014	.004	**.009**	.014	.S..GD2
.E..HD	.007	**.017**	.028	.005	**.013**	.020	.004	**.011**	.018	.004	**.010**	.016	.004	**.010**	.016	.E..HD

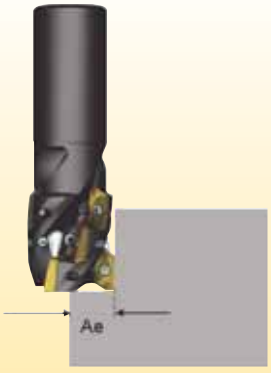
NOTE: Use “Light Machining” values as starting feed rate.

Application Examples



insert style	cutting diameter	max ramp angle	min hole diameter (DH min)	max flat-bottom hole diameter (DH1 max)	max diameter (no flat bottom)
Mill 1-14	1.25	5.4°	1.862	2.312	2.5
Mill 1-14	1.50	4.0°	2.370	2.822	3
Mill 1-14	2.00	2.6°	3.368	3.822	4
Mill 1-14	2.50	1.9°	4.367	4.822	5

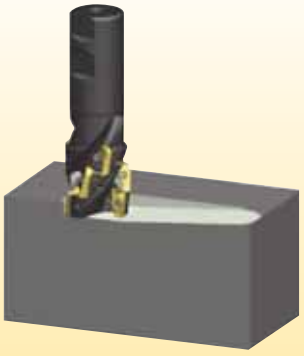
Best Machining Practices



Contouring/Profiling
Ae = up to 50% of cutter Ø. This can be used with or without coolant/air blast, depending on materials being machined.



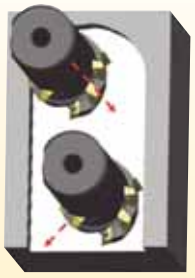
Slotting
Full width cutting or profiling over 50% of the cutter Ø. It is suggested to use coolant or air blast to evacuate chips. If necessary, reduce coolant nozzle hole size, which adds more pressure, and the chip is forced out of the chip gash.



Ramping
Only machine to the depth of the first insert. Observe the ramping angles given in the catalog.

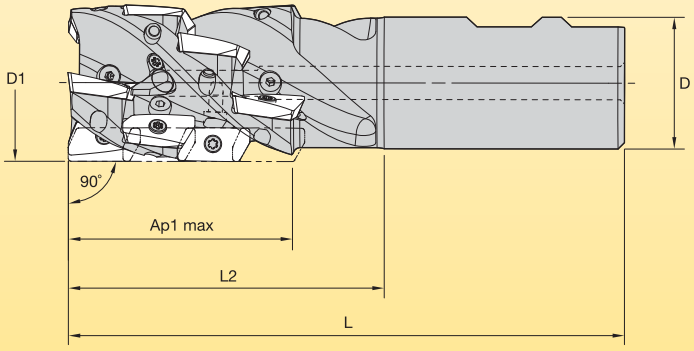
Slotting by Plunging

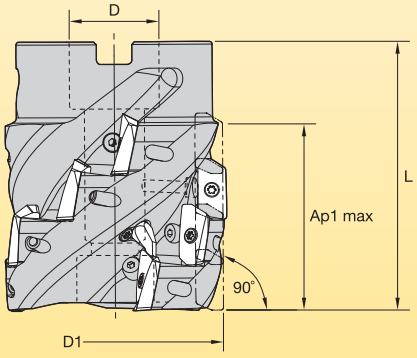
Slot with the alternate side method, alternating the cuts from side to side. This will enable the cutter to move away from the material prior to moving back up in the Z-axis. The cutter will not be in contact with the workpiece. Follow the direction of the arrows. Move 3 axes simultaneously into the center of the slot. Maximum step over .315" (8mm).



With multiple Z-axis passes, when the final depth is achieved, move straight back up in the Z-axis, then repeat at the next step over.







LOIS™ Mill 1-14 Helical End Mills

	catalog number	order number	D1	ZU [1]	Z	Mtg. [2]	D	L2	L	Ap1 max	max Ra [3]	max CR [4]	max RPM
Inch Cutters	M1HR125E14W125Z2L200C4	3732889	1.25	2	4	W	1.25	2.00	4.28	1.09	5.4°	0.094	31100
	M1HR150E14W125Z3L200C6	3732890	1.50	3	6	W	1.25	2.00	4.28	1.09	4.0°	0.094	28400
	M1HR150E14W125Z3L250C9	3732891	1.50	3	9	W	1.25	2.50	4.78	1.61	4.0°	0.094	28400
	M1HR150E14W125Z3L300C12	3732892	1.50	3	12	W	1.25	3.00	5.28	2.13	4.0°	0.094	28400
	M1HR200E14S075Z3L200C6	3732933	2.00	3	6	S	0.75	–	2.00	1.07	2.6°	0.094	24600
	M1HR200E14S075Z3L250C9	3732934	2.00	3	9	S	0.75	–	2.5	1.59	2.6°	0.094	24600
	M1HR200E14W150Z3L300C12	3732935	2.00	3	12	W	1.50	3.00	5.69	2.10	2.6°	0.094	24600
	M1HR250E14S100Z3L200C6	3732936	2.50	3	6	S	1.00	–	2.00	1.06	1.9°	0.094	22000
	M1HR250E14S100Z3L250C9	3732937	2.50	3	9	S	1.00	–	2.50	1.57	1.9°	0.062	22000
	M1HR250E14S100Z4L250C12	3732938	2.50	4	12	S	1.00	–	2.50	1.57	1.9°	0.062	22000
	M1HR250E14S100Z3L300C12	3732939	2.50	3	12	S	1.00	–	3.00	2.07	1.9°	0.062	22000
[5]	M1HR250E14S100Z5L300C20	3786638	2.50	5	20	S	1.00	–	3.00	2.07	1.9°	0.062	22000

Metric Cutters	M1H32J2R50B32S90ED14C4	3742932	32	2	4	W	32	50	111	27,8	5,4°	2,4	31100
	M1H40J3R50B32S90ED14C6	3743033	40	3	6	W	32	50	111	27,6	3,8°	2,4	28400
	M1H40J3R65B32S90ED14C9	3743034	40	3	9	W	32	65	126	40,8	3,8°	2,4	28400
	M1H40J4R80B32S90ED14C12	5085631	40	4	12	W	32	80	141	40,8	3,8°	2,5	28400
	M1H40J3R80B32S90ED14C12	3743035	40	3	12	W	32	80	141	54,0	3,8°	2,4	28400
	M1H50T3R50A22S90ED14C6	3743036	50	3	6	S	22	–	50	27,3	2,7°	2,4	24600
	M1H50T3R65A22S90ED14C9	3743037	50	3	9	S	22	–	65	40,4	2,7°	2,4	24600
	M1H50J3R80B40S90ED14C12	3743038	63	3	12	W	40	80	151	53,5	1,9°	2,4	24600
	M1H63T3R50A27S90ED14C6	3743039	63	3	6	S	27	–	50	27,0	1,9°	1,6	22000
	M1H63T3R65A27S90ED14C9	3743040	63	3	9	S	27	–	65	39,9	1,9°	1,6	22000
	M1H63T4R65A27S90ED14C12	3743041	63	4	12	S	27	–	65	39,9	1,9°	1,6	22000
	M1H63T3R75A27S90ED14C12	3743042	63	3	12	S	27	–	75	52,8	1,9°	1,6	22000
[5]	M1H63T5R75A27S90ED14C20	3831819	63	5	20	S	27	–	75	52,8	1,9°	1,6	22000

[1] Number of effective flutes.
[2] Mounting style: W = Weldon®; S = Shell mill.
[3] Max ramp angle when radial depth of cut exceeds 0.31" (8mm).
[4] Max insert corner radius allowed in first row without cutter body modification.
[5] Recommended for profiling applications only.

Profile, Slot, and Ramp

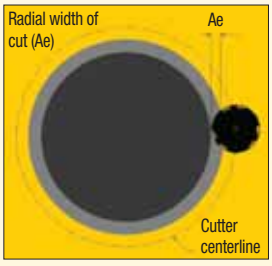
When taking a cut that equals up to 50% of the cutter diameter, you can operate without coolant, unless your material is coolant-dependent. When using more than 50% of the cutter diameter, there is a need to have coolant or an air blast through the nozzles. This will assist with chip evacuation. Please use the feed table when taking a small percentage of the cutter diameter. This will improve the volume of material removed. To achieve a superior surface finish on the base, adjust the feed to suit the finish required.

When using this cutter for plunging, the maximum suggested step over is .130" (3,30mm). Always try to move the cutter and insert away from the material when retracting in the Z-axis. This can be done when employing the alternate cut method (zig zag method). Use a 3-axis move to get all axes moving at the same time, suggest .010" (0,25mm).

When machining a conventional slot, you have to move straight up in the Z-axis.

Circular and Helical Interpolation

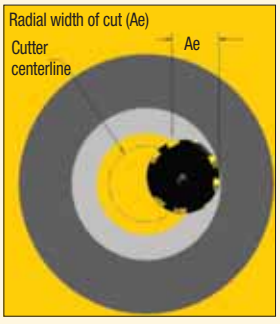
External



When profiling around the external part of a component, it is important to increase the feed rate. This will maintain the chip thickness value.
The programmed feed rate needs to be calculated at the cutter centerline.

For external profiling, adjust the feed rate for feed at the cutter centerline.
Increase the feed rate for external profiling.

Internal



When machining inside a component profile, the area of contact is larger.
The feed rate needs to be slower and at the centerline.

For internal profiling, adjust the feed rate for feed at the cutter centerline.
This will effectively reduce the feed rate as the distance traveled is less than the peripheral distance.

Cutting Data

Reference page P41 for both speed and feed data. Each insert has an average chip thickness value that will enable you to determine the feed per tooth.

Please remember when using less than 50% of the cutter diameter, the feed rate will need to be increased. Failure to do so will result in premature insert failure.

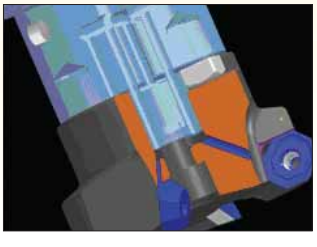
Running too slowly will reduce tool life.

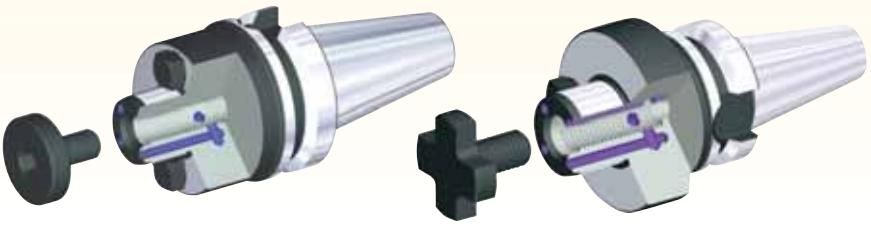
Spare Parts

Please make sure all the spare parts in the cutters are fully tightened prior to using the product.

Shell mill cutters no longer have coolant grooved bolts. We now have adapters that will enable the coolant to be fed through the adapter pilot diameter.

True Through Coolant Shell Mill Adapters







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Mill 1-18™

Primary Application

Mill 1-18 is a versatile, functional cutter system for a range of cutting tasks. Mill 1-18 cutters can be used for profiling, slotting, ramping, helical interpolation, plunging, and other milling applications. It's a single tool with multi-functional benefits. The Mill 1-18 inserts also are specially designed to add cutting versatility, especially for larger axial depths of cut. Results include significantly reduced cycle times and lower cutting forces.

Features and Benefits

Features

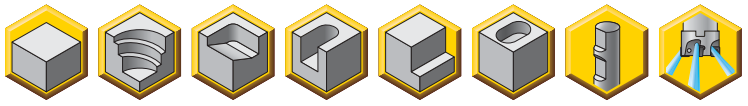
- Inserts for larger axial depth of cut.
- Inserts radii up to .250" (6,35mm).
- Axial depth of cut up to .708" (18mm).
- Cutter diameters up to 8" (160mm).
- Beyond™ grade technology.

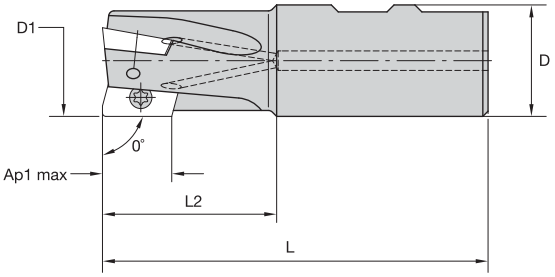
Benefits

- Slotting, profiling, ramping, helical interpolation, and plunging.
- Angled screw for insert retention.
- Insert geometries and grades for most workpiece materials.



- Aggressive ramping angles.
- Generates superior surface finish.
- Mill 0° walls.
- High RPM capabilities.







End Mills • Weldon® Shank

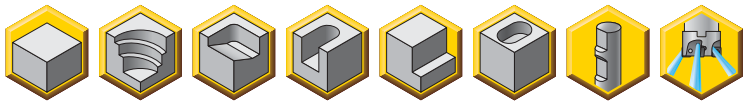
order number	catalog number	D1	D	L	L2	Ap1 max	Z	max ramp angle	lbs	max RPM
2267545	**M1D097E1802W100L175**	.970	1.000	4.030	1.750	.710	2	17.5°	.67	37710
2267550	**M1D100E1802W100L175R**	1.000	1.000	3.968	1.688	.640	2	13.6°	.70	37000
2267546	**M1D100E1802W100L175**	1.000	1.000	4.030	1.750	.710	2	16.5°	.69	37000
2267552	**M1D100E1802W100L375R**	1.000	1.000	5.968	3.688	.640	2	13.6°	1.10	37000
2267547	**M1D100E1802W100L375**	1.000	1.000	6.030	3.750	.710	2	16.5°	1.09	37000
2267624	**M1D125E1803W125L225R**	1.250	1.250	4.468	2.188	.650	3	7.5°	1.22	32300
2267623	**M1D125E1803W125L225**	1.250	1.250	4.530	2.250	.710	3	10.5°	1.23	32300
2267626	**M1D125E1803W125L425R**	1.250	1.250	6.468	4.188	.650	3	7.5°	1.83	32300
2267625	**M1D125E1803W125L425**	1.250	1.250	6.530	4.250	.710	3	10.5°	1.84	32300

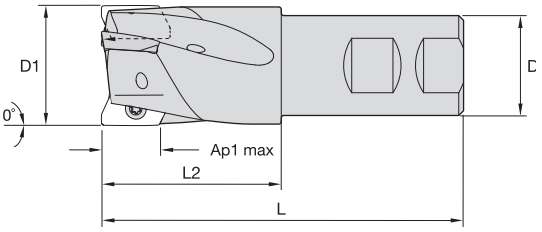
Spare Parts

D1	 insert screw	in. lbs.	 Torx Plus driver
.970	**MS2126**	30.0	**DT15IP**
1.000	**MS2126**	30.0	**DT15IP**
1.250	**MS2126**	30.0	**DT15IP**

NOTE: “R” in catalog number designates factory relieved tool for insert radii .187" and .250". For example: M1D100E1802W100L375**R**.
Additional insert screws may be ordered in packages of five pieces from catalog number MS2126PKG.
Standard milling cutters will accept insert nose radii up to .078" without modification.

- Aggressive ramping angles.
- Generates superior surface finish.
- Mill 0° walls.
- High RPM capabilities.







End Mills • Reduced Weldon® Shank

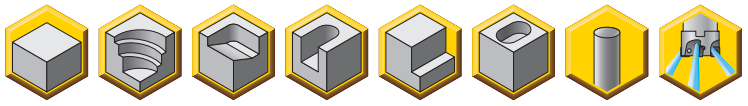
order number	catalog number	D1	D	L	L2	Ap1 max	Z	max ramp angle	lbs	max RPM
2452372	**M1D100E1802W075L175**	1.000	.750	3.780	1.750	.710	2	16.5°	.45	37000
2452414	**M1D125E1802W100L225**	1.250	1.000	4.530	2.250	.710	2	10.5°	1.00	32300
2635710	**M1D125E1803W100L225**	1.250	1.000	4.530	2.250	.710	3	10.5°	.95	32300
2267627	**M1D150E1803W125L225**	1.500	1.250	4.530	2.250	.710	3	8.0°	1.50	29020
2267631	**M1D150E1803W125L425R**	1.500	1.250	6.468	4.188	.640	3	5.3°	2.40	29020
2267651	**M1D150E1803W125L425**	1.500	1.250	6.530	4.250	.710	3	8.0°	2.40	29020
2267628	**M1D150E1804W125L225R**	1.500	1.250	4.468	2.188	.640	4	5.3°	1.40	29020
2267629	**M1D150E1804W125L225**	1.500	1.250	4.530	2.250	.710	4	8.0°	1.40	29020
2267621	**M1D200E1805W125L225**	2.000	1.250	4.530	2.250	.710	5	5.0°	2.00	24670

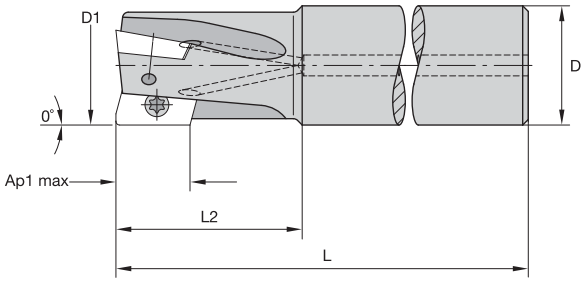
Spare Parts

D1	 insert screw	in. lbs.	 Torx Plus driver
1.000	**MS2126**	30.0	**DT15IP**
1.250	**MS2126**	30.0	**DT15IP**
1.500	**MS2126**	30.0	**DT15IP**
2.000	**MS2126**	30.0	**DT15IP**

NOTE: “R” in catalog number designates factory relieved tool for insert radii .187" and .250". For example: M1D100E1802W100L375**R.**
Additional insert screws may be ordered in packages of five pieces from catalog number MS2126PKG.
Standard milling cutters will accept insert nose radii up to .078" without modification.

- Aggressive ramping angles.
- Generates superior surface finish.
- Mill 0° walls.
- High RPM capabilities.







End Mills • Cylindrical Shank

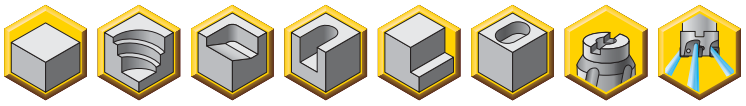
order number	catalog number	D1	D	L	L2	Ap1 max	Z	max ramp angle	lbs	max RPM
2267534	**M1D100E1802C100L800**	1.000	1.000	8.000	3.750	.710	2	16.5°	1.49	37000
2267535	**M1D100E1802C100L1000**	1.000	1.000	10.000	3.750	.710	2	16.5°	1.91	37000
2267536	**M1D125E1802C125L800**	1.250	1.250	8.000	4.250	.710	2	10.5°	2.40	32300
2267537	**M1D125E1802C125L1000**	1.250	1.250	10.000	4.250	.710	2	10.5°	3.06	32300
2267538	**M1D150E1803C125L800**	1.500	1.250	8.000	4.250	.710	3	8.0°	3.00	29020
2267539	**M1D150E1803C125L1000**	1.500	1.250	10.000	4.250	.710	3	8.0°	3.70	29020

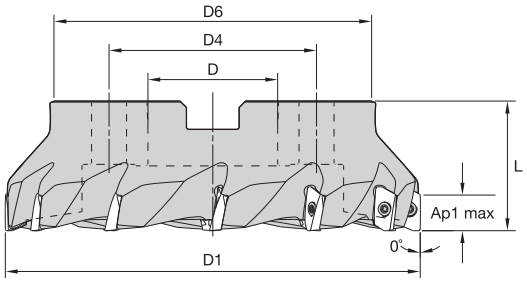
Spare Parts

D1	 insert screw	in. lbs.	 Torx Plus driver
1.000	**MS2126**	30.0	**DT15IP**
1.250	**MS2126**	30.0	**DT15IP**
1.500	**MS2126**	30.0	**DT15IP**

NOTE: Additional insert screws may be ordered in packages of five pieces from catalog number MS2126PKG.
Standard milling cutters will accept insert nose radii up to .078" without modification.

- Aggressive ramping angles.
- Generates superior surface finish.
- Mill 0° walls.
- High RPM capabilities.







Shell Mills

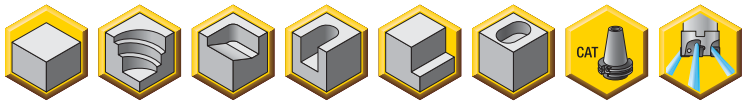
order number	catalog number	D1	D	D4	D6	L	Ap1 max	Z	max ramp angle	lbs	max RPM
2267542	**M1D200E1803S075L157**	2.000	.750	—	1.688	1.575	.700	3	5.0°	.78	24670
2267541	**M1D200E1803SS75L157**	2.000	.750	—	1.688	1.575	.700	3	5.0°	.81	24670
2267540	**M1D200E1805SS75L157**	2.000	.750	—	1.750	1.575	.700	5	5.0°	.74	24670
2267650	**M1D200E1805S075L157**	2.000	.750	—	1.750	1.575	.700	5	5.0°	.72	24670
2267614	**M1D250E1804S075L157**	2.500	.750	—	1.750	1.575	.690	4	4.0°	1.15	21820
2267632	**M1D250E1806S075L157**	2.500	.750	—	1.750	1.575	.690	6	4.0°	1.02	21820
2267616	**M1D300E1805S100L175**	3.000	1.000	—	2.188	1.750	.690	5	3.0°	1.93	19780
2267615	**M1D300E1807SS100L175**	3.000	1.000	—	2.188	1.750	.690	7	3.0°	1.84	19780
2267643	**M1D300E1807S100L175**	3.000	1.000	—	2.188	1.750	.690	7	3.0°	1.81	19780
2267617	**M1D400E1806S150L200**	4.000	1.500	—	3.625	2.000	.690	6	2.0°	3.72	16970
2267644	**M1D400E1808S150L200**	4.000	1.500	—	3.625	2.000	.690	8	2.0°	3.58	16970
2267645	**M1D500E1809S150L200**	5.000	1.500	—	3.750	2.000	.690	9	1.5°	5.60	15100
2267646	**M1D600E1808S150L200**	6.000	1.500	—	3.750	2.000	.690	8	1.2°	7.93	13740
2267618	**M1D600E1808S200L200**	6.000	2.000	—	4.875	2.000	.690	8	1.2°	8.54	13740
2267620	**M1D800E1812S250L250**	8.000	2.500	4.000	6.125	2.500	.690	12	1.0°	16.87	11850

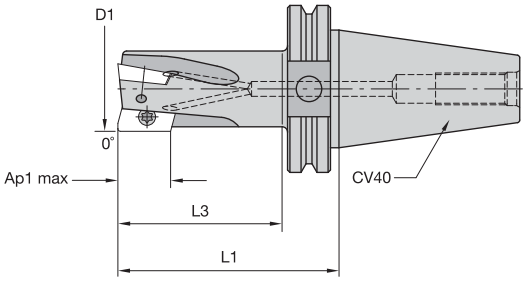
Spare Parts

D1	insert screw	in. lbs.	Torx Plus driver	socket-head cap screw with coolant groove	coolant lock screw	flat point socket set screw
2.000	**MS2126**	30.0	**DT15IP**	**S445CG**	—	—
2.000	**MS2126**	30.0	**DT15IP**	**KLSS0712C**	—	—
2.500	**MS2126**	30.0	**DT15IP**	**S445CG**	—	—
3.000	**MS2126**	30.0	**DT15IP**	**KLSS1013C**	—	—
3.000	**MS2126**	30.0	**DT15IP**	**S2044CG**	—	—
4.000	**MS2126**	30.0	**DT15IP**	—	**KLS15C**	**MS1297**
5.000	**MS2126**	30.0	**DT15IP**	—	**KLS15C**	**MS1297**
6.000	**MS2126**	30.0	**DT15IP**	—	**KLS20C**	**MS1297**
6.000	**MS2126**	30.0	**DT15IP**	—	**KLS15C**	**MS1297**
8.000	**MS2126**	30.0	**DT15IP**	—	—	—

NOTE: "Speed screw" differential lock-up system is identified by the "SS" in the catalog number. For example: M1D200E1803**SS**075L157.
Additional insert screws may be ordered in packages of five pieces from catalog number MS2126PKG.
Standard milling cutters will accept insert nose radii up to .078" without modification.

- Aggressive ramping angles.
- Generates superior surface finish.
- Mill 0° walls.
- High RPM capabilities.







End Mills • Steep Taper CV40

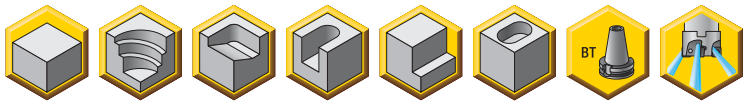
order number	catalog number	CSMS system size	D1	L1	L3	Ap1 max	Z	max ramp angle	lbs	max RPM
2267549	**M1D100E1802CV40L250**	CV40	1.000	2.500	1.625	.710	2	16.5°	2.04	37000
2541967	**M1D100E1802CV40L450**	CV40	1.000	4.500	2.625	.710	2	16.5°	2.79	37000
2267551	**M1D125E1803CV40L288**	CV40	1.250	2.875	2.000	.710	3	10.5°	2.26	32300
2541970	**M1D125E1803CV40L488**	CV40	1.250	4.875	3.000	.710	3	10.5°	3.14	32300
2267548	**M1D150E1804CV40L288**	CV40	1.500	2.875	2.000	.710	4	8.0°	2.43	29020
2541972	**M1D150E1804CV40L488**	CV40	1.500	4.875	3.000	.710	4	8.0°	3.56	29020

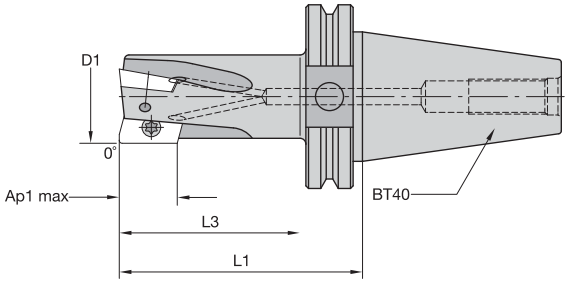
Spare Parts

D1	 insert screw	in. lbs.	 Torx Plus driver
1.000	**MS2126**	30.0	**DT15IP**
1.250	**MS2126**	30.0	**DT15IP**
1.500	**MS2126**	30.0	**DT15IP**

NOTE: Additional insert screws may be ordered in packages of five pieces from catalog number MS2126PKG.
Standard milling cutters will accept insert nose radii up to .078" without modification.

- Aggressive ramping angles.
- Generates superior surface finish.
- Mill 0° walls.
- High RPM capabilities.







End Mills • Steep Taper BT40

order number	catalog number	CSMS system size	D1	L1	L3	Ap1 max	Z	max ramp angle	lbs	max RPM
2541969	**M1D100E1802BT40L450**	BT40	1.000	4.500	2.625	.710	2	16.5°	2.85	37000
2541986	**M1D125E1803BT40L488**	BT40	1.250	4.875	3.000	.710	3	10.5°	3.21	32300
2541984	**M1D150E1804BT40L488**	BT40	1.500	4.875	3.000	.710	4	8.0°	3.59	29020

Spare Parts

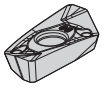
D1	 insert screw	in. lbs.	 Torx Plus driver
1.000	**MS2126**	30.0	**DT15IP**
1.250	**MS2126**	30.0	**DT15IP**
1.500	**MS2126**	30.0	**DT15IP**

NOTE: Additional insert screws may be ordered in packages of five pieces from catalog number MS2126PKG.
Standard milling cutters will accept insert nose radii up to .078" without modification.

Insert Selection Guide

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.E..GD	KC725M	**.E..HD**	**KC725M**	.S..GD	KC725M
P3–P4	.S..GE	KCPK30	**.E..HD**	**KCPK30**	.S..GD	KCPK30
P5–P6	.E..HD	KCPK30	**.S..GD**	**KCPK30**	.S..GD	KCPK30
M1–M2	.E..GD	KC725M	**.E..HD**	**KC725M**	.S..GD	KC725M
M3	.E..GD	KC725M	**.E..HD**	**KC725M**	.S..GE	KC725M
K1–K2	.E..GD	KC520M	**.S..GD**	**KCK15**	.E..HD	KCPK30
K3	.E..GD	KCPK30	**.S..GD**	**KCPK30**	.E..HD	KCPK30
N1–N2	.F..LDJ	KC410M	**.E..LDJ**	**KC422M**	.E..LD	KC522M
N3	.F..LDJ	KC410M	**.F..LDJ**	**KC410M**	.E..LDJ	KC422M
S1–S2	.E..LD	KC522M	**.E..HD**	**KC725M**	.S..GE	KC725M
S3	.E..LD	KC522M	**.E..HD**	**KC725M**	.S..GE	KC725M
S4	.E..HD	KC725M	**.S..GE**	**KC725M**	–	–
H1	.S..GE	KCPM20	**.S..GE**	**KCPM20**	–	–

Indexable Inserts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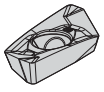
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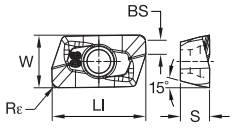


beyond

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

● first choice
○ alternate choice

EDCT-F.LDJ

catalog number	LI	W	S	BS	Rε	hm	cutting edges	KC410M	KC422M	KC520M	KC522M	KC525M	KC725M	KCK15	KCPM20	KCPK30
EC1804FJ	.856	.432	.217	.121	.016	.001	2	●								
EC1808FJ	.857	.432	.217	.106	.031	.001	2	●								
EC1812FJ	.857	.432	.217	.090	.047	.001	2	●								
EC1816FJ	.858	.431	.217	.075	.062	.001	2	●								
EC1820FJ	.858	.431	.217	.059	.079	.001	2	●								
EC1824FJ	.858	.430	.217	.044	.095	.001	2	●								
EC1832FJ	.858	.430	.217	.013	.125	.001	2	●								
EC1840FJ	.818	.428	.217	–	.157	.001	2	●								
EC1848FJ	.795	.426	.217	–	.188	.001	2	●								
EC1850FJ	.785	.426	.217	–	.197	.001	2	●								
EC1864FJ	.737	.422	.217	–	.250	.001	2	●								

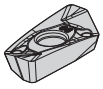
EDCT-E.LDJ

catalog number	LI	W	S	BS	Rε	hm	cutting edges	KC410M	KC422M	KC520M	KC522M	KC525M	KC725M	KCK15	KCPM20	KCPK30
EC1808EJ	.857	.432	.217	.106	.031	.001	2		●							
EC1812EJ	.857	.432	.217	.090	.047	.001	2		●							
EC1816EJ	.858	.431	.217	.075	.062	.001	2		●							
EC1824EJ	.858	.430	.217	.044	.094	.001	2		●							
EC1832EJ	.858	.430	.217	.013	.125	.001	2		●							
EC1840EJ	.818	.428	.217	–	.157	.001	2		●							
EC1848EJ	.795	.426	.217	–	.188	.001	2		●							
EC1864EJ	.737	.422	.217	–	.250	.001	2		●							

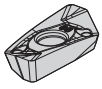
Insert Selection Guide

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.E..GD	KC725M	**.E..HD**	**KC725M**	.S..GD	KC725M
P3–P4	.S..GE	KCPK30	**.E..HD**	**KCPK30**	.S..GD	KCPK30
P5–P6	.E..HD	KCPK30	**.S..GD**	**KCPK30**	.S..GD	KCPK30
M1–M2	.E..GD	KC725M	**.E..HD**	**KC725M**	.S..GD	KC725M
M3	.E..GD	KC725M	**.E..HD**	**KC725M**	.S..GE	KC725M
K1–K2	.E..GD	KC520M	**.S..GD**	**KCK15**	.E..HD	KCPK30
K3	.E..GD	KCPK30	**.S..GD**	**KCPK30**	.E..HD	KCPK30
N1–N2	.F..LDJ	KC410M	**.E..LDJ**	**KC422M**	.E..LD	KC522M
N3	.F..LDJ	KC410M	**.F..LDJ**	**KC410M**	.E..LDJ	KC422M
S1–S2	.E..LD	KC522M	**.E..HD**	**KC725M**	.S..GE	KC725M
S3	.E..LD	KC522M	**.E..HD**	**KC725M**	.S..GE	KC725M
S4	.E..HD	KC725M	**.S..GE**	**KC725M**	–	–
H1	.S..GE	KCPM20	**.S..GE**	**KCPM20**	–	–

Indexable Inserts



EDCT-LD



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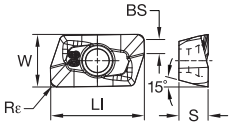


beyond

● first choice
○ alternate choice

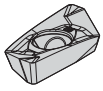
	KC410M	KC422M	KC520M	KC522M	KC525M	KC725M	KCK15	KCPM20	KCPK30
P				○		●		●	●
M				●	●	●		○	○
K			●	○			●	○	○
N	●	●							
S				●	●	●			
H								○	

EDCT-LD

catalog number	LI	W	S	BS	Rε	hm	cutting edges	KC410M	KC422M	KC520M	KC522M	KC525M	KC725M	KCK15	KCPM20	KCPK30
EC1808E2	.857	.432	.217	.106	.031	.002	2				●					
EC1816E	.858	.431	.217	.075	.062	.002	2				●					
EC1832E	.858	.430	.217	.013	.125	.002	2				●					
EC1840E	.818	.428	.217	–	.157	.002	2				●					
EC1848E	.795	.426	.217	–	.188	.002	2				●					
EC1864E	.737	.422	.217	–	.250	.002	2				●					

EDCT-E.GD

catalog number	LI	W	S	BS	Rε	hm	cutting edges	KC410M	KC422M	KC520M	KC522M	KC525M	KC725M	KCK15	KCPM20	KCPK30
EC1804E	.856	.432	.217	.121	.016	.004	2						●			
EC1808E	.857	.432	.217	.106	.031	.004	2						●		●	
EC1812E	.857	.432	.217	.090	.047	.004	2						●			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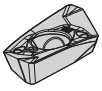
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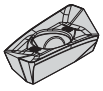
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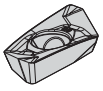
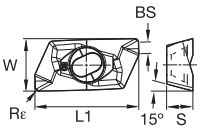

EDPT-SGD



beyond

● first choice
○ alternate choice

	KC410M	KC422M	KC520M	KC522M	KC525M	KC725M	KCK15	KCPM20	KCPK30
P				○		●		●	●
M				●	●	●		○	○
K			●	○			●	○	○
N	●	●							
S				●	●	●			
H								○	

EDPT-E.GD

catalog number	L1	W	S	BS	Rε	hm	cutting edges	KC410M	KC422M	KC520M	KC522M	KC525M	KC725M	KCK15	KCPM20	KCPK30
EP1808E	.857	.432	.217	.106	.031	.004	2			●		●	●			●
EP1812E	.857	.433	.217	.090	.047	.004	2						●			
EP1816E	.858	.431	.217	.075	.062	.004	2			●	●	●	●			●
EP1824E	.858	.430	.217	.044	.095	.004	2						●			
EP1832E	.858	.430	.217	.013	.125	.004	2			●	●	●	●			●
EP1848E	.795	.426	.217	—	.189	.004	2				●	●	●			
EP1864E	.740	.422	.217	—	.250	.004	2				●	●	●			●

EDPT-EHD

catalog number	L1	W	S	BS	Rε	hm	cutting edges	KC410M	KC422M	KC520M	KC522M	KC525M	KC725M	KCK15	KCPM20	KCPK30
EP1808EHD	.857	.429	.217	.106	.031	.003	2						●			●
EP1812EHD	.857	.428	.217	.090	.047	.003	2						●			●
EP1816EHD	.857	.428	.217	.075	.062	.003	2						●			●
EP1832EHD	.858	.426	.217	.012	.125	.003	2						●			●
EP1840EHD	.823	.424	.217	—	.157	.003	2						●			●
EP1848EHD	.794	.423	.217	—	.188	.003	2						●			●
EP1864EHD	.740	.420	.217	—	.250	.003	2						●			●

EDPT-SGE

catalog number	L1	W	S	BS	Rε	hm	cutting edges	KC410M	KC422M	KC520M	KC522M	KC525M	KC725M	KCK15	KCPM20	KCPK30
EP1808SGE	.855	.421	.214	.095	.031	.005	2				●		●		●	●
EP1812SGE	.856	.420	.214	.079	.047	.005	2				●		●		●	●
EP1816SGE	.856	.420	.214	.063	.062	.005	2				●		●		●	●
EP1832SGE	.856	.418	.214	.003	.125	.005	2				●		●		●	●

EDPT-SGD

catalog number	L1	W	S	BS	Rε	hm	cutting edges	KC410M	KC422M	KC520M	KC522M	KC525M	KC725M	KCK15	KCPM20	KCPK30
EP1808S	.857	.429	.217	.106	.031	.006	2						●	●		●
EP1812S	.857	.429	.217	.090	.047	.006	2						●	●		●
EP1816S	.858	.428	.217	.075	.062	.006	2						●	●		●
EP1832S	.858	.426	.217	.013	.125	.006	2						●			●
EP1848S	.795	.423	.216	—	.189	.005	2						●			
EP1864S	.739	.419	.217	—	.250	.005	2						●			

Recommended Starting Speeds and Feeds [SFM]

Material Group		KC410M			KC422M			KC520M			KC522M			KC525M		
P	1	–	–	–	–	–	–	–	–	–	1080	**940**	880	720	**660**	590
	2	–	–	–	–	–	–	–	–	–	900	**790**	660	590	**520**	490
	3	–	–	–	–	–	–	–	–	–	830	**700**	580	520	**490**	460
	4	–	–	–	–	–	–	–	–	–	740	**610**	490	460	**430**	390
	5	–	–	–	–	–	–	–	–	–	610	**550**	490	490	**460**	430
	6	–	–	–	–	–	–	–	–	–	540	**410**	330	430	**390**	360
M	1	–	–	–	–	–	–	–	–	–	670	**590**	540	490	**460**	430
	2	–	–	–	–	–	–	–	–	–	610	**520**	430	430	**390**	360
	3	–	–	–	–	–	–	–	–	–	460	**400**	310	300	**260**	230
K	1	–	–	–	–	–	–	880	**800**	710	750	**680**	600	–	–	–
	2	–	–	–	–	–	–	690	**620**	580	590	**530**	490	–	–	–
	3	–	–	–	–	–	–	580	**520**	470	490	**440**	400	–	–	–
N	1–2	3990	**3550**	3270	3520	**3100**	2870	–	–	–	–	–	–	–	–	–
	3	3550	**3270**	3000	3100	**2870**	2500	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	–	–	–	130	**120**	90	200	**180**	160
	2	–	–	–	–	–	–	–	–	–	130	**120**	90	200	**180**	160
	3	–	–	–	–	–	–	–	–	–	170	**130**	90	160	**150**	130
	4	–	–	–	–	–	–	–	–	–	230	**170**	120	200	**160**	130
H	1	–	–	–	–	–	–	–	–	–	390	**300**	230	–	–	–

Material Group		KC725M			KCK15			KCPM20			KCPK30		
P	1	860	**750**	700	–	–	–	1810	**1590**	1470	1485	**1300**	1210
	2	720	**630**	530	–	–	–	1120	**1010**	910	920	**830**	750
	3	660	**560**	460	–	–	–	1010	**910**	830	830	**750**	680
	4	590	**490**	390	–	–	–	760	**700**	630	620	**575**	520
	5	490	**440**	390	–	–	–	910	**820**	750	850	**760**	690
	6	430	**330**	260	–	–	–	630	**550**	475	520	**450**	–
M	1	560	**490**	450	–	–	–	730	**655**	570	680	**600**	515
	2	510	**430**	360	–	–	–	670	**580**	520	610	**530**	460
	3	380	**330**	260	–	–	–	530	**475**	410	475	**430**	380
K	1	–	–	–	1380	**1255**	1115	1180	**1070**	960	965	**875**	780
	2	–	–	–	1095	**975**	910	940	**840**	770	770	**690**	630
	3	–	–	–	920	**815**	750	790	**700**	650	645	**575**	530
N	1–2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
S	1	115	**100**	80	–	–	–	–	–	–	–	–	–
	2	115	**100**	80	–	–	–	–	–	–	–	–	–
	3	150	**115**	80	–	–	–	–	–	–	–	–	–
	4	200	**150**	100	–	–	–	–	–	–	–	–	–
H	1	–	–	–	–	–	–	460	**380**	310	–	–	–

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

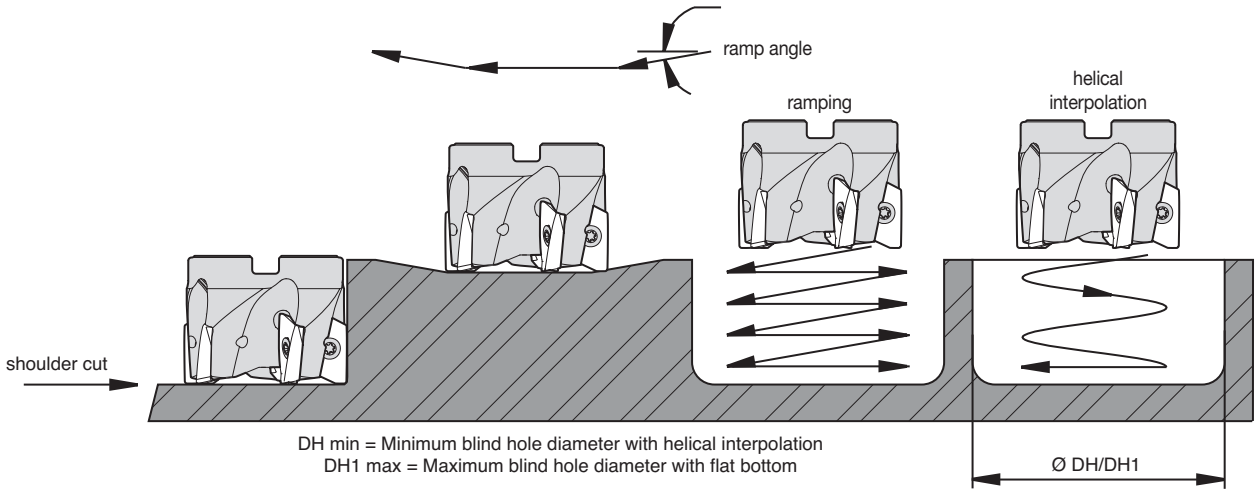
Recommended Starting Feeds [IPT]

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%			
.F..LDJ	.003	**.007**	.009	.003	**.005**	.007	.002	**.004**	.006	.002	**.004**	.006	.002	**.004**	.006	.F..LDJ
.E..LDJ	.003	**.008**	.014	.003	**.006**	.011	.002	**.005**	.009	.002	**.005**	.009	.002	**.005**	.008	.E..LDJ
.E..LD	.005	**.011**	.019	.004	**.008**	.014	.003	**.007**	.012	.003	**.007**	.011	.003	**.006**	.011	.E..LD
.E..GD	.007	**.012**	.021	.005	**.009**	.015	.004	**.008**	.013	.004	**.007**	.013	.004	**.007**	.012	.E..GD
.S..GE	.007	**.014**	.023	.005	**.010**	.017	.004	**.009**	.015	.004	**.008**	.014	.004	**.008**	.014	.S..GE
.S..GD	.007	**.015**	.026	.005	**.011**	.019	.004	**.010**	.016	.004	**.009**	.015	.004	**.009**	.015	.S..GD
.E..HD	.007	**.017**	.028	.005	**.013**	.020	.004	**.011**	.018	.004	**.010**	.016	.004	**.010**	.016	.E..HD

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

Application Examples



insert style	cutting diameter	max ramp angle	min hole diameter (DH min)	max flat-bottom hole diameter (DH1 max)	max diameter (no flat bottom)
Mill-1, 18mm	.970	18˚	1.124	1.776	1.94
Mill-1, 18mm	1.000	17˚	1.182	1.836	2.00
Mill-1, 18mm	1.250	11˚	1.686	2.336	2.50
Mill-1, 18mm	1.500	8˚	2.182	2.836	3.00
Mill-1, 18mm	2.000	5˚	3.180	3.836	4.00
Mill-1, 18mm	1.500	8˚	2.180	2.836	3.00
Mill-1, 18mm	2.000	5˚	3.176	3.862	4.00
Mill-1, 18mm	2.500	4˚	4.174	4.862	5.00
Mill-1, 18mm	3.000	3˚	5.174	5.862	6.00
Mill-1, 18mm	4.000	2˚	7.174	7.862	8.00
Mill-1, 18mm	5.000	2˚	9.172	9.862	10.00
Mill-1, 18mm	6.000	1˚	11.172	11.862	12.00
Mill-1, 18mm	8.000	1˚	15.172	15.862	16.00

Mill 1-25™

Primary Application

Also known as Mill1 Max, the Mill 1-25 cutter is made specifically for aluminum machining but is also useful when machining cast iron. High-Feed capabilities enable routing applications with an axial depth of cut of up to .98" (25mm).

Features and Benefits

Functions

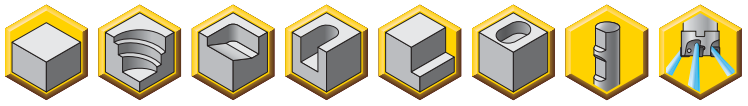
- Strong, thick inserts over .200" (5,2mm) thick.
- Axial depth of cut up to .98" (25mm).
- Cylindrical, monoblock/HSK63A, CV50, and shell mills.

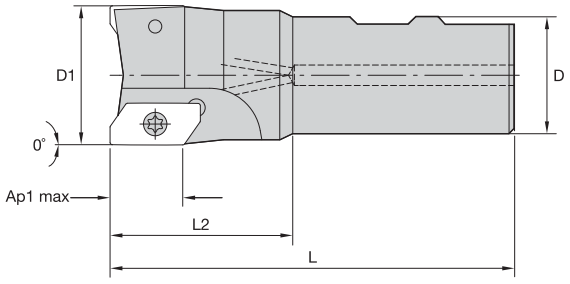
Benefits

- Made for machining aluminum, but also useful for machining cast iron.
- High-Feed capability for routing applications.
- Balanced-by-design — if running over 10,000 RPM, balance the cutter assembly.



- For aluminum machining.
- High-speed capability.
- Insert screws should be changed when inserts are changed.





End Mills • Weldon® Shank

order number	catalog number	D1	D	L	L2	Ap1 max	Z	max ramp angle	lbs	max RPM
2530317	**M1D150K2502W125L200**	1.500	1.250	4.280	2.000	.980	2	16.5°	1.21	25200

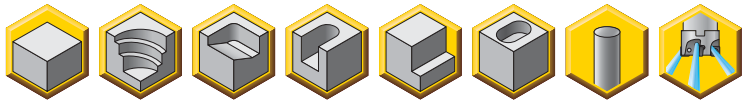
Spare Parts

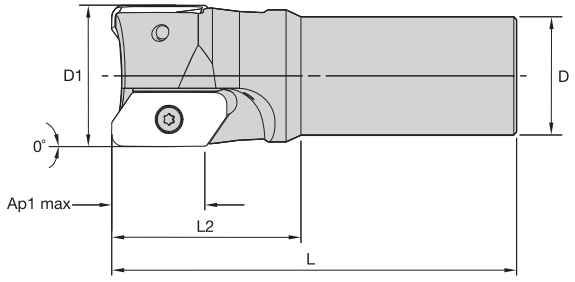




D1	insert screw	in. lbs.	Torx driver
1.500	**MS1374**	35.0	**DT15**

NOTE: Standard milling cutters will accept insert nose radii up to .078" without modification.





End Mills • Cylindrical Shank

order number	catalog number	D1	D	L	L2	Ap1 max	Z	max ramp angle	lbs	max RPM
2530318	**M1D150K2502C125L200**	1.500	1.250	4.280	2.000	.980	2	16.5°	1.23	25200
2530319	**M1D150K2502C125L300**	1.500	1.250	5.280	3.000	.980	2	16.5°	1.65	25200
2530320	**M1D150K2502C125L400**	1.500	1.250	6.280	4.000	.980	2	16.5°	2.07	25200
2530322	**M1D200K2503C125L200**	2.000	1.250	4.155	2.000	.976	3	10.0°	1.54	20300

Spare Parts

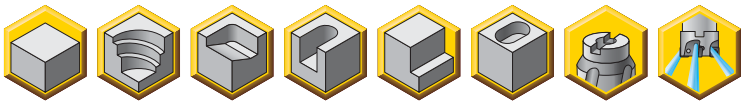


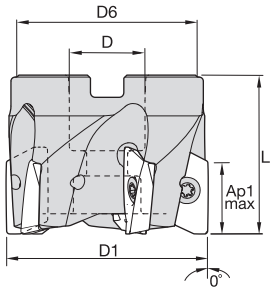


D1	insert screw	in. lbs.	Torx driver
1.500	**MS1374**	35.0	**DT15**
2.000	**MS1374**	35.0	**DT15**

NOTE: Standard milling cutters will accept insert nose radii up to .078" without modification.

- For aluminum machining.
- High-speed capability.
- Insert screws should be changed when inserts are changed.







Shell Mills

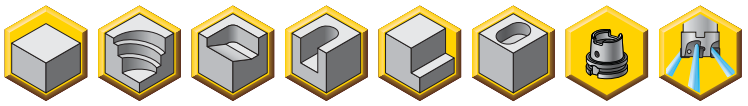
order number	catalog number	D1	D	D6	L	Ap1 max	Z	max ramp angle	lbs	max RPM
2581445	**M1D200K2502S075L200**	2.000	.750	1.750	2.000	.980	2	10.0°	.87	20300
2581447	**M1D250K2503S100L225**	2.500	1.000	2.190	2.250	.970	3	7.0°	1.49	17500
2496869	**M1D300K2503S100L225**	3.000	1.000	2.190	2.250	.970	3	5.0°	2.33	15600
2581449	**M1D400K2504S125L225**	4.000	1.250	2.880	2.250	.970	4	3.5°	3.05	13100

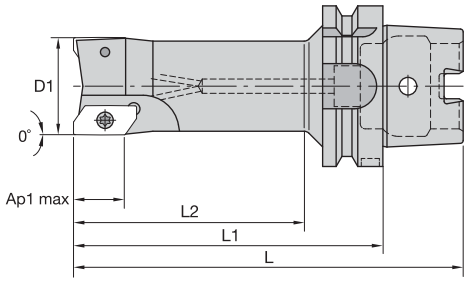
Spare Parts

D1	 insert screw	in. lbs.	 Torx driver	 coolant lock screw assembly	 socket-head cap screw with coolant groove
2.000	**MS1374**	35.0	**DT15**	**—**	**S445CG**
2.500	**MS1374**	35.0	**DT15**	**—**	**S459CG**
3.000	**MS1374**	35.0	**DT15**	**—**	**S458CG**
4.000	**MS1374**	35.0	**DT15**	**S2164C**	**—**

NOTE: Standard milling cutters will accept insert nose radii up to .078" without modification.

- For aluminum machining.
- High-speed capability.
- All integral shank tools are balanced to G2.5 at 10,000 RPM.
- Insert screws should be changed when inserts are changed.





Monoblocks • HSK63A

order number	catalog number	shank taper	D1	L	L1	L3	Ap1 max	Z	max ramp angle	lbs	max RPM
2530357	**M1D150K2502HSK63L477**	HSK63A	1.500	6.028	4.772	3.500	.984	2	16.5°	2.60	25200

Spare Parts



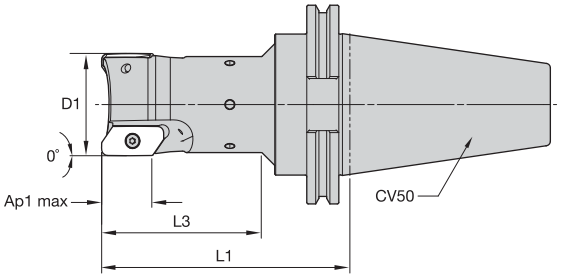




D1	insert screw	in. lbs.	Torx driver	balancing screw
1.500	**MS1374**	35.0	**DT15**	**KUAM27**

NOTE: Standard milling cutters will accept insert nose radii up to .078" without modification.





