

FRACTIONAL 6 Flute Countersink

Series 606 Fractional				DC • in							
Hardness		Vc (sfm)		1/8	3/16	1/4	3/8	1/2	3/4	1	
P	CARBON STEELS 1018, 1040, 1080, 1090, 10L50, 1140, 1212, 12L15, 1525, 1536	≤ 175 Bhn or ≤ 7 HRc	125	RPM	3820	2547	1910	1273	955	637	478
			(100-150)	Fr	0.0010	0.0016	0.0021	0.0031	0.0042	0.0063	0.0084
				Feed (ipm)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
		≤ 300 Bhn or ≤ 32 HRc	60	RPM	1834	1222	917	611	458	306	229
			(48-72)	Fr	0.0010	0.0015	0.0020	0.0029	0.0039	0.0059	0.0079
				Feed (ipm)	1.8	1.8	1.8	1.8	1.8	1.8	1.8
		≤ 425 Bhn or ≤ 45 HRc	45	RPM	1375	917	688	458	344	229	172
			(36-54)	Fr	0.0006	0.0009	0.0012	0.0017	0.0023	0.0035	0.0047
				Feed (ipm)	0.8	0.8	0.8	0.8	0.8	0.8	0.8
	ALLOY STEELS 4140, 4150, 4320, 5120, 5150, 8630, 86L20, 50100	≤ 275 Bhn or ≤ 28 HRc	95	RPM	2903	1935	1452	968	726	484	363
			(76-114)	Fr	0.0009	0.0013	0.0018	0.0027	0.0036	0.0054	0.0072
				Feed (ipm)	2.6	2.6	2.6	2.6	2.6	2.6	2.6
		≤ 375 Bhn or ≤ 40 HRc	60	RPM	1834	1222	917	611	458	306	229
			(48-72)	Fr	0.0009	0.0014	0.0019	0.0028	0.0037	0.0056	0.0074
				Feed (ipm)	1.7	1.7	1.7	1.7	1.7	1.7	1.7
		≤ 425 Bhn or ≤ 45 HRc	35	RPM	1070	713	535	357	267	178	134
			(28-42)	Fr	0.0006	0.0008	0.0011	0.0017	0.0022	0.0034	0.0045
				Feed (ipm)	0.6	0.6	0.6	0.6	0.6	0.6	0.6
	TOOL STEELS A2, D2, H13, L2, M2, P20, S7, T15, W2	≤ 250 Bhn or ≤ 24 HRc	35	RPM	1070	713	535	357	267	178	134
			(28-42)	Fr	0.0006	0.0008	0.0011	0.0017	0.0022	0.0034	0.0045
				Feed (ipm)	0.6	0.6	0.6	0.6	0.6	0.6	0.6
		≤ 375 Bhn or ≤ 40 HRc	25	RPM	764	509	382	255	191	127	96
			(20-30)	Fr	0.0003	0.0004	0.0005	0.0008	0.0010	0.0016	0.0021
				Feed (ipm)	0.2	0.2	0.2	0.2	0.2	0.2	0.2
M	STAINLESS STEELS (FREE MACHINING) 303, 416, 420F, 430F 440F	≤ 250 Bhn or ≤ 24 HRc	53	RPM	1620	1080	810	540	405	270	202
			(42-64)	Fr	0.0006	0.0009	0.0012	0.0019	0.0025	0.0037	0.0049
				Feed (ipm)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
		≤ 330 Bhn or ≤ 36 HRc	46	RPM	1406	937	703	469	351	234	176
			(37-55)	Fr	0.0005	0.0007	0.0010	0.0015	0.0020	0.0030	0.0040
				Feed (ipm)	0.7	0.7	0.7	0.7	0.7	0.7	0.7
	STAINLESS STEELS (DIFFICULT) 304, 316, 321, 13-8 PH, 15-5PH, 17-4 PH, Custom 450	≤ 275 Bhn or ≤ 28 HRc	28	RPM	856	570	428	285	214	143	107
			(22-34)	Fr	0.0007	0.0011	0.0014	0.0021	0.0028	0.0042	0.0056
				Feed (IPM)	0.6	0.6	0.6	0.6	0.6	0.6	0.6
		≤ 375 Bhn or ≤ 40 HRc	21	RPM	642	428	321	214	160	107	80
			(17-25)	Fr	0.0003	0.0005	0.0006	0.0009	0.0012	0.0019	0.0025
				Feed (IPM)	0.2	0.2	0.2	0.2	0.2	0.2	0.2

