

General Application Drills





Hole Making

GENERAL APPLICATION DRILLS	SERIES	DESCRIPTION	PAGE	S&F PAGE
2 Flute	101	2 Flute Slow Spiral	336	344
Short Length Self Centering (DIN6539)	108M Plus	2 Flute Short Length DIN 6539	341	346
Straight Flute	106	Straight Flute 140 Point Geometry	348	351
3 Flute with 150 Point Geometry	103	3 Flute 150 Point Geometry	352	356

GENERAL APPLICATION COUNTERSINKS	SERIES	DESCRIPTION	PAGE	S&F PAGE
Combined Drill & Countersink	301	2 Flute Straight Flute Combined Drill and Countersink Fractional	358	361
	301M	2 Flute Straight Flute Combined Drill and Countersink Metric	358	362
Single Flute Countersink	601	Single Flute Fractional	364	365
3 Flute Countersink	603	3 Flute Fractional	367	368
6 Flute Countersink	606	6 Flute Fractional	370	371

GENERAL APPLICATION REAMERS	SERIES	DESCRIPTION	PAGE	S&F PAGE
Straight Flute Accu-Reamer	200	Accu-Reamer	374	376
Straight Flute Reamer	201M	Metric Reamer	378	379

Speed & Feed Recommendations listed after each series

Taladrado

BROCAS DE USO GENERAL	SERIE	DESCRIPCIÓN	PÁGINA	S&F PÁGINA
2 filos	101	2 filos, espiral de avance lento	336	344
Autocentrante de longitud corta (DIN6539)	108M Plus	2 filos, longitud corta, DIN 6539	341	346
Filo recto	106	Filo recto, geometría de 140 puntos	348	351
3 filos con geometría de 150 puntos	103	3 filos, geometría de 150 puntos	352	356

BROCAS DE USO AVELLANADORES	SERIE	DESCRIPCIÓN	PÁGINA	S&F PÁGINA
Broca y avellanador combinados	301	2 filos, filo recto, broca y avellanador combinados, fraccional	358	361
	301M	2 filos, filo recto, broca y avellanador combinados, métrico	358	362
Avellanador de filo único	601	Filo único, fraccional	364	365
Avellanador de 3 filos	603	3 filos, fraccional	367	368
Avellanador de 6 filos	606	6 filos, fraccional	370	371

BROCAS DE USO ESCARIADORES	SERIE	DESCRIPCIÓN	PÁGINA	S&F PÁGINA
Escariador Accu de filo recto	200	Escariador Accu	374	376
Escariador de filo recto	201M	Escariador métrico	378	379

Recomendaciones de velocidades y avances mostradas tras cada serie

Outils de perçage

FORETS UNIVERSELS	SÈRIES	DESCRIPTION	PAGE	S&F PAGE
2 dents	101	2 dents à spirale lente	336	344
Court autocentrant (DIN 6539)	108M Plus	2 dents court DIN 6539	341	346
Denture droite	106	Denture droite à angle de pointe 140°	348	351
3 dents à angle de pointe 150°	103	3 dents à angle de pointe 150°	352	356

FORETS À FRAISER	SÈRIES	DESCRIPTION	PAGE	S&F PAGE
Foret et foret à fraiser combinés	301	2 dents denture droite foret et foret à fraiser combinés (fractionnel)	358	361
	301M	2 dents denture droite foret et foret à fraiser combinés (métrique)	358	362
Foret à fraiser à dent simple	601	Foret à dent simple (fractionnel)	364	365
Foret à fraiser 3 dents	603	3 dents (fractionnel)	367	368
Foret à fraiser 6 dents	606	6 dents (fractionnel)	370	371

FORETS À ALÉSOIRS	SÈRIES	DESCRIPTION	PAGE	S&F PAGE
Alésoir denture droite Accu-Reamer	200	Alésoir Accu-Reamer	374	376
Alésoir denture droite	201M	Alésoir (métrique)	378	379

Recommandations de vitesse et avance indiquées après chaque série

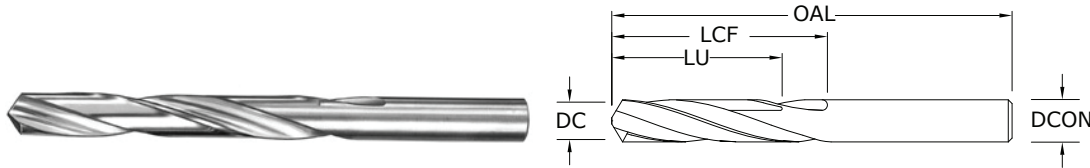
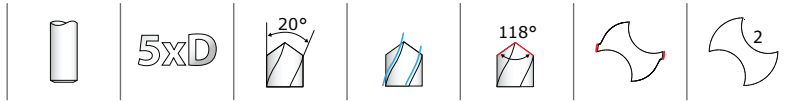
STANDARD-BOHRER	SERIE	BESCHREIBUNG	SEITE	S&F SEITE
2 Schneiden	101	2 Schneiden mit kleinem Spanwinkel	336	344
Kurze Bauform Selbstzentrierung (DIN 6539)	108M Plus	2 Schneiden Kurze Bauform DIN 6539	341	346
Gerade Schneiden	106	Gerade Schneiden Spitzengeometrie 140	348	351
3 Schneiden mit Spitzengeometrie 150	103	3 Schneiden Spitzengeometrie 150	352	356

STANDARD-BOHRER	SERIE	BESCHREIBUNG	SEITE	S&F SEITE
Senkbohrer	301	Zölliger Senkbohrer mit 2 geraden Schneiden	358	361
	301M	Metrischer Senkbohrer mit 2 geraden Schneiden	358	362
Senker mit 1 Schneide	601	Zölliger Bohrer mit 1 Schneide	364	365
Senkbohrer mit 1 Schneide	603	Zölliger Bohrer mit 3 Schneiden	367	368
Senkbohrer mit 6 Schneiden	606	Zölliger Bohrer mit 6 Schneiden	370	371

STANDARD-BOHRER	SERIE	BESCHREIBUNG	SEITE	S&F SEITE
Reibahlen mit gerader Schneide	200	Accu-Reamer	374	376
Reibahle mit gerader Schneide	201M	Metrische Reibahle	378	379

Empfehlungen für Drehzahl & Vorschub im Anhang zu jeder Serie

2 Flute Drills • Metric: DIN 338



Pictured:
Series 101 Drill Set



101

FRACTIONAL & METRIC SERIES

DECIMAL DC/DCON	METRIC DC/DCON	inch & mm		FLUTE LENGTH LCF	USABLE LENGTH LU	EDP NO.	
		FRACTIONAL/ LETTER/WIRE DC	OVERALL LENGTH OAL			UNCOATED	Ti-NAMITE®-A (AlTiN)
0.0135	0,340 mm	#80	3/4	3/16	—	51080	57076
0.0145	0,370 mm	#79	3/4	3/16	—	51079	57077
0.0156	0,400 mm	1/64	3/4	3/16	—	51101	57078
0.0160	0,410 mm	#78	3/4	3/16	—	51078	57079
0.0180	0,460 mm	#77	3/4	3/16	—	51077	57080
0.0200	0,510 mm	#76	7/8	1/4	—	51076	57081
0.0210	0,530 mm	#75	7/8	1/4	—	51075	57082
0.0225	0,570 mm	#74	7/8	1/4	—	51074	57083
0.0240	0,610 mm	#73	7/8	1/4	—	51073	57084
0.0250	0,640 mm	#72	1	5/16	—	51072	57085
0.0260	0,660 mm	#71	1	5/16	—	51071	57086
0.0276	0,700 mm		28,0	9,0	—	61001	68268
0.0280	0,710 mm	#70	1-1/4	1/2	—	51070	57087
0.0292	0,740 mm	#69	1-1/4	1/2	—	51069	57088
0.0310	0,790 mm	#68	1-1/4	1/2	—	51068	57089
0.0312	0,790 mm	1/32	1-1/4	1/2	—	51102	57090
0.0315	0,800 mm		30,0	10,0	—	61003	68269
0.0320	0,810 mm	#67	1-1/4	1/2	—	51067	57091
0.0330	0,840 mm	#66	1-1/4	1/2	—	51066	57092
0.0350	0,890 mm	#65	1-3/8	5/8	1/2	51065	57093
0.0354	0,900 mm		32,0	11,0	8,0	61005	68270
0.0360	0,910 mm	#64	1-3/8	5/8	1/2	51064	57094
0.0370	0,940 mm	#63	1-3/8	5/8	1/2	51063	57095
0.0380	0,970 mm	#62	1-3/8	5/8	1/2	51062	57096
0.0390	0,990 mm	#61	1-3/8	5/8	1/2	51061	57097
0.0394	1,000 mm		34,0	12,0	9,0	61007	68271
0.0400	1,020 mm	#60	1-1/2	3/4	39/64	51060	57098
0.0410	1,040 mm	#59	1-1/2	3/4	39/64	51059	57099
0.0420	1,070 mm	#58	1-1/2	3/4	39/64	51058	57100
0.0430	1,090 mm	#57	1-1/2	3/4	39/64	51057	57101
0.0433	1,000 mm		36,0	14,0	11,0	61052	68294
0.0465	1,180 mm	#56	1-1/2	3/4	39/64	51056	57102
0.0469	1,190 mm	3/64	1-1/2	3/4	39/64	51103	57103
0.0472	1,200 mm		38,0	16,0	12,0	61053	68295
0.0512	1,300 mm		38,0	16,0	12,0	61054	68296
0.0520	1,320 mm	#55	1-1/2	3/4	39/64	51055	57104
0.0550	1,400 mm	#54	1-1/2	3/4	39/64	51054	57105
0.0551	1,400 mm		40,0	18,0	14,0	61055	68297
0.0591	1,500 mm		40,0	18,0	14,0	61009	68272
0.0595	1,510 mm	#53	1-1/2	3/4	39/64	51053	57106
0.0625	1,590 mm	*1/16	1-1/2	3/4	39/64	51104	57107
0.0630	1,600 mm		43,0	20,0	16,0	61056	68298
0.0635	1,610 mm	#52	1-1/2	3/4	39/64	51052	57108
0.0669	1,700 mm		43,0	20,0	17,0	61057	68299

TOLERANCES (inch)

DC = +0.0000/-0.0005

TOLERANCES (mm)

DC = +0,0000/-0,0127

- STEELS
- STAINLESS STEELS
- CAST IRON
- NON-FERROUS
- HIGH TEMP ALLOYS
- HARDENED STEELS

For patent information visit www.ksptpatents.com

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2 Flute Drills • Metric: DIN 338

101

FRACTIONAL & METRIC SERIES

CONTINUED

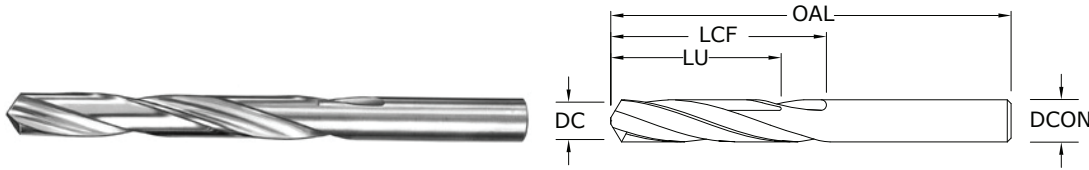
DECIMAL DC/DCON	METRIC DC/DCON	inch & mm				EDP NO.	
		FRACTIONAL/ LETTER/WIRE DC	OVERALL LENGTH OAL	FLUTE LENGTH LCF	USABLE LENGTH LU	UNCOATED	Ti-NAMITE®-A (AITIN)
0.0670	1,700 mm	#51	1-1/2	3/4	39/64	51051	57109
0.0700	1,780 mm	#50	1-3/4	7/8	45/64	51050	57110
0.0709	1,800 mm		46,0	22,0	17,0	61058	68300
0.0730	1,850 mm	#49	1-3/4	7/8	45/64	51049	57111
0.0748	1,900 mm		46,0	22,0	17,0	61059	68301
0.0760	1,930 mm	#48	1-3/4	7/8	45/64	51048	57112
0.0781	1,980 mm	5/64	1-3/4	7/8	45/64	51105	57113
0.0785	1,990 mm	#47	1-3/4	7/8	45/64	51047	57114
0.0787	2,000 mm		49,0	24,0	19,0	61011	68273
0.0810	2,060 mm	#46	1-3/4	7/8	45/64	51046	57115
0.0820	2,080 mm	#45	1-3/4	7/8	45/64	51045	57116
0.0827	2,100 mm		49,0	24,0	19,0	61060	68302
0.0860	2,180 mm	#44	2	1	51/64	51044	57117
0.0866	2,200 mm		53,0	27,0	21,0	61061	68303
0.0890	2,260 mm	#43	2	1	51/64	51043	57118
0.0906	2,300 mm		53,0	27,0	21,0	61062	68304
0.0935	2,370 mm	#42	2	1	51/64	51042	57119
0.0938	2,380 mm	3/32	2	1	51/64	51106	57120
0.0945	2,400 mm		57,0	30,0	24,0	61063	68305
0.0960	2,440 mm	#41	2	1	51/64	51041	57121
0.0980	2,490 mm	#40	2	1	51/64	51040	57122
0.0984	2,500 mm		57,0	30,0	24,0	61013	68274
0.0995	2,530 mm	#39	2-1/4	1-1/4	1	51039	57123
0.1015	2,580 mm	#38	2-1/4	1-1/4	1	51038	57124
0.1024	2,600 mm		57,0	30,0	24,0	61064	68306
0.1040	2,640 mm	#37	2-1/4	1-1/4	1	51037	57125
0.1063	2,700 mm		61,0	33,0	26,0	61065	68307
0.1065	2,710 mm	#36	2-1/4	1-1/4	1	51036	57126
0.1094	2,780 mm	7/64	2-1/4	1-1/4	1	51107	57127
0.1100	2,790 mm	#35	2-1/4	1-1/4	1	51035	57128
0.1102	2,800 mm		61,0	33,0	26,0	61066	68308
0.1110	2,820 mm	#34	2-1/4	1-1/4	1	51034	57129
0.1130	2,870 mm	#33	2-1/4	1-1/4	1	51033	57130
0.1142	2,900 mm		61,0	33,0	26,0	61067	68309
0.1160	2,950 mm	#32	2-1/4	1-1/4	1	51032	57131
0.1181	3,000 mm		61,0	33,0	26,0	61015	68275
0.1200	3,050 mm	#31	2-1/4	1-1/4	1	51031	57132
0.1220	3,100 mm		65,0	36,0	28,0	61068	68310
0.1250	3,180 mm	*1/8	2-1/4	1-1/4	1	51108	57133
0.1260	3,200 mm		65,0	36,0	28,0	61069	68311
0.1285	3,260 mm	#30	2-1/4	1-1/4	1	51030	57134
0.1299	3,300 mm		65,0	36,0	28,0	61070	68312
0.1339	3,400 mm		70,0	39,0	31,0	61071	68313
0.1360	3,450 mm	#29	2-1/2	1-3/8	1-7/64	51029	57135
0.1378	3,500 mm		70,0	39,0	31,0	61017	68276
0.1405	3,570 mm	#28	2-1/2	1-3/8	1-7/64	51028	57136
0.1406	3,570 mm	9/64	2-1/2	1-3/8	1-7/64	51109	57137
0.1417	3,600 mm		70,0	39,0	31,0	61072	68314
0.1440	3,660 mm	#27	2-1/2	1-3/8	1-7/64	51027	57138
0.1457	3,700 mm		70,0	39,0	31,0	61073	68315
0.1470	3,730 mm	#26	2-1/2	1-3/8	1-7/64	51026	57139
0.1495	3,800 mm	#25	2-1/2	1-3/8	1-7/64	51025	57140
0.1496	3,800 mm		75,0	43,0	34,0	61074	68316
0.1520	3,860 mm	#24	2-1/2	1-3/8	1-7/64	51024	57141

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2 Flute Drills • Metric: DIN 338



Pictured:
Series 101 Drill Set



101 FRACTIONAL & METRIC SERIES

CONTINUED

DECIMAL DC / DCON	METRIC DC / DCON	inch & mm		FLUTE LENGTH LCF	USABLE LENGTH LU	EDP NO.	
		FRACTIONAL/ LETTER/WIRE DC	OVERALL LENGTH OAL			UNCOATED	TI-NAMITE®-A (AlTiN)
0.1535	3,900 mm		75,0	43,0	34,0	61075	68317
0.1540	3,910 mm	#23	2-1/2	1-3/8	1-7/64	51023	57142
0.1562	3,970 mm	5/32	2-1/2	1-3/8	1-7/64	51110	57143
0.1570	3,990 mm	#22	2-1/2	1-3/8	1-7/64	51022	57144
0.1575	4,000 mm		75,0	43,0	34,0	61019	68277
0.1590	4,040 mm	#21	2-1/2	1-3/8	1-7/64	51021	57145
0.1610	4,090 mm	#20	2-1/2	1-3/8	1-7/64	51020	57146
0.1614	4,100 mm		75,0	43,0	34,0	61076	68318
0.1654	4,200 mm		75,0	43,0	34,0	61077	68319
0.1660	4,220 mm	#19	2-3/4	1-5/8	1-19/64	51019	57147
0.1693	4,300 mm		80,0	47,0	37,0	61078	68320
0.1695	4,310 mm	#18	2-3/4	1-5/8	1-19/64	51018	57148
0.1719	4,370 mm	11/64	2-3/4	1-5/8	1-19/64	51111	57149
0.1730	4,390 mm	#17	2-3/4	1-5/8	1-19/64	51017	57150
0.1732	4,400 mm		80,0	47,0	37,0	61079	68321
0.1770	4,500 mm	#16	2-3/4	1-5/8	1-19/64	51016	57151
0.1772	4,500 mm		80,0	47,0	37,0	61021	68278
0.1800	4,570 mm	#15	2-3/4	1-5/8	1-19/64	51015	57152
0.1811	4,600 mm		80,0	47,0	37,0	61080	68322
0.1820	4,620 mm	#14	2-3/4	1-5/8	1-19/64	51014	57153
0.1850	4,700 mm		80,0	47,0	37,0	61081	68323
0.1850	4,700 mm	#13	2-3/4	1-5/8	1-19/64	51013	57154
0.1875	4,760 mm	*3/16	2-3/4	1-5/8	1-19/64	51112	57155
0.1890	4,800 mm		86,0	52,0	41,0	61082	68324
0.1890	4,800 mm	#12	2-3/4	1-5/8	1-19/64	51012	57156
0.1910	4,850 mm	#11	2-3/4	1-5/8	1-19/64	51011	57157
0.1929	4,900 mm		86,0	52,0	41,0	61083	68325
0.1935	4,910 mm	#10	2-3/4	1-5/8	1-19/64	51010	57158
0.1960	4,980 mm	#9	3	1-3/4	1-13/32	51009	57159
0.1969	5,000 mm		86,0	52,0	41,0	61023	68279
0.1990	5,050 mm	#8	3	1-3/4	1-13/32	51008	57160
0.2008	5,010 mm		86,0	52,0	41,0	61084	68326
0.2010	5,110 mm	#7	3	1-3/4	1-13/32	51007	57161
0.2031	5,160 mm	13/64	3	1-3/4	1-13/32	51113	57162
0.2040	5,180 mm	#6	3	1-3/4	1-13/32	51006	57163
0.2047	5,200 mm		86,0	52,0	41,0	61085	68327
0.2055	5,220 mm	#5	3	1-3/4	1-13/32	51005	57164
0.2087	5,300 mm		86,0	52,0	41,0	61086	68328
0.2090	5,310 mm	#4	3	1-3/4	1-13/32	51004	57165
0.2126	5,400 mm		93,0	57,0	45,0	61087	68329
0.2130	5,410 mm	#3	3	1-3/4	1-13/32	51003	57166
0.2165	5,500 mm		93,0	57,0	45,0	61025	68280
0.2188	5,560 mm	7/32	3	1-3/4	1-13/32	51114	57167
0.2205	5,600 mm		93,0	57,0	45,0	61088	68330

TOLERANCES (inch)

DC = +0.0000/-0.0005

TOLERANCES (mm)

DC = +0,0000/-0,0127

- STEELS
- STAINLESS STEELS
- CAST IRON
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2 Flute Drills • Metric: DIN 338