Monoblocks • CV50

order number	catalog number	shank taper	D1	L1	L3	Ap1 max	Z	max ramp angle	lbs	max RPM
2530374	**M1D200K2503CV50L700**	CV50	2.000	7.000	5.375	.976	3	10.0°	10.62	20300

Spare Parts



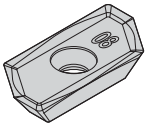


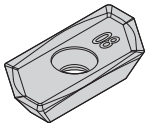


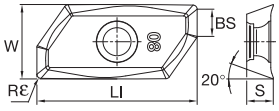
D1	insert screw	in. lbs.	Torx driver	balancing screw
2.000	**MS1374**	35.0	**DT15**	**KUAM27**

Insert Selection Guide

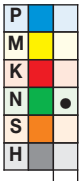
Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	–	–	–	–	–	–
P3–P4	–	–	–	–	–	–
P5–P6	–	–	–	–	–	–
M1–M2	–	–	–	–	–	–
M3	–	–	–	–	–	–
K1–K2	–	–	–	–	–	–
K3	–	–	–	–	–	–
N1–N2	.F..LNJ	K313	**.E..LDJ**	**KC410M**	.E..LDJ	KC410M
N3	.E..LDJ	KC410M	**.E..LDJ**	**KC410M**	.E..LDJ	KC410M
S1–S2	–	–	–	–	–	–
S3	–	–	–	–	–	–
S4	–	–	–	–	–	–
H1	–	–	–	–	–	–


KEGT-LDJ


KEGT-LDJ2



● first choice
○ alternate choice



KEGT-LDJ

catalog number	LI	W	S	BS	Rε	hm	cutting edges	KC410M
KG2508ELDJ	1.239	.575	.205	.210	.031	.001	2	●
KG2512ELDJ	1.239	.575	.205	.195	.047	.001	2	●
KG2516ELDJ	1.239	.575	.205	.179	.063	.001	2	●
KG2520ELDJ	1.239	.575	.205	.164	.079	.001	2	●
KG2524ELDJ	1.239	.575	.205	.149	.094	.001	2	●
KG2531ELDJ	1.239	.575	.205	.120	.122	.001	2	●
KG2540ELDJ	1.239	.575	.205	.085	.157	.001	2	●
KG2547ELDJ	1.239	.575	.205	.055	.188	.001	2	●
KG2550ELDJ	1.239	.575	.205	.045	.197	.001	2	●
KG2560ELDJ	1.239	.575	.205	.005	.236	.001	2	●
KG2564ELDJ	1.181	.575	.205	–	.252	.001	2	●

KEGT-LDJ2

catalog number	LI	W	S	BS	Rε	hm	cutting edges	KC410M
KEGT25L508PEERLDJ2	31,39	14,59	5,21	7,30	0,8	–	2	●

Recommended Starting Speeds and Feeds [SFM]

Material Group		K313			KC410M		
P	1	–	–	–	–	–	–
	2	–	–	–	–	–	–
	3	–	–	–	–	–	–
	4	–	–	–	–	–	–
	5	–	–	–	–	–	–
	6	–	–	–	–	–	–
M	1	–	–	–	–	–	–
	2	–	–	–	–	–	–
	3	–	–	–	–	–	–
K	1	620	**550**	490	–	–	–
	2	–	–	–	–	–	–
	3	–	–	–	–	–	–
N	1–2	2610	**2280**	1960	3990	**3550**	3270
	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%			
.F..LNJ	.003	**.014**	.028	.003	**.010**	.020	.002	**.009**	.018	.002	**.008**	.016	.002	**.008**	.016	.F..LNJ
.E..LDJ	.003	**.017**	.031	.003	**.013**	.023	.002	**.011**	.020	.002	**.010**	.018	.002	**.010**	.018	.E..LDJ

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



More than just the right tool • the ultimate solution for titanium machining

That's **Beyond BLAST.**™

That's **Different Thinking.**

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

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

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

Milling

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



beyond™ BLAST™



KSSM™ • Platform

Primary Application

The Kennametal KSSM platform is a versatile solution providing three insert sizes that cover a wide range of applications: face milling, shoulder milling, slotting, profiling, and Z-axis (plunge milling).

Features and Benefits

KSSM IC10

- Four cutting edges.
- Excellent surface finishes.
- Low power requirements.

KSSM IC12

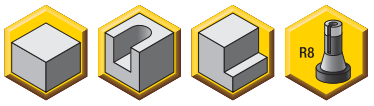
- Four cutting edges.
- Excellent surface finishes.
- Low power requirements.
- Increased depth of cut.

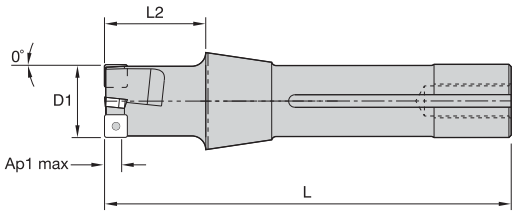
KSSM IC15

- Four cutting edges.
- Excellent surface finish.
- Low power consumption.
- Economical cutting solution.



- Four cutting edges per insert.
- Excellent surface finishes.
- Low power requirements.







End Mills • Bridgeport Shank • R8

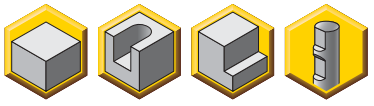
order number	catalog number	D1	L	L2	Ap1 max	Z	lbs	max RPM
1229112	**KISBR150SP10T30F**	1.500	5.180	1.250	.259	4	1.20	30300
1229113	**KISBR200SP10T30F**	2.000	5.180	1.250	.259	5	1.50	26300

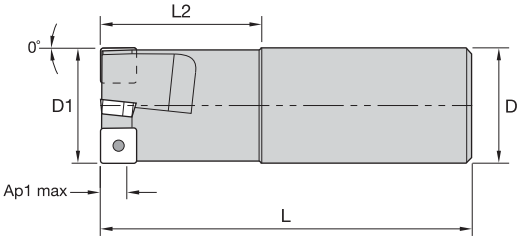
Spare Parts





D1	insert screw	in. lbs.	Torx Plus driver
1.500	**MS2148**	10.0	**DT9IP**
2.000	**MS2148**	10.0	**DT9IP**







End Mills • Weldon® Shank

order number	catalog number	D1	D	L	L2	Ap1 max	Z	lbs	max RPM
1229091	**KISR075SP10T30F**	.750	.750	3.500	1.470	.259	1	.40	42900
1229092	**KISR100SP10T30F**	1.000	1.000	3.500	1.220	.259	2	.60	37100
1229095	**KISR125SP10T30F**	1.250	1.250	4.030	1.750	.259	3	1.10	33200
1229096	**KISR150SP10T30F**	1.500	1.500	4.030	1.340	.259	4	1.63	30300

Spare Parts

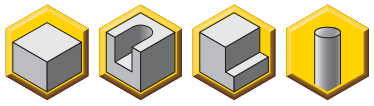


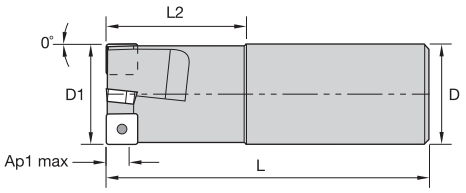


D1	insert screw	in. lbs.	Torx Plus driver
.750	**MS2148**	10.0	**DT9IP**
1.000	**MS2148**	10.0	**DT9IP**
1.250	**MS2148**	10.0	**DT9IP**
1.500	**MS2148**	10.0	**DT9IP**

NOTE: Standard milling cutters will accept insert nose radii up to .078" without modification.

- Four cutting edges per insert.
- Excellent surface finishes.
- Low power requirements.







End Mills • Cylindrical Shank

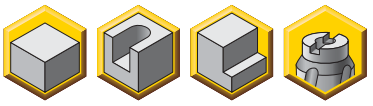
order number	catalog number	D1	D	L	L2	Ap1 max	Z	lbs	max RPM
1229102	**KISR100SP10T30FS4**	1.000	1.000	3.500	1.220	.259	2	.60	37100

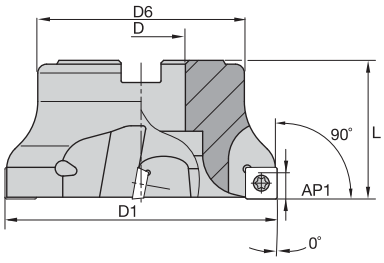
Spare Parts

D1	insert screw	in. lbs.	Torx Plus driver
1.000	**MS2148**	10.0	**DT9IP**

NOTE: Standard milling cutters will accept insert nose radii up to .078" without modification.

- Four cutting edges per insert.
- Excellent surface finishes.
- Low power requirements.







End Mills • Shell Mills

order number	catalog number	D1	D	D6	L	Ap1 max	Z	lbs	max RPM
1229047	**KSSR150SP10T30F2**	1.500	.500	1.355	1.250	.258	4	.30	30300
1229078	**KSSR200SP10T30F3**	2.000	.750	1.625	1.750	.258	5	.60	26300
1229079	**KSSR250SP10T30F4**	2.500	1.000	2.065	1.750	.258	6	.90	23500
1229080	**KSSR300SP10T30F4**	3.000	1.000	2.065	1.750	.258	8	1.30	21450
1229081	**KSSR400SP10T30F5**	4.000	1.250	2.755	2.000	.258	10	2.50	18600
1229082	**KSSR400SP10T30F6**	4.000	1.500	3.567	2.000	.258	10	3.10	18600

Spare Parts

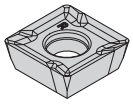
D1	 insert screw	in. lbs.	 Torx Plus driver	 socket-head cap screw
1.500	**MS2148**	10.0	**DT9IP**	**S422**
2.000	**MS2148**	10.0	**DT9IP**	**S445**
2.500	**MS2148**	10.0	**DT9IP**	**–**
3.000	**MS2148**	10.0	**DT9IP**	**–**
4.000	**MS2148**	10.0	**DT9IP**	**–**

NOTE: Standard milling cutters will accept insert nose radii up to .078" without modification.

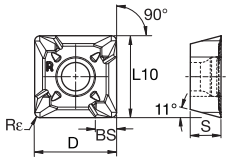
Insert Selection Guide

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.E..LD2	KC725M	**.E..GB2**	**KC725M**	.S..GB2	KC725M
P3–P4	.E..GB2	KC725M	**.E..GB2**	**KCPK30**	.S..GB2	KCPK30
P5–P6	.E..GB2	KCPK30	**.E..GB2**	**KCPM20**	.S..GB2	KCPM20
M1–M2	.E..LD2	KC725M	**.E..GB2**	**KC725M**	.S..GB2	KC725M
M3	.E..GB2	KC725M	**.E..GB2**	**KCPK30**	.S..GB2	KCPK30
K1–K2	.E..LD2	KC520M	**.E..GB2**	**KCK15**	.S..GB2	KCK15
K3	.E..GB2	KC520M	**.E..GB2**	**KCPK30**	.S..GB2	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..LD2	KC725M	**.E..GB2**	**KC725M**	.S..GB2	KC725M
S3	.E..LD2	KC725M	**.E..GB2**	**KC725M**	.S..GB2	KC725M
S4	.E..GB2	KC725M	**.S..GB2**	**KC725M**	–	–
H1	–	–	**–**	**–**	–	–

Indexable Inserts • SP.T10T3



SPCT-LE



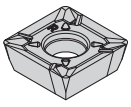
beyond

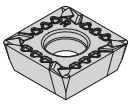
	KC410M	KC520M	KC725M	KCK15	KCPM20	KCPK30
P			●		●	●
M			●		○	○
K		●		●	○	○
N	●					
S			●			
H						

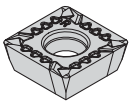
● first choice
○ alternate choice

SPCT-LE

catalog number	D	S	L10	BS	Rε	hm	cutting edges	KC410M	KC520M	KC725M	KCK15	KCPM20	KCPK30
SPCT31251PPFR8LE	.394	.156	.394	.106	.016	.001	4	●					
SPCT3125PPFR8LE	.394	.156	.394	.106	.031	.001	4	●					
SPCT31253PPFR8LE	.394	.156	.394	.106	.047	.001	4	●					
SPCT31254FNLE	.394	.156	.394	–	.063	.001	4	●					
SPCT31255FNLE	.394	.156	.394	–	.078	.001	4	●					


SPCT-LD2


SPET-GB2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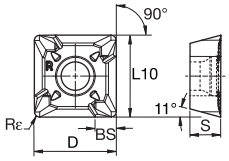


beyond

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

● first choice
○ alternate choice

SPCT-LD2

catalog number	D	S	L10	BS	Rε	hm	cutting edges	KC410M	KC520M	KC725M	KCK15	KCPM20	KCPK30
SPCT31251PPER8LD2	.394	.156	.394	.106	.016	.002	4			●		●	
SPCT3125PPER8LD2	.394	.156	.394	.106	.031	.002	4		●	●		●	
SPCT31253PPER8LD2	.394	.156	.394	.106	.047	.002	4			●			
SPCT31254ENLD2	.394	.156	.394	—	.063	.002	4			●			
SPCT31255ENLD2	.394	.156	.394	—	.078	.002	4			●			

SPET-GB2

catalog number	D	S	L10	BS	Rε	hm	cutting edges	KC410M	KC520M	KC725M	KCK15	KCPM20	KCPK30
SPET31251PPER8GB2	.394	.156	.394	.106	.016	.003	4			●	●		●
SPET3125PPER8GB2	.394	.156	.394	.106	.031	.003	4		●	●	●		●
SPET3125PPSR8GB2	.394	.156	.394	.106	.031	.005	4		●	●	●		●

SPPT-GB2

catalog number	D	S	L10	BS	Rε	hm	cutting edges	KC410M	KC520M	KC725M	KCK15	KCPM20	KCPK30
SPPT3125PPER8GB2	.394	.156	.394	.106	.031	.003	4				●	●	●
SPPT3125PPSR8GB2	.394	.156	.394	.106	.031	.005	4				●	●	●

Recommended Starting Speeds and Feeds [SFM]

Material Group		KC410M			KC520M			KC725M			KCK15			KCPM20			KCPK30		
P	1	–	–	–	–	–	–	860	**750**	700	–	–	–	1810	**1590**	1470	1485	**1300**	1210
	2	–	–	–	–	–	–	720	**630**	530	–	–	–	1120	**1010**	910	920	**830**	750
	3	–	–	–	–	–	–	660	**560**	460	–	–	–	1010	**910**	830	830	**750**	680
	4	–	–	–	–	–	–	590	**490**	390	–	–	–	760	**700**	630	620	**575**	520
	5	–	–	–	–	–	–	490	**440**	390	–	–	–	910	**820**	750	850	**760**	690
	6	–	–	–	–	–	–	430	**330**	260	–	–	–	630	**550**	475	520	**450**	–
M	1	–	–	–	–	–	–	560	**490**	450	–	–	–	730	**655**	570	680	**600**	515
	2	–	–	–	–	–	–	510	**430**	360	–	–	–	670	**580**	520	610	**530**	460
	3	–	–	–	–	–	–	380	**330**	260	–	–	–	530	**475**	410	475	**430**	380
K	1	–	–	–	880	**800**	710	–	–	–	1380	**1255**	1115	1180	**1070**	960	965	**875**	780
	2	–	–	–	690	**620**	580	–	–	–	1095	**975**	910	940	**840**	770	770	**690**	630
	3	–	–	–	580	**520**	470	–	–	–	920	**815**	750	790	**700**	650	645	**575**	530
N	1–2	3990	**3550**	3270	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	115	**100**	80	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	115	**100**	80	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	150	**115**	80	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	200	**150**	100	–	–	–	–	–	–	–	–	–
H	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

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

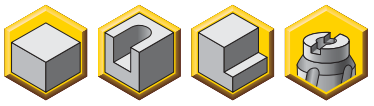
Recommended Starting Feeds [IPT]

Light Machining	General Purpose	Heavy Machining

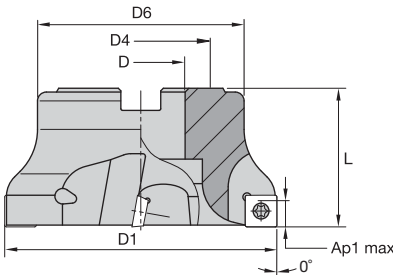
Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.F..LE	.003	**.007**	.014	.003	**.005**	.010	.002	**.004**	.009	.002	**.004**	.008	.002	**.004**	.008	.F..LE
.E..LD2	.004	**.010**	.020	.003	**.008**	.015	.002	**.007**	.013	.002	**.006**	.012	.002	**.006**	.012	.E..LD2
.E..GB2	.007	**.014**	.025	.005	**.011**	.018	.004	**.009**	.016	.004	**.009**	.015	.004	**.008**	.014	.E..GB2
.S..GB2	.007	**.017**	.028	.005	**.013**	.020	.004	**.011**	.018	.004	**.010**	.016	.004	**.010**	.016	.S..GB2

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

- Four cutting edges per insert.
- Excellent surface finishes.
- Low power requirements.







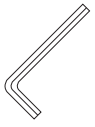
End Mills • Shell Mills

order number	catalog number	D1	D	D4	D6	L	Ap1 max	Z	lbs	max RPM
1024970	KSSISR200SD430C3	2.000	.750	–	1.625	1.750	.361	3	.79	20450
1024972	KSSISR200SD430M3	2.000	.750	–	1.625	1.750	.361	4	.75	20450
1024994	KSSISR200SD430F3	2.000	.750	–	1.625	1.750	.361	5	.77	20450
1024998	KSSISR250SD430M4	2.500	1.000	–	2.065	1.750	.361	5	1.20	18290
1025000	KSSISR250SD430F4	2.500	1.000	–	2.065	1.750	.361	6	1.23	18290
1024930	KSSISR300SD430C4	3.000	1.000	–	2.065	1.750	.361	4	1.42	16700
1024931	KSSISR300SD430M4	3.000	1.000	–	2.065	1.750	.361	6	1.38	16700
1024932	KSSISR300SD430F4	3.000	1.000	–	2.065	1.750	.361	7	1.38	16700
1025025	KSSISR400SD430C5	4.000	1.250	–	2.755	2.000	.361	5	3.05	14460
1025029	KSSISR400SD430M5	4.000	1.250	–	2.755	2.000	.361	7	3.03	14460
1025033	KSSISR400SD430F5	4.000	1.250	–	2.755	2.000	.361	8	3.01	14460
1025027	KSSISR400SD430C6	4.000	1.500	–	3.685	2.000	.361	5	3.58	14460
1025031	KSSISR400SD430M6	4.000	1.500	–	3.685	2.000	.361	7	3.57	14460
1025065	KSSISR400SD430F6	4.000	1.500	–	3.685	2.000	.361	8	3.62	14460
1024933	KSSISR500SD430C6	5.000	1.500	–	3.685	2.380	.361	6	5.82	12940
1024964	KSSISR500SD430M6	5.000	1.500	–	3.685	2.380	.361	8	5.91	12940
1024965	KSSISR500SD430F6	5.000	1.500	–	3.685	2.380	.361	10	5.96	12940
1024966	KSSISR600SD430C6	6.000	1.500	–	3.685	2.380	.361	8	8.52	11800
1024967	KSSISR600SD430M6	6.000	1.500	–	3.685	2.380	.361	10	8.58	11800
1024968	KSSISR600SD430F6	6.000	1.500	–	3.685	2.380	.361	12	8.60	11800
1025071	KSSISR600SD430C8	6.000	2.000	–	4.875	2.380	.361	8	7.37	11800
1025094	KSSISR600SD430M8	6.000	2.000	–	4.875	2.380	.361	10	7.44	11800
1025097	KSSISR600SD430F8	6.000	2.000	–	4.875	2.380	.361	12	7.47	11800
1025102	KSSISR800SD430C10	8.000	2.500	4.000	6.125	2.380	.361	10	15.40	10230
1025134	KSSISR800SD430M10	8.000	2.500	4.000	6.125	2.380	.361	12	15.40	10230
1025136	KSSISR800SD430F10	8.000	2.500	4.000	6.125	2.380	.361	14	15.30	10230
1025138	KSSISR1000SD430C10	10.000	2.500	4.000	8.125	2.380	.361	12	24.20	9150
1025140	KSSISR1000SD430M10	10.000	2.500	4.000	8.125	2.380	.361	16	25.90	9150
1025142	KSSISR1000SD430F10	10.000	2.500	4.000	8.125	2.380	.361	18	24.40	9150

Spare Parts







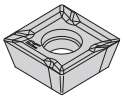

D1	insert screw	in. lbs.	Torx Plus driver	shim	shim screw	in. lbs.	hex driver	socket-head cap screw
2.000	MS2078	35.0	DT15IP	–	–	40.0	–	S445
2.500	MS2078	35.0	DT15IP	SM449	SRS3	40.0	DH35M	S458
3.000	MS2078	35.0	DT15IP	SM449	SRS3	40.0	DH35M	–
4.000	MS2078	35.0	DT15IP	SM449	SRS3	40.0	DH35M	–
5.000	MS2078	35.0	DT15IP	SM449	SRS3	40.0	DH35M	–
6.000	MS2078	35.0	DT15IP	SM449	SRS3	40.0	DH35M	–
8.000	MS2078	35.0	DT15IP	SM449	SRS3	40.0	DH35M	–
10.000	MS2078	35.0	DT15IP	SM449	SRS3	40.0	DH35M	–

NOTE: Standard milling cutters will accept insert nose radii up to .078" without modification.
2" cutter does not have shims.
2", 2.5", and 3" fine-pitch cutters do not have shims.

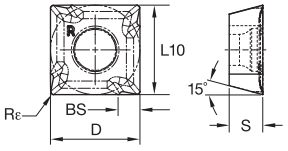
Insert Selection Guide

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.E..LD2	KC725M	**.E..GB2**	**KC725M**	.S..GB2	KC725M
P3–P4	.E..GB2	KCPK30	**.S..GB2**	**KCPK30**	.S..GB2	KCPK30
P5–P6	.E..GB2	KCPK30	**.E..GB2**	**KCPM20**	.S..GB2	KCPM20
M1–M2	.E..LD2	KC725M	**.E..GB2**	**KC725M**	.S..GB2	KC725M
M3	.E..GB2	KCPK30	**.S..GB2**	**KCPK30**	.S..GB2	KCPK30
K1–K2	.E..LD2	KC520M	**.E..GB2**	**KCK15**	.S..GB2	KCK15
K3	.E..GB2	KCPK30	**.S..GB2**	**KCPK30**	.S..GB	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..LD2	KC725M	**.E..GB2**	**KC725M**	.S..GB2	KC725M
S3	.E..GB2	KC725M	**.S..GB2**	**KC725M**	.S..GB	KC725M
S4	.S..GB2	KC725M	**.S..GB**	**KC725M**	–	–
H1	.S..GB2	KCPM20	**.S..GB**	**KCPK30**	–	–

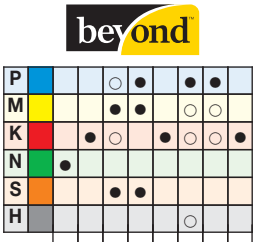
Indexable Inserts • SD.T1204



SDCT-LE

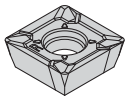


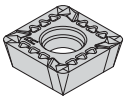
● first choice
○ alternate choice

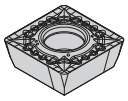


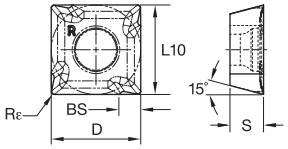
SDCT-LE

catalog number	D	S	L10	BS	Rε	hm	cutting edges	KC410M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30	KY3500
SDCT431PDFR8LE	.500	.188	.500	.106	.016	.001	4	●							
SDCT43PDFR8LE	.500	.188	.500	.106	.031	.001	4	●							
SDCT433PDFR8LE	.500	.188	.500	.106	.047	.001	4	●							
SDCT434FNLE	.500	.188	.500	–	.063	.001	4	●							
SDCT435FNLE	.500	.188	.500	–	.078	.001	4	●							
SDCT436FNLE	.500	.188	.500	–	.094	.001	4	●							
SDCT438FNLE	.500	.188	.500	–	.125	.001	4	●							


SDCT-LD2


SDCT-GB2


SDCT-GB



beyond

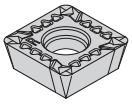
● first choice
○ alternate choice

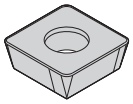
| | | |

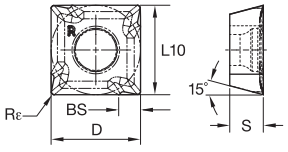
Insert Selection Guide

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.E..LD2	KC725M	**.E..GB2**	**KC725M**	.S..GB2	KC725M
P3–P4	.E..GB2	KCPK30	**.S..GB2**	**KCPK30**	.S..GB2	KCPK30
P5–P6	.E..GB2	KCPK30	**.E..GB2**	**KCPM20**	.S..GB2	KCPM20
M1–M2	.E..LD2	KC725M	**.E..GB2**	**KC725M**	.S..GB2	KC725M
M3	.E..GB2	KCPK30	**.S..GB2**	**KCPK30**	.S..GB2	KCPK30
K1–K2	.E..LD2	KC520M	**.E..GB2**	**KCK15**	.S..GB2	KCK15
K3	.E..GB2	KCPK30	**.S..GB2**	**KCPK30**	.S..GB	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..LD2	KC725M	**.E..GB2**	**KC725M**	.S..GB2	KC725M
S3	.E..GB2	KC725M	**.S..GB2**	**KC725M**	.S..GB	KC725M
S4	.S..GB2	KC725M	**.S..GB**	**KC725M**	–	–
H1	.S..GB2	KCPM20	**.S..GB**	**KCPK30**	–	–

Indexable Inserts • SD.T1204


SDPT-GB2


SDCW-GN



beyond

		KC410M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30	KY3500
P				○	●		●	●	
M				●	●		○	○	
K			●	○		●	○	○	●
N		●							
S				●	●				
H							○		

● first choice
○ alternate choice

Shoulder Mills

SDPT-GB2

catalog number	D	S	L10	BS	Rε	hm	cutting edges	KC410M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30	KY3500
SDPT43PDER8GB2	.500	.188	.500	.106	.031	.003	4				●	●	●	●	
SDPT43PDSR8GB2	.500	.188	.500	.106	.031	.005	4				●	●	●	●	

SDCW-GN

catalog number	D	S	L10	BS	Rε	hm	cutting edges	KC410M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30	KY3500
SDCW43PDSR8GN	.500	.188	.500	.131	.031	.006	4								●
SDCW43EDSR8GN	.500	.188	.500	.132	.031	.006	4								●
SDCW433PDSR8GN	.500	.188	.500	.120	.047	.006	4								●

Recommended Starting Speeds and Feeds [SFM]

Material Group		KC410M			KC520M			KC522M			KC725M		
P	1	–	–	–	–	–	–	1080	**940**	880	860	**750**	700
	2	–	–	–	–	–	–	900	**790**	660	720	**630**	530
	3	–	–	–	–	–	–	830	**700**	580	660	**560**	460
	4	–	–	–	–	–	–	740	**610**	490	590	**490**	390
	5	–	–	–	–	–	–	610	**550**	490	490	**440**	390
	6	–	–	–	–	–	–	540	**410**	330	430	**330**	260
M	1	–	–	–	–	–	–	670	**590**	540	560	**490**	450
	2	–	–	–	–	–	–	610	**520**	430	510	**430**	360
	3	–	–	–	–	–	–	460	**400**	310	380	**330**	260
K	1	–	–	–	880	**800**	710	750	**680**	600	–	–	–
	2	–	–	–	690	**620**	580	590	**530**	490	–	–	–
	3	–	–	–	580	**520**	470	490	**440**	400	–	–	–
N	1–2	3990	**3550**	3270	–	–	–	–	–	–	–	–	–
	3	3550	**3270**	3000	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	130	**120**	90	115	**100**	80
	2	–	–	–	–	–	–	130	**120**	90	115	**100**	80
	3	–	–	–	–	–	–	170	**130**	90	150	**115**	80
	4	–	–	–	–	–	–	230	**170**	120	200	**150**	100
H	1	–	–	–	–	–	–	390	**300**	230	–	–	–

Material Group		KCK15			KCPM20			KCPK30			KY3500		
P	1	–	–	–	1810	**1590**	1470	1485	**1300**	1210	–	–	–
	2	–	–	–	1120	**1010**	910	920	**830**	750	–	–	–
	3	–	–	–	1010	**910**	830	830	**750**	680	–	–	–
	4	–	–	–	760	**700**	630	620	**575**	520	–	–	–
	5	–	–	–	910	**820**	750	850	**760**	690	–	–	–
	6	–	–	–	630	**550**	475	520	**450**	–	–	–	–
M	1	–	–	–	730	**655**	570	680	**600**	515	–	–	–
	2	–	–	–	670	**580**	520	610	**530**	460	–	–	–
	3	–	–	–	530	**475**	410	475	**430**	380	–	–	–
K	1	1380	**1255**	1115	1180	**1070**	960	965	**875**	780	2640	**2400**	2130
	2	1095	**975**	910	940	**840**	770	770	**690**	630	2090	**1870**	1740
	3	920	**815**	750	790	**700**	650	645	**575**	530	1760	**1560**	1430
N	1–2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–	–	–	–
H	1	–	–	–	460	**380**	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%			
.F..LE	.003	**.007**	.014	.003	**.005**	.010	.002	**.004**	.009	.002	**.004**	.008	.002	**.004**	.008	.F..LE
.E..LD2	.004	**.010**	.020	.003	**.007**	.015	.002	**.006**	.013	.002	**.006**	.012	.002	**.006**	.012	.E..LD2
.E..GB	.007	**.014**	.024	.005	**.011**	.018	.004	**.009**	.015	.004	**.009**	.014	.004	**.008**	.014	.E..GB
.E..GB2	.007	**.014**	.024	.005	**.011**	.018	.004	**.009**	.015	.004	**.009**	.014	.004	**.008**	.014	.E..GB2
.S..GB	.007	**.015**	.025	.005	**.011**	.018	.004	**.010**	.016	.004	**.009**	.015	.004	**.009**	.015	.S..GB
.S..GB2	.007	**.015**	.025	.005	**.011**	.019	.004	**.010**	.016	.004	**.009**	.015	.004	**.009**	.015	.S..GB2
.S..GN	.007	**.017**	.028	.005	**.013**	.020	.004	**.011**	.018	.004	**.010**	.016	.004	**.010**	.016	.S..GN

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



KSSM-KSSP Helical

Primary Application

The KSSM-KSSP helical cutters were originally developed and proven for the aerospace industry but are now available for all industries. The proprietary variable rake design minimizes vibration and chatter.

Features and Benefits

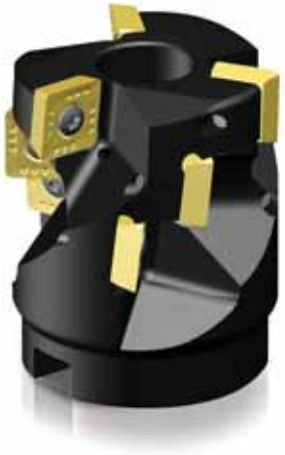
Features

- Patented HARVI™ technology.
- Progressive helical rakes.
- Unique coolant supply.

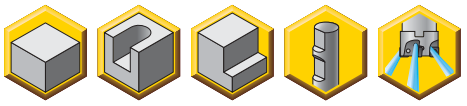
Benefits

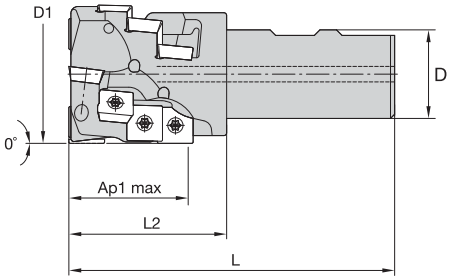
- Increased tool life in titanium.
- Increased metal removal rates.
- Lower power consumption.
- Ensures chip evacuation, even on exotic materials.





- Four cutting edges per insert.
- Excellent surface finishes.
- Low power requirements.







End Mills • Weldon® Shank

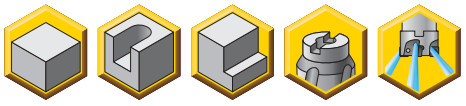
order number	catalog number	D1	D	L	L2	Ap1 max	Z	Z U	lbs	max RPM
2528269	**KSSP200R3SD43W125L169**	2.000	1.250	4.530	2.250	1.691	12	3	1.73	16300

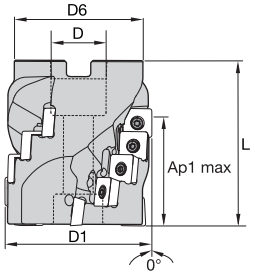
Spare Parts

D1	 insert screw	in. lbs.	 Torx wrench
2.000	**MS1273**	35.0	**TT15**

NOTE: Maximum nose radii of lead insert is .094" for a 2"-diameter cutter.
All subsequent inserts up the flute should have a maximum nose radius of .031" to avoid lap lines.

- Four cutting edges per insert.
- Excellent surface finishes.
- Low power requirements.







Shell Mills

order number	catalog number	D1	D	D6	L	Ap1 max	Z	Z U	lbs	max RPM
2400680	**KSSP200R3SD43L168**	2.000	.750	1.750	2.250	1.691	12	3	1.02	16300
3045090	**KSSP200R3SD43L200HC**	2.000	.750	1.913	3.000	2.072	15	3	1.42	16300
2601012	**KSSP200R3SD43L125**	2.000	.750	1.750	1.875	1.275	9	3	.87	16300
2400681	**KSSP250R3SD43L200**	2.500	1.000	2.190	2.750	2.005	15	3	2.34	14550
2400682	**KSSP300R4SD43L240**	3.000	1.250	2.750	3.250	2.427	24	4	4.07	13300
2977923	**KSSP300R5SD43L400HC**	3.000	1.250	2.900	5.000	4.110	55	5	5.74	13300

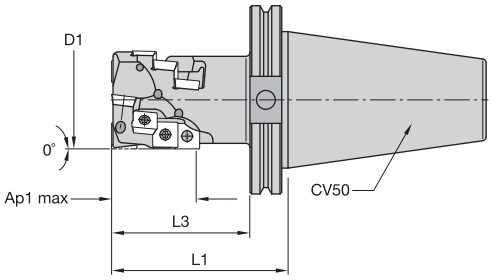
Spare Parts

order number	D1	 insert screw	in. lbs.	 Torx wrench	 Torx Plus wrench
3045090	2.000	**MS2085**	35.0	**—**	**TTP15**
2400680	2.000	**MS1273**	35.0	**TT15**	**—**
2601012	2.000	**MS1273**	35.0	**TT15**	**—**
2400681	2.500	**MS1273**	35.0	**TT15**	**—**
2400682	3.000	**MS1273**	35.0	**TT15**	**—**
2977923	3.000	**MS2085**	35.0	**—**	**TTP15**

NOTE: ZU = Effective number of flutes.
Maximum nose radii of lead insert is .094" for 2" diameter cutters and .125" for 2.50" diameter cutters and above.
All subsequent inserts up the flutes should have a maximum nose radius of .031" to avoid lap lines.

- Four cutting edges per insert.
- Excellent surface finishes.
- Low power requirements.







End Mills • Integral Shank CV50

order number	catalog number	shank taper	D1	L3	L1	Ap1 max	Z	Z U	lbs	max RPM
2528270	**KSSP200R3SD43CV50L169**	CV50	2.000	2.250	3.000	1.691	12	3	6.68	16300

Spare Parts

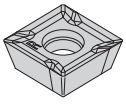
D1	insert screw	in. lbs.	Torx wrench	set screw
2.000	**MS1273**	35.0	**TT15**	**MS1276**

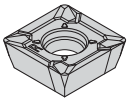
NOTE: Maximum nose radii of lead insert is .094" for 2" diameter cutter.
All subsequent inserts up the flutes should have a maximum nose radius of .031" to avoid lap lines.

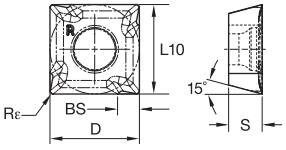
Insert Selection Guide

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.E..LD2	KC725M	**.E..GB2**	**KC725M**	.S..GB2	KC725M
P3–P4	.E..GB2	KCPK30	**.S..GB2**	**KCPK30**	.S..GB2	KCPK30
P5–P6	.E..GB2	KCPK30	**.E..GB2**	**KCPM20**	.S..GB2	KCPM20
M1–M2	.E..LD2	KC725M	**.E..GB2**	**KC725M**	.S..GB2	KC725M
M3	.E..GB2	KCPK30	**.S..GB2**	**KCPK30**	.S..GB2	KCPK30
K1–K2	.E..LD2	KC520M	**.E..GB2**	**KCK15**	.S..GB2	KCK15
K3	.E..GB2	KCPK30	**.S..GB2**	**KCPK30**	.S..GB	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..LD2	KC725M	**.E..GB2**	**KC725M**	.S..GB2	KC725M
S3	.E..GB2	KC725M	**.S..GB2**	**KC725M**	.S..GB	KC725M
S4	.S..GB2	KC725M	**.S..GB**	**KC725M**	–	–
H1	–	–	**–**	**–**	–	–

Indexable Inserts • SD.T1204


SDCT-LE


SDCT-LD2



beyond

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

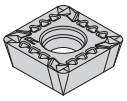
● first choice
○ alternate choice

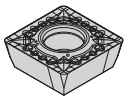
SDCT-LE

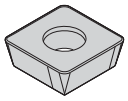
catalog number	D	S	L10	BS	Rε	hm	cutting edges	KC410M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30	KY3500
SDCT431PDFR8LE	.500	.188	.500	.106	.016	.001	4	●							
SDCT43PDFR8LE	.500	.188	.500	.106	.031	.001	4	●							
SDCT433PDFR8LE	.500	.188	.500	.106	.047	.001	4	●							
SDCT434FNLE	.500	.188	.500	–	.063	.001	4	●							
SDCT435FNLE	.500	.188	.500	–	.078	.001	4	●							
SDCT436FNLE	.500	.188	.500	–	.094	.001	4	●							
SDCT438FNLE	.500	.188	.500	–	.125	.001	4	●							

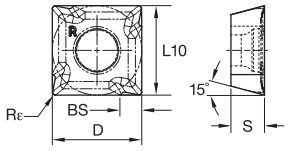
SDCT-LD2

catalog number	D	S	L10	BS	Rε	hm	cutting edges	KC410M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30	KY3500
SDCT431PDER8LD2	.500	.188	.500	.115	.016	.002	4				●		●		
SDCT43PDER8LD2	.500	.188	.500	.130	.031	.002	4		●		●		●		
SDCT433PDER8LD2	.500	.188	.500	.120	.047	.002	4				●				
SDCT434ENLD2	.500	.188	.500	–	.063	.002	4				●				
SDCT435ENLD2	.500	.188	.500	–	.078	.002	4				●				
SDCT436ENLD2	.500	.188	.500	–	.094	.002	4				●				
SDCT438ENLD2	.500	.188	.500	–	.125	.002	4			●	●				
SDCT4316ENLD2	.500	.188	.500	–	.250	.002	2				●				


SDET-GB2
SDPT-GB2


SDET-GB


SDCW-GN



beyond

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

● first choice
○ alternate choice

SDET-GB2

catalog number	D	S	L10	BS	Rε	hm	cutting edges	KC410M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30	KY3500
SDET43PDER8GB2	.500	.188	.500	.130	.031	.003	4		●		●	●		●	
SDET43PDSR8GB2	.500	.188	.500	.130	.031	.005	4		●		●	●		●	
SDET433PDER8GB2	.500	.188	.500	.120	.047	.003	4		●		●	●		●	
SDET434SNGB2	.500	.188	.500	—	.063	.005	4		●		●	●		●	
SDET435SNGB2	.500	.188	.500	—	.078	.005	4		●		●	●		●	
SDET436SNGB2	.500	.188	.500	—	.094	.005	4		●		●	●		●	
SDET438XENGB2	.500	.188	.500	—	.125	.003	2				●				
SDET438SNGB2	.500	.188	.500	—	.125	.005	4		●		●	●		●	
SDET4316SNGB2	.500	.188	.500	—	.250	.005	2					●		●	

SDET-GB

catalog number	D	S	L10	BS	Rε	hm	cutting edges	KC410M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30	KY3500
SDET43PDER8GB	.500	.188	.500	.132	.031	.003	4		●						
SDET43PDSR8GB	.500	.188	.500	.132	.031	.006	4				●			●	
SDET433PDER8GB	.500	.188	.500	.132	.047	.003	4				●				
SDET4316SNGB	.500	.188	.500	—	.250	.006	2				●				

SDPT-GB2

catalog number	D	S	L10	BS	Rε	hm	cutting edges	KC410M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30	KY3500
SDPT43PDER8GB2	.500	.188	.500	.106	.031	.003	4				●	●	●	●	
SDPT43PDSR8GB2	.500	.188	.500	.106	.031	.005	4				●	●	●	●	

SDCW-GN

catalog number	D	S	L10	BS	Rε	hm	cutting edges	KC410M	KC520M	KC522M	KC725M	KCK15	KCPM20	KCPK30	KY3500
SDCW43PDSR8GN	.500	.188	.500	.131	.031	.006	4								●
SDCW43EDSR8GN	.500	.188	.500	.132	.031	.006	4								●
SDCW433PDSR8GN	.500	.188	.500	.120	.047	.006	4								●

Recommended Starting Speeds and Feeds [SFM]

Material Group		KC410M			KC520M			KC522M			KC725M		
P	1	–	–	–	–	–	–	1080	**940**	880	860	**750**	700
	2	–	–	–	–	–	–	900	**790**	660	720	**630**	530
	3	–	–	–	–	–	–	830	**700**	580	660	**560**	460
	4	–	–	–	–	–	–	740	**610**	490	590	**490**	390
	5	–	–	–	–	–	–	610	**550**	490	490	**440**	390
	6	–	–	–	–	–	–	540	**410**	330	430	**330**	260
M	1	–	–	–	–	–	–	670	**590**	540	560	**490**	450
	2	–	–	–	–	–	–	610	**520**	430	510	**430**	360
	3	–	–	–	–	–	–	460	**400**	310	380	**330**	260
K	1	–	–	–	880	**800**	710	750	**680**	600	–	–	–
	2	–	–	–	690	**620**	580	590	**530**	490	–	–	–
	3	–	–	–	580	**520**	470	490	**440**	400	–	–	–
N	1–2	3990	**3550**	3270	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	130	**120**	90	115	**100**	80
	2	–	–	–	–	–	–	130	**120**	90	115	**100**	80
	3	–	–	–	–	–	–	170	**130**	90	150	**115**	80
	4	–	–	–	–	–	–	230	**170**	120	200	**150**	100
H	1	–	–	–	–	–	–	–	–	–	–	–	–

Material Group		KCK15			KCPM20			KCPK30		
P	1	–	–	–	1810	**1590**	1470	1485	**1300**	1210
	2	–	–	–	1120	**1010**	910	920	**830**	750
	3	–	–	–	1010	**910**	830	830	**750**	680
	4	–	–	–	760	**700**	630	620	**575**	520
	5	–	–	–	910	**820**	750	850	**760**	690
	6	–	–	–	630	**550**	475	520	**450**	–
M	1	–	–	–	730	**655**	570	680	**600**	515
	2	–	–	–	670	**580**	520	610	**530**	460
	3	–	–	–	530	**475**	410	475	**430**	380
K	1	1380	**1255**	1115	1180	**1070**	960	965	**875**	780
	2	1095	**975**	910	940	**840**	770	770	**690**	630
	3	920	**815**	750	790	**700**	650	645	**575**	530
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%			
.F..LE	.003	**.007**	.014	.003	**.005**	.010	.002	**.004**	.009	.002	**.004**	.008	.002	**.004**	.008	.F..LE
.E..LD2	.004	**.010**	.020	.003	**.007**	.015	.002	**.006**	.013	.002	**.006**	.012	.002	**.006**	.012	.E..LD2
.E..GB	.007	**.014**	.024	.005	**.011**	.018	.004	**.009**	.015	.004	**.009**	.014	.004	**.008**	.014	.E..GB
.E..GB2	.007	**.014**	.024	.005	**.011**	.018	.004	**.009**	.015	.004	**.009**	.014	.004	**.008**	.014	.E..GB2
.S..GB	.007	**.015**	.025	.005	**.011**	.018	.004	**.010**	.016	.004	**.009**	.015	.004	**.009**	.015	.S..GB
.S..GB2	.007	**.015**	.025	.005	**.011**	.019	.004	**.010**	.016	.004	**.009**	.015	.004	**.009**	.015	.S..GB2
.S..GN	.007	**.017**	.028	.005	**.013**	.020	.004	**.011**	.018	.004	**.010**	.016	.004	**.010**	.016	.S..GN

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



Beyond BLAST™ • KSSM™ 45°

More than just the right tool — the ultimate solution for titanium machining

Features and Benefits

- PCT — Precision Coolant Technology.
- Coolant delivery exactly to the cutting area.
- Increased heat transfer.
- Less tool/chip friction and shear stress.
- Improved chip control.
- True internal coolant assists chip evacuation.
- Beyond BLAST also works with regular low-pressure conditions.
- No need for investments in high-pressure equipment.
- Easy to convert from conventional to Beyond BLAST technology.
- Shop-floor-proven handling reduces costly downtime.
- Up to 100% better tool life.
- Performance leader in machining titanium.

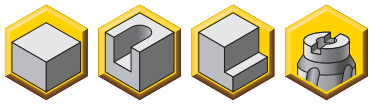
beyond™ BLAST™

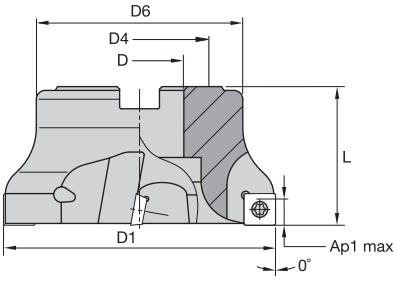
Experience the advantages at your Authorized Kennametal Distributor or at **www.kennametal.com**.

www.kennametal.com

KENNAMETAL®

- Four cutting edges per insert.
- Excellent surface finishes.
- Low power requirements.







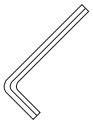
End Mills • Shell Mills

order number	catalog number	D1	D	D4	D6	L	Ap1 max	Z	lbs	max RPM
1025167	**KSSISR200SD530M3**	2.000	.750	–	1.625	1.750	.484	4	.60	17940
1025165	**KSSISR200SD530C3**	2.000	.750	–	1.625	1.750	.484	3	.70	17940
1025171	**KSSISR250SD530M4**	2.500	1.000	–	2.065	1.750	.484	5	1.20	16050
1025173	**KSSISR300SD530C4**	3.000	1.000	–	2.065	1.750	.484	4	1.40	14650
1025205	**KSSISR300SD530M4**	3.000	1.000	–	2.065	1.750	.484	6	1.40	14650
1025212	**KSSISR400SD530M5**	4.000	1.250	–	2.755	2.000	.484	6	2.90	12690
1025244	**KSSISR400SD530M6**	4.000	1.500	–	3.685	2.000	.484	6	3.80	12690
1025275	**KSSISR600SD530M6**	6.000	1.500	–	3.685	2.380	.484	10	10.50	10360
1025281	**KSSISR800SD530M10**	8.000	2.500	4.000	6.125	2.380	.484	12	15.40	8970
1025279	**KSSISR800SD530C10**	8.000	2.500	4.000	6.125	2.380	.484	10	15.70	8970

Spare Parts



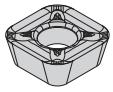


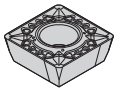


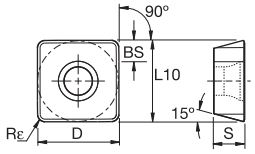

D1	insert screw	in. lbs.	Torx Plus driver	shim	shim screw	in. lbs.	hex driver	socket-head cap screw
2.000	**MS2079**	35.0	**DT15IP**	–	–	40.0	–	**S1960PKG**
2.500	**MS2079**	35.0	**DT15IP**	**SM450**	**SRS4**	40.0	**DH4M**	**S458**
3.000	**MS2079**	35.0	**DT15IP**	**SM450**	**SRS4**	40.0	**DH4M**	–
4.000	**MS2079**	35.0	**DT15IP**	**SM450**	**SRS4**	40.0	**DH4M**	–
6.000	**MS2079**	35.0	**DT15IP**	**SM450**	**SRS4**	40.0	**DH4M**	–
8.000	**MS2079**	35.0	**DT15IP**	**SM450**	**SRS4**	40.0	**DH4M**	–

Insert Selection Guide

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


SDCT-LD


SDET-GB



● first choice
○ alternate choice

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

SDCT-LD

catalog number	D	S	L10	BS	Rε	hm	cutting edges	KC510M	KC725M	KCK15	KCPK30
SDCT53PDFR8LD	.625	.188	.625	.132	.031	.001	4	●			
SDCT53PDER8LD	.625	.188	.625	.132	.031	.002	4		●		
SDCT533PDFR8LD	.625	.188	.625	.132	.047	.001	4	●			
SDCT533PDER8LD	.625	.188	.625	.132	.047	.002	4		●		

SDET-GB

catalog number	D	S	L10	BS	Rε	hm	cutting edges	KC510M	KC725M	KCK15	KCPK30
SDET53PDER8GB	.625	.188	.625	.132	.031	.003	4		●		●
SDET53PDSR8GB	.625	.188	.625	.132	.031	.004	4		●		●
SDET533PDER8GB	.625	.188	.625	.132	.047	.003	4		●	●	●
SDET533PDSR8GB	.625	.188	.625	.132	.047	.004	4		●		●

Recommended Starting Speeds and Feeds [SFM]

Material Group		KC510M			KC725M			KCK15			KCPK30		
P	1	–	–	–	860	**750**	700	–	–	–	1485	**1300**	1210
	2	–	–	–	720	**630**	530	–	–	–	920	**830**	750
	3	–	–	–	660	**560**	460	–	–	–	830	**750**	680
	4	800	**650**	550	590	**490**	390	–	–	–	620	**575**	520
	5	–	–	–	490	**440**	390	–	–	–	850	**760**	690
	6	–	–	–	430	**330**	260	–	–	–	520	**450**	–
M	1	–	–	–	560	**490**	450	–	–	–	680	**600**	515
	2	–	–	–	510	**430**	360	–	–	–	610	**530**	460
	3	–	–	–	380	**330**	260	–	–	–	475	**430**	380
K	1	960	**870**	780	–	–	–	1380	**1255**	1115	965	**875**	780
	2	760	**680**	630	–	–	–	1095	**975**	910	770	**690**	630
	3	640	**570**	520	–	–	–	920	**815**	750	645	**575**	530
N	1–2	2100	**1870**	1720	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
S	1	–	–	–	115	**100**	80	–	–	–	–	–	–
	2	–	–	–	115	**100**	80	–	–	–	–	–	–
	3	–	–	–	150	**115**	80	–	–	–	–	–	–
	4	–	–	–	200	**150**	100	–	–	–	–	–	–
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..LD	.003	**.007**	.014	.003	**.005**	.010	.002	**.004**	.009	.002	**.004**	.008	.002	**.004**	.008	.F..LD
.E..LD	.004	**.013**	.026	.003	**.009**	.019	.002	**.008**	.016	.002	**.008**	.015	.002	**.008**	.015	.E..LD
.E..GB	.007	**.017**	.028	.005	**.013**	.020	.004	**.011**	.018	.004	**.010**	.016	.004	**.010**	.016	.E..GB
.S..GB	.007	**.017**	.028	.005	**.013**	.020	.004	**.011**	.018	.004	**.010**	.016	.004	**.010**	.016	.S..GB

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



Screw-On Milling Cutter Adapters

The Complete Solution to Milling

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.

NOTE: Consult the Kennametal Tooling Systems catalog for information on holders.

www.kennametal.com

KENNAMETAL®



KFSR™ Heavy-Duty Cutter

Primary Application

The KFSR heavy-duty cutter is specifically engineered for heavy-duty milling of steel and cast iron — with unparalleled chip control and large axial depth of cut. Engineered for applications requiring higher cutting speeds and feed rates with low cutting forces, it is ideally suited for the automotive, heavy automotive, rail, shipbuilding, construction vehicles, and general engineering industries.

Features and Benefits

Features

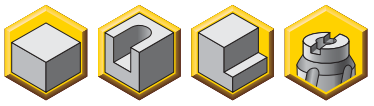
- Enables heavy machining with low cutting forces and less vibration.
- Uses less horsepower with increased metal removal rates.
- Inserts with three and four serrations generate small chips for easy evacuation.
- Cutter design alternates the two insert styles to provide better overall chip control.
- Inserts stacked in helical rows.
- Replaceable shim provides pocket protection for leading insert. (NOTE: 63mm cutters do not contain a shim).

Notching

- Cutter design alternates two insert styles (G3 and G4) to provide better overall chip control.
- Insert serrations reduce cutting forces.
- Special chipbreaker generates small, controllable chips for easy evacuation.



