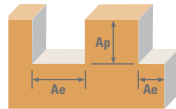


Series M032 Fractional	Hardness	Ae x DC	Ap x DC	Vc (sfm)		DC • in			
						1/32	5/64	7/64	
P CARBON STEELS 1018, 1040, 1080, 1090, 10L50, 1140, 1212, 12L15, 1525, 1536	≤ 275 Bhn or ≤ 28 HRc	≤ 0.25	≤ 1	790 (632-948)	Profile	RPM	96570	38628	27591
						Fz	0.00009	0.00022	0.00031
						Feed (ipm)	26.0	26.0	26.0
		1	≤ .5	630 (504-756)	Slot	RPM	77011	30804	22003
						Fz	0.00009	0.00022	0.00031
						Feed (ipm)	20.5	20.5	20.5
		≤ .02	1	1565 (1252-1878)	Finish	RPM	191306	76522	54659
						Fz	0.00017	0.00041	0.00058
						Feed (ipm)	95.0	95.0	95.0
P ALLOY STEELS 4140, 4150, 4320, 5120, 5150, 8630, 86L20, 50100	≤ 375 Bhn or ≤ 40 HRc	≤ 0.25	≤ 1	450 (360-540)	Profile	RPM	55008	22003	15717
						Fz	0.00007	0.00017	0.00023
						Feed (ipm)	11.0	11.0	11.0
		1	≤ .5	360 (288-432)	Slot	RPM	44006	17603	12573
						Fz	0.00007	0.00017	0.00024
						Feed (ipm)	8.9	8.9	8.9
		≤ .02	1	895 (716-1074)	Finish	RPM	109405	43762	31259
						Fz	0.00012	0.00030	0.00043
						Feed (ipm)	40.0	40.0	40.0
P ALLOY STEELS 4140, 4150, 4320, 5120, 5150, 8630, 86L20, 50100	≤ 560 Bhn or ≤ 55 HRc	≤ 0.25	≤ 1	93 (74-112)	Profile	RPM	11368	4547	3248
						Fz	0.00003	0.00007	0.00010
						Feed (ipm)	0.9	0.9	0.9
		1	≤ .5	65 (52-78)	Slot	RPM	7946	3178	2270
						Fz	0.00003	0.00006	0.00009
						Feed (ipm)	0.6	0.6	0.6
		≤ .02	1	167 (134-200)	Finish	RPM	20414	8166	5833
						Fz	0.00004	0.00011	0.00016
						Feed (ipm)	2.8	2.8	2.8
H TOOL STEELS A2, D2, H13, L2, M2, P20, S7, T15, W2	≤ 375 Bhn or ≤ 40 HRc	≤ 0.25	≤ 1	69 (55-83)	Profile	RPM	8435	3374	2410
						Fz	0.00003	0.00007	0.00010
						Feed (ipm)	0.8	0.8	0.8
		1	≤ .5	50 (40-60)	Slot	RPM	6112	2445	1746
						Fz	0.00002	0.00006	0.00009
						Feed (ipm)	0.5	0.5	0.5
		≤ .02	1	124 (99-149)	Finish	RPM	15158	6063	4331
						Fz	0.00005	0.00012	0.00017
						Feed (ipm)	2.2	2.2	2.2
K CAST IRONS (LOW & MEDIUM ALLOY) Gray, Malleable, Ductile	≤ 220 Bhn or ≤ 19 HRc	≤ 0.25	≤ 1	620 (496-744)	Profile	RPM	75789	30316	21654
						Fz	0.00011	0.00028	0.00039
						Feed (ipm)	25.5	25.5	25.5
		1	≤ .5	450 (360-540)	Slot	RPM	55008	22003	15717
						Fz	0.00010	0.00024	0.00034
						Feed (ipm)	16.0	16.0	16.0
		≤ .02	1	1115 (892-1338)	Finish	RPM	136298	54519	38942
						Fz	0.00018	0.00045	0.00062
						Feed (ipm)	73.0	73.0	73.0