101

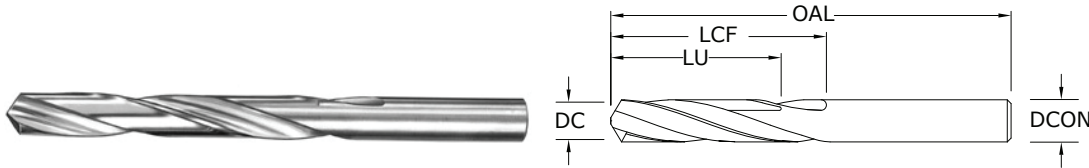
FRACTIONAL & METRIC SERIES

CONTINUED

DECIMAL DC/DCON	METRIC DC/DCON	inch & mm				EDP NO.	
		FRACTIONAL/ LETTER/WIRE DC	OVERALL LENGTH OAL	FLUTE LENGTH LCF	USABLE LENGTH LU	UNCOATED	Ti-NAMITE®-A (AITIN)
0.2210	5,610 mm	#2	3	1-3/4	1-13/32	51002	57168
0.2244	5,700 mm		93,0	57,0	45,0	61089	68331
0.2280	5,790 mm	#1	3	1-3/4	1-13/32	51001	57169
0.2283	5,800 mm		93,0	57,0	45,0	61090	68332
0.2323	5,900 mm		93,0	57,0	45,0	61091	68333
0.2340	5,940 mm	A	3-1/4	2	1-39/64	51201	57170
0.2344	5,950 mm	15/64	3-1/4	2	1-39/64	51115	57171
0.2362	6,000 mm		93,0	57,0	45,0	61027	68281
0.2380	6,050 mm	B	3-1/4	2	1-39/64	51202	57172
0.2402	6,100 mm		101,0	63,0	50,0	61092	68334
0.2420	6,150 mm	C	3-1/4	2	1-39/64	51203	57173
0.2441	6,200 mm		101,0	63,0	50,0	61093	68335
0.2460	6,250 mm	D	3-1/4	2	1-39/64	51204	57174
0.2480	6,300 mm		101,0	63,0	50,0	61094	68336
0.2500	6,350 mm	*1/4	3-1/4	2	1-39/64	51116	57176
0.2520	6,400 mm		101,0	63,0	50,0	61095	68337
0.2559	6,500 mm		101,0	63,0	50,0	61029	68282
0.2570	6,530 mm	F	3-1/4	2	1-39/64	51206	57177
0.2598	6,600 mm		101,0	63,0	50,0	61096	68338
0.2610	6,630 mm	G	3-1/2	2-1/8	1-45/64	51207	57178
0.2638	6,700 mm		101,0	63,0	50,0	61097	68339
0.2656	6,750 mm	17/64	3-1/2	2-1/8	1-45/64	51117	57179
0.2660	6,760 mm	H	3-1/2	2-1/8	1-45/64	51208	57180
0.2677	6,800 mm		109,0	69,0	55,0	61098	68340
0.2717	6,900 mm		109,0	69,0	55,0	61099	68341
0.2720	6,910 mm	I	3-1/2	2-1/8	1-45/64	51209	57181
0.2756	7,000 mm		109,0	69,0	55,0	61031	68283
0.2770	7,040 mm	J	3-1/2	2-1/8	1-45/64	51210	57182
0.2795	7,100 mm		109,0	69,0	55,0	61100	68342
0.2810	7,140 mm	K	3-1/2	2-1/8	1-45/64	51211	57183
0.2812	7,140 mm	9/32	3-1/2	2-1/8	1-45/64	51118	57184
0.2835	7,200 mm		109,0	69,0	55,0	61101	68343
0.2874	7,300 mm		109,0	69,0	55,0	61102	68344
0.2900	7,370 mm	L	3-1/2	2-1/8	1-45/64	51212	57185
0.2913	7,400 mm		109,0	69,0	55,0	61103	68345
0.2950	7,490 mm	M	3-3/4	2-3/8	1-29/32	51213	57186
0.2953	7,500 mm		109,0	69,0	55,0	61033	68284
0.2969	7,540 mm	19/64	3-3/4	2-3/8	1-29/32	51119	57187
0.2992	7,600 mm		117,0	75,0	60,0	61104	68346
0.3020	7,670 mm	N	3-3/4	2-3/8	1-29/32	51214	57188
0.3031	7,700 mm		117,0	75,0	60,0	61105	68347
0.3071	7,800 mm		117,0	75,0	60,0	61106	68348
0.3110	7,900 mm		117,0	75,0	60,0	61107	68349
0.3125	7,940 mm	*5/16	3-3/4	2-3/8	1-29/32	51120	57189
0.3150	8,000 mm		117,0	75,0	60,0	61035	68285
0.3160	8,030 mm	O	3-3/4	2-3/8	1-29/32	51215	57190
0.3189	8,100 mm		117,0	75,0	60,0	61108	68350
0.3228	8,200 mm		117,0	75,0	60,0	61109	68351
0.3230	8,200 mm	P	3-3/4	2-3/8	1-29/32	51216	57191
0.3268	8,300 mm		117,0	75,0	60,0	61110	68352
0.3281	8,330 mm	21/64	4	2-1/2	2	51121	57192
0.3307	8,400 mm		117,0	75,0	60,0	61111	68353
0.3320	8,430 mm	Q	4	2-1/2	2	51217	57193
0.3346	8,500 mm		117,0	75,0	60,0	61037	68286

continued on next page

2 Flute Drills • Metric: DIN 338



Pictured:
Series 101 Drill Set



101

FRACTIONAL & METRIC SERIES

CONTINUED

DECIMAL DC / DCON	METRIC DC / DCON	FRACTIONAL/ LETTER/WIRE DC	inch & mm			EDP NO.	
			OVERALL LENGTH OAL	FLUTE LENGTH LCF	USABLE LENGTH LU	UNCOATED	TI-NAMITE®-A (AlTiN)
0.3386	8,600 mm		125,0	81,0	64,0	61112	68354
0.3390	8,610 mm	R	4	2-1/2	2	51218	57194
0.3425	8,700 mm		125,0	81,0	64,0	61113	68355
0.3438	8,730 mm	11/32	4	2-1/2	2	51122	57195
0.3465	8,800 mm		125,0	81,0	64,0	61114	68356
0.3480	8,840 mm	S	4	2-1/2	2	51219	57196
0.3504	8,900 mm		125,0	81,0	64,0	61115	68357
0.3543	9,000 mm		125,0	81,0	64,0	61039	68287
0.3580	9,090 mm	T	4-1/4	2-3/4	2-13/64	51220	57197
0.3583	9,100 mm		125,0	81,0	64,0	61116	68358
0.3594	9,130 mm	23/64	4-1/4	2-3/4	2-13/64	51123	57198
0.3622	9,200 mm		125,0	81,0	64,0	61117	68359
0.3661	9,300 mm		125,0	81,0	64,0	61118	68360
0.3680	9,350 mm	U	4-1/4	2-3/4	2-13/64	51221	57199
0.3701	9,400 mm		125,0	81,0	64,0	61119	68361
0.3740	9,500 mm		125,0	81,0	64,0	61041	68288
0.3750	9,530 mm	*3/8	4-1/4	2-3/4	2-13/64	51124	57200
0.3770	9,580 mm	V	4-1/4	2-3/4	2-13/64	51222	57201
0.3780	9,600 mm		133,0	87,0	69,0	61120	68362
0.3819	9,700 mm		133,0	87,0	69,0	61121	68363
0.3858	9,800 mm		133,0	87,0	69,0	61122	68364
0.3860	9,800 mm	W	4-1/2	2-7/8	2-19/64	51223	57202
0.3898	9,900 mm		133,0	87,0	69,0	61123	68365
0.3906	9,920 mm	25/64	4-1/2	2-7/8	2-19/64	51125	57203
0.3937	10,000 mm		133,0	87,0	69,0	61043	68289
0.3970	10,080 mm	X	4-1/2	2-7/8	2-19/64	51224	57204
0.4016	10,010 mm		133,0	87,0	69,0	61124	68366
0.4040	10,260 mm	Y	4-1/2	2-7/8	2-19/64	51225	57205
0.4062	10,320 mm	13/32	4-1/2	2-7/8	2-19/64	51126	57206
0.4130	10,490 mm	Z	4-1/2	2-7/8	2-19/64	51226	57207
0.4134	10,500 mm		133,0	87,0	69,0	61045	68290
0.4219	10,720 mm	27/64	4-1/2	2-7/8	2-19/64	51127	57208
0.4331	11,000 mm		142,0	94,0	75,0	61047	68291
0.4375	11,110 mm	7/16	4-1/2	2-7/8	2-19/64	51128	57209
0.4528	11,500 mm		142,0	94,0	75,0	61049	68292
0.4531	11,510 mm	29/64	4-3/4	3	2-13/32	51129	57210
0.4688	11,910 mm	15/32	4-3/4	3	2-13/32	51130	57211
0.4724	12,000 mm		151,0	101,0	80,0	61051	68293
0.4844	12,300 mm	31/64	4-3/4	3	2-13/32	51131	57212
0.5000	12,700 mm	1/2	4-3/4	3	2-13/32	51132	57213
						61175	57351

*Series 101 Set

TOLERANCES (inch)

DC = +0.0000/-0.0005

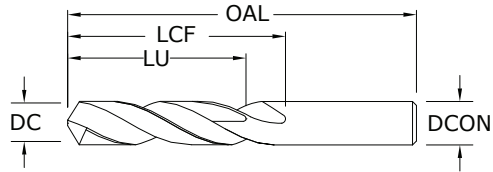
TOLERANCES (mm)

DC = +0,0000/-0,0127

- STEELS
- STAINLESS STEELS
- CAST IRON
- NON-FERROUS
- HIGH TEMP ALLOYS
- HARDENED STEELS

For patent information visit www.ksptpatents.com

Short Length Self Centering Drills • DIN 6539



108M Plus
METRIC SERIES

TOLERANCES (mm)

≤3 DIAMETER

DC = +0,000/-0,010

DCON = h₆

>3–6 DIAMETER

DC = +0,000/-0,012

DCON = h₆

>6–10 DIAMETER

DC = +0,000/-0,015

DCON = h₆

>10–16 DIAMETER

DC = +0,000/-0,018

DCON = h₆

STEELS

STAINLESS STEELS

CAST IRON

NON-FERROUS

HIGH TEMP ALLOYS

HARDENED STEELS

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mm						EDP NO.	
DECIMAL DC/DCON	METRIC DC/DCON	LETTER/WIRE DC	OVERALL LENGTH OAL	FLUTE LENGTH LCF	USABLE LENGTH LU	UNCOATED	Ti-NAMITE®-A (AlTiN)
0.0197	0,500 mm		20,0	3,0	—	62001	68643
0.0217	0,550 mm		21,0	3,5	—	62003	68644
0.0236	0,600 mm		21,0	3,5	—	62005	68645
0.0256	0,650 mm		22,0	4,0	—	62007	68646
0.0276	0,700 mm		23,0	4,5	—	62009	68647
0.0295	0,750 mm		23,0	4,5	—	62011	68648
0.0315	0,800 mm		24,0	5,0	—	62013	68649
0.0335	0,850 mm		24,0	5,0	—	62015	68650
0.0354	0,900 mm		25,0	5,5	4,0	62017	68651
0.0374	0,950 mm		25,0	5,5	4,0	62019	68652
0.0394	1,000 mm		26,0	6,0	4,7	62021	68653
0.0413	1,050 mm		26,0	6,0	4,7	62023	68654
0.0433	1,100 mm		28,0	7,0	5,4	62025	68655
0.0453	1,150 mm		28,0	7,0	5,4	62027	68656
0.0472	1,200 mm		30,0	8,0	6,0	62029	68657
0.0492	1,250 mm		30,0	8,0	6,0	62031	68658
0.0512	1,300 mm		30,0	8,0	6,0	62033	68659
0.0531	1,350 mm		32,0	9,0	7,0	62035	68660
0.0551	1,400 mm		32,0	9,0	7,0	62037	68661
0.0571	1,450 mm		32,0	9,0	7,0	62039	68662
0.0591	1,500 mm		32,0	9,0	7,0	62041	68663
0.0630	1,600 mm		34,0	10,0	7,0	62043	68664
0.0669	1,700 mm		34,0	10,0	7,0	62045	68665
0.0709	1,800 mm		36,0	11,0	8,0	62047	68666
0.0748	1,900 mm		36,0	11,0	8,0	62049	68667
0.0748	2,000 mm		38,0	12,0	9,0	62051	68668
0.0827	2,100 mm		38,0	12,0	9,0	62053	68669
0.0866	2,200 mm		40,0	13,0	10,0	62055	68670
0.0906	2,300 mm		40,0	13,0	10,0	62057	68671
0.0945	2,400 mm		43,0	14,0	11,0	62059	68672
0.0984	2,500 mm		43,0	14,0	11,0	62061	68673
0.1024	2,600 mm		43,0	14,0	11,0	62063	68674
0.1063	2,700 mm		46,0	16,0	12,0	62065	68675
0.1102	2,800 mm		46,0	16,0	12,0	62067	68676

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Short Length Self Centering Drills • DIN 6539

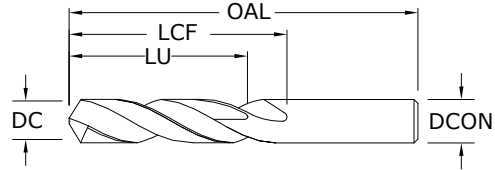


3xD



108M Plus

METRIC SERIES



CONTINUED

			mm			EDP NO.	
DECIMAL DC/DCON	METRIC DC/DCON	LETTER/WIRE DC	OVERALL LENGTH OAL	FLUTE LENGTH LCF	USABLE LENGTH LU	UNCOATED	Ti-NAMITE [®] -A (AITiN)
0.1142	2,900 mm		46,0	16,0	12,0	62069	68677
0.1181	3,000 mm		46,0	16,0	12,0	62071	68678
0.1220	3,100 mm		49,0	18,0	14,0	62073	68679
0.1260	3,200 mm		49,0	18,0	14,0	62075	68680
0.1299	3,300 mm		49,0	18,0	14,0	62077	68681
0.1339	3,400 mm		52,0	20,0	15,0	62079	68682
0.1378	3,500 mm		52,0	20,0	15,0	62081	68683
0.1417	3,600 mm		52,0	20,0	15,0	62083	68684
0.1457	3,700 mm		52,0	20,0	15,0	62085	68685
0.1496	3,800 mm		55,0	22,0	17,0	62087	68686
0.1535	3,900 mm		55,0	22,0	17,0	62089	68687
0.1575	4,000 mm		55,0	22,0	17,0	62091	68688
0.1614	4,100 mm		55,0	22,0	17,0	62093	68689
0.1654	4,200 mm		55,0	22,0	17,0	62095	68690
0.1693	4,300 mm		58,0	24,0	18,0	62097	68691
0.1732	4,400 mm		58,0	24,0	18,0	62099	68692
0.1772	4,500 mm		58,0	24,0	18,0	62101	68693
0.1811	4,600 mm		58,0	24,0	18,0	62103	68694
0.1850	4,700 mm	#13	58,0	24,0	18,0	62105	68695
0.1890	4,800 mm	#12	62,0	26,0	20,0	62107	68696
0.1929	4,900 mm		62,0	26,0	20,0	62109	68697
0.1969	5,000 mm		62,0	26,0	20,0	62111	68698
0.2008	5,100 mm		62,0	26,0	20,0	62113	68699
0.2047	5,200 mm		62,0	26,0	20,0	62115	68700
0.2087	5,300 mm		62,0	26,0	20,0	62117	68701
0.2126	5,400 mm		66,0	28,0	21,0	62119	68702
0.2165	5,500 mm		66,0	28,0	21,0	62121	68703
0.2205	5,600 mm		66,0	28,0	21,0	62123	68704
0.2244	5,700 mm		66,0	28,0	21,0	62125	68705
0.2283	5,800 mm		66,0	28,0	21,0	62127	68706
0.2323	5,900 mm		66,0	28,0	21,0	62129	68707
0.2362	6,000 mm		66,0	28,0	21,0	62131	68708

TOLERANCES (mm)

≤3 DIAMETER

DC = +0,000/-0,010

DCON = h₆

>3-6 DIAMETER

DC = +0,000/-0,012

DCON = h₆

>6-10 DIAMETER

DC = +0,000/-0,015

DCON = h₆

>10-16 DIAMETER

DC = +0,000/-0,018

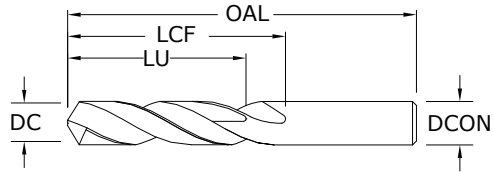
DCON = h₆

- STEELS
- STAINLESS STEELS
- CAST IRON
- NON-FERROUS
- HIGH TEMP ALLOYS
- HARDENED STEELS

For patent information visit www.ksptpatents.com

continued on next page

Short Length Self Centering Drills • DIN 6539



108M Plus
METRIC SERIES

TOLERANCES (mm)

≤3 DIAMETER

DC = +0,000/-0,010

DCON = h₆

>3–6 DIAMETER

DC = +0,000/-0,012

DCON = h₆

>6–10 DIAMETER

DC = +0,000/-0,015

DCON = h₆

>10–16 DIAMETER

DC = +0,000/-0,018

DCON = h₆

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- HARDENED STEELS

For patent information visit www.ksptpatents.com

mm						EDP NO.	
DECIMAL DC/DCON	METRIC DC/DCON	LETTER/WIRE DC	OVERALL LENGTH OAL	FLUTE LENGTH LCF	USABLE LENGTH LU	UNCOATED	Ti-NAMITE®-A (AlTiN)
0.2402	6,100 mm		70,0	31,0	23,0	62133	68709
0.2441	6,200 mm		70,0	31,0	23,0	62135	68710
0.2480	6,300 mm		70,0	31,0	23,0	62137	68711
0.2520	6,400 mm		70,0	31,0	23,0	62139	68712
0.2559	6,500 mm		70,0	31,0	23,0	62141	68713
0.2598	6,800 mm		70,0	31,0	23,0	62142	68603
0.2756	7,000 mm		74,0	34,0	25,0	62143	68718
0.2953	7,500 mm		74,0	34,0	25,0	62145	68723
0.3071	7,800 mm		79,0	37,0	27,0	62146	68604
0.3150	8,000 mm		79,0	37,0	27,0	62147	68728
0.3346	8,500 mm		79,0	37,0	27,0	62149	68733
0.3543	9,000 mm		84,0	40,0	29,0	62151	68738
0.3740	9,500 mm		84,0	40,0	29,0	62153	68743
0.3858	9,800 mm		89,0	43,0	31,0	62154	68606
0.3937	10,000 mm		89,0	43,0	31,0	62155	68748
0.4016	10,200 mm		89,0	43,0	31,0	62156	68607
0.4134	10,500 mm		89,0	43,0	31,0	62066	68753
0.4331	11,000 mm		95,0	47,0	33,0	62157	68758
0.4528	11,500 mm		95,0	47,0	33,0	62084	68763
0.4646	11,800 mm		102,0	51,0	35,0	62158	68608
0.4724	12,000 mm		102,0	51,0	35,0	62159	68768
0.4921	12,500 mm		102,0	51,0	35,0	62102	68773
0.5118	13,000 mm		102,0	51,0	35,0	62112	68778
0.5433	13,800 mm		107,0	54,0	37,0	62164	68609
0.5512	14,000 mm		107,0	54,0	37,0	62116	68780
0.5709	14,500 mm		111,0	56,0	38,0	62166	68611
0.5827	14,800 mm		111,0	56,0	38,0	62167	68612
0.5906	15,000 mm		111,0	56,0	38,0	62168	68613
0.6221	15,800 mm		115,0	58,0	38,0	62170	68614
0.6299	16,000 mm		115,0	58,0	38,0	62171	68616