- Lower cutting forces with serrated inserts.
- Small chips for ease of evacuation.
- Improved metal removal rates.
- IMPORTANT: Load the inserts in the correct position; see additional details below.



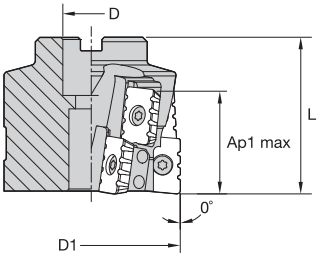


Fig. 1

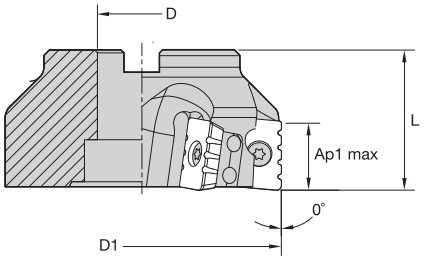


Fig. 3

Shell Mill

order number	catalog number	D1	D	L	Ap1 max	Z	Z U	figure	lbs
3578346	**KFSR300R1AP25**	3.000	1.000	1.970	.925	4	4	FIG 3	2.66
3578347	**KFSR300R2AP25**	3.000	1.000	2.760	1.770	8	4	FIG 1	3.85
3578349	**KFSR400R2AP25**	4.000	1.250	2.760	1.770	12	6	FIG 1	4.53
3578348	**KFSR400R1AP25**	4.000	1.250	1.970	.925	6	6	FIG 3	3.37

Insert pocket detail:

- If insert pocket is marked with number “3”, use insert AP ER-G3.
- If insert pocket is marked with number “4”, use insert AP ER-G4.
- It is very important to use the correct insert in position 3 or 4. Failure to do this will result in damage to the cutter body.
- Only use inserts with nose radii greater than .030" in the first row.

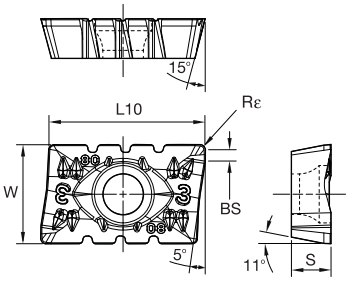
Spare Parts

D1	 insert screw	 Torx wrench	 shim screw	 Torx driver	 shim	 socket-head cap screw
3.000	**MS2209**	**TT25**	**MS2210**	**DT15**	**SM904**	**S459**
4.000	**MS2209**	**TT25**	**MS2210**	**DT15**	**SM904**	**–**

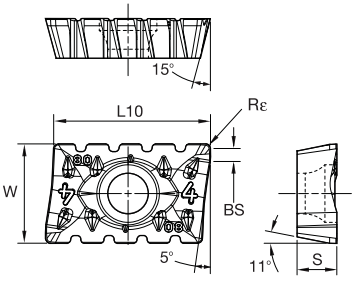
Insert Selection Guide

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.E..L	KC720M	**.E..L**	**KC720M**	.E..L	KC730M
P3–P4	.E..G	KC720M	**.E..G**	**KC720M**	.E..G	KC730M
P5–P6	–	–	–	–	–	–
M1–M2	–	–	–	–	–	–
M3	–	–	–	–	–	–
K1–K2	.E..L	KC505M	**.E..L**	**KC505M**	.E..G	KC505M
K3	.E..L	KC505M	**.E..G**	**KC505M**	.E..G	KC505M
N1–N2	–	–	–	–	–	–
N3	–	–	–	–	–	–
S1–S2	–	–	–	–	–	–
S3	–	–	–	–	–	–
S4	–	–	–	–	–	–
H1	–	–	–	–	–	–

Indexable Insert • Heavy-Duty Cutters



APMT G3



APMT G4
(this must be used in conjunction with insert G3)

● first choice
○ alternate choice

P	M	K	N	S	H
●		●			

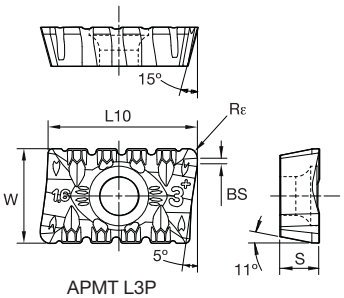
Shoulder Mills

APMT G3

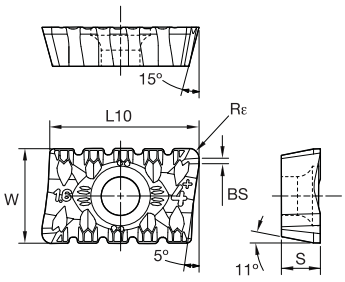
catalog number	S	L10	BS	Rε	W	hm	cutting edges	KC505M	KC720M	KC730M
APMT250608ERG3	.250	.984	.071	.031	.625	.003	2	●		
APMT250616ERG3	.250	.984	.039	.063	.625	.003	2	●	●	●
APMT250640ERG3	.250	.984	.004	.156	.625	.003	2	●	●	●

APMT G4

catalog number	S	L10	BS	Rε	W	hm	cutting edges	KC505M	KC720M	KC730M
APMT250608ERG4	.250	.984	.071	.031	.625	.003	2	●		
APMT250616ERG4	.250	.984	.039	.063	.625	.003	2	●	●	●
APMT250640ERG4	.250	.984	.004	.156	.625	.003	2	●	●	●



APMT L3P



APMT L4P
(this must be used in conjunction with insert L3P)

● first choice
○ alternate choice

P		●	●
M			
K	●		
N			
S			
H			

APMT L3P

catalog number	S	L10	BS	Rε	W	hm	cutting edges	KC505M	KC720M	KC730M
APMT250616ERL3P	.250	.984	.039	.063	.625	.003	2	●	●	●

APMT L4P

catalog number	S	L10	BS	Rε	W	hm	cutting edges	KC505M	KC720M	KC730M
APMT250616ERL4P	.250	.984	.039	.063	.625	.003	2	●	●	●

Recommended Starting Speeds and Feeds [SFM]

Material Group		KC505M			KC720M			KC730M		
P	1	–	–	–	720	**660**	590	420	**400**	330
	2	–	–	–	660	**590**	525	400	**360**	340
	3	–	–	–	590	**525**	460	360	**330**	300
	4	–	–	–	525	**490**	460	330	**300**	270
	5	–	–	–	460	**390**	330	300	**270**	250
	6	–	–	–	330	**260**	260	270	**250**	235
M	1	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–
K	1	630	**560**	490	–	–	–	–	–	–
	2	570	**510**	440	–	–	–	–	–	–
	3	370	**310**	240	–	–	–	–	–	–
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%			
.E..L	.007	**.014**	.029	.005	**.011**	.021	.004	**.009**	.018	.004	**.009**	.017	.004	**.008**	.017	.E..L
.E..G	.007	**.017**	.035	.005	**.013**	.025	.004	**.011**	.022	.004	**.010**	.020	.004	**.010**	.020	.E..G

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

APMT L3P

					(R-1) = one high KFSR400R1AP25		(R-2) = two high KFSR400R2AP25	
material	overhang	recommended condition (vc * fz)	RPM	table feed	DOC (Ap x Ae)	MRR (inch³/min)	DOC (Ap x Ae)	MRR (inch³/min)
steel	less 4.00"	SFM = 490 fz = .008	478	22.6	.787 x 3.150	56	1.575 x 1.575	56
	4.0"–8.0"	SFM = 490 fz = .008	573	22.6	.787 x 1.575	28	1.575 x .787	28
	over 8.0"	SFM = 330 fz = .008	318	15.3	.787 x 1.181	14	1.575 x .787	18.7
cast iron	less 4.00"	SFM = 590 fz = .008	573	27.1	.787 x 3.150	67.2	1.575 x 1.575	67.2
	4.0"–8.0"	SFM = 590 fz = .008	478	27.1	.787 x 1.575	33.6	1.575 x .787	33.6
	over 8.0"	SFM = 395 fz = .008	382	18.3	.787 x 1.181	16.1	1.575 x .787	21.4
stainless steel	not recommended							
aluminum/copper	not recommended							
high-temp alloys	not recommended							



Slotting Cutters

KTMS • T-Slot Platform Q2–Q6

KVNS • Very Narrow Slotting Cutter Platform Q8–Q13

SN • Popular Square Inserted Cutter Q14–Q17

LN • Adjustable Width Cutter System Q18–Q25

KSSM10 • Neutral and Right- and Left-Hand Cutters, 10mm I/C Q26–Q38

KSSM12 • Neutral and Right- and Left-Hand Cutters, 12mm I/C Q39–Q54



KTMS™ Slotting Cutter

Primary Application

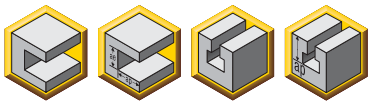
KTMS slotting cutter produces “T” slots in machine beds as well as small radial depths of cut for machining shallow radial slots. There is always a need to prepare the slot before using this type of cutter — preparation is the key to success. See the technical information for information about the pre-machining on page Q6. Please note that all of these cutters have metric diameters, speeds, and feeds.

Features and Benefits

- Only available in metric dimensions.
- Slot widths from 9–22mm.
- Three different insert sizes.
- Preparing the component before slotting is the key to success.
- Prepare workpiece with a slot.
- Honed insert edges.
- Feed rates between 0,10–0,15mm; lower feed rates will induce vibration.
- Use air flow to evacuate chips.
- Always start the cutting process with a new cutting edge.



- Prepare workpiece with a slot.
- Honed insert edges.
- Feed rates between 0,10–0,15mm; lower feed rates will induce vibration.
- Use air flow to evacuate chips.
- Always start the cutting process with a new cutting edge.



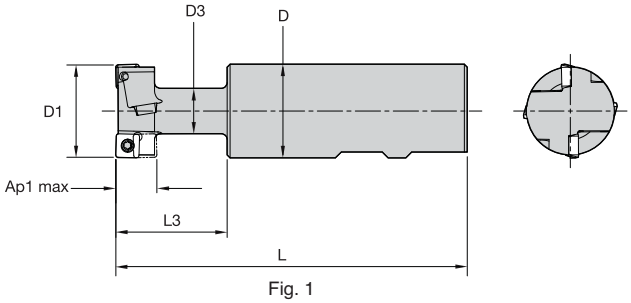


Fig. 1

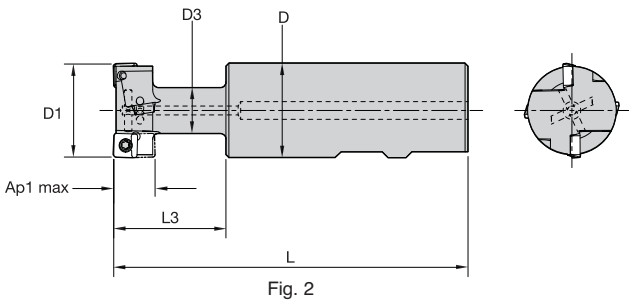


Fig. 2

KTMS • T-Slot Cutter • Metric

order number	catalog number	D1	D	D3	L	L3	Ap1 max	Z	Z U	figure	insert 1	kg
3577118	KTMS21S25SD06	21	25	11	109	29	9	2	1	FIG 1	SDMT060304EGG	0,37
3577120	KTMS25S25SD06	25	25	13	112	32	11	4	2	FIG 1	SDMT060304EGG	0,38
3577122	KTMS32S32SD08	32	32	16	120	38	14	4	2	FIG 1	SDMT080308EGG	0,62
3577134	KTMS40S32SD12	40	32	21	130	50	18	4	2	FIG 1	SDMT120408EGG	0,69
3577136	KTMS50S32SD12	50	32	27	140	60	22	4	2	FIG 1	SDMT120408EGG	0,88

KTMS • T-Slot Cutter • Metric

order number	catalog number	D1	D	D3	L	L3	Ap1 max	Z	Z U	figure	insert 1	kg
3577119	KTMS21S25SD06H	21	25	11	109	29	9	2	1	FIG 2	SDMT060304EGG	0,35
3577121	KTMS25S25SD06H	25	25	13	112	32	11	4	2	FIG 2	SDMT060304EGG	0,36
3577133	KTMS32S32SD08H	32	32	16	120	38	14	4	2	FIG 2	SDMT080308EGG	0,60
3577135	KTMS40S32SD12H	40	32	21	130	50	18	4	2	FIG 2	SDMT120408EGG	0,66
3577137	KTMS50S32SD12H	50	32	27	140	60	22	4	2	FIG 2	SDMT120408EGG	0,85

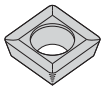
Spare Parts

D1	 insert screw	Nm	 Torx driver	 anti-seize lube
21	MS2206	1	DT8	ASL3GT
25	MS2206	1	DT8	ASL3GT
32	MS2207	2	DT10	ASL3GT
40	MS2208	4	DT15	ASL3GT
50	MS2208	4	DT15	ASL3GT

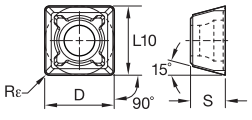
Insert Selection Guide

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.E..GG	KC730M	**.E..GG**	**KC730M**	.E..GG	KC735M
P3–P4	.E..GG	KC730M	**.E..GG**	**KC730M**	.E..GG	KC735M
P5–P6	.E..GG	KC730M	**.E..GG**	**KC735M**	.E..GG	KC735M
M1–M2	–	–	–	–	–	–
M3	–	–	–	–	–	–
K1–K2	.E..GG	K110M	**.E..GG**	**K110M**	.E..GG	KC505M
K3	.E..GG	K110M	**.E..GG**	**KC505M**	.E..GG	KC505M
N1–N2	–	–	–	–	–	–
N3	–	–	–	–	–	–
S1–S2	–	–	–	–	–	–
S3	–	–	–	–	–	–
S4	–	–	–	–	–	–
H1	–	–	–	–	–	–

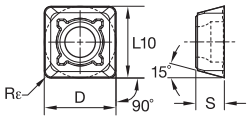
Indexable Inserts • T-Slot Cutters



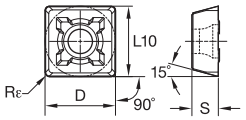
SDMT



SDMT 06

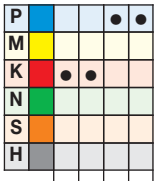


SDMT 08



SDMT 12

● first choice
○ alternate choice



SDMT

catalog number	D	S	L10	Rε	hm	cutting edges	K110M	KC505M	KC730M	KC735M
SDMT060304EGG	6,35	3,18	6,35	0,40	0,06	4	●	●	●	●
SDMT080308EGG	8,00	3,18	8,00	0,80	0,06	4	●	●	●	●
SDMT120408EGG	12,70	4,76	12,70	0,80	0,06	4	●	●	●	●

Recommended Starting Speeds [SFM]

Material Group		KC110M			KC505M			KC730M			KC735M		
P	1	–	–	–	–	–	–	420	**400**	330	490	**460**	430
	2	–	–	–	–	–	–	400	**360**	340	460	**430**	390
	3	–	–	–	–	–	–	360	**330**	300	430	**390**	360
	4	–	–	–	–	–	–	330	**300**	270	390	**360**	330
	5	–	–	–	–	–	–	300	**270**	250	360	**290**	260
	6	–	–	–	–	–	–	270	**250**	235	290	**260**	230
M	1	–	–	–	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–
K	1	425	**400**	375	490	**460**	390	–	–	–	–	–	–
	2	375	**350**	325	460	**390**	340	–	–	–	–	–	–
	3	330	**295**	260	340	**310**	260	–	–	–	–	–	–
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%			
.E..GG	.006	**.012**	.020	.004	**.009**	.015	.004	**.008**	.013	.003	**.007**	.012	.003	**.007**	.012	.E..GG

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

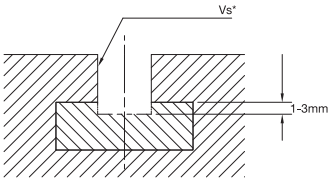


Fig. 1

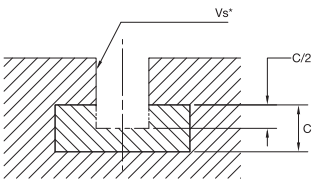


Fig. 2

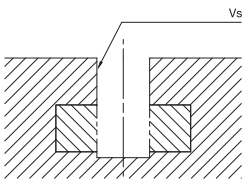
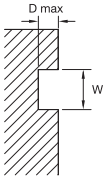


Fig. 3



Side Slotting

Steel

- Machining a vertical slot, depth to be kept at a minimum as shown in Figure 1.
- If the depth is greater than Figure 1, chip evacuation problems could occur.
- Vibrations could occur when the T-slot cutter diameter increases; use Figure 1 as the starting point.
- If chattering is a concern, adopt the Figure 2 solution.

Cast Iron

- Fewer problems with chip evacuation and reduced cutting forces enable deeper vertical slots as shown in Figures 2 and 3.
- Air blast is recommended to disperse the chips; this can be used for steel and cast iron.

Cutting Data Table • Slotting

	material type	catalog number	cutting conditions vc (m/min)	feed per tooth (mm)	Vs*
P	carbon steel/ alloy steel	KTMS21S25SD06H	120	0,10	Figure 1
		KTMS25S25SD06H	120	0,10	Figure 1
		KTMS32S32SD08H	100	0,10	Figure 1
		KTMS40S32SD12H	80	0,15	Figure 2
		KTMS50S32SD12H	not recommended due to frequent chattering		
K	cast iron	KTMS21S25SD06H	120	0,12	Figures 1, 2, 3
		KTMS25S25SD06H	120	0,12	Figures 1, 2, 3
		KTMS32S32SD08H	120	0,12	Figures 1, 2, 3
		KTMS40S32SD12H	120	0,15	Figures 2,3
		KTMS50S32SD12H	120	0,15	Figure 3

*Vs = Vertical Slot Preparation for T-slot.

Side Slot Machining

side slot dimension catalog number	W -0.1/-0.3 (mm)	D max (mm)
KTMS21S25SD06H	9	4,4
KTMS25S25SD06H	11	5,4
KTMS32S32SD08H	14	6,9
KTMS40S32SD12H	18	8,9
KTMS50S32SD12H	22	10,9

NOTE: KTMS T-slot is available to side slot as per drawing.

Cutting Data Table • Side Machining

	material type	catalog number	cutting conditions vc (m/min)	n (RPM)	feed per tooth (mm)
P	carbon steel/ alloy steel	KTMS21S25SD06H	120	1820	0,10
		KTMS25S25SD06H	120	1530	0,10
		KTMS32S32SD08H	120	1190	0,10
		KTMS40S32SD12H	120	960	0,10
		KTMS50S32SD12H	120	760	0,10
K	cast iron	KTMS21S25SD06H	150	2270	0,12
		KTMS25S25SD06H	150	1910	0,12
		KTMS32S32SD08H	150	1490	0,12
		KTMS40S32SD12H	150	1190	0,15
		KTMS50S32SD12H	150	960	0,15



KSRM™

Mulitpurpose Milling Cutters

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.

- Anti-rotation feature with eight indexes.
- High positive topography with strong cutting edges.
- High clearance on the cutters and inserts.
- Wide cutter offering with internal coolant.
- Ground and PSTS inserts.
- Provides more stability and reliability.
- Lower cutting forces generated.
- Cutters can run with higher feed rates and better ramping capacities.
- Cover extensive workpiece materials.
- Superior productivity and better insert utilization/cost per edge.
- Able to convert all milling applications.
- Improve tool life and chip evacuation.
- Superior overall performance.

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

www.kennametal.com

KENNAMETAL®



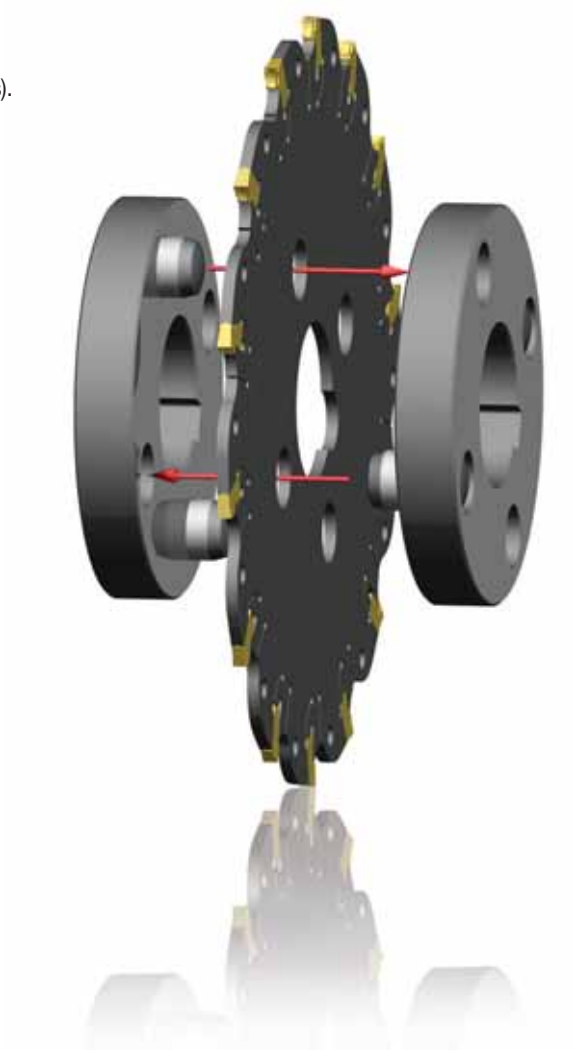
KVNS™ Slotting Cutter

Primary Application

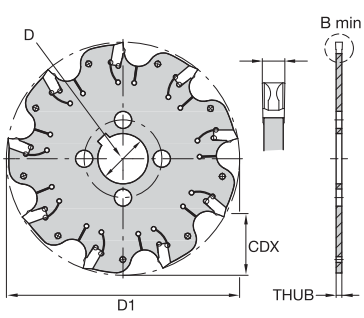
The KVNS slotting cutter enables diameters from 2.50–10" and insert widths from .063–.245". It is a perfect solution for small groove widths, grades, and geometries and suits most materials. Drive rings and support rings are available; use these items to get the maximum support for the cutter body.

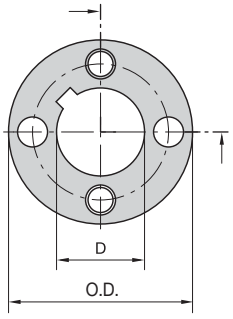
Features and Benefits

- Slot widths from .063–.245".
- Grades and geometries to suit most workpiece materials.
- Drive rings and support rings available, must be ordered separately (in pairs).
- Self clamping inserts.
- .063–.245" slot width range.
- Positive chipforming inserts are standard.
- Self-clamping insert seat with fixed stop.
- Excellent for all flat-bottom slotting and cut-off operations.
- Two drive hubs required for each cutter body, except when using two drive supports (must be ordered separately, in pairs).

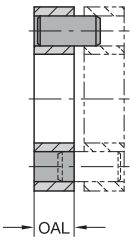


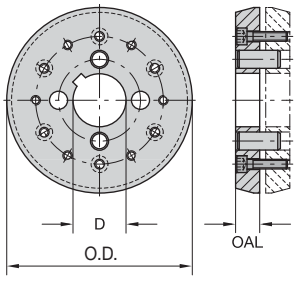
- .063–.245" slot width range.
- Positive chipforming inserts are standard.
- Self-clamping insert seat with fixed stop.
- Excellent for all flat-bottom slotting and cut-off operations.
- Two drive rings required for each cutter body, except when using two drive supports (must be ordered separately, in pairs).





Drive Ring





Support Ring



KVNS • Cutting Width .063"

order number	catalog number	D1	D	B min	CDX	THUB	Z	max RPM	insert 1	lbs
1247698	**KVNS02063OD**	2.500	.625	.063	.625	.051	5	5100	OD_1063__	<2.00
1247710	**KVNS03063OD**	3.000	.625	.063	.875	.051	7	4000	OD_1063__	<2.00
1247725	**KVNS04063OD**	4.000	1.000	.063	1.063	.051	9	3200	OD_1063__	<2.00
1247738	**KVNS05063OD**	5.000	1.250	.063	1.375	.051	11	2600	OD_1063__	<2.00

KVNS • Cutting Width .087"

order number	catalog number	D1	D	B min	CDX	THUB	Z	max RPM	insert 1	lbs
1247712	**KVNS03087OD**	3.000	.625	.089	.875	.071	7	4000	OD_2087__	<2.00
1247727	**KVNS04087OD**	4.000	1.000	.089	1.063	.071	9	3200	OD_2087__	<2.00
1247740	**KVNS05087OD**	5.000	1.250	.089	1.375	.071	11	2600	OD_2087__	<2.00
1247753	**KVNS06087OD**	6.000	1.250	.089	1.438	.071	14	2000	OD_2087__	<2.00

KVNS • Cutting Width .118"

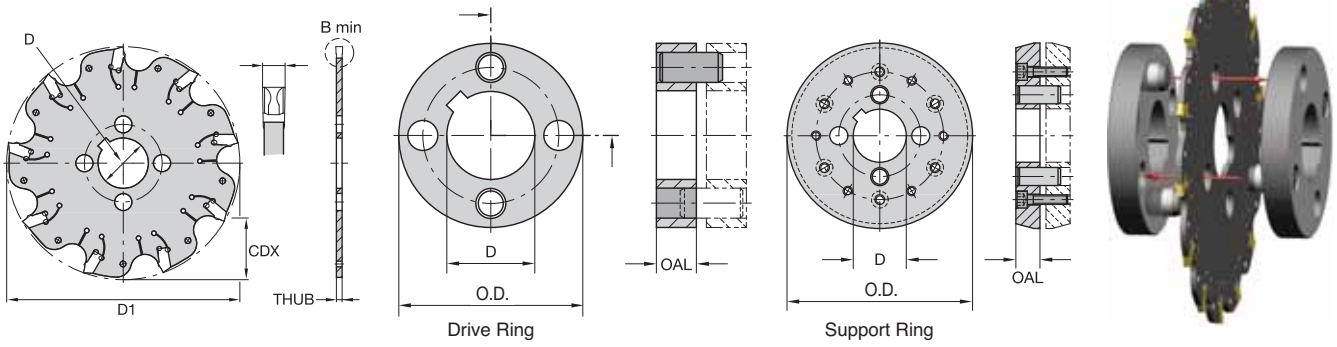
order number	catalog number	D1	D	B min	CDX	THUB	Z	max RPM	insert 1	lbs
1247704	**KVNS02118OD**	2.500	.625	.126	.625	.095	4	5100	OD_3125_	<2.00
1247716	**KVNS03118OD**	3.000	.625	.126	.875	.095	6	4000	OD_3125_	<2.00
1247730	**KVNS04118OD**	4.000	1.000	.126	1.063	.095	9	3200	OD_3125_	<2.00
1247742	**KVNS05118OD**	5.000	1.250	.126	1.375	.095	11	2600	OD_3125_	<2.00
1247757	**KVNS06118OD**	6.000	1.250	.126	1.438	.095	14	2000	OD_3125_	<2.00
1247768	**KVNS08118OD**	8.000	2.000	.126	2.250	.095	19	1600	OD_3125_	<2.00
1247778	**KVNS10118OD**	10.000	2.000	.126	3.250	.095	24	1300	OD_3125_	<2.00

KVNS • Cutting Width .158"

order number	catalog number	D1	D	B min	CDX	THUB	Z	max RPM	insert 1	lbs
1247718	**KVNS03158OD**	3.000	.625	.164	.875	.134	6	4000	OD_4158__	<2.00
1247732	**KVNS04158OD**	4.000	1.000	.164	1.063	.134	9	3200	OD_4158__	<2.00
1247746	**KVNS05158OD**	5.000	1.250	.164	1.375	.134	11	2600	OD_4158__	<2.00

KVNS • Cutting Width .197"

order number	catalog number	D1	D	B min	CDX	THUB	Z	max RPM	insert 1	lbs
1247721	**KVNS03197OD**	3.000	.625	.206	.875	.173	5	4000	OD_5197__	<2.00



KVNS • Cutting Width .236"

order number	catalog number	D1	D	B min	CDX	THUB	Z	max RPM	insert 1	lbs
1247722	**KVNS03236OD**	3.000	.625	.245	.875	.213	5	4000	OD_6236__	lt/>2.00
1247735	**KVNS04236OD**	4.000	1.000	.245	1.063	.213	8	3200	OD_6236__	lt/>2.00
1247785	**KVNS102360D**	10.000	2.000	.245	3.250	.213	24	1300	OD_6236__	lt/>2.00

NOTE: Insert wrench 170.183 (order number 1124601) must be ordered separately.

Drive Rings

order number	D1	O.D.	OAL	bore size	drive ring	lbs
1247650	2.500	1.250	.315	.625	**KAP1250632**	.07
1247675	3.000	1.250	.315	.625	**KAP1250764**	.11
1247652	2.500	1.250	.315	.625	**KAP1250634**	.08
1247660	4.000	1.875	.394	1.000	**KAP1871004**	.20
1247666	6.000	3.125	.472	1.250	**KAP3121254**	.75
1247663	5.000	2.250	.394	1.250	**KAP2251254**	.26
1247668	10.000	3.500	.472	2.000	**KAP3502004**	.75

NOTE: KAP1250634 is for use with KVNS020630D.
KAP1250632 is for use with KVNS021180D.

Support Rings

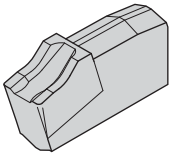
order number	catalog number	D1	O.D.	OAL	bore size	lbs
1247669	**KAP5502004**	8.000	5.500	.472	2.000	2.53
1247669	**KAP5502004**	10.000	7.500	.472	2.000	5.17
1247673	**KAP7502004**	12.000	7.500	.472	2.000	5.17

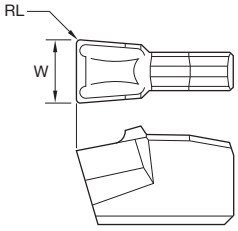
Spare Parts

D1	support ring screw
8.000	**125.616**
10.000	**125.616**
12.000	**125.616**

Insert Selection Guide

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.S..GD	KCPK30	**.S..GD**	**KCPK30**	.S..GB	KCPK30
P3–P4	.S..GD	KCPK30	**.S..GD**	**KCPK30**	.S..GB	KCPK30
P5–P6	.S..GD	KCPK30	**.S..GB**	**KC735M**	.S..GB	KCPK30
M1–M2	.S..GD	KC735M	**.S..GD**	**KCPK30**	.S..GB	KC735M
M3	.S..GD	KCPK30	**.S..GB**	**KC735M**	.S..GB	KCPK30
K1–K2	.S..GD	KCPK30	**.S..GD**	**KCPK30**	.S..GB	KCPK30
K3	.S..GD	KCPK30	**.S..GB**	**KCPK30**	.S..GB	KCPK30
N1–N2	.E..GD	KMF	**.E..GD**	**KMF**	.E..GD	KMF
N3	.E..GD	KMF	**.E..GD**	**KMF**	.E..GD	KMF
S1–S2	.E..GD	KMF	**.E..GD**	**KMF**	.E..GD	KMF
S3	.E..GD	KMF	**.E..GD**	**KMF**	.E..GD	KMF
S4	.E..GD	KMF	**.E..GD**	**KMF**	–	–
H1	–	–	**–**	**–**	–	–





● first choice
○ alternate choice

P	○	●	
M	●	○	
K		○	
N			●
S	●		●
H			

.063"

catalog number	W	RL	hm	KC735M	KCPK30	KMF
ODG1063ISGB	.063	.006	.003	●	●	
ODG1063ISGD	.063	.006	.003	●	●	
ODC1063IEGD	.063	.006	.003			●

.087"

catalog number	W	RL	hm	KC735M	KCPK30	KMF
ODG2087ISGB	.087	.008	.003	●	●	
ODG2087ISGD	.087	.008	.003	●	●	
ODC2087IEGD	.087	.008	.003			●

.118"

catalog number	W	RL	hm	KC735M	KCPK30	KMF
ODC3125IEGD	.119	.008	.003			●
ODG3125ISGD	.120	.008	.003	●	●	
ODG3125ISGB	.120	.008	.003	●	●	

.158"

catalog number	W	RL	hm	KC735M	KCPK30	KMF
ODC4158IEGD	.159	.008	.003			●
ODG4158ISGB	.160	.008	.003	●	●	
ODG4158ISGD	.160	.008	.003	●	●	

.197"

catalog number	W	RL	hm	KC735M	KCPK30	KMF
ODG5197ISGB	.199	.012	.003	●	●	

.236"

catalog number	W	RL	hm	KC735M	KCPK30	KMF
ODG6236ISGB	.238	.012	.003	●	●	

Recommended Starting Speeds [SFM]

Material Group		KC735M			KCPK30			KMF		
P	1	–	**–**	–	1485	**1300**	1210	–	**–**	–
	2	–	**–**	–	920	**830**	750	–	**–**	–
	3	–	**–**	–	830	**750**	680	–	**–**	–
	4	–	**–**	–	620	**575**	520	–	**–**	–
	5	–	**–**	–	850	**760**	690	–	**–**	–
	6	–	**–**	–	520	**450**	–	–	**–**	–
M	1	340	**290**	270	680	**600**	515	–	**–**	–
	2	310	**280**	250	610	**530**	460	–	**–**	–
	3	230	**200**	–	475	**430**	380	–	**–**	–
K	1	–	**–**	–	965	**875**	780	–	**–**	–
	2	–	**–**	–	770	**690**	630	–	**–**	–
	3	–	**–**	–	645	**575**	530	–	**–**	–
N	1–2	–	**–**	–	–	**–**	–	1100	**980**	890
	3	–	**–**	–	–	**–**	–	720	**650**	560
S	1	–	**–**	–	–	**–**	–	100	**80**	65
	2	–	**–**	–	–	**–**	–	100	**80**	65
	3	–	**–**	–	–	**–**	–	100	**80**	65
	4	–	**–**	–	–	**–**	–	80	**80**	80
H	1	–	**–**	–	–	**–**	–	–	**–**	–

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

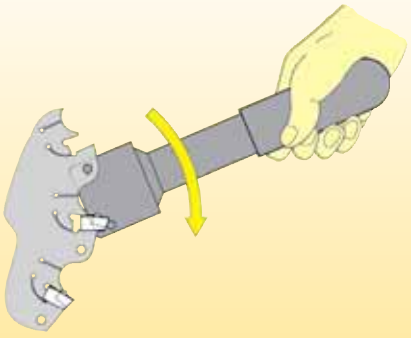
Recommended Starting Feeds [IPT]

Light Machining	General Purpose	Heavy Machining

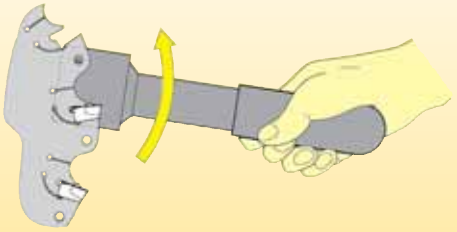
Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..GD	.007	**.010**	.014	.005	**.008**	.011	.004	**.007**	.009	.004	**.006**	.009	.004	**.006**	.008	.E..GD
.S..GD	.007	**.013**	.017	.005	**.009**	.013	.004	**.008**	.011	.004	**.008**	.010	.004	**.008**	.010	.S..GD
.S..GB	.007	**.017**	.020	.005	**.013**	.015	.004	**.011**	.013	.004	**.010**	.012	.004	**.010**	.012	.S..GB

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

Secure Clamping • Self-Clamping Insert Seat for Maximum Machining Safety



Using the assembly wrench:
Fitting the insert



Removing the insert

- Exact position of the insert guaranteed by the positive stop.
- Maximum possible insert repeatability with dual positive prism clamping.
- Powerful, secure clamping guarantees high peripheral speeds.

Carbide Recycling

Help preserve and protect our planet!

It's easy for your company to be environmentally conscious with the Kennametal Carbide Recycling Program.

By sending us your used carbide tools, you help preserve and protect the environment and ensure that these products are recycled responsibly. Kennametal accepts any coated or non-coated carbide items, including inserts, drills, reamers, and taps.



By using the Kennametal Carbide Recycling Program, you will receive:

- A partner who cares about a sustainable environment.
- Easy-to-use web portal to value your used carbide.
- Access to our popular Green Box™ options for carbide collection.
- Systematic and efficient disposal of carbide materials.
- Improved profitability.

Program is not currently available in all geographical areas.
For more information, please visit **www.kennametal.com/carbiderecycling.**



SN Slotting Cutter

Primary Application

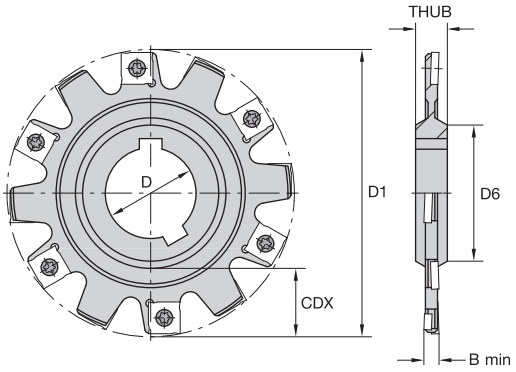
SN slotting cutters are perfect for deeper applications that require the cutting load to be shared from one insert to the other. Provides groove widths from .161–.187" and cutter diameters from 4–6" as well as an economical way to achieve balanced cutting.

Features and Benefits

- Cutters available in arbor mount.
- Inserts with four indexes.
- Staggered key ways in mounting bore, used for multiple ganged cutters.
- Slot width .161–.187".
- Three insert geometries available: -GP, -GE, and -T.
- Requires only one spare part.
- Economical to use.



- .161–.187" slotting width range.
- Four indexes per insert.
- Three chipformers available.
- Two keyways for staggered mounting.
- Requires only one spare part.
- Economical to use.





SN • Cutting Width .161"

order number	catalog number	D1	D	D6	B min	CDX	THUB	Z	Z U	max RPM	insert 1	lbs
1247681	**KS426SNH1102**	4.000	1.000	1.620	.161	1.120	.500	12	6	9530	SNHX1102T	<2.00
1247684	**KS526SNH1102**	5.000	1.250	1.880	.161	1.500	.500	14	7	8520	SNHX1102T	<2.00

SN • Cutting Width .187"

order number	catalog number	D1	D	D6	B min	CDX	THUB	Z	Z U	max RPM	insert 1	lbs
1247686	**KS33SNH1103**	3.000	1.000	1.620	.187	.620	.500	10	5	10000	SNHX1103T	<2.00
1247688	**KS43SNH1103**	4.000	1.000	1.620	.187	1.120	.500	12	6	8660	SNHX1103T	<2.00
1247691	**KS53SNH1103**	5.000	1.250	1.880	.187	1.500	.500	14	7	7745	SNHX1103T	<2.00
1247694	**KS63SNH1103**	6.000	1.250	1.880	.187	2.000	.500	18	9	7070	SNHX1103T	2.00

Spare Parts





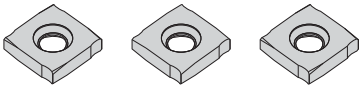
D1	insert screw	in. lbs.	Torx driver
3.000	**MS1883PKG**	10	**DT7**
4.000	**MS1883PKG**	10	**DT7**
5.000	**MS1883PKG**	10	**DT7**
6.000	**MS1883PKG**	10	**DT7**

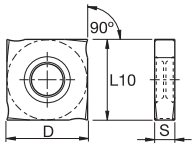
NOTE: Torque value for insert screw is 10 in. lbs.
Slot width tolerance is +/-.003" over standard insert.
Bottom slot angle is 2°.

Insert Selection Guide

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.T..GP	KC725M	**.T..GP**	**KC725M**	.T..	KC725M
P3–P4	.T..GP	KC725M	**.T..GP**	**KCPK30**	.T..	KCPK30
P5–P6	.T..GP	KCPK30	**.T..**	**KC735M**	.T..	KCPK30
M1–M2	.T..GP	KC725M	**.T..GP**	**KC725M**	.T..	KC725M
M3	.T..GP	KC725M	**.T..GP**	**KCPK30**	.T..	KCPK30
K1–K2	.F..GE	K110M	**.T..GP**	**KCPK30**	.T..	KCPK30
K3	.T..GP	KCPK30	**.T..**	**KCPK30**	.T..	KCPK30
N1–N2	.F..GE	K110M	**.F..GE**	**K110M**	.F..GE	KC510M
N3	.F..GE	K110M	**.F..GE**	**KC510M**	.T..GP	K110M
S1–S2	.T..GP	KC725M	**.T..GP**	**KC725M**	.T..	KC725M
S3	.T..GP	KC725M	**.T..GP**	**KC725M**	.T..	KC725M
S4	.T..GP	KC725M	**.T..**	**KC725M**	–	–
H1	–	–	**–**	**–**	–	–

Indexable Inserts • SNHX


SNHX-T SNHX-NGE SNHX-NGP



● first choice
○ alternate choice

		K110M	KC510M	KC520M	KC725M	KC735M	KCPK30
P			●		●		●
M					●	●	○
K		○	●	●			○
N		●	○				
S					●		
H							

SNHX-T

catalog number	D	S	L10	hm	cutting edges	K110M	KC510M	KC520M	KC725M	KC735M	KCPK30
SNHX1102T	.433	.094	.433	.006	4				●	●	
SNHX1103T	.433	.106	.433	.006	4			●	●	●	●
SNHX1203T	.500	.126	.500	.006	4				●	●	
SNHX1204T	.500	.157	.500	.004	4				●		
SNHX12045T	.500	.177	.500	.004	4				●		
SNHX1205T	.500	.213	.500	.004	4				●	●	

SNHX-NGE

catalog number	D	S	L10	hm	cutting edges	K110M	KC510M	KC520M	KC725M	KC735M	KCPK30
SNHX1102PZFNGE	.433	.091	.433	.001	4	●					
SNHX11T3PZFNGE	.433	.106	.433	.002	4		●				
SNHX1203PZFNGE	.500	.126	.500	.002	4		●				
SNHX12L5PZFNGE	.500	.213	.500	.002	4	●	●				

SNHX-NGP

catalog number	D	S	L10	hm	cutting edges	K110M	KC510M	KC520M	KC725M	KC735M	KCPK30
SNHX1102PZTNGP	.433	.091	.433	.006	4	●			●	●	●
SNHX11T3PZTNGP	.433	.106	.433	.006	4				●		
SNHX1203PZTNGP	.500	.126	.500	.006	4	●			●	●	●
SNHX12L4PZTNGP	.500	.177	.500	.006	4						●
SNHX12L5PZTNGP	.500	.213	.500	.006	4	●			●	●	●

Recommended Starting Speeds [SFM]

Material Group		KC110M			KC510M			KC520M		
P	1	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–
	5	–	–	–	–	–	–	–	–	–
	6	–	–	–	–	–	–	–	–	–
M	1	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–
K	1	425	**400**	375	960	**870**	780	880	**800**	710
	2	375	**350**	325	760	**680**	630	690	**620**	580
	3	330	**295**	260	640	**570**	520	580	**520**	470
N	1–2	1650	**1550**	1475	2100	**1870**	1720	–	–	–
	3	1350	**1200**	1050	–	–	–	–	–	–
S	1	–	–	–	–	–	–	–	–	–
	2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–
	4	–	–	–	–	–	–	–	–	–
H	1	–	–	–	–	–	–	–	–	–

Material Group		KC725M			KC735M			KCPK30		
P	1	860	**750**	700	–	–	–	1485	**1300**	1210
	2	720	**630**	530	–	–	–	920	**830**	750
	3	660	**560**	460	–	–	–	830	**750**	680
	4	590	**490**	390	–	–	–	620	**575**	520
	5	490	**440**	390	–	–	–	850	**760**	690
	6	430	**330**	260	–	–	–	520	**450**	–
M	1	560	**490**	450	340	**290**	270	680	**600**	515
	2	510	**430**	360	310	**280**	250	610	**530**	460
	3	380	**330**	260	230	**200**	–	475	**430**	380
K	1	–	–	–	–	–	–	965	**875**	780
	2	–	–	–	–	–	–	770	**690**	630
	3	–	–	–	–	–	–	645	**575**	530
N	1–2	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–
S	1	115	**100**	80	–	–	–	–	–	–
	2	115	**100**	80	–	–	–	–	–	–
	3	150	**115**	80	–	–	–	–	–	–
	4	200	**150**	100	–	–	–	–	–	–
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..GE	.003	**.007**	.014	.003	**.005**	.010	.002	**.004**	.009	.002	**.004**	.008	.002	**.004**	.008	.F..GE
.T..GP	.007	**.014**	.020	.005	**.010**	.015	.004	**.009**	.013	.004	**.008**	.012	.004	**.008**	.012	.T..GP
.T..	.007	**.017**	.024	.005	**.013**	.017	.004	**.011**	.015	.004	**.010**	.014	.004	**.010**	.014	.T..

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



LN Slotting Cutter

Primary Application

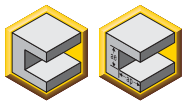
LN slotting cutters offer arbor and shell mill cutter options, groove widths from .250–.539", and cutter diameters from 3–8". Easy to adjust radially in .020" increments.

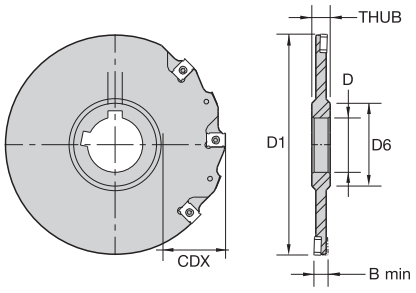
Features and Benefits

- Cutter available in arbor and shell mounts.
- Groove width .250–.500".
- Groove width can be changed by consulting additional chart; this involves changing insert and insert screw.
- Staggered internal keys.
- Positive chip grooves.
- Easy width adjustment through insert thickness.
- Full side and face cutting.
- Neutral and positive chipforming inserts are standard.
- Four insert cutting edges.
- Requires only one spare part.



- .250–.500" slot width range.
- Easy width adjustment through insert thickness.
- Full side and face cutting.
- Neutral and positive chipforming inserts are standard.
- Four insert cutting edges.
- Two keyways for staggered mounting.
- Requires only one spare part.





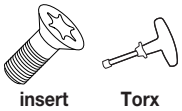


LN • Cutting Width .250"



order number	catalog number	D1	D	D6	B min	CDX	THUB	Z	Z U	max RPM	insert screw	Torx wrench	in. lbs.	insert 1	lbs
1025930	KS34LNE1240	3.000	1.000	1.620	.250	.620	.500	8	4	9470	MS1281	TT15	35	LNE_1240___	<2.00
1025931	KS44LNE1240	4.000	1.250	1.880	.250	1.000	.500	10	5	8200	MS1281	TT15	35	LNE_1240___	<2.00
1025895	KS54LNE1240	5.000	1.250	1.880	.250	1.500	.500	12	6	7330	MS1281	TT15	35	LNE_1240___	<2.00
1025932	KS64LNE1240	6.000	1.500	2.250	.250	1.750	.500	16	8	6700	MS1281	TT15	35	LNE_1240___	2.00
1025933	KS84LNE1240	8.000	1.500	2.250	.250	2.750	.500	18	9	5800	MS1281	TT15	35	LNE_1240___	3.00

LN • Cutting Width .312"



order number	catalog number	D1	D	D6	B min	CDX	THUB	Z	Z U	max RPM	insert screw	Torx wrench	in. lbs.	insert 1	lbs
1025964	KS45LNE1245	4.000	1.250	1.880	.312	1.000	.500	10	5	7400	MS1282	TT15	35	LNE_1245___	<2.00
1025896	KS55LNE1245	5.000	1.250	1.880	.312	1.500	.500	12	6	6600	MS1282	TT15	35	LNE_1245___	<2.00
1025965	KS65LNE1245	6.000	1.500	2.250	.312	1.750	.500	16	8	6000	MS1282	TT15	35	LNE_1245___	2.10
1025897	KS85LNE1245	8.000	1.500	2.250	.312	2.750	.500	18	9	5200	MS1282	TT15	35	LNE_1245___	3.50

LN • Cutting Width .375"



order number	catalog number	D1	D	D6	B min	CDX	THUB	Z	Z U	max RPM	insert screw	Torx wrench	in. lbs.	insert 1	lbs
1025966	KS46LNE1245	4.000	1.250	1.880	.375	1.000	.500	9	3	7400	MS1282	TT15	35	LNE_1245___	<2.00
1025898	KS56LNE1245	5.000	1.250	1.880	.375	1.500	.500	12	4	6600	MS1282	TT15	35	LNE_1245___	2.00
1025967	KS66LNE1245	6.000	1.500	2.250	.375	1.750	.500	15	5	6000	MS1282	TT15	35	LNE_1245___	2.70
1025968	KS86LNE1245	8.000	1.500	2.250	.375	2.750	.500	18	6	5200	MS1282	TT15	35	LNE_1245___	5.00

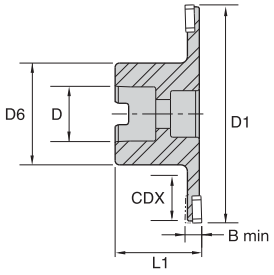
LN • Cutting Width .500"

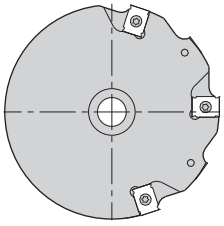


order number	catalog number	D1	D	D6	B min	CDX	THUB	Z	Z U	max RPM	insert screw	Torx wrench	in. lbs.	insert 1	lbs
1025969	KS48LNE1255	4.000	1.250	1.880	.500	1.000	.500	9	3	4900	MS1284	TT15	35	LNE_1255___	<2.00
1025899	KS58LNE1255	5.000	1.250	1.880	.500	1.500	.500	12	4	4400	MS1284	TT15	35	LNE_1255___	2.40
1025970	KS68LNE1255	6.000	1.500	2.250	.500	1.750	.500	15	5	4000	MS1284	TT15	35	LNE_1255___	3.00
1025971	KS88LNE1255	8.000	1.500	2.250	.500	2.750	.500	18	6	3500	MS1284	TT15	35	LNE_1255___	5.50

NOTE: Slot width tolerance is +/-.003" over standard insert.

- .250–.500" slot width range.
- Easy width adjustment through insert thickness.
- Full side and face cutting versions.
- Neutral and positive chipforming inserts are standard.
- Four insert cutting edges.
- Requires only one spare part.







LN • Cutting Width .250"

order number	catalog number	D1	D	D6	B min	CDX	L1	Z	Z U	max RPM	insert screw	Torx wrench	in. lbs.	flat-head cap screw	socket-head cap screw	insert 1
1067765	**KS254BLNE1240**	2.500	.750	1.580	.250	.550	1.875	6	3	10400	**MS1281**	**TT15**	35	**S1903**	**–**	LNE_1240___
1025861	**KS44BLNE1240**	4.000	1.000	1.880	.250	.940	1.570	10	5	8200	**MS1281**	**TT15**	35	**–**	**S458**	LNE_1240___

LN • Cutting Width .312"

order number	catalog number	D1	D	D6	B min	CDX	L1	Z	Z U	max RPM	insert screw	Torx wrench	in. lbs.	flat-head cap screw	socket-head cap screw	insert 1
1067766	**KS255BLNE1245**	2.500	.750	1.580	.312	.550	1.875	6	3	9400	**MS1282**	**TT15**	35	**S1903**	**–**	LNE_1245___
1025862	**KS45BLNE1245**	4.000	1.000	1.880	.312	.940	1.570	10	5	7400	**MS1282**	**TT15**	35	**–**	**S458**	LNE_1245___

LN • Cutting Width .375"

order number	catalog number	D1	D	D6	B min	CDX	L1	Z	Z U	max RPM	insert screw	Torx wrench	in. lbs.	socket-head cap screw	insert 1
1025863	**KS46BLNE1245**	4.000	1.000	1.880	.375	.940	1.570	9	3	7400	**MS1282**	**TT15**	35	**S458**	LNE_1245___

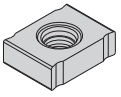
LN • Cutting Width .500"

order number	catalog number	D1	D	D6	B min	CDX	L1	Z	Z U	max RPM	insert screw	Torx wrench	in. lbs.	socket-head cap screw	insert 1
1025894	**KS48BLNE1255**	4.000	1.000	1.880	.500	.940	2.000	9	3	4900	**MS1284**	**TT15**	35	**S458**	LNE_1255___

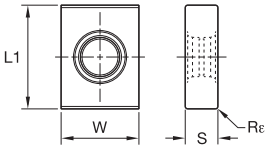
NOTE: Slot width tolerance is +/-.003" over standard insert.
2.50" diameter cutters are supplied with S-1903 (3/8-24 x 1.75 long) flat-head socket cap screw.

