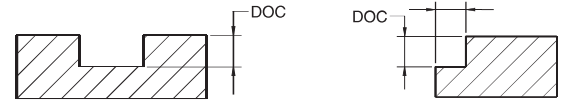


# Recommended Starting Speed and Feeds



## End Mill Series – HPRSS..S3., F3BS..BD.35

- 1) Starting parameters are based on using regular-length tools; for stub-length tools, increase feed by 20%.
- 2) For DOC equal to .05 x diameter on slotting applications, increase feed by 20%.
- 3) These guidelines may require possible variations to achieve optimum results.



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

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

application	maximum cutting parameters		cutting speed	feed per tooth						
	DOC	WOC		SFM	1/4"	5/16"	3/8"	1/2"	5/8"	3/4"
				6 mm	8 mm	10 mm	12 mm	16 mm	20 mm	25 mm
profiling	1 x dia.	.4 x dia.	450-550	.0014	.0016	.0019	.0029	.0029	.0032	.0034
slotting	1 x dia.	–	400-500	.0012	.0014	.0016	.0024	.0024	.0026	.0028

### 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

application	maximum cutting parameters		cutting speed	feed per tooth						
	DOC	WOC		SFM	1/4"	5/16"	3/8"	1/2"	5/8"	3/4"
				6 mm	8 mm	10 mm	12 mm	16 mm	20 mm	25 mm
profiling	1 x dia.	.4 x dia.	300-425	.0012	.0015	.0018	.0024	.0030	.0035	.0040
slotting	1 x dia.	–	270-350	.0010	.0012	.0014	.0020	.0022	.0024	.0026

### Cast Iron (<220 HB) <18 HRC

Gray: Class 20, 25; Ductile: Grades 60-40-18, 65-45-12; Malleable: 32510, 35018, M3210

application	maximum cutting parameters		cutting speed	feed per tooth						
	DOC	WOC		SFM	1/4"	5/16"	3/8"	1/2"	5/8"	3/4"
				6 mm	8 mm	10 mm	12 mm	16 mm	20 mm	25 mm
profiling	1 x dia.	.4 x dia.	450-550	.0015	.0018	.0020	.0025	.0030	.0045	.0050
slotting	1 x dia.	–	400-500	.0008	.0012	.0015	.0022	.0025	.0030	.0035

### Aluminum and Other Free-Machining, Non-Ferrous Materials, Low Silicon

Aluminum, 6061-T6, 7075-T6

application	maximum cutting parameters		cutting speed	feed per tooth						
	DOC	WOC		SFM	1/4"	5/16"	3/8"	1/2"	5/8"	3/4"
				6 mm	8 mm	10 mm	12 mm	16 mm	20 mm	25 mm
profiling	1 x dia.	.4 x dia.	2000-5500	.0026	.0028	.0036	.0048	.0056	.0070	.0080
slotting	1 x dia.	–	1600-5000	.0022	.0024	.0030	.0040	.0047	.0060	.0070

### Titanium Alloys, Nickel Base

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

application	maximum cutting parameters		cutting speed	feed per tooth						
	DOC	WOC		SFM	1/4"	5/16"	3/8"	1/2"	5/8"	3/4"
				6 mm	8 mm	10 mm	12 mm	16 mm	20 mm	25 mm
profiling	1 x dia.	.4 x dia.	85-110	.0007	.0009	.0011	.0014	.0018	.0024	.0029
slotting	1 x dia.	–	75-90	.0006	.0008	.0009	.0012	.0015	.0020	.0024

NOTE: For cast iron >18 HRC (Gray: class 45, 55; Ductile: grades 80-55-06, 120-90-02, D5506; Malleable: 70003, 80002, 90001), reduce SFM by 20% and maintain chiploads.