CONTINUED

2 Flute Drills

Series 101 Fractional	Hardness	Vc (sfm)	DC • in								
			1/64	1/32	1/16	1/8	1/4	3/8	1/2		
CARBON STEELS 1018, 1040, 1080, 1090, 10L50, 1140, 1212, 12L15, 1525, 1536	≤ 175 Bhn or ≤ 7 HRc	265 (212-318)	RPM	64787	32394	16197	8098	4049	2699	2025	
			Fr	0.00021	0.0004	0.0008	0.0017	0.0033	0.0050	0.0067	
			Feed (ipm)	13.5	13.5	13.5	13.5	13.5	13.5	13.5	
	≤ 300 Bhn or ≤ 32 HRc	125 (100-150)	RPM	30560	15280	7640	3820	1910	1273	955	
			Fr	0.00020	0.0004	0.0008	0.0016	0.0031	0.0047	0.0063	
			Feed (ipm)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
	≤ 425 Bhn or ≤ 45 HRc	85 (68-102)	RPM	20781	10390	5195	2598	1299	866	649	
			Fr	0.00011	0.0002	0.0004	0.0008	0.0017	0.0025	0.0034	
			Feed (ipm)	2.2	2.2	2.2	2.2	2.2	2.2	2.2	
	ALLOY STEELS 4140, 4150, 4320, 5120, 5150, 8630, 86L20, 50100	≤ 275 Bhn or ≤ 28 HRc	230 (184-276)	RPM	56230	28115	14058	7029	3514	2343	1757
				Fr	0.00019	0.0004	0.0007	0.0015	0.0030	0.0045	0.0060
				Feed (ipm)	10.5	10.5	10.5	10.5	10.5	10.5	10.5
≤ 375 Bhn or ≤ 40 HRc		145 (116-174)	RPM	35450	17725	8862	4431	2216	1477	1108	
			Fr	0.00019	0.0004	0.0007	0.0015	0.0030	0.0045	0.0060	
			Feed (ipm)	6.6	6.6	6.6	6.6	6.6	6.6	6.6	
≤ 425 Bhn or ≤ 45 HRc		60 (48-72)	RPM	14669	7334	3667	1834	917	611	458	
			Fr	0.00008	0.0002	0.0003	0.0007	0.0013	0.0020	0.0026	
			Feed (ipm)	1.2	1.2	1.2	1.2	1.2	1.2	1.2	
TOOL STEELS A2, D2, H13, L2, M2, P20, S7, T15, W2		≤ 250 Bhn or ≤ 24 HRc	85 (68-102)	RPM	20781	10390	5195	2598	1299	866	649
				Fr	0.00011	0.0002	0.0004	0.0009	0.0018	0.0027	0.0035
				Feed (ipm)	2.3	2.3	2.3	2.3	2.3	2.3	2.3
	≤ 375 Bhn or ≤ 40 HRc	55 (44-66)	RPM	13446	6723	3362	1681	840	560	420	
			Fr	0.00005	0.0001	0.0002	0.0004	0.0008	0.0012	0.0017	
			Feed (ipm)	0.7	0.7	0.7	0.7	0.7	0.7	0.7	
STAINLESS STEELS (FREE MACHINING) 303, 416, 420F, 430F 440F	≤ 250 Bhn or ≤ 24 HRc	210 (168-252)	RPM	51341	25670	12835	6418	3209	2139	1604	
			Fr	0.00015	0.0003	0.0006	0.0012	0.0024	0.0036	0.0048	
			Feed (ipm)	7.7	7.7	7.7	7.7	7.7	7.7	7.7	
	≤ 330 Bhn or ≤ 36 HRc	110 (88-132)	RPM	26893	13446	6723	3362	1681	1121	840	
			Fr	0.00009	0.0002	0.0004	0.0007	0.0015	0.0022	0.0030	
			Feed (ipm)	2.5	2.5	2.5	2.5	2.5	2.5	2.5	
	STAINLESS STEELS (DIFFICULT) 304, 316, 321, 13-8 PH, 15-5PH, 17-4 PH, Custom 450	≤ 275 Bhn or ≤ 28 HRc	65 (52-78)	RPM	15891	7946	3973	1986	993	662	497
				Fr	0.00010	0.0002	0.0005	0.0009	0.0018	0.0025	0.0035
				Feed (ipm)	1.7	1.7	1.7	1.7	1.7	1.7	1.7
		≤ 375 Bhn or ≤ 40 HRc	55 (44-66)	RPM	13446	6723	3362	1681	840	560	420
				Fr	0.00010	0.0002	0.0004	0.0008	0.0015	0.0023	0.0031
				Feed (ipm)	1.3	1.3	1.3	1.3	1.3	1.3	1.3
CAST IRONS Gray, Malleable, Ductile	≤ 220 Bhn or ≤ 19 HRc	280 (224-336)	RPM	68454	34227	17114	8557	4278	2852	2139	
			Fr	0.00026	0.0005	0.0010	0.0020	0.0041	0.0061	0.0082	
			Feed (ipm)	17.5	17.5	17.5	17.5	17.5	17.5	17.5	
	≤ 330 Bhn or ≤ 36 HRc	250 (200-300)	RPM	61120	30560	15280	7640	3820	2547	1910	
			Fr	0.00025	0.0005	0.0010	0.0020	0.0041	0.0061	0.0081	
			Feed (ipm)	15.5	15.5	15.5	15.5	15.5	15.5	15.5	

continued on next page

FRACTIONAL 2 Flute Drills

Series 101 Fractional	Hardness	Vc (sfm)		DC • in							
				1/64	1/32	1/16	1/8	1/4	3/8	1/2	
N	ALUMINUM ALLOYS 2017, 2024, 356, 6061, 7075	≤ 80 Bhn or ≤ 47 HRb	540	RPM	132019	66010	33005	16502	8251	5501	4126
			(432-648)	Fr	0.00030	0.0006	0.0012	0.0024	0.0048	0.0073	0.0097
			Feed (ipm)	40.0	40.0	40.0	40.0	40.0	40.0	40.0	
		≤ 150 Bhn or ≤ 88 HRb	455	RPM	111238	55619	27810	13905	6952	4635	3476
			(364-546)	Fr	0.00031	0.0006	0.0013	0.0025	0.0050	0.0076	0.0101
			Feed (ipm)	35.0	35.0	35.0	35.0	35.0	35.0	35.0	
	COPPER ALLOYS Alum Bronze, C110, Muntz Brass	≤ 140 Bhn or ≤ 3 HRc	190	RPM	46451	23226	11613	5806	2903	1935	1452
			(152-228)	Fr	0.00015	0.0003	0.0006	0.0012	0.0024	0.0036	0.0048
			Feed (ipm)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	
		≤ 200 Bhn or ≤ 23 HRc	175	RPM	42784	21392	10696	5348	2674	1783	1337
			(140-210)	Fr	0.00015	0.0003	0.0006	0.0012	0.0024	0.0036	0.0048
			Feed (ipm)	6.4	6.4	6.4	6.4	6.4	6.4	6.4	
PLASTICS Polycarbonate, PVC	500 (400-600)	RPM	122240	61120	30560	15280	7640	5093	3820		
		Fr	0.00031	0.0006	0.0012	0.0025	0.0050	0.0075	0.0099		
		Feed (ipm)	38.0	38.0	38.0	38.0	38.0	38.0	38.0		
S	HIGH TEMP ALLOYS (NICKEL, COBALT, IRON BASE) Inconel 601, 617, 625, Incoloy 800, Monel 400, Rene, Waspaloy	≤ 220 Bhn or ≤ 19 HRc	40	RPM	9779	4890	2445	1222	611	407	306
			(32-48)	Fr	0.00010	0.0002	0.0004	0.0008	0.0016	0.0025	0.0033
			Feed (ipm)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
		≤ 320 Bhn or ≤ 34 HRc	25	RPM	6112	3056	1528	764	382	255	191
			(20-30)	Fr	0.00010	0.0002	0.0004	0.0008	0.0016	0.0024	0.0031
			Feed (ipm)	0.6	0.6	0.6	0.6	0.6	0.6	0.6	
	≤ 425 Bhn or ≤ 45 HRc	20	RPM	4890	2445	1222	611	306	204	153	
		(16-24)	Fr	0.00004	0.0001	0.0002	0.0003	0.0007	0.0010	0.0013	
		Feed (ipm)	0.2	0.2	0.2	0.2	0.2	0.2	0.2		
	TITANIUM ALLOYS (DIFFICULT) Pure Titanium, Ti6Al4V, Ti6Al2Sn4Zr2Mo, Ti4Al4Mo2Sn0.5Si, Ti-6Al4V	≤ 275 Bhn or ≤ 28 HRc	85	RPM	20781	10390	5195	2598	1299	866	649
			(68-102)	Fr	0.00020	0.0004	0.0008	0.0016	0.0032	0.0049	0.0065
			Feed (ipm)	4.2	4.2	4.2	4.2	4.2	4.2	4.2	
≤ 350 Bhn or ≤ 38 HRc		65	RPM	15891	7946	3973	1986	993	662	497	
		(52-78)	Fr	0.00011	0.0002	0.0004	0.0009	0.0017	0.0026	0.0034	
		Feed (ipm)	1.7	1.7	1.7	1.7	1.7	1.7	1.7		
≤ 440 Bhn or ≤ 47 HRc	55	RPM	13446	6723	3362	1681	840	560	420		
	(44-66)	Fr	0.00010	0.0002	0.0004	0.0008	0.0015	0.0023	0.0031		
	Feed (ipm)	1.3	1.3	1.3	1.3	1.3	1.3	1.3			
H	TOOL STEELS A2, D2, H13, L2, M2, P20, S7, T15, W2	≤ 475 Bhn or ≤ 50 HRc	40	RPM	9779	4890	2445	1222	611	407	306
			(32-48)	Fr	0.00005	0.0001	0.0002	0.0004	0.0008	0.0012	0.0016
			Feed (ipm)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	

Bhn (Brinell) HRc (Rockwell C) HRb (Rockwell B)
 $rpm = Vc \times 3.82 / DC$
 $ipm = Fr \times rpm$
 reduce speed and feed 30 percent when using uncoated drills
 reduce speed and feed for materials harder than listed
 refer to the SGS Tool Wizard® for complete technical information (www.kyocera-sgstoool.com)

2 Flute Drills

Short Length Self Centering Drills • DIN 6539

Series 101M, 108M Metric	Hardness	Vc (m/min)	DC • mm								
			1	3	6	8	10	12	16		
P CARBON STEELS 1018, 1040, 1080, 1090, 10L50, 1140, 1212, 12L15, 1525, 1536	≤ 175 Bhn or ≤ 7 HRc	81 (65-97)	RPM	25690	8563	4282	3211	2569	2141	1606	
			Fr	0.014	0.041	0.082	0.109	0.136	0.163	0.218	
			Feed (mm/min)	350	350	350	350	350	350	350	
	≤ 300 Bhn or ≤ 32 HRc	38 (30-46)	RPM	12118	4039	2020	1515	1212	1010	757	
			Fr	0.012	0.036	0.072	0.096	0.120	0.144	0.191	
			Feed (mm/min)	145	145	145	145	145	145	145	
	≤ 425 Bhn or ≤ 45 HRc	26 (21-31)	RPM	8240	2747	1373	1030	824	687	515	
			Fr	0.007	0.020	0.040	0.053	0.067	0.080	0.107	
			Feed (mm/min)	55	55	55	55	55	55	55	
	≤ 275 Bhn or ≤ 28 HRc	70 (56-84)	RPM	22297	7432	3716	2787	2230	1858	1394	
			Fr	0.012	0.036	0.073	0.097	0.121	0.145	0.194	
			Feed (mm/min)	270	270	270	270	270	270	270	
	ALLOY STEELS 4140, 4150, 4320, 5120, 5150, 8630, 86L20, 50100	≤ 375 Bhn or ≤ 40 HRc	44 (35-53)	RPM	14057	4686	2343	1757	1406	1171	879
				Fr	0.012	0.036	0.073	0.097	0.121	0.145	0.194
				Feed (mm/min)	170	170	170	170	170	170	170
≤ 425 Bhn or ≤ 45 HRc	18 (15-22)	RPM	5816	1939	969	727	582	485	364		
		Fr	0.005	0.015	0.030	0.040	0.050	0.060	0.080		
		Feed (mm/min)	29	29	29	29	29	29	29		
TOOL STEELS A2, D2, H13, L2, M2, P20, S7, T15, W2	≤ 250 Bhn or ≤ 24 HRc	26 (21-31)	RPM	8240	2747	1373	1030	824	687	515	
			Fr	0.007	0.020	0.040	0.053	0.067	0.080	0.107	
			Feed (mm/min)	55	55	55	55	55	55	55	
≤ 375 Bhn or ≤ 40 HRc	17 (13-20)	RPM	5332	1777	889	666	533	444	333		
		Fr	0.003	0.010	0.020	0.027	0.034	0.041	0.054		
		Feed (mm/min)	18	18	18	18	18	18	18		
M STAINLESS STEELS (FREE MACHINING) 303, 416, 420F, 430F 440F	≤ 250 Bhn or ≤ 24 HRc	64 (51-77)	RPM	20358	6786	3393	2545	2036	1696	1272	
			Fr	0.010	0.029	0.059	0.079	0.098	0.118	0.157	
			Feed (mm/min)	200	200	200	200	200	200	200	
	≤ 330 Bhn or ≤ 36 HRc	34 (27-40)	RPM	10664	3555	1777	1333	1066	889	666	
			Fr	0.006	0.017	0.034	0.045	0.056	0.068	0.090	
			Feed (mm/min)	60	60	60	60	60	60	60	
	STAINLESS STEELS (DIFFICULT) 304, 316, 321, 13-8 PH, 15-5PH, 17-4 PH, Custom 450	≤ 275 Bhn or ≤ 28 HRc	20 (16-24)	RPM	6301	2100	1050	788	630	525	394
				Fr	0.007	0.021	0.043	0.057	0.071	0.086	0.114
				Feed (mm/min)	45	45	45	45	45	45	45
	≤ 375 Bhn or ≤ 40 HRc	17 (13-20)	RPM	5332	1777	889	666	533	444	333	
			Fr	0.007	0.020	0.039	0.053	0.066	0.079	0.105	
			Feed (mm/min)	35	35	35	35	35	35	35	
K CAST IRONS Gray, Malleable, Ductile	≤ 220 Bhn or ≤ 19 HRc	85 (68-102)	RPM	27144	9048	4524	3393	2714	2262	1696	
			Fr	0.016	0.049	0.097	0.130	0.162	0.195	0.259	
			Feed (mm/min)	440	440	440	440	440	440	440	
	≤ 330 Bhn or ≤ 36 HRc	76 (61-91)	RPM	24235	8078	4039	3029	2424	2020	1515	
			Fr	0.017	0.050	0.099	0.132	0.165	0.198	0.264	
			Feed (mm/min)	400	400	400	400	400	400	400	

continued on next page

2 Flute Drills

Short Length Self Centering Drills • DIN 6539

Series 101M, 108M Metric	Hardness	Vc (m/min)	DC • mm								
			1	3	6	8	10	12	16		
N ALUMINUM ALLOYS 2017, 2024, 356, 6061, 7075	≤ 80 Bhn or ≤ 47 HRb	165 (132-198)	RPM	52348	17449	8725	6544	5235	4362	3272	
			Fr	0.020	0.060	0.120	0.160	0.200	0.240	0.319	
			Feed (mm/min)	1045	1045	1045	1045	1045	1045	1045	
	≤ 150 Bhn or ≤ 88 HRb	139 (111-166)	RPM	44108	14703	7351	5514	4411	3676	2757	
			Fr	0.020	0.060	0.120	0.160	0.200	0.239	0.319	
			Feed (mm/min)	880	880	880	880	880	880	880	
	COPPER ALLOYS Alum Bronze, C110, Muntz Brass	≤ 140 Bhn or ≤ 3 HRc	58 (46-69)	RPM	18419	6140	3070	2302	1842	1535	1151
				Fr	0.010	0.030	0.060	0.080	0.100	0.121	0.161
				Feed (mm/min)	185	185	185	185	185	185	185
		≤ 200 Bhn or ≤ 23 HRc	53 (43-64)	RPM	16965	5655	2827	2121	1696	1414	1060
				Fr	0.010	0.030	0.060	0.080	0.100	0.120	0.160
				Feed (mm/min)	170	170	170	170	170	170	170
PLASTICS Polycarbonate, PVC	152 (122-183)	RPM	48471	16157	8078	6059	4847	4039	3029		
		Fr	0.020	0.060	0.120	0.160	0.200	0.240	0.320		
		Feed (mm/min)	970	970	970	970	970	970	970		
S HIGH TEMP ALLOYS (NICKEL, COBALT, IRON BASE) Inconel 601, 617, 625, Incoloy 800, Monel 400, Rene, Waspaloy	≤ 220 Bhn or ≤ 19 HRc	12 (10-15)	RPM	3878	1293	646	485	388	323	242	
			Fr	0.006	0.019	0.039	0.052	0.064	0.077	0.103	
			Feed (mm/min)	25	25	25	25	25	25	25	
	≤ 320 Bhn or ≤ 34 HRc	8 (6-9)	RPM	2424	808	404	303	242	202	151	
			Fr	0.006	0.019	0.037	0.050	0.062	0.074	0.099	
			Feed (mm/min)	15	15	15	15	15	15	15	
	≤ 425 Bhn or ≤ 45 HRc	6 (5-7)	RPM	1939	646	323	242	194	162	121	
			Fr	0.005	0.015	0.031	0.041	0.052	0.062	0.083	
			Feed (mm/min)	10	10	10	10	10	10	10	
	TITANIUM ALLOYS (DIFFICULT) Pure Titanium, Ti6Al4V, Ti6Al2Sn4Zr2Mo, Ti4Al4Mo2Sn0.5Si, Ti-6Al4V	≤ 275 Bhn or ≤ 28 HRc	26 (21-31)	RPM	8240	2747	1373	1030	824	687	515
				Fr	0.013	0.040	0.080	0.107	0.133	0.160	0.214
				Feed (mm/min)	110	110	110	110	110	110	110
≤ 350 Bhn or ≤ 38 HRc		20 (16-24)	RPM	6301	2100	1050	788	630	525	394	
			Fr	0.007	0.021	0.043	0.057	0.071	0.086	0.114	
			Feed (mm/min)	45	45	45	45	45	45	45	
≤ 440 Bhn or ≤ 47 HRc	17 (13-20)	RPM	5332	1777	889	666	533	444	333		
		Fr	0.007	0.020	0.039	0.053	0.066	0.079	0.105		
		Feed (mm/min)	35	35	35	35	35	35	35		
H TOOL STEELS A2, D2, H13, L2, M2, P20, S7, T15, W2	≤ 475 Bhn or ≤ 50 HRc	12 (10-15)	RPM	3878	1293	646	485	388	323	242	
			Fr	0.003	0.009	0.019	0.025	0.031	0.037	0.050	
			Feed (mm/min)	12	12	12	12	12	12	12	

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

$$\text{rpm} = (\text{Vc} \times 1000) / (\text{DC} \times 3.14)$$

$$\text{mm/min} = \text{Fr} \times \text{rpm}$$

reduce speed and feed 30 percent when using uncoated drills

reduce speed and feed for materials harder than listed

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

Straight Flute Drills • Metric: DIN 6539

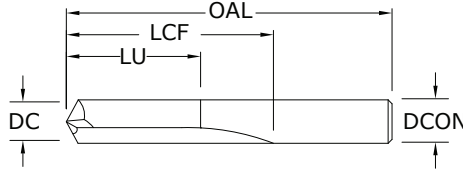


3xD



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FRACTIONAL & METRIC SERIES



DECIMAL DC/DCON	METRIC DC/DCON	inch & mm				EDP NO.	
		FRACTIONAL/ LETTER/WIRE DC	OVERALL LENGTH OAL	FLUTE LENGTH LCF	USABLE LENGTH LU	UNCOATED	Ti-NAMITE®-A (AlTiN)
0.0394	1,000 mm		26,0	6,0	4,5	66001	66002
0.0400	1,020 mm	#60	1-1/2	1/2	13/32	56060	56269
0.0410	1,040 mm	#59	1-1/2	1/2	13/32	56059	56268
0.0420	1,070 mm	#58	1-1/2	1/2	13/32	56058	56267
0.0430	1,090 mm	#57	1-1/2	1/2	13/32	56057	56266
0.0465	1,180 mm	#56	1-1/2	1/2	13/32	56056	56265
0.0469	1,190 mm	3/64	1-1/2	1/2	13/32	56103	56135
0.0520	1,320 mm	#55	1-1/2	1/2	13/32	56055	56264
0.0550	1,400 mm	#54	1-1/2	1/2	13/32	56054	56263
0.0591	1,500 mm		32,0	9,0	7,0	66003	66004
0.0595	1,510 mm	#53	1-1/2	1/2	13/32	56053	56262
0.0625	1,590 mm	1/16	1-1/2	5/8	1/2	56104	56136
0.0635	1,610 mm	#52	1-11/16	11/16	35/64	56052	56261
0.0670	1,700 mm	#51	1-11/16	11/16	35/64	56051	56260
0.0700	1,780 mm	#50	1-11/16	11/16	35/64	56050	56259
0.0730	1,850 mm	#49	1-11/16	11/16	35/64	56049	56258
0.0760	1,930 mm	#48	1-11/16	11/16	35/64	56048	56257
0.0781	1,980 mm	5/64	1-11/16	11/16	35/64	56105	56137
0.0785	1,990 mm	#47	1-3/4	3/4	39/64	56047	56256
0.0787	2,000 mm		38,0	12,0	9,0	66005	66006
0.0810	2,060 mm	#46	1-3/4	3/4	39/64	56046	56255
0.0820	2,080 mm	#45	1-3/4	3/4	39/64	56045	56254
0.0860	2,180 mm	#44	1-3/4	3/4	39/64	56044	56253
0.0890	2,260 mm	#43	1-3/4	3/4	39/64	56043	56252
0.0935	2,370 mm	#42	1-3/4	3/4	39/64	56042	56251
0.0938	2,380 mm	3/32	1-3/4	3/4	39/64	56106	56138
0.0960	2,440 mm	#41	1-13/16	13/16	21/32	56041	56250
0.0980	2,490 mm	#40	1-13/16	13/16	21/32	56040	56249
0.0984	2,500 mm		43,0	14,0	11,0	66007	66008
0.0995	2,530 mm	#39	1-13/16	13/16	21/32	56039	56248
0.1015	2,580 mm	#38	1-13/16	13/16	21/32	56038	56247
0.1040	2,640 mm	#37	1-13/16	13/16	21/32	56037	56246
0.1065	2,710 mm	#36	1-13/16	13/16	21/32	56036	56245
0.1094	2,780 mm	7/64	1-13/16	13/16	21/32	56107	56139
0.1100	2,790 mm	#35	1-7/8	7/8	45/64	56035	56244
0.1110	2,820 mm	#34	1-7/8	7/8	45/64	56034	56243

TOLERANCES (inch)

DC = +0.0000/-0.0005
DCON = h₆

TOLERANCES (mm)

