

9-Flute variFLUTE®

Speed and Feed Recommendations

	WORKPIECE MATERIAL	TYPE OF CUT	AXIAL DOC	RADIAL DOC	SURFACE SPEED (SFM)	3/16" 4.5 MM	1/4" 6 MM	3/8" 10 MM	1/2" 12 MM	5/8" 16 MM	3/4" 20 MM	1" 25 MM	
Steels – ISO P	Low Alloy Steels 10XX, 11XX, 13XX	High Speed Profiling	Full LOC	< .025 D	525	.0023	.0028	.0041	.0055	.0069	.0083	.0111	
		Profiling	Full LOC	< .015 D	400	.0024	.0032	.0057	.0063	.0079	.0095	.0127	
	Medium Alloy Steels 200, 250, 300	High Speed Profiling	Full LOC	< .025 D	425	.0019	.0025	.0038	.0050	.0063	.0076	.0101	
		Profiling	Full LOC	< .015 D	375	.0023	.0029	.0043	.0058	.0072	.0086	.0116	
	High Alloy Steels Mold & Die A2, P20, 01, 02, D2, H13	High Speed Profiling	1 x D	< .025 D	475	.0016	.0022	.0032	.0042	.0053	.0064	.0086	
		Profiling	Full LOC	< .015 D	350	.0018	.0024	.0037	.0049	.0061	.0073	.0098	
	High Strength Steels 4140, 4340, 52100	High Speed Profiling	1 x D	< .025 D	500	.0019	.0025	.0038	.0050	.0063	.0076	.0101	
		Profiling	Full LOC	< .015 D	375	.0023	.0029	.0043	.0058	.0072	.0086	.0116	
	Stainless Steels – ISO M	Martensitic Stainless Steels 403, 410, 416	High Speed Profiling	1.5 x D	< .025 D	500	.0019	.0025	.0038	.0050	.0063	.0076	.0101
			Profiling	Full LOC	< .015 D	375	.0022	.0029	.0043	.0058	.0072	.0086	.0116
Austenitic Stainless Steels 302, 303, 304L, 316L		High Speed Profiling	1.5 x D	< .025 D	475	.0019	.0028	.0042	.0057	.0070	.0085	.0113	
		Profiling	Full LOC	< .015 D	350	.0020	.0027	.0041	.0054	.0068	.0081	.0109	
Precipitation Hardened Stainless Steels 13-8, 15-5, 17-4PH		High Speed Profiling	1.5 x D	< .025 D	450	.0017	.0023	.0035	.0047	.0059	.0070	.0094	
		Profiling	Full LOC	< .015 D	325	.0016	.0023	.0034	.0045	.0057	.0068	.0091	
High Temp Alloys – ISO S	Iron Base High Temp Alloys Incoloy 800-802, Multimet N155	High Speed Profiling	.5 x D	< .02 D	155	.0005	.0008	.0013	.0017	.0021	.0025	.0033	
		Profiling	Full LOC	< .01 D	130	.0006	.0009	.0014	.0019	.0023	.0028	.0038	
	Nickel Base High Temp Alloys Inconel 600, 625, 718, Nickel 200, Monel 400, 405, K-Monel, Incoloy 600	High Speed Profiling	.5 x D	< .02 D	160	.0005	.0007	.0010	.0017	.0016	.0026	.0026	
		Profiling	Full LOC	< .01 D	145	.0005	.0007	.0011	.0018	.0018	.0022	.0022	
	Cobalt Base High Temp Alloys Stellite, Haynes 25, 188, X40	High Speed Profiling	.5 x D	< .02 D	175	.0004	.0005	.0008	.0011	.0014	.0016	.0022	
		Profiling	Full LOC	< .01 D	150	.0005	.0007	.0007	.0013	.0016	.0020	.0026	
	Titanium Alloys 6AL-4V, ASTM 1, 2, 3, 6AL-2S	High Speed Profiling	1.5 x D	< .025 D	425	.0016	.0022	.0032	.0043	.0054	.0065	.0086	
		Profiling	Full LOC	< .015 D	300	.0016	.0021	.0032	.0041	.0052	.0062	.0083	
	Cast Irons – ISO K	Cast Iron Gray	High Speed Profiling	Full LOC	< .025 D	500	.0018	.0023	.0035	.0048	.0059	.0071	.0095
			Profiling	Full LOC	< .015 D	375	.0022	.0027	.0041	.0054	.0068	.0081	.0109
Cast Iron Ductile		High Speed Profiling	Full LOC	< .025 D	475	.0014	.0020	.0030	.0040	.0050	.0059	.0079	
		Profiling	Full LOC	< .015 D	350	.0015	.0023	.0034	.0045	.0057	.0068	.0091	

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

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.