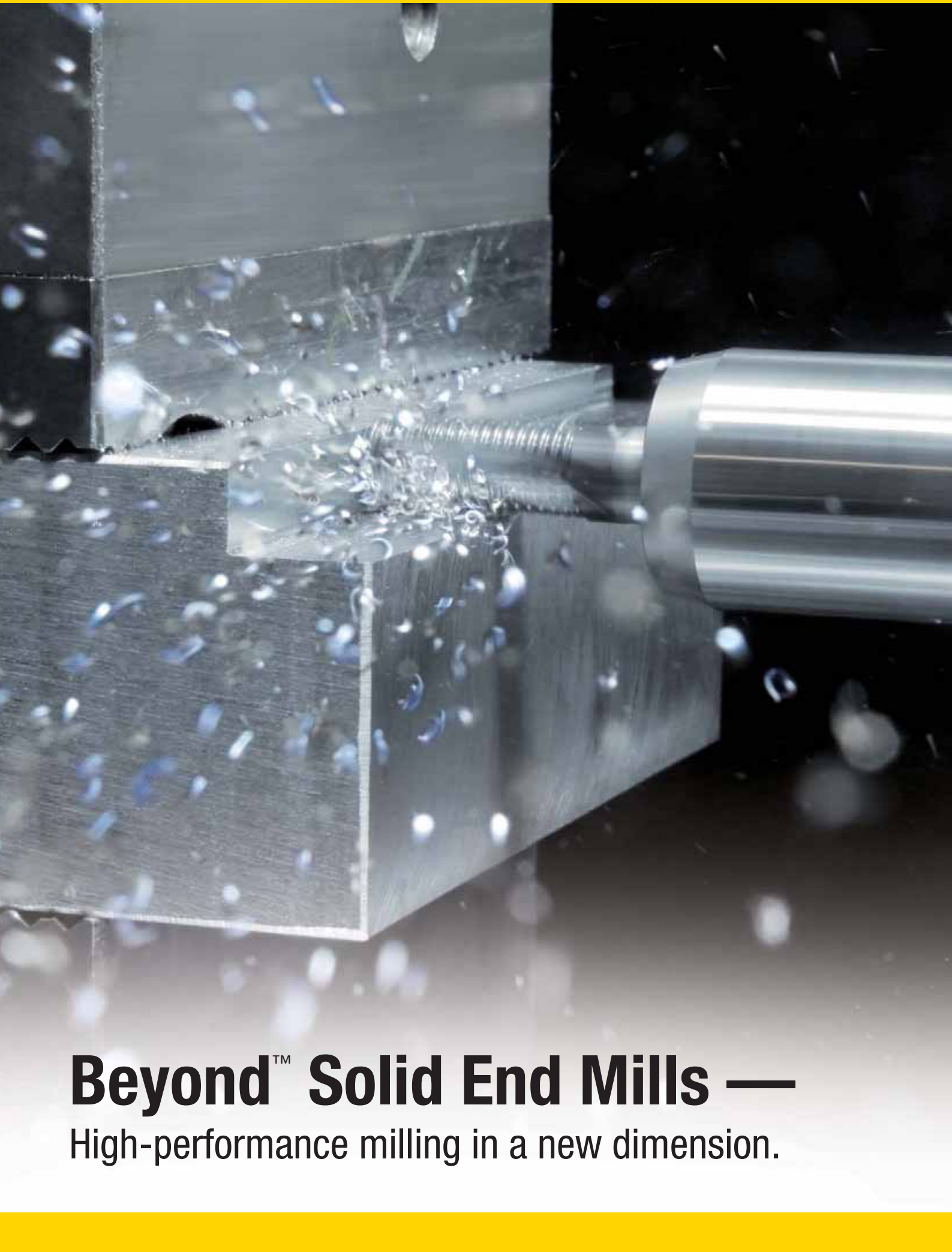
INNOVATIONS PREVIEW EDITION

MASTER CATALOGUE

SOLID END MILL PORTFOLIO
2013

www.kennametal.com

KENNAMETAL®



Beyond™ Solid End Mills —

High-performance milling in a new dimension.

Solid End Milling

beyond *Beyond™ grade.

		series	D1 diameter (mm)	length of cut	flute Z	helix	internal coolant
HARVI I™*		F4AS...DL	4–25	1,8–3 x D1	ZU=4	38°	
HARVI I*		F4AS..WM-WX-WL	6–25	1,5 x D1	ZU=4	38°	
HARVI I Chipbreaker*		F4BS..WM-WX-WL	6–25	1,5 x D1	ZU=4	38°	
HARVI I Ball Nose*		F4AW..WL-WX	6–16	1 x D1	ZU=4	38°	
HARVI II™*		UCDE	4–25	1,8–2,7 x D1	ZU=5	38°	
HARVI II		UDDE	6–25	1,8–2,2 x D1	ZU=5	38°	
HARVI II		UGDE	6–25	3–5 x D1	ZU=5	43°	
KenFeed™		KHDA	6–20		ZU=6	20°	
KenFeed		KMDA	6–20		ZU=6	20°	
Hard Steels		F2AT...WM-WL-WX	2–12	1 x D1	ZU=2	20°	
Hard Steels		F4AT... WS-WM-WL-WX	4–12	0,5 x D1	ZU=4	20°	
Hard Steels		F4AJ-F5AJ... WS-WM-WL-WX	6–25	1,5 x D1	ZU=X	50°	
Hard Steels		F4AJ-F5AJ-F6AJ WS-WL-WX	6–25	1,5 x D1	ZU=X	50°	
Hard Steels		F6AV-F8AV...DL	6–25	2,2–3 x D1	ZU=X	45°	
Hard Steels Ball Nose		F2AL...WL-WM-WX	2–12		ZU=2	20°	
Hard Steels Ball Nose		F2AL...WL-WM	1–16		ZU=2	30°	
Hard Steels Ball Nose		F2AL...WL-WM-WX	6–16		ZU=2	30°	
Hard Steels Ball Nose		F2AB...WL-WM-WX	3–10		ZU=2	30°	
Hard Steels Ball Nose		F4AL...WL-WM-WX	3–10		ZU=4	30°	
Aluminium MaxiMet™		ABDF	1,5–20	1,9–4 x D1	ZU=2	45°	
Aluminium MaxiMet		ABDE	3–20	1,9–4 x D1	ZU=3	38°	
Aluminium MaxiMet		ABDE	6–20	1,5 x D1	ZU=3	38°	
Aluminium		F2AA...DL	4–20	1,6–2 x D1	ZU=2	45°	
Aluminium		F2AA...WM-WL-WX	6–25	1,5 x D1	ZU=2	45°	
Aluminium		F3AA... WS-WM-WL-WX	3–20	1,9–4 x D1	ZU=3	45°	

					shank	centre cutting	neck	P	M	K	N	S	H						product page(s)	cutting data page(s)
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			☑					●	●	○		●	○	☑					M18–M19	M25
☑							☑					●				☑		☑	M28	M30
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	☑					☑					●			☑	☑	☑	☑		M56	M63

● first choice
○ alternate choice

beyond *Beyond™ grade.

		series	D1 diameter (mm)	length of cut	flute Z	helix	internal coolant
Aluminium		F3AA... WS-WM-WL-WX	6–25	1,5 x D1	ZU=3	45°	
Aluminium		F3BA... WS-WM-WL-WX	6–25	1,8–2,1 x D1	ZU=3	40°	
Aluminium		F3BA... WS-WM-WL-WX	8–25	1,8–2 x D1	ZU=3	40°	
Aluminium		F3BA...DL	6–20	1,2 x D1	ZU=3	40°	
CFRP*		CCNC	6–12	3 x D1	ZU=X	25°	
CFRP*		CDDC	6–12	3 x D1	ZU=6	25°	
CFRP*		CBDB	6–12	3 x D1	ZU=X	15°	
CFRP*		CRBD	10–12		ZU=4	30°	
Micro		F2AH...WS-WM	0,3–2,5		ZU=2	30°	
Micro		F2AH...WS	0,4–3		ZU=2	30°	
Micro		F3AH...WS	0,4–3		ZU=3	30°	
Micro		F2AL...WS	0,5–3		ZU=2	30°	
Micro		F2AL...WS	0,3–6		ZU=2	30°	
Micro		F2AL...WM	0,5–4		ZU=2	30°	
HP Finisher		F2AU...DK	1,8–19,7	1 x D1	ZU=2	38°	
HP Finisher		F3AU...DK	2,8–19,7	1–1,3 x D1	ZU=3	38°	
HP Finisher*		F3AS...DK	3–20	1–1,3 x D1	ZU=3	35°	
HP Finisher		F3AJ...DL	6–20	1,9–2,1 x D1	ZU=3	60°	
HP Finisher*		F3AW...WL-WX	6–16		ZU=3	35°	
HP Finisher*		F8AJ-F10AJ...DK	8–20	1 x D1	ZU=X	45°	
HP Finisher*		F6AJ-F8AJ...DL	6–25	2–3 x D1	ZU=X	45°	
HP Rougher*		F3BH...DL	4–25	1,8–2 x D1	ZU=3	30°	
HP Rougher*		F3BS..DK-DL	6–20	1–1,6 x D1	ZU=3	35°	
HP Rougher*		F4BJ...DL	6–20	1,9–2,2 x D1	ZU=4	30°	

	shank	centre cutting	neck	P	M	K	N	S	H		product page(s)	cutting data page(s)
	☑		☑				●			☑	M57	M63
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		☑	☑	●	●	●			○	☑	M98	M106
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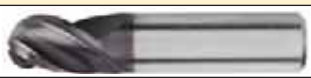
● first choice
○ alternate choice

beyond *Beyond™ grade.

		series	D1 diameter (mm)	length of cut	flute Z	helix	internal coolant
HP Rougher		F3BT-F4BT-F6BT... WM-WL-WX	4–25	1 x D1	ZU=X	45°	
HP Rougher		F4BJ-F6BJ...DL	6–12	1 x D1	ZU=X	45°	
HP Rougher*		F4BJ-F6BJ...DL	6–25	1,8–2,1 x D1	ZU=X	45°	
HP Rougher*		F3BH-F4BJ-F5BJ... WS-WM-WL-WX	4–25	1,8–2,7 x D1	ZU=X	20°	
HP Rougher*		F3BH-F4BJ... WS-WM-WL-WX	8–20	1,3–1,9 x D1	ZU=X	20°	
HP Rougher*		F3BL...WS-WM	6–8		ZU=X	20°	
GP		F2AH...DN	4–20	1,6–2 x D1	ZU=2	30°	
GP		F2AH...DK	2–20	1,5 x D1	ZU=2	30°	
GP		F2AH... WS-WM-WL-WX	3–20	3,3–6,6 x D1	ZU=2	30°	
GOmill™		UEDE	2–12	1,2–2 x D1	ZU=3	38°	
GP		F3AH...DN	4–20	1,6–2 x D1	ZU=3	30°	
GP		F3AH...DL/DK	2,5–25	1,2–1,8 x D1	ZU=3	30°	
GP		F3AH...DK	2–20	1,5 x D1	ZU=3	45°	
GOmill		UEDE	4–12	1,2–1,7 x D1	ZU=4	38°	
GP		F4AJ...DN	4–20	1,9–2,7 x D1	ZU=4	30°	
GP		F4AJ...DK	2–20	1,9–2 x D1	ZU=4	30°	
GP		F4AJ...WM-WL-WX	3–20	3,3–6,7 x D1	ZU=4	30°	
GOmill		UEBC	2–12	1,2–2 x D1	ZU=2	30°	
GP		F2AL...DN	2–20	1,6–3 x D1	ZU=2	30°	
GP		F2AL...DL	2–20	1,6–3 x D1	ZU=2	30°	
GP		F2AL...WM-WL-WX	3–12	3,7–6,7 x D1	ZU=2	30°	
GOmill		UEBE	2–12	1,2–2 x D1	ZU=3	38°	
GP		F4AL...DN	2–20	1,9–3,5 x D1	ZU=4	30°	
GP		F4AL...DL	3–20	1,9–2,3 x D1	ZU=4	30°	
GP		F4AL...WM-WL-WX	3–12	3,7–6,7 x D1	ZU=4	30°	

					shank	centre cutting	neck	P	M	K	N	S	H						product page(s)	cutting data page(s)
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		✓				✓		●	●	●			○	✓	✓	✓			M102	M108
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		✓				✓		●	●	●	○			✓	✓	✓	✓		M114	M134
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		✓				✓		●	●	●	○			✓	✓	✓	✓		M121	M136
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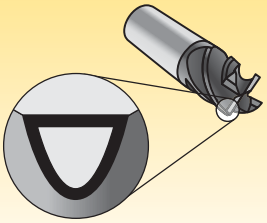
				✓		✓		●	●	●	○			✓	✓			✓	M129	M142
				✓		✓		●	●	●		●	○	✓	✓		✓	✓	M130	M139
				✓		✓		●	●	●	○			✓	✓			✓	M131	M140
				✓		✓		●	●	●	○			✓	✓			✓	M132	M141
				✓		✓		●	●	●				✓				✓	M133	M142

● 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

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 optimised 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
KC643M	Coated fine-grain grade with PVD (AlTiN). KC643M is a 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
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 characterised by good hardness and wear resistance. It provides outstanding protection for solid carbide tools against cratering and abrasion.	P M S
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
KC639M	PVD (AlTiN) coated carbide on a new sub-micron carbide substrate. This hard coating provides outstanding performance in milling hardened materials (58–65 HRC).	H
KC637M	Coated, tough, wear-resistant carbide grade with hard PVD coating, particularly suitable for machining steels above 48 HRC.	H
KC635M	Universal carbide grade with PVD coating (TiAlN). KC635M is a high-performance grade for finishing operations. This grade is characterised by high hardness and wear resistance.	P M K S
KCN05	**High-Performance Grade** A pure, diamond-coated carbide for milling CFRP and graphite. It is a very tough and wear-resistant grade.	N

Beyond™ Solid End Milling

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 aluminium 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

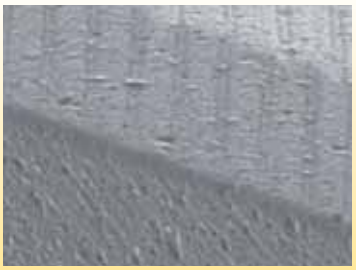
Coating		Grade Description	
KCPM15	 AlTiN	Coated carbide grade with thick PVD coating and optimised chemistry and process for increased wear resistance. Outstanding protection in milling stainless steel to mitigate crater, DOCN (depth-of-cut notching), and flank wear. Excellent performance up to 52 HRC.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

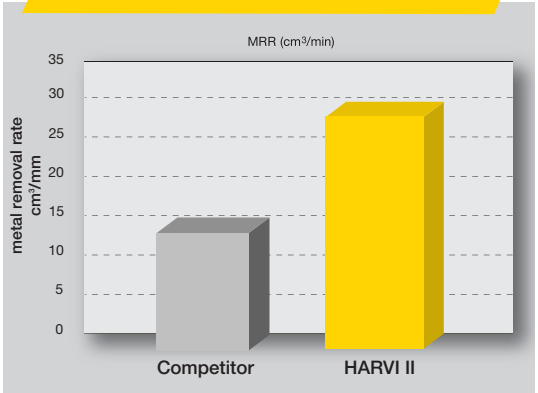
- Best suited for applications in the aerospace, medical, die and mould, automotive, and general engineering markets.
- Outstanding performance in stainless steel, titanium, INCONEL®, and other high-temperature alloys and steels.
- Increased metal removal rates in roughing and finishing operations.
-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

Featured Application: Slotting an Engine Ring

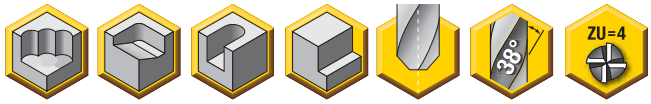
Operation: Slotting
Customer: Aerospace manufacturer
Workpiece: Engine ring
Material: SST nickel-based alloy EZ3NCT25 (25% nickel, 13% chromium) at 245 HB
Solution: HARVI II™ 5-flute with AlTiN coating
Results: 90% increase in metal removal rate

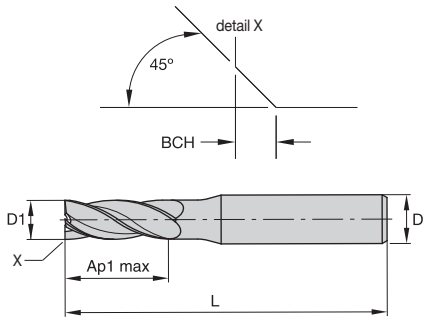
	COMPETITOR	HARVI II™
coating:	TiAlN	AlTiN
end mill:	4-flute 12mm 1mm radius	5-flute 12mm 1mm radius
material:	SST nickel-based alloy	SST nickel-based alloy
depth of cut (ap):	11,15mm	11,15mm
width of cut (ae):	12mm	12mm
speed (vc):	30 m/min	40 m/min
RPM (N):	800 RPM	1,060 RPM
feed rate (vf):	112 mm/min	212 mm/min
chip load per tooth (fz):	0,035 mm/th	0,04 mm/th
metal removal rate:	15 cm^3/min	28 cm^3/min

90% Productivity Increase!

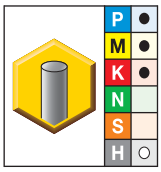


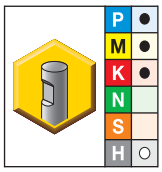
- Centre cutting.
- Single tool for roughing and finishing applications.
- Unequal flute spacing minimises chatter for smoother machining.





beyond





● first choice
○ alternate choice

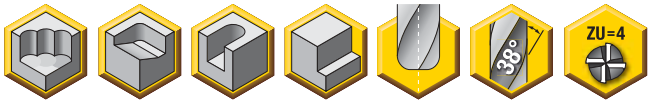
KCPM15	KCPM15	D1	D	Ap1 max	L	BCH
F4AS0400ADL38	**F4AS0400BDL38**	4,00	6,00	12,00	55,00	0,40
F4AS0500ADL38	**F4AS0500BDL38**	5,00	6,00	13,00	57,00	0,40
F4AS0600ADL38	**F4AS0600BDL38**	6,00	6,00	13,00	57,00	0,40
F4AS0800ADL38	**F4AS0800BDL38**	8,00	8,00	16,00	63,00	0,40
F4AS1000ADL38	**F4AS1000BDL38**	10,00	10,00	22,00	72,00	0,50
F4AS1200ADL38	**F4AS1200BDL38**	12,00	12,00	26,00	83,00	0,50
–	**F4AS1400BDL38**	14,00	14,00	26,00	83,00	0,50
F4AS1600ADL38	**F4AS1600BDL38**	16,00	16,00	32,00	92,00	0,50
F4AS1800ADL38	**F4AS1800BDL38**	18,00	18,00	32,00	92,00	0,50
F4AS2000ADL38	**F4AS2000BDL38**	20,00	20,00	38,00	104,00	0,50
F4AS2500ADL38	**F4AS2500BDL38**	25,00	25,00	45,00	121,00	0,50

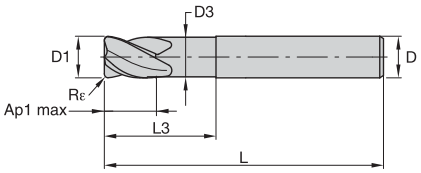
NOTE: For application data, see page M22.

End Mill Tolerances

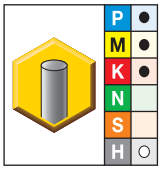
D1	tolerance e8	D	tolerance h6
≤3	-0,014/-0,028	≤3	+0/-0,006
>3–6	-0,020/-0,038	>3–6	+0/-0,008
>6–10	-0,025/-0,047	>6–10	+0/-0,009
>10–18	-0,032/-0,059	>10–18	+0/-0,011
>18–30	-0,040/-0,073	>18–30	+0/-0,013

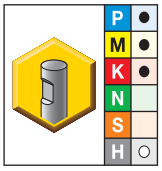
- Kennametal standard dimensions.
- Centre cutting.
- Single tool for roughing and finishing applications.
- Unequal flute spacing minimises chatter for smoother machining.





beyond





● first choice
○ alternate choice

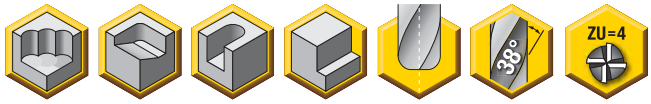
KCPM15	KCPM15	D1	D	Ap1 max	L3	L	Rε	D3
F4AS0600AWM38R050	F4AS0600BWM38R050	6,00	6,00	9,00	18,00	63,00	0,50	5,80
F4AS0600AWM38R100	F4AS0600BWM38R100	6,00	6,00	9,00	18,00	63,00	1,00	5,80
F4AS0800AWM38R050	F4AS0800BWM38R050	8,00	8,00	12,00	24,00	68,00	0,50	7,80
F4AS0800AWM38R100	F4AS0800BWM38R100	8,00	8,00	12,00	24,00	68,00	1,00	7,80
F4AS1000AWL38R050	F4AS1000BWL38R050	10,00	10,00	15,00	30,00	76,00	0,50	9,50
F4AS1000AWL38R100	F4AS1000BWL38R100	10,00	10,00	15,00	30,00	76,00	1,00	9,50
F4AS1000AWL38R200	F4AS1000BWL38R200	10,00	10,00	15,00	30,00	76,00	2,00	9,50
F4AS1000AWL38R300	F4AS1000BWL38R300	10,00	10,00	15,00	30,00	76,00	3,00	9,50
F4AS1000AWL38R400	F4AS1000BWL38R400	10,00	10,00	15,00	30,00	76,00	4,00	9,50
F4AS1200AWL38R050	F4AS1200BWL38R050	12,00	12,00	18,00	36,00	84,00	0,50	11,50
F4AS1200AWL38R100	F4AS1200BWL38R100	12,00	12,00	18,00	36,00	84,00	1,00	11,50
F4AS1200AWL38R200	F4AS1200BWL38R200	12,00	12,00	18,00	36,00	84,00	2,00	11,50
F4AS1200AWL38R300	F4AS1200BWL38R300	12,00	12,00	18,00	36,00	84,00	3,00	11,50
F4AS1200AWL38R400	F4AS1200BWL38R400	12,00	12,00	18,00	36,00	84,00	4,00	11,50
F4AS1600AWX38R050	F4AS1600BWX38R050	16,00	16,00	24,00	48,00	100,00	0,50	15,00
F4AS1600AWX38R100	F4AS1600BWX38R100	16,00	16,00	24,00	48,00	100,00	1,00	15,00
F4AS1600AWX38R200	F4AS1600BWX38R200	16,00	16,00	24,00	48,00	100,00	2,00	15,00
F4AS1600AWX38R300	F4AS1600BWX38R300	16,00	16,00	24,00	48,00	100,00	3,00	15,00
F4AS1600AWX38R400	F4AS1600BWX38R400	16,00	16,00	24,00	48,00	100,00	4,00	15,00
F4AS2000AWX38R050	F4AS2000BWX38R050	20,00	20,00	30,00	60,00	115,00	0,50	19,00
F4AS2000AWX38R100	F4AS2000BWX38R100	20,00	20,00	30,00	60,00	115,00	1,00	19,00
F4AS2000AWX38R200	F4AS2000BWX38R200	20,00	20,00	30,00	60,00	115,00	2,00	19,00
F4AS2000AWX38R300	F4AS2000BWX38R300	20,00	20,00	30,00	60,00	115,00	3,00	19,00
F4AS2000AWX38R400	F4AS2000BWX38R400	20,00	20,00	30,00	60,00	115,00	4,00	19,00
F4AS2500AWX38R050	F4AS2500BWX38R050	25,00	25,00	37,50	75,00	135,00	0,50	24,00
F4AS2500AWX38R100	F4AS2500BWX38R100	25,00	25,00	37,50	75,00	135,00	1,00	24,00
F4AS2500AWX38R200	F4AS2500BWX38R200	25,00	25,00	37,50	75,00	135,00	2,00	24,00
F4AS2500AWX38R300	F4AS2500BWX38R300	25,00	25,00	37,50	75,00	135,00	3,00	24,00
F4AS2500AWX38R400	F4AS2500BWX38R400	25,00	25,00	37,50	75,00	135,00	4,00	24,00

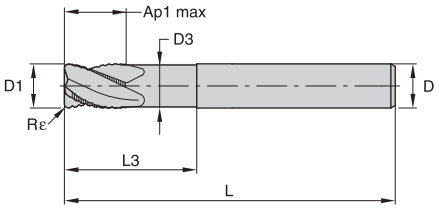
NOTE: For application data, see page M22.

End Mill Tolerances

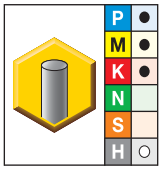
D1	tolerance e8	D	tolerance h6
≤3	-0,014/-0,028	≤3	+0/-0,006
>3–6	-0,020/-0,038	>3–6	+0/-0,008
>6–10	-0,025/-0,047	>6–10	+0/-0,009
>10–18	-0,032/-0,059	>10–18	+0/-0,011
>18–30	-0,040/-0,073	>18–30	+0/-0,013

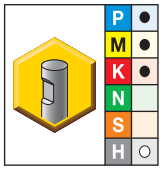
- Kennametal standard dimensions.
- Centre cutting.
- Chipbreaker profile.





beyond





● first choice
○ alternate choice

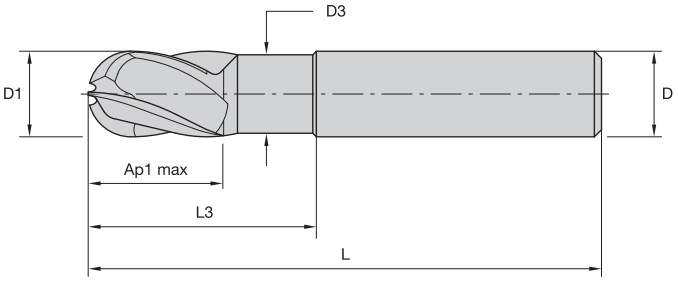
KCPM15	KCPM15	D1	D	Ap1 max	L3	L	Rε	D3
F4BS0600AWM38R050	F4BS0600BWM38R050	6,00	6,00	9,00	18,00	63,00	0,50	5,80
F4BS0600AWM38R100	F4BS0600BWM38R100	6,00	6,00	9,00	18,00	63,00	1,00	5,80
F4BS0800AWM38R050	F4BS0800BWM38R050	8,00	8,00	12,00	24,00	68,00	0,50	7,80
F4BS0800AWM38R100	F4BS0800BWM38R100	8,00	8,00	12,00	24,00	68,00	1,00	7,80
F4BS1000AWL38R050	F4BS1000BWL38R050	10,00	10,00	15,00	30,00	76,00	0,50	9,50
F4BS1000AWL38R100	F4BS1000BWL38R100	10,00	10,00	15,00	30,00	76,00	1,00	9,50
F4BS1000AWL38R200	F4BS1000BWL38R200	10,00	10,00	15,00	30,00	76,00	2,00	9,50
F4BS1000AWL38R300	F4BS1000BWL38R300	10,00	10,00	15,00	30,00	76,00	3,00	9,50
F4BS1000AWL38R400	F4BS1000BWL38R400	10,00	10,00	15,00	30,00	76,00	4,00	9,50
F4BS1200AWL38R050	F4BS1200BWL38R050	12,00	12,00	18,00	36,00	84,00	0,50	11,50
F4BS1200AWL38R100	F4BS1200BWL38R100	12,00	12,00	18,00	36,00	84,00	1,00	11,50
F4BS1200AWL38R200	F4BS1200BWL38R200	12,00	12,00	18,00	36,00	84,00	2,00	11,50
F4BS1200AWL38R300	F4BS1200BWL38R300	12,00	12,00	18,00	36,00	84,00	3,00	11,50
F4BS1200AWL38R400	F4BS1200BWL38R400	12,00	12,00	18,00	36,00	84,00	4,00	11,50
F4BS1600AWX38R050	F4BS1600BWX38R050	16,00	16,00	24,00	48,00	100,00	0,50	15,00
F4BS1600AWX38R100	F4BS1600BWX38R100	16,00	16,00	24,00	48,00	100,00	1,00	15,00
F4BS1600AWX38R200	F4BS1600BWX38R200	16,00	16,00	24,00	48,00	100,00	2,00	15,00
F4BS1600AWX38R300	F4BS1600BWX38R300	16,00	16,00	24,00	48,00	100,00	3,00	15,00
F4BS1600AWX38R400	F4BS1600BWX38R400	16,00	16,00	24,00	48,00	100,00	4,00	15,00
F4BS2000AWX38R050	F4BS2000BWX38R050	20,00	20,00	30,00	60,00	115,00	0,50	19,00
F4BS2000AWX38R100	F4BS2000BWX38R100	20,00	20,00	30,00	60,00	115,00	1,00	19,00
F4BS2000AWX38R200	F4BS2000BWX38R200	20,00	20,00	30,00	60,00	115,00	2,00	19,00
F4BS2000AWX38R300	F4BS2000BWX38R300	20,00	20,00	30,00	60,00	115,00	3,00	19,00
F4BS2000AWX38R400	F4BS2000BWX38R400	20,00	20,00	30,00	60,00	115,00	4,00	19,00
F4BS2500AWX38R050	F4BS2500BWX38R050	25,00	25,00	37,50	75,00	135,00	0,50	24,00
F4BS2500AWX38R100	F4BS2500BWX38R100	25,00	25,00	37,50	75,00	135,00	1,00	24,00
F4BS2500AWX38R200	F4BS2500BWX38R200	25,00	25,00	37,50	75,00	135,00	2,00	24,00
F4BS2500AWX38R300	F4BS2500BWX38R300	25,00	25,00	37,50	75,00	135,00	3,00	24,00
F4BS2500AWX38R400	F4BS2500BWX38R400	25,00	25,00	37,50	75,00	135,00	4,00	24,00

NOTE: For application data, see page M23.

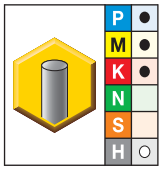
End Mill Tolerances

D1	tolerance e8	D	tolerance h6
≤3	-0,014/-0,028	≤3	+0/-0,006
>3–6	-0,020/-0,038	>3–6	+0/-0,008
>6–10	-0,025/-0,047	>6–10	+0/-0,009
>10–18	-0,032/-0,059	>10–18	+0/-0,011
>18–30	-0,040/-0,073	>18–30	+0/-0,013

- Kennametal standard dimensions.
- Centre cutting.



beyond



● first choice
○ alternate choice

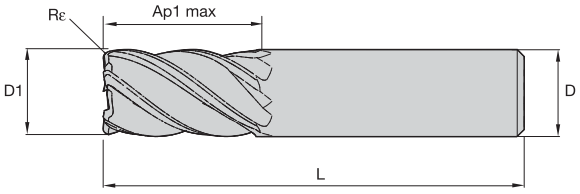
KCPM15	D1	D	Ap1 max	L3	L	D3
F4AW0600AWL38E120	6,00	6,00	6,00	12,00	76,00	5,80
F4AW0800AWL38E160	8,00	8,00	8,00	16,00	100,00	7,80
F4AW1000AWX38E200	10,00	10,00	10,00	20,00	121,50	9,50
F4AW1200AWX38E240	12,00	12,00	12,00	24,00	125,00	11,50
F4AW1600AWX38E320	16,00	16,00	16,00	32,00	150,00	15,00

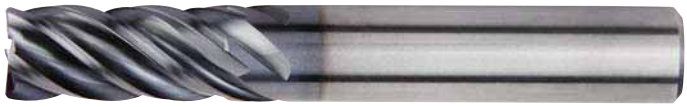
NOTE: For application data, see page M23.

End Mill Tolerances

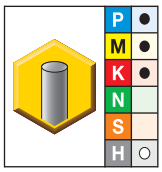
D1	tolerance e8	D	tolerance h6
≤3	-0,014/-0,028	≤3	+0/-0,006
>3–6	-0,020/-0,038	>3–6	+0/-0,008
>6–10	-0,025/-0,047	>6–10	+0/-0,009
>10–18	-0,032/-0,059	>10–18	+0/-0,011
>18–30	-0,040/-0,073	>18–30	+0/-0,013

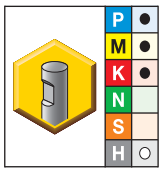
- Kennametal standard dimensions.
- Non-centre cutting.
- Unequal flute spacing minimises chatter for smoother machining.
- Single tool for both roughing and finishing operations for fewer setups.
- Five-flute geometry enables slotting up to 1 x D.





beyond





● first choice
○ alternate choice

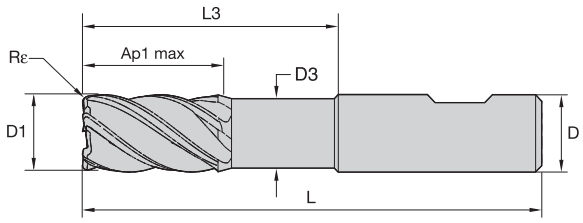
KCPM15	KCPM15	D1	D	Ap1 max	L	Rε
UCDE0400A5ARA	**UCDE0400B5ARA**	4,00	6,00	11,00	55,00	0,25
UCDE0400A5ASA	**–**	4,00	6,00	11,00	55,00	–
UCDE0500A5ARA	**UCDE0500B5ARA**	5,00	6,00	13,00	57,00	0,25
UCDE0500A5ASA	**–**	5,00	6,00	13,00	57,00	–
UCDE0600A5ARA	**UCDE0600B5ARA**	6,00	6,00	13,00	57,00	0,40
UCDE0600A5ASA	**–**	6,00	6,00	13,00	57,00	–
UCDE0700A5ARA	**UCDE0700B5ARA**	7,00	8,00	16,00	63,00	0,40
UCDE0700A5ASA	**–**	7,00	8,00	16,00	63,00	–
UCDE0800A5ARA	**UCDE0800B5ARA**	8,00	8,00	19,00	63,00	0,50
UCDE0800A5ASA	**–**	8,00	8,00	19,00	63,00	–
UCDE0900A5ARA	**UCDE0900B5ARA**	9,00	10,00	19,00	72,00	0,50
UCDE0900A5ASA	**–**	9,00	10,00	19,00	72,00	–
UCDE1000A5ARA	**UCDE1000B5ARA**	10,00	10,00	22,00	72,00	0,50
UCDE1000A5ASA	**–**	10,00	10,00	22,00	72,00	–
UCDE1200A5ARA	**UCDE1200B5ARA**	12,00	12,00	26,00	83,00	0,75
UCDE1200A5ASA	**–**	12,00	12,00	26,00	83,00	–
UCDE1400A5ARA	**UCDE1400B5ARA**	14,00	14,00	26,00	83,00	0,75
UCDE1400A5ASA	**–**	14,00	14,00	26,00	83,00	–
UCDE1600A5ARA	**UCDE1600B5ARA**	16,00	16,00	32,00	92,00	0,75
UCDE1600A5ASA	**–**	16,00	16,00	32,00	92,00	–
UCDE1800A5ARA	**UCDE1800B5ARA**	18,00	18,00	32,00	92,00	0,75
UCDE1800A5ASA	**–**	18,00	18,00	32,00	92,00	–
UCDE2000A5ARA	**UCDE2000B5ARA**	20,00	20,00	38,00	104,00	0,75
UCDE2000A5ASA	**–**	20,00	20,00	38,00	104,00	–
UCDE2500A5ARA	**UCDE2500B5ARA**	25,00	25,00	45,00	121,00	0,75
UCDE2500A5ASA	**–**	25,00	25,00	45,00	121,00	–

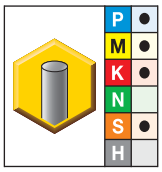
NOTE: For application data, see page M24.

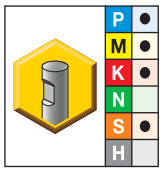
End Mill Tolerances

D1	tolerance e8	D	tolerance h6
≤3	-0,014/-0,028	≤3	+0/-0,006
>3–6	-0,020/-0,038	>3–6	+0/-0,008
>6–10	-0,025/-0,047	>6–10	+0/-0,009
>10–18	-0,032/-0,059	>10–18	+0/-0,011
>18–30	-0,040/-0,073	>18–30	+0/-0,013

- Kennametal standard dimensions.
- Non-centre cutting.
- Optimised geometry for titanium machining.
- Unequal flute spacing minimises 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.





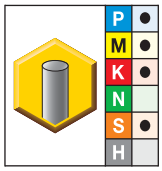


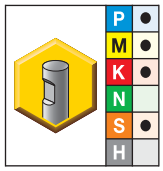
● first choice
○ alternate choice

KC643M	KC643M	D1	D	Ap1 max	L3	L	Rε	D3
–	UDDE0600B5ARA	6,00	6,00	13,00	18,00	63,00	0,20	5,64
UDDE0600A5ARA	UDDE0600B5ARB	6,00	6,00	13,00	18,00	63,00	0,50	5,64
UDDE0600A5ARB	UDDE0600B5ARC	6,00	6,00	13,00	18,00	63,00	1,00	5,64
UDDE0600A5ARC	UDDE0600B5ARD	6,00	6,00	13,00	18,00	63,00	1,50	5,64
UDDE0600A5ASA	–	6,00	6,00	13,00	18,00	63,00	–	5,64
–	UDDE0800B5ARA	8,00	8,00	19,00	24,00	68,00	0,20	7,52
UDDE0800A5ARA	UDDE0800B5ARB	8,00	8,00	19,00	24,00	68,00	0,50	7,52
UDDE0800A5ARB	UDDE0800B5ARC	8,00	8,00	19,00	24,00	68,00	1,00	7,52
UDDE0800A5ARC	UDDE0800B5ARD	8,00	8,00	19,00	24,00	68,00	2,00	7,52
UDDE0800A5ASA	–	8,00	8,00	19,00	24,00	68,00	–	7,52
UDDE1000A5ARA	UDDE1000B5ARA	10,00	10,00	22,00	30,00	76,00	0,50	9,40
UDDE1000A5ARB	UDDE1000B5ARB	10,00	10,00	22,00	30,00	76,00	1,00	9,40
UDDE1000A5ARC	UDDE1000B5ARC	10,00	10,00	22,00	30,00	76,00	2,00	9,40
UDDE1000A5ARD	UDDE1000B5ARD	10,00	10,00	22,00	30,00	76,00	2,50	9,40
UDDE1000A5ASA	–	10,00	10,00	22,00	30,00	76,00	–	9,40
UDDE1200A5ARA	UDDE1200B5ARA	12,00	12,00	26,00	36,00	84,00	0,50	11,28

(continued)

(continued)





● first choice
○ alternate choice

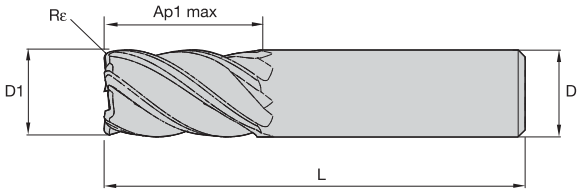
KC643M	KC643M	D1	D	Ap1 max	L3	L	Rε	D3
UDDE1200A5ARB	**UDDE1200B5ARB**	12,00	12,00	26,00	36,00	84,00	1,00	11,28
UDDE1200A5ARC	**UDDE1200B5ARC**	12,00	12,00	26,00	36,00	84,00	2,00	11,28
UDDE1200A5ARD	**UDDE1200B5ARD**	12,00	12,00	26,00	36,00	84,00	3,00	11,28
UDDE1200A5ASA	**–**	12,00	12,00	26,00	36,00	84,00	–	11,28
UDDE1600A5ARA	**UDDE1600B5ARA**	16,00	16,00	32,00	48,00	100,00	0,50	15,04
UDDE1600A5ARB	**UDDE1600B5ARB**	16,00	16,00	32,00	48,00	100,00	1,00	15,04
UDDE1600A5ARC	**UDDE1600B5ARC**	16,00	16,00	32,00	48,00	100,00	2,00	15,04
UDDE1600A5ARD	**UDDE1600B5ARD**	16,00	16,00	32,00	48,00	100,00	3,00	15,04
UDDE1600A5ARE	**UDDE1600B5ARE**	16,00	16,00	32,00	48,00	100,00	4,00	15,04
UDDE1600A5ASA	**–**	16,00	16,00	32,00	48,00	100,00	–	15,04
UDDE2000A5ARA	**UDDE2000B5ARA**	20,00	20,00	38,00	60,00	115,00	0,50	18,80
UDDE2000A5ARB	**UDDE2000B5ARB**	20,00	20,00	38,00	60,00	115,00	1,00	18,80
UDDE2000A5ARC	**UDDE2000B5ARC**	20,00	20,00	38,00	60,00	115,00	2,00	18,80
UDDE2000A5ARD	**UDDE2000B5ARD**	20,00	20,00	38,00	60,00	115,00	3,00	18,80
UDDE2000A5ARE	**UDDE2000B5ARE**	20,00	20,00	38,00	60,00	115,00	4,00	18,80
UDDE2000A5ASA	**–**	20,00	20,00	38,00	60,00	115,00	–	18,80
UDDE2500A5ARA	**UDDE2500B5ARA**	25,00	25,00	45,00	75,00	135,00	0,50	23,50
UDDE2500A5ARB	**UDDE2500B5ARB**	25,00	25,00	45,00	75,00	135,00	1,00	23,50
UDDE2500A5ARC	**UDDE2500B5ARC**	25,00	25,00	45,00	75,00	135,00	2,00	23,50
UDDE2500A5ARD	**UDDE2500B5ARD**	25,00	25,00	45,00	75,00	135,00	3,00	23,50
UDDE2500A5ARE	**UDDE2500B5ARE**	25,00	25,00	45,00	75,00	135,00	4,00	23,50
UDDE2500A5ASA	**–**	25,00	25,00	45,00	75,00	135,00	–	23,50

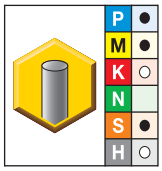
NOTE: For application data, see page M24.