DC = +0,0000/-0,0127
DCON = h₆

- STEELS
- CAST IRON
- HARDENED STEELS

For patent information visit www.kspatents.com

continued on next page

Straight Flute Drills • Metric: DIN 6539

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FRACTIONAL & METRIC SERIES

CONTINUED

DECIMAL DC/DCON	METRIC DC/DCON	inch & mm				EDP NO.	
		FRACTIONAL/ LETTER/WIRE DC	OVERALL LENGTH OAL	FLUTE LENGTH LCF	USABLE LENGTH LU	UNCOATED	Ti-NAMITE®-A (AITIN)
0.1130	2,870 mm	#33	1-7/8	7/8	45/64	56033	56242
0.1160	2,950 mm	#32	1-7/8	7/8	45/64	56032	56241
0.1181	3,000 mm		46,0	16,0	12,0	66009	66010
0.1200	3,050 mm	#31	1-7/8	7/8	45/64	56031	56240
0.1250	3,180 mm	1/8	1-7/8	7/8	45/64	56108	56140
0.1285	3,260 mm	#30	1-15/16	15/16	3/4	56030	56239
0.1360	3,450 mm	#29	1-15/16	15/16	3/4	56029	56238
0.1378	3,500 mm		52,0	20,0	15,0	66011	66012
0.1405	3,570 mm	#28	1-15/16	15/16	3/4	56028	56237
0.1406	3,570 mm	9/64	1-15/16	15/16	3/4	56109	56141
0.1440	3,660 mm	#27	2-1/16	1	51/64	56027	56236
0.1470	3,730 mm	#26	2-1/16	1	51/64	56026	56235
0.1495	3,800 mm	#25	2-1/16	1	51/64	56025	56234
0.1520	3,860 mm	#24	2-1/16	1	51/64	56024	56233
0.1540	3,910 mm	#23	2-1/16	1	51/64	56023	56232
0.1562	3,970 mm	5/32	2-1/16	1	51/64	56110	56142
0.1570	3,990 mm	#22	2-1/8	1-1/16	55/64	56022	56231
0.1575	4,000 mm		55,0	22,0	17,0	66013	66014
0.1590	4,040 mm	#21	2-1/8	1-1/16	55/64	56021	56230
0.1610	4,090 mm	#20	2-1/8	1-1/16	55/64	56020	56229
0.1660	4,220 mm	#19	2-1/8	1-1/16	55/64	56019	56228
0.1695	4,310 mm	#18	2-1/8	1-1/16	55/64	56018	56227
0.1719	4,370 mm	11/64	2-1/8	1-1/16	55/64	56111	56143
0.1730	4,390 mm	#17	2-3/16	1-1/8	29/32	56017	56226
0.1770	4,500 mm	#16	2-3/16	1-1/8	29/32	56016	56225
0.1772	4,500 mm		58,0	24,0	18,0	66015	66016
0.1800	4,570 mm	#15	2-3/16	1-1/8	29/32	56015	56224
0.1820	4,620 mm	#14	2-3/16	1-1/8	29/32	56014	56223
0.1850	4,700 mm	#13	2-3/16	1-1/8	29/32	56013	56222
0.1875	4,760 mm	3/16	2-3/16	1-1/8	29/32	56112	56144
0.1890	4,800 mm	#12	2-3/16	1-1/8	29/32	56012	56221
0.1910	4,850 mm	#11	2-3/16	1-1/8	29/32	56011	56220
0.1935	4,910 mm	#10	2-3/16	1-1/8	29/32	56010	56219
0.1960	4,980 mm	#9	2-1/4	1-3/16	61/64	56009	56218
0.1969	5,000 mm		62,0	26,0	20,0	66017	66018
0.1990	5,050 mm	#8	2-1/4	1-3/16	61/64	56008	56217
0.2010	5,110 mm	#7	2-1/4	1-3/16	61/64	56007	56216
0.2031	5,160 mm	13/64	2-1/4	1-3/16	61/64	56113	56145
0.2040	5,180 mm	#6	2-3/8	1-1/4	1	56006	56215
0.2055	5,220 mm	#5	2-3/8	1-1/4	1	56005	56214
0.2090	5,310 mm	#4	2-3/8	1-1/4	1	56004	56213
0.2130	5,410 mm	#3	2-3/8	1-1/4	1	56003	56212
0.2165	5,500 mm		66,0	28,0	21,0	66019	66020
0.2188	5,560 mm	7/32	2-3/8	1-1/4	1	56114	56146
0.2210	5,610 mm	#2	2-7/16	1-5/16	1-3/64	56002	56211
0.2280	5,790 mm	#1	2-7/16	1-5/16	1-3/64	56001	56210

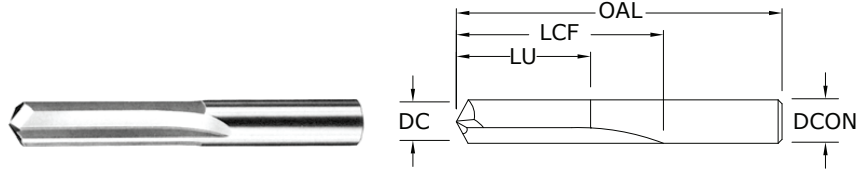
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Straight Flute Drills • Metric: DIN 6539



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FRACTIONAL & METRIC SERIES



DECIMAL DC/DCON	METRIC DC/DCON	inch & mm				EDP NO.	
		FRACTIONAL/ LETTER/WIRE DC	OVERALL LENGTH OAL	FLUTE LENGTH LCF	USABLE LENGTH LU	UNCOATED	Ti-NAMITE®-A (AlTiN)
0.2344	5,950 mm	15/64	2-7/16	1-5/16	1-3/64	56115	56147
0.2362	6,000 mm		66,0	28,0	21,0	66021	66045
0.2500	6,350 mm	1/4	2-1/2	1-3/8	1-7/64	56116	56148
0.2559	6,500 mm		70,0	31,0	23,0	66022	66046
0.2656	6,750 mm	17/64	2-5/8	1-7/16	1-7/64	56117	56149
0.2756	7,000 mm		74,0	34,0	25,0	66023	66024
0.2812	7,140 mm	9/32	2-11/16	1-1/2	1-13/64	56118	56150
0.2953	7,500 mm		74,0	34,0	25,0	66025	66026
0.2969	7,540 mm	19/64	2-3/4	1-9/16	1-1/4	56119	56151
0.3125	7,940 mm	5/16	2-13/16	1-5/8	1-19/64	56120	56152
0.3150	8,000 mm		79,0	37,0	27,0	66027	66028
0.3281	8,330 mm	21/64	2-15/16	1-11/16	1-23/64	56121	56153
0.3346	8,500 mm		79,0	37,0	27,0	66029	66030
0.3438	8,730 mm	11/32	3	1-11/16	1-23/64	56122	56154
0.3543	9,000 mm		84,0	40,0	29,0	66031	66032
0.3594	9,130 mm	23/64	3-1/16	1-3/4	1-13/32	56123	56155
0.3740	9,500 mm		84,0	40,0	29,0	66033	66034
0.3750	9,530 mm	3/8	3-1/8	1-13/16	1-29/64	56124	56156
0.3906	9,920 mm	25/64	3-1/4	1-7/8	1-1/2	56125	56157
0.3937	10,000 mm		89,0	43,0	31,0	66035	66036
0.4062	10,320 mm	13/32	3-5/16	1-15/16	1-35/64	56126	56158
0.4134	10,500 mm		89,0	43,0	31,0	66037	66038
0.4219	10,720 mm	27/64	3-3/8	2	1-39/64	56127	56159
0.4331	11,000 mm		95,0	47,0	33,0	66039	66040
0.4375	11,110 mm	7/16	3-7/16	2-1/16	1-21/32	56128	56160
0.4528	11,500 mm		95,0	47,0	33,0	66041	66042
0.4531	11,510 mm	29/64	3-9/16	2-1/8	1-45/64	56129	56161
0.4688	11,910 mm	15/32	3-5/8	2-1/8	1-45/64	56130	56162
0.4724	12,000 mm		102,0	51,0	35,0	66043	66044
0.4844	12,300 mm	31/64	3-11/16	2-3/16	1-3/4	56131	56163
0.5000	12,700 mm	1/2	3-3/4	2-1/4	1-51/64	56132	56164

TOLERANCES (inch)

DC = +0.0000/-0.0005
DCON = h₆

TOLERANCES (mm)

DC = +0,0000/-0,0127
DCON = h₆

- STEELS
- CAST IRON
- HARDENED STEELS

For patent information visit www.kspatents.com

FRACTIONAL & METRIC Straight Flute Drills

Series 106 Fractional	Hardness	Vc (sfm)	DC • in							
			1/16	1/8	3/16	1/4	3/8	1/2		
P ALLOY STEELS 4140, 4150, 4320, 5120, 5150, 8630, 86L20, 50100	≤ 500 Bhn or ≤ 52 HRc	60 (48-72)	RPM	3667	1834	1222	917	611	458	
			Fr	0.0004	0.0007	0.0011	0.0014	0.0021	0.0028	
			Feed (ipm)	1.3	1.3	1.3	1.3	1.3	1.3	
	≤ 615 Bhn or ≤ 58 HRc	50 (40-60)	RPM	3056	1528	1019	764	509	382	
			Fr	0.0004	0.0008	0.0012	0.0016	0.0024	0.0031	
			Feed (ipm)	1.2	1.2	1.2	1.2	1.2	1.2	
	K CAST IRONS Gray, Malleable, Ductile	≤ 220 Bhn or ≤ 19 HRc	250 (200-300)	RPM	15280	7640	5093	3820	2547	1910
				Fr	0.0010	0.0020	0.0030	0.0041	0.0061	0.0081
				Feed (ipm)	15.5	15.5	15.5	15.5	15.5	15.5
≤ 330 Bhn or ≤ 36 HRc		195 (156-234)	RPM	11918	5959	3973	2980	1986	1490	
			Fr	0.0010	0.0020	0.0030	0.0040	0.0060	0.0081	
			Feed (ipm)	12.0	12.0	12.0	12.0	12.0	12.0	
H TOOL STEELS A2, D2, H13, L2, M2, P20, S7, T15, W2		≤ 500 Bhn or ≤ 52 HRc	60 (48-72)	RPM	3667	1834	1222	917	611	458
				Fr	0.0004	0.0007	0.0011	0.0014	0.0021	0.0028
				Feed (ipm)	1.3	1.3	1.3	1.3	1.3	1.3
	≤ 615 Bhn or ≤ 58 HRc	50 (40-60)	RPM	3056	1528	1019	764	509	382	
			Fr	0.0004	0.0008	0.0012	0.0016	0.0024	0.0031	
			Feed (ipm)	1.2	1.2	1.2	1.2	1.2	1.2	

Bhn (Brinell) HRc (Rockwell C)

$$\text{rpm} = \text{Vc} \times 3.82 / \text{DC}$$

$$\text{ipm} = \text{Fr} \times \text{rpm}$$

reduce speed and feed 30 percent when using uncoated drills

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

Series 106M Metric	Hardness	Vc (m/min)	DC • mm							
			1	3	6	8	10	12		
P ALLOY STEELS 4140, 4150, 4320, 5120, 5150, 8630, 86L20, 50100	≤ 500 Bhn or ≤ 52 HRc	18 (15-22)	RPM	5816	1939	969	727	582	485	
			Fr	0.006	0.018	0.035	0.047	0.058	0.070	
			Feed (mm/min)	34	34	34	34	34	34	
	≤ 615 Bhn or ≤ 58 HRc	15 (12-18)	RPM	4847	1616	808	606	485	404	
			Fr	0.006	0.017	0.033	0.045	0.056	0.067	
			Feed (mm/min)	27	27	27	27	27	27	
	K CAST IRONS Gray, Malleable, Ductile	≤ 220 Bhn or ≤ 19 HRc	76 (61-91)	RPM	24235	8078	4039	3029	2424	2020
				Fr	0.016	0.048	0.096	0.128	0.160	0.192
				Feed (mm/min)	395	395	395	395	395	395
≤ 330 Bhn or ≤ 36 HRc		59 (48-71)	RPM	18904	6301	3151	2363	1890	1575	
			Fr	0.016	0.048	0.096	0.128	0.160	0.192	
			Feed (mm/min)	305	305	305	305	305	305	
H TOOL STEELS A2, D2, H13, L2, M2, P20, S7, T15, W2		≤ 500 Bhn or ≤ 52 HRc	18 (15-22)	RPM	5816	1939	969	727	582	485
				Fr	0.006	0.018	0.035	0.047	0.058	0.070
				Feed (mm/min)	34	34	34	34	34	34
	≤ 615 Bhn or ≤ 58 HRc	15 (12-18)	RPM	4847	1616	808	606	485	404	
			Fr	0.006	0.017	0.033	0.045	0.056	0.067	
			Feed (mm/min)	27	27	27	27	27	27	

Bhn (Brinell) HRc (Rockwell C)

$$\text{rpm} = (\text{Vc} \times 1000) / (\text{DC} \times 3.14)$$

$$\text{mm/min} = \text{Fr} \times \text{rpm}$$

reduce speed and feed 30 percent when using uncoated drills

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

3 Flute Drills • Metric: DIN 6539



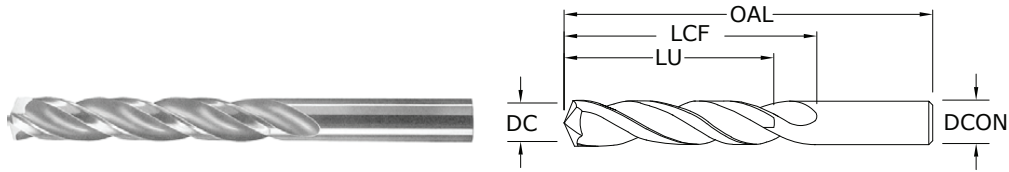
3xD
(mm)

5xD
(inch)



103

FRACTIONAL & METRIC SERIES



DECIMAL DC / DCON	METRIC DC / DCON	inch & mm				EDP NO.	
		FRACTIONAL/ LETTER/WIRE DC	OVERALL LENGTH OAL	FLUTE LENGTH LCF	USABLE LENGTH LU	UNCOATED	Ti-NAMITE®-A (AlTiN)
0.1065	2,710 mm	#36	2-1/4	1-1/4	1	53036	58011
0.1094	2,780 mm	7/64	2-1/4	1-1/4	1	53107	58012
0.1100	2,790 mm	#35	2-1/4	1-1/4	1	53035	58013
0.1110	2,820 mm	#34	2-1/4	1-1/4	1	53034	58014
0.1130	2,870 mm	#33	2-1/4	1-1/4	1	53033	58015
0.1160	2,950 mm	#32	2-1/4	1-1/4	1	53032	58016
0.1181	3,000 mm		46,0	16,0	12,0	63000	68965
0.1200	3,050 mm	#31	2-1/4	1-1/4	1	53031	58017
0.1220	3,100 mm		49,0	18,0	14,0	63044	68966
0.1250	3,180 mm	1/8	2-1/4	1-1/4	1	53108	58018
0.1260	3,200 mm		49,0	18,0	14,0	63045	68967
0.1285	3,260 mm	#30	2-1/4	1-1/4	1	53030	58019
0.1299	3,300 mm		49,0	18,0	14,0	63001	68968
0.1339	3,400 mm		52,0	20,0	15,0	63046	68969
0.1360	3,450 mm	#29	2-1/2	1-3/8	1-7/64	53029	58020
0.1378	3,500 mm		52,0	20,0	15,0	63002	68970
0.1405	3,570 mm	#28	2-1/2	1-3/8	1-7/64	53028	58021
0.1406	3,570 mm	9/64	2-1/2	1-3/8	1-7/64	53109	58022
0.1417	3,600 mm		52,0	20,0	15,0	63047	68971
0.1440	3,660 mm	#27	2-1/2	1-3/8	1-7/64	53027	58023
0.1457	3,700 mm		52,0	20,0	15,0	63003	68972
0.1470	3,730 mm	#26	2-1/2	1-3/8	1-7/64	53026	58024
0.1495	3,800 mm	#25	2-1/2	1-3/8	1-7/64	53025	58025
0.1496	3,800 mm		55,0	22,0	17,0	63048	68973
0.1520	3,860 mm	#24	2-1/2	1-3/8	1-7/64	53024	58026
0.1535	3,900 mm		55,0	22,0	17,0	63049	68974
0.1540	3,910 mm	#23	2-1/2	1-3/8	1-7/64	53023	58027
0.1562	3,970 mm	5/32	2-1/2	1-3/8	1-7/64	53110	58028
0.1570	3,990 mm	#22	2-1/2	1-3/8	1-7/64	53022	58029
0.1575	4,000 mm		55,0	22,0	17,0	63004	68975
0.1590	4,040 mm	#21	2-1/2	1-3/8	1-7/64	53021	58030
0.1610	4,090 mm	#20	2-1/2	1-3/8	1-7/64	53020	58031
0.1614	4,100 mm		55,0	22,0	17,0	63050	68976
0.1654	4,200 mm		55,0	22,0	17,0	63005	68977
0.1660	4,220 mm	#19	2-3/4	1-5/8	1-19/64	53019	58032
0.1693	4,300 mm		58,0	24,0	18,0	63051	68978
0.1695	4,310 mm	#18	2-3/4	1-5/8	1-19/64	53018	58033
0.1719	4,370 mm	11/64	2-3/4	1-5/8	1-19/64	53111	58034
0.1730	4,390 mm	#17	2-3/4	1-5/8	1-19/64	53017	58035
0.1732	4,400 mm		58,0	24,0	18,0	63052	68979

TOLERANCES (inch)
DC = +0.0000/-0.0005
DCON = h₆

TOLERANCES (mm)
DC = +0,0000/-0,0127
DCON = h₆

- STEELS
- CAST IRON
- NON-FERROUS
- HARDENED STEELS

For patent information visit www.ksptpatents.com

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3 Flute Drills • Metric: DIN 6539

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FRACTIONAL & METRIC SERIES

DECIMAL DC/DCON	METRIC DC/DCON	inch & mm				EDP NO.	
		FRACTIONAL/ LETTER/WIRE DC	OVERALL LENGTH OAL	FLUTE LENGTH LCF	USABLE LENGTH LU	UNCOATED	Ti-NAMITE®-A (AITIN)
0.1770	4,500 mm	#16	2-3/4	1-5/8	1-19/64	53016	58036
0.1772	4,500 mm		58,0	24,0	18,0	63006	68980
0.1800	4,570 mm	#15	2-3/4	1-5/18	1-19/64	53015	58037
0.1811	4,600 mm		58,0	24,0	18,0	63053	68981
0.1820	4,620 mm	#14	2-3/4	1-5/8	1-19/64	53014	58038
0.1850	4,700 mm	#13	2-3/4	1-5/8	1-19/64	53013	58039
0.1850	4,700 mm		58,0	24,0	18,0	63054	68982
0.1875	4,760 mm	3/16	2-3/4	1-5/8	1-19/64	53112	58040
0.1890	4,800 mm	#12	2-3/4	1-5/8	1-19/64	53012	58041
0.1890	4,800 mm		62,0	26,0	20,0	63055	68983
0.1910	4,850 mm	#11	2-3/4	1-5/8	1-19/64	53011	58042
0.1929	4,900 mm		62,0	26,0	20,0	63056	68984
0.1935	4,910 mm	#10	2-3/4	1-5/8	1-19/64	53010	58043
0.1960	4,980 mm	#9	3	1-3/4	1-13/32	53009	58044
0.1969	5,000 mm		62,0	26,0	20,0	63007	68985
0.1990	5,050 mm	#8	3	1-3/4	1-13/32	53008	58045
0.2008	5,100 mm		62,0	26,0	20,0	63057	68986
0.2010	5,110 mm	#7	3	1-3/4	1-13/32	53007	58046
0.2031	5,160 mm	13/64	3	1-3/4	1-13/32	53113	58047
0.2040	5,180 mm	#6	3	1-3/4	1-13/32	53006	58048
0.2047	5,200 mm		62,0	26,0	20,0	63008	68987
0.2055	5,220 mm	#5	3	1-3/4	1-13/32	53005	58049
0.2087	5,300 mm		62,0	26,0	20,0	63058	68988
0.2090	5,310 mm	#4	3	1-3/4	1-13/32	53004	58050
0.2126	5,400 mm		66,0	28,0	21,0	63059	68989
0.2130	5,410 mm	#3	3	1-3/4	1-13/32	53003	58051
0.2165	5,500 mm		66,0	28,0	21,0	63009	68990
0.2188	5,560 mm	7/32	3	1-3/4	1-13/32	53114	58052
0.2205	5,600 mm		66,0	28,0	21,0	63060	68991
0.2210	5,610 mm	#2	3	1-3/4	1-13/32	53002	58053
0.2244	5,700 mm		66,0	28,0	21,0	63061	68992
0.2280	5,790 mm	#1	3	1-3/4	1-13/32	53001	58054
0.2283	5,800 mm		66,0	28,0	21,0	63062	68993
0.2323	5,900 mm		66,0	28,0	21,0	63063	68994
0.2340	5,940 mm	A	3-1/4	2	1-39/64	53201	58055
0.2344	5,950 mm	15/64	3-1/4	2	1-39/64	53115	58056
0.2362	6,000 mm		66,0	28,0	21,0	63010	68995
0.2380	6,050 mm	B	3-1/4	2	1-39/64	53202	58057
0.2402	6,100 mm		70,0	31,0	23,0	63064	68996
0.2420	6,150 mm	C	3-1/4	2	1-39/64	53203	58058
0.2441	6,200 mm		70,0	31,0	23,0	63011	68997
0.2460	6,250 mm	D	3-1/4	2	1-39/64	53204	58059
0.2480	6,300 mm		70,0	31,0	23,0	63065	68998
0.2500	6,350 mm	1/4	3-1/4	2	1-39/64	53116	58061
0.2520	6,400 mm		70,0	31,0	23,0	63066	68999
0.2559	6,500 mm		70,0	31,0	23,0	63012	69000
0.2570	6,530 mm	F	3-1/4	2	1-39/64	53206	58062
0.2598	6,600 mm		70,0	31,0	23,0	63067	69001
0.2610	6,630 mm	G	3-1/2	2-1/8	1-45/64	53207	58063
0.2638	6,700 mm		70,0	31,0	23,0	63068	69002

