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CARBIDE TIPPED TOOLS





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COOLANT FEEDING DRILLS — CARBIDE TIPPED

Coolant Drill — 125° four facet point, self centering.

Shank diameter same size as cutting tip.

Carbide tip high temperature brazed to hardened tool steel bodies with polished straight flutes

Shank coolant hole not tapped.

Tip diameter tolerance +.000, -.001.

Two coolant passages

Tool Diameter		Length		Tool Diameter Range*
Frac.	Dec.	Flute	Overall	
1/4	.2500	2 1/2	4 29/32	0.2490 – 0.2530
17/64	.2656	2 3/4	5 5/32	—
9/32	.2813	2 3/4	5 5/32	0.2640 – 0.2840
19/64	.2969	3 3/16	5 19/32	—
5/16	.3125	3 3/16	5 19/32	0.2950 – 0.3160
21/64	.3281	3 7/16	5 27/32	—
11/32	.3438	3 7/16	5 27/32	0.3260 – 0.3460
23/64	.3594	3 5/8	6 1/32	—
3/8	.3750	3 5/8	6 1/32	0.3540 – 0.3770
25/64	.3906	3 7/8	6 9/32	—
13/32	.4063	3 7/8	6 9/32	0.3850 – 0.4080

$\frac{27}{64}$	.4219	$4 \frac{1}{16}$	$6 \frac{15}{32}$	–
$\frac{7}{16}$	.4375	$4 \frac{1}{16}$	$6 \frac{15}{32}$	0.4100 – 0.4390
$\frac{29}{64}$	.4531	$4 \frac{5}{16}$	$6 \frac{23}{32}$	–
$\frac{15}{32}$	.4688	$4 \frac{5}{16}$	$6 \frac{23}{32}$	0.4391 – 0.4724
$\frac{31}{64}$	.4844	$4 \frac{1}{2}$	$6 \frac{29}{32}$	–
$\frac{1}{2}$	.5000	$4 \frac{1}{2}$	$6 \frac{29}{32}$	0.4725 – 0.5030
$\frac{33}{64}$	.5156	$4 \frac{13}{16}$	$7 \frac{7}{32}$	–
$\frac{17}{32}$	.5313	$4 \frac{13}{16}$	$7 \frac{7}{32}$	0.5031 – 0.5330
$\frac{35}{64}$	.5469	$4 \frac{13}{16}$	$7 \frac{7}{32}$	–
$\frac{9}{16}$	.5625	$4 \frac{13}{16}$	$7 \frac{7}{32}$	0.5331 – 0.5650
$\frac{37}{64}$	.5781	$5 \frac{3}{16}$	$7 \frac{19}{32}$	–
$\frac{19}{32}$	.5938	$5 \frac{3}{16}$	$7 \frac{19}{32}$	0.5651 – 0.5950
$\frac{39}{64}$	.6094	$5 \frac{3}{16}$	$7 \frac{19}{32}$	–
$\frac{5}{8}$	.6250	$5 \frac{3}{16}$	$7 \frac{19}{32}$	0.5951 – 0.6270
$\frac{41}{64}$	.6406	$5 \frac{3}{16}$	$7 \frac{19}{32}$	–
$\frac{21}{32}$	.6563	$5 \frac{3}{16}$	$7 \frac{19}{32}$	0.6271 – 0.6570
$\frac{43}{64}$	.6719	$5 \frac{5}{8}$	$8 \frac{1}{32}$	–
$\frac{11}{16}$	.6875	$5 \frac{5}{8}$	$8 \frac{1}{32}$	0.6571 – 0.6900
$\frac{45}{64}$	.7031	$5 \frac{5}{8}$	$8 \frac{1}{32}$	–
$\frac{23}{32}$	.7188	$5 \frac{5}{8}$	$8 \frac{1}{32}$	0.6901 – 0.7220
$\frac{47}{64}$	.7344	$6 \frac{1}{16}$	$8 \frac{15}{32}$	–
$\frac{3}{4}$	.7500	$6 \frac{1}{16}$	$8 \frac{15}{32}$	0.7221 – 0.7530
$\frac{49}{64}$	.7656	$6 \frac{1}{16}$	$8 \frac{9}{16}$	–
$\frac{25}{32}$	.7813	$6 \frac{1}{16}$	$8 \frac{9}{16}$	0.7531 – 0.7840
$\frac{13}{16}$	.8125	$6 \frac{1}{16}$	$8 \frac{9}{16}$	0.7841 – 0.8160
$\frac{27}{32}$	.8438	$6 \frac{1}{2}$	9	0.8161 – 0.8470
$\frac{7}{8}$	.8750	$6 \frac{1}{2}$	9	0.8471 – 0.8780
$\frac{29}{32}$	.9063	$6 \frac{15}{16}$	$9 \frac{7}{16}$	0.8781 – 0.9090
$\frac{15}{16}$	.9375	$6 \frac{15}{16}$	$9 \frac{7}{16}$	0.9091 – 0.9390
$\frac{31}{32}$	.9688	$6 \frac{15}{16}$	$9 \frac{7}{16}$	0.9391 – 0.9700
1	1.0000	$7 \frac{3}{8}$	$9 \frac{7}{8}$	0.9701 – 1.0030



COOLANT FEEDING DRILLS - CARBIDE TIPPED - SHORT LENGTH — METRIC

125° four facet point Flat relieved,

self centering point Polished straight flutes,

Two coolant outlets

Drill body diameter smaller than tool diameter to prevent gauling;

shank diameter same size as tool diameter.

Shank and tool diameter tolerances: plus .000", minus .001".

Carbide high temperature brazed to hardened tool steel body

Straight flutes for superior hole straightness, improved finish and maximum chip capacity.

Tool Diameter		Length				Modified Tool Diameter Range	
		Flute		Overall			
mm	Inch	mm	Inch	mm	Inch	Low	High
6.5	.2559	64.0	2 1/2	125.0	4 29/32	—	—
7.0	.2756	70.0	2 3/4	131.0	5 5/32	6.7060	7.2140
7.5	.2953	81.0	3 3/16	142.0	5 19/32	7.4930	8.0260
8.0	.3150	81.0	3 3/16	142.0	5 19/32	—	—
8.5	.3346	87.0	3 7/16	148.0	5 27/32	8.2800	8.7880
9.0	.3543	92.0	3 5/8	153.0	6 1/32	8.9920	9.5760
9.5	.3740	92.0	3 5/8	153.0	6 1/32	—	—

Tool Diameter		Length				Modified Tool Diameter Range	
		Flute		Overall			
mm	Inch	mm	Inch	mm	Inch	Low	High
10.0	.3937	98.0	3 7/8	159.0	6 9/32	9.7790	10.3630
10.5	.4134	103.0	4 1/16	164.0	6 15/32	10.4140	11.1510
11.0	.4331	103.0	4 1/16	164.0	6 15/32	—	—
11.5	.4528	109.0	4 5/16	171.0	6 23/32	11.1530	12.0000
12.0	.4724	109.0	4 5/16	171.0	6 23/32	—	—
12.5	.4921	114.0	4 1/2	175.0	6 29/32	12.0020	12.7760
13.0	.5118	122.0	4 13/16	183.0	7 7/32	12.7790	13.5380
13.5	.5315	122.0	4 13/16	183.0	7 7/32	—	—
14.0	.5512	122.0	4 13/16	183.0	7 7/32	13.5410	14.3510
14.5	.5709	131.0	5 3/16	193.0	7 19/32	14.3540	15.1130
15.0	.5906	131.0	5 3/16	193.0	7 19/32	—	—
15.5	.6102	131.0	5 3/16	193.0	7 19/32	15.1160	15.9260
16.0	.6299	131.0	5 3/16	193.0	7 19/32	15.9280	16.6880
16.5	.6496	131.0	5 3/16	193.0	7 19/32	—	—
17.0	.6693	143.0	5 5/8	204.0	8 1/32	16.6900	17.5260
17.5	.6890	143.0	5 5/8	204.0	8 1/32	—	—
18.0	.7087	143.0	5 5/8	204.0	8 1/32	17.5290	18.3390
18.5	.7283	154.0	6 1/16	215.0	8 15/32	18.3410	19.1260
19.0	.7480	154.0	6 1/16	215.0	8 15/32	—	—
19.5	.7677	154.0	6 1/16	217.0	8 9/16	19.1290	19.9140
20.0	.7874	154.0	6 1/16	217.0	8 9/16	19.9160	20.7260
20.5	.8071	154.0	6 1/16	217.0	8 9/16	—	—
21.0	.8268	165.0	6 1/2	229.0	9	20.7290	21.5140
21.5	.8465	165.0	6 1/2	229.0	9	—	—
22.0	.8661	165.0	6 1/2	229.0	9	21.5160	22.3010
22.5	.8858	176.0	6 15/16	240.0	9 7/16	22.3040	23.0890
23.0	.9055	176.0	6 15/16	240.0	9 7/16	—	—
23.5	.9252	176.0	6 15/16	240.0	9 7/16	23.0910	23.8510
24.0	.9449	176.0	6 15/16	240.0	9 7/16	23.8530	24.6380

Tool Diameter		Length				Modified Tool Diameter Range	
		Flute		Overall			
mm	Inch	mm	Inch	mm	Inch	Low	High
24.5	.9646	176.0	6 ¹⁵ / ₁₆	240.0	9 ⁷ / ₁₆	—	—
25.0	.9843	187.0	7 ³ / ₈	251.0	9 ⁷ / ₈	24.6410	25.4760



COOLANT FEEDING DRILLS — CARBIDE TIPPED

LONG LENGTH — 125° SELF CENTERING POINT

Coolant Drill — 125° four facet point, self centering.

Shank diameter same size as cutting tip.

Carbide tip high temperature brazed to hardened tool steel bodies with polished straight flutes.

Shank coolant hole not tapped.

Tip diameter tolerance +.000, -.001.

Two coolant passages.

Tool Diameter		Length		Tool Diameter Range*
Frac.	Dec.	Flute	Overall	
1/4	.2500	4 5/8	6 1/8	0.2490 – 0.2530
17/64	.2656	4 3/4	6 1/4	–
9/32	.2813	4 3/4	6 1/4	0.2640 – 0.2840
19/64	.2969	4 7/8	6 3/8	–
5/16	.3125	4 7/8	6 3/8	0.2950 – 0.3160
21/64	.3281	5	6 1/2	–
11/32	.3438	5	6 1/2	0.3260 – 0.3460
23/64	.3594	5 1/4	6 3/4	–
3/8	.3750	5 1/4	6 3/4	0.3540 – 0.3770
25/64	.3906	5 1/2	7	–
13/32	.4063	5 1/2	7	0.3850 – 0.4080
27/64	.4219	5 3/4	7 1/4	–
7/16	.4375	5 3/4	7 1/4	0.4100 – 0.4390
29/64	.4531	5 3/4	7 1/2	–
15/32	.4688	5 3/4	7 1/2	0.4391 – 0.4724
31/64	.4844	5 3/4	7 3/4	–
1/2	.5000	5 3/4	7 3/4	0.4725 – 0.5030
33/64	.5156	6	8	–
17/32	.5313	6	8	0.5031 – 0.5330
35/64	.5469	6 1/4	8 1/4	–
9/16	.5625	6 1/4	8 1/4	0.5331 – 0.5650
37/64	.5781	6 3/4	8 3/4	–
19/32	.5938	6 3/4	8 3/4	0.5651 – 0.5950
39/64	.6094	6 3/4	8 3/4	–
5/8	.6250	6 3/4	8 3/4	0.5951 – 0.6270
41/64	.6406	7	9	–
21/32	.6563	7	9	0.6271 – 0.6570
43/64	.6719	7 1/4	9 1/4	–
11/16	.6875	7 1/4	9 1/4	0.6571 – 0.6900
45/64	.7031	7 1/2	9 1/2	–

$\frac{23}{32}$	.7188	$7 \frac{1}{2}$	$9 \frac{1}{2}$	0.6901 – 0.7220
$\frac{47}{64}$	.7344	$7 \frac{3}{4}$	$9 \frac{3}{4}$	–
$\frac{3}{4}$	.7500	$7 \frac{3}{4}$	$9 \frac{3}{4}$	0.7221 – 0.7530
$\frac{49}{64}$	.7656	$7 \frac{7}{8}$	$9 \frac{7}{8}$	–
$\frac{25}{32}$	.7813	$7 \frac{7}{8}$	$9 \frac{7}{8}$	0.7531 – 0.7840
$\frac{13}{16}$	.8125	8	10	0.7841 – 0.8160
$\frac{27}{32}$	.8438	8	10	0.8161 – 0.8470
$\frac{7}{8}$	.8750	8	10	0.8471 – 0.8780
$\frac{29}{32}$	.9063	8	10	0.8781 – 0.9090
$\frac{15}{16}$	.9375	$8 \frac{3}{4}$	$10 \frac{3}{4}$	0.9091 – 0.9390
$\frac{31}{32}$	.9688	9	11	0.9391 – 0.9700
1	1.0000	9	11	0.9701 – 1.0030



COOLANT FEEDING DRILLS — CARBIDE TIPPED

LONG LENGTH — 125° SELF CENTERING POINT — METRIC

Coolant Drill — 125° four facet point, self centering.

Shank diameter same size as cutting tip.

Carbide tip high temperature brazed to hardened tool steel bodies with polished straight flutes.

Shank coolant hole not tapped.

Tip diameter tolerance +.000, -.001.

Two coolant passages.

Tool Diameter		Length		Tool Diameter Range*
mm	Inch	Flute	Overall	
6.5	.2559	4 ⁵ / ₈	6 ¹ / ₈	—
7.0	.2756	4 ³ / ₄	6 ¹ / ₄	6.7060 – 7.2140
7.5	.2953	4 ⁷ / ₈	6 ³ / ₈	7.4930 – 8.0260
8.0	.3150	4 ⁷ / ₈	6 ³ / ₈	—
8.5	.3346	5	6 ¹ / ₂	8.2800 – 8.7880
9.0	.3543	5 ¹ / ₄	6 ³ / ₄	8.9920 – 9.5760
9.5	.3740	5 ¹ / ₄	6 ³ / ₄	—
10.0	.3937	5 ¹ / ₂	7	9.7790 – 10.3630
10.5	.4134	5 ³ / ₄	7 ¹ / ₄	10.4140 – 11.1510
11.0	.4331	5 ³ / ₄	7 ¹ / ₄	—

Tool Diameter		Length		Tool Diameter Range*
mm	Inch	Flute	Overall	
11.5	.4528	5 3/4	7 1/2	11.1530 – 12.0000
12.0	.4724	5 3/4	7 1/2	–
12.5	.4921	5 3/4	7 3/4	12.0020 – 12.7760
13.0	.5118	6	8	12.7790 – 13.5380
13.5	.5315	6	8	–
14.0	.5512	6 1/4	8 1/4	13.5410 – 14.3510
14.5	.5709	6 3/4	8 3/4	14.3540 – 15.1130
15.0	.5906	6 3/4	8 3/4	–
15.5	.6102	6 3/4	8 3/4	15.1160 – 15.9260
16.0	.6299	7	9	15.9280 – 16.6880
16.5	.6496	7	9	–
17.0	.6693	7 1/4	9 1/4	16.6900 – 17.5260
17.5	.6890	7 1/4	9 1/4	–
18.0	.7087	7 1/2	9 1/2	17.5290 – 18.3390
18.5	.7283	7 3/4	9 3/4	18.3410 – 19.1260
19.0	.7480	7 3/4	9 3/4	–
19.5	.7677	7 7/8	9 7/8	19.1290 – 19.9140
20.0	.7874	8	10	19.9160 – 20.7260
20.5	.8071	8	10	–
21.0	.8268	8	10	20.7290 – 21.5140
21.5	.8465	8	10	–
22.0	.8661	8	10	21.5160 – 22.3010
22.5	.8858	8	10	22.3040 – 23.0890
23.0	.9055	8	10	–
23.5	.9252	8 3/4	10 3/4	23.0910 – 23.8510
24.0	.9449	9	11	23.8530 – 24.6380
24.5	.9646	9	11	–
25.0	.9843	9	11	24.6410 – 25.4760



COOLANT FEEDING DRILLS — CARBIDE TIPPED

EXTRA LONG LENGTH - 25° four facet point

Flat relieved, self centering point

Polished straight flutes

Two coolant outlets

Drill body diameter smaller than tool diameter to prevent gauling; shank diameter same size as tool diameter. Flat(s) on shank, Tanged shank

Shank and tool diameter tolerances: plus .000", minus .001".

Carbide high temperature brazed to hardened tool steel body

Extra long carbide tip for additional regrinds

Straight flutes for superior hole straightness, improved finish and maximum chip capacity.

Tool Diameter		Length		Modified Tool Diameter Range	
Frac.	Dec.	Flute	Overall	Low	High
5/16	.3125	8	10	.3100	.3160
11/32	.3438	8	10	.3281	.3460
3/8	.3750	9	11	.3594	.3770
13/32	.4063	9	11	.3906	.4080
7/16	.4375	9	11	.4200	.4390
15/32	.4688	9 3/4	12	.4531	.4710
1/2	.5000	9 3/4	12	.4800	.5030
17/32	.5313	9 3/4	12	.5118	.5330

Tool Diameter		Length		Modified Tool Diameter Range	
Frac.	Dec.	Flute	Overall	Low	High
9/16	.5625	10 3/4	13	.5430	.5650
5/8	.6250	10 3/4	13	.6070	.6270
11/16	.6875	11 3/4	14	.6693	.6900
3/4	.7500	11 3/4	14	.7320	.7530
13/16	.8125	12 3/4	15	.7953	.8160
7/8	.8750	12 3/4	15	.8570	.8780
15/16	.9375	13 3/4	16	.9180	.9390
1	1.0000	13 3/4	16	.9820	1.0030



AIRCRAFT EXTENSION DRILLS — CARBIDE TIPPED— 6"

*6" overall length aircraft extension drill.
135° split point per NAS 907 specifications.*

Tool Diameter			Flute Length
Frac.	Wire / Letter	Dec.	
1/8	32	.1160	1 5/8
	31	.1200	1 5/8
		.1250	1 5/8
	30	.1285	1 5/8
9/64	29	.1360	1 3/4
	28	.1405	1 3/4
		.1406	1 3/4
	27	.1440	1 7/8
	26	.1470	1 7/8
	25	.1495	1 7/8
	24	.1520	2
	23	.1540	2
5/32		.1563	2
	22	.1570	2
	21	.1590	2 1/8
	20	.1610	2 1/8
11/64	19	.1660	2 1/8
	18	.1695	2 1/8
		.1719	2 1/8
	17	.1730	2 3/16
	16	.1770	2 3/16
	15	.1800	2 3/16
	14	.1820	2 3/16
	13	.1850	2 5/16
3/16		.1875	2 5/16
	12	.1890	2 5/16
	11	.1910	2 5/16
	10	.1935	2 7/16
	9	.1960	2 7/16
	8	.1990	2 7/16

Tool Diameter			Flute Length
Frac.	Wire / Letter	Dec.	
13/64	7	.2010	2 7/16
		.2031	2 7/16
	6	.2040	2 1/2
	5	.2055	2 1/2
	4	.2090	2 1/2
	3	.2130	2 1/2
7/32		.2188	2 1/2
	2	.2210	2 5/8
	1	.2280	2 5/8
	A	.2340	2 5/8
15/64		.2344	2 5/8
	B	.2380	2 3/4
	C	.2420	2 3/4
	D	.2460	2 3/4
1/4	E	.2500	2 3/4
	F	.2570	2 7/8
	G	.2610	2 7/8
17/64		.2656	2 7/8
	H	.2660	2 7/8
	I	.2720	2 7/8
	J	.2770	2 7/8
	K	.2810	2 15/16
		.2813	2 15/16
9/32	L	.2900	2 15/16
	M	.2950	3 1/16
		.2969	3 1/16
19/64		.2969	3 1/16
	N	.3020	3 1/16
		.3125	3 3/16
	O	.3160	3 3/16
5/16		.3160	3 3/16
	P	.3230	3 5/16

Tool Diameter			Flute Length
Frac.	Wire / Letter	Dec.	
$2\frac{1}{64}$		.3281	$3\frac{5}{16}$
	Q	.3320	$3\frac{7}{16}$
	R	.3390	$3\frac{7}{16}$
$1\frac{1}{32}$		.3438	$3\frac{7}{16}$
$2\frac{3}{64}$	S	.3480	$3\frac{1}{2}$
	T	.3580	$3\frac{1}{2}$
		.3594	$3\frac{1}{2}$
	U	.3680	$3\frac{5}{8}$
$\frac{3}{8}$		.3750	$3\frac{5}{8}$
	V	.3770	$3\frac{5}{8}$
	W	.3860	$3\frac{3}{4}$
$2\frac{5}{64}$		.3906	$3\frac{3}{4}$
$1\frac{3}{32}$	X	.3970	$3\frac{3}{4}$
	Y	.4040	$3\frac{7}{8}$
		.4063	$3\frac{7}{8}$
	Z	.4130	$3\frac{7}{8}$
$2\frac{7}{64}$		.4219	$3\frac{15}{16}$
$\frac{7}{16}$		.4375	$4\frac{1}{16}$
$2\frac{9}{64}$		.4531	$4\frac{3}{16}$
$1\frac{5}{32}$		.4688	$4\frac{5}{16}$
$3\frac{1}{64}$		.4844	$4\frac{3}{8}$
$\frac{1}{2}$		.5000	$4\frac{1}{2}$



AIRCRAFT EXTENSION DRILLS — CARBIDE TIPPED— 12"

12" overall length aircraft extension drill.
 135° split point per NAS 907 specifications.

Tool Diameter			Flute Length
Frac.	Wire / Letter	Dec.	
1/8	32	.1160	1 5/8
	31	.1200	1 5/8
		.1250	1 5/8
	30	.1285	1 5/8
9/64	29	.1360	1 3/4
	28	.1405	1 3/4
		.1406	1 3/4
	27	.1440	1 7/8
	26	.1470	1 7/8
	25	.1495	1 7/8

Tool Diameter			Flute Length
Frac.	Wire / Letter	Dec.	
	24	.1520	2
	23	.1540	2
$\frac{5}{32}$		.1563	2
	22	.1570	2
	21	.1590	2 $\frac{1}{8}$
	20	.1610	2 $\frac{1}{8}$
$\frac{11}{64}$	19	.1660	2 $\frac{1}{8}$
	18	.1695	2 $\frac{1}{8}$
		.1719	2 $\frac{1}{8}$
	17	.1730	2 $\frac{3}{16}$
	16	.1770	2 $\frac{3}{16}$
	15	.1800	2 $\frac{3}{16}$
	14	.1820	2 $\frac{3}{16}$
	13	.1850	2 $\frac{5}{16}$
$\frac{3}{16}$		.1875	2 $\frac{5}{16}$
	12	.1890	2 $\frac{5}{16}$
	11	.1910	2 $\frac{5}{16}$
	10	.1935	2 $\frac{7}{16}$
$\frac{13}{64}$	9	.1960	2 $\frac{7}{16}$
	8	.1990	2 $\frac{7}{16}$
	7	.2010	2 $\frac{7}{16}$
		.2031	2 $\frac{7}{16}$
	6	.2040	2 $\frac{1}{2}$
	5	.2055	2 $\frac{1}{2}$
	4	.2090	2 $\frac{1}{2}$
	3	.2130	2 $\frac{1}{2}$
$\frac{7}{32}$		.2188	2 $\frac{1}{2}$
	2	.2210	2 $\frac{5}{8}$
	1	.2280	2 $\frac{5}{8}$
	A	.2340	2 $\frac{5}{8}$

Tool Diameter			Flute Length
Frac.	Wire / Letter	Dec.	
$\frac{15}{64}$		.2344	$2 \frac{5}{8}$
	B	.2380	$2 \frac{3}{4}$
	C	.2420	$2 \frac{3}{4}$
	D	.2460	$2 \frac{3}{4}$
$\frac{1}{4}$	E	.2500	$2 \frac{3}{4}$
	F	.2570	$2 \frac{7}{8}$
	G	.2610	$2 \frac{7}{8}$
$\frac{17}{64}$		.2656	$2 \frac{7}{8}$
	H	.2660	$2 \frac{7}{8}$
	I	.2720	$2 \frac{7}{8}$
	J	.2770	$2 \frac{7}{8}$
	K	.2810	$2 \frac{15}{16}$
$\frac{9}{32}$		.2813	$2 \frac{15}{16}$
	L	.2900	$2 \frac{15}{16}$
	M	.2950	$3 \frac{1}{16}$
$\frac{19}{64}$		.2969	$3 \frac{1}{16}$
$\frac{5}{16}$	N	.3020	$3 \frac{1}{16}$
		.3125	$3 \frac{3}{16}$
	O	.3160	$3 \frac{3}{16}$
	P	.3230	$3 \frac{5}{16}$
		.3281	$3 \frac{5}{16}$
$\frac{21}{64}$	Q	.3320	$3 \frac{7}{16}$
	R	.3390	$3 \frac{7}{16}$
		.3438	$3 \frac{7}{16}$
$\frac{11}{32}$			
$\frac{23}{64}$	S	.3480	$3 \frac{1}{2}$
	T	.3580	$3 \frac{1}{2}$
		.3594	$3 \frac{1}{2}$
	U	.3680	$3 \frac{5}{8}$
$\frac{3}{8}$		.3750	$3 \frac{5}{8}$
	V	.3770	$3 \frac{5}{8}$

Tool Diameter			Flute Length
Frac.	Wire / Letter	Dec.	
25/64	W	.3860	3 3/4
		.3906	3 3/4
13/32	X	.3970	3 3/4
	Y	.4040	3 7/8
		.4063	3 7/8
	Z	.4130	3 7/8
27/64		.4219	3 15/16
7/16		.4375	4 1/16
29/64		.4531	4 3/16
15/32		.4688	4 5/16
31/64		.4844	4 3/8
1/2		.5000	4 1/2



TWIST DRILLS — CARBIDE TIPPED

JOBBER'S LENGTH — 118° POINT

For drilling cast iron, non-ferrous metals and non-metals.

Tool Diameter			Length	
Frac.	Wire / Letter	Dec.	Flute	Overall
1/16		.0625	3/4	1 1/2

Tool Diameter			Length	
Frac.	Wire / Letter	Dec.	Flute	Overall
$\frac{5}{64}$		.0781	$\frac{7}{8}$	$1 \frac{3}{4}$
	40	.0938	1	2
		.0980	1	2
	39	.0995	$1 \frac{1}{4}$	$2 \frac{1}{4}$
	38	.1015	$1 \frac{1}{4}$	$2 \frac{1}{4}$
	37	.1040	$1 \frac{1}{4}$	$2 \frac{1}{4}$
	36	.1065	$1 \frac{1}{4}$	$2 \frac{1}{4}$
$\frac{7}{64}$		.1094	$1 \frac{1}{4}$	$2 \frac{1}{4}$
	35	.1100	$1 \frac{1}{4}$	$2 \frac{1}{4}$
	34	.1110	$1 \frac{1}{4}$	$2 \frac{1}{4}$
	33	.1130	$1 \frac{1}{4}$	$2 \frac{1}{4}$
$\frac{1}{8}$	32	.1160	$1 \frac{5}{8}$	$2 \frac{3}{4}$
	31	.1200	$1 \frac{5}{8}$	$2 \frac{3}{4}$
		.1250	$1 \frac{5}{8}$	$2 \frac{3}{4}$
	30	.1285	$1 \frac{5}{8}$	$2 \frac{3}{4}$
$\frac{9}{64}$	29	.1360	$1 \frac{3}{4}$	$2 \frac{7}{8}$
	28	.1405	$1 \frac{3}{4}$	$2 \frac{7}{8}$
		.1406	$1 \frac{3}{4}$	$2 \frac{7}{8}$
	27	.1440	$1 \frac{7}{8}$	3
	26	.1470	$1 \frac{7}{8}$	3
	25	.1495	$1 \frac{7}{8}$	3
	24	.1520	2	$3 \frac{1}{8}$
	23	.1540	2	$3 \frac{1}{8}$
$\frac{5}{32}$		.1563	2	$3 \frac{1}{8}$
	22	.1570	2	$3 \frac{1}{8}$
	21	.1590	$2 \frac{1}{8}$	$3 \frac{1}{4}$
	20	.1610	$2 \frac{1}{8}$	$3 \frac{1}{4}$
$\frac{11}{64}$	19	.1660	$2 \frac{1}{8}$	$3 \frac{1}{4}$
	18	.1695	$2 \frac{1}{8}$	$3 \frac{1}{4}$
		.1719	$2 \frac{1}{8}$	$3 \frac{1}{4}$

Tool Diameter			Length	
Frac.	Wire / Letter	Dec.	Flute	Overall
	17	.1730	2 ³ / ₁₆	3 ³ / ₈
	16	.1770	2 ³ / ₁₆	3 ³ / ₈
	15	.1800	2 ³ / ₁₆	3 ³ / ₈
	14	.1820	2 ³ / ₁₆	3 ³ / ₈
	13	.1850	2 ⁵ / ₁₆	3 ¹ / ₂
³ / ₁₆		.1875	2 ⁵ / ₁₆	3 ¹ / ₂
	12	.1890	2 ⁵ / ₁₆	3 ¹ / ₂
	11	.1910	2 ⁵ / ₁₆	3 ¹ / ₂
	10	.1935	2 ⁷ / ₁₆	3 ⁵ / ₈
	9	.1960	2 ⁷ / ₁₆	3 ⁵ / ₈
	8	.1990	2 ⁷ / ₁₆	3 ⁵ / ₈
	7	.2010	2 ⁷ / ₁₆	3 ⁵ / ₈
¹³ / ₆₄		.2031	2 ⁷ / ₁₆	3 ⁵ / ₈
	6	.2040	2 ¹ / ₂	3 ³ / ₄
	5	.2055	2 ¹ / ₂	3 ³ / ₄
	4	.2090	2 ¹ / ₂	3 ³ / ₄
	3	.2130	2 ¹ / ₂	3 ³ / ₄
⁷ / ₃₂		.2188	2 ¹ / ₂	3 ³ / ₄
	2	.2210	2 ⁵ / ₈	3 ⁷ / ₈
	1	.2280	2 ⁵ / ₈	3 ⁷ / ₈
	A	.2340	2 ⁵ / ₈	3 ⁷ / ₈
¹⁵ / ₆₄		.2344	2 ⁵ / ₈	3 ⁷ / ₈
	B	.2380	2 ³ / ₄	4
	C	.2420	2 ³ / ₄	4
	D	.2460	2 ³ / ₄	4
¹ / ₄	E	.2500	2 ³ / ₄	4
	F	.2570	2 ⁷ / ₈	4 ¹ / ₈
	G	.2610	2 ⁷ / ₈	4 ¹ / ₈
¹⁷ / ₆₄		.2656	2 ⁷ / ₈	4 ¹ / ₈
	H	.2660	2 ⁷ / ₈	4 ¹ / ₈

Tool Diameter		Length		
Frac.	Wire / Letter	Dec.	Flute	Overall
	I	.2720	2 ⁷ / ₈	4 ¹ / ₈
	J	.2770	2 ⁷ / ₈	4 ¹ / ₈
	K	.2810	2 ¹⁵ / ₁₆	4 ¹ / ₄
⁹ / ₃₂		.2813	2 ¹⁵ / ₁₆	4 ¹ / ₄
	L	.2900	2 ¹⁵ / ₁₆	4 ¹ / ₄
	M	.2950	3 ¹ / ₁₆	4 ³ / ₈
¹⁹ / ₆₄		.2969	3 ¹ / ₁₆	4 ³ / ₈
	N	.3020	3 ¹ / ₁₆	4 ³ / ₈
⁵ / ₁₆		.3125	3 ³ / ₁₆	4 ¹ / ₂
	O	.3160	3 ³ / ₁₆	4 ¹ / ₂
	P	.3230	3 ⁵ / ₁₆	4 ⁵ / ₈
²¹ / ₆₄		.3281	3 ⁵ / ₁₆	4 ⁵ / ₈
	Q	.3320	3 ⁷ / ₁₆	4 ³ / ₄
	R	.3390	3 ⁷ / ₁₆	4 ³ / ₄
¹¹ / ₃₂		.3438	3 ⁷ / ₁₆	4 ³ / ₄
	S	.3480	3 ¹ / ₂	4 ⁷ / ₈
	T	.3580	3 ¹ / ₂	4 ⁷ / ₈
²³ / ₆₄		.3594	3 ¹ / ₂	4 ⁷ / ₈
	U	.3680	3 ⁵ / ₈	5
³ / ₈		.3750	3 ⁵ / ₈	5
	V	.3770	3 ⁵ / ₈	5
	W	.3860	3 ³ / ₄	5 ¹ / ₈
²⁵ / ₆₄		.3906	3 ³ / ₄	5 ¹ / ₈
	X	.3970	3 ³ / ₄	5 ¹ / ₈
	Y	.4040	3 ⁷ / ₈	5 ¹ / ₄
¹³ / ₃₂		.4063	3 ⁷ / ₈	5 ¹ / ₄
	Z	.4130	3 ⁷ / ₈	5 ¹ / ₄
²⁷ / ₆₄		.4219	3 ¹⁵ / ₁₆	5 ³ / ₈
⁷ / ₁₆		.4375	4 ¹ / ₁₆	5 ¹ / ₂
²⁹ / ₆₄		.4531	4 ³ / ₁₆	5 ⁵ / ₈

Tool Diameter		Length		
Frac.	Wire / Letter	Dec.	Flute	Overall
15/32		.4688	4 5/16	5 3/4
31/64		.4844	4 3/8	5 7/8
1/2		.5000	4 1/2	6
33/64		.5156	4 13/16	6 5/8
17/32		.5313	4 13/16	6 5/8
35/64		.5469	4 13/16	6 5/8
9/16		.5625	4 13/16	6 5/8
37/64		.5781	4 13/16	6 5/8
19/32		.5938	5 3/16	7 1/8
39/64		.6094	5 3/16	7 1/8
5/8		.6250	5 3/16	7 1/8
41/64		.6406	5 3/16	7 1/8
21/32		.6563	5 3/16	7 1/8
43/64		.6719	5 5/8	7 5/8
11/16		.6875	5 5/8	7 5/8
45/64		.7031	5 5/8	7 5/8
23/32		.7188	5 5/8	7 5/8
47/64		.7344	5 5/8	7 5/8
3/4		.7500	5 13/16	8



TWIST DRILLS — CARBIDE TIPPED
JOBBER'S LENGTH — 118° POINT — METRIC

For drilling cast iron, non-ferrous metals and non-metals.

