

GROUP #	MATERIAL CARBON STEEL	MATERIAL EXAMPLES	HARDNESS	LOW SFM	HIGH SFM	RECOMMENDED MAX% STEPOVER 2@ XD IA LOC	CT IPT Ø 0.250	CT IPT Ø 0.375	CT IPT Ø 0.500	CT IPT Ø 0.625	CT IPT Ø 0.750	CT IPT 1.000
P1	Low-Carbon Steels	1018, 1108, 1117, A36 12L14, 1200's, 1500's	<300	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
P2	Medium & High Carbon Steels	1000-1200 SERIES	>285	250	750	Roughing	0.0016	0.0025	0.0031	0.0038	0.0047	0.0065
				300	800	Finishing - HEM	0.0012	0.0018	0.0022	0.0028	0.0035	0.0042
P3	Alloy Steels	4130, 4140, 5140, 6150, 8620,	<330	300	800	Roughing	0.0014	0.0019	0.0026	0.0030	0.0037	0.0049
				300	600	Finishing - HEM	0.0016	0.0020	0.0028	0.0035	0.0040	0.0046
P4	Tool Steels	A2, P20, S7, H13, L6	<300	250	600	Roughing	0.0012	0.0018	0.0024	0.0028	0.0032	0.0041
				250	500	Finishing - HEM	0.001	0.0016	0.0020	0.0026	0.0030	0.0035
P5	Ferritic, Martensitic & PH Stainless Steels	400's, 15-5, 17-4 Custom 400's	>300	150	250	Roughing	0.0011	0.0018	0.2000	0.0022	0.0024	0.0030
				300	500	Finishing - HEM	0.0016	0.0020	0.0024	0.0027	0.0030	0.0033
M1	Austenitic Stainless Steels	Inox, 200 Series, 300 Series and 304L	<300	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
M2	Austenitic Stainless Steels & Cast Stainless Steels	310, 314, 316	<300	250	350	Roughing	0.0013	0.0019	0.0012	0.0031	0.0036	0.0048
				300	450	Finishing - HEM	0.0013	0.0018	0.0027	0.0032	0.0035	0.0038
M3	Duplex Steels (Austenitic & Ferritic)	255, 323, 329, 2202, 2205, 2304	<310	160	225	Roughing	0.0025	0.0032	0.0040	0.0048	0.0055	0.0061
				160	500	Finishing - HEM	0.0017	0.0020	0.0027	0.0032	0.0035	0.0039
K1	Cast Iron - Gray Low Strength	Class 20, 25, 30, 35 Grade G1800	<270	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
K2	Cast Iron - Malleable Medium Strength	60-14-18, 65-45-12, M3210, M4504	<320	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
K3	Cast Iron - Nodular High Strength	32510, 40010, 5005, 70003, 90001	>300	180	375	Roughing	0.0006	0.0010	0.0015	0.0019	0.0027	0.0031
				300	600	Finishing - HEM	0.0008	0.0014	0.0020	0.0026	0.0033	0.0037
S1	Iron-Based, Heat-Resistant Alloys	A-286, INVAR, Discaloy, IN-COLOY 800-802, Nitronic	>200	150	300	Roughing	0.0010	0.0016	0.0021	0.0027	0.0030	0.0035
				150	300	Finishing - HEM	0.0011	0.0016	0.0020	0.0027	0.0034	0.0040
S2	Cobalt-Based, Heat-Resistant Alloys	Haynes 25, Haynes 188, Stellite, MAR-M302	>180	80	200	Roughing	0.0013	0.0018	0.0026	0.0028	0.0032	0.0043
				80	150	Finishing - HEM	0.0007	0.0009	0.0012	0.0016	0.0020	0.0026
S3	Nickel-Based, Heat-Resistant Alloys	HAST-C, Rene 41, Waspalloy, Monel, Nimonic, UDIMET, Inconel	>180	60	250	Roughing	0.0008	0.0014	0.0020	0.0026	0.0030	0.0037
				60	250	Finishing - HEM	0.0004	0.0013	0.0017	0.0022	0.0026	0.0031
S4	TITANIUM	Ti6AL4V	>270	160	275	Roughing	0.0014	0.0018	0.0023	0.0029	0.0036	0.0042
				300	425	Finishing - HEM	0.0012	0.0016	0.0021	0.0026	0.0032	0.0036
S4.2	TITANIUM	TITANIUM 10-2-3	<390	100	200	Roughing	0.0011	0.0016	0.0022	0.0027	0.0032	0.0038
				125	200	Finishing - HEM	0.0010	0.0013	0.0018	0.0023	0.0028	0.0033
H1	Hardened Tool Steels	D2, H13, S7	>360	300	500	Finishing - HEM	0.0019	0.0028	0.0037	0.0042	0.0045	0.0049
H2	Hardened Tool Steels	D2, H13, S7	>420	250	450	Finishing - HEM	0.0018	0.0025	0.0030	0.0033	0.0036	0.0039
H2	Hardened Tool Steels	D2, H13, S7	>485	175	300	Finishing - HEM	0.0008	0.0011	0.0018	0.0022	0.0025	0.0028
H2	Hardened Tool Steels	D2, H13, S7	>560	150	275	Finishing - HEM	0.0004	0.0004	0.0005	0.0007	0.0009	0.0010

For best results, max stepover on the 558 Series 5 flute tool should be limited to 35%, excluding internal arcs
 Reduce the SFM as the stepover amount increases
 Reduce the Feedrate to obtain better finish