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3 Flute Drills • Metric: DIN 6539



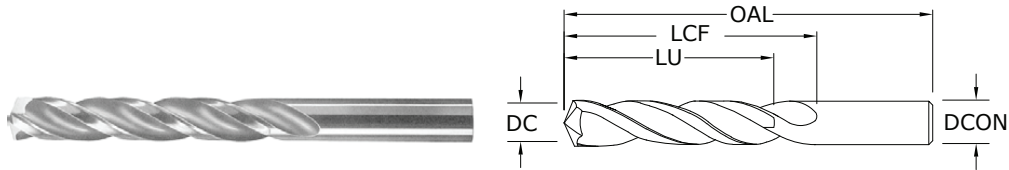
3xD
(mm)

5xD
(inch)



103

FRACTIONAL & METRIC SERIES



DECIMAL DC / DCON	METRIC DC / DCON	inch & mm				EDP NO.	
		FRACTIONAL/ LETTER/WIRE DC	OVERALL LENGTH OAL	FLUTE LENGTH LCF	USABLE LENGTH LU	UNCOATED	Ti-NAMITE®-A (AlTiN)
0.2656	6,750 mm	17/64	3-1/2	2-1/8	1-45/64	53117	58064
0.2660	6,760 mm	H	3-1/2	2-1/8	1-45/64	53208	58065
0.2677	6,800 mm		74,0	34,0	25,0	63013	69003
0.2717	6,900 mm		74,0	34,0	25,0	63069	69004
0.2720	6,910 mm	I	3-1/2	2-1/8	1-45/64	53209	58066
0.2756	7,000 mm		74,0	34,0	25,0	63014	69005
0.2770	7,040 mm	J	3-1/2	2-1/8	1-45/64	53210	58067
0.2795	7,100 mm		74,0	34,0	25,0	63070	69006
0.2810	7,140 mm	K	3-1/2	2-1/8	1-45/64	53211	58068
0.2812	7,140 mm	9/32	3-1/2	2-1/8	1-45/64	53118	58069
0.2835	7,200 mm		74,0	34,0	25,0	63015	69007
0.2874	7,300 mm		74,0	34,0	25,0	63071	69008
0.2900	7,370 mm	L	3-1/2	2-1/8	1-45/64	53212	58070
0.2913	7,400 mm		74,0	34,0	25,0	63072	69009
0.2950	7,490 mm	M	3-3/4	2-3/8	1-29/32	53213	58071
0.2953	7,500 mm		74,0	34,0	25,0	63016	69010
0.2969	7,540 mm	19/64	3-3/4	2-3/8	1-29/32	53119	58072
0.2992	7,600 mm		79,0	37,0	27,0	63073	69011
0.3020	7,670 mm	N	2-3/8	2-3/8	1-29/32	53214	58073
0.3031	7,700 mm		79,0	37,0	27,0	63074	69012
0.3071	7,800 mm		79,0	37,0	27,0	63075	69013
0.3110	7,900 mm		79,0	37,0	27,0	63076	69014
0.3125	7,940 mm	5/16	3-3/4	2-3/8	1-29/32	53120	58074
0.3150	8,000 mm		79,0	37,0	27,0	63017	69015
0.3160	8,030 mm	O	3-3/4	2-3/8	1-29/32	53215	58075
0.3189	8,100 mm		79,0	37,0	27,0	63077	69016
0.3228	8,200 mm		79,0	37,0	27,0	63018	69017
0.3230	8,200 mm	P	3-3/4	2-3/8	1-29/32	53216	58076
0.3268	8,300 mm		79,0	37,0	27,0	63078	69018
0.3281	8,330 mm	21/64	4	2-1/2	2	53121	58077
0.3307	8,400 mm		79,0	37,0	27,0	63019	69019
0.3320	8,430 mm	Q	4	2-1/2	2	53217	58078
0.3346	8,500 mm		79,0	37,0	27,0	63020	69020
0.3386	8,600 mm		84,0	40,0	29,0	63021	69021
0.3390	8,610 mm	R	4	2-1/2	2	53218	58079
0.3425	8,700 mm		84,0	40,0	29,0	63079	69022
0.3438	8,730 mm	11/32	4	2-1/2	2	53122	58080
0.3465	8,800 mm		84,0	40,0	29,0	63022	69023
0.3480	8,840 mm	S	4	2-1/2	2	53219	58081
0.3504	8,900 mm		84,0	40,0	29,0	63080	69024
0.3543	9,000 mm		84,0	40,0	29,0	63023	69025
0.3580	9,090 mm	T	4-1/4	2-3/4	2-13/64	53220	58082

TOLERANCES (inch)

DC = +0.0000/-0.0005
DCON = h₆

TOLERANCES (mm)

DC = +0,0000/-0,0127
DCON = h₆

- STEELS
- CAST IRON
- NON-FERROUS
- HARDENED STEELS

For patent information visit www.ksptpatents.com

continued on next page

3 Flute Drills • Metric: DIN 6539

103

FRACTIONAL & METRIC SERIES

DECIMAL DC/DCON	METRIC DC/DCON	inch & mm				EDP NO.	
		FRACTIONAL/ LETTER/WIRE DC	OVERALL LENGTH OAL	FLUTE LENGTH LCF	USABLE LENGTH LU	UNCOATED	Ti-NAMITE®-A (AITIN)
0.3583	9,100 mm		84,0	40,0	29,0	63081	69026
0.3594	9,130 mm	23/64	4-1/4	2-3/4	2-13/64	53123	58083
0.3622	9,200 mm		84,0	40,0	29,0	63024	69027
0.3661	9,300 mm		84,0	40,0	29,0	63082	69028
0.3680	9,350 mm	U	4-1/4	2-3/4	2-13/64	53221	58084
0.3701	9,400 mm		84,0	40,0	29,0	63083	69029
0.3740	9,500 mm		84,0	40,0	29,0	63025	69030
0.3750	9,530 mm	3/8	4-1/4	2-3/4	2-13/64	53124	58085
0.3770	9,580 mm	V	4-1/4	2-3/4	2-13/64	53222	58086
0.3780	9,600 mm		89,0	43,0	31,0	63084	69031
0.3819	9,700 mm		89,0	43,0	31,0	63085	69032
0.3858	9,800 mm		89,0	43,0	31,0	63086	69033
0.3860	9,800 mm	W	4-1/2	2-7/8	2-19/64	53223	58087
0.3898	9,900 mm		89,0	43,0	31,0	63087	69034
0.3906	9,920 mm	25/64	4-1/2	2-7/8	2-19/64	53125	58088
0.3937	10,000 mm		89,0	43,0	31,0	63026	69035
0.3970	10,080 mm	X	4-1/2	2-7/8	2-19/64	53224	58089
0.3976	10,100 mm		89,0	43,0	31,0	63088	69036
0.4016	10,200 mm		89,0	43,0	31,0	63027	69037
0.4040	10,260 mm	Y	4-1/2	2-7/8	2-19/64	53225	58090
0.4062	10,320 mm	13/32	4-1/2	2-7/8	2-19/64	53126	58091
0.4094	10,400 mm		89,0	43,0	31,0	63028	69038
0.4130	10,490 mm	Z	4-1/2	2-7/8	2-19/64	53226	58092
0.4134	10,500 mm		89,0	43,0	31,0	63029	69039
0.4213	10,700 mm		95,0	47,0	33,0	63030	69040
0.4219	10,720 mm	27/64	4-1/2	2-7/8	2-19/64	53127	58093
0.4252	10,800 mm		95,0	47,0	33,0	63031	69041
0.4331	11,000 mm		95,0	47,0	33,0	63032	69042
0.4375	11,110 mm	7/16	4-1/2	2-7/8	2-19/64	53128	58094
0.4528	11,500 mm		95,0	47,0	33,0	63033	69043
0.4531	11,510 mm	29/64	4-3/4	3	2-13/32	53129	58095
0.4688	11,910 mm	15/32	4-3/4	3	2-13/32	53130	58096
0.4724	12,000 mm		102,0	51,0	35,0	63034	69044
0.4844	12,300 mm	31/64	4-3/4	3	2-13/32	53131	58097
0.4921	12,500 mm		102,0	51,0	35,0	63035	69045
0.5000	12,700 mm	1/2	4-3/4	3	2-13/32	53132	58098
0.5039	12,800 mm		102,0	51,0	35,0	63036	69046
0.5118	13,000 mm		102,0	51,0	35,0	63089	69047
0.5156	13,100 mm	33/64	4-3/4	3	2-13/32	53135	58099
0.5157	13,100 mm		102,0	51,0	35,0	63037	69048
0.5315	13,500 mm		107,0	54,0	37,0	63090	69049
0.5512	14,000 mm		107,0	54,0	37,0	63038	69050
0.5625	14,290 mm	9/16	4-3/4	3	2-13/32	53136	58100
0.5630	14,300 mm		111,0	56,0	38,0	63039	69051
0.5709	14,500 mm		111,0	56,0	38,0	63040	69052
0.5906	15,000 mm		111,0	56,0	38,0	63091	69053
0.6250	15,880 mm	5/8	5-3/4	3-1/2	2-51/64	53133	58101
0.6875	17,460 mm	11/16	5-3/4	3-1/2	2-51/64	53137	58102
0.6890	17,500 mm		123,0	62,0	40,0	63041	69054
0.7500	19,050 mm	3/4	5-3/4	4-1/4	3 13/32	53134	58103
0.7677	19,500 mm		131,0	66,0	42,0	63042	69055
0.7874	20,000 mm		131,0	66,0	42,0	63043	69056

CONTINUED

3 Flute Drills

Series 103 Fractional	Hardness	Vc (sfm)	DC • in							
			1/8	1/4	3/8	1/2	5/8	3/4		
CARBON STEELS 1018, 1040, 1080, 1090, 10L50, 1140, 1212, 12L15, 1525, 1536	≤ 175 Bhn or ≤ 7 HRc	295	RPM	9015	4508	3005	2254	1803	1503	
		(236-354)	Fr	0.0026	0.0051	0.0077	0.0102	0.0128	0.0153	
			Feed (ipm)	23.0	23.0	23.0	23.0	23.0	23.0	
	≤ 300 Bhn or ≤ 32 HRc	260	RPM	7946	3973	2649	1986	1589	1324	
		(208-312)	Fr	0.0023	0.0045	0.0068	0.0091	0.0113	0.0136	
			Feed (ipm)	18.0	18.0	18.0	18.0	18.0	18.0	
	≤ 425 Bhn or ≤ 45 HRc	150	RPM	4584	2292	1528	1146	917	764	
		(120-180)	Fr	0.0013	0.0026	0.0039	0.0052	0.0065	0.0079	
			Feed (ipm)	6.0	6.0	6.0	6.0	6.0	6.0	
	ALLOY STEELS 4140, 4150, 4320, 5120, 5150, 8630, 86L20, 50100	≤ 275 Bhn or ≤ 28 HRc	230	RPM	7029	3514	2343	1757	1406	1171
			(184-276)	Fr	0.0019	0.0038	0.0058	0.0077	0.0096	0.0115
				Feed (ipm)	13.5	13.5	13.5	13.5	13.5	13.5
≤ 375 Bhn or ≤ 40 HRc		145	RPM	4431	2216	1477	1108	886	739	
		(116-174)	Fr	0.0019	0.0038	0.0058	0.0077	0.0096	0.0115	
			Feed (ipm)	8.5	8.5	8.5	8.5	8.5	8.5	
≤ 425 Bhn or ≤ 45 HRc		115	RPM	3514	1757	1171	879	703	586	
		(92-138)	Fr	0.0005	0.0010	0.0015	0.0020	0.0026	0.0031	
			Feed (ipm)	1.8	1.8	1.8	1.8	1.8	1.8	
TOOL STEELS A2, D2, H13, L2, M2, P20, S7, T15, W2		≤ 250 Bhn or ≤ 24 HRc	85	RPM	2598	1299	866	649	520	433
			(68-102)	Fr	0.0013	0.0026	0.0039	0.0052	0.0065	0.0079
				Feed (ipm)	3.4	3.4	3.4	3.4	3.4	3.4
	≤ 375 Bhn or ≤ 40 HRc	65	RPM	1986	993	662	497	397	331	
		(52-78)	Fr	0.0007	0.0013	0.0020	0.0026	0.0033	0.0039	
			Feed (ipm)	1.3	1.3	1.3	1.3	1.3	1.3	
CAST IRONS Gray, Malleable, Ductile	≤ 220 Bhn or ≤ 19 HRc	250	RPM	7640	3820	2547	1910	1528	1273	
		(200-300)	Fr	0.0026	0.0052	0.0079	0.0105	0.0131	0.0157	
			Feed (ipm)	20.0	20.0	20.0	20.0	20.0	20.0	
	≤ 330 Bhn or ≤ 36 HRc	195	RPM	5959	2980	1986	1490	1192	993	
		(156-234)	Fr	0.0026	0.0052	0.0078	0.0104	0.0130	0.0156	
			Feed (ipm)	15.5	15.5	15.5	15.5	15.5	15.5	
ALUMINUM ALLOYS 2017, 2024, 356, 6061, 7075	≤ 80 Bhn or ≤ 47 HRb	540	RPM	16502	8251	5501	4126	3300	2750	
		(432-648)	Fr	0.0032	0.0064	0.0096	0.0128	0.0161	0.0193	
			Feed (ipm)	53.0	53.0	53.0	53.0	53.0	53.0	
	≤ 150 Bhn or ≤ 88 HRb	455	RPM	13905	6952	4635	3476	2781	2317	
		(364-546)	Fr	0.0032	0.0065	0.0097	0.0129	0.0162	0.0194	
			Feed (ipm)	45.0	45.0	45.0	45.0	45.0	45.0	
COPPER ALLOYS Alum Bronze, C110, Muntz Brass	≤ 140 Bhn or ≤ 3 HRc	305	RPM	9321	4660	3107	2330	1864	1553	
		(244-366)	Fr	0.0019	0.0039	0.0058	0.0077	0.0097	0.0116	
			Feed (ipm)	18.0	18.0	18.0	18.0	18.0	18.0	
	≤ 200 Bhn or ≤ 23 HRc	160	RPM	4890	2445	1630	1222	978	815	
		(128-192)	Fr	0.0016	0.0033	0.0049	0.0065	0.0082	0.0098	
			Feed (ipm)	8.0	8.0	8.0	8.0	8.0	8.0	
TOOL STEELS A2, D2, H13, L2, M2, P20, S7, T15, W2	≤ 475 Bhn or ≤ 50 HRc	(40-60)	RPM	1528	764	509	382	306	255	
			Fr	0.0007	0.0013	0.0020	0.0026	0.0033	0.0039	
			Feed (ipm)	1.0	1.0	1.0	1.0	1.0	1.0	

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

rpm = Vc x 3.82 / DC

ipm = Fr x rpm

reduce speed and feed 30 percent when using uncoated drills

reduce speed and feed for materials harder than listed

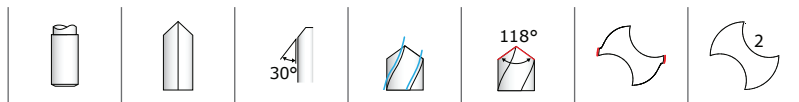
refer to the SGS Tool Wizard® for complete technical information (www.kyocera-sgstool.com)

3 Flute Drills

Series 103M Metric	Hardness	Vc (m/min)	DC • mm							
			3	6	10	12	16	20		
P	CARBON STEELS 1018, 1040, 1080, 1090, 10L50, 1140, 1212, 12L15, 1525, 1536	≤ 175 Bhn or ≤ 7 HRc	90	RPM	9533	4766	2860	2383	1787	1430
			(72-108)	Fr	0.062	0.124	0.206	0.248	0.330	0.413
				Feed (mm/min)	590	590	590	590	590	590
		≤ 300 Bhn or ≤ 32 HRc	79	RPM	8402	4201	2520	2100	1575	1260
			(63-95)	Fr	0.055	0.110	0.183	0.219	0.292	0.365
				Feed (mm/min)	460	460	460	460	460	460
		≤ 425 Bhn or ≤ 45 HRc	46	RPM	4847	2424	1454	1212	909	727
			(37-55)	Fr	0.032	0.064	0.107	0.128	0.171	0.213
				Feed (mm/min)	155	155	155	155	155	155
	ALLOY STEELS 4140, 4150, 4320, 5120, 5150, 8630, 86L20, 50100	≤ 275 Bhn or ≤ 28 HRc	70	RPM	7432	3716	2230	1858	1394	1115
			(56-84)	Fr	0.046	0.093	0.155	0.186	0.248	0.309
				Feed (mm/min)	345	345	345	345	345	345
		≤ 375 Bhn or ≤ 40 HRc	44	RPM	4686	2343	1406	1171	879	703
			(35-53)	Fr	0.046	0.092	0.153	0.184	0.245	0.306
				Feed (mm/min)	215	215	215	215	215	215
≤ 450 Bhn or ≤ 48 HRc		35	RPM	3716	1858	1115	929	697	557	
		(28-42)	Fr	0.012	0.024	0.040	0.048	0.065	0.081	
			Feed (mm/min)	45	45	45	45	45	45	
TOOL STEELS A2, D2, H13, L2, M2, P20, S7, T15, W2	≤ 250 Bhn or ≤ 24 HRc	26	RPM	2747	1373	824	687	515	412	
		(21-31)	Fr	0.031	0.062	0.103	0.124	0.165	0.206	
			Feed (mm/min)	85	85	85	85	85	85	
	≤ 375 Bhn or ≤ 40 HRc	20	RPM	2100	1050	630	525	394	315	
		(16-24)	Fr	0.017	0.033	0.056	0.067	0.089	0.111	
			Feed (mm/min)	35	35	35	35	35	35	
K	CAST IRONS Gray, Malleable, Ductile	≤ 220 Bhn or ≤ 19 HRc	76	RPM	8078	4039	2424	2020	1515	1212
			(61-91)	Fr	0.063	0.126	0.210	0.253	0.337	0.421
				Feed (mm/min)	510	510	510	510	510	510
		≤ 330 Bhn or ≤ 36 HRc	59	RPM	6301	3151	1890	1575	1181	945
			(48-71)	Fr	0.052	0.105	0.175	0.209	0.279	0.349
				Feed (mm/min)	330	330	330	330	330	330
N	ALUMINUM ALLOYS 2017, 2024, 356, 6061, 7075	≤ 80 Bhn or ≤ 47 HRb	165	RPM	17449	8725	5235	4362	3272	2617
			(132-198)	Fr	0.078	0.156	0.260	0.312	0.416	0.520
				Feed (mm/min)	1360	1360	1360	1360	1360	1360
		≤ 150 Bhn or ≤ 7 HRc	139	RPM	14703	7351	4411	3676	2757	2205
			(111-166)	Fr	0.078	0.156	0.261	0.313	0.417	0.521
				Feed (mm/min)	1150	1150	1150	1150	1150	1150
	COPPER ALLOYS Alum Bronze, C110, Muntz Brass	≤ 140 Bhn or ≤ 3 HRc	93	RPM	9856	4928	2957	2464	1848	1478
			(74-112)	Fr	0.047	0.094	0.157	0.189	0.252	0.315
				Feed (mm/min)	465	465	465	465	465	465
		≤ 200 Bhn or ≤ 23 HRc	49	RPM	5170	2585	1551	1293	969	776
			(39-59)	Fr	0.039	0.077	0.129	0.155	0.206	0.258
				Feed (mm/min)	200	200	200	200	200	200
H	TOOL STEELS A2, D2, H13, L2, M2, P20, S7, T15, W2	≤ 475 Bhn or ≤ 50 HRc	15	RPM	1616	808	485	404	303	242
			(12-18)	Fr	0.015	0.031	0.052	0.062	0.083	0.103
				Feed (mm/min)	25	25	25	25	25	25

Bhn (Brinell) HRc (Rockwell C) HRb (Rockwell B)
 rpm = (Vc x 1000) / (DC x 3.14)
 mm/min = Fr x rpm
 reduce speed and feed 30 percent when using uncoated drills
 reduce speed and feed for materials harder than listed
 refer to the SGS Tool Wizard® for complete technical information (www.kyocera-sgstool.com)

Combined Drill & Countersink

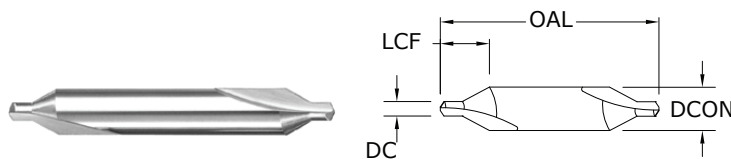


Pictured:
Series 301 Set



301

FRACTIONAL SERIES



SIZE	inch				EDP NO.	
	DRILL DIAMETER DC	BODY DIAMETER DCON	OVERALL LENGTH OAL	FLUTE LENGTH LCF	UNCOATED	Ti-NAMITE®-A (AlTiN)
*00	.025	1/8	1-1/2	.125	57005	57015
*0	1/32	1/8	1-1/2	.130	57006	57016
*1	3/64	1/8	1-1/2	.135	57007	57017
*2	5/64	3/16	1-7/8	.200	57008	57018
*3	7/64	1/4	2	.280	57009	57019
*4	1/8	5/16	2-1/8	.340	57010	57020
*5	3/16	7/16	2-3/4	.475	57011	57021
*6	7/32	1/2	3	.540	57012	57022
*Series 301 Set	—	—	—	—	57075	—