End Mill Tolerances

D1	tolerance e8	D	tolerance h6
≤3	-0,014/-0,028	≤3	+0/-0,006
>3–6	-0,020/-0,038	>3–6	+0/-0,008
>6–10	-0,025/-0,047	>6–10	+0/-0,009
>10–18	-0,032/-0,059	>10–18	+0/-0,011
>18–30	-0,040/-0,073	>18–30	+0/-0,013

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





● first choice
○ alternate choice

KC643M	D1	D	Ap1 max	L	Rε
UGDE0600A5ARA	6,00	6,00	18,00	63,00	0,20
UGDE0600A5ARB	6,00	6,00	18,00	63,00	0,50
UGDE0600A5ARC	6,00	6,00	18,00	63,00	1,00
UGDE0600A5BRA	6,00	6,00	30,00	76,00	0,20
UGDE0600A5BRB	6,00	6,00	30,00	76,00	0,50
UGDE0600A5BRC	6,00	6,00	30,00	76,00	1,00
UGDE0800A5ARA	8,00	8,00	24,00	67,00	0,20
UGDE0800A5ARB	8,00	8,00	24,00	67,00	0,50
UGDE0800A5ARC	8,00	8,00	24,00	67,00	1,00
UGDE0800A5BRA	8,00	8,00	40,00	87,00	0,20
UGDE0800A5BRB	8,00	8,00	40,00	87,00	0,50
UGDE0800A5BRC	8,00	8,00	40,00	87,00	1,00
UGDE1000A5ARA	10,00	10,00	30,00	76,00	0,50
UGDE1000A5ARB	10,00	10,00	30,00	76,00	1,00
UGDE1000A5ARC	10,00	10,00	30,00	76,00	2,00
UGDE1000A5ARD	10,00	10,00	30,00	76,00	2,50
UGDE1000A5BRA	10,00	10,00	50,00	100,00	0,50
UGDE1000A5BRB	10,00	10,00	50,00	100,00	1,00
UGDE1000A5BRC	10,00	10,00	50,00	100,00	2,00
UGDE1000A5BRD	10,00	10,00	50,00	100,00	2,50
UGDE1200A5ARA	12,00	12,00	36,00	100,00	0,50
UGDE1200A5ARB	12,00	12,00	36,00	100,00	1,00
UGDE1200A5ARC	12,00	12,00	36,00	100,00	2,00
UGDE1200A5ARD	12,00	12,00	36,00	100,00	2,50
UGDE1200A5BRA	12,00	12,00	36,00	125,00	0,50
UGDE1200A5BRB	12,00	12,00	60,00	125,00	1,00
UGDE1200A5BRC	12,00	12,00	60,00	125,00	2,00
UGDE1200A5BRD	12,00	12,00	60,00	125,00	2,50
UGDE1400A5ARD	14,00	14,00	42,00	100,00	3,00
UGDE1400A5BRD	14,00	14,00	70,00	120,00	3,00

(continued)

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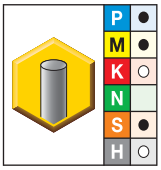


● first choice
○ alternate choice

KC643M	D1	D	Ap1 max	L	Rε
UGDE1600A5ARA	16,00	16,00	48,00	110,00	1,00
UGDE1600A5ARB	16,00	16,00	48,00	110,00	2,00
UGDE1600A5ARC	16,00	16,00	48,00	110,00	2,50
UGDE1600A5ARD	16,00	16,00	48,00	110,00	3,00
UGDE1600A5ARE	16,00	16,00	48,00	110,00	4,00
UGDE1600A5BRA	16,00	16,00	80,00	141,00	1,00
UGDE1600A5BRB	16,00	16,00	80,00	141,00	2,00
UGDE1600A5BRC	16,00	16,00	80,00	141,00	2,50
UGDE1600A5BRD	16,00	16,00	80,00	141,00	3,00
UGDE1600A5BRE	16,00	16,00	80,00	141,00	4,00
UGDE2000A5ARA	20,00	20,00	60,00	125,00	1,00
UGDE2000A5ARB	20,00	20,00	60,00	125,00	2,00
UGDE2000A5ARC	20,00	20,00	60,00	125,00	2,50
UGDE2000A5ARD	20,00	20,00	60,00	125,00	3,00
UGDE2000A5ARE	20,00	20,00	60,00	125,00	4,00
UGDE2000A5BRA	20,00	20,00	100,00	166,00	1,00
UGDE2000A5BRB	20,00	20,00	100,00	166,00	2,00
UGDE2000A5BRC	20,00	20,00	100,00	166,00	2,50
UGDE2000A5BRD	20,00	20,00	100,00	166,00	3,00
UGDE2000A5BRE	20,00	20,00	100,00	166,00	4,00
UGDE2500A5ARA	25,00	25,00	75,00	150,00	1,00
UGDE2500A5ARB	25,00	25,00	75,00	150,00	2,00
UGDE2500A5ARC	25,00	25,00	75,00	150,00	2,50
UGDE2500A5ARD	25,00	25,00	75,00	150,00	3,00
UGDE2500A5ARE	25,00	25,00	75,00	150,00	4,00
UGDE2500A5BRA	25,00	25,00	125,00	190,00	1,00
UGDE2500A5BRB	25,00	25,00	125,00	190,00	2,00
UGDE2500A5BRC	25,00	25,00	125,00	190,00	2,50
UGDE2500A5BRD	25,00	25,00	125,00	190,00	3,00
UGDE2500A5BRE	25,00	25,00	125,00	190,00	4,00

NOTE: For application data, see page M25.

End Mill Tolerances

D1	tolerance e8	D	tolerance h6
≤3	-0,014/-0,028	≤3	+0/-0,006
>3–6	-0,020/-0,038	>3–6	+0/-0,008
>6–10	-0,025/-0,047	>6–10	+0/-0,009
>10–18	-0,032/-0,059	>10–18	+0/-0,011
>18–30	-0,040/-0,073	>18–30	+0/-0,013

High-Performance Solid Carbide End Mills

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 12mm (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.

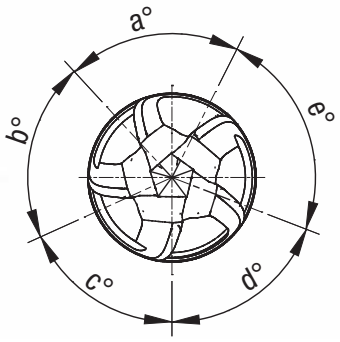
Functions

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

Benefits

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

Custom-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.

HARVI I™ • F4AS...DL • Unequal Flute Spacing

Material Group		A		B	KCPM15			Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%.							
					Cutting Speed — vc m/min			D1 — Diameter							
		ap	ae	ap	min	max	mm	4,0	6,0	8,0	10,0	12,0	16,0	20,0	25,0
P	1	1,5 x D	0,5 x D	1 x D	150	200	fz	0,028	0,044	0,060	0,072	0,083	0,101	0,114	0,124
	2	1,5 x D	0,5 x D	1 x D	140	190	fz	0,028	0,044	0,060	0,072	0,083	0,101	0,114	0,124
	3	1,5 x D	0,5 x D	1 x D	120	160	fz	0,023	0,036	0,050	0,061	0,070	0,087	0,101	0,114
	4	1,5 x D	0,5 x D	0,75 x D	90	150	fz	0,021	0,033	0,045	0,054	0,062	0,077	0,088	0,098
	5	1,5 x D	0,5 x D	1 x D	60	100	fz	0,019	0,029	0,040	0,048	0,056	0,070	0,081	0,091
	6	1,5 x D	0,5 x D	0,75 x D	50	75	fz	0,016	0,025	0,034	0,040	0,047	0,057	0,065	0,071
M	1	1,5 x D	0,5 x D	1 x D	90	115	fz	0,023	0,036	0,050	0,061	0,070	0,087	0,101	0,114
	2	1,5 x D	0,5 x D	1 x D	60	80	fz	0,019	0,029	0,040	0,048	0,056	0,070	0,081	0,091
	3	1,5 x D	0,5 x D	1 x D	60	70	fz	0,016	0,025	0,034	0,040	0,047	0,057	0,065	0,071
K	1	1,5 x D	0,5 x D	1 x D	120	150	fz	0,028	0,044	0,060	0,072	0,083	0,101	0,114	0,124
	2	1,5 x D	0,5 x D	1 x D	110	130	fz	0,023	0,036	0,050	0,061	0,070	0,087	0,101	0,114
	3	1,5 x D	0,5 x D	1 x D	100	130	fz	0,019	0,029	0,040	0,048	0,056	0,070	0,081	0,091
H	1	1,5 x D	0,5 x D	0,75 x D	80	140	fz	0,021	0,033	0,045	0,054	0,062	0,077	0,088	0,098

Solid End Milling

HARVI I • F4AS.. WM-WX-WL

Material Group		A		B	KCPM15			Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%.							
					Cutting Speed — vc m/min			D1 — Diameter							
		ap	ae	ap	min	max	mm	4,0	6,0	8,0	10,0	12,0	16,0	20,0	25,0
P	1	1,5 x D	0,5 x D	1 x D	150	200	fz	0,028	0,044	0,060	0,072	0,083	0,101	0,114	0,124
	2	1,5 x D	0,5 x D	1 x D	140	190	fz	0,028	0,044	0,060	0,072	0,083	0,101	0,114	0,124
	3	1,5 x D	0,5 x D	1 x D	120	160	fz	0,023	0,036	0,050	0,061	0,070	0,087	0,101	0,114
	4	1,5 x D	0,5 x D	0,75 x D	90	150	fz	0,021	0,033	0,045	0,054	0,062	0,077	0,088	0,098
	5	1,5 x D	0,5 x D	1 x D	60	100	fz	0,019	0,029	0,040	0,048	0,056	0,070	0,081	0,091
	6	1,5 x D	0,5 x D	0,75 x D	50	75	fz	0,016	0,025	0,034	0,040	0,047	0,057	0,065	0,071
M	1	1,5 x D	0,5 x D	1 x D	90	115	fz	0,023	0,036	0,050	0,061	0,070	0,087	0,101	0,114
	2	1,5 x D	0,5 x D	1 x D	60	80	fz	0,019	0,029	0,040	0,048	0,056	0,070	0,081	0,091
	3	1,5 x D	0,5 x D	1 x D	60	70	fz	0,016	0,025	0,034	0,040	0,047	0,057	0,065	0,071
K	1	1,5 x D	0,5 x D	1 x D	120	150	fz	0,028	0,044	0,060	0,072	0,083	0,101	0,114	0,124
	2	1,5 x D	0,5 x D	1 x D	110	130	fz	0,023	0,036	0,050	0,061	0,070	0,087	0,101	0,114
	3	1,5 x D	0,5 x D	1 x D	100	130	fz	0,019	0,029	0,040	0,048	0,056	0,070	0,081	0,091
H	1	1,5 x D	0,5 x D	0,75 x D	80	140	fz	0,021	0,033	0,045	0,054	0,062	0,077	0,088	0,098

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 centres, please adjust parameters accordingly on >12mm diameter.

HARVI I™ • F4BS.. WM-WX-WL • Unequal Flute Spacing • Extended Neck • Chipbreaker

Material Group		A		B	KCPM15			Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%.							
					Cutting Speed — vc m/min			D1 — Diameter							
		ap	ae	ap	min	max	mm	4,0	6,0	8,0	10,0	12,0	16,0	20,0	25,0
P	1	1,5 x D	0,5 x D	1 x D	150	200	fz	0,028	0,044	0,060	0,072	0,083	0,101	0,114	0,124
	2	1,5 x D	0,5 x D	1 x D	140	190	fz	0,028	0,044	0,060	0,072	0,083	0,101	0,114	0,124
	3	1,5 x D	0,5 x D	1 x D	120	160	fz	0,023	0,036	0,050	0,061	0,070	0,087	0,101	0,114
	4	1,5 x D	0,5 x D	0,75 x D	90	150	fz	0,021	0,033	0,045	0,054	0,062	0,077	0,088	0,098
	5	1,5 x D	0,5 x D	1 x D	60	100	fz	0,019	0,029	0,040	0,048	0,056	0,070	0,081	0,091
	6	1,5 x D	0,5 x D	0,75 x D	50	75	fz	0,016	0,025	0,034	0,040	0,047	0,057	0,065	0,071
M	1	1,5 x D	0,5 x D	1 x D	90	115	fz	0,023	0,036	0,050	0,061	0,070	0,087	0,101	0,114
	2	1,5 x D	0,5 x D	1 x D	60	80	fz	0,019	0,029	0,040	0,048	0,056	0,070	0,081	0,091
	3	1,5 x D	0,5 x D	1 x D	60	70	fz	0,016	0,025	0,034	0,040	0,047	0,057	0,065	0,071
K	1	1,5 x D	0,5 x D	1 x D	120	150	fz	0,028	0,044	0,060	0,072	0,083	0,101	0,114	0,124
	2	1,5 x D	0,5 x D	1 x D	110	130	fz	0,023	0,036	0,050	0,061	0,070	0,087	0,101	0,114
	3	1,5 x D	0,5 x D	1 x D	100	130	fz	0,019	0,029	0,040	0,048	0,056	0,070	0,081	0,091
H	1	1,5 x D	0,5 x D	0,75 x D	80	140	fz	0,021	0,033	0,045	0,054	0,062	0,077	0,088	0,098

HARVI I • F4AW..WL-WX • Extended Neck • Unequal Flute Spacing • Ball Nose

Material Group		A		B	KCPM15			Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%.						
					Cutting Speed — vc m/min			D1 — Diameter						
		ap	ae	ap	min	max	mm	5,0	6,0	8,0	10,0	12,0	16,0	20,0
P	1	1,5 x D	0,5 x D	1 x D	150	200	fz	0,036	0,044	0,060	0,072	0,083	0,101	0,114
	2	1,5 x D	0,5 x D	1 x D	140	190	fz	0,036	0,044	0,060	0,072	0,083	0,101	0,114
	3	1,5 x D	0,5 x D	1 x D	120	160	fz	0,030	0,036	0,050	0,061	0,070	0,087	0,101
	4	1,5 x D	0,5 x D	0,75 x D	90	150	fz	0,027	0,033	0,045	0,054	0,062	0,077	0,088
	5	1,5 x D	0,5 x D	1 x D	60	100	fz	0,024	0,029	0,040	0,048	0,056	0,070	0,081
	6	1,5 x D	0,5 x D	0,75 x D	50	75	fz	0,020	0,025	0,034	0,040	0,047	0,057	0,065
M	1	1,5 x D	0,5 x D	1 x D	90	115	fz	0,030	0,036	0,050	0,061	0,070	0,087	0,101
	2	1,5 x D	0,5 x D	1 x D	60	80	fz	0,024	0,029	0,040	0,048	0,056	0,070	0,081
	3	1,5 x D	0,5 x D	1 x D	60	70	fz	0,020	0,025	0,034	0,040	0,047	0,057	0,065
K	1	1,5 x D	0,5 x D	1 x D	120	150	fz	0,036	0,044	0,060	0,072	0,083	0,101	0,114
	2	1,5 x D	0,5 x D	1 x D	110	130	fz	0,030	0,036	0,050	0,061	0,070	0,087	0,101
	3	1,5 x D	0,5 x D	1 x D	100	130	fz	0,024	0,029	0,040	0,048	0,056	0,070	0,081
H	1	1,5 x D	0,5 x D	0,75 x D	80	140	fz	0,027	0,033	0,045	0,054	0,062	0,077	0,088

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 centres, please adjust parameters accordingly on >12mm diameter.

HARVI II™ • UCDE • Unequal Flute Spacing

Material Group		A		B	KCPM15 Cutting Speed — vc m/min			Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%. D1 — Diameter							
		ap	ae	ap	min	max	mm	4,0	6,0	8,0	10,0	12,0	16,0	20,0	25,0
P	1	1,5 x D	0,5 x D	1 x D	150	200	fz	0,028	0,044	0,060	0,072	0,083	0,101	0,114	0,124
	2	1,5 x D	0,5 x D	1 x D	140	190	fz	0,028	0,044	0,060	0,072	0,083	0,101	0,114	0,124
	3	1,5 x D	0,5 x D	1 x D	120	160	fz	0,023	0,036	0,050	0,061	0,070	0,087	0,101	0,114
	4	1,5 x D	0,5 x D	0,75 x D	90	150	fz	0,021	0,033	0,045	0,054	0,062	0,077	0,088	0,098
	5	1,5 x D	0,5 x D	1 x D	60	100	fz	0,019	0,029	0,040	0,048	0,056	0,070	0,081	0,091
	6	1,5 x D	0,5 x D	0,75 x D	50	75	fz	0,016	0,025	0,034	0,040	0,047	0,057	0,065	0,071
M	1	1,5 x D	0,5 x D	1 x D	90	115	fz	0,023	0,036	0,050	0,061	0,070	0,087	0,101	0,114
	2	1,5 x D	0,5 x D	1 x D	60	80	fz	0,019	0,029	0,040	0,048	0,056	0,070	0,081	0,091
	3	1,5 x D	0,5 x D	1 x D	60	70	fz	0,016	0,025	0,034	0,040	0,047	0,057	0,065	0,071
K	1	1,5 x D	0,5 x D	1 x D	120	150	fz	0,028	0,044	0,060	0,072	0,083	0,101	0,114	0,124
	2	1,5 x D	0,5 x D	1 x D	110	130	fz	0,023	0,036	0,050	0,061	0,070	0,087	0,101	0,114
	3	1,5 x D	0,5 x D	1 x D	100	130	fz	0,019	0,029	0,040	0,048	0,056	0,070	0,081	0,091
H	1	1,5 x D	0,5 x D	0,75 x D	80	140	fz	0,021	0,033	0,045	0,054	0,062	0,077	0,088	0,098

Solid End Milling

HARVI I™ • UDDE

Material Group		A		B	KC643M Cutting Speed — vc m/min			Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%. D1 — Diameter									
		ap	ae	ap	min	max	mm	4,0	5,0	6,0	8,0	10,0	12,0	14,0	16,0	18,0	20,0	25,0
P	2	1,5 x D	0,5 x D	1 x D	160	200	fz	0,030	0,040	0,050	0,060	0,070	0,070	0,080	0,080	0,090	0,10	0,11
	3	1,5 x D	0,5 x D	1 x D	160	180	fz	0,030	0,030	0,040	0,05	0,060	0,030	0,070	0,080	0,080	0,090	0,10
	4	1,5 x D	0,5 x D	1 x D	140	160	fz	0,020	0,030	0,040	0,040	0,05	0,060	0,070	0,070	0,080	0,080	0,10
M	1	1,5 x D	0,5 x D	1 x D	90	115	fz	0,030	0,030	0,040	0,050	0,060	0,070	0,070	0,080	0,080	0,090	0,10
	2	1,5 x D	0,5 x D	1 x D	60	80	fz	0,020	0,030	0,030	0,040	0,050	0,060	0,060	0,070	0,070	0,080	0,080
	3	1,5 x D	0,5 x D	1 x D	60	70	fz	0,020	0,020	0,030	0,040	0,040	0,050	0,050	0,050	0,060	0,060	0,070
K	1	1,5 x D	0.5 x D	1 x D	130	170	fz	0,030	0,040	0,050	0,060	0,080	0,080	0,10	0,10	0,11	0,12	0,13
	2	1,5 x D	0,5 x D	1 x D	110	130	fz	0,020	0,030	0,030	0,050	0,050	0,060	0,070	0,070	0,080	0,080	0,100
S	3	1,5 x D	0,2 x D	0,3 x D	25	40	fz	0,010	0,010	0,020	0,030	0,030	0,040	0,040	0,050	0,060	0,060	0,070
	4	1,5 x D	0,5 x D	1 x D	50	60	fz	0,020	0,020	0,030	0,040	0,040	0,050	0,050	0,060	0,070	0,080	0,090

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 centres, please adjust parameters accordingly on >12mm diameter.

HARVI II™ • UGDE • 3 x D and 5 x D Lengths of Cut

Material Group		A		KC643M		Feed per Tooth — fz information is for Side Milling (A).								
				Cutting Speed — vc m/min			D1 — Diameter							
		ap	ae	min	max	mm	6,0	8,0	10,0	12,0	14,0	16,0	20,0	25,0
P	1	Ap1 max	0,05 x D*	300	400	fz	0,044	0,060	0,072	0,083	0,092	0,101	0,114	0,124
	2	Ap1 max	0,05 x D*	280	380	fz	0,044	0,060	0,072	0,083	0,092	0,101	0,114	0,124
	3	Ap1 max	0,05 x D*	240	320	fz	0,036	0,050	0,061	0,070	0,079	0,087	0,101	0,114
	4	Ap1 max	0,05 x D*	180	300	fz	0,033	0,045	0,054	0,062	0,070	0,077	0,088	0,098
	5	Ap1 max	0,05 x D*	120	200	fz	0,029	0,040	0,048	0,056	0,063	0,070	0,081	0,091
	6	Ap1 max	0,05 x D*	100	150	fz	0,025	0,034	0,040	0,047	0,052	0,057	0,065	0,071
M	1	Ap1 max	0,05 x D*	180	230	fz	0,036	0,050	0,061	0,070	0,079	0,087	0,101	0,114
	2	Ap1 max	0,05 x D*	120	160	fz	0,029	0,040	0,048	0,056	0,063	0,070	0,081	0,091
	3	Ap1 max	0,05 x D*	120	140	fz	0,025	0,034	0,040	0,047	0,052	0,057	0,065	0,071
K	1	Ap1 max	0,05 x D*	240	300	fz	0,044	0,060	0,072	0,083	0,092	0,101	0,114	0,124
	2	Ap1 max	0,05 x D*	220	260	fz	0,036	0,050	0,061	0,070	0,079	0,087	0,101	0,114
	3	Ap1 max	0,05 x D*	200	260	fz	0,029	0,040	0,048	0,056	0,063	0,070	0,081	0,091
S	1	Ap1 max	0,05 x D*	100	180	fz	0,036	0,050	0,061	0,070	0,079	0,087	0,101	0,114
	2	Ap1 max	0,05 x D*	50	80	fz	0,019	0,026	0,032	0,037	0,042	0,046	0,054	0,061
	3	Ap1 max	0,05 x D*	120	160	fz	0,029	0,040	0,048	0,056	0,063	0,070	0,081	0,091
	4	Ap1 max	0,05 x D*	100	120	fz	0,026	0,037	0,045	0,052	0,058	0,064	0,074	0,084
H	1	Ap1 max	0,05 x D*	160	140	fz	0,033	0,045	0,054	0,062	0,070	0,077	0,088	0,098

* For the above cutting data, do not exceed an overall ae of 0,8mm.

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 >12mm diameter.

KenFeed™ End Mills for High-Feed Milling

Primary Application

Specifically engineered to machine hardened steel up to 65 HRC at extreme speeds and feeds.

Features and Benefits

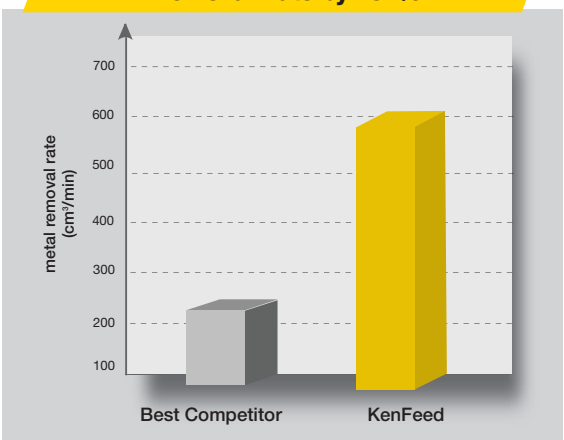
- Unique tool with new 6-flute style for high productivity.
- Necked shanks provide extended reach in deep cavities.
- High-feed rates up to 0,6mm per tooth on a 20mm tool.
- Machine hardened materials at 2–3x the metal removal rate of competitive end mills.
- Wide range of cutting diameters: down to 6mm for small and medium pocket work.
- Innovative new geometry maximises metal removal rates.
- High metal removal rates lower manufacturing costs.

Featured Application: Milling a Mould

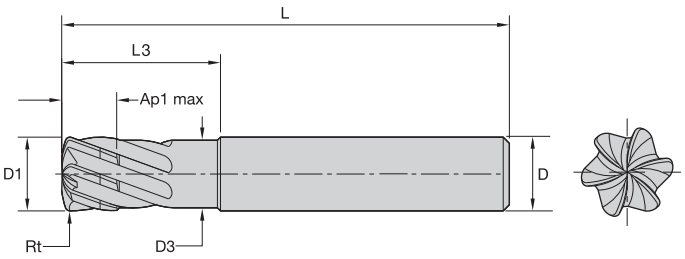
Operation: Pocket milling
Customer: Die and mould manufacturer
Workpiece: Mould
Material: AISI 4340 hardened steel (52 HRC)
Results: 3x better metal removal rate than competitive tool!
Machined at more than 3x faster feed!

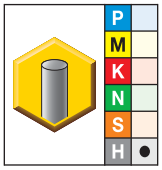
	COMPETITOR	KenFeed
tool:	4-flute H/P for die and mould	KMDA1200A6ANA
material:	medium-hardened steel	medium-hardened steel
surface speed:	120 m/min	160 m/min
feed per tooth:	0,34mm	0,34mm
depth of cut:	0,8mm	0,6mm
table feed:	4.331 mm/min	15.287 mm/min
metal removal rate:	22,8 cm^3/min	60,5 cm^3/min

Increased Metal Removal Rate by 191%



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



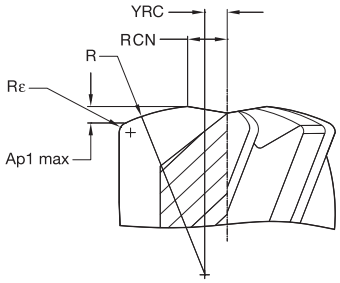


● first choice
○ alternate choice

KC639M	D1	D3	D	Ap1 max	L3	L	Rε
KHDA0600A6ANA	6,00	5,00	6,00	0,20	18,00	63,00	0,38
KHDA0800A6ANA	8,00	7,00	8,00	0,27	24,00	76,00	0,50
KHDA1000A6ANA	10,00	9,00	10,00	0,33	30,00	89,00	0,63
KHDA1200A6ANA	12,00	11,00	12,00	0,40	36,00	100,00	0,75
KHDA1600A6ANA	16,00	15,00	16,00	0,54	48,00	110,00	1,00
KHDA2000A6ANA	20,00	19,00	20,00	0,67	60,00	125,00	1,25

NOTE: For application data, see page M30.

D1	D1 tolerance	D tolerance
All	DIN e8	DIN h6

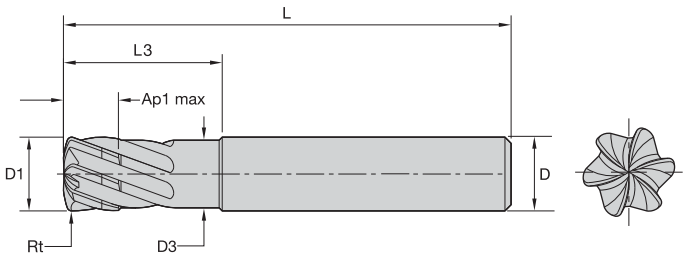


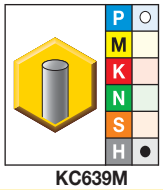
Programming Data

	geometrical parameters						ramping guide for circular and linear ramping						
							circular interpolation		linear ramping				
catalogue number	D1	Ap1 max	R	Rε	YRC	CRN	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°
KHDA0600A6ANA	6	0,20	9	0,375	0,75	1,26	8,52	12,00	32,99	16,49	10,99	8,23	6,58
KHDA0800A6ANA	8	0,27	12	0,500	1,00	1,68	11,36	16,00	43,98	21,99	14,65	10,98	8,78
KHDA1000A6ANA	10	0,33	15	0,625	1,25	2,10	14,20	20,00	54,98	27,48	18,31	13,72	10,97
KHDA1200A6ANA	12	0,40	18	0,750	1,50	2,52	17,04	24,00	65,98	32,98	21,97	16,47	13,16
KHDA1600A6ANA	16	0,54	24	1,000	2,00	3,36	22,72	32,00	87,97	43,97	29,30	21,96	17,55
KHDA2000A6ANA	20	0,67	30	1,250	2,50	4,20	28,40	40,00	109,96	54,96	36,62	27,45	21,94
							recommended percentage of programmed feed rate to use while ramping		100%	70%	50%	30%	10%

YRC = distance from centreline to the crown of the R radius.
CRN = distance from centreline 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.

- Kennemetal standard dimensions.
- High-feed.
- Non-centre cutting.



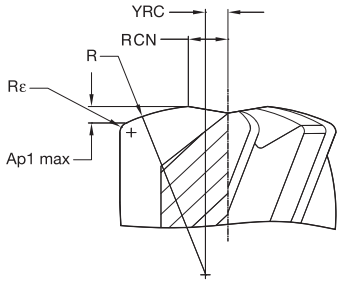


● first choice
○ alternate choice

KC639M	D1	D3	D	Ap1 max	L	Rε
KMDA0600A6ANA	6,00	5,00	6,00	0,32	63,00	0,38
KMDA0800A6ANA	8,00	7,00	8,00	0,42	76,00	0,50
KMDA1000A6ANA	10,00	9,00	10,00	0,53	89,00	0,63
KMDA1200A6ANA	12,00	11,00	12,00	0,63	100,00	0,75
KMDA1600A6ANA	16,00	15,00	16,00	0,84	110,00	1,00
KMDA2000A6ANA	20,00	19,00	20,00	1,05	125,00	1,25

NOTE: For application data, see page M30.

D1	D1 tolerance	D tolerance
All	DIN e8	DIN h6



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				
catalogue number	D1	Ap1 max	R	Rε	YRC	RCN	smallest	largest	1°	2°	3°	4°	5°
KMDA0600A6ANA	6	0,32	6	0,375	0,75	1,32	8,64	12,00	35,58	17,79	11,85	8,88	7,10
KMDA0800A6ANA	8	0,42	8	0,500	1,00	1,76	11,52	16,00	47,44	23,71	15,80	11,84	9,47
KMDA1000A6ANA	10	0,53	10	0,625	1,25	2,20	14,40	20,00	59,30	29,64	19,75	14,80	11,83
KMDA1200A6ANA	12	0,63	12	0,750	1,50	2,64	17,28	24,00	71,17	35,57	23,70	17,76	14,20
KMDA1600A6ANA	16	0,84	16	1,000	2,00	3,52	23,04	32,00	94,89	47,43	31,60	23,69	18,93
KMDA2000A6ANA	20	1,05	20	1,250	2,50	4,40	28,80	40,00	118,61	59,29	39,50	29,61	23,66
							recommended degree of programmed feed rate to use while ramping		100%	70%	50%	30%	10%

YRC = distance from centreline to the crown of the R radius.
CRN = distance from centreline 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.

KenFeed • KHDA

Group		A		KC639M			Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%.					
				Cutting Speed — vc m/min			D1 — Diameter					
		ap	ae	min	max	mm	6,0	8,0	10,0	12,0	16,0	20,0
H	2	0,03 x D	0,55 x D	100	120	fz	0,200	0,300	0,300	0,400	0,500	0,600
	3	0,03 x D	0,55 x D	80	100	fz	0,200	0,300	0,300	0,400	0,500	0,600
	4	0,03 x D	0,55 x D	50	70	fz	0,150	0,200	0,250	0,300	0,400	0,500

KenFeed • KMDA

Group		A		KC639M			Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%.					
				Cutting Speed — vc m/min			D1 — Diameter					
		ap	ae	min	max	mm	6,0	8,0	10,0	12,0	16,0	20,0
P	4	0,05 x D	0,55 x D	160	180	fz	0,300	0,500	0,500	0,500	0,600	0,700
H	1	0,05 x D	0.55 x D	140	160	fz	0,300	0,500	0,500	0,500	0,600	0,700
	2	0,05 x D	0,55 x D	100	120	fz	0,200	0,300	0,300	0,400	0,500	0,600

These guidelines may require variations to achieve optimum results.

Best-in-Class Performance for Machining Hard Materials

Using Kennametal Solid End Mills will:

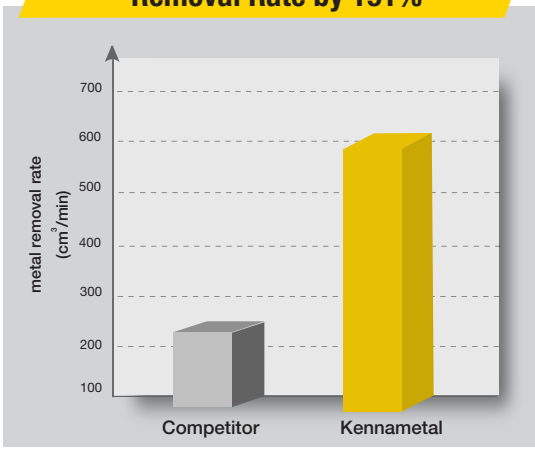
- Reduce the number of tools needed.
- Offer excellent chip evacuation.
- Promote maximum productivity.
- Increase removal rates.
- Enable higher speeds.
- Ensure accuracy.
- Reduce manufacturing costs.
- Provide long tool life.

Featured Application KenFeed™: Milling a Mould

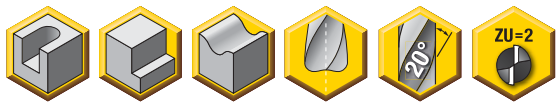
Operation: Pocket milling
Customer: Die and mould manufacturer
Workpiece: Mould
Material: AISI 4340 hardened steel (52 HRC)
Results: 3x better metal removal rate than competitive tool!
Machined at more than 3x faster feed!

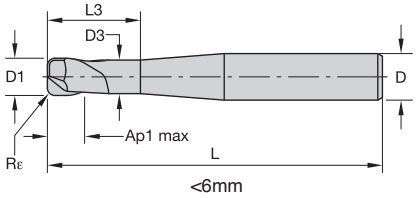
	COMPETITOR	Kennametal
tool:	4-flute H/P for die and mould	KMDA1200A6ANA
material:	medium-hardened steel	medium-hardened steel
surface speed:	120 m/min	160 m/min
feed per tooth:	0,34mm	0,6mm
depth of cut:	0,8mm	0,6mm
table feed:	4.331mm/min	15.287mm/min
metal removal rate:	22,8 cm^3/mm	60,5 cm^3/mm

Increased Metal Removal Rate by 191%



- Kennametal standard dimensions.
- Centre cutting.





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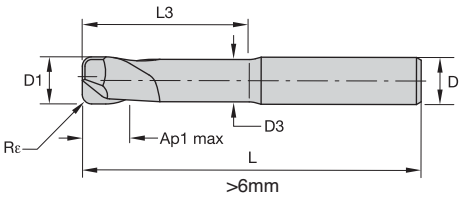

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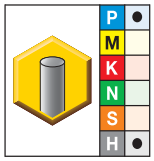


● first choice
○ alternate choice

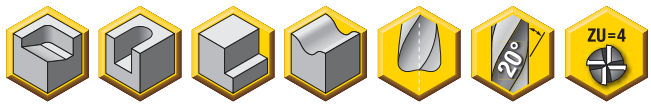
KC637M	D1	D	Ap1 max	L3	L	Rε	D3
F2AT0200AWM20R003	2,00	6,00	2,00	17,50	70,00	0,30	1,70
F2AT0200AWM20R005	2,00	6,00	2,00	17,50	70,00	0,50	1,70
F2AT0300AWM20R005	3,00	6,00	3,00	18,50	70,00	0,50	2,50
F2AT0300AWM20R010	3,00	6,00	3,00	18,50	70,00	1,00	2,50
F2AT0400AWL20R005	4,00	6,00	4,00	19,50	80,00	0,50	3,50
F2AT0400AWL20R010	4,00	6,00	4,00	19,50	80,00	1,00	3,50
F2AT0500AWL20R005	5,00	6,00	5,00	44,00	80,00	0,50	4,50
F2AT0500AWL20R010	5,00	6,00	5,00	44,00	80,00	1,00	4,50
F2AT0600AWL20R005	6,00	6,00	6,00	44,00	80,00	0,50	5,50
F2AT0600AWL20R010	6,00	6,00	6,00	44,00	80,00	1,00	5,50
F2AT0600AWL20R015	6,00	6,00	6,00	44,00	80,00	1,50	5,50
F2AT0800AWL20R010	8,00	8,00	8,00	54,00	90,00	1,00	7,00
F2AT0800AWL20R015	8,00	8,00	8,00	54,00	90,00	1,50	7,00
F2AT0800AWL20R020	8,00	8,00	8,00	54,00	90,00	2,00	7,00
F2AT1000AWL20R005	10,00	10,00	10,00	60,00	100,00	0,50	9,00
F2AT1000AWL20R010	10,00	10,00	10,00	60,00	100,00	1,00	9,00
F2AT1000AWL20R020	10,00	10,00	10,00	60,00	100,00	2,00	9,00
F2AT1000AWL20R030	10,00	10,00	10,00	60,00	100,00	3,00	9,00
F2AT1200AWX20R005	12,00	12,00	12,00	65,00	110,00	0,50	11,00
F2AT1200AWX20R010	12,00	12,00	12,00	65,00	110,00	1,00	11,00
F2AT1200AWX20R030	12,00	12,00	12,00	65,00	110,00	3,00	11,00
F2AT1200AWX20R040	12,00	12,00	12,00	65,00	110,00	4,00	11,00

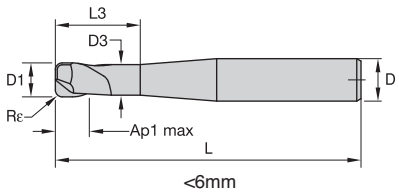
NOTE: For application data, see page M42.

End Mill Tolerances

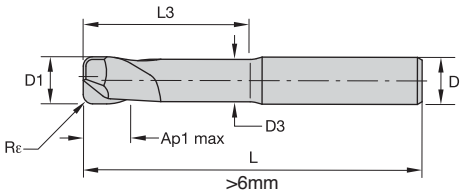
D1	tolerance e8	D	tolerance h6
≤3	-0,014/-0,028	≤3	+0/-0,006
>3–6	-0,020/-0,038	>3–6	+0/-0,008
>6–10	-0,025/-0,047	>6–10	+0/-0,009
>10–18	-0,032/-0,059	>10–18	+0/-0,011
>18–30	-0,040/-0,073	>18–30	+0/-0,013

- Kennametal standard dimensions.
- Centre cutting.

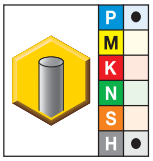




<6mm



>6mm



● first choice
○ alternate choice

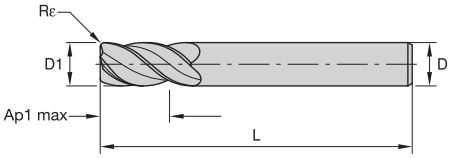
KC637M	D1	D	Ap1 max	L3	L	Rε	D3
F4AT0400AWS20R005	4,00	6,00	2,00	10,00	45,00	0,50	3,80
F4AT0400AWS20R010	4,00	6,00	2,00	10,00	45,00	1,00	3,80
F4AT0500AWS20R005	5,00	6,00	2,50	12,00	50,00	0,50	4,80
F4AT0500AWS20R010	5,00	6,00	2,50	12,00	50,00	1,00	4,80
F4AT0600AWS20R005	6,00	6,00	3,00	12,00	50,00	0,50	5,80
F4AT0600AWS20R020	6,00	6,00	3,00	12,00	50,00	2,00	5,80
F4AT0600AWL20R003	6,00	6,00	6,00	42,00	80,00	0,30	5,80
F4AT0600AWL20R005	6,00	6,00	6,00	42,00	80,00	0,50	5,80
F4AT0600AWL20R010	6,00	6,00	6,00	42,00	80,00	1,00	5,80
F4AT0800AWM20R005	8,00	8,00	4,00	20,00	60,00	0,50	7,80
F4AT0800AWM20R010	8,00	8,00	4,00	20,00	60,00	1,00	7,80
F4AT0800AWM20R020	8,00	8,00	4,00	20,00	60,00	2,00	7,80
F4AT0800AWL20R005	8,00	8,00	8,00	52,00	90,00	0,50	7,80
F4AT0800AWL20R010	8,00	8,00	8,00	52,00	90,00	1,00	7,80
F4AT0800AWL20R015	8,00	8,00	8,00	52,00	90,00	1,50	7,80
F4AT0800AWL20R020	8,00	8,00	8,00	52,00	90,00	2,00	7,80
F4AT1000AWL20R005	10,00	10,00	10,00	58,00	100,00	0,50	9,70
F4AT1000AWL20R010	10,00	10,00	10,00	58,00	100,00	1,00	9,70
F4AT1000AWL20R015	10,00	10,00	10,00	58,00	100,00	1,50	9,70
F4AT1000AWL20R020	10,00	10,00	10,00	58,00	100,00	2,00	9,70
F4AT1000AWL20R025	10,00	10,00	10,00	58,00	100,00	2,50	9,70
F4AT1000AWM20R005	10,00	10,00	5,00	24,00	70,00	0,50	9,80
F4AT1000AWM20R010	10,00	10,00	5,00	24,00	70,00	1,00	9,80
F4AT1000AWM20R015	10,00	10,00	5,00	24,00	70,00	1,50	9,80
F4AT1000AWM20R020	10,00	10,00	5,00	24,00	70,00	2,00	9,80
F4AT1000AWM20R025	10,00	10,00	5,00	24,00	70,00	2,50	9,80
F4AT1200AWX20R010	12,00	12,00	12,00	62,00	110,00	1,00	11,70
F4AT1200AWX20R015	12,00	12,00	12,00	62,00	110,00	1,50	11,70
F4AT1200AWX20R020	12,00	12,00	12,00	62,00	110,00	2,00	11,70
F4AT1200AWX20R030	12,00	12,00	12,00	62,00	110,00	3,00	11,70
F4AT1200AWL20R005	12,00	12,00	6,00	24,00	75,00	0,50	11,80
F4AT1200AWL20R010	12,00	12,00	6,00	24,00	75,00	1,00	11,80
F4AT1200AWL20R015	12,00	12,00	6,00	24,00	75,00	1,50	11,80
F4AT1200AWL20R020	12,00	12,00	6,00	24,00	75,00	2,00	11,80
F4AT1200AWL20R030	12,00	12,00	6,00	24,00	75,00	3,00	11,80

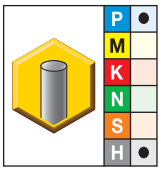
NOTE: For application data, see page M42.

End Mill Tolerances

D1	tolerance e8	D	tolerance h6
≤3	-0,014/-0,028	≤3	+0/-0,006
>3–6	-0,020/-0,038	>3–6	+0/-0,008
>6–10	-0,025/-0,047	>6–10	+0/-0,009
>10–18	-0,032/-0,059	>10–18	+0/-0,011
>18–30	-0,040/-0,073	>18–30	+0/-0,013

- Kennametal standard dimensions.
- Centre cutting.





● first choice
○ alternate choice

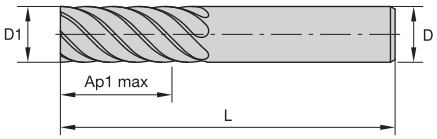
KC633M	D1	D	Ap1 max	L	Rε	Z U
F4AJ0600AWS50R025	6,00	6,00	9,00	50,00	0,25	4
F4AJ0600AWS50R050	6,00	6,00	9,00	50,00	0,50	4
F4AJ0800AWM50R050	8,00	8,00	12,00	63,00	0,50	4
F4AJ0800AWM50R100	8,00	8,00	12,00	63,00	1,00	4
F4AJ1000AWL50R050	10,00	10,00	15,00	76,00	0,50	4
F4AJ1000AWL50R100	10,00	10,00	15,00	76,00	1,00	4
F4AJ1200AWL50R050	12,00	12,00	18,00	76,00	0,50	4
F4AJ1200AWL50R150	12,00	12,00	18,00	76,00	1,50	4
F4AJ1600AWL50R050	16,00	16,00	24,00	89,00	0,50	4
F4AJ1600AWL50R150	16,00	16,00	24,00	89,00	1,50	4
F4AJ2000AWX50R050	20,00	20,00	30,00	104,00	0,50	4
F4AJ2000AWX50R200	20,00	20,00	30,00	104,00	2,00	4
F5AJ2500AWX50R050	25,00	25,00	38,00	121,00	0,50	5
F5AJ2500AWX50R300	25,00	25,00	38,00	121,00	3,00	5

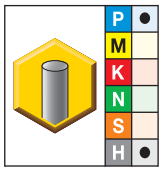
NOTE: For application data, see page M43.

End Mill Tolerances

D1	tolerance e8	D	tolerance h6
≤3	-0,014/-0,028	≤3	+0/-0,006
>3–6	-0,020/-0,038	>3–6	+0/-0,008
>6–10	-0,025/-0,047	>6–10	+0/-0,009
>10–18	-0,032/-0,059	>10–18	+0/-0,011
>18–30	-0,040/-0,073	>18–30	+0/-0,013

- Kennametal standard dimensions.
- Centre cutting.





● first choice
○ alternate choice

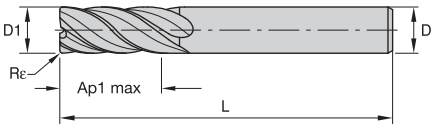
KC633M	D1	D	Ap1 max	L	Z U
F4AJ0600AWS50L090	6,00	6,00	9,00	50,00	4
F4AJ0800AWM50L120	8,00	8,00	12,00	63,00	4
F4AJ1000AWM50L150	10,00	10,00	15,00	76,00	4
F4AJ1200AWL50L180	12,00	12,00	18,00	76,00	4
F4AJ1600AWL50L240	16,00	16,00	24,00	89,00	4
F4AJ2000AWL50L300	20,00	20,00	30,00	104,00	4
F5AJ2500AWX50L380	25,00	25,00	38,00	121,00	5

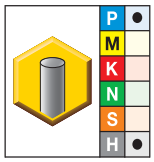
NOTE: For application data, see page M43.

End Mill Tolerances

D1	tolerance e8	D	tolerance h6
≤3	-0,014/-0,028	≤3	+0/-0,006
>3–6	-0,020/-0,038	>3–6	+0/-0,008
>6–10	-0,025/-0,047	>6–10	+0/-0,009
>10–18	-0,032/-0,059	>10–18	+0/-0,011
>18–30	-0,040/-0,073	>18–30	+0/-0,013

• Centre cutting.