Tool Diameter		Length			
		Flute		Overall	
mm	Inch	mm	Inch	mm	Inch
3.0	.1181	41.0	1 5/8	70.0	2 3/4
3.1	.1220	41.0	1 5/8	70.0	2 3/4
3.2	.1260	41.0	1 5/8	70.0	2 3/4
3.3	.1299	44.0	1 3/4	73.0	2 7/8
3.4	.1339	44.0	1 3/4	73.0	2 7/8
3.5	.1378	44.0	1 3/4	73.0	2 7/8
3.6	.1417	48.0	1 7/8	76.0	3
3.7	.1457	48.0	1 7/8	76.0	3
3.8	.1496	48.0	1 7/8	76.0	3
3.9	.1535	51.0	2	79.0	3 1/8
4.0	.1575	54.0	2 1/8	83.0	3 1/4
4.1	.1614	54.0	2 1/8	83.0	3 1/4
4.2	.1654	54.0	2 1/8	83.0	3 1/4
4.3	.1693	54.0	2 1/8	83.0	3 1/4
4.4	.1732	56.0	2 3/16	86.0	3 3/8
4.5	.1772	56.0	2 3/16	86.0	3 3/8
4.6	.1811	56.0	2 3/16	86.0	3 3/8
4.7	.1850	59.0	2 5/16	89.0	3 1/2
4.8	.1890	59.0	2 5/16	89.0	3 1/2
4.9	.1929	62.0	2 7/16	92.0	3 5/8
5.0	.1969	62.0	2 7/16	92.0	3 5/8
5.1	.2008	62.0	2 7/16	92.0	3 5/8
5.2	.2047	64.0	2 1/2	95.0	3 3/4
5.3	.2087	64.0	2 1/2	95.0	3 3/4
5.4	.2126	64.0	2 1/2	95.0	3 3/4
5.5	.2165	64.0	2 1/2	95.0	3 3/4
5.6	.2205	67.0	2 5/8	98.0	3 7/8
5.7	.2244	67.0	2 5/8	98.0	3 7/8
5.8	.2283	67.0	2 5/8	98.0	3 7/8

Tool Diameter		Length			
		Flute		Overall	
mm	Inch	mm	Inch	mm	Inch
5.9	.2323	67.0	2 5/8	98.0	3 7/8
6.0	.2362	70.0	2 3/4	102.0	4
6.1	.2402	70.0	2 3/4	102.0	4
6.2	.2441	70.0	2 3/4	102.0	4
6.3	.2480	70.0	2 3/4	102.0	4
6.4	.2520	73.0	2 7/8	105.0	4 1/8
6.5	.2559	73.0	2 7/8	105.0	4 1/8
6.6	.2598	73.0	2 7/8	105.0	4 1/8
6.7	.2638	73.0	2 7/8	105.0	4 1/8
6.8	.2677	73.0	2 7/8	105.0	4 1/8
6.9	.2717	73.0	2 7/8	105.0	4 1/8
7.0	.2756	73.0	2 7/8	105.0	4 1/8
7.1	.2795	75.0	2 15/16	108.0	4 1/4
7.2	.2835	75.0	2 15/16	108.0	4 1/4
7.3	.2874	75.0	2 15/16	108.0	4 1/4
7.4	.2913	78.0	3 1/16	111.0	4 3/8
7.5	.2953	78.0	3 1/16	111.0	4 3/8
7.6	.2992	78.0	3 1/16	111.0	4 3/8
7.7	.3031	81.0	3 3/16	114.0	4 1/2
7.8	.3071	81.0	3 3/16	114.0	4 1/2
7.9	.3110	81.0	3 3/16	114.0	4 1/2
8.0	.3150	81.0	3 3/16	114.0	4 1/2
8.1	.3189	84.0	3 5/16	117.0	4 5/8
8.2	.3228	84.0	3 5/16	117.0	4 5/8
8.3	.3268	84.0	3 5/16	117.0	4 5/8
8.4	.3307	87.0	3 7/16	121.0	4 3/4
8.5	.3346	87.0	3 7/16	121.0	4 3/4
8.6	.3386	87.0	3 7/16	121.0	4 3/4
8.7	.3425	87.0	3 7/16	121.0	4 3/4

Tool Diameter		Length			
		Flute		Overall	
mm	Inch	mm	Inch	mm	Inch
8.8	.3465	89.0	3 1/2	124.0	4 7/8
8.9	.3504	89.0	3 1/2	124.0	4 7/8
9.0	.3543	89.0	3 1/2	124.0	4 7/8
9.1	.3583	89.0	3 1/2	124.0	4 7/8
9.2	.3622	92.0	3 5/8	127.0	5
9.3	.3661	92.0	3 5/8	127.0	5
9.4	.3701	92.0	3 5/8	127.0	5
9.5	.3740	92.0	3 5/8	127.0	5
9.6	.3780	95.0	3 3/4	130.0	5 1/8
9.7	.3819	95.0	3 3/4	130.0	5 1/8
9.8	.3858	95.0	3 3/4	130.0	5 1/8
9.9	.3898	95.0	3 3/4	130.0	5 1/8
10.0	.3937	95.0	3 3/4	130.0	5 1/8
10.1	.3976	98.0	3 7/8	133.0	5 1/4
10.2	.4016	98.0	3 7/8	133.0	5 1/4
10.3	.4055	98.0	3 7/8	133.0	5 1/4
10.4	.4094	98.0	3 7/8	133.0	5 1/4
10.5	.4134	98.0	3 7/8	133.0	5 1/4
10.6	.4173	100.0	3 15/16	137.0	5 3/8
10.7	.4213	100.0	3 15/16	137.0	5 3/8
10.8	.4252	103.0	4 1/16	140.0	5 1/2
10.9	.4291	103.0	4 1/16	140.0	5 1/2
11.0	.4331	103.0	4 1/16	140.0	5 1/2
11.1	.4370	103.0	4 1/16	140.0	5 1/2
11.2	.4409	106.0	4 3/16	143.0	5 5/8
11.3	.4449	106.0	4 3/16	143.0	5 5/8
11.4	.4488	106.0	4 3/16	143.0	5 5/8
11.5	.4528	106.0	4 3/16	143.0	5 5/8
11.6	.4567	110.0	4 5/16	146.0	5 3/4

Tool Diameter		Length			
		Flute		Overall	
mm	Inch	mm	Inch	mm	Inch
11.7	.4606	110.0	4 ⁵ / ₁₆	146.0	5 ³ / ₄
11.8	.4646	110.0	4 ⁵ / ₁₆	146.0	5 ³ / ₄
11.9	.4685	110.0	4 ⁵ / ₁₆	146.0	5 ³ / ₄
12.0	.4724	111.0	4 ³ / ₈	149.0	5 ⁷ / ₈
12.1	.4764	111.0	4 ³ / ₈	149.0	5 ⁷ / ₈
12.2	.4803	111.0	4 ³ / ₈	149.0	5 ⁷ / ₈
12.3	.4843	111.0	4 ³ / ₈	149.0	5 ⁷ / ₈
12.4	.4882	114.0	4 ¹ / ₂	152.0	6
12.5	.4921	114.0	4 ¹ / ₂	152.0	6
12.6	.4961	114.0	4 ¹ / ₂	152.0	6
12.7	.5000	114.0	4 ¹ / ₂	152.0	6
12.8	.5039	114.0	4 ¹ / ₂	152.0	6
12.9	.5079	114.0	4 ¹ / ₂	152.0	6
13.0	.5118	114.0	4 ¹ / ₂	152.0	6
13.5	.5315	122.0	4 ¹³ / ₁₆	168.0	6 ⁵ / ₈
14.0	.5512	122.0	4 ¹³ / ₁₆	168.0	6 ⁵ / ₈
14.5	.5709	122.0	4 ¹³ / ₁₆	168.0	6 ⁵ / ₈
15.0	.5906	132.0	5 ³ / ₁₆	181.0	7 ¹ / ₈
15.5	.6102	132.0	5 ³ / ₁₆	181.0	7 ¹ / ₈
16.0	.6299	132.0	5 ³ / ₁₆	181.0	7 ¹ / ₈
16.5	.6496	132.0	5 ³ / ₁₆	181.0	7 ¹ / ₈
17.0	.6693	143.0	5 ⁵ / ₈	194.0	7 ⁵ / ₈
17.5	.6890	143.0	5 ⁵ / ₈	194.0	7 ⁵ / ₈
18.0	.7087	143.0	5 ⁵ / ₈	194.0	7 ⁵ / ₈
18.5	.7283	143.0	5 ⁵ / ₈	194.0	7 ⁵ / ₈
19.0	.7480	148.0	5 ¹³ / ₁₆	203.0	8



TWIST DRILLS — CARBIDE TIPPED

JOBBER'S LENGTH — 135° POINT

For drilling abrasive and tough materials.

Carbide tips brazed to hardened tool steel bodies.

Tool Diameter			Length	
Frac.	Wire / Letter	Dec.	Flute	Overall
1/8	32	.1160	1 5/8	2 3/4
	31	.1200	1 5/8	2 3/4
		.1250	1 5/8	2 3/4
	30	.1285	1 5/8	2 3/4
9/64	29	.1360	1 3/4	2 7/8
	28	.1405	1 3/4	2 7/8
		.1406	1 3/4	2 7/8
	27	.1440	1 7/8	3
	26	.1470	1 7/8	3
	25	.1495	1 7/8	3
	24	.1520	2	3 1/8
	23	.1540	2	3 1/8
5/32		.1563	2	3 1/8
	22	.1570	2	3 1/8
	21	.1590	2 1/8	3 1/4
	20	.1610	2 1/8	3 1/4
11/64	19	.1660	2 1/8	3 1/4
	18	.1695	2 1/8	3 1/4
		.1719	2 1/8	3 1/4
	17	.1730	2 3/16	3 3/8

Tool Diameter			Length	
Frac.	Wire / Letter	Dec.	Flute	Overall
	16	.1770	2 ³ / ₁₆	3 ³ / ₈
	15	.1800	2 ³ / ₁₆	3 ³ / ₈
	14	.1820	2 ³ / ₁₆	3 ³ / ₈
	13	.1850	2 ⁵ / ₁₆	3 ¹ / ₂
³ / ₁₆		.1875	2 ⁵ / ₁₆	3 ¹ / ₂
	12	.1890	2 ⁵ / ₁₆	3 ¹ / ₂
	11	.1910	2 ⁵ / ₁₆	3 ¹ / ₂
	10	.1935	2 ⁷ / ₁₆	3 ⁵ / ₈
¹³ / ₆₄	9	.1960	2 ⁷ / ₁₆	3 ⁵ / ₈
	8	.1990	2 ⁷ / ₁₆	3 ⁵ / ₈
	7	.2010	2 ⁷ / ₁₆	3 ⁵ / ₈
		.2031	2 ⁷ / ₁₆	3 ⁵ / ₈
	6	.2040	2 ¹ / ₂	3 ³ / ₄
	5	.2055	2 ¹ / ₂	3 ³ / ₄
	4	.2090	2 ¹ / ₂	3 ³ / ₄
	3	.2130	2 ¹ / ₂	3 ³ / ₄
⁷ / ₃₂		.2188	2 ¹ / ₂	3 ³ / ₄
	2	.2210	2 ⁵ / ₈	3 ⁷ / ₈
	1	.2280	2 ⁵ / ₈	3 ⁷ / ₈
	A	.2340	2 ⁵ / ₈	3 ⁷ / ₈
¹⁵ / ₆₄		.2344	2 ⁵ / ₈	3 ⁷ / ₈
	B	.2380	2 ³ / ₄	4
	C	.2420	2 ³ / ₄	4
	D	.2460	2 ³ / ₄	4
¹ / ₄	E	.2500	2 ³ / ₄	4
	F	.2570	2 ⁷ / ₈	4 ¹ / ₈
	G	.2610	2 ⁷ / ₈	4 ¹ / ₈
¹⁷ / ₆₄		.2656	2 ⁷ / ₈	4 ¹ / ₈
	H	.2660	2 ⁷ / ₈	4 ¹ / ₈
	I	.2720	2 ⁷ / ₈	4 ¹ / ₈

Tool Diameter		Length		
Frac.	Wire / Letter	Dec.	Flute	Overall
	J	.2770	2 ⁷ / ₈	4 ¹ / ₈
	K	.2810	2 ¹⁵ / ₁₆	4 ¹ / ₄
⁹ / ₃₂		.2813	2 ¹⁵ / ₁₆	4 ¹ / ₄
	L	.2900	2 ¹⁵ / ₁₆	4 ¹ / ₄
	M	.2950	3 ¹ / ₁₆	4 ³ / ₈
¹⁹ / ₆₄		.2969	3 ¹ / ₁₆	4 ³ / ₈
	N	.3020	3 ¹ / ₁₆	4 ³ / ₈
⁵ / ₁₆		.3125	3 ³ / ₁₆	4 ¹ / ₂
	O	.3160	3 ³ / ₁₆	4 ¹ / ₂
	P	.3230	3 ⁵ / ₁₆	4 ⁵ / ₈
²¹ / ₆₄		.3281	3 ⁵ / ₁₆	4 ⁵ / ₈
	Q	.3320	3 ⁷ / ₁₆	4 ³ / ₄
	R	.3390	3 ⁷ / ₁₆	4 ³ / ₄
¹¹ / ₃₂		.3438	3 ⁷ / ₁₆	4 ³ / ₄
	S	.3480	3 ¹ / ₂	4 ⁷ / ₈
	T	.3580	3 ¹ / ₂	4 ⁷ / ₈
²³ / ₆₄		.3594	3 ¹ / ₂	4 ⁷ / ₈
	U	.3680	3 ⁵ / ₈	5
³ / ₈		.3750	3 ⁵ / ₈	5
	V	.3770	3 ⁵ / ₈	5
	W	.3860	3 ³ / ₄	5 ¹ / ₈
²⁵ / ₆₄		.3906	3 ³ / ₄	5 ¹ / ₈
	X	.3970	3 ³ / ₄	5 ¹ / ₈
	Y	.4040	3 ⁷ / ₈	5 ¹ / ₄
¹³ / ₃₂		.4063	3 ⁷ / ₈	5 ¹ / ₄
	Z	.4130	3 ⁷ / ₈	5 ¹ / ₄
²⁷ / ₆₄		.4219	3 ¹⁵ / ₁₆	5 ³ / ₈
⁷ / ₁₆		.4375	4 ¹ / ₁₆	5 ¹ / ₂
²⁹ / ₆₄		.4531	4 ³ / ₁₆	5 ⁵ / ₈
¹⁵ / ₃₂		.4688	4 ⁵ / ₁₆	5 ³ / ₄

Tool Diameter		Length		
Frac.	Wire / Letter	Dec.	Flute	Overall
31/64		.4844	4 3/8	5 7/8
1/2		.5000	4 1/2	6
33/64		.5156	4 13/16	6 5/8
17/32		.5313	4 13/16	6 5/8
35/64		.5469	4 13/16	6 5/8
9/16		.5625	4 13/16	6 5/8
37/64		.5781	4 13/16	6 5/8
19/32		.5938	5 3/16	7 1/8
39/64		.6094	5 3/16	7 1/8
5/8		.6250	5 3/16	7 1/8
41/64		.6406	5 3/16	7 1/8
21/32		.6563	5 3/16	7 1/8
43/64		.6719	5 5/8	7 5/8
11/16		.6875	5 5/8	7 5/8
45/64		.7031	5 5/8	7 5/8
23/32		.7188	5 5/8	7 5/8
47/64		.7344	5 5/8	7 5/8
3/4		.7500	5 13/16	8



TWIST DRILLS — CARBIDE TIPPED

JOBBER'S LENGTH — 135° POINT — METRIC

For drilling abrasive and tough materials.

Carbide tips brazed to hardened tool steel bodies.

Tool		Length			
Diameter		Flute		Overall	
mm	Inch	mm	Inch	mm	Inch
3.0	.1181	41.0	1 5/8	70.0	2 3/4
3.1	.1220	41.0	1 5/8	70.0	2 3/4
3.2	.1260	41.0	1 5/8	70.0	2 3/4
3.3	.1299	44.0	1 3/4	73.0	2 7/8
3.4	.1339	44.0	1 3/4	73.0	2 7/8
3.5	.1378	44.0	1 3/4	73.0	2 7/8
3.6	.1417	48.0	1 7/8	76.0	3
3.7	.1457	48.0	1 7/8	76.0	3
3.8	.1496	48.0	1 7/8	76.0	3
3.9	.1535	51.0	2	79.0	3 1/8
4.0	.1575	54.0	2 1/8	83.0	3 1/4
4.1	.1614	54.0	2 1/8	83.0	3 1/4
4.2	.1654	54.0	2 1/8	83.0	3 1/4
4.3	.1693	54.0	2 1/8	83.0	3 1/4
4.4	.1732	56.0	2 3/16	86.0	3 3/8
4.5	.1772	56.0	2 3/16	86.0	3 3/8
4.6	.1811	56.0	2 3/16	86.0	3 3/8
4.7	.1850	59.0	2 5/16	89.0	3 1/2
4.8	.1890	59.0	2 5/16	89.0	3 1/2
4.9	.1929	62.0	2 7/16	92.0	3 5/8
5.0	.1969	62.0	2 7/16	92.0	3 5/8
5.1	.2008	62.0	2 7/16	92.0	3 5/8
5.2	.2047	64.0	2 1/2	95.0	3 3/4
5.3	.2087	64.0	2 1/2	95.0	3 3/4
5.4	.2126	64.0	2 1/2	95.0	3 3/4
5.5	.2165	64.0	2 1/2	95.0	3 3/4
5.6	.2205	67.0	2 5/8	98.0	3 7/8
5.7	.2244	67.0	2 5/8	98.0	3 7/8

Tool Diameter		Length			
		Flute		Overall	
mm	Inch	mm	Inch	mm	Inch
5.8	.2283	67.0	2 5/8	98.0	3 7/8
5.9	.2323	67.0	2 5/8	98.0	3 7/8
6.0	.2362	70.0	2 3/4	102.0	4
6.1	.2402	70.0	2 3/4	102.0	4
6.2	.2441	70.0	2 3/4	102.0	4
6.3	.2480	70.0	2 3/4	102.0	4
6.4	.2520	73.0	2 7/8	105.0	4 1/8
6.5	.2559	73.0	2 7/8	105.0	4 1/8
6.6	.2598	73.0	2 7/8	105.0	4 1/8
6.7	.2638	73.0	2 7/8	105.0	4 1/8
6.8	.2677	73.0	2 7/8	105.0	4 1/8
6.9	.2717	73.0	2 7/8	105.0	4 1/8
7.0	.2756	73.0	2 7/8	105.0	4 1/8
7.1	.2795	75.0	2 15/16	108.0	4 1/4
7.2	.2835	75.0	2 15/16	108.0	4 1/4
7.3	.2874	75.0	2 15/16	108.0	4 1/4
7.4	.2913	78.0	3 1/16	111.0	4 3/8
7.5	.2953	78.0	3 1/16	111.0	4 3/8
7.6	.2992	78.0	3 1/16	111.0	4 3/8
7.7	.3031	81.0	3 3/16	114.0	4 1/2
7.8	.3071	81.0	3 3/16	114.0	4 1/2
7.9	.3110	81.0	3 3/16	114.0	4 1/2
8.0	.3150	81.0	3 3/16	114.0	4 1/2
8.1	.3189	84.0	3 5/16	117.0	4 5/8
8.2	.3228	84.0	3 5/16	117.0	4 5/8
8.3	.3268	84.0	3 5/16	117.0	4 5/8
8.4	.3307	87.0	3 7/16	121.0	4 3/4
8.5	.3346	87.0	3 7/16	121.0	4 3/4
8.6	.3386	87.0	3 7/16	121.0	4 3/4

Tool Diameter		Length			
		Flute		Overall	
mm	Inch	mm	Inch	mm	Inch
8.7	.3425	87.0	3 ⁷ / ₁₆	121.0	4 ³ / ₄
8.8	.3465	89.0	3 ¹ / ₂	124.0	4 ⁷ / ₈
8.9	.3504	89.0	3 ¹ / ₂	124.0	4 ⁷ / ₈
9.0	.3543	89.0	3 ¹ / ₂	124.0	4 ⁷ / ₈
9.1	.3583	89.0	3 ¹ / ₂	124.0	4 ⁷ / ₈
9.2	.3622	92.0	3 ⁵ / ₈	127.0	5
9.3	.3661	92.0	3 ⁵ / ₈	127.0	5
9.4	.3701	92.0	3 ⁵ / ₈	127.0	5
9.5	.3740	92.0	3 ⁵ / ₈	127.0	5
9.6	.3780	95.0	3 ³ / ₄	130.0	5 ¹ / ₈
9.7	.3819	95.0	3 ³ / ₄	130.0	5 ¹ / ₈
9.8	.3858	95.0	3 ³ / ₄	130.0	5 ¹ / ₈
9.9	.3898	95.0	3 ³ / ₄	130.0	5 ¹ / ₈
10.0	.3937	95.0	3 ³ / ₄	130.0	5 ¹ / ₈
10.1	.3976	98.0	3 ⁷ / ₈	133.0	5 ¹ / ₄
10.2	.4016	98.0	3 ⁷ / ₈	133.0	5 ¹ / ₄
10.3	.4055	98.0	3 ⁷ / ₈	133.0	5 ¹ / ₄
10.4	.4094	98.0	3 ⁷ / ₈	133.0	5 ¹ / ₄
10.5	.4134	98.0	3 ⁷ / ₈	133.0	5 ¹ / ₄
10.6	.4173	100.0	3 ¹⁵ / ₁₆	137.0	5 ³ / ₈
10.7	.4213	100.0	3 ¹⁵ / ₁₆	137.0	5 ³ / ₈
10.8	.4252	103.0	4 ¹ / ₁₆	140.0	5 ¹ / ₂
10.9	.4291	103.0	4 ¹ / ₁₆	140.0	5 ¹ / ₂
11.0	.4331	103.0	4 ¹ / ₁₆	140.0	5 ¹ / ₂
11.1	.4370	103.0	4 ¹ / ₁₆	140.0	5 ¹ / ₂
11.2	.4409	106.0	4 ³ / ₁₆	143.0	5 ⁵ / ₈
11.3	.4449	106.0	4 ³ / ₁₆	143.0	5 ⁵ / ₈
11.4	.4488	106.0	4 ³ / ₁₆	143.0	5 ⁵ / ₈
11.5	.4528	106.0	4 ³ / ₁₆	143.0	5 ⁵ / ₈

Tool Diameter		Length			
		Flute		Overall	
mm	Inch	mm	Inch	mm	Inch
11.6	.4567	110.0	4 ⁵ / ₁₆	146.0	5 ³ / ₄
11.7	.4606	110.0	4 ⁵ / ₁₆	146.0	5 ³ / ₄
11.8	.4646	110.0	4 ⁵ / ₁₆	146.0	5 ³ / ₄
11.9	.4685	110.0	4 ⁵ / ₁₆	146.0	5 ³ / ₄
12.0	.4724	111.0	4 ³ / ₈	149.0	5 ⁷ / ₈
12.1	.4764	111.0	4 ³ / ₈	149.0	5 ⁷ / ₈
12.2	.4803	111.0	4 ³ / ₈	149.0	5 ⁷ / ₈
12.3	.4843	111.0	4 ³ / ₈	149.0	5 ⁷ / ₈
12.4	.4882	114.0	4 ¹ / ₂	152.0	6
12.5	.4921	114.0	4 ¹ / ₂	152.0	6
12.6	.4961	114.0	4 ¹ / ₂	152.0	6
12.7	.5000	114.0	4 ¹ / ₂	152.0	6
12.8	.5039	114.0	4 ¹ / ₂	152.0	6
12.9	.5079	114.0	4 ¹ / ₂	152.0	6
13.0	.5118	114.0	4 ¹ / ₂	152.0	6
13.5	.5315	122.0	4 ¹³ / ₁₆	168.0	6 ⁵ / ₈
14.0	.5512	122.0	4 ¹³ / ₁₆	168.0	6 ⁵ / ₈
14.5	.5709	122.0	4 ¹³ / ₁₆	168.0	6 ⁵ / ₈
15.0	.5906	132.0	5 ³ / ₁₆	181.0	7 ¹ / ₈
15.5	.6102	132.0	5 ³ / ₁₆	181.0	7 ¹ / ₈
16.0	.6299	132.0	5 ³ / ₁₆	181.0	7 ¹ / ₈
16.5	.6496	132.0	5 ³ / ₁₆	181.0	7 ¹ / ₈
17.0	.6693	143.0	5 ⁵ / ₈	194.0	7 ⁵ / ₈
17.5	.6890	143.0	5 ⁵ / ₈	194.0	7 ⁵ / ₈
18.0	.7087	143.0	5 ⁵ / ₈	194.0	7 ⁵ / ₈
18.5	.7283	143.0	5 ⁵ / ₈	194.0	7 ⁵ / ₈
19.0	.7480	148.0	5 ¹³ / ₁₆	203.0	8



TWIST DRILLS — CARBIDE TIPPED
JOBBER LENGTH TANGED — 118° POINT

Tool Diameter			Length	
Frac.	Wire / Letter	Dec.	Flute	Overall
1/8		.1250	1 5/8	2 3/4
	30	.1285	1 5/8	2 3/4
	29	.1360	1 3/4	2 7/8
	28	.1405	1 3/4	2 7/8
9/64		.1406	1 3/4	2 7/8
	27	.1440	1 7/8	3
	26	.1470	1 7/8	3
	25	.1495	1 7/8	3
5/32	24	.1520	2	3 1/8
	23	.1540	2	3 1/8
		.1563	2	3 1/8

Tool Diameter			Length	
Frac.	Wire / Letter	Dec.	Flute	Overall
	22	.1570	2	3 1/8
	21	.1590	2 1/8	3 1/4
	20	.1610	2 1/8	3 1/4
	19	.1660	2 1/8	3 1/4
	18	.1695	2 1/8	3 1/4
11/64		.1719	2 1/8	3 1/4
	17	.1730	2 3/16	3 3/8
	16	.1770	2 3/16	3 3/8
	15	.1800	2 3/16	3 3/8
3/16	14	.1820	2 3/16	3 3/8
	13	.1850	2 5/16	3 1/2
		.1875	2 5/16	3 1/2
	12	.1890	2 5/16	3 1/2
	11	.1910	2 5/16	3 1/2
	10	.1935	2 7/16	3 5/8
	9	.1960	2 7/16	3 5/8
	8	.1990	2 7/16	3 5/8
13/64	7	.2010	2 7/16	3 5/8
		.2031	2 7/16	3 5/8
	6	.2040	2 1/2	3 3/4
	5	.2055	2 1/2	3 3/4
7/32	4	.2090	2 1/2	3 3/4
	3	.2130	2 1/2	3 3/4
		.2188	2 1/2	3 3/4
	2	.2210	2 5/8	3 7/8
15/64	1	.2280	2 5/8	3 7/8
	A	.2340	2 5/8	3 7/8
		.2344	2 5/8	3 7/8
	B	.2380	2 3/4	4
	C	.2420	2 3/4	4

Tool Diameter			Length	
Frac.	Wire / Letter	Dec.	Flute	Overall
1/4	D	.2460	2 3/4	4
	E	.2500	2 3/4	4
	F	.2570	2 7/8	4 1/8
17/64	G	.2610	2 7/8	4 1/8
		.2656	2 7/8	4 1/8
	H	.2660	2 7/8	4 1/8
	I	.2720	2 7/8	4 1/8
9/32	J	.2770	2 7/8	4 1/8
	K	.2810	2 15/16	4 1/4
		.2813	2 15/16	4 1/4

	L	.2900	2 15/16	4 1/4
19/64	M	.2950	3 1/16	4 3/8
		.2969	3 1/16	4 3/8
5/16	N	.3020	3 1/16	4 3/8
		.3125	3 3/16	4 1/2
21/64	O	.3160	3 3/16	4 1/2
	P	.3230	3 5/16	4 5/8
		.3281	3 5/16	4 5/8
	Q	.3320	3 7/16	4 3/4
11/32	R	.3390	3 7/16	4 3/4
		.3438	3 7/16	4 3/4
	S	.3480	3 1/2	4 7/8
	T	.3580	3 1/2	4 7/8
23/64		.3594	3 1/2	4 7/8
3/8	U	.3680	3 5/8	5
		.3750	3 5/8	5
	V	.3770	3 5/8	5
	W	.3860	3 3/4	5 1/8

$\frac{25}{64}$		.3906	$3 \frac{3}{4}$	$5 \frac{1}{8}$
	X	.3970	$3 \frac{3}{4}$	$5 \frac{1}{8}$
	Y	.4040	$3 \frac{7}{8}$	$5 \frac{1}{4}$
$\frac{13}{32}$		.4063	$3 \frac{7}{8}$	$5 \frac{1}{4}$
	Z	.4130	$3 \frac{7}{8}$	$5 \frac{1}{4}$
$\frac{27}{64}$		.4219	$3 \frac{15}{16}$	$5 \frac{3}{8}$
$\frac{7}{16}$		.4375	$4 \frac{1}{16}$	$5 \frac{1}{2}$
$\frac{29}{64}$		.4531	$4 \frac{3}{16}$	$5 \frac{5}{8}$
$\frac{15}{32}$		.4688	$4 \frac{5}{16}$	$5 \frac{3}{4}$
$\frac{31}{64}$		.4844	$4 \frac{3}{8}$	$5 \frac{7}{8}$
$\frac{1}{2}$		.5000	$4 \frac{1}{2}$	6
$\frac{33}{64}$		.5156	$4 \frac{13}{16}$	$6 \frac{5}{8}$
$\frac{17}{32}$		.5313	$4 \frac{13}{16}$	$6 \frac{5}{8}$
$\frac{35}{64}$		.5469	$4 \frac{13}{16}$	$6 \frac{5}{8}$
$\frac{9}{16}$		.5625	$4 \frac{13}{16}$	$6 \frac{5}{8}$
$\frac{37}{64}$		.5781	$4 \frac{13}{16}$	$6 \frac{5}{8}$
$\frac{19}{32}$		.5938	$5 \frac{3}{16}$	$7 \frac{1}{8}$
$\frac{39}{64}$		.6094	$5 \frac{3}{16}$	$7 \frac{1}{8}$
$\frac{5}{8}$		.6250	$5 \frac{3}{16}$	$7 \frac{1}{8}$
$\frac{41}{64}$		.6406	$5 \frac{3}{16}$	$7 \frac{1}{8}$
$\frac{21}{32}$		.6563	$5 \frac{3}{16}$	$7 \frac{1}{8}$
$\frac{43}{64}$		.6719	$5 \frac{5}{8}$	$7 \frac{5}{8}$
$\frac{11}{16}$		.6875	$5 \frac{5}{8}$	$7 \frac{5}{8}$
$\frac{45}{64}$		.7031	$5 \frac{5}{8}$	$7 \frac{5}{8}$
$\frac{23}{32}$		.7188	$5 \frac{5}{8}$	$7 \frac{5}{8}$
$\frac{47}{64}$		.7344	$5 \frac{5}{8}$	$7 \frac{5}{8}$
$\frac{3}{4}$		.7500	$5 \frac{13}{16}$	8



TWIST DRILLS — CARBIDE TIPPED
JOBBER'S LENGTH TANGED — 118° POINT

Tool		Length			
		Flute		Overall	
Diameter		mm	Inch	mm	Inch
3.2	.1260	41	1 5/8	70	2 3/4
3.3	.1299	44	1 3/4	73	2 7/8
3.4	.1339	44	1 3/4	73	2 7/8
3.5	.1378	44	1 3/4	73	2 7/8
3.6	.1417	48	1 7/8	76	3
3.7	.1457	48	1 7/8	76	3
3.8	.1496	48	1 7/8	76	3
3.9	.1535	51	2	79	3 1/8
4.0	.1575	54	2 1/8	83	3 1/4
4.1	.1614	54	2 1/8	83	3 1/4
4.2	.1654	54	2 1/8	83	3 1/4
4.3	.1693	54	2 1/8	83	3 1/4
4.4	.1732	56	2 3/16	86	3 3/8
4.5	.1772	56	2 3/16	86	3 3/8
4.6	.1811	56	2 3/16	86	3 3/8
4.7	.1850	59	2 5/16	89	3 1/2
4.8	.1890	59	2 5/16	89	3 1/2
4.9	.1929	62	2 7/16	92	3 5/8
5.0	.1969	62	2 7/16	92	3 5/8

Tool Diameter		Length			
		Flute		Overall	
mm	Inch	mm	Inch	mm	Inch
5.1	.2008	62	2 ⁷ / ₁₆	92	3 ⁵ / ₈
5.2	.2047	64	2 ¹ / ₂	95	3 ³ / ₄
5.3	.2087	64	2 ¹ / ₂	95	3 ³ / ₄
5.4	.2126	64	2 ¹ / ₂	95	3 ³ / ₄
5.5	.2165	64	2 ¹ / ₂	95	3 ³ / ₄
5.6	.2205	67	2 ⁵ / ₈	98	3 ⁷ / ₈
5.7	.2244	67	2 ⁵ / ₈	98	3 ⁷ / ₈
5.8	.2283	67	2 ⁵ / ₈	98	3 ⁷ / ₈
5.9	.2323	67	2 ⁵ / ₈	98	3 ⁷ / ₈
6.0	.2362	70	2 ³ / ₄	102	4
6.1	.2402	70	2 ³ / ₄	102	4
6.2	.2441	70	2 ³ / ₄	102	4
6.3	.2480	70	2 ³ / ₄	102	4
6.4	.2520	73	2 ⁷ / ₈	105	4 ¹ / ₈
6.5	.2559	73	2 ⁷ / ₈	105	4 ¹ / ₈
6.6	.2598	73	2 ⁷ / ₈	105	4 ¹ / ₈
6.7	.2638	73	2 ⁷ / ₈	105	4 ¹ / ₈
6.8	.2677	73	2 ⁷ / ₈	105	4 ¹ / ₈
6.9	.2717	73	2 ⁷ / ₈	105	4 ¹ / ₈
7.0	.2756	73	2 ⁷ / ₈	105	4 ¹ / ₈
7.1	.2795	75	2 ¹⁵ / ₁₆	108	4 ¹ / ₄
7.2	.2835	75	2 ¹⁵ / ₁₆	108	4 ¹ / ₄
7.3	.2874	75	2 ¹⁵ / ₁₆	108	4 ¹ / ₄
7.4	.2913	78	3 ¹ / ₁₆	111	4 ³ / ₈
7.5	.2953	78	3 ¹ / ₁₆	111	4 ³ / ₈
7.6	.2992	78	3 ¹ / ₁₆	111	4 ³ / ₈
7.7	.3031	81	3 ³ / ₁₆	114	4 ¹ / ₂
7.8	.3071	81	3 ³ / ₁₆	114	4 ¹ / ₂
7.9	.3110	81	3 ³ / ₁₆	114	4 ¹ / ₂

Tool Diameter		Length			
		Flute		Overall	
mm	Inch	mm	Inch	mm	Inch
8.0	.3150	81	3 ³ / ₁₆	114	4 ¹ / ₂
8.1	.3189	84	3 ⁵ / ₁₆	117	4 ⁵ / ₈
8.2	.3228	84	3 ⁵ / ₁₆	117	4 ⁵ / ₈
8.3	.3268	84	3 ⁵ / ₁₆	117	4 ⁵ / ₈
8.4	.3307	87	3 ⁷ / ₁₆	121	4 ³ / ₄
8.5	.3346	87	3 ⁷ / ₁₆	121	4 ³ / ₄
8.6	.3386	87	3 ⁷ / ₁₆	121	4 ³ / ₄
8.7	.3425	87	3 ⁷ / ₁₆	121	4 ³ / ₄
8.8	.3465	89	3 ¹ / ₂	124	4 ⁷ / ₈
8.9	.3504	89	3 ¹ / ₂	124	4 ⁷ / ₈
9.0	.3543	89	3 ¹ / ₂	124	4 ⁷ / ₈
9.1	.3583	89	3 ¹ / ₂	124	4 ⁷ / ₈
9.2	.3622	92	3 ⁵ / ₈	127	5
9.3	.3661	92	3 ⁵ / ₈	127	5
9.4	.3701	92	3 ⁵ / ₈	127	5
9.5	.3740	92	3 ⁵ / ₈	127	5
9.6	.3780	95	3 ³ / ₄	130	5 ¹ / ₈
9.7	.3819	95	3 ³ / ₄	130	5 ¹ / ₈
9.8	.3858	95	3 ³ / ₄	130	5 ¹ / ₈
9.9	.3898	95	3 ³ / ₄	130	5 ¹ / ₈
10.0	.3937	95	3 ³ / ₄	130	5 ¹ / ₈
10.1	.3976	98	3 ⁷ / ₈	133	5 ¹ / ₄
10.2	.4016	98	3 ⁷ / ₈	133	5 ¹ / ₄
10.3	.4055	98	3 ⁷ / ₈	133	5 ¹ / ₄
10.4	.4094	98	3 ⁷ / ₈	133	5 ¹ / ₄
10.5	.4134	98	3 ⁷ / ₈	133	5 ¹ / ₄
10.6	.4173	100	3 ¹⁵ / ₁₆	137	5 ³ / ₈
10.7	.4213	100	3 ¹⁵ / ₁₆	137	5 ³ / ₈
10.8	.4252	103	4 ¹ / ₁₆	140	5 ¹ / ₂

Tool		Length			
		Flute		Overall	
Diameter					
mm	Inch	mm	Inch	mm	Inch
10.9	.4291	103	4 1/16	140	5 1/2
11.0	.4331	103	4 1/16	140	5 1/2
11.1	.4370	103	4 1/16	140	5 1/2
11.2	.4409	106	4 3/16	143	5 5/8
11.3	.4449	106	4 3/16	143	5 5/8
11.4	.4488	106	4 3/16	143	5 5/8
11.5	.4528	106	4 3/16	143	5 5/8
11.6	.4567	110	4 5/16	146	5 3/4
11.7	.4606	110	4 5/16	146	5 3/4
11.8	.4646	110	4 5/16	146	5 3/4
11.9	.4685	110	4 5/16	146	5 3/4
12.0	.4724	111	4 3/8	149	5 7/8
12.5	.4921	114	4 1/2	152	6
13.0	.5118	114	4 1/2	152	6
13.5	.5315	122	4 13/16	168	6 5/8
14.0	.5512	122	4 13/16	168	6 5/8
14.5	.5709	122	4 13/16	168	6 5/8
15.0	.5906	132	5 3/16	181	7 1/8
15.5	.6102	132	5 3/16	181	7 1/8
16.0	.6299	132	5 3/16	181	7 1/8
16.5	.6496	132	5 3/16	181	7 1/8
17.0	.6693	143	5 5/8	194	7 5/8
17.5	.6890	143	5 5/8	194	7 5/8
18.0	.7087	143	5 5/8	194	7 5/8
18.5	.7283	143	5 5/8	194	7 5/8
19.0	.7480	148	5 13/16	203	8



TWIST DRILLS — CARBIDE TIPPED
JOBBERS LENGTH TANGED — 135° POINT

Tanged jobbers length - 135° split point designed for drilling tough abrasive or high tensile materials

Tool Diameter			Length	
Frac.	Wire / Letter	Dec.	Flute	Overall
1/8		.1250	1 5/8	2 3/4
	30	.1285	1 5/8	2 3/4
	29	.1360	1 3/4	2 7/8
	28	.1405	1 3/4	2 7/8
9/64		.1406	1 3/4	2 7/8
	27	.1440	1 7/8	3
	26	.1470	1 7/8	3
	25	.1495	1 7/8	3
5/32	24	.1520	2	3 1/8
	23	.1540	2	3 1/8
		.1563	2	3 1/8
	22	.1570	2	3 1/8
	21	.1590	2 1/8	3 1/4
	20	.1610	2 1/8	3 1/4
	19	.1660	2 1/8	3 1/4
	18	.1695	2 1/8	3 1/4
11/64		.1719	2 1/8	3 1/4
	17	.1730	2 3/16	3 3/8
	16	.1770	2 3/16	3 3/8
	15	.1800	2 3/16	3 3/8

Tool Diameter			Length	
Frac.	Wire / Letter	Dec.	Flute	Overall
$\frac{3}{16}$	14	.1820	$2 \frac{3}{16}$	$3 \frac{3}{8}$
	13	.1850	$2 \frac{5}{16}$	$3 \frac{1}{2}$
		.1875	$2 \frac{5}{16}$	$3 \frac{1}{2}$
	12	.1890	$2 \frac{5}{16}$	$3 \frac{1}{2}$
	11	.1910	$2 \frac{5}{16}$	$3 \frac{1}{2}$
	10	.1935	$2 \frac{7}{16}$	$3 \frac{5}{8}$
	9	.1960	$2 \frac{7}{16}$	$3 \frac{5}{8}$
	8	.1990	$2 \frac{7}{16}$	$3 \frac{5}{8}$
$\frac{13}{64}$	7	.2010	$2 \frac{7}{16}$	$3 \frac{5}{8}$
		.2031	$2 \frac{7}{16}$	$3 \frac{5}{8}$
	6	.2040	$2 \frac{1}{2}$	$3 \frac{3}{4}$
	5	.2055	$2 \frac{1}{2}$	$3 \frac{3}{4}$
$\frac{7}{32}$	4	.2090	$2 \frac{1}{2}$	$3 \frac{3}{4}$
	3	.2130	$2 \frac{1}{2}$	$3 \frac{3}{4}$
		.2188	$2 \frac{1}{2}$	$3 \frac{3}{4}$
	2	.2210	$2 \frac{5}{8}$	$3 \frac{7}{8}$
$\frac{15}{64}$	1	.2280	$2 \frac{5}{8}$	$3 \frac{7}{8}$
	A	.2340	$2 \frac{5}{8}$	$3 \frac{7}{8}$
		.2344	$2 \frac{5}{8}$	$3 \frac{7}{8}$
	B	.2380	$2 \frac{3}{4}$	4
$\frac{1}{4}$	C	.2420	$2 \frac{3}{4}$	4
	D	.2460	$2 \frac{3}{4}$	4
	E	.2500	$2 \frac{3}{4}$	4
	F	.2570	$2 \frac{7}{8}$	$4 \frac{1}{8}$
$\frac{17}{64}$	G	.2610	$2 \frac{7}{8}$	$4 \frac{1}{8}$
		.2656	$2 \frac{7}{8}$	$4 \frac{1}{8}$
	H	.2660	$2 \frac{7}{8}$	$4 \frac{1}{8}$
	I	.2720	$2 \frac{7}{8}$	$4 \frac{1}{8}$
	J	.2770	$2 \frac{7}{8}$	$4 \frac{1}{8}$
	K	.2810	$2 \frac{15}{16}$	$4 \frac{1}{4}$

Tool Diameter		Length		
Frac.	Wire / Letter	Dec.	Flute	Overall
9/32	L	.2813	2 15/16	4 1/4
		.2900	2 15/16	4 1/4
19/64	M	.2950	3 1/16	4 3/8
		.2969	3 1/16	4 3/8
	N	.3020	3 1/16	4 3/8
5/16		.3125	3 3/16	4 1/2
21/64	O	.3160	3 3/16	4 1/2
	P	.3230	3 5/16	4 5/8
		.3281	3 5/16	4 5/8
	Q	.3320	3 7/16	4 3/4
11/32	R	.3390	3 7/16	4 3/4
	S	.3438	3 7/16	4 3/4
		.3480	3 1/2	4 7/8
	T	.3580	3 1/2	4 7/8
23/64	U	.3594	3 1/2	4 7/8
3/8		.3680	3 5/8	5
		.3750	3 5/8	5
25/64	V	.3770	3 5/8	5
		W	.3860	3 3/4	5 1/8
	X	.3906	3 3/4	5 1/8
		.3970	3 3/4	5 1/8
Y	.4040	3 7/8	5 1/4	
	13/32	Z	.4063	3 7/8
.4130			3 7/8	5 1/4
27/64			.4219	3 15/16	5 3/8
7/16		.4375	4 1/16	5 1/2
29/64		.4531	4 3/16	5 5/8
15/32		.4688	4 5/16	5 3/4
31/64		.4844	4 3/8	5 7/8
1/2		.5000	4 1/2	6

Tool Diameter			Length	
Frac.	Wire / Letter	Dec.	Flute	Overall
33/64		.5156	4 13/16	6 5/8
17/32		.5313	4 13/16	6 5/8
35/64		.5469	4 13/16	6 5/8
9/16		.5625	4 13/16	6 5/8
37/64		.5781	4 13/16	6 5/8
19/32		.5938	5 3/16	7 1/8
39/64		.6094	5 3/16	7 1/8
5/8		.6250	5 3/16	7 1/8
41/64		.6406	5 3/16	7 1/8
21/32		.6563	5 3/16	7 1/8

21/32	.6563	5 3/16	7 1/8
43/64	.6719	5 5/8	7 5/8
11/16	.6875	5 5/8	7 5/8
45/64	.7031	5 5/8	7 5/8
23/32	.7188	5 5/8	7 5/8
47/64	.7344	5 5/8	7 5/8
3/4	.7500	5 13/16	8

CARMET
TOOLS & INSERTS



TWIST DRILLS — CARBIDE TIPPED
JOBBERS LENGTH — 135° POINT — METRIC

For drilling abrasive and tough materials.