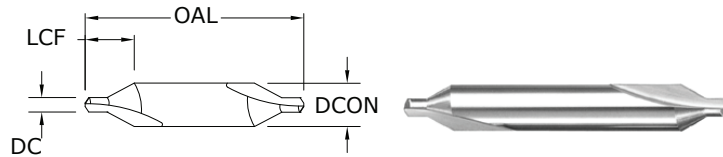
TOLERANCES (inch)

DC = +0.003/-0.000
DCON = -0.0001/-0.0005

- STEELS
- STAINLESS STEELS
- CAST IRON
- NON-FERROUS
- HIGH TEMP ALLOYS
- HARDENED STEELS

For patent information visit www.ksptpatents.com

Combined Drill & Countersink



301M
METRIC SERIES

TOLERANCES (mm)

DC = +0,076/-0,000
DCON = -0,0025/-0,0127

- STEELS
- STAINLESS STEELS
- CAST IRON
- NON-FERROUS
- HIGH TEMP ALLOYS
- HARDENED STEELS

For patent information visit www.ksptpatents.com

DRILL DIAMETER DC	BODY DIAMETER DCON	mm		EDP NO.	
		OVERALL LENGTH OAL	FLUTE LENGTH LCF	UNCOATED	Ti-NAMITE®-A (AlTiN)
0,5	3,15	20,0	3,0	67005	67035
0,8	3,15	20,0	3,5	67007	67037
1	3,15	31,5	3,5	67009	67039
1,25	3,15	31,5	4,0	67011	67041
1,6	4,0	35,5	5,0	67013	67043
2	5,0	40,0	6,0	67015	67045
2,5	6,3	45,0	7,0	67017	67047
3,15	8,0	50,0	9,0	67019	67049
4	10,0	56,0	11,0	67021	67051
5	12,5	63,0	14,0	67023	67053

Combined Drill & Countersink

Series 301 Fractional	Hardness	Vc (sfm)	DC • in						
			1/32	5/64	1/8	3/16	7/32		
CARBON STEELS 1018, 1040, 1080, 1090, 10L50, 1140, 1212, 12L15, 1525, 1536	≤ 175 Bhn or ≤ 7 HRc	265	RPM	8098	5399	3239	2314	2025	
		(212-318)	Fr	0.00068	0.0010	0.0017	0.0024	0.0027	
			Feed (ipm)	5.5	5.5	5.5	5.5	5.5	
	≤ 300 Bhn or ≤ 32 HRc	125	RPM	3820	2547	1528	1091	955	
		(100-150)	Fr	0.00065	0.0010	0.0016	0.0023	0.0026	
			Feed (ipm)	2.5	2.5	2.5	2.5	2.5	
	≤ 425 Bhn or ≤ 45 HRc	85	RPM	2598	1732	1039	742	649	
		(68-102)	Fr	0.00038	0.0006	0.0010	0.0013	0.0015	
			Feed (ipm)	1.0	1.0	1.0	1.0	1.0	
	P ALLOY STEELS 4140, 4150, 4320, 5120, 5150, 8630, 86L20, 50100	≤ 275 Bhn or ≤ 28 HRc	230	RPM	7029	4686	2812	2008	1757
			(184-276)	Fr	0.00064	0.0010	0.0016	0.0022	0.0026
				Feed (ipm)	4.5	4.5	4.5	4.5	4.5
≤ 375 Bhn or ≤ 40 HRc		145	RPM	4431	2954	1772	1266	1108	
		(116-174)	Fr	0.00059	0.0009	0.0015	0.0021	0.0023	
			Feed (ipm)	2.6	2.6	2.6	2.6	2.6	
≤ 425 Bhn or ≤ 45 HRc		60	RPM	1834	1222	733	524	458	
		(48-72)	Fr	0.00027	0.0004	0.0007	0.0010	0.0011	
			Feed (ipm)	0.5	0.5	0.5	0.5	0.5	
TOOL STEELS A2, D2, H13, L2, M2, P20, S7, T15, W2		≤ 250 Bhn or ≤ 24 HRc	85	RPM	2598	1732	1039	742	649
			(68-102)	Fr	0.00035	0.0005	0.0009	0.0012	0.0014
				Feed (ipm)	0.9	0.9	0.9	0.9	0.9
	≤ 375 Bhn or ≤ 40 HRc	55	RPM	1681	1121	672	480	420	
		(44-66)	Fr	0.00016	0.0002	0.0004	0.0006	0.0006	
			Feed (ipm)	0.3	0.3	0.3	0.3	0.3	
M STAINLESS STEELS (FREE MACHINING) 303, 416, 420F, 430F 440F	≤ 250 Bhn or ≤ 24 HRc	210	RPM	6418	4278	2567	1834	1604	
		(168-252)	Fr	0.00048	0.0007	0.0012	0.0017	0.0019	
			Feed (ipm)	3.1	3.1	3.1	3.1	3.1	
	≤ 330 Bhn or ≤ 36 HRc	110	RPM	3362	2241	1345	960	840	
		(88-132)	Fr	0.00028	0.0004	0.0007	0.0010	0.0011	
			Feed (ipm)	0.9	0.9	0.9	0.9	0.9	
	STAINLESS STEELS (DIFFICULT) 304, 316, 321, 13-8 PH, 15-5PH, 17-4 PH, Custom 450	≤ 275 Bhn or ≤ 28 HRc	65	RPM	1986	1324	795	568	497
			(52-78)	Fr	0.00036	0.0005	0.0009	0.0013	0.0014
				Feed (ipm)	0.7	0.7	0.7	0.7	0.7
		≤ 375 Bhn or ≤ 40 HRc	55	RPM	1681	1121	672	480	420
			(44-66)	Fr	0.00032	0.0005	0.0008	0.0011	0.0013
				Feed (ipm)	0.5	0.5	0.5	0.5	0.5
K CAST IRONS Gray, Malleable, Ductile	≤ 220 Bhn or ≤ 19 HRc	280	RPM	8557	5705	3423	2445	2139	
		(224-336)	Fr	0.00084	0.0013	0.0021	0.0029	0.0034	
			Feed (ipm)	7.2	7.2	7.2	7.2	7.2	
	≤ 330 Bhn or ≤ 36 HRc	250	RPM	7640	5093	3056	2183	1910	
		(200-300)	Fr	0.00084	0.0013	0.0021	0.0029	0.0034	
			Feed (ipm)	6.4	6.4	6.4	6.4	6.4	

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Combined Drill & Countersink

Series 301 Fractional	Hardness	Vc (sfm)		DC • in					
				1/32	5/64	1/8	3/16	7/32	
N ALUMINUM ALLOYS 2017, 2024, 356, 6061, 7075	≤ 80 Bhn or ≤ 47 HRb	540 (432-648)	RPM	16502	11002	6601	4715	4126	
			Fr	0.00100	0.0015	0.0025	0.0035	0.0040	
			Feed (ipm)	16.5	16.5	16.5	16.5	16.5	
	≤ 150 Bhn or ≤ 88 HRb	455 (364-546)	RPM	13905	9270	5562	3973	3476	
			Fr	0.00100	0.0015	0.0025	0.0035	0.0040	
			Feed (ipm)	13.9	13.9	13.9	13.9	13.9	
	COPPER ALLOYS Alum Bronze, C110, Muntz Brass	≤ 140 Bhn or ≤ 3 HRc	190 (152-228)	RPM	5806	3871	2323	1659	1452
				Fr	0.00048	0.0007	0.0012	0.0017	0.0019
				Feed (ipm)	2.8	2.8	2.8	2.8	2.8
		≤ 200 Bhn or ≤ 23 HRc	175 (140-210)	RPM	5348	3565	2139	1528	1337
				Fr	0.00048	0.0007	0.0012	0.0017	0.0019
				Feed (ipm)	2.6	2.6	2.6	2.6	2.6
PLASTICS Polycarbonate, PVC	500 (400-600)	RPM	15280	10187	6112	4366	3820		
		Fr	0.00100	0.0015	0.0025	0.0035	0.0040		
		Feed (ipm)	15.3	15.3	15.3	15.3	15.3		
S HIGH TEMP ALLOYS (NICKEL, COBALT, IRON BASE) Inconel 601, 617, 625, Incoloy 800, Monel 400, Rene, Waspaloy	≤ 220 Bhn or ≤ 19 HRc	40 (32-48)	RPM	1222	815	489	349	306	
			Fr	0.00036	0.0005	0.0009	0.0013	0.0014	
			Feed (ipm)	0.4	0.4	0.4	0.4	0.4	
	≤ 320 Bhn or ≤ 34 HRc	25 (20-30)	RPM	764	509	306	218	191	
			Fr	0.00033	0.0005	0.0008	0.0011	0.0013	
			Feed (ipm)	0.3	0.3	0.3	0.3	0.3	
	≤ 425 Bhn or ≤ 45 HRc	20 (16-24)	RPM	611	407	244	175	153	
			Fr	0.00016	0.0002	0.0004	0.0006	0.0007	
			Feed (ipm)	0.1	0.1	0.1	0.1	0.1	
	TITANIUM ALLOYS Pure Titanium, Ti6Al4V, Ti6Al2Sn4Zr2Mo, Ti4Al4Mo2Sn0.5Si, Ti-6Al4V	≤ 275 Bhn or ≤ 28 HRc	85 (68-102)	RPM	2598	1732	1039	742	649
				Fr	0.00064	0.0010	0.0016	0.0022	0.0026
				Feed (ipm)	1.7	1.7	1.7	1.7	1.7
≤ 350 Bhn or ≤ 38 HRc		65 (52-78)	RPM	1986	1324	795	568	497	
			Fr	0.00036	0.0005	0.0009	0.0013	0.0014	
			Feed (ipm)	0.7	0.7	0.7	0.7	0.7	
≤ 440 Bhn or ≤ 47 HRc	55 (44-66)	RPM	1681	1121	672	480	420		
		Fr	0.00032	0.0005	0.0008	0.0011	0.0013		
		Feed (ipm)	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	40 (32-48)	RPM	1222	815	489	349	306	
			Fr	0.00016	0.0002	0.0004	0.0006	0.0007	
			Feed (ipm)	0.2	0.2	0.2	0.2	0.2	

Bhn (Brinell) HRc (Rockwell C) HRb (Rockwell B)
 $rpm = Vc \times 3.82 / DCON$
 $ipm = Fr \times rpm$
 reduce speed and feed 30 percent when using uncoated drills
 reduce speed and feed for materials harder than listed
 refer to the SGS Tool Wizard® for complete technical information (www.kyocera-sgstool.com)

Combined Drill & Countersink

Series 301M Metric	Hardness	Vc (m/min)	DC • mm						
			1	1.6	2.5	4	5		
CARBON STEELS 1018, 1040, 1080, 1090, 10L50, 1140, 1212, 12L15, 1525, 1536	≤ 175 Bhn or ≤ 7 HRc	81	RPM	8155	6422	4078	2569	2055	
		(65-97)	Fr	0.017	0.022	0.034	0.054	0.068	
			Feed (mm/min)	139	139	139	139	139	
	≤ 300 Bhn or ≤ 32 HRc	38	RPM	3847	3029	1923	1212	969	
		(30-46)	Fr	0.016	0.020	0.032	0.051	0.064	
			Feed (mm/min)	62	62	62	62	62	
	≤ 425 Bhn or ≤ 45 HRc	26	RPM	2616	2060	1308	824	659	
		(21-31)	Fr	0.010	0.013	0.020	0.032	0.039	
			Feed (mm/min)	26	26	26	26	26	
	ALLOY STEELS 4140, 4150, 4320, 5120, 5150, 8630, 86L20, 50100	≤ 275 Bhn or ≤ 28 HRc	70	RPM	7078	5574	3539	2230	1784
			(56-84)	Fr	0.016	0.020	0.032	0.051	0.063
				Feed (mm/min)	113	113	113	113	113
≤ 375 Bhn or ≤ 40 HRc		44	RPM	4462	3514	2231	1406	1125	
		(35-53)	Fr	0.015	0.019	0.030	0.048	0.060	
			Feed (mm/min)	67	67	67	67	67	
≤ 425 Bhn or ≤ 45 HRc		18	RPM	1847	1454	923	582	465	
		(15-22)	Fr	0.007	0.009	0.014	0.022	0.028	
			Feed (mm/min)	13	13	13	13	13	
TOOL STEELS A2, D2, H13, L2, M2, P20, S7, T15, W2		≤ 250 Bhn or ≤ 24 HRc	26	RPM	2616	2060	1308	824	659
			(21-31)	Fr	0.009	0.012	0.018	0.029	0.036
				Feed (mm/min)	24	24	24	24	24
	≤ 375 Bhn or ≤ 40 HRc	17	RPM	1693	1333	846	533	427	
		(13-20)	Fr	0.004	0.005	0.008	0.013	0.016	
			Feed (mm/min)	7	7	7	7	7	
STAINLESS STEELS (FREE MACHINING) 303, 416, 420F, 430F 440F	≤ 250 Bhn or ≤ 24 HRc	64	RPM	6463	5089	3231	2036	1629	
		(51-77)	Fr	0.012	0.015	0.024	0.038	0.048	
			Feed (mm/min)	78	78	78	78	78	
	≤ 330 Bhn or ≤ 36 HRc	34	RPM	3385	2666	1693	1066	853	
		(27-40)	Fr	0.007	0.009	0.014	0.023	0.028	
			Feed (mm/min)	24	24	24	24	24	
	STAINLESS STEELS (DIFFICULT) 304, 316, 321, 13-8 PH, 15-5PH, 17-4 PH, Custom 450	≤ 275 Bhn or ≤ 28 HRc	20	RPM	2000	1575	1000	630	504
			(16-24)	Fr	0.009	0.011	0.018	0.029	0.036
				Feed (mm/min)	18	18	18	18	18
		≤ 375 Bhn or ≤ 40 HRc	17	RPM	1693	1333	846	533	427
			(13-20)	Fr	0.008	0.011	0.017	0.026	0.033
				Feed (mm/min)	14	14	14	14	14
CAST IRONS Gray, Malleable, Ductile	≤ 220 Bhn or ≤ 19 HRc	85	RPM	8617	6786	4309	2714	2171	
		(68-102)	Fr	0.021	0.027	0.042	0.067	0.083	
			Feed (mm/min)	181	181	181	181	181	
	≤ 330 Bhn or ≤ 36 HRc	76	RPM	7694	6059	3847	2424	1939	
		(61-91)	Fr	0.021	0.027	0.042	0.067	0.084	
			Feed (mm/min)	162	162	162	162	162	

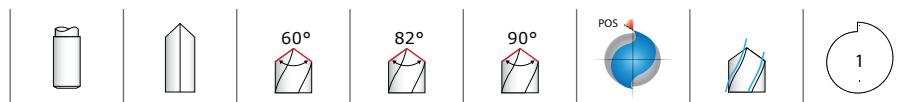
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Combined Drill & Countersink

Series 301M Metric	Hardness	Vc (m/min)	DC • mm							
			1	1.6	2.5	4	5			
N	ALUMINUM ALLOYS 2017, 2024, 356, 6061, 7075	≤ 80 Bhn or ≤ 47 HRb	165	RPM	16619	13087	8309	5235	4188	
		(132-198)	Fr	0.025	0.032	0.050	0.079	0.099		
			Feed (mm/min)	415	415	415	415	415		
			139	RPM	14003	11027	7001	4411	3529	
		(111-166)	Fr	0.025	0.032	0.050	0.079	0.099		
			Feed (mm/min)	350	350	350	350	350		
	COPPER ALLOYS Alum Bronze, C110, Muntz Brass		≤ 140 Bhn or ≤ 3 HRc	58	RPM	5847	4605	2924	1842	1474
		(46-69)	Fr	0.012	0.015	0.024	0.038	0.048		
			Feed (mm/min)	70	70	70	70	70		
			53	RPM	5386	4241	2693	1696	1357	
		(43-64)	Fr	0.012	0.015	0.024	0.038	0.048		
			Feed (mm/min)	65	65	65	65	65		
PLASTICS Polycarbonate, PVC	≤ 152 Bhn or ≤ 12 HRc		152	RPM	15388	12118	7694	4847	3878	
	(122-183)	Fr	0.025	0.032	0.050	0.079	0.099			
		Feed (mm/min)	385	385	385	385	385			
		S	HIGH TEMP ALLOYS (NICKEL, COBALT, IRON BASE) Inconel 601, 617, 625, Incoloy 800, Monel 400, Rene, Waspaloy	≤ 220 Bhn or ≤ 19 HRc	12	RPM	1231	969	616	388
	(10-15)			Fr	0.009	0.011	0.018	0.028	0.035	
				Feed (mm/min)	11	11	11	11	11	
8				RPM	769	606	385	242	194	
(6-9)	Fr			0.008	0.010	0.016	0.025	0.031		
	Feed (mm/min)			6	6	6	6	6		
	6		RPM	616	485	308	194	155		
(5-7)	Fr		0.003	0.004	0.006	0.010	0.013			
	Feed (mm/min)		2	2	2	2	2			
	TITANIUM ALLOYS Pure Titanium, Ti6Al4V, Ti6Al2Sn4Zr2Mo, Ti4Al4Mo2Sn0.5Si, Ti-6Al4V		≤ 275 Bhn or ≤ 28 HRc	26	RPM	2616	2060	1308	824	659
(21-31)			Fr	0.016	0.020	0.032	0.051	0.064		
			Feed (mm/min)	42	42	42	42	42		
		20	RPM	2000	1575	1000	630	504		
(16-24)		Fr	0.009	0.011	0.018	0.029	0.036			
		Feed (mm/min)	18	18	18	18	18			
	17	RPM	1693	1333	846	533	427			
(13-20)	Fr	0.008	0.011	0.017	0.026	0.033				
	Feed (mm/min)	14	14	14	14	14				
	H	TOOL STEELS A2, D2, H13, L2, M2, P20, S7, T15, W2	≤ 475 Bhn or ≤ 50 HRc	12	RPM	1231	969	616	388	310
(10-15)			Fr	0.004	0.005	0.008	0.013	0.016		
			Feed (mm/min)	5	5	5	5	5		

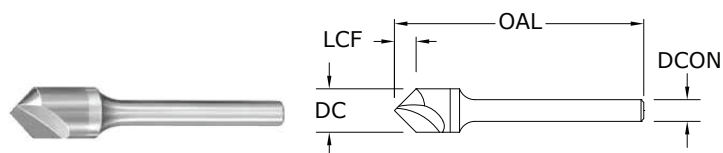
Bhn (Brinell) HRc (Rockwell C) HRb (Rockwell B)
 $rpm = (Vc \times 1000) / (DCON \times 3.14)$
 $mm/min = Fr \times rpm$
 reduce speed and feed 30 percent when using uncoated drills
 reduce speed and feed for materials harder than listed
 refer to the SGS Tool Wizard® for complete technical information (www.kyocera-sgstool.com)

Single Flute Countersink



601

FRACTIONAL SERIES



inch				EDP NO.		
CUTTING DIAMETER DC	SHANK DIAMETER DCON	OVERALL LENGTH OAL	FLUTE LENGTH LCF	UNCOATED 60°	UNCOATED 82°	UNCOATED 90°
1/8	1/8	1-1/2	.062	—	—	74201
1/8	1/8	1-1/2	.072	—	74101	—
1/8	1/8	1-1/2	.108	74001	—	—
3/16	3/16	2	.094	—	—	74204
3/16	3/16	2	.108	—	74104	—
3/16	3/16	2	.163	74004	—	—
1/4	1/4	2	.125	—	—	74207
1/4	1/4	2	.144	—	74107	—
1/4	1/4	2	.217	74007	—	—
*3/8	1/4	2-13/16	.188	—	—	74210
*3/8	1/4	2-13/16	.216	—	74110	—
*3/8	1/4	2-13/16	.325	74010	—	—
*1/2	1/4	2-7/8	.250	—	—	74213
*1/2	1/4	2-7/8	.288	—	74113	—
*1/2	1/4	2-7/8	.433	74013	—	—
*5/8	3/8	3	.313	—	—	74216
*5/8	3/8	3	.360	—	74116	—
*5/8	3/8	3	.541	74016	—	—
*3/4	1/2	3	.375	—	—	74219
*3/4	1/2	3	.431	—	74119	—
*3/4	1/2	3	.650	74019	—	—
*1	1/2	3-1/4	.500	—	—	74222
*1	1/2	3-1/4	.575	—	74122	—
*1	1/2	3-1/4	.866	74022	—	—

*Steel Shank / Con mango de acero / Avec queue en acier / Mit Stahlschaft

TOLERANCES (inch)

1/8–1/4 DIAMETER

DC = +0.0000/–0.0005

3/8–1 DIAMETER

DC = +0.003/–0.000

Included Angle +1°/–1°

- STEELS
- STAINLESS STEELS
- CAST IRON
- NON-FERROUS
- HIGH TEMP ALLOYS
- HARDENED STEELS

For patent information visit www.ksptpatents.com

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	
	P 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	
P 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	
	M 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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Single Flute Countersink