● first choice
○ alternate choice

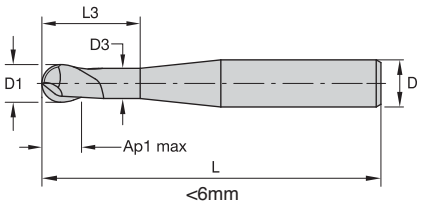
KC637M	D1	D	Ap1 max	L	Rε	Z U
F6AV0600ADL45	6,00	6,00	13,00	57,00	0,50	6
F6AV0600AWM45	6,00	6,00	18,00	62,00	0,50	6
F6AV0800ADL45	8,00	8,00	19,00	63,00	0,50	6
F6AV0800AWM45	8,00	8,00	24,00	68,00	0,50	6
F6AV1000ADL45	10,00	10,00	22,00	72,00	0,50	6
F6AV1000AWL45	10,00	10,00	30,00	80,00	0,50	6
F6AV1200ADL45	12,00	12,00	26,00	83,00	1,00	6
F6AV1200AWL45	12,00	12,00	36,00	93,00	1,00	6
F6AV1600ADL45	16,00	16,00	32,00	92,00	1,00	6
F6AV1600AWX45	16,00	16,00	48,00	108,00	1,00	6
F8AV2000ADL45	20,00	20,00	38,00	104,00	1,00	8
F8AV2000AWX45	20,00	20,00	60,00	126,00	1,00	8
F8AV2500ADL45	25,00	25,00	45,00	121,00	0,50	8
F8AV2500AWX45	25,00	25,00	75,00	150,00	1,50	8

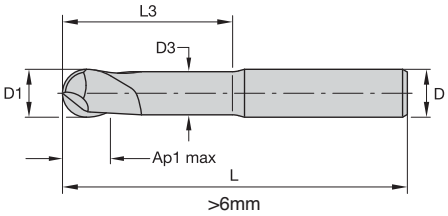
NOTE: For application data, see page M45.

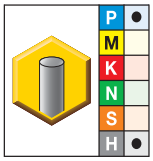
End Mill Tolerances

D1	tolerance e8	D	tolerance h6
≤3	-0,014/-0,028	≤3	+0/-0,006
>3–6	-0,020/-0,038	>3–6	+0/-0,008
>6–10	-0,025/-0,047	>6–10	+0/-0,009
>10–18	-0,032/-0,059	>10–18	+0/-0,011
>18–30	-0,040/-0,073	>18–30	+0/-0,013

- Kennametal standard dimensions.
- Centre cutting.







● first choice
○ alternate choice

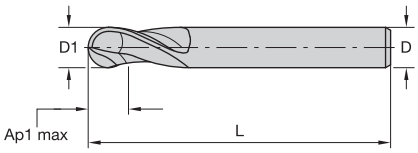
KC637M	D1	D3	D	Ap1 max	L3	L
F2AL0200AWM20	2,00	1,70	6,00	2,00	17,50	70,00
F2AL0300AWM20	3,00	2,50	6,00	3,00	18,50	70,00
F2AL0400AWL20	4,00	3,50	6,00	4,00	19,50	80,00
F2AL0500AWL20	5,00	4,50	6,00	5,00	44,00	80,00
F2AL0600AWL20	6,00	5,50	6,00	6,00	44,00	80,00
F2AL0800AWL20	8,00	7,00	8,00	8,00	54,00	90,00
F2AL1000AWL20	10,00	9,00	10,00	10,00	60,00	100,00
F2AL1200AWX20	12,00	11,00	12,00	12,00	65,00	110,00

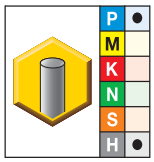
NOTE: For application data, see page M44.

End Mill Tolerances

D1	tolerance h10	D	tolerance h6
≤3	+0/-0,040	≤3	+0-/0,006
>3–6	+0/-0,048	>3–6	+0/-0,008
>6–10	+0/-0,058	>6–10	+0/-0,009
>10–18	+0/-0,070	>10–18	+0/-0,011
>18–30	+0/-0,084	>18–30	+0/-0,013

- Kennametal standard dimensions.
- Centre cutting.





● first choice
○ alternate choice

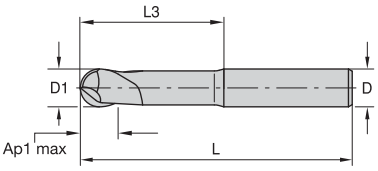
KC637M	D1	D	Ap1 max	L
F2AL0100AWL30	1,00	4,00	1,00	40,00
F2AL0150AWL30	1,50	4,00	1,50	40,00
F2AL0200AWL30	2,00	6,00	2,00	45,00
F2AL0300AWL30	3,00	6,00	3,00	45,00
F2AL0400AWL30	4,00	6,00	4,00	45,00
F2AL0500AWL30	5,00	6,00	5,00	50,00
F2AL0600AWL30	6,00	6,00	6,00	50,00
F2AL0800AWL30	8,00	8,00	8,00	60,00
F2AL1000AWM30	10,00	10,00	10,00	70,00
F2AL1200AWM30	12,00	12,00	12,00	75,00
F2AL1600AWM30	16,00	16,00	16,00	80,00

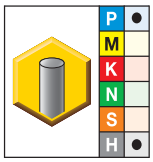
NOTE: For application data, see page M46.

End Mill Tolerances

D1	tolerance h10	D	tolerance h6
≤3	+0/-0,040	≤3	+0/-0,006
>3–6	+0/-0,048	>3–6	+0/-0,008
>6–10	+0/-0,058	>6–10	+0/-0,009
>10–18	+0/-0,070	>10–18	+0/-0,011
>18–30	+0/-0,084	>18–30	+0/-0,013

- Kennametal standard dimensions.
- Centre cutting.





● first choice
○ alternate choice

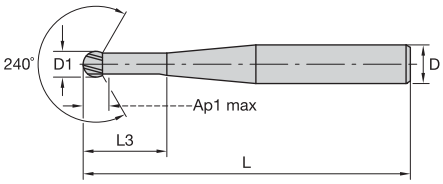
KC637M	D1	D	Ap1 max	L	L3
F2AL0600AWM30	6,00	6,00	6,00	80,00	6,00
F2AL0800AWM30	8,00	8,00	8,00	90,00	8,00
F2AL1000AWL30	10,00	10,00	10,00	100,00	10,00
F2AL1200AWX30	12,00	12,00	12,00	110,00	12,00
F2AL1600AWX30	16,00	16,00	16,00	140,00	16,00

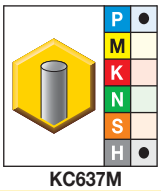
NOTE: For application data, see page M47.

End Mill Tolerances

D1	tolerance h10	D	tolerance h6
≤3	+0/-0,040	≤3	+0/-0,006
>3–6	+0/-0,048	>3–6	+0/-0,008
>6–10	+0/-0,058	>6–10	+0/-0,009
>10–18	+0/-0,070	>10–18	+0/-0,011
>18–30	+0/-0,084	>18–30	+0/-0,013

- Kennametal standard dimensions.
- Centre cutting.





● first choice
○ alternate choice

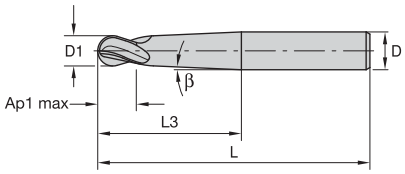
KC637M	D1	D	Ap1 max	L3	L
F2AB0200AWM30	2,00	6,00	1,00	17,00	70,00
F2AB0300AWM30	3,00	6,00	1,50	18,00	70,00
F2AB0400AWL30	4,00	6,00	2,00	19,00	80,00
F2AB0500AWL30	5,00	6,00	2,50	42,00	80,00
F2AB0600AWL30	6,00	6,00	3,00	42,00	80,00
F2AB0800AWL30	8,00	8,00	4,00	52,00	90,00
F2AB1000AWL30	10,00	10,00	5,00	58,00	100,00
F2AB1200AWX30	12,00	12,00	6,00	63,00	110,00

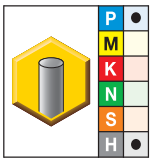
NOTE: For application data, see page M48.

End Mill Tolerances

D1	tolerance h10	D	tolerance h6
≤3	+0/-0,040	≤3	+0/-0,006
>3–6	+0/-0,048	>3–6	+0/-0,008
>6–10	+0/-0,058	>6–10	+0/-0,009
>10–18	+0/-0,070	>10–18	+0/-0,011
>18–30	+0/-0,084	>18–30	+0/-0,013

- Kennametal standard dimensions.
- Centre cutting.





● first choice
○ alternate choice

KC637M	D1	D	Ap1 max	L3	L	β
F4AL0300AWM30L040	3,00	6,00	4,00	4,00	75,00	2.85
F4AL0300AWL30L040	3,00	6,00	4,00	4,00	100,00	1.65
F4AL0400AWM30L050	4,00	6,00	5,00	5,00	75,00	2.67
F4AL0400AWL30L050	4,00	6,00	5,00	5,00	100,00	1.18
F4AL0500AWM30L060	5,00	6,00	6,00	6,00	75,00	1.33
F4AL0500AWL30L060	5,00	8,00	6,00	6,00	100,00	1.75
F4AL0600AWM30L080	6,00	8,00	8,00	8,00	75,00	2.38
F4AL0600AWL30L080	6,00	10,00	8,00	8,00	100,00	2.52
F4AL0800AWL30L120	8,00	10,00	12,00	12,00	100,00	1.52
F4AL0800AWX30L120	8,00	12,00	12,00	12,00	150,00	1.40
F4AL1000AWL30L150	10,00	12,00	15,00	15,00	100,00	1.83
F4AL1000AWX30L150	10,00	12,00	15,00	15,00	150,00	.80

NOTE: For application data, see page M49.

End Mill Tolerances

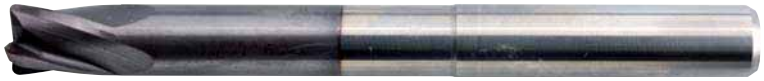
D1	tolerance h8	D	tolerance h6
≤3	+0/-0,014	≤3	+0/-0,006
>3–6	+0/-0,018	>3–6	+0/-0,008
>6–10	+0/-0,022	>6–10	+0/-0,009
>10–18	+0/-0,027	>10–18	+0/-0,011
>18–30	+0/-0,033	>18–30	+0/-0,013

F2AT...AWL/M/X20R...

Material Group		A ap	A ae	B ap	KC637M Cutting Speed — vc m/min min	KC637M Cutting Speed — vc m/min max		Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%. D1 — Diameter 2,0	3,0	4,0	5,0	6,0	8,0	10,0	12,0
P	3	0,5 x D	0,4 x D	0,3 x D	120	160	fz	0,011	0,017	0,026	0,033	0,040	0,055	0,067	0,077
P	4	0,5 x D	0,4 x D	0,3 x D	90	150	fz	0,010	0,016	0,024	0,030	0,036	0,049	0,059	0,069
H	1	0,5 x D	0,4 x D	0,3 x D	80	140	fz	0,010	0,016	0,024	0,030	0,036	0,049	0,059	0,069
H	2	0,5 x D	0,3 x D	0,2 x D	60	80	fz	0,012	0,016	0,018	0,022	0,027	0,037	0,044	0,051
H	3	0,5 x D	0,15 x D	0,15 x D	50	70	fz	0,009	0,013	0,014	0,018	0,021	0,029	0,035	0,041
H	4	0,5 x D	0,1 x D	0,1 x D	40	60	fz	0,006	0,008	0,009	0,012	0,014	0,019	0,023	0,027

These guidelines may require possible 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 centres, please adjust parameters accordingly on >12mm diameter.

F4AT...AWS/M/L/X20R...



Material Group		A ap	A ae	B ap	KC637M Cutting Speed — vc m/min min	KC637M Cutting Speed — vc m/min max		Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%. D1 — Diameter 4,0	5,0	6,0	8,0	10,0	12,0
P	3	0,5 x D	0,4 x D	0,3 x D	120	160	fz	0,026	0,033	0,040	0,055	0,067	0,077
P	4	0,5 x D	0,4 x D	0,3 x D	90	150	fz	0,024	0,030	0,036	0,049	0,059	0,069
H	1	0,5 x D	0,4 x D	0,3 x D	80	140	fz	0,024	0,030	0,036	0,049	0,059	0,069
H	2	0,5 x D	0,3 x D	0,2 x D	60	80	fz	0,018	0,022	0,027	0,037	0,044	0,051
H	3	0,5 x D	0,15 x D	0,15 x D	50	70	fz	0,014	0,018	0,021	0,029	0,035	0,041
H	4	0,5 x D	0,1 x D	0,1 x D	40	60	fz	0,009	0,012	0,014	0,019	0,023	0,027

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 centres, please adjust parameters accordingly on >12mm diameter.

F4/5AJ...AWS/M/LX50R...

Material Group		A		B	KC633M		Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%.									
					Cutting Speed — vc m/min			D1 — Diameter								
		ap	ae	ap	min	max	mm	3,0	4,0	5,0	6,0	8,0	10,0	12,0	16,0	20,0	25,0
P	3	1 x D	0,4 x D	1 x D	160	180	fz	0,019	0,026	0,033	0,040	0,055	0,067	0,077	0,096	0,111	0,125
	4	1 x D	0,4 x D	0,75 x D	140	160	fz	0,017	0,024	0,030	0,036	0,049	0,059	0,069	0,084	0,097	0,107
H	1	1 x D	0,4 x D	0,75 x D	120	140	fz	0,017	0,024	0,030	0,036	0,049	0,059	0,069	0,084	0,097	0,107
	2	1 x D	0,3 x D	0,5 x D	80	130	fz	0,013	0,018	0,022	0,027	0,037	0,044	0,051	0,063	0,071	0,078
	3	1 x D	0,15 x D	0,3 x D	70	100	fz	0,010	0,014	0,018	0,021	0,029	0,035	0,041	0,051	0,059	0,067
	4	1 x D	0,1 x D	0,15 x D	50	70	fz	0,007	0,009	0,012	0,014	0,019	0,023	0,027	0,034	0,039	0,044

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 centres, please adjust parameters accordingly on >12mm diameter.

F4/5/6AJ...A/BWS/M/LX50L...

Material Group		A		B	KC633M		Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%.									
					Cutting Speed — vc m/min			D1 — Diameter								
		ap	ae	ap	min	max	mm	3,0	4,0	5,0	6,0	8,0	10,0	12,0	16,0	20,0	25,0
P	3	1 x D	0,4 x D	1 x D	160	180	fz	0,019	0,026	0,033	0,040	0,055	0,067	0,077	0,096	0,111	0,125
	4	1 x D	0,4 x D	0,75 x D	140	160	fz	0,017	0,024	0,030	0,036	0,049	0,059	0,069	0,084	0,097	0,107
H	1	1 x D	0,4 x D	0,75 x D	120	140	fz	0,017	0,024	0,030	0,036	0,049	0,059	0,069	0,084	0,097	0,107
	2	1 x D	0,3 x D	0,5 x D	80	130	fz	0,013	0,018	0,022	0,027	0,037	0,044	0,051	0,063	0,071	0,078
	3	1 x D	0,15 x D	0,3 x D	70	100	fz	0,010	0,014	0,018	0,021	0,029	0,035	0,041	0,051	0,059	0,067
	4	1 x D	0,1 x D	0,15 x D	50	70	fz	0,007	0,009	0,012	0,014	0,019	0,023	0,027	0,034	0,039	0,044

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 centres, please adjust parameters accordingly on >12mm diameter.

F2AL...AWM/L/X20...

Material Group		A		KC637M			Finishing — Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%.							
				Cutting Speed — vc m/min			D1 — Diameter							
		ap	ae	min	max	mm	2,0	3,0	4,0	5,0	6,0	8,0	10,0	12,0
P	3	0,04 x D	0,04 x D	416	468	fz	0,052	0,080	0,108	0,137	0,168	0,231	0,279	0,324
	4	0,04 x D	0,04 x D	364	416	fz	0,048	0,073	0,099	0,125	0,152	0,207	0,249	0,288
H	1	0,03 x D	0,03 x D	290	406	fz	0,052	0,078	0,106	0,134	0,162	0,221	0,266	0,308
	2	0,03 x D	0,03 x D	203	348	fz	0,039	0,059	0,080	0,101	0,122	0,166	0,199	0,230
	3	0,02 x D	0,02 x D	216	324	fz	0,033	0,050	0,067	0,084	0,102	0,139	0,168	0,196
	4	0,02 x D	0,02 x D	180	252	fz	0,022	0,033	0,045	0,056	0,068	0,093	0,112	0,130

Material Group		A		KC637M			Semi-Finishing — Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%.							
				Cutting Speed — vc m/min			D1 — Diameter							
		ap	ae	min	max	mm	2,0	3,0	4,0	5,0	6,0	8,0	10,0	12,0
P	3	0,1 x D	0,05 x D	272	306	fz	0,034	0,052	0,070	0,089	0,109	0,150	0,182	0,211
	4	0,1 x D	0,05 x D	238	272	fz	0,031	0,048	0,064	0,081	0,099	0,134	0,162	0,187
H	1	0,07 x D	0,1 x D	200	280	fz	0,039	0,060	0,080	0,102	0,123	0,168	0,203	0,234
	2	0,05 x D	0,04 x D	161	276	fz	0,034	0,052	0,070	0,088	0,107	0,145	0,174	0,201
	3	0,03 x D	0,03 x D	174	261	fz	0,031	0,047	0,063	0,079	0,096	0,130	0,158	0,183
	4	0,03 x D	0,03 x D	145	203	fz	0,021	0,031	0,042	0,053	0,064	0,087	0,105	0,122

Material Group		A		KC637M			Roughing — Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%.							
				Cutting Speed — vc m/min			D1 — Diameter							
		ap	ae	min	max	mm	2,0	3,0	4,0	5,0	6,0	8,0	10,0	12,0
P	3	0,2 x D	0,1 x D	208	234	fz	0,015	0,023	0,031	0,040	0,049	0,067	0,081	0,094
	4	0,2 x D	0,1 x D	182	208	fz	0,014	0,021	0,029	0,036	0,044	0,060	0,073	0,084
H	1	0,15 x D	0,1 x D	140	196	fz	0,021	0,032	0,043	0,054	0,066	0,090	0,109	0,125
	2	0.1 x D	0,075 x D	119	204	fz	0,024	0,036	0,048	0,061	0,074	0,101	0,121	0,140
	3	0,05 x D	0,05 x D	138	207	fz	0,027	0,041	0,055	0,069	0,084	0,114	0,138	0,161
	4	0,05 x D	0,05 x D	115	161	fz	0,018	0,027	0,037	0,046	0,056	0,076	0,092	0,107

F6/8AV...ADL45...

Material Group		A		KC637M			Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%.						
				Cutting Speed — vc m/min			D1 — Diameter						
		ap	ae	min	max	mm	6,0	8,0	10,0	12,0	16,0	20,0	25,0
P	3	1,5 x D	0,2 x D	120	160	fz	0,040	0,055	0,067	0,077	0,096	0,111	0,125
	4	1,5 x D	0,2 x D	90	150	fz	0,036	0,049	0,059	0,069	0,084	0,097	0,107
H	1	1,5 x D	0,2 x D	80	140	fz	0,036	0,049	0,059	0,069	0,084	0,097	0,107
	2	1,5 x D	0,15 x D	60	80	fz	0,027	0,037	0,044	0,051	0,063	0,071	0,078
	3	1,5 x D	0,1 x D	50	70	fz	0,021	0,029	0,035	0,041	0,051	0,059	0,067
	4	1,5 x D	0,05 x D	40	60	fz	0,014	0,019	0,023	0,027	0,034	0,039	0,044

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 centres, please adjust parameters accordingly on >12mm diameter.

Solid End Milling Application Videos

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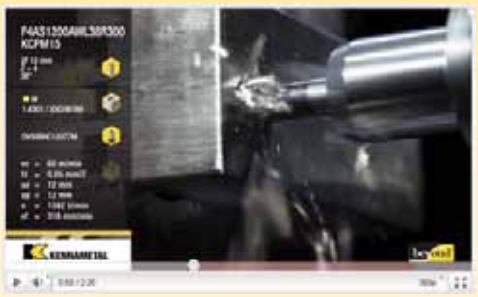


F2AL...AWL/M30..

Material Group		A		KC637M			Finishing — Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%.							
				Cutting Speed — vc m/min			D1 — Diameter							
		ap	ae	min	max	mm	1,0	2,0	4,0	6,0	8,0	10,0	12,0	16,0
P	3	0,04 x D	0,04 x D	416	468	fz	0,0256	0,0522	0,108	0,168	0,231	0,279	0,324	0,403
	4	0,04 x D	0,04 x D	364	416	fz	0,0239	0,0484	0,099	0,152	0,207	0,249	0,288	0,355
H	1	0,03 x D	0,03 x D	290	406	fz	0,0255	0,0517	0,106	0,162	0,221	0,266	0,308	0,379
	2	0,03 x D	0,03 x D	203	348	fz	0,0193	0,0391	0,080	0,122	0,166	0,199	0,230	0,281
	3	0,02 x D	0,02 x D	216	324	fz	0,0163	0,0328	0,067	0,102	0,139	0,168	0,196	0,244
	4	0,02 x D	0,02 x D	180	252	fz	0,0108	0,0219	0,045	0,068	0,093	0,112	0,130	0,162

Material Group		A		KC637M			Semi-Finishing — Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%.							
				Cutting Speed — vc m/min			D1 — Diameter							
		ap	ae	min	max	mm	1,0	2,0	4,0	6,0	8,0	10,0	12,0	16,0
P	3	0,1 x D	0,05 x D	272	306	fz	0,017	0,034	0,070	0,109	0,150	0,182	0,211	0,262
	4	0,1 x D	0,05 x D	238	272	fz	0,016	0,031	0,064	0,099	0,134	0,162	0,187	0,230
H	1	0,07 x D	0,1 x D	200	280	fz	0,019	0,039	0,080	0,123	0,168	0,203	0,234	0,288
	2	0,05 x D	0,04 x D	161	276	fz	0,017	0,034	0,070	0,107	0,145	0,174	0,201	0,246
	3	0,03 x D	0,03 x D	174	261	fz	0,015	0,031	0,063	0,096	0,130	0,158	0,183	0,229
	4	0,03 x D	0,03 x D	145	203	fz	0,010	0,021	0,042	0,064	0,087	0,105	0,122	0,151

Material Group		A		KC637M			Roughing — Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%.							
				Cutting Speed — vc m/min			D1 — Diameter							
		ap	ae	min	max	mm	1,0	2,0	4,0	6,0	8,0	10,0	12,0	16,0
P	3	0,2 x D	0,1 x D	208	234	fz	0,007	0,015	0,031	0,049	0,067	0,081	0,094	0,117
	4	0,2 x D	0,1 x D	182	208	fz	0,007	0,014	0,029	0,044	0,060	0,073	0,084	0,103
H	1	0,15 x D	0,1 x D	140	196	fz	0,010	0,021	0,043	0,066	0,090	0,109	0,125	0,154
	2	0,1 x D	0,075 x D	119	204	fz	0,012	0,024	0,048	0,074	0,101	0,121	0,140	0,171
	3	0,05 x D	0,05 x D	138	207	fz	0,013	0,027	0,055	0,084	0,114	0,138	0,161	0,200
	4	0,05 x D	0,05 x D	115	161	fz	0,009	0,018	0,037	0,056	0,076	0,092	0,107	0,133

F2AL...AWM/L/X30...

Material Group		A		KC637M			Finishing — Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%.							
				Cutting Speed — vc m/min			D1 — Diameter							
		ap	ae	min	max	mm	1,0	2,0	4,0	6,0	8,0	10,0	12,0	16,0
P	3	0,04 x D	0,04 x D	416	468	fz	0,0256	0,0522	0,108	0,168	0,231	0,279	0,324	0,403
	4	0,04 x D	0,04 x D	364	416	fz	0,0239	0,0484	0,099	0,152	0,207	0,249	0,288	0,355
H	1	0,03 x D	0,03 x D	290	406	fz	0,0255	0,0517	0,106	0,162	0,221	0,266	0,308	0,379
	2	0,03 x D	0,03 x D	203	348	fz	0,0193	0,0391	0,080	0,122	0,166	0,199	0,230	0,281
	3	0,02 x D	0,02 x D	216	324	fz	0,0163	0,0328	0,067	0,102	0,139	0,168	0,196	0,244
	4	0,02 x D	0,02 x D	180	252	fz	0,0108	0,0219	0,045	0,068	0,093	0,112	0,130	0,162

Material Group		A		KC637M			Semi-Finishing — Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%.							
				Cutting Speed — vc m/min			D1 — Diameter							
		ap	ae	min	max	mm	1,0	2,0	4,0	6,0	8,0	10,0	12,0	16,0
P	3	0,1 x D	0,05 x D	272	306	fz	0,017	0,034	0,070	0,109	0,150	0,182	0,211	0,262
	4	0,1 x D	0,05 x D	238	272	fz	0,016	0,031	0,064	0,099	0,134	0,162	0,187	0,230
H	1	0,07 x D	0,1 x D	200	280	fz	0,019	0,039	0,080	0,123	0,168	0,203	0,234	0,288
	2	0,05 x D	0,04 x D	161	276	fz	0,017	0,034	0,070	0,107	0,145	0,174	0,201	0,246
	3	0,03 x D	0,03 x D	174	261	fz	0,015	0,031	0,063	0,096	0,130	0,158	0,183	0,229
	4	0,03 x D	0,03 x D	145	203	fz	0,010	0,021	0,042	0,064	0,087	0,105	0,122	0,151

Material Group		A		KC637M			Roughing — Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%.							
				Cutting Speed — vc m/min			D1 — Diameter							
		ap	ae	min	max	mm	1,0	2,0	4,0	6,0	8,0	10,0	12,0	16,0
P	3	0,2 x D	0,1 x D	208	234	fz	0,007	0,015	0,031	0,049	0,067	0,081	0,094	0,117
	4	0,2 x D	0,1 x D	182	208	fz	0,007	0,014	0,029	0,044	0,060	0,073	0,084	0,103
H	1	0,15 x D	0,1 x D	140	196	fz	0,010	0,021	0,043	0,066	0,090	0,109	0,125	0,154
	2	0,1 x D	0,075 x D	119	204	fz	0,012	0,024	0,048	0,074	0,101	0,121	0,140	0,171
	3	0,05 x D	0,05 x D	138	207	fz	0,013	0,027	0,055	0,084	0,114	0,138	0,161	0,200
	4	0,05 x D	0,05 x D	115	161	fz	0,009	0,018	0,037	0,056	0,076	0,092	0,107	0,133

F2AB...AWM/L/X30...

Material Group		A		KC637M			Finishing — Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%.					
				Cutting Speed — vc m/min			D1 — Diameter					
		ap	ae	min	max	mm	2,0	4,0	6,0	8,0	10,0	12,0
P	3	0,04 x D	0,04 x D	416	468	fz	0,0522	0,108	0,168	0,231	0,279	0,324
P	4	0,04 x D	0,04 x D	364	416	fz	0,0484	0,099	0,152	0,207	0,249	0,288
H	1	0,03 x D	0,03 x D	290	406	fz	0,0517	0,106	0,162	0,221	0,266	0,308
H	2	0,03 x D	0,03 x D	203	348	fz	0,0391	0,080	0,122	0,166	0,199	0,230
H	3	0,02 x D	0,02 x D	216	324	fz	0,0328	0,067	0,102	0,139	0,168	0,196
H	4	0,02 x D	0,02 x D	180	252	fz	0,0219	0,045	0,068	0,093	0,112	0,130

Material Group		A		KC637M			Semi-Finishing — Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%.					
				Cutting Speed — vc m/min			D1 — Diameter					
		ap	ae	min	max	mm	2,0	4,0	6,0	8,0	10,0	12,0
P	3	0,1 x D	0,05 x D	272	306	fz	0,034	0,070	0,109	0,150	0,182	0,211
P	4	0,1 x D	0,05 x D	238	272	fz	0,031	0,064	0,099	0,134	0,162	0,187
H	1	0,07 x D	0,1 x D	200	280	fz	0,039	0,080	0,123	0,168	0,203	0,234
H	2	0,05 x D	0,04 x D	161	276	fz	0,034	0,070	0,107	0,145	0,174	0,201
H	3	0,03 x D	0,03 x D	174	261	fz	0,031	0,063	0,096	0,130	0,158	0,183
H	4	0,03 x D	0,03 x D	145	203	fz	0,021	0,042	0,064	0,087	0,105	0,122

Material Group		A		KC637M			Roughing — Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%.					
				Cutting Speed — vc m/min			D1 — Diameter					
		ap	ae	min	max	mm	2,0	4,0	6,0	8,0	10,0	12,0
P	3	0,2 x D	0,1 x D	208	234	fz	0,015	0,031	0,049	0,067	0,081	0,094
P	4	0,2 x D	0,1 x D	182	208	fz	0,014	0,029	0,044	0,060	0,073	0,084
H	1	0,15 x D	0,1 x D	140	196	fz	0,021	0,043	0,066	0,090	0,109	0,125
H	2	0,1 x D	0,075 x D	119	204	fz	0,024	0,048	0,074	0,101	0,121	0,140
H	3	0,05 x D	0,05 x D	138	207	fz	0,027	0,055	0,084	0,114	0,138	0,161
H	4	0,05 x D	0,05 x D	115	161	fz	0,018	0,037	0,056	0,076	0,092	0,107

F4AL...AWM/L/X30L...

Material Group		A		KC637M			Finishing — Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%.					
				Cutting Speed — vc m/min			D1 — Diameter					
		ap	ae	min	max	mm	3,0	4,0	5,0	6,0	8,0	10,0
P	3	0,04 x D	0,04 x D	416	468	fz	0,080	0,108	0,137	0,168	0,231	0,279
	4	0,04 x D	0,04 x D	364	416	fz	0,073	0,099	0,125	0,152	0,207	0,249
H	1	0,03 x D	0,03 x D	290	406	fz	0,078	0,106	0,134	0,162	0,221	0,266
	2	0,03 x D	0,03 x D	203	348	fz	0,059	0,080	0,101	0,122	0,166	0,199
	3	0,02 x D	0,02 x D	216	324	fz	0,050	0,067	0,084	0,102	0,139	0,168
	4	0,02 x D	0,02 x D	180	252	fz	0,033	0,045	0,056	0,068	0,093	0,112

Material Group		A		KC637M			Semi-Finishing — Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%.					
				Cutting Speed — vc m/min			D1 — Diameter					
		ap	ae	min	max	mm	3,0	4,0	5,0	6,0	8,0	10,0
P	3	0,1 x D	0,05 x D	272	306	fz	0,052	0,070	0,089	0,109	0,150	0,182
	4	0,1 x D	0,05 x D	238	272	fz	0,048	0,064	0,081	0,099	0,134	0,162
H	1	0,07 x D	0,1 x D	200	280	fz	0,060	0,080	0,102	0,123	0,168	0,203
	2	0,05 x D	0,04 x D	161	276	fz	0,052	0,070	0,088	0,107	0,145	0,174
	3	0,03 x D	0,03 x D	174	261	fz	0,047	0,063	0,079	0,096	0,130	0,158
	4	0,03 x D	0,03 x D	145	203	fz	0,031	0,042	0,053	0,064	0,087	0,105

Material Group		A		KC637M			Roughing — Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%.					
				Cutting Speed — vc m/min			D1 — Diameter					
		ap	ae	min	max	mm	3,0	4,0	5,0	6,0	8,0	10,0
P	3	0,2 x D	0,1 x D	208	234	fz	0,023	0,031	0,040	0,049	0,067	0,081
	4	0,2 x D	0,1 x D	182	208	fz	0,021	0,029	0,036	0,044	0,060	0,073
H	1	0,15 x D	0,1 x D	140	196	fz	0,032	0,043	0,054	0,066	0,090	0,109
	2	0,1 x D	0,075 x D	119	204	fz	0,036	0,048	0,061	0,074	0,101	0,121
	3	0,05 x D	0,05 x D	138	207	fz	0,041	0,055	0,069	0,084	0,114	0,138
	4	0,05 x D	0,05 x D	115	161	fz	0,027	0,037	0,046	0,056	0,076	0,092

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

Primary Application

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

Features and Benefits

Higher Productivity and Profitability

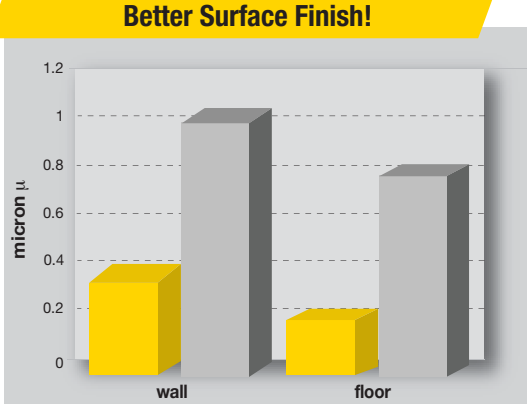
- Use only one tool for roughing and finishing operations.
- Slotting is effective up to full 1 x D axial depth. Side milling is effective up to 0,5 x D radial and 1,5 x D axial depth.
- Three-flute series uses unequal flute spacing for chatter-free performance.
- Effective in a full range of machine speeds.
- Multiple corner radii and extended neck configurations are available as standard.

Featured Application: Machining a Block

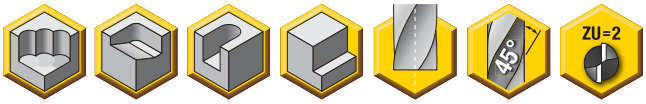
Operation: Slotting
Workpiece: Aluminium block
Material: 6061 aluminium
Solution: MaxiMet solid carbide end mill
Results: 100% better surface finish on walls and floor

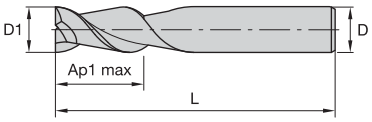
	COMPETITOR	MaxiMet
grade:	uncoated tools	uncoated tools
end mill:	16mm 3-flute	16mm 3-flute MaxiMet
material:	aluminium	aluminium
depth of cut (ap):	8mm	8mm
width of cut (ae):	8mm	8mm
speed (vc):	610 m/min	610 m/min
RPM (N):	12.000 RPM	12.000 RPM
feed rate (vf):	3.600 mm/min	3.600 mm/min
chip load per tooth (fz):	0,1 mm/th	0,1 mm/th
metal removal rate:	230 cm^3/min	230 cm^3/min

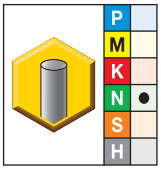
MaxiMet Delivered 100% Better Surface Finish!



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







● first choice
○ alternate choice

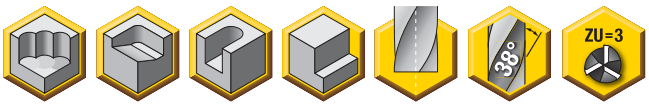
K600	D1	D	Ap1 max	L
ABDF0150A2AS	1,50	3,00	6,00	38,00
ABDF0200A2AS	2,00	3,00	8,00	38,00
ABDF0250A2AS	2,50	3,00	9,00	38,00
ABDF0300A2AS	3,00	3,00	12,00	38,00
ABDF0400A2AS	4,00	4,00	12,00	50,00
ABDF0500A2AS	5,00	5,00	14,00	50,00
ABDF0600A2AS	6,00	6,00	16,00	50,00
ABDF0800A2AS	8,00	8,00	20,00	63,00
ABDF1000A2AS	10,00	10,00	22,00	76,00
ABDF1200A2AS	12,00	12,00	25,00	76,00
ABDF1400A2AS	14,00	14,00	32,00	83,00
ABDF1600A2AS	16,00	16,00	32,00	89,00
ABDF1800A2AS	18,00	18,00	38,00	100,00
ABDF2000A2AS	20,00	20,00	38,00	104,00

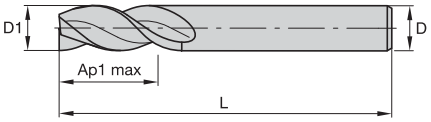
NOTE: For application data, see page M62.

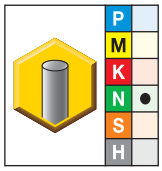
End Mill Tolerances

D1	D1 tolerance	D tolerance
<6mm	DIN e8	DIN h6
>6mm	DIN h6	DIN h6

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







● first choice
○ alternate choice

K600	D1	D	Ap1 max	L
ABDE0300A3AS	3,00	3,00	12,00	38,00
ABDE0400A3AS	4,00	4,00	12,00	50,00
ABDE0500A3AS	5,00	5,00	14,00	50,00
ABDE0600A3AS	6,00	6,00	16,00	50,00
ABDE0800A3AS	8,00	8,00	20,00	63,00
ABDE1000A3AS	10,00	10,00	22,00	76,00
ABDE1200A3AS	12,00	12,00	25,00	76,00
ABDE1400A3AS	14,00	14,00	32,00	83,00
ABDE1600A3AS	16,00	16,00	32,00	89,00
ABDE1800A3AS	18,00	18,00	38,00	100,00
ABDE2000A3AS	20,00	20,00	38,00	104,00

NOTE: For application data, see page M62.

End Mill Tolerances

D1	D1 tolerance	D tolerance
<6mm	DIN e8	DIN h6
>6mm	DIN h6	DIN h6

- Kennametal standard dimensions.
- Effective in thin wall applications.
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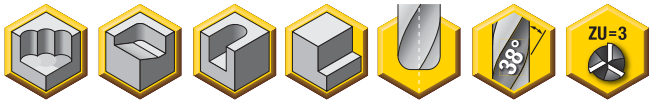
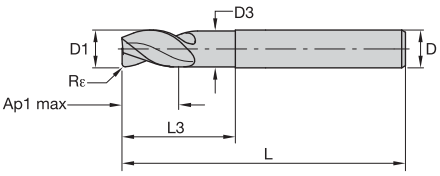
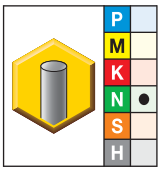






● first choice
○ alternate choice

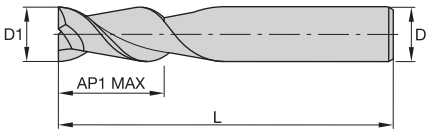
K600	D1	D	D3	Ap1 max	L3	L	Rε
ABDE0600A3ARA	6,00	6,00	5,40	9,00	18,00	63,00	0,20
ABDE0600A3ARB	6,00	6,00	5,40	9,00	18,00	63,00	0,50
ABDE0600A3ARC	6,00	6,00	5,40	9,00	18,00	63,00	1,00
ABDE0800A3ARA	8,00	8,00	7,20	12,00	24,00	76,00	0,20
ABDE0800A3ARB	8,00	8,00	7,20	12,00	24,00	76,00	0,50
ABDE0800A3ARC	8,00	8,00	7,20	12,00	24,00	76,00	1,00
ABDE1000A3ARA	10,00	10,00	9,00	15,00	30,00	89,00	0,20
ABDE1000A3ARB	10,00	10,00	9,00	15,00	30,00	89,00	0,50
ABDE1000A3ARC	10,00	10,00	9,00	15,00	30,00	89,00	1,50
ABDE1200A3ARA	12,00	12,00	10,80	18,00	36,00	100,00	0,20
ABDE1200A3ARB	12,00	12,00	10,80	18,00	36,00	100,00	0,50
ABDE1200A3ARC	12,00	12,00	10,80	18,00	36,00	100,00	1,50
ABDE1600A3ARA	16,00	16,00	14,40	24,00	48,00	110,00	0,20
ABDE1600A3ARB	16,00	16,00	14,40	24,00	48,00	110,00	0,50
ABDE1600A3ARC	16,00	16,00	14,40	24,00	48,00	110,00	1,00
ABDE1600A3ARD	16,00	16,00	14,40	24,00	48,00	110,00	2,00
ABDE2000A3ARA	20,00	20,00	18,80	30,00	60,00	125,00	0,20
ABDE2000A3ARB	20,00	20,00	18,80	30,00	60,00	125,00	0,50
ABDE2000A3ARC	20,00	20,00	18,80	30,00	60,00	125,00	1,50
ABDE2000A3ARD	20,00	20,00	18,80	30,00	60,00	125,00	4,00

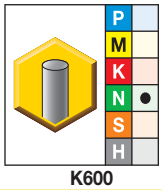
NOTE: For application data, see page M62.

End Mill Tolerances

D1	D1 tolerance	D tolerance
<6mm	DIN e8	DIN h6
>6mm	DIN h6	DIN h6

• Centre cutting.





● first choice
○ alternate choice

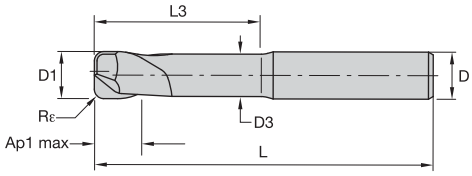
K600	D1	D	Ap1 max	L
F2AA0400ADL45	4,00	6,00	8,00	57,00
F2AA0500ADL45	5,00	6,00	10,00	57,00
F2AA0600ADL45	6,00	6,00	10,00	57,00
F2AA0800ADL45	8,00	8,00	16,00	63,00
F2AA1000ADL45	10,00	10,00	19,00	72,00
F2AA1200ADL45	12,00	12,00	22,00	83,00
F2AA1400ADL45	14,00	14,00	22,00	83,00
F2AA1600ADL45	16,00	16,00	26,00	92,00
F2AA1800ADL45	18,00	18,00	26,00	92,00
F2AA2000ADL45	20,00	20,00	32,00	104,00

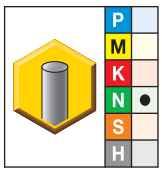
NOTE: For application data, see page M62.

End Mill Tolerances

D1	D1 tolerance	D tolerance
<6mm	DIN e8	DIN h6
>6mm	DIN h6	DIN h6

- Kennametal standard dimensions.
- Centre cutting.





● first choice
○ alternate choice

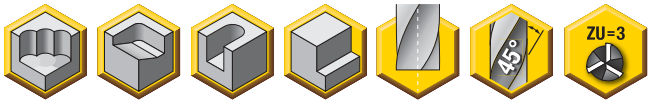
K600	D1	D	Ap1 max	L3	L	Rε	D3
F2AA0600AWM45R050	6,00	6,00	9,00	18,00	63,00	0,50	5,80
F2AA0600AWM45R100	6,00	6,00	9,00	18,00	63,00	1,00	5,80
F2AA0800AWM45R050	8,00	8,00	12,00	24,00	68,00	0,50	7,80
F2AA0800AWM45R100	8,00	8,00	12,00	24,00	68,00	1,00	7,80
F2AA1000AWL45R050	10,00	10,00	15,00	30,00	76,00	0,50	9,50
F2AA1000AWL45R100	10,00	10,00	15,00	30,00	76,00	1,00	9,50
F2AA1000AWL45R200	10,00	10,00	15,00	30,00	76,00	2,00	9,50
F2AA1000AWL45R300	10,00	10,00	15,00	30,00	76,00	3,00	9,50
F2AA1000AWL45R400	10,00	10,00	15,00	30,00	76,00	4,00	9,50
F2AA1200AWL45R050	12,00	12,00	18,00	36,00	84,00	0,50	11,50
F2AA1200AWL45R100	12,00	12,00	18,00	36,00	84,00	1,00	11,50
F2AA1200AWL45R200	12,00	12,00	18,00	36,00	84,00	2,00	11,50
F2AA1200AWL45R300	12,00	12,00	18,00	36,00	84,00	3,00	11,50
F2AA1200AWL45R400	12,00	12,00	18,00	36,00	84,00	4,00	11,50
F2AA1600AWX45R050	16,00	16,00	24,00	48,00	100,00	0,50	15,00
F2AA1600AWX45R100	16,00	16,00	24,00	48,00	100,00	1,00	15,00
F2AA1600AWX45R200	16,00	16,00	24,00	48,00	100,00	2,00	15,00
F2AA1600AWX45R300	16,00	16,00	24,00	48,00	100,00	3,00	15,00
F2AA1600AWX45R400	16,00	16,00	24,00	48,00	100,00	4,00	15,00
F2AA2000AWX45R050	20,00	20,00	30,00	60,00	115,00	0,50	19,00
F2AA2000AWX45R100	20,00	20,00	30,00	60,00	115,00	1,00	19,00
F2AA2000AWX45R200	20,00	20,00	30,00	60,00	115,00	2,00	19,00
F2AA2000AWX45R300	20,00	20,00	30,00	60,00	115,00	3,00	19,00
F2AA2000AWX45R400	20,00	20,00	30,00	60,00	115,00	4,00	19,00
F2AA2500AWX45R050	25,00	25,00	37,50	75,00	135,00	0,50	24,00
F2AA2500AWX45R100	25,00	25,00	37,50	75,00	135,00	1,00	24,00
F2AA2500AWX45R200	25,00	25,00	37,50	75,00	135,00	2,00	24,00
F2AA2500AWX45R300	25,00	25,00	37,50	75,00	135,00	3,00	24,00
F2AA2500AWX45R400	25,00	25,00	37,50	75,00	135,00	4,00	24,00

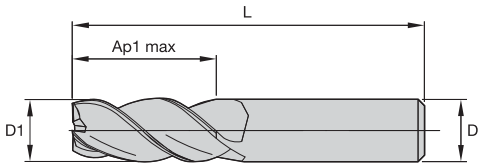
NOTE: For application data, see page M63.

