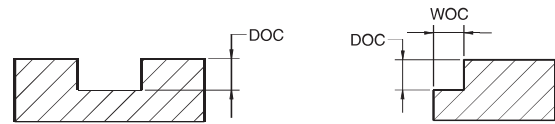# Recommended Starting Speed and Feeds

End Mill Series includes HEC, SLEC, DHEC, and CRHEC

1) Starting parameters are based on using stub length tools.
2) These guidelines may require possible variations to achieve optimum results.

DOC — DOC — WOC

Sidebar tabs: Inserts, Face Mills, End Mills, Die and Mold, Slotting, Thread Milling, Widia Cutters, Vintage Cutters, Accessories, Technical Data, Mat'l Database, Index

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Low & Plain Carbon, Alloy & Tool Steels (<286 HB) <30 HRC

AISI: 1008, 1010, 1018, 1141, 12L13, 12L14, 1045, 1335, 4140, 4340, 5120, 8620, P20

cutting speed (SFM)

K600	250-300
KC610M	300-400
KC635M	350-450

Reduce speed by 20% for slotting applications.

application parameters			feed per tooth									
			1/16"	1/8"	3/16"	1/4"	5/16"	3/8"	1/2"	5/8"	3/4"	1"
	DOC	WOC	2 mm	8 mm	4 mm	6 mm	8 mm	10 mm	12 mm	16 mm	20 mm	25 mm
profiling	1 x dia.	.1 x dia.	.0006	.0010	.0012	.0020	.0022	.0025	.0030	.0035	.0040	.0045
slotting	.5 x dia,	–	.0003	.0005	.0007	.0010	.0017	.0020	.0024	.0028	.0030	.0035

Plain Carbon, Alloy & Tool Steels (294-371 HB) 31-40 HRC

Tool steels: H10, H11, Alloy steels AISI: 1335, 4140, 4150, 4320, 4340, 4422, 5120, 8620

cutting speed (SFM)

KC610M	250-300
KC635M	300-350

Reduce speed by 20% for slotting applications.

application parameters			feed per tooth									
			1/16"	1/8"	3/16"	1/4"	5/16"	3/8"	1/2"	5/8"	3/4"	1"
	DOC	WOC	2 mm	8 mm	4 mm	6 mm	8 mm	10 mm	12 mm	16 mm	20 mm	25 mm
profiling	1 x dia.	.1 x dia.	.0006	.0010	.0012	.0020	.0022	.0025	.0030	.0035	.0040	.0045
slotting	.5 x dia.	–	.0003	.0004	.0005	.0010	.0011	.0013	.0015	.0017	.0020	.0025

Austenitic Stainless Steels (200 & 300 Series) Including Duplex (135-275 HB) <28 HRC

AISI: 201, 209, 219, 302, 303, 304, 316, 321, 347, 329, ASTM: XM-1, XM-7, XM-21, CF-8M

cutting speed (SFM)

KC610M	200-350
KC635M	350-450

Reduce speed by 20% for slotting applications.

application parameters			feed per tooth									
			1/16"	1/8"	3/16"	1/4"	5/16"	3/8"	1/2"	5/8"	3/4"	1"
	DOC	WOC	2 mm	8 mm	4 mm	6 mm	8 mm	10 mm	12 mm	16 mm	20 mm	25 mm
profiling	1 x dia.	.1 x dia.	.0003	.0005	.0007	.0010	.0013	.0017	.0025	.0030	.0040	.0045
slotting	.5 x dia.	–	.0002	.0003	.0004	.0005	.0007	.0010	.0015	.0017	.0020	.0025

Ferritic, Martensitic (400 & 500 Series) & PH Stainless Steels (<371 HB) <40 HRC

AISI: 416, 416F, 416Se, 420F, PH Steels 15-5 PH, 17-4 H, 17-7 PH

cutting speed (SFM)

KC610M	250-350
KC635M	300-400

Reduce speed by 20% for slotting applications.

| application parameters			feed per tooth									
			1/16"	1/8"	3/16"	1/4"	5/16"	3/8"	1/2"	5/8"	3/4"	1"
	DOC	WOC	2 mm	8 mm	4 mm	6 mm	8 mm	10 mm	12 mm	16 mm	20 mm	25 mm
profiling	1 x dia.	.1 x dia.	.0006	.0010	.0012	.0020	.0022	.0025	.0030	.0035	.0040	.0045
slotting	.5 x dia.	–	.0003	.0004	.0005	.0007	.0015	.0020	.0024	.0028	.0030	.0035

NOTE: Above guidelines may require possible variations to achieve optimum results.

