

Single Flute Countersink

Series 601 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	0.0005	0.0008	0.0010	0.0016	0.0021	0.0031	0.0042
				Feed (ipm)	2.0	2.0	2.0	2.0	2.0	2.0	2.0
		≤ 300 Bhn or ≤ 32 HRc	60	RPM	1834	1222	917	611	458	306	229
			(48-72)	Fr	0.0005	0.0007	0.0010	0.0015	0.0020	0.0029	0.0039
				Feed (ipm)	0.9	0.9	0.9	0.9	0.9	0.9	0.9
		≤ 425 Bhn or ≤ 45 HRc	45	RPM	1375	917	688	458	344	229	172
			(36-54)	Fr	0.0003	0.0004	0.0006	0.0009	0.0012	0.0017	0.0023
				Feed (ipm)	0.4	0.4	0.4	0.4	0.4	0.4	0.4
	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	0.0004	0.0007	0.0009	0.0013	0.0018	0.0027	0.0036
				Feed (ipm)	1.3	1.3	1.3	1.3	1.3	1.3	1.3
		≤ 375 Bhn or ≤ 40 HRc	60	RPM	1834	1222	917	611	458	306	229
			(48-72)	Fr	0.0004	0.0007	0.0009	0.0013	0.0017	0.0026	0.0035
				Feed (ipm)	0.8	0.8	0.8	0.8	0.8	0.8	0.8
		≤ 425 Bhn or ≤ 45 HRc	35	RPM	1070	713	535	357	267	178	134
			(28-42)	Fr	0.0003	0.0004	0.0006	0.0008	0.0011	0.0017	0.0022
				Feed (ipm)	0.3	0.3	0.3	0.3	0.3	0.3	0.3
	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	0.0003	0.0004	0.0006	0.0008	0.0011	0.0017	0.0022
				Feed (ipm)	0.3	0.3	0.3	0.3	0.3	0.3	0.3
		≤ 375 Bhn or ≤ 40 HRc	25	RPM	764	509	382	255	191	127	96
			(20-30)	Fr	0.0001	0.0002	0.0003	0.0004	0.0005	0.0008	0.0010
				Feed (ipm)	0.1	0.1	0.1	0.1	0.1	0.1	0.1
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	0.0003	0.0005	0.0006	0.0009	0.0012	0.0019	0.0025
				Feed (ipm)	0.5	0.5	0.5	0.5	0.5	0.5	0.5
		≤ 330 Bhn or ≤ 36 HRc	46	RPM	1406	937	703	469	351	234	176
			(37-55)	Fr	0.0002	0.0003	0.0004	0.0006	0.0009	0.0013	0.0017
				Feed (ipm)	0.3	0.3	0.3	0.3	0.3	0.3	0.3
	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	0.0004	0.0005	0.0007	0.0011	0.0014	0.0021	0.0028
				Feed (ipm)	0.3	0.3	0.3	0.3	0.3	0.3	0.3
		≤ 375 Bhn or ≤ 40 HRc	21	RPM	642	428	321	214	160	107	80
			(17-25)	Fr	0.0002	0.0002	0.0003	0.0005	0.0006	0.0009	0.0012
				Feed (ipm)	0.1	0.1	0.1	0.1	0.1	0.1	0.1
K	CAST IRONS Gray, Malleable, Ductile	≤ 220 Bhn or ≤ 19 HRc	105	RPM	3209	2139	1604	1070	802	535	401
			(84-126)	Fr	0.0006	0.0009	0.0012	0.0018	0.0024	0.0036	0.0047
				Feed (ipm)	1.9	1.9	1.9	1.9	1.9	1.9	1.9
		≤ 330 Bhn or ≤ 36 HRc	75	RPM	2292	1528	1146	764	573	382	287
			(60-90)	Fr	0.0006	0.0009	0.0012	0.0018	0.0024	0.0037	0.0049
				Feed (ipm)	1.4	1.4	1.4	1.4	1.4	1.4	1.4

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	Series 601 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	≤ 80 Bhn or ≤ 47 HRb	225	RPM	6876	4584	3438	2292	1719	1146	860
			(180-270)	Fr	0.0008	0.0011	0.0015	0.0023	0.0030	0.0045	0.0061
				Feed (ipm)	5.2	5.2	5.2	5.2	5.2	5.2	5.2
		≤ 150 Bhn or ≤ 88 HRb	190	RPM	5806	3871	2903	1935	1452	968	726
			(152-228)	Fr	0.0008	0.0011	0.0015	0.0023	0.0030	0.0045	0.0061
				Feed (ipm)	4.4	4.4	4.4	4.4	4.4	4.4	4.4
	COPPER ALLOYS Alum Bronze, C110, Muntz Brass	≤ 140 Bhn or ≤ 3 HRc	95	RPM	2903	1935	1452	968	726	484	363
			(76-114)	Fr	0.0004	0.0006	0.0008	0.0011	0.0015	0.0023	0.0030
				Feed (ipm)	1.1	1.1	1.1	1.1	1.1	1.1	1.1
		≤ 200 Bhn or ≤ 23 HRc	80	RPM	2445	1630	1222	815	611	407	306
			(64-96)	Fr	0.0004	0.0006	0.0008	0.0012	0.0016	0.0025	0.0033
				Feed (ipm)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
S	HIGH TEMP ALLOYS (NICKEL, COBALT, IRON BASE) Inconel 601, 617, 625, Incoloy 800, Monel 400, Rene, Waspaloy	≤ 220 Bhn or ≤ 19 HRc	18	RPM	550	367	275	183	138	92	69
			(14-22)	Fr	0.0002	0.0003	0.0004	0.0005	0.0007	0.0011	0.0015
				Feed (ipm)	0.1	0.1	0.1	0.1	0.1	0.1	0.1
		≤ 320 Bhn or ≤ 34 HRc	14	RPM	428	285	214	143	107	71	53
			(11-17)	Fr	0.0002	0.0004	0.0005	0.0007	0.0009	0.0014	0.0019
				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	≤ 425 Bhn or ≤ 45 HRc	12	RPM	367	244	183	122	92	61	46
			(10-14)	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
		≤ 275 Bhn or ≤ 28 HRc	36	RPM	1100	733	550	367	275	183	138
			(29-43)	Fr	0.0005	0.0007	0.0009	0.0014	0.0018	0.0027	0.0036
				Feed (ipm)	0.5	0.5	0.5	0.5	0.5	0.5	0.5
H	TOOL STEELS A2, D2, H13, L2, M2, P20, S7, T15, W2	≤ 475 Bhn or ≤ 50 HRc	20	RPM	611	407	306	204	153	102	76
			(16-24)	Fr	0.0002	0.0002	0.0003	0.0005	0.0007	0.0010	0.0013
				Feed (ipm)	0.1	0.1	0.1	0.1	0.1	0.1	0.1
				RPM	856	570	428	285	214	143	107
				Fr	0.0004	0.0005	0.0007	0.0011	0.0014	0.0021	0.0028
				Feed (ipm)	0.3	0.3	0.3	0.3	0.3	0.3	0.3

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)