Carbide tips brazed to hardened tool steel bodies.

Tool Diameter		Length			
		Flute		Overall	
mm	Inch	mm	Inch	mm	Inch
3.0	.1181	41.0	1 5/8	70.0	2 3/4
3.1	.1220	41.0	1 5/8	70.0	2 3/4
3.2	.1260	41.0	1 5/8	70.0	2 3/4
3.3	.1299	44.0	1 3/4	73.0	2 7/8
3.4	.1339	44.0	1 3/4	73.0	2 7/8
3.5	.1378	44.0	1 3/4	73.0	2 7/8
3.6	.1417	48.0	1 7/8	76.0	3
3.7	.1457	48.0	1 7/8	76.0	3
3.8	.1496	48.0	1 7/8	76.0	3
3.9	.1535	51.0	2	79.0	3 1/8
4.0	.1575	54.0	2 1/8	83.0	3 1/4
4.1	.1614	54.0	2 1/8	83.0	3 1/4
4.2	.1654	54.0	2 1/8	83.0	3 1/4
4.3	.1693	54.0	2 1/8	83.0	3 1/4
4.4	.1732	56.0	2 3/16	86.0	3 3/8
4.5	.1772	56.0	2 3/16	86.0	3 3/8
4.6	.1811	56.0	2 3/16	86.0	3 3/8
4.7	.1850	59.0	2 5/16	89.0	3 1/2
4.8	.1890	59.0	2 5/16	89.0	3 1/2
4.9	.1929	62.0	2 7/16	92.0	3 5/8
5.0	.1969	62.0	2 7/16	92.0	3 5/8
5.1	.2008	62.0	2 7/16	92.0	3 5/8
5.2	.2047	64.0	2 1/2	95.0	3 3/4
5.3	.2087	64.0	2 1/2	95.0	3 3/4
5.4	.2126	64.0	2 1/2	95.0	3 3/4

Tool Diameter		Length			
		Flute		Overall	
mm	Inch	mm	Inch	mm	Inch
5.5	.2165	64.0	2 1/2	95.0	3 3/4
5.6	.2205	67.0	2 5/8	98.0	3 7/8
5.7	.2244	67.0	2 5/8	98.0	3 7/8
5.8	.2283	67.0	2 5/8	98.0	3 7/8
5.9	.2323	67.0	2 5/8	98.0	3 7/8
6.0	.2362	70.0	2 3/4	102.0	4
6.1	.2402	70.0	2 3/4	102.0	4
6.2	.2441	70.0	2 3/4	102.0	4
6.3	.2480	70.0	2 3/4	102.0	4
6.4	.2520	73.0	2 7/8	105.0	4 1/8
6.5	.2559	73.0	2 7/8	105.0	4 1/8
6.6	.2598	73.0	2 7/8	105.0	4 1/8
6.7	.2638	73.0	2 7/8	105.0	4 1/8
6.8	.2677	73.0	2 7/8	105.0	4 1/8
6.9	.2717	73.0	2 7/8	105.0	4 1/8
7.0	.2756	73.0	2 7/8	105.0	4 1/8
7.1	.2795	75.0	2 15/16	108.0	4 1/4
7.2	.2835	75.0	2 15/16	108.0	4 1/4
7.3	.2874	75.0	2 15/16	108.0	4 1/4
7.4	.2913	78.0	3 1/16	111.0	4 3/8
7.5	.2953	78.0	3 1/16	111.0	4 3/8
7.6	.2992	78.0	3 1/16	111.0	4 3/8
7.7	.3031	81.0	3 3/16	114.0	4 1/2
7.8	.3071	81.0	3 3/16	114.0	4 1/2
7.9	.3110	81.0	3 3/16	114.0	4 1/2
8.0	.3150	81.0	3 3/16	114.0	4 1/2
8.1	.3189	84.0	3 5/16	117.0	4 5/8
8.2	.3228	84.0	3 5/16	117.0	4 5/8
8.3	.3268	84.0	3 5/16	117.0	4 5/8

Tool Diameter		Length			
		Flute		Overall	
mm	Inch	mm	Inch	mm	Inch
8.4	.3307	87.0	3 ⁷ / ₁₆	121.0	4 ³ / ₄
8.5	.3346	87.0	3 ⁷ / ₁₆	121.0	4 ³ / ₄
8.6	.3386	87.0	3 ⁷ / ₁₆	121.0	4 ³ / ₄
8.7	.3425	87.0	3 ⁷ / ₁₆	121.0	4 ³ / ₄
8.8	.3465	89.0	3 ¹ / ₂	124.0	4 ⁷ / ₈
8.9	.3504	89.0	3 ¹ / ₂	124.0	4 ⁷ / ₈
9.0	.3543	89.0	3 ¹ / ₂	124.0	4 ⁷ / ₈
9.1	.3583	89.0	3 ¹ / ₂	124.0	4 ⁷ / ₈
9.2	.3622	92.0	3 ⁵ / ₈	127.0	5
9.3	.3661	92.0	3 ⁵ / ₈	127.0	5
9.4	.3701	92.0	3 ⁵ / ₈	127.0	5
9.5	.3740	92.0	3 ⁵ / ₈	127.0	5
9.6	.3780	95.0	3 ³ / ₄	130.0	5 ¹ / ₈
9.7	.3819	95.0	3 ³ / ₄	130.0	5 ¹ / ₈
9.8	.3858	95.0	3 ³ / ₄	130.0	5 ¹ / ₈
9.9	.3898	95.0	3 ³ / ₄	130.0	5 ¹ / ₈
10.0	.3937	95.0	3 ³ / ₄	130.0	5 ¹ / ₈
10.1	.3976	98.0	3 ⁷ / ₈	133.0	5 ¹ / ₄
10.2	.4016	98.0	3 ⁷ / ₈	133.0	5 ¹ / ₄
10.3	.4055	98.0	3 ⁷ / ₈	133.0	5 ¹ / ₄
10.4	.4094	98.0	3 ⁷ / ₈	133.0	5 ¹ / ₄
10.5	.4134	98.0	3 ⁷ / ₈	133.0	5 ¹ / ₄
10.6	.4173	100.0	3 ¹⁵ / ₁₆	137.0	5 ³ / ₈
10.7	.4213	100.0	3 ¹⁵ / ₁₆	137.0	5 ³ / ₈
10.8	.4252	103.0	4 ¹ / ₁₆	140.0	5 ¹ / ₂
10.9	.4291	103.0	4 ¹ / ₁₆	140.0	5 ¹ / ₂
11.0	.4331	103.0	4 ¹ / ₁₆	140.0	5 ¹ / ₂
11.1	.4370	103.0	4 ¹ / ₁₆	140.0	5 ¹ / ₂
11.2	.4409	106.0	4 ³ / ₁₆	143.0	5 ⁵ / ₈

Tool Diameter		Length			
		Flute		Overall	
mm	Inch	mm	Inch	mm	Inch
11.3	.4449	106.0	4 ³ / ₁₆	143.0	5 ⁵ / ₈
11.4	.4488	106.0	4 ³ / ₁₆	143.0	5 ⁵ / ₈
11.5	.4528	106.0	4 ³ / ₁₆	143.0	5 ⁵ / ₈
11.6	.4567	110.0	4 ⁵ / ₁₆	146.0	5 ³ / ₄
11.7	.4606	110.0	4 ⁵ / ₁₆	146.0	5 ³ / ₄
11.8	.4646	110.0	4 ⁵ / ₁₆	146.0	5 ³ / ₄
11.9	.4685	110.0	4 ⁵ / ₁₆	146.0	5 ³ / ₄
12.0	.4724	111.0	4 ³ / ₈	149.0	5 ⁷ / ₈
12.1	.4764	111.0	4 ³ / ₈	149.0	5 ⁷ / ₈
12.2	.4803	111.0	4 ³ / ₈	149.0	5 ⁷ / ₈
12.3	.4843	111.0	4 ³ / ₈	149.0	5 ⁷ / ₈
12.4	.4882	114.0	4 ¹ / ₂	152.0	6
12.5	.4921	114.0	4 ¹ / ₂	152.0	6
12.6	.4961	114.0	4 ¹ / ₂	152.0	6
12.7	.5000	114.0	4 ¹ / ₂	152.0	6
12.8	.5039	114.0	4 ¹ / ₂	152.0	6
12.9	.5079	114.0	4 ¹ / ₂	152.0	6
13.0	.5118	114.0	4 ¹ / ₂	152.0	6
13.5	.5315	122.0	4 ¹³ / ₁₆	168.0	6 ⁵ / ₈
14.0	.5512	122.0	4 ¹³ / ₁₆	168.0	6 ⁵ / ₈
14.5	.5709	122.0	4 ¹³ / ₁₆	168.0	6 ⁵ / ₈
15.0	.5906	132.0	5 ³ / ₁₆	181.0	7 ¹ / ₈
15.5	.6102	132.0	5 ³ / ₁₆	181.0	7 ¹ / ₈
16.0	.6299	132.0	5 ³ / ₁₆	181.0	7 ¹ / ₈
16.5	.6496	132.0	5 ³ / ₁₆	181.0	7 ¹ / ₈
17.0	.6693	143.0	5 ⁵ / ₈	194.0	7 ⁵ / ₈
17.5	.6890	143.0	5 ⁵ / ₈	194.0	7 ⁵ / ₈
18.0	.7087	143.0	5 ⁵ / ₈	194.0	7 ⁵ / ₈
18.5	.7283	143.0	5 ⁵ / ₈	194.0	7 ⁵ / ₈

Tool		Length			
Diameter		Flute		Overall	
mm	Inch	mm	Inch	mm	Inch
19.0	.7480	148.0	5 13/16	203.0	8



COBALT DRILLS FOR STEEL

JOBBERS LENGTH — 135° SPLIT POINT

For drilling low and medium carbon steels, steel alloys, and stainless steel.

Tool Diameter			Length	
Frac.	Wire / Letter	Dec.	Flute	Overall
	60	.0400	1 1/16	1 5/8
	59	.0410	1 1/16	1 5/8
	58	.0420	1 1/16	1 5/8
	57	.0430	3/4	1 3/4

Tool Diameter			Length	
Frac.	Wire / Letter	Dec.	Flute	Overall
	56	.0465	$\frac{3}{4}$	$1 \frac{3}{4}$
	55	.0520	$\frac{7}{8}$	$1 \frac{7}{8}$
	54	.0550	$\frac{7}{8}$	$1 \frac{7}{8}$
	53	.0595	$\frac{7}{8}$	$1 \frac{7}{8}$
$\frac{1}{16}$		.0625	$\frac{7}{8}$	$1 \frac{7}{8}$
	52	.0635	$\frac{7}{8}$	$1 \frac{7}{8}$
	51	.0670	1	2
	50	.0700	1	2
	49	.0730	1	2
	48	.0760	1	2
$\frac{5}{64}$		.0781	1	2
	47	.0785	1	2
	46	.0810	$1 \frac{1}{8}$	$2 \frac{1}{8}$
	45	.0820	$1 \frac{1}{8}$	$2 \frac{1}{8}$
	44	.0860	$1 \frac{1}{8}$	$2 \frac{1}{8}$
	43	.0890	$1 \frac{1}{4}$	$2 \frac{1}{4}$
	42	.0935	$1 \frac{1}{4}$	$2 \frac{1}{4}$
$\frac{3}{32}$		.0938	$1 \frac{1}{4}$	$2 \frac{1}{4}$
	41	.0960	$1 \frac{3}{8}$	$2 \frac{3}{8}$
	40	.0980	$1 \frac{3}{8}$	$2 \frac{3}{8}$
	39	.0995	$1 \frac{3}{8}$	$2 \frac{3}{8}$
	38	.1015	$1 \frac{7}{16}$	$2 \frac{1}{2}$
	37	.1040	$1 \frac{7}{16}$	$2 \frac{1}{2}$
	36	.1065	$1 \frac{7}{16}$	$2 \frac{1}{2}$
$\frac{7}{64}$		.1094	$1 \frac{1}{2}$	$2 \frac{5}{8}$
	35	.1100	$1 \frac{1}{2}$	$2 \frac{5}{8}$
	34	.1110	$1 \frac{1}{2}$	$2 \frac{5}{8}$
	33	.1130	$1 \frac{1}{2}$	$2 \frac{5}{8}$
	32	.1160	$1 \frac{5}{8}$	$2 \frac{3}{4}$
	31	.1200	$1 \frac{5}{8}$	$2 \frac{3}{4}$

Tool Diameter			Length	
Frac.	Wire / Letter	Dec.	Flute	Overall
1/8		.1250	1 5/8	2 3/4
	30	.1285	1 5/8	2 3/4
9/64	29	.1360	1 3/4	2 7/8
	28	.1405	1 3/4	2 7/8
		.1406	1 3/4	2 7/8
	27	.1440	1 7/8	3
	26	.1470	1 7/8	3
	25	.1495	1 7/8	3
	24	.1520	2	3 1/8
	23	.1540	2	3 1/8
5/32		.1563	2	3 1/8
	22	.1570	2	3 1/8
	21	.1590	2 1/8	3 1/4
	20	.1610	2 1/8	3 1/4
11/64	19	.1660	2 1/8	3 1/4
	18	.1695	2 1/8	3 1/4
		.1719	2 1/8	3 1/4
	17	.1730	2 3/16	3 3/8
	16	.1770	2 3/16	3 3/8
	15	.1800	2 3/16	3 3/8
	14	.1820	2 3/16	3 3/8
	13	.1850	2 5/16	3 1/2
3/16		.1875	2 5/16	3 1/2
	12	.1890	2 5/16	3 1/2
	11	.1910	2 5/16	3 1/2
	10	.1935	2 7/16	3 5/8
	9	.1960	2 7/16	3 5/8
	8	.1990	2 7/16	3 5/8
	7	.2010	2 7/16	3 5/8
	13/64		.2031	2 7/16	3 5/8

Tool Diameter			Length	
Frac.	Wire / Letter	Dec.	Flute	Overall
	6	.2040	2 1/2	3 3/4
	5	.2055	2 1/2	3 3/4
	4	.2090	2 1/2	3 3/4
	3	.2130	2 1/2	3 3/4
7/32		.2188	2 1/2	3 3/4
	2	.2210	2 5/8	3 7/8
	1	.2280	2 5/8	3 7/8
	A	.2340	2 5/8	3 7/8
15/64		.2344	2 5/8	3 7/8
	B	.2380	2 3/4	4
	C	.2420	2 3/4	4
	D	.2460	2 3/4	4
1/4		.2500	2 3/4	4
	F	.2570	2 7/8	4 1/8
	G	.2610	2 7/8	4 1/8
17/64		.2656	2 7/8	4 1/8
	H	.2660	2 7/8	4 1/8
	I	.2720	2 7/8	4 1/8
	J	.2770	2 7/8	4 1/8
	K	.2810	2 15/16	4 1/4
9/32		.2813	2 15/16	4 1/4
	L	.2900	2 15/16	4 1/4
	M	.2950	3 1/16	4 3/8
19/64		.2969	3 1/16	4 3/8
	N	.3020	3 1/16	4 3/8
5/16		.3125	3 3/16	4 1/2
	O	.3160	3 1/16	4 1/2
	P	.3230	3 5/16	4 5/8
21/64		.3281	3 5/16	4 5/8
	Q	.3320	3 7/16	4 3/4

Tool Diameter			Length	
Frac.	Wire / Letter	Dec.	Flute	Overall
11/32	R	.3390	3 7/16	4 3/4
		.3438	3 7/16	4 3/4
23/64	S	.3480	3 1/2	4 7/8
	T	.3580	3 1/2	4 7/8
		.3594	3 1/2	4 7/8
	U	.3680	3 5/8	5
3/8		.3750	3 5/8	5
		.3770	3 5/8	5
		.3860	3 3/4	5 1/8
		.3906	3 3/4	5 1/8
25/64				
13/32	X	.3970	3 3/4	5 1/8
	Y	.4040	3 7/8	5 1/4
		.4063	3 7/8	5 1/4
	Z	.4130	3 7/8	5 1/4
27/64		.4219	3 15/16	5 3/8
		.4375	4 1/16	5 1/2
		.4531	4 3/16	5 5/8
		.4688	4 5/16	5 3/4
7/16				
29/64				
15/32				
31/64		.4844	4 3/8	5 7/8
		.5000	4 1/2	6
1/2				



TWIST DRILLS — CARBIDE TIPPED
STUB LENGTH — 118° POINT

Stub length — 118° standard point

Tool Diameter			Length	
Frac.	Wire / Letter	Dec.	Flute	Overall
1/8	32	.1160	7/8	1 7/8
	31	.1200	7/8	1 7/8
		.1250	7/8	1 7/8
	30	.1285	15/16	1 15/16
9/64	29	.1360	15/16	1 15/16
	28	.1405	15/16	1 15/16
		.1406	15/16	1 15/16
	27	.1440	1	2 1/16
	26	.1470	1	2 1/16
	25	.1495	1	2 1/16
	24	.1520	1	2 1/16
	23	.1540	1	2 1/16
5/32		.1563	1	2 1/16
	22	.1570	1 1/16	2 1/8
	21	.1590	1 1/16	2 1/8
	20	.1610	1 1/16	2 1/8
11/64	19	.1660	1 1/16	2 1/8
	18	.1695	1 1/16	2 1/8
		.1719	1 1/16	2 1/8
	17	.1730	1 1/8	2 3/16
	16	.1770	1 1/8	2 3/16
	15	.1800	1 1/8	2 3/16

Tool Diameter			Length	
Frac.	Wire / Letter	Dec.	Flute	Overall
	14	.1820	1 1/8	2 3/16
	13	.1850	1 1/8	2 3/16
3/16		.1875	1 1/8	2 3/16
	12	.1890	1 3/16	2 1/4
	11	.1910	1 3/16	2 1/4
	10	.1935	1 3/16	2 1/4
	9	.1960	1 3/16	2 1/4

13/64	8	.1990	1 3/16	2 1/4
	7	.2010	1 3/16	2 1/4
		.2031	1 3/16	2 1/4
	6	.2040	1 1/4	2 3/8
	5	.2055	1 1/4	2 3/8
	4	.2090	1 1/4	2 3/8
	3	.2130	1 1/4	2 3/8
7/32		.2188	1 1/4	2 3/8
	2	.2210	1 5/16	2 7/16
	1	.2280	1 5/16	2 7/16
	A	.2340	1 5/16	2 7/16
15/64		.2344	1 5/16	2 7/16
	B	.2380	1 3/8	2 1/2
	C	.2420	1 3/8	2 1/2
	D	.2460	1 3/8	2 1/2
1/4	E	.2500	1 3/8	2 1/2

17/64	F	.2570	1 7/16	2 5/8
	G	.2610	1 7/16	2 5/8
		.2656	1 7/16	2 5/8
	H	.2660	1 1/2	2 11/16
	I	.2720	1 1/2	2 11/16
	J	.2770	1 1/2	2 11/16
	K	.2810	1 1/2	2 11/16
9/32		.2813	1 1/2	2 11/16
	L	.2900	1 9/16	2 3/4
	M	.2950	1 9/16	2 3/4
		.2969	1 9/16	2 3/4
5/16	N	.3020	1 5/8	2 13/16
		.3125	1 5/8	2 13/16
	O	.3160	1 11/16	2 15/16
	P	.3230	1 11/16	2 15/16
21/64		.3281	1 11/16	2 15/16
	Q	.3320	1 11/16	3
	R	.3390	1 11/16	3
		.3438	1 11/16	3
11/32	S	.3480	1 3/4	3 1/16
	T	.3580	1 3/4	3 1/16
		.3594	1 3/4	3 1/16
	U	.3680	1 13/16	3 1/8
3/8		.3750	1 13/16	3 1/8
	V	.3770	1 7/8	3 1/4
	W	.3860	1 7/8	3 1/4
		.3906	1 7/8	3 1/4
25/64	X	.3970	1 15/16	3 5/16
	Y	.4040	1 15/16	3 5/16
		.4063	1 15/16	3 5/16
	Z	.4130	2	3 3/8
27/64		.4219	2	3 3/8

$\frac{7}{16}$	.4375	$2 \frac{1}{16}$	$3 \frac{7}{16}$
$\frac{29}{64}$	.4531	$2 \frac{1}{8}$	$3 \frac{9}{16}$
$\frac{15}{32}$	.4688	$2 \frac{1}{8}$	$3 \frac{5}{8}$
$\frac{31}{64}$	.4844	$2 \frac{3}{16}$	$3 \frac{11}{16}$
$\frac{1}{2}$	.5000	$2 \frac{1}{4}$	$3 \frac{3}{4}$
$\frac{33}{64}$	.5156	$2 \frac{3}{8}$	$3 \frac{7}{8}$
$\frac{17}{32}$	.5313	$2 \frac{3}{8}$	$3 \frac{7}{8}$
$\frac{35}{64}$	.5469	$2 \frac{1}{2}$	4
$\frac{9}{16}$	.5625	$2 \frac{1}{2}$	4
$\frac{37}{64}$	.5781	$2 \frac{5}{8}$	$4 \frac{1}{8}$
$\frac{19}{32}$	.5938	$2 \frac{5}{8}$	$4 \frac{1}{8}$
$\frac{39}{64}$	.6094	$2 \frac{3}{4}$	$4 \frac{1}{4}$
$\frac{5}{8}$	.6250	$2 \frac{3}{4}$	$4 \frac{1}{4}$
$\frac{41}{64}$	.6406	$2 \frac{7}{8}$	$4 \frac{1}{2}$
$\frac{21}{32}$	.6563	$2 \frac{7}{8}$	$4 \frac{1}{2}$
$\frac{43}{64}$	.6719	$2 \frac{7}{8}$	$4 \frac{5}{8}$
$\frac{11}{16}$	.6875	$2 \frac{7}{8}$	$4 \frac{5}{8}$
$\frac{45}{64}$	.7031	3	$4 \frac{3}{4}$
$\frac{23}{32}$	.7188	3	$4 \frac{3}{4}$
$\frac{47}{64}$	.7344	$3 \frac{1}{8}$	5
$\frac{3}{4}$	.7500	$3 \frac{1}{8}$	5
$\frac{49}{64}$	.7656	$3 \frac{1}{4}$	$5 \frac{1}{8}$
$\frac{25}{32}$	.7813	$3 \frac{1}{4}$	$5 \frac{1}{8}$
$\frac{51}{64}$	.7969	$3 \frac{3}{8}$	$5 \frac{1}{4}$
$\frac{13}{16}$	.8125	$3 \frac{3}{8}$	$5 \frac{1}{4}$
$\frac{53}{64}$	.8281	$3 \frac{1}{2}$	$5 \frac{3}{8}$
$\frac{27}{32}$	.8438	$3 \frac{1}{2}$	$5 \frac{3}{8}$
$\frac{55}{64}$	.8594	$3 \frac{1}{2}$	$5 \frac{1}{2}$
$\frac{7}{8}$	.8750	$3 \frac{1}{2}$	$5 \frac{1}{2}$
$\frac{57}{64}$	.8906	$3 \frac{5}{8}$	$5 \frac{5}{8}$
$\frac{29}{32}$	.9063	$3 \frac{5}{8}$	$5 \frac{5}{8}$
$\frac{59}{64}$	.9219	$3 \frac{3}{4}$	$5 \frac{3}{4}$

15/16	.9375	3 3/4	5 3/4
61/64	.9531	3 7/8	5 7/8
31/32	.9688	3 7/8	5 7/8
63/64	.9844	4	6
1	1.0000	4	6
1 1/32	1.0313	4	6 1/4
1 1/16	1.0625	4	6 1/4
1 3/32	1.0938	4	6 3/8
1 1/8	1.1250	4	6 3/8
1 5/32	1.1563	4 1/4	6 5/8
1 3/16	1.1875	4 1/4	6 5/8
1 7/32	1.2188	4 3/8	6 3/4
1 1/4	1.2500	4 3/8	6 3/4

* 1" Shank diameter x 2 1/4" long

CARMET
TOOLS & INSERTS



**TWIST DRILLS — CARBIDE TIPPED
STUB LENGTH — 118° POINT — METRIC**

Stub length — 118° standard point

Tool Diameter		Length			
		Flute		Overall	
mm	Inch	mm	Inch	mm	Inch
3.0	.1181	22	$\frac{7}{8}$	48	$1 \frac{7}{8}$
3.1	.1220	22	$\frac{7}{8}$	48	$1 \frac{7}{8}$
3.2	.1260	24	$\frac{15}{16}$	49	$1 \frac{15}{16}$
3.3	.1299	24	$\frac{15}{16}$	49	$1 \frac{15}{16}$
3.4	.1339	24	$\frac{15}{16}$	49	$1 \frac{15}{16}$
3.5	.1378	24	$\frac{15}{16}$	49	$1 \frac{15}{16}$
3.6	.1417	25	1	52	$2 \frac{1}{16}$
3.7	.1457	25	1	52	$2 \frac{1}{16}$
3.8	.1496	25	1	52	$2 \frac{1}{16}$
3.9	.1535	25	1	52	$2 \frac{1}{16}$
4.0	.1575	27	$1 \frac{1}{16}$	54	$2 \frac{1}{8}$
4.1	.1614	27	$1 \frac{1}{16}$	54	$2 \frac{1}{8}$
4.2	.1654	27	$1 \frac{1}{16}$	54	$2 \frac{1}{8}$
4.3	.1693	27	$1 \frac{1}{16}$	54	$2 \frac{1}{8}$
4.4	.1732	29	$1 \frac{1}{8}$	56	$2 \frac{3}{16}$
4.5	.1772	29	$1 \frac{1}{8}$	56	$2 \frac{3}{16}$
4.6	.1811	29	$1 \frac{1}{8}$	56	$2 \frac{3}{16}$
4.7	.1850	29	$1 \frac{1}{8}$	56	$2 \frac{3}{16}$
4.8	.1890	30	$1 \frac{3}{16}$	57	$2 \frac{1}{4}$
4.9	.1929	30	$1 \frac{3}{16}$	57	$2 \frac{1}{4}$
5.0	.1969	30	$1 \frac{3}{16}$	57	$2 \frac{1}{4}$
5.1	.2008	30	$1 \frac{3}{16}$	57	$2 \frac{1}{4}$
5.2	.2047	32	$1 \frac{1}{4}$	60	$2 \frac{3}{8}$
5.3	.2087	32	$1 \frac{1}{4}$	60	$2 \frac{3}{8}$
5.4	.2126	32	$1 \frac{1}{4}$	60	$2 \frac{3}{8}$
5.5	.2165	32	$1 \frac{1}{4}$	60	$2 \frac{3}{8}$
5.6	.2205	33	$1 \frac{5}{16}$	62	$2 \frac{7}{16}$
5.7	.2244	33	$1 \frac{5}{16}$	62	$2 \frac{7}{16}$
5.8	.2283	33	$1 \frac{5}{16}$	62	$2 \frac{7}{16}$

Tool Diameter		Length			
		Flute		Overall	
mm	Inch	mm	Inch	mm	Inch
5.9	.2323	33	1 5/16	62	2 7/16
6.0	.2362	35	1 3/8	64	2 1/2
6.1	.2402	35	1 3/8	64	2 1/2
6.2	.2441	35	1 3/8	64	2 1/2
6.3	.2480	35	1 3/8	64	2 1/2
6.4	.2520	37	1 7/16	67	2 5/8
6.5	.2559	37	1 7/16	67	2 5/8
6.6	.2598	37	1 7/16	67	2 5/8
6.7	.2638	37	1 7/16	67	2 5/8
6.8	.2677	38	1 1/2	68	2 11/16
6.9	.2717	38	1 1/2	68	2 11/16
7.0	.2756	38	1 1/2	68	2 11/16
7.1	.2795	38	1 1/2	68	2 11/16
7.2	.2835	40	1 9/16	70	2 3/4
7.3	.2874	40	1 9/16	70	2 3/4
7.4	.2913	40	1 9/16	70	2 3/4
7.5	.2953	40	1 9/16	70	2 3/4
7.6	.2992	41	1 5/8	71	2 13/16
7.7	.3031	41	1 5/8	71	2 13/16
7.8	.3071	41	1 5/8	71	2 13/16
7.9	.3110	41	1 5/8	71	2 13/16
8.0	.3150	43	1 11/16	75	2 15/16
8.1	.3189	43	1 11/16	75	2 15/16
8.2	.3228	43	1 11/16	75	2 15/16
8.3	.3268	43	1 11/16	75	2 15/16
8.4	.3307	43	1 11/16	76	3
8.5	.3346	43	1 11/16	76	3
8.6	.3386	43	1 11/16	76	3
8.7	.3425	43	1 11/16	76	3

Tool Diameter		Length			
		Flute		Overall	
mm	Inch	mm	Inch	mm	Inch
8.8	.3465	44	1 3/4	78	3 1/16
8.9	.3504	44	1 3/4	78	3 1/16
9.0	.3543	44	1 3/4	78	3 1/16
9.1	.3583	44	1 3/4	78	3 1/16
9.2	.3622	46	1 13/16	79	3 1/8
9.3	.3661	46	1 13/16	79	3 1/8
9.4	.3701	46	1 13/16	79	3 1/8
9.5	.3740	46	1 13/16	79	3 1/8
9.6	.3780	48	1 7/8	83	3 1/4
9.7	.3819	48	1 7/8	83	3 1/4
9.8	.3858	48	1 7/8	83	3 1/4
9.9	.3898	48	1 7/8	83	3 1/4
10.0	.3937	49	1 15/16	84	3 5/16
10.5	.4134	51	2	86	3 3/8
11.0	.4331	52	2 1/16	87	3 7/16
11.5	.4528	54	2 1/8	90	3 9/16
12.0	.4724	56	2 3/16	94	3 11/16
12.5	.4921	57	2 1/4	95	3 3/4
13.0	.5118	60	2 3/8	98	3 7/8
13.5	.5315	60	2 3/8	98	3 7/8
14.0	.5512	64	2 1/2	102	4
14.5	.5709	67	2 5/8	105	4 1/8
15.0	.5906	67	2 5/8	105	4 1/8
15.5	.6102	70	2 3/4	108	4 1/4
16.0	.6299	73	2 7/8	114	4 1/2
16.5	.6496	73	2 7/8	114	4 1/2
17.0	.6693	73	2 7/8	117	4 5/8
17.5	.6890	76	3	121	4 3/4
18.0	.7087	76	3	121	4 3/4

Tool Diameter		Length			
		Flute		Overall	
mm	Inch	mm	Inch	mm	Inch
18.5	.7283	79	3 1/8	127	5
19.0	.7480	79	3 1/8	127	5
19.5	.7677	83	3 1/4	130	5 1/8
20.0	.7874	86	3 3/8	133	5 1/4
20.5	.8071	86	3 3/8	133	5 1/4
21.0	.8268	89	3 1/2	137	5 3/8
21.5	.8465	89	3 1/2	140	5 1/2
22.0	.8661	89	3 1/2	140	5 1/2
22.5	.8858	92	3 5/8	143	5 5/8
23.0	.9055	92	3 5/8	143	5 5/8
23.5	.9252	95	3 3/4	146	5 3/4
24.0	.9449	98	3 7/8	149	5 7/8
24.5	.9646	98	3 7/8	149	5 7/8
25.0	.9843	102	4	152	6

CARMET
TOOLS & INSERTS



**TWIST DRILLS — CARBIDE TIPPED
STUB LENGTH — 135° POINT**

Tool Diameter			Length	
Frac.	Wire / Letter	Dec.	Flute	Overall
1/8	32	.1160	7/8	1 7/8
	31	.1200	7/8	1 7/8
		.1250	7/8	1 7/8
	30	.1285	15/16	1 15/16
9/64	29	.1360	15/16	1 15/16
	28	.1405	15/16	1 15/16
		.1406	15/16	1 15/16
	27	.1440	1	2 1/16
	26	.1470	1	2 1/16
	25	.1495	1	2 1/16
	24	.1520	1	2 1/16
	23	.1540	1	2 1/16
5/32		.1563	1	2 1/16
	22	.1570	1 1/16	2 1/8
	21	.1590	1 1/16	2 1/8
	20	.1610	1 1/16	2 1/8
11/64	19	.1660	1 1/16	2 1/8
	18	.1695	1 1/16	2 1/8
		.1719	1 1/16	2 1/8
	17	.1730	1 1/8	2 3/16
	16	.1770	1 1/8	2 3/16
	15	.1800	1 1/8	2 3/16
	14	.1820	1 1/8	2 3/16
	13	.1850	1 1/8	2 3/16
3/16		.1875	1 1/8	2 3/16
	12	.1890	1 3/16	2 1/4
	11	.1910	1 3/16	2 1/4

