

Speed & Feed Recommendations

Series 601 Fractional	Hardness BRINELL	Vc (SFM)	Diameter (D ₁) (inch)							
			1/8	3/16	1/4	3/8	1/2	3/4	1	
M	STAINLESS STEELS (DIFFICULT) 304, 316, 321, 13-8 PH, 15-5PH, 17-4 PH, Custom 450	28	RPM	856	570	428	285	214	143	107
		> 270 (22-34)	Fr	0.0004	0.0005	0.0007	0.0011	0.0014	0.0021	0.0028
			Feed (IPM)	0.3	0.3	0.3	0.3	0.3	0.3	0.3
		21	RPM	642	428	321	214	160	107	80
		> 270 ≤ 370 (17-25)	Fr	0.0002	0.0002	0.0003	0.0005	0.0006	0.0009	0.0012
			Feed (IPM)	0.1	0.1	0.1	0.1	0.1	0.1	0.1
S	SUPER ALLOYS (NICKEL, COBALT, IRON BASE) Inconel 601, 617, 625, Incoly 800, Monel 400, Rene, Waspaloy	18	RPM	550	367	275	183	138	92	69
		≤ 220 (14-22)	Fr	0.0002	0.0003	0.0005	0.0007	0.0009	0.0014	0.0018
			Feed (IPM)	0.1	0.1	0.1	0.1	0.1	0.1	0.1
		14	RPM	428	285	214	143	107	71	53
		> 220 ≤ 330 (11-17)	Fr	0.0002	0.0003	0.0005	0.0007	0.0009	0.0014	0.0018
			Feed (IPM)	0.1	0.1	0.1	0.1	0.1	0.1	0.1
		12	RPM	367	244	183	122	92	61	46
		> 330 ≤ 420 (10-14)	Fr	0.0002	0.0003	0.0004	0.0006	0.0008	0.0012	0.0016
			Feed (IPM)	0.1	0.1	0.1	0.1	0.1	0.1	0.1
S	TITANIUM ALLOYS Pure Titanium, Ti6Al4V, Ti6Al2Sn4Zr2Mo, Ti4Al4Mo2Sn0.5Si, Ti-6Al4V	36	RPM	1100	733	550	367	275	183	138
		≤ 280 (29-43)	Fr	0.0005	0.0007	0.0009	0.0014	0.0018	0.0027	0.0036
			Feed (IPM)	0.6	0.5	0.5	0.5	0.5	0.5	0.5
		28	RPM	856	570	428	285	214	143	107
		> 280 ≤ 350 (22-34)	Fr	0.0004	0.0005	0.0007	0.0011	0.0014	0.0021	0.0028
			Feed (IPM)	0.3	0.3	0.3	0.3	0.3	0.3	0.3
		21	RPM	642	428	321	214	160	107	80
		> 350 ≤ 440 (17-25)	Fr	0.0002	0.0002	0.0003	0.0005	0.0006	0.0009	0.0012
			Feed (IPM)	0.1	0.1	0.1	0.1	0.1	0.1	0.1
N	ALUMINUM ALLOYS 2017, 2024, 356, 6061, 7075	225	RPM	6876	4584	3438	2292	1719	1146	860
		≤ 80 (180-270)	Fr	0.0008	0.0011	0.0015	0.0023	0.0030	0.0045	0.0060
			Feed (IPM)	5.5	5.0	5.2	5.3	5.2	5.2	5.2
		190	RPM	5806	3871	2903	1935	1452	968	726
		> 80 (152-228)	Fr	0.0008	0.0011	0.0015	0.0023	0.0030	0.0045	0.0060
			Feed (IPM)	4.6	4.3	4.4	4.5	4.4	4.4	4.4
N	COPPER ALLOYS Alum Bronze, C110, Muntz Brass	95	RPM	2903	1935	1452	968	726	484	363
		≤ 140 (76-114)	Fr	0.0004	0.0006	0.0008	0.0011	0.0015	0.0023	0.0030
			Feed (IPM)	1.2	1.2	1.2	1.1	1.1	1.1	1.1
		80	RPM	2445	1630	1222	815	611	407	306
		> 140 (64-96)	Fr	0.0004	0.0006	0.0008	0.0011	0.0015	0.0023	0.0030
			Feed (IPM)	1.0	1.0	1.0	0.9	0.9	0.9	0.9

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 ()