

Speed & Feed Recommendations

Series 301 Fractional	Hardness BRINELL	Vc (SFM)	Diameter (D ₁) (inch)							
			1/32	3/64	5/64	1/8	3/16	7/32		
M	STAINLESS STEELS (DIFFICULT) 304, 316, 321, 13-8 PH, 15-5PH, 17-4 PH, Custom 450	> 270 ≤ 370	70	RPM	8557	5705	3423	2139	1426	1222
			(56-84)	Fr	0.0002	0.0003	0.0004	0.0006	0.0009	0.0011
				Feed (IPM)	1.7	1.7	1.4	1.3	1.3	1.3
		> 270 ≤ 370	50	RPM	6112	4075	2445	1528	1019	873
			(40-60)	Fr	0.0001	0.0002	0.0003	0.0004	0.0006	0.0007
				Feed (IPM)	0.6	0.8	0.7	0.6	0.6	0.6
S	SUPER ALLOYS (NICKEL, COBALT, IRON BASE) Inconel 601, 617, 625, Incoly 800, Monel 400, Rene, Waspaloy	≤ 220	25	RPM	3056	2037	1222	764	509	437
			(20-30)	Fr	0.0002	0.0003	0.0005	0.0007	0.0011	0.0013
				Feed (IPM)	0.6	0.6	0.6	0.5	0.6	0.6
		> 220 ≤ 330	20	RPM	2445	1630	978	611	407	349
			(16-24)	Fr	0.0001	0.0001	0.0002	0.0003	0.0005	0.0006
				Feed (IPM)	0.2	0.2	0.2	0.2	0.2	0.2
		> 330 ≤ 420	15	RPM	1834	1222	733	458	306	262
			(12-18)	Fr	0.0001	0.0001	0.0001	0.0002	0.0003	0.0004
				Feed (IPM)	0.2	0.1	0.1	0.1	0.1	0.1
S	TITANIUM ALLOYS Pure Titanium, Ti6Al4V, Ti6Al2Sn4Zr2Mo, Ti4Al4Mo2Sn0.5Si, Ti-6Al4V	≤ 280	85	RPM	10390	6927	4156	2598	1732	1484
			(68-102)	Fr	0.0003	0.0004	0.0007	0.0011	0.0017	0.0020
				Feed (IPM)	3.1	2.8	2.9	2.9	2.9	3.0
		> 280 ≤ 350	65	RPM	7946	5297	3178	1986	1324	1135
			(52-78)	Fr	0.0001	0.0002	0.0004	0.0006	0.0009	0.0010
				Feed (IPM)	0.8	1.1	1.3	1.2	1.2	1.1
		> 350 ≤ 440	50	RPM	6112	4075	2445	1528	1019	873
			(40-60)	Fr	0.0002	0.0004	0.0008	0.0015	0.0025	0.0030
				Feed (IPM)	1.2	1.6	2.0	2.3	2.5	2.6
N	ALUMINUM ALLOYS 2017, 2024, 356, 6061, 7075	≤ 80	540	RPM	66010	44006	26404	16502	11002	9430
			(432-648)	Fr	0.0004	0.0007	0.0011	0.0018	0.0027	0.0031
				Feed (IPM)	26.4	30.8	29.0	29.7	29.7	29.2
		> 80	455	RPM	55619	37079	22248	13905	9270	7946
			(364-546)	Fr	0.0004	0.0007	0.0011	0.0018	0.0027	0.0031
				Feed (IPM)	22.2	26.0	24.5	25.0	25.0	24.6
N	COPPER ALLOYS Alum Bronze, C110, Muntz Brass	≤ 140	230	RPM	28115	18743	11246	7029	4686	4016
			(184-276)	Fr	0.0002	0.0003	0.0005	0.0009	0.0013	0.0015
				Feed (IPM)	5.6	5.6	5.6	6.3	6.1	6.0
		> 140	175	RPM	21392	14261	8557	5348	3565	3056
			(140-210)	Fr	0.0002	0.0003	0.0005	0.0009	0.0013	0.0015
				Feed (IPM)	4.3	4.3	4.3	4.8	4.6	4.6

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 ()