Recommended Starting Speed and Feeds

End Mill Series includes HEC, SLEC, DHEC, and CRHEC

1) Starting parameters are based on using regular length tools.
2) These guidelines may require possible variations to achieve optimum results.
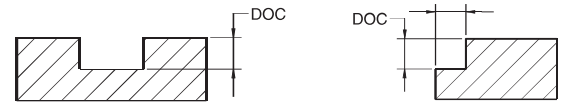
Gray Cast Iron (120-220 HB) <18 HRC

ASTM A48: Class 20, 25, 30, 35, 40, 45, 50, 55, 60, SAE J431: grade G1800, G3000, G3500

cutting speed (SFM)

K600	350-450
KC635M	450-550

Reduce speed by 20% for slotting applications.

application parameters			feed per tooth									
			1/16"	1/8"	3/16"	1/4"	5/16"	3/8"	1/2"	5/8"	3/4"	1"
	DOC	WOC	2 mm	8 mm	4 mm	6 mm	8 mm	10 mm	12 mm	16 mm	20 mm	25 mm
profiling	1 x dia.	.1 x dia.	.0003	.0005	.0007	.0015	.0020	.0023	.0028	.0040	.0050	.0060
slotting	.5 x dia.	–	.0002	.0003	.0005	.0007	.0010	.0015	.0020	.0025	.0030	.0035

Gray Cast Iron (220-320 HB) 19-34 HRC

ASTM A48: Class 20, 25, 30, 35, 40, 45, 50, 55, 60, SAE J431: grade G1800, G3000, G3500

cutting speed (SFM)

KC610M	250-300
KC635M	350-450

Reduce speed by 20% for slotting applications.

application parameters			feed per tooth									
			1/16"	1/8"	3/16"	1/4"	5/16"	3/8"	1/2"	5/8"	3/4"	1"
	DOC	WOC	2 mm	8 mm	4 mm	6 mm	8 mm	10 mm	12 mm	16 mm	20 mm	25 mm
profiling	1 x dia.	.1 x dia.	.0003	.0005	.0007	.0015	.0020	.0023	.0028	.0040	.0050	.0060
slotting	.3 x dia.	–	.0002	.0003	.0005	.0007	.0010	.0015	.0020	.0025	.0030	.0035

Titanium-alloyed

Commercially pure: Ti98.8, Alpha: TiSa12.5SN, Alpha/Beta: Ti-6AI-4V

cutting speed (SFM)

KC635M	150-250

Reduce speed by 20% for slotting applications.

application parameters			feed per tooth									
			1/16"	1/8"	3/16"	1/4"	5/16"	3/8"	1/2"	5/8"	3/4"	1"
	DOC	WOC	2 mm	8 mm	4 mm	6 mm	8 mm	10 mm	12 mm	16 mm	20 mm	25 mm
profiling	1 x dia.	.1 x dia.	.0002	.0005	.0007	.0010	.0012	.0015	.0018	.0025	.0030	.0035
slotting	.25 x dia.	–	.0001	.0003	.0004	.0006	.0009	.0010	.0015	.0018	.0022	.0025

Titanium-alloyed, Nickel Base

Inconel: 601, 617, 625, 718, X-750, 901, Waspaloy, Hastelloy

cutting speed (SFM)

KC635M	100-200

Reduce speed by 20% for slotting applications.

application parameters			feed per tooth									
			1/16"	1/8"	3/16"	1/4"	5/16"	3/8"	1/2"	5/8"	3/4"	1"
	DOC	WOC	2 mm	8 mm	4 mm	6 mm	8 mm	10 mm	12 mm	16 mm	20 mm	25 mm
profiling	1 x dia.	.1 x dia.	.0002	.0005	.0007	.0010	.0012	.0015	.0018	.0025	.0030	.0035
slotting	.25 x dia.	–	.0001	.0003	.0004	.0006	.0009	.0010	.0015	.0018	.0022	.0025

Hardened Steels (381-481 HB) 41-50 HRC

Tool steels: H10, H11, H13, D2, D3, D5, Alloy steels AISI: 1335, 4140, 4150, 4320, 4340, 5140, 8625, Die steels: P20, P21

cutting speed (SFM)

KC635M	150-250

Reduce speed by 20% for slotting applications.

application parameters			feed per tooth									
			1/16"	1/8"	3/16"	1/4"	5/16"	3/8"	1/2"	5/8"	3/4"	1"
	DOC	WOC	2 mm	8 mm	4 mm	6 mm	8 mm	10 mm	12 mm	16 mm	20 mm	25 mm
profiling	1 x dia.	.1 x dia	.0002	.0005	.0007	.0010	.0015	.0017	.0020	.0023	.0025	.0030
slotting	.25 x dia	–	.0001	.0003	.0004	.0006	.0009	.0010	.0012	.0014	.0015	.0018

NOTE: Above guidelines may require possible variations to achieve optimum results.

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