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 (180-270)	RPM	6876	4584	3438	2292	1719	1146	860
			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 (152-228)	RPM	5806	3871	2903	1935	1452	968	726
			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
	≤ 140 Bhn or ≤ 3 HRc	95 (76-114)	RPM	2903	1935	1452	968	726	484	363
			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 (64-96)	RPM	2445	1630	1222	815	611	407	306
			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 (14-22)	RPM	550	367	275	183	138	92	69
			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 (11-17)	RPM	428	285	214	143	107	71	53
			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
	≤ 425 Bhn or ≤ 45 HRc	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
	≤ 275 Bhn or ≤ 28 HRc	36 (29-43)	RPM	1100	733	550	367	275	183	138
			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
≤ 350 Bhn or ≤ 38 HRc	28 (22-34)	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	
≤ 440 Bhn or ≤ 47 HRc	21 (17-25)	RPM	642	428	321	214	160	107	80	
		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	
H TOOL STEELS A2, D2, H13, L2, M2, P20, S7, T15, W2	≤ 475 Bhn or ≤ 50 HRc	20 (16-24)	RPM	611	407	306	204	153	102	76
			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

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

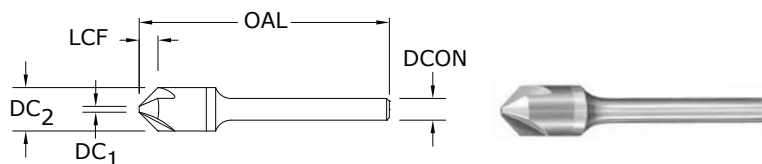
rpm = Vc x 3.82 / DC

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)

3 Flute Countersink



603
FRACTIONAL SERIES

TOLERANCES (inch)

1/8–1/4 DIAMETER

DC = +0.0000/–0.0005

3/8–1 DIAMETER

DC = +0.003/–0.000

Included Angle +1°/–1°

STEELS

STAINLESS STEELS

CAST IRON

NON-FERROUS

HIGH TEMP ALLOYS

HARDENED STEELS

For patent information visit www.ksptpatents.com

CUTTING DIAMETER DC ₂	SHANK DIAMETER DCON	inch			EDP NO.		
		OVERALL LENGTH OAL	FLUTE LENGTH LCF	TIP DIAMETER DC ₁	UNCOATED 60°	UNCOATED 82°	UNCOATED 90°
1/8	1/8	1-1/2	.045	.040	–	–	74225
1/8	1/8	1-1/2	.049	.040	–	74125	–
1/8	1/8	1-1/2	.078	.035	74025	–	–
3/16	3/16	2	.071	.060	–	–	74228
3/16	3/16	2	.073	.060	–	74128	–
3/16	3/16	2	.123	.045	74028	–	–
1/4	1/4	2	.090	.100	–	–	74231
1/4	1/4	2	.086	.100	–	74131	–
1/4	1/4	2	.156	.070	74031	–	–
*3/8	1/4	2-13/16	.138	.108	–	–	74234
*3/8	1/4	2-13/16	.154	.108	–	74134	–
*3/8	1/4	2-13/16	.238	.100	74034	–	–
*1/2	1/4	2-7/8	.194	.122	–	–	74237
*1/2	1/4	2-7/8	.217	.122	–	74137	–
*1/2	1/4	2-7/8	.335	.113	74037	–	–
*5/8	3/8	3	.249	.138	–	–	74240
*5/8	3/8	3	.280	.138	–	74140	–
*5/8	3/8	3	.430	.128	74040	–	–
*3/4	1/2	3	.304	.153	–	–	74243
*3/4	1/2	3	.343	.153	–	74143	–
*3/4	1/2	3	.526	.143	74043	–	–
*1	1/2	3-1/4	.421	.168	–	–	74246
*1	1/2	3-1/4	.479	.168	–	74146	–
*1	1/2	3-1/4	.729	.158	74046	–	–

*Steel Shank / Con mango de acero / Avec queue en acier / Mit Stahlschaft
NOTE: DC₁ dimension varies based on angle. Contact your KSPT representative or consult SGS Tool Wizard® for dimension information.

3 Flute Countersink

Series 603 Fractional	Hardness	Vc (sfm)		DC • in							
				1/8	3/16	1/4	3/8	1/2	3/4	1	
CARBON STEELS 1018, 1040, 1080, 1090, 10L50, 1140, 1212, 12L15, 1525, 1536	≤ 175 Bhn or ≤ 7 HRc	125 (100-150)	RPM	3820	2547	1910	1273	955	637	478	
			Fr	0.0008	0.0012	0.0016	0.0024	0.0031	0.0047	0.0063	
			Feed (ipm)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
	≤ 300 Bhn or ≤ 32 HRc	60 (48-72)	RPM	1834	1222	917	611	458	306	229	
			Fr	0.0007	0.0011	0.0014	0.0021	0.0028	0.0043	0.0057	
			Feed (ipm)	1.3	1.3	1.3	1.3	1.3	1.3	1.3	
	≤ 425 Bhn or ≤ 45 HRc	45 (36-54)	RPM	1375	917	688	458	344	229	172	
			Fr	0.0004	0.0007	0.0009	0.0013	0.0017	0.0026	0.0035	
			Feed (ipm)	0.6	0.6	0.6	0.6	0.6	0.6	0.6	
	ALLOY STEELS 4140, 4150, 4320, 5120, 5150, 8630, 86L20, 50100	≤ 275 Bhn or ≤ 28 HRc	95 (76-114)	RPM	2903	1935	1452	968	726	484	363
				Fr	0.0007	0.0010	0.0014	0.0021	0.0028	0.0041	0.0055
				Feed (ipm)	2.0	2.0	2.0	2.0	2.0	2.0	2.0
≤ 375 Bhn or ≤ 40 HRc		60 (48-72)	RPM	1834	1222	917	611	458	306	229	
			Fr	0.0007	0.0010	0.0013	0.0020	0.0026	0.0039	0.0052	
			Feed (ipm)	1.2	1.2	1.2	1.2	1.2	1.2	1.2	
≤ 425 Bhn or ≤ 45 HRc		35 (28-42)	RPM	1070	713	535	357	267	178	134	
			Fr	0.0004	0.0006	0.0007	0.0011	0.0015	0.0022	0.0030	
			Feed (ipm)	0.4	0.4	0.4	0.4	0.4	0.4	0.4	
TOOL STEELS A2, D2, H13, L2, M2, P20, S7, T15, W2		≤ 250 Bhn or ≤ 24 HRc	35 (28-42)	RPM	1070	713	535	357	267	178	134
				Fr	0.0004	0.0006	0.0007	0.0011	0.0015	0.0022	0.0030
				Feed (ipm)	0.4	0.4	0.4	0.4	0.4	0.4	0.4
	≤ 375 Bhn or ≤ 40 HRc	25 (20-30)	RPM	764	509	382	255	191	127	96	
			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	
STAINLESS STEELS (FREE MACHINING) 303, 416, 420F, 430F 440F	≤ 250 Bhn or ≤ 24 HRc	53 (42-64)	RPM	1620	1080	810	540	405	270	202	
			Fr	0.0004	0.0006	0.0009	0.0013	0.0017	0.0026	0.0035	
			Feed (ipm)	0.7	0.7	0.7	0.7	0.7	0.7	0.7	
	≤ 330 Bhn or ≤ 36 HRc	46 (37-55)	RPM	1406	937	703	469	351	234	176	
			Fr	0.0004	0.0005	0.0007	0.0011	0.0014	0.0021	0.0028	
			Feed (ipm)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
	STAINLESS STEELS (DIFFICULT) 304, 316, 321, 13-8 PH, 15-5PH, 17-4 PH, Custom 450	≤ 275 Bhn or ≤ 28 HRc	28 (22-34)	RPM	856	570	428	285	214	143	107
				Fr	0.0005	0.0007	0.0009	0.0014	0.0019	0.0028	0.0037
				Feed (ipm)	0.4	0.4	0.4	0.4	0.4	0.4	0.4
		≤ 375 Bhn or ≤ 40 HRc	21 (17-25)	RPM	642	428	321	214	160	107	80
				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
CAST IRONS Gray, Malleable, Ductile	≤ 220 Bhn or ≤ 19 HRc	105 (84-126)	RPM	3209	2139	1604	1070	802	535	401	
			Fr	0.0009	0.0014	0.0018	0.0027	0.0036	0.0054	0.0072	
			Feed (ipm)	2.9	2.9	2.9	2.9	2.9	2.9	2.9	
	≤ 330 Bhn or ≤ 36 HRc	75 (60-90)	RPM	2292	1528	1146	764	573	382	287	
			Fr	0.0009	0.0014	0.0018	0.0027	0.0037	0.0055	0.0073	
			Feed (ipm)	2.1	2.1	2.1	2.1	2.1	2.1	2.1	

continued on next page

3 Flute Countersink

Series 603 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	0.0011	0.0017	0.0023	0.0034	0.0045	0.0068	0.0091	
			Feed (ipm)	7.8	7.8	7.8	7.8	7.8	7.8	7.8	
	≤ 150 Bhn or ≤ 88 HRb	190	RPM	5806	3871	2903	1935	1452	968	726	
		(152-228)	Fr	0.0011	0.0017	0.0022	0.0034	0.0045	0.0067	0.0090	
			Feed (ipm)	6.5	6.5	6.5	6.5	6.5	6.5	6.5	
	COPPER ALLOYS Alum Bronze, C110, Muntz Brass	≤ 140 Bhn or ≤ 3 HRc	95	RPM	2903	1935	1452	968	726	484	363
			(76-114)	Fr	0.0006	0.0009	0.0012	0.0018	0.0023	0.0035	0.0047
				Feed (ipm)	1.7	1.7	1.7	1.7	1.7	1.7	1.7
		≤ 200 Bhn or ≤ 23 HRc	80	RPM	2445	1630	1222	815	611	407	306
			(64-96)	Fr	0.0006	0.0009	0.0011	0.0017	0.0023	0.0034	0.0046
				Feed (ipm)	1.4	1.4	1.4	1.4	1.4	1.4	1.4
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	0.0004	0.0005	0.0007	0.0011	0.0015	0.0022	0.0029	
			Feed (ipm)	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
	≤ 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	
	≤ 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	
	TITANIUM ALLOYS Pure Titanium, Ti6Al4V, Ti6Al2Sn4Zr2Mo, Ti4Al4Mo2Sn0.5Si, Ti-6Al4V	≤ 275 Bhn or ≤ 28 HRc	36	RPM	1100	733	550	367	275	183	138
			(29-43)	Fr	0.0007	0.0011	0.0015	0.0022	0.0029	0.0044	0.0058
				Feed (ipm)	0.8	0.8	0.8	0.8	0.8	0.8	0.8
≤ 350 Bhn or ≤ 38 HRc		28	RPM	856	570	428	285	214	143	107	
		(22-34)	Fr	0.0006	0.0009	0.0012	0.0018	0.0023	0.0035	0.0047	
			Feed (ipm)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
≤ 440 Bhn or ≤ 47 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		
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	

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

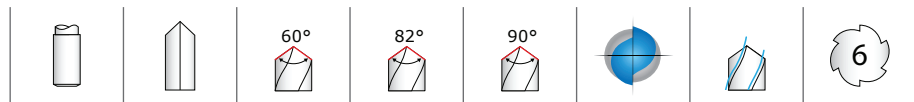
rpm = Vc x 3.82 / DC

ipm = Fr x rpm

reduce speed and feed for materials harder than listed

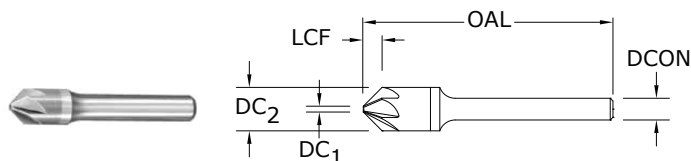
refer to the SGS Tool Wizard® for complete technical information (www.kyocera-sgstoool.com)

6 Flute Countersink



606

FRACTIONAL SERIES



CUTTING DIAMETER DC ₂	SHANK DIAMETER DCON	inch			EDP NO.		
		OVERALL LENGTH OAL	FLUTE LENGTH LCF	TIP DIAMETER DC ₁	UNCOATED 60°	UNCOATED 82°	UNCOATED 90°
1/8	1/8	1-1/2	.045	.035	—	—	74249
1/8	1/8	1-1/2	.052	.035	—	74149	—
1/8	1/8	1-1/2	.078	.035	74049	—	—
3/16	3/16	2	.071	.045	—	—	74252
3/16	3/16	2	.082	.045	—	74152	—
3/16	3/16	2	.123	.045	74052	—	—
1/4	1/4	2	.090	.070	—	—	74255
1/4	1/4	2	.104	.070	—	74155	—
1/4	1/4	2	.156	.070	74055	—	—
*3/8	1/4	2-13/16	.138	.100	—	—	74258
*3/8	1/4	2-13/16	.158	.100	—	74158	—
*3/8	1/4	2-13/16	.238	.100	74058	—	—
*1/2	1/4	2-7/8	.170	.160	—	—	74261
*1/2	1/4	2-7/8	.196	.160	—	74161	—
*1/2	1/4	2-7/8	.294	.160	74061	—	—
*5/8	3/8	3	.218	.190	—	—	74264
*5/8	3/8	3	.250	.190	—	74164	—
*5/8	3/8	3	.377	.190	74064	—	—
*3/4	1/2	3	.265	.220	—	—	74267
*3/4	1/2	3	.305	.220	—	74167	—
*3/4	1/2	3	.459	.220	74067	—	—
*1	1/2	3-1/4	.370	.260	—	—	74270
*1	1/2	3-1/4	.426	.260	—	74170	—
*1	1/2	3-1/4	.641	.260	74070	—	—

*Steel Shank / Con mango de acero / Avec queue en acier / Mit Stahlschaft
 NOTE: DC₁ dimension varies based on angle. Contact your KSPT representative or consult SGS Tool Wizard® for dimension information.

TOLERANCES (inch)

1/8–1/4 DIAMETER

DC = +0.0000/–0.0005

3/8–1 DIAMETER

DC = +0.003/–0.000

Included Angle +1°/–1°

- STEELS
- STAINLESS STEELS
- CAST IRON
- NON-FERROUS
- HIGH TEMP ALLOYS
- HARDENED STEELS

For patent information visit www.ksptpatents.com

6 Flute Countersink

Series 606 Fractional	Hardness	Vc (sfm)	DC • in								
			1/8	3/16	1/4	3/8	1/2	3/4	1		
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	
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

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	
K	CAST IRONS Gray, Malleable, Ductile	≤ 220 Bhn or ≤ 19 HRc	105	RPM	3209	2139	1604	1070	802	535	401
			(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
	≤ 330 Bhn or ≤ 36 HRc	75	RPM	2292	1528	1146	764	573	382	287	
		(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	
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	0.0015	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	RPM	5806	3871	2903	1935	1452	968	726
			(152-228)	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
≤ 140 Bhn or ≤ 3 HRc	95	RPM	2903	1935	1452	968	726	484	363		
	(76-114)	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	RPM	2445	1630	1222	815	611	407	306		
	(64-96)	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		

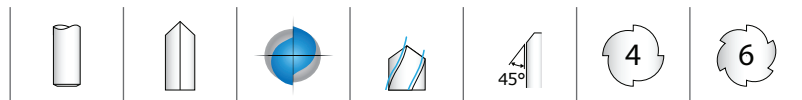
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6 Flute Countersink

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	≤ 220 Bhn or ≤ 19 HRc	18	RPM	550	367	275	183	138	92	69
			(14-22)	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
		≤ 320 Bhn or ≤ 34 HRc	14	RPM	428	285	214	143	107	71	53
			(11-17)	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
	≤ 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	
	TITANIUM ALLOYS Pure Titanium, Ti6Al4V, Ti6Al2Sn4Zr2Mo, Ti4Al4Mo2Sn0.5Si, Ti-6Al4V	≤ 275 Bhn or ≤ 28 HRc	36	RPM	1100	733	550	367	275	183	138
			(29-43)	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
≤ 350 Bhn or ≤ 38 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	
≤ 440 Bhn or ≤ 47 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		
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	0.0003	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

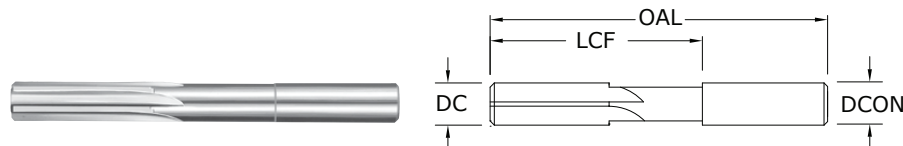
Bhn (Brinell) HRc (Rockwell C) HRb (Rockwell B)
 rpm = Vc x 3.82 / DC
 ipm = Fr x rpm
 reduce speed and feed for materials harder than listed
 refer to the SGS Tool Wizard® for complete technical information (www.kyocera-sgstool.com)

Straight Flute Accu-Reamer



200

FRACTIONAL SERIES



inch					EDP NO.
CUTTING DIAMETER DC	SHANK DIAMETER DCON	MAXIMUM REAM LENGTH LCF	OVERALL LENGTH OAL	NO. OF FLUTES	UNCOATED
3/64	3/64	3/4	1-1/2	4	70003
1/16	1/16	3/4	1-1/2	4	70004
5/64	5/64	1	2	4	70005
3/32	3/32	1-1/4	2-1/4	4	70006
7/64	7/64	1-1/4	2-1/4	4	70007
1/8	1/8	1-1/4	2-1/4	4	70008
9/64	9/64	1-1/2	2-1/2	4	70009
5/32	5/32	1-1/2	2-1/2	4	70010
11/64	11/64	1-3/4	2-3/4	4	70011
3/16	3/16	1-3/4	2-3/4	4	70012
13/64	13/64	2	3	4	70013
7/32	7/32	2	3	4	70014
15/64	15/64	2	3	4	70015
1/4	1/4	2	3	4	70016
17/64	17/64	2-1/4	3-1/4	6	70017
9/32	9/32	2-1/4	3-1/4	6	70018
19/64	19/64	2-1/4	3-1/4	6	70019
5/16	5/16	2-1/4	3-1/4	6	70020
21/64	21/64	2-3/8	3-1/2	6	70021
11/32	11/32	2-3/8	3-1/2	6	70022
23/64	23/64	2-3/8	3-1/2	6	70023
3/8	3/8	2-3/8	3-1/2	6	70024
25/64	25/64	2-7/8	4	6	70025
13/32	13/32	2-7/8	4	6	70026
27/64	27/64	2-7/8	4	6	70027
7/16	7/16	2-7/8	4	6	70028
29/64	29/64	2-7/8	4	6	70029
15/32	15/32	2-7/8	4	6	70030
31/64	31/64	2-7/8	4	6	70031
1/2	1/2	2-7/8	4	6	70032

continued on next page

TOLERANCES (inch)

DC = +0.0002/-0.0000

DCON = +0.0002/-0.0000

STEELS

STAINLESS STEELS

CAST IRON

NON-FERROUS

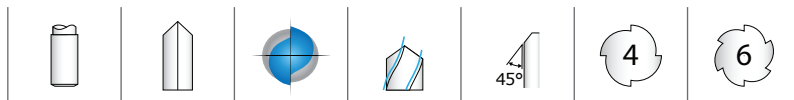
HIGH TEMP ALLOYS

HARDENED STEELS

For patent information visit

www.ksptpatents.com

Straight Flute Accu-Reamer



200
FRACTIONAL SERIES

CUTTING DIAMETER DC	inch			NO. OF FLUTES	CONTINUED
	SHANK DIAMETER DCON	MAXIMUM REAM LENGTH LCF	OVERALL LENGTH OAL		
.0470 – .0625	1/16	3/4	1-1/2	4	
.0626 – .0781	5/64	1	2	4	
.0782 – .0938	3/32	1-1/4	2-1/4	4	
.0939 – .1094	7/64	1-1/4	2-1/4	4	
.1095 – .1250	1/8	1-1/4	2-1/4	4	
.1251 – .1406	9/64	1-1/2	2-1/2	4	
.1407 – .1562	5/32	1-1/2	2-1/2	4	
.1563 – .1719	11/64	1-3/4	2-3/4	4	
.1720 – .1875	3/16	1-3/4	2-3/4	4	
.1876 – .2031	13/64	2	3	4	
.2032 – .2188	7/32	2	3	4	
.2189 – .2344	15/64	2	3	4	
.2345 – .2500	1/4	2	3	4	
.2501 – .2656	17/64	2-1/4	3-1/4	6	
.2657 – .2812	9/32	2-1/4	3-1/4	6	
.2813 – .2969	19/64	2-1/4	3-1/4	6	
.2970 – .3125	5/16	2-1/4	3-1/4	6	
.3126 – .3281	21/64	2-3/8	3-1/2	6	
.3282 – .3438	11/32	2-3/8	3-1/2	6	
.3439 – .3594	23/64	2-3/8	3-1/2	6	
.3595 – .3750	3/8	2-3/8	3-1/2	6	
.3751 – .3906	25/64	2-7/8	4	6	
.3907 – .4062	13/32	2-7/8	4	6	
.4063 – .4219	27/64	2-7/8	4	6	
.4220 – .4375	7/16	2-7/8	4	6	
.4376 – .4531	29/64	2-7/8	4	6	
.4532 – .4688	15/32	2-7/8	4	6	
.4689 – .4844	31/64	2-7/8	4	6	
.4845 – .5000	1/2	2-7/8	4	6	

