



	Series 135 3D Fractional	Hardness BRINELL	Vc (SFM)	Diameter (D ₁) (inch)							
				1/32	1/8	1/4	3/8	1/2	5/8	7/8	
M	STAINLESS STEELS (DIFFICULT) 304, 316, 321, 13-8 PH, 15-5PH, 17-4 PH, Custom 450	> 270 ≤ 370	90	RPM	11002	2750	1375	917	688	550	393
			(72-108)	Fr	0.0005	0.0018	0.0035	0.0055	0.0070	0.0090	0.0125
				Feed (IPM)	5.5	5.0	4.8	5.0	4.8	5.0	4.9
		> 270 ≤ 370	70	RPM	8557	2139	1070	713	535	428	306
			(56-84)	Fr	0.0004	0.0015	0.0030	0.0045	0.0060	0.0075	0.0105
				Feed (IPM)	3.4	3.2	3.2	3.2	3.2	3.2	3.2
S	SUPER ALLOYS (NICKEL, COBALT, IRON BASE) Inconel 601, 617, 625, Incoly 800, Monel 400, Rene, Waspaloy	≤ 220	60	RPM	7334	1834	917	611	458	367	262
			(48-72)	Fr	0.0003	0.0010	0.0020	0.0030	0.0040	0.0050	0.0070
				Feed (IPM)	2.2	1.8	1.8	1.8	1.8	1.8	1.8
		> 220 ≤ 330	40	RPM	4890	1222	611	407	306	244	175
			(32-48)	Fr	0.0002	0.0008	0.0015	0.0025	0.0030	0.0040	0.0055
				Feed (IPM)	1.0	0.9	0.9	1.0	0.9	1.0	1.0
		> 330 ≤ 420	30	RPM	3667	917	458	306	229	183	131
			(24-36)	Fr	0.0001	0.0003	0.0010	0.0015	0.0020	0.0025	0.0035
				Feed (IPM)	0.4	0.3	0.5	0.5	0.5	0.5	0.5
S	TITANIUM ALLOYS (DIFFICULT) Pure Titanium, Ti6Al4V, Ti6Al2Sn4Zr2Mo, Ti4Al4Mo2Sn0.5Si, Ti-6Al4V	≤ 280	120	RPM	14669	3667	1834	1222	917	733	524
			(96-144)	Fr	0.0005	0.0018	0.0035	0.0055	0.0070	0.0090	0.0125
				Feed (IPM)	7.3	6.4	6.4	6.7	6.4	6.6	6.5
		> 280 ≤ 350	100	RPM	12224	3056	1528	1019	764	611	437
			(80-120)	Fr	0.0004	0.0015	0.0030	0.0045	0.0060	0.0075	0.0105
				Feed (IPM)	4.9	4.6	4.6	4.6	4.6	4.6	4.6
		> 350 ≤ 440	70	RPM	8557	2139	1070	713	535	428	306
			(56-84)	Fr	0.0003	0.0013	0.0025	0.0040	0.0050	0.0065	0.0090
				Feed (IPM)	2.6	2.7	2.7	2.9	2.7	2.8	2.8
N	ALUMINUM ALLOYS 2017, 2024, 356, 6061, 7075	≤ 80	700	RPM	85568	21392	10696	7131	5348	4278	3056
			(560-840)	Fr	0.0014	0.0055	0.0110	0.0165	0.0220	0.0275	0.0385
				Feed (IPM)	119.8	117.7	117.7	117.7	117.7	117.7	117.7
		> 80	600	RPM	73344	18336	9168	6112	4584	3667	2619
			(480-720)	Fr	0.0013	0.0050	0.0100	0.0150	0.0200	0.0250	0.0350
				Feed (IPM)	95.3	91.7	91.7	91.7	91.7	91.7	91.7
N	COPPER ALLOYS Alum Bronze, C110, Muntz Brass	≤ 140	500	RPM	61120	15280	7640	5093	3820	3056	2183
			(400-600)	Fr	0.0005	0.0020	0.0040	0.0060	0.0080	0.0100	0.0140
				Feed (IPM)	30.6	30.6	30.6	30.6	30.6	30.6	30.6
		> 140	400	RPM	48896	12224	6112	4075	3056	2445	1746
			(320-480)	Fr	0.0005	0.0020	0.0040	0.0060	0.0080	0.0100	0.0140
				Feed (IPM)	24.4	24.4	24.4	24.4	24.4	24.4	24.4

rpm = sfm x 3.82 / D₁

ipm = (inch / revolution) x rpm

reduce speed and feed for materials harder than listed

refer to the SGS Tool Wizard for complete technical information ()