Insert Selection Guide

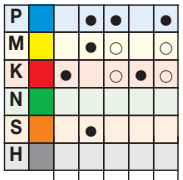
Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	–	KC725M	–	**KC725M**	.S..GP	KC725M
P3–P4	–	KC725M	–	**KCPK30**	.S..GP	KC725M
P5–P6	–	KC735M	–	**KCPK30**	.S..GP	KC735M
M1–M2	–	KC725M	–	**KC725M**	.S..GP	KC725M
M3	–	KC735M	–	**KCPK30**	.S..GP	KC725M
K1–K2	–	KC520M	–	**KCK15**	–	KCPK30
K3	–	KCK15	–	**KCPK30**	–	KCPK30
N1–N2	–	–	–	–	–	–
N3	–	–	–	–	–	–
S1–S2	–	KC725M	–	**KC725M**	.S..GP	KC725M
S3	–	KC735M	**.S..GP**	**KC735M**	.S..GP	KC725M
S4	–	KC725M	**.S..GP**	**KC725M**	–	–
H1	–	–	–	–	–	–



LNEU-R



● first choice
○ alternate choice



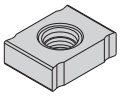
LNEU-R

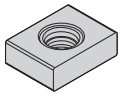
catalog number	L1	W	S	Rε	hm	cutting edges	KC520M	KC725M	KC735M	KCK15	KCPK30
LNEU1235R03 4	.500	.378	.138	.012	.002	4	●	●	●		
LNEU1240R03 4	.500	.378	.158	.012	.002	4	●	●	●		
LNEU1240R08 4	.500	.378	.158	.031	.002	4	●	●			
LNEU1240R16 4	.500	.378	.158	.062	.002	4		●			
LNEU1245R04	.500	.378	.177	.016	.003	4	●	●	●		●
LNEU1245R08	.500	.378	.177	.031	.002	4	●	●			
LNEU1245R16	.500	.378	.177	.062	.002	4	●	●			
LNEU1245R32	.500	.378	.177	.125	.002	4	●	●			
LNEU1250R04	.500	.378	.197	.016	.002	4		●			
LNEU1250R08	.500	.378	.197	.031	.002	4		●			
LNEU1255R04	.500	.378	.217	.016	.002	4		●			
LNEU1255R08	.500	.378	.217	.031	.002	4	●	●			
LNEU1255R16	.500	.378	.217	.062	.002	4		●			
LNEU1255R32	.500	.378	.217	.125	.002	4		●			
LNEU1260R04	.500	.378	.236	.016	.002	4		●			

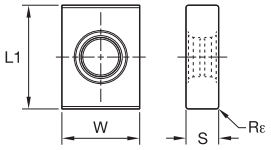
Insert Selection Guide

Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	–	KC725M	–	**KC725M**	.S..GP	KC725M
P3–P4	–	KC725M	–	**KCPK30**	.S..GP	KC725M
P5–P6	–	KC735M	–	**KCPK30**	.S..GP	KC735M
M1–M2	–	KC725M	–	**KC725M**	.S..GP	KC725M
M3	–	KC735M	–	**KCPK30**	.S..GP	KC725M
K1–K2	–	KC520M	–	**KCK15**	–	KCPK30
K3	–	KCK15	–	**KCPK30**	–	KCPK30
N1–N2	–	–	–	–	–	–
N3	–	–	–	–	–	–
S1–S2	–	KC725M	–	**KC725M**	.S..GP	KC725M
S3	–	KC735M	**.S..GP**	**KC735M**	.S..GP	KC725M
S4	–	KC725M	**.S..GP**	**KC725M**	–	–
H1	–	–	–	–	–	–

Indexable Inserts • 0° LN • LNEU/LNEQ


LNEU-SGP


LNEQ



● first choice
○ alternate choice

	KC520M	KC725M	KC735M	KCK15	KCPK30
P		●	●		●
M		●	○		○
K	●		○	●	○
N					
S		●			
H					

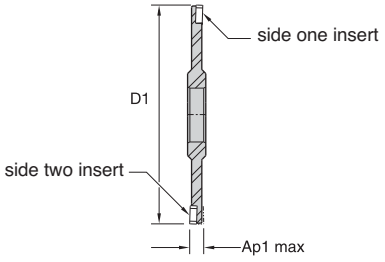
LNEU-SGP

catalog number	L1	W	S	Rε	hm	cutting edges	KC520M	KC725M	KC735M	KCK15	KCPK30
LNEU1235R03SGP 4	.500	.378	.138	.012	.004	4		●			
LNEU1240R03SGP 4	.500	.378	.157	.012	.004	4		●	●		
LNEU1245R04SGP	.500	.378	.177	.016	.003	4		●	●		
LNEU1245R08SGP	.500	.378	.177	.031	.004	4		●			
LNEU1245R16SGP	.500	.378	.177	.063	.004	4		●			
LNEU1250R04SGP	.500	.378	.197	.016	.004	4		●			
LNEU1250R08SGP	.500	.378	.197	.031	.004	4		●			

LNEQ

catalog number	L1	W	S	BS	Rε	hm	cutting edges	KC520M	KC725M	KC735M	KCK15	KCPK30
LNEQ1235R03 4	.500	.375	.138	–	.012	.002	4		●		●	
LNEQ1240 4	.500	.375	.158	.012	–	.002	4			●		
LNEQ1240R03 4	.500	.375	.158	–	.012	.002	4		●		●	●
LNEQ1245R04	.500	.375	.177	–	.016	.002	4	●	●		●	●
LNEQ1250R04	.500	.375	.197	–	.016	.002	4			●	●	
LNEQ1255	.500	.375	.217	.016	–	.002	4			●		
LNEQ1255R04	.500	.375	.217	–	.016	.002	4		●		●	
LNEQ1260R04	.500	.375	.236	–	.016	.002	4		●		●	

- Utilizes wider inserts in standard cutter bodies.
- Cutting width of the unique LNE insert style for narrow slotting cutters can be varied by using an insert one size thicker.
- The width can be increased in .0195" and .039" increments.
- Refer to the insert combination table below for insert selection.



cutter catalog number	D1	Ap1 max	Ap1 max (new)	side one insert *	screw **	side two insert *	screw **
KS43LNE	3.000	.250	.270	LNE1240	MS-1281	LNE1245	MS-1282
KS44LNE	4.000	.250	.270	LNE1240	MS-1281	LNE1245	MS-1282
KS54LNE	5.000	.250	.289	LNE1245	MS-1282	LNE1245	MS-1282
KS64LNE	6.000	.250	.289	LNE1245	MS-1282	LNE1245	MS-1282
KS84LNE	8.000	.250	.289	LNE1245	MS-1282	LNE1245	MS-1282
KS45LNE	4.000	.312	.332	LNE1245	MS-1282	LNE1250	MS-1283
KS55LNE	5.000	.312	.332	LNE1245	MS-1282	LNE1250	MS-1283
KS65LNE	6.000	.312	.351	LNE1250	MS-1283	LNE1250	MS-1283
KS85LNE	8.000	.312	.351	LNE1250	MS-1283	LNE1250	MS-1283
KS46LNE	4.000	.375	.395	LNE1245	MS-1282	LNE1250	MS-1283
KS56LNE	5.000	.375	.395	LNE1245	MS-1282	LNE1250	MS-1283
KS66LNE	6.000	.375	.414	LNE1250	MS-1283	LNE1250	MS-1283
KS86LNE	8.000	.375	.414	LNE1250	MS-1283	LNE1250	MS-1283
KS48LNE	4.000	.500	.520	LNE1255	MS-1284	LNE1260	MS-1285
KS58LNE	5.000	.500	.520	LNE1255	MS-1284	LNE1260	MS-1285
KS68LNE	6.000	.500	.539	LNE1260	MS-1285	LNE1260	MS-1285
KS88LNE	8.000	.500	.539	LNE1260	MS-1285	LNE1260	MS-1285

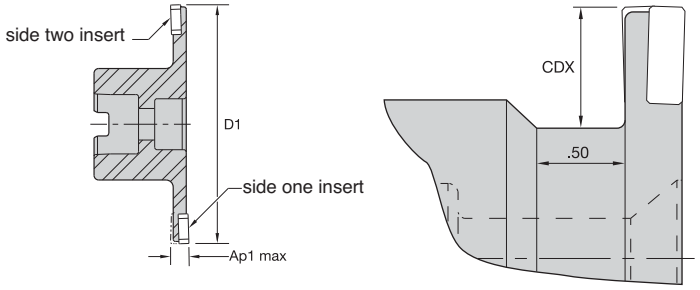
cutter width of .289"

cutter catalog number	D1	Ap1 max (new)	side one insert *	screw **	side two insert *	screw **
KS43LNE	3.000	.289	LNE1245	MS-1282	LNE1245	MS-1282

* Caution variation in cutting width range is limited to one size (thickness) greater than the standard insert thickness.
** When changing to wider insert thickness, use the necessary longer screw.

NOTE: When using inserts that employ a radius of .094" or .125", the corner radius under the insert on the cutter body must be modified to a .10" radius or an optional .10" x 45° chamfer; see chart for detail.

- Utilizes wider inserts in standard cutter bodies.
- Cutting width of the unique LNE insert style for narrow slotting cutters can be varied by using an insert one size thicker.
- The width can be increased in .0195" and .039" increments.
- Refer to the insert combination table below for insert selection.



cutter catalog number	D1	Ap1 max	Ap1 max (new)	side one insert *	screw **	side two insert *	screw **
KS254BLNE1240	2.500	.250	.270	LNE1240	MS-1281	LNE1245	MS-1282
KS44BLNE1240	4.000	.250	.289	LNE1245	MS-1282	LNE1245	MS-1282
KS255BLNE1245	2.500	.312	.332	LNE1245	MS-1282	LNE1250	MS-1283
KS45BLNE1245	4.000	.312	.351	LNE1250	MS-1283	LNE1250	MS-1283
KS46BLNE1245	4.000	.375	.395	LNE1245	MS-1282	LNE1250	MS-1283
KS46BLNE1245	4.000	.375	.414	LNE1250	MS-1283	LNE1250	MS-1283
KS48BLNE1255	4.000	.500	.520	LNE1255	MS-1284	LNE1260	MS-1285
KS48BLNE1255	4.000	.500	.539	LNE1260	MS-1285	LNE1260	MS-1285

* Caution variation in cutting width range limited to one size (thickness) greater than the standard insert thickness.
** When changing to wider insert thickness, use the necessary longer screw.

NOTE: When using inserts with a radius of .094" or .125", the corner radius under the insert on the cutter body must be modified to a .10" radius or an optional .10" x 45° chamfer.

Recommended Starting Speeds [SFM]

Material Group		KC520M			KC725M			KC735M			KCK15			KCPK30		
P	1	–	–	–	860	**750**	700	–	–	–	–	–	–	1485	**1300**	1210
	2	–	–	–	720	**630**	530	–	–	–	–	–	–	920	**830**	750
	3	–	–	–	660	**560**	460	–	–	–	–	–	–	830	**750**	680
	4	–	–	–	590	**490**	390	–	–	–	–	–	–	620	**575**	520
	5	–	–	–	490	**440**	390	–	–	–	–	–	–	850	**760**	690
	6	–	–	–	430	**330**	260	–	–	–	–	–	–	520	**450**	–
M	1	–	–	–	560	**490**	450	340	**290**	270	–	–	–	680	**600**	515
	2	–	–	–	510	**430**	360	310	**280**	250	–	–	–	610	**530**	460
	3	–	–	–	380	**330**	260	230	**200**	–	–	–	–	475	**430**	380
K	1	880	**800**	710	–	–	–	–	–	–	1380	**1255**	1115	965	**875**	780
	2	690	**620**	580	–	–	–	–	–	–	1095	**975**	910	770	**690**	630
	3	580	**520**	470	–	–	–	–	–	–	920	**815**	750	645	**575**	530
N	1–2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
	3	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
S	1	–	–	–	115	**100**	80	–	–	–	–	–	–	–	–	–
	2	–	–	–	115	**100**	80	–	–	–	–	–	–	–	–	–
	3	–	–	–	150	**115**	80	–	–	–	–	–	–	–	–	–
	4	–	–	–	200	**150**	100	–	–	–	–	–	–	–	–	–
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%			
...	.005	**.014**	.020	.004	**.010**	.015	.003	**.009**	.013	.003	**.008**	.012	.003	**.008**	.012	...
.S..GP	.007	**.016**	.024	.005	**.012**	.017	.004	**.010**	.015	.004	**.009**	.014	.004	**.009**	.014	.S..GP

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



KSSM™ Slotting Cutter

Primary Application

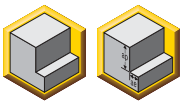
With insert grades and geometries for most materials, the KSSM fixed-width slotting cutters are a cost effective solution for the general engineering market. Very precise adjustments to achieve consistent widths are possible with the variable width and enables customers to change the tool from right hand to left hand with a change of cartridge.

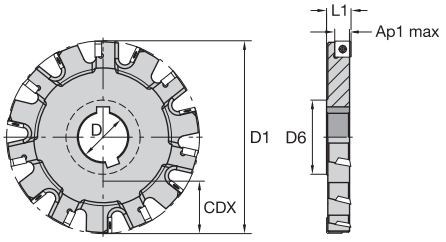
Features and Benefits

- Cutters available in arbor and shell mounts.
- Cutters right and left hand and full slotting have fixed widths.
- Groove widths: Fixed .614"; Adjustable .551–.917".
- Rapid adjustment mechanism.
- Large insert selection — grades and geometries.
- Wiper inserts.
- Insert radii from .016–.250".
- Right-hand and left-hand cutters with .359" depth of cut.
- Diameter range is 4–12".
- Large selection of insert geometries and grades to cut most workpiece materials.
- Four insert cutting edges.
- Five insert radii available.
- Faceted inserts for superior surface finishes.



- Right-hand and left-hand cutters with .359" width of cut.
- Large selection of insert geometries and grades to cut most workpiece materials.
- Four insert cutting edges.
- Insert radii available.
- Faceted inserts for superior surface finishes.







Arbor Mount • 10mm IC • Right Hand

order number	catalog number	D1	D	D6	CDX	L1	Ap1 max	Z	Z S	max RPM	lbs
2629770	**KSSS400ASP10R625**	4.000	1.250	1.880	1.038	.625	.359	10	10	17100	1.22
2629773	**KSSS500ASP10R625**	5.000	1.500	2.250	1.353	.625	.359	11	11	15300	1.98
2629776	**KSSS600ASP10R625**	6.000	1.500	2.250	1.853	.625	.359	11	11	14000	3.13
2629779	**KSSS800ASP10R625**	8.000	2.000	2.880	2.538	.625	.359	13	13	12100	5.78

NOTE: For superior surface finish, use right-hand inserts.

Arbor Mount • 10mm IC • Left Hand

order number	catalog number	D1	D	D6	CDX	L1	Ap1 max	Z	Z S	max RPM	lbs
2629769	**KSSS400ASP10L625**	4.000	1.250	1.880	1.038	.625	.359	10	10	17100	1.22
2629772	**KSSS500ASP10L625**	5.000	1.500	2.250	1.353	.625	.359	11	11	15300	1.98
2629775	**KSSS600ASP10L625**	6.000	1.500	2.250	1.853	.625	.359	11	11	14000	3.13
2629778	**KSSS800ASP10L625**	8.000	2.000	2.880	2.538	.625	.359	13	13	12100	5.78

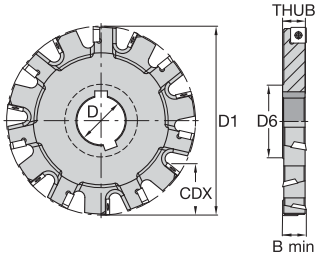
NOTE: For superior surface finish, use left-hand inserts.

Spare Parts

D1	 insert screw	in. lbs.	 Torx Plus driver
4.000	**MS2148**	17	**DT9IP**
5.000	**MS2148**	17	**DT9IP**
6.000	**MS2148**	17	**DT9IP**
8.000	**MS2148**	17	**DT9IP**

NOTE: Insert radii ≥.062" (1,6mm) has no facet.

- Neutral slot width (B min) is .614" + .010".
- Large selection of insert geometries and grades to cut most workpiece materials.
- Four insert cutting edges.
- Wide selection of insert radii.
- Faceted inserts for superior surface finishes.





Arbor Mount • 10mm IC • Neutral (Full Slotting)

order number	catalog number	D1	D	D6	B min	CDX	THUB	Z	Z S	max RPM	lbs
2629768	**KSSS400ASP10N625**	4.000	1.250	1.880	.614	1.042	.542	10	5	17100	1.05
2629794	**KSSS500ASP10N625**	5.000	1.500	2.250	.614	1.357	.542	12	6	15300	1.75
2629774	**KSSS600ASP10N625**	6.000	1.500	2.250	.614	1.857	.542	12	6	14000	2.78
2629777	**KSSS800ASP10N625**	8.000	2.000	2.880	.614	2.542	.542	14	7	12100	5.09

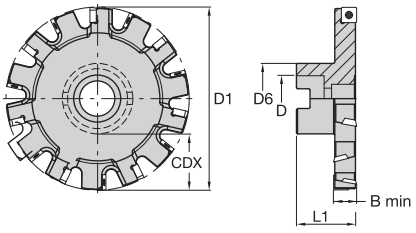
Spare Parts





D1	insert screw	in. lbs.	Torx Plus driver
4.000	**MS2148**	17	**DT9IP**
5.000	**MS2148**	17	**DT9IP**
6.000	**MS2148**	17	**DT9IP**
8.000	**MS2148**	17	**DT9IP**

- Neutral slot width (B min) is .614" + .010".
- Neutral cutting.
- Large selection of insert geometries and grades to cut most workpiece materials.
- Four insert cutting edges.
- Wide selection of insert radii.
- Faceted inserts for superior surface finishes.





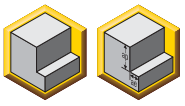
Shell Mount • 10mm IC • Neutral (Full Slotting)

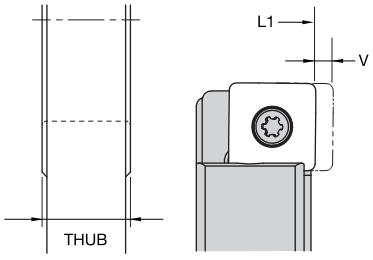
order number	catalog number	D1	D	D6	B min	CDX	L1	Z	Z S	max RPM	lbs
2629780	**KSSS400BSP10N625**	4.000	1.000	2.132	.614	.887	1.500	10	5	17100	2.12
2629781	**KSSS500BSP10N625**	5.000	1.250	2.880	.614	.995	1.750	12	6	15300	3.89
2629782	**KSSS600BSP10N625**	6.000	1.500	3.810	.614	1.030	2.000	12	6	14000	5.95
2629783	**KSSS800BSP10N625**	8.000	1.500	3.810	.614	2.030	2.000	14	7	12100	8.80

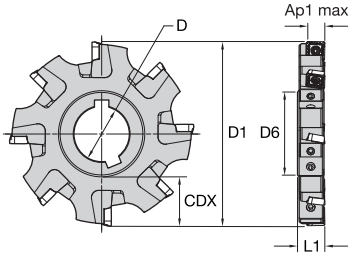
Spare Parts

D1	 insert screw	in. lbs.	 Torx Plus driver	 socket-head cap screw
4.000	**MS2148**	17	**DT9IP**	**S2044**
5.000	**MS2148**	17	**DT9IP**	**S467**
6.000	**MS2148**	17	**DT9IP**	**–**
8.000	**MS2148**	17	**DT9IP**	**–**

- Rapid adjustment and setting via unique cam adjustment mechanism.
- Large selection of insert geometries and grades to cut most workpiece materials.
- Four insert cutting edges.
- Large selection of insert radii.
- Two keyways for staggered mounting.
- Wiper insert facets for superior surface finishes.





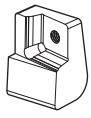


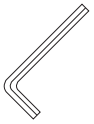


Arbor Mount • Half-Side Cutting • Right Hand

order number	catalog number	D1	D	D6	CDX	L1	THUB	V	Ap1 max	Z	Z S	max RPM	lbs
2268623	**KSSS400ASP10R551-630**	4.000	1.250	1.880	1.030	.548	.545	.040	.359	6	6	17100	1.17
2268629	**KSSS500ASP10R551-630**	5.000	1.500	2.250	1.345	.548	.545	.040	.359	8	8	15300	1.94
2268641	**KSSS600ASP10R551-630**	6.000	1.500	2.250	1.845	.548	.545	.040	.359	10	10	14000	2.97
2268653	**KSSS800ASP10R551-630**	8.000	2.000	2.880	2.530	.548	.545	.040	.359	14	14	12100	5.53

Spare Parts









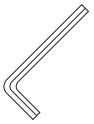

D1	right-hand cartridge	wedge	cam pin wrench	insert screw	in. lbs.	Torx Plus wrench	cam pin	wedge wrench	wedge screw
4.000	**KSSC551-630R**	**KSSW551-630**	**MW25**	**MS2148**	17	**TTP9**	**KSSCP551-709**	**THW3M**	**STCM32**
5.000	**KSSC551-630R**	**KSSW551-630**	**MW25**	**MS2148**	17	**TTP9**	**KSSCP551-709**	**THW3M**	**STCM11**
6.000	**KSSC551-630R**	**KSSW551-630**	**MW25**	**MS2148**	17	**TTP9**	**KSSCP551-709**	**THW3M**	**STCM11**
8.000	**KSSC551-630R**	**KSSW551-630**	**MW25**	**MS2148**	17	**TTP9**	**KSSCP551-709**	**THW3M**	**STCM11**

Arbor Mount • Half-Side Cutting • Right Hand

order number	catalog number	D1	D	D6	CDX	L1	THUB	V	Ap1 max	Z	Z S	max RPM	lbs
2268635	**KSSS500ASP10R630-709**	5.000	1.500	2.250	1.345	.627	.624	.040	.359	8	8	15300	2.27
2268647	**KSSS600ASP10R630-709**	6.000	1.500	2.250	1.845	.627	.624	.040	.359	10	10	14000	3.50
2268659	**KSSS800ASP10R630-709**	8.000	2.000	2.880	2.530	.627	.624	.040	.259	14	14	12100	6.48
2268665	**KSSS1000ASP10R630-709**	10.000	2.000	2.880	3.530	.627	.624	.040	.359	18	18	10800	10.67
2268671	**KSSS1200ASP10R630-709**	12.000	2.000	2.880	4.530	.627	.624	.040	.359	20	20	9900	15.96

Spare Parts



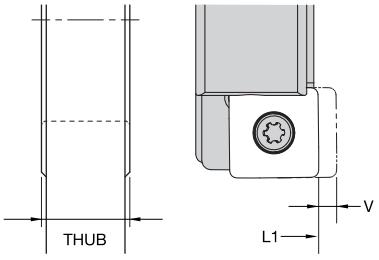


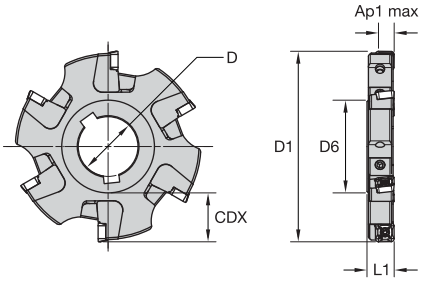





D1	right-hand cartridge	wedge	cam pin wrench	insert screw	in. lbs.	Torx Plus wrench	cam pin	wedge wrench	wedge screw
5.000	**KSSC630-709R**	**KSSW630-709**	**MW25**	**MS2148**	17	**TTP9**	**KSSCP551-709**	**THW3M**	**STCM11**
6.000	**KSSC630-709R**	**KSSW630-709**	**MW25**	**MS2148**	17	**TTP9**	**KSSCP551-709**	**THW3M**	**STCM11**
8.000	**KSSC630-709R**	**KSSW630-709**	**MW25**	**MS2148**	17	**TTP9**	**KSSCP551-709**	**THW3M**	**STCM11**
10.000	**KSSC630-709R**	**KSSW630-709**	**MW25**	**MS2148**	17	**TTP9**	**KSSCP551-709**	**THW3M**	**STCM11**
12.000	**KSSC630-709R**	**KSSW630-709**	**MW25**	**MS2148**	17	**TTP9**	**KSSCP551-709**	**THW3M**	**STCM11**

- Rapid adjustment and setting via unique cam adjustment mechanism.
- Large selection of insert geometries and grades to cut most workpiece materials.
- Four insert cutting edges.
- Large selection of insert radii.
- Two keyways for staggered mounting.
- Wiper insert facets for superior surface finishes.





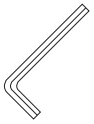


Arbor Mount • Half-Side Cutting • Left Hand

order number	catalog number	D1	D	D6	CDX	L1	THUB	V	Ap1 max	Z	Z S	max RPM	lbs
2268624	KSSS400ASP10L551-630	4.000	1.250	1.880	1.030	.548	.545	.040	.359	6	6	17100	1.17
2268630	KSSS500ASP10L551-630	5.000	1.500	2.250	1.345	.548	.545	.040	.359	8	8	15300	1.94
2268642	KSSS600ASP10L551-630	6.000	1.500	2.250	1.845	.548	.545	.040	.359	10	10	14000	2.97
2268654	KSSS800ASP10L551-630	8.000	2.000	2.880	2.530	.548	.545	.040	.359	14	14	12100	5.53

Spare Parts









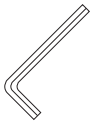

D1	left-hand cartridge	wedge	cam pin wrench	insert screw	in. lbs.	Torx Plus wrench	cam pin	wedge wrench	wedge screw
4.000	KSSC551-630L	KSSW551-630	MW25	MS2148	17	TTP9	KSSCP551-709	THW3M	STCM32
5.000	KSSC551-630L	KSSW551-630	MW25	MS2148	17	TTP9	KSSCP551-709	THW3M	STCM11
6.000	KSSC551-630L	KSSW551-630	MW25	MS2148	17	TTP9	KSSCP551-709	THW3M	STCM11
8.000	KSSC551-630L	KSSW551-630	MW25	MS2148	17	TTP9	KSSCP551-709	THW3M	STCM11

Arbor Mount • Half-Side Cutting • Left Hand

order number	catalog number	D1	D	D6	CDX	L1	THUB	V	Ap1 max	Z	Z S	max RPM	lbs
2268636	KSSS500ASP10L630-709	5.000	1.500	2.250	1.345	.627	.624	.040	.359	8	8	15300	2.27
2268648	KSSS600ASP10L630-709	6.000	1.500	2.250	1.845	.627	.624	.040	.359	10	10	14000	3.50
2268660	KSSS800ASP10L630-709	8.000	2.000	2.880	2.530	.627	.624	.040	.359	14	14	12100	6.48
2268666	KSSS1000ASP10L630-709	10.000	2.000	2.880	3.530	.627	.624	.040	.359	18	18	10800	10.67
2268672	KSSS1200ASP10L630-709	12.000	2.000	2.880	4.530	.627	.624	.040	.359	20	20	9900	15.96

Spare Parts



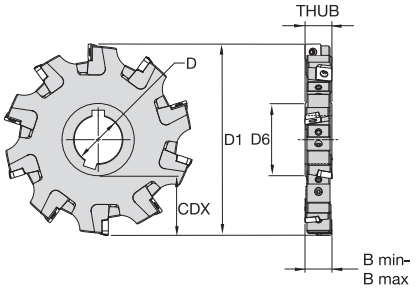







D1	left-hand cartridge	wedge	cam pin wrench	insert screw	in. lbs.	Torx Plus wrench	cam pin	wedge wrench	wedge screw
5.000	KSSC630-709L	KSSW630-709	MW25	MS2148	17	TTP9	KSSCP551-709	THW3M	STCM11
6.000	KSSC630-709L	KSSW630-709	MW25	MS2148	17	TTP9	KSSCP551-709	THW3M	STCM11
8.000	KSSC630-709L	KSSW630-709	MW25	MS2148	17	TTP9	KSSCP551-709	THW3M	STCM11
10.000	KSSC630-709L	KSSW630-709	MW25	MS2148	17	TTP9	KSSCP551-709	THW3M	STCM11
12.000	KSSC630-709L	KSSW630-709	MW25	MS2148	17	TTP9	KSSCP551-709	THW3M	STCM11

- Rapid adjustment and setting via unique cam adjustment mechanism.
- Large selection of insert geometries and grades to cut most workpiece materials.
- Four insert cutting edges.
- Large selection of insert radii.
- Two keyways for staggered mounting.
- Wiper insert facets for superior surface finishes.



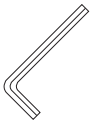


Arbor Mount • Slotting Cutter • .551–.630" Adjustment Range

order number	catalog number	D1	D	D6	B min	B max	CDX	THUB	Z	Z S	max RPM	lbs
2268052	KSSS400ASP10N551-630	4.000	1.250	1.880	.551	.630	1.030	.545	6	3	17100	1.17
2268628	KSSS500ASP10N551-630	5.000	1.500	2.250	.551	.630	1.345	.545	8	4	15300	1.94
2268640	KSSS600ASP10N551-630	6.000	1.500	2.250	.551	.630	1.845	.545	10	5	14000	2.97
2268652	KSSS800ASP10N551-630	8.000	2.000	2.880	.551	.630	2.530	.545	14	7	12100	5.53

Spare Parts





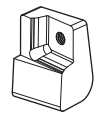


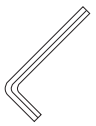

D1	right-hand cartridge	left-hand cartridge	wedge	cam pin wrench	insert screw	in. lbs.	Torx Plus wrench	cam pin	wedge wrench	wedge screw
4.000	KSSC551-630R	KSSC551-630L	KSSW551-630	MW25	MS2148	17	TTP9	KSSCP551-709	THW3M	STCM32
5.000	KSSC551-630R	KSSC551-630L	KSSW551-630	MW25	MS2148	17	TTP9	KSSCP551-709	THW3M	STCM11
6.000	KSSC551-630R	KSSC551-630L	KSSW551-630	MW25	MS2148	17	TTP9	KSSCP551-709	THW3M	STCM11
8.000	KSSC551-630R	KSSC551-630L	KSSW551-630	MW25	MS2148	17	TTP9	KSSCP551-709	THW3M	STCM11

Arbor Mount • Slotting Cutter • .630–.709" Adjustment Range

order number	catalog number	D1	D	D6	B min	B max	CDX	THUB	Z	Z S	max RPM	lbs
2268634	KSSS500ASP10N630-709	5.000	1.500	2.250	.630	.709	1.345	.624	8	4	15300	2.27
2268646	KSSS600ASP10N630-709	6.000	1.500	2.250	.630	.709	1.845	.624	10	5	14000	3.50
2268658	KSSS800ASP10N630-709	8.000	2.000	2.880	.630	.709	2.530	.624	14	7	12100	6.48
2268664	KSSS1000ASP10N630-709	10.000	2.000	2.880	.630	.709	3.530	.624	18	9	10800	10.67
2268670	KSSS1200ASP10N630-709	12.000	2.000	2.880	.630	.709	4.530	.624	20	10	9900	15.96

Spare Parts



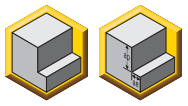



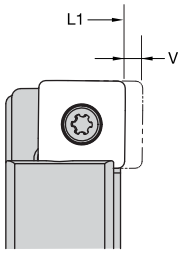


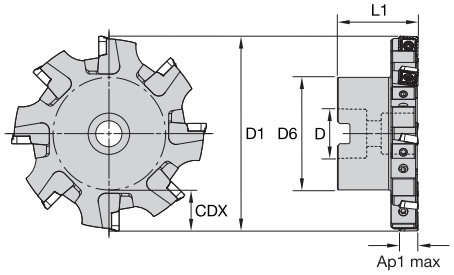



D1	right-hand cartridge	left-hand cartridge	wedge	cam pin wrench	insert screw	in. lbs.	Torx Plus wrench	cam pin	wedge wrench	wedge screw
5.000	KSSC630-709R	KSSC630-709L	KSSW630-709	MW25	MS2148	17	TTP9	KSSCP551-709	THW3M	STCM11
6.000	KSSC630-709R	KSSC630-709L	KSSW630-709	MW25	MS2148	17	TTP9	KSSCP551-709	THW3M	STCM11
8.000	KSSC630-709R	KSSC630-709L	KSSW630-709	MW25	MS2148	17	TTP9	KSSCP551-709	THW3M	STCM11
10.000	KSSC630-709R	KSSC630-709L	KSSW630-709	MW25	MS2148	17	TTP9	KSSCP551-709	THW3M	STCM11
12.000	KSSC630-709R	KSSC630-709L	KSSW630-709	MW25	MS2148	17	TTP9	KSSCP551-709	THW3M	STCM11

- Rapid adjustment and setting via unique cam adjustment mechanism.
- Large selection of insert geometries and grades to cut most workpiece materials.
- Four insert cutting edges.
- Large selection of insert radii.
- Wiper insert facets for superior surface finishes.







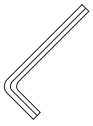


Shell Mount • Half-Side Cutting • Right Hand

order number	catalog number	D1	D	D6	CDX	L1	V	Ap1 max	Z	Z S	max RPM	lbs
2268626	KSSS400BSP10R551-630	4.000	1.000	2.132	.872	2.033	.040	.359	6	6	17100	2.49
2268632	KSSS500BSP10R551-630	5.000	1.250	2.880	.997	2.033	.040	.359	8	8	15300	4.35
2268644	KSSS600BSP10R551-630	6.000	1.500	3.810	1.032	2.033	.040	.359	10	10	14000	6.01
2268656	KSSS800BSP10R551-630	8.000	1.500	3.810	2.032	2.033	.040	.359	14	14	12100	8.74

Spare Parts











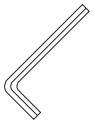
D1	right-hand cartridge	wedge	cam pin wrench	insert screw	in. lbs.	Torx Plus wrench	cam pin	wedge wrench	wedge screw	socket-head cap screw
4.000	KSSC551-630R	KSSW551-630	MW25	MS2148	17	TTP9	KSSCP551-709	THW3M	STCM11	S458
5.000	KSSC551-630R	KSSW551-630	MW25	MS2148	17	TTP9	KSSCP551-709	THW3M	STCM11	S467
6.000	KSSC551-630R	KSSW551-630	MW25	MS2148	17	TTP9	KSSCP551-709	THW3M	STCM11	–
8.000	KSSC551-630R	KSSW551-630	MW25	MS2148	17	TTP9	KSSCP551-709	THW3M	STCM11	–

Shell Mount • Half-Side Cutting • Right Hand

order number	catalog number	D1	D	D6	CDX	L1	V	Ap1 max	Z	Z S	max RPM	lbs
2268638	KSSS500BSP10R630-709	5.000	1.250	2.880	.997	2.033	.040	.359	8	8	15300	4.60
2268650	KSSS600BSP10R630-709	6.000	1.500	3.810	1.032	2.033	.040	.359	10	10	14000	6.32
2268662	KSSS800BSP10R630-709	8.000	1.500	3.810	2.032	2.033	.040	.359	14	14	12100	9.51
2268668	KSSS1000BSP10R630-709	10.000	2.500	5.250	2.312	2.033	.040	.359	18	18	10800	13.56
2268674	KSSS1200BSP10R630-709	12.000	2.500	5.250	3.312	2.033	.040	.359	20	20	9900	18.84

Spare Parts











D1	right-hand cartridge	wedge	cam pin wrench	insert screw	in. lbs.	Torx Plus wrench	cam pin	wedge wrench	wedge screw	socket-head cap screw
5.000	KSSC630-709R	KSSW630-709	MW25	MS2148	17	TTP9	KSSCP551-709	THW3M	STCM11	S467
6.000	KSSC630-709R	KSSW630-709	MW25	MS2148	17	TTP9	KSSCP551-709	THW3M	STCM11	–
8.000	KSSC630-709R	KSSW630-709	MW25	MS2148	17	TTP9	KSSCP551-709	THW3M	STCM11	–
10.000	KSSC630-709R	KSSW630-709	MW25	MS2148	17	TTP9	KSSCP551-709	THW3M	STCM11	–
12.000	KSSC630-709R	KSSW630-709	MW25	MS2148	17	TTP9	KSSCP551-709	THW3M	STCM11	–

- Rapid adjustment and setting via unique cam adjustment mechanism.
- Large selection of insert geometries and grades to cut most workpiece materials.
- Four insert cutting edges.
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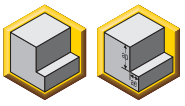
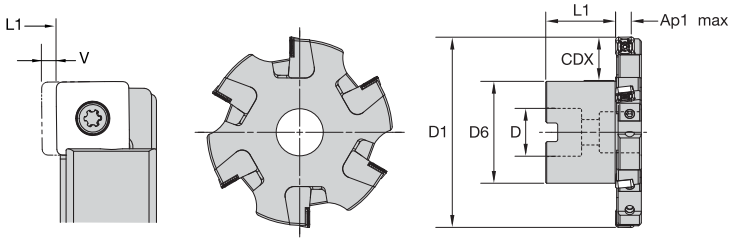
- Wiper insert facets for superior surface finishes.



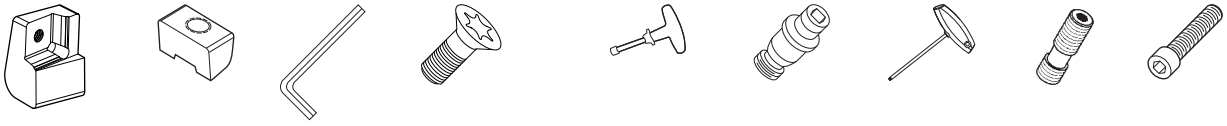




Shell Mount • Half-Side Cutting • Left Hand

order number	catalog number	D1	D	D6	CDX	L1	V	Ap1 max	Z	Z S	max RPM	lbs
2268627	KSSS400BSP10L551-630	4.000	1.000	2.132	.872	1.482	.040	.359	6	6	17100	2.49
2268633	KSSS500BSP10L551-630	5.000	1.250	2.880	.997	1.482	.040	.359	8	8	15300	4.35
2268645	KSSS600BSP10L551-630	6.000	1.500	3.810	1.032	1.482	.040	.359	10	10	14000	6.01
2268657	KSSS800BSP10L551-630	8.000	1.500	3.810	2.032	1.482	.040	.359	14	14	12100	8.74

Spare Parts

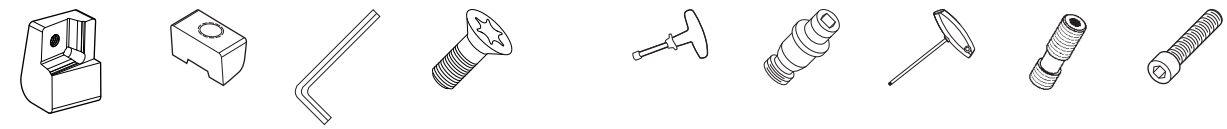


D1	left-hand cartridge	wedge	cam pin wrench	insert screw	in. lbs.	Torx Plus wrench	cam pin	wedge wrench	wedge screw	socket-head cap screw
4.000	KSSC551-630L	KSSW551-630	MW25	MS2148	17	TTP9	KSSCP551-709	THW3M	STCM11	S458
5.000	KSSC551-630L	KSSW551-630	MW25	MS2148	17	TTP9	KSSCP551-709	THW3M	STCM11	S467
6.000	KSSC551-630L	KSSW551-630	MW25	MS2148	17	TTP9	KSSCP551-709	THW3M	STCM11	–
8.000	KSSC551-630L	KSSW551-630	MW25	MS2148	17	TTP9	KSSCP551-709	THW3M	STCM11	–

Shell Mount • Half-Side Cutting • Left Hand

order number	catalog number	D1	D	D6	CDX	L1	V	Ap1 max	Z	Z S	max RPM	lbs
2268639	KSSS500BSP10L630-709	5.000	1.250	2.880	.997	1.403	.040	.359	8	8	15300	4.60
2268651	KSSS600BSP10L630-709	6.000	1.500	3.810	1.032	1.403	.040	.359	10	10	14000	6.32
2268663	KSSS800BSP10L630-709	8.000	1.500	3.810	2.032	1.403	.040	.359	14	14	12100	9.51
2268669	KSSS1000BSP10L630-709	10.000	2.500	5.250	2.312	1.403	.040	.359	18	18	10800	13.56
2268675	KSSS1200BSP10L630-709	12.000	2.500	5.250	3.312	1.403	.040	.359	20	20	9900	18.84

Spare Parts



D1	left-hand cartridge	wedge	cam pin wrench	insert screw	in. lbs.	Torx Plus wrench	cam pin	wedge wrench	wedge screw	socket-head cap screw
5.000	KSSC630-709L	KSSW630-709	MW25	MS2148	17	TTP9	KSSCP551-709	THW3M	STCM11	S467
6.000	KSSC630-709L	KSSW630-709	MW25	MS2148	17	TTP9	KSSCP551-709	THW3M	STCM11	–
8.000	KSSC630-709L	KSSW630-709	MW25	MS2148	17	TTP9	KSSCP551-709	THW3M	STCM11	–
10.000	KSSC630-709L	KSSW630-709	MW25	MS2148	17	TTP9	KSSCP551-709	THW3M	STCM11	–
12.000	KSSC630-709L	KSSW630-709	MW25	MS2148	17	TTP9	KSSCP551-709	THW3M	STCM11	–

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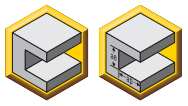
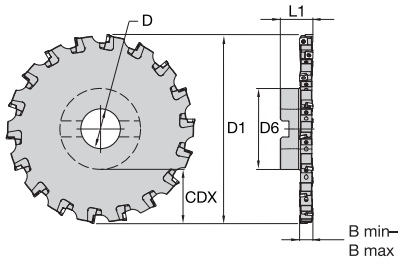


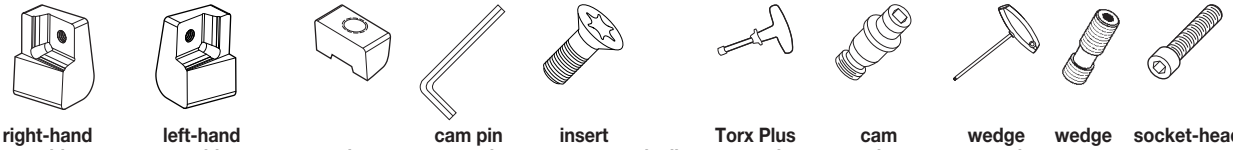




Shell Mount • Slotting Cutting • .551–.630" Adjustment Range

order number	catalog number	D1	D	D6	B min	B max	CDX	L1	Z	Z S	max RPM	lbs
2268625	KSSS400BSP10N551-630	4.000	1.000	2.132	.551	.630	.872	2.072	6	3	17100	2.49
2268631	KSSS500BSP10N551-630	5.000	1.250	2.880	.551	.630	.997	2.072	8	4	15300	4.35
2268643	KSSS600BSP10N551-630	6.000	1.500	3.810	.551	.630	1.032	2.072	10	5	14000	6.01
2268655	KSSS800BSP10N551-630	8.000	1.500	3.810	.551	.630	2.032	2.072	14	7	12100	8.74

Spare Parts

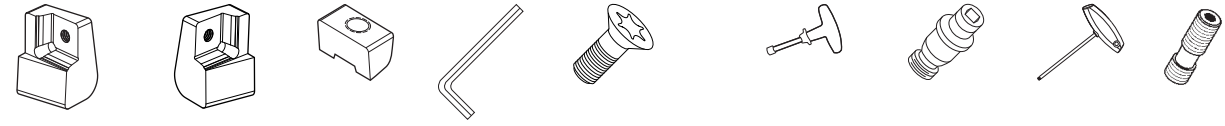


D1	right-hand cartridge	left-hand cartridge	wedge	cam pin wrench	insert screw	in. lbs.	Torx Plus wrench	cam pin	wedge wrench	wedge screw	socket-head cap screw
4.000	KSSC551-630R	KSSC551-630L	KSSW551-630	MW25	MS2148	17	TTP9	KSSCP551-709	THW3M	STCM11	S458
5.000	KSSC551-630R	KSSC551-630L	KSSW551-630	MW25	MS2148	17	TTP9	KSSCP551-709	THW3M	STCM11	–
6.000	KSSC551-630R	KSSC551-630L	KSSW551-630	MW25	MS2148	17	TTP9	KSSCP551-709	THW3M	STCM11	–
8.000	KSSC551-630R	KSSC551-630L	KSSW551-630	MW25	MS2148	17	TTP9	KSSCP551-709	THW3M	STCM11	–

Shell Mount • Slotting Cutting • .630–.709" Adjustment Range

order number	catalog number	D1	D	D6	B min	B max	CDX	L1	Z	Z S	max RPM	lbs
2268637	KSSS500BSP10N630-709	5.000	1.250	2.880	.630	.709	.997	2.072	8	4	15300	4.60
2268649	KSSS600BSP10N630-709	6.000	1.500	3.810	.630	.709	1.032	2.072	10	5	14000	6.32
2268661	KSSS800BSP10N630-709	8.000	1.500	3.810	.630	.709	2.032	2.072	14	7	12100	9.51
2268667	KSSS1000BSP10N630-709	10.000	2.500	5.250	.630	.709	2.312	2.072	18	9	10800	13.56
2268673	KSSS1200BSP10N630-709	12.000	2.500	5.250	.630	.709	3.312	2.072	20	10	9900	18.84

Spare Parts



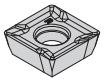
D1	right-hand cartridge	left-hand cartridge	wedge	cam pin wrench	insert screw	in. lbs.	Torx Plus wrench	cam pin	wedge wrench	wedge screw
5.000	KSSC630-709R	KSSC630-709L	KSSW630-709	MW25	MS2148	17	TTP9	KSSCP551-709	THW3M	STCM11
6.000	KSSC630-709R	KSSC630-709L	KSSW630-709	MW25	MS2148	17	TTP9	KSSCP551-709	THW3M	STCM11
8.000	KSSC630-709R	KSSC630-709L	KSSW630-709	MW25	MS2148	17	TTP9	KSSCP551-709	THW3M	STCM11
10.000	KSSC630-709R	KSSC630-709L	KSSW630-709	MW25	MS2148	17	TTP9	KSSCP551-709	THW3M	STCM11
12.000	KSSC630-709R	KSSC630-709L	KSSW630-709	MW25	MS2148	17	TTP9	KSSCP551-709	THW3M	STCM11

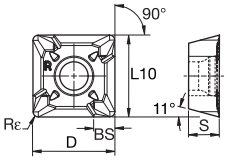
Insert Selection Guide

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.E..LD2	KC725M	**.E..GB2**	**KC725M**	.S..GB2	KC725M
P3–P4	.E..GB2	KC725M	**.E..GB2**	**KCPK30**	.S..GB2	KCPK30
P5–P6	.E..GB2	KCPK30	**.E..GB2**	**KCPM20**	.S..GB2	KCPM20
M1–M2	.E..LD2	KC725M	**.E..GB2**	**KC725M**	.S..GB2	KC725M
M3	.E..GB2	KC725M	**.E..GB2**	**KCPK30**	.S..GB2	KCPK30
K1–K2	.E..LD2	KC520M	**.E..GB2**	**KCK15**	.S..GB2	KCK15
K3	.E..GB2	KC520M	**.E..GB2**	**KCPK30**	.S..GB2	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..LD2	KC725M	**.E..GB2**	**KC725M**	.S..GB2	KC725M
S3	.E..LD2	KC725M	**.E..GB2**	**KC725M**	.S..GB2	KC725M
S4	.E..GB2	KC725M	**.S..GB2**	**KC725M**	–	–
H1	–	–	**–**	**–**	–	–

Indexable Inserts • KSSM SP.T10T3...


SPCT-LD2


SPCT-LE



● first choice
○ alternate choice

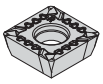
P			●		●	●
M			●		○	○
K		●		●	○	○
N	●					
S			●			
H						

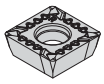
SPCT-LD2

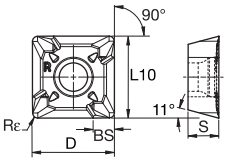
catalog number	D	S	L10	BS	Rε	hm	cutting edges	KC410M	KC520M	KC725M	KCK15	KCPM20	KCPK30
SPCT31251PPEL8LD2	.394	.156	.394	.106	.016	.002	4			●			
SPCT31251PPER8LD2	.394	.156	.394	.106	.016	.002	4			●		●	
SPCT3125PPER8LD2	.394	.156	.394	.106	.031	.002	4		●	●		●	
SPCT3125PPEL8LD2	.394	.156	.394	.106	.031	.002	4			●			
SPCT31253PPER8LD2	.394	.156	.394	.106	.047	.002	4			●			
SPCT31253PPEL8LD2	.394	.156	.394	.106	.047	.002	4			●			
SPCT31254ENLD2	.394	.156	.394	–	.063	.002	4			●			
SPCT31255ENLD2	.394	.156	.394	–	.078	.002	4			●			

SPCT-LE

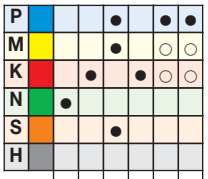
catalog number	D	S	L10	BS	Rε	hm	cutting edges	KC410M	KC520M	KC725M	KCK15	KCPM20	KCPK30
SPCT31251PPFL8LE	.394	.156	.394	.106	.016	.001	4	●					
SPCT31251PPFR8LE	.394	.156	.394	.106	.016	.001	4	●					
SPCT3125PPFR8LE	.394	.156	.394	.106	.031	.001	4	●					
SPCT3125PPFL8LE	.394	.156	.394	.106	.031	.001	4	●					
SPCT31253PPFR8LE	.394	.156	.394	.106	.047	.001	4	●					
SPCT31253PPFL8LE	.394	.156	.394	.106	.047	.001	4	●					
SPCT31254FNLE	.394	.156	.394	–	.063	.001	4	●					
SPCT31255FNLE	.394	.156	.394	–	.078	.001	4	●					


SPET-GB2


SPPT-GB2



● first choice
○ alternate choice



SPET-GB2

catalog number	D	S	L10	BS	Rε	hm	cutting edges	KC410M	KC520M	KC725M	KCK15	KCPM20	KCPK30
SPET31251PPER8GB2	.394	.156	.394	.106	.016	.003	4			●	●		●
SPET31251PPEL8GB2	.394	.156	.394	.106	.016	.003	4			●	●		●
SPET3125PPER8GB2	.394	.156	.394	.106	.031	.003	4		●	●	●		●
SPET3125PPEL8GB2	.394	.156	.394	.106	.031	.003	4		●	●	●		●
SPET3125PPSL8GB2	.394	.156	.394	.106	.031	.005	4			●			●
SPET3125PPSR8GB2	.394	.156	.394	.106	.031	.005	4		●	●	●		●

SPPT-GB2

catalog number	D	S	L10	BS	Rε	hm	cutting edges	KC410M	KC520M	KC725M	KCK15	KCPM20	KCPK30
SPPT3125PPER8GB2	.394	.156	.394	.106	.031	.003	4				●	●	●
SPPT3125PPSR8GB2	.394	.156	.394	.106	.031	.005	4				●	●	●

Recommended Starting Speeds [SFM]

Material Group		KC410M			KC520M			KC725M		
P	1	–	–	–	–	–	–	860	**750**	700
	2	–	–	–	–	–	–	720	**630**	530
	3	–	–	–	–	–	–	660	**560**	460
	4	–	–	–	–	–	–	590	**490**	390
	5	–	–	–	–	–	–	490	**440**	390
	6	–	–	–	–	–	–	430	**330**	260
M	1	–	–	–	–	–	–	560	**490**	450
	2	–	–	–	–	–	–	510	**430**	360
	3	–	–	–	–	–	–	380	**330**	260
K	1	–	–	–	880	**800**	710	–	–	–
	2	–	–	–	690	**620**	580	–	–	–
	3	–	–	–	580	**520**	470	–	–	–
N	1–2	3990	**3550**	3270	–	–	–	–	–	–
	3	3550	**3270**	3000	–	–	–	–	–	–
S	1	–	–	–	–	–	–	115	**100**	80
	2	–	–	–	–	–	–	115	**100**	80
	3	–	–	–	–	–	–	150	**115**	80
	4	–	–	–	–	–	–	200	**150**	100
H	1	–	–	–	–	–	–	–	–	–

Material Group		KCK15			KCPM20			KCPK30		
P	1	–	–	–	1810	**1590**	1470	1485	**1300**	1210
	2	–	–	–	1120	**1010**	910	920	**830**	750
	3	–	–	–	1010	**910**	830	830	**750**	680
	4	–	–	–	760	**700**	630	620	**575**	520
	5	–	–	–	910	**820**	750	850	**760**	690
	6	–	–	–	630	**550**	475	520	**450**	–
M	1	–	–	–	730	**655**	570	680	**600**	515
	2	–	–	–	670	**580**	520	610	**530**	460
	3	–	–	–	530	**475**	410	475	**430**	380
K	1	1380	**1255**	1115	1180	**1070**	960	965	**875**	780
	2	1095	**975**	910	940	**840**	770	770	**690**	630
	3	920	**815**	750	790	**700**	650	645	**575**	530
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.

