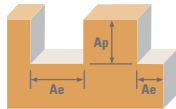


Series M032 Metric	Hardness	Ae x DC	Ap x DC	Vc (m/min)	DC • mm				
					1	2	3		
P CARBON STEELS 1018, 1040, 1080, 1090, 10L50, 1140, 1212, 12L15, 1525, 1536	≤ 275 Bhn or ≤ 28 HRc	Profile 	≤ 0.25	≤ 1	241	RPM	76584	38292	25528
					(193-289)	Fz	0.0029	0.0057	0.0086
						Feed (mm/min)	660	660	660
		Slot 	1	≤ .5	192	RPM	61073	30537	20358
					(154-230)	Fz	0.0028	0.0057	0.0085
						Feed (ipm)	521	521	521
		Finish 	≤ .02	1	477	RPM	151714	75857	50571
					(382-572)	Fz	0.0053	0.0106	0.0159
						Feed (ipm)	2413	2413	2413
P ALLOY STEELS 4140, 4150, 4320, 5120, 5150, 8630, 86L20, 50100	≤ 375 Bhn or ≤ 40 HRc	Profile 	≤ 0.25	≤ 1	137	RPM	43624	21812	14541
					(110-165)	Fz	0.0021	0.0043	0.0064
						Feed (ipm)	279	279	279
		Slot 	1	≤ .5	110	RPM	34899	17449	11633
					(88-132)	Fz	0.0022	0.0043	0.0065
						Feed (ipm)	226	226	226
		Finish 	≤ .02	1	273	RPM	86763	43381	28921
					(218-327)	Fz	0.0039	0.0078	0.0117
						Feed (ipm)	1016	1016	1016
P ALLOY STEELS 4140, 4150, 4320, 5120, 5150, 8630, 86L20, 50100	≤ 560 Bhn or ≤ 55 HRc	Profile 	≤ 0.25	≤ 1	28	RPM	9016	4508	3005
					(23-34)	Fz	0.0009	0.0018	0.0026
						Feed (ipm)	24	24	24
		Slot 	1	≤ .5	20	RPM	6301	3151	2100
					(16-24)	Fz	0.0008	0.0016	0.0025
						Feed (ipm)	15	15	15
		Finish 	≤ .02	1	51	RPM	16189	8095	5396
					(41-61)	Fz	0.0014	0.0029	0.0043
						Feed (ipm)	70	70	70
H TOOL STEELS A2, D2, H13, L2, M2, P20, S7, T15, W2	≤ 375 Bhn or ≤ 40 HRc	Profile 	≤ 0.25	≤ 1	21	RPM	6689	3344	2230
					(17-25)	Fz	0.0009	0.0019	0.0028
						Feed (ipm)	19	19	19
		Slot 	1	≤ .5	15	RPM	4847	2424	1616
					(12-18)	Fz	0.0008	0.0016	0.0024
						Feed (ipm)	11	11	11
		Finish 	≤ .02	1	38	RPM	12021	6010	4007
					(30-45)	Fz	0.0015	0.0031	0.0046
						Feed (ipm)	56	56	56
K CAST IRONS (LOW & MEDIUM ALLOY) Gray, Malleable, Ductile	≤ 220 Bhn or ≤ 19 HRc	Profile 	≤ 0.25	≤ 1	189	RPM	60104	30052	20035
					(151-227)	Fz	0.0036	0.0072	0.0108
						Feed (ipm)	648	648	648
		Slot 	1	≤ .5	137	RPM	43624	21812	14541
					(110-165)	Fz	0.0031	0.0062	0.0093
						Feed (ipm)	406	406	406
		Finish 	≤ .02	1	340	RPM	108090	54045	36030
					(272-408)	Fz	0.0057	0.0114	0.0172
						Feed (ipm)	1854	1854	1854

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METRIC Series M032



Series M032 Metric	Hardness	Ae x DC	Ap x DC	Vc (m/min)	DC • mm			
					1	2	3	
M STAINLESS STEELS (DIFFICULT) 304, 304L, 316, 316L	≤ 275 Bhn or ≤ 28 HRc	Profile 	≤ 0.25	≤ 1	102	RPM 32475	16238	10825
					(82-123)	Fz 0.0026	0.0052	0.0077
						Feed (ipm) 251	251	251
		Slot 	1	≤ .5	75	RPM 23751	11875	7917
					(60-90)	Fz 0.0021	0.0043	0.0064
						Feed (ipm) 152	152	152
		Finish 	≤ .02	1	184	RPM 58650	29325	19550
					(148-221)	Fz 0.0040	0.0079	0.0119
						Feed (ipm) 699	699	699
M STAINLESS STEELS (PH) 13-8 PH, 15-5 PH, 17-4 PH, Custom 450	≤ 325 Bhn or ≤ 35 HRc	Profile 	≤ 0.25	≤ 1	94	RPM 30052	15026	10017
					(76-113)	Fz 0.0025	0.0051	0.0076
						Feed (ipm) 229	229	229
		Slot 	1	≤ .5	69	RPM 21812	10906	7271
					(55-82)	Fz 0.0021	0.0043	0.0064
						Feed (ipm) 140	140	140
		Finish 	≤ .02	1	169	RPM 53803	26901	17934
					(135-203)	Fz 0.0040	0.0080	0.0120
						Feed (ipm) 648	648	648
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	61	RPM 19388	9694	6463
					(49-73)	Fz 0.0022	0.0045	0.0067
						Feed (ipm) 130	130	130
		Slot 	1	≤ 1	44	RPM 14057	7028	4686
					(35-53)	Fz 0.0019	0.0039	0.0058
						Feed (ipm) 81	81	81
		Finish 	≤ .02	1	110	RPM 34899	17449	11633
					(88-132)	Fz 0.0035	0.0070	0.0106
						Feed (ipm) 368	368	368
S TITANIUM ALLOYS Pure Titanium, Ti6Al4V, Ti6Al2Sn4Zr2Mo, Ti4Al4Mo2Sn0.5Si	≤ 350 Bhn or ≤ 38 HRc	Profile 	≤ 0.5	≤ 1.5	75	RPM 23751	11875	7917
					(60-90)	Fz 0.0022	0.0045	0.0067
						Feed (ipm) 160	160	160
		Slot 	1	≤ 1	55	RPM 17449	8725	5816
					(44-66)	Fz 0.0019	0.0038	0.0057
						Feed (ipm) 99	99	99
		Finish 	≤ .02	1	134	RPM 42654	21327	14218
					(107-161)	Fz 0.0036	0.0071	0.0107
						Feed (ipm) 457	457	457

Bhn (Brinell) HRc (Rockwell C)
 $rpm = (Vc \times 1000) / (DC \times 3.14)$
 $mm/min = Fz \times 3 \times rpm$ (Fz x 3 x max available rpm when recommendation exceeds machine limit)
 reduce speed and feed for materials harder than listed
 refer to the KYOCERA SGS Tool Wizard® for complete technical information (www.kyocera-sgstool.com)