SER 200 Fractional reamers can be ordered to specific diameters according to the size range of Cutting Diameter DC. Please order as:

- 200. Then the size of the cut diameter in fractional format.
- i.e. 200.0492
- Description: Series 200 size 0.0492
- For Metric sizes convert to fractional inches (i.e. $\div 25.4$)
- The above sample would be a 1.25mm size ($1.25 \div 25.4 = 0.0492$)

All other dimensions are fractional as per table including the Shank

Straight Flute Accu-Reamer

Series 200 Fractional	Hardness	Vc (sfm)	DC • in								
			1/16	1/8	3/16	1/4	5/16	3/8	1/2		
CARBON STEELS 1018, 1040, 1080, 1090, 10L50, 1140, 1212, 12L15, 1525, 1536	≤ 175 Bhn or ≤ 7 HRc	150	RPM	9168	4584	3056	2292	1834	1528	1146	
		(120-180)	Fr	0.0018	0.0035	0.0053	0.0071	0.0088	0.0106	0.0141	
			Feed (ipm)	16.5	16.0	16.2	16.3	16.1	16.2	16.2	
	≤ 300 Bhn or ≤ 32 HRc	75	RPM	4584	2292	1528	1146	917	764	573	
		(60-90)	Fr	0.0016	0.0031	0.0047	0.0062	0.0078	0.0093	0.0124	
			Feed (ipm)	7.3	7.1	7.2	7.1	7.2	7.1	7.1	
	≤ 425 Bhn or ≤ 45 HRc	55	RPM	3362	1681	1121	840	672	560	420	
		(44-66)	Fr	0.0009	0.0019	0.0028	0.0037	0.0046	0.0056	0.0074	
			Feed (ipm)	3.0	3.2	3.1	3.1	3.1	3.1	3.1	
	P ALLOY STEELS 4140, 4150, 4320, 5120, 5150, 8630, 86L20, 50100	≤ 275 Bhn or ≤ 28 HRc	115	RPM	7029	3514	2343	1757	1406	1171	879
			(92-138)	Fr	0.0015	0.0030	0.0045	0.0060	0.0075	0.0090	0.0120
				Feed (ipm)	10.5	10.5	10.5	10.5	10.5	10.5	10.5
≤ 375 Bhn or ≤ 40 HRc		70	RPM	4278	2139	1426	1070	856	713	535	
		(56-84)	Fr	0.0015	0.0030	0.0045	0.0060	0.0075	0.0090	0.0120	
			Feed (ipm)	6.4	6.4	6.4	6.4	6.4	6.4	6.4	
≤ 425 Bhn or ≤ 45 HRc		45	RPM	2750	1375	917	688	550	458	344	
		(36-54)	Fr	0.0009	0.0019	0.0028	0.0037	0.0046	0.0056	0.0074	
			Feed (ipm)	2.5	2.6	2.6	2.5	2.5	2.6	2.5	
TOOL STEELS A2, D2, H13, L2, M2, P20, S7, T15, W2		≤ 250 Bhn or ≤ 24 HRc	40	RPM	2445	1222	815	611	489	407	306
			(32-48)	Fr	0.0010	0.0020	0.0029	0.0039	0.0049	0.0059	0.0078
				Feed (ipm)	2.4	2.4	2.4	2.4	2.4	2.4	2.4
≤ 375 Bhn or ≤ 40 HRc	25	RPM	1528	764	509	382	306	255	191		
	(20-30)	Fr	0.0006	0.0013	0.0019	0.0025	0.0031	0.0038	0.0050		
		Feed (ipm)	0.9	1.0	1.0	1.0	0.9	1.0	1.0		
M STAINLESS STEELS (FREE MACHINING) 303, 416, 420F, 430F 440F	≤ 250 Bhn or ≤ 24 HRc	75	RPM	4584	2292	1528	1146	917	764	573	
		(60-90)	Fr	0.0010	0.0020	0.0029	0.0039	0.0049	0.0059	0.0078	
			Feed (ipm)	4.6	4.6	4.4	4.5	4.5	4.5	4.5	
	≤ 330 Bhn or ≤ 36 HRc	55	RPM	3362	1681	1121	840	672	560	420	
		(44-66)	Fr	0.0008	0.0015	0.0023	0.0030	0.0038	0.0045	0.0060	
			Feed (ipm)	2.7	2.5	2.6	2.5	2.6	2.5	2.5	
	STAINLESS STEELS (DIFFICULT) 304, 316, 321, 13-8 PH, 15-5PH, 17-4 PH, Custom 450	≤ 275 Bhn or ≤ 28 HRc	35	RPM	2139	1070	713	535	428	357	267
			(28-42)	Fr	0.0010	0.0020	0.0029	0.0039	0.0049	0.0059	0.0078
				Feed (ipm)	2.1	2.1	2.1	2.1	2.1	2.1	2.1
	≤ 375 Bhn or ≤ 40 HRc	25	RPM	1528	764	509	382	306	255	191	
		(20-30)	Fr	0.0006	0.0013	0.0019	0.0025	0.0031	0.0038	0.0050	
			Feed (ipm)	0.9	1.0	1.0	1.0	0.9	1.0	1.0	
K CAST IRONS Gray, Malleable, Ductile	≤ 220 Bhn or ≤ 19 HRc	125	RPM	7640	3820	2547	1910	1528	1273	955	
		(100-150)	Fr	0.0020	0.0040	0.0060	0.0081	0.0101	0.0121	0.0161	
			Feed (ipm)	15.3	15.3	15.3	15.5	15.4	15.4	15.4	
	≤ 330 Bhn or ≤ 36 HRc	95	RPM	5806	2903	1935	1452	1161	968	726	
		(76-114)	Fr	0.0020	0.0040	0.0060	0.0081	0.0101	0.0121	0.0161	
			Feed (ipm)	11.6	11.6	11.6	11.8	11.7	11.7	11.7	

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Straight Flute Accu-Reamer

Series 200 Fractional	Hardness	Vc (sfm)		DC • in							
				1/16	1/8	3/16	1/4	5/16	3/8	1/2	
N ALUMINUM ALLOYS 2017, 2024, 356, 6061, 7075	≤ 80 Bhn or ≤ 47 HRb	270 (216-324)	RPM	16502	8251	5501	4126	3300	2750	2063	
			Fr	0.0025	0.0050	0.0075	0.0100	0.0125	0.0150	0.0200	
			Feed (ipm)	41.3	41.3	41.3	41.3	41.3	41.3	41.3	
	≤ 150 Bhn or ≤ 88 HRb	230 (184-276)	RPM	14058	7029	4686	3514	2812	2343	1757	
			Fr	0.0025	0.0050	0.0075	0.0100	0.0125	0.0150	0.0200	
			Feed (ipm)	35.1	35.1	35.1	35.1	35.1	35.1	35.1	
	COPPER ALLOYS Alum Bronze, C110, Muntz Brass	≤ 140 Bhn or ≤ 3 HRc	115 (92-138)	RPM	7029	3514	2343	1757	1406	1171	879
				Fr	0.0013	0.0026	0.0038	0.0051	0.0064	0.0077	0.0102
				Feed (ipm)	9.1	9.1	8.9	9.0	9.0	9.0	9.0
		≤ 200 Bhn or ≤ 23 HRc	95 (76-114)	RPM	5806	2903	1935	1452	1161	968	726
				Fr	0.0013	0.0026	0.0038	0.0051	0.0064	0.0077	0.0102
				Feed (ipm)	7.5	7.5	7.4	7.4	7.4	7.5	7.4
S HIGH TEMP ALLOYS (NICKEL, COBALT, IRON BASE) Inconel 601, 617, 625, Incoloy 800, Monel 400, Rene, Waspaloy	≤ 220 Bhn or ≤ 19 HRc	20 (16-24)	RPM	1222	611	407	306	244	204	153	
			Fr	0.0008	0.0015	0.0023	0.0030	0.0038	0.0045	0.0060	
			Feed (ipm)	1.0	0.9	0.9	0.9	0.9	0.9	0.9	
	≤ 320 Bhn or ≤ 34 HRc	15 (12-18)	RPM	917	458	306	229	183	153	115	
			Fr	0.0006	0.0013	0.0019	0.0025	0.0031	0.0038	0.0050	
			Feed (ipm)	0.6	0.6	0.6	0.6	0.6	0.6	0.6	
	≤ 425 Bhn or ≤ 45 HRc	10 (8-12)	RPM	611	306	204	153	122	102	76	
			Fr	0.0004	0.0007	0.0011	0.0015	0.0018	0.0022	0.0029	
			Feed (ipm)	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
	TITANIUM ALLOYS Pure Titanium, Ti6Al4V, Ti6Al2Sn4Zr2Mo, Ti4Al4Mo2Sn0.5Si, Ti-6Al4V	≤ 275 Bhn or ≤ 28 HRc	45 (36-54)	RPM	2750	1375	917	688	550	458	344
				Fr	0.0015	0.0030	0.0045	0.0060	0.0075	0.0090	0.0120
				Feed (ipm)	4.1	4.1	4.1	4.1	4.1	4.1	4.1
≤ 350 Bhn or ≤ 38 HRc		35 (28-42)	RPM	2139	1070	713	535	428	357	267	
			Fr	0.0010	0.0020	0.0029	0.0039	0.0049	0.0059	0.0078	
			Feed (ipm)	2.1	2.1	2.1	2.1	2.1	2.1	2.1	
≤ 440 Bhn or ≤ 47 HRc	25 (20-30)	RPM	1528	764	509	382	306	255	191		
		Fr	0.0006	0.0013	0.0019	0.0025	0.0031	0.0038	0.0050		
		Feed (ipm)	0.9	1.0	1.0	1.0	0.9	1.0	1.0		
H TOOL STEELS A2, D2, H13, L2, M2, P20, S7, T15, W2	≤ 475 Bhn or ≤ 50 HRc	20 (16-24)	RPM	1222	611	407	306	244	204	153	
			Fr	0.0004	0.0008	0.0012	0.0016	0.0019	0.0023	0.0031	
			Feed (ipm)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
	≤ 655 Bhn or ≤ 60 HRc	14 (11-17)	RPM	856	428	285	214	171	143	107	
			Fr	0.0003	0.0007	0.0011	0.0014	0.0018	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

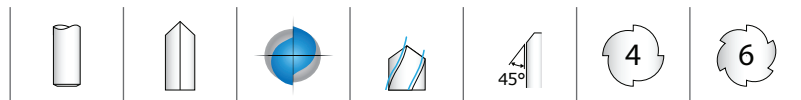
increase speed and feed 30 percent when using coated reamers

reduce speed and feed for materials harder than listed

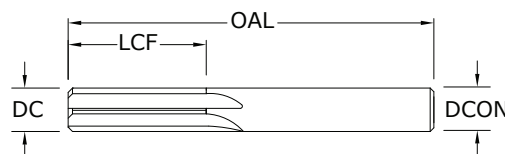
refer to the SGS Tool Wizard® for complete technical information (www.kyocera-sgstoool.com)

METRIC

Straight Flute Reamer



201M
METRIC SERIES



CUTTING DIAMETER DC	SHANK DIAMETER DCON	mm		NO. OF FLUTES	EDP NO.
		MAXIMUM REAM LENGTH LCF	OVERALL LENGTH OAL		UNCOATED
1,0	1,0	6,0	32,0	4	81001
1,5	1,5	9,5	38,0	4	81003
2,0	2,0	12,7	44,0	4	81005
2,5	2,5	12,7	50,0	4	81007
3,0	3,0	16,0	57,0	4	81009
3,5	3,5	19,0	63,0	4	81011
4,0	4,0	19,0	63,0	4	81013
4,5	4,5	22,0	70,0	4	81015
5,0	5,0	25,0	75,0	4	81017
5,5	5,5	25,0	75,0	4	81019
6,0	6,0	25,0	75,0	4	81021
7,0	7,0	28,0	82,0	6	81023
8,0	8,0	28,0	82,0	6	81025
9,0	9,0	31,0	89,0	6	81027
10,0	10,0	31,0	89,0	6	81029

TOLERANCES (mm)

1-6 DIAMETER

DC = +0,008/-0,000

>6-10 DIAMETER

DC = +0,010/-0,000

STEELS

STAINLESS STEELS

CAST IRON

NON-FERROUS

HIGH TEMP ALLOYS

HARDENED STEELS

For patent
information visit

www.ksptpatents.com

Straight Flute Reamer

Series 201M Metric	Hardness	Vc (m/min)	DC • mm								
			1	2	3	4	6	8	10		
CARBON STEELS 1018, 1040, 1080, 1090, 10L50, 1140, 1212, 12L15, 1525, 1536	≤ 175 Bhn or ≤ 7 HRc	46	RPM	14541	7271	4847	3635	2424	1818	1454	
		(37-55)	Fr	0.028	0.056	0.085	0.113	0.169	0.226	0.282	
			Feed (mm/min)	410	410	410	410	410	410	410	
	≤ 300 Bhn or ≤ 32 HRc	23	RPM	7271	3635	2424	1818	1212	909	727	
		(18-27)	Fr	0.025	0.050	0.074	0.099	0.149	0.198	0.248	
			Feed (mm/min)	180	180	180	180	180	180	180	
	≤ 425 Bhn or ≤ 45 HRc	17	RPM	5332	2666	1777	1333	889	666	533	
		(13-20)	Fr	0.015	0.030	0.044	0.059	0.089	0.119	0.148	
			Feed (mm/min)	79	79	79	79	79	79	79	
	ALLOY STEELS 4140, 4150, 4320, 5120, 5150, 8630, 86L20, 50100	≤ 275 Bhn or ≤ 28 HRc	35	RPM	11148	5574	3716	2787	1858	1394	1115
			(28-42)	Fr	0.024	0.048	0.072	0.096	0.144	0.192	0.240
				Feed (mm/min)	268	268	268	268	268	268	268
≤ 375 Bhn or ≤ 40 HRc		21	RPM	6786	3393	2262	1696	1131	848	679	
		(17-26)	Fr	0.024	0.048	0.072	0.096	0.144	0.192	0.240	
			Feed (mm/min)	163	163	163	163	163	163	163	
≤ 425 Bhn or ≤ 45 HRc		14	RPM	4362	2181	1454	1091	727	545	436	
		(11-16)	Fr	0.015	0.030	0.045	0.060	0.089	0.119	0.149	
			Feed (mm/min)	65	65	65	65	65	65	65	
TOOL STEELS A2, D2, H13, L2, M2, P20, S7, T15, W2		≤ 250 Bhn or ≤ 24 HRc	12	RPM	3878	1939	1293	969	646	485	388
			(10-15)	Fr	0.015	0.031	0.046	0.062	0.093	0.124	0.155
				Feed (mm/min)	60	60	60	60	60	60	60
	≤ 375 Bhn or ≤ 40 HRc	8	RPM	2424	1212	808	606	404	303	242	
		(6-9)	Fr	0.010	0.020	0.030	0.040	0.059	0.079	0.099	
			Feed (mm/min)	24	24	24	24	24	24	24	
STAINLESS STEELS (FREE MACHINING) 303, 416, 420F, 430F 440F	≤ 250 Bhn or ≤ 24 HRc	23	RPM	7271	3635	2424	1818	1212	909	727	
		(18-27)	Fr	0.015	0.030	0.045	0.059	0.089	0.119	0.149	
			Feed (mm/min)	108	108	108	108	108	108	108	
	≤ 330 Bhn or ≤ 36 HRc	17	RPM	5332	2666	1777	1333	889	666	533	
		(13-20)	Fr	0.012	0.024	0.036	0.048	0.072	0.096	0.120	
			Feed (mm/min)	64	64	64	64	64	64	64	
	STAINLESS STEELS (DIFFICULT) 304, 316, 321, 13-8 PH, 15-5PH, 17-4 PH, Custom 450	≤ 275 Bhn or ≤ 28 HRc	11	RPM	3393	1696	1131	848	565	424	339
			(9-13)	Fr	0.015	0.029	0.044	0.059	0.088	0.118	0.147
				Feed (mm/min)	50	50	50	50	50	50	50
		≤ 375 Bhn or ≤ 40 HRc	8	RPM	2424	1212	808	606	404	303	242
			(6-9)	Fr	0.010	0.020	0.030	0.040	0.059	0.079	0.099
				Feed (mm/min)	24	24	24	24	24	24	24

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Straight Flute Reamer

Series 201M Metric	Hardness	Vc (m/min)	DC • mm							
			1	2	3	4	6	8	10	
K CAST IRONS Gray, Malleable, Ductile	≤ 220 Bhn or ≤ 19 HRc	38	RPM	12118	6059	4039	3029	2020	1515	1212
		(30-46)	Fr	0.032	0.064	0.097	0.129	0.193	0.257	0.322
			Feed (mm/min)	390	390	390	390	390	390	390
	≤ 330 Bhn or ≤ 36 HRc	29	RPM	9209	4605	3070	2302	1535	1151	921
		(23-35)	Fr	0.032	0.064	0.096	0.128	0.192	0.256	0.320
			Feed (mm/min)	295	295	295	295	295	295	295
N ALUMINUM ALLOYS 2017, 2024, 356, 6061, 7075	≤ 80 Bhn or ≤ 47 HRb	82	RPM	26174	13087	8725	6544	4362	3272	2617
		(66-99)	Fr	0.040	0.080	0.120	0.160	0.240	0.320	0.400
			Feed (mm/min)	1047	1047	1047	1047	1047	1047	1047
	≤ 150 Bhn or ≤ 88 HRb	70	RPM	22297	11148	7432	5574	3716	2787	2230
		(56-84)	Fr	0.040	0.080	0.120	0.160	0.240	0.320	0.400
			Feed (mm/min)	892	892	892	892	892	892	892
COPPER ALLOYS Alum Bronze, C110, Muntz Brass	≤ 140 Bhn or ≤ 3 HRc	35	RPM	11148	5574	3716	2787	1858	1394	1115
		(28-42)	Fr	0.020	0.041	0.061	0.081	0.122	0.163	0.204
			Feed (mm/min)	227	227	227	227	227	227	227
	≤ 200 Bhn or ≤ 23 HRc	29	RPM	9209	4605	3070	2302	1535	1151	921
		(23-35)	Fr	0.020	0.041	0.061	0.082	0.122	0.163	0.204
			Feed (mm/min)	188	188	188	188	188	188	188

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Straight Flute Reamer

Series 201M Metric	Hardness	Vc (m/min)	DC • mm								
			1	2	3	4	6	8	10		
S	HIGH TEMP ALLOYS (NICKEL, COBALT, IRON BASE) Inconel 601, 617, 625, Incoloy 800, Monel 400, Rene, Waspaloy	≤ 220 Bhn or ≤ 19 HRc	6	RPM	1939	969	646	485	323	242	194
			(5-7)	Fr	0.012	0.024	0.036	0.047	0.071	0.095	0.119
				Feed (mm/min)	23	23	23	23	23	23	23
		≤ 320 Bhn or ≤ 34 HRc	5	RPM	1454	727	485	364	242	182	145
				Fr	0.010	0.021	0.031	0.041	0.062	0.083	0.103
			(4-5)	Feed (mm/min)	15	15	15	15	15	15	15
		≤ 425 Bhn or ≤ 45 HRc	3	RPM	969	485	323	242	162	121	97
				Fr	0.006	0.012	0.019	0.025	0.037	0.050	0.062
			(2-4)	Feed (mm/min)	6	6	6	6	6	6	6
	TITANIUM ALLOYS Pure Titanium, Ti6Al4V, Ti6Al2Sn4Zr2Mo, Ti4Al4Mo2Sn0.5Si, Ti-6Al4V	≤ 275 Bhn or ≤ 28 HRc	14	RPM	4362	2181	1454	1091	727	545	436
				Fr	0.024	0.048	0.072	0.096	0.144	0.193	0.241
			(11-16)	Feed (mm/min)	105	105	105	105	105	105	105
		≤ 350 Bhn or ≤ 38 HRc	11	RPM	3393	1696	1131	848	565	424	339
				Fr	0.015	0.029	0.044	0.059	0.088	0.118	0.147
			(9-13)	Feed (mm/min)	50	50	50	50	50	50	50
≤ 440 Bhn or ≤ 47 HRc		8	RPM	2424	1212	808	606	404	303	242	
			Fr	0.010	0.020	0.030	0.040	0.059	0.079	0.099	
		(6-9)	Feed (mm/min)	24	24	24	24	24	24	24	
H	≤ 475 Bhn or ≤ 50 HRc	6	RPM	1939	969	646	485	323	242	194	
			Fr	0.006	0.012	0.019	0.025	0.037	0.050	0.062	
		(5-7)	Feed (mm/min)	12	12	12	12	12	12	12	
	≤ 655 Bhn or ≤ 60 HRc	4	RPM	1272	636	424	318	212	159	127	
			Fr	0.006	0.013	0.019	0.025	0.038	0.050	0.063	
		(3-5)	Feed (mm/min)	8	8	8	8	8	8	8	

Bhn (Brinell) HRc (Rockwell C) HRb (Rockwell B)
 rpm = (Vc x 1000) / (DC x 3.14)
 mm/min = Fr x rpm
 increase speed and feed 30 percent when using coated reamers
 reduce speed and feed for materials harder than listed
 refer to the SGS Tool Wizard® for complete technical information (www.kyocera-sgstool.com)