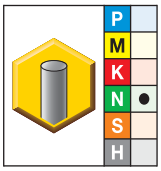
End Mill Tolerances

D1	D1 tolerance	D tolerance
<6mm	DIN e8	DIN h6
>6mm	DIN h6	DIN h6

- Kennametal standard dimensions.
- Centre cutting.







● first choice
○ alternate choice

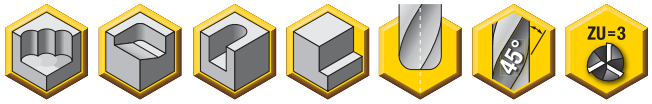
K600	D1	D	Ap1 max	L
F3AA0300AWS45	3,00	3,00	12,00	38,00
F3AA0400AWS45	4,00	4,00	12,00	50,00
F3AA0500AWS45	5,00	6,00	14,00	50,00
F3AA0600AWS45	6,00	6,00	16,00	50,00
F3AA0800AWM45	8,00	8,00	20,00	63,00
F3AA1000AWL45	10,00	10,00	22,00	76,00
F3AA1200AWL45	12,00	12,00	25,00	76,00
F3AA1400AWL45	14,00	14,00	32,00	89,00
F3AA1600AWL45	16,00	16,00	32,00	89,00
F3AA1800AWL45	18,00	18,00	38,00	100,00
F3AA2000AWX45	20,00	20,00	38,00	104,00

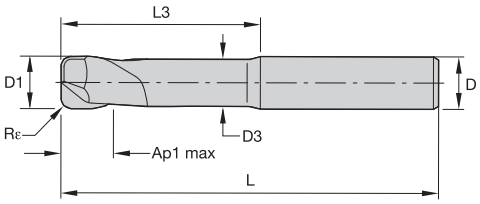
NOTE: For application data, see page M63.

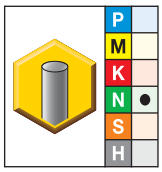
End Mill Tolerances

D1	D1 tolerance	D tolerance
<6mm	DIN e8	DIN h6
>6mm	DIN h6	DIN h6

- Kennametal standard dimension.
- Centre cutting.







● first choice
○ alternate choice

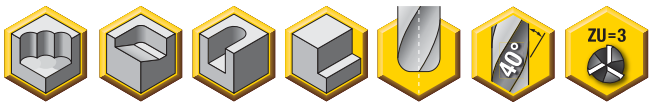
K600	D1	D3	D	Ap1 max	L3	L	Rε
F3AA0600AWM45R050	6,00	5,80	6,00	9,00	18,00	63,00	0,50
F3AA0600AWM45R100	6,00	5,80	6,00	9,00	18,00	63,00	1,00
F3AA0800AWM45R050	8,00	7,80	8,00	12,00	24,00	68,00	0,50
F3AA0800AWM45R100	8,00	7,80	8,00	12,00	24,00	68,00	1,00
F3AA1000AWL45R050	10,00	9,50	10,00	15,00	30,00	76,00	0,50
F3AA1000AWL45R100	10,00	9,50	10,00	15,00	30,00	76,00	1,00
F3AA1000AWL45R200	10,00	9,50	10,00	15,00	30,00	76,00	2,00
F3AA1000AWL45R300	10,00	9,50	10,00	15,00	30,00	76,00	3,00
F3AA1000AWL45R400	10,00	9,50	10,00	15,00	30,00	76,00	4,00
F3AA1200AWL45R050	12,00	11,50	12,00	18,00	36,00	84,00	0,50
F3AA1200AWL45R100	12,00	11,50	12,00	18,00	36,00	84,00	1,00
F3AA1200AWL45R200	12,00	11,50	12,00	18,00	36,00	84,00	2,00
F3AA1200AWL45R300	12,00	11,50	12,00	18,00	36,00	84,00	3,00
F3AA1200AWL45R400	12,00	11,50	12,00	18,00	36,00	84,00	4,00
F3AA1600AWX45R050	16,00	15,00	16,00	24,00	48,00	100,00	0,50
F3AA1600AWX45R100	16,00	15,00	16,00	24,00	48,00	100,00	1,00
F3AA1600AWX45R200	16,00	15,00	16,00	24,00	48,00	100,00	2,00
F3AA1600AWX45R300	16,00	15,00	16,00	24,00	48,00	100,00	3,00
F3AA1600AWX45R400	16,00	15,00	16,00	24,00	48,00	100,00	4,00
F3AA2000AWX45R050	20,00	19,00	20,00	30,00	60,00	115,00	0,50
F3AA2000AWX45R100	20,00	19,00	20,00	30,00	60,00	115,00	1,00
F3AA2000AWX45R200	20,00	19,00	20,00	30,00	60,00	115,00	2,00
F3AA2000AWX45R300	20,00	19,00	20,00	30,00	60,00	115,00	3,00
F3AA2000AWX45R400	20,00	19,00	20,00	30,00	60,00	115,00	4,00
F3AA2500AWX45R050	25,00	24,00	25,00	37,50	75,00	135,00	0,50
F3AA2500AWX45R100	25,00	24,00	25,00	37,50	75,00	135,00	1,00
F3AA2500AWX45R200	25,00	24,00	25,00	37,50	75,00	135,00	2,00
F3AA2500AWX45R300	25,00	24,00	25,00	37,50	75,00	135,00	3,00
F3AA2500AWX45R400	25,00	24,00	25,00	37,50	75,00	135,00	4,00

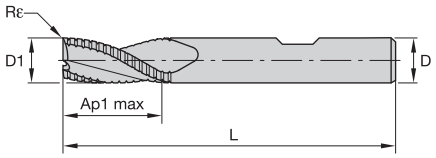
NOTE: For application data, see page M63.

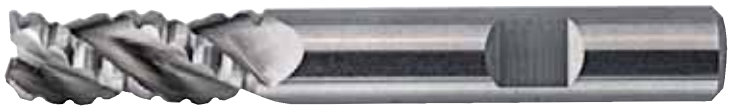
End Mill Tolerances

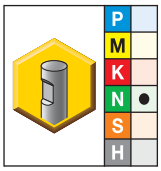
D1	D1 tolerance	D tolerance
<6mm	DIN e8	DIN h6
>6mm	DIN h6	DIN h6

- Kennametal standard dimensions.
- Aluminium profile.
- Centre cutting.









● first choice
○ alternate choice

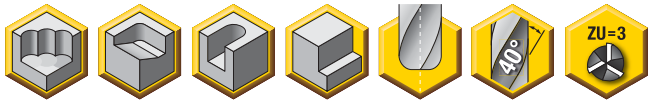
K600	D1	D	Ap1 max	L	Rε
F3BA0600BWS40	6,00	6,00	13,00	57,00	0,25
F3BA0800BWM40	8,00	8,00	16,00	63,00	0,25
F3BA1000BWM40	10,00	10,00	22,00	72,00	0,50
F3BA1200BWL40	12,00	12,00	26,00	83,00	0,50
F3BA1600BWL40	16,00	16,00	32,00	92,00	1,00
F3BA2000BWX40	20,00	20,00	38,00	104,00	1,00
F3BA2500BWX40	25,00	25,00	45,00	121,00	1,50

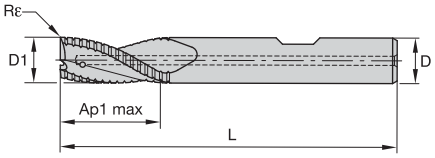
NOTE: For application data, see page M64.

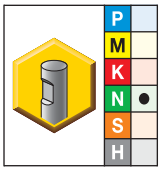
End Mill Tolerances

D1	tolerance d11	D	tolerance h6
≤3	-0,020/-0,080	≤3	+0/-0,006
>3–6	-0,030/-0,105	>3–6	+0/-0,008
>6–10	-0,040/-0,130	>6–10	+0/-0,009
>10–18	-0,050/-0,160	>10–18	+0/-0,011
>18–30	-0,065/-0,195	>18–30	+0/-0,013

- Kennametal standard dimensions.
- Aluminium profile.
- Centre cutting.







● first choice
○ alternate choice

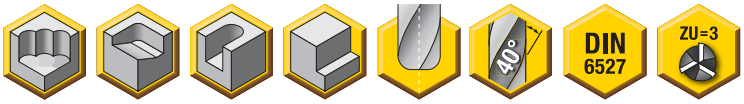
K600	D1	D	Ap1 max	L	Rε
F3BA0800BWM40C160	8,00	8,00	16,00	63,00	0,25
F3BA1000BWM40C220	10,00	10,00	22,00	72,00	0,50
F3BA1200BWL40C260	12,00	12,00	26,00	83,00	0,50
F3BA1600BWL40C320	16,00	16,00	32,00	92,00	1,00
F3BA2000BWX40C380	20,00	20,00	38,00	104,00	1,00
F3BA2500BWX40C450	25,00	25,00	45,00	121,00	1,50

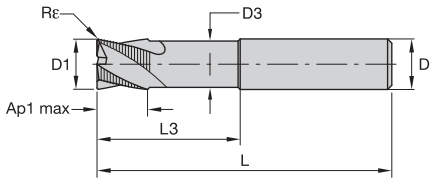
NOTE: For application data, see page M64.

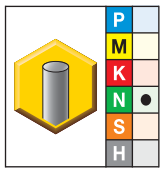
End Mill Tolerances

D1	tolerance d11	D	tolerance h6
≤3	-0,020/-0,080	≤3	+0/-0,006
>3–6	-0,030/-0,105	>3–6	+0/-0,008
>6–10	-0,040/-0,130	>6–10	+0/-0,009
>10–18	-0,050/-0,160	>10–18	+0/-0,011
>18–30	-0,065/-0,195	>18–30	+0/-0,013

- Aluminium profile.
- Centre cutting.







● first choice
○ alternate choice

K600	D1	D	Ap1 max	L3	L	Rε	D3
F3BA0600ADL40E180	6,00	6,00	8,00	18,00	57,00	0,25	5,00
F3BA0800ADL40E240	8,00	8,00	10,00	24,00	63,00	0,25	7,00
F3BA1000ADL40E300	10,00	10,00	12,00	30,00	72,00	0,25	9,00
F3BA1200ADL40E360	12,00	12,00	15,00	36,00	83,00	0,25	11,00
F3BA1600ADL40E480	16,00	16,00	20,00	48,00	92,00	1,00	15,00
F3BA2000ADL40E600	20,00	20,00	24,00	60,00	104,00	1,00	19,00

NOTE: For application data, see page M64.

End Mill Tolerances

D1	tolerance d11	D	Tolerance h6
≤3	-0,020/-0,080	≤3	+0/-0,006
>3–6	-0,030/-0,105	>3–6	+0/-0,008
>6–10	-0,040/-0,130	>6–10	+0/-0,009
>10–18	-0,050/-0,160	>10–18	+0/-0,011
>18–30	-0,065/-0,195	>18–30	+0/-0,013

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.**

ABDE... • ABDF...

Material Group		A ap	A ae	B ap	K600 Cutting Speed — vc m/min min	K600 Cutting Speed — vc m/min max	mm	Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%. D1 — Diameter 1,5	2,0	4,0	6,0	8,0	10,0	12,0	16,0	20,0
N	1	1,5 x D	0,5 x D	1 x D	500	2000	fz	0,014	0,018	0,036	0,054	0,072	0,090	0,108	0,144	0,180
N	2	1,5 x D	0,5 x D	1 x D	500	1500	fz	0,012	0,016	0,032	0,049	0,065	0,081	0,097	0,130	0,162

ABDE... with Neck

Material Group		A ap	A ae	B ap	K600 Cutting Speed — vc m/min min	K600 Cutting Speed — vc m/min max	mm	Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%. D1 — Diameter 6,0	8,0	10,0	12,0	16,0	20,0
N	1	1 x D	0,5 x D	1 x D	500	2000	fz	0,060	0,080	0,100	0,120	0,160	0,200
N	2	1 x D	0,5 x D	1 x D	500	1500	fz	0,054	0,072	0,090	0,108	0,144	0,180

F2AA...ADL45...

Material Group		A ap	A ae	B ap	K600 Cutting Speed — vc m/min min	K600 Cutting Speed — vc m/min max	mm	Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%. D1 — Diameter 4,0	6,0	8,0	10,0	12,0	14,0	16,0	20,0
N	1	1,2 x D	0,5 x D	1 x D	500	2000	fz	0,036	0,054	0,072	0,090	0,108	0,126	0,144	0,180
N	2	1,2 x D	0,5 x D	1 x D	500	1500	fz	0,032	0,049	0,065	0,081	0,097	0,113	0,130	0,162

ap for milling machine with ceramic bearings spindle, multiply by 0,5.
For better surface finish, reduce feed per tooth.
Above parameters are based on ideal conditions. For smaller taper machining centres, please adjust parameters accordingly on >12mm diameter.

F2AA...AWM/L/X45R...

Material Group		A		B	K600 Cutting Speed — vc m/min			Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%. D1 — Diameter						
		ap	ae	ap	min	max	mm	6,0	8,0	10,0	12,0	16,0	20,0	25,0
N	1	1 x D	0,5 x D	1 x D	500	2000	fz	0,054	0,072	0,090	0,108	0,144	0,180	0,225
	2	1 x D	0,5 x D	1 x D	500	1500	fz	0,049	0,065	0,081	0,097	0,130	0,162	0,203

F3AA...AWS/L45...

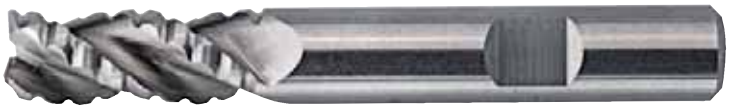
Material Group		A		B	K600 Cutting Speed — vc m/min			Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%. D1 — Diameter							
		ap	ae	ap	min	max	mm	3,0	4,0	6,0	8,0	10,0	12,0	16,0	20,0
N	1	1 x D	0,5 x D	0,7 x D	500	2000	fz	0,027	0,036	0,054	0,072	0,090	0,108	0,144	0,180
	2	1 x D	0,5 x D	0,7 x D	500	1500	fz	0,024	0,032	0,049	0,065	0,081	0,097	0,130	0,162

F3AA...AWM/L/X45R...

Material Group		A		B	K600 Cutting Speed — vc m/min			Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%. D1 — Diameter							
		ap	ae	ap	min	max	mm	6,0	8,0	10,0	12,0	16,0	18,0	20,0	25,0
N	1	1 x D	0,5 x D	0,7 x D	500	2000	fz	0,054	0,072	0,090	0,108	0,144	0,162	0,180	0,225
	2	1 x D	0,5 x D	0,7 x D	500	1500	fz	0,049	0,065	0,081	0,097	0,130	0,146	0,162	0,203

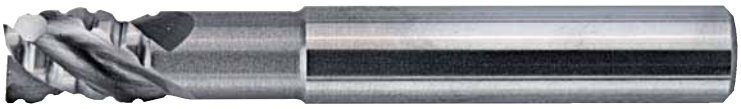
ap for milling machine with ceramic bearings spindle, multiply by 0,5.
For better surface finish, reduce feed per tooth.
Above parameters are based on ideal conditions. For smaller taper machining centres, please adjust parameters accordingly on >12mm diameter.

F3BA...BWS/M/L/X30...



Material Group		A ap	A ae	B ap	K600 Cutting Speed — vc m/min min	K600 Cutting Speed — vc m/min max	mm	Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%. D1 — Diameter 6,0	8,0	10,0	12,0	16,0	20,0	25,0
N	1	1,5 x D	0,5 x D	1 x D	500	2000	fz	0,072	0,096	0,120	0,144	0,192	0,240	0,300
N	2	1,5 x D	0,5 x D	1 x D	500	1500	fz	0,065	0,086	0,108	0,130	0,173	0,216	0,270

F3BA..BWM/L/X30C...



Material Group		A ap	A ae	B ap	K600 Cutting Speed — vc m/min min	K600 Cutting Speed — vc m/min max	mm	Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%. D1 — Diameter 8,0	10,0	12,0	16,0	20,0	25,0
N	1	1,5 x D	0,5 x D	1,25 x D	500	2000	fz	0,096	0,120	0,144	0,192	0,240	0,300
N	2	1,5 x D	1,5 x D	1,25 x D	500	1500	fz	0,086	0,108	0,130	0,173	0,216	0,270

F3BA...ADL40E...

Material Group		A ap	A ae	B ap	K600 Cutting Speed — vc m/min min	K600 Cutting Speed — vc m/min max	mm	Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%. D1 — Diameter 6,0	8,0	10,0	12,0	16,0	20,0
N	1	1 x D	0,5 x D	1 x D	500	2000	fz	0,078	0,104	0,130	0,156	0,208	0,260
N	2	1 x D	0,5 x D	1 x D	500	1500	fz	0,070	0,094	0,117	0,140	0,187	0,234

These guidelines may require possible variations to achieve optimum results.
ap for milling machine with ceramic bearings spindle, multiply by 0,5.
For better surface finish, reduce feed per tooth.
Above parameters are based on ideal conditions. For smaller taper machining centres, please adjust parameters accordingly on >12mm diameter.

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

beyond™

Primary Application

Kennametal has the correct milling solutions engineered for machining difficult CFRP (Carbon-Fibre 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.

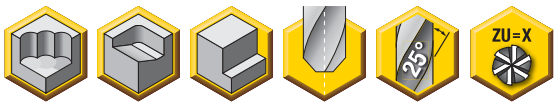
Burr-Style Router

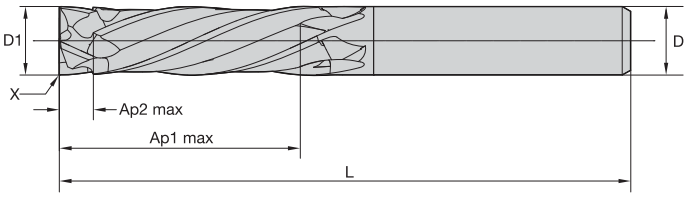
- Designed for trimming fibreglass and CFRP.
- Excellent temperature control.
- Good surface quality.

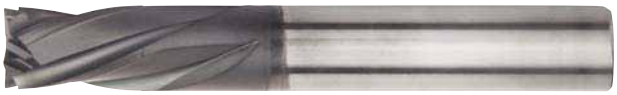
Ball-End-Style Router

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

- Kennametal standard dimensions.
- Through-hole capability.
- Aerospace composites and fibreglass.
- Internal air coolant for ZU=4.







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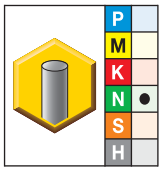


● first choice
○ alternate choice

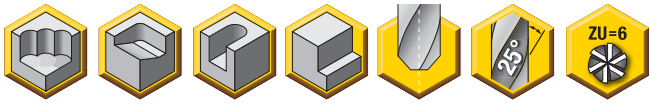
KCN05	D1	D	Ap1 max	Ap2 max	L	Z U
CCNC0600A3AH	6,00	6,00	18,01	2,50	63,00	3
CCNC0600A3BH	6,00	6,00	35,99	2,50	100,00	3
CCNC1000A4AH	10,00	10,00	18,01	2,50	83,00	4
CCNC1000A4BH	10,00	10,00	35,99	2,50	100,00	4
CCNC1200A4AH	12,00	12,00	18,01	2,50	83,00	4
CCNC1200A4BH	12,00	12,00	35,99	2,50	100,00	4

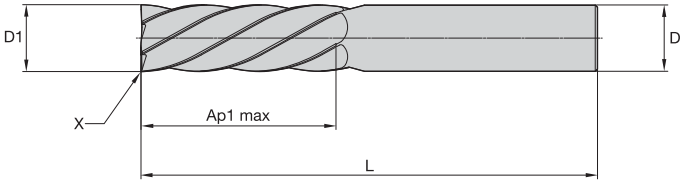
NOTE: For application data, see page M70.

End Mill Tolerances

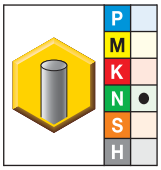
D1	tolerance	D	tolerance h6
All	+0/-0,05	≤3	+0/-0,006
		>3–6	+0/-0,008
		>6–10	+0/-0,009
		>10–18	+0/-0,011
		>18–24	+0/-0,013

- Kennametal standard dimensions.
- Aerospace composites and fibreglass.





beyond



● first choice
○ alternate choice

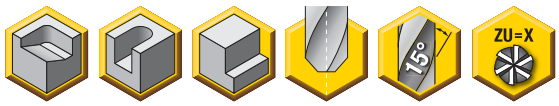
KCN05	D1	D	Ap1 max	L
CDDC0600A6AH	6,00	6,00	18,00	63,00
CDDC0600A6BH	6,00	6,00	36,00	100,00
CDDC1000A6AH	10,00	10,00	18,00	83,00
CDDC1000A6BH	10,00	10,00	36,00	100,00
CDDC1200A6AH	12,00	12,00	18,00	83,00
CDDC1200A6BH	12,00	12,00	36,00	100,00

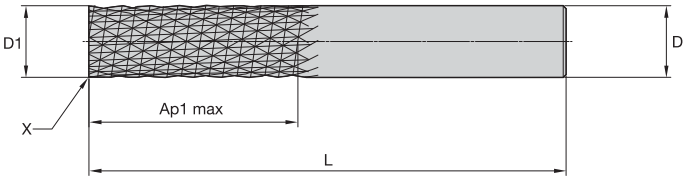
NOTE: For application data, see page M70.

End Mill Tolerances

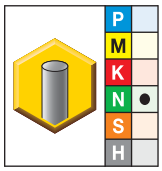
D1	tolerance	D	tolerance h6
All	+0/-0,05	≤3	+0/-0,006
		>3–6	+0/-0,008
		>6–10	+0/-0,009
		>10–18	+0/-0,011
		>18–24	+0/-0,013

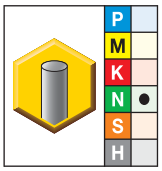
- Kennametal standard dimensions.
- Aerospace composites and fiberglass.





beyond



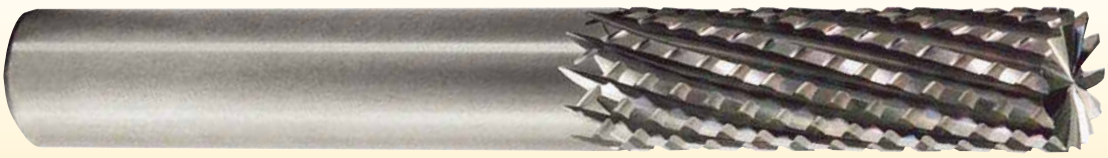


● first choice
○ alternate choice

K600	KCN05	D1	D	Ap1 max	L
CBDB0600AXAS	**CBDB0600AXAS**	6,00	6,00	18,00	63,00
CBDB0600AXBS	**CBDB0600AXBS**	6,00	6,00	36,00	100,00
CBDB1000AXAS	**CBDB1000AXAS**	10,00	10,00	18,00	83,00
CBDB1000AXBS	**CBDB1000AXBS**	10,00	10,00	36,00	100,00
CBDB1200AXAS	**CBDB1200AXAS**	12,00	12,00	18,00	83,00
CBDB1200AXBS	**CBDB1200AXBS**	12,00	12,00	36,00	100,00

NOTE: For application data, see page M70.
12 RHS/RHC flutes. 10 LHS/RHC flutes, 6 end teeth.
For tolerance table, see page M67.

Additional point styles are available upon request:

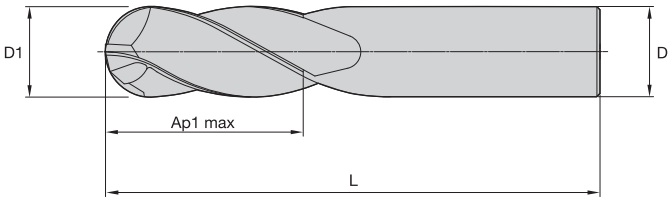


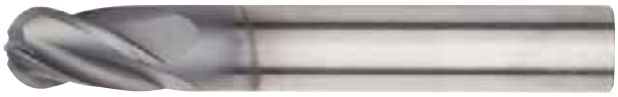
End Mill End Cutting

Drill-Point Cutting

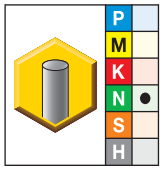
Non-End Cutting

- Kennametal standard dimensions.
- Aerospace composites and fiberglass.





beyond



● first choice
○ alternate choice

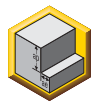
KCN05	D1	D	Ap1 max	L
CRBD1000A4AR	10,00	10,00	18,00	83,00
CRBD1200A4AR	12,00	12,00	18,00	83,00

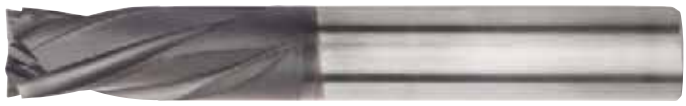
NOTE: For application data, see page M71.
For tolerance table, see page M67.

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.**

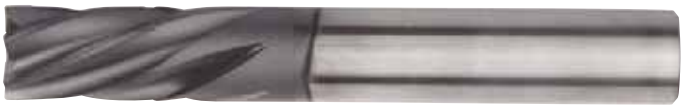
Compression-Style Router • CCNC • Metric





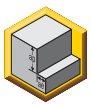
Material Group		A		beyond KCN05 Cutting Speed — vc m/min			Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 10%. D1 — Diameter		
		ap	ae	min	max	mm	6,0	10,0	12,0
N	5	Ap1 max	0,5 x D	100	150	fz	0,018	0,030	0,036

Down-Cut Router • CDDC • Metric



Material Group		A		beyond KCN05 Cutting Speed — vc m/min			Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 10%. D1 — Diameter		
		ap	ae	min	max	mm	6,0	10,0	12,0
N	5	Ap1 max	1 x D	100	150	fz	0,018	0,030	0,036

Burr-Style Router • CBDB • Metric



Material Group		A		B	K600 Cutting Speed — vc m/min		beyond KCN05 Cutting Speed — vc m/min			Feed per revolution — Frev information is for side milling (A). For Slotting (B), reduce fz by 10%. D1 — Diameter		
		ap	ae	ap	min	max	min	max	mm	6,0	10,0	12,0
N	5	Ap1 max	0,2 x D	1 x D	80	120	100	150	Frev	0,15	0,25	0,30

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 centres, please adjust parameters accordiongly on >12mm diameter.

Ball-Style Router • CRBD • Metric

Material Group		A		beyond KCN05 Cutting Speed — vc m/min			Feed per Tooth — Finishing D1 — Diameter	
		ap	ae	min	max	mm	10,0	12,0
N	5	0,04 x D	0,04 x D	416	468	fz	0,279	0,324


Material Group		A		beyond KCN05 Cutting Speed — vc m/min			Feed per Tooth — Semi-Finishing D1 — Diameter	
		ap	ae	min	max	mm	10,0	12,0
N	5	0,1 x D	0,05 x D	272	306	fz	0,182	0,211


Material Group		A		beyond KCN05 Cutting Speed — vc m/min			Feed per Tooth — Roughing D1 — Diameter	
		ap	ae	min	max	mm	10,0	12,0
N	5	0,2 x D	0,1 x D	208	234	fz	0,081	0,094

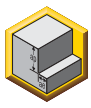
Lower value of cutting speed is used for high stock removal applications or for higher hardness (machinability) within group.
Higher value of cutting speed is used for finishing applications or for lower hardness (machinability) within group.
Above parameters are based on ideal conditions. For smaller taper machining centres, please adjust parameters accordiongly on >12mm diameter.

High-Performance Solid Carbide End Mills • Micro

Features and Benefits

- End mills from cutting diameter D = 0,4mm.
- Short and long length of cut variations.
- Ball nose and square end offering.

Applications:



Side Milling

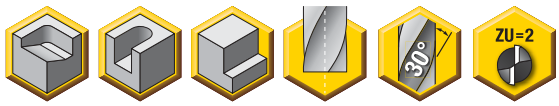
Slotting

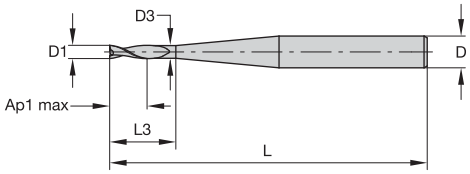
3-D Milling

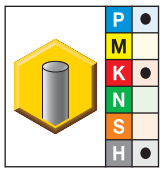
Workpiece Materials:

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

- Kennametal standard dimensions.
- Centre cutting.







● first choice
○ alternate choice

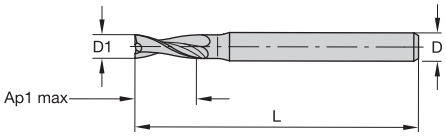
KC637M	D1	D	Ap1 max	L3	L	D3
F2AH0030AWS30L040	0,30	6,00	0,40	–	50,00	–
F2AH0040AWS30L060	0,40	6,00	0,60	–	50,00	–
F2AH0050AWS30L070	0,50	6,00	0,70	1,50	50,00	0,45
F2AH0050AWM30L070	0,50	6,00	0,70	2,50	60,00	0,45
F2AH0060AWS30L090	0,60	6,00	0,90	1,80	50,00	0,55
F2AH0060AWM30L090	0,60	6,00	0,90	3,00	60,00	0,55
F2AH0080AWS30L120	0,80	6,00	1,20	2,40	50,00	0,75
F2AH0080AWM30L120	0,80	6,00	1,20	4,00	60,00	0,75
F2AH0100AWS30L150	1,00	6,00	1,50	2,50	50,00	0,95
F2AH0100AWM30L150	1,00	6,00	1,50	5,00	60,00	0,95
F2AH0120AWS30L180	1,20	6,00	1,80	3,00	50,00	1,15
F2AH0120AWM30L180	1,20	6,00	1,80	6,00	60,00	1,15
F2AH0140AWS30L210	1,40	6,00	2,10	3,50	50,00	1,35
F2AH0140AWM30L210	1,40	6,00	2,10	7,00	60,00	1,35
F2AH0150AWS30L230	1,50	6,00	2,30	3,80	50,00	1,45
F2AH0150AWM30L230	1,50	6,00	2,30	7,50	60,00	1,45
F2AH0160AWS30L240	1,60	6,00	2,40	4,00	50,00	1,55
F2AH0160AWM30L240	1,60	6,00	2,40	8,00	60,00	1,55
F2AH0180AWS30L270	1,80	6,00	2,70	4,50	50,00	1,75
F2AH0180AWM30L270	1,80	6,00	2,70	9,00	60,00	1,75
F2AH0200AWS30L300	2,00	6,00	3,00	5,00	50,00	1,95
F2AH0200AWM30L300	2,00	6,00	3,00	10,00	60,00	1,95
F2AH0250AWS30L370	2,50	6,00	3,70	5,00	50,00	2,40
F2AH0250AWM30L370	2,50	6,00	3,70	12,50	60,00	2,40

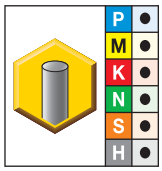
NOTE: For application data, see page M79.

End Mill Tolerances

D1	tolerance e8	D	tolerance h6
≤3	-0,014/-0,028	≤3	+0/-0,006
>3–6	-0,020/-0,038	>3–6	+0/-0,008
>6–10	-0,025/-0,047	>6–10	+0/-0,009
>10–18	-0,032/-0,059	>10–18	+0/-0,011
>18–30	-0,040/-0,073	>18–30	+0/-0,013

- Kennametal standard dimensions.
- Centre cutting.





● first choice
○ alternate choice

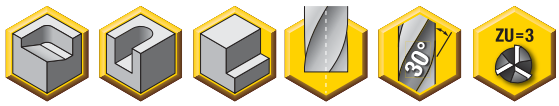
KC625M	D1	D	Ap1 max	L
F2AH0040AWS30	0,40	3,00	0,80	38,00
F2AH0050AWS30	0,50	3,00	1,00	38,00
F2AH0060AWS30	0,60	3,00	1,20	38,00
F2AH0080AWS30	0,80	3,00	1,60	38,00
F2AH0100AWS30	1,00	3,00	2,00	38,00
F2AH0120AWS30	1,20	3,00	2,40	38,00
F2AH0150AWS30	1,50	3,00	3,00	38,00
F2AH0180AWS30	1,80	3,00	3,60	38,00
F2AH0200AWS30	2,00	3,00	6,00	38,00
F2AH0250AWS30	2,50	3,00	7,00	38,00
F2AH0300AWS30	3,00	3,00	7,00	38,00

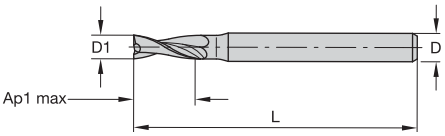
NOTE: For application data, see page M79.

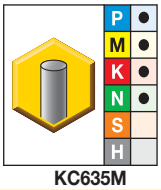
End Mill Tolerances

D1	tolerance e8	D	tolerance h6
≤3	-0,014/-0,028	≤3	+0/-0,006
>3–6	-0,020/-0,038	>3–6	+0/-0,008
>6–10	-0,025/-0,047	>6–10	+0/-0,009
>10–18	-0,032/-0,059	>10–18	+0/-0,011
>18–30	-0,040/-0,073	>18–30	+0/-0,013

- Kennametal standard dimensions.
- Centre cutting.







● first choice
○ alternate choice

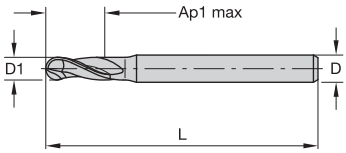
KC635M	D1	D	Ap1 max	L
F3AH0040AWS30	0,40	3,00	1,50	38,00
F3AH0050AWS30	0,50	3,00	1,50	38,00
F3AH0060AWS30	0,60	3,00	1,50	38,00
F3AH0080AWS30	0,80	3,00	1,50	38,00
F3AH0100AWS30	1,00	3,00	2,00	38,00
F3AH0120AWS30	1,20	3,00	2,00	38,00
F3AH0150AWS30	1,50	3,00	2,00	38,00
F3AH0180AWS30	1,80	3,00	2,00	38,00
F3AH0200AWS30	2,00	3,00	8,00	38,00
F3AH0250AWS30	2,50	3,00	9,00	38,00
F3AH0300AWS30	3,00	3,00	12,00	38,00

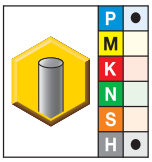
NOTE: For application data, see page M80.

End Mill Tolerances

D1	tolerance e8	D	tolerance h6
≤3	-0,014/-0,028	≤3	+0/-0,006
>3–6	-0,020/-0,038	>3–6	+0/-0,008
>6–10	-0,025/-0,047	>6–10	+0/-0,009
>10–18	-0,032/-0,059	>10–18	+0/-0,011
>18–30	-0,040/-0,073	>18–30	+0/-0,013

- Kennametal standard dimensions.
- Centre cutting.





● first choice
○ alternate choice

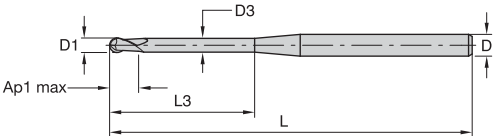
KC637M	D1	D	Ap1 max	L
F2AL0050AWS30	0,50	3,00	1,50	38,00
F2AL0060AWS30	0,60	3,00	1,60	38,00
F2AL0080AWS30	0,80	3,00	1,80	38,00
F2AL0100AWS30	1,00	3,00	2,00	38,00
F2AL0120AWS30	1,20	3,00	2,20	38,00
F2AL0150AWS30	1,50	3,00	2,50	38,00
F2AL0200AWS30	2,00	3,00	3,00	38,00
F2AL0250AWS30	2,50	3,00	4,00	38,00
F2AL0300AWS30	3,00	3,00	5,00	38,00

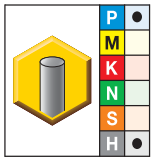
NOTE: For application data, see page M81.

End Mill Tolerances

D1	tolerance h8	D	tolerance h6
≤3	+0/-0,014	≤3	+0/-0,006
>3–6	+0/-0,018	>3–6	+0/-0,008
>6–10	+0/-0,022	>6–10	+0/-0,009
>10–18	+0/-0,027	>10–18	+0/-0,011
>18–30	+0/-0,033	>18–30	+0/-0,013

- Kennametal standard dimensions.
- Centre cutting.





● first choice
○ alternate choice

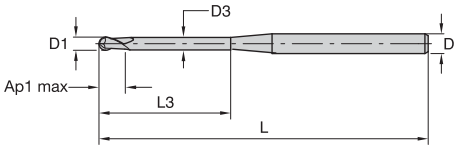
KC637M	D1	D	Ap1 max	L3	L	D3
F2AL0030AWS30L030	0,30	6,00	0,30	–	50,00	–
F2AL0040AWS30L040	0,40	6,00	0,40	–	50,00	–
F2AL0050AWS30L050	0,50	6,00	0,50	1,50	50,00	0,45
F2AL0060AWS30L060	0,60	6,00	0,60	1,80	50,00	0,55
F2AL0080AWS30L080	0,80	6,00	0,80	2,40	50,00	0,75
F2AL0100AWS30L100	1,00	6,00	1,00	2,50	50,00	0,95
F2AL0120AWS30L120	1,20	6,00	1,20	3,00	50,00	1,15
F2AL0140AWS30L140	1,40	6,00	1,40	3,50	50,00	1,35
F2AL0150AWS30L150	1,50	6,00	1,50	3,80	50,00	1,45
F2AL0160AWS30L160	1,60	6,00	1,60	4,00	50,00	1,55
F2AL0180AWS30L180	1,80	6,00	1,80	4,50	50,00	1,75
F2AL0200AWS30L200	2,00	6,00	2,00	5,00	50,00	1,95
F2AL0250AWS30L250	2,50	6,00	2,50	5,00	50,00	2,40
F2AL0300AWS30L300	3,00	6,00	3,00	6,00	50,00	2,85
F2AL0400AWS30L400	4,00	6,00	4,00	6,00	50,00	3,85
F2AL0600AWS30L600	6,00	6,00	6,00	9,00	50,00	5,85

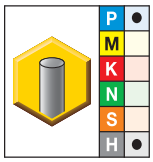
NOTE: For application data, see page M82.

End Mill Tolerances

D1	tolerance e8	D	tolerance h6
≤3	-0,014/-0,028	≤3	+0/-0,006
>3–6	-0,020/-0,038	>3–6	+0/-0,008
>6–10	-0,025/-0,047	>6–10	+0/-0,009
>10–18	-0,032/-0,059	>10–18	+0/-0,011
>18–30	-0,040/-0,073	>18–30	+0/-0,013

- Kennametal standard dimensions.
- Centre cutting.





● first choice
○ alternate choice

KC637M	D1	D	Ap1 max	L3	L	D3
F2AL0050AWM30E050	0,50	4,00	1,00	5,00	65,00	0,46
F2AL0050AWM30E080	0,50	4,00	1,00	8,00	65,00	0,46
F2AL0060AWM30E060	0,60	4,00	1,00	6,00	65,00	0,56
F2AL0060AWM30E090	0,60	4,00	1,00	9,00	65,00	0,56
F2AL0080AWM30E040	0,80	4,00	1,30	4,00	65,00	0,76
F2AL0080AWM30E080	0,80	4,00	1,30	8,00	65,00	0,76
F2AL0080AWM30E120	0,80	4,00	1,30	12,00	65,00	0,76
F2AL0080AWM30E160	0,80	4,00	1,30	16,00	65,00	0,76
F2AL0100AWM30E030	1,00	4,00	1,60	3,00	65,00	0,95
F2AL0100AWM30E060	1,00	4,00	1,60	6,00	65,00	0,95
F2AL0100AWM30E100	1,00	4,00	1,60	10,00	65,00	0,95
F2AL0100AWM30E160	1,00	4,00	1,60	16,00	65,00	0,95
F2AL0150AWM30E030	1,50	4,00	2,40	3,00	65,00	1,44
F2AL0150AWM30E060	1,50	4,00	2,40	6,00	65,00	1,44
F2AL0150AWM30E100	1,50	4,00	2,40	10,00	65,00	1,44
F2AL0150AWM30E160	1,50	4,00	2,40	16,00	65,00	1,44
F2AL0200AWM30E60	2,00	4,00	3,20	6,00	65,00	1,94
F2AL0200AWM30E100	2,00	4,00	3,20	10,00	65,00	1,94
F2AL0200AWM30E160	2,00	4,00	3,20	16,00	65,00	1,94
F2AL0200AWM30E0200	2,00	4,00	3,20	20,00	65,00	1,94
F2AL0300AWM30E080	3,00	4,00	4,50	8,00	65,00	2,92
F2AL0300AWM30E120	3,00	4,00	4,50	12,00	65,00	2,92
F2AL0300AWM30E160	3,00	4,00	4,50	16,00	65,00	2,92
F2AL0300AWM30E0300	3,00	4,00	4,50	30,00	65,00	2,92
F2AL0400AWM30E060	4,00	6,00	6,00	6,00	70,00	3,92
F2AL0400AWM30E100	4,00	6,00	6,00	10,00	70,00	3,92
F2AL0400AWM30E140	4,00	6,00	6,00	14,00	70,00	3,92
F2AL0400AWM30E160	4,00	6,00	6,00	16,00	70,00	3,92

NOTE: For application data, see page M83.

End Mill Tolerances

D1	tolerance e8	D	tolerance h6
≤3	-0,014/-0,028	≤3	+0/-0,006
>3–6	-0,020/-0,038	>3–6	+0/-0,008
>6–10	-0,025/-0,047	>6–10	+0/-0,009
>10–18	-0,032/-0,059	>10–18	+0/-0,011
>18–30	-0,040/-0,073	>18–30	+0/-0,013

F2AH...AWS30L...

Material Group		A		B	KC637M Cutting Speed — vc m/min			Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%. D1 — Diameter							
		ap	ae	ap	min	max	mm	0,3	0,5	0,8	1,0	1,5	2,0	2,5	3,0
P	2	1,25 x D	0,25 x D	0,75 x D	140	190	fz	0,0020	0,0034	0,0054	0,0069	0,0104	0,0138	0,0174	0,0210
P	3	1,25 x D	0,25 x D	0,75 x D	120	160	fz	0,0016	0,0028	0,0044	0,0057	0,0085	0,0113	0,0143	0,0173
P	4	1,25 x D	0,25 x D	0,5 x D	90	150	fz	0,0015	0,0026	0,0041	0,0052	0,0079	0,0105	0,0132	0,0159
P	5	1,25 x D	0,25 x D	0,5 x D	60	100	fz	0,0014	0,0023	0,0037	0,0047	0,0071	0,0094	0,0118	0,0143
K	1	1,25 x D	0,25 x D	0,5 x D	120	160	fz	0,0020	0,0034	0,0054	0,0069	0,0104	0,0138	0,0174	0,0210
K	2	1,25 x D	0,25 x D	0,5 x D	110	140	fz	0,0016	0,0028	0,0044	0,0057	0,0085	0,0113	0,0143	0,0173
H	1	1,25 x D	0,25 x D	0,5 x D	80	140	fz	0,0015	0,0026	0,0041	0,0052	0,0079	0,0105	0,0132	0,0159
H	2	1,25 x D	0,25 x D	0,3 x D	70	120	fz	0,0012	0,0020	0,0031	0,0079	0,0100	0,0120	0,0141	0,0162
H	3	1,25 x D	0,25 x D	0,25 x D	60	90	fz	0,0009	0,0015	0,0025	0,0062	0,0078	0,0095	0,0111	0,0127

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 with reach >3 x D, reduce fz by 20%.
For tools with reach >5 x D, reduce fz by 30%.
For tools with reach >10 x D, reduce vc and fz by 20–30%.

F2AH...AWS30...

