

VP2-End Mill

Speed and Feed Recommendations

	WORKPIECE MATERIAL	HARDNESS	TYPE OF CUT	SURFACE SPEED (SFM)	FEED PER TOOTH BY END MILL DIAMETER				
					1/8"	1/4"	1/2"	3/4"	1"
ISO P	Plain Steels - Low and Medium Carbon 1018, 12L12, 1108, 1213	175 BRN	Profile	600	0.0004	0.0015	0.0034	0.0043	0.0047
		-	Slot	480	0.0003	0.0011	0.0027	0.0034	0.0038
	Plain Steels - Low and Medium Carbon 1018, 12L12, 1108, 1213	275 BRN	Profile	480	0.0004	0.0015	0.0034	0.0043	0.0047
		28 HRc	Slot	385	0.0003	0.0011	0.0027	0.0034	0.0038
	Alloy Steels - Medium Carbon 4140, 4150, 4340	275 BRN	Profile	480	0.0003	0.0011	0.0028	0.0039	0.0045
		28 HRc	Slot	385	0.0002	0.0009	0.0022	0.0031	0.0036
Alloy Steels - Medium Carbon 4140, 4150, 4340	375 BRN	Profile	360	0.0003	0.0011	0.0028	0.0039	0.0045	
	41 HRC	Slot	290	0.0002	0.0009	0.0022	0.0031	0.0036	
Mold & Die Steels O1, A2, D2, H13, P20	275 BRN	Profile	215	0.0002	0.0011	0.0028	0.0039	0.0045	
	28 HRc	Slot	175	0.0002	0.0009	0.0022	0.0031	0.0036	
ISO M	300 Series Stainless Steels 304,316, 416, 440F	275 BRN	Profile	345	0.0003	0.0011	0.0028	0.0039	0.0047
		28 HRc	Slot	275	0.0002	0.0009	0.0022	0.0031	0.0038
	400 Series Stainless Steels 430, 436	325 BRN	Profile	290	0.0003	0.0011	0.0028	0.0039	0.0047
		35 HRc	Slot	230	0.0002	0.0009	0.0022	0.0031	0.0038
Precipitation Hardened Stainless Steels 17-4PH, 15-4PH	325 BRN	Profile	290	0.0002	0.0011	0.0025	0.0034	0.0045	
	35 HRc	Slot	230	0.0002	0.0009	0.0020	0.0027	0.0036	
ISO K	Cast Iron Gray	200 BRN	Profile	580	0.0004	0.0013	0.0034	0.0043	0.0047
		-	Slot	460	0.0003	0.0011	0.0027	0.0034	0.0038
	Cast Iron Ductile	300 BRN	Profile	265	0.0003	0.0011	0.0034	0.0037	0.0047
		32 HRc	Slot	210	0.0002	0.0009	0.0027	0.0029	0.0038
ISO S	Titanium Alloys Ti-6Al-4V, ASTM B367 Grades C-3, C-4	300 BRN	Profile	300	0.0003	0.0011	0.0028	0.0030	0.0039
		32 HRc	Slot	240	0.0002	0.0009	0.0022	0.0025	0.0031
	High Temperature Alloys Inconel, Hastelloy, Waspaloy	300 BRN	Profile	75	0.0002	0.0008	0.0022	0.0028	0.0036
		32 HRc	Slot	60	0.0002	0.0007	0.0018	0.0022	0.0029

Speeds and Feeds are suggested starting points and may be increased or decreased depending on actual material and machining conditions.

In general, use lower speeds and feeds for hard and difficult-to-machine materials. Use higher speeds and feeds for easy-to-machine materials. Use higher speeds for lighter cuts, smaller tools, and better finishes. Higher feed rates can improve tool life and performance in softer materials and more abrasive materials.

For long and extra long tools reduce feed rates by 50%.

NOTE: Information in this chart is for reference only. We will not be held liable for any consequential damages or economic loss due to the use of information contained within this chart.

Successful Machining

Tool Holding - High Quality tool holders should be used to minimize run-out and maximize rigidity.

Machine - A rigid machine with a high quality spindle is required.

Work-Holding - The workpiece should be securely held to prevent movement and vibration while machining.

Coolant - A high quality coolant under adequate pressure should be used to enhance chip control and improve tool life.

Plunging - When Plunging or Ramping the feed rate should be reduced 50%.

Tool Choice - The shortest tool that will do the job is recommended to reduce chatter and deflection.

Speed and Feed - Using correct speed and feed rates will provide a better surface finish and improve tool life.

VP2-MILL Diameter Tolerances		
Mill Diameter: +.000/-0.002 (All Sizes)		
Shank Diameter: h6		
Shank Dia. Range		Tolerance
< 3mm .1181"	≤ 6mm .2362"	+.000mm/-0.008mm +.0000"/-0.00031"
> 6mm .2362"	≤ 10mm .3937"	+.000mm/-0.009mm +.0000"/-0.00035"
> 10mm .3937"	≤ 18mm .7087"	+.000mm/-0.011mm +.0000"/-0.00043"
> 18mm .7087"	≤ 30mm 1.1811"	+.000mm/-0.013mm +.0000"/-0.00051"