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FRACTIONAL Series M032



Series M032 Fractional	Hardness	Ae x DC	Ap x DC	Vc (sfm)	DC • in				
					1/32	5/64	7/64		
M STAINLESS STEELS (DIFFICULT) 304, 304L, 316, 316L	≤ 275 Bhn or ≤ 28 HRc	Profile 	≤ 0.25	≤ 1	335	RPM	40950	16380	11700
					(268-402)	Fz	0.00008	0.00020	0.00028
						Feed (ipm)	9.9	9.9	9.9
		Slot 	1	≤ .5	245	RPM	29949	11980	8557
					(196-294)	Fz	0.00007	0.00017	0.00023
						Feed (ipm)	6.0	6.0	6.0
		Finish 	≤ .02	1	605	RPM	73955	29582	21130
					(484-726)	Fz	0.00012	0.00031	0.00043
						Feed (ipm)	27.5	27.5	27.5
M STAINLESS STEELS (PH) 13-8 PH, 15-5 PH, 17-4 PH, Custom 450	≤ 325 Bhn or ≤ 35 HRc	Profile 	≤ 0.25	≤ 1	310	RPM	37894	15158	10827
					(248-372)	Fz	0.00008	0.00020	0.00028
						Feed (ipm)	9.0	9.0	9.0
		Slot 	1	≤ .5	225	RPM	27504	11002	7858
					(180-270)	Fz	0.00007	0.00017	0.00023
						Feed (ipm)	5.5	5.5	5.5
		Finish 	≤ .02	1	555	RPM	67843	27137	19384
					(444-666)	Fz	0.00013	0.00031	0.00044
						Feed (ipm)	25.5	25.5	25.5
S SUPER ALLOYS (NICKEL, COBALT, IRON BASE) Inconel 718, X-750, Incoloy, Waspaloy, Hastelloy, Rene	≤ 400 Bhn or ≤ 43 HRc	Profile 	≤ 0.5	≤ 1.5	200	RPM	24448	9779	6985
					(160-240)	Fz	0.00007	0.00017	0.00024
						Feed (ipm)	5.1	5.1	5.1
		Slot 	1	≤ 1	145	RPM	17725	7090	5064
					(116-174)	Fz	0.00006	0.00015	0.00021
						Feed (ipm)	3.2	3.2	3.2
		Finish 	≤ .02	1	360	RPM	44006	17603	12573
					(288-432)	Fz	0.00011	0.00027	0.00038
						Feed (ipm)	14.5	14.5	14.5
S TITANIUM ALLOYS Pure Titanium, Ti6Al4V, Ti6Al2Sn4Zr2Mo, Ti4Al4Mo2Sn0.5Si	≤ 350 Bhn or ≤ 38 HRc	Profile 	≤ 0.5	≤ 1.5	245	RPM	29949	11980	8557
					(196-294)	Fz	0.00007	0.00018	0.00025
						Feed (ipm)	6.3	6.3	6.3
		Slot 	1	≤ 1	180	RPM	22003	8801	6287
					(144-216)	Fz	0.00006	0.00015	0.00021
						Feed (ipm)	3.9	3.9	3.9
		Finish 	≤ .02	1	440	RPM	53786	21514	15367
					(352-528)	Fz	0.00011	0.00028	0.00039
						Feed (ipm)	18.0	18.0	18.0

Bhn (Brinell) HRc (Rockwell C)

rpm = Vc x 3.82 / DC

ipm = Fz x 3 x rpm (Fz x 3 x max available rpm when recommendation exceeds machine limit)

ramp up to 5 degrees using slotting speed and feed rates. Do not plunge.

reduce speed and feed for materials harder than listed

refer to the KYOCERA SGS Tool Wizard® for complete technical information (www.kyocera-sgstool.com)