Material Group		A		B	KC625M Cutting Speed — vc m/min			Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%. D1 — Diameter							
		ap	ae	ap	min	max	mm	0,4	0,6	0,8	1,0	1,2	1,5	2,0	3,0
P	1	1 x D	0,1 x D	0,25 x D	150	200	fz	0,003	0,004	0,005	0,007	0,008	0,010	0,014	0,020
P	2	1 x D	0,1 x D	0,25 x D	140	190	fz	0,003	0,004	0,005	0,007	0,008	0,010	0,014	0,020
P	3	1 x D	0,1 x D	0,25 x D	120	160	fz	0,002	0,003	0,004	0,006	0,007	0,008	0,011	0,017
P	4	1 x D	0,1 x D	0,25 x D	90	150	fz	0,002	0,003	0,004	0,005	0,006	0,008	0,010	0,016
P	5	1 x D	0,1 x D	0,25 x D	60	100	fz	0,002	0,003	0,004	0,005	0,006	0,007	0,009	0,014
M	1	1 x D	0,1 x D	0,25 x D	90	115	fz	0,002	0,003	0,004	0,006	0,007	0,008	0,011	0,017
M	2	1 x D	0,1 x D	0,25 x D	60	80	fz	0,002	0,003	0,004	0,005	0,006	0,007	0,009	0,014
K	1	1 x D	0,1 x D	0,25 x D	120	150	fz	0,003	0,004	0,005	0,007	0,008	0,010	0,014	0,020
K	2	1 x D	0,1 x D	0,25 x D	110	130	fz	0,002	0,003	0,004	0,006	0,007	0,008	0,011	0,017
N	1	1 x D	0,1 x D	0,25 x D	500	2000	fz	0,004	0,006	0,008	0,010	0,012	0,015	0,020	0,030
N	2	1 x D	0,1 x D	0,25 x D	500	1500	fz	0,003	0,005	0,006	0,008	0,010	0,012	0,016	0,024
N	3	1 x D	0,1 x D	0,25 x D	500	1000	fz	0,004	0,005	0,007	0,009	0,011	0,014	0,018	0,027
S	1	1 x D	0,1 x D	0,25 x D	50	90	fz	0,002	0,003	0,004	0,006	0,007	0,008	0,011	0,017
S	4	1 x D	0,1 x D	0,25 x D	60	80	fz	0,002	0,003	0,004	0,005	0,006	0,007	0,009	0,014
H	1	1 x D	0,1 x D	0,25 x D	80	140	fz	0,002	0,003	0,004	0,005	0,006	0,008	0,010	0,016

These guidelines may require possible variations to achieve optimum results.

F3AH...AWS30...

Material Group		A		B	KC635M Cutting Speed — vc m/min			Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%. D1 — Diameter						
		ap	ae	ap	min	max	mm	0,4	0,5	0,6	0,8	1,0	1,2	1,5
P	1	1 x D	0,1 x D	0,25 x D	150	200	fz	0,003	0,004	0,005	0,006	0,008	0,009	0,012
	2	1 x D	0,1 x D	0,25 x D	140	190	fz	0,003	0,004	0,005	0,006	0,008	0,009	0,012
	3	1 x D	0,1 x D	0,25 x D	120	160	fz	0,003	0,003	0,004	0,005	0,006	0,008	0,010
	4	1 x D	0,1 x D	0,25 x D	90	150	fz	0,002	0,003	0,004	0,005	0,006	0,007	0,009
M	1	1 x D	0,1 x D	0,25 x D	90	115	fz	0,003	0,003	0,004	0,005	0,006	0,008	0,010
	2	1 x D	0,1 x D	0,25 x D	60	80	fz	0,002	0,003	0,003	0,004	0,005	0,006	0,008
K	1	1 x D	0,1 x D	0,25 x D	120	150	fz	0,003	0,004	0,005	0,006	0,008	0,009	0,012
	2	1 x D	0,1 x D	0,25 x D	110	130	fz	0,003	0,003	0,004	0,005	0,006	0,008	0,010
N	1	1 x D	0,1 x D	0,25 x D	250	1000	fz	0,005	0,006	0,007	0,009	0,012	0,014	0,017
	2	1 x D	0,1 x D	0,25 x D	250	750	fz	0,004	0,005	0,006	0,007	0,009	0,011	0,014
	3	1 x D	0,1 x D	0,25 x D	250	750	fz	0,004	0,005	0,006	0,008	0,010	0,012	0,016

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.

F2AL...AWS30...

Material Group		A		KC637M Cutting Speed – vc m/min			Feed per Tooth – Finishing D1 – Diameter							
		ap	ae	min	max	mm	0,5	0,6	0,8	1,0	1,5	2,0	2,5	3,0
P	3	0,04 x D	0,04 x D	416	468	fz	0,0127	0,0153	0,0204	0,0256	0,0389	0,0522	0,0659	0,0796
	4	0,04 x D	0,04 x D	364	416	fz	0,0119	0,0143	0,0191	0,0239	0,0361	0,0484	0,0609	0,0734
H	1	0,03 x D	0,03 x D	290	406	fz	0,0127	0,0153	0,0204	0,0255	0,0386	0,0517	0,0650	0,0784
	2	0,03 x D	0,03 x D	203	348	fz	0,0096	0,0116	0,0154	0,0193	0,0292	0,0391	0,0491	0,0592
	3	0,02 x D	0,02 x D	216	324	fz	0,0081	0,0097	0,0130	0,0163	0,0245	0,0328	0,0413	0,0497
	4	0,02 x D	0,02 x D	180	252	fz	0,0054	0,0065	0,0087	0,0108	0,0164	0,0219	0,0275	0,0331

Material Group		A		KC637M Cutting Speed – vc m/min			Feed per Tooth – Semi-Finishing D1 – Diameter							
		ap	ae	min	max	mm	0,5	0,6	0,8	1,0	1,5	2,0	2,5	3,0
P	3	0,1 x D	0,05 x D	272	306	fz	0,0083	0,0099	0,0133	0,0167	0,0253	0,0339	0,0428	0,0518
	4	0,1 x D	0,05 x D	238	272	fz	0,0077	0,0093	0,0124	0,0155	0,0235	0,0314	0,0396	0,0477
H	1	0,07 x D	0,1 x D	200	280	fz	0,0097	0,0116	0,0155	0,0194	0,0294	0,0393	0,0495	0,0596
	2	0,05 x D	0,04 x D	161	276	fz	0,0084	0,0101	0,0135	0,0169	0,0255	0,0342	0,0430	0,0518
	3	0,03 x D	0,03 x D	174	261	fz	0,0076	0,0091	0,0122	0,0152	0,0230	0,0308	0,0387	0,0466
	4	0,03 x D	0,03 x D	145	203	fz	0,0051	0,0061	0,0081	0,0102	0,0153	0,0205	0,0258	0,0311

Material Group		A		KC637M Cutting Speed – vc m/min			Feed per Tooth – Roughing D1 – Diameter							
		ap	ae	min	max	mm	0,5	0,6	0,8	1,0	1,5	2,0	2,5	3,0
P	3	0,2 x D	0,1 x D	208	234	fz	0,0037	0,0044	0,0059	0,0075	0,0113	0,0152	0,0192	0,0232
	4	0,2 x D	0,1 x D	182	208	fz	0,0035	0,0042	0,0056	0,0070	0,0105	0,0141	0,0177	0,0213
H	1	0,15 x D	0,1 x D	140	196	fz	0,0052	0,0062	0,0083	0,0104	0,0157	0,0211	0,0265	0,0319
	2	0,1 x D	0,075 x D	119	204	fz	0,0059	0,0070	0,0094	0,0118	0,0178	0,0238	0,0299	0,0360
	3	0,05 x D	0,05 x D	138	207	fz	0,0066	0,0080	0,0106	0,0133	0,0201	0,0269	0,0338	0,0408
	4	0,05 x D	0,05 x D	115	161	fz	0,0044	0,0053	0,0071	0,0089	0,0134	0,0179	0,0226	0,0272

F2AL...AWS30L...

Material Group		A		KC637M			Feed per Tooth — Finishing							
				Cutting Speed — vc m/min			D1 — Diameter							
		ap	ae	min	max	mm	0,5	0,6	0,8	1,0	1,5	2,0	2,5	3,0
P	3	0,04 x D	0,04 x D	416	468	fz	0,0127	0,0153	0,0204	0,0256	0,0389	0,0522	0,0659	0,0796
	4	0,04 x D	0,04 x D	364	416	fz	0,0119	0,0143	0,0191	0,0239	0,0361	0,0484	0,0609	0,0734
H	1	0,03 x D	0,03 x D	290	406	fz	0,0127	0,0153	0,0204	0,0255	0,0386	0,0517	0,0650	0,0784
	2	0,03 x D	0,03 x D	203	348	fz	0,0096	0,0116	0,0154	0,0193	0,0292	0,0391	0,0491	0,0592
	3	0,02 x D	0,02 x D	216	324	fz	0,0081	0,0097	0,0130	0,0163	0,0245	0,0328	0,0413	0,0497
	4	0,02 x D	0,02 x D	180	252	fz	0,0054	0,0065	0,0087	0,0108	0,0164	0,0219	0,0275	0,0331

Material Group		A		KC637M			Feed per Tooth — Semi-Finishing							
				Cutting Speed — vc m/min			D1 — Diameter							
		ap	ae	min	max	mm	0,5	0,6	0,8	1,0	1,5	2,0	2,5	3,0
P	3	0,1 x D	0,05 x D	272	306	fz	0,0083	0,0099	0,0133	0,0167	0,0253	0,0339	0,0428	0,0518
	4	0,1 x D	0,05 x D	238	272	fz	0,0077	0,0093	0,0124	0,0155	0,0235	0,0314	0,0396	0,0477
H	1	0,07 x D	0,1 x D	200	280	fz	0,0097	0,0116	0,0155	0,0194	0,0294	0,0393	0,0495	0,0596
	2	0,05 x D	0,04 x D	161	276	fz	0,0084	0,0101	0,0135	0,0169	0,0255	0,0342	0,0430	0,0518
	3	0,03 x D	0,03 x D	174	261	fz	0,0076	0,0091	0,0122	0,0152	0,0230	0,0308	0,0387	0,0466
	4	0,03 x D	0,03 x D	145	203	fz	0,0051	0,0061	0,0081	0,0102	0,0153	0,0205	0,0258	0,0311

Material Group		A		KC637M			Feed per Tooth — Roughing							
				Cutting Speed — vc m/min			D1 — Diameter							
		ap	ae	min	max	mm	0,5	0,6	0,8	1,0	1,5	2,0	2,5	3,0
P	3	0,2 x D	0,1 x D	208	234	fz	0,0037	0,0044	0,0059	0,0075	0,0113	0,0152	0,0192	0,0232
	4	0,2 x D	0,1 x D	182	208	fz	0,0035	0,0042	0,0056	0,0070	0,0105	0,0141	0,0177	0,0213
H	1	0,15 x D	0,1 x D	140	196	fz	0,0052	0,0062	0,0083	0,0104	0,0157	0,0211	0,0265	0,0319
	2	0,1 x D	0,075 x D	119	204	fz	0,0059	0,0070	0,0094	0,0118	0,0178	0,0238	0,0299	0,0360
	3	0,05 x D	0,05 x D	138	207	fz	0,0066	0,0080	0,0106	0,0133	0,0201	0,0269	0,0338	0,0408
	4	0,05 x D	0,05 x D	115	161	fz	0,0044	0,0053	0,0071	0,0089	0,0134	0,0179	0,0226	0,0272

F2AL...AWM30E...

Material Group		A		KC637M Cutting Speed – vc m/min			Feed per Tooth – Finishing D1 – Diameter											
		ap	ae	min	max	mm	0,3	0,4	0,5	0,6	0,8	1,0	1,5	2,0	2,5	3,0	4,0	5,0	6,0
P	3	0,04 x D	0,04 x D	374	421	fz	0,0076	0,0102	0,0127	0,0153	0,0204	0,0256	0,0389	0,0522	0,0659	0,0796	0,1062	0,1327	0,0796
	4	0,04 x D	0,04 x D	328	374	fz	0,0071	0,0095	0,0119	0,0143	0,0191	0,0239	0,0361	0,0484	0,0609	0,0734	0,0979	0,1223	0,0734
H	1	0,03 x D	0,03 x D	261	365	fz	0,0076	0,0102	0,0127	0,0153	0,0204	0,0255	0,0386	0,0517	0,0650	0,0784	0,1045	0,1307	0,0784
	2	0,03 x D	0,03 x D	183	313	fz	0,0058	0,0077	0,0096	0,0116	0,0154	0,0193	0,0292	0,0391	0,0491	0,0592	0,0789	0,0986	0,0592
	3	0,02 x D	0,02 x D	194	292	fz	0,0049	0,0065	0,0081	0,0097	0,0130	0,0163	0,0245	0,0328	0,0413	0,0497	0,0663	0,0828	0,0497
	4	0,02 x D	0,02 x D	162	227	fz	0,0032	0,0043	0,0054	0,0065	0,0087	0,0108	0,0164	0,0219	0,0275	0,0331	0,0442	0,0552	0,0331

Material Group		A		KC637M Cutting Speed – vc m/min			Feed per Tooth – Semi-Finishing D1 – Diameter											
		ap	ae	min	max	mm	0,3	0,4	0,5	0,6	0,8	1,0	1,5	2,0	2,5	3,0	4,0	5,0	6,0
P	3	0,1 x D	0,05 x D	245	275	fz	0,0050	0,0066	0,0083	0,0099	0,0133	0,0167	0,0253	0,0339	0,0428	0,0518	0,0690	0,0863	0,0518
	4	0,1 x D	0,05 x D	214	245	fz	0,0046	0,0062	0,0077	0,0093	0,0124	0,0155	0,0235	0,0314	0,0396	0,0477	0,0636	0,0795	0,0477
H	1	0,07 x D	0,1 x D	180	252	fz	0,0058	0,0077	0,0097	0,0116	0,0155	0,0194	0,0294	0,0393	0,0495	0,0596	0,0795	0,0994	0,0596
	2	0,05 x D	0,04 x D	145	248	fz	0,0050	0,0067	0,0084	0,0101	0,0135	0,0169	0,0255	0,0342	0,0430	0,0518	0,0690	0,0863	0,0518
	3	0,03 x D	0,03 x D	157	235	fz	0,0045	0,0061	0,0076	0,0091	0,0122	0,0152	0,0230	0,0308	0,0387	0,0466	0,0621	0,0777	0,0466
	4	0,03 x D	0,03 x D	131	183	fz	0,0030	0,0040	0,0051	0,0061	0,0081	0,0102	0,0153	0,0205	0,0258	0,0311	0,0414	0,0518	0,0311

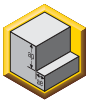
Material Group		A		KC637M Cutting Speed – vc m/min			Feed per Tooth – Roughing D1 – Diameter											
		ap	ae	min	max	mm	0,3	0,4	0,5	0,6	0,8	1,0	1,5	2,0	2,5	3,0	4,0	5,0	6,0
P	3	0,2 x D	0,1 x D	187	211	fz	0,0022	0,0030	0,0037	0,0044	0,0059	0,0075	0,0113	0,0152	0,0192	0,0232	0,0309	0,0386	0,0232
	4	0,2 x D	0,1 x D	164	187	fz	0,0021	0,0028	0,0035	0,0042	0,0056	0,0070	0,0105	0,0141	0,0177	0,0213	0,0285	0,0356	0,0213
H	1	0,15 x D	0,1 x D	126	176	fz	0,0031	0,0041	0,0052	0,0062	0,0083	0,0104	0,0157	0,0211	0,0265	0,0319	0,0426	0,0532	0,0319
	2	0,1 x D	0,075 x D	107	184	fz	0,0035	0,0047	0,0059	0,0070	0,0094	0,0118	0,0178	0,0238	0,0299	0,0360	0,0480	0,0600	0,0360
	3	0,05 x D	0,05 x D	124	186	fz	0,0040	0,0053	0,0066	0,0080	0,0106	0,0133	0,0201	0,0269	0,0338	0,0408	0,0544	0,0680	0,0408
	4	0,05 x D	0,05 x D	104	145	fz	0,0027	0,0035	0,0044	0,0053	0,0071	0,0089	0,0134	0,0179	0,0226	0,0272	0,0362	0,0453	0,0272

High-Performance Solid Carbide End Mills • Finishing

Features and Benefits

- Best surface finish.
- Keyway cutter portfolio.
- High helix portfolio.
- Multiflute finisher.

Applications:



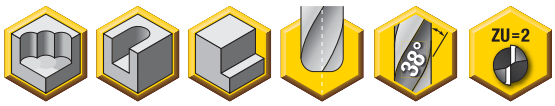
Side Milling

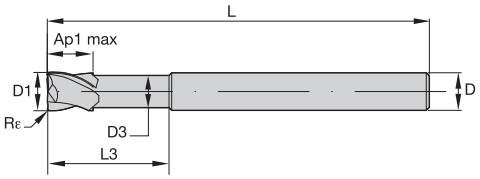
Slotting

Workpiece Materials:

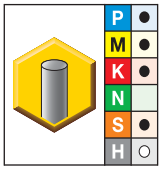
P	Steel
M	Stainless Steel
K	Cast Iron
N	Non-Ferrous Materials
S	High-Temp Alloys
H	Hardened Materials

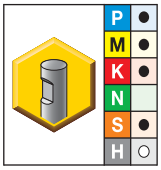
- Kennametal standard dimensions.
- Centre cutting.





NEW!





● first choice
○ alternate choice

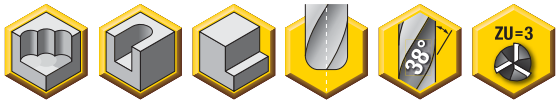
KC643M	KC643M	D1	D	D3	Ap1 max	L	L3	Rε
F2AU0180ADK38	–	1,80	4,00	1,77	2,00	36,00	8,00	0,12
F2AU0280ADK38	**F2AU0280BDK38**	2,80	6,00	2,77	4,00	50,00	14,00	0,12
–	**F2AU0380BDK38**	3,80	6,00	3,76	5,00	54,00	18,00	0,12
F2AU0380ADK38	–	3,80	6,00	3,76	5,00	54,00	18,00	0,12
F2AU0480ADK38	**F2AU0480BDK38**	4,80	6,00	4,76	6,00	54,00	18,00	0,20
F2AU0575ADK38	**F2AU0575BDK38**	5,75	6,00	5,71	7,00	54,00	18,00	0,20
F2AU0775ADK38	**F2AU0775BDK38**	7,75	8,00	7,70	9,00	58,00	22,00	0,20
F2AU0970ADK38	**F2AU0970BDK38**	9,70	10,00	9,65	11,00	66,00	26,00	0,33
F2AU1170ADK38	**F2AU1170BDK38**	11,70	12,00	11,64	12,00	73,00	28,00	0,33
F2AU1370ADK38	**F2AU1370BDK38**	13,70	14,00	13,64	14,00	75,00	30,00	0,33
F2AU1570ADK38	**F2AU1570BDK38**	15,70	16,00	15,64	16,00	82,00	34,00	0,33
F2AU1770ADK38	**F2AU1770BDK38**	17,70	18,00	17,64	18,00	84,00	36,00	0,40
F2AU1970ADK38	**F2AU1970BDK38**	19,70	20,00	19,63	20,00	92,00	42,00	0,40

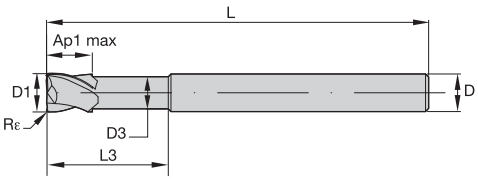
NOTE: For application data, see page M92.

End Mill Tolerances

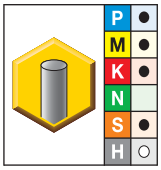
D1	tolerance e8	D	tolerance h6
≤3	-0,014/-0,028	≤3	+0/-0,006
>3–6	-0,020/-0,038	>3–6	+0/-0,008
>6–10	-0,025/-0,047	>6–10	+0/-0,009
>10–18	-0,032/-0,059	>10–18	+0/-0,011
>18–30	-0,040/-0,073	>18–30	+0/-0,013

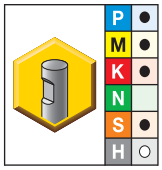
- Kennametal standard dimensions.
- Centre cutting.





NEW!





● first choice
○ alternate choice

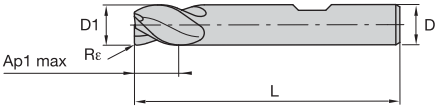
KC643M	KC643M	D1	D	D3	Ap1 max	L	L3	Rε
F3AU0280ADK38	**F3AU0280BDK38**	2,80	6,00	2,77	4,00	50,00	14,00	0,12
F3AU0380ADK38	**F3AU0380BDK38**	3,80	6,00	3,76	5,00	54,00	18,00	0,12
F3AU0480ADK38	**F3AU0480BDK38**	4,80	6,00	4,76	6,00	54,00	18,00	0,20
F3AU0575ADK38	**F3AU0575BDK38**	5,75	6,00	5,71	7,00	54,00	18,00	0,20
F3AU0775ADK38	**F3AU0775BDK38**	7,75	8,00	7,70	9,00	58,00	22,00	0,20
F3AU0970ADK38	**F3AU0970BDK38**	9,70	10,00	9,65	11,00	66,00	26,00	0,33
F3AU1170ADK38	**F3AU1170BDK38**	11,70	12,00	11,64	12,00	73,00	28,00	0,33
F3AU1370ADK38	**F3AU1370BDK38**	13,70	14,00	13,64	14,00	75,00	30,00	0,33
F3AU1570ADK38	**F3AU1570BDK38**	15,70	16,00	15,64	16,00	82,00	34,00	0,33
F3AU1770ADK38	**F3AU1770BDK38**	17,70	18,00	17,64	18,00	84,00	36,00	0,40
F3AU1970ADK38	**F3AU1970BDK38**	19,70	20,00	19,63	20,00	92,00	42,00	0,40

NOTE: For application data, see page M92.

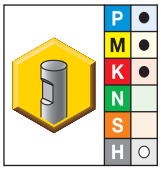
End Mill Tolerances

D1	tolerance e8	D	tolerance h6
≤3	-0,014/-0,028	≤3	+0/-0,006
>3–6	-0,020/-0,038	>3–6	+0/-0,008
>6–10	-0,025/-0,047	>6–10	+0/-0,009
>10–18	-0,032/-0,059	>10–18	+0/-0,011
>18–30	-0,040/-0,073	>18–30	+0/-0,013

• Centre cutting.



beyond



● first choice
○ alternate choice

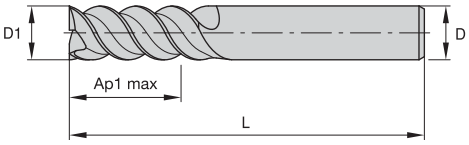
KCPM15	D1	D	Ap1 max	L	Rε
F3AS0300BDK35	3,00	6,00	4,00	50,00	0,25
F3AS0400BDK35	4,00	6,00	5,00	54,00	0,25
F3AS0500BDK35	5,00	6,00	6,00	54,00	0,25
F3AS0600BDK35	6,00	6,00	7,00	54,00	0,45
F3AS0800BDK35	8,00	8,00	9,00	58,00	0,45
F3AS1000BDK35	10,00	10,00	11,00	66,00	0,45
F3AS1200BDK35	12,00	12,00	12,00	73,00	0,45
F3AS1400BDK35	14,00	14,00	14,00	75,00	0,45
F3AS1600BDK35	16,00	16,00	16,00	82,00	0,45
F3AS1800BDK35	18,00	18,00	18,00	84,00	0,45
F3AS2000BDK35	20,00	20,00	20,00	92,00	0,45

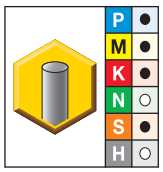
NOTE: For application data, see page M93.

End Mill Tolerances

D1	tolerance e8	D	tolerance h6
≤3	-0,014/-0,028	≤3	+0/-0,006
>3–6	-0,020/-0,038	>3–6	+0/-0,008
>6–10	-0,025/-0,047	>6–10	+0/-0,009
>10–18	-0,032/-0,059	>10–18	+0/-0,011
>18–30	-0,040/-0,073	>18–30	+0/-0,013

• Centre cutting.





● first choice
○ alternate choice

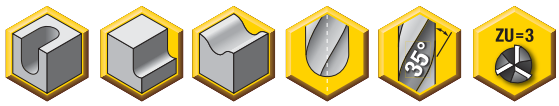
KC625M	D1	D	Ap1 max	L
F3AJ0600ADL60	6,00	6,00	13,00	57,00
F3AJ0800ADL60	8,00	8,00	19,00	63,00
F3AJ1000ADL60	10,00	10,00	22,00	72,00
F3AJ1200ADL60	12,00	12,00	26,00	83,00
F3AJ1400ADL60	14,00	14,00	26,00	83,00
F3AJ1600ADL60	16,00	16,00	32,00	92,00
F3AJ1800ADL60	18,00	18,00	32,00	92,00
F3AJ2000ADL60	20,00	20,00	38,00	104,00

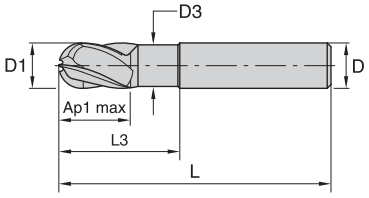
NOTE: For application data, see page M93.

End Mill Tolerances

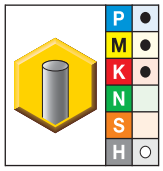
D1	tolerance e8	D	tolerance h6
≤3	-0,014/-0,028	≤3	+0/-0,006
>3–6	-0,020/-0,038	>3–6	+0/-0,008
>6–10	-0,025/-0,047	>6–10	+0/-0,009
>10–18	-0,032/-0,059	>10–18	+0/-0,011
>18–30	-0,040/-0,073	>18–30	+0/-0,013

- Kennametal standard dimensions.
- Centre cutting.





beyond



● first choice
○ alternate choice

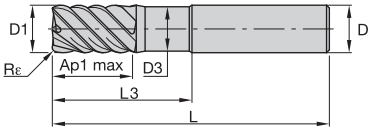
KCPM15	D1	D	Ap1 max	L3	L	D3
F3AW0600AWL35E120	6,00	6,00	6,00	12,00	76,00	5,80
F3AW0800AWL35E160	8,00	8,00	8,00	16,00	100,00	7,80
F3AW1000AWX35E200	10,00	10,00	10,00	20,00	121,50	9,50
F3AW1200AWX35E240	12,00	12,00	12,00	24,00	125,00	11,50
F3AW1600AWX35E320	16,00	16,00	16,00	32,00	150,00	15,00

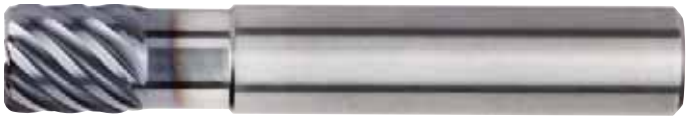
NOTE: For application data, see page M94.

End Mill Tolerances

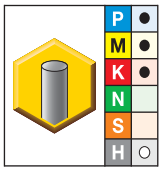
D1	tolerance e8	D	tolerance h6
All	+0/-0,03	≤3	+0/-0,006
		>3–6	+0/-0,008
		>6–10	+0/-0,009
		>10–18	+0/-0,011
		>18–30	+0/-0,013

• Centre cutting.





beyond



● first choice
○ alternate choice

KCPM15	D1	D	Ap1 max	L3	L	Rε	D3	Z U
F8AJ0800ADK45E160	8,00	8,00	8,00	16,00	58,00	1,00	7,00	8
F8AJ1000ADK45E200	10,00	10,00	10,00	20,00	66,00	1,00	9,00	8
F8AJ1200ADK45E240	12,00	12,00	12,00	24,00	73,00	1,00	11,00	8
F10AJ1600ADK45E320	16,00	16,00	16,00	32,00	82,00	1,00	15,00	10
F10AJ2000ADK45E400	20,00	20,00	20,00	40,00	92,00	1,00	19,00	10

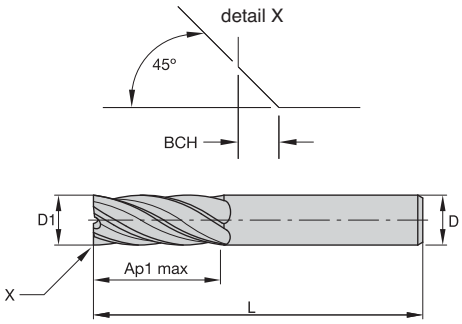
NOTE: For application data, see page M94.

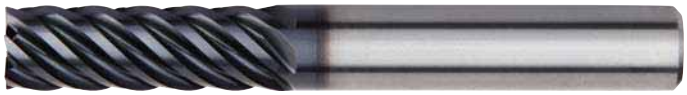
Solid End Milling

End Mill Tolerances

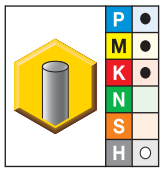
D1	tolerance e8	D	tolerance h6
≤3	-0,014/-0,028	≤3	+0/-0,006
>3–6	-0,020/-0,038	>3–6	+0/-0,008
>6–10	-0,025/-0,047	>6–10	+0/-0,009
>10–18	-0,032/-0,059	>10–18	+0/-0,011
>18–30	-0,040/-0,073	>18–30	+0/-0,013

• Non-centre cutting.





beyond



● first choice
○ alternate choice

KCPM15	D1	D	Ap1 max	L	BCH	Z U
F6AJ0600ADL45	6,00	6,00	13,00	57,00	0,10	6
F6AJ0600AWM45	6,00	6,00	18,00	62,00	0,10	6
F6AJ0800ADL45	8,00	8,00	19,00	63,00	0,20	6
F6AJ0800AWM45	8,00	8,00	24,00	68,00	0,20	6
F6AJ1000ADL45	10,00	10,00	22,00	72,00	0,30	6
F6AJ1000AWL45	10,00	10,00	30,00	80,00	0,30	6
F6AJ1200ADL45	12,00	12,00	26,00	83,00	0,30	6
F6AJ1200AWL45	12,00	12,00	36,00	93,00	0,30	6
F6AJ1400ADL45	14,00	14,00	26,00	83,00	0,30	6
F6AJ1600ADL45	16,00	16,00	32,00	92,00	0,40	6
F6AJ1600AWX45	16,00	16,00	48,00	108,00	0,40	6
F8AJ2000AWX45	20,00	20,00	60,00	126,00	0,40	8
F8AJ2500AWX45	25,00	25,00	75,00	150,00	0,40	8

NOTE: For application data, see page M95.

End Mill Tolerances

D1	tolerance e8	D	tolerance h6
≤3	-0,014/-0,028	≤3	+0/-0,006
>3–6	-0,020/-0,038	>3–6	+0/-0,008
>6–10	-0,025/-0,047	>6–10	+0/-0,009
>10–18	-0,032/-0,059	>10–18	+0/-0,011
>18–30	-0,040/-0,073	>18–30	+0/-0,013

	Corner Chamfer (chamfer height)	
D1 h10	BCH	tolerance
2–6,75	0,10	-0,05
6,76–9,7	0,20	-0,10
9,71–15,7	0,30	-0,10
15,71–25	0,40	-0,20

F2AU...A/BDK38...

Material Group		A ap	A ae	B ap	K633M Cutting Speed — vc m/min min	K633M Cutting Speed — vc m/min max	mm	Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%. D1 — Diameter 2,0	3,0	4,0	6,0	8,0	10,0	12,0
P	1	1 x D	0,5 x D	0,75 x D	150	200	fz	0,014	0,021	0,028	0,044	0,060	0,072	0,083
	2	1 x D	0,5 x D	0,75 x D	140	190	fz	0,014	0,021	0,028	0,044	0,060	0,072	0,083
	3	1 x D	0,5 x D	0,75 x D	120	160	fz	0,011	0,017	0,023	0,036	0,050	0,061	0,070
	4	1 x D	0,5 x D	0,75 x D	90	150	fz	0,010	0,016	0,021	0,033	0,045	0,054	0,062
	5	1 x D	0,5 x D	0,75 x D	60	100	fz	0,009	0,014	0,019	0,029	0,040	0,048	0,056
	6	1 x D	0,5 x D	0,75 x D	50	75	fz	0,008	0,012	0,016	0,025	0,034	0,040	0,047
M	1	1 x D	0,5 x D	0,75 x D	90	115	fz	0,011	0,017	0,023	0,036	0,050	0,061	0,070
	2	1 x D	0,5 x D	0,75 x D	60	80	fz	0,009	0,014	0,019	0,029	0,040	0,048	0,056
	3	1 x D	0,5 x D	0,75 x D	60	70	fz	0,008	0,012	0,016	0,025	0,034	0,040	0,047
K	1	1 x D	0,5 x D	0,75 x D	120	150	fz	0,014	0,021	0,028	0,044	0,060	0,072	0,083
	2	1 x D	0,5 x D	0,75 x D	110	130	fz	0,011	0,017	0,023	0,036	0,050	0,061	0,070
	3	1 x D	0,5 x D	0,75 x D	100	130	fz	0,009	0,014	0,019	0,029	0,040	0,048	0,056
S	1	1 x D	0,3 x D	0,3 x D	50	90	fz	0,011	0,017	0,023	0,036	0,050	0,061	0,070
	2	1 x D	0,3 x D	0,3 x D	50	90	fz	0,011	0,017	0,023	0,036	0,050	0,061	0,070
	3	1 x D	0,3 x D	0,3 x D	25	40	fz	0,006	0,009	0,013	0,019	0,026	0,032	0,037
	4	1 x D	0,5 x D	0,75 x D	50	60	fz	0,007	0,011	0,016	0,026	0,037	0,045	0,052
H	1	1 x D	0,5 x D	0,75 x D	80	140	fz	0,010	0,016	0,021	0,033	0,045	0,054	0,062

F3AU...A/BDK38...

Material Group		A ap	A ae	B ap	K633M Cutting Speed — vc m/min min	K633M Cutting Speed — vc m/min max	mm	Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%. D1 — Diameter 2,0	3,0	4,0	6,0	8,0	10,0	12,0
P	1	1 x D	0,5 x D	0,75 x D	150	200	fz	0,014	0,021	0,028	0,044	0,060	0,072	0,083
	2	1 x D	0,5 x D	0,75 x D	140	190	fz	0,014	0,021	0,028	0,044	0,060	0,072	0,083
	3	1 x D	0,5 x D	0,75 x D	120	160	fz	0,011	0,017	0,023	0,036	0,050	0,061	0,070
	4	1 x D	0,5 x D	0,75 x D	90	150	fz	0,010	0,016	0,021	0,033	0,045	0,054	0,062
	5	1 x D	0,5 x D	0,75 x D	60	100	fz	0,009	0,014	0,019	0,029	0,040	0,048	0,056
	6	1 x D	0,5 x D	0,75 x D	50	75	fz	0,008	0,012	0,016	0,025	0,034	0,040	0,047
M	1	1 x D	0,5 x D	0,75 x D	90	115	fz	0,011	0,017	0,023	0,036	0,050	0,061	0,070
	2	1 x D	0,5 x D	0,75 x D	60	80	fz	0,009	0,014	0,019	0,029	0,040	0,048	0,056
	3	1 x D	0,5 x D	0,75 x D	60	70	fz	0,008	0,012	0,016	0,025	0,034	0,040	0,047
K	1	1 x D	0,5 x D	0,75 x D	120	150	fz	0,014	0,021	0,028	0,044	0,060	0,072	0,083
	2	1 x D	0,5 x D	0,75 x D	110	130	fz	0,011	0,017	0,023	0,036	0,050	0,061	0,070
	3	1 x D	0,5 x D	0,75 x D	100	130	fz	0,009	0,014	0,019	0,029	0,040	0,048	0,056
S	1	1 x D	0,3 x D	0,3 x D	50	90	fz	0,011	0,017	0,023	0,036	0,050	0,061	0,070
	2	1 x D	0,3 x D	0,3 x D	50	90	fz	0,011	0,017	0,023	0,036	0,050	0,061	0,070
	3	1 x D	0,3 x D	0,3 x D	25	40	fz	0,006	0,009	0,013	0,019	0,026	0,032	0,037
	4	1 x D	0,5 x D	0,75 x D	50	60	fz	0,007	0,011	0,016	0,026	0,037	0,045	0,052
H	1	1 x D	0,5 x D	0,75 x D	80	140	fz	0,010	0,016	0,021	0,033	0,045	0,054	0,062

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 centres, please adjust parameters accordingly on >12mm diameter.

F3AS...DK

Material Group		A ap	A ae	B ap	KCPM15 Cutting Speed — vc m/min min	KCPM15 Cutting Speed — vc m/min max	mm	Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%. D1 — Diameter 3,0	4,0	6,0	8,0	10,0	12,0	16,0	20,0
P	1	0,75 x D	0,4 x D	0,5 x D	150	200	fz	0,021	0,028	0,044	0,060	0,072	0,083	0,101	0,114
	2	0,75 x D	0,4 x D	0,5 x D	140	190	fz	0,021	0,028	0,044	0,060	0,072	0,083	0,101	0,114
	3	0,75 x D	0,4 x D	0,5 x D	120	160	fz	0,018	0,023	0,036	0,050	0,061	0,070	0,087	0,101
	4	0,75 x D	0,4 x D	0,3 x D	90	150	fz	0,016	0,021	0,033	0,045	0,054	0,062	0,077	0,088
	5	0,75 x D	0,4 x D	0,5 x D	60	100	fz	0,014	0,019	0,029	0,040	0,048	0,056	0,070	0,081
	6	0,75 x D	0,4 x D	0,3 x D	50	75	fz	0,012	0,016	0,025	0,034	0,040	0,047	0,057	0,065
M	1	0,75 x D	0,4 x D	0,5 x D	80	100	fz	0,018	0,023	0,036	0,050	0,061	0,070	0,087	0,101
	2	0,75 x D	0,4 x D	0,5 x D	60	80	fz	0,014	0,019	0,029	0,040	0,048	0,056	0,070	0,081
	3	0,75 x D	0,4 x D	0,5 x D	60	80	fz	0,012	0,016	0,025	0,034	0,040	0,047	0,057	0,065
K	1	0,75 x D	0,4 x D	0,5 x D	120	160	fz	0,021	0,028	0,044	0,060	0,072	0,083	0,101	0,114
	2	0,75 x D	0,4 x D	0,5 x D	110	140	fz	0,018	0,023	0,036	0,050	0,061	0,070	0,087	0,101
	3	0,75 x D	0,4 x D	0,5 x D	100	130	fz	0,014	0,019	0,029	0,040	0,048	0,056	0,070	0,081
H	1	0,75 x D	0,4 x D	0,3 x D	100	140	fz	0,016	0,021	0,033	0,045	0,054	0,062	0,077	0,088

F3AJ...ADL60...

Material Group		A ap	A ae	B ap	KC625M Cutting Speed — vc m/min min	KC625M Cutting Speed — vc m/min max	mm	Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%. D1 — Diameter 3,0	4,0	5,0	6,0	8,0	10,0	12,0	16,0	20,0
P	3	1,5 x D	0,3 x D	0,5 x D	120	160	fz	0,015	0,019	0,024	0,029	0,040	0,048	0,056	0,070	0,081
	4	1,5 x D	0,3 x D	0,3 x D	90	150	fz	0,013	0,017	0,022	0,026	0,036	0,043	0,050	0,061	0,070
	5	1,5 x D	0,3 x D	0,5 x D	60	100	fz	0,012	0,015	0,019	0,024	0,032	0,039	0,045	0,056	0,065
	6	1,5 x D	0,3 x D	0,3 x D	50	75	fz	0,010	0,013	0,016	0,020	0,027	0,032	0,037	0,046	0,052
M	1	1,5 x D	0,3 x D	0,5 x D	80	100	fz	0,015	0,019	0,024	0,029	0,040	0,048	0,056	0,070	0,081
	2	1,5 x D	0,3 x D	0,5 x D	60	80	fz	0,012	0,015	0,019	0,024	0,032	0,039	0,045	0,056	0,065
	3	1,5 x D	0,3 x D	0,5 x D	60	80	fz	0,010	0,013	0,016	0,020	0,027	0,032	0,037	0,046	0,052
K	1	1,5 x D	0,3 x D	0,5 x D	120	160	fz	0,018	0,023	0,029	0,035	0,048	0,058	0,066	0,081	0,091
	2	1,5 x D	0,3 x D	0,5 x D	110	140	fz	0,015	0,019	0,024	0,029	0,040	0,048	0,056	0,070	0,081
	3	1,5 x D	0,3 x D	0,5 x D	100	130	fz	0,012	0,015	0,019	0,024	0,032	0,039	0,045	0,056	0,065
S	1	1,5 x D	0,3 x D	0,3 x D	50	90	fz	0,015	0,019	0,024	0,029	0,040	0,048	0,056	0,070	0,081
	2	1,5 x D	0,3 x D	0,3 x D	20	40	fz	0,008	0,010	0,013	0,016	0,021	0,026	0,030	0,037	0,043
	3	1,5 x D	0,3 x D	0,5 x D	50	80	fz	0,012	0,015	0,019	0,024	0,032	0,039	0,045	0,056	0,065
	4	1,5 x D	0,3 x D	0,3 x D	45	65	fz	0,010	0,013	0,017	0,021	0,029	0,036	0,041	0,051	0,059
H	1	1,5 x D	0,3 x D	0,5 x D	80	140	fz	0,013	0,017	0,022	0,026	0,036	0,043	0,050	0,061	0,070

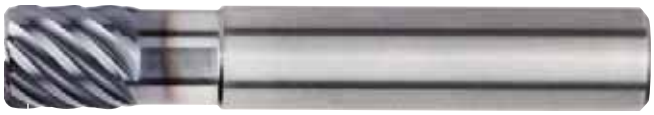
Lower value of cutting speed is used for high stock removal applications or for higher hardness (machinability) within group.
Higher value of cutting speed is used for finishing applications or for lower hardness (machinability) within group.
Above parameters are based on ideal conditions. For smaller taper machining centres, please adjust parameters accordingly on >12mm diameter.

F3AW...WL-WX

Material Group		A ap	A ae	B ap	KCPM15 Cutting Speed — vc m/min min	KCPM15 Cutting Speed — vc m/min max	mm	Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%. D1 — Diameter 3,0	5,0	6,0	8,0	10,0	12,0	16,0	20,0	20,0
P	1	1 x D	0,5 x D	1 x D	150	200	fz	0,022	0,036	0,044	0,060	0,072	0,083	0,101	0,114	0,114
	2	1 x D	0,5 x D	1 x D	140	190	fz	0,022	0,036	0,044	0,060	0,072	0,083	0,101	0,114	0,114
	3	1 x D	0,5 x D	1 x D	120	160	fz	0,018	0,030	0,036	0,050	0,061	0,070	0,087	0,101	0,101
	4	1 x D	0,5 x D	1 x D	90	150	fz	0,016	0,027	0,033	0,045	0,054	0,062	0,077	0,088	0,088
	5	1 x D	0,5 x D	1 x D	60	100	fz	0,015	0,024	0,029	0,040	0,048	0,056	0,070	0,081	0,081
	6	1 x D	0,5 x D	1 x D	50	75	fz	0,012	0,020	0,025	0,034	0,040	0,047	0,057	0,065	0,065
M	1	1 x D	0,5 x D	1 x D	80	100	fz	0,018	0,030	0,036	0,050	0,061	0,070	0,087	0,101	0,101
	2	1 x D	0,5 x D	1 x D	60	80	fz	0,015	0,024	0,029	0,040	0,048	0,056	0,070	0,081	0,081
	3	1 x D	0,5 x D	1 x D	60	80	fz	0,012	0,020	0,025	0,034	0,040	0,047	0,057	0,065	0,065
K	1	1 x D	0,5 x D	1 x D	120	160	fz	0,022	0,036	0,044	0,060	0,072	0,083	0,101	0,114	0,114
	2	1 x D	0,5 x D	1 x D	110	140	fz	0,018	0,030	0,036	0,050	0,061	0,070	0,087	0,101	0,101
	3	1 x D	0,5 x D	1 x D	100	130	fz	0,015	0,024	0,029	0,040	0,048	0,056	0,070	0,081	0,081
H	1	1 x D	0,5 x D	1 x D	100	140	fz	0,016	0,027	0,033	0,045	0,054	0,062	0,077	0,088	0,088

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 centres, please adjust parameters accordingly on >12mm diameter.