Tool Diameter			Length	
Frac.	Wire / Letter	Dec.	Flute	Overall
	10	.1935	1 ³ / ₁₆	2 ¹ / ₄
¹³ / ₆₄	9	.1960	1 ³ / ₁₆	2 ¹ / ₄
	8	.1990	1 ³ / ₁₆	2 ¹ / ₄
	7	.2010	1 ³ / ₁₆	2 ¹ / ₄
		.2031	1 ³ / ₁₆	2 ¹ / ₄
	6	.2040	1 ¹ / ₄	2 ³ / ₈
	5	.2055	1 ¹ / ₄	2 ³ / ₈
	4	.2090	1 ¹ / ₄	2 ³ / ₈
	3	.2130	1 ¹ / ₄	2 ³ / ₈

	3	.2130	1 ¹ / ₄	2 ³ / ₈
⁷ / ₃₂		.2188	1 ¹ / ₄	2 ³ / ₈
	2	.2210	1 ⁵ / ₁₆	2 ⁷ / ₁₆
	1	.2280	1 ⁵ / ₁₆	2 ⁷ / ₁₆
	A	.2340	1 ⁵ / ₁₆	2 ⁷ / ₁₆
¹⁵ / ₆₄		.2344	1 ⁵ / ₁₆	2 ⁷ / ₁₆
	B	.2380	1 ³ / ₈	2 ¹ / ₂
	C	.2420	1 ³ / ₈	2 ¹ / ₂
	D	.2460	1 ³ / ₈	2 ¹ / ₂
¹ / ₄	E	.2500	1 ³ / ₈	2 ¹ / ₂
	F	.2570	1 ⁷ / ₁₆	2 ⁵ / ₈
	G	.2610	1 ⁷ / ₁₆	2 ⁵ / ₈
	¹⁷ / ₆₄	.2656	1 ⁷ / ₁₆	2 ⁵ / ₈
	H	.2660	1 ¹ / ₂	2 ¹¹ / ₁₆
	I	.2720	1 ¹ / ₂	2 ¹¹ / ₁₆
	J	.2770	1 ¹ / ₂	2 ¹¹ / ₁₆
	K	.2810	1 ¹ / ₂	2 ¹¹ / ₁₆
⁹ / ₃₂		.2813	1 ¹ / ₂	2 ¹¹ / ₁₆
	L	.2900	1 ⁹ / ₁₆	2 ³ / ₄

$\frac{19}{64}$	M	.2950	$1 \frac{9}{16}$	$2 \frac{3}{4}$
		.2969	$1 \frac{9}{16}$	$2 \frac{3}{4}$
$\frac{5}{16}$	N	.3020	$1 \frac{5}{8}$	$2 \frac{13}{16}$
		.3125	$1 \frac{5}{8}$	$2 \frac{13}{16}$
	O	.3160	$1 \frac{11}{16}$	$2 \frac{15}{16}$
	P	.3230	$1 \frac{11}{16}$	$2 \frac{15}{16}$
$\frac{21}{64}$		.3281	$1 \frac{11}{16}$	$2 \frac{15}{16}$
	Q	.3320	$1 \frac{11}{16}$	3
	R	.3390	$1 \frac{11}{16}$	3
	$\frac{11}{32}$	.3438	$1 \frac{11}{16}$	3
$\frac{23}{64}$	S	.3480	$1 \frac{3}{4}$	$3 \frac{1}{16}$
	T	.3580	$1 \frac{3}{4}$	$3 \frac{1}{16}$
		.3594	$1 \frac{3}{4}$	$3 \frac{1}{16}$
	U	.3680	$1 \frac{13}{16}$	$3 \frac{1}{8}$
$\frac{3}{8}$		.3750	$1 \frac{13}{16}$	$3 \frac{1}{8}$
	V	.3770	$1 \frac{7}{8}$	$3 \frac{1}{4}$
	W	.3860	$1 \frac{7}{8}$	$3 \frac{1}{4}$
	$\frac{25}{64}$	.3906	$1 \frac{7}{8}$	$3 \frac{1}{4}$
$\frac{13}{32}$	X	.3970	$1 \frac{15}{16}$	$3 \frac{5}{16}$
	Y	.4040	$1 \frac{15}{16}$	$3 \frac{5}{16}$
		.4063	$1 \frac{15}{16}$	$3 \frac{5}{16}$
	Z	.4130	2	$3 \frac{3}{8}$
$\frac{27}{64}$		.4219	2	$3 \frac{3}{8}$
$\frac{7}{16}$		.4375	$2 \frac{1}{16}$	$3 \frac{7}{16}$
$\frac{29}{64}$		.4531	$2 \frac{1}{8}$	$3 \frac{9}{16}$
$\frac{15}{32}$		.4688	$2 \frac{1}{8}$	$3 \frac{5}{8}$
$\frac{31}{64}$		.4844	$2 \frac{3}{16}$	$3 \frac{11}{16}$
$\frac{1}{2}$		.5000	$2 \frac{1}{4}$	$3 \frac{3}{4}$
$\frac{33}{64}$		.5156	$2 \frac{3}{8}$	$3 \frac{7}{8}$
$\frac{17}{32}$		.5313	$2 \frac{3}{8}$	$3 \frac{7}{8}$
$\frac{35}{64}$		.5469	$2 \frac{1}{2}$	4
$\frac{9}{16}$		.5625	$2 \frac{1}{2}$	4

$\frac{37}{64}$	.5781	$2 \frac{5}{8}$	$4 \frac{1}{8}$
$\frac{19}{32}$	.5938	$2 \frac{5}{8}$	$4 \frac{1}{8}$
$\frac{39}{64}$	.6094	$2 \frac{3}{4}$	$4 \frac{1}{4}$
$\frac{5}{8}$	.6250	$2 \frac{3}{4}$	$4 \frac{1}{4}$
$\frac{41}{64}$	.6406	$2 \frac{7}{8}$	$4 \frac{1}{2}$
$\frac{21}{32}$	.6563	$2 \frac{7}{8}$	$4 \frac{1}{2}$
$\frac{43}{64}$	.6719	$2 \frac{7}{8}$	$4 \frac{5}{8}$
$\frac{11}{16}$	.6875	$2 \frac{7}{8}$	$4 \frac{5}{8}$
$\frac{45}{64}$	.7031	3	$4 \frac{3}{4}$
$\frac{23}{32}$	.7188	3	$4 \frac{3}{4}$
$\frac{47}{64}$	.7344	$3 \frac{1}{8}$	5
$\frac{3}{4}$	.7500	$3 \frac{1}{8}$	5
$\frac{49}{64}$	.7656	$3 \frac{1}{4}$	$5 \frac{1}{8}$
$\frac{25}{32}$	.7813	$3 \frac{1}{4}$	$5 \frac{1}{8}$
$\frac{51}{64}$	.7969	$3 \frac{3}{8}$	$5 \frac{1}{4}$
$\frac{13}{16}$	.8125	$3 \frac{3}{8}$	$5 \frac{1}{4}$
$\frac{53}{64}$	.8281	$3 \frac{1}{2}$	$5 \frac{3}{8}$
$\frac{27}{32}$	.8438	$3 \frac{1}{2}$	$5 \frac{3}{8}$
$\frac{55}{64}$	.8594	$3 \frac{1}{2}$	$5 \frac{1}{2}$
$\frac{7}{8}$	.8750	$3 \frac{1}{2}$	$5 \frac{1}{2}$
$\frac{57}{64}$	.8906	$3 \frac{5}{8}$	$5 \frac{5}{8}$
$\frac{29}{32}$	.9063	$3 \frac{5}{8}$	$5 \frac{5}{8}$
$\frac{59}{64}$	.9219	$3 \frac{3}{4}$	$5 \frac{3}{4}$
$\frac{15}{16}$	.9375	$3 \frac{3}{4}$	$5 \frac{3}{4}$
$\frac{61}{64}$	.9531	$3 \frac{7}{8}$	$5 \frac{7}{8}$
$\frac{31}{32}$	.9688	$3 \frac{7}{8}$	$5 \frac{7}{8}$
$\frac{63}{64}$	.9844	4	6
1	1.0000	4	6
$1 \frac{1}{32}$	1.0313	4	$6 \frac{1}{4}$
$1 \frac{1}{16}$	1.0625	4	$6 \frac{1}{4}$
$1 \frac{3}{32}$	1.0938	4	$6 \frac{3}{8}$
$1 \frac{1}{8}$	1.1250	4	$6 \frac{3}{8}$

1 5/32	1.1563	4 1/4	6 5/8
1 3/16	1.1875	4 1/4	6 5/8
1 7/32	1.2188	4 3/8	6 3/4
1 1/4	1.2500	4 3/8	6 3/4

CARMET
TOOLS & INSERTS



**TWIST DRILLS — CARBIDE TIPPED
STUB LENGTH — 135° POINT — METRIC**

Tool Diameter		Length			
		Flute		Overall	
mm	Inch	mm	Inch	mm	Inch
3.0	.1181	22	7/8	48	1 7/8
3.1	.1220	22	7/8	48	1 7/8
3.2	.1260	24	15/16	49	1 15/16
3.3	.1299	24	15/16	49	1 15/16
3.4	.1339	24	15/16	49	1 15/16

Tool Diameter		Length			
		Flute		Overall	
mm	Inch	mm	Inch	mm	Inch
3.5	.1378	24	1 ⁵ / ₁₆	49	1 ¹⁵ / ₁₆
3.6	.1417	25	1	52	2 ¹ / ₁₆
3.7	.1457	25	1	52	2 ¹ / ₁₆
3.8	.1496	25	1	52	2 ¹ / ₁₆
3.9	.1535	25	1	52	2 ¹ / ₁₆
4.0	.1575	27	1 ¹ / ₁₆	54	2 ¹ / ₈
4.1	.1614	27	1 ¹ / ₁₆	54	2 ¹ / ₈
4.2	.1654	27	1 ¹ / ₁₆	54	2 ¹ / ₈
4.3	.1693	27	1 ¹ / ₁₆	54	2 ¹ / ₈
4.4	.1732	29	1 ¹ / ₈	56	2 ³ / ₁₆
4.5	.1772	29	1 ¹ / ₈	56	2 ³ / ₁₆
4.6	.1811	29	1 ¹ / ₈	56	2 ³ / ₁₆
4.7	.1850	29	1 ¹ / ₈	56	2 ³ / ₁₆
4.8	.1890	30	1 ³ / ₁₆	57	2 ¹ / ₄
4.9	.1929	30	1 ³ / ₁₆	57	2 ¹ / ₄
5.0	.1969	30	1 ³ / ₁₆	57	2 ¹ / ₄
5.1	.2008	30	1 ³ / ₁₆	57	2 ¹ / ₄
5.2	.2047	32	1 ¹ / ₄	60	2 ³ / ₈
5.3	.2087	32	1 ¹ / ₄	60	2 ³ / ₈
5.4	.2126	32	1 ¹ / ₄	60	2 ³ / ₈
5.5	.2165	32	1 ¹ / ₄	60	2 ³ / ₈
5.6	.2205	33	1 ⁵ / ₁₆	62	2 ⁷ / ₁₆
5.7	.2244	33	1 ⁵ / ₁₆	62	2 ⁷ / ₁₆
5.8	.2283	33	1 ⁵ / ₁₆	62	2 ⁷ / ₁₆
5.9	.2323	33	1 ⁵ / ₁₆	62	2 ⁷ / ₁₆
6.0	.2362	35	1 ³ / ₈	64	2 ¹ / ₂
6.1	.2402	35	1 ³ / ₈	64	2 ¹ / ₂
6.2	.2441	35	1 ³ / ₈	64	2 ¹ / ₂
6.3	.2480	35	1 ³ / ₈	64	2 ¹ / ₂

Tool Diameter		Length			
		Flute		Overall	
mm	Inch	mm	Inch	mm	Inch
6.4	.2520	37	1 ⁷ / ₁₆	67	2 ⁵ / ₈
6.5	.2559	37	1 ⁷ / ₁₆	67	2 ⁵ / ₈
6.6	.2598	37	1 ⁷ / ₁₆	67	2 ⁵ / ₈
6.7	.2638	37	1 ⁷ / ₁₆	67	2 ⁵ / ₈
6.8	.2677	38	1 ¹ / ₂	68	2 ¹¹ / ₁₆
6.9	.2717	38	1 ¹ / ₂	68	2 ¹¹ / ₁₆
7.0	.2756	38	1 ¹ / ₂	68	2 ¹¹ / ₁₆
7.1	.2795	38	1 ¹ / ₂	68	2 ¹¹ / ₁₆
7.2	.2835	40	1 ⁹ / ₁₆	70	2 ³ / ₄
7.3	.2874	40	1 ⁹ / ₁₆	70	2 ³ / ₄
7.4	.2913	40	1 ⁹ / ₁₆	70	2 ³ / ₄
7.5	.2953	40	1 ⁹ / ₁₆	70	2 ³ / ₄
7.6	.2992	41	1 ⁵ / ₈	71	2 ¹³ / ₁₆
7.7	.3031	41	1 ⁵ / ₈	71	2 ¹³ / ₁₆
7.8	.3071	41	1 ⁵ / ₈	71	2 ¹³ / ₁₆
7.9	.3110	41	1 ⁵ / ₈	71	2 ¹³ / ₁₆
8.0	.3150	43	1 ¹¹ / ₁₆	75	2 ¹⁵ / ₁₆
8.1	.3189	43	1 ¹¹ / ₁₆	75	2 ¹⁵ / ₁₆
8.2	.3228	43	1 ¹¹ / ₁₆	75	2 ¹⁵ / ₁₆
8.3	.3268	43	1 ¹¹ / ₁₆	75	2 ¹⁵ / ₁₆
8.4	.3307	43	1 ¹¹ / ₁₆	76	3
8.5	.3346	43	1 ¹¹ / ₁₆	76	3
8.6	.3386	43	1 ¹¹ / ₁₆	76	3
8.7	.3425	43	1 ¹¹ / ₁₆	76	3
8.8	.3465	44	1 ³ / ₄	78	3 ¹ / ₁₆
8.9	.3504	44	1 ³ / ₄	78	3 ¹ / ₁₆
9.0	.3543	44	1 ³ / ₄	78	3 ¹ / ₁₆
9.1	.3583	44	1 ³ / ₄	78	3 ¹ / ₁₆
9.2	.3622	46	1 ¹³ / ₁₆	79	3 ¹ / ₈

Tool Diameter		Length			
		Flute		Overall	
mm	Inch	mm	Inch	mm	Inch
9.3	.3661	46	1 ¹³ / ₁₆	79	3 ¹ / ₈
9.4	.3701	46	1 ¹³ / ₁₆	79	3 ¹ / ₈
9.5	.3740	46	1 ¹³ / ₁₆	79	3 ¹ / ₈
9.6	.3780	48	1 ⁷ / ₈	83	3 ¹ / ₄
9.7	.3819	48	1 ⁷ / ₈	83	3 ¹ / ₄
9.8	.3858	48	1 ⁷ / ₈	83	3 ¹ / ₄
9.9	.3898	48	1 ⁷ / ₈	83	3 ¹ / ₄
10.0	.3937	49	1 ¹⁵ / ₁₆	84	3 ⁵ / ₁₆
10.5	.4134	51	2	86	3 ³ / ₈
11.0	.4331	52	2 ¹ / ₁₆	87	3 ⁷ / ₁₆
11.5	.4528	54	2 ¹ / ₈	90	3 ⁹ / ₁₆
12.0	.4724	56	2 ³ / ₁₆	94	3 ¹¹ / ₁₆
12.5	.4921	57	2 ¹ / ₄	95	3 ³ / ₄
13.0	.5118	60	2 ³ / ₈	98	3 ⁷ / ₈
13.5	.5315	60	2 ³ / ₈	98	3 ⁷ / ₈
14.0	.5512	64	2 ¹ / ₂	102	4
14.5	.5709	67	2 ⁵ / ₈	105	4 ¹ / ₈
15.0	.5906	67	2 ⁵ / ₈	105	4 ¹ / ₈
15.5	.6102	70	2 ³ / ₄	108	4 ¹ / ₄
16.0	.6299	73	2 ⁷ / ₈	114	4 ¹ / ₂
16.5	.6496	73	2 ⁷ / ₈	114	4 ¹ / ₂
17.0	.6693	73	2 ⁷ / ₈	117	4 ⁵ / ₈
17.5	.6890	76	3	121	4 ³ / ₄
18.0	.7087	76	3	121	4 ³ / ₄
18.5	.7283	79	3 ¹ / ₈	127	5
19.0	.7480	79	3 ¹ / ₈	127	5
19.5	.7677	83	3 ¹ / ₄	130	5 ¹ / ₈
20.0	.7874	86	3 ³ / ₈	133	5 ¹ / ₄
20.5	.8071	86	3 ³ / ₈	133	5 ¹ / ₄

Tool Diameter		Length			
		Flute		Overall	
mm	Inch	mm	Inch	mm	Inch
21.0	.8268	89	3 ½	137	5 ¾
21.5	.8465	89	3 ½	140	5 ½
22.0	.8661	89	3 ½	140	5 ½
22.5	.8858	92	3 ⅝	143	5 ⅝
23.0	.9055	92	3 ⅝	143	5 ⅝
23.5	.9252	95	3 ¾	146	5 ¾
24.0	.9449	98	3 ⅞	149	5 ⅞
24.5	.9646	98	3 ⅞	149	5 ⅞
25.0	.9843	102	4	152	6



JOBBER LENGTH SOLID CARBIDE DRILL
JOBBERS LENGTH — 118° — SPLIT POINT

For drilling most types of material including steel and steel alloys.

Tool Diameter			Length	
FRAC.	WIRE LTR.	Dec.	Flute	Overall
1/32		.0313	5/16	1 1/4
	67	.0320	5/16	1 1/4
	66	.0330	5/16	1 1/4
	65	.0350	5/8	1 3/8
	64	.0360	5/8	1 3/8
	63	.0370	5/8	1 3/8
	62	.0380	5/8	1 3/8
	61	.0390	5/8	1 3/8
	60	.0400	3/4	1 1/2
	59	.0410	3/4	1 1/2
	58	.0420	3/4	1 1/2
	57	.0430	3/4	1 1/2
3/64	56	.0465	3/4	1 1/2
		.0469	3/4	1 1/2
	55	.0520	3/4	1 1/2
	54	.0550	3/4	1 1/2
1/16	53	.0595	3/4	1 1/2
		.0625	3/4	1 1/2
	52	.0635	3/4	1 1/2
	51	.0670	3/4	1 1/2
5/64	50	.0700	7/8	1 3/4
	49	.0730	7/8	1 3/4
	48	.0760	7/8	1 3/4
		.0781	7/8	1 3/4
	47	.0785	7/8	1 3/4
	46	.0810	7/8	1 3/4
	45	.0820	7/8	1 3/4

Tool Diameter			Length	
FRAC.	WIRE LTR.	Dec.	Flute	Overall
	44	.0860	1	2
3/32	43	.0890	1	2
	42	.0935	1	2
		.0938	1	2
	41	.0960	1	2
	40	.0980	1	2
	39	.0995	1 ¼	2 ¼
	38	.1015	1 ¼	2 ¼
	37	.1040	1 ¼	2 ¼
7/64	36	.1065	1 ¼	2 ¼
		.1094	1 ¼	2 ¼
	35	.1100	1 ¼	2 ¼
	34	.1110	1 ¼	2 ¼
1/8	33	.1130	1 ¼	2 ¼
	32	.1160	1 ¼	2 ¼
	31	.1200	1 ¼	2 ¼
		.1250	1 ¼	2 ¼
9/64	30	.1285	1 ¼	2 ¼
	29	.1360	1 3/8	2 ½
	28	.1405	1 3/8	2 ½
		.1406	1 3/8	2 ½
	27	.1440	1 3/8	2 ½
	26	.1470	1 3/8	2 ½
	25	.1495	1 3/8	2 ½
	24	.1520	1 3/8	2 ½
5/32	23	.1540	1 3/8	2 ½
		.1563	1 3/8	2 ½
	22	.1570	1 3/8	2 ½
	21	.1590	1 3/8	2 ½
	20	.1610	1 3/8	2 ½

Tool Diameter			Length	
FRAC.	WIRE LTR.	Dec.	Flute	Overall
11/64	19	.1660	1 5/8	2 3/4
	18	.1695	1 5/8	2 3/4
		.1719	1 5/8	2 3/4
	17	.1730	1 5/8	2 3/4
	16	.1770	1 5/8	2 3/4
	15	.1800	1 5/8	2 3/4
	14	.1820	1 5/8	2 3/4
3/16	13	.1850	1 5/8	2 3/4
		.1875	1 5/8	2 3/4
	12	.1890	1 5/8	2 3/4
	11	.1910	1 5/8	2 3/4
	10	.1935	1 5/8	2 3/4
	9	.1960	1 3/4	3
	8	.1990	1 3/4	3
	7	.2010	1 3/4	3
13/64		.2031	1 3/4	3
	6	.2040	1 3/4	3
	5	.2055	1 3/4	3
	4	.2090	1 3/4	3
7/32	3	.2130	1 3/4	3
		.2188	1 3/4	3
	2	.2210	1 3/4	3
	1	.2280	1 3/4	3
15/64	A	.2340	2	3 1/4
		.2344	2	3 1/4
	B	.2380	2	3 1/4
	C	.2420	2	3 1/4
1/4	D	.2460	2	3 1/4
	E	.2500	2	3 1/4
	F	.2570	2	3 1/4

Tool Diameter			Length	
FRAC.	WIRE LTR.	Dec.	Flute	Overall
	G	.2610	2 1/8	3 1/2
17/64		.2656	2 1/8	3 1/2
	H	.2660	2 1/8	3 1/2
	I	.2720	2 1/8	3 1/2
	J	.2770	2 1/8	3 1/2
9/32	K	.2810	2 1/8	3 1/2
		.2813	2 1/8	3 1/2
	L	.2900	2 1/8	3 1/2
	M	.2950	2 3/8	3 3/4
19/64 5/16		.2969	2 3/8	3 3/4
	N	.3020	2 3/8	3 3/4
		.3125	2 3/8	3 3/4
	O	.3160	2 3/8	3 3/4
21/64	P	.3230	2 3/8	3 3/4
		.3281	2 1/2	4
	Q	.3320	2 1/2	4
	R	.3390	2 1/2	4
11/32 23/64		.3438	2 1/2	4
	S	.3480	2 1/2	4
	T	.3580	2 3/4	4 1/4
		.3594	2 3/4	4 1/4
3/8	U	.3680	2 3/4	4 1/4
		.3750	2 3/4	4 1/4
	V	.3770	2 3/4	4 1/4
	W	.3860	2 7/8	4 1/2
25/64 13/32		.3906	2 7/8	4 1/2
	X	.3970	2 7/8	4 1/2
	Y	.4040	2 7/8	4 1/2
		.4063	2 7/8	4 1/2
	Z	.4130	2 7/8	4 1/2

Tool Diameter			Length	
FRAC.	WIRE LTR.	Dec.	Flute	Overall
$\frac{27}{64}$		.4219	2 $\frac{7}{8}$	4 $\frac{1}{2}$
$\frac{7}{16}$		.4375	2 $\frac{7}{8}$	4 $\frac{1}{2}$
$\frac{29}{64}$		.4531	3	4 $\frac{3}{4}$
$\frac{15}{32}$		.4688	3	4 $\frac{3}{4}$
$\frac{31}{64}$		.4844	3	4 $\frac{3}{4}$
$\frac{1}{2}$		.5000	3	4 $\frac{3}{4}$
$\frac{9}{16}$		.5625	3 $\frac{1}{4}$	5
$\frac{5}{8}$		.6250	3 $\frac{1}{4}$	5
$\frac{3}{4}$		.7500	3 $\frac{3}{4}$	6



JOBBER LENGTH SOLID CARBIDE DRILL
JOBBERS LENGTH — 118° — SPLIT POINT

For drilling most types of material including steel and steel alloys.

Tool Diameter		Length	
mm	Inch	Flute	Overall
1.0000	.0394	16.00	38.00
1.0500	.0413	19.00	38.00
1.1000	.0433	19.00	38.00
1.1500	.0453	19.00	38.00
1.2000	.0472	19.00	38.00
1.2500	.0492	19.00	38.00
1.3000	.0512	19.00	38.00
1.3500	.0531	19.00	38.00
1.4000	.0551	19.00	38.00
1.4500	.0571	19.00	38.00
1.5000	.0591	19.00	38.00
1.5500	.0610	19.00	38.00
1.6000	.0630	19.00	38.00
1.6500	.0650	19.00	38.00
1.7000	.0669	19.00	38.00
1.7500	.0689	19.00	38.00
1.8000	.0709	22.00	44.00
1.8500	.0728	22.00	44.00
1.9000	.0748	22.00	44.00
1.9500	.0768	22.00	44.00
2.0000	.0787	22.00	44.00
2.0500	.0807	22.00	44.00
2.1000	.0827	22.00	44.00
2.1500	.0846	25.00	50.00
2.2000	.0866	25.00	50.00
2.2500	.0886	25.00	50.00
2.3000	.0906	25.00	50.00
2.3500	.0925	25.00	50.00
2.4000	.0945	25.00	50.00
2.4500	.0965	25.00	50.00

Tool Diameter		Length	
mm	Inch	Flute	Overall
2.5000	.0984	25.00	50.00
2.6000	.1024	31.00	57.00
2.7000	.1063	31.00	57.00
2.7500	.1083	31.00	57.00
2.8000	.1102	31.00	57.00
2.9000	.1142	31.00	57.00
3.0000	.1181	32.00	57.00
3.1000	.1220	31.00	57.00
3.2000	.1260	31.00	57.00
3.2500	.1280	31.00	57.00
3.3000	.1299	31.00	57.00
3.4000	.1339	34.00	63.00
3.5000	.1378	35.00	63.00
3.6000	.1417	34.00	63.00
3.7000	.1457	34.00	63.00
3.7500	.1476	34.00	63.00
3.8000	.1496	34.00	63.00
3.9000	.1535	34.00	63.00
4.0000	.1575	35.00	63.00
4.1000	.1614	34.00	63.00
4.2000	.1654	41.00	70.00
4.2500	.1673	41.00	70.00
4.3000	.1693	41.00	70.00
4.4000	.1732	41.00	70.00
4.5000	.1772	41.00	70.00
4.6000	.1811	41.00	70.00
4.7000	.1850	41.00	70.00
4.7500	.1870	41.00	70.00
4.8000	.1890	41.00	70.00
4.9000	.1929	41.00	70.00

Tool Diameter		Length	
mm	Inch	Flute	Overall
5.0000	.1969	44.00	75.00
5.1000	.2008	44.00	76.00
5.2000	.2047	44.00	76.00
5.2500	.2067	44.00	76.00
5.3000	.2087	44.00	76.00
5.4000	.2126	44.00	76.00
5.5000	.2165	44.00	75.00
5.6000	.2205	44.00	76.00
5.7000	.2244	44.00	76.00
5.7500	.2264	44.00	76.00
5.8000	.2283	44.00	76.00
5.9000	.2323	51.00	82.00
6.0000	.2362	50.00	82.00
6.1000	.2402	51.00	82.00
6.2000	.2441	51.00	82.00
6.2500	.2461	51.00	82.00
6.3000	.2480	51.00	82.00
6.4000	.2520	51.00	82.00
6.5000	.2559	50.00	82.00
6.6000	.2598	54.00	89.00
6.7000	.2638	54.00	89.00
6.7500	.2657	54.00	89.00
6.8000	.2677	54.00	89.00
6.9000	.2717	54.00	89.00
7.0000	.2756	54.00	89.00
7.1000	.2795	54.00	89.00
7.2000	.2835	54.00	89.00
7.2500	.2854	54.00	89.00
7.3000	.2874	54.00	89.00
7.4000	.2913	60.00	95.00

Tool Diameter		Length	
mm	Inch	Flute	Overall
7.5000	.2953	60.00	95.00
7.6000	.2992	60.00	95.00
7.7000	.3031	60.00	95.00
7.7500	.3051	60.00	95.00
7.8000	.3071	60.00	95.00
7.9000	.3110	60.00	95.00
8.0000	.3150	60.00	95.00
8.1000	.3189	60.00	95.00
8.2000	.3228	60.00	95.00
8.2500	.3248	63.00	101.00
8.3000	.3268	63.00	101.00
8.4000	.3307	63.00	101.00
8.5000	.3346	63.00	100.00
8.6000	.3386	63.00	101.00
8.7000	.3425	63.00	101.00
8.7500	.3445	63.00	101.00
8.8000	.3465	63.00	101.00
8.9000	.3504	63.00	101.00
9.0000	.3543	70.00	100.00
9.1000	.3583	70.00	108.00
9.2000	.3622	70.00	108.00
9.2500	.3642	70.00	108.00
9.3000	.3661	70.00	108.00
9.4000	.3701	70.00	108.00
9.5000	.3740	70.00	108.00
9.6000	.3780	70.00	108.00
9.7000	.3819	70.00	108.00
9.7500	.3839	70.00	108.00
9.8000	.3858	70.00	108.00
9.9000	.3900	73.00	114.00

Tool Diameter		Length	
mm	Inch	Flute	Overall
10.0000	.3937	73.00	114.00
10.1000	.3976	73.00	114.00
10.2000	.4016	73.00	114.00
10.2500	.4035	73.00	114.00
10.3000	.4055	73.00	114.00
10.4000	.4094	73.00	114.00
10.5000	.4134	73.00	114.00
10.6000	.4173	73.00	114.00
10.7000	.4213	73.00	114.00
10.7500	.4232	73.00	114.00
10.8000	.4252	73.00	114.00
10.9000	.4291	73.00	114.00
11.0000	.4331	73.00	114.00
11.1000	.4370	73.00	114.00
11.2000	.4409	76.00	120.00
11.2500	.4429	76.00	120.00
11.3000	.4449	76.00	120.00
11.4000	.4488	76.00	120.00
11.5000	.4528	76.00	120.00
11.6000	.4567	76.00	120.00
11.7000	.4606	76.00	120.00
11.7500	.4626	76.00	120.00
11.8000	.4646	76.00	120.00
11.9000	.4685	76.00	120.00
12.0000	.4724	76.00	120.00
12.1000	.4764	76.00	120.00
12.2000	.4803	76.00	120.00
12.2500	.4823	76.00	120.00
12.3000	.4843	76.00	120.00
12.4000	.4882	76.00	120.00

Tool Diameter		Length	
mm	Inch	Flute	Overall
12.5000	.4921	76.00	120.00
12.6000	.4961	76.00	120.00
12.7000	.5000	76.00	120.00
13.0000	.5118	82.00	127.00
13.5000	.5315	82.00	127.00
14.0000	.5512	82.00	127.00
14.5000	.5709	82.00	127.00
15.0000	.5906	82.00	127.00
15.5000	.6102	82.00	127.00
16.0000	.6299	82.00	127.00
16.5000	.6496	89.00	140.00
17.0000	.6693	89.00	140.00
17.5000	.6890	89.00	140.00
18.0000	.7087	89.00	140.00
18.5000	.7283	89.00	140.00
19.0000	.7480	95.00	152.00



TWIST DRILLS — CARBIDE TIPPED

TAPER LENGTH — 118° POINT

Straight shank, tanged, for use in ASA split sleeve drill drivers. Longer flute and overall lengths.

Tool Diameter			Length	
Frac.	Wire / Letter	Dec.	Flute	Overall
1/8		.1250	2 3/4	5 1/8
	30	.1285	3	5 3/8
	29	.1360	3	5 3/8
	28	.1405	3	5 3/8
9/64		.1406	3	5 3/8
	27	.1440	3	5 3/8
	26	.1470	3	5 3/8
	25	.1495	3	5 3/8
	24	.1520	3	5 3/8
	23	.1540	3	5 3/8
5/32		.1563	3	5 3/8
	22	.1570	3 3/8	5 3/8
	21	.1590	3 3/8	5 3/8
	20	.1610	3 3/8	5 3/8
	19	.1660	3 3/8	5 3/8
	18	.1695	3 3/8	5 3/8
11/64		.1719	3 3/8	5 3/8
	17	.1730	3 3/8	5 3/8
	16	.1770	3 3/8	5 3/8
	15	.1800	3 3/8	5 3/8
3/16	14	.1820	3 3/8	5 3/8
	13	.1850	3 3/8	5 3/8
		.1875	3 3/8	5 3/8
	12	.1890	3 5/8	6
	11	.1910	3 5/8	6
	10	.1935	3 5/8	6
	9	.1960	3 5/8	6
	8	.1990	3 5/8	6
13/64	7	.2010	3 5/8	6
		.2031	3 5/8	6

Tool Diameter			Length	
Frac.	Wire / Letter	Dec.	Flute	Overall
	6	.2040	3 5/8	6
	5	.2055	3 5/8	6
7/32	4	.2090	3 5/8	6
	3	.2130	3 5/8	6
		.2188	3 5/8	6
	2	.2210	3 3/4	6 1/8
15/64	1	.2280	3 3/4	6 1/8
	A	.2340	3 3/4	6 1/8
		.2344	3 3/4	6 1/8
	B	.2380	3 3/4	6 1/8
1/4	C	.2420	3 3/4	6 1/8
	D	.2460	3 3/4	6 1/8
	E	.2500	3 3/4	6 1/8
	F	.2570	3 7/8	6 1/4
17/64	G	.2610	3 7/8	6 1/4
		.2656	3 7/8	6 1/4
	H	.2660	3 7/8	6 1/4
	I	.2720	3 7/8	6 1/4
9/32	J	.2770	3 7/8	6 1/4
	K	.2810	3 7/8	6 1/4
		.2813	3 7/8	6 1/4
	L	.2900	4	6 3/8
19/64	M	.2950	4	6 3/8
		.2969	4	6 3/8
	N	.3020	4	6 3/8
5/16		.3125	4	6 3/8
21/64	O	.3160	4 1/8	6 1/2
	P	.3230	4 1/8	6 1/2
		.3281	4 1/8	6 1/2
	Q	.3320	4 1/8	6 1/2

Tool Diameter			Length	
Frac.	Wire / Letter	Dec.	Flute	Overall
11/32	R	.3390	4 1/8	6 1/2
		.3438	4 1/8	6 1/2
	S	.3480	4 1/4	6 3/4
	T	.3580	4 1/4	6 3/4
23/64	U	.3594	4 1/4	6 3/4
		.3680	4 1/4	6 3/4
	3/8	V	.3770	4 3/8	7
25/64	W	.3860	4 3/8	7
		.3906	4 3/8	7
	X	.3970	4 3/8	7
	Y	.4040	4 3/8	7
13/32	Z	.4063	4 3/8	7
		.4130	4 5/8	7 1/4
		27/64	.4219	4 5/8
7/16		.4375	4 5/8	7 1/4
29/64		.4531	4 3/4	7 1/2
15/32		.4688	4 3/4	7 1/2
31/64		.4844	4 3/4	7 3/4
1/2		.5000	4 3/4	7 3/4
33/64		.5156	4 3/4	8
17/32		.5313	4 3/4	8
35/64		.5469	4 7/8	8 1/4
9/16		.5625	4 7/8	8 1/4
37/64		.5781	4 7/8	8 3/4
19/32		.5938	4 7/8	8 3/4
39/64		.6094	4 7/8	8 3/4
5/8		.6250	4 7/8	8 3/4
41/64		.6406	5 1/8	9
21/32		.6563	5 1/8	9

Tool Diameter			Length	
Frac.	Wire / Letter	Dec.	Flute	Overall
$\frac{43}{64}$		.6719	$5 \frac{3}{8}$	$9 \frac{1}{4}$
$\frac{11}{16}$		.6875	$5 \frac{3}{8}$	$9 \frac{1}{4}$
$\frac{45}{64}$		.7031	$5 \frac{5}{8}$	$9 \frac{1}{2}$
$\frac{23}{32}$		.7188	$5 \frac{5}{8}$	$9 \frac{1}{2}$
$\frac{47}{64}$		.7344	$5 \frac{7}{8}$	$9 \frac{3}{4}$
$\frac{3}{4}$		.7500	$5 \frac{7}{8}$	$9 \frac{3}{4}$
$\frac{49}{64}$		.7656	6	$9 \frac{7}{8}$
$\frac{25}{32}$		.7813	6	$9 \frac{7}{8}$
$\frac{51}{64}$		.7969	$6 \frac{1}{8}$	10
$\frac{13}{16}$		.8125	$6 \frac{1}{8}$	10
$\frac{53}{64}$		.8281	$6 \frac{1}{8}$	10
$\frac{27}{32}$		.8438	$6 \frac{1}{8}$	10
$\frac{55}{64}$		.8594	$6 \frac{1}{8}$	10
$\frac{7}{8}$		.8750	$6 \frac{1}{8}$	10
$\frac{57}{64}$		.8906	$6 \frac{1}{8}$	10
$\frac{29}{32}$		.9063	$6 \frac{1}{8}$	10
$\frac{59}{64}$		.9219	$6 \frac{1}{8}$	$10 \frac{3}{4}$
$\frac{15}{16}$		.9375	$6 \frac{1}{8}$	$10 \frac{3}{4}$
$\frac{61}{64}$		.9531	$6 \frac{3}{8}$	11
$\frac{31}{32}$		.9688	$6 \frac{3}{8}$	11
$\frac{63}{64}$		.9844	$6 \frac{3}{8}$	11
1		1.0000	$6 \frac{3}{8}$	11



TWIST DRILLS — CARBIDE TIPPED

TAPER LENGTH — 118° POINT — METRIC

Straight shank, tanged, for use in ASA split sleeve drill drivers. Longer flute and overall lengths.