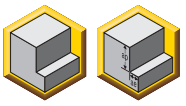
Recommended Starting Feeds [IPT]

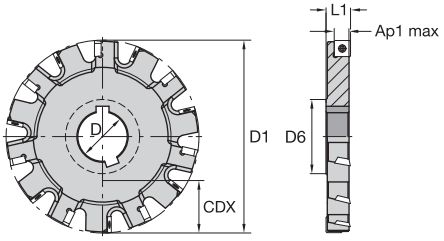
Light Machining	General Purpose	Heavy Machining

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.F..LE	.003	**.007**	.014	.003	**.005**	.010	.002	**.004**	.009	.002	**.004**	.008	.002	**.004**	.008	.F..LE
.E..LD2	.004	**.010**	.020	.003	**.008**	.015	.002	**.007**	.013	.002	**.006**	.012	.002	**.006**	.012	.E..LD2
.E..GB2	.007	**.014**	.025	.005	**.011**	.018	.004	**.009**	.016	.004	**.009**	.015	.004	**.008**	.014	.E..GB2
.S..GB2	.007	**.017**	.028	.005	**.013**	.020	.004	**.011**	.018	.004	**.010**	.016	.004	**.010**	.016	.S..GB2

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

- Right- and left-hand cutters available.
- Large selection of insert geometries and grades to cut most workpiece materials.
- Four insert cutting edges.
- Large selection of insert radii.
- Faceted inserts for superior surface finishes.







Arbor Mount • 1/2" IC • Right Hand

order number	catalog number	D1	D	D6	CDX	L1	Ap1 max	Z	Z S	max RPM	lbs
2618969	**KSSS600ASD43R750**	6.000	1.500	2.250	1.851	.750	.461	12	12	9400	3.73
2629787	**KSSS800ASD43R750**	8.000	2.000	2.880	2.536	.750	.461	14	14	8150	6.86
2629790	**KSSS1000ASD43R750**	10.000	2.000	2.880	3.536	.750	.461	16	16	7250	11.44

Arbor Mount • 1/2" IC • Left Hand

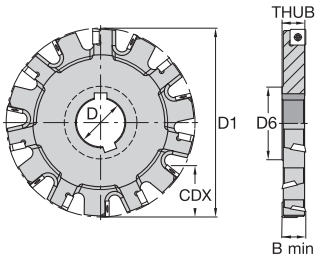
order number	catalog number	D1	D	D6	CDX	L1	Ap1 max	Z	Z S	max RPM	lbs
2629784	**KSSS600ASD43L750**	6.000	1.500	2.250	1.851	.750	.461	12	12	9400	3.73
2629786	**KSSS800ASD43L750**	8.000	2.000	2.880	2.536	.750	.461	14	14	8150	6.86
2629789	**KSSS1000ASD43L750**	10.000	2.000	2.880	3.536	.750	.461	16	16	7250	11.44

Spare Parts

D1	 insert screw	in. lbs.	 Torx Plus driver
6.000	**MS2078**	35	**DT15IP**
8.000	**MS2078**	35	**DT15IP**
10.000	**MS2078**	35	**DT15IP**

NOTE: For superior surface finish, use left-hand inserts.

- Neutral slot width (B min) is .739" + .010" wide.
- Large selection of insert geometries and grades to cut most workpiece materials.
- Four insert cutting edges.
- Large selection of insert radii.
- Faceted inserts for superior surface finishes.





Arbor Mount • 1/2" IC • Neutral (Full Slotting)

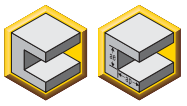
order number	catalog number	D1	D	D6	B min	CDX	THUB	Z	Z S	max RPM	lbs
2618967	**KSSS600ASD43N750**	6.000	1.500	2.250	.739	1.857	.666	14	7	9400	3.49
2629785	**KSSS800ASD43N750**	8.000	2.000	2.880	.739	2.542	.666	18	9	8150	6.58
2629788	**KSSS1000ASD43N750**	10.000	2.000	2.880	.739	3.542	.666	22	11	7250	11.02

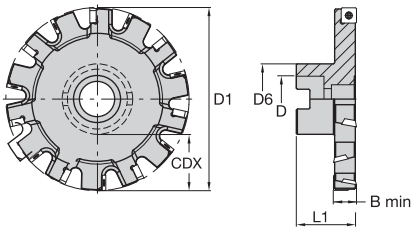
Spare Parts

D1	 insert screw	in. lbs.	 Torx Plus driver
6.000	**MS2078**	35	**DT15IP**
8.000	**MS2078**	35	**DT15IP**
10.000	**MS2078**	35	**DT15IP**

NOTE: For superior surface finish, use right-hand and left-hand inserts.

- Neutral slot width (Bmin) is .739" + .010" wide.
- Large selection of insert geometries and grades to cut most workpiece materials.
- Four insert cutting edges.
- Large selection of insert radii.
- Faceted inserts for superior surface finishes.







Shell Mount • 1/2" IC • Neutral (Full Slotting)

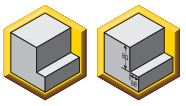
order number	catalog number	D1	D	D6	B min	CDX	L1	Z	Z S	max RPM	lbs
2629791	**KSSS600BSD43N750**	6.000	1.500	3.810	.739	1.029	2.000	14	7	9400	6.28
2629792	**KSSS800BSD43N750**	8.000	1.500	3.810	.739	2.029	2.000	18	9	8150	9.90
2629793	**KSSS1000BSD43N750**	10.000	2.500	5.250	.739	2.309	2.000	22	11	7250	14.22

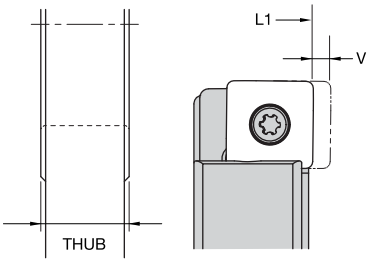
Spare Parts

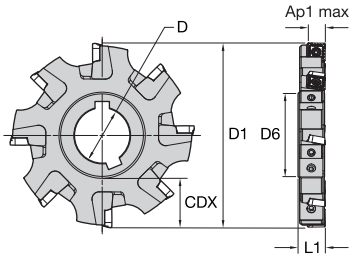
D1	 insert screw	in. lbs.	 Torx Plus driver
6.000	**MS2078**	35	**DT15IP**
8.000	**MS2078**	35	**DT15IP**
10.000	**MS2078**	35	**DT15IP**

NOTE: For superior surface finish, use right-hand and left-hand inserts.

- Rapid adjustment and setting via unique cam adjustment mechanism.
- Large selection of insert geometries and grades to cut most workpiece materials.
- Four insert cutting edges.
- Large selection of insert radii.
- Two keyways for staggered mounting.
- Wiper insert facets for superior surface finishes.







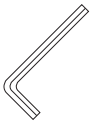


Arbor Mount • Half-Side Cutting • Right Hand

order number	catalog number	D1	D	D6	CDX	L1	THUB	V	Ap1 max	Z	Z S	max RPM	lbs
2268677	**KSSS500ASD43R709-813**	5.000	1.500	2.250	1.331	.712	.716	.052	.461	8	8	10300	2.33
2268689	**KSSS600ASD43R709-813**	6.000	1.500	2.250	1.831	.712	.716	.052	.461	10	10	9400	3.62
2268701	**KSSS800ASD43R709-813**	8.000	2.000	2.880	2.516	.712	.716	.052	.461	14	14	8150	6.85
2268713	**KSSS1000ASD43R709-813**	10.000	2.000	2.880	3.516	.712	.716	.052	.461	16	16	7250	11.51
2268725	**KSSS1200ASD43R709-813**	12.000	2.000	2.880	4.516	.712	.716	.052	.461	18	18	6650	17.30

Spare Parts









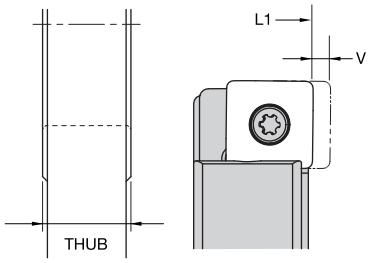

D1	right-hand cartridge	wedge	cam pin wrench	insert screw	in. lbs.	Torx Plus wrench	cam pin	wedge wrench	wedge screw
5.000	**KSSC709-813R**	**KSSW709-813**	**MW3**	**MS2077**	35	**TTP15**	**KSSCP709-917**	**THW3M**	**STCM11**
6.000	**KSSC709-813R**	**KSSW709-813**	**MW3**	**MS2077**	35	**TTP15**	**KSSCP709-917**	**THW3M**	**STCM11**
8.000	**KSSC709-813R**	**KSSW709-813**	**MW3**	**MS2077**	35	**TTP15**	**KSSCP709-917**	**THW3M**	**STCM11**
10.000	**KSSC709-813R**	**KSSW709-813**	**MW3**	**MS2077**	35	**TTP15**	**KSSCP709-917**	**THW3M**	**STCM11**
12.000	**KSSC709-813R**	**KSSW709-813**	**MW3**	**MS2077**	35	**TTP15**	**KSSCP709-917**	**THW3M**	**STCM11**

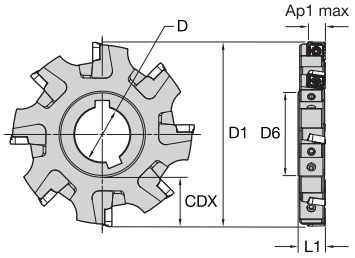
Right-Hand Cartridge • Larger Insert Radii

order number	catalog number
3663324	**KSSC709813RX**

NOTE: Use right-hand cartridge for right-hand cutters. Fits all larger radii cutters.

- Rapid adjustment and setting via unique cam adjustment mechanism.
- Large selection of insert geometries and grades to cut most workpiece materials.
- Four insert cutting edges.
- Large selection of insert radii.
- Two keyways for staggered mounting.
- Wiper insert facets for superior surface finishes.





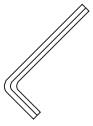


Arbor Mount • Half-Side Cutting • Right Hand

order number	catalog number	D1	D	D6	CDX	L1	THUB	V	Ap1 max	Z	Z S	max RPM	lbs
2268683	**KSSS500ASD43R813-917**	5.000	1.500	2.250	1.331	.816	.820	.052	.461	8	8	10300	2.72
2268695	**KSSS600ASD43R813-917**	6.000	1.500	2.250	1.831	.816	.820	.052	.461	10	10	9400	4.23
2268707	**KSSS800ASD43R813-917**	8.000	2.000	2.880	2.516	.816	.820	.052	.461	14	14	8150	7.99
2268719	**KSSS1000ASD43R813-917**	10.000	2.000	2.880	3.516	.816	.820	.052	.461	16	16	7250	13.16
2268731	**KSSS1200ASD43R813-917**	12.000	2.000	2.880	4.516	.816	.820	.052	.461	18	18	6650	20.20

Spare Parts









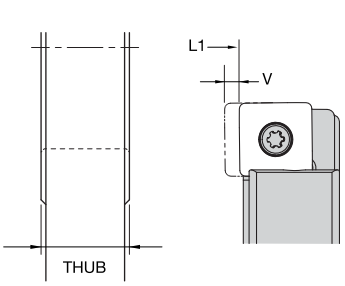

D1	right-hand cartridge	wedge	cam pin wrench	insert screw	in. lbs.	Torx Plus wrench	cam pin	wedge wrench	wedge screw
5.000	**KSSC813-917R**	**KSSW813-917**	**MW3**	**MS2077**	35	**TTP15**	**KSSCP709-917**	**THW3M**	**STCM11**
6.000	**KSSC813-917R**	**KSSW813-917**	**MW3**	**MS2077**	35	**TTP15**	**KSSCP709-917**	**THW3M**	**STCM11**
8.000	**KSSC813-917R**	**KSSW813-917**	**MW3**	**MS2077**	35	**TTP15**	**KSSCP709-917**	**THW3M**	**STCM11**
10.000	**KSSC813-917R**	**KSSW813-917**	**MW3**	**MS2077**	35	**TTP15**	**KSSCP709-917**	**THW3M**	**STCM11**
12.000	**KSSC813-917R**	**KSSW813-917**	**MW3**	**MS2077**	35	**TTP15**	**KSSCP709-917**	**THW3M**	**STCM11**

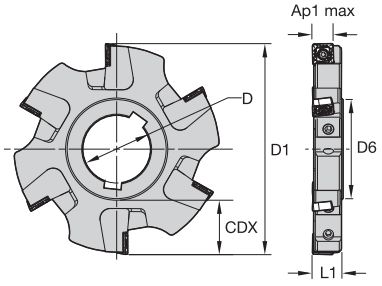
Right-Hand Cartridge • Larger Insert Radii

order number	catalog number
3663326	**KSSC813917RX**

NOTE: Use right-hand cartridge for right-hand cutters. Fits all larger radii cutters.

- Rapid adjustment and setting via unique cam adjustment mechanism.
- Large selection of insert geometries and grades to cut most workpiece materials.
- Four insert cutting edges.
- Large selection of insert radii.
- Two keyways for staggered mounting.
- Wiper insert facets for superior surface finishes.





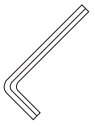


Arbor Mount • Half-Side Cutting • Left Hand

order number	catalog number	D1	D	D6	CDX	L1	THUB	V	Ap1 max	Z	Z S	max RPM	lbs
2268678	**KSSS500ASD43L709-813**	5.000	1.500	2.250	1.331	.712	.716	.052	.461	8	8	10300	2.33
2268690	**KSSS600ASD43L709-813**	6.000	1.500	2.250	1.831	.712	.716	.052	.461	10	10	9400	3.62
2268702	**KSSS800ASD43L709-813**	8.000	2.000	2.880	2.516	.712	.716	.052	.461	14	14	8150	6.85
2268714	**KSSS1000ASD43L709-813**	10.000	2.000	2.880	3.516	.712	.716	.052	.461	16	16	7250	11.51
2268726	**KSSS1200ASD43L709-813**	12.000	2.000	2.880	4.516	.712	.716	.052	.461	18	18	6650	17.30

Spare Parts









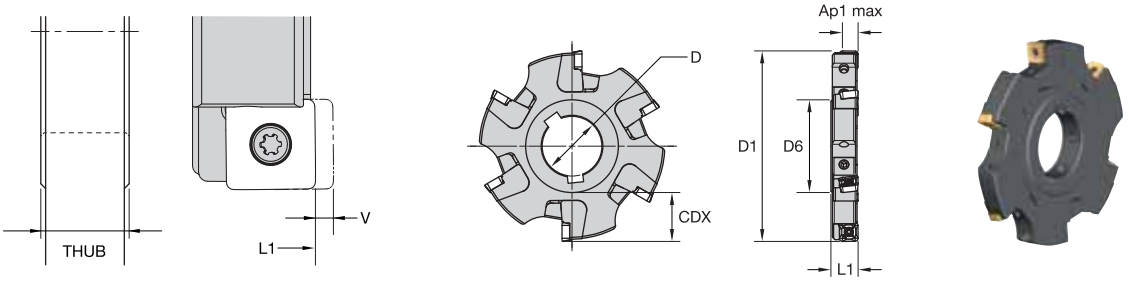

D1	left-hand cartridge	wedge	cam pin wrench	insert screw	in. lbs.	Torx Plus wrench	cam pin	wedge wrench	wedge screw
5.000	**KSSC709-813L**	**KSSW709-813**	**MW3**	**MS2077**	35	**TTP15**	**KSSCP709-917**	**THW3M**	**STCM11**
6.000	**KSSC709-813L**	**KSSW709-813**	**MW3**	**MS2077**	35	**TTP15**	**KSSCP709-917**	**THW3M**	**STCM11**
8.000	**KSSC709-813L**	**KSSW709-813**	**MW3**	**MS2077**	35	**TTP15**	**KSSCP709-917**	**THW3M**	**STCM11**
10.000	**KSSC709-813L**	**KSSW709-813**	**MW3**	**MS2077**	35	**TTP15**	**KSSCP709-917**	**THW3M**	**STCM11**
12.000	**KSSC709-813L**	**KSSW709-813**	**MW3**	**MS2077**	35	**TTP15**	**KSSCP709-917**	**THW3M**	**STCM11**

Left-Hand Cartridge • Larger Insert Radii

order number	catalog number
3663325	**KSSC709813LX**

NOTE: Use left-hand cartridge for left-hand cutters. Fits all larger radii inserts.

- Rapid adjustment and setting via unique cam adjustment mechanism.
- Large selection of insert geometries and grades to cut most workpiece materials.
- Four insert cutting edges.
- Large selection of insert radii.
- Two keyways for staggered mounting.
- Wiper insert facets for superior surface finishes.



Arbor Mount • Half-Side Cutting • Left Hand

order number	catalog number	D1	D	D6	CDX	L1	THUB	V	Ap1 max	Z	Z S	max RPM	lbs
2268684	**KSSS500ASD43L813-917**	5.000	1.500	2.250	1.331	.816	.820	.052	.461	8	8	10300	2.72
2268696	**KSSS600ASD43L813-917**	6.000	1.500	2.250	1.831	.816	.820	.052	.461	10	10	9400	4.23
2268708	**KSSS800ASD43L813-917**	8.000	2.000	2.880	2.516	.816	.820	.052	.461	14	14	8150	7.99
2268720	**KSSS1000ASD43L813-917**	10.000	2.000	2.880	3.516	.816	.820	.052	.461	16	16	7250	13.16
2268732	**KSSS1200ASD43L813-917**	12.000	2.000	2.880	4.516	.816	.820	.052	.461	18	18	6650	20.20

Spare Parts



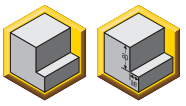
D1	left-hand cartridge	wedge	cam pin wrench	insert screw	in. lbs.	Torx Plus wrench	cam pin wrench	wedge wrench	wedge screw
5.000	**KSSC813-917L**	**KSSW813-917**	**MW3**	**MS2077**	35	**TTP15**	**KSSCP709-917**	**THW3M**	**STCM11**
6.000	**KSSC813-917L**	**KSSW813-917**	**MW3**	**MS2077**	35	**TTP15**	**KSSCP709-917**	**THW3M**	**STCM11**
8.000	**KSSC813-917L**	**KSSW813-917**	**MW3**	**MS2077**	35	**TTP15**	**KSSCP709-917**	**THW3M**	**STCM11**
10.000	**KSSC813-917L**	**KSSW813-917**	**MW3**	**MS2077**	35	**TTP15**	**KSSCP709-917**	**THW3M**	**STCM11**
12.000	**KSSC813-917L**	**KSSW813-917**	**MW3**	**MS2077**	35	**TTP15**	**KSSCP709-917**	**THW3M**	**STCM11**

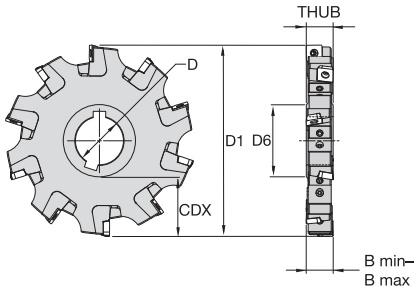
Left-Hand Cartridge • Larger Insert Radii

order number	catalog number
3663327	**KSSC813917LX**

NOTE: Use left-hand cartridge for left-hand cutters. Fits all larger radii inserts.

- Rapid adjustment and setting via unique cam adjustment mechanism.
- Large selection of insert geometries and grades to cut most workpiece materials.
- Four insert cutting edges.
- Large selection of insert radii.
- Two keyways for staggered mounting.
- Wiper insert facets for superior surface finishes.



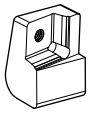


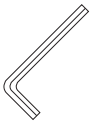


Arbor Mount • Slotting Cutter • .709–.813" Adjustment Range

order number	catalog number	D1	D	D6	B min	B max	CDX	THUB	Z	Z S	max RPM	lbs
2268676	**KSSS500ASD43N709-813**	5.000	1.500	2.250	.709	.813	1.331	.716	8	4	10300	2.33
2268688	**KSSS600ASD43N709-813**	6.000	1.500	2.250	.709	.813	1.831	.716	10	5	9400	3.62
2268700	**KSSS800ASD43N709-813**	8.000	2.000	2.880	.709	.813	2.516	.716	14	7	8150	6.85
2268712	**KSSS1000ASD43N709-813**	10.000	2.000	2.880	.709	.813	3.516	.716	16	8	7250	11.51
2268724	**KSSS1200ASD43N709-813**	12.000	2.000	2.880	.709	.813	4.516	.716	18	9	6650	17.30

Spare Parts







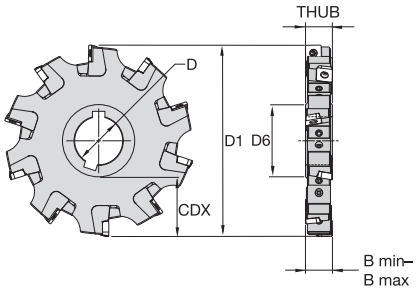

D1	right-hand cartridge	left-hand cartridge	wedge	cam pin wrench	insert screw	in. lbs.	Torx Plus wrench	cam pin	wedge wrench	wedge screw
5.000	**KSSC709-813R**	**KSSC709-813L**	**KSSW709-813**	**MW3**	**MS2077**	35	**TTP15**	**KSSCP709-917**	**THW3M**	**STCM11**
6.000	**KSSC709-813R**	**KSSC709-813L**	**KSSW709-813**	**MW3**	**MS2077**	35	**TTP15**	**KSSCP709-917**	**THW3M**	**STCM11**
8.000	**KSSC709-813R**	**KSSC709-813L**	**KSSW709-813**	**MW3**	**MS2077**	35	**TTP15**	**KSSCP709-917**	**THW3M**	**STCM11**
10.000	**KSSC709-813R**	**KSSC709-813L**	**KSSW709-813**	**MW3**	**MS2077**	35	**TTP15**	**KSSCP709-917**	**THW3M**	**STCM11**
12.000	**KSSC709-813R**	**KSSC709-813L**	**KSSW709-813**	**MW3**	**MS2077**	35	**TTP15**	**KSSCP709-917**	**THW3M**	**STCM11**

Cartridges • Larger Insert Radii

order number	catalog number
3663324	**KSSC709813RX**
3663325	**KSSC709813LX**

NOTE: Use left- or right-hand cartridges for neutral cutters. Fits all larger radii inserts.

- Rapid adjustment and setting via unique cam adjustment mechanism.
- Large selection of insert geometries and grades to cut most workpiece materials.
- Four insert cutting edges.
- Large selection of insert radii.
- Two keyways for staggered mounting.
- Wiper insert facets for superior surface finishes.



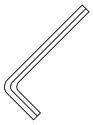


Arbor Mount • Slotting Cutter • .813–.917" Adjustment Range

order number	catalog number	D1	D	D6	B min	B max	CDX	THUB	Z	Z S	max RPM	lbs
2268682	KSSS500ASD43N813-917	5.000	1.500	2.250	.813	.917	1.331	.820	8	4	10300	2.72
2268694	KSSS600ASD43N813-917	6.000	1.500	2.250	.813	.917	1.831	.820	10	5	9400	4.23
2268706	KSSS800ASD43N813-917	8.000	2.000	2.880	.813	.917	2.516	.820	14	7	8150	7.99
2268718	KSSS1000ASD43N813-917	10.000	2.000	2.880	.813	.917	3.516	.820	16	8	7250	13.16
2268730	KSSS1200ASD43N813-917	12.000	2.000	2.880	.813	.917	4.516	.820	18	9	6650	20.20

Spare Parts







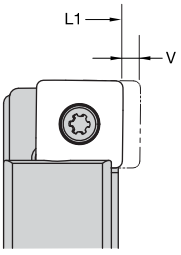

D1	right-hand cartridge	left-hand cartridge	wedge	cam pin wrench	insert screw	in. lbs.	Torx Plus wrench	cam pin	wedge wrench	wedge screw
5.000	KSSC813-917R	KSSC813-917L	KSSW813-917	MW3	MS2077	35	TTP15	KSSCP709-917	THW3M	STCM11
6.000	KSSC813-917R	KSSC813-917L	KSSW813-917	MW3	MS2077	35	TTP15	KSSCP709-917	THW3M	STCM11
8.000	KSSC813-917R	KSSC813-917L	KSSW813-917	MW3	MS2077	35	TTP15	KSSCP709-917	THW3M	STCM11
10.000	KSSC813-917R	KSSC813-917L	KSSW813-917	MW3	MS2077	35	TTP15	KSSCP709-917	THW3M	STCM11
12.000	KSSC813-917R	KSSC813-917L	KSSW813-917	MW3	MS2077	35	TTP15	KSSCP709-917	THW3M	STCM11

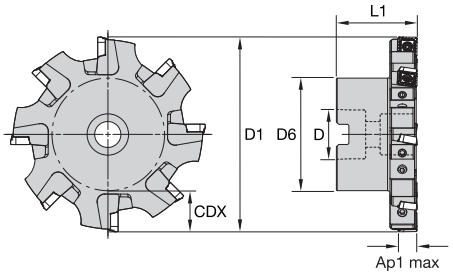
Cartridges • Larger Insert Radii

order number	catalog number
3663326	KSSC813917RX
3663327	KSSC813917LX

NOTE: Use left- or right-hand cartridges for neutral cutters. Fits all larger radii inserts.

- Rapid adjustment and setting via unique cam adjustment mechanism.
- Large selection of insert geometries and grades to cut most workpiece materials.
- Four insert cutting edges.
- Large selection of insert radii.
- Wiper insert facets for superior surface finishes.



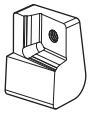


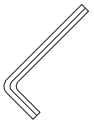


Shell Mount • Half-Side Cutting • Right Hand

order number	catalog number	D1	D	D6	CDX	L1	V	Ap1 max	Z	Z S	max RPM	lbs
2268680	KSSS500BSD43R709-813	5.000	1.250	2.880	.997	2.041	.052	.461	8	8	10300	4.55
2268692	KSSS600BSD43R709-813	6.000	1.500	3.810	1.032	2.041	.052	.461	10	10	9400	6.26
2268704	KSSS800BSD43R709-813	8.000	1.500	3.810	2.032	2.041	.052	.461	14	14	8150	9.72
2268716	KSSS1000BSD43R709-813	10.000	2.500	5.250	2.312	2.041	.052	.461	16	16	7250	14.04
2268728	KSSS1200BSD43R709-813	12.000	2.500	5.250	3.312	2.041	.052	.461	18	18	6650	19.83

Spare Parts











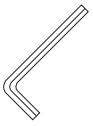
D1	right-hand cartridge	wedge	cam pin wrench	insert screw	in. lbs.	Torx Plus wrench	cam pin	wedge wrench	wedge screw	socket-head cap screw
5.000	KSSC709-813R	KSSW709-813	MW3	MS2077	35	TTP15	KSSCP709-917	THW3M	STCM11	S467
6.000	KSSC709-813R	KSSW709-813	MW3	MS2077	35	TTP15	KSSCP709-917	THW3M	STCM11	–
8.000	KSSC709-813R	KSSW709-813	MW3	MS2077	35	TTP15	KSSCP709-917	THW3M	STCM11	–
10.000	KSSC709-813R	KSSW709-813	MW3	MS2077	35	TTP15	KSSCP709-917	THW3M	STCM11	–
12.000	KSSC709-813R	KSSW709-813	MW3	MS2077	35	TTP15	KSSCP709-917	THW3M	STCM11	–

Shell Mount • Half-Side Cutting • Right Hand

order number	catalog number	D1	D	D6	CDX	L1	V	Ap1 max	Z	Z S	max RPM	lbs
2268686	KSSS500BSD43R813-917	5.000	1.250	2.880	.997	2.041	.052	.461	8	8	10300	4.80
2268698	KSSS600BSD43R813-917	6.000	1.500	3.810	1.032	2.041	.052	.461	10	10	9400	6.58
2268710	KSSS800BSD43R813-917	8.000	1.500	3.810	2.032	2.041	.052	.461	14	14	8150	10.62
2268722	KSSS1000BSD43R813-917	10.000	2.500	5.200	2.312	2.041	.052	.461	16	16	7250	15.42
2268734	KSSS1200BSD43R813-917	12.000	2.500	5.200	3.312	2.041	.052	.461	18	18	6650	21.19

Spare Parts











D1	right-hand cartridge	wedge	cam pin wrench	insert screw	in. lbs.	Torx Plus wrench	cam pin	wedge wrench	wedge screw	socket-head cap screw
5.000	KSSC813-917R	KSSW813-917	MW3	MS2077	35	TTP15	KSSCP709-917	THW3M	STCM11	S467
6.000	KSSC813-917R	KSSW813-917	MW3	MS2077	35	TTP15	KSSCP709-917	THW3M	STCM11	–
8.000	KSSC813-917R	KSSW813-917	MW3	MS2077	35	TTP15	KSSCP709-917	THW3M	STCM11	–
10.000	KSSC813-917R	KSSW813-917	MW3	MS2077	35	TTP15	KSSCP709-917	THW3M	STCM11	–
12.000	KSSC813-917R	KSSW813-917	MW3	MS2077	35	TTP15	KSSCP709-917	THW3M	STCM11	–

- Rapid adjustment and setting via unique cam adjustment mechanism.
- Large selection of insert geometries and grades to cut most workpiece materials.
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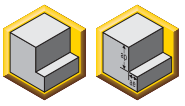
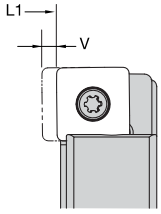
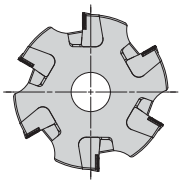
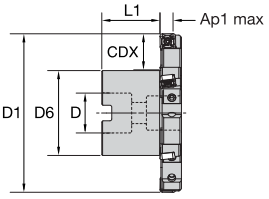








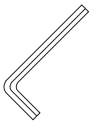


Shell Mount • Half-Side Cutting • Left Hand

order number	catalog number	D1	D	D6	CDX	L1	V	Ap1 max	Z	Z S	max RPM	lbs
2268681	KSSS500BSD43L709-813	5.000	1.250	2.880	.997	1.332	.052	.461	8	8	10300	4.55
2268693	KSSS600BSD43L709-813	6.000	1.500	3.810	1.032	1.332	.052	.461	10	10	9400	6.26
2268705	KSSS800BSD43L709-813	8.000	1.500	3.810	2.032	1.332	.052	.461	14	14	8150	9.72
2268717	KSSS1000BSD43L709-813	10.000	2.500	5.250	2.312	1.332	.052	.461	16	16	7250	14.04
2268729	KSSS1200BSD43L709-813	12.000	2.500	5.250	3.312	1.332	.052	.461	18	18	6650	19.83

Spare Parts











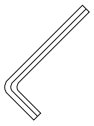
D1	left-hand cartridge	wedge	cam pin wrench	insert screw	in. lbs.	Torx Plus wrench	cam pin	wedge wrench	wedge screw	socket-head cap screw
5.000	KSSC709-813L	KSSW709-813	MW3	MS2077	35	TTP15	KSSCP709-917	THW3M	STCM11	S467
6.000	KSSC709-813L	KSSW709-813	MW3	MS2077	35	TTP15	KSSCP709-917	THW3M	STCM11	–
8.000	KSSC709-813L	KSSW709-813	MW3	MS2077	35	TTP15	KSSCP709-917	THW3M	STCM11	–
10.000	KSSC709-813L	KSSW709-813	MW3	MS2077	35	TTP15	KSSCP709-917	THW3M	STCM11	–
12.000	KSSC709-813L	KSSW709-813	MW3	MS2077	35	TTP15	KSSCP709-917	THW3M	STCM11	–

Shell Mount • Half-Side Cutting • Left Hand

order number	catalog number	D1	D	D6	CDX	L1	V	Ap1 max	Z	Z S	max RPM	lbs
2268687	KSSS500BSD43L813-917	5.000	1.250	2.880	.997	1.228	.052	.461	8	8	10300	4.80
2268699	KSSS600BSD43L813-917	6.000	1.500	3.810	1.032	1.228	.052	.461	10	10	9400	6.58
2268711	KSSS800BSD43L813-917	8.000	1.500	3.810	2.032	1.228	.052	.461	14	14	8150	10.62
2268723	KSSS1000BSD43L813-917	10.000	2.500	5.200	2.312	1.228	.052	.461	16	16	7250	15.42
2268735	KSSS1200BSD43L813-917	12.000	2.500	5.200	3.312	1.228	.052	.461	18	18	6650	21.19

Spare Parts





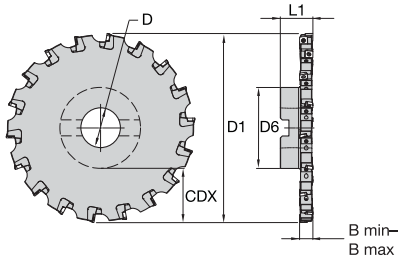






D1	left-hand cartridge	wedge	cam pin wrench	insert screw	in. lbs.	Torx Plus wrench	cam pin	wedge wrench	wedge screw	socket-head cap screw
5.000	KSSC813-917L	KSSW813-917	MW3	MS2077	35	TTP15	KSSCP709-917	THW3M	STCM11	S467
6.000	KSSC813-917L	KSSW813-917	MW3	MS2077	35	TTP15	KSSCP709-917	THW3M	STCM11	–
8.000	KSSC813-917L	KSSW813-917	MW3	MS2077	35	TTP15	KSSCP709-917	THW3M	STCM11	–
10.000	KSSC813-917L	KSSW813-917	MW3	MS2077	35	TTP15	KSSCP709-917	THW3M	STCM11	–
12.000	KSSC813-917L	KSSW813-917	MW3	MS2077	35	TTP15	KSSCP709-917	THW3M	STCM11	–

- Rapid adjustment and setting via unique cam adjustment mechanism.
- Large selection of insert geometries and grades to cut most workpiece materials.
- Four insert cutting edges.
- Large selection of insert radii.
- Wiper insert facets for superior surface finishes.

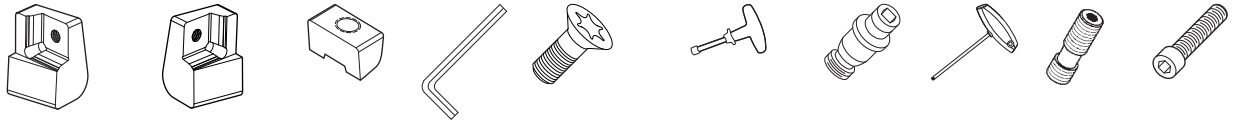




Shell Mount • Slotting Cutting • .709–.813" Adjustment Range

order number	catalog number	D1	D	D6	B min	B max	CDX	L1	Z	Z S	max RPM	lbs
2268679	KSSS500BSD43N709-813	5.000	1.250	2.880	.709	.813	.997	2.093	8	4	10300	4.55
2268691	KSSS600BSD43N709-813	6.000	1.500	3.810	.709	.813	1.032	2.093	10	5	9400	6.26
2268703	KSSS800BSD43N709-813	8.000	1.500	3.810	.709	.813	2.032	2.093	14	7	8150	9.72
2268715	KSSS1000BSD43N709-813	10.000	2.500	5.250	.709	.813	2.312	2.093	16	8	7250	14.04
2268727	KSSS1200BSD43N709-813	12.000	2.500	5.250	.709	.813	3.312	2.093	18	9	6650	19.83

Spare Parts

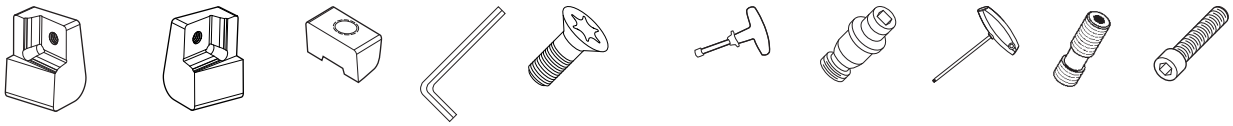


D1	right-hand cartridge	left-hand cartridge	wedge	cam pin wrench	insert screw	in. lbs.	Torx Plus wrench	cam pin	wedge wrench	wedge screw	socket-head cap screw
5.000	KSSC709-813R	KSSC709-813L	KSSW709-813	MW3	MS2077	35	TTP15	KSSCP709-917	THW3M	STCM11	S467
6.000	KSSC709-813R	KSSC709-813L	KSSW709-813	MW3	MS2077	35	TTP15	KSSCP709-917	THW3M	STCM11	–
8.000	KSSC709-813R	KSSC709-813L	KSSW709-813	MW3	MS2077	35	TTP15	KSSCP709-917	THW3M	STCM11	–
10.000	KSSC709-813R	KSSC709-813L	KSSW709-813	MW3	MS2077	35	TTP15	KSSCP709-917	THW3M	STCM11	–
12.000	KSSC709-813R	KSSC709-813L	KSSW709-813	MW3	MS2077	35	TTP15	KSSCP709-917	THW3M	STCM11	–

Shell Mount • Slotting Cutting • .813–.917" Adjustment Range

order number	catalog number	D1	D	D6	B min	B max	CDX	L1	Z	Z S	max RPM	lbs
2268685	KSSS500BSD43N813-917	5.000	1.250	2.880	.813	.917	.997	2.093	8	4	10300	4.80
2268697	KSSS600BSD43N813-917	6.000	1.500	3.810	.813	.917	1.032	2.093	10	5	9400	6.58
2268709	KSSS800BSD43N813-917	8.000	1.500	3.810	.813	.917	2.032	2.093	14	7	8150	10.62
2268721	KSSS1000BSD43N813-917	10.000	2.500	5.200	.813	.917	2.312	2.093	16	8	7250	15.42
2268733	KSSS1200BSD43N813-917	12.000	2.500	5.200	.813	.917	3.312	2.093	18	9	6650	21.19

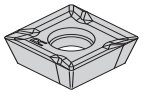
Spare Parts



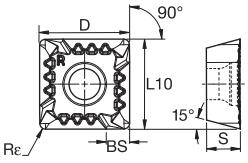
D1	right-hand cartridge	left-hand cartridge	wedge	cam pin wrench	insert screw	in. lbs.	Torx Plus wrench	cam pin	wedge wrench	wedge screw	socket-head cap screw
5.000	KSSC813-917R	KSSC813-917L	KSSW813-917	MW3	MS2077	35	TTP15	KSSCP709-917	THW3M	STCM11	S467
6.000	KSSC813-917R	KSSC813-917L	KSSW813-917	MW3	MS2077	35	TTP15	KSSCP709-917	THW3M	STCM11	–
8.000	KSSC813-917R	KSSC813-917L	KSSW813-917	MW3	MS2077	35	TTP15	KSSCP709-917	THW3M	STCM11	–
10.000	KSSC813-917R	KSSC813-917L	KSSW813-917	MW3	MS2077	35	TTP15	KSSCP709-917	THW3M	STCM11	–
12.000	KSSC813-917R	KSSC813-917L	KSSW813-917	MW3	MS2077	35	TTP15	KSSCP709-917	THW3M	STCM11	–

Insert Selection Guide

Group	Light Machining Geometry	Light Machining Grade	General Purpose Geometry	General Purpose Grade	Heavy Machining Geometry	Heavy Machining Grade
P1–P2	.E..LD2	KC725M	**.E..GB2**	**KC725M**	.S..GB2	KC725M
P3–P4	.E..GB2	KCPK30	**.S..GB2**	**KCPK30**	.S..GB	KCPK30
P5–P6	.E..GB2	KCPM20	**.S..GB2**	**KCPM20**	.S..GB	KCPK30
M1–M2	.E..LD2	KC725M	**.E..GB2**	**KC725M**	.S..GB2	KC725M
M3	.E..GB2	KCPK30	**.S..GB2**	**KCPK30**	.S..GB	KCPK30
K1–K2	.E..LD	KCK15	**.E..GB2**	**KCK15**	.S..GB2	KCK15
K3	.E..GB2	KCPK30	**.S..GB2**	**KCPK30**	.S..GB	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..LD2	KC725M	**.E..GB2**	**KC725M**	.S..GB2	KC725M
S3	.E..GB2	KC725M	**.S..GB2**	**KC725M**	.S..GB	KC725M
S4	.S..GB2	KC725M	**.S..GB**	**KC725M**	–	–
H1	–	–	–	–	–	–



SDCT-LE

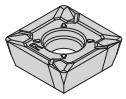


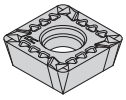
● first choice
○ alternate choice

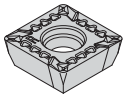
	KC410M	KC520M	KC522M	KC725M	KCK15	KCPK30	KCPM20
P			○	●		●	●
M			●	●		○	○
K		●	○		●	○	○
N	●						
S			●	●			
H							

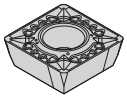
SDCT-LE (Ground) 20° Rake Face

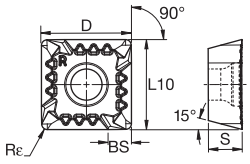
catalog number	D	S	L10	BS	Rε	hm	cutting edges	KC410M	KC520M	KC522M	KC725M	KCK15	KCPK30	KCPM20
SDCT431PDFL8LE	.500	.188	.500	.106	.016	.001	4	●						
SDCT431PDFR8LE	.500	.188	.500	.106	.016	.001	4	●						
SDCT43PDFL8LE	.500	.188	.500	.106	.031	.001	4	●						
SDCT43PDFR8LE	.500	.188	.500	.106	.031	.001	4	●						
SDCT433PDFL8LE	.500	.188	.500	.106	.047	.001	4	●						
SDCT433PDFR8LE	.500	.188	.500	.106	.047	.001	4	●						
SDCT434FNLE	.500	.188	.500	–	.063	.001	4	●						
SDCT435FNLE	.500	.188	.500	–	.078	.001	4	●						
SDCT436FNLE	.500	.188	.500	–	.094	.001	4	●						
SDCT438FNLE	.500	.188	.500	–	.125	.001	4	●						


SDCT-LD2


SDET-GB2


SDPT-GB2


SDET-GB



● first choice
○ alternate choice

		KC410M	KC520M	KC522M	KC725M	KCK15	KCPK30	KCPM20
P				○	●		●	●
M				●	●		○	○
K			●	○		●	○	○
N		●						
S				●	●			
H								

SDCT-LD2 (Ground) 15° Rake Face

catalog number	D	S	L10	BS	Rε	hm	cutting edges	KC410M	KC520M	KC522M	KC725M	KCK15	KCPK30	KCPM20
SDCT431PDEL8LD2	.500	.188	.500	.106	.016	.002	4				●			
SDCT431PDER8LD2	.500	.188	.500	.115	.016	.002	4				●			●
SDCT43PDEL8LD2	.500	.188	.500	.130	.031	.002	4				●			
SDCT43PDER8LD2	.500	.188	.500	.130	.031	.002	4		●		●			●
SDCT433PDEL8LD2	.500	.188	.500	.120	.047	.002	4				●			
SDCT433PDER8LD2	.500	.188	.500	.120	.047	.002	4				●			
SDCT434ENLD2	.500	.188	.500	–	.063	.002	4				●			
SDCT435ENLD2	.500	.188	.500	–	.078	.002	4				●			
SDCT436ENLD2	.500	.188	.500	–	.094	.002	4				●			
SDCT438ENLD2	.500	.188	.500	–	.125	.002	4			●	●			
SDCT4316ENLD2	.500	.188	.500	–	.250	.002	2				●			

SDET-GB2 (Ground) 5° Rake Face

catalog number	D	S	L10	BS	Rε	hm	cutting edges	KC410M	KC520M	KC522M	KC725M	KCK15	KCPK30	KCPM20
SDET43PDEL8GB2	.500	.188	.500	.130	.031	.003	4		●		●	●	●	
SDET43PDER8GB2	.500	.188	.500	.130	.031	.003	4		●		●	●	●	
SDET43PDSL8GB2	.500	.188	.500	.130	.031	.005	4		●		●	●	●	
SDET43PDSR8GB2	.500	.188	.500	.130	.031	.005	4		●		●	●	●	
SDET433PDEL8GB2	.500	.188	.500	.120	.047	.003	4		●		●	●		
SDET433PDER8GB2	.500	.188	.500	.120	.047	.003	4		●		●	●	●	
SDET434SNGB2	.500	.188	.500	–	.063	.005	4		●		●	●	●	
SDET435SNGB2	.500	.188	.500	–	.078	.005	4		●		●	●	●	
SDET436SNGB2	.500	.188	.500	–	.094	.005	4		●		●	●	●	
SDET438SNGB2	.500	.188	.500	–	.125	.005	4		●		●	●	●	
SDET438XENGB2	.500	.188	.500	–	.125	.003	2				●			
SDET4316SNGB2	.500	.188	.500	–	.250	.005	2					●	●	

SDPT-GB2

catalog number	D	S	L10	BS	Rε	hm	cutting edges	KC410M	KC520M	KC522M	KC725M	KCK15	KCPK30	KCPM20
SDPT43PDER8GB2	.500	.188	.500	.106	.031	.003	4				●	●	●	●
SDPT43PDSR8GB2	.500	.188	.500	.106	.031	.005	4				●	●	●	●

SDET-GB (Ground) 5° Rake Face

catalog number	D	S	L10	BS	Rε	hm	cutting edges	KC410M	KC520M	KC522M	KC725M	KCK15	KCPK30	KCPM20
SDET43PDER8GB	.500	.188	.500	.132	.031	.003	4		●					
SDET43PDSR8GB	.500	.188	.500	.132	.031	.006	4				●		●	
SDET433PDER8GB	.500	.188	.500	.132	.047	.003	4				●			
SDET4316SNGB	.500	.188	.500	–	.250	.006	2				●			

Recommended Starting Speeds [SFM]

Material Group		KC410M			KC520M			KC522M			KC725M		
P	1	–	–	–	–	–	–	1080	**940**	880	860	**750**	700
	2	–	–	–	–	–	–	900	**790**	660	720	**630**	530
	3	–	–	–	–	–	–	830	**700**	580	660	**560**	460
	4	–	–	–	–	–	–	740	**610**	490	590	**490**	390
	5	–	–	–	–	–	–	610	**550**	490	490	**440**	390
	6	–	–	–	–	–	–	540	**410**	330	430	**330**	260
M	1	–	–	–	–	–	–	670	**590**	540	560	**490**	450
	2	–	–	–	–	–	–	610	**520**	430	510	**430**	360
	3	–	–	–	–	–	–	460	**400**	310	380	**330**	260
K	1	–	–	–	880	**800**	710	750	**680**	600	–	–	–
	2	–	–	–	690	**620**	580	590	**530**	490	–	–	–
	3	–	–	–	580	**520**	470	490	**440**	400	–	–	–
N	1–2	3990	**3550**	3270	–	–	–	–	–	–	–	–	–
	3	3550	**3270**	3000	–	–	–	–	–	–	–	–	–
S	1	–	–	–	–	–	–	130	**120**	90	115	**100**	80
	2	–	–	–	–	–	–	130	**120**	90	115	**100**	80
	3	–	–	–	–	–	–	170	**130**	90	150	**115**	80
	4	–	–	–	–	–	–	230	**170**	120	200	**150**	100
H	1	–	–	–	–	–	–	–	–	–	–	–	–

Material Group		KCK15			KCPK30			KCPM20		
P	1	–	–	–	1485	**1300**	1210	1810	**1590**	1470
	2	–	–	–	920	**830**	750	1120	**1010**	910
	3	–	–	–	830	**750**	680	1010	**910**	830
	4	–	–	–	620	**575**	520	760	**700**	630
	5	–	–	–	850	**760**	690	910	**820**	750
	6	–	–	–	520	**450**	–	630	**550**	475
M	1	–	–	–	680	**600**	515	730	**655**	570
	2	–	–	–	610	**530**	460	670	**580**	520
	3	–	–	–	475	**430**	380	530	**475**	410
K	1	1380	**1255**	1115	965	**875**	780	1180	**1070**	960
	2	1095	**975**	910	770	**690**	630	940	**840**	770
	3	920	**815**	750	645	**575**	530	790	**700**	650
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.

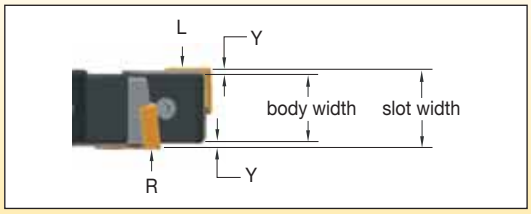
Recommended Starting Feeds [IPT]

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%			
.F..LE	.003	**.007**	.014	.003	**.005**	.010	.002	**.004**	.009	.002	**.004**	.008	.002	**.004**	.008	.F..LE
.E..LD	.004	**.010**	.020	.003	**.007**	.015	.002	**.006**	.013	.002	**.006**	.012	.002	**.006**	.012	.E..LD
.E..LD2	.004	**.010**	.020	.003	**.007**	.015	.002	**.006**	.013	.002	**.006**	.012	.002	**.006**	.012	.E..LD2
.E..GB	.007	**.014**	.024	.005	**.011**	.018	.004	**.009**	.015	.004	**.009**	.014	.004	**.008**	.014	.E..GB
.E..GB2	.007	**.014**	.024	.005	**.011**	.018	.004	**.009**	.015	.004	**.009**	.014	.004	**.008**	.014	.E..GB2
.S..GB	.007	**.017**	.025	.005	**.013**	.019	.004	**.011**	.016	.004	**.010**	.015	.004	**.010**	.015	.S..GB
.S..GB2	.007	**.017**	.025	.005	**.013**	.019	.004	**.011**	.016	.004	**.010**	.015	.004	**.010**	.015	.S..GB2

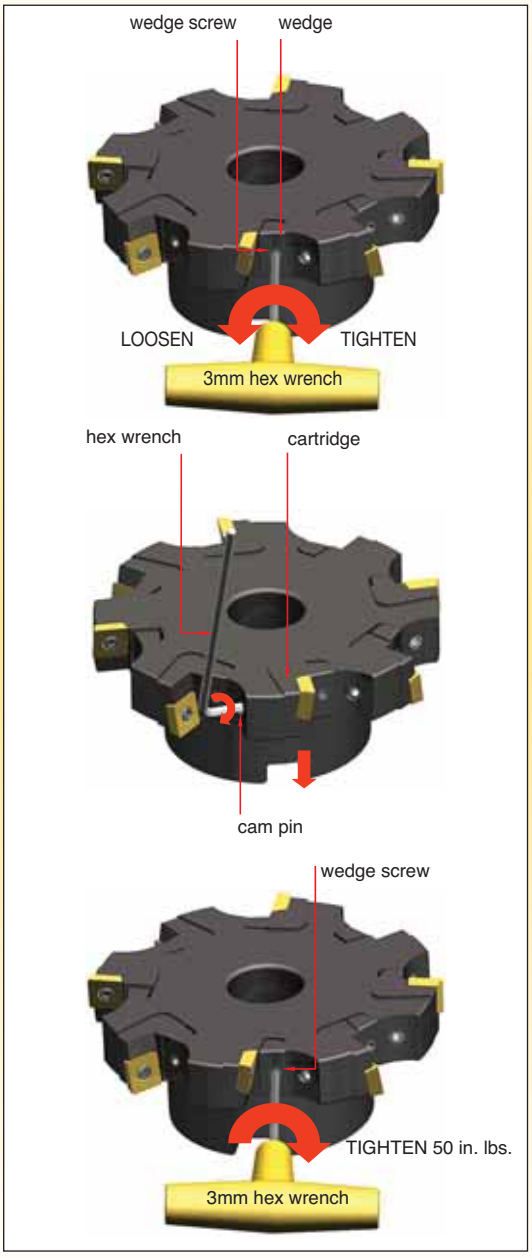
NOTE: Use “Light Machining” values as starting feed rate.

KSSM Slot Width Adjustment Instructions



1. Measure body width at pocket 1 (per stamp on tool body) behind cartridge.
2. Zero tool presetter at pocket 1 behind cartridge.
3. Move presetter over the insert and set distance Y. Y = (Desired Slot Width–Body Width)/2.
4. Zero over insert at starting pocket (pocket 1).
5. Adjust remaining cartridges on the same side.
6. Return to starting pocket and start with step 2 for opposite side of cutter.

