










Speed & Feed Recommendations

7, 7B Fractional	HARDNESS	CUT	SPEED	FEED (inch/flute)					
	BRINELL	Type	sfm	1/8	1/4	3/8	1/2	3/4	1
 CARBON STEEL 1018, 1040, 1080, 1090, 10L50, 1140, 1212, 12L15, 1525, 1536	≤ 175	Finish	825	0.00069	0.0018	0.0035	0.0046	0.0055	0.0064
	> 175 ≤ 275	Finish	720	0.00069	0.0018	0.0035	0.0046	0.0055	0.0064
 ALLOY STEEL 4140, 4150, 4320, 5120, 5150, 8630, 86L20, 50100	≤ 275	Finish	605	0.00051	0.0014	0.0026	0.0034	0.0041	0.0048
	> 275 ≤ 375	Finish	410	0.00051	0.0014	0.0026	0.0034	0.0041	0.0048
 TOOL STEEL A2, D2, H13, L2, M2, P20, S7, T15, W2	≤ 250	Finish	565	0.00036	0.0010	0.0018	0.0024	0.0029	0.0034
	> 250 ≤ 375	Finish	350	0.00029	0.0008	0.0015	0.0020	0.0024	0.0028
 CAST IRON Gray, Malleable, Ductile	≤ 220	Finish	605	0.00055	0.0015	0.0028	0.0037	0.0044	0.0052
	> 220 ≤ 260	Finish	450	0.00055	0.0015	0.0028	0.0037	0.0044	0.0052
 STAINLESS (free machining) 303, 416, 420F, 430F, 440F	≤ 275	Finish	420	0.00036	0.0010	0.0018	0.0024	0.0029	0.0034
 STAINLESS (difficult) 304, 304L, 316, 316L	≤ 275	Finish	290	0.00034	0.0009	0.0017	0.0020	0.0027	0.0031
 STAINLESS (PH) 17-4PH, 15-5PH, Custom 450, 16-6PH, PH13-8Mo	≤ 325	Finish	265	0.00029	0.0008	0.0015	0.0020	0.0024	0.0028
 TITANIUM Ti5Al-5V-5Mo, Ti6Al4V, Ti-7Al4Mo	≤ 350	Finish	300	0.00038	0.0010	0.0019	0.0025	0.0030	0.0035
 HIGH TEMPERATURE ALLOY Inconel, Rene, Waspalloy	≤ 300	Finish	80	0.00030	0.0008	0.0014	0.0019	0.0023	0.0034

CUT TYPE	$rpm = sfm \times 3.82 / D_1$ $ipm = (inch/flute) \times 4 \times rpm$
FINISH	
$Rw = .02 \times D_1$ $Ad = L_2$	<ul style="list-style-type: none"> • maximum recommended depths shown • adjust feed as required for optimum results • reduce speed and feed for materials harder than listed • refer to the SGS Tool Wizard for more complete technical information (available at)