Tool Diameter		Length			
		Flute		Overall	
mm	Inch	mm	Inch	mm	Inch
3.2	.1260	76.0	3	137.0	5 3/8
3.3	.1299	76.0	3	137.0	5 3/8
3.4	.1339	76.0	3	137.0	5 3/8
3.5	.1378	76.0	3	137.0	5 3/8
3.6	.1417	76.0	3	137.0	5 3/8
3.7	.1457	76.0	3	137.0	5 3/8
3.8	.1496	76.0	3	137.0	5 3/8
3.9	.1535	76.0	3	137.0	5 3/8
4.0	.1575	86.0	3 3/8	146.0	5 3/4
4.1	.1614	86.0	3 3/8	146.0	5 3/4
4.2	.1654	86.0	3 3/8	146.0	5 3/4
4.3	.1693	86.0	3 3/8	146.0	5 3/4
4.4	.1732	86.0	3 3/8	146.0	5 3/4
4.5	.1772	86.0	3 3/8	146.0	5 3/4
4.6	.1811	86.0	3 3/8	146.0	5 3/4
4.7	.1850	86.0	3 3/8	146.0	5 3/4
4.8	.1890	92.0	3 5/8	152.0	6

Tool Diameter		Length			
		Flute		Overall	
mm	Inch	mm	Inch	mm	Inch
4.9	.1929	92.0	3 5/8	152.0	6
5.0	.1969	92.0	3 5/8	152.0	6
5.1	.2008	92.0	3 5/8	152.0	6
5.2	.2047	92.0	3 5/8	152.0	6
5.3	.2087	92.0	3 5/8	152.0	6
5.4	.2126	92.0	3 5/8	152.0	6
5.5	.2165	92.0	3 5/8	152.0	6
5.6	.2205	95.0	3 3/4	156.0	6 1/8
5.7	.2244	95.0	3 3/4	156.0	6 1/8
5.8	.2283	95.0	3 3/4	156.0	6 1/8
5.9	.2323	95.0	3 3/4	156.0	6 1/8
6.0	.2362	95.0	3 3/4	156.0	6 1/8
6.1	.2402	95.0	3 3/4	156.0	6 1/8
6.2	.2441	95.0	3 3/4	156.0	6 1/8
6.3	.2480	95.0	3 3/4	156.0	6 1/8
6.4	.2520	98.0	3 7/8	159.0	6 1/4
6.5	.2559	98.0	3 7/8	159.0	6 1/4
6.6	.2598	98.0	3 7/8	159.0	6 1/4
6.7	.2638	98.0	3 7/8	159.0	6 1/4
6.8	.2677	98.0	3 7/8	159.0	6 1/4
6.9	.2717	98.0	3 7/8	159.0	6 1/4
7.0	.2756	98.0	3 7/8	159.0	6 1/4
7.1	.2795	98.0	3 7/8	159.0	6 1/4
7.2	.2835	102.0	4	162.0	6 3/8
7.3	.2874	102.0	4	162.0	6 3/8
7.4	.2913	102.0	4	162.0	6 3/8
7.5	.2953	102.0	4	162.0	6 3/8
7.6	.2992	102.0	4	162.0	6 3/8
7.7	.3031	102.0	4	162.0	6 3/8

Tool Diameter		Length			
		Flute		Overall	
mm	Inch	mm	Inch	mm	Inch
7.8	.3071	102.0	4	162.0	6 ³ / ₈
7.9	.3110	102.0	4	162.0	6 ³ / ₈
8.0	.3150	105.0	4 ¹ / ₈	165.0	6 ¹ / ₂
8.1	.3189	105.0	4 ¹ / ₈	165.0	6 ¹ / ₂
8.2	.3228	105.0	4 ¹ / ₈	165.0	6 ¹ / ₂
8.3	.3268	105.0	4 ¹ / ₈	165.0	6 ¹ / ₂
8.4	.3307	105.0	4 ¹ / ₈	165.0	6 ¹ / ₂
8.5	.3346	105.0	4 ¹ / ₈	165.0	6 ¹ / ₂
8.6	.3386	105.0	4 ¹ / ₈	165.0	6 ¹ / ₂
8.7	.3425	105.0	4 ¹ / ₈	165.0	6 ¹ / ₂
8.8	.3465	108.0	4 ¹ / ₄	171.0	6 ³ / ₄
8.9	.3504	108.0	4 ¹ / ₄	171.0	6 ³ / ₄
9.0	.3543	108.0	4 ¹ / ₄	171.0	6 ³ / ₄
9.1	.3583	108.0	4 ¹ / ₄	171.0	6 ³ / ₄
9.2	.3622	108.0	4 ¹ / ₄	171.0	6 ³ / ₄
9.3	.3661	108.0	4 ¹ / ₄	171.0	6 ³ / ₄
9.4	.3701	108.0	4 ¹ / ₄	171.0	6 ³ / ₄
9.5	.3740	108.0	4 ¹ / ₄	171.0	6 ³ / ₄
9.6	.3780	111.0	4 ³ / ₈	178.0	7
9.7	.3819	111.0	4 ³ / ₈	178.0	7
9.8	.3858	111.0	4 ³ / ₈	178.0	7
9.9	.3898	111.0	4 ³ / ₈	178.0	7
10.0	.3937	111.0	4 ³ / ₈	178.0	7
10.1	.3976	111.0	4 ³ / ₈	178.0	7
10.2	.4016	111.0	4 ³ / ₈	178.0	7
10.3	.4055	111.0	4 ³ / ₈	178.0	7
10.4	.4094	117.0	4 ⁵ / ₈	184.0	7 ¹ / ₄
10.5	.4134	117.0	4 ⁵ / ₈	184.0	7 ¹ / ₄
10.6	.4173	117.0	4 ⁵ / ₈	184.0	7 ¹ / ₄

Tool Diameter		Length			
		Flute		Overall	
mm	Inch	mm	Inch	mm	Inch
10.7	.4213	117.0	4 5/8	184.0	7 1/4
10.8	.4252	117.0	4 5/8	184.0	7 1/4
10.9	.4291	117.0	4 5/8	184.0	7 1/4
11.0	.4331	117.0	4 5/8	184.0	7 1/4
11.5	.4528	121.0	4 3/4	190.0	7 1/2
12.0	.4724	121.0	4 3/4	197.0	7 3/4
12.5	.4921	121.0	4 3/4	197.0	7 3/4
13.0	.5118	121.0	4 3/4	203.0	8
13.5	.5315	121.0	4 3/4	203.0	8
14.0	.5512	124.0	4 7/8	210.0	8 1/4
14.5	.5709	124.0	4 7/8	222.0	8 3/4
15.0	.5906	124.0	4 7/8	222.0	8 3/4
15.5	.6102	124.0	4 7/8	222.0	8 3/4
16.0	.6299	130.0	5 1/8	229.0	9
16.5	.6496	130.0	5 1/8	229.0	9
17.0	.6693	137.0	5 3/8	235.0	9 1/4
17.5	.6890	143.0	5 5/8	241.0	9 1/2
18.0	.7087	143.0	5 5/8	241.0	9 1/2
18.5	.7283	149.0	5 7/8	248.0	9 3/4
19.0	.7480	149.0	5 7/8	248.0	9 3/4
19.5	.7677	152.0	6	251.0	9 7/8
20.0	.7874	156.0	6 1/8	254.0	10
20.5	.8071	156.0	6 1/8	254.0	10
21.0	.8268	156.0	6 1/8	254.0	10
21.5	.8465	156.0	6 1/8	254.0	10
22.0	.8661	156.0	6 1/8	254.0	10
22.5	.8858	156.0	6 1/8	254.0	10
23.0	.9055	156.0	6 1/8	254.0	10
23.5	.9252	156.0	6 1/8	273.0	10 3/4

Tool		Length			
Diameter		Flute		Overall	
mm	Inch	mm	Inch	mm	Inch
24.0	.9449	162.0	6 3/8	279.0	11
24.5	.9646	162.0	6 3/8	279.0	11
25.0	.9843	162.0	6 3/8	279.0	11



TWIST DRILLS — CARBIDE TIPPED
TAPER LENGTH — 135° POINT

Tool Diameter			Length	
Frac.	Wire / Letter	Dec.	Flute	Overall
1/8		.1250	2 3/4	5 1/8
	30	.1285	3	5 3/8
	29	.1360	3	5 3/8
	28	.1405	3	5 3/8
9/64		.1406	3	5 3/8
	27	.1440	3	5 3/8
	26	.1470	3	5 3/8
	25	.1495	3	5 3/8

$\frac{5}{32}$	24	.1520	3	$5 \frac{3}{8}$
	23	.1540	3	$5 \frac{3}{8}$
		.1563	3	$5 \frac{3}{8}$
	22	.1570	$3 \frac{3}{8}$	$5 \frac{3}{4}$
	21	.1590	$3 \frac{3}{8}$	$5 \frac{3}{4}$
	20	.1610	$3 \frac{3}{8}$	$5 \frac{3}{4}$
	19	.1660	$3 \frac{3}{8}$	$5 \frac{3}{4}$
	18	.1695	$3 \frac{3}{8}$	$5 \frac{3}{4}$
$\frac{11}{64}$		.1719	$3 \frac{3}{8}$	$5 \frac{3}{4}$
	17	.1730	$3 \frac{3}{8}$	$5 \frac{3}{4}$
	16	.1770	$3 \frac{3}{8}$	$5 \frac{3}{4}$
	15	.1800	$3 \frac{3}{8}$	$5 \frac{3}{4}$
$\frac{3}{16}$	14	.1820	$3 \frac{3}{8}$	$5 \frac{3}{4}$
	13	.1850	$3 \frac{3}{8}$	$5 \frac{3}{4}$
		.1875	$3 \frac{3}{8}$	$5 \frac{3}{4}$
	12	.1890	$3 \frac{5}{8}$	6
	11	.1910	$3 \frac{5}{8}$	6
	10	.1935	$3 \frac{5}{8}$	6
	9	.1960	$3 \frac{5}{8}$	6
	8	.1990	$3 \frac{5}{8}$	6
$\frac{13}{64}$	7	.2010	$3 \frac{5}{8}$	6
		.2031	$3 \frac{5}{8}$	6
	6	.2040	$3 \frac{5}{8}$	6
	5	.2055	$3 \frac{5}{8}$	6
$\frac{7}{32}$	4	.2090	$3 \frac{5}{8}$	6
	3	.2130	$3 \frac{5}{8}$	6
		.2188	$3 \frac{5}{8}$	6
	2	.2210	$3 \frac{3}{4}$	$6 \frac{1}{8}$
$\frac{15}{64}$	1	.2280	$3 \frac{3}{4}$	$6 \frac{1}{8}$
	A	.2340	$3 \frac{3}{4}$	$6 \frac{1}{8}$
		.2344	$3 \frac{3}{4}$	$6 \frac{1}{8}$
	B	.2380	$3 \frac{3}{4}$	$6 \frac{1}{8}$

¼	C	.2420	3 ¾	6 1/8	
	D	.2460	3 ¾	6 1/8	
	E	.2500	3 ¾	6 1/8	
	F	.2570	3 7/8	6 ¼	
17/64	G	.2610	3 7/8	6 ¼	
		.2656	3 7/8	6 ¼	
	H	.2660	3 7/8	6 ¼	
	I	.2720	3 7/8	6 ¼	
9/32	J	.2770	3 7/8	6 ¼	
	K	.2810	3 7/8	6 ¼	
		.2813	3 7/8	6 ¼	
	L	.2900	4	6 3/8	
19/64	M	.2950	4	6 3/8	
		.2969	4	6 3/8	
	N	.3020	4	6 3/8	
	5/16	.3125	4	6 3/8	
21/64	O	.3160	4 1/8	6 ½	
	P	.3230	4 1/8	6 ½	
		.3281	4 1/8	6 ½	
	Q	.3320	4 1/8	6 ½	
11/32	R	.3390	4 1/8	6 ½	
		.3438	4 1/8	6 ½	
	S	.3480	4 ¼	6 ¾	
	T	.3580	4 ¼	6 ¾	
23/64		.3594	4 ¼	6 ¾	
	3/8	U	.3680	4 ¼	6 ¾
			.3750	4 ¼	6 ¾
	V	.3770	4 3/8	7	
25/64	W	.3860	4 3/8	7	
		.3906	4 3/8	7	
	X	.3970	4 3/8	7	
	Y	.4040	4 3/8	7	

$13/32$	Z	.4063	$4 \frac{3}{8}$	7
		.4130	$4 \frac{5}{8}$	$7 \frac{1}{2}$
$27/64$		.4219	$4 \frac{5}{8}$	$7 \frac{1}{4}$
$7/16$		.4375	$4 \frac{5}{8}$	$7 \frac{1}{4}$
$29/64$		.4531	$4 \frac{3}{4}$	$7 \frac{1}{2}$
$15/32$		.4688	$4 \frac{3}{4}$	$7 \frac{1}{2}$
$31/64$		.4844	$4 \frac{3}{4}$	$7 \frac{3}{4}$
$1/2$		.5000	$4 \frac{3}{4}$	$7 \frac{3}{4}$
$33/64$		.5156	$4 \frac{3}{4}$	8
$17/32$		.5313	$4 \frac{3}{4}$	8
$35/64$		.5469	$4 \frac{7}{8}$	$8 \frac{1}{4}$
$9/16$		.5625	$4 \frac{7}{8}$	$8 \frac{1}{4}$
$37/64$		.5781	$4 \frac{7}{8}$	$8 \frac{3}{4}$
$19/32$		.5938	$4 \frac{7}{8}$	$8 \frac{3}{4}$
$39/64$		.6094	$4 \frac{7}{8}$	$8 \frac{3}{4}$
$5/8$		.6250	$4 \frac{7}{8}$	$8 \frac{3}{4}$
$41/64$		.6406	$5 \frac{1}{8}$	9
$21/32$		.6563	$5 \frac{1}{8}$	9
$43/64$		.6719	$5 \frac{3}{8}$	$9 \frac{1}{4}$
$11/16$		.6875	$5 \frac{3}{8}$	$9 \frac{1}{4}$
$45/64$		.7031	$5 \frac{5}{8}$	$9 \frac{1}{2}$
$23/32$		.7188	$5 \frac{5}{8}$	$9 \frac{1}{2}$
$47/64$		.7344	$5 \frac{7}{8}$	$9 \frac{3}{4}$
$3/4$		.7500	$5 \frac{7}{8}$	$9 \frac{3}{4}$
$49/64$		.7656	6	$9 \frac{7}{8}$
$25/32$		.7813	6	$9 \frac{7}{8}$
$51/64$		.7969	$6 \frac{1}{8}$	10
$13/16$		.8125	$6 \frac{1}{8}$	10
$53/64$		.8281	$6 \frac{1}{8}$	10
$27/32$		.8438	$6 \frac{1}{8}$	10
$55/64$		.8594	$6 \frac{1}{8}$	10
$7/8$		.8750	$6 \frac{1}{8}$	10

$\frac{57}{64}$		.8906	$6 \frac{1}{8}$	10
$\frac{29}{32}$		.9063	$6 \frac{1}{8}$	10
$\frac{59}{64}$		.9219	$6 \frac{1}{8}$	$10 \frac{3}{4}$
$\frac{15}{16}$		.9375	$6 \frac{1}{8}$	$10 \frac{3}{4}$
$\frac{61}{64}$		.9531	$6 \frac{3}{8}$	11
$\frac{31}{32}$		.9688	$6 \frac{3}{8}$	11
$\frac{63}{64}$		.9844	$6 \frac{3}{8}$	11
1		1.0000	$6 \frac{3}{8}$	11

$57/64$	.8906	$6 \frac{1}{8}$	10
$29/32$	.9063	$6 \frac{1}{8}$	10
$59/64$	.9219	$6 \frac{1}{8}$	$10 \frac{3}{4}$
$15/16$	.9375	$6 \frac{1}{8}$	$10 \frac{3}{4}$
$61/64$	.9531	$6 \frac{3}{8}$	11
$31/32$	.9688	$6 \frac{3}{8}$	11
$63/64$	.9844	$6 \frac{3}{8}$	11
1	1.0000	$6 \frac{3}{8}$	11



TWIST DRILLS — CARBIDE TIPPED
TAPER LENGTH — 135° POINT — METRIC

Tool		Length			
		Flute		Overall	
mm	Inch	mm	Inch	mm	Inch
3.2	.1260	76.0	3	137.0	$5 \frac{3}{8}$
3.3	.1299	76.0	3	137.0	$5 \frac{3}{8}$

Tool Diameter		Length			
		Flute		Overall	
mm	Inch	mm	Inch	mm	Inch
3.4	.1339	76.0	3	137.0	5 3/8
3.5	.1378	76.0	3	137.0	5 3/8
3.6	.1417	76.0	3	137.0	5 3/8
3.7	.1457	76.0	3	137.0	5 3/8
3.8	.1496	76.0	3	137.0	5 3/8
3.9	.1535	76.0	3	137.0	5 3/8
4.0	.1575	86.0	3 3/8	146.0	5 3/4
4.1	.1614	86.0	3 3/8	146.0	5 3/4
4.2	.1654	86.0	3 3/8	146.0	5 3/4
4.3	.1693	86.0	3 3/8	146.0	5 3/4
4.4	.1732	86.0	3 3/8	146.0	5 3/4
4.5	.1772	86.0	3 3/8	146.0	5 3/4
4.6	.1811	86.0	3 3/8	146.0	5 3/4
4.7	.1850	86.0	3 3/8	146.0	5 3/4
4.8	.1890	92.0	3 5/8	152.0	6
4.9	.1929	92.0	3 5/8	152.0	6
5.0	.1969	92.0	3 5/8	152.0	6
5.1	.2008	92.0	3 5/8	152.0	6
5.2	.2047	92.0	3 5/8	152.0	6
5.3	.2087	92.0	3 5/8	152.0	6
5.4	.2126	92.0	3 5/8	152.0	6
5.5	.2165	92.0	3 5/8	152.0	6
5.6	.2205	95.0	3 3/4	156.0	6 1/8
5.7	.2244	95.0	3 3/4	156.0	6 1/8
5.8	.2283	95.0	3 3/4	156.0	6 1/8
5.9	.2323	95.0	3 3/4	156.0	6 1/8
6.0	.2362	95.0	3 3/4	156.0	6 1/8
6.1	.2402	95.0	3 3/4	156.0	6 1/8
6.2	.2441	95.0	3 3/4	156.0	6 1/8

Tool Diameter		Length			
		Flute		Overall	
mm	Inch	mm	Inch	mm	Inch
6.3	.2480	95.0	3 ³ / ₈	156.0	6 ¹ / ₈
6.4	.2520	98.0	3 ⁷ / ₈	159.0	6 ¹ / ₄
6.5	.2559	98.0	3 ⁷ / ₈	159.0	6 ¹ / ₄
6.6	.2598	98.0	3 ⁷ / ₈	159.0	6 ¹ / ₄
6.7	.2638	98.0	3 ⁷ / ₈	159.0	6 ¹ / ₄
6.8	.2677	98.0	3 ⁷ / ₈	159.0	6 ¹ / ₄
6.9	.2717	98.0	3 ⁷ / ₈	159.0	6 ¹ / ₄
7.0	.2756	98.0	3 ⁷ / ₈	159.0	6 ¹ / ₄
7.1	.2795	98.0	3 ⁷ / ₈	159.0	6 ¹ / ₄
7.2	.2835	102.0	4	162.0	6 ³ / ₈
7.3	.2874	102.0	4	162.0	6 ³ / ₈
7.4	.2913	102.0	4	162.0	6 ³ / ₈
7.5	.2953	102.0	4	162.0	6 ³ / ₈
7.6	.2992	102.0	4	162.0	6 ³ / ₈
7.7	.3031	102.0	4	162.0	6 ³ / ₈
7.8	.3071	102.0	4	162.0	6 ³ / ₈
7.9	.3110	102.0	4	162.0	6 ³ / ₈
8.0	.3150	105.0	4 ¹ / ₈	165.0	6 ¹ / ₂
8.1	.3189	105.0	4 ¹ / ₈	165.0	6 ¹ / ₂
8.2	.3228	105.0	4 ¹ / ₈	165.0	6 ¹ / ₂
8.3	.3268	105.0	4 ¹ / ₈	165.0	6 ¹ / ₂
8.4	.3307	105.0	4 ¹ / ₈	165.0	6 ¹ / ₂
8.5	.3346	105.0	4 ¹ / ₈	165.0	6 ¹ / ₂
8.6	.3386	105.0	4 ¹ / ₈	165.0	6 ¹ / ₂
8.7	.3425	105.0	4 ¹ / ₈	165.0	6 ¹ / ₂
8.8	.3465	108.0	4 ¹ / ₄	171.0	6 ³ / ₄
8.9	.3504	108.0	4 ¹ / ₄	171.0	6 ³ / ₄
9.0	.3543	108.0	4 ¹ / ₄	171.0	6 ³ / ₄
9.1	.3583	108.0	4 ¹ / ₄	171.0	6 ³ / ₄

Tool Diameter		Length			
		Flute		Overall	
mm	Inch	mm	Inch	mm	Inch
9.2	.3622	108.0	4 ¼	171.0	6 ¾
9.3	.3661	108.0	4 ¼	171.0	6 ¾
9.4	.3701	108.0	4 ¼	171.0	6 ¾
9.5	.3740	108.0	4 ¼	171.0	6 ¾
9.6	.3780	111.0	4 ⅜	178.0	7
9.7	.3819	111.0	4 ⅜	178.0	7
9.8	.3858	111.0	4 ⅜	178.0	7
9.9	.3898	111.0	4 ⅜	178.0	7
10.0	.3937	111.0	4 ⅜	178.0	7
10.1	.3976	111.0	4 ⅜	178.0	7
10.2	.4016	111.0	4 ⅜	178.0	7
10.3	.4055	111.0	4 ⅜	178.0	7
10.4	.4094	117.0	4 ⅝	184.0	7 ¼
10.5	.4134	117.0	4 ⅝	184.0	7 ¼
10.6	.4173	117.0	4 ⅝	184.0	7 ¼
10.7	.4213	117.0	4 ⅝	184.0	7 ¼
10.8	.4252	117.0	4 ⅝	184.0	7 ¼
10.9	.4291	117.0	4 ⅝	184.0	7 ¼
11.0	.4331	117.0	4 ⅝	184.0	7 ¼
11.5	.4528	121.0	4 ¾	190.0	7 ½
12.0	.4724	121.0	4 ¾	197.0	7 ¾
12.5	.4921	121.0	4 ¾	197.0	7 ¾
13.0	.5118	121.0	4 ¾	203.0	8
13.5	.5315	121.0	4 ¾	203.0	8
14.0	.5512	124.0	4 ⅞	210.0	8 ¼
14.5	.5709	124.0	4 ⅞	222.0	8 ¾
15.0	.5906	124.0	4 ⅞	222.0	8 ¾
15.5	.6102	124.0	4 ⅞	222.0	8 ¾
16.0	.6299	130.0	5 ⅛	229.0	9

Tool Diameter		Length			
		Flute		Overall	
mm	Inch	mm	Inch	mm	Inch
16.5	.6496	130.0	5 1/8	229.0	9
17.0	.6693	137.0	5 3/8	235.0	9 1/4
17.5	.6890	143.0	5 5/8	241.0	9 1/2
18.0	.7087	143.0	5 5/8	241.0	9 1/2
18.5	.7283	149.0	5 7/8	248.0	9 3/4
19.0	.7480	149.0	5 7/8	248.0	9 3/4
19.5	.7677	152.0	6	251.0	9 7/8
20.0	.7874	156.0	6 1/8	254.0	10
20.5	.8071	156.0	6 1/8	254.0	10
21.0	.8268	156.0	6 1/8	254.0	10
21.5	.8465	156.0	6 1/8	254.0	10
22.0	.8661	156.0	6 1/8	254.0	10
22.5	.8858	156.0	6 1/8	254.0	10
23.0	.9055	156.0	6 1/8	254.0	10
23.5	.9252	156.0	6 1/8	273.0	10 3/4
24.0	.9449	162.0	6 3/8	279.0	11
24.5	.9646	162.0	6 3/8	279.0	11
25.0	.9843	162.0	6 3/8	279.0	11



TWIST DRILLS — CARBIDE TIPPED
TAPER SHANK — 118° POINT

Regular taper shank size.

Heavy duty construction.

Tool		Dimensions		
Diameter		Taper	Length	
Frac.	Dec.		Flute	Overall
¼	.2500	1	2 7/8	6 1/8
17/64	.2656	1	3	6 ¼
9/32	.2813	1	3	6 ¼
19/64	.2969	1	3 1/8	6 3/8
5/16	.3125	1	3 1/8	6 3/8
21/64	.3281	1	3 ¼	6 ½
11/32	.3438	1	3 ¼	6 ½
23/64	.3594	1	3 ½	6 ¾
3/8	.3750	1	3 ½	6 ¾
25/64	.3906	1	3 5/8	7
13/32	.4063	1	3 5/8	7
27/64	.4219	1	3 7/8	7 ¼
7/16	.4375	1	3 7/8	7 ¼
29/64	.4531	1	4 1/8	7 ½
15/32	.4688	1	4 1/8	7 ½
31/64	.4844	2	4 3/8	8 ¼
½	.5000	2	4 3/8	8 ¼
33/64	.5156	2	4 5/8	8 ½
17/32	.5313	2	4 5/8	8 ½
35/64	.5469	2	4 7/8	8 ¾
9/16	.5625	2	4 7/8	8 ¾
37/64	.5781	2	4 7/8	8 ¾
19/32	.5938	2	4 7/8	8 ¾
39/64	.6094	2	4 7/8	8 ¾
5/8	.6250	2	4 7/8	8 ¾

Tool Diameter		Dimensions		
		Taper	Length	
Frac.	Dec.		Flute	Overall
41/64	.6406	2	5 1/8	9
21/32	.6563	2	5 1/8	9
43/64	.6719	2	5 3/8	9 1/4
11/16	.6875	2	5 3/8	9 1/4
45/64	.7031	2	5 5/8	9 1/2
23/32	.7188	2	5 5/8	9 1/2
47/64	.7344	2	5 7/8	9 3/4
3/4	.7500	2	5 7/8	9 3/4
49/64	.7656	2	6	9 7/8
25/32	.7813	2	6	9 7/8
51/64	.7969	3	6 1/8	10 3/4
13/16	.8125	3	6 1/8	10 3/4
53/64	.8281	3	6 1/8	10 3/4
27/32	.8438	3	6 1/8	10 3/4
55/64	.8594	3	6 1/8	10 3/4
7/8	.8750	3	6 1/8	10 3/4
57/64	.8906	3	6 1/8	10 3/4
29/32	.9063	3	6 1/8	10 3/4
59/64	.9219	3	6 1/8	10 3/4
15/16	.9375	3	6 1/8	10 3/4
61/64	.9531	3	6 3/8	11
31/32	.9688	3	6 3/8	11
63/64	.9844	3	6 3/8	11
1	1.0000	3	6 3/8	11
1 1/64	1.0156	3	6 1/2	11 1/8
1 1/32	1.0313	3	6 1/2	11 1/8
1 3/64	1.0469	3	6 5/8	11 1/4
1 1/16	1.0625	3	6 5/8	11 1/4
1 5/64	1.0781	4	6 7/8	12 1/2

Tool Diameter		Dimensions		
Frac.	Dec.	Taper	Length	
			Flute	Overall
1 ³ / ₃₂	1.0938	4	6 ⁷ / ₈	12 ¹ / ₂
1 ⁷ / ₆₄	1.1094	4	7 ¹ / ₈	12 ³ / ₄
1 ¹ / ₈	1.1250	4	7 ¹ / ₈	12 ³ / ₄
1 ⁹ / ₆₄	1.1406	4	7 ¹ / ₄	12 ⁷ / ₈
1 ⁵ / ₃₂	1.1563	4	7 ¹ / ₄	12 ⁷ / ₈
1 ¹¹ / ₆₄	1.1719	4	7 ³ / ₈	13
1 ³ / ₁₆	1.1875	4	7 ³ / ₈	13
1 ¹³ / ₆₄	1.2031	4	7 ¹ / ₂	13 ¹ / ₈
1 ⁷ / ₃₂	1.2188	4	7 ¹ / ₂	13 ¹ / ₈
1 ¹⁵ / ₆₄	1.2344	4	7 ⁷ / ₈	13 ¹ / ₂
1 ¹ / ₄	1.2500	4	7 ⁷ / ₈	13 ¹ / ₂
1 ⁹ / ₃₂	1.2813	4	8 ¹ / ₂	14 ¹ / ₈
1 ⁵ / ₁₆	1.3125	4	8 ⁵ / ₈	14 ¹ / ₄
1 ¹¹ / ₃₂	1.3438	4	8 ³ / ₄	14 ³ / ₈
1 ³ / ₈	1.3750	4	8 ⁷ / ₈	14 ¹ / ₂
1 ¹³ / ₃₂	1.4063	4	9	14 ⁵ / ₈
1 ⁷ / ₁₆	1.4375	4	9 ¹ / ₈	14 ³ / ₄
1 ¹⁵ / ₃₂	1.4688	4	9 ¹ / ₄	14 ⁷ / ₈
1 ¹ / ₂	1.5000	4	9 ³ / ₈	15



**TWIST DRILLS — CARBIDE TIPPED
TAPER SHANK — 135° POINT**

Tool Diameter		Dimensions		
Frac.	Dec.	Taper	Length	
			Flute	Overall
¼	.2500	1	2 7/8	6 1/8
17/64	.2656	1	3	6 ¼
9/32	.2813	1	3	6 ¼
19/64	.2969	1	3 1/8	6 3/8
5/16	.3125	1	3 1/8	6 3/8
21/64	.3281	1	3 ¼	6 ½
11/32	.3438	1	3 ¼	6 ½
23/64	.3594	1	3 ½	6 ¾
3/8	.3750	1	3 ½	6 ¾
25/64	.3906	1	3 5/8	7
13/32	.4063	1	3 5/8	7
27/64	.4219	1	3 7/8	7 ¼
7/16	.4375	1	3 7/8	7 ¼
29/64	.4531	1	4 1/8	7 ½
15/32	.4688	1	4 1/8	7 ½
31/64	.4844	2	4 3/8	8 ¼

Tool Diameter		Dimensions		
		Taper	Length	
Frac.	Dec.		Flute	Overall
½	.5000	2	4 ¾	8 ¼
33/64	.5156	2	4 5/8	8 ½
17/32	.5313	2	4 5/8	8 ½
35/64	.5469	2	4 7/8	8 ¾
9/16	.5625	2	4 7/8	8 ¾
37/64	.5781	2	4 7/8	8 ¾
19/32	.5938	2	4 7/8	8 ¾
39/64	.6094	2	4 7/8	8 ¾
5/8	.6250	2	4 7/8	8 ¾
41/64	.6406	2	5 1/8	9
21/32	.6563	2	5 1/8	9
43/64	.6719	2	5 3/8	9 ¼
11/16	.6875	2	5 3/8	9 ¼
45/64	.7031	2	5 5/8	9 ½
23/32	.7188	2	5 5/8	9 ½
47/64	.7344	2	5 7/8	9 ¾
¾	.7500	2	5 7/8	9 ¾
49/64	.7656	2	6	9 7/8
25/32	.7813	2	6	9 7/8
51/64	.7969	3	6 1/8	10 ¾
13/16	.8125	3	6 1/8	10 ¾
53/64	.8281	3	6 1/8	10 ¾
27/32	.8438	3	6 1/8	10 ¾
55/64	.8594	3	6 1/8	10 ¾
7/8	.8750	3	6 1/8	10 ¾
57/64	.8906	3	6 1/8	10 ¾
29/32	.9063	3	6 1/8	10 ¾
59/64	.9219	3	6 1/8	10 ¾
15/16	.9375	3	6 1/8	10 ¾

Tool Diameter		Dimensions		
Frac.	Dec.	Taper	Length	
			Flute	Overall
61/64	.9531	3	6 3/8	11
31/32	.9688	3	6 3/8	11
63/64	.9844	3	6 3/8	11
1	1.0000	3	6 3/8	11
1 1/64	1.0156	3	6 1/2	11 1/8
1 1/32	1.0313	3	6 1/2	11 1/8
1 3/64	1.0469	3	6 5/8	11 1/4
1 1/16	1.0625	3	6 5/8	11 1/4
1 5/64	1.0781	4	6 7/8	12 1/2
1 3/32	1.0938	4	6 7/8	12 1/2
1 7/64	1.1094	4	7 1/8	12 3/4
1 1/8	1.1250	4	7 1/8	12 3/4
1 9/64	1.1406	4	7 1/2	12 7/8
1 5/32	1.1563	4	7 1/2	12 7/8
1 11/64	1.1719	4	7 3/8	13
1 3/16	1.1875	4	7 3/8	13
1 13/64	1.2031	4	7 1/2	13 1/8
1 7/32	1.2188	4	7 1/2	13 1/8
1 15/64	1.2344	4	7 7/8	13 1/2
1 1/4	1.2500	4	7 7/8	13 1/2
1 9/32	1.2813	4	8 1/2	14 1/8
1 5/16	1.3125	4	8 5/8	14 1/4
1 11/32	1.3438	4	8 3/4	14 3/8
1 3/8	1.3750	4	8 7/8	14 1/2
1 13/32	1.4063	4	9	14 5/8
1 7/16	1.4375	4	9 1/8	14 3/4
1 15/32	1.4688	4	9 1/4	14 7/8
1 1/2	1.5000	4	9 3/8	15



**SILVER & DEMING DRILLS — CARBIDE TIPPED
118° STANDARD POINT**

Shank: 1/2" diameter, 2 1/4" long
118° point – 6" overall length
Heavy duty quality construction

Tool Diameter		Length	
Frac.	Dec.	Flute	Overall
1/2	.5000	3 1/8	6
17/32	.5313	3 1/8	6
9/16	.5625	3 1/8	6
19/32	.5938	3 1/8	6
5/8	.6250	3 1/8	6
21/32	.6563	3 1/8	6
11/16	.6875	3 1/8	6
23/32	.7188	3 1/8	6
3/4	.7500	3 1/8	6
25/32	.7813	3 1/8	6

Tool Diameter		Length	
Frac.	Dec.	Flute	Overall
$13/16$	.8125	$3 \frac{1}{8}$	6
$27/32$	.8438	$3 \frac{1}{8}$	6
$7/8$	.8750	$3 \frac{1}{8}$	6
$29/32$	.9063	$3 \frac{1}{8}$	6
$15/16$	.9375	$3 \frac{1}{8}$	6
$31/32$	.9688	$3 \frac{1}{8}$	6
1	1.0000	$3 \frac{1}{8}$	6
$1 \frac{1}{32}$	1.0313	$3 \frac{1}{8}$	6
$1 \frac{1}{16}$	1.0625	$3 \frac{1}{8}$	6
$1 \frac{3}{32}$	1.0938	$3 \frac{1}{8}$	6
$1 \frac{1}{8}$	1.1250	$3 \frac{1}{8}$	6
$1 \frac{5}{32}$	1.1563	$3 \frac{1}{8}$	6
$1 \frac{3}{16}$	1.1875	$3 \frac{1}{8}$	6
$1 \frac{7}{32}$	1.2188	$3 \frac{1}{8}$	6
$1 \frac{1}{4}$	1.2500	$3 \frac{1}{8}$	6

CARMET
TOOLS & INSERTS



SILVER & DEMING DRILLS — CARBIDE TIPPED 135° SPLIT POINT

Shank: 1/2" diameter, 2 1/4" long

135° split point

Heavy duty quality construction

Designed for drilling tough abrasive or high tensile materials

Tool Diameter		Length	
Frac.	Dec.	Flute	Overall
1/2	.5000	3 1/8	6
17/32	.5313	3 1/8	6
9/16	.5625	3 1/8	6
19/32	.5938	3 1/8	6
5/8	.6250	3 1/8	6
21/32	.6563	3 1/8	6
11/16	.6875	3 1/8	6
23/32	.7188	3 1/8	6
3/4	.7500	3 1/8	6
25/32	.7813	3 1/8	6
13/16	.8125	3 1/8	6
27/32	.8438	3 1/8	6
7/8	.8750	3 1/8	6
29/32	.9063	3 1/8	6
15/16	.9375	3 1/8	6
31/32	.9688	3 1/8	6
1	1.0000	3 1/8	6
1 1/32	1.0313	3 1/8	6
1 1/16	1.0625	3 1/8	6
1 3/32	1.0938	3 1/8	6
1 1/8	1.1250	3 1/8	6
1 5/32	1.1563	3 1/8	6

Tool Diameter		Length	
Frac.	Dec.	Flute	Overall
1 ³ / ₁₆	1.1875	3 ¹ / ₈	6
1 ⁷ / ₃₂	1.2188	3 ¹ / ₈	6
1 ¹ / ₄	1.2500	3 ¹ / ₈	6



**CNC SPOTTING / CENTERING DRILLS — CARBIDE TIPPED
90° POINT SHORT LENGTH**

Tool Diameter		Length	
Frac.	Dec.	Flute	Overall
¹ / ₄	.2500	1	2 ¹ / ₂
³ / ₈	.3750	1 ¹ / ₈	3 ¹ / ₈
¹ / ₂	.5000	1 ¹ / ₂	3 ³ / ₄
⁵ / ₈	.6250	1 ⁵ / ₈	4 ¹ / ₄
³ / ₄	.7500	1 ⁷ / ₈	5
1	1.0000	2 ¹ / ₄	6



**CNC SPOTTING / CENTERING DRILLS — CARBIDE TIPPED
90° POINT REGULAR LENGTH**

Tool Diameter		Length	
Frac.	Dec.	Flute	Overall
¼	.2500	1	4
⅜	.3750	1 ⅛	5
½	.5000	1 ½	6
⅝	.6250	1 ⅝	7
¾	.7500	1 ¾	8
1	1.0000	2 ¼	8



CNC SPOTTING / CENTERING DRILLS — CARBIDE TIPPED 120° POINT SHORT LENGTH

Tool Diameter		Length	
Frac.	Dec.	Flute	Overall
¼	.2500	1	2 ½
¾	.3750	1 1/8	3 1/8
½	.5000	1 ½	3 ¾
5/8	.6250	1 5/8	4 ¼
¾	.7500	1 7/8	5
1	1.0000	2 ¼	6



**CNC SPOTTING / CENTERING DRILLS — CARBIDE TIPPED
120° POINT REGULAR LENGTH**

Tool Diameter		Length	
Frac.	Dec.	Flute	Overall
¼	.2500	1	4
3/8	.3750	1 1/8	5
½	.5000	1 ½	6
5/8	.6250	1 5/8	7
¾	.7500	1 7/8	8
1	1.0000	2 ¼	8



CNC SPOTTING / CENTERING DRILLS — CARBIDE TIPPED 140° POINT SHORT LENGTH

Tool Diameter		Length	
Frac.	Dec.	Flute	Overall
¼	.2500	1	2 ½
⅜	.3750	1 ⅛	3 ⅛
½	.5000	1 ½	3 ¾
⅝	.6250	1 ⅝	4 ¼
¾	.7500	1 ⅞	5
1	1.0000	2 ¼	6



**CNC SPOTTING / CENTERING DRILLS — CARBIDE TIPPED
140° POINT REGULAR LENGTH**

Tool Diameter		Length	
Frac.	Dec.	Flute	Overall
¼	.2500	1	4
3/8	.3750	1 1/8	5
½	.5000	1 ½	6
5/8	.6250	1 5/8	7
¾	.7500	1 7/8	8
1	1.0000	2 ¼	8



**HARD STEEL DIE DRILLS — CARBIDE TIPPED
DIE DRILL — NEGATIVE EDGE — 118° POINT**

Die drill — negative angle cutting edge.
118° included point.