KSSM Cartridge Adjustment Instructions



1. Insert 3mm hex wrench into STCM Screw.
2. Rotate 3mm hex wrench counter-clockwise to loosen wedge.
3. Rotate 3mm hex wrench clockwise to lightly tighten STCM screw to approximately 9 in. lbs., so the wedge is touching the cartridge and cutter body. This creates some slight resistance against the cartridge during the adjustment.
4. Insert hex wrench into cam pin behind cartridge.
5. Rotate wrench to adjust cartridge to desired position.
6. For best accuracy, back cam pin off, so you can feel it is not touching the sides of the slot in the back of the cartridge.
7. Remove wrench from cam pin.
8. Insert 3mm hex wrench into STCM screw
9. Tighten STCM screw to 55 in. lbs. prior to using the cutter. Kennametal torque wrench KTW45 or alternate torque wrench should be used.
10. Double check cartridge position to assure no movement.



Beyond BLAST™ KSSM 45°

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The Beyond BLAST KSSM 45° utilizes Precision Coolant Technology (PCT) to aggressively apply coolant directly to the cutting area. Not only does this reduce heat at the cutting edge, but it also assists with reducing tool and chip friction, increasing chip evacuation, and relieving shear stress. Because the Beyond BLAST technology can be applied in low-pressure conditions, there is no need to invest in additional equipment. It's so easy to convert from conventional to Beyond BLAST technology, it can be done directly on the floor — virtually eliminating costly downtime. See what the performance leader can do for your titanium machining.

- Easy to convert from conventional to Beyond BLAST technology.
- Up to 100% better tool life.
- Less tool/chip friction and shear stress.
- Beyond BLAST also works with regular low-pressure conditions.
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KDMT • Toroidal and High-Feed Inserts R87–R91

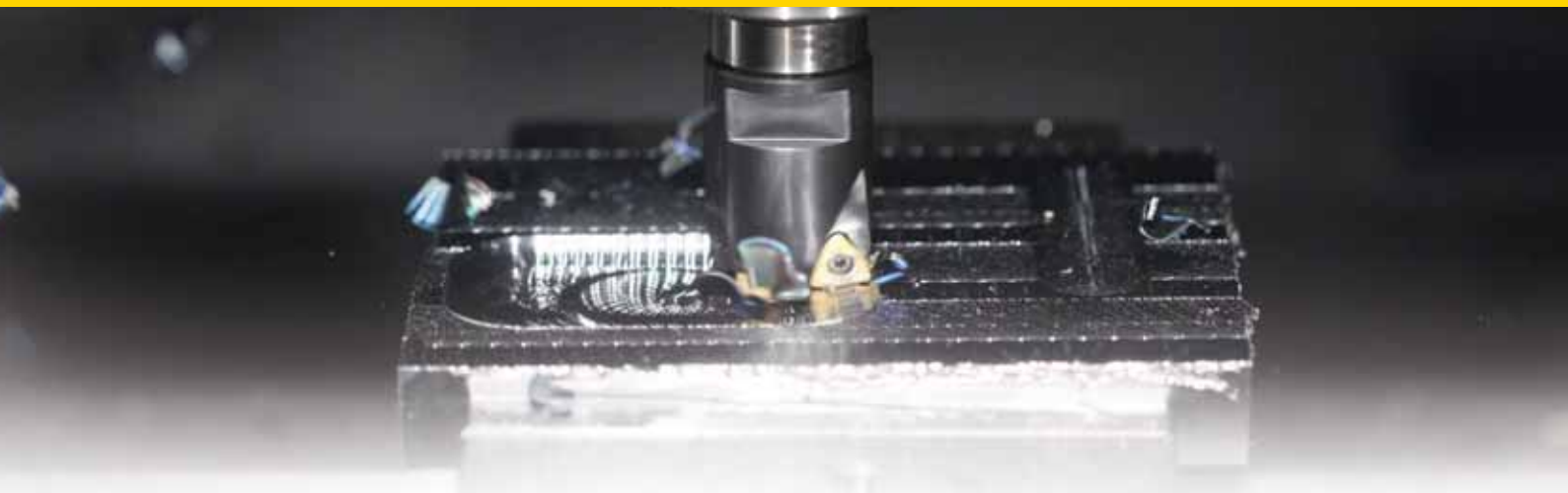
Z-Axis • Plunge Milling Cutters R92–R100

KDMR • Multifunction Cutters R102–R106

KIPR and KSSR • Round Ceramic Milling Cutters R108–R117

RPG2150, RPG32, RPG43 • Positive Insert Style R109–R114

RNG45 • Negative Insert Style, Double Sided R115–R117



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Primary Application

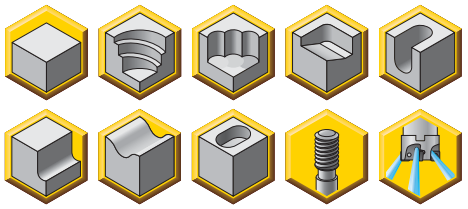
KenFeed 2X is a double-sided trigon insert with six cutting edges engineered to provide you a superior MRR and productivity through high-feed rates for roughing operations.

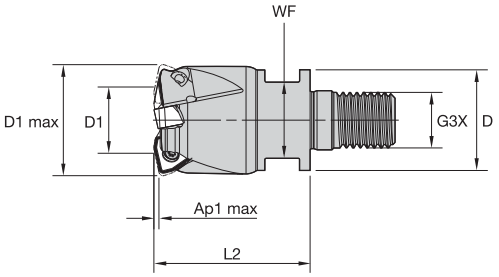
Features and Benefits





- 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.

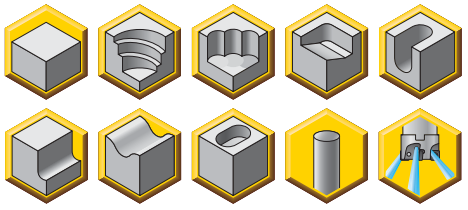


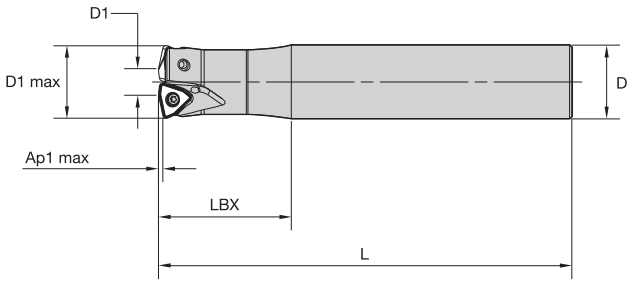




Screw-On End Mills • Inch

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







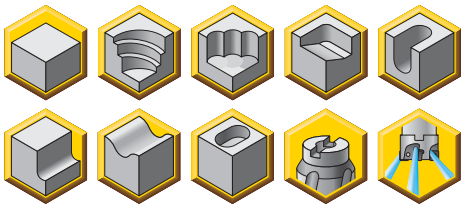
End Mills • Inch

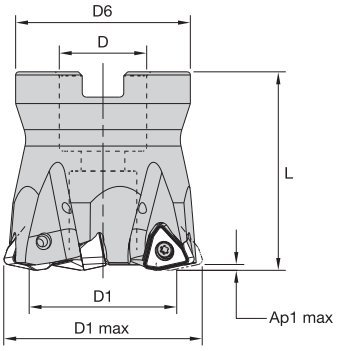
order number	catalog number	D1 max	D1	D	L	LBX	Ap1 max	Z	max RPM	insert 1	lbs
4109580	**KF2X100W0902C100L600**	1.000	.350	1.000	6.000	1.780	.059	2	36600	WOEJ090512__	1.15
4109581	**KF2X100W0902C100L800**	1.000	.350	1.000	8.000	1.780	.059	2	36600	WOEJ090512__	1.58
4109582	**KF2X125W0903C125L600**	1.250	.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

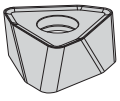
D1 max	 insert screw	in. lbs.	 Torx Plus driver	 socket-head cap screw
1.500	**MS2235**	15.00	**DT8IP**	**S424**
2.000	**MS2235**	15.00	**DT8IP**	**S445**
2.500	**MS2235**	15.00	**DT8IP**	**S445**
3.000	**MS2235**	15.00	**DT8IP**	**S458**

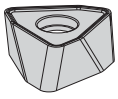
Insert Selection Guide

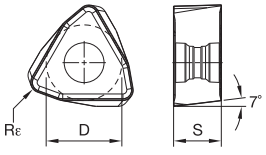
Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.S..GD	KC522M	**.S..GD**	**KCPK30**	.S..GD	KCPK30
P3–P4	.S..HD	KC522M	**.S..HD**	**KCPK30**	.S..HD	KCPK30
P5–P6	.S..HD	KC522M	**.S..HD**	**KCPK30**	.S..HD	KCPK30
M1–M2	.S..GD	KC522M	**.S..GD**	**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]

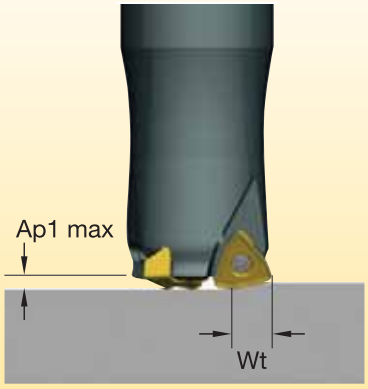
Light Machining	General Purpose	Heavy Machining

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

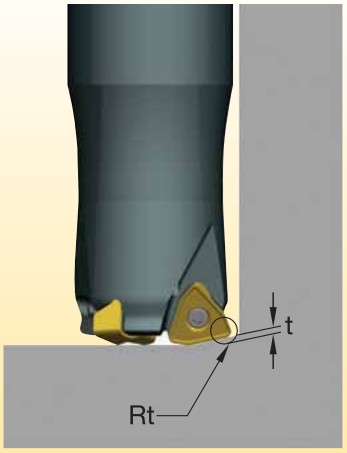
NOTE: Use “Light Machining” values as starting feed rate.

General Programming Information for Applying KenFeed 2X • IC09

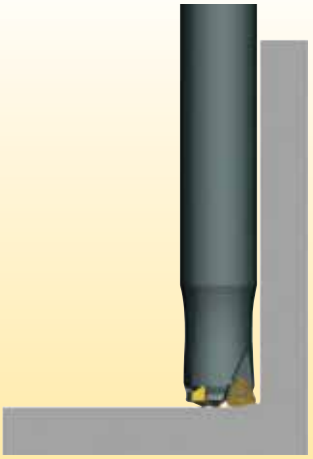
Rt	Wt	t
.110	.312	.045



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

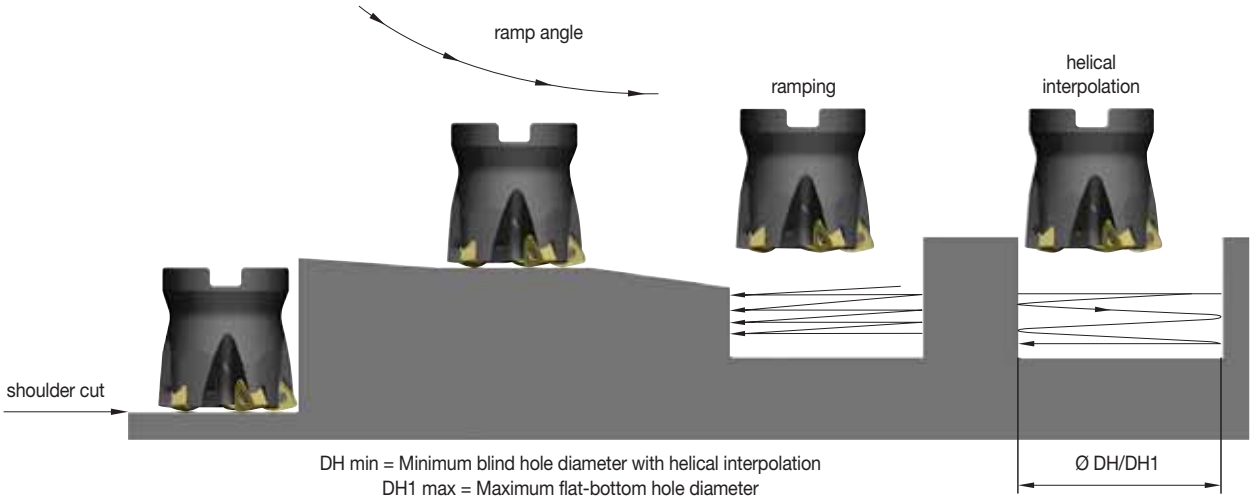


For CAM programming, the loads can be programmed as a toroidal tool type by using the Rt value as the insert radius.



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.**

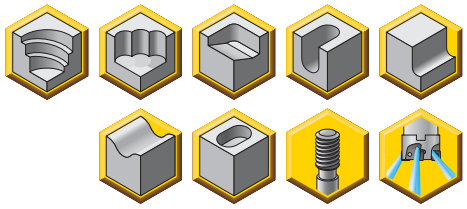
Features and Benefits

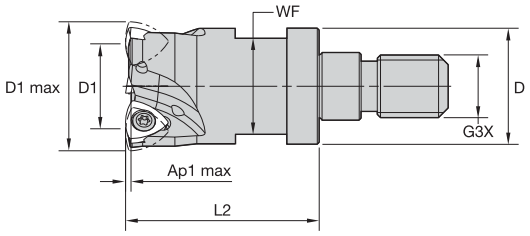


Insert and body design with superior copy milling capabilities enable us to run the cutter with true ramping, profiling, and pocketing capabilities.



- 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.

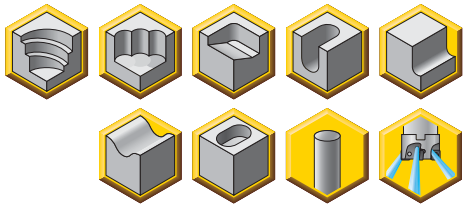


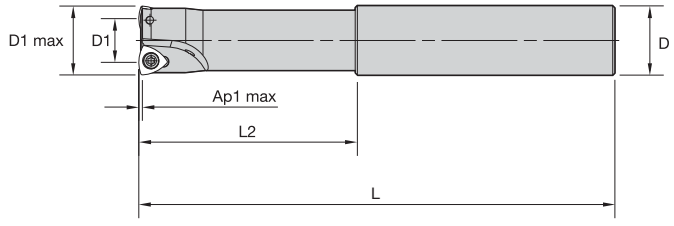




Screw-On End Mills • Inch

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

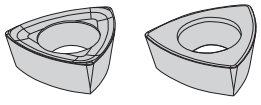
D1 max	insert screw	in. lbs.	Torx wrench
.625	**192.416**	8	**FT7**
.750	**192.416**	8	**FT7**
1.000	**192.416**	8	**FT7**

Insert Selection Guide

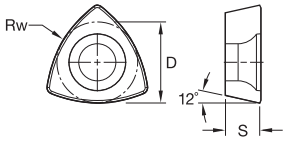
Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.LD..	KC522M	**.LD..**	**KCPK30**	.LD..	KCPK30
P3–P4	.LD..	KC522M	**.LD..**	**KCPK30**	.LD..	KCPK30
P5–P6	.LD..	KCPK30	**.LD..**	**KCPM20**	–	–
M1–M2	.LD..	KC522M	**.LD..**	**KC725M**	–	–
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]

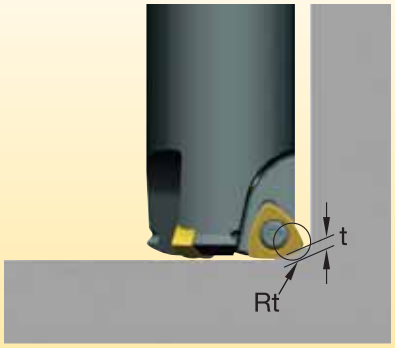
Light Machining	General Purpose	Heavy Machining

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..

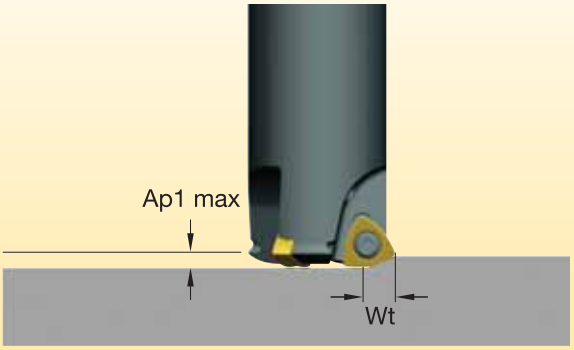
NOTE: Use “Light Machining” values as starting feed rate.

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.

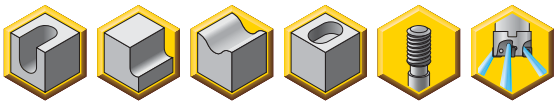
Three insert and topography styles to cover any type of component and application.

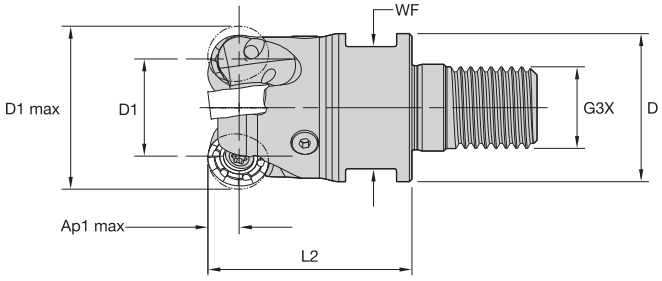


To learn more, ***scan here****.*

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.

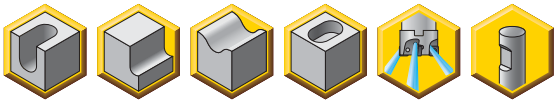


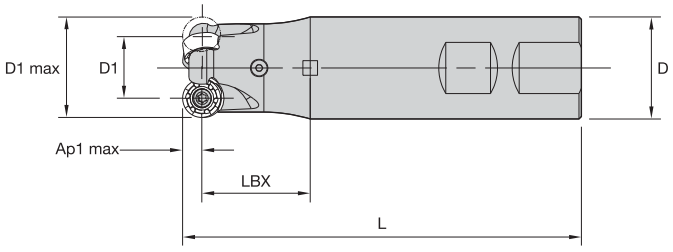




Screw-On End Mills

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__

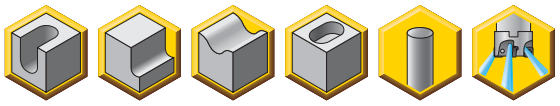
Spare Parts

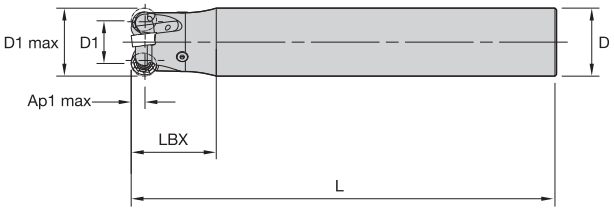




D1 max	insert screw	in. lbs.	wrench
1.25	**193.492**	35	**170.025**
1.50	**193.492**	35	**170.025**

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







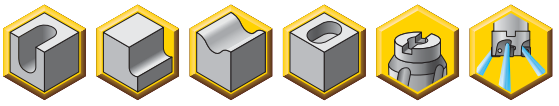
Cylindrical End Mills

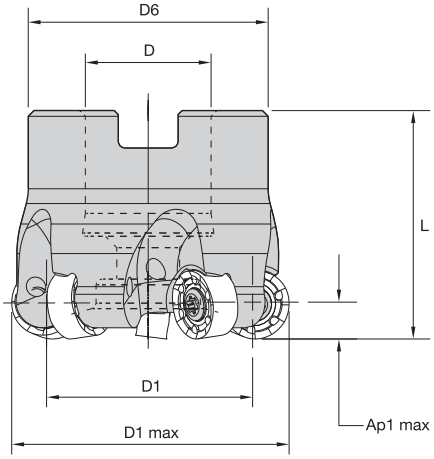
order number	catalog number	D1 max	D1	D	L	LBX	Ap1 max	Z	lbs	max RPM	insert 1
4178120	**KDR125R1202C125L900**	1.25	.778	1.25	9.00	1.50	.117	2	2.79	39310	RN_J1204M0__
4178121	**KDR150R1203C150L900**	1.50	1.028	1.50	9.00	1.50	.117	3	4.03	35890	RN_J1204M0__

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.



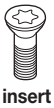




Shell Mills

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

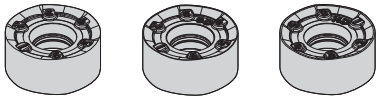
D1 max	 insert screw	in. lbs.	 socket-head cap screw	 socket-head cap screw with coolant groove	 wrench
1.50	**193.492**	35	**S422**	**S422CG**	**170.025**
2.00	**193.492**	35	**S445**	**S445CG**	**170.025**
2.50	**193.492**	35	**S445**	**S445CG**	**170.025**
3.00	**193.492**	35	**S458**	**S458CG**	**170.025**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

Insert Selection Guide

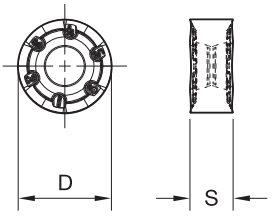
Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.E..LD	KCPK30	**.S..GD**	**KCPK30**	.S..HD	KCPK30
P3–P4	.S..GD	KC522M	**.S..HD**	**KCPM20**	.S..HD	KCPK30
P5–P6	.S..GD	KC522M	**.S..GD**	**KCPK30**	.S..HD	KCPM20
M1–M2	.E..LD	KC522M	**.E..LD**	**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.



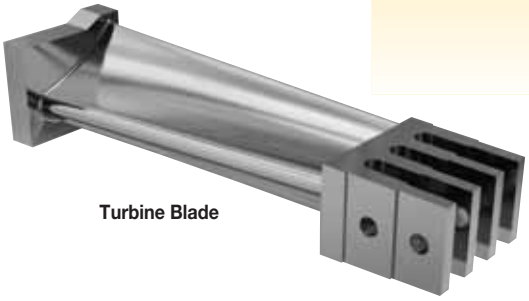
Power Plant



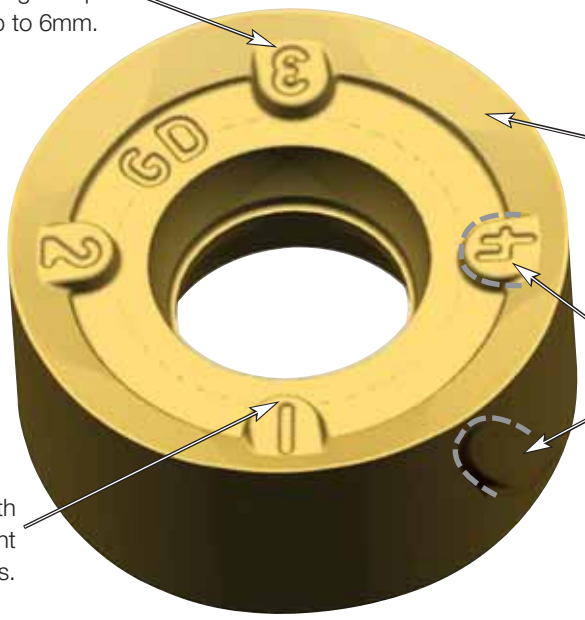
Steam Turbine



Rodeka 8



Turbine Blade



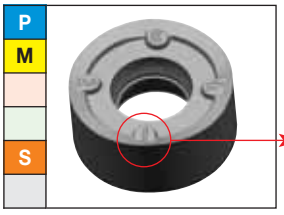
Four indexes per side, in total eight cutting edges. With higher Ap capabilities, up to 6mm.

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.

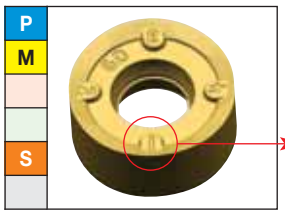
-LD



Light/Medium Machining

First choice for stainless steel and titanium machining.

-GD



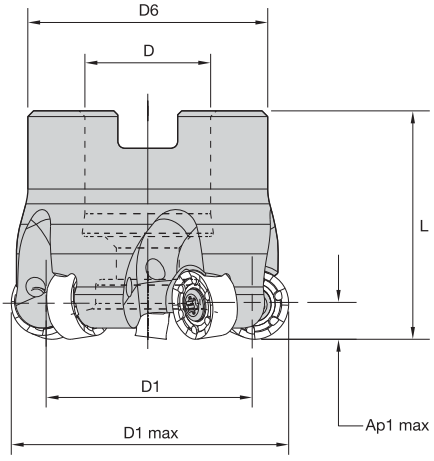
Medium/Heavy Machining

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

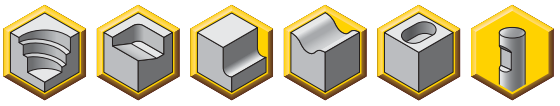
- Big draft clearance angle to improve the pocketing operations performance.
- Big clearance area in the bottom, superior ramping, and helical values.
- High accuracy and tight runout.

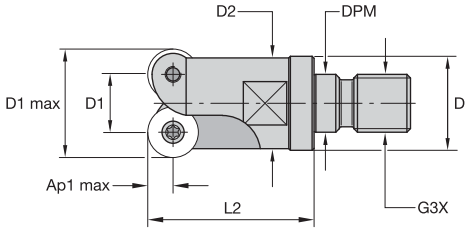
Value Proposition

- 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

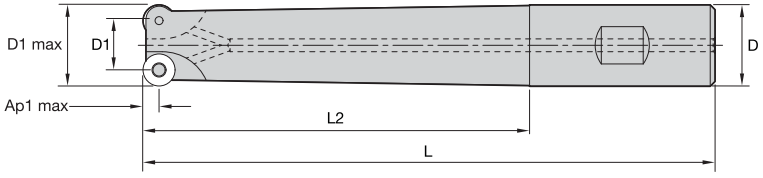
order number	catalog number	D1 max	D1	D	D2	DPM	G3X	L2	Ap1 max	Z	max ramp angle	lbs	insert 1
2511327	**KDM050RD0702M08075**	.500	.224	.512	.453	.335	M8	1.102	.138	2	10.0°	.08	RD.X07T1..
2511345	**KDM063RD0702M08100**	.625	.349	.512	.559	.335	M8	1.000	.138	2	7.0°	.08	RD.X0702..
2511346	**KDM063RD0703M08100**	.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

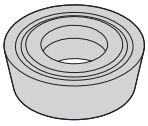
order number	catalog number	D1 max	D1	D	L	L2	Ap1 max	Z	max ramp angle	lbs	insert 1
2251715	**KDM050RD07W200**	.500	.224	.625	3.970	2.000	.138	1	10.0°	.26	RD.X07.
2251716	**KDM063RD07W200**	.625	.349	.625	3.970	2.000	.138	2	7.0°	.31	RD.X07.
2251717	**KDM075RD07W200**	.750	.474	.750	4.050	2.000	.138	3	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

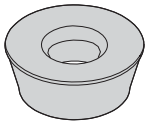
D1 max	 insert screw	in. lbs.	 Torx wrench
.500	**193.364**	10	**FT7**
.625	**193.364**	10	**FT7**
.750	**193.364**	10	**FT7**
1.000	**193.364**	10	**FT7**

Insert Selection Guide

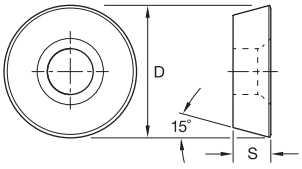
Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.F..LP	KC522M	**.F..LP**	**KC725M**	.S..LN	KC725M
P3–P4	.S..LN	KCPM20	**.S..LN**	**KC522M**	.S..LN	KC725M
P5–P6	.S..LN	KC522M	**.S..LN**	**KCPM20**	.S..LN	KCPM20
M1–M2	.F..LP	KC522M	**.F..LP**	**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)

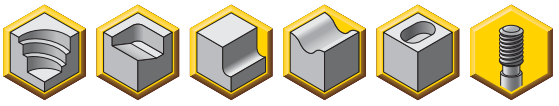
Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.F..LP	.005	**.008**	.021	.004	**.006**	.015	.003	**.005**	.013	.003	**.005**	.012	.003	**.005**	.012	.F..LP
.S..LN	.009	**.025**	.042	.006	**.018**	.031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

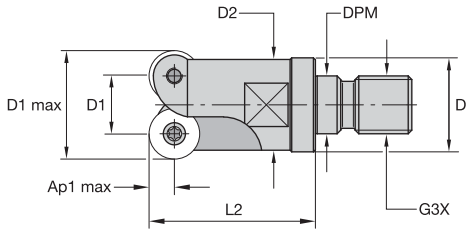
At .017 Axial Depth of Cut (ap)

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.





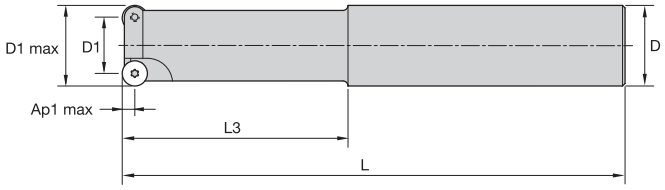


Screw-On End Mills • RD.X10 Inserts

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.







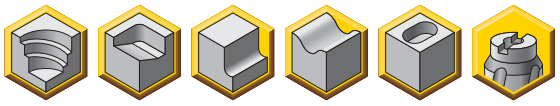
End Mills with Weldon® Shank • RD.X10 Inserts

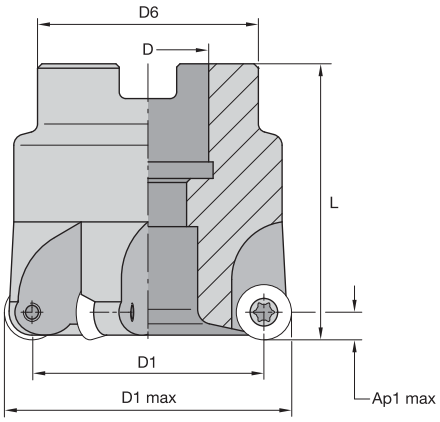
order number	catalog number	D1 max	D1	D	L	L3	Ap1 max	Z	max ramp angle	lbs	insert 1
2251721	**KDM075RD10W275**	.750	.356	.750	4.480	2.750	.197	2	10.0°	.53	RD.X10.
2251722	**KDM075RD10W475**	.750	.356	1.000	7.030	4.750	.197	2	10.0°	1.17	RD.X10.
2251753	**KDM100RD10W300**	1.000	.606	1.000	5.280	2.750	.197	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**

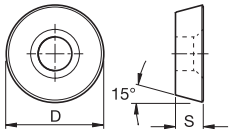
Insert Selection Guide

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

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)

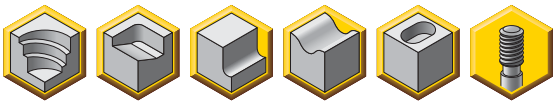
Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.F..LP	.005	**.010**	.021	.004	**.008**	.015	.003	**.007**	.013	.003	**.006**	.012	.003	**.006**	.012	.F..LP
.S..GN	.010	**.024**	.042	.008	**.018**	.031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

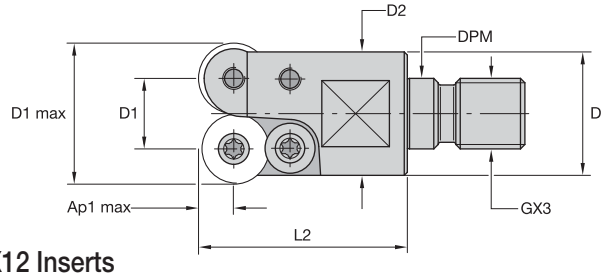
At .025 Axial Depth of Cut (ap)

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

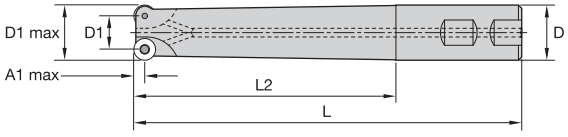
order number	catalog number	D1 max	D1	D	D2	DPM	G3X	L2	Ap1 max	Z	max ramp angle	lbs	insert 1
2511464	**KDM100RD1202M12138**	1.000	.528	.827	.906	.492	M12	1.375	.236	2	10.0°	.24	RD.X12T3..
2511465	**KDM125RD1203M16169**	1.250	.778	1.142	1.327	.669	M16	1.690	.236	3	8.0°	.49	RD.X12T3..
2511466	**KDM150RD1204M16169**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







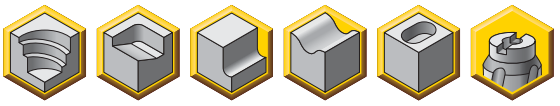
End Mills with Weldon® Shank • RD.X12 Inserts

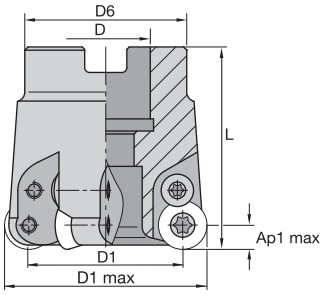
order number	catalog number	D1 max	D1	D	L	L2	Ap1 max	Z	max ramp angle	lbs	insert 1
2251757	**KDM100RD12W275**	1.000	.528	1.250	5.030	2.750	.236	2	10.0°	.99	RD.X12T3..
2251758	**KDM100RD12W475**	1.000	.528	1.250	7.030	4.750	.236	2	10.0°	1.65	RD.X12T3..
2251759	**KDM125RD12W375**	1.250	.778	1.250	6.030	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..

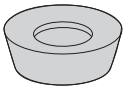
Spare Parts

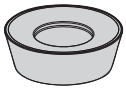
D1 max	 insert screw	in. lbs.	 Torx wrench	 clamp screw	 socket-head cap screw
2.000	**193.342**	30	**FT15**	**193.338**	**S445**
2.500	**193.342**	30	**FT15**	**193.338**	**S458**
3.000	**193.342**	30	**FT15**	**193.338**	**–**
4.000	**193.342**	30	**FT15**	**193.338**	**–**

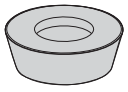
Insert Selection Guide

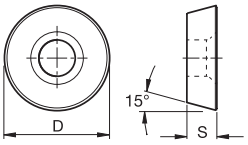
Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.F..LP	KC725M	**.S..HP**	**KC725M**	.S..HP	KC725M
P3–P4	.S..HP	KC522M	**.S..HP**	**KCPK30**	.S..HP	KCPK30
P5–P6	.S..HP	KC522M	**.S..HP**	**KCPM20**	.S..HN	KCPM20
M1–M2	–	–	**.S..HP**	**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)

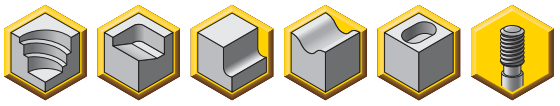
Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.F..LP	.005	**.010**	.021	.004	**.008**	.015	.003	**.007**	.013	.003	**.006**	.012	.003	**.006**	.012	.F..LP
.F..GN	.005	**.010**	.021	.004	**.008**	.015	.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

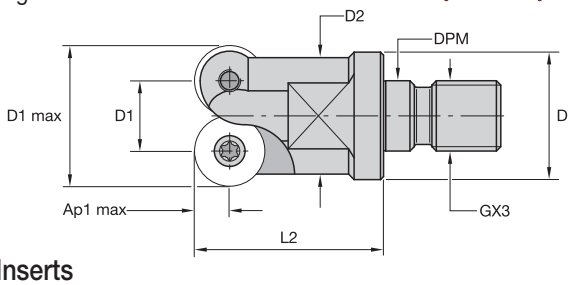
At .030 Axial Depth of Cut (ap)

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

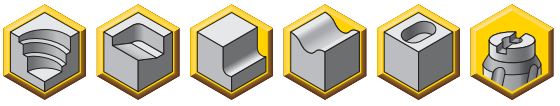
order number	catalog number	D1 max	D1	D	D2	DPM	G3X	L2	Ap1 max	Z	max ramp angle	lbs	insert 1
2511467	**KDM125RD1602M16169**	1.250	.620	1.142	1.102	.669	M16	1.690	.315	2	15.0°	.45	RD.X1604..

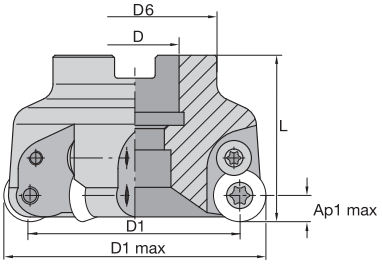
Spare Parts





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







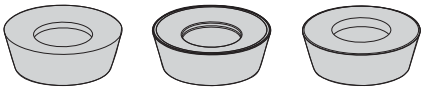


D1 max	insert screw	in. lbs.	Torx wrench	clamp screw	socket-head cap screw
2.000	**193.343**	30	**FT20**	**193.383**	**S445**
2.500	**193.343**	30	**FT20**	**193.383**	**S458**
3.000	**193.343**	30	**FT20**	**193.383**	**–**
4.000	**193.343**	30	**FT20**	**193.383**	**–**
5.000	**193.343**	30	**FT20**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

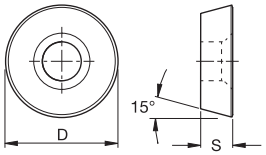
Insert Selection Guide

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

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.

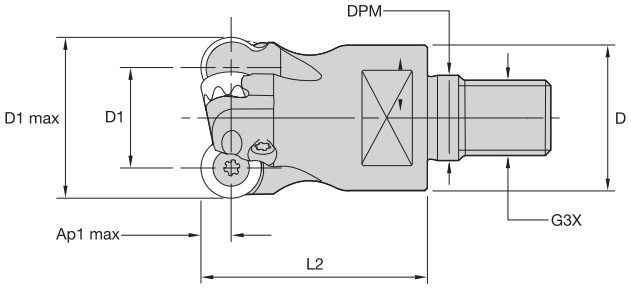
Features and Benefits





- 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...

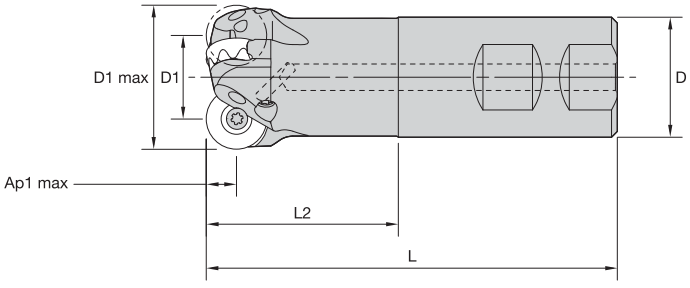
Spare Parts





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

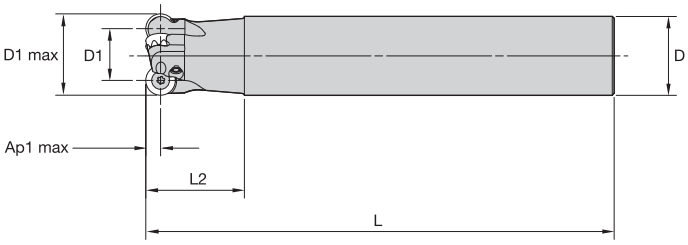




D1 max	insert screw	in. lbs.	anti-rotation screw	Torx Plus driver
1.250	MS2077	20	MS-2225	DT15IP
1.500	MS2077	20	MS-2225	DT15IP

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







Cylindrical End Mills

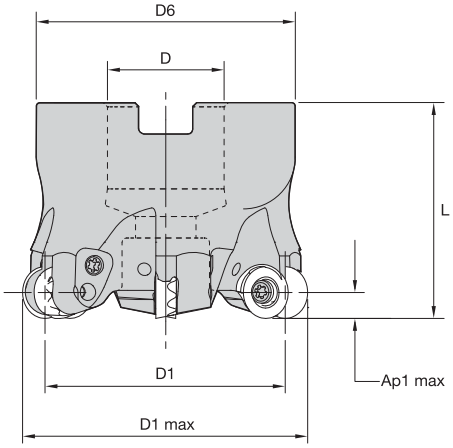
order number	catalog number	D1 max	D1	D	L	L2	Ap1 max	Z	max ramp angle	max RPM	lbs	insert 1
4042692	**BMD125R1203C125L700**	1.250	.778	1.250	7.000	1.575	.236	3	5.7°	43500	2.11	RP..T1204M0…
4042713	**BMD150R1203C125L800**	1.500	1.028	1.250	8.000	1.575	.236	3	9.8°	39700	2.54	RP..T1204M0…

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

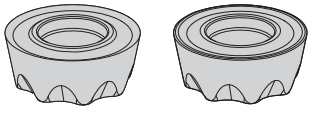
* Socket head cap screw with coolant groove sold separately as a spare part.

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	–	–	**–**	**–**	–	–

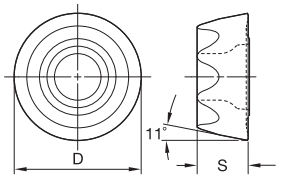
Indexable Round Inserts • KSRM

- 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

	KC422M	KC522M	KC725M	KCPM20	KCPK30
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)

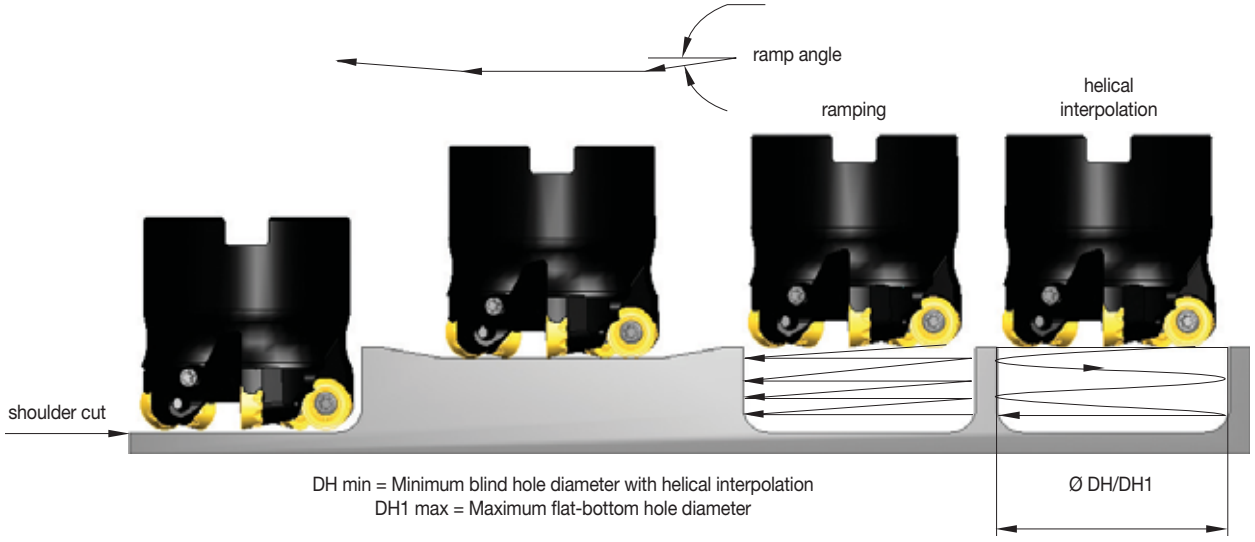
Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..LEJ	.005	**.008**	.012	.004	**.006**	.009	.003	**.005**	.008	.003	**.005**	.007	.003	**.005**	.007	.E..LEJ
.E..LE	.007	**.013**	.021	.005	**.009**	.015	.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.

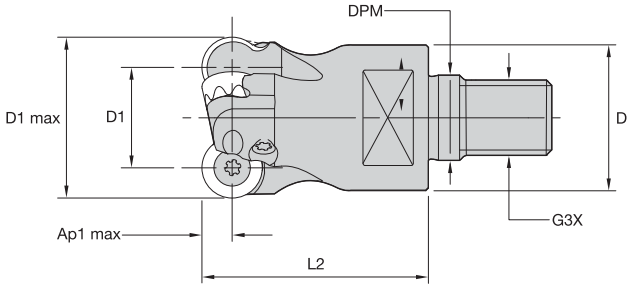
Maximum Linear Ramping and Helical Interpolation from Solid



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.



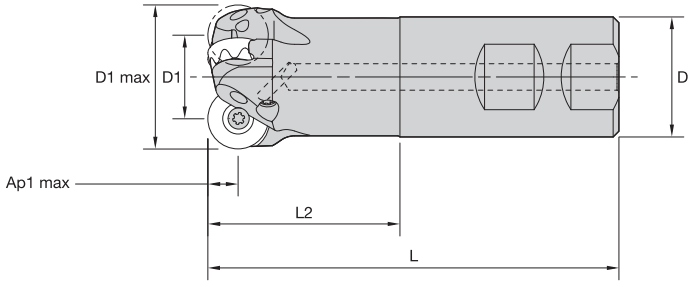




Screw-On End Mills

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



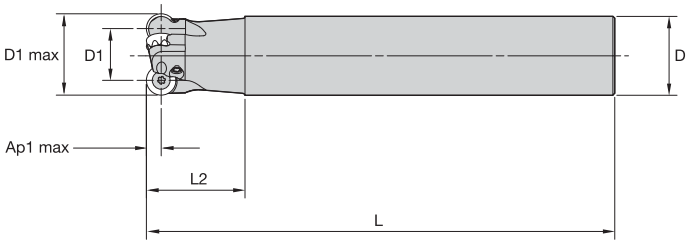




D1 max	insert screw	in. lbs.	anti-rotation screw	Torx Plus driver
1.500	MS-2071	35	MS-2225	DT15IP

- 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…

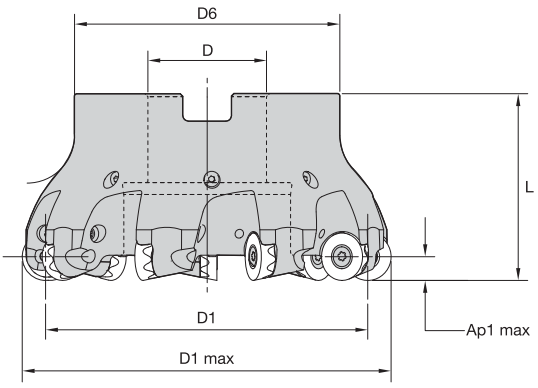
Spare Parts

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**

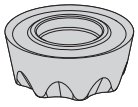
* Socket head cap screw with coolant groove sold separately as a spare part.

Insert Selection Guide

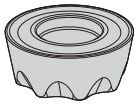
Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	.E..LE	KC725M	**.S..GE**	**KC725M**	.S..HP	KC725M
P3–P4	.E..LE	KCPK30	**.S..GE**	**KCPK30**	.S..HP	KCPK30
P5–P6	.S..GE	KCPK30	**.S..HP**	**KCPK30**	.S..HP	KCPM20
M1–M2	.E..LE	KC725M	**.E..LE**	**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

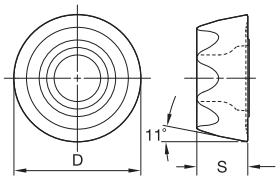
- SGE and ELE are the first choice for titanium machining.
- SGE geometry is the first choice for medium and heavy applications.
- ELE is the first choice for lower cutting forces to avoid built-up edge.



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)

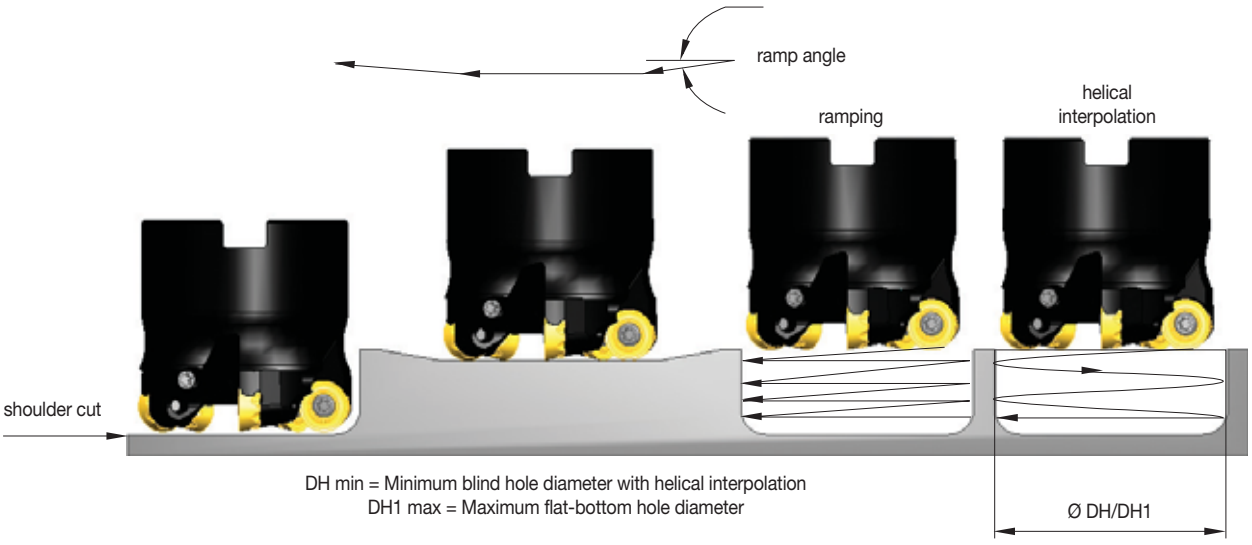
Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50%–100%			
.E..LEJ	.005	**.009**	.014	.004	**.007**	.010	.003	**.006**	.009	.003	**.006**	.008	.003	**.005**	.008	.E..LEJ
.E..LE	.007	**.015**	.023	.005	**.011**	.017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

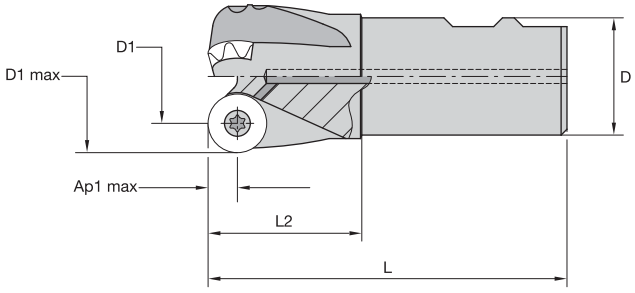
Maximum Linear Ramping and Helical Interpolation from Solid



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

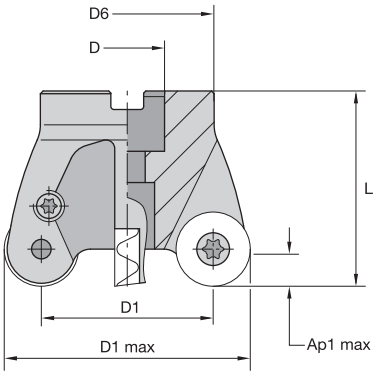
order number	catalog number	D1 max	D1	D	L	L2	Ap1 max	Z	max ramp angle	max RPM	lbs	insert 1
2610667	**BMD200R6403W150L200**	2.000	1.250	1.500	4.690	2.000	.375	3	0.60°	29000	2.15	RCG_64___

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___

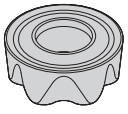
Spare Parts

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**

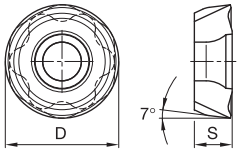
Insert Selection Guide

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

		KC522M	KC715M	KC725M	KCPK30
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

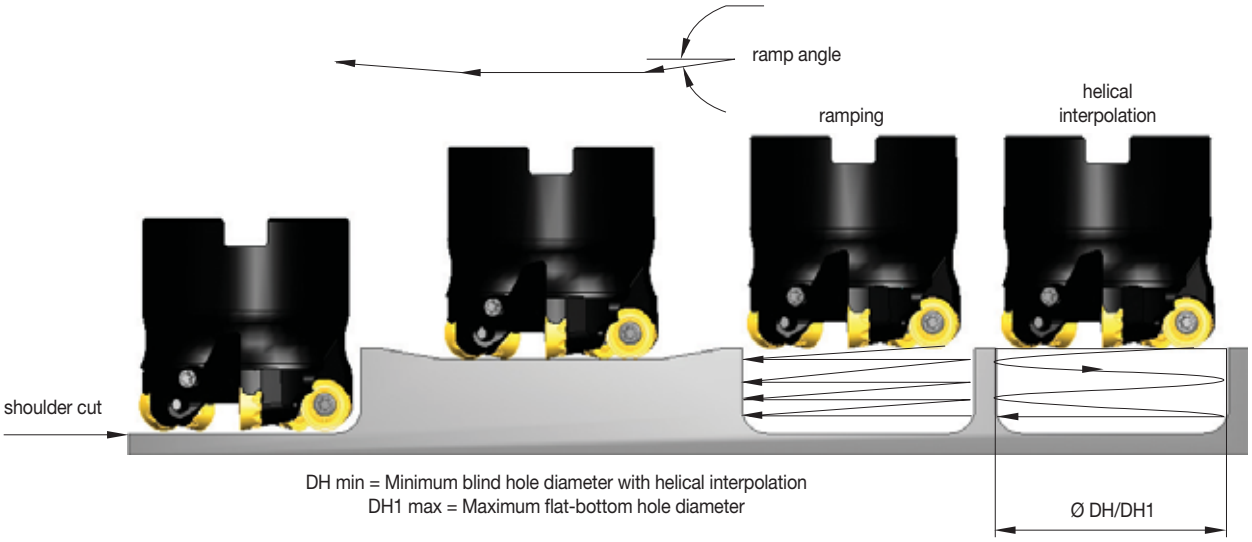
At .094 Axial Depth of Cut (ap)

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

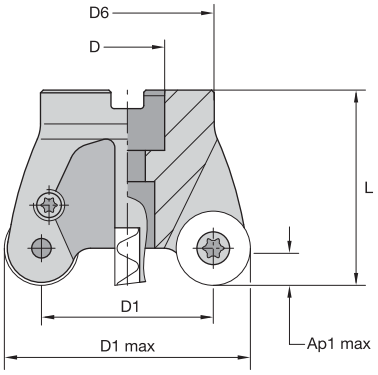
NOTE: Use “Light Machining” values as starting feed rate.