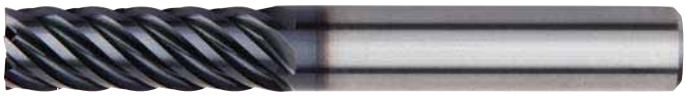
F8AJ-F10AJ...DK



Material Group		A ap	A ae	KCPM15 Cutting Speed — vc m/min min	KCPM15 Cutting Speed — vc m/min max	mm	Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%. D1 — Diameter 6,0	8,0	10,0	12,0	14,0	16,0	18,0	20,0
P	1	1 x D	0,05 x D	150	200	fz	0,044	0,060	0,072	0,083	0,092	0,101	0,108	0,114
	2	1 x D	0,05 x D	140	190	fz	0,044	0,060	0,072	0,083	0,092	0,101	0,108	0,114
	3	1 x D	0,05 x D	120	160	fz	0,036	0,050	0,061	0,070	0,079	0,087	0,095	0,101
	4	1 x D	0,04 x D	90	150	fz	0,033	0,045	0,054	0,062	0,070	0,077	0,083	0,088
	5	1 x D	0,05 x D	60	100	fz	0,029	0,040	0,048	0,056	0,063	0,070	0,076	0,081
	6	1 x D	0,04 x D	50	75	fz	0,025	0,034	0,040	0,047	0,052	0,057	0,061	0,065
M	1	1 x D	0,05 x D	80	100	fz	0,036	0,050	0,061	0,070	0,079	0,087	0,095	0,101
	2	1 x D	0,05 x D	60	80	fz	0,029	0,040	0,048	0,056	0,063	0,070	0,076	0,081
	3	1 x D	0,05 x D	60	80	fz	0,025	0,034	0,040	0,047	0,052	0,057	0,061	0,065
K	1	1 x D	0,05 x D	120	160	fz	0,044	0,060	0,072	0,083	0,092	0,101	0,108	0,114
	2	1 x D	0,05 x D	110	140	fz	0,036	0,050	0,061	0,070	0,079	0,087	0,095	0,101
	3	1 x D	0,05 x D	100	130	fz	0,029	0,040	0,048	0,056	0,063	0,070	0,076	0,081
H	1	1 x D	0,04 x D	80	140	fz	0,033	0,045	0,054	0,062	0,070	0,077	0,083	0,088

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.
Above parameters are based on ideal conditions. For smaller taper machining centres, please adjust parameters accordingly on >12mm diameter.

F6AJ-F8AJ...DL • Multiflute • Long • Extra Long



Material Group		A		KCPM15			Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%.							
				Cutting Speed — vc m/min			D1 — Diameter							
		ap	ae	min	max	mm	6,0	8,0	10,0	12,0	14,0	16,0	18,0	20,0
P	1	1,5 x D	0,05 x D	150	200	fz	0,044	0,060	0,072	0,083	0,092	0,101	0,108	0,114
	2	1,5 x D	0,05 x D	140	190	fz	0,044	0,060	0,072	0,083	0,092	0,101	0,108	0,114
	3	1,5 x D	0,05 x D	120	160	fz	0,036	0,050	0,061	0,070	0,079	0,087	0,095	0,101
	4	1,5 x D	0,04 x D	90	150	fz	0,033	0,045	0,054	0,062	0,070	0,077	0,083	0,088
	5	1,5 x D	0,05 x D	60	100	fz	0,029	0,040	0,048	0,056	0,063	0,070	0,076	0,081
	6	1,5 x D	0,04 x D	50	75	fz	0,025	0,034	0,040	0,047	0,052	0,057	0,061	0,065
M	1	1,5 x D	0,05 x D	80	100	fz	0,036	0,050	0,061	0,070	0,079	0,087	0,095	0,101
	2	1,5 x D	0,05 x D	60	80	fz	0,029	0,040	0,048	0,056	0,063	0,070	0,076	0,081
	3	1,5 x D	0,05 x D	60	80	fz	0,025	0,034	0,040	0,047	0,052	0,057	0,061	0,065
K	1	1,5 x D	0,05 x D	120	160	fz	0,044	0,060	0,072	0,083	0,092	0,101	0,108	0,114
	2	1,5 x D	0,05 x D	110	140	fz	0,036	0,050	0,061	0,070	0,079	0,087	0,095	0,101
	3	1,5 x D	0,05 x D	100	130	fz	0,029	0,040	0,048	0,056	0,063	0,070	0,076	0,081
H	1	1,5 x D	0,04 x D	80	140	fz	0,033	0,045	0,054	0,062	0,070	0,077	0,083	0,088

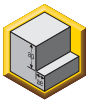
Lower value of cutting speed is used for high stock removal applications or for higher hardness (machinability) within group.
Higher value of cutting speed is used for finishing applications or for lower hardness (machinability) within group.
For better surface finish, reduce feed per tooth.
Above parameters are based on ideal conditions. For smaller taper machining centres, please adjust parameters accordingly on >12mm diameter.

High-Performance Solid Carbide End Mills • Roughing

Features and Benefits

- Highest metal removal rates.
- Innovative roughing geometries.
- End mills with internal coolant.
- Different radius styles.

Applications:



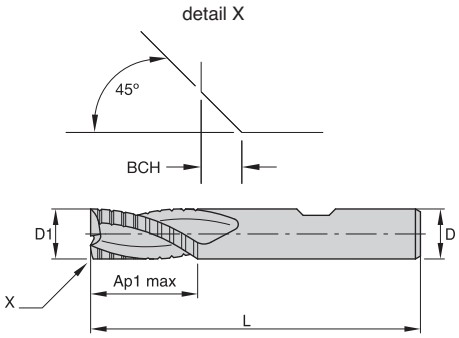
Side Milling

Slotting

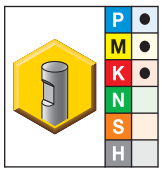
Workpiece Materials:

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

- Centre cutting.
- Semi-finishing profile.



beyond



● first choice
○ alternate choice

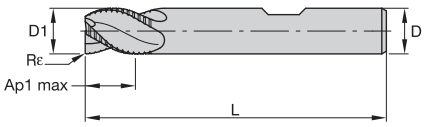
KCPM15	D1	D	Ap1 max	L	BCH
F3BH0400BDL30	4,00	6,00	8,00	57,00	0,10
F3BH0500BDL30	5,00	6,00	13,00	57,00	0,10
F3BH0600BDL30	6,00	6,00	13,00	57,00	0,10
F3BH0800BDL30	8,00	8,00	16,00	63,00	0,20
F3BH1000BDL30	10,00	10,00	19,00	72,00	0,30
F3BH1200BDL30	12,00	12,00	22,00	83,00	0,30
F3BH1600BDL30	16,00	16,00	26,00	92,00	0,40
F3BH2000BDL30	20,00	20,00	32,00	104,00	0,40
F3BH2500BDL30	25,00	25,00	45,00	121,00	0,40

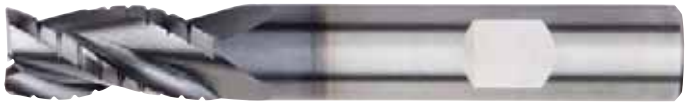
NOTE: For application data, see page M106.

End Mill Tolerances

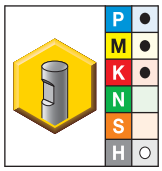
D1	tolerance h11	D	tolerance h6
≤3	+0/-0,060	≤3	+0/-0,006
>3–6	+0/-0,075	>3–6	+0/-0,008
>6–10	+0/-0,090	>6–10	+0/-0,009
>10–18	+0/-0,110	>10–18	+0/-0,011
>18–30	+0/-0,130	>18–30	+0/-0,013

- Centre cutting.
- Chipbreaker profile.





beyond



● first choice
○ alternate choice

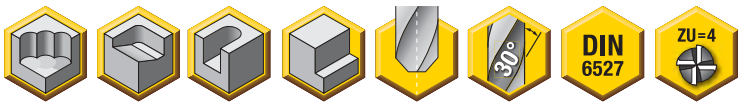
KCPM15	D1	D	Ap1 max	L	Rε
F3BS0600BDK35	6,00	6,00	7,00	54,00	0,45
F3BS0600BDL35	6,00	6,00	10,00	57,00	0,45
F3BS0800BDK35	8,00	8,00	9,00	58,00	0,45
F3BS0800BDL35	8,00	8,00	16,00	63,00	0,45
F3BS1000BDK35	10,00	10,00	11,00	66,00	0,45
F3BS1000BDL35	10,00	10,00	19,00	72,00	0,45
F3BS1200BDK35	12,00	12,00	12,00	73,00	0,45
F3BS1200BDL35	12,00	12,00	22,00	83,00	0,45
F3BS1400BDK35	14,00	14,00	14,00	75,00	0,45
F3BS1400BDL35	14,00	14,00	22,00	83,00	0,45
F3BS1600BDK35	16,00	16,00	16,00	82,00	0,45
F3BS1600BDL35	16,00	16,00	26,00	92,00	0,45
F3BS2000BDK35	20,00	20,00	20,00	92,00	0,45
F3BS2000BDL35	20,00	20,00	32,00	104,00	0,45

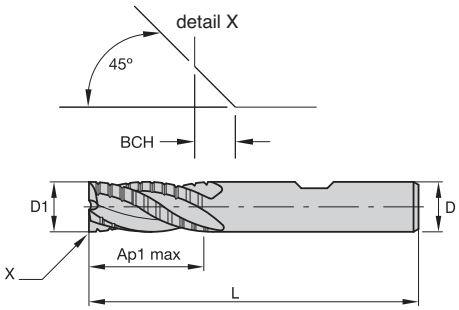
NOTE: For application data, see page M106.

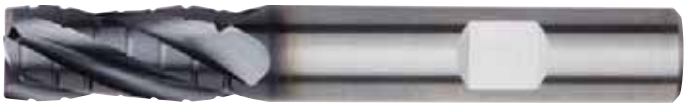
End Mill Tolerances

D1	tolerance d11	D	Tolerance h6
≤3	-0,020/-0,080	≤3	+0/-0,006
>3–6	-0,030/-0,105	>3–6	+0/-0,008
>6–10	-0,040/-0,130	>6–10	+0/-0,009
>10–18	-0,050/-0,160	>10–18	+0/-0,011
>18–30	-0,065/-0,195	>18–30	+0/-0,013

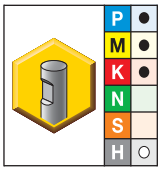
- Centre cutting.
- Semi-finishing profile.







beyond



● first choice
○ alternate choice

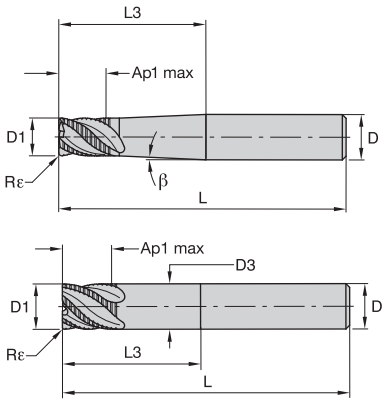
KCPM15	D1	D	Ap1 max	L	BCH
F4BJ0600BDL30	6,00	6,00	13,00	57,00	0,10
F4BJ0800BDL30	8,00	8,00	19,00	63,00	0,20
F4BJ1000BDL30	10,00	10,00	22,00	72,00	0,30
F4BJ1200BDL30	12,00	12,00	26,00	83,00	0,30
F4BJ1400BDL30	14,00	14,00	26,00	83,00	0,30
F4BJ1600BDL30	16,00	16,00	32,00	92,00	0,40
F4BJ1800BDL30	18,00	18,00	32,00	92,00	0,40
F4BJ2000BDL30	20,00	20,00	38,00	104,00	0,40

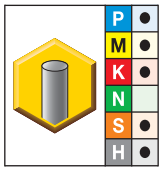
NOTE: For application data, see page M107.

End Mill Tolerances

D1	tolerance h11	D	tolerance h6
≤3	+0/-0,060	≤3	+0/-0,006
>3–6	+0/-0,075	>3–6	+0/-0,008
>6–10	+0/-0,090	>6–10	+0/-0,009
>10–18	+0/-0,110	>10–18	+0/-0,011
>18–30	+0/-0,130	>18–30	+0/-0,013

- Kennametal standard dimensions.
- Centre cutting.
- Flat shallow-pitch profile.





● first choice
○ alternate choice

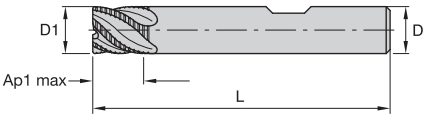
KC633M	D1	D	Ap1 max	L	L3	Rε	D3	Z U
F3BT0400AWM45R075	4,00	6,00	4,00	75,00	4,00	0,75	–	3
F3BT0500AWM45R075	5,00	6,00	5,00	75,00	5,00	0,75	–	3
F4BT0600AWL45R075	6,00	10,00	6,00	100,00	6,00	0,75	–	4
F4BT0800AWL45R075	8,00	10,00	8,00	100,00	8,00	0,75	–	4
F4BT1000AWX45R075	10,00	12,00	10,00	125,00	10,00	0,75	–	4
F4BT1200AWX45R100	12,00	16,00	12,00	125,00	12,00	1,00	–	4
F6BT2000AWX45R125	20,00	20,00	20,00	150,00	20,00	1,25	19,00	6
F6BT2500AWX45R125	25,00	25,00	25,00	150,00	25,00	1,25	24,00	6

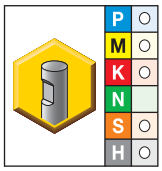
NOTE: For application data, see page M107.

End Mill Tolerances

D1	tolerance d11	D	tolerance h6
≤3	-0,020/-0,080	≤3	+0/-0,006
>3–6	-0,030/-0,105	>3–6	+0/-0,008
>6–10	-0,040/-0,130	>6–10	+0/-0,009
>10–18	-0,050/-0,160	>10–18	+0/-0,011
>18–30	-0,065/-0,195	>18–30	+0/-0,013

- Centre cutting.
- Shallow-pitch profile.





● first choice
○ alternate choice

KC633M	D1	D	Ap1 max	L	Z U
F4BJ0600BDL45L060	6,00	6,00	6,00	57,00	4
F4BJ0800BDL45L080	8,00	8,00	8,00	63,00	4
F4BJ1000BDL45L100	10,00	10,00	10,00	72,00	4
F4BJ1200BDL45L120	12,00	12,00	12,00	83,00	4

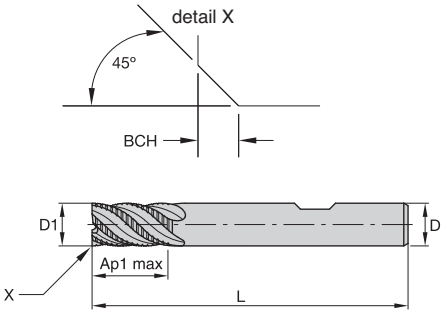
NOTE: For application data, see page M108.

End Mill Tolerances

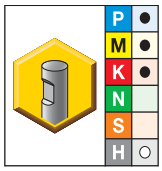
D1	tolerance d11	D	tolerance h6
≤ 3	-0,020/-0,080	≤ 3	+0/-0,006
>3–6	-0,030/-0,105	>3–6	+0/-0,008
>6–10	-0,040/-0,130	>6–10	+0/-0,009
>10–18	-0,050/-0,160	>10–18	+0/-0,011
>18–30	-0,065/-0,195	>18–30	+0/-0,013

	Corner Radius (chamfer height)	
D1 d11	R	tolerance
6–11,99	0,75	± 0,05
12–19,99	1,00	± 0,05
20–25	1,25	± 0,05

- Centre cutting.
- Shallow-pitch profile.



beyond



KCPM15	D1	D	Ap1 max	L	BCH	Z U
F4BJ0600BDL45	6,00	6,00	13,00	57,00	0,10	4
F4BJ0800BDL45	8,00	8,00	19,00	63,00	0,20	4
F4BJ1000BDL45	10,00	10,00	22,00	72,00	0,30	4
F4BJ1200BDL45	12,00	12,00	26,00	83,00	0,30	4
F6BJ1600BDL45	16,00	16,00	32,00	92,00	1,00	6
F6BJ2000BDL45	20,00	20,00	38,00	104,00	1,25	6
F6BJ2500BDL45	25,00	25,00	45,00	121,00	1,25	6

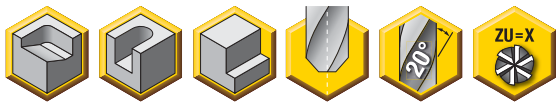
NOTE: For application data, see page M108.

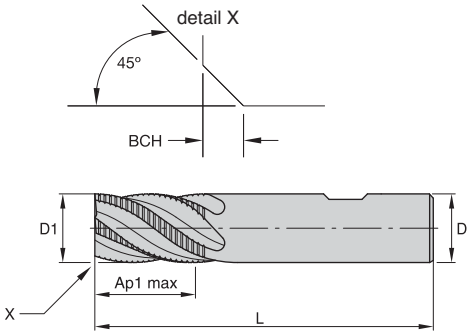
End Mill Tolerances

D1	tolerance h11	D	tolerance h6
≤ 3	+0/-0,060	≤ 3	+0/-0,006
>3–6	+0/-0,075	>3–6	+0/-0,008
>6–10	+0/-0,090	>6–10	+0/-0,009
>10–18	+0/-0,110	>10–18	+0/-0,011
>18–30	+0/-0,130	>18–30	+0/-0,013

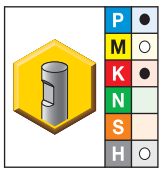
	Corner Chamfer (chamfer height)	
D1 h10	BCH	tolerance
2–6,75	0,10	-0,05
6,76–9,7	0,20	-0,10
9,71–15,7	0,30	-0,10
15,71–25	0,40	-0,20

- Kennametal standard dimensions.
- Centre cutting.
- Fine-pitch profile.





beyond



● first choice
○ alternate choice

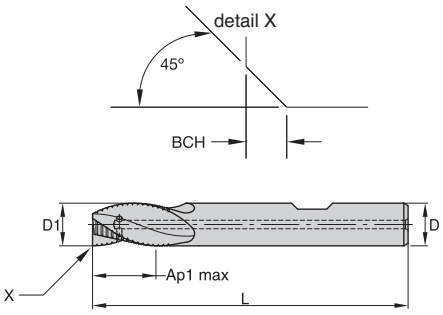
KCPM15	D1	D	Ap1 max	L	BCH	Z U
F3BH0400BWS20L110	4,00	6,00	11,00	55,00	0,30	3
F3BH0500BWS20L130	5,00	6,00	13,00	57,00	0,30	3
F3BH0600BWS20L080	6,00	6,00	8,00	54,00	0,30	3
F3BH0600BWS20L130	6,00	6,00	13,00	57,00	0,30	3
F3BH0800BWS20L110	8,00	8,00	11,00	58,00	0,30	3
F3BH0800BWM20L160	8,00	8,00	16,00	63,00	0,30	3
F4BJ1000BWM20L130	10,00	10,00	13,00	66,00	0,50	4
F4BJ1000BWM20L220	10,00	10,00	22,00	72,00	0,50	4
F4BJ1200BWM20L160	12,00	12,00	16,00	73,00	0,50	4
F4BJ1200BWL20L260	12,00	12,00	26,00	83,00	0,50	4
F4BJ1400BWL20L260	14,00	14,00	26,00	83,00	0,50	4
F4BJ1600BWL20L190	16,00	16,00	19,00	82,00	0,50	4
F4BJ1600BWL20L320	16,00	16,00	32,00	92,00	0,50	4
F4BJ2000BWL20L220	20,00	20,00	22,00	92,00	0,50	4
F4BJ2000BWX20L380	20,00	20,00	38,00	104,00	0,50	4
F5BJ2500BWX20L450	25,00	25,00	45,00	121,00	0,50	5

NOTE: For application data, see page M109.

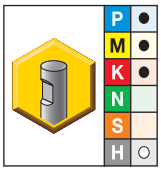
End Mill Tolerances

D1	tolerance d11	D	tolerance h6
≤ 3	-0,020/-0,080	≤ 3	+0/-0,006
>3–6	-0,030/-0,105	>3–6	+0/-0,008
>6–10	-0,040/-0,130	>6–10	+0/-0,009
>10–18	-0,050/0,160	>10–18	+0/-0,011
>18–30	-0,065/-0,195	>18–30	+0/-0,013

- Kennametal standard dimensions.
- Centre cutting.
- Fine-pitch profile.



beyond



● first choice
○ alternate choice

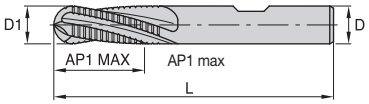
KCPM15	D1	D	Ap1 max	L	BCH	Z U
F3BH0800BWS20C110	8,00	8,00	11,00	58,00	0,30	3
F3BH0800BWM20C160	8,00	8,00	16,00	63,00	0,30	3
F4BJ1000BWM20C130	10,00	10,00	13,00	66,00	0,50	4
F4BJ1000BWM20C220	10,00	10,00	22,00	72,00	0,50	4
F4BJ1200BWM20C160	12,00	12,00	16,00	73,00	0,50	4
F4BJ1200BWL20C260	12,00	12,00	26,00	83,00	0,50	4
F4BJ1600BWL20C190	16,00	16,00	19,00	82,00	0,50	4
F4BJ1600BWL20C320	16,00	16,00	32,00	92,00	0,50	4
F4BJ2000BWL20C220	20,00	20,00	22,00	92,00	0,50	4
F4BJ2000BWX20C380	20,00	20,00	38,00	104,00	0,50	4

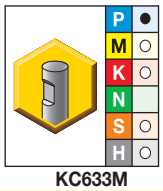
NOTE: For application data, see page M109.

End Mill Tolerances

D1	tolerance d11	D	tolerance h6
≤3	-0,020/-0,080	≤3	+0/-0,006
>3–6	-0,030/-0,105	>3–6	+0/-0,008
>6–10	-0,040/-0,130	>6–10	+0/-0,009
>10–18	-0,050/-0,160	>10–18	+0/-0,011
>18–30	-0,065/-0,195	>18–30	+0/-0,013

- Kennametal standard dimensions.
- Centre cutting.
- Roughing profile.





● first choice
○ alternate choice

KC633M	D1	D	Ap1 max	L	Z U
F3BL0600BWS20	6,00	6,00	13,00	57,00	3
F3BL0800BWM20	8,00	8,00	16,00	63,00	3

NOTE: For application data, see page M110.

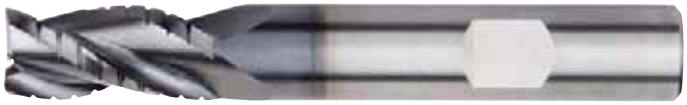
End Mill Tolerances

D1	tolerance d11	D	tolerance h6
≤3	-0,020/-0,080	≤3	+0/-0,006
>3–6	-0,030/-0,105	>3–6	+0/-0,008
>6–10	-0,040/-0,130	>6–10	+0/-0,009
>10–18	-0,050/-0,160	>10–18	+0/-0,011
>18–30	-0,065/-0,195	>18–30	+0/-0,013

F3BH...DL • DIN 6527 • Long • Steel

Material Group		A		B	KCPM15			Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%.							
					Cutting Speed — vc m/min			D1 — Diameter							
		ap	ae	ap	min	max	mm	3,0	4,0	6,0	8,0	10,0	12,0	16,0	20,0
P	1	1 x D	0,4 x D	0,75 x D	150	200	fz	0,021	0,028	0,044	0,060	0,072	0,083	0,101	0,114
	2	1 x D	0,4 x D	0,75 x D	140	190	fz	0,021	0,028	0,044	0,060	0,072	0,083	0,101	0,114
	3	1 x D	0,4 x D	0,75 x D	120	160	fz	0,018	0,023	0,036	0,050	0,061	0,070	0,087	0,101
	4	1 x D	0,3 x D	0,3 x D	90	150	fz	0,016	0,021	0,033	0,045	0,054	0,062	0,077	0,088
	3	1 x D	0,4 x D	0,75 x D	60	100	fz	0,014	0,019	0,029	0,040	0,048	0,056	0,070	0,081
	4	1 x D	0,3 x D	0,3 x D	50	75	fz	0,012	0,016	0,025	0,034	0,040	0,047	0,057	0,065
M	1	1 x D	0,4 x D	0,75 x D	80	100	fz	0,018	0,023	0,036	0,050	0,061	0,070	0,087	0,101
	2	1 x D	0,4 x D	0,75 x D	60	80	fz	0,014	0,019	0,029	0,040	0,048	0,056	0,070	0,081
	3	1 x D	0,4 x D	0,75 x D	60	80	fz	0,012	0,016	0,025	0,034	0,040	0,047	0,057	0,065
K	1	1 x D	0,4 x D	0,75 x D	120	160	fz	0,021	0,028	0,044	0,060	0,072	0,083	0,101	0,114
	2	1 x D	0,4 x D	0,75 x D	110	140	fz	0,018	0,023	0,036	0,050	0,061	0,070	0,087	0,101
	3	1 x D	0,4 x D	0,75 x D	100	130	fz	0,014	0,019	0,029	0,040	0,048	0,056	0,070	0,081

F3BS...DK-DL • DIN 6527 • Short • Long • Steel • Stainless Steel



Material Group		A		B	KCPM15			Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%.							
					Cutting Speed — vc m/min			D1 — Diameter							
		ap	ae	ap	min	max	mm	3,0	4,0	6,0	8,0	10,0	12,0	16,0	20,0
P	1	1 x D	0,4 x D	0,75 x D	150	200	fz	0,021	0,028	0,044	0,060	0,072	0,083	0,101	0,114
	2	1 x D	0,4 x D	0,75 x D	140	190	fz	0,021	0,028	0,044	0,060	0,072	0,083	0,101	0,114
	3	1 x D	0,4 x D	0,75 x D	120	160	fz	0,018	0,023	0,036	0,050	0,061	0,070	0,087	0,101
	4	1 x D	0,3 x D	0,3 x D	90	150	fz	0,016	0,021	0,033	0,045	0,054	0,062	0,077	0,088
	5	1 x D	0,4 x D	0,75 x D	60	100	fz	0,014	0,019	0,029	0,040	0,048	0,056	0,070	0,081
	6	1 x D	0,3 x D	0,3 x D	50	75	fz	0,012	0,016	0,025	0,034	0,040	0,047	0,057	0,065
M	1	1 x D	0,4 x D	0,75 x D	80	100	fz	0,018	0,023	0,036	0,050	0,061	0,070	0,087	0,101
	2	1 x D	0,4 x D	0,75 x D	60	80	fz	0,014	0,019	0,029	0,040	0,048	0,056	0,070	0,081
	3	1 x D	0,4 x D	0,75 x D	60	80	fz	0,012	0,016	0,025	0,034	0,040	0,047	0,057	0,065
K	1	1 x D	0,4 x D	0,75 x D	120	160	fz	0,021	0,028	0,044	0,060	0,072	0,083	0,101	0,114
	2	1 x D	0,4 x D	0,75 x D	110	140	fz	0,018	0,023	0,036	0,050	0,061	0,070	0,087	0,101
	3	1 x D	0,4 x D	0,75 x D	100	130	fz	0,014	0,019	0,029	0,040	0,048	0,056	0,070	0,081
H	1	1 x D	0,3 x D	0,3 x D	100	140	fz	0,016	0,021	0,033	0,045	0,054	0,062	0,077	0,088

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 centres, please adjust parameters accordingly on >12mm diameter.

F4BJ...DL • DIN 6527 • Long • Steel

Material Group		A		B	KCPM15 Cutting Speed — vc m/min			Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%. D1 — Diameter										
		ap	ae	ap	min	max	mm	4,0	5,0	6,0	8,0	10,0	12,0	14,0	16,0	18,0	20,0	25,0
P	1	1,5 x D	0,4 x D	1 x D	150	200	fz	0,028	0,036	0,044	0,060	0,072	0,083	0,092	0,101	0,107	0,114	0,143
	2	1,5 x D	0,4 x D	1 x D	140	190	fz	0,028	0,036	0,044	0,060	0,072	0,083	0,092	0,101	0,107	0,114	0,143
	3	1,5 x D	0,4 x D	0,75 x D	120	160	fz	0,023	0,030	0,036	0,050	0,061	0,070	0,079	0,087	0,094	0,101	0,126
	4	1,5 x D	0,3 x D	0,3 x D	90	150	fz	0,021	0,027	0,033	0,045	0,054	0,062	0,070	0,077	0,082	0,088	0,110
	5	1,5 x D	0,4 x D	0,75 x D	60	100	fz	0,019	0,024	0,029	0,040	0,048	0,056	0,063	0,070	0,075	0,081	0,101
	6	1,5 x D	0,3 x D	0,3 x D	50	75	fz	0,016	0,020	0,025	0,034	0,040	0,047	0,052	0,057	0,061	0,065	0,081
M	1	1,5 x D	0,4 x D	0,75 x D	80	100	fz	0,023	0,030	0,036	0,050	0,061	0,070	0,079	0,087	0,094	0,101	0,126
	2	1,5 x D	0,4 x D	0,75 x D	60	80	fz	0,019	0,024	0,029	0,040	0,048	0,056	0,063	0,070	0,075	0,081	0,101
	3	1,5 x D	0,4 x D	0,75 x D	60	80	fz	0,016	0,020	0,025	0,034	0,040	0,047	0,052	0,057	0,061	0,065	0,081
K	1	1,5 x D	0,4 x D	1 x D	120	160	fz	0,028	0,036	0,044	0,060	0,072	0,083	0,092	0,101	0,107	0,114	0,143
	2	1,5 x D	0,4 x D	1 x D	110	140	fz	0,023	0,030	0,036	0,050	0,061	0,070	0,079	0,087	0,094	0,101	0,126
	3	1,5 x D	0,4 x D	1 x D	100	130	fz	0,019	0,024	0,029	0,040	0,048	0,056	0,063	0,070	0,075	0,081	0,101
H	1	1,5 x D	0,3 x D	0,3 x D	100	140	fz	0,021	0,027	0,033	0,045	0,054	0,062	0,070	0,077	0,082	0,088	0,110

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 centres, please adjust parameters accordingly on >12mm diameter.

F3/4/6BT...AWM/L/X45R...

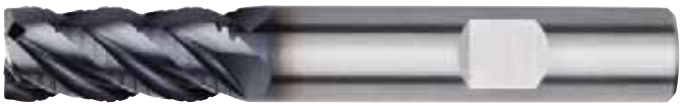
Material Group		A		B	K633M Cutting Speed — vc m/min			Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%. D1 — Diameter								
		ap	ae	ap	min	max	mm	4,0	5,0	6,0	8,0	10,0	12,0	16,0	20,0	25,0
P	3	0,8 x D	0,5 x D	0,75 x D	160	180	fz	0,020	0,025	0,031	0,043	0,051	0,063	0,078	0,101	0,114
	4	0,8 x D	0,4 x D	0,5 x D	140	160	fz	0,018	0,023	0,028	0,038	0,046	0,056	0,069	0,088	0,098
	5	0,8 x D	0,5 x D	0,75 x D	60	100	fz	0,016	0,021	0,025	0,034	0,041	0,051	0,063	0,081	0,091
	6	0,8 x D	0,4 x D	0,5 x D	50	80	fz	0,014	0,017	0,021	0,029	0,034	0,042	0,051	0,065	0,071
M	1	0,8 x D	0,5 x D	0,75 x D	80	100	fz	0,020	0,025	0,031	0,043	0,051	0,063	0,078	0,101	0,114
	2	0,8 x D	0,4 x D	0,75 x D	60	80	fz	0,016	0,021	0,025	0,034	0,041	0,051	0,063	0,081	0,091
	3	0,8 x D	0,4 x D	0,75 x D	60	80	fz	0,014	0,017	0,021	0,029	0,034	0,042	0,051	0,065	0,071
K	1	0,8 x D	0,5 x D	0,75 x D	120	160	fz	0,024	0,031	0,037	0,051	0,061	0,075	0,091	0,114	0,124
	2	0,8 x D	0,5 x D	0,75 x D	110	140	fz	0,020	0,025	0,031	0,043	0,051	0,063	0,078	0,101	0,114
	3	0,8 x D	0,4 x D	0,75 x D	100	130	fz	0,016	0,021	0,025	0,034	0,041	0,051	0,063	0,081	0,091
S	1	0,8 x D	0,4 x D	0,75 x D	90	115	fz	0,020	0,025	0,031	0,043	0,051	0,063	0,078	0,101	0,114
	2	0,8 x D	0,25 x D	0,3 x D	20	40	fz	0,011	0,014	0,017	0,022	0,027	0,033	0,042	0,054	0,061
	3	0,8 x D	0,4 x D	0,75 x D	50	80	fz	0,016	0,021	0,025	0,034	0,041	0,051	0,063	0,081	0,091
	4	0,8 x D	0,3 x D	0,5 x D	45	65	fz	0,013	0,018	0,022	0,031	0,038	0,046	0,058	0,074	0,084
H	1	0,8 x D	0,5 x D	0,5 x D	120	140	fz	0,018	0,023	0,028	0,038	0,046	0,056	0,069	0,088	0,098
	2	0,8 x D	0,2 x D	0,3 x D	80	130	fz	0,014	0,017	0,021	0,029	0,034	0,042	0,051	0,065	0,071
	3	0,8 x D	0,15 x D	0,2 x D	70	100	fz	0,011	0,014	0,017	0,023	0,027	0,034	0,041	0,052	0,057

These guidelines may require possible 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 60% of table value.
Above parameters are based on ideal conditions. For smaller taper machining centres, please adjust parameters accordingly on >12mm diameter.

F4BJ-F6BJ...DL • DIN 6527

Material Group		A		B	KC633M			Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%.						
					Cutting Speed — vc m/min			D1 — Diameter						
		ap	ae	ap	min	max	mm	6,0	8,0	10,0	12,0	16,0	20,0	25,0
P	3	0,8 x D	0,5 x D	0,75 x D	120	160	fz	0,031	0,043	0,051	0,063	0,078	0,101	0,114
	4	0,8 x D	0,4 x D	0,5 x D	90	150	fz	0,028	0,038	0,046	0,056	0,069	0,088	0,098
	5	0,8 x D	0,5 x D	0,75 x D	60	100	fz	0,025	0,034	0,041	0,051	0,063	0,081	0,091
	6	0,8 x D	0,4 x D	0,5 x D	50	75	fz	0,021	0,029	0,034	0,042	0,051	0,065	0,071
M	1	0,8 x D	0,5 x D	0,75 x D	80	100	fz	0,031	0,043	0,051	0,063	0,078	0,101	0,114
	2	0,8 x D	0,4 x D	0,75 x D	60	80	fz	0,025	0,034	0,041	0,051	0,063	0,081	0,091
	3	0,8 x D	0,4 x D	0,75 x D	60	80	fz	0,021	0,029	0,034	0,042	0,051	0,065	0,071
K	1	0,8 x D	0,5 x D	0,75 x D	120	160	fz	0,037	0,051	0,061	0,075	0,091	0,114	0,124
	2	0,8 x D	0,5 x D	0,75 x D	110	140	fz	0,031	0,043	0,051	0,063	0,078	0,101	0,114
	3	0,8 x D	0,4 x D	0,75 x D	100	130	fz	0,025	0,034	0,041	0,051	0,063	0,081	0,091
S	1	0,8 x D	0,4 x D	0,75 x D	50	90	fz	0,031	0,043	0,051	0,063	0,078	0,101	0,114
	2	0,8 x D	0,4 x D	0,75 x D	50	90	fz	0,031	0,043	0,051	0,063	0,078	0,101	0,114
	3	0,8 x D	0,25 x D	0,3 x D	20	40	fz	0,017	0,022	0,027	0,033	0,042	0,054	0,061
	4	0,8 x D	0,3 x D	0,5 x D	45	65	fz	0,022	0,031	0,038	0,046	0,058	0,074	0,084
H	1	0,8 x D	0,5 x D	0,5 x D	80	140	fz	0,028	0,038	0,046	0,056	0,069	0,088	0,098
	2	0,8 x D	0,2 x D	0,3 x D	70	120	fz	0,021	0,029	0,034	0,042	0,051	0,065	0,071
	3	0,8 x D	0,2 x D	0,2 x D	60	90	fz	0,017	0,023	0,027	0,034	0,041	0,052	0,057

F4BJ-F6BJ...DL • DIN 6527



Material Group		A		B	KCPM15			Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%.						
					Cutting Speed — vc m/min			D1 — Diameter						
		ap	ae	ap	min	max	mm	6,0	8,0	10,0	12,0	16,0	20,0	25,0
P	3	1 x D	0,5 x D	0,5 x D	120	160	fz	0,031	0,043	0,051	0,063	0,078	0,101	0,114
	4	1 x D	0,3 x D	0,4 x D	90	150	fz	0,028	0,038	0,046	0,056	0,069	0,088	0,098
	5	1 x D	0,5 x D	0,5 x D	60	100	fz	0,025	0,034	0,041	0,051	0,063	0,081	0,091
	6	1 x D	0,3 x D	0,4 x D	50	75	fz	0,021	0,029	0,034	0,042	0,051	0,065	0,071
M	1	1 x D	0,5 x D	0,5 x D	80	100	fz	0,031	0,043	0,051	0,063	0,078	0,101	0,114
	2	1 x D	0,5 x D	0,5 x D	60	80	fz	0,025	0,034	0,041	0,051	0,063	0,081	0,091
	3	1 x D	0,5 x D	0,5 x D	60	80	fz	0,021	0,029	0,034	0,042	0,051	0,065	0,071
K	1	1 x D	0,5 x D	0,5 x D	120	160	fz	0,037	0,051	0,061	0,075	0,091	0,114	0,124
	2	1 x D	0,5 x D	0,5 x D	110	140	fz	0,031	0,043	0,051	0,063	0,078	0,101	0,114
	3	1 x D	0,5 x D	0,5 x D	100	130	fz	0,025	0,034	0,041	0,051	0,063	0,081	0,091
H	1	1 x D	0,3 x D	0,3 x D	80	140	fz	0,028	0,038	0,046	0,056	0,069	0,088	0,098
	2	1 x D	0,2 x D	0,2 x D	70	120	fz	0,021	0,029	0,034	0,042	0,051	0,065	0,071
	3	1 x D	0,2 x D	0,2 x D	60	90	fz	0,017	0,023	0,027	0,034	0,041	0,052	0,057

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 centres, please adjust parameters accordingly on >12mm diameter.

F3BH-F4BJ-F5BJ...WS-WM-WL-WX

Material Group		A		B	KCPM15			Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%.						
					Cutting Speed — vc m/min			D1 — Diameter						
		ap	ae	ap	min	max	mm	8,0	10,0	12,0	14,0	16,0	18,0	20,0
P	1	1,5 x D	0,5 x D	1 x D	150	200	fz	0,049	0,059	0,072	0,080	0,087	0,093	0,098
	2	1,5 x D	0,5 x D	1 x D	140	190	fz	0,049	0,059	0,072	0,080	0,087	0,093	0,098
	3	1,5 x D	0,4 x D	0,75 x D	120	160	fz	0,041	0,049	0,061	0,068	0,075	0,082	0,087
	4	1 x D	0,3 x D	0,5 x D	90	150	fz	0,037	0,044	0,054	0,060	0,066	0,072	0,076
	5	1,5 x D	0,4 x D	0,75 x D	60	100	fz	0,033	0,039	0,049	0,055	0,060	0,065	0,070
M	1	1 x D	0,4 x D	0,75 x D	80	100	fz	0,041	0,049	0,061	0,068	0,075	0,082	0,087
	2	1 x D	0,4 x D	0,75 x D	60	80	fz	0,033	0,039	0,049	0,055	0,060	0,065	0,070
	3	1 x D	0,4 x D	0,75 x D	60	80	fz	0,026	0,032	0,039	0,044	0,048	0,052	0,056
K	1	1,5 x D	0,5 x D	1 x D	120	160	fz	0,049	0,059	0,072	0,080	0,087	0,093	0,098
	2	1,5 x D	0,4 x D	1 x D	110	140	fz	0,041	0,049	0,061	0,068	0,075	0,082	0,087
	3	1,5 x D	0,4 x D	1 x D	100	130	fz	0,033	0,039	0,049	0,055	0,060	0,065	0,070
H	1	1,0 x D	0,3 x D	0,5 x D	80	140	fz	0,037	0,044	0,054	0,060	0,066	0,072	0,076

F3BH-F4BJ...WS-WM-WL-WX • Internal Coolant

Material Group		A		B	KCPM15			Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%.						
					Cutting Speed — vc m/min			D1 — Diameter						
		ap	ae	ap	min	max	mm	8,0	10,0	12,0	14,0	16,0	18,0	20,0
P	1	1,5 x D	0,5 x D	1 x D	150	200	fz	0,049	0,059	0,072	0,080	0,087	0,093	0,098
	2	1,5 x D	0,5 x D	1 x D	140	190	fz	0,049	0,059	0,072	0,080	0,087	0,093	0,098
	3	1,5 x D	0,4 x D	0,75 x D	120	160	fz	0,041	0,049	0,061	0,068	0,075	0,082	0,087
	4	1 x D	0,3 x D	0,5 x D	90	150	fz	0,037	0,044	0,054	0,060	0,066	0,072	0,076
	5	1,5 x D	0,4 x D	0,75 x D	60	100	fz	0,033	0,039	0,049	0,055	0,060	0,065	0,070
M	1	1 x D	0,4 x D	0,75 x D	80	100	fz	0,041	0,049	0,061	0,068	0,075	0,082	0,087
	2	1 x D	0,4 x D	0,75 x D	60	80	fz	0,033	0,039	0,049	0,055	0,060	0,065	0,070
	3	1 x D	0,4 x D	0,75 x D	60	80	fz	0,026	0,032	0,039	0,044	0,048	0,052	0,056
K	1	1,5 x D	0,5 x D	1 x D	120	160	fz	0,049	0,059	0,072	0,080	0,087	0,093	0,098
	2	1,5 x D	0,4 x D	1 x D	110	140	fz	0,041	0,049	0,061	0,068	0,075	0,082	0,087
	3	1,5 x D	0,4 x D	1 x D	100	130	fz	0,033	0,039	0,049	0,055	0,060	0,065	0,070
H	1	1,0 x D	0,3 x D	0,5 x D	80	140	fz	0,037	0,044	0,054	0,060	0,066	0,072	0,076

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 centres, please adjust parameters accordingly on >12mm diameter.

F3BL...BWS/M...

Material Group		A		B	KC633M			Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%.							
					Cutting Speed — vc m/min			D1 — Diameter							
		ap	ae	ap	min	max	mm	6,0	8,0	10,0	12,0	14,0	16,0	18,0	20,0
P	1	1.5 x D	0.5 x D	1 x D	150	200	fz	0,037	0,049	0,059	0,072	0,080	0,087	0,093	0,098
	2	1.5 x D	0.5 x D	1 x D	140	190	fz	0,037	0,049	0,059	0,072	0,080	0,087	0,093	0,098
	3	1.5 x D	0.4 x D	0,75 x D	120	160	fz	0,031	0,041	0,049	0,061	0,068	0,075	0,082	0,087
	4	1 x D	0.3 x D	0,5 x D	90	150	fz	0,027	0,037	0,044	0,054	0,060	0,066	0,072	0,076
	5	1.5 x D	0.4 x D	0,75 x D	60	100	fz	0,024	0,033	0,039	0,049	0,055	0,060	0,065	0,070
M	1	1 x D	0.4 x D	0,75 x D	80	100	fz	0,031	0,041	0,049	0,061	0,068	0,075	0,082	0,087
	2	1 x D	0.4 x D	0,75 x D	60	80	fz	0,024	0,033	0,039	0,049	0,055	0,060	0,065	0,070
	3	1 x D	0.4 x D	0,75 x D	60	80	fz	0,020	0,026	0,032	0,039	0,044	0,048	0,052	0,056
K	1	1.5 x D	0.5 x D	1 x D	120	160	fz	0,037	0,049	0,059	0,072	0,080	0,087	0,093	0,098
	2	1.5 x D	0.4 x D	1 x D	110	140	fz	0,031	0,041	0,049	0,061	0,068	0,075	0,082	0,087
	3	1.5 x D	0.4 x D	1 x D	100	130	fz	0,024	0,033	0,039	0,049	0,055	0,060	0,065	0,070
S	1	1.5 x D	0.4 x D	0,75 x D	50	90	fz	0,031	0,041	0,049	0,061	0,068	0,075	0,082	0,087
	3	1.5 x D	0.4 x D	0,75 x D	50	80	fz	0,024	0,033	0,039	0,049	0,055	0,060	0,065	0,070
H	1	1 x D	0.3 x D	0,5 x D	80	140	fz	0,027	0,037	0,044	0,054	0,060	0,066	0,072	0,076

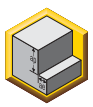
Lower value of cutting speed is used for high stock removal applications or for higher hardness (machinability) within group.
Higher value of cutting speed is used for finishing applications or for lower hardness (machinability) within group.
Above parameters are based on ideal conditions. For smaller taper machining centers, please adjust parameters accordingly on >12,0mm diameter.