Tool Diameter		Length	
Frac.	Dec.	Flute	Overall
1/16	.0625		1 1/2
5/64	.0781		1 1/2
3/32	.0938		2
7/64	.1094		2
1/8	.1250		2
9/64	.1406		2

5/32	.1563		2
11/64	.1719		2 3/8
3/16	.1875	1 1/2	3 1/2
13/64	.2031	1 1/2	3 1/2
7/32	.2188	1 3/4	3 3/4
15/64	.2344	1 3/4	3 3/4
1/4	.2500	2	4

$\frac{17}{64}$	.2656	2	4
$\frac{9}{32}$	.2813	2 $\frac{1}{4}$	4 $\frac{1}{4}$
$\frac{19}{64}$	.2969	2 $\frac{1}{4}$	4 $\frac{1}{4}$
$\frac{5}{16}$	.3125	2 $\frac{1}{2}$	4 $\frac{1}{2}$
$\frac{21}{64}$	.3281	2 $\frac{1}{2}$	4 $\frac{1}{2}$
$\frac{11}{32}$	.3438	2 $\frac{3}{4}$	4 $\frac{3}{4}$
$\frac{23}{64}$	.3594	2 $\frac{3}{4}$	4 $\frac{3}{4}$
$\frac{3}{8}$	.3750	3	5
$\frac{25}{64}$	.3906	3	5
$\frac{13}{32}$	.4063	3	5 $\frac{1}{4}$
$\frac{27}{64}$	.4219	3	5 $\frac{1}{4}$
$\frac{7}{16}$	.4375	3	5 $\frac{1}{2}$
$\frac{29}{64}$	.4531	3	5 $\frac{1}{2}$
$\frac{15}{32}$	.4688	3 $\frac{1}{4}$	5 $\frac{3}{4}$
$\frac{31}{64}$	.4844	3 $\frac{1}{4}$	5 $\frac{3}{4}$
$\frac{1}{2}$	.5000	3 $\frac{1}{2}$	6
$\frac{17}{32}$	.5313	3 $\frac{1}{2}$	6
$\frac{9}{16}$	.5625	3 $\frac{1}{2}$	6
$\frac{19}{32}$	.5938	4	7
$\frac{5}{8}$	.6250	4	7
$\frac{21}{32}$	.6563	4 $\frac{1}{2}$	7 $\frac{1}{2}$
$\frac{11}{16}$	.6875	4 $\frac{1}{2}$	7 $\frac{1}{2}$
$\frac{23}{32}$	.7188	4 $\frac{3}{4}$	8
$\frac{3}{4}$	.7500	4 $\frac{3}{4}$	8
$\frac{25}{32}$	.7813	4 $\frac{3}{4}$	8
$\frac{13}{16}$	.8125	4 $\frac{3}{4}$	8
$\frac{7}{8}$	.8750	4 $\frac{3}{4}$	8
$\frac{15}{16}$	.9375	4 $\frac{3}{4}$	8
1	1.0000	4 $\frac{3}{4}$	8



**HARD STEEL DIE DRILLS — CARBIDE TIPPED
DIE DRILL — NEGATIVE EDGE — 118° POINT — METRIC**

For drilling hardened steel in the range of 35 to 65 Rockwell C.

Tool		Length			
Diameter		Flute		Overall	
mm	Inch	mm	Inch	mm	Inch
5.0	.1969	38.0	1 1/2	89.0	3 1/2
5.5	.2165	45.0	1 3/4	95.0	3 3/4
6.0	.2362	51.0	2	102.0	4
6.5	.2559	51.0	2	102.0	4
7.0	.2756	57.0	2 1/4	108.0	4 1/4
7.5	.2953	57.0	2 1/4	108.0	4 1/4
8.0	.3150	64.0	2 1/2	114.0	4 1/2
8.5	.3346	70.0	2 3/4	121.0	4 3/4
9.0	.3543	70.0	2 3/4	121.0	4 3/4
9.5	.3740	76.0	3	127.0	5
10.0	.3937	76.0	3	133.0	5 1/4
10.5	.4134	76.0	3	133.0	5 1/4
11.0	.4331	76.0	3	140.0	5 1/2
11.5	.4528	76.0	3	140.0	5 1/2
12.0	.4724	83.0	3 1/4	146.0	5 3/4
12.5	.4921	89.0	3 1/2	152.0	6

Tool		Length			
Diameter		Flute		Overall	
mm	Inch	mm	Inch	mm	Inch
13.0	.5118	89.0	3 1/2	152.0	6
13.5	.5315	89.0	3 1/2	152.0	6
14.0	.5512	89.0	3 1/2	152.0	6



**HARD STEEL DIE DRILLS — CARBIDE TIPPED
DIE DRILL — POSITIVE EDGE — 140° POINT**

Die drill — positive angle cutting edge.
140° included point angle.

steel in the range of 35 to 65 Rockwell C

Tool		Length	
Frac.	Dec.	Flute	Overall
3/16	.1875	1 1/2	3 1/2
13/64	.2031	1 1/2	3 1/2
7/32	.2188	1 3/4	3 3/4
15/64	.2344	1 3/4	3 3/4
1/4	.2500	2	4
17/64	.2656	2	4
9/32	.2813	2 1/4	4 1/4
19/64	.2969	2 1/4	4 1/4
5/16	.3125	2 1/2	4 1/2
21/64	.3281	2 1/2	4 1/2
11/32	.3438	2 3/4	4 3/4

Tool Diameter		Length	
Frac.	Dec.	Flute	Overall
$\frac{23}{64}$	.3594	2 $\frac{3}{4}$	4 $\frac{3}{4}$
$\frac{3}{8}$	.3750	3	5
$\frac{25}{64}$	.3906	3	5
$\frac{13}{32}$	.4063	3	5 $\frac{1}{4}$
$\frac{27}{64}$	.4219	3	5 $\frac{1}{4}$
$\frac{7}{16}$	.4375	3	5 $\frac{1}{2}$
$\frac{29}{64}$	.4531	3	5 $\frac{1}{2}$
$\frac{15}{32}$	.4688	3 $\frac{1}{4}$	5 $\frac{3}{4}$
$\frac{31}{64}$	.4844	3 $\frac{1}{4}$	5 $\frac{3}{4}$
$\frac{1}{2}$	.5000	3 $\frac{1}{2}$	6
$\frac{17}{32}$	.5313	3 $\frac{1}{2}$	6
$\frac{9}{16}$	.5625	3 $\frac{1}{2}$	6
$\frac{19}{32}$	.5938	4	7
$\frac{5}{8}$	.6250	4	7
$\frac{21}{32}$	.6563	4 $\frac{1}{2}$	7 $\frac{1}{2}$
$\frac{11}{16}$	.6875	4 $\frac{1}{2}$	7 $\frac{1}{2}$
$\frac{23}{32}$	.7188	4 $\frac{3}{4}$	8
$\frac{3}{4}$	.7500	4 $\frac{3}{4}$	8
$\frac{25}{32}$	.7813	4 $\frac{3}{4}$	8
$\frac{13}{16}$	.8125	4 $\frac{3}{4}$	8
$\frac{7}{8}$	.8750	4 $\frac{3}{4}$	8
$\frac{15}{16}$	.9375	4 $\frac{3}{4}$	8
1	1.0000	4 $\frac{3}{4}$	8



HARD STEEL DIE DRILLS — CARBIDE TIPPED

DIE DRILL — POSITIVE EDGE — 118° POINT

For drilling hardened steel in the range of 35 to 65 Rockwell C

Tool Diameter		Length	
Frac.	Dec.	Flute	Overall
$\frac{3}{16}$	.1875	1 1/2	3 1/2
$\frac{13}{64}$	.2031	1 1/2	3 1/2
$\frac{7}{32}$	.2188	1 3/4	3 3/4
$\frac{15}{64}$	.2344	1 3/4	3 3/4
$\frac{1}{4}$	.2500	2	4
$\frac{17}{64}$	.2656	2	4
$\frac{9}{32}$	.2813	2 1/4	4 1/4
$\frac{19}{64}$	.2969	2 1/4	4 1/4
$\frac{5}{16}$	.3125	2 1/2	4 1/2
$\frac{21}{64}$	.3281	2 1/2	4 1/2

Tool Diameter		Length	
Frac.	Dec.	Flute	Overall
$11/32$	.3438	$2\ 3/4$	$4\ 3/4$
$23/64$	.3594	$2\ 3/4$	$4\ 3/4$
$3/8$	.3750	3	5
$25/64$	.3906	3	5
$13/32$	.4063	3	$5\ 1/4$
$27/64$	.4219	3	$5\ 1/4$
$7/16$	.4375	3	$5\ 1/2$
$29/64$	.4531	3	$5\ 1/2$
$15/32$	.4688	$3\ 1/4$	$5\ 3/4$
$31/64$	.4844	$3\ 1/4$	$5\ 3/4$
$1/2$	.5000	$3\ 1/2$	6
$17/32$	.5313	$3\ 1/2$	6
$9/16$	.5625	$3\ 1/2$	6
$19/32$	.5938	4	7
$5/8$	.6250	4	7
$21/32$	.6563	$4\ 1/2$	$7\ 1/2$
$11/16$	.6875	$4\ 1/2$	$7\ 1/2$
$23/32$	.7188	$4\ 3/4$	8
$3/4$	.7500	$4\ 3/4$	8
$25/32$	.7813	$4\ 3/4$	8
$13/16$	.8125	$4\ 3/4$	8
$7/8$	.8750	$4\ 3/4$	8
$15/16$	.9375	$4\ 3/4$	8
1	1.0000	$4\ 3/4$	8



**HARD STEEL DIE DRILLS — CARBIDE TIPPED
DIE DRILL — POSITIVE EDGE — 118° POINT — METRIC**

For drilling hardened steel in the range of 35 to 65 Rockwell C

Tool Diameter		Length			
		Flute		Overall	
mm	Inch	mm	Inch	mm	Inch
5.0	.1969	38.0	1 1/2	89.0	3 1/2
5.5	.2165	45.0	1 3/4	95.0	3 3/4
6.0	.2362	51.0	2	102.0	4
6.5	.2559	51.0	2	102.0	4
7.0	.2756	57.0	2 1/4	108.0	4 1/4
7.5	.2953	57.0	2 1/4	108.0	4 1/4
8.0	.3150	64.0	2 1/2	114.0	4 1/2
8.5	.3346	70.0	2 3/4	121.0	4 3/4
9.0	.3543	70.0	2 3/4	121.0	4 3/4
9.5	.3740	76.0	3	127.0	5
10.0	.3937	76.0	3	133.0	5 1/4
10.5	.4134	76.0	3	133.0	5 1/4

Tool		Length			
Diameter		Flute		Overall	
mm	Inch	mm	Inch	mm	Inch
11.0	.4331	76.0	3	140.0	5 1/2
11.5	.4528	76.0	3	140.0	5 1/2
12.0	.4724	83.0	3 1/4	146.0	5 3/4
12.5	.4921	89.0	3 1/2	152.0	6
13.0	.5118	89.0	3 1/2	152.0	6
13.5	.5315	89.0	3 1/2	152.0	6
14.0	.5512	89.0	3 1/2	152.0	6

CARMET
TOOLS & INSERTS



HARD STEEL DIE DRILLS — CARBIDE TIPPED

DIE DRILL — POSITIVE EDGE — 140° POINT

For drilling hardened steel in the range of 35 to 65 Rockwell C

Tool Diameter		Length	
Frac.	Dec.	Flute	Overall
$\frac{3}{16}$	.1875	1 $\frac{1}{2}$	3 $\frac{1}{2}$
$\frac{13}{64}$	.2031	1 $\frac{1}{2}$	3 $\frac{1}{2}$
$\frac{7}{32}$	.2188	1 $\frac{3}{4}$	3 $\frac{3}{4}$
$\frac{15}{64}$	.2344	1 $\frac{3}{4}$	3 $\frac{3}{4}$
$\frac{1}{4}$	.2500	2	4
$\frac{17}{64}$	.2656	2	4
$\frac{9}{32}$	.2813	2 $\frac{1}{4}$	4 $\frac{1}{4}$
$\frac{19}{64}$	.2969	2 $\frac{1}{4}$	4 $\frac{1}{4}$
$\frac{5}{16}$	.3125	2 $\frac{1}{2}$	4 $\frac{1}{2}$
$\frac{21}{64}$	.3281	2 $\frac{1}{2}$	4 $\frac{1}{2}$
$\frac{11}{32}$	.3438	2 $\frac{3}{4}$	4 $\frac{3}{4}$
$\frac{23}{64}$	.3594	2 $\frac{3}{4}$	4 $\frac{3}{4}$
$\frac{3}{8}$	.3750	3	5
$\frac{25}{64}$	.3906	3	5
$\frac{13}{32}$	.4063	3	5 $\frac{1}{4}$
$\frac{27}{64}$	.4219	3	5 $\frac{1}{4}$
$\frac{7}{16}$	.4375	3	5 $\frac{1}{2}$
$\frac{29}{64}$	.4531	3	5 $\frac{1}{2}$
$\frac{15}{32}$	.4688	3 $\frac{1}{4}$	5 $\frac{3}{4}$
$\frac{31}{64}$	.4844	3 $\frac{1}{4}$	5 $\frac{3}{4}$
$\frac{1}{2}$	.5000	3 $\frac{1}{2}$	6
$\frac{17}{32}$	.5313	3 $\frac{1}{2}$	6
$\frac{9}{16}$	.5625	3 $\frac{1}{2}$	6

19/32	.5938	4	7
5/8	.6250	4	7
21/32	.6563	4 1/2	7 1/2
11/16	.6875	4 1/2	7 1/2
23/32	.7188	4 3/4	8
3/4	.7500	4 3/4	8
25/32	.7813	4 3/4	8
13/16	.8125	4 3/4	8
7/8	.8750	4 3/4	8
15/16	.9375	4 3/4	8
1	1.0000	4 3/4	8



**HARD STEEL DIE DRILLS — CARBIDE TIPPED
SPADE TYPE — 120° POINT**

Flat flutes and 120° point angle with flat lip clearances.
Carbide tips high temperature brazed to tool steel bodies.
Precision ground to insure concentricity of tip and shank body. Used for shallow holes,

Tool Diameter		Overall Length
Frac.	Dec.	
3/32	.0938	2
7/64	.1094	2
1/8	.1250	2

Tool Diameter		Overall Length
Frac.	Dec.	
$\frac{9}{64}$	.1406	2
$\frac{5}{32}$	.1563	2
$\frac{11}{64}$	.1719	3
$\frac{3}{16}$	.1875	3
$\frac{13}{64}$	.2031	3
$\frac{7}{32}$	.2188	3 $\frac{1}{2}$
$\frac{15}{64}$	.2344	3 $\frac{1}{2}$
$\frac{1}{4}$	.2500	4
$\frac{17}{64}$	.2656	4
$\frac{9}{32}$	.2813	4
$\frac{19}{64}$	.2969	4
$\frac{5}{16}$	.3125	4
$\frac{21}{64}$	.3281	4
$\frac{11}{32}$	.3438	4
$\frac{23}{64}$	.3594	4
$\frac{3}{8}$	.3750	4
$\frac{25}{64}$	.3906	4
$\frac{13}{32}$	.4063	4
$\frac{27}{64}$	.4219	4
$\frac{7}{16}$	.4375	4 $\frac{1}{2}$
$\frac{29}{64}$	.4531	4 $\frac{1}{2}$
$\frac{15}{32}$	.4688	4 $\frac{1}{2}$
$\frac{31}{64}$	.4844	4 $\frac{1}{2}$
$\frac{1}{2}$	.5000	5



**HARD STEEL DIE DRILLS — CARBIDE TIPPED
SPADE TYPE — 140° POINT**

Tool Diameter		Overall Length
Frac.	Dec.	
$\frac{3}{32}$	.0938	2
$\frac{7}{64}$	.1094	2
$\frac{1}{8}$	.1250	2
$\frac{9}{64}$	.1406	2
$\frac{5}{32}$	.1563	2
$\frac{11}{64}$	.1719	3
$\frac{3}{16}$	.1875	3
$\frac{13}{64}$	.2031	3
$\frac{7}{32}$	.2188	3 $\frac{1}{2}$
$\frac{15}{64}$	.2344	3 $\frac{1}{2}$
$\frac{1}{4}$	.2500	4
$\frac{17}{64}$	.2656	4
$\frac{9}{32}$	.2813	4
$\frac{19}{64}$	.2969	4
$\frac{5}{16}$	.3125	4

$21/64$	.3281	4
$11/32$	.3438	4
$23/64$	.3594	4
$3/8$	.3750	4
$25/64$	.3906	4
$13/32$.4063	4
$27/64$.4219	4
$7/16$.4375	4 1/2
$29/64$.4531	4 1/2
$15/32$.4688	4 1/2
$31/64$.4844	4 1/2
$1/2$.5000	5

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TOOLS & INSERTS



**REDUCED SHANK DIAMETER DRILLS — CARBIDE TIPPED
STUB LENGTH — 118° POINT**

Tool Diameter		Dimensions	
Frac.	Dec.	Shank Diameter	Overall Length
$\frac{9}{32}$	.2813	$\frac{1}{4}$	$2 \frac{11}{16}$
$\frac{5}{16}$	.3125	$\frac{1}{4}$	$2 \frac{13}{16}$
$\frac{11}{32}$	.3438	$\frac{1}{4}$	3
$\frac{3}{8}$	.3750	$\frac{1}{4}$	$3 \frac{1}{8}$
$\frac{13}{32}$	.4063	$\frac{1}{4}$	$3 \frac{5}{16}$
$\frac{7}{16}$	.4375	$\frac{1}{4}$	$3 \frac{7}{16}$
$\frac{15}{32}$	.4688	$\frac{1}{4}$	$3 \frac{5}{8}$
$\frac{1}{2}$	.5000	$\frac{1}{4}$	$3 \frac{3}{4}$
$\frac{13}{32}$	.4063	$\frac{3}{8}$	$3 \frac{5}{16}$
$\frac{7}{16}$	.4375	$\frac{3}{8}$	$3 \frac{7}{16}$
$\frac{15}{32}$	.4688	$\frac{3}{8}$	$3 \frac{5}{8}$
$\frac{1}{2}$	.5000	$\frac{3}{8}$	$3 \frac{3}{4}$
$\frac{17}{32}$	.5313	$\frac{3}{8}$	$3 \frac{7}{8}$
$\frac{9}{16}$	.5625	$\frac{3}{8}$	4
$\frac{19}{32}$	.5938	$\frac{3}{8}$	$4 \frac{1}{8}$
$\frac{5}{8}$	.6250	$\frac{3}{8}$	$4 \frac{1}{4}$
$\frac{21}{32}$	.6563	$\frac{3}{8}$	$4 \frac{1}{2}$
$\frac{11}{16}$	.6875	$\frac{3}{8}$	$4 \frac{5}{8}$
$\frac{23}{32}$	.7188	$\frac{3}{8}$	$4 \frac{3}{4}$
$\frac{3}{4}$	.7500	$\frac{3}{8}$	5
$\frac{17}{32}$	.5313	$\frac{1}{2}$	$3 \frac{7}{8}$
$\frac{9}{16}$	.5625	$\frac{1}{2}$	4
$\frac{19}{32}$	.5938	$\frac{1}{2}$	$4 \frac{1}{8}$
$\frac{5}{8}$	.6250	$\frac{1}{2}$	$4 \frac{1}{4}$
$\frac{21}{32}$	.6563	$\frac{1}{2}$	$4 \frac{1}{2}$
$\frac{11}{16}$	.6875	$\frac{1}{2}$	$4 \frac{5}{8}$
$\frac{23}{32}$	.7188	$\frac{1}{2}$	$4 \frac{3}{4}$
$\frac{3}{4}$	.7500	$\frac{1}{2}$	5
$\frac{13}{16}$	.8125	$\frac{1}{2}$	$5 \frac{1}{4}$
$\frac{7}{8}$	.8750	$\frac{1}{2}$	$5 \frac{1}{2}$

Tool Diameter		Dimensions	
Frac.	Dec.	Shank Diameter	Overall Length
$\frac{15}{16}$	.9375	$\frac{1}{2}$	$5 \frac{3}{4}$
1	1.0000	$\frac{1}{2}$	6
$\frac{13}{16}$	.8125	$\frac{3}{4}$	$5 \frac{1}{4}$
$\frac{7}{8}$	.8750	$\frac{3}{4}$	$5 \frac{1}{2}$
$\frac{15}{16}$	.9375	$\frac{3}{4}$	$5 \frac{3}{4}$
1	1.0000	$\frac{3}{4}$	6
$1 \frac{1}{16}$	1.0625	$\frac{3}{4}$	$6 \frac{1}{4}$
$1 \frac{1}{8}$	1.1250	$\frac{3}{4}$	$6 \frac{3}{8}$
$1 \frac{3}{16}$	1.1875	$\frac{3}{4}$	$6 \frac{5}{8}$
$1 \frac{1}{4}$	1.2500	$\frac{3}{4}$	$6 \frac{3}{4}$

CARMET
TOOLS & INSERTS



REDUCED SHANK DIAMETER DRILLS — CARBIDE TIPPED STUB LENGTH — 135° POINT

Tool Diameter		Dimensions	
Frac.	Dec.	Shank Diameter	Overall Length
$\frac{9}{32}$	.2813	$\frac{1}{4}$	$2 \frac{11}{16}$
$\frac{5}{16}$	.3125	$\frac{1}{4}$	$2 \frac{13}{16}$

Tool Diameter		Dimensions	
Frac.	Dec.	Shank Diameter	Overall Length
$1\frac{1}{32}$	.3438	$\frac{1}{4}$	3
$\frac{3}{8}$	.3750	$\frac{1}{4}$	$3\frac{1}{8}$
$1\frac{3}{32}$	.4063	$\frac{1}{4}$	$3\frac{5}{16}$
$\frac{7}{16}$	.4375	$\frac{1}{4}$	$3\frac{7}{16}$
$1\frac{5}{32}$	.4688	$\frac{1}{4}$	$3\frac{5}{8}$
$\frac{1}{2}$	.5000	$\frac{1}{4}$	$3\frac{3}{4}$
$1\frac{3}{32}$	.4063	$\frac{3}{8}$	$3\frac{5}{16}$
$\frac{7}{16}$	.4375	$\frac{3}{8}$	$3\frac{7}{16}$
$1\frac{5}{32}$	.4688	$\frac{3}{8}$	$3\frac{5}{8}$
$\frac{1}{2}$	.5000	$\frac{3}{8}$	$3\frac{3}{4}$
$1\frac{7}{32}$	.5313	$\frac{3}{8}$	$3\frac{7}{8}$
$\frac{9}{16}$	.5625	$\frac{3}{8}$	4
$1\frac{9}{32}$	.5938	$\frac{3}{8}$	$4\frac{1}{8}$
$\frac{5}{8}$	.6250	$\frac{3}{8}$	$4\frac{1}{4}$
$1\frac{11}{32}$	.6563	$\frac{3}{8}$	$4\frac{1}{2}$
$1\frac{11}{16}$	.6875	$\frac{3}{8}$	$4\frac{5}{8}$
$1\frac{23}{32}$	.7188	$\frac{3}{8}$	$4\frac{3}{4}$
$\frac{3}{4}$	.7500	$\frac{3}{8}$	5
$1\frac{17}{32}$	.5313	$\frac{1}{2}$	$3\frac{7}{8}$
$\frac{9}{16}$	.5625	$\frac{1}{2}$	4
$1\frac{19}{32}$	.5938	$\frac{1}{2}$	$4\frac{1}{8}$
$\frac{5}{8}$	.6250	$\frac{1}{2}$	$4\frac{1}{4}$
$1\frac{21}{32}$	.6563	$\frac{1}{2}$	$4\frac{1}{2}$
$1\frac{11}{16}$	.6875	$\frac{1}{2}$	$4\frac{5}{8}$
$1\frac{23}{32}$	.7188	$\frac{1}{2}$	$4\frac{3}{4}$
$\frac{3}{4}$	.7500	$\frac{1}{2}$	5
$1\frac{13}{16}$	.8125	$\frac{1}{2}$	$5\frac{1}{4}$
$\frac{7}{8}$	.8750	$\frac{1}{2}$	$5\frac{1}{2}$
$1\frac{15}{16}$	.9375	$\frac{1}{2}$	$5\frac{3}{4}$
1	1.0000	$\frac{1}{2}$	6

Tool Diameter		Dimensions	
Frac.	Dec.	Shank Diameter	Overall Length
$\frac{13}{16}$	.8125	$\frac{3}{4}$	$5 \frac{1}{4}$
$\frac{7}{8}$	.8750	$\frac{3}{4}$	$5 \frac{1}{2}$
$\frac{15}{16}$	.9375	$\frac{3}{4}$	$5 \frac{3}{4}$
1	1.0000	$\frac{3}{4}$	6
$1 \frac{1}{16}$	1.0625	$\frac{3}{4}$	$6 \frac{1}{4}$
$1 \frac{1}{8}$	1.1250	$\frac{3}{4}$	$6 \frac{3}{8}$
$1 \frac{3}{16}$	1.1875	$\frac{3}{4}$	$6 \frac{5}{8}$
$1 \frac{1}{4}$	1.2500	$\frac{3}{4}$	$6 \frac{3}{4}$



**REDUCED SHANK DIAMETER DRILLS — CARBIDE TIPPED
JOBBER LENGTH — 118° POINT**

Tool Diameter		Dimensions	
Frac.	Dec.	Shank Diameter	Overall Length
9/32	.2813	1/4	4 1/4
5/16	.3125	1/4	4 1/2
11/32	.3438	1/4	4 3/4
3/8	.3750	1/4	5
13/32	.4063	1/4	5 1/4
7/16	.4375	1/4	5 1/2
15/32	.4688	1/4	5 3/4
1/2	.5000	1/4	6
13/32	.4063	3/8	5 1/4
7/16	.4375	3/8	5 1/2
15/32	.4688	3/8	5 3/4
1/2	.5000	3/8	6
17/32	.5313	3/8	6 5/8
9/16	.5625	3/8	6 5/8
19/32	.5938	3/8	7 1/8
5/8	.6250	3/8	7 1/8
21/32	.6563	3/8	7 1/8
11/16	.6875	3/8	7 5/8
23/32	.7188	3/8	7 5/8
3/4	.7500	3/8	8

Tool Diameter		Dimensions	
Frac.	Dec.	Shank Diameter	Overall Length
17/32	.5313	1/2	6 5/8
9/16	.5625	1/2	6 5/8
19/32	.5938	1/2	7 1/8
5/8	.6250	1/2	7 1/8
21/32	.6563	1/2	7 1/8
11/16	.6875	1/2	7 5/8
23/32	.7188	1/2	7 5/8
3/4	.7500	1/2	8



**REDUCED SHANK DIAMETER DRILLS — CARBIDE TIPPED
JOBBER LENGTH — 135° POINT**

Tool Diameter		Dimensions	
Frac.	Dec.	Shank Diameter	Overall Length
9/32	.2813	1/4	4 1/4
5/16	.3125	1/4	4 1/2
11/32	.3438	1/4	4 3/4
3/8	.3750	1/4	5
13/32	.4063	1/4	5 1/4
7/16	.4375	1/4	5 1/2

Tool Diameter		Dimensions	
Frac.	Dec.	Shank Diameter	Overall Length
$\frac{15}{32}$	.4688	$\frac{1}{4}$	$5 \frac{3}{4}$
$\frac{1}{2}$	.5000	$\frac{1}{4}$	6
$\frac{13}{32}$	.4063	$\frac{3}{8}$	$5 \frac{1}{4}$
$\frac{7}{16}$	.4375	$\frac{3}{8}$	$5 \frac{1}{2}$
$\frac{15}{32}$	.4688	$\frac{3}{8}$	$5 \frac{3}{4}$
$\frac{1}{2}$	.5000	$\frac{3}{8}$	6
$\frac{17}{32}$	.5313	$\frac{3}{8}$	$6 \frac{5}{8}$
$\frac{9}{16}$	.5625	$\frac{3}{8}$	$6 \frac{5}{8}$
$\frac{19}{32}$	.5938	$\frac{3}{8}$	$7 \frac{1}{8}$
$\frac{5}{8}$	.6250	$\frac{3}{8}$	$7 \frac{1}{8}$
$\frac{21}{32}$	.6563	$\frac{3}{8}$	$7 \frac{1}{8}$
$\frac{11}{16}$	.6875	$\frac{3}{8}$	$7 \frac{5}{8}$
$\frac{23}{32}$	.7188	$\frac{3}{8}$	$7 \frac{5}{8}$
$\frac{3}{4}$	.7500	$\frac{3}{8}$	8
$\frac{17}{32}$	.5313	$\frac{1}{2}$	$6 \frac{5}{8}$
$\frac{9}{16}$	.5625	$\frac{1}{2}$	$6 \frac{5}{8}$
$\frac{19}{32}$	.5938	$\frac{1}{2}$	$7 \frac{1}{8}$
$\frac{5}{8}$	.6250	$\frac{1}{2}$	$7 \frac{1}{8}$
$\frac{21}{32}$	.6563	$\frac{1}{2}$	$7 \frac{1}{8}$
$\frac{11}{16}$	.6875	$\frac{1}{2}$	$7 \frac{5}{8}$
$\frac{23}{32}$	.7188	$\frac{1}{2}$	$7 \frac{5}{8}$
$\frac{3}{4}$	.7500	$\frac{1}{2}$	8



**REDUCED SHANK DIAMETER DRILLS — CARBIDE TIPPED
HARD STEEL DIE DRILLS — NEGATIVE 118° POINT**

Tool Diameter		Dimensions	
Frac.	Dec.	Shank Diameter	Overall Length
5/16	.3125	1/4	4 1/2
11/32	.3438	1/4	4 3/4
3/8	.3750	1/4	5
13/32	.4063	1/4	5 1/4
7/16	.4375	1/4	5 1/2
15/32	.4688	1/4	5 3/4
1/2	.5000	1/4	6
7/16	.4375	3/8	5 1/2
15/32	.4688	3/8	5 3/4
1/2	.5000	3/8	6
17/32	.5313	3/8	6
9/16	.5625	3/8	6
19/32	.5938	3/8	7
5/8	.6250	3/8	7
21/32	.6563	3/8	7 1/2
11/16	.6875	3/8	7 1/2
23/32	.7188	3/8	8
3/4	.7500	3/8	8

Tool Diameter		Dimensions	
Frac.	Dec.	Shank Diameter	Overall Length
$\frac{9}{16}$	.5625	$\frac{1}{2}$	6
$\frac{19}{32}$	.5938	$\frac{1}{2}$	7
$\frac{5}{8}$	.6250	$\frac{1}{2}$	7
$\frac{21}{32}$	.6563	$\frac{1}{2}$	7 $\frac{1}{2}$
$\frac{11}{16}$	.6875	$\frac{1}{2}$	7 $\frac{1}{2}$
$\frac{23}{32}$	.7188	$\frac{1}{2}$	8
$\frac{3}{4}$	.7500	$\frac{1}{2}$	8
$\frac{13}{16}$	.8125	$\frac{1}{2}$	8
$\frac{7}{8}$	.8750	$\frac{1}{2}$	8
$\frac{15}{16}$	.9375	$\frac{1}{2}$	8
1	1.0000	$\frac{1}{2}$	8
$\frac{13}{16}$	.8125	$\frac{3}{4}$	8
$\frac{7}{8}$	.8750	$\frac{3}{4}$	8
$\frac{15}{16}$	.9375	$\frac{3}{4}$	8
1	1.0000	$\frac{3}{4}$	8

CARMET
TOOLS & INSERTS



REDUCED SHANK DIAMETER DRILLS — CARBIDE TIPPED JOBBER LENGTH — 135° POINT

Tool Diameter		Dimensions	
Frac.	Dec.	Shank Diameter	Overall Length
$\frac{9}{32}$	.2813	$\frac{1}{4}$	4 $\frac{1}{4}$
$\frac{5}{16}$	.3125	$\frac{1}{4}$	4 $\frac{1}{2}$
$\frac{11}{32}$	.3438	$\frac{1}{4}$	4 $\frac{3}{4}$
$\frac{3}{8}$	.3750	$\frac{1}{4}$	5
$\frac{13}{32}$	.4063	$\frac{1}{4}$	5 $\frac{1}{4}$
$\frac{7}{16}$	.4375	$\frac{1}{4}$	5 $\frac{1}{2}$
$\frac{15}{32}$	.4688	$\frac{1}{4}$	5 $\frac{3}{4}$
$\frac{1}{2}$	.5000	$\frac{1}{4}$	6
$\frac{13}{32}$	.4063	$\frac{3}{8}$	5 $\frac{1}{4}$
$\frac{7}{16}$	.4375	$\frac{3}{8}$	5 $\frac{1}{2}$
$\frac{15}{32}$	.4688	$\frac{3}{8}$	5 $\frac{3}{4}$
$\frac{1}{2}$	.5000	$\frac{3}{8}$	6
$\frac{17}{32}$	.5313	$\frac{3}{8}$	6 $\frac{5}{8}$
$\frac{9}{16}$	.5625	$\frac{3}{8}$	6 $\frac{5}{8}$
$\frac{19}{32}$	.5938	$\frac{3}{8}$	7 $\frac{1}{8}$
$\frac{5}{8}$	.6250	$\frac{3}{8}$	7 $\frac{1}{8}$
$\frac{21}{32}$	.6563	$\frac{3}{8}$	7 $\frac{1}{8}$
$\frac{11}{16}$	.6875	$\frac{3}{8}$	7 $\frac{5}{8}$
$\frac{23}{32}$	.7188	$\frac{3}{8}$	7 $\frac{5}{8}$
$\frac{3}{4}$	.7500	$\frac{3}{8}$	8
$\frac{17}{32}$	.5313	$\frac{1}{2}$	6 $\frac{5}{8}$
$\frac{9}{16}$	.5625	$\frac{1}{2}$	6 $\frac{5}{8}$
$\frac{19}{32}$	.5938	$\frac{1}{2}$	7 $\frac{1}{8}$
$\frac{5}{8}$	.6250	$\frac{1}{2}$	7 $\frac{1}{8}$
$\frac{21}{32}$	.6563	$\frac{1}{2}$	7 $\frac{1}{8}$
$\frac{11}{16}$	.6875	$\frac{1}{2}$	7 $\frac{5}{8}$
$\frac{23}{32}$	.7188	$\frac{1}{2}$	7 $\frac{5}{8}$

