

Series M080	Hardness	Vc (sfm)	DC • in						
			0.005	0.010	0.020	0.040	0.080	0.125	
P CARBON STEELS 1018, 1040, 1080, 1090, 10L50, 1140, 1212, 12L15, 1525, 1536	≤ 175 Bhn or ≤ 7 HRc	280 (224-336)	RPM	213920	106960	53480	26740	13370	8557
			Fr	0.00010	0.00021	0.0004	0.0008	0.0016	0.0026
			Feed (ipm)	22.0	22.0	22.0	22.0	22.0	22.0
			RPM	137520	68760	34380	17190	8595	5501
			Fr	0.00010	0.00019	0.0004	0.0008	0.0015	0.0024
			Feed (ipm)	13.3	13.3	13.3	13.3	13.3	13.3
M STAINLESS STEELS (FREE MACHINING) 303, 416, 420F, 430F, 440F	≤ 250 Bhn or ≤ 24 HRc	210 (168-252)	RPM	160440	80220	40110	20055	10028	6418
			Fr	0.00011	0.00021	0.0004	0.0008	0.0017	0.0026
			Feed (ipm)	17.0	17.0	17.0	17.0	17.0	17.0
			RPM	137520	68760	34380	17190	8595	5501
			Fr	0.0001	0.0002	0.0004	0.0008	0.0015	0.0024
			Feed (ipm)	13.3	13.3	13.3	13.3	13.3	13.3
K CAST IRONS Gray, Malleable, Ductile	≤ 220 Bhn or ≤ 19 HRc	280 (224-336)	RPM	213920	106960	53480	26740	13370	8557
			Fr	0.00007	0.00015	0.0003	0.0006	0.0012	0.0018
			Feed (ipm)	15.8	15.8	15.8	15.8	15.8	15.8
			RPM	458400	229200	114600	57300	28650	18336
			Fr	0.00012	0.00024	0.0005	0.0009	0.0019	0.0029
			Feed (ipm)	54.0	54.0	54.0	54.0	54.0	54.0
N ALUMINUM ALLOYS 2017, 2024, 356, 6061, 7075	≤ 150 Bhn or ≤ 7 HRc	600 (480-720)	RPM	145160	72580	36290	18145	9073	5806
			Fr	0.00010	0.00019	0.0004	0.0008	0.0016	0.0024
			Feed (ipm)	14.1	14.1	14.1	14.1	14.1	14.1
			RPM	382000	191000	95500	47750	23875	15280
			Fr	0.00012	0.00024	0.0005	0.0009	0.0019	0.0029
			Feed (ipm)	45.0	45.0	45.0	45.0	45.0	45.0
S COPPER ALLOYS Alum Bronze, C110, Muntz Brass	≤ 140 Bhn or ≤ 3 HRc	190 (152-228)	RPM	53480	26740	13370	6685	3343	2139
			Fr	0.00006	0.00012	0.0002	0.0005	0.0010	0.0015
			Feed (ipm)	3.2	3.2	3.2	3.2	3.2	3.2
			RPM	91680	45840	22920	11460	5730	3667
			Fr	0.00006	0.00012	0.0002	0.0005	0.0010	0.0015
			Feed (ipm)	5.6	5.6	5.6	5.6	5.6	5.6
H PLASTICS Polycarbonate, PVC	≤ 320 Bhn or ≤ 34 HRc	70 (56-84)	RPM	53480	26740	13370	6685	3343	2139
			Fr	0.00004	0.00008	0.0002	0.0003	0.0006	0.0010
			Feed (ipm)	2.1	2.1	2.1	2.1	2.1	2.1
			RPM	53480	26740	13370	6685	3343	2139
			Fr	0.00004	0.00008	0.0002	0.0003	0.0006	0.0010
			Feed (ipm)	2.1	2.1	2.1	2.1	2.1	2.1
S HIGH TEMP ALLOYS (NICKEL, COBALT, IRON BASE) Inconel 601, 617, 625, Incoloy 800, Monel 400, Rene, Waspaloy	≤ 350 Bhn or ≤ 38 HRc	120 (96-144)	RPM	53480	26740	13370	6685	3343	2139
			Fr	0.00004	0.00008	0.0002	0.0003	0.0006	0.0010
			Feed (ipm)	2.1	2.1	2.1	2.1	2.1	2.1
			RPM	53480	26740	13370	6685	3343	2139
			Fr	0.00004	0.00008	0.0002	0.0003	0.0006	0.0010
			Feed (ipm)	2.1	2.1	2.1	2.1	2.1	2.1
S TITANIUM ALLOYS Pure Titanium, Ti6Al4V, Ti6Al2Sn4Zr2Mo, Ti4Al4Mo2Sn0.5Si	≤ 475 Bhn or ≤ 50 HRc	70 (56-84)	RPM	53480	26740	13370	6685	3343	2139
			Fr	0.00004	0.00008	0.0002	0.0003	0.0006	0.0010
			Feed (ipm)	2.1	2.1	2.1	2.1	2.1	2.1
			RPM	53480	26740	13370	6685	3343	2139
			Fr	0.00004	0.00008	0.0002	0.0003	0.0006	0.0010
			Feed (ipm)	2.1	2.1	2.1	2.1	2.1	2.1
H TOOL STEELS A2, D2, H13, L2, M2, P20, S7, T15, W2	≤ 475 Bhn or ≤ 50 HRc	70 (56-84)	RPM	53480	26740	13370	6685	3343	2139
			Fr	0.00004	0.00008	0.0002	0.0003	0.0006	0.0010
			Feed (ipm)	2.1	2.1	2.1	2.1	2.1	2.1
			RPM	53480	26740	13370	6685	3343	2139
			Fr	0.00004	0.00008	0.0002	0.0003	0.0006	0.0010
			Feed (ipm)	2.1	2.1	2.1	2.1	2.1	2.1

Note:

- Bhn (Brinell) HRc (Rockwell C) HRb (Rockwell B)
- rpm = Vc x 3.82 / DC
- ipm = Fr x rpm
- 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® for complete technical information (www.kyocera-sgstool.com)