

Series M081

Series M081	Hardness	Vc (m/min)	DC • mm							
			0.15	0.25	0.5	1	2	3		
P	CARBON STEELS 1018, 1040, 1080, 1090, 10L50, 1140, 1212, 12L15, 1525, 1536	≤ 175 Bhn or ≤ 7 HRc	85 (68-102)	RPM	180958	108575	54287	27144	13572	9048
				Fz	0.0031	0.0051	0.0103	0.0206	0.0412	0.0618
				Feed (mm/min)	559	559	559	559	559	559
	ALLOY STEELS 4140, 4150, 4320, 5120, 5150, 8630, 86L20, 50100	≤ 275 Bhn or ≤ 28 HRc	55 (44-66)	RPM	116330	69798	34899	17449	8725	5816
				Fz	0.0029	0.0048	0.0097	0.0194	0.0387	0.0581
				Feed (mm/min)	338	338	338	338	338	338
H	TOOL STEELS A2, D2, H13, L2, M2, P20, S7, T15, W2	≤ 475 Bhn or ≤ 50 HRc	21 (17-26)	RPM	45239	27144	13572	6786	3393	2262
				Fz	0.0012	0.0020	0.0039	0.0079	0.0157	0.0236
				Feed (mm/min)	53	53	53	53	53	53
K	CAST IRONS Gray, Malleable, Ductile	≤ 220 Bhn or ≤ 19 HRc	85 (68-102)	RPM	180958	108575	54287	27144	13572	9048
				Fz	0.0022	0.0037	0.0074	0.0148	0.0296	0.0444
				Feed (mm/min)	401	401	401	401	401	401
M	STAINLESS STEELS (FREE MACHINING) 303, 416, 420F, 430F, 440F	≤ 250 Bhn or ≤ 24 HRc	64 (51-77)	RPM	135718	81431	40715	20358	10179	6786
				Fz	0.0032	0.0053	0.0106	0.0212	0.0424	0.0636
				Feed (mm/min)	432	432	432	432	432	432
	STAINLESS STEELS (DIFFICULT) 304, 316, 321, 13-8 PH, 15-5PH, 17-4 PH, CUSTOM 450	≤ 275 Bhn or ≤ 28 HRc	55 (44-66)	RPM	116330	69798	34899	17449	8725	5816
				Fz	0.0029	0.0048	0.0097	0.0194	0.0387	0.0581
				Feed (mm/min)	338	338	338	338	338	338
S	SUPER ALLOYS (NICKEL, COBALT, IRON BASE) Inconel 601, 617, 625, Incoloy 800, Monel 400, Rene, Waspaloy	≤ 320 Bhn or ≤ 34 HRc	21 (17-26)	RPM	45239	27144	13572	6786	3393	2262
				Fz	0.0018	0.0030	0.0060	0.0120	0.0240	0.0359
				Feed (mm/min)	81	81	81	81	81	81
	TITANIUM ALLOYS Pure Titanium, Ti6Al4V, Ti6Al2Sn4Zr2Mo, Ti4Al4Mo2Sn0.5Si	≤ 350 Bhn or ≤ 38 HRc	37 (29-44)	RPM	77553	46532	23266	11633	5816	3878
				Fz	0.0018	0.0031	0.0061	0.0122	0.0245	0.0367
				Feed (mm/min)	142	142	142	142	142	142
N	ALUMINUM ALLOYS 2017, 2024, 356, 6061, 7075	≤ 150 Bhn or ≤ 7 HRc	183 (146-219)	RPM	387767	232660	116330	58165	29082	19388
				Fz	0.0035	0.0059	0.0118	0.0236	0.0472	0.0707
				Feed (mm/min)	1372	1372	1372	1372	1372	1372
	COPPER ALLOYS Alum Bronze, C110, Muntz Brass	≤ 140 Bhn or ≤ 3 HRc	58 (46-69)	RPM	122793	73676	36838	18419	9209	6140
				Fz	0.0029	0.0049	0.0097	0.0194	0.0389	0.0583
				Feed (mm/min)	358	358	358	358	358	358
PLASTICS Polycarbonate, PVC		152 (122-183)	RPM	323139	193883	96942	48471	24235	16157	
			Fz	0.0035	0.0059	0.0118	0.0236	0.0472	0.0707	
			Feed (mm/min)	1143	1143	1143	1143	1143	1143	

Note:

- Bhn (Brinell) HRc (Rockwell C) HRb (Rockwell B)
- rpm = (Vc x 1000) / (DC x 3.14)
- mm/min = Fr x rpm (Fr x maximum available rpm when recommendation exceeds machine limit)
- reduce speed and feed 30% when using uncoated drills
- reduce speed and feed for materials harder than listed
- refer to the KYOCERA SGS Tool Wizard® or sgsmicrotools.com for complete technical information