Tool Diameter		Dimensions	
Frac.	Dec.	Shank Diameter	Overall Length
3/4	.7500	1/2	8



**REDUCED SHANK DIAMETER DRILLS — CARBIDE TIPPED
HARD STEEL DIE DRILLS — NEGATIVE 118° POINT**

Tool Diameter		Dimensions	
Frac.	Dec.	Shank Diameter	Overall Length
5/16	.3125	1/4	4 1/2
11/32	.3438	1/4	4 3/4
3/8	.3750	1/4	5
13/32	.4063	1/4	5 1/4
7/16	.4375	1/4	5 1/2
15/32	.4688	1/4	5 3/4
1/2	.5000	1/4	6
7/16	.4375	3/8	5 1/2
15/32	.4688	3/8	5 3/4
1/2	.5000	3/8	6
17/32	.5313	3/8	6
9/16	.5625	3/8	6
19/32	.5938	3/8	7
5/8	.6250	3/8	7
21/32	.6563	3/8	7 1/2
11/16	.6875	3/8	7 1/2

Tool Diameter		Dimensions	
Frac.	Dec.	Shank Diameter	Overall Length
$\frac{23}{32}$	.7188	$\frac{3}{8}$	8
$\frac{3}{4}$	.7500	$\frac{3}{8}$	8
$\frac{9}{16}$	.5625	$\frac{1}{2}$	6
$\frac{19}{32}$	.5938	$\frac{1}{2}$	7
$\frac{5}{8}$	.6250	$\frac{1}{2}$	7
$\frac{21}{32}$	.6563	$\frac{1}{2}$	7 $\frac{1}{2}$
$\frac{11}{16}$	.6875	$\frac{1}{2}$	7 $\frac{1}{2}$
$\frac{23}{32}$	.7188	$\frac{1}{2}$	8
$\frac{3}{4}$	.7500	$\frac{1}{2}$	8
$\frac{13}{16}$	.8125	$\frac{1}{2}$	8
$\frac{7}{8}$	.8750	$\frac{1}{2}$	8
$\frac{15}{16}$	.9375	$\frac{1}{2}$	8
1	1.0000	$\frac{1}{2}$	8
$\frac{13}{16}$	.8125	$\frac{3}{4}$	8
$\frac{7}{8}$	.8750	$\frac{3}{4}$	8
$\frac{15}{16}$	.9375	$\frac{3}{4}$	8



REDUCED SHANK DIAMETER DRILLS — CARBIDE TIPPED

HARD STEEL DIE DRILLS — POSITIVE 118° POINT

Tool Diameter		Dimensions	
Frac.	Dec.	Shank Diameter	Overall Length
$\frac{5}{16}$	.3125	$\frac{1}{4}$	4 $\frac{1}{2}$
$\frac{11}{32}$	.3438	$\frac{1}{4}$	4 $\frac{3}{4}$
$\frac{3}{8}$	.3750	$\frac{1}{4}$	5
$\frac{13}{32}$	.4063	$\frac{1}{4}$	5 $\frac{1}{4}$
$\frac{7}{16}$	.4375	$\frac{1}{4}$	5 $\frac{1}{2}$
$\frac{15}{32}$	.4688	$\frac{1}{4}$	5 $\frac{3}{4}$
$\frac{1}{2}$	.5000	$\frac{1}{4}$	6
$\frac{7}{16}$	.4375	$\frac{3}{8}$	5 $\frac{1}{2}$
$\frac{15}{32}$	.4688	$\frac{3}{8}$	5 $\frac{3}{4}$
$\frac{1}{2}$	.5000	$\frac{3}{8}$	6
$\frac{17}{32}$	.5313	$\frac{3}{8}$	6
$\frac{9}{16}$	.5625	$\frac{3}{8}$	6
$\frac{19}{32}$	.5938	$\frac{3}{8}$	7
$\frac{5}{8}$	.6250	$\frac{3}{8}$	7
$\frac{21}{32}$	.6563	$\frac{3}{8}$	7 $\frac{1}{2}$
$\frac{11}{16}$	.6875	$\frac{3}{8}$	7 $\frac{1}{2}$
$\frac{23}{32}$	.7188	$\frac{3}{8}$	8
$\frac{3}{4}$	.7500	$\frac{3}{8}$	8
$\frac{9}{16}$	.5625	$\frac{1}{2}$	6
$\frac{19}{32}$	.5938	$\frac{1}{2}$	7
$\frac{5}{8}$	.6250	$\frac{1}{2}$	7
$\frac{21}{32}$	.6563	$\frac{1}{2}$	7 $\frac{1}{2}$
$\frac{11}{16}$	.6875	$\frac{1}{2}$	7 $\frac{1}{2}$
$\frac{23}{32}$	.7188	$\frac{1}{2}$	8
$\frac{3}{4}$	.7500	$\frac{1}{2}$	8
$\frac{13}{16}$	.8125	$\frac{1}{2}$	8
$\frac{7}{8}$	.8750	$\frac{1}{2}$	8
$\frac{15}{16}$	.9375	$\frac{1}{2}$	8

Tool Diameter		Dimensions	
Frac.	Dec.	Shank Diameter	Overall Length
1	1.0000	1/2	8
13/16	.8125	3/4	8
7/8	.8750	3/4	8
15/16	.9375	3/4	8
1	1.0000	3/4	8



MASONRY DRILLS — CARBIDE TIPPED REGULAR HELIX (WIDE SPIRAL)

Tool Diameter	Dimensions	
	Shank Diameter	Overall Length
1/8	1/8	3
3/16	3/16	3
1/4	1/4	4
1/4	1/4	6
5/16	1/4	6
5/16	1/4	4
3/8	1/4	4
3/8	1/4	6

Tool	Dimensions	
	Diameter	Shank Diameter	Overall Length
7/16	1/4	6
7/16	1/4	4
1/2	1/4	4
1/2	1/4	6
1/2	3/8	6
9/16	3/8	6
5/8	1/2	6
11/16	1/2	6
3/4	1/2	6
7/8	1/2	6
1	1/2	6



**MASONRY DRILLS — CARBIDE TIPPED
HIGH HELIX (FAST SPIRAL)**

Tool	Dimensions	
	Diameter	Shank Diameter	Overall Length
1/8	1/8	3
3/16	3/16	3
1/4	1/4	4
1/4	1/4	6
5/16	1/4	6
5/16	1/4	4
3/8	1/4	4

Tool Diameter	Dimensions	
	Shank Diameter	Overall Length
3/8	1/4	6
7/16	1/4	6
7/16	1/4	4
1/2	1/4	4
1/2	1/4	6
1/2	3/8	6
9/16	3/8	6
5/8	1/2	6
11/16	1/2	6
3/4	1/2	6
7/8	1/2	6
1	1/2	6



**MASONRY DRILLS — CARBIDE TIPPED
HIGH HELIX (FAST SPIRAL) — 13" LENGTH**

Tool Diameter	Shank Diameter
1/4	1/4
5/16	1/4
3/8	1/4
7/16	1/4
1/2	3/8
9/16	3/8

Tool Diameter	Shank Diameter
5/8	1/2
11/16	1/2
3/4	1/2
7/8	1/2
1	1/2



**MASONRY DRILLS — CARBIDE TIPPED
HIGH HELIX (FAST SPIRAL) — 18" LENGTH**

Tool Diameter	Shank Diameter
1/4	1/4
5/16	1/4
3/8	1/4
7/16	1/4
1/2	3/8
9/16	3/8
5/8	1/2

Tool Diameter	Shank Diameter
1 ¹ / ₁₆	1/2
3/4	1/2
7/8	1/2
1	1/2



**GLASS & TILE DRILLS — CARBIDE TIPPED
CARBIDE SPEAR POINT STRAIGHT SHANK**

Tool Diameter		Dimensions	
Frac.	Dec.	Shank Diameter	Overall Length
1/8	.1250	7/64	2 1/2
3/16	.1875	5/32	2 1/2
1/4	.2500	7/32	2 1/2
5/16	.3125	1/4	3
3/8	.3750	5/16	3 1/2
7/16	.4375	3/8	3 1/2
1/2	.5000	7/16	3 1/2
9/16	.5625	1/2	4
5/8	.6250	9/16	4



CORE DRILLS — CARBIDE TIPPED STRAIGHT SHANK — FRACTIONAL SIZES

Cutting diameter tolerance plus .000" minus .001".
Carbide tips brazed to one piece hardened tool steel bodies.

Tool		Dimensions				
		Diameter		Length		
Frac.	Dec.	Min. Cut	Shank	Flute	Carbide	Overall
3/8 *	.3750	.2620	3/8	3 1/2	5/8	6 3/4
13/32 *	.4063	.2840	13/32	3 5/8	5/8	7
7/16 *	.4375	.3060	7/16	3 7/8	3/4	7 1/4
15/32 *	.4688	.3280	15/32	4 1/8	3/4	7 1/2
1/2	.5000	.3500	1/2	4 3/8	3/4	8 1/4
17/32	.5313	.3720	17/32	4 3/8	3/4	8 1/4
9/16	.5625	.3940	9/16	4 3/8	3/4	8 1/4
19/32	.5938	.4160	19/32	4 3/8	3/4	8 1/4
5/8	.6250	.4380	5/8	4 3/8	3/4	8 1/4
21/32	.6563	.4590	21/32	4 3/8	3/4	8 1/4
11/16	.6875	.4810	11/16	4 3/8	7/8	8 1/4
23/32	.7188	.5030	23/32	4 3/8	7/8	8 1/4
3/4	.7500	.5250	3/4	4 3/8	7/8	8 1/4
25/32	.7813	.5470	25/32	4 3/8	7/8	8 1/4
13/16	.8125	.5690	13/16	4 7/8	7/8	9 1/2

Tool		Dimensions				
		Diameter		Length		
Frac.	Dec.	Min. Cut	Shank	Flute	Carbide	Overall
$\frac{27}{32}$	.8438	.5910	$\frac{27}{32}$	4 $\frac{7}{8}$	$\frac{7}{8}$	9 $\frac{1}{2}$
$\frac{7}{8}$	.8750	.6120	$\frac{7}{8}$	4 $\frac{7}{8}$	$\frac{7}{8}$	9 $\frac{1}{2}$
$\frac{29}{32}$	.9063	.6340	$\frac{29}{32}$	4 $\frac{7}{8}$	$\frac{7}{8}$	9 $\frac{1}{2}$
$\frac{15}{16}$	.9375	.6560	$\frac{15}{16}$	4 $\frac{7}{8}$	$\frac{7}{8}$	9 $\frac{1}{2}$
$\frac{31}{32}$	.9688	.6780	$\frac{31}{32}$	4 $\frac{7}{8}$	$\frac{7}{8}$	9 $\frac{1}{2}$
1	1.0000	.7000	1	4 $\frac{7}{8}$	$\frac{7}{8}$	9 $\frac{1}{2}$
1 $\frac{1}{32}$	1.0313	.7220	1 $\frac{1}{32}$	4 $\frac{7}{8}$	$\frac{7}{8}$	9 $\frac{1}{2}$
1 $\frac{1}{16}$	1.0625	.7440	1 $\frac{1}{16}$	4 $\frac{7}{8}$	$\frac{7}{8}$	9 $\frac{1}{2}$
1 $\frac{3}{32}$	1.0938	.7660	1 $\frac{3}{32}$	4 $\frac{7}{8}$	1	10 $\frac{1}{2}$
1 $\frac{1}{8}$	1.1250	.7870	1 $\frac{1}{8}$	4 $\frac{7}{8}$	1	10 $\frac{1}{2}$
1 $\frac{5}{32}$	1.1563	.8090	1 $\frac{5}{32}$	4 $\frac{7}{8}$	1	10 $\frac{1}{2}$
1 $\frac{3}{16}$	1.1875	.8310	1 $\frac{3}{16}$	4 $\frac{7}{8}$	1	10 $\frac{1}{2}$
1 $\frac{7}{32}$	1.2188	.8530	1 $\frac{7}{32}$	4 $\frac{7}{8}$	1	10 $\frac{1}{2}$
1 $\frac{1}{4}$	1.2500	$\frac{7}{8}$	1 $\frac{1}{4}$	4 $\frac{7}{8}$	1	10 $\frac{1}{2}$
1 $\frac{9}{32}$	1.2813	.8970	1 $\frac{9}{32}$	4 $\frac{7}{8}$	1	10 $\frac{1}{2}$
1 $\frac{5}{16}$	1.3125	.9190	1 $\frac{5}{16}$	4 $\frac{7}{8}$	1	10 $\frac{1}{2}$
1 $\frac{11}{32}$	1.3438	.9400	1 $\frac{11}{32}$	4 $\frac{7}{8}$	1	10 $\frac{1}{2}$
1 $\frac{3}{8}$	1.3750	.9620	1 $\frac{3}{8}$	4 $\frac{7}{8}$	1	10 $\frac{1}{2}$
1 $\frac{13}{32}$	1.4063	$\frac{63}{64}$	1 $\frac{13}{32}$	4 $\frac{7}{8}$	1	10 $\frac{1}{2}$
1 $\frac{7}{16}$	1.4375	1.0060	1 $\frac{7}{16}$	4 $\frac{7}{8}$	1	10 $\frac{1}{2}$
1 $\frac{15}{32}$	1.4688	1.0250	1 $\frac{15}{32}$	4 $\frac{7}{8}$	1	10 $\frac{1}{2}$
1 $\frac{1}{2}$	1.5000	1.0500	1 $\frac{1}{2}$	4 $\frac{7}{8}$	1	10 $\frac{1}{2}$



CORE DRILLS — CARBIDE TIPPED STRAIGHT SHANK — METRIC SIZES

Cutting diameter tolerance plus .000" minus .001".

Carbide tips brazed to one piece hardened tool steel bodies..

Tool		Dimensions				
		Diameter		Length		
mm	Inch	Min. Cut	Shank	Flute	Carbide	Overall
9.0 *	.3543	.2620	$\frac{3}{8}$	3 $\frac{1}{2}$	$\frac{5}{8}$	6 $\frac{3}{4}$
10.0 *	.3937	.2840	$\frac{13}{32}$	3 $\frac{5}{8}$	$\frac{5}{8}$	7
11.0 *	.4331	.3060	$\frac{7}{16}$	3 $\frac{7}{8}$	$\frac{3}{4}$	7 $\frac{1}{4}$
—		.3280	$\frac{15}{32}$	4 $\frac{1}{8}$	$\frac{3}{4}$	7 $\frac{1}{2}$
12.0	.4724	.3500	$\frac{1}{2}$	4 $\frac{3}{8}$	$\frac{3}{4}$	8 $\frac{1}{4}$
13.0	.5118	.3720	$\frac{17}{32}$	4 $\frac{3}{8}$	$\frac{3}{4}$	8 $\frac{1}{4}$
14.0	.5512	.3940	$\frac{9}{16}$	4 $\frac{3}{8}$	$\frac{3}{4}$	8 $\frac{1}{4}$
15.0	.5906	.4160	$\frac{19}{32}$	4 $\frac{3}{8}$	$\frac{3}{4}$	8 $\frac{1}{4}$
—		.4380	$\frac{5}{8}$	4 $\frac{3}{8}$	$\frac{3}{4}$	8 $\frac{1}{4}$
16.0	.6299	.4590	$\frac{21}{32}$	4 $\frac{3}{8}$	$\frac{3}{4}$	8 $\frac{1}{4}$
17.0	.6693	.4810	$\frac{11}{16}$	4 $\frac{3}{8}$	$\frac{7}{8}$	8 $\frac{1}{4}$
18.0	.7087	.5030	$\frac{23}{32}$	4 $\frac{3}{8}$	$\frac{7}{8}$	8 $\frac{1}{4}$
19.0	.7480	.5250	$\frac{3}{4}$	4 $\frac{3}{8}$	$\frac{7}{8}$	8 $\frac{1}{4}$
—		.5470	$\frac{25}{32}$	4 $\frac{3}{8}$	$\frac{7}{8}$	8 $\frac{1}{4}$
20.0	.7874	.5690	$\frac{13}{16}$	4 $\frac{7}{8}$	$\frac{7}{8}$	9 $\frac{1}{2}$
21.0	.8268	.5910	$\frac{27}{32}$	4 $\frac{7}{8}$	$\frac{7}{8}$	9 $\frac{1}{2}$

Tool Diameter		Dimensions				
		Diameter		Length		
mm	Inch	Min. Cut	Shank	Flute	Carbide	Overall
22.0	.8661	.6120	$\frac{7}{8}$	4 $\frac{7}{8}$	$\frac{7}{8}$	9 $\frac{1}{2}$
23.0	.9055	.6340	$\frac{29}{32}$	4 $\frac{7}{8}$	$\frac{7}{8}$	9 $\frac{1}{2}$
—		.6560	$\frac{15}{16}$	4 $\frac{7}{8}$	$\frac{7}{8}$	9 $\frac{1}{2}$
24.0	.9449	.6780	$\frac{31}{32}$	4 $\frac{7}{8}$	$\frac{7}{8}$	9 $\frac{1}{2}$
25.0	.9843	.7000	1	4 $\frac{7}{8}$	$\frac{7}{8}$	9 $\frac{1}{2}$
26.0	1.0236	.7220	1 $\frac{1}{32}$	4 $\frac{7}{8}$	$\frac{7}{8}$	9 $\frac{1}{2}$
27.0	1.0630	.7440	1 $\frac{1}{16}$	4 $\frac{7}{8}$	$\frac{7}{8}$	9 $\frac{1}{2}$
—		.7660	1 $\frac{3}{32}$	4 $\frac{7}{8}$	1	10 $\frac{1}{2}$
28.0	1.1024	.7870	1 $\frac{1}{8}$	4 $\frac{7}{8}$	1	10 $\frac{1}{2}$
29.0	1.1417	.8090	1 $\frac{5}{32}$	4 $\frac{7}{8}$	1	10 $\frac{1}{2}$
30.0	1.1811	.8310	1 $\frac{3}{16}$	4 $\frac{7}{8}$	1	10 $\frac{1}{2}$
31.0	1.2205	.8530	1 $\frac{7}{32}$	4 $\frac{7}{8}$	1	10 $\frac{1}{2}$
—		$\frac{7}{8}$	1 $\frac{1}{4}$	4 $\frac{7}{8}$	1	10 $\frac{1}{2}$
32.0	1.2598	.8970	1 $\frac{9}{32}$	4 $\frac{7}{8}$	1	10 $\frac{1}{2}$
33.0	1.2992	.9190	1 $\frac{5}{16}$	4 $\frac{7}{8}$	1	10 $\frac{1}{2}$
34.0	1.3386	.9400	1 $\frac{11}{32}$	4 $\frac{7}{8}$	1	10 $\frac{1}{2}$
35.0	1.3780	.9620	1 $\frac{3}{8}$	4 $\frac{7}{8}$	1	10 $\frac{1}{2}$
—		$\frac{63}{64}$	1 $\frac{13}{32}$	4 $\frac{7}{8}$	1	10 $\frac{1}{2}$
36.0	1.4173	1.0060	1 $\frac{7}{16}$	4 $\frac{7}{8}$	1	10 $\frac{1}{2}$
37.0	1.4567	1.0250	1 $\frac{15}{32}$	4 $\frac{7}{8}$	1	10 $\frac{1}{2}$
38.0	1.4961	1.0500	1 $\frac{1}{2}$	4 $\frac{7}{8}$	1	10 $\frac{1}{2}$



CORE DRILLS — CARBIDE TIPPED TAPER SHANK — FRACTIONAL SIZES

Cutting diameter tolerance plus .000" minus .001".
Carbide tips brazed to one piece hardened tool steel bodies.

Tool Diameter		Dimensions				
		Min. Cut Diam.	Taper	Length		
Frac.	Dec.			Flute	Carbide	Overall
3/8 *	.3750	.2620	1	3 1/2	5/8	6 3/4
13/32 *	.4063	.2840	1	3 5/8	5/8	7
7/16 *	.4375	.3060	1	3 7/8	3/4	7 1/4
15/32 *	.4688	.3280	1	4 1/8	3/4	7 1/2
1/2	.5000	.3500	2	4 3/8	3/4	8 1/4
17/32	.5313	.3720	2	4 3/8	3/4	8 1/4
9/16	.5625	.3940	2	4 3/8	3/4	8 1/4
19/32	.5938	.4160	2	4 3/8	3/4	8 1/4
5/8	.6250	.4380	2	4 3/8	3/4	8 1/4
21/32	.6563	.4590	2	4 3/8	3/4	8 1/4
11/16	.6875	.4810	2	4 3/8	7/8	8 1/4
23/32	.7188	.5030	2	4 3/8	7/8	8 1/4
3/4	.7500	.5250	2	4 3/8	7/8	8 1/4
25/32	.7813	.5470	2	4 3/8	7/8	8 1/4
13/16	.8125	.5690	3	4 7/8	7/8	9 1/2

Tool Diameter		Dimensions				
		Min. Cut Diam.	Taper	Length		
Frac.	Dec.			Flute	Carbide	Overall
$\frac{27}{32}$	.8438	.5910	3	4 $\frac{7}{8}$	$\frac{7}{8}$	9 $\frac{1}{2}$
$\frac{7}{8}$	.8750	.6120	3	4 $\frac{7}{8}$	$\frac{7}{8}$	9 $\frac{1}{2}$
$\frac{29}{32}$	.9063	.6340	3	4 $\frac{7}{8}$	$\frac{7}{8}$	9 $\frac{1}{2}$
$\frac{15}{16}$	.9375	.6560	3	4 $\frac{7}{8}$	$\frac{7}{8}$	9 $\frac{1}{2}$
$\frac{31}{32}$	.9688	.6780	3	4 $\frac{7}{8}$	$\frac{7}{8}$	9 $\frac{1}{2}$
1	1.0000	.7000	3	4 $\frac{7}{8}$	$\frac{7}{8}$	9 $\frac{1}{2}$
1 $\frac{1}{32}$	1.0313	.7220	3	4 $\frac{7}{8}$	$\frac{7}{8}$	9 $\frac{1}{2}$
1 $\frac{1}{16}$	1.0625	.7440	3	4 $\frac{7}{8}$	$\frac{7}{8}$	9 $\frac{1}{2}$
1 $\frac{3}{32}$	1.0938	.7660	4	4 $\frac{7}{8}$	1	10 $\frac{1}{2}$
1 $\frac{1}{8}$	1.1250	.7870	4	4 $\frac{7}{8}$	1	10 $\frac{1}{2}$
1 $\frac{5}{32}$	1.1563	.8090	4	4 $\frac{7}{8}$	1	10 $\frac{1}{2}$
1 $\frac{3}{16}$	1.1875	.8310	4	4 $\frac{7}{8}$	1	10 $\frac{1}{2}$
1 $\frac{7}{32}$	1.2188	.8530	4	4 $\frac{7}{8}$	1	10 $\frac{1}{2}$
1 $\frac{1}{4}$	1.2500	$\frac{7}{8}$	4	4 $\frac{7}{8}$	1	10 $\frac{1}{2}$
1 $\frac{9}{32}$	1.2813	.8970	4	4 $\frac{7}{8}$	1	10 $\frac{1}{2}$
1 $\frac{5}{16}$	1.3125	.9190	4	4 $\frac{7}{8}$	1	10 $\frac{1}{2}$
1 $\frac{11}{32}$	1.3438	.9400	4	4 $\frac{7}{8}$	1	10 $\frac{1}{2}$
1 $\frac{3}{8}$	1.3750	.9620	4	4 $\frac{7}{8}$	1	10 $\frac{1}{2}$
1 $\frac{13}{32}$	1.4063	$\frac{63}{64}$	4	4 $\frac{7}{8}$	1	10 $\frac{1}{2}$
1 $\frac{7}{16}$	1.4375	1.0060	4	4 $\frac{7}{8}$	1	10 $\frac{1}{2}$
1 $\frac{15}{32}$	1.4688	1.0250	4	4 $\frac{7}{8}$	1	10 $\frac{1}{2}$
1 $\frac{1}{2}$	1.5000	1.0500	4	4 $\frac{7}{8}$	1	10 $\frac{1}{2}$



CORE DRILLS — CARBIDE TIPPED TAPER SHANK — METRIC SIZES

Cutting diameter tolerance plus .000" minus .001".

Carbide tips brazed to one piece hardened tool steel bodies.

Tool Diameter		Dimensions				
		Min. Cut Diam.	Taper	Length		
				Flute	Carbide	Overall
mm	Inch					
9.0 *	.3543	.2620	1	3 1/2	5/8	6 3/4
10.0 *	.3937	.2840	1	3 5/8	5/8	7
11.0 *	.4331	.3060	1	3 7/8	3/4	7 1/4
—		.3280	1	4 1/8	3/4	7 1/2
12.0	.4724	.3500	2	4 3/8	3/4	8 1/4
13.0	.5118	.3720	2	4 3/8	3/4	8 1/4
14.0	.5512	.3940	2	4 3/8	3/4	8 1/4
15.0	.5906	.4160	2	4 3/8	3/4	8 1/4
—		.4380	2	4 3/8	3/4	8 1/4
16.0	.6299	.4590	2	4 3/8	3/4	8 1/4
17.0	.6693	.4810	2	4 3/8	7/8	8 1/4
18.0	.7087	.5030	2	4 3/8	7/8	8 1/4
19.0	.7480	.5250	2	4 3/8	7/8	8 1/4
—		.5470	2	4 3/8	7/8	8 1/4
20.0	.7874	.5690	3	4 7/8	7/8	9 1/2
21.0	.8268	.5910	3	4 7/8	7/8	9 1/2

Tool Diameter		Dimensions				
		Min. Cut Diam.	Taper	Length		
				Flute	Carbide	Overall
mm	Inch					
22.0	.8661	.6120	3	4 7/8	7/8	9 1/2
23.0	.9055	.6340	3	4 7/8	7/8	9 1/2
—		.6560	3	4 7/8	7/8	9 1/2
24.0	.9449	.6780	3	4 7/8	7/8	9 1/2
25.0	.9843	.7000	3	4 7/8	7/8	9 1/2
26.0	1.0236	.7220	3	4 7/8	7/8	9 1/2
27.0	1.0630	.7440	3	4 7/8	7/8	9 1/2
—		.7660	4	4 7/8	1	10 1/2
28.0	1.1024	.7870	4	4 7/8	1	10 1/2
29.0	1.1417	.8090	4	4 7/8	1	10 1/2
30.0	1.1811	.8310	4	4 7/8	1	10 1/2
31.0	1.2205	.8530	4	4 7/8	1	10 1/2
—		7/8	4	4 7/8	1	10 1/2
32.0	1.2598	.8970	4	4 7/8	1	10 1/2
33.0	1.2992	.9190	4	4 7/8	1	10 1/2
34.0	1.3386	.9400	4	4 7/8	1	10 1/2
35.0	1.3780	.9620	4	4 7/8	1	10 1/2
—		⁶³ / ₆₄	4	4 7/8	1	10 1/2
36.0	1.4173	1.0060	4	4 7/8	1	10 1/2
37.0	1.4567	1.0250	4	4 7/8	1	10 1/2
38.0	1.4961	1.0500	4	4 7/8	1	10 1/2

38.0	1.4961	1.0500	4	4 ⁷ / ₈	1	10 ¹ / ₂	205.05
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CNC STUB REAMERS — CARBIDE TIPPED STRAIGHT FLUTES

Flute long carbide tipped.
 Polished flutes for high volume chip flow.
 Flute long carbide on .2841" tool diameter and larger.
 Straight shanks fit into standard holders.
 Pin cross holes permit use in pin drive floating holders.
 Carbide tips brazed to one piece hardened tool steel bodies.
 Cutting diameter tolerance plus .0003" minus .0000".

Tool		Dimensions					
		Diameter		No. of Flutes	Length		
Frac.	Dec.	Shank	Pin Hole		Flute	Carbide	Overall
³ / ₁₆	.1875	¹ / ₄	³ / ₃₂	4	1	¹ / ₂	2 ¹ / ₄
⁷ / ₃₂	.2188	¹ / ₄	³ / ₃₂	4	1	¹ / ₂	2 ¹ / ₄
¹⁵ / ₆₄	.2344	¹ / ₄	³ / ₃₂	4	1	¹ / ₂	2 ¹ / ₄
¹ / ₄	.2500	¹ / ₄	³ / ₃₂	4	1	¹ / ₂	2 ¹ / ₄

Tool		Dimensions					
		Diameter		No. of Flutes	Length		
Frac.	Dec.	Shank	Pin Hole		Flute	Carbide	Overall
9/32	.2813	3/8	1/8	4	1	1/2	2 1/4
5/16	.3125	3/8	1/8	4	1	1	2 1/4
11/32	.3438	3/8	1/8	4	1 1/4	1 1/4	2 1/2
3/8	.3750	3/8	1/8	4	1 1/4	1 1/4	2 1/2
13/32	.4063	1/2	3/16	4	1 1/4	1 1/4	2 1/2
7/16	.4375	1/2	3/16	4	1 1/4	1 1/4	2 1/2
15/32	.4688	1/2	3/16	4	1 1/4	1 1/4	2 1/2
1/2	.5000	1/2	3/16	4	1 1/4	1 1/4	2 1/2
17/32	.5313	5/8	1/4	6	1 1/2	1 1/2	3
9/16	.5625	5/8	1/4	6	1 1/2	1 1/2	3
19/32	.5938	5/8	1/4	6	1 1/2	1 1/2	3
5/8	.6250	5/8	1/4	6	1 1/2	1 1/2	3
21/32	.6563	5/8	1/4	6	1 1/2	1 1/2	3
11/16	.6875	5/8	1/4	6	1 1/2	1 1/2	3
23/32	.7188	3/4	5/16	6	1 1/2	1 1/2	3
3/4	.7500	3/4	5/16	6	1 1/2	1 1/2	3
25/32	.7813	3/4	5/16	6	1 1/2	1 1/2	3
13/16	.8125	3/4	5/16	6	1 1/2	1 1/2	3
27/32	.8438	3/4	5/16	6	1 1/2	1 1/2	3
7/8	.8750	3/4	5/16	6	1 1/2	1 1/2	3
29/32	.9063	3/4	5/16	6	1 1/2	1 1/2	3
15/16	.9375	3/4	5/16	6	1 1/2	1 1/2	3
31/32	.9688	3/4	5/16	8	1 1/2	1 1/2	3
1	1.0000	3/4	5/16	8	1 1/2	1 1/2	3
1 1/16	1.0625	3/4	5/16	8	1 1/2	1 1/2	3
1 1/8	1.1250	3/4	5/16	8	1 1/2	1 1/2	3
1 3/16	1.1875	3/4	5/16	8	1 1/2	1 1/2	3
1 1/4	1.2500	3/4	5/16	8	1 1/2	1 1/2	3

Tool Diameter		Dimensions					
		Diameter		No. of Flutes	Length		
Frac.	Dec.	Shank	Pin Hole		Flute	Carbide	Overall
1 5/16	1.3125	3/4	5/16	8	1 1/2	1 1/2	3
1 3/8	1.3750	3/4	5/16	8	1 1/2	1 1/2	3
1 7/16	1.4375	3/4	5/16	8	1 1/2	1 1/2	3
1 1/2	1.5000	3/4	5/16	8	1 1/2	1 1/2	3



CNC STUB REAMERS — CARBIDE TIPPED LEFT SPIRAL FLUTES

Flute long carbide tipped.
 Polished flutes for high volume chip flow.
 Flute long carbide on .2841" tool diameter and larger.
 Straight shanks fit into standard holders.
 Pin cross holes permit use in pin drive floating holders.
 Carbide tips brazed to one piece hardened tool steel bodies.
 Cutting diameter tolerance plus .0003" minus .0000".

Tool		Dimensions					
		Diameter		No. of Flutes	Length		
Frac.	Dec.	Shank	Pin Hole		Flute	Carbide	Overall
$\frac{3}{16}$	.1875	$\frac{1}{4}$	$\frac{3}{32}$	4	1	$\frac{1}{2}$	2 $\frac{1}{4}$
$\frac{7}{32}$	.2188	$\frac{1}{4}$	$\frac{3}{32}$	4	1	$\frac{1}{2}$	2 $\frac{1}{4}$
$\frac{15}{64}$	.2344	$\frac{1}{4}$	$\frac{3}{32}$	4	1	$\frac{1}{2}$	2 $\frac{1}{4}$
$\frac{1}{4}$	.2500	$\frac{1}{4}$	$\frac{3}{32}$	4	1	$\frac{1}{2}$	2 $\frac{1}{4}$
$\frac{9}{32}$	.2813	$\frac{3}{8}$	$\frac{1}{8}$	4	1	$\frac{1}{2}$	2 $\frac{1}{4}$
$\frac{5}{16}$	.3125	$\frac{3}{8}$	$\frac{1}{8}$	4	1	1	2 $\frac{1}{4}$
$\frac{11}{32}$	.3438	$\frac{3}{8}$	$\frac{1}{8}$	4	1 $\frac{1}{4}$	1 $\frac{1}{4}$	2 $\frac{1}{2}$
$\frac{3}{8}$	.3750	$\frac{3}{8}$	$\frac{1}{8}$	4	1 $\frac{1}{4}$	1 $\frac{1}{4}$	2 $\frac{1}{2}$
$\frac{13}{32}$	.4063	$\frac{1}{2}$	$\frac{3}{16}$	4	1 $\frac{1}{4}$	1 $\frac{1}{4}$	2 $\frac{1}{2}$
$\frac{7}{16}$	.4375	$\frac{1}{2}$	$\frac{3}{16}$	4	1 $\frac{1}{4}$	1 $\frac{1}{4}$	2 $\frac{1}{2}$
$\frac{15}{32}$	.4688	$\frac{1}{2}$	$\frac{3}{16}$	4	1 $\frac{1}{4}$	1 $\frac{1}{4}$	2 $\frac{1}{2}$
$\frac{1}{2}$	.5000	$\frac{1}{2}$	$\frac{3}{16}$	4	1 $\frac{1}{4}$	1 $\frac{1}{4}$	2 $\frac{1}{2}$
$\frac{17}{32}$	.5313	$\frac{5}{8}$	$\frac{1}{4}$	6	1 $\frac{1}{2}$	1 $\frac{1}{2}$	3
$\frac{9}{16}$	.5625	$\frac{5}{8}$	$\frac{1}{4}$	6	1 $\frac{1}{2}$	1 $\frac{1}{2}$	3
$\frac{19}{32}$	.5938	$\frac{5}{8}$	$\frac{1}{4}$	6	1 $\frac{1}{2}$	1 $\frac{1}{2}$	3
$\frac{5}{8}$	.6250	$\frac{5}{8}$	$\frac{1}{4}$	6	1 $\frac{1}{2}$	1 $\frac{1}{2}$	3
$\frac{21}{32}$	.6563	$\frac{5}{8}$	$\frac{1}{4}$	6	1 $\frac{1}{2}$	1 $\frac{1}{2}$	3
$\frac{11}{16}$	.6875	$\frac{5}{8}$	$\frac{1}{4}$	6	1 $\frac{1}{2}$	1 $\frac{1}{2}$	3
$\frac{23}{32}$	.7188	$\frac{3}{4}$	$\frac{5}{16}$	6	1 $\frac{1}{2}$	1 $\frac{1}{2}$	3
$\frac{3}{4}$	.7500	$\frac{3}{4}$	$\frac{5}{16}$	6	1 $\frac{1}{2}$	1 $\frac{1}{2}$	3
$\frac{25}{32}$	.7813	$\frac{3}{4}$	$\frac{5}{16}$	6	1 $\frac{1}{2}$	1 $\frac{1}{2}$	3
$\frac{13}{16}$	.8125	$\frac{3}{4}$	$\frac{5}{16}$	6	1 $\frac{1}{2}$	1 $\frac{1}{2}$	3
$\frac{27}{32}$	.8438	$\frac{3}{4}$	$\frac{5}{16}$	6	1 $\frac{1}{2}$	1 $\frac{1}{2}$	3
$\frac{7}{8}$	.8750	$\frac{3}{4}$	$\frac{5}{16}$	6	1 $\frac{1}{2}$	1 $\frac{1}{2}$	3
$\frac{29}{32}$	.9063	$\frac{3}{4}$	$\frac{5}{16}$	6	1 $\frac{1}{2}$	1 $\frac{1}{2}$	3
$\frac{15}{16}$	.9375	$\frac{3}{4}$	$\frac{5}{16}$	6	1 $\frac{1}{2}$	1 $\frac{1}{2}$	3
$\frac{31}{32}$	.9688	$\frac{3}{4}$	$\frac{5}{16}$	8	1 $\frac{1}{2}$	1 $\frac{1}{2}$	3
1	1.0000	$\frac{3}{4}$	$\frac{5}{16}$	8	1 $\frac{1}{2}$	1 $\frac{1}{2}$	3

Tool Diameter		Dimensions					
		Diameter		No. of Flutes	Length		
Frac.	Dec.	Shank	Pin Hole		Flute	Carbide	Overall
1 1/16	1.0625	3/4	5/16	8	1 1/2	1 1/2	3
1 1/8	1.1250	3/4	5/16	8	1 1/2	1 1/2	3
1 3/16	1.1875	3/4	5/16	8	1 1/2	1 1/2	3
1 1/4	1.2500	3/4	5/16	8	1 1/2	1 1/2	3
1 5/16	1.3125	3/4	5/16	8	1 1/2	1 1/2	3
1 3/8	1.3750	3/4	5/16	8	1 1/2	1 1/2	3
1 7/16	1.4375	3/4	5/16	8	1 1/2	1 1/2	3
1 1/2	1.5000	3/4	5/16	8	1 1/2	1 1/2	3

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COOLANT FEEDING REAMERS — CARBIDE TIPPED CENTER FEED FOR BLIND HOLDS — STRAIGHT FLUTES

Full length center feeding coolant hole.
Flute long carbide on .2841" tool diameter and larger.
Tool diameter tolerance +.0003"/-.0000".