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.



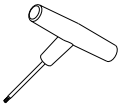
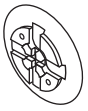




Shell Mills

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___

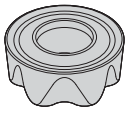
Spare Parts

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**	**–**

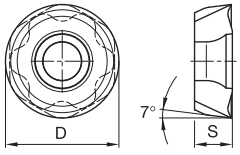
Insert Selection Guide

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

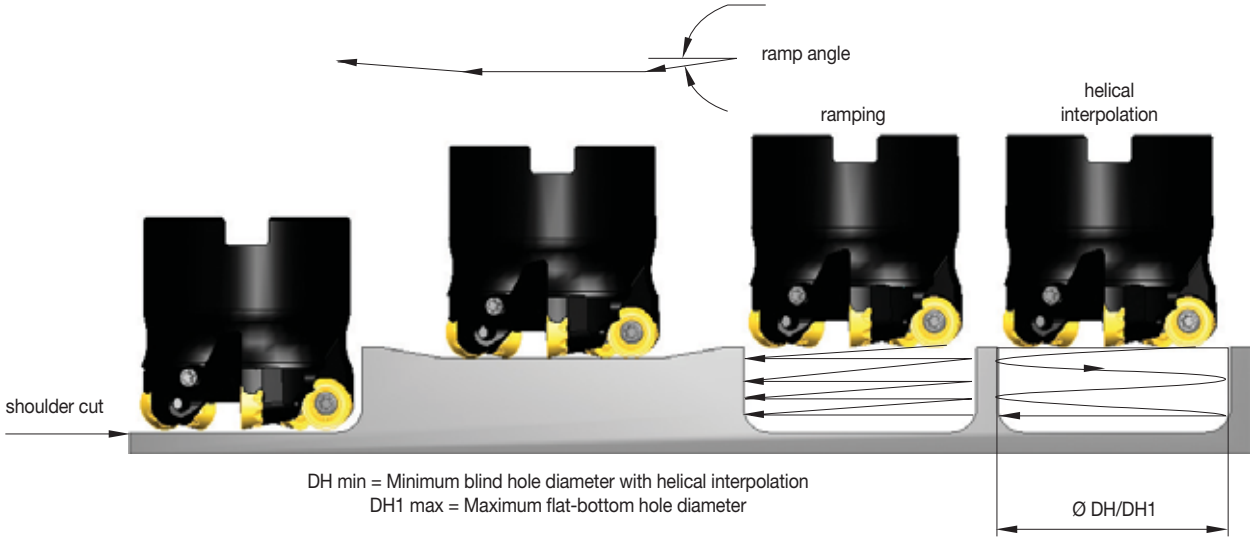
At .125 Axial Depth of Cut (ap)

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

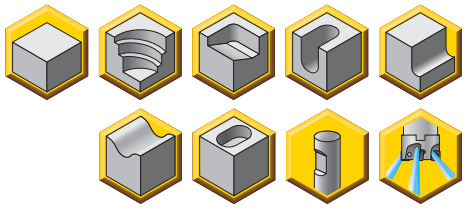
Platform Features	Benefits
Channeling coolant through the insert.	Increase productivity, tool life, and chip control.
Anti-rotation feature with six indexes.	Superior productivity and better insert utilization/cost per edge.
High positive topography with strong cutting edges.	Long tool life and better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

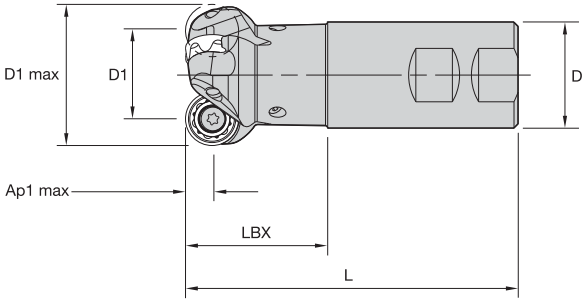


To learn more, ***scan here****.*

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

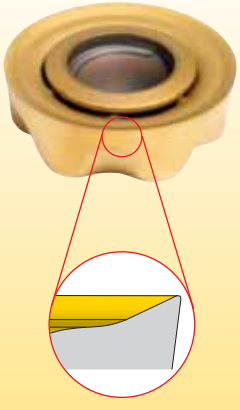
order number	catalog number	D1 max	D1	D	L	LBX	Ap1 max	Z	max RPM	insert 1	lbs
4109182	KSRM200R64BB03W150L200	2.000	1.250	1.500	4.690	2.000	.375	3	20100	RCGX64__	2.06

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

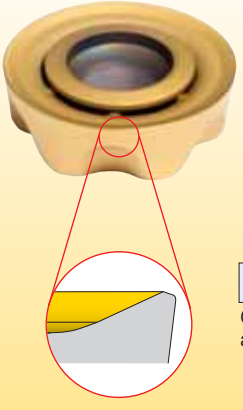
-ELF



S

Geometry for light and medium machining

-SGF

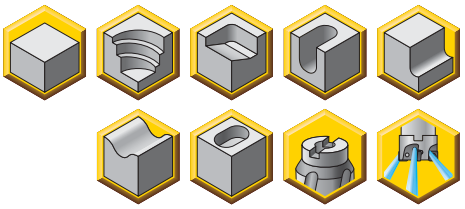


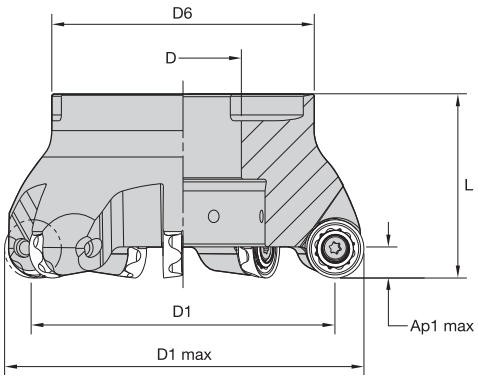
S

Geometry for medium and heavy machining

Copy Mills

- 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.







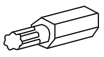
beyond BLAST™

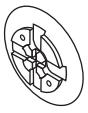
Face Mills • Inch

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







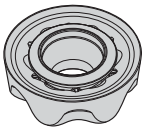

D1 max	insert screw	in. lbs.	universal bit torque driver	drive bit	coolant lock screw assembly	coolant shower plate assembly	socket-head cap screw with coolant groove
2.500	**MS1162**	45	**KPTW45**	**BT25L50**	**–**	**–**	**S445CG**
3.000	**MS1162**	45	**KPTW45**	**BT25L50**	**–**	**–**	**S458CG**
4.000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

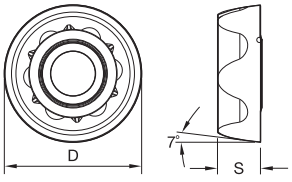
Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	–	–	–	–	–	–
P3–P4	–	–	–	–	–	–
P5–P6	–	–	–	–	–	–
M1–M2	–	–	–	–	–	–
M3	–	–	–	–	–	–
K1–K2	–	–	–	–	–	–
K3	–	–	–	–	–	–
N1–N2	–	–	–	–	–	–
N3	–	–	–	–	–	–
S1–S2	–	–	–	–	–	–
S3	–	–	–	–	–	–
S4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

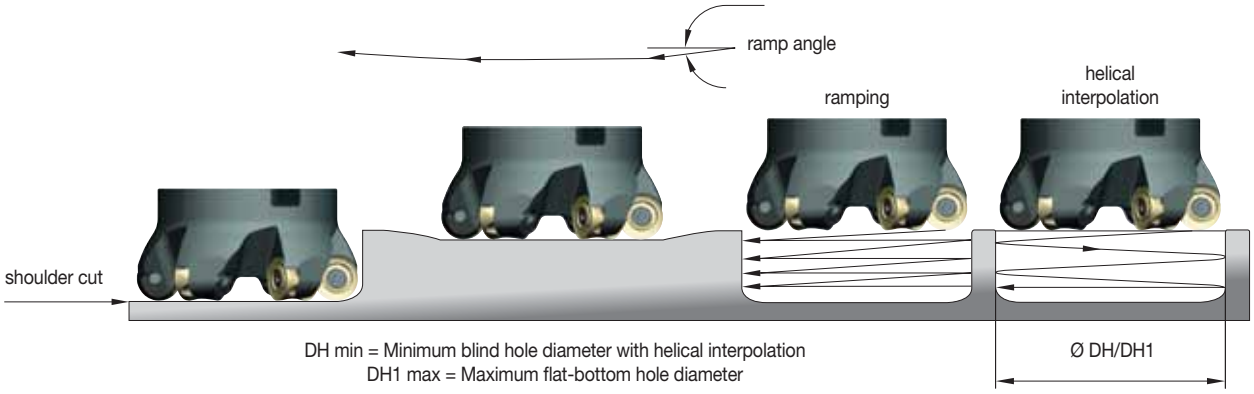
Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..LF	.010	**.021**	.031	.008	**.015**	.023	.007	**.013**	.020	.006	**.013**	.019	.006	**.012**	.018	.E..LF
.S..GF	.010	**.026**	.042	.008	**.019**	.031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

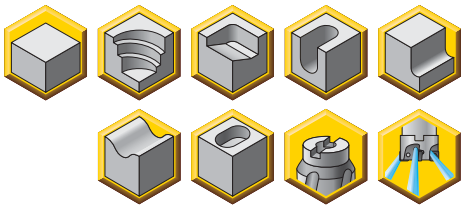
Ramping and Helical Interpolation Values from Solid

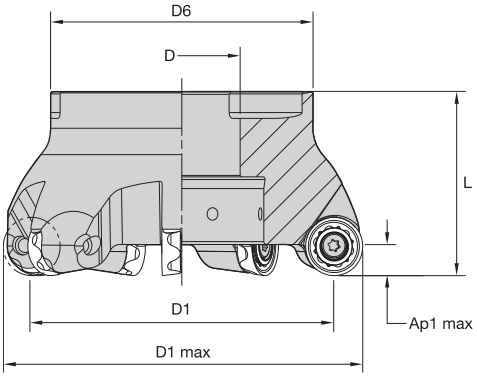


Round Insert RCGX64

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.







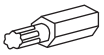
beyond BLAST™

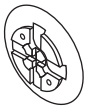
Face Mills • Inch

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







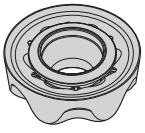

D1 max	insert screw	in. lbs.	universal bit torque driver	drive bit	coolant lock screw assembly	coolant shower plate assembly	socket-head cap screw with coolant groove
3.000	**MS1162**	45	**KPTW45**	**BT25L50**	**–**	**–**	**S445CG**
4.000	**MS1162**	45	**KPTW45**	**BT25L50**	**S2164C**	**–**	**–**
5.000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

Insert Selection Guide

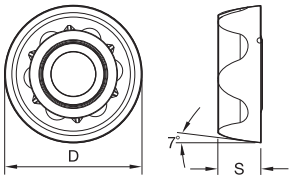
Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	–	–	–	–	–	–
P3–P4	–	–	–	–	–	–
P5–P6	–	–	–	–	–	–
M1–M2	–	–	–	–	–	–
M3	–	–	–	–	–	–
K1–K2	–	–	–	–	–	–
K3	–	–	–	–	–	–
N1–N2	–	–	–	–	–	–
N3	–	–	–	–	–	–
S1–S2	–	–	–	–	–	–
S3	–	–	–	–	–	–
S4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



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)

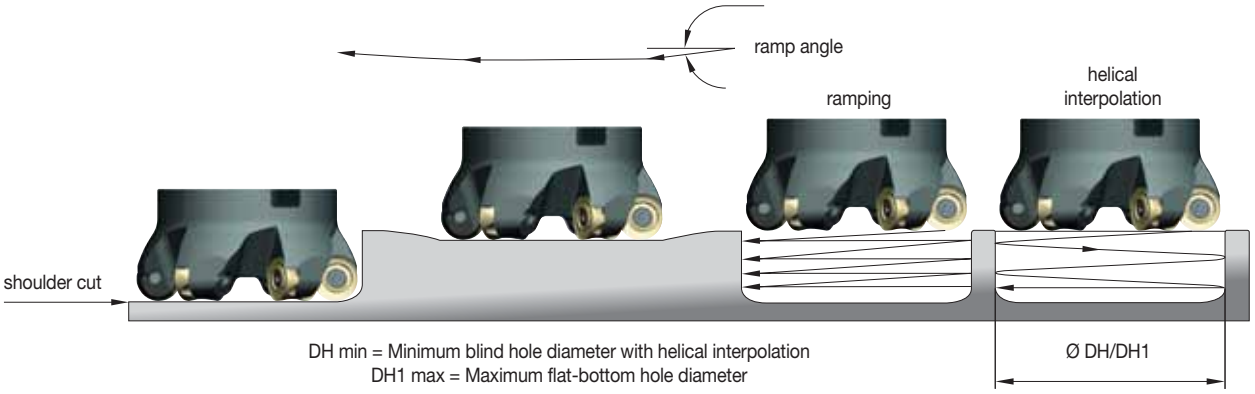
Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..LF	.010	**.021**	.031	.008	**.015**	.023	.007	**.013**	.020	.006	**.013**	.019	.006	**.012**	.018	.E..LF
.S..GF	.010	**.026**	.042	.008	**.019**	.031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

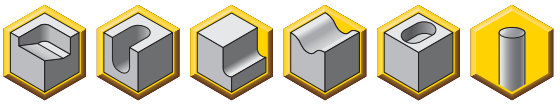
- Due to the new helical geometry, we obtain better surface quality.
- New ultra-grain grade for outstanding tool life.
- Diameters .250" and .312" natural replacement for SEM tools.
- Better cost per edge.

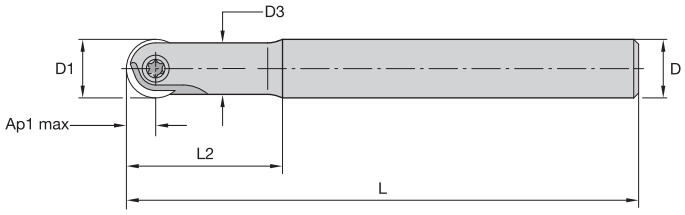
Usability and Flexibility

- 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.







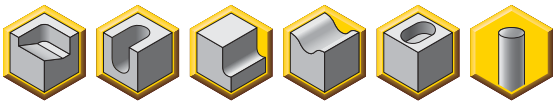
Necked End Mills • Steel Shank

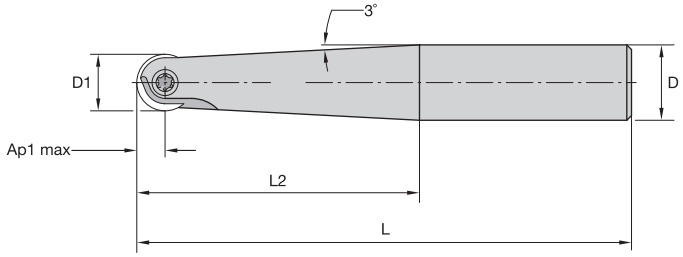
order number	catalog number	D1	D	D3	L	L2	Ap1 max	Z	Z U	max ramp angle	max RPM	lbs	insert 1
2877812	**KDMB0375R354A038SN**	.375	.500	.335	3.543	1.378	.188	1	2	3.0°	40000	.07	KDMB0375..
2878434	**KDMB0500R512A050SN**	.500	.500	.413	5.120	1.260	.250	1	2	3.0°	40000	.22	KDMB0500..
2878433	**KDMB0500R591A050SN**	.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.







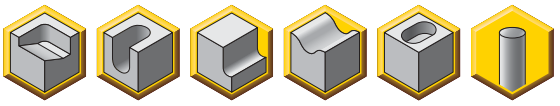
Tapered End Mills • Steel Shank

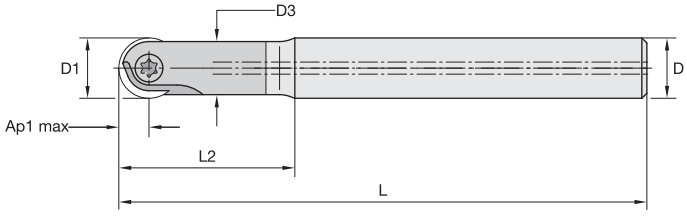
order number	catalog number	D1	D	L	L2	Ap1 max	Z	Z U	max ramp angle	max RPM	lbs	insert 1
2878444	**KDMB0312R551A031ST**	.312	.500	5.510	1.970	.156	1	2	3.0°	40000	.25	KDMB0312..
2878445	**KDMB0375R591A038ST**	.375	.500	5.910	1.380	.188	1	2	3.0°	40000	.29	KDMB0375..
2878446	**KDMB0500R630A050ST**	.500	.625	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:

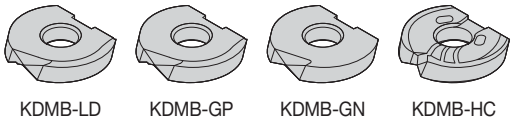
High-precision insert with helical geometry for semi-finishing and finishing of steel up to 63 HRC, cast steel, and high-temperature alloys.

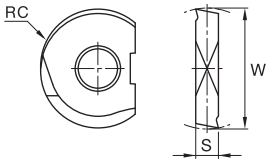
GN Geometry:

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**





● 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

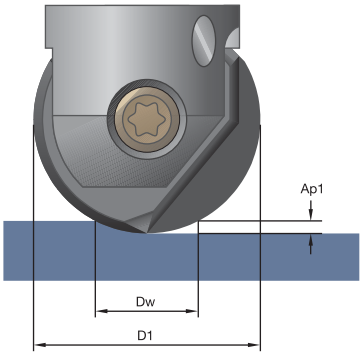
catalog number	W	S	RC	hm	K115M	KC505M	KC515M	KC530M
KDMB0250M0ERGP	.250	.063	.125	.002			●	
KDMB0312M0ERGP	.312	.079	.156	.002		●		
KDMB0375M0ERGP	.375	.098	.188	.002		●	●	
KDMB0500M0ERGP	.500	.098	.250	.002		●		
KDMB0625M0ERGP	.625	.118	.313	.002		●	●	
KDMB0750M0ERGP	.750	.118	.375	.002		●	●	
KDMB1000M0ERGP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

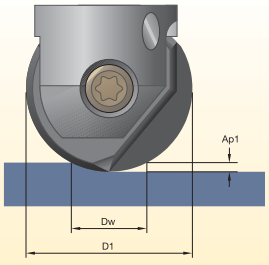
Material Group		K115M			KC505M			KC515M			KC530M		
P	1	–	–	–	–	–	–	1080	**960**	840	900	**780**	660
	2	–	–	–	–	–	–	1020	**900**	780	780	**660**	540
	3	–	–	–	–	–	–	900	**780**	660	660	**600**	540
	4	–	–	–	1180	**860**	710	780	**660**	540	600	**540**	480
	5	–	–	–	1180	**860**	710	660	**540**	420	540	**480**	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:

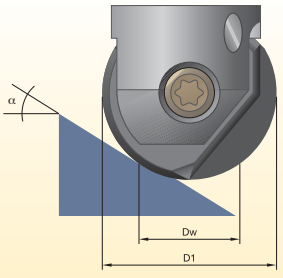
It is important to consider the effective diameter (Dw) when using light depths of cut in order to properly calculate RPM values. Use the following formula when machining flat surfaces or inclinations of 10° or less to find the Dw value. Then, use this for RPM calculations, as opposed to using the overall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

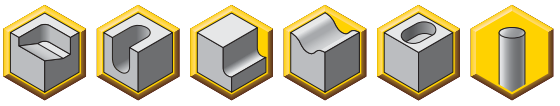
Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.E..LD	.008	**.011**	.020	.006	**.008**	.015	.005	**.007**	.013	.005	**.007**	.012	.005	**.007**	.012	.E..LD
.E..GP	.008	**.011**	.020	.006	**.008**	.015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

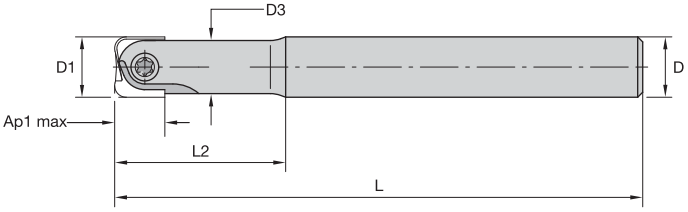
At .063 Axial Depth of Cut (ap)

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

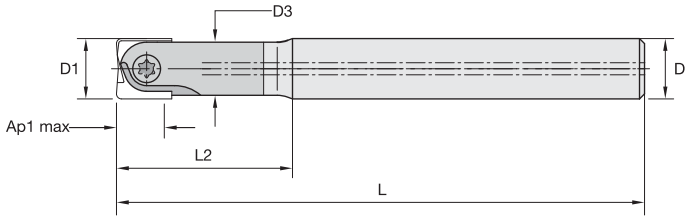
order number	catalog number	D1	D	D3	L	L2	Ap1 max	Z	Z U	max ramp angle	max RPM	lbs	insert 1
2957828	**KDMT0500R512A050SN**	.500	.500	.420	5.120	1.339	.118	1	2	3.0°	40000	.22	KDMT0500..
2957829	**KDMT0500R591A050SN**	.500	.500	.420	5.909	1.890	.118	1	2	3.0°	40000	.22	KDMT0500..
2957830	**KDMT0625R551A063SN**	.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

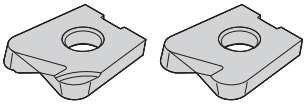
order number	catalog number	D1	D	D3	L	L2	Ap1 max	Z	Z	U	max ramp angle	max RPM	lbs	insert 1
2878452	**KDMT0500R472A050HNC**	.500	.500	.420	4.803	1.457	.118	1	2		3.0°	40000	.39	KDMT0500..
2878733	**KDMT0500R630A050HNC**	.500	.500	.420	6.378	2.047	.118	1	2		3.0°	40000	.53	KDMT0500..
2878734	**KDMT0625R551A063HNC**	.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..

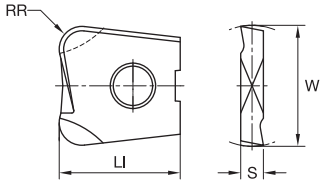
Spare Parts

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

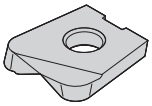
catalog number	LI	W	S	RR	hm	KC515M
KDMT05004ERGC	.550	.500	.098	.063	.003	●
KDMT05002ERGC	.550	.500	.098	.032	.003	●
KDMT06254ERGC	.625	.625	.118	.063	.003	●
KDMT06252ERGC	.625	.625	.118	.032	.003	●
KDMT07502ERGC	.700	.750	.118	.032	.003	●
KDMT07504ERGC	.700	.750	.118	.063	.003	●
KDMT10004ERGC	.925	1.000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

NOTE: Ap1 max = RR

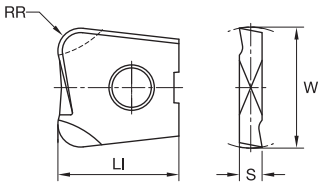
KDMT-GN • High-Precision Insert • Semi-Finishing and Finishing

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]

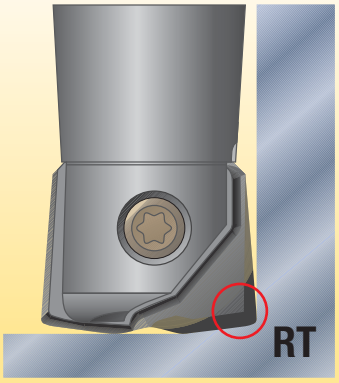
Light Machining	General Purpose	Heavy Machining

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.

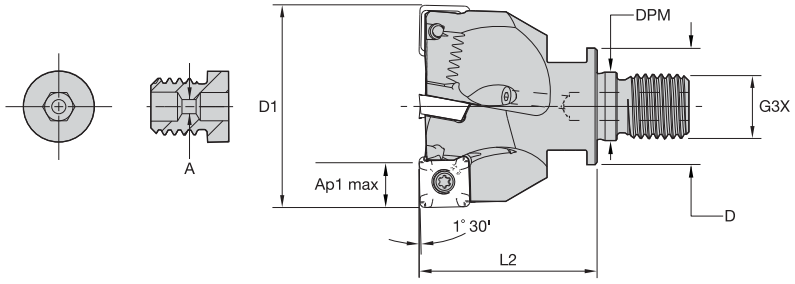
Features and Benefits

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.



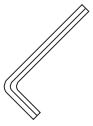


Screw-On End Mills

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

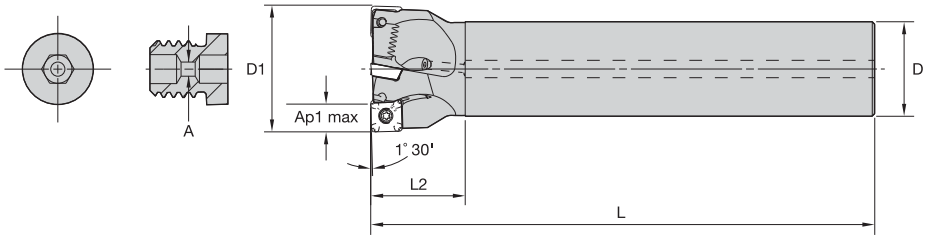
order number	catalog number	A
3400611	**MS2191C00**	–
3400612	**MS2191C06**	.024
3400613	**MS2191C08**	.032
3400614	**MS2191C10**	.039
3400616	**MS2191C12**	.047
3400617	**MS2191C14**	.055
3400618	**MS2191C16**	.063
3400619	**MS2191C18**	.071
3400620	**MS2191C20**	.079

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.



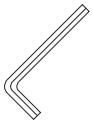


End Mills

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

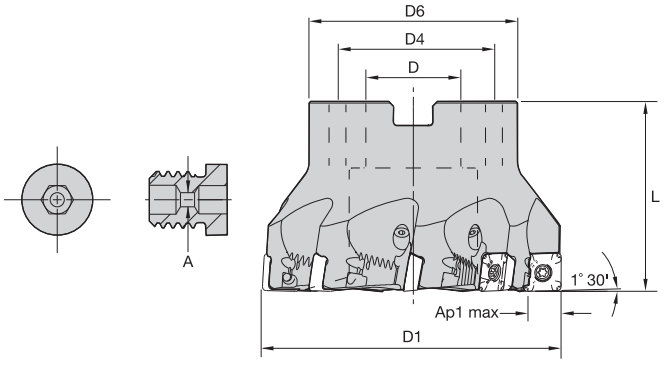
order number	catalog number	A
3400611	**MS2191C00**	–
3400612	**MS2191C06**	.024
3400613	**MS2191C08**	.032
3400614	**MS2191C10**	.039
3400616	**MS2191C12**	.047
3400617	**MS2191C14**	.055
3400618	**MS2191C16**	.063
3400619	**MS2191C18**	.071
3400620	**MS2191C20**	.079

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.



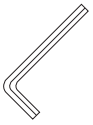


Shell Mills

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

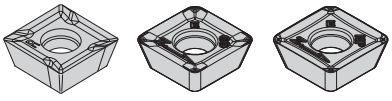
order number	catalog number	drive size
1993552	THW2M	2 MM

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.

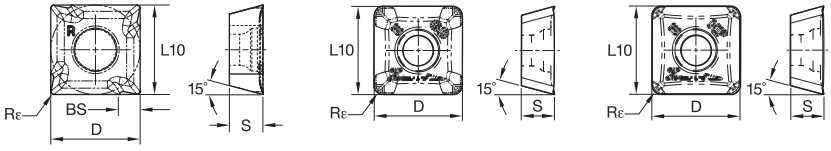
Insert Selection Guide

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.

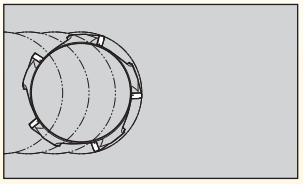


Figure 1

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.

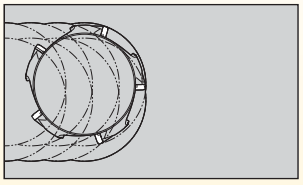


Figure 2

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.

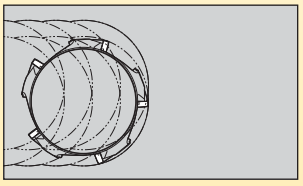


Figure 3

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.

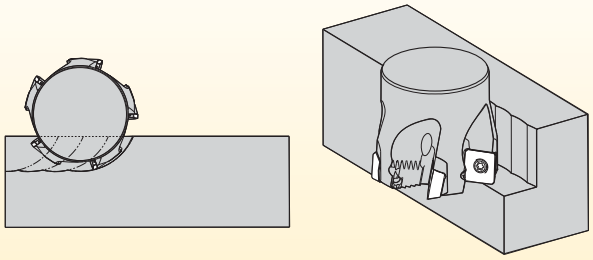
Move the cutter to the left of the slot to define the new position and make the cut. When reaching the base, a 3-axis move will need to be made. Again, the Z-axis will be in a positive direction at 45° (.010"), and the corresponding Y-axis will move away the same respective amount from the wall.

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)*

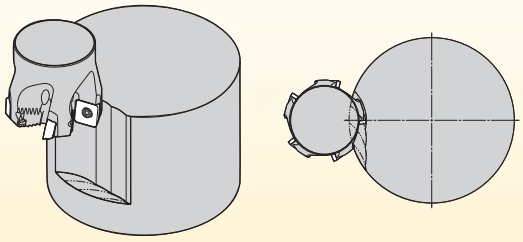


Linear Plunge Milling

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.

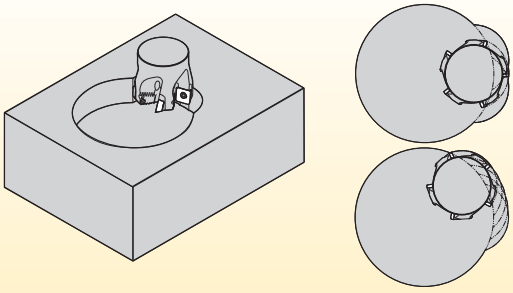
If the radial width of cut takes more than 60% of the cutter diameter, it is more difficult to remove the insert/cutter because the machine program wants to move the cutter upwards to (G00) Z+. When taking more than 60% of the cutter diameter, the material is enveloping the cutter and is difficult to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

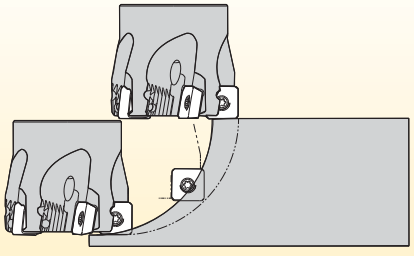
This artwork represents the typical application for this type of process. Move into the cut and follow the external profile of the workpiece. When moving the cutter back to the start position, it's always advisable to move the insert from contacting the workpiece. This should be done with a 2- or 3-axis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



Screw-On Milling Cutter Adapters

The Complete Solution to Milling

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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KDMR™ • Multifunction Cutter

Primary Application

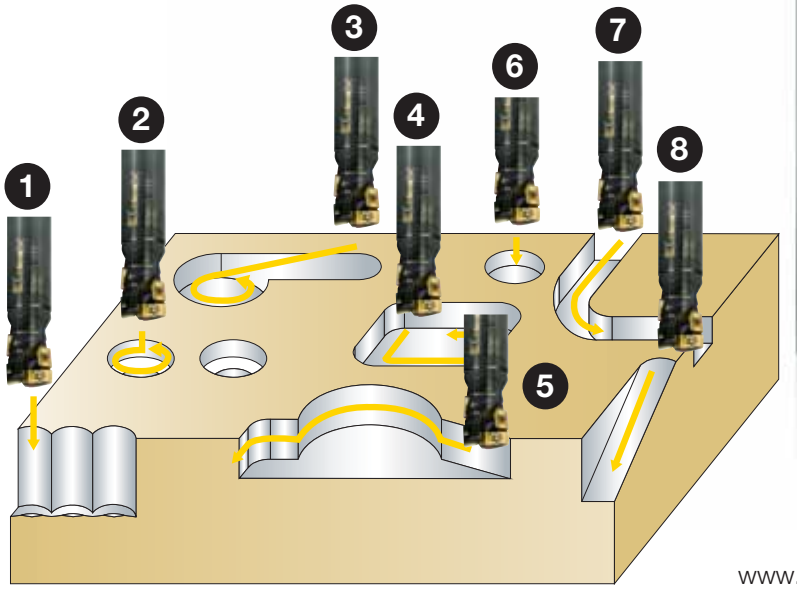
An extensive offering of versatile mills that can also drill.

Features and Benefits

Platform Features

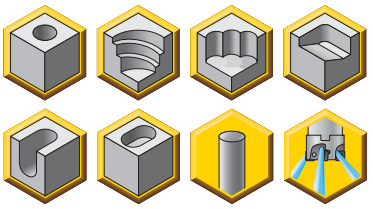
- Just two grades needed for a wide variety of materials.
- Reduced shank for machining down a side wall.
- Metric and inch sizes available.
- Reduced shank diameters for access down long side walls.
- Extensive product portfolio.
- Use compressed air when drilling for improved chip evacuation.
- Full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





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

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



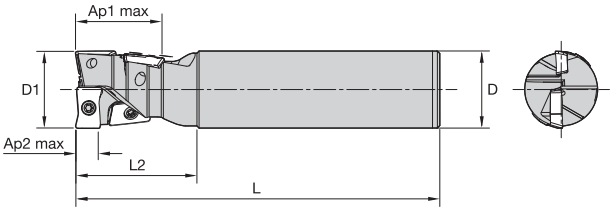


Fig. 3

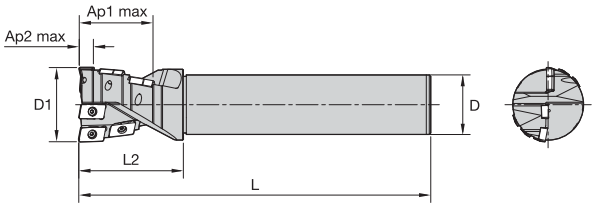


Fig. 4

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

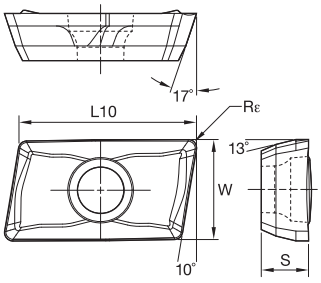
D1	 insert screw	 Torx driver	 anti-seize lube
.630	**MS2211**	**DT6**	**ASL3GT**
.787	**MS2212**	**DT8**	**ASL3GT**
1.000	**MS2213**	**DT10**	**ASL3GT**
1.250	**MS2214**	**DT15**	**ASL3GT**
1.500	**MS2213**	**DT10**	**ASL3GT**
1.984	**MS2214**	**DT15**	**ASL3GT**

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.

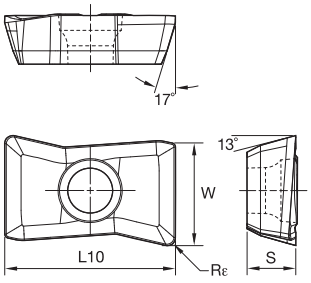
Insert Selection Guide

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

P	○	●
M		●
K	●	
N		
S		
H		

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

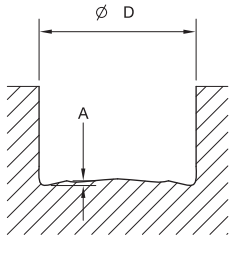
Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
.LD/.LF	.006	**.014**	.020	.004	**.010**	.015	.004	**.009**	.013	.003	**.008**	.012	.002	**.008**	.012	.LD/.LF

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

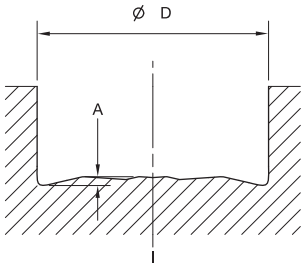
Insert Cross Reference

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.

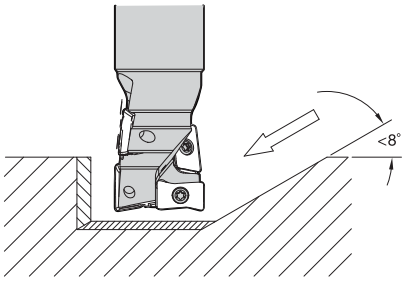
drilling	
cutting diameter	maximum depth (inch)
Ø .630	.511
Ø .787	.511
Ø 1.000	.866
Ø 1.250	1.000
Ø 1.500	1.000
Ø 1.984	1.000

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



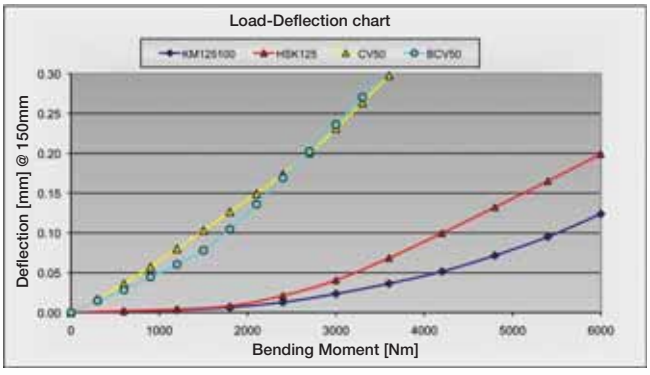
KM4X™

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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www.kennametal.com

KENNAMETAL®



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

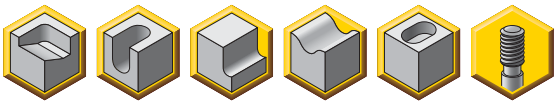
- Engineering to provide outstanding metal removal rates and productivity in nickel-based and/or cobalt-based alloys, stellites, stainless steel, and PH series through HSM.
- High axial and radial runout accuracy.
- Improved insert clearance and thickness tolerance to increase overall performance.
-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

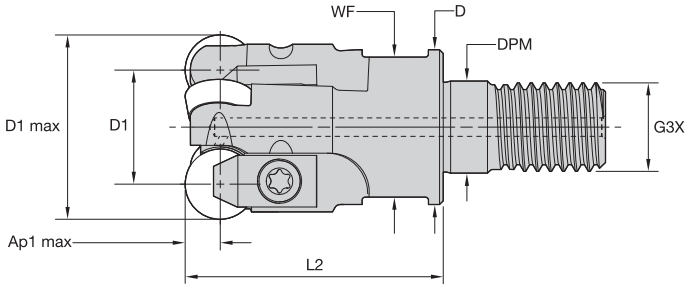
Usability and Offering

- 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.







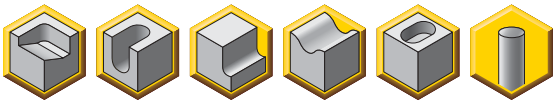
Screw-On End Mills

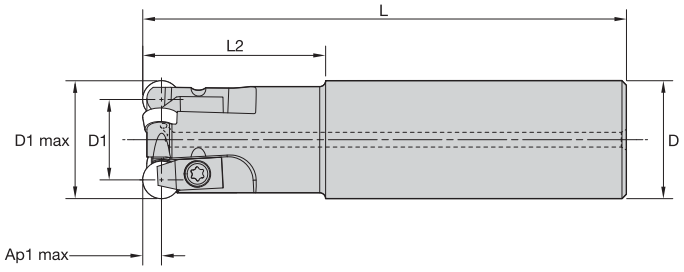
order number	catalog number	D1 max	D1	D	DPM	G3X	L2	WF	Ap1 max	Z	max ramp angle	max RPM	lbs	insert 1
3760369	**KIPR100RP32M1203**	1.000	.625	.827	.492	M12	1.250	.709	.188	3	8.0°	20450	.17	RP_32_
3760370	**KIPR125RP43M1603**	1.250	.750	1.142	.669	M16	1.500	.866	.250	3	2.5°	21000	.32	RP_43_

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.







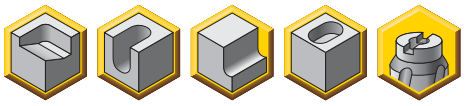
Cylindrical End Mills

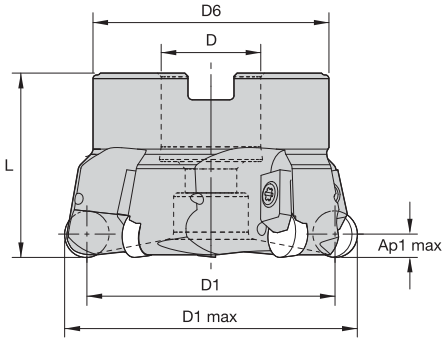
order number	catalog number	D1 max	D1	D	L	L2	Ap1 max	Z	max ramp angle	max RPM	lbs	insert 1
3759533	**KIPR062RP21229**	.625	.375	.625	2.950	1.021	.125	2	12.0°	37400	.21	RP_2150_
3759534	**KIPR075RP21332**	.750	.500	.750	3.200	1.192	.125	3	10.0°	34150	.33	RP_2150_
3759535	**KIPR100RP32438**	1.000	.625	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

RPG2150... High Temp

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	–	–	–	–	–	–
P3–P4	–	–	–	–	–	–
P5–P6	..E	KYSP30	**..E**	**KYSP30**	..E	KYSP30
M1–M2	–	–	–	–	–	–
M3	..E	KYSM10	**..E**	**KYSM10**	..E	KYSM10
K1–K2	–	–	–	–	–	–
K3	–	–	–	–	–	–
N1–N2	–	–	–	–	–	–
N3	–	–	–	–	–	–
S1–S2	..E	KYS30	**..E**	**KYS30**	..E	KYS30
S3	..E	KYS30	**..E**	**KYS30**	..E	KYS30
S4	–	–	–	–	–	–
H1	..E	KYHS10	**..E**	**KYHS10**	–	–

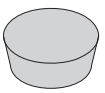
RPG32... High Temp

Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	–	–	–	–	–	–
P3–P4	–	–	–	–	–	–
P5–P6	..E	KYSP30	**..E**	**KYSP30**	..E	KYSP30
M1–M2	–	–	–	–	–	–
M3	..E	KYSM10	**..E**	**KYSM10**	..E	KYSM10
K1–K2	–	–	–	–	–	–
K3	–	–	–	–	–	–
N1–N2	–	–	–	–	–	–
N3	–	–	–	–	–	–
S1–S2	..E	KYS30	**..E**	**KYS30**	..T	KYS30
S3	..E	KYS30	**..T**	**KYS30**	..T	KYS30
S4	–	–	–	–	–	–
H1	..E	KYHS10	**..E**	**KYHS10**	–	–

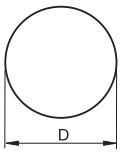
RPG43... High Temp

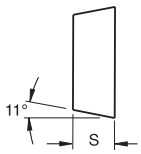
Material Group	Light Machining		General Purpose		Heavy Machining	
	Geometry	Grade	Geometry	Grade	Geometry	Grade
P1–P2	–	–	–	–	–	–
P3–P4	–	–	–	–	–	–
P5–P6	..E	KYSP30	**..E**	**KYSP30**	..E	KYSP30
M1–M2	–	–	–	–	–	–
M3	..E	KYSM10	**..E**	**KYSM10**	..E	KYSM10
K1–K2	–	–	–	–	–	–
K3	–	–	–	–	–	–
N1–N2	–	–	–	–	–	–
N3	–	–	–	–	–	–
S1–S2	..E	KYS30	**..E**	**KYS30**	...T	KYS30
S3	..E	KYS30	**..T**	**KYS30**	..T	KYS30
S4	–	–	–	–	–	–
H1	..E	KYHS10	**..E**	**KYHS10**	–	–

Indexable Ceramic Inserts • KIPR-RP • KSSR-RP

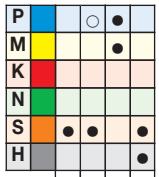


RPGN





● first choice
○ alternate choice



Copy Mills

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] • RPG2150...

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**	.007	.004	**.004**	.005	.003	**.003**	.004	.003	**.003**	.004	.003	**.003**	.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	.005	**.006**	.008	.004	**.004**	.006	.004	**.004**	.005	.003	**.004**	.005	.003	**.004**	.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	.007	**.008**	.010	.005	**.006**	.008	.005	**.005**	.007	.004	**.005**	.006	.004	**.005**	.006	..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**	.014	.007	**.008**	.010	.006	**.007**	.009	.006	**.007**	.008	.006	**.006**	.008	..E

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

Recommended Starting Feeds [IPT] • RPG32...

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**	.007	.004	**.004**	.005	.003	**.003**	.004	.003	**.003**	.004	.003	**.003**	.004	..E
..T	.007	**.008**	.010	.005	**.006**	.008	.004	**.005**	.007	.004	**.005**	.006	.004	**.005**	.006	..T

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**	.008	.004	**.004**	.006	.004	**.004**	.005	.003	**.004**	.005	.003	**.004**	.005	..E
..T	.008	**.009**	.012	.006	**.007**	.009	.005	**.006**	.008	.005	**.006**	.007	.005	**.006**	.007	..T

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**	.010	.005	**.006**	.008	.005	**.005**	.007	.004	**.005**	.006	.004	**.005**	.006	..E
..T	.010	**.012**	.015	.008	**.009**	.011	.007	**.008**	.010	.006	**.007**	.009	.006	**.007**	.009	..T

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**	.014	.007	**.008**	.010	.006	**.007**	.009	.006	**.007**	.008	.006	**.006**	.008	..E
..T	.014	**.017**	.021	.010	**.012**	.016	.009	**.011**	.014	.008	**.010**	.013	.008	**.010**	.012	..T

Recommended Starting Feeds [IPT] • RPG43...

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**	.007	.004	**.004**	.005	.003	**.003**	.004	.003	**.003**	.004	.003	**.003**	.004	..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	.005	**.006**	.008	.004	**.004**	.006	.004	**.004**	.005	.003	**.004**	.005	.003	**.004**	.005	..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)

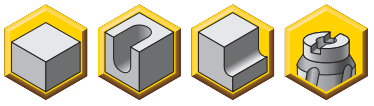
Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
..E	.007	**.008**	.010	.005	**.006**	.008	.005	**.005**	.007	.004	**.005**	.006	.004	**.005**	.006	..E
..T	.010	**.016**	.017	.008	**.012**	.013	.007	**.010**	.011	.006	**.010**	.010	.006	**.009**	.010	..T

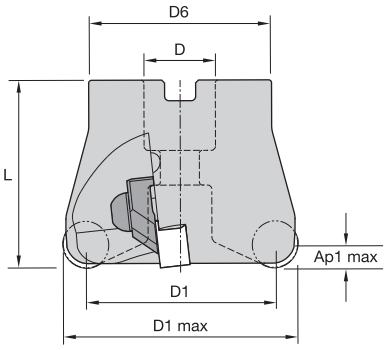
At .031 Axial Depth of Cut (ap)

Insert Geometry	Programmed Feed per Tooth (fz) as a % of Radial Depth of Cut (ae)															Insert Geometry
	10%			20%			30%			40%			50–100%			
..E	.010	**.011**	.014	.007	**.008**	.010	.006	**.007**	.009	.006	**.007**	.008	.006	**.006**	.008	..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.

- 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__

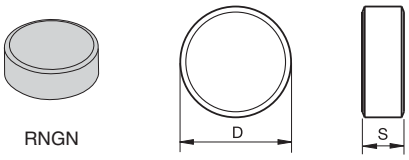
Spare Parts

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.



Thread Mills

Tool Selection • ISO Internal Threads **S2**

Tool Selection • UN Internal Threads **S3**

Indexable End Mills

Weldon Shank • TM25 • Double Sided S4

Conical Thread • TMT25 • Single Sided • NPT/BSPT S5

Mini Thread Mills • STN S9

Tapered Thread • STN S10

Indexable Inserts **S6, S11–S12**

Application and Technical Information **S8, S13–S19**

Internal Threads • Insert and Holder Recommendations

thread	tap hole fl (mm)	indexable insert	largest milling cutter
M11 x 0,75	10,19	STN10075ISO-I	9X1R .. STN10M
M12	10,11	STN10175ISO-I-C	9X1R015B20-STN10C
M12 x 1,00	10,92	STN10100ISO-I	9X1R .. STN10M
M14	11,84	STN11200ISO-I-C	11X1R .. STN11N
M16	13,84	STN11200ISO-I-C	11X1R .. STN11N
M20	17,29	STN16250ISO-I-C	15X1R020B16-STN16C
M20 x 1,50	18,38	STN11150ISO-I	11X1R .. STN11N
M20 x 1,00	18,92	STN11100ISO-I	11X1R .. STN11N
M24	20,75	STN22300ISO-I-C	18X1R030B25-STN22C
M24 x 2,00	21,84	STN16200ISO-I	17X1R022B16-STN16N
M24 x 1,50	22,38	STN11150ISO-I	11X1R .. STN11N
M24 x 1,50	22,38	STN16150ISO-I	17X1R022B16-STN16N
M27	23,75	STN22300ISO-I-C	18X1R030B25-STN22C
M30	26,21	STN27350ISO-I-C	25X1R040B25-STN27C
M30 x 2,00	27,84	STN16200ISO-I	22X1R025B25-STN16L
M33	29,21	STN27350ISO-I-C	25X1R040B25-STN27C
M33 x 2,00	30,84	STN16200ISO-I	22X1R025B25-STN16L
M33 x 1,50	31,38	STN16150ISO-I	22X1R025B25-STN16L
M35 x 1,50	33,38	STN16150ISO-I	22X1R025B25-STN16L
M36 x 2,00	33,84	STN16200ISO-I	22X1R025B25-STN16L
M42 x 2,00	39,84	STN27200ISO-I	30X1R052B25-STN27N
M45 x 2,00	42,84	STN27200ISO-I	37X1R .. STN27N or L
M48 x 2,00	45,84	STN27200ISO-I	37X1R058B32-STN27N or L
M55 x 2,00	52,84	STN27200ISO-I	37X1R .. STN27N or L
M56 x 2,00	53,84	STN27200ISO-I	37X1R .. STN27N or L
M72 x 2,00	69,84	STN27200ISO-I	37X1R .. STN27N or L

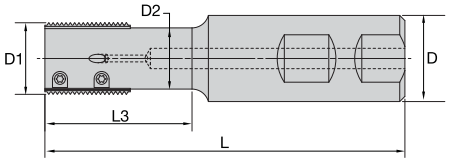
Internal Threads • Insert and Holder Recommendations

thread	tap hole fl (mm)	indexable insert	largest milling cutter
9/16 - 18UNF	12,76	STN1018UN-I	9X1R .. STN10M
5/8 - 24UNEF	14,73	STN1124UN-I	11X1R .. STN11N
5/8 - 18UNF	14,35	STN1118UN-I	11X1R .. STN11N
3/4 - 20UNEF	17,68	STN1120UN-I	11X1R .. STN11N
3/4 - 16UNF	17,33	STN1116UN-I	11X1R .. STN11N
7/8 - 14UNF	20,26	STN1114UN-I	11X1R .. STN11N
1 - 16UN	23,68	STN1616UN-I	18X1R030B25-STN22C
1 - 12UNF	23,11	STN1612UN-I	17X1R .. STN16N
1 1/8 - 12UNF	26,28	STN1612UN-I	22X1R .. STN16L
1 1/4 - 12UNF	29,46	STN1612UN-I	22X1R .. STN16L
1 3/8 - 12UNF	32,63	STN1612UN-I	22X1R .. STN16L

Whitworth Pipe Thread (Internal) to DIN 259

thread	tap hole fl (mm)	indexable insert	largest milling cutter
R 5/8	20,59	STN1614BSW	17X1R022B16-STN16N
R 3/4	24,12	STN1614BSW	20X1R043B20-STN16N
R 7/8	27,88	STN1614BSW	22X1R025B25-STN16L
R 1	30,29	STN1611BSW	22X1R025B25-STN16L

- .670–1.180" cutting diameter range.
- For internal and external threading on most types of workpiece materials.
- One tool is used for both right- and left-hand threads.
- All cutters have through-coolant capability.
- Utilizes inserts with various profiles and pitches.

