

FRACTIONAL 6 Flute Countersink

Series 606 Fractional	Hardness	Vc (sfm)	DC • in								
			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	
	M 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
≤ 450 Bhn or ≤ 48 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	
K STAINLESS STEELS (DIFFICULT) 304, 316, 321, 13-8 PH, 15-5PH, 17-4 PH, Custom 450		≤ 330 Bhn or ≤ 36 HRc	(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
			46	RPM	1406	937	703	469	351	234	176
		≤ 275 Bhn or ≤ 28 HRc	(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
			21	RPM	642	428	321	214	160	107	80
	≤ 375 Bhn or ≤ 40 HRc	(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	
		105	RPM	3209	2139	1604	1070	802	535	401	
	≤ 220 Bhn or ≤ 19 HRc	(84-126)	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	
		75	RPM	2292	1528	1146	764	573	382	287	
	≤ 330 Bhn or ≤ 36 HRc	(60-90)	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	
		K CAST IRONS Gray, Malleable, Ductile	(84-126)	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		
75	RPM		2292	1528	1146	764	573	382	287		
≤ 330 Bhn or ≤ 36 HRc	(60-90)	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		

continued on next page

6 Flute Countersink

Series 606 Fractional	Hardness	Vc (sfm)		DC • in						
				1/8	3/16	1/4	3/8	1/2	3/4	1
N	ALUMINUM ALLOYS 2017, 2024, 356, 6061, 7075	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
		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	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
		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
S	SUPER 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		

continued on next page

FRACTIONAL 6 Flute Countersink

Series 606 Fractional	Hardness	Vc (sfm)	DC • in							
			1/8	3/16	1/4	3/8	1/2	3/4	1	
H 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
	≤ 475 Bhn or ≤ 50 HRc	20	RPM	611	407	306	204	153	102	76
		(16-24)	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)