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Hardness				Vc (sfm)	1/8	3/16	1/4	3/8	1/2	3/4	1
K	CAST IRONS Gray, Malleable, Ductile	≤ 220 Bhn or ≤ 19 HRc	105 (84-126)	RPM	3209	2139	1604	1070	802	535	401
				Fr	0.0012	0.0018	0.0024	0.0036	0.0049	0.0073	0.0097
				Feed (ipm)	3.9	3.9	3.9	3.9	3.9	3.9	3.9
		≤ 330 Bhn or ≤ 36 HRc	75 (60-90)	RPM	2292	1528	1146	764	573	382	287
				Fr	0.0012	0.0018	0.0024	0.0037	0.0049	0.0073	0.0098
				Feed (ipm)	2.8	2.8	2.8	2.8	2.8	2.8	2.8
N	ALUMINUM ALLOYS 2017, 2024, 356, 6061, 7075	≤ 80 Bhn or ≤ 47 HRb	225 (180-270)	RPM	6876	4584	3438	2292	1719	1146	860
				Fr	0.0015	0.0022	0.0030	0.0045	0.0060	0.0090	0.0120
				Feed (ipm)	10.3	10.3	10.3	10.3	10.3	10.3	10.3
		≤ 150 Bhn or ≤ 88 HRb	190 (152-228)	RPM	5806	3871	2903	1935	1452	968	726
				Fr	0.0015	0.0022	0.0030	0.0045	0.0060	0.0090	0.0120
				Feed (ipm)	8.7	8.7	8.7	8.7	8.7	8.7	8.7
	COPPER ALLOYS Alum Bronze, C110, Muntz Brass	≤ 140 Bhn or ≤ 3 HRc	95 (76-114)	RPM	2903	1935	1452	968	726	484	363
				Fr	0.0008	0.0011	0.0015	0.0023	0.0030	0.0045	0.0061
				Feed (ipm)	2.2	2.2	2.2	2.2	2.2	2.2	2.2
		≤ 200 Bhn or ≤ 23 HRc	80 (64-96)	RPM	2445	1630	1222	815	611	407	306
				Fr	0.0008	0.0012	0.0016	0.0023	0.0031	0.0047	0.0062
				Feed (ipm)	1.9	1.9	1.9	1.9	1.9	1.9	1.9

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Series 606 Fractional	Hardness	Vc (sfm)		DC • in						
				1/8	3/16	1/4	3/8	1/2	3/4	1
S	HIGH TEMP ALLOYS (NICKEL, COBALT, IRON BASE) Inconel 601, 617, 625, Incoloy 800, Monel 400, Rene, Waspaloy	18 (14-22)	RPM	550	367	275	183	138	92	69
			Fr	0.0005	0.0008	0.0011	0.0016	0.0022	0.0033	0.0044
			Feed (ipm)	0.3	0.3	0.3	0.3	0.3	0.3	0.3
		14 (11-17)	RPM	428	285	214	143	107	71	53
			Fr	0.0005	0.0007	0.0009	0.0014	0.0019	0.0028	0.0037
			Feed (ipm)	0.2	0.2	0.2	0.2	0.2	0.2	0.2
		12 (10-14)	RPM	367	244	183	122	92	61	46
			Fr	0.0003	0.0004	0.0005	0.0008	0.0011	0.0016	0.0022
			Feed (ipm)	0.1	0.1	0.1	0.1	0.1	0.1	0.1
	TITANIUM ALLOYS Pure Titanium, Ti6Al4V, Ti6Al2Sn4Zr2Mo, Ti4Al4Mo2Sn0.5Si, Ti-6Al4V	36 (29-43)	RPM	1100	733	550	367	275	183	138
			Fr	0.0009	0.0014	0.0018	0.0027	0.0036	0.0055	0.0073
			Feed (ipm)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
		28 (22-34)	RPM	856	570	428	285	214	143	107
			Fr	0.0007	0.0011	0.0014	0.0021	0.0028	0.0042	0.0056
			Feed (ipm)	0.6	0.6	0.6	0.6	0.6	0.6	0.6
		21 (17-25)	RPM	642	428	321	214	160	107	80
			Fr	0.0003	0.0005	0.0006	0.0009	0.0012	0.0019	0.0025
			Feed (ipm)	0.2	0.2	0.2	0.2	0.2	0.2	0.2
H	TOOL STEELS A2, D2, H13, L2, M2, P20, S7, T15, W2	20 (16-24)	RPM	611	407	306	204	153	102	76
			Fr	0.0003	0.0005	0.0007	0.0010	0.0013	0.0020	0.0026
			Feed (ipm)	0.2	0.2	0.2	0.2	0.2	0.2	0.2

Bhn (Brinell) HRc (Rockwell C) HRb (Rockwell B)

rpm = Vc x 3.82 / DC

ipm = Fr x rpm

reduce speed and feed for materials harder than listed

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