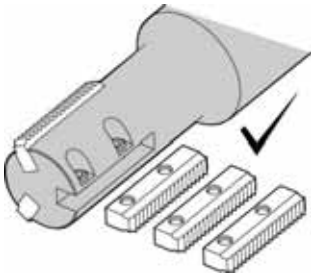




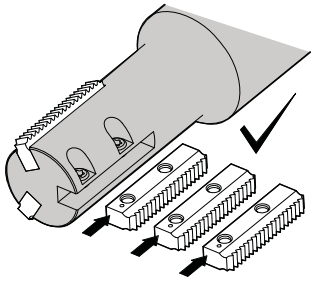
Thread Mill • Weldon Shank

order number	catalog number	D1	D	D2	L	L3	Z	insert screw	in. lbs.	Torx Plus driver
3031706	**TM25D067L110Z2**	.670	1.000	.550	3.500	1.100	2	**TM25INSERTSCREW**	35	**DT8IP**
3031707	**TM25D067L145Z2**	.670	1.000	.550	3.860	1.450	2	**TM25INSERTSCREW**	35	**DT8IP**
3031709	**TM25D081L150Z3**	.810	1.000	.650	3.900	1.500	3	**TM25INSERTSCREW**	35	**DT8IP**
3031710	**TM25D081L175Z3**	.810	1.000	.650	4.150	1.750	3	**TM25INSERTSCREW**	35	**DT8IP**
3031713	**TM25D087L220Z3**	.870	1.000	.710	4.600	2.200	3	**TM25INSERTSCREW**	35	**DT8IP**
3031711	**TM25D087L170Z3**	.870	1.000	.710	4.090	1.700	3	**TM25INSERTSCREW**	35	**DT8IP**
3031716	**TMC25D118L315Z4**	1.180	1.000	1.100	5.510	3.150	4	**TM25INSERTSCREW**	35	**DT8IP**
3031714	**TM25D118L220Z5**	1.180	1.000	1.100	4.530	2.200	5	**TM25INSERTSCREW**	35	**DT8IP**

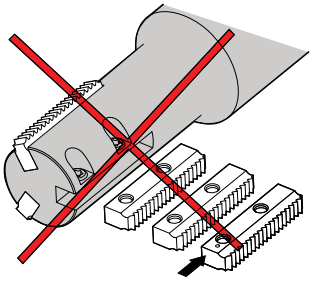
Thread Application per Toolholder min thread Ø						
toolholder	D1 inch	ISO (coarse)	ISO (fine)	UNC	UN/UNF/UNEF/UNS	BSF
TM25D067L110Z2	0.67	M20 x 2.5	M19 x 1; M19 x 1.5;		7/8-10UNS; 13/16-12UN; 7/8-14UNF;	7/8-11; 7/8-12;
TM25D067L145Z2			M20 x 2.		3/4-16UNF; 3/4-18UNS; 3/4-20UNEF;	7/8-14; 7/8-16
TM25D081L150Z3	0.81	M24 x 3.0	M22 x 1; M23 x 1.5;	1-8	15/16-9UN; 1.0-10UNS; 15/16-12UN	1.-11; 1.-12;
TM25D081L175Z3			M23 x 2; M23.5 x 2.5		1.0-14UNS; 15/16-16UN; 7/8-18UNS; 7/8-20UNEF;	1.-14; 1.-16
TM25D087L170Z3	0.87	M27 x 3.0	M24 x 1; M24 x 1.5;		11/16-8UN; 1.0-9UN; 1.0-10UNS; 1.0-12UNF	1-11; 1-12;
TM25D087L220Z3			M25 x 2; M25 x 2.5		1.0-14UNS; 1.0-16UN; 1.0-18UN; 15/16-20UNEF	1-14; 1-16
TM25D118L220Z5	1.18		M32 x 1; M32 x 1.5;		1 3/8-8UN; 1 3/8-9UN; 1 3/8-10UN; 1 5/16-12UN;	1 3/8-11; 1 3/8-12;
TMC25D118L315Z4			M33 x 2; M33 x 2.5; M34 x 3		1 3/8-14UNS; 1 5/16-16UN; 1 5/16-18UNEF; 1 5/16-20UN	1 3/8-14; 1 3/8-16



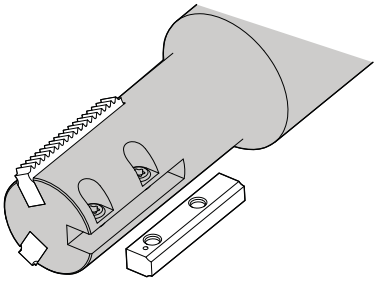
Always mount all inserts on the same side



Side with identification marks



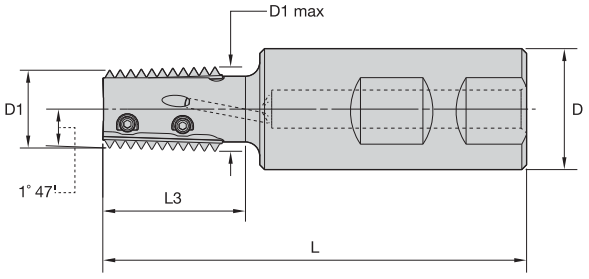
Side without identification marks



TM25 blank plug insert *

* When not using an insert in each pocket, protect the pocket by using a TM25 blank.

- .550–1.100" cutting diameter range.
- For internal and external threading on most types of workpiece materials.
- One tool is used for both right- and left-hand threads.
- All cutters have through-coolant capability.
- Utilizes inserts with various profiles and pitches.

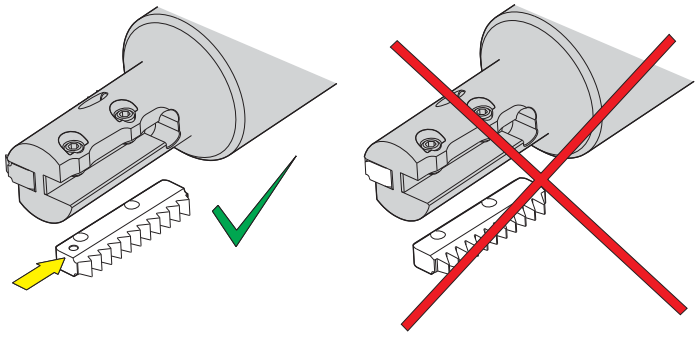




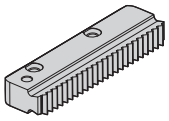
Thread Mill • Normal Shank

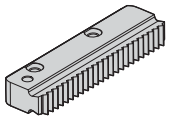
order number	catalog number	D1	D	D1 max	L	L3	Z	insert screw	in. lbs.	Torx Plus driver
3031708	**TMT25D067L110Z2**	.550	1.000	.670	3.500	1.100	2	**TM25INSERTSCREW**	35	**DT8IP**
3031712	**TMT25D087L170Z3**	.710	1.000	.870	4.090	1.700	3	**TM25INSERTSCREW**	35	**DT8IP**
3031715	**TMT25D110L170Z4**	1.100	1.000	1.100	4.060	1.700	4	**TM25INSERTSCREW**	35	**DT8IP**

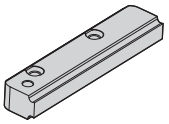
Thread Application per Toolholder min thread Ø				
toolholder	**D1 max**	**NPT**	**NPTF**	**BSPT**
TMT25D067L110Z2	.670	1/2-14; 3/4-14; 1-11.5; 2-11.5	1/2-14; 3/4-14; 1-11.5; 2-11.5	1/2-14; 3/4-14; 1-11; 1 1/4-11; 1 1/2-11; 2-11
TMT25D087L170Z3	.870	3/4-14; 1-11.5; 2-11.5	3/4-14; 1-11.5; 2-11.5	3/4-14; 1-11; 1 1/4-11;1 1/2-11; 2-11; 2 1/2-11; 3-11; 4-11; 5-11; 6-11
TMT25D110L170Z4	1.100	1-11.5; 2-11.5	1-11.5; 2-11.5	1-11; 1 1/4-11; 1 1/2-11; 2-11; 2 1/2-11; 3-11; 4-11; 5-11; 6-11

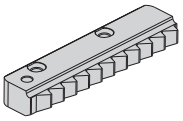


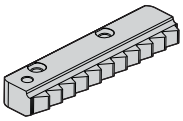
NOTE: On conical inserts, the identification mark must be face up.

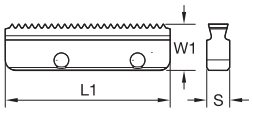

ISO Profiles

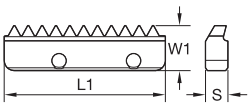

BSW Profiles


Blank


NPT Profiles


BSPT Profiles





Conical Insert

● first choice
○ alternate choice

P	●	○
M	○	●
K	●	
N	●	
S		●
H	○	●

ISO Profiles • Internal

ISO catalog number	ANSI catalog number	thread pitch mm	L1	W1	S	KC610M	KC635M
TM25N100ISO	TM25N100ISO	1,0	.984	.300	.140	●	●
TM25N150ISO	TM25N150ISO	1,5	.984	.300	.140	●	●
TM25N200ISO	TM25N200ISO	2,0	.984	.300	.140	●	●
TM25N250ISO	TM25N250ISO	2,5	.984	.300	.140	●	●
TM25N300ISO	TM25N300ISO	3,0	.984	.300	.140	●	●

UN Profiles • Internal

ISO catalog number	ANSI catalog number	TPI	L1	W1	S	KC610M	KC635M
TM25N8UN	TM25N8UN	8	.984	.300	.140	●	●
TM25N9UN	TM25N9UN	9	.984	.300	.140	●	●
TM25N10UN	TM25N10UN	10	.984	.300	.140	●	●
TM25N12UN	TM25N12UN	12	.984	.300	.140	●	●
TM25N14UN	TM25N14UN	14	.984	.300	.140	●	●
TM25N16UN	TM25N16UN	16	.984	.300	.140	●	●
TM25N18UN	TM25N18UN	18	.984	.300	.140	●	
TM25N20UN	TM25N20UN	20	.984	.300	.140	●	●

Whitworth Profiles • Internal/External

ISO catalog number	ANSI catalog number	TPI	L1	W1	S	KC610M	KC635M
TM25EN11W	TM25EN11W	11	.984	.300	.140	●	●
TM25EN12W	TM25EN12W	12	.984	.300	.140	●	
TM25EN14W	TM25EN14W	14	.984	.300	.140	●	●

NPT Profiles • Internal/External

ISO catalog number	ANSI catalog number	TPI	L1	W1	S	KC610M	KC635M
TM25EN115NPT	TM25EN115NPT	11.5	.984	.300	.140	●	●
TM25EN14NPT	TM25EN14NPT	14	.984	.300	.140	●	●

BSPT Profiles • Internal/External

ISO catalog number	ANSI catalog number	internal TPI	L1	W1	S	KC610M	KC635M
TM25EN11BSPT	TM25EN11BSPT	11	.984	.300	.140	●	●
TM25EN14BSPT	TM25EN14BSPT	14	.984	.300	.140	●	

Blank Insert Form

ISO catalog number	ANSI catalog number	L	W1	S
TM25BLANK	TM25BLANK	.988	.220	.140

Kennametal Thread Mill (TM Insert) – SFM

materials	Brinell	surface speeds		indexable inserts
steel	HB	KC610M	KC635M	feed fz (IPT)
P1	125	325–675	290–590	.002–.008
P2	180	290–550	290–520	.002–.008
P3	225	200–425	225–375	.002–.008
P4	250	250–490	250–500	.002–.008
P5	275	250–425	250–500	.002–.006
P6	325	225–350	200–325	.002–.004
stainless steel				
M1	180	325–550	375–590	.002–.004
M2	250	225–450	325–450	.002–.004
M3	330	225–375	325–375	.002–.004
cast iron				
K1	180	200–425	325–450	.001–.003
K2	220	200–390	250–325	.002–.006
K3	260	160–290	200–275	.002–.004
non-ferrous				
N1	60–100	325–820	–	.002–.010
high-temp alloys				
S1	200	65–140	65–130	.002–.004
S2	250	65–90	65–90	.001–.002
S3	280	50–65	50–65	.001–.002
S4	350	30–50	30–50	.001–.002
hardened steel				
H1	55HRc	65–140	65–140	.0004–.001

www.kennametal.com/en-US/customer_support/metalworking/software_download_reference_tools.jhtml
Kennametal thread mill software: TM - CNC Generator

Carbide Recycling

Help preserve and protect our planet!

It's easy for your company to be environmentally conscious with the Kennametal Carbide Recycling Program.

By sending us your used carbide tools, you help preserve and protect the environment and ensure that these products are recycled responsibly. Kennametal accepts any coated or non-coated carbide items, including inserts, drills, reamers, and taps.



By using the Kennametal Carbide Recycling Program, you will receive:

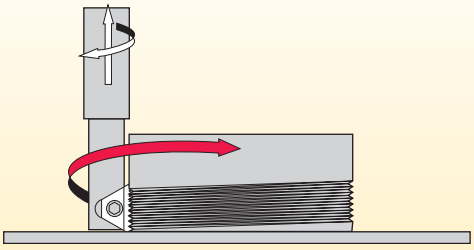
- A partner who cares about a sustainable environment.
- Easy-to-use web portal to value your used carbide.
- Access to our popular Green Box™ options for carbide collection.
- Systematic and efficient disposal of carbide materials.
- Improved profitability.

Program is not currently available in all geographical areas.
For more information, please visit **www.kennametal.com/carbiderecycling.**

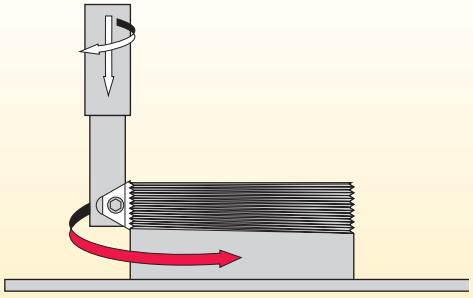
The Following Are a Few Thread Milling Methods (Work Directions)

NOTE: Climb milling results in lower cutting forces, better chip development, higher thread surface quality, and longer insert life. Therefore, it should be used whenever possible. However, in the case of some hardened materials, or when milling certain difficult-to-machine exotic materials, conventional milling may be preferred.

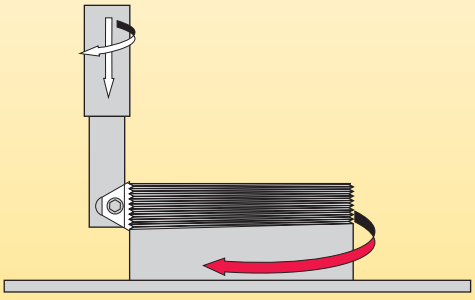
Methods of External Thread Milling



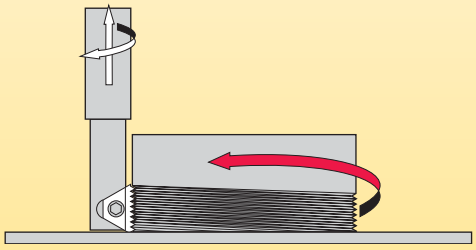
right-hand thread... conventional milling



left-hand thread... conventional milling

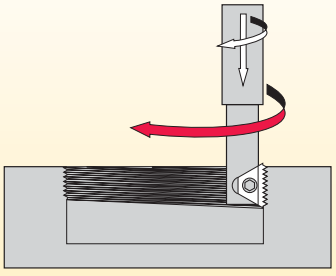


right-hand thread... climb milling

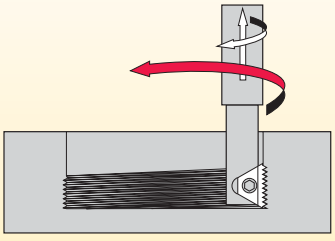


left-hand thread... climb milling

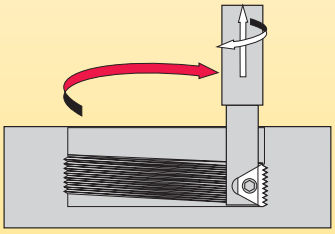
Methods of Internal Thread Milling



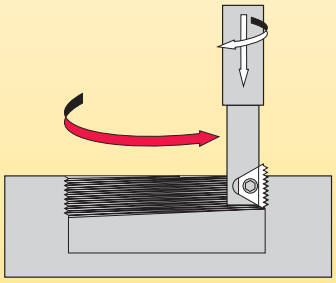
right-hand thread... conventional milling



left-hand thread... conventional milling



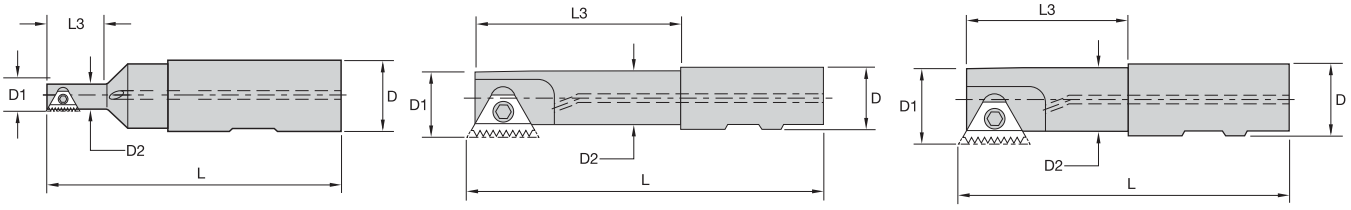
right-hand thread... climb milling



left-hand thread... climb milling

- For internal and external threading on most types workpiece materials.
- One tool is used for both right- and left-hand threads.
- All cutters have through-coolant capability.
- Utilizes inserts with various profiles and pitches.





Thread Mill • Mini




order number	catalog number	D1	D	D2	L	L3	Z	max RPM	insert 1	insert screw	Torx driver
1280476	K035TM1RW050STN10M	.354	.500	.264	2.720	.472	1	39935	STN10	SN7T	DT7
1280477	K035TM1RW075STN10M	.354	.750	.264	3.300	.669	1	39935	STN10	SN7T	DT7

Thread Mill • Normal Shank • STN11




order number	catalog number	D1	D	D2	L	L3	Z	max RPM	insert 1	insert screw	Torx driver
1280481	K045TM1RW050STN11N	.450	.500	.350	2.750	.470	1	36825	STN11	SN2TPKG	DT8
1280483	K045TM1RW075STN11N	.450	.750	.350	3.500	.790	1	36825	STN11	SN2TPKG	DT8

Thread Mill • Normal Shank • STN16




order number	catalog number	D1	D	D2	L	L3	Z	max RPM	insert 1	insert screw	Torx driver
1280493	K067TM1RW062STN16N	.670	.625	.537	3.560	.870	1	25750	STN16	SN3TM	DT10
1192237	K079TM1RW075STN16N	.790	.750	.650	3.750	1.680	1	23330	STN16	SN3TPKG	DT10

Thread Mill • Normal Shank • STN27




order number	catalog number	D1	D	D2	L	L3	Z	max RPM	insert 1	insert screw	Torx wrench
1280548	K118TM1RW100STN27N	1.180	1.000	.945	4.380	2.030	1	12900	STN27	SN5TM	TT25
1280581	K146TM1RW125STN27N	1.460	1.250	1.220	4.750	2.410	1	11600	STN27	SN5TM	TT25

Thread Mill • Long Shank • STN16



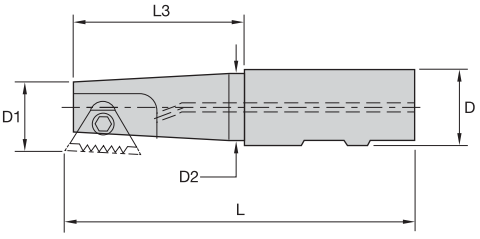

order number	catalog number	D1	D	D2	L	L3	Z	max RPM	insert 1	insert screw	Torx driver
1280501	K087TM1RW100STN16L	.870	1.000	.728	5.000	1.000	1	22230	STN16	SN3TPKG	DT10

Thread Mill • Long Shank • STN27




order number	catalog number	D1	D	D2	L	L3	Z	max RPM	insert 1	insert screw	Torx wrench
1280546	K118TM1RW100STN27L	1.180	1.000	.945	5.880	3.530	1	12900	STN27	SN5TM	TT25
1280579	K146TM1RW125STN27L	1.460	1.250	1.220	6.330	4.000	1	11600	STN27	SN5TMPKG	TT25

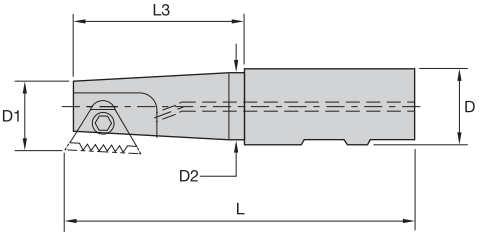
- For internal and external threading on most types of workpiece materials.
- One tool is used for both right- and left-hand threads.
- All cutters have through-coolant capability.
- Uses inserts with various profiles and pitches.





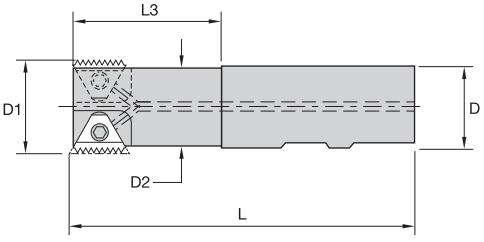
Thread Mill • Tapered Thread • Right Hand

order number	catalog number	D1	D	D2	L	L3	Z	max RPM	insert 1	insert screw	Torx driver	Torx wrench
1280478	**K039TM1RW075STN11T**	.390	.750	.290	3.120	.610	1	36500	STN11	**SN2TPKG**	**DT8**	**–**
1280491	**K061TM1RW062STN16T**	.610	.625	.494	3.560	.870	1	26550	STN16	**SN3TPKG**	**DT10**	**–**
1280497	**K075TM1RW075STN16T**	.750	.750	.591	3.380	.910	1	24350	STN16	**SN3TM**	**DT10**	**–**
1280549	**K118TM1RW100STN27T**	1.180	1.000	.945	4.380	2.030	1	12900	STN27	**SN5TM**	**–**	**TT25**



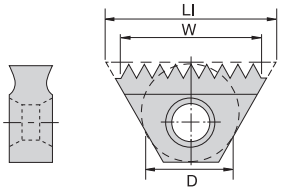
Thread Mill • Tapered Thread • Left Hand

order number	catalog number	D1	D	D2	L	L3	Z	max RPM	insert 1	insert screw	Torx driver
1280490	**K061TM1LW062STN16T**	.610	.625	.494	3.560	.870	1	26550	STN16	**SN3TPKG**	**DT10**
1280496	**K075TM1LW075STN16T**	.750	.750	.591	3.380	.910	1	24350	STN16	**SN3TM**	**DT10**



Thread Mill • Double Insert

order number	catalog number	D1	D	D2	L	L3	Z	max RPM	insert 1	insert screw	Torx driver	Torx wrench
1280494	**K067TM2RW075STN11D**	.670	.750	.537	3.420	1.340	2	30275	STN11	**SN2TPKG**	**DT8**	**–**
1280517	**K102TM2RW100STN16D**	1.024	1.000	.891	4.020	1.690	2	20530	STN16	**SN3TPKG**	**DT10**	**–**
1280598	**K165TM2RW125STN27D**	1.654	1.250	1.417	4.650	1.770	2	10900	STN27	**SN5TM**	**–**	**TT25**



● first choice
○ alternate choice

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

Internal • UN Thread

ISO catalog number	ANSI catalog number	TPI	D	LI	W	KC610M	KC620M	KC635M
STN1020UNI	STN1020UNI	20	.2362	.410	.350			●
STN1018UNI	STN1018UNI	18	.2362	.410	.330			●
STN1128UNI	STN1128UNI	28	1/4	.430	.390			●
STN1124UNI	STN1124UNI	24	1/4	.430	.380			●
STN1120UNI	STN1120UNI	20	1/4	.430	.400			●
STN1118UNI	STN1118UNI	18	1/4	.430	.390			●
STN1116UNI	STN1116UNI	16	1/4	.430	.380			●
STN1114UNI	STN1114UNI	14	1/4	.430	.360			●
STN1632UNI	STN1632UNI	32	3/8	.630	.590			●
STN1627UNI	STN1627UNI	27	3/8	.630	.560			●
STN1624UNI	STN1624UNI	24	3/8	.630	.580			●
STN1616UNI	STN1616UNI	16	3/8	.630	.560	●		
STN1614UNI	STN1614UNI	14	3/8	.630	.570			●
STN1612UNI	STN1612UNI	12	3/8	.630	.580			●

External • UN Thread

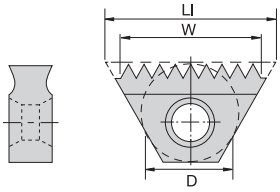
ISO catalog number	ANSI catalog number	TPI	D	LI	W	KC610M	KC620M	KC635M
STN1118UNE	STN1118UNE	18	1/4	.430	.390			●
STN1624UNE	STN1624UNE	24	3/8	.630	.580			●
STN1620UNE	STN1620UNE	20	3/8	.630	.550			●
STN1616UNE	STN1616UNE	16	3/8	.630	.560			●
STN1614UNE	STN1614UNE	14	3/8	.630	.570			●

Internal • ISO Thread

ISO catalog number	ANSI catalog number	thread pitch mm	D	LI	W	KC610M	KC620M	KC635M
STN10150ISOI	STN10150ISOI	1,5	.2362	.410	.350			●
STN10125ISOI	STN10125ISOI	1,25	.2362	.410	.340			●
STN10100ISOI	STN10100ISOI	1,0	.2362	.410	.350		●	●
STN10075ISOI	STN10075ISOI	0,75	.2362	.410	.380			●
STN11150ISOI	STN11150ISOI	1,5	1/4	.430	.410			●
STN11125ISOI	STN11125ISOI	1,25	1/4	.430	.340			●
STN11100ISOI	STN11100ISOI	1,0	1/4	.430	.390			●
STN11050ISOI	STN11050ISOI	0,50	1/4	.430	.410			●
STN16200ISOI	STN16200ISOI	2,0	3/8	.630	.550			●
STN16175ISOI	STN16175ISOI	1,75	3/8	.630	.550			●
STN16150ISOI	STN16150ISOI	1,5	3/8	.630	.590			●
STN16100ISOI	STN16100ISOI	1,0	3/8	.630	.590			●

Internal • ISO Thread • Coarse

ISO catalog number	ANSI catalog number	thread pitch mm	D	LI	W	KC610M	KC620M	KC635M
STN22300ISOIC	STN22300ISOIC	3,0	.500	.870	.700	●		
STN27350ISOIC	STN27350ISOIC	3,5	.625	1.060	.960	●		



● first choice
○ alternate choice

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

External • ISO Thread

ISO catalog number	ANSI catalog number	thread pitch mm	D	LI	W	KC610M	KC620M	KC635M
STN16150ISOE	STN16150ISOE	1,5	3/8	.630	.590	●	●	
STN27200ISOE	STN27200ISOE	2,0	5/8	1.060	.940	●		

BSW Thread

ISO catalog number	ANSI catalog number	TPI	D	LI	W	KC610M	KC620M	KC635M
STN1119BSW	STN1119BSW	19	1/4	.430	.370			●
STN1614BSW	STN1614BSW	14	3/8	.630	.570	●		●
STN1612BSW	STN1612BSW	12	3/8	.630	.580			●
STN1611BSW	STN1611BSW	11	3/8	.630	.550	●		●

NPS Thread

ISO catalog number	ANSI catalog number	TPI	D	LI	W	KC610M	KC620M	KC635M
STN1614NPS	STN1614NPS	14	3/8	.630	.570			●
STN16115NPS	STN16115NPS	11.5	3/8	.630	.520			●

NPT Thread

ISO catalog number	ANSI catalog number	TPI	D	LI	W	KC610M	KC620M	KC635M
STN1118NPT	STN1118NPT	18	1/4	.430	.390			●
STN1614NPT	STN1614NPT	14	3/8	.630	.570			●
STN16115NPT	STN16115NPT	11.5	3/8	.630	.520			●

NPTF Thread

ISO catalog number	ANSI catalog number	TPI	D	LI	W	KC610M	KC620M	KC635M
STN1118NPTF	STN1118NPTF	18	1/4	.430	.390			●
STN1614NPTF	STN1614NPTF	14	3/8	.630	.570			●
STN16115NPTF	STN16115NPTF	11.5	3/8	.630	.520			●

NOTE: NPTF = Dry Seal
NPT and NPTF inserts possess right- and left-hand edge.
Order left-hand bar for left-hand inserts.

Minimum Bore Diameters for Thread Milling

UN-ISO-BSW

cutter	TPI	48	32	24	20	16	12	10	8	7	6	5.5	5	4.5	4
	pitch mm	0,5	0,75	1,0	1,25	1,5	2,0	2,5	3,0	3,5	4,0	4,5	5,0	5,5	6,0
	cutter diameter (D1)	minimum bore diameter (D) (inches)													
K035TM1RW050-STN10	.35	.374	.394	.421	.449										
K045TM1RW050-STN11N	.45	.472	.492	.520	.547	.571									
K049TM1RW037LT11S	.49	.512	.531	.559	.587	.610									
K061TM1RW062-STN16T	.61	.630	.650	.667	.705	.728	.768								
K067TM2RW075-STN11D	.67	.693	.717	.748	.772	.787	.827								
K075TM1RW075-STN16T	.75	.776	.803	.827	.850	.866	.906								
K079TM1RW075-STN16N	.79	.815	.843	.866	.890	.906	.945								
K087TM1RW100-STN16L	.87	.893	.921	.945	.969	.984	1.024								
K102TM2RW100-STN16D	1.02	1.051	1.079	1.102	1.130	1.154	1.193								
K118TM1RW100-STN27N	1.18	1.209	1.236	1.260	1.291	1.319	1.362	1.441	1.535	1.654	1.772	1.890			
K146TM1RW125-STN27N	1.46	1.496	1.520	1.555	1.591	1.614	1.654	1.732	1.830	1.929	2.047	2.185			
K165TM2RW125-STN27D	1.65	1.701	1.724	1.772	1.811	1.831	1.866	1.929	2.047	2.146	2.268	2.401			
–	1.38 (UN)	–	–	–	–	–	–	–	–	–	1.969	–	1.843	–	–
–	1.38 (ISO)	–	–	–	–	–	–	–	–	–	1.969	2.102	1.673	1.969	2.264
–	1.38 (BSW)	–	–	–	–	–	–	–	–	–	1.961	–	1.831	–	–

Cutting Data Recommendation

workpiece material	cutting speed (SFM) KC635M	feed rate per revolution (inch)
carbon steels <187 HB	300 - 700	.004 - .008
carbon steels 187–220 HB	300 - 500	.004 - .006
alloy steel 200–250 HB	200 - 425	.004 - .006
alloy steel 250–325 HB	150 - 300	.004 - .006
stainless steel, austenitic <210 HB	300 - 450	.004 - .006
stainless steel, martensitic <321 HB	250 - 350	.002 - .006
stainless steel, ferritic <245 HB	350 - 550	.002 - .004
cast steel <140 HB	350 - 550	.002 - .006
cast steel 220–302 HB	225 - 425	.002 - .004
titanium alloys	200 - 400	.001 - .003
high-temperature (nickel and iron based)	75 - 150	.001 - .002
high-temperature (cobalt based)	50 - 100	.001 - .002
cast iron	250 - 350	.002 - .006
malleable iron	250 - 400	.001 - .003

NOTE:

All thread milling inserts are full profile or cresting type.
Inserts are designed to mill full thread depth in one revolution or pass.

When machining difficult materials, two passes may be desired. A 60% thread depth on the first pass and a 40% thread depth on the second pass is recommended.

Thread relief grooves in blind holes are not necessary.

Thread milling large parts requires considerably less horsepower compared to other threading methods.

Thread milling produces short chips compared to stringy chips of other threading methods.

One holder is suitable for many different thread pitches.

PVD-coated inserts provide maximum tool life for a wide variety of materials.

Understanding Thread Milling

In order to perform a thread milling operation, a milling machine with 3-axis control, capable of helical interpolation, is required. Helical interpolation is a CNC function producing tool movement along a helical path. This helical travel combines circular movement in one plane with a simultaneous linear motion in a plane perpendicular to the first. For example, the path from point A to point B (Figure A) on the envelope of the cylinder combines a circular movement in the X and Y plane with a linear movement in the Z direction.

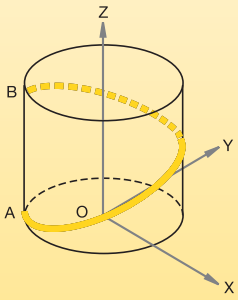
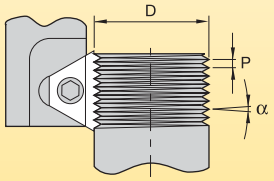


Figure A



α — helix angle
D — external diameter
P — pitch

Figure B

On most CNC systems, this function can be executed in two different ways:

1. G02: helical interpolation in a clockwise direction.
2. G03: helical interpolation in a counterclockwise direction.

The thread milling operation (Figure B) consists of circular rotation of the tool about its own axis together with an orbiting motion along the bore or workpiece circumference.

During one such orbit, the tool will move vertically one pitch length. These movements, combined with the insert geometry, create the required thread form.

There are two acceptable ways of approaching the workpiece with the tool to initiate production of the thread:

1. Along a tangential arc.
2. Along a tangential straight line.

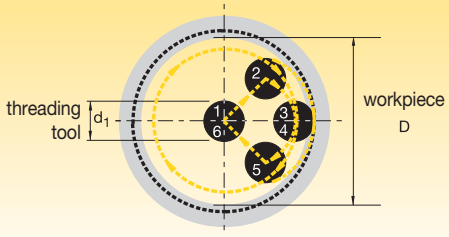
NOTE: Climb milling is preferred.

Tangential Approach (Arc)

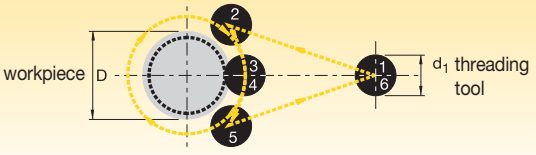
With this method, the tool enters and exits the workpiece smoothly. No marks are left on the workpiece, and there is no vibration, even with harder materials.

Although it requires slightly more complex programming, this is the method recommended for machining the highest quality threads.

1–2:	rapid approach
2–3:	tool entry along tangential arc with simultaneous feed along Z-axis
3–4:	helical movement during one full orbit (360°)
4–5:	tool exit along tangential arc with continuing feed along the Z-axis
5–6:	rapid return



internal left-hand thread

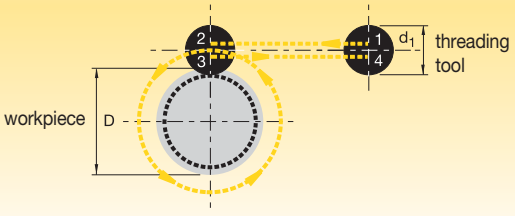


external thread

Tangential Approach (Line)

This method is very simple and has all of the advantages of the tangential arc method. However, it is applicable only to external threads.

1–2:	radial entry with simultaneous feed along the Z-axis
2–3:	helical movement during one full orbit (360°)
3–4:	radial exit



Preparing for the Thread Milling Operation

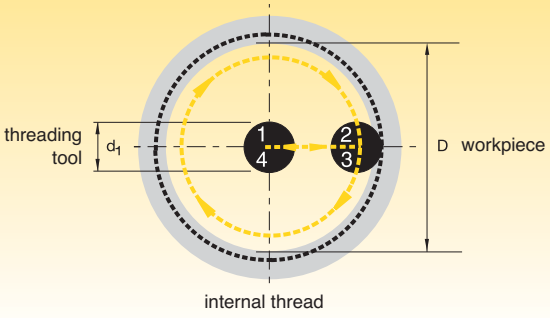
This is the simplest method. There are two characteristics worth noting about the radial approach:

a. A small vertical mark may be left at the entry (and exit) point. This is of no significance to the thread itself.

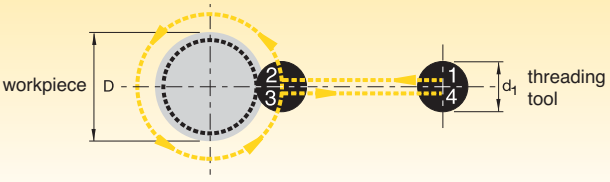
b. When using this method with very hard materials, there may be a tendency for the tool to vibrate as it approaches the full cutting depth.

1–2:	radial entry
2–3:	helical movement during one full orbit (360°)
3–4:	radial exit

NOTE: Radial feed during entry to the full profile depth should be only 1/3 of the subsequent circular feed!



internal thread



external thread

Calculation of Feed Rates at the Cutting Edge

The first step is to calculate the tool feed rate at the cutting edge.

$$F_1 = fz \times z \times n$$

F_1 = tool feed rate at the cutting edge (in/min)
f_z = inch per tooth (feed rate)
Z = number of effective inserts in cutter
n = rotational speed (spindle RPM)

The rotational speed (RPM) is calculated by the following formula:

$$RPM = \frac{12 \times SFM}{\pi \times d_1}$$

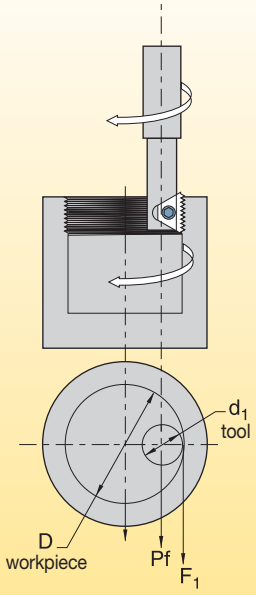
SFM = cutting speed, surface feet per minute
d_1 = cutter diameter, over insert
π = 3.1416

Calculation of Program Feed Rate

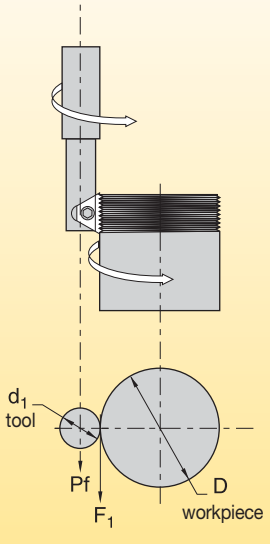
On most CNC machines, the feed rate required for programming is at the centerline of the tool. When dealing with linear tool movement, the feed rate at the cutting edge and the centerline are identical. However, with circular tool movement, this is not the case. The following equations define the relationship between feed rates at the cutting edge and at the tool centerline.

$$P_1 = F_1 + \frac{(F_1 \times d_1)}{D}$$

P_f = program feed rate (in/min)
D = major diameter (external thread)
D = minor diameter (internal thread)
d_1 = cutting diameter, over insert



external thread



internal thread

Step-by-Step Thread Milling Example

thread: internal right hand 11/4 x 16 UN–2B–RH(21)

material: AISI 4140 (300 HB)

thread diameters: D (minimum bore dia.) = 1.182

Do (nominal dia.) = 1.25"

thread length: .50"

For best thread quality, the cutter with the largest d_1 (cutter diameter) possible should be used. This cutter diameter can be found in the table on page S13 as a function of pitch and minimum bore diameter D. The result for the above example is that any cutter diameter 1.02 inch or smaller can be utilized.

A cutter with a smaller d_1 will perform the thread milling operation in less time. The smaller d_1 may result in less tool rigidity, so it should be used with caution on very tough materials.

Find the appropriate normal-length shank cutter diameter on pages S9–S10.

Use the minimum bore diameter table below for reference.

pitch (TPI)	24	20	16	12
pitch (mm)	1,0	1,25	1,5	2,0
cutter dia. d_1	minimum bore diameter D			
.67	.748	.772	.787	.827
.75	.827	.850	.866	.906
.79	.866	.890	.906	.945

Figure B: cutter selected: K079TMIRW075STN16N
outer dimensions: d_1 = .79, R_t (radius of tool) = $d_1 \div 2$ = .395

Choosing Insert Size

The insert IC is defined by the selected cutter (STN16).

Use the appropriate insert table on pages S11–S12.

insert size IC	a in (mm)	pitch (TPI)	internal thread catalog number	b thread length (in)	number of teeth	grade KC610M	grade KC620M	external thread catalog number	b thread length (in)	number of teeth	grade KC610M	grade KC620M	cutter type
		32	**STN16 32UN-I**	.59	19	□	□	**STN16 32UN-E**	.59	19	□	□	
		28	**STN16 28UN-I**	.57	16	■	■	**STN16 28UN-E**	.57	16	□	□	
		27	**STN16 27UN-I**	.56	15	□	■	**STN16 27UN-E**	.56	15	■	□	
		24	**STN16 24UN-I**	.55	14	□	□	**STN16 24UN-E**	.58	14	■	□	
3/8	.63 (16)	20	**STN16 20UN-I**	.55	11	■	■	**STN16 20UN-E**	.55	11	■	■	STN16
		18	**STN16 18UN-I**	.56	10	■	■	**STN16 18UN-E**	.56	10	■	■	
		16	**STN16 16UN-I**	.56	9	■	■	**STN16 16UN-E**	.56	9	■	■	
		14	**STN16 14UN-I**	.57	8	■	■	**STN16 14UN-E**	.57	8	■	■	
		13	**STN16 13UN-I**	.54	7	□	□	**STN16 13UN-E**	.54	7	□	□	
		12	**STN16 12UN-I**	.58	7	■	■	**STN16 12UN-E**	.58	7	■	■	□

insert selected: STN16 16UN-I

■ stock standard

□ non-stock standard

Step-by-Step Thread Milling Example

Calculate the feed rates:
First, find the RPM.

$$RPM = \frac{12 \times SFM}{\pi \times d_1} = \frac{12 \times 500}{3.14 \times .79} = 2418 \text{ RPM}$$

Next, calculate the feed rate at the insert cutting edge (F_1):
(using the chosen feed per tooth of .004.)

$F_1 = IPT \times nt \times RPM = .004 \times 1 \times 2418 = 9.67$ in/min

Finally, calculate the feed rate at the cutter centerline (F_2):

$$F_2 = \frac{F_1 \times (D - d_1)}{D} = \frac{9.67 \times (1.182 - .79)}{1.182} = 3.207 \text{ in/min}$$

Select the thread milling method.
Selected method — climb milling (preferred) refer to page S8.

Calculate the radius of the tangential arc R_e:

$$R_e = \frac{(R_i - C_L)^2 + R_o^2}{2R_o} = \frac{(.591 - .02)^2 + .625^2}{2 \times .625}$$

$R_e = .573333$ in.

Calculate the angle (β):

$$\beta = 90° + \text{arc sin} \frac{R_o - R_e}{R_e}$$

$$\beta = 90° + \text{arc sin} \frac{.625 - .573333}{.57333}$$

$\beta = 90° + 5.17° = 95.17° = 95° 10'$

Calculate the movement along the Z-axis during the entry approach from point A to point B (Zα).
(NOTE: P = pitch)

$$Z\alpha = P \text{ (in)} \times \frac{\alpha°}{360°} = x \frac{.0625}{4} = .0156 \text{ in, because } \alpha = 90°$$

Calculate the X and Y values at the start of the entry approach.

$X = 0Y = -R_i + C_L = -.591 + .02 = - .571$ in

Define Z-axis location at the start of the entry approach.
(NOTE: L = length of thread)

$Z = – (L + Z\alpha) = – (.50 + .0156) = – .5156$ in

Define the starting point.

$X_a = 0$
$Y_a = 0$

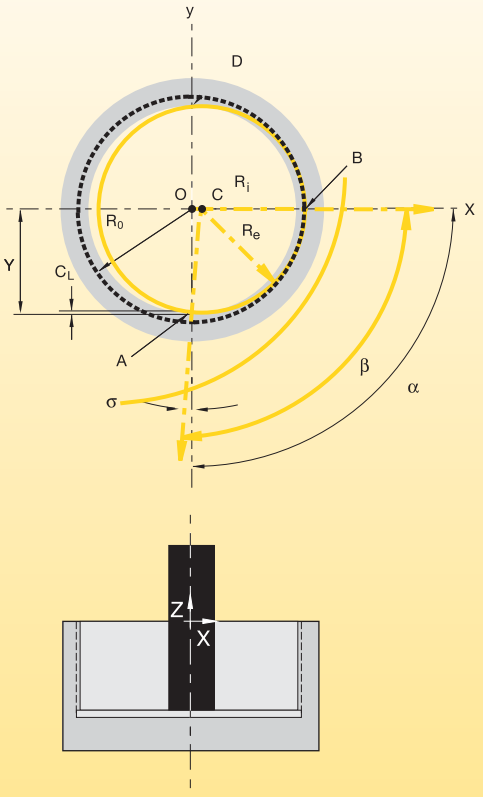
CNC Program (Fanuc 11M)

```
%
N10G90G00G57X0.000Y0.000
N20G43H10Z0.M3S2417
N30G91G00X0.Y0.Z–0.5156
N40G41D60X0.000Y–0.5710Z0.
N50G03X0.6250Y0.5710Z0.0156R0.5733F3.206
N60G03X0.Y0.Z0.0625I–0.625J0.
N70G03X–0.625Y0.5710Z0.0156R0.5733
N80G00G40X0.Y–0.5710Z0.
N90G49G57G00Z8.0M5
N100M30
%
```

$R_i = \frac{D}{2}$ $R_o = \frac{D_o}{2}$

D = minor diameter D_o = nominal diameter

α = 90°



Step-by-Step Thread Milling Example

Appendix A

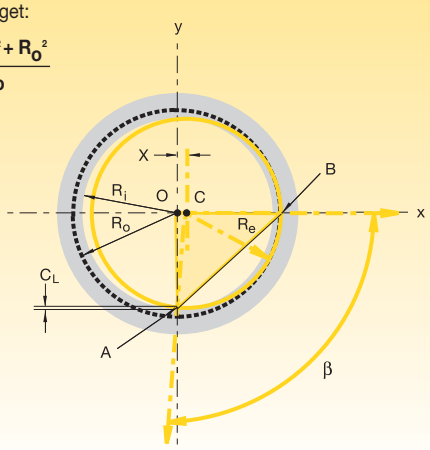
Derivation of Formulas for Internal Thread Milling

R_e, β, and X can be found by a geometric analysis of the entry path.
This entry path is defined by the tool traveling along a circular path, with a radius of R_e about the point C.

derivation of $R_e = \dfrac{(R_i - C_L)^2 + R_o^2}{2R_o}$

Triangle OAC enables us to simply solve for R_e.
Note that OAC is a right-angle triangle, and that:
$OA = R_i - C_L$
$CA = R_e$
$OC = R_o - R_e$
Pythagoras' law states: $OA^2 + OC^2 = AC^2$
Replacing actual values, we get:
$(R_i - C_L)2 + (R_o - R_e)^2 = R_e^2$
Simplifying, we get:

$R_e = \dfrac{(R_i - C_L)^2 + R_o^2}{2R_o}$



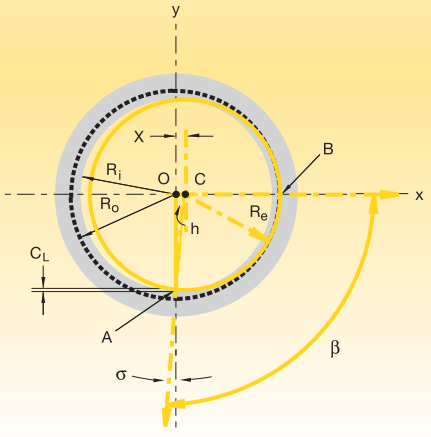
Find the angle β.

$\beta = 90° + \sigma$

$\sin \sigma = \dfrac{OC}{CA} = \dfrac{(R_o - R_e)}{R_e}$

$\sigma = \arcsin \left(\dfrac{R_o - R_e}{R_e} \right)$

Therefore, $\beta = 90° + \arcsin \left(\dfrac{R_o - R_e}{R_e} \right)$



Appendix B

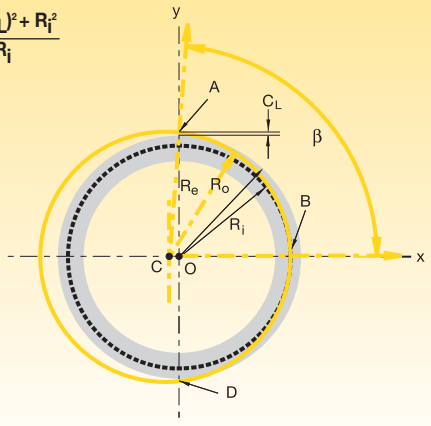
Derivation of Formulas for External Thread Milling

R_e, β, and X can be found by a geometric analysis of the entry path.
This entry path is defined by the tool traveling along a circular path, with a radius of R_e about the point C.

derivation of $R_e = \dfrac{(R_o - C_L)^2 + R_i^2}{2R_i}$

Triangle OAC enables us to simply solve for R_e.
Note that OAC is a right-angle triangle, and that:
$OA = R_o + C_L$
$CA = R_e$
$OC = R_e - R_i$
Pythagoras' law states: $OA^2 + OC^2 = AC^2$
Replacing actual values, we get:
$(R_o + C_L)^2 + (R_e - R_i)^2 = R_e^2$
Simplifying, we get:

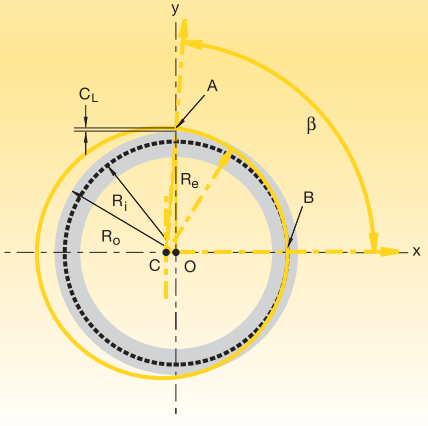
$R_e = \dfrac{(R_o - C_L)^2 + R_i^2}{2R_i}$



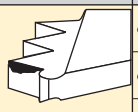
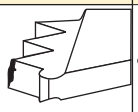
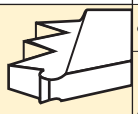
Find the angle β.
β can be easily found using the same triangle:

$\sin \beta = \dfrac{AO}{AC} = \dfrac{(R_o + C_L)}{R_e}$

$\beta = \arcsin \left(\dfrac{R_o + C_L}{R_e} \right)$



Thread Mill Troubleshooting

problem	possible cause	solution
excessive insert flank wear 	• Cutting speed too high.	• Reduce cutting speed.
	• Chip is too thin.	• Increase feed rate.
	• Insufficient coolant.	• Increase coolant quantity/pressure.
chipping of cutting edge 	• Chip is too thick.	• Reduce feed rate. • Use the tangential arc method of entrance. • Increase rpm.
	• Vibration.	• Check rigidity.
material build-up on the cutting edge 	• Cutting speed too slow.	• Increase cutting speed.
	• Chip thickness too small.	• Increase feed rate.
chatter/vibration	• Feed rate is too high.	• Reduce the feed.
	• Profile is too deep (coarse pitch threads).	• Execute two passes, each with increased cutting depth. • Execute two passes, each cutting only half the thread length.
	• Thread length is too long.	• Execute two passes, each cutting only half of the thread length.
insufficient thread accuracy	• Tool deflection.	• Reduce feed rate. • Execute a zero cut.

Insert Tolerance Classes

thread designation	standard designation	tolerance class
UN	ANSI B 1.174	2A/2B
UNJ	MIL-S-8879A	3A/3B
ISO	R262 (DIN 13)	6g/6H
NPT	USAS B2.1 : 1968	standard NPT
NPTF	ANSI B 1.20.3-1976	standard
BSW	B.S. 84 : 1956, DIN 259, ISO 228/1 : 1982	medium class A
BSPT	B.S. 21 : 1985	standard BSPT
ACME	ANSI B1/5 : 1988	3G
PG	DIN 40430	standard
TR	DIN 103	7e/7H