General Application • Solid Carbide End Mills

Features and Benefits

- Wide range of diameters.
- Short, regular, long, and extra-long overall lengths.
- Different coatings.
- DIN and factory-standard end mills.

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.

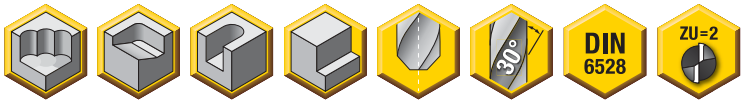
Portfolio:

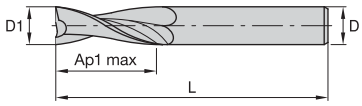
- 4-flute square end, chamfer corner, Ø 4–12mm.
- 3-flute square end, sharp corner, Ø 2–12mm.
- 3-flute ball nose, Ø 2–12mm.
- 2-flute ball nose, Ø 2–12mm.

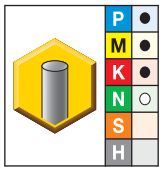
Functions:

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

• Centre cutting.







● first choice
○ alternate choice

KC633M	D1	D	Ap1 max	L
F2AH0400ADN30	4,00	4,00	8,00	50,00
F2AH0450ADN30	4,50	4,50	8,00	50,00
F2AH0500ADN30	5,00	5,00	10,00	50,00
F2AH0550ADN30	5,50	5,50	10,00	57,00
F2AH0600ADN30	6,00	6,00	10,00	57,00
F2AH0650ADN30	6,50	6,50	13,00	60,00
F2AH0700ADN30	7,00	7,00	13,00	60,00
F2AH0750ADN30	7,50	7,50	16,00	63,00
F2AH0800ADN30	8,00	8,00	16,00	63,00
F2AH0850ADN30	8,50	8,50	16,00	67,00
F2AH0900ADN30	9,00	9,00	16,00	67,00
F2AH0950ADN30	9,50	9,50	19,00	72,00
F2AH1000ADN30	10,00	10,00	19,00	72,00
F2AH1100ADN30	11,00	11,00	22,00	83,00
F2AH1200ADN30	12,00	12,00	22,00	83,00
F2AH1300ADN30	13,00	13,00	22,00	83,00
F2AH1400ADN30	14,00	14,00	22,00	83,00
F2AH1500ADN30	15,00	15,00	26,00	92,00
F2AH1600ADN30	16,00	16,00	26,00	92,00
F2AH1800ADN30	18,00	18,00	26,00	92,00
F2AH2000ADN30	20,00	20,00	32,00	104,00

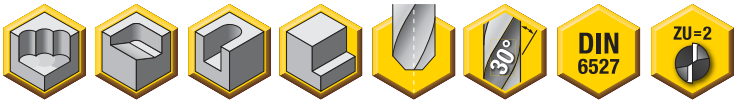
NOTE: For application data, see page M134.

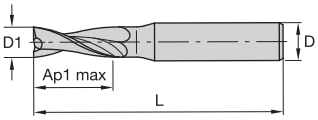
End Mill Tolerances

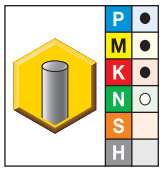
D1	tolerance h10	D	tolerance h6
≤3	+0/-0,04	≤3	+0/-0,006
>3–6	+0/-0,048	>3–6	+0/-0,008
>6–10	+0/-0,058	>6–10	+0/-0,009
>10–18	+0/-0,070	>10–18	+0/-0,011
>18–30	+0/-0,084	>18–30	+0/-0,013

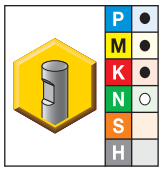
	Corner Chamfer (chamfer height)	
D1 h10	BCH	tolerance
2–6,75	0,10	-0,05
6,76–9,7	0,20	-0,10
9,71–15,7	0,30	-0,10
15,71–25	0,40	-0,20

• Centre cutting.







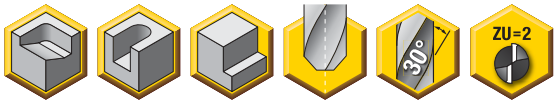


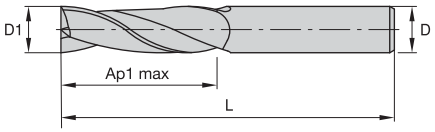
● first choice
○ alternate choice

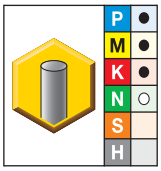
KC633M	KC633M	D1	D	Ap1 max	L
F2AH0200ADK30	F2AH0200BDK30	2,00	6,00	3,00	50,00
F2AH0250ADK30	F2AH0250BDK30	2,50	6,00	3,00	50,00
F2AH0250ADL30	F2AH0250BDL30	2,50	6,00	7,00	57,00
F2AH0300ADK30	F2AH0300BDK30	3,00	6,00	4,00	50,00
F2AH0300ADL30	F2AH0300BDL30	3,00	6,00	7,00	57,00
F2AH0350ADK30	F2AH0350BDK30	3,50	6,00	4,00	50,00
F2AH0400ADK30	F2AH0400BDK30	4,00	6,00	5,00	54,00
F2AH0400ADL30	F2AH0400BDL30	4,00	6,00	8,00	57,00
F2AH0450ADK30	F2AH0450BDK30	4,50	6,00	5,00	54,00
F2AH0450ADL30	F2AH0450BDL30	4,50	6,00	8,00	57,00
F2AH0500ADK30	F2AH0500BDK30	5,00	6,00	6,00	54,00
F2AH0500ADL30	F2AH0500BDL30	5,00	6,00	10,00	57,00
F2AH0550ADK30	F2AH0550BDK30	5,50	6,00	7,00	54,00
F2AH0550ADL30	F2AH0550BDL30	5,50	6,00	10,00	57,00
F2AH0600ADK30	F2AH0600BDK30	6,00	6,00	7,00	54,00
F2AH0600ADL30	F2AH0600BDL30	6,00	6,00	10,00	57,00
F2AH0650ADK30	F2AH0650BDK30	6,50	8,00	8,00	58,00
F2AH0700ADK30	F2AH0700BDK30	7,00	8,00	8,00	58,00
F2AH0700ADL30	F2AH0700BDL30	7,00	8,00	13,00	63,00
F2AH0750ADK30	F2AH0750BDK30	7,50	8,00	9,00	58,00
F2AH0800ADK30	F2AH0800BDK30	8,00	8,00	9,00	58,00
F2AH0800ADL30	F2AH0800BDL30	8,00	8,00	16,00	63,00
F2AH0850ADK30	F2AH0850BDK30	8,50	10,00	10,00	66,00
F2AH0900ADK30	F2AH0900BDK30	9,00	10,00	10,00	66,00
F2AH0900ADL30	F2AH0900BDL30	9,00	10,00	16,00	72,00
F2AH0950ADK30	F2AH0950BDK30	9,50	10,00	11,00	66,00
F2AH1000ADK30	F2AH1000BDK30	10,00	10,00	11,00	66,00
F2AH1000ADL30	F2AH1000BDL30	10,00	10,00	19,00	72,00
F2AH1100ADK30	F2AH1100BDK30	11,00	12,00	12,00	73,00
F2AH1100ADL30	F2AH1100BDL30	11,00	12,00	22,00	83,00
F2AH1200ADK30	F2AH1200BDK30	12,00	12,00	12,00	73,00
F2AH1200ADL30	F2AH1200BDL30	12,00	12,00	22,00	83,00
F2AH1300ADK30	F2AH1300BDK30	13,00	14,00	14,00	75,00
F2AH1400ADK30	F2AH1400BDK30	14,00	14,00	14,00	75,00
F2AH1400ADL30	F2AH1400BDL30	14,00	14,00	22,00	83,00
F2AH1500ADK30	F2AH1500BDK30	15,00	16,00	16,00	82,00
F2AH1500ADL30	F2AH1500BDL30	15,00	16,00	26,00	92,00
F2AH1600ADK30	F2AH1600BDK30	16,00	16,00	16,00	82,00
F2AH1600ADL30	F2AH1600BDL30	16,00	16,00	26,00	92,00
F2AH1800ADK30	F2AH1800BDK30	18,00	18,00	18,00	84,00
F2AH1800ADL30	F2AH1800BDL30	18,00	18,00	26,00	92,00
F2AH2000ADK30	F2AH2000BDK30	20,00	20,00	20,00	92,00
F2AH2000ADL30	F2AH2000BDL30	20,00	20,00	32,00	104,00

NOTE: For application data, see page M134.
For tolerance and chamfer tables, see M114.

- Kennametal standard dimensions.
- Centre cutting.







● first choice
○ alternate choice

KC625M	D1	D	Ap1 max	L
F2AH0300AWM30	3,00	3,00	20,00	75,00
F2AH0400AWM30	4,00	4,00	25,00	75,00
F2AH0500AWM30	5,00	5,00	30,00	75,00
F2AH0600AWM30	6,00	6,00	30,00	75,00
F2AH0800AWL30	8,00	8,00	40,00	100,00
F2AH1000AWL30	10,00	10,00	40,00	100,00
F2AH1200AWX30	12,00	12,00	45,00	150,00
F2AH1400AWX30	14,00	14,00	45,00	150,00
F2AH1600AWX30	16,00	16,00	65,00	150,00
F2AH1800AWX30	18,00	18,00	65,00	150,00
F2AH2000AWX30	20,00	20,00	65,00	150,00

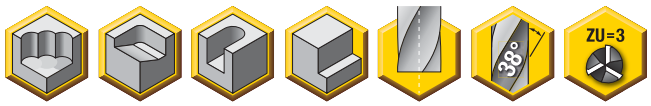
NOTE: For application data, see page M135.

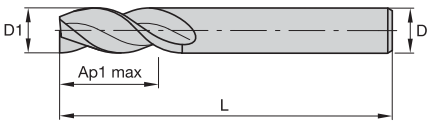
End Mill Tolerances

D1	tolerance h10	D	tolerance h6
≤3	+0/-0,04	≤3	+0/-0,006
>3–6	+0/-0,048	>3–6	+0/-0,008
>6–10	+0/-0,058	>6–10	+0/-0,009
>10–18	+0/-0,070	>10–18	+0/-0,011
>18–30	+0/-0,084	>18–30	+0/-0,013

	Corner Chamfer (chamfer height)	
D1 h10	BCH	tolerance
2–6,75	0,10	-0,05
6,76–9,7	0,20	-0,10
9,71–15,7	0,30	-0,10
15,71–25	0,40	-0,20

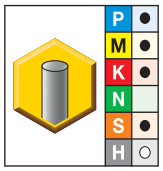
- Kennametal standard dimensions.
- Centre cutting.
- Unequal flute spacing.
- Roughing/finishing.

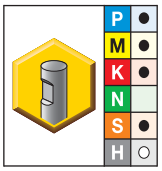




NEW!

GOmill





● first choice
○ alternate choice

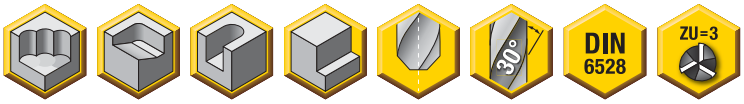
KC643M	KC643M	D1	D	Ap1 max	L
UEDE0200A3AS	**UEDE0200B3AS**	2,00	6,00	4,00	38,00
UEDE0300A3AS	**UEDE0300B3AS**	3,00	6,00	5,00	38,00
UEDE0400A3AS	**UEDE0400B3AS**	4,00	6,00	7,00	38,00
UEDE0500A3AS	**UEDE0500B3AS**	5,00	6,00	8,00	38,00
UEDE0600A3AS	**UEDE0600B3AS**	6,00	6,00	8,00	38,00
UEDE0800A3AS	**UEDE0800B3AS**	8,00	8,00	11,00	43,00
UEDE1000A3AS	**UEDE1000B3AS**	10,00	10,00	13,00	50,00
UEDE1200A3AS	**UEDE1200B3AS**	12,00	12,00	15,00	55,00

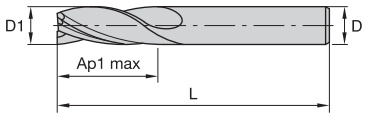
NOTE: For application data, see page M135.

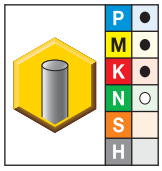
End Mill Tolerances

D1	tolerance e8	D	tolerance h6
≤3	-0,014/-0,028	≤3	+0/-0,006
>3–6	-0,020/-0,038	>3–6	+0/-0,008
>6–10	-0,025/-0,047	>6–10	+0/-0,009
>10–18	-0,032/-0,059	>10–18	+0/-0,011
>18–30	-0,040/-0,073	>18–30	+0/-0,013

• Centre cutting.







● first choice
○ alternate choice

KC633M	D1	D	Ap1 max	L
F3AH0400ADN30	4,00	4,00	8,00	50,00
F3AH0450ADN30	4,50	4,50	8,00	50,00
F3AH0500ADN30	5,00	5,00	10,00	50,00
F3AH0550ADN30	5,50	5,50	10,00	57,00
F3AH0600ADN30	6,00	6,00	10,00	57,00
F3AH0650ADN30	6,50	6,50	13,00	60,00
F3AH0700ADN30	7,00	7,00	13,00	60,00
F3AH0750ADN30	7,50	7,50	16,00	63,00
F3AH0800ADN30	8,00	8,00	16,00	63,00
F3AH0850ADN30	8,50	8,50	16,00	67,00
F3AH0900ADN30	9,00	9,00	16,00	67,00
F3AH0950ADN30	9,50	9,50	19,00	72,00
F3AH1000ADN30	10,00	10,00	19,00	72,00
F3AH1100ADN30	11,00	11,00	22,00	83,00
F3AH1200ADN30	12,00	12,00	22,00	83,00
F3AH1300ADN30	13,00	13,00	22,00	83,00
F3AH1400ADN30	14,00	14,00	22,00	83,00
F3AH1500ADN30	15,00	15,00	26,00	92,00
F3AH1600ADN30	16,00	16,00	26,00	92,00
F3AH1800ADN30	18,00	18,00	26,00	92,00
F3AH2000ADN30	20,00	20,00	32,00	104,00

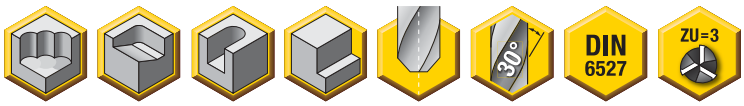
NOTE: For application data, see page M134.

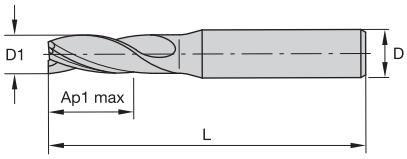
End Mill Tolerances

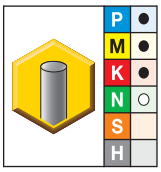
D1	tolerance h10	D	tolerance h6
≤3	+0/-0,04	≤3	+0/-0,006
>3–6	+0/-0,048	>3–6	+0/-0,008
>6–10	+0/-0,058	>6–10	+0/-0,009
>10–18	+0/-0,070	>10–18	+0/-0,011
>18–30	+0/-0,084	>18–30	+0/-0,013

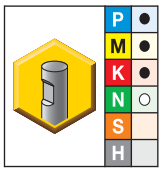
	Corner Chamfer (chamfer height)	
D1 h10	BCH	tolerance
2–6,75	0,10	-0,05
6,76–9,7	0,20	-0,10
9,71–15,7	0,30	-0,10
15,71–25	0,40	-0,20

• Centre cutting.







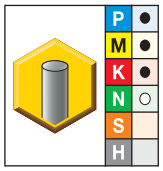


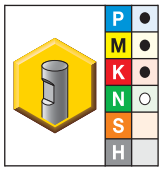
● first choice
○ alternate choice

KC633M	KC633M	D1	D	Ap1 max	L
F3AH0250ADK30	F3AH0250BDK30	2,50	6,00	3,00	50,00
F3AH0280ADK30	F3AH0280BDK30	2,80	6,00	4,00	50,00
F3AH0300ADK30	F3AH0300BDK30	3,00	6,00	4,00	50,00
F3AH0350ADK30	F3AH0350BDK30	3,50	6,00	4,00	50,00
F3AH0380ADK30	F3AH0380BDK30	3,80	6,00	5,00	54,00
F3AH0400ADK30	F3AH0400BDK30	4,00	6,00	5,00	54,00
F3AH0400ADL30	F3AH0400BDL30	4,00	6,00	8,00	57,00
F3AH0450ADK30	F3AH0450BDK30	4,50	6,00	5,00	54,00
F3AH0450ADL30	F3AH0450BDL30	4,50	6,00	8,00	57,00
F3AH0480ADK30	F3AH0480BDK30	4,80	6,00	6,00	54,00
F3AH0480ADL30	F3AH0480BDL30	4,80	6,00	10,00	57,00
F3AH0500ADK30	F3AH0500BDK30	5,00	6,00	6,00	54,00
F3AH0500ADL30	F3AH0500BDL30	5,00	6,00	10,00	57,00
F3AH0550ADK30	F3AH0550BDK30	5,50	6,00	7,00	54,00
F3AH0550ADL30	F3AH0550BDL30	5,50	6,00	10,00	57,00
F3AH0575ADK30	F3AH0575BDK30	5,75	6,00	7,00	54,00
F3AH0575ADL30	F3AH0575BDL30	5,75	6,00	10,00	57,00
F3AH0600ADK30	F3AH0600BDK30	6,00	6,00	7,00	54,00
F3AH0600ADL30	F3AH0600BDL30	6,00	6,00	10,00	57,00
F3AH0650ADK30	F3AH0650BDK30	6,50	8,00	8,00	58,00
F3AH0650ADL30	F3AH0650BDL30	6,50	8,00	13,00	63,00
F3AH0675ADK30	F3AH0675BDK30	6,75	8,00	8,00	58,00
F3AH0675ADL30	F3AH0675BDL30	6,75	8,00	13,00	63,00
F3AH0700ADK30	F3AH0700BDK30	7,00	8,00	8,00	58,00
F3AH0700ADL30	F3AH0700BDL30	7,00	8,00	13,00	63,00
F3AH0750ADK30	F3AH0750BDK30	7,50	8,00	9,00	58,00
F3AH0775ADK30	F3AH0775BDK30	7,75	8,00	9,00	58,00
F3AH0775ADL30	F3AH0775BDL30	7,75	8,00	16,00	63,00
F3AH0800ADK30	F3AH0800BDK30	8,00	8,00	9,00	58,00
F3AH0800ADL30	F3AH0800BDL30	8,00	8,00	16,00	63,00
F3AH0850ADK30	F3AH0850BDK30	8,50	10,00	10,00	66,00
F3AH0850ADL30	F3AH0850BDL30	8,50	10,00	16,00	72,00
F3AH0870ADK30	F3AH0870BDK30	8,70	10,00	10,00	66,00
F3AH0870ADL30	F3AH0870BDL30	8,70	10,00	16,00	72,00
F3AH0900ADK30	F3AH0900BDK30	9,00	10,00	10,00	66,00
F3AH0900ADL30	F3AH0900BDL30	9,00	10,00	16,00	72,00
F3AH0950ADK30	F3AH0950BDK30	9,50	10,00	11,00	66,00
F3AH0970ADK30	F3AH0970BDK30	9,70	10,00	11,00	66,00
F3AH0970ADL30	F3AH0970BDL30	9,70	10,00	19,00	72,00
F3AH1000ADK30	F3AH1000BDK30	10,00	10,00	11,00	66,00
F3AH1000ADL30	F3AH1000BDL30	10,00	10,00	19,00	72,00
F3AH1100ADK30	F3AH1100BDK30	11,00	12,00	12,00	73,00
F3AH1100ADL30	F3AH1100BDL30	11,00	12,00	22,00	83,00
F3AH1170ADK30	F3AH1170BDK30	11,70	12,00	12,00	73,00
F3AH1170ADL30	F3AH1170BDL30	11,70	12,00	22,00	83,00
F3AH1200ADK30	F3AH1200BDK30	12,00	12,00	12,00	73,00

(continued)

(continued)





● first choice
○ alternate choice

KC633M	KC633M	D1	D	Ap1 max	L
F3AH1200ADL30 **F3AH1300ADK30**	**F3AH1200BDL30** **F3AH1300BDK30**	12,00 13,00	12,00 14,00	22,00 14,00	83,00 75,00
F3AH1300ADL30 **F3AH1370ADK30**	**F3AH1300BDL30** **F3AH1370BDK30**	13,00 13,70	14,00 14,00	22,00 14,00	83,00 75,00
F3AH1370ADL30 **F3AH1400ADK30**	**F3AH1370BDL30** **F3AH1400BDK30**	13,70 14,00	14,00 14,00	22,00 14,00	83,00 75,00
F3AH1400ADL30 **F3AH1500ADK30**	**F3AH1400BDL30** **F3AH1500BDK30**	14,00 15,00	14,00 16,00	22,00 16,00	83,00 82,00
F3AH1500ADL30 **F3AH1570ADK30**	**F3AH1500BDL30** **F3AH1570BDK30**	15,00 15,70	16,00 16,00	26,00 16,00	92,00 82,00
F3AH1570ADL30 **F3AH1600ADK30**	**F3AH1570BDL30** **F3AH1600BDK30**	15,70 16,00	16,00 16,00	26,00 16,00	92,00 82,00
F3AH1600ADL30 **F3AH1800ADK30**	**F3AH1600BDL30** **F3AH1800BDK30**	16,00 18,00	16,00 18,00	26,00 18,00	92,00 84,00
F3AH1800ADL30 **F3AH2000ADK30**	**F3AH1800BDL30** **F3AH2000BDK30**	18,00 20,00	18,00 20,00	26,00 20,00	92,00 92,00
F3AH2000ADL30	**F3AH2000BDL30**	20,00	20,00	32,00	104,00

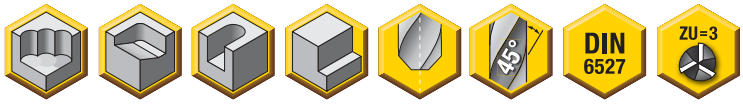
NOTE: For application data, see page M136.

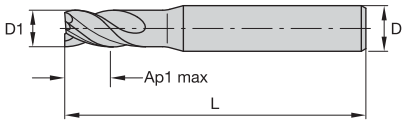
End Mill Tolerances

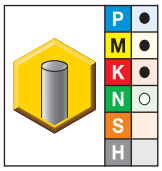
D1	tolerance h10	D	tolerance h6
≤3	+0/-0,04	≤3	+0/-0,006
>3–6	+0/-0,048	>3–6	+0/-0,008
>6–10	+0/-0,058	>6–10	+0/-0,009
>10–18	+0/-0,070	>10–18	+0/-0,011
>18–30	+0/-0,084	>18–30	+0/-0,013

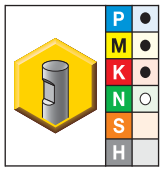
	Corner Chamfer (chamfer height)	
D1 h10	BCH	tolerance
2–6,75	0,10	-0,05
6,76–9,7	0,20	-0,10
9,71–15,7	0,30	-0,10
15,71–25	0,40	-0,20

• Centre cutting.









● first choice
○ alternate choice

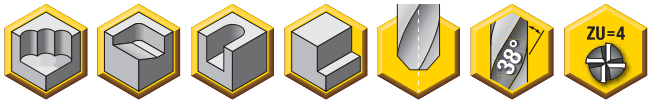
KC633M	KC633M	D1	D	Ap1 max	L
F3AH0200ADK45	F3AH0200BDK45	2,00	6,00	3,00	50,00
F3AH0250ADK45	F3AH0250BDK45	2,50	6,00	3,00	50,00
F3AH0300ADK45	F3AH0300BDK45	3,00	6,00	4,00	50,00
F3AH0300ADL45	F3AH0300BDL45	3,00	6,00	7,00	57,00
F3AH0350ADK45	F3AH0350BDK45	3,50	6,00	4,00	50,00
F3AH0350ADL45	F3AH0350BDL45	3,50	6,00	7,00	57,00
F3AH0400ADK45	F3AH0400BDK45	4,00	6,00	5,00	54,00
F3AH0400ADL45	F3AH0400BDL45	4,00	6,00	8,00	57,00
F3AH0450ADK45	F3AH0450BDK45	4,50	6,00	5,00	54,00
F3AH0450ADL45	F3AH0450BDL45	4,50	6,00	8,00	57,00
F3AH0500ADK45	F3AH0500BDK45	5,00	6,00	6,00	54,00
F3AH0500ADL45	F3AH0500BDL45	5,00	6,00	10,00	57,00
F3AH0600ADK45	F3AH0600BDK45	6,00	6,00	7,00	54,00
F3AH0600ADL45	F3AH0600BDL45	6,00	6,00	10,00	57,00
F3AH0700ADK45	F3AH0700BDK45	7,00	8,00	8,00	58,00
F3AH0700ADL45	F3AH0700BDL45	7,00	8,00	13,00	63,00
F3AH0800ADK45	F3AH0800BDK45	8,00	8,00	9,00	58,00
F3AH0800ADL45	F3AH0800BDL45	8,00	8,00	16,00	63,00
F3AH0900ADK45	F3AH0900BDK45	9,00	10,00	10,00	66,00
F3AH0900ADL45	F3AH0900BDL45	9,00	10,00	16,00	72,00
F3AH1000ADK45	F3AH1000BDK45	10,00	10,00	11,00	66,00
F3AH1000ADL45	F3AH1000BDL45	10,00	10,00	19,00	72,00
F3AH1200ADK45	F3AH1200BDK45	12,00	12,00	12,00	73,00
F3AH1200ADL45	F3AH1200BDL45	12,00	12,00	22,00	83,00
F3AH1400ADK45	F3AH1400BDK45	14,00	14,00	14,00	75,00
F3AH1400ADL45	F3AH1400BDL45	14,00	14,00	22,00	83,00
F3AH1600ADK45	F3AH1600BDK45	16,00	16,00	16,00	82,00
F3AH1600ADL45	F3AH1600BDL45	16,00	16,00	26,00	92,00
F3AH1800ADK45	F3AH1800BDK45	18,00	18,00	18,00	84,00
F3AH1800ADL45	F3AH1800BDL45	18,00	18,00	26,00	92,00
F3AH2000ADK45	F3AH2000BDK45	20,00	20,00	20,00	92,00
F3AH2000ADL45	F3AH2000BDL45	20,00	20,00	32,00	104,00

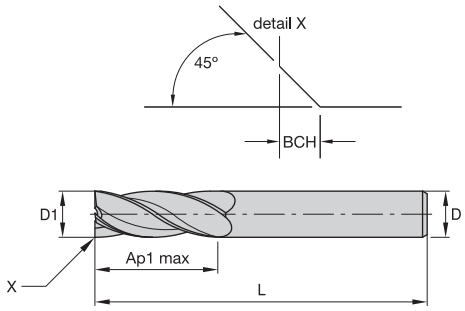
NOTE: For application data, see page M136.

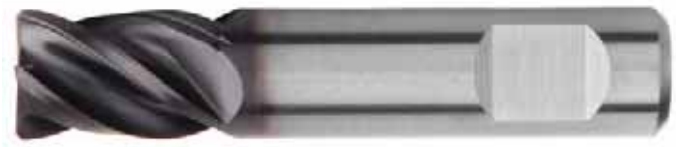
End Mill Tolerances			
D1	tolerance h10	D	tolerance h6
≤3	+0/-0,04	≤3	+0/-0,006
>3–6	+0/-0,048	>3–6	+0/-0,008
>6–10	+0/-0,058	>6–10	+0/-0,009
>10–18	+0/-0,070	>10–18	+0/-0,011
>18–30	+0/-0,084	>18–30	+0/-0,013

	Corner Chamfer (chamfer height)	
D1 h10	BCH	tolerance
2–6,75	0,10	-0,05
6,76–9,7	0,20	-0,10
9,71–15,7	0,30	-0,10
15,71–25	0,40	-0,20

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

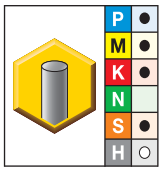


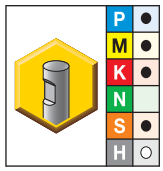




NEW!

GOmill





● first choice
○ alternate choice

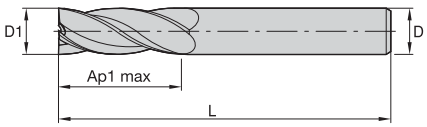
KC643M	KC643M	D1	D	Ap1 max	L	BCH
UEDE0400A4AH	**UEDE0400B4AH**	4,00	6,00	7,00	38,00	0,40
UEDE0600A4AH	**UEDE0600B4AH**	6,00	6,00	8,00	38,00	0,40
UEDE0800A4AH	**UEDE0800B4AH**	8,00	8,00	11,00	43,00	0,40
UEDE1000A4AH	**UEDE1000B4AH**	10,00	10,00	13,00	50,00	0,50
UEDE1200A4AH	**UEDE1200B4AH**	12,00	12,00	15,00	55,00	0,50

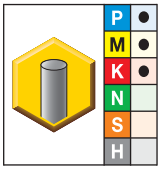
NOTE: For application data, see page M136.

End Mill Tolerances

D1	tolerance e8	D	tolerance h6
≤3	-0,014/-0,028	≤3	+0/-0,006
>3–6	-0,020/-0,038	>3–6	+0/-0,008
>6–10	-0,025/-0,047	>6–10	+0/-0,009
>10–18	-0,032/-0,059	>10–18	+0/-0,011
>18–30	-0,040/-0,073	>18–30	+0/-0,013

• Centre cutting.





● first choice
○ alternate choice

KC633M	D1	D	Ap1 max	L
F4AJ0400ADN30	4,00	4,00	11,00	50,00
F4AJ0450ADN30	4,50	4,50	11,00	50,00
F4AJ0500ADN30	5,00	5,00	13,00	50,00
F4AJ0550ADN30	5,50	5,50	13,00	57,00
F4AJ0600ADN30	6,00	6,00	13,00	57,00
F4AJ0650ADN30	6,50	6,50	16,00	60,00
F4AJ0700ADN30	7,00	7,00	16,00	60,00
F4AJ0750ADN30	7,50	7,50	19,00	63,00
F4AJ0800ADN30	8,00	8,00	19,00	63,00
F4AJ0850ADN30	8,50	8,50	19,00	67,00
F4AJ0900ADN30	9,00	9,00	19,00	67,00
F4AJ0950ADN30	9,50	9,50	22,00	72,00
F4AJ1000ADN30	10,00	10,00	22,00	72,00
F4AJ1200ADN30	12,00	12,00	26,00	83,00
F4AJ1300ADN30	13,00	13,00	26,00	83,00
F4AJ1400ADN30	14,00	14,00	26,00	83,00
F4AJ1500ADN30	15,00	15,00	32,00	92,00
F4AJ1600ADN30	16,00	16,00	32,00	92,00
F4AJ1800ADN30	18,00	18,00	32,00	92,00
F4AJ2000ADN30	20,00	20,00	38,00	104,00

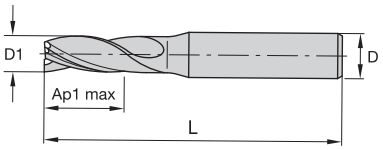
NOTE: For application data, see page M137.

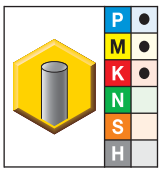
End Mill Tolerances

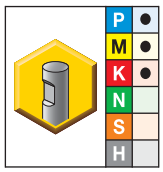
D1	tolerance h10	D	tolerance h6
≤3	+0/-0,04	≤3	+0/-0,006
>3–6	+0/-0,048	>3–6	+0/-0,008
>6–10	+0/-0,058	>6–10	+0/-0,009
>10–18	+0/-0,070	>10–18	+0/-0,011
>18–30	+0/-0,084	>18–30	+0/-0,013

	Corner Chamfer (chamfer height)	
D1 h10	BCH	tolerance
2–6,75	0,10	-0,05
6,76–9,7	0,20	-0,10
9,71–15,7	0,30	-0,10
15,71–25	0,40	-0,20

• Centre cutting





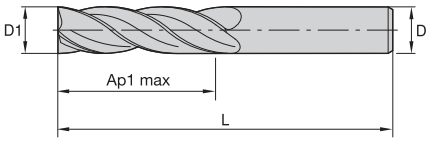


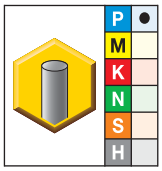
● first choice
○ alternate choice

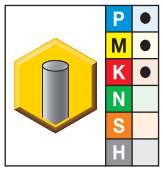
KC633M	KC633M	D1	D	Ap1 max	L
F4AJ0200ADK30	F4AJ0200BDK30	2,00	6,00	4,00	50,00
F4AJ0250ADK30	F4AJ0250BDK30	2,50	6,00	4,00	50,00
F4AJ0300ADK30	F4AJ0300BDK30	3,00	6,00	5,00	50,00
F4AJ0350ADK30	F4AJ0350BDK30	3,50	6,00	6,00	50,00
F4AJ0400ADK30	F4AJ0400BDK30	4,00	6,00	8,00	54,00
F4AJ0400ADL30	F4AJ0400BDL30	4,00	6,00	11,00	57,00
F4AJ0450ADK30	F4AJ0450BDK30	4,50	6,00	8,00	54,00
F4AJ0450ADL30	F4AJ0450BDL30	4,50	6,00	11,00	57,00
F4AJ0500ADK30	F4AJ0500BDK30	5,00	6,00	9,00	54,00
F4AJ0500ADL30	F4AJ0500BDL30	5,00	6,00	13,00	57,00
F4AJ0550ADK30	F4AJ0550BDK30	5,50	6,00	10,00	54,00
F4AJ0600ADK30	F4AJ0600BDK30	6,00	6,00	10,00	54,00
F4AJ0600ADL30	F4AJ0600BDL30	6,00	6,00	13,00	57,00
F4AJ0650ADK30	F4AJ0650BDK30	6,50	8,00	11,00	58,00
F4AJ0700ADK30	F4AJ0700BDK30	7,00	8,00	11,00	58,00
F4AJ0700ADL30	F4AJ0700BDL30	7,00	8,00	16,00	63,00
F4AJ0750ADK30	F4AJ0750BDK30	7,50	8,00	12,00	58,00
F4AJ0800ADK30	F4AJ0800BDK30	8,00	8,00	12,00	58,00
F4AJ0800ADL30	F4AJ0800BDL30	8,00	8,00	19,00	63,00
F4AJ0850ADK30	F4AJ0850BDK30	8,50	10,00	13,00	66,00
F4AJ0900ADK30	F4AJ0900BDK30	9,00	10,00	13,00	66,00
F4AJ0900ADL30	F4AJ0900BDL30	9,00	10,00	19,00	72,00
F4AJ0950ADK30	F4AJ0950BDK30	9,50	10,00	14,00	66,00
F4AJ1000ADK30	F4AJ1000BDK30	10,00	10,00	14,00	66,00
F4AJ1000ADL30	F4AJ1000BDL30	10,00	10,00	22,00	72,00
F4AJ1100ADK30	F4AJ1100BDK30	11,00	12,00	16,00	73,00
F4AJ1100ADL30	F4AJ1100BDL30	11,00	12,00	26,00	83,00
F4AJ1200ADK30	F4AJ1200BDK30	12,00	12,00	16,00	73,00
F4AJ1200ADL30	F4AJ1200BDL30	12,00	12,00	26,00	83,00
F4AJ1300ADK30	F4AJ1300BDK30	13,00	14,00	18,00	75,00
F4AJ1300ADL30	F4AJ1300BDL30	13,00	14,00	26,00	83,00
F4AJ1400ADK30	F4AJ1400BDK30	14,00	14,00	18,00	75,00
F4AJ1400ADL30	F4AJ1400BDL30	14,00	14,00	26,00	83,00
F4AJ1500ADK30	F4AJ1500BDK30	15,00	16,00	22,00	82,00
F4AJ1500ADL30	F4AJ1500BDL30	15,00	16,00	32,00	92,00
F4AJ1600ADK30	F4AJ1600BDK30	16,00	16,00	22,00	82,00
F4AJ1600ADL30	F4AJ1600BDL30	16,00	16,00	32,00	92,00
F4AJ1800ADK30	F4AJ1800BDK30	18,00	18,00	24,00	84,00
F4AJ1800ADL30	F4AJ1800BDL30	18,00	18,00	32,00	92,00
F4AJ2000ADK30	F4AJ2000BDK30	20,00	20,00	26,00	92,00
F4AJ2000ADL30	F4AJ2000BDL30	20,00	20,00	38,00	104,00

NOTE: For application data, see page M137.
For tolerance and chamfer tables, see M125

- Kennametal standard dimensions.
- Centre cutting.







● first choice
○ alternate choice

K600	KC625M	D1	D	Ap1 max	L
F4AJ0300AWM30	**F4AJ0300AWM30**	3,00	3,00	20,00	75,00
F4AJ0400AWM30	**F4AJ0400AWM30**	4,00	4,00	25,00	75,00
F4AJ0500AWM30	**F4AJ0500AWM30**	5,00	5,00	30,00	75,00
F4AJ0600AWM30	**F4AJ0600AWM30**	6,00	6,00	30,00	75,00
F4AJ0800AWL30	**F4AJ0800AWL30**	8,00	8,00	40,00	100,00
F4AJ1000AWL30	**F4AJ1000AWL30**	10,00	10,00	40,00	100,00
F4AJ1200AWX30	**F4AJ1200AWX30**	12,00	12,00	45,00	150,00
F4AJ1400AWX30	**F4AJ1400AWX30**	14,00	14,00	45,00	150,00
F4AJ1600AWX30	**F4AJ1600AWX30**	16,00	16,00	65,00	150,00
F4AJ1800AWX30	**F4AJ1800AWX30**	18,00	18,00	65,00	150,00
F4AJ2000AWX30	**F4AJ2000AWX30**	20,00	20,00	65,00	150,00

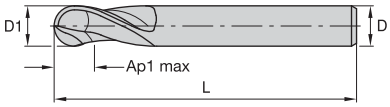
NOTE: For application data, see page M138.

End Mill Tolerances

D1	tolerance h10	D	tolerance h6
≤3	+0/-0,04	≤3	+0/-0,006
>3–6	+0/-0,048	>3–6	+0/-0,008
>6–10	+0/-0,058	>6–10	+0/-0,009
>10–18	+0/-0,070	>10–18	+0/-0,011
>18–30	+0/-0,084	>18–30	+0/-0,013

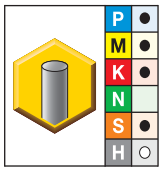
	Corner Chamfer (chamfer height)	
D1 h10	BCH	tolerance
2–6,75	0,10	-0,05
6,76–9,7	0,20	-0,10
9,71–15,7	0,30	-0,10
15,71–25	0,40	-0,20

- Kennametal standard dimensions.
- Semi-finishing/finishing.
- Centre cutting.



NEW!

GOmill



● first choice
○ alternate choice

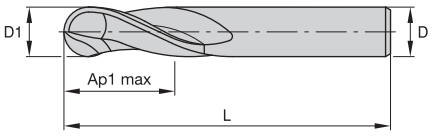
KC643M	D1	D	Ap1 max	L
UEBC0200A2A	2,00	6,00	4,00	38,00
UEBC0300A2A	3,00	6,00	5,00	38,00
UEBC0400A2A	4,00	6,00	7,00	38,00
UEBC0500A2A	5,00	6,00	8,00	38,00
UEBC0600A2A	6,00	6,00	8,00	38,00
UEBC0800A2A	8,00	8,00	11,00	43,00
UEBC1000A2A	10,00	10,00	13,00	50,00
UEBC1200A2A	12,00	12,00	15,00	55,00

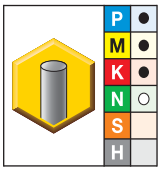
NOTE: For application data, see page M138.

End Mill Tolerances

D1	tolerance e8	D	tolerance h6
≤3	-0,014/-0,028	≤3	+0/-0,006
>3–6	-0,020/-0,038	>3–6	+0/-0,008
>6–10	-0,025/-0,047	>6–10	+0/-0,009
>10–18	-0,032/-0,059	>10–18	+0/-0,011
>18–30	-0,040/-0,073	>18–30	+0/-0,013

• Centre cutting.





● first choice
○ alternate choice

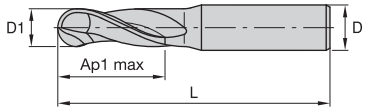
KC633M	D1	D	Ap1 max	L
F2AL0200ADN30	2,00	2,00	6,00	32,00
F2AL0300ADN30	3,00	3,00	7,00	32,00
F2AL0400ADN30	4,00	4,00	8,00	50,00
F2AL0500ADN30	5,00	5,00	10,00	50,00
F2AL0600ADN30	6,00	6,00	10,00	57,00
F2AL0800ADN30	8,00	8,00	16,00	63,00
F2AL1000ADN30	10,00	10,00	19,00	72,00
F2AL1200ADN30	12,00	12,00	22,00	83,00
F2AL1400ADN30	14,00	14,00	22,00	83,00
F2AL1600ADN30	16,00	16,00	26,00	92,00
F2AL1800ADN30	18,00	18,00	26,00	92,00
F2AL2000ADN30	20,00	20,00	32,00	104,00

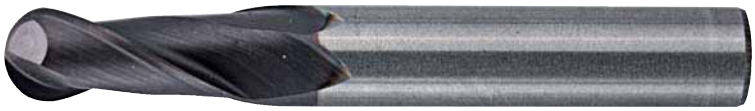
NOTE: For application data, see page M140.

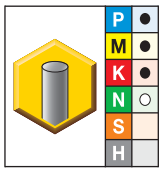
End Mill Tolerances

D1	tolerance h10	D	tolerance h6
≤3	+0/-0,04	≤3	+0/-0,006
>3–6	+0/-0,048	>3–6	+0/-0,008
>6–10	+0/-0,058	>6–10	+0/-0,009
>10–18	+0/-0,070	>10–18	+0/-0,011
>18–30	+0/-0,084	>18–30	+0/-0,013

• Centre cutting.







● first choice
○ alternate choice

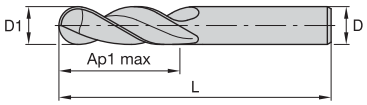
KC633M	D1	D	Ap1 max	L
F2AL0200ADL30	2,00	6,00	6,00	57,00
F2AL0300ADL30	3,00	6,00	7,00	57,00
F2AL0400ADL30	4,00	6,00	8,00	57,00
F2AL0500ADL30	5,00	6,00	10,00	57,00
F2AL0600ADL30	6,00	6,00	10,00	57,00
F2AL0800ADL30	8,00	8,00	16,00	63,00
F2AL1000ADL30	10,00	10,00	19,00	72,00
F2AL1200ADL30	12,00	12,00	22,00	83,00
F2AL1400ADL30	14,00	14,00	22,00	83,00
F2AL1600ADL30	16,00	16,00	26,00	92,00
F2AL1800ADL30	18,00	18,00	26,00	92,00
F2AL2000ADL30	20,00	20,00	32,00	104,00

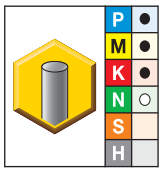
NOTE: For application data, see page M141.

End Mill Tolerances

D1	tolerance h10	D	tolerance h6
≤3	+0/-0,04	≤3	+0/-0,006
>3–6	+0/-0,048	>3–6	+0/-0,008
>6–10	+0/-0,058	>6–10	+0/-0,009
>10–18	+0/-0,070	>10–18	+0/-0,011
>18–30	+0/-0,084	>18–30	+0/-0,013

- Kennametal standard dimensions..
- Centre cutting.





● first choice
○ alternate choice

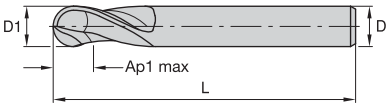
KC633M	D1	D	Ap1 max	L
F2AL0300AWM30L200	3,00	3,00	20,00	75,00
F2AL0400AWM30L250	4,00	4,00	25,00	75,00
F2AL0500AWM30L300	5,00	5,00	30,00	75,00
F2AL0600AWM30L300	6,00	6,00	30,00	75,00
F2AL0800AWL30L400	8,00	8,00	40,00	100,00
F2AL1000AWL30L400	10,00	10,00	40,00	100,00
F2AL1200AWX30L450	12,00	12,00	45,00	150,00

NOTE: For application data, see page M142.

End Mill Tolerances

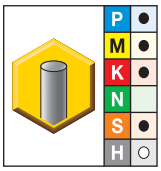
D1	tolerance h10	D	tolerance h6
≤3	+0/-0,04	≤3	+0/-0,006
>3–6	+0/-0,048	>3–6	+0/-0,008
>6–10	+0/-0,058	>6–10	+0/-0,009
>10–18	+0/-0,070	>10–18	+0/-0,011
>18–30	+0/-0,084	>18–30	+0/-0,013

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



NEW!

GOmill



● first choice
○ alternate choice

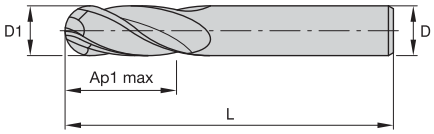
KC643M	D1	D	Ap1 max	L
UEBE0200A3A	2,00	6,00	4,00	38,00
UEBE0300A3A	3,00	6,00	5,00	38,00
UEBE0400A3A	4,00	6,00	7,00	38,00
UEBE0500A3A	5,00	6,00	8,00	38,00
UEBE0600A3A	6,00	6,00	8,00	38,00
UEBE0800A3A	8,00	8,00	11,00	43,00
UEBE1000A3A	10,00	10,00	13,00	50,00
UEBE1200A3A	12,00	12,00	15,00	55,00

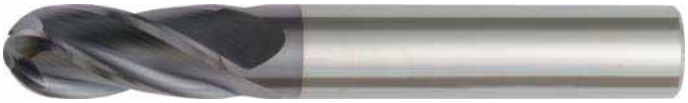
NOTE: For application data, see page M139.

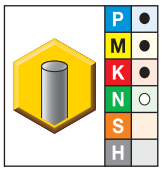
End Mill Tolerances

D1	tolerance e8	D	tolerance h6
≤3	-0,014/-0,028	≤3	+0/-0,006
>3–6	-0,020/-0,038	>3–6	+0/-0,008
>6–10	-0,025/-0,047	>6–10	+0/-0,009
>10–18	-0,032/-0,059	>10–18	+0/-0,011
>18–30	-0,040/-0,073	>18–30	+0/-0,013

• Centre cutting.







● first choice
○ alternate choice

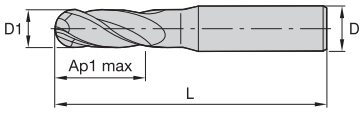
KC633M	D1	D	Ap1 max	L
F4AL0200ADN30	2,00	2,00	7,00	32,00
F4AL0300ADN30	3,00	3,00	8,00	32,00
F4AL0400ADN30	4,00	4,00	11,00	50,00
F4AL0500ADN30	5,00	5,00	13,00	50,00
F4AL0600ADN30	6,00	6,00	13,00	57,00
F4AL0800ADN30	8,00	8,00	19,00	63,00
F4AL1000ADN30	10,00	10,00	22,00	72,00
F4AL1200ADN30	12,00	12,00	26,00	83,00
F4AL1400ADN30	14,00	14,00	26,00	83,00
F4AL1600ADN30	16,00	16,00	32,00	92,00
F4AL1800ADN30	18,00	18,00	32,00	92,00
F4AL2000ADN30	20,00	20,00	38,00	104,00

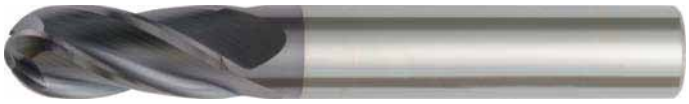
NOTE: For application data, see page M140.

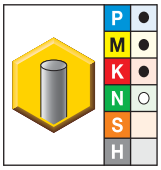
End Mill Tolerances

D1	tolerance h10	D	tolerance h6
≤3	+0/-0,04	≤3	+0/-0,006
>3–6	+0/-0,048	>3–6	+0/-0,008
>6–10	+0/-0,058	>6–10	+0/-0,009
>10–18	+0/-0,070	>10–18	+0/-0,011
>18–30	+0/-0,084	>18–30	+0/-0,013

• Centre cutting.







● first choice
○ alternate choice

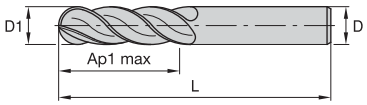
KC633M	D1	D	Ap1 max	L
F4AL0300ADL30	3,00	6,00	7,00	57,00
F4AL0400ADL30	4,00	6,00	8,00	57,00
F4AL0500ADL30	5,00	6,00	11,00	57,00
F4AL0600ADL30	6,00	6,00	13,00	57,00
F4AL0800ADL30	8,00	8,00	19,00	63,00
F4AL1000ADL30	10,00	10,00	22,00	72,00
F4AL1200ADL30	12,00	12,00	26,00	83,00
F4AL1400ADL30	14,00	14,00	26,00	83,00
F4AL1600ADL30	16,00	16,00	32,00	92,00
F4AL1800ADL30	18,00	18,00	32,00	92,00
F4AL2000ADL30	20,00	20,00	38,00	104,00

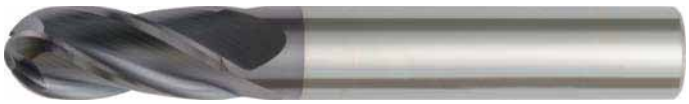
NOTE: For application data, see page M141.

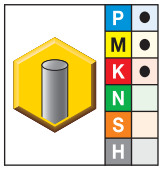
End Mill Tolerances

D1	tolerance h10	D	tolerance h6
≤3	+0/-0,04	≤3	+0/-0,006
>3–6	+0/-0,048	>3–6	+0/-0,008
>6–10	+0/-0,058	>6–10	+0/-0,009
>10–18	+0/-0,070	>10–18	+0/-0,011
>18–30	+0/-0,084	>18–30	+0/-0,013

- Kennametal standard dimensions.
- Centre cutting.







● first choice
○ alternate choice

KC633M	D1	D	Ap1 max	L
F4AL0300AWM30L200	3,00	3,00	20,00	75,00
F4AL0400AWM30L250	4,00	4,00	25,00	75,00
F4AL0500AWM30L300	5,00	5,00	30,00	75,00
F4AL0600AWM30L300	6,00	6,00	30,00	75,00
F4AL0800AWL30L400	8,00	8,00	40,00	100,00
F4AL1000AWL30L400	10,00	10,00	40,00	100,00
F4AL1200AWX30L450	12,00	12,00	45,00	150,00

NOTE: For application data, see page M142.

End Mill Tolerances

D1	tolerance h10	D	tolerance h6
≤3	+0/-0,04	≤3	+0/-0,006
>3–6	+0/-0,048	>3–6	+0/-0,008
>6–10	+0/-0,058	>6–10	+0/-0,009
>10–18	+0/-0,070	>10–18	+0/-0,011
>18–30	+0/-0,084	>18–30	+0/-0,013

F2/3AH...ADN30...

Material Group		A		B	KC633M			Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%.								
					Cutting Speed — vc m/min			D1 — Diameter								
		ap	ae	ap	min	max	mm	2,0	4,0	6,0	8,0	10,0	12,0	14,0	16,0	20,0
P	1	1,25 x D	0,1 x D	0,5 x D	150	200	fz	0,014	0,028	0,044	0,060	0,072	0,083	0,092	0,101	0,114
	2	1,25 x D	0,1 x D	0,5 x D	140	190	fz	0,014	0,028	0,044	0,060	0,072	0,083	0,092	0,101	0,114
	3	1,25 x D	0,1 x D	0,5 x D	120	160	fz	0,011	0,023	0,036	0,050	0,061	0,070	0,079	0,087	0,101
	4	1,25 x D	0,1 x D	0,5 x D	90	150	fz	0,010	0,021	0,033	0,045	0,054	0,062	0,070	0,077	0,088
M	1	1,25 x D	0,1 x D	0,5 x D	90	115	fz	0,011	0,023	0,036	0,050	0,061	0,070	0,079	0,087	0,101
	2	1,25 x D	0,1 x D	0,5 x D	60	80	fz	0,009	0,019	0,029	0,040	0,048	0,056	0,063	0,070	0,081
K	1	1,25 x D	0,1 x D	0,5 x D	120	150	fz	0,014	0,028	0,044	0,060	0,072	0,083	0,092	0,101	0,114
	2	1,25 x D	0,1 x D	0,5 x D	110	130	fz	0,011	0,023	0,036	0,050	0,061	0,070	0,079	0,087	0,101
N	1	1,25 x D	0,1 x D	0,5 x D	100	300	fz	0,020	0,040	0,060	0,080	0,100	0,120	0,140	0,160	0,200
	2	1,25 x D	0,1 x D	0,5 x D	250	750	fz	0,016	0,032	0,048	0,064	0,080	0,096	0,112	0,128	0,160
	5	1,25 x D	0,1 x D	0,5 x D	250	750	fz	0,018	0,036	0,054	0,072	0,090	0,108	0,126	0,144	0,180

F2AH...A/BDK30

Material Group		A		B	KC633M			Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%.								
					Cutting Speed — vc m/min			D1 — Diameter								
		ap	ae	ap	min	max	mm	2,0	4,0	6,0	8,0	10,0	12,0	14,0	16,0	20,0
P	1	0,75 x D	0,1 x D	0,5 x D	150	200	fz	0,014	0,028	0,044	0,060	0,072	0,083	0,092	0,101	0,114
	2	0,75 x D	0,1 x D	0,5 x D	140	190	fz	0,014	0,028	0,044	0,060	0,072	0,083	0,092	0,101	0,114
	3	0,75 x D	0,1 x D	0,5 x D	120	160	fz	0,011	0,023	0,036	0,050	0,061	0,070	0,079	0,087	0,101
	4	0,75 x D	0,1 x D	0,5 x D	90	150	fz	0,010	0,021	0,033	0,045	0,054	0,062	0,070	0,077	0,088
M	1	0,75 x D	0,1 x D	0,5 x D	90	115	fz	0,011	0,023	0,036	0,050	0,061	0,070	0,079	0,087	0,101
	2	0,75 x D	0,1 x D	0,5 x D	60	80	fz	0,009	0,019	0,029	0,040	0,048	0,056	0,063	0,070	0,081
K	1	0,75 x D	0,1 x D	0,5 x D	120	150	fz	0,014	0,028	0,044	0,060	0,072	0,083	0,092	0,101	0,114
	2	0,75 x D	0,1 x D	0,5 x D	110	130	fz	0,011	0,023	0,036	0,050	0,061	0,070	0,079	0,087	0,101
N	1	0,75 x D	0,1 x D	0,5XD	250	1000	fz	0,020	0,040	0,060	0,080	0,100	0,120	0,140	0,160	0,200
	2	0,75 x D	0,1 x D	0,5 x D	250	750	fz	0,016	0,032	0,048	0,064	0,080	0,096	0,112	0,128	0,160
	5	0,75 x D	0,1 x D	0,5 x D	250	750	fz	0,018	0,036	0,054	0,072	0,090	0,108	0,126	0,144	0,180

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 centres, please adjust parameters accordingly on >12mm diameter.

F2AH...AWM/L/X30...

Material Group		A		B	KC625M Cutting Speed — vc m/min			Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%. D1 — Diameter								
		ap	ae	ap	min	max	mm	3,0	4,0	6,0	8,0	10,0	12,0	16,0	18,0	20,0
P	1	3 x D	0,05 x D	0,15 x D	150	200	fz	0,013	0,028	0,044	0,060	0,072	0,083	0,101	0,107	0,114
	2	3 x D	0,05 x D	0,15 x D	140	190	fz	0,013	0,028	0,044	0,060	0,072	0,083	0,101	0,107	0,114
	3	3 x D	0,05 x D	0,15 x D	120	160	fz	0,011	0,023	0,036	0,050	0,061	0,070	0,087	0,094	0,101
	4	3 x D	0,05 x D	0,15 x D	90	150	fz	0,010	0,021	0,033	0,045	0,054	0,062	0,077	0,082	0,088
M	1	3 x D	0,05 x D	0,15 x D	90	115	fz	0,011	0,023	0,036	0,050	0,061	0,070	0,087	0,094	0,101
	2	3 x D	0,05 x D	0,15 x D	60	80	fz	0,009	0,019	0,029	0,040	0,048	0,056	0,070	0,075	0,081
K	1	3 x D	0,05 x D	0,15 x D	120	150	fz	0,013	0,028	0,044	0,060	0,072	0,083	0,101	0,107	0,114
	2	3 x D	0,05 x D	0,15 x D	110	130	fz	0,011	0,023	0,036	0,050	0,061	0,070	0,087	0,094	0,101
N	1	3 x D	0,05 x D	0,15 x D	250	1000	fz	0,020	0,040	0,060	0,080	0,100	0,120	0,160	0,180	0,200
	2	3 x D	0,05 x D	0,15 x D	250	750	fz	0,016	0,032	0,048	0,064	0,080	0,096	0,128	0,144	0,160
	5	3 x D	0,05 x D	0,15 x D	500	1000	fz	0,018	0,036	0,054	0,072	0,090	0,108	0,144	0,162	0,180

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 centres, please adjust parameters accordingly on >12mm diameter.

UEDE • 3-Flute Sharp

Material Group		A		B	KC643M Cutting Speed — vc m/min			Recommended Feed per Tooth (fz=inch/th) for side milling (A). For slotting (B), reduce fz by 10%. D1 — Diameter						
		ap	ae	ap	min	max	mm	2,0	3,0	4,0	6,0	8,0	10,0	12,0
P	1	1,5 x D	0,5 x D	1 x D	150	200	fz	0,014	0,021	0,028	0,044	0,060	0,072	0,083
	2	1,5 x D	0,5 x D	1 x D	140	190	fz	0,014	0,021	0,028	0,044	0,060	0,072	0,083
	3	1,5 x D	0,5 x D	1 x D	120	160	fz	0,011	0,017	0,023	0,036	0,050	0,061	0,070
	4	1,5 x D	0,5 x D	0,75 x D	90	150	fz	0,010	0,016	0,021	0,033	0,045	0,054	0,062
	5	1,5 x D	0,5 x D	1 x D	60	100	fz	0,009	0,014	0,019	0,029	0,040	0,048	0,056
	6	1,5 x D	0,5 x D	0,75 x D	50	75	fz	0,008	0,012	0,016	0,025	0,034	0,040	0,047
M	1	1,5 x D	0,5 x D	1 x D	90	115	fz	0,011	0,017	0,023	0,036	0,050	0,061	0,070
	2	1,5 x D	0,5 x D	1 x D	60	80	fz	0,009	0,014	0,019	0,029	0,040	0,048	0,056
	3	1,5 x D	0,5 x D	1 x D	60	70	fz	0,008	0,012	0,016	0,025	0,034	0,040	0,047
K	1	1,5 x D	0,5 x D	1 x D	120	150	fz	0,014	0,021	0,028	0,044	0,060	0,072	0,083
	2	1,5 x D	0,5 x D	1 x D	110	130	fz	0,011	0,017	0,023	0,036	0,050	0,061	0,070
	3	1,5 x D	0,5 x D	1 x D	100	130	fz	0,009	0,014	0,019	0,029	0,040	0,048	0,056
S	1	1,5 x D	0,3 x D	0,3 x D	50	90	fz	0,011	0,017	0,023	0,036	0,050	0,061	0,070
	2	1,5 x D	0,3 x D	0,3 x D	25	40	fz	0,006	0,009	0,013	0,019	0,026	0,032	0,037
	3	1,5 x D	0,5 x D	1 x D	60	80	fz	0,009	0,014	0,019	0,029	0,040	0,048	0,056
	4	1,5 x D	0,5 x D	1 x D	50	60	fz	0,007	0,011	0,016	0,026	0,037	0,045	0,052
H	1	1,5 x D	0,5 x D	0,75 x D	80	140	fz	0,010	0,016	0,021	0,033	0,045	0,054	0,062

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.

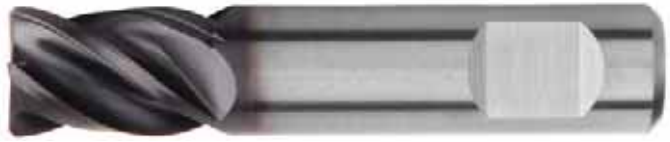
F3AH...A/BDK/L...

Material Group		A ap	A ae	B ap	KC633M Cutting Speed — vc m/min min	KC633M Cutting Speed — vc m/min max	mm	Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%. D1 — Diameter 2,0	4,0	6,0	8,0	10,0	12,0	14,0	16,0	20,0
P	1	0,5 x D	0,1 x D	0,25 x D	150	200	fz	0,014	0,028	0,044	0,060	0,072	0,083	0,092	0,101	0,114
P	2	0,5 x D	0,1 x D	0,25 x D	140	190	fz	0,014	0,028	0,044	0,060	0,072	0,083	0,092	0,101	0,114
P	3	0,5 x D	0,1 x D	0,25 x D	120	160	fz	0,011	0,023	0,036	0,050	0,061	0,070	0,079	0,087	0,101
P	4	0,5 x D	0,1 x D	0,25 x D	90	150	fz	0,010	0,021	0,033	0,045	0,054	0,062	0,070	0,077	0,088
M	1	0,5 x D	0,1 x D	0,25 x D	90	115	fz	0,011	0,023	0,036	0,050	0,061	0,070	0,079	0,087	0,101
M	2	0,5 x D	0,1 x D	0,25 x D	60	80	fz	0,009	0,019	0,029	0,040	0,048	0,056	0,063	0,070	0,081
K	1	0,5 x D	0,1 x D	0,25 x D	120	150	fz	0,014	0,028	0,044	0,060	0,072	0,083	0,092	0,101	0,114
K	2	0,5 x D	0,1 x D	0,25 x D	110	130	fz	0,011	0,023	0,036	0,050	0,061	0,070	0,079	0,087	0,101
N	1	0,5 x D	0,1 x D	0,25 x D	250	1000	fz	0,020	0,040	0,060	0,080	0,100	0,120	0,140	0,160	0,200
N	2	0,5 x D	0,1 x D	0,25 x D	250	750	fz	0,016	0,032	0,048	0,064	0,080	0,096	0,112	0,128	0,160
N	5	0,5 x D	0,1 x D	0,25 x D	250	750	fz	0,018	0,036	0,054	0,072	0,090	0,108	0,126	0,144	0,180

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 centres, please adjust parameters accordingly on >12mm diameter.

Solid End Milling

UEDE • 4-Flute Chamfer



Material Group		A ap	A ae	B ae	KC643M Cutting Speed — vc m/min min	KC643M Cutting Speed — vc m/min max	mm	Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%. D1 — Diameter 4,0	6,0	8,0	10,0	12,0
P	1	1,5 x D	0,5 x D	1 x D	150	200	fz	0,028	0,044	0,060	0,072	0,083
P	2	1,5 x D	0,5 x D	1 x D	140	190	fz	0,028	0,044	0,060	0,072	0,083
P	3	1,5 x D	0,5 x D	1 x D	120	160	fz	0,023	0,036	0,050	0,061	0,070
P	4	1,5 x D	0,5 x D	0,75 x D	90	150	fz	0,021	0,033	0,045	0,054	0,062
P	5	1,5 x D	0,5 x D	1 x D	60	100	fz	0,019	0,029	0,040	0,048	0,056
P	6	1,5 x D	0,5 x D	0,75 x D	50	75	fz	0,016	0,025	0,034	0,040	0,047
M	1	1,5 x D	0,5 x D	1 x D	90	115	fz	0,023	0,036	0,050	0,061	0,070
M	2	1,5 x D	0,5 x D	1 x D	60	80	fz	0,019	0,029	0,040	0,048	0,056
M	3	1,5 x D	0,5 x D	1 x D	60	70	fz	0,016	0,025	0,034	0,040	0,047
K	1	1,5 x D	0,5 x D	1 x D	120	150	fz	0,028	0,044	0,060	0,072	0,083
K	2	1,5 x D	0,5 x D	1 x D	110	130	fz	0,023	0,036	0,050	0,061	0,070
K	3	1,5 x D	0,5 x D	1 x D	100	130	fz	0,019	0,029	0,040	0,048	0,056
S	1	1,5 x D	0,3 x D	0,3 x D	50	90	fz	0,023	0,036	0,050	0,061	0,070
S	2	1,5 x D	0,3 x D	0,3 x D	25	40	fz	0,013	0,019	0,026	0,032	0,037
S	3	1,5 x D	0,5 x D	1 x D	60	80	fz	0,019	0,029	0,040	0,048	0,056
S	4	1,5 x D	0,5 x D	1 x D	50	60	fz	0,016	0,026	0,037	0,045	0,052
H	1	1,5 x D	0,5 x D	0,75 x D	80	140	fz	0,021	0,033	0,045	0,054	0,062

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.

F4AJ...ADN30...

Material Group		A		B	KC633M			Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%.								
					Cutting Speed — vc m/min			D1 — Diameter								
		ap	ae	ap	min	max	mm	2,0	4,0	6,0	8,0	10,0	12,0	14,0	16,0	20,0
P	1	1,5 x D	0,1 x D	0,5 x D	150	200	fz	0,014	0,028	0,044	0,060	0,072	0,083	0,092	0,101	0,114
	2	1,5 x D	0,1 x D	0,5 x D	140	190	fz	0,014	0,028	0,044	0,060	0,072	0,083	0,092	0,101	0,114
	3	1,5 x D	0,1 x D	0,5 x D	120	160	fz	0,011	0,023	0,036	0,050	0,061	0,070	0,079	0,087	0,101
	4	1,5 x D	0,1 x D	0,5 x D	90	150	fz	0,010	0,021	0,033	0,045	0,054	0,062	0,070	0,077	0,088
M	1	1,5 x D	0,1 x D	0,5 x D	90	115	fz	0,011	0,023	0,036	0,050	0,061	0,070	0,079	0,087	0,101
	2	1,5 x D	0,1 x D	0,5 x D	60	80	fz	0,009	0,019	0,029	0,040	0,048	0,056	0,063	0,070	0,081
K	1	1,5 x D	0,1 x D	0,5 x D	120	150	fz	0,014	0,028	0,044	0,060	0,072	0,083	0,092	0,101	0,114
	2	1,5 x D	0,1 x D	0,5 x D	110	130	fz	0,011	0,023	0,036	0,050	0,061	0,070	0,079	0,087	0,101

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 centres, please adjust parameters accordingly on >12mm diameter.

F4AJ...A/BDL/K30...

Material Group		A		B	KC633M			Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%.								
					Cutting Speed — vc m/min			D1 — Diameter								
		ap	ae	ap	min	max	mm	2,0	4,0	6,0	8,0	10,0	12,0	14,0	16,0	20,0
P	1	1 x D	0,1 x D	0,5 x D	180	220	fz	0,014	0,028	0,044	0,060	0,072	0,083	0,092	0,101	0,114
	2	1 x D	0,1 x D	0,5 x D	160	200	fz	0,014	0,028	0,044	0,060	0,072	0,083	0,092	0,101	0,114
	3	1 x D	0,1 x D	0,5 x D	160	180	fz	0,011	0,023	0,036	0,050	0,061	0,070	0,079	0,087	0,101
	4	1 x D	0,1 x D	0,5 x D	140	160	fz	0,010	0,021	0,033	0,045	0,054	0,062	0,070	0,077	0,088
M	1	1 x D	0,1 x D	0,5 x D	90	115	fz	0,011	0,023	0,036	0,050	0,061	0,070	0,079	0,087	0,101
	2	1 x D	0,1 x D	0,5 x D	60	80	fz	0,009	0,019	0,029	0,040	0,048	0,056	0,063	0,070	0,081
K	1	1 x D	0,1 x D	0,5 x D	120	150	fz	0,014	0,028	0,044	0,060	0,072	0,083	0,092	0,101	0,114
	2	1 x D	0,1 x D	0,5 x D	110	130	fz	0,011	0,023	0,036	0,050	0,061	0,070	0,079	0,087	0,101

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.

F4AJ...AWM/L/X30...

Material Group		A		B	K600	KC625M			Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%.								
					Cutting Speed — vc m/min				D1 — Diameter								
		ap	ae	ap	min	max	min	max	mm	3,0	4,0	6,0	8,0	10,0	12,0	16,0	18,0	20,0
P	1	3 x D	0,1 x D	0,15 x D	90	110	180	220	fz	0,013	0,028	0,044	0,060	0,072	0,083	0,101	0,107	0,114
	2	3 x D	0,1 x D	0,15 x D	80	100	160	200	fz	0,013	0,028	0,044	0,060	0,072	0,083	0,101	0,107	0,114
	3	3 x D	0,1 x D	0,15 x D	–	–	160	180	fz	0,011	0,023	0,036	0,050	0,061	0,070	0,087	0,094	0,101
	4	3 x D	0,05 x D	0,15 x D	–	–	140	160	fz	0,010	0,021	0,033	0,045	0,054	0,062	0,077	0,082	0,088
M	1	3 x D	0,1 x D	0,15 x D	–	–	90	115	fz	0,011	0,023	0,036	0,050	0,061	0,070	0,087	0,094	0,101
	2	3 x D	0,1 x D	0,15 x D	–	–	60	80	fz	0,009	0,019	0,029	0,040	0,048	0,056	0,070	0,075	0,081
K	1	3 x D	0,1 x D	0,15 x D	–	–	120	150	fz	0,013	0,028	0,044	0,060	0,072	0,083	0,101	0,107	0,114
	2	3 x D	0,1 x D	0,15 x D	–	–	110	130	fz	0,011	0,023	0,036	0,050	0,061	0,070	0,087	0,094	0,101

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 centres, please adjust parameters accordingly on >12mm diameter.

UEBC • 2-Flute Ball Nose

Material Group		A		B	KC643M			Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%.						
					Cutting Speed — vc m/min			D1 — Diameter						
		ap	ae	ap	min	max	mm	2,0	3,0	4,0	6,0	8,0	10,0	12,0
P	1	1,5 x D	0,5 x D	1 x D	150	200	fz	0,014	0,021	0,028	0,044	0,060	0,072	0,083
	2	1,5 x D	0,5 x D	1 x D	140	190	fz	0,014	0,021	0,028	0,044	0,060	0,072	0,083
	3	1,5 x D	0,5 x D	1 x D	120	160	fz	0,011	0,017	0,023	0,036	0,050	0,061	0,070
	4	1,5 x D	0,5 x D	0,75 x D	90	150	fz	0,010	0,016	0,021	0,033	0,045	0,054	0,062
	5	1,5 x D	0,5 x D	1 x D	60	100	fz	0,009	0,014	0,019	0,029	0,040	0,048	0,056
	6	1,5 x D	0,5 x D	0,75 x D	50	75	fz	0,008	0,012	0,016	0,025	0,034	0,040	0,047
M	1	1,5 x D	0,5 x D	1 x D	90	115	fz	0,011	0,017	0,023	0,036	0,050	0,061	0,070
	2	1,5 x D	0,5 x D	1 x D	60	80	fz	0,009	0,014	0,019	0,029	0,040	0,048	0,056
	3	1,5 x D	0,5 x D	1 x D	60	70	fz	0,008	0,012	0,016	0,025	0,034	0,040	0,047
K	1	1,5 x D	0,5 x D	1 x D	120	150	fz	0,014	0,021	0,028	0,044	0,060	0,072	0,083
	2	1,5 x D	0,5 x D	1 x D	110	130	fz	0,011	0,017	0,023	0,036	0,050	0,061	0,070
	3	1,5 x D	0,5 x D	1 x D	100	130	fz	0,009	0,014	0,019	0,029	0,040	0,048	0,056
S	1	1,5 x D	0,3 x D	0,3 x D	50	90	fz	0,011	0,017	0,023	0,036	0,050	0,061	0,070
	2	1,5 x D	0,3 x D	0,3 x D	25	40	fz	0,006	0,009	0,013	0,019	0,026	0,032	0,037
	3	1,5 x D	0,5 x D	1 x D	60	80	fz	0,009	0,014	0,019	0,029	0,040	0,048	0,056
	4	1,5 x D	0,5 x D	1 x D	50	60	fz	0,007	0,011	0,016	0,026	0,037	0,045	0,052
H	1	1,5 x D	0,5 x D	0,75 x D	80	140	fz	0,010	0,016	0,021	0,033	0,045	0,054	0,062

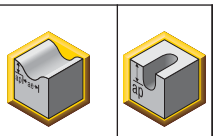
Lower value of cutting speed is used for high-stock removal applications or for higher hardness (machinability) within group.
Higher value of cutting speed is used for finishing applications or for lower hardness (machinability) within group.

UEBE • 3-Flute Ball Nose

Material Group		A		B	KC643M			Recommended Feed per Tooth (fz=inch/th) for side milling (A). For slotting (B), reduce fz by 20%.						
					Cutting Speed — vc m/min			D1 — Diameter						
		ap	ae	ap	min	max	mm	2,0	3,0	4,0	6,0	8,0	10,0	12,0
P	1	1,5 x D	0,5 x D	1 x D	150	200	fz	0,014	0,021	0,028	0,044	0,060	0,072	0,083
	2	1,5 x D	0,5 x D	1 x D	140	190	fz	0,014	0,021	0,028	0,044	0,060	0,072	0,083
	3	1,5 x D	0,5 x D	1 x D	120	160	fz	0,011	0,017	0,023	0,036	0,050	0,061	0,070
	4	1,5 x D	0,5 x D	0,75 x D	90	150	fz	0,010	0,016	0,021	0,033	0,045	0,054	0,062
	5	1,5 x D	0,5 x D	1 x D	60	100	fz	0,009	0,014	0,019	0,029	0,040	0,048	0,056
	6	1,5 x D	0,5 x D	0,75 x D	50	75	fz	0,008	0,012	0,016	0,025	0,034	0,040	0,047
M	1	1,5 x D	0,5 x D	1 x D	90	115	fz	0,011	0,017	0,023	0,036	0,050	0,061	0,070
	2	1,5 x D	0,5 x D	1 x D	60	80	fz	0,009	0,014	0,019	0,029	0,040	0,048	0,056
	3	1,5 x D	0,5 x D	1 x D	60	70	fz	0,008	0,012	0,016	0,025	0,034	0,040	0,047
K	1	1,5 x D	0,5 x D	1 x D	120	150	fz	0,014	0,021	0,028	0,044	0,060	0,072	0,083
	2	1,5 x D	0,5 x D	1 x D	110	130	fz	0,011	0,017	0,023	0,036	0,050	0,061	0,070
	3	1,5 x D	0,5 x D	1 x D	100	130	fz	0,009	0,014	0,019	0,029	0,040	0,048	0,056
S	1	1,5 x D	0,3 x D	0,3 x D	50	90	fz	0,011	0,017	0,023	0,036	0,050	0,061	0,070
	2	1,5 x D	0,3 x D	0,3 x D	25	40	fz	0,006	0,009	0,013	0,019	0,026	0,032	0,037
	3	1,5 x D	0,5 x D	1 x D	60	80	fz	0,009	0,014	0,019	0,029	0,040	0,048	0,056
	4	1,5 x D	0,5 x D	1 x D	50	60	fz	0,007	0,011	0,016	0,026	0,037	0,045	0,052
H	1	1,5 x D	0,5 x D	0,75 x D	80	140	fz	0,010	0,016	0,021	0,033	0,045	0,054	0,062

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.

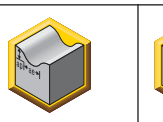
F2ALDN30...

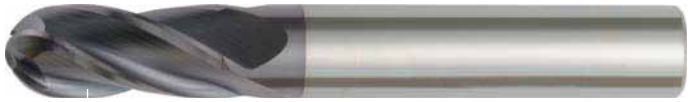


Material Group		A		B	KC633M			Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%.										
					Cutting Speed — vc m/min			D1 — Diameter										
		ap	ae	ap	min	max	mm	2,0	3,0	4,0	5,0	6,0	8,0	10,0	12,0	14,0	16,0	18,0	20,0
P	1	1 x D	0,25 x D	0,5 x D	180	220	fz	0,014	0,021	0,028	0,036	0,044	0,060	0,072	0,083	0,092	0,101	0,107	0,114
	2	1 x D	0,25 x D	0,5 x D	160	200	fz	0,014	0,021	0,028	0,036	0,044	0,060	0,072	0,083	0,092	0,101	0,107	0,114
	3	1 x D	0,25 x D	0,5 x D	160	180	fz	0,011	0,017	0,023	0,030	0,036	0,050	0,061	0,070	0,079	0,087	0,094	0,101
	4	1 x D	0,25 x D	0,4 x D	140	160	fz	0,010	0,016	0,021	0,027	0,033	0,045	0,054	0,062	0,070	0,077	0,082	0,088
M	1	1 x D	0,25 x D	0,5 x D	90	115	fz	0,011	0,017	0,023	0,030	0,036	0,050	0,061	0,070	0,079	0,087	0,094	0,101
	2	1 x D	0,25 x D	0,5 x D	60	80	fz	0,009	0,014	0,019	0,024	0,029	0,040	0,048	0,056	0,063	0,070	0,075	0,081
K	1	1 x D	0,25 x D	0,5 x D	120	150	fz	0,014	0,021	0,028	0,036	0,044	0,060	0,072	0,083	0,092	0,101	0,107	0,114
	2	1 x D	0,25 x D	0,5 x D	110	130	fz	0,011	0,017	0,023	0,030	0,036	0,050	0,061	0,070	0,079	0,087	0,094	0,101
N	1	1 x D	0,25 x D	0,5 x D	250	1000	fz	0,020	0,030	0,040	0,050	0,060	0,080	0,100	0,120	0,140	0,160	0,180	0,200
	2	1 x D	0,25 x D	0,5 x D	250	750	fz	0,016	0,024	0,032	0,040	0,048	0,064	0,080	0,096	0,112	0,128	0,144	0,160
	3	1 x D	0,25 x D	0,5 x D	250	750	fz	0,018	0,027	0,036	0,045	0,054	0,072	0,090	0,108	0,126	0,144	0,162	0,180

Solid End Milling

F4ALDN30....





Material Group		A		B	KC633M			Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%.							
					Cutting Speed — vc m/min			D1 — Diameter							
		ap	ae	ap	min	max	mm	2,0	4,0	6,0	8,0	10,0	12,0	16,0	20,0
P	1	1,25 x D	0,25 x D	0,5 x D	150	200	fz	0,014	0,028	0,044	0,060	0,072	0,083	0,101	0,114
	2	1,25 x D	0,25 x D	0,5 x D	140	190	fz	0,014	0,028	0,044	0,060	0,072	0,083	0,101	0,114
	3	1,25 x D	0,25 x D	0,5 x D	120	160	fz	0,011	0,023	0,036	0,050	0,061	0,070	0,087	0,101
	4	1,25 x D	0,25 x D	0,4 x D	90	150	fz	0,010	0,021	0,033	0,045	0,054	0,062	0,077	0,088
M	1	1,25 x D	0,25 x D	0,5 x D	90	115	fz	0,011	0,023	0,036	0,050	0,061	0,070	0,087	0,101
	2	1,25 x D	0,25 x D	0,5 x D	60	80	fz	0,009	0,019	0,029	0,040	0,048	0,056	0,070	0,081
K	1	1,25 x D	0,25 x D	0,5 x D	120	150	fz	0,014	0,028	0,044	0,060	0,072	0,083	0,101	0,114
	2	1,25 x D	0,25 x D	0,5 x D	110	130	fz	0,011	0,023	0,036	0,050	0,061	0,070	0,087	0,101
N	1	1,25 x D	0,25 x D	0,5 x D	250	1000	fz	0,020	0,040	0,060	0,080	0,100	0,120	0,160	0,200
	2	1,25 x D	0,25 x D	0,5 x D	250	750	fz	0,016	0,032	0,048	0,064	0,080	0,096	0,128	0,160
	3	1,25 x D	0,25 x D	0,5 x D	250	750	fz	0,018	0,036	0,054	0,072	0,090	0,108	0,144	0,180

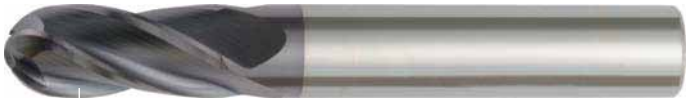
Lower value of cutting speed is used for high stock removal applications or for higher hardness (machinability) within group.
Higher value of cutting speed is used for finishing applications or for lower hardness (machinability) within group.
Above parameters are based on ideal conditions. For smaller taper machining centres, please adjust parameters accordingly on >12mm diameter.

F2AL...ADL30...

Material Group		A		B	KC633M			Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%.							
					Cutting Speed — vc m/min			D1 — Diameter							
		ap	ae	ap	min	max	mm	3,0	4,0	6,0	8,0	10,0	12,0	16,0	20,0
P	1	1,25 x D	0,25 x D	0,5 x D	150	200	fz	0,021	0,028	0,044	0,060	0,072	0,083	0,101	0,114
	2	1,25 x D	0,25 x D	0,5 x D	140	190	fz	0,021	0,028	0,044	0,060	0,072	0,083	0,101	0,114
	3	1,25 x D	0,25 x D	0,5 x D	120	160	fz	0,017	0,023	0,036	0,050	0,061	0,070	0,087	0,101
	4	1,25 x D	0,25 x D	0,5 x D	90	150	fz	0,016	0,021	0,033	0,045	0,054	0,062	0,077	0,088
M	1	1,25 x D	0,25 x D	0,5 x D	90	115	fz	0,017	0,023	0,036	0,050	0,061	0,070	0,087	0,101
	2	1,25 x D	0,25 x D	0,5 x D	60	80	fz	0,014	0,019	0,029	0,040	0,048	0,056	0,070	0,081
K	1	1,25 x D	0,25 x D	0,5 x D	120	150	fz	0,021	0,028	0,044	0,060	0,072	0,083	0,101	0,114
	2	1,25 x D	0,25 x D	0,5 x D	110	130	fz	0,017	0,023	0,036	0,050	0,061	0,070	0,087	0,101
N	1	1,25 x D	0,25 x D	0,5 x D	250	1000	fz	0,030	0,040	0,060	0,080	0,100	0,120	0,160	0,200
	2	1,25 x D	0,25 x D	0,5 x D	250	750	fz	0,024	0,032	0,048	0,064	0,080	0,096	0,128	0,160
	3	1,25 x D	0,25 x D	0,5 x D	250	750	fz	0,027	0,036	0,054	0,072	0,090	0,108	0,144	0,180

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 centres, please adjust parameters accordingly on >12mm diameter.

F4AL...ADL30...



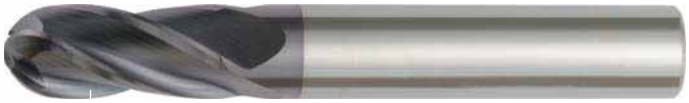
Material Group		A		B	KC633M			Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%.							
					Cutting Speed — vc m/min			D1 — Diameter							
		ap	ae	ap	min	max	mm	2,0	4,0	6,0	8,0	10,0	12,0	16,0	20,0
P	1	1,25 x D	0,25 x D	0,5 x D	150	200	fz	0,014	0,028	0,044	0,060	0,072	0,083	0,101	0,114
	2	1,25 x D	0,25 x D	0,5 x D	140	190	fz	0,014	0,028	0,044	0,060	0,072	0,083	0,101	0,114
	3	1,25 x D	0,25 x D	0,5 x D	120	160	fz	0,011	0,023	0,036	0,050	0,061	0,070	0,087	0,101
	4	1,25 x D	0,25 x D	0,4 x D	90	150	fz	0,010	0,021	0,033	0,045	0,054	0,062	0,077	0,088
M	1	1,25 x D	0,25 x D	0,5 x D	90	115	fz	0,011	0,023	0,036	0,050	0,061	0,070	0,087	0,101
	2	1,25 x D	0,25 x D	0,5 x D	60	80	fz	0,009	0,019	0,029	0,040	0,048	0,056	0,070	0,081
K	1	1,25 x D	0,25 x D	0,5 x D	120	150	fz	0,014	0,028	0,044	0,060	0,072	0,083	0,101	0,114
	2	1,25 x D	0,25 x D	0,5 x D	110	130	fz	0,011	0,023	0,036	0,050	0,061	0,070	0,087	0,101
N	1	1,25 x D	0,25 x D	0,5 x D	250	1000	fz	0,020	0,040	0,060	0,080	0,100	0,120	0,160	0,200
	2	1,25 x D	0,25 x D	0,5 x D	250	750	fz	0,016	0,032	0,048	0,064	0,080	0,096	0,128	0,160
	3	1,25 x D	0,25 x D	0,5 x D	250	750	fz	0,018	0,036	0,054	0,072	0,090	0,108	0,144	0,180

These guidelines may require possible 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 centres, please adjust parameters accordingly on >12mm diameter.

F2/4AL...AWM/L/X30L...

Material Group		A ap	A ae	B ap	KC633M Cutting Speed — vc m/min min	KC633M Cutting Speed — vc m/min max	mm	Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%. D1 — Diameter 3,0	4,0	6,0	8,0	10,0	12,0	16,0
P	1	1,5 x D	0,15 x D	0,25 x D	150	200	fz	0,021	0,028	0,044	0,060	0,072	0,083	0,101
P	2	1,5 x D	0,15 x D	0,25 x D	140	190	fz	0,021	0,028	0,044	0,060	0,072	0,083	0,101
P	3	1,5 x D	0,15 x D	0,25 x D	120	160	fz	0,017	0,023	0,036	0,050	0,061	0,070	0,087
P	4	1,5 x D	0,15 x D	0,25 x D	90	150	fz	0,016	0,021	0,033	0,045	0,054	0,062	0,077
M	1	1,5 x D	0,15 x D	0,25 x D	90	115	fz	0,017	0,023	0,036	0,050	0,061	0,070	0,087
M	2	1,5 x D	0,15 x D	0,25 x D	60	80	fz	0,014	0,019	0,029	0,040	0,048	0,056	0,070
K	1	1,5 x D	0,15 x D	0,25 x D	120	150	fz	0,021	0,028	0,044	0,060	0,072	0,083	0,101
K	2	1,5 x D	0,15 x D	0,25 x D	110	130	fz	0,017	0,023	0,036	0,050	0,061	0,070	0,087
N	1	1,5 x D	0,25 x D	0,5 x D	250	1000	fz	0,030	0,040	0,060	0,080	0,100	0,120	0,160
N	2	1,5 x D	0,25 x D	0,5 x D	250	750	fz	0,024	0,032	0,048	0,064	0,080	0,096	0,128
N	3	1,5 x D	0,25 x D	0,5 x D	250	750	fz	0,027	0,036	0,054	0,072	0,090	0,108	0,144

F2/4AL...AWM/L/X30L...



Material Group		A ap	A ae	B ap	KC633M Cutting Speed — vc m/min min	KC633M Cutting Speed — vc m/min max	mm	Feed per Tooth — fz information is for side milling (A). For slotting (B), reduce fz by 20%. D1 — Diameter 3,0	4,0	6,0	8,0	10,0	12,0	16,0
P	1	1,5 x D	0,15 x D	0,25 x D	150	200	fz	0,021	0,028	0,044	0,060	0,072	0,083	0,101
P	2	1,5 x D	0,15 x D	0,25 x D	140	190	fz	0,021	0,028	0,044	0,060	0,072	0,083	0,101
P	3	1,5 x D	0,15 x D	0,25 x D	120	160	fz	0,017	0,023	0,036	0,050	0,061	0,070	0,087
P	4	1,5 x D	0,15 x D	0,25 x D	90	150	fz	0,016	0,021	0,033	0,045	0,054	0,062	0,077
M	1	1,5 x D	0,15 x D	0,25 x D	90	115	fz	0,017	0,023	0,036	0,050	0,061	0,070	0,087
M	2	1,5 x D	0,15 x D	0,25 x D	60	80	fz	0,014	0,019	0,029	0,040	0,048	0,056	0,070
K	1	1,5 x D	0,15 x D	0,25 x D	120	150	fz	0,021	0,028	0,044	0,060	0,072	0,083	0,101
K	2	1,5 x D	0,15 x D	0,25 x D	110	130	fz	0,017	0,023	0,036	0,050	0,061	0,070	0,087

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 centres, please adjust parameters accordingly on >12mm diameter.

High-Performance Milling Chucks

- Heavy- and fine-milling capabilities.
- Prebalanced G6.3 @ 20,000 RPM — 6 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" (0,01mm) 3 x D1.
- Fine milling — tighten as above, then back the locknut off 1/8–1/4 turn to achieve runout .0002" (0,005mm) 3 x D1.
- Sub-zero heat treatment for material stability.
- Through-the-toolholder coolant capability using stop screw as sealing device.
- 3/8" (10mm) axial adjustment stop screw.

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