Tool Diameter		Dimensions				
		Max. Shank Diam.	No. of Flutes	Length		
Frac.	Dec.			Flute	Carbide	Overall
3/16	.1875	.1805	4	1 1/4	1/2	5
13/64	.2031	.1805	4	1 1/4	1/2	5
7/32	.2188	.2075	4	1 1/4	1/2	5
15/64	.2344	.2265	4	1 1/2	1/2	6
1/4	.2500	.2405	4	1 1/2	1/2	6
17/64	.2656	.2485	4	1 1/2	1/2	6
9/32	.2813	.2485	4	1 1/2	1/2	6
19/64	.2969	.2792	4	1 1/2	1 1/2	6
5/16	.3125	.2792	4	1 1/2	1 1/2	6
21/64	.3281	.2792	4	1 1/2	1 1/2	6
11/32	.3438	.2792	4	1 1/2	1 1/2	6
23/64	.3594	.3105	4	1 3/4	1 3/4	7
3/8	.3750	.3105	4	1 3/4	1 3/4	7
25/64	.3906	.3105	4	1 3/4	1 3/4	7
13/32	.4063	.3105	4	1 3/4	1 3/4	7
27/64	.4219	.3730	6	1 3/4	1 3/4	7
7/16	.4375	.3730	6	1 3/4	1 3/4	7
29/64	.4531	.3730	6	1 3/4	1 3/4	7
15/32	.4688	.3730	6	1 3/4	1 3/4	7
31/64	.4844	.4355	6	2	2	8
1/2	.5000	.4355	6	2	2	8
33/64	.5156	.4355	6	2	2	8
17/32	.5313	.4355	6	2	2	8
9/16	.5625	.4355	6	2	2	8
19/32	.5938	.4355	6	2	2	8
5/8	.6250	.5615	6	2 1/4	2 1/4	9
21/32	.6563	.5615	6	2 1/4	2 1/4	9
11/16	.6875	.5615	6	2 1/4	2 1/4	9

Tool Diameter		Dimensions				
		Max. Shank Diam.	No. of Flutes	Length		
Frac.	Dec.			Flute	Carbide	Overall
23/32	.7188	.5615	6	2 1/4	2 1/4	9
3/4	.7500	.6245	6	2 1/2	2 1/2	9 1/2
25/32	.7813	.6245	6	2 1/2	2 1/2	9 1/2
13/16	.8125	.6245	6	2 1/2	2 1/2	9 1/2
27/32	.8438	.6245	6	2 1/2	2 1/2	9 1/2
7/8	.8750	.7495	6	2 5/8	2 5/8	10
29/32	.9063	.7495	6	2 5/8	2 5/8	10
15/16	.9375	.7495	8	2 5/8	2 5/8	10
31/32	.9688	.7495	8	2 5/8	2 5/8	10
1	1.0000	.8745	8	2 3/4	2 3/4	10 1/2
1 1/16	1.0625	.8745	8	2 3/4	2 3/4	10 1/2
1 1/8	1.1250	.8745	8	2 7/8	2 7/8	11
1 3/16	1.1875	.9995	8	2 7/8	2 7/8	11
1 1/4	1.2500	.9995	8	3	3	11 1/2
1 5/16	1.3125	.9995	8	3	3	11 1/2
1 3/8	1.3750	.9995	8	3 1/4	3 1/4	12
1 7/16	1.4375	.9995	8	3 1/4	3 1/4	12
1 1/2	1.5000	1.2495	8	3 1/2	3 1/2	12 1/2
1 9/16	1.5625	1.2495	8	3 1/2	3 1/2	12 1/2
1 5/8	1.6250	1.2495	8	3 1/2	3 1/2	13
1 11/16	1.6875	1.2495	8	3 1/2	3 1/2	13
1 3/4	1.7500	1.2495	10	3 1/2	3 1/2	13 1/2
1 13/16	1.8125	1.4995	10	3 1/2	3 1/2	13 1/2
1 7/8	1.8750	1.4995	10	3 1/2	3 1/2	14
1 15/16	1.9375	1.4995	10	3 1/2	3 1/2	14
2	2.0000	1.4995	12	3 1/2	3 1/2	14



**COOLANT FEEDING REAMERS — CARBIDE TIPPED
CENTER FEED FOR BLIND HOLES — RIGHT SPIRAL FLUTES**

Center coolant outlet.
 Polished flutes; flute long carbide on .2841" tool diameter and larger.
 Tool diameter tolerance plus .0003", minus .0000".

TOOL DIAMETER		NO. OF FLUTES	LENGTH		MAX SHANK DIAM.	SPECIAL DECIMAL SIZE RANGE
FRAC.	DECIMAL		FLUTE	OVERALL		
1/4	.2500	4	1 1/2	6	.2405	.2381 – .2530
9/32	.2813	4	1 1/2	6	.2485	.2531 – .2840
5/16	.3125	4	1 1/2	6	.2792	.2841 – .3150
11/32	.3438	4	1 1/2	6	.2792	.3151 – .3470
3/8	.3750	4	1 3/4	7	.3105	.3471 – .3780
13/32	.4063	4	1 3/4	7	.3105	.3781 – .4090
7/16	.4375	6	1 3/4	7	.3730	.4091 – .4410
15/32	.4688	6	1 3/4	7	.3730	.4411 – .4720
1/2	.5000	6	2	8	.4355	.4721 – .5030
17/32	.5313	6	2	8	.4355	.5031 – .5340
9/16	.5625	6	2	8	.4355	.5341 – .5660
19/32	.5938	6	2	8	.4355	.5661 – .5970
5/8	.6250	6	2 1/4	9	.5615	.5971 – .6280
21/32	.6563	6	2 1/4	9	.5615	.6281 – .6590

TOOL DIAMETER		NO. OF FLUTES	LENGTH		MAX SHANK DIAM.	SPECIAL DECIMAL SIZE RANGE
FRAC.	DECIMAL		FLUTE	OVERALL		
$11/16$	.6875	6	2 $1/4$	9	.5615	.6591 – .6910
$23/32$	.7188	6	2 $1/4$	9	.5615	.6911 – .7220
$3/4$	.7500	6	2 $1/2$	9 $1/2$	.6245	.7221 – .7530
$25/32$	.7813	6	2 $1/2$	9 $1/2$	.6245	.7531 – .7840
$13/16$	.8125	6	2 $1/2$	9 $1/2$	.6245	.7841 – .8160
$27/32$	.8438	6	2 $1/2$	9 $1/2$	.6245	.8161 – .8470
$7/8$	.8750	6	2 $5/8$	10	.7495	.8471 – .8780
$29/32$	.9063	6	2 $5/8$	10	.7495	.8781 – .9090
$15/16$	.9375	8	2 $5/8$	10	.7495	.9091 – .9410
$31/32$	.9688	8	2 $5/8$	10	.7495	.9411 – .9720
1	1.0000	8	2 $3/4$	10 $1/2$	.8745	.9721 – 1.0030
1 $1/16$	1.0625	8	2 $3/4$	10 $1/2$	.8745	1.0031 – 1.0660
1 $1/8$	1.1250	8	2 $7/8$	11	.8745	1.0661 – 1.1280
1 $3/16$	1.1875	8	2 $7/8$	11	.9995	1.1281 – 1.1905
1 $1/4$	1.2500	8	3	11 $1/2$	.9995	1.1906 – 1.2530

TOOL DIAMETER			LENGTH		MAX SHANK DIAM.	SPECIAL DECIMAL SIZE RANGE
FRAC.	DECIMAL		FLUTE	OVERALL		
1 ⁵ / ₁₆	1.3125	8	3	11 ¹ / ₂	.9995	1.2531 – 1.3155
1 ³ / ₈	1.3750	8	3 ¹ / ₄	12	.9995	1.3156 – 1.3780
1 ⁷ / ₁₆	1.4375	8	3 ¹ / ₄	12	.9995	1.3781 – 1.4405
1 ¹ / ₂	1.5000	8	3 ¹ / ₂	12 ¹ / ₂	1.2495	1.4406 – 1.5030



COOLANT FEEDING REAMERS — CARBIDE TIPPED

FLUTE FEED FOR THROUGH HOLES — STRAIGHT FLUTES

Coolant feed outlets in each flute.
 Flute long carbide on .2841" tool diameter and larger.
 Tool diameter tolerance +.0003"/-.0000".

Tool Diameter		Dimensions				
		Max. Shank Diam.	No. of Flutes	Length		
Frac.	Dec.			Flute	Carbide	Overall
3/16	.1875	.1805	4	1 1/4	1/2	5
13/64	.2031	.1805	4	1 1/4	1/2	5
7/32	.2188	.2075	4	1 1/4	1/2	5
15/64	.2344	.2265	4	1 1/2	1/2	6
1/4	.2500	.2405	4	1 1/2	1/2	6
17/64	.2656	.2485	4	1 1/2	1/2	6
9/32	.2813	.2485	4	1 1/2	1/2	6
19/64	.2969	.2792	4	1 1/2	1 1/2	6
5/16	.3125	.2792	4	1 1/2	1 1/2	6
21/64	.3281	.2792	4	1 1/2	1 1/2	6
11/32	.3438	.2792	4	1 1/2	1 1/2	6
23/64	.3594	.3105	4	1 3/4	1 3/4	7
3/8	.3750	.3105	4	1 3/4	1 3/4	7
25/64	.3906	.3105	4	1 3/4	1 3/4	7
13/32	.4063	.3105	4	1 3/4	1 3/4	7
27/64	.4219	.3730	6	1 3/4	1 3/4	7
7/16	.4375	.3730	6	1 3/4	1 3/4	7
29/64	.4531	.3730	6	1 3/4	1 3/4	7
15/32	.4688	.3730	6	1 3/4	1 3/4	7
31/64	.4844	.4355	6	2	2	8
1/2	.5000	.4355	6	2	2	8
33/64	.5156	.4355	6	2	2	8
17/32	.5313	.4355	6	2	2	8
9/16	.5625	.4355	6	2	2	8
19/32	.5938	.4355	6	2	2	8
5/8	.6250	.5615	6	2 1/4	2 1/4	9
21/32	.6563	.5615	6	2 1/4	2 1/4	9
11/16	.6875	.5615	6	2 1/4	2 1/4	9

Tool Diameter		Dimensions				
		Max. Shank Diam.	No. of Flutes	Length		
Frac.	Dec.			Flute	Carbide	Overall
23/32	.7188	.5615	6	2 1/4	2 1/4	9
3/4	.7500	.6245	6	2 1/2	2 1/2	9 1/2
25/32	.7813	.6245	6	2 1/2	2 1/2	9 1/2
13/16	.8125	.6245	6	2 1/2	2 1/2	9 1/2
27/32	.8438	.6245	6	2 1/2	2 1/2	9 1/2
7/8	.8750	.7495	6	2 5/8	2 5/8	10
29/32	.9063	.7495	6	2 5/8	2 5/8	10
15/16	.9375	.7495	8	2 5/8	2 5/8	10
31/32	.9688	.7495	8	2 5/8	2 5/8	10
1	1.0000	.8745	8	2 3/4	2 3/4	10 1/2
1 1/16	1.0625	.8745	8	2 3/4	2 3/4	10 1/2
1 1/8	1.1250	.8745	8	2 7/8	2 7/8	11
1 3/16	1.1875	.9995	8	2 7/8	2 7/8	11
1 1/4	1.2500	.9995	8	3	3	11 1/2
1 5/16	1.3125	.9995	8	3	3	11 1/2
1 3/8	1.3750	.9995	8	3 1/4	3 1/4	12
1 7/16	1.4375	.9995	8	3 1/4	3 1/4	12
1 1/2	1.5000	1.2495	8	3 1/2	3 1/2	12 1/2
1 9/16	1.5625	1.2495	8	3 1/2	3 1/2	12 1/2
1 5/8	1.6250	1.2495	8	3 1/2	3 1/2	13
1 11/16	1.6875	1.2495	8	3 1/2	3 1/2	13
1 3/4	1.7500	1.2495	10	3 1/2	3 1/2	13 1/2
1 13/16	1.8125	1.4995	10	3 1/2	3 1/2	13 1/2
1 7/8	1.8750	1.4995	10	3 1/2	3 1/2	14
1 15/16	1.9375	1.4995	10	3 1/2	3 1/2	14
2	2.0000	1.4995	12	3 1/2	3 1/2	14



COOLANT FEEDING REAMERS — CARBIDE TIPPED

FLUTE FEED FOR THROUGH HOLES — RIGHT SPIRAL FLUTES

Coolant outlets in each flute. Polished flutes; flute long carbide on .2841" tool diameter and larger. Tool diameter tolerance plus .0003", minus .0000".

TOOL DIAMETER		NO. OF FLUTES	LENGTH		MAX SHANK DIAM.	SPECIAL DECIMAL SIZE RANGE
FRAC.	DECIMAL		FLUTE	OVERALL		
1/4	.2500	4	1 1/2	6	.2405	.2381 – .2530
9/32	.2813	4	1 1/2	6	.2485	.2531 – .2840
5/16	.3125	4	1 1/2	6	.2792	.2841 – .3150
11/32	.3438	4	1 1/2	6	.2792	.3151 – .3470
3/8	.3750	4	1 3/4	7	.3105	.3471 – .3780
13/32	.4063	4	1 3/4	7	.3105	.3781 – .4090
7/16	.4375	6	1 3/4	7	.3730	.4091 – .4410
15/32	.4688	6	1 3/4	7	.3730	.4411 – .4720
1/2	.5000	6	2	8	.4355	.4721 – .5030

TOOL DIAMETER		NO. OF FLUTES	LENGTH		MAX SHANK DIAM.	SPECIAL DECIMAL SIZE RANGE
FRAC.	DECIMAL		FLUTE	OVERALL		
$17/32$	.5313	6	2	8	.4355	.5031 – .5340
$9/16$	.5625	6	2	8	.4355	.5341 – .5660
$19/32$	.5938	6	2	8	.4355	.5661 – .5970
$5/8$	.6250	6	$2\ 1/4$	9	.5615	.5971 – .6280
$21/32$	.6563	6	$2\ 1/4$	9	.5615	.6281 – .6590
$11/16$	.6875	6	$2\ 1/4$	9	.5615	.6591 – .6910
$23/32$	.7188	6	$2\ 1/4$	9	.5615	.6911 – .7220
$3/4$	.7500	6	$2\ 1/2$	$9\ 1/2$	.6245	.7221 – .7530
$25/32$	.7813	6	$2\ 1/2$	$9\ 1/2$	.6245	.7531 – .7840
$13/16$	.8125	6	$2\ 1/2$	$9\ 1/2$	.6245	.7841 – .8160
$27/32$	.8438	6	$2\ 1/2$	$9\ 1/2$	.6245	.8161 – .8470
$7/8$	.8750	6	$2\ 5/8$	10	.7495	.8471 – .8780
$29/32$	.9063	6	$2\ 5/8$	10	.7495	.8781 – .9090
$15/16$	.9375	8	$2\ 5/8$	10	.7495	.9091 – .9410
$31/32$	.9688	8	$2\ 5/8$	10	.7495	.9411 – .9720
1	1.0000	8	$2\ 3/4$	$10\ 1/2$	.8745	.9721 – 1.0030
$1\ 1/16$	1.0625	8	$2\ 3/4$	$10\ 1/2$	.8745	1.0031 – 1.0660
$1\ 1/8$	1.1250	8	$2\ 7/8$	11	.8745	1.0661 – 1.1280
$1\ 3/16$	1.1875	8	$2\ 7/8$	11	.9995	1.1281 – 1.1905
$1\ 1/4$	1.2500	8	3	$11\ 1/2$	.9995	1.1906 – 1.2530
$1\ 5/16$	1.3125	8	3	$11\ 1/2$	.9995	1.2531 – 1.3155
$1\ 3/8$	1.3750	8	$3\ 1/4$	12	.9995	1.3156 – 1.3780
$1\ 7/16$	1.4375	8	$3\ 1/4$	12	.9995	1.3781 – 1.4405
$1\ 1/2$	1.5000	8	$3\ 1/2$	$12\ 1/2$	1.2495	1.4406 – 1.5030

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COOLANT FEEDING REAMERS — CARBIDE TIPPED

FLUTE FEED FOR THROUGH HOLES - LEFT SPIRAL FLUTES

Coolant outlets in each flute. Polished flutes; flute long carbide on .2841" tool diameter and larger.

Left spiral flutes should not be used on blind holes.

Tool diameter tolerance plus .0003", minus .0000".

TOOL DIAMETER		NO. OF FLUTES	LENGTH		MAX SHANK DIAM.	SPECIAL DECIMAL SIZE RANGE
FRAC.	DECIMAL		FLUTE	OVERALL		
1/4	.2500	4	1 1/2	6	.2405	.2381 – .2530
9/32	.2813	4	1 1/2	6	.2485	.2531 – .2840
5/16	.3125	4	1 1/2	6	.2792	.2841 – .3150
11/32	.3438	4	1 1/2	6	.2792	.3151 – .3470
3/8	.3750	4	1 3/4	7	.3105	.3471 – .3780

TOOL DIAMETER		NO. OF FLUTES	LENGTH		MAX SHANK DIAM.	SPECIAL DECIMAL SIZE RANGE
FRAC.	DECIMAL		FLUTE	OVERALL		
$13/32$	.4063	4	$1 \frac{3}{4}$	7	.3105	.3781 – .4090
$7/16$	.4375	6	$1 \frac{3}{4}$	7	.3730	.4091 – .4410
$15/32$	.4688	6	$1 \frac{3}{4}$	7	.3730	.4411 – .4720
$1/2$	.5000	6	2	8	.4355	.4721 – .5030
$17/32$	.5313	6	2	8	.4355	.5031 – .5340
$9/16$	.5625	6	2	8	.4355	.5341 – .5660
$19/32$	.5938	6	2	8	.4355	.5661 – .5970
$5/8$	.6250	6	$2 \frac{1}{4}$	9	.5615	.5971 – .6280
$21/32$	.6563	6	$2 \frac{1}{4}$	9	.5615	.6281 – .6590
$11/16$	.6875	6	$2 \frac{1}{4}$	9	.5615	.6591 – .6910
$23/32$	.7188	6	$2 \frac{1}{4}$	9	.5615	.6911 – .7220
$3/4$	.7500	6	$2 \frac{1}{2}$	$9 \frac{1}{2}$	.6245	.7221 – .7530
$25/32$	.7813	6	$2 \frac{1}{2}$	$9 \frac{1}{2}$	.6245	.7531 – .7840
$13/16$	.8125	6	$2 \frac{1}{2}$	$9 \frac{1}{2}$	.6245	.7841 – .8160
$27/32$	.8438	6	$2 \frac{1}{2}$	$9 \frac{1}{2}$	.6245	.8161 – .8470
$7/8$	.8750	6	$2 \frac{5}{8}$	10	.7495	.8471 – .8780
$29/32$	.9063	6	$2 \frac{5}{8}$	10	.7495	.8781 – .9090
$15/16$	.9375	8	$2 \frac{5}{8}$	10	.7495	.9091 – .9410
$31/32$	.9688	8	$2 \frac{5}{8}$	10	.7495	.9411 – .9720
1	1.0000	8	$2 \frac{3}{4}$	$10 \frac{1}{2}$	.8745	.9721 – 1.0030
$1 \frac{1}{16}$	1.0625	8	$2 \frac{3}{4}$	$10 \frac{1}{2}$	.8745	1.0031 – 1.0660
$1 \frac{1}{8}$	1.1250	8	$2 \frac{7}{8}$	11	.8745	1.0661 – 1.1280
$1 \frac{3}{16}$	1.1875	8	$2 \frac{7}{8}$	11	.9995	1.1281 – 1.1905
$1 \frac{1}{4}$	1.2500	8	3	$11 \frac{1}{2}$	.9995	1.1906 – 1.2530
$1 \frac{5}{16}$	1.3125	8	3	$11 \frac{1}{2}$	.9995	1.2531 – 1.3155
$1 \frac{3}{8}$	1.3750	8	$3 \frac{1}{4}$	12	.9995	1.3156 – 1.3780
$1 \frac{7}{16}$	1.4375	8	$3 \frac{1}{4}$	12	.9995	1.3781 – 1.4405
$1 \frac{1}{2}$	1.5000	8	$3 \frac{1}{2}$	$12 \frac{1}{2}$	1.2495	1.4406 – 1.5030



CHUCKING REAMERS — CARBIDE TIPPED

STRAIGHT POLISHED FLUTES — STRAIGHT SHANK

Straight shank and straight polished flutes.
Carbide tips brazed to one piece hardened tool steel bodies.
Cutting diameter tolerance plus .0003" minus .0000".

Tool Diameter		Dimensions				
		Shank Diameter	No. of Flutes	Length		
				Flute	Carbide	Overall
Frac.	Dec.					
$\frac{5}{32}$	.1563	.151	4	1	$\frac{1}{2}$	4
$\frac{11}{64}$	.1719	.151	4	1	$\frac{1}{2}$	4
$\frac{3}{16}$	.1875	$\frac{11}{64}$	4	$1 \frac{1}{8}$	$\frac{1}{2}$	$4 \frac{1}{2}$
$\frac{3}{16}$	.1875	$\frac{11}{64}$	4	$1 \frac{1}{4}$	$\frac{1}{2}$	5
$\frac{13}{64}$	.2031	$\frac{11}{64}$	4	$1 \frac{1}{8}$	$\frac{1}{2}$	$4 \frac{1}{2}$
$\frac{7}{32}$	.2188	$\frac{13}{64}$	4	$1 \frac{1}{4}$	$\frac{1}{2}$	5
$\frac{15}{64}$	.2344	$\frac{7}{32}$	4	$1 \frac{1}{2}$	$\frac{1}{2}$	6
$\frac{1}{4}$	.2500	$\frac{15}{64}$	4	$1 \frac{1}{2}$	$\frac{1}{2}$	6
$\frac{17}{64}$	.2656	$\frac{15}{64}$	4	$1 \frac{1}{2}$	$\frac{1}{2}$	6
$\frac{9}{32}$	.2813	$\frac{15}{64}$	4	$1 \frac{1}{2}$	$\frac{1}{2}$	6
$\frac{19}{64}$	.2969	$\frac{9}{32}$	4	$1 \frac{1}{2}$	$\frac{1}{2}$	6
$\frac{5}{16}$	.3125	$\frac{9}{32}$	4	$1 \frac{1}{2}$	$\frac{1}{2}$	6
$\frac{21}{64}$	.3281	$\frac{9}{32}$	4	$1 \frac{1}{2}$	$\frac{5}{8}$	6
$\frac{11}{32}$	.3438	$\frac{9}{32}$	4	$1 \frac{1}{2}$	$\frac{5}{8}$	6
$\frac{23}{64}$	.3594	$\frac{5}{16}$	4	$1 \frac{3}{4}$	$\frac{5}{8}$	7
$\frac{3}{8}$	.3750	$\frac{5}{16}$	4	$1 \frac{3}{4}$	$\frac{5}{8}$	7
$\frac{25}{64}$	.3906	$\frac{5}{16}$	4	$1 \frac{3}{4}$	$\frac{5}{8}$	7
$\frac{13}{32}$	.4063	$\frac{5}{16}$	4	$1 \frac{3}{4}$	$\frac{5}{8}$	7
$\frac{27}{64}$	.4219	$\frac{3}{8}$	4	$1 \frac{3}{4}$	$\frac{5}{8}$	7
$\frac{7}{16}$	.4375	$\frac{3}{8}$	4	$1 \frac{3}{4}$	$\frac{5}{8}$	7
$\frac{29}{64}$	.4531	$\frac{3}{8}$	4	$1 \frac{3}{4}$	$\frac{5}{8}$	7
$\frac{15}{32}$	.4688	$\frac{3}{8}$	4	$1 \frac{3}{4}$	$\frac{5}{8}$	7
$\frac{31}{64}$	.4844	$\frac{7}{16}$	6	2	$\frac{5}{8}$	8
$\frac{1}{2}$	.5000	$\frac{7}{16}$	6	2	$\frac{5}{8}$	8
$\frac{33}{64}$	.5156	$\frac{7}{16}$	6	2	$\frac{5}{8}$	8
$\frac{17}{32}$	.5313	$\frac{7}{16}$	6	2	$\frac{5}{8}$	8
$\frac{35}{64}$	.5469	$\frac{7}{16}$	6	2	$\frac{5}{8}$	8
$\frac{9}{16}$	.5625	$\frac{7}{16}$	6	2	$\frac{5}{8}$	8

Tool Diameter		Dimensions				
		Shank Diameter	No. of Flutes	Length		
Frac.	Dec.			Flute	Carbide	Overall
$\frac{37}{64}$	.5781	$\frac{7}{16}$	6	2	$\frac{5}{8}$	8
$\frac{19}{32}$	.5938	$\frac{7}{16}$	6	2	$\frac{5}{8}$	8
$\frac{39}{64}$	.6094	$\frac{9}{16}$	6	2 $\frac{1}{4}$	$\frac{5}{8}$	9
$\frac{5}{8}$	.6250	$\frac{9}{16}$	6	2 $\frac{1}{4}$	$\frac{5}{8}$	9
$\frac{41}{64}$	.6406	$\frac{9}{16}$	6	2 $\frac{1}{4}$	$\frac{5}{8}$	9
$\frac{21}{32}$	.6563	$\frac{9}{16}$	6	2 $\frac{1}{4}$	$\frac{5}{8}$	9
$\frac{43}{64}$	.6719	$\frac{9}{16}$	6	2 $\frac{1}{4}$	$\frac{5}{8}$	9
$\frac{11}{16}$	.6875	$\frac{9}{16}$	6	2 $\frac{1}{4}$	$\frac{5}{8}$	9
$\frac{45}{64}$	.7031	$\frac{9}{16}$	6	2 $\frac{1}{4}$	$\frac{5}{8}$	9
$\frac{23}{32}$	.7188	$\frac{9}{16}$	6	2 $\frac{1}{4}$	$\frac{5}{8}$	9
$\frac{47}{64}$	.7344	$\frac{5}{8}$	6	2 $\frac{1}{2}$	$\frac{3}{4}$	9 $\frac{1}{2}$
$\frac{3}{4}$	.7500	$\frac{5}{8}$	6	2 $\frac{1}{2}$	$\frac{3}{4}$	9 $\frac{1}{2}$
$\frac{49}{64}$	.7656	$\frac{5}{8}$	6	2 $\frac{1}{2}$	$\frac{3}{4}$	9 $\frac{1}{2}$
$\frac{25}{32}$	.7813	$\frac{5}{8}$	6	2 $\frac{1}{2}$	$\frac{3}{4}$	9 $\frac{1}{2}$
$\frac{51}{64}$	.7969	$\frac{5}{8}$	6	2 $\frac{1}{2}$	$\frac{3}{4}$	9 $\frac{1}{2}$
$\frac{13}{16}$	.8125	$\frac{5}{8}$	6	2 $\frac{1}{2}$	$\frac{3}{4}$	9 $\frac{1}{2}$
$\frac{53}{64}$	.8281	$\frac{5}{8}$	6	2 $\frac{1}{2}$	$\frac{3}{4}$	9 $\frac{1}{2}$
$\frac{27}{32}$	.8438	$\frac{5}{8}$	6	2 $\frac{1}{2}$	$\frac{3}{4}$	9 $\frac{1}{2}$
$\frac{55}{64}$	.8594	$\frac{3}{4}$	6	2 $\frac{5}{8}$	$\frac{3}{4}$	10
$\frac{7}{8}$	.8750	$\frac{3}{4}$	6	2 $\frac{5}{8}$	$\frac{3}{4}$	10
$\frac{57}{64}$	.8906	$\frac{3}{4}$	6	2 $\frac{5}{8}$	$\frac{3}{4}$	10
$\frac{29}{32}$	.9063	$\frac{3}{4}$	6	2 $\frac{5}{8}$	$\frac{3}{4}$	10
$\frac{59}{64}$	.9219	$\frac{3}{4}$	8	2 $\frac{5}{8}$	$\frac{3}{4}$	10
$\frac{15}{16}$	.9375	$\frac{3}{4}$	8	2 $\frac{5}{8}$	$\frac{3}{4}$	10
$\frac{61}{64}$	.9531	$\frac{3}{4}$	8	2 $\frac{5}{8}$	$\frac{3}{4}$	10
$\frac{31}{32}$	.9688	$\frac{3}{4}$	8	2 $\frac{5}{8}$	$\frac{3}{4}$	10
$\frac{63}{64}$	.9844	$\frac{7}{8}$	8	2 $\frac{3}{4}$	$\frac{3}{4}$	10 $\frac{1}{2}$
1	1.0000	$\frac{7}{8}$	8	2 $\frac{3}{4}$	$\frac{3}{4}$	10 $\frac{1}{2}$

Tool Diameter		Dimensions					
		Shank Diameter	No. of Flutes	Length			
Frac.	Dec.			Flute	Carbide	Overall	
1	1/16	1.0625	7/8	8	2 3/4	3/4	10 1/2
1	1/8	1.1250	7/8	8	2 7/8	7/8	11
1	3/16	1.1875	1	8	2 7/8	7/8	11
1	1/4	1.2500	1	8	3	7/8	11 1/2
1	5/16	1.3125	1	8	3	7/8	11 1/2
1	3/8	1.3750	1	8	3 1/4	7/8	12
1	7/16	1.4375	1 1/4	8	3 1/4	7/8	12
1	1/2	1.5000	1 1/4	8	3 1/2	7/8	12 1/2
1	9/16	1.5625	1 1/4	8	3 1/2	7/8	12 1/2
1	5/8	1.6250	1 1/4	8	3 3/4	7/8	13
1	11/16	1.6875	1 1/4	8	3 3/4	7/8	13
1	3/4	1.7500	1 1/4	10	4	7/8	13 1/2
1	13/16	1.8125	1 1/2	10	4	7/8	13 1/2
1	7/8	1.8750	1 1/2	10	4 1/4	7/8	14
1	15/16	1.9375	1 1/2	10	4 1/4	7/8	14
2		2.0000	1 1/2	12	4 1/4	7/8	14



CHUCKING REAMERS — CARBIDE TIPPED

STRAIGHT FLUTES & STRAIGHT SHANK — METRIC SIZES

Straight shank and straight polished flutes.

Carbide tips brazed to one piece hardened tool steel bodies.

Cutting diameter tolerance plus .0003" minus .0000".

Tool		Dimensions				
		Shank Diameter	No. of Flutes	Length		
mm	Inch			Flute	Carbide	Overall
4.0	.1575	.151	4	1	1/2	4
4.5	.1772	11/64	4	1 1/8	1/2	4 1/2
5.0	.1969	11/64	4	1 1/8	1/2	4 1/2
5.5	.2165	13/64	4	1 1/4	1/2	5
6.0	.2362	7/32	4	1 1/2	1/2	6
6.3	.2480	15/64	4	1 1/2	1/2	6
6.5	.2559	15/64	4	1 1/2	1/2	6
7.0	.2756	15/64	4	1 1/2	1/2	6
7.5	.2953	9/32	4	1 1/2	1/2	6
8.0	.3150	9/32	4	1 1/2	1/2	6
8.5	.3346	9/32	4	1 1/2	5/8	6
9.0	.3543	5/16	4	1 3/4	5/8	7
9.5	.3740	5/16	4	1 3/4	5/8	7
10.0	.3937	5/16	4	1 3/4	5/8	7
10.5	.4134	3/8	4	1 3/4	5/8	7
11.0	.4331	3/8	4	1 3/4	5/8	7
11.5	.4528	3/8	4	1 3/4	5/8	7
12.0	.4724	7/16	6	2	5/8	8
12.5	.4921	7/16	6	2	5/8	8
13.0	.5118	7/16	6	2	5/8	8
13.5	.5315	7/16	6	2	5/8	8
14.0	.5512	7/16	6	2	5/8	8
14.5	.5709	7/16	6	2	5/8	8
15.0	.5906	7/16	6	2	5/8	8

Tool Diameter		Dimensions				
		Shank Diameter	No. of Flutes	Length		
				Flute	Carbide	Overall
mm	Inch					
15.5	.6102	$\frac{9}{16}$	6	2 $\frac{1}{4}$	$\frac{5}{8}$	9
16.0	.6299	$\frac{9}{16}$	6	2 $\frac{1}{4}$	$\frac{5}{8}$	9
16.5	.6496	$\frac{9}{16}$	6	2 $\frac{1}{4}$	$\frac{5}{8}$	9
17.0	.6693	$\frac{9}{16}$	6	2 $\frac{1}{4}$	$\frac{5}{8}$	9
17.5	.6890	$\frac{9}{16}$	6	2 $\frac{1}{4}$	$\frac{5}{8}$	9
18.0	.7087	$\frac{9}{16}$	6	2 $\frac{1}{4}$	$\frac{5}{8}$	9
18.5	.7283	$\frac{5}{8}$	6	2 $\frac{1}{2}$	$\frac{3}{4}$	9 $\frac{1}{2}$
19.0	.7480	$\frac{5}{8}$	6	2 $\frac{1}{2}$	$\frac{3}{4}$	9 $\frac{1}{2}$
19.5	.7677	$\frac{5}{8}$	6	2 $\frac{1}{2}$	$\frac{3}{4}$	9 $\frac{1}{2}$
20.0	.7874	$\frac{5}{8}$	6	2 $\frac{1}{2}$	$\frac{3}{4}$	9 $\frac{1}{2}$
20.5	.8071	$\frac{5}{8}$	6	2 $\frac{1}{2}$	$\frac{3}{4}$	9 $\frac{1}{2}$
21.0	.8268	$\frac{5}{8}$	6	2 $\frac{1}{2}$	$\frac{3}{4}$	9 $\frac{1}{2}$
21.5	.8465	$\frac{5}{8}$	6	2 $\frac{1}{2}$	$\frac{3}{4}$	9 $\frac{1}{2}$
22.0	.8661	$\frac{3}{4}$	6	2 $\frac{5}{8}$	$\frac{3}{4}$	10
22.5	.8858	$\frac{3}{4}$	6	2 $\frac{5}{8}$	$\frac{3}{4}$	10
23.0	.9055	$\frac{3}{4}$	6	2 $\frac{5}{8}$	$\frac{3}{4}$	10
23.5	.9252	$\frac{3}{4}$	8	2 $\frac{5}{8}$	$\frac{3}{4}$	10
24.0	.9449	$\frac{3}{4}$	8	2 $\frac{5}{8}$	$\frac{3}{4}$	10
24.5	.9646	$\frac{3}{4}$	8	2 $\frac{5}{8}$	$\frac{3}{4}$	10
25.0	.9843	$\frac{7}{8}$	8	2 $\frac{3}{4}$	$\frac{3}{4}$	10 $\frac{1}{2}$
25.5	1.0039	$\frac{7}{8}$	8	2 $\frac{3}{4}$	$\frac{3}{4}$	10 $\frac{1}{2}$
26.0	1.0236	$\frac{7}{8}$	8	2 $\frac{3}{4}$	$\frac{3}{4}$	10 $\frac{1}{2}$
27.0	1.0630	$\frac{7}{8}$	8	2 $\frac{3}{4}$	$\frac{3}{4}$	10 $\frac{1}{2}$
28.0	1.1024	$\frac{7}{8}$	8	2 $\frac{7}{8}$	$\frac{7}{8}$	11
29.0	1.1417	1	8	2 $\frac{7}{8}$	$\frac{7}{8}$	11
30.0	1.1811	1	8	2 $\frac{7}{8}$	$\frac{7}{8}$	11
31.0	1.2205	1	8	3	$\frac{7}{8}$	11 $\frac{1}{2}$
32.0	1.2598	1	8	3	$\frac{7}{8}$	11 $\frac{1}{2}$

Tool Diameter		Dimensions				
		Shank Diameter	No. of Flutes	Length		
				Flute	Carbide	Overall
mm	Inch					
33.0	1.2992	1	8	3	$\frac{7}{8}$	11 $\frac{1}{2}$
34.0	1.3386	1	8	3 $\frac{1}{4}$	$\frac{7}{8}$	12
35.0	1.3780	1	8	3 $\frac{1}{4}$	$\frac{7}{8}$	12
36.0	1.4173	1 $\frac{1}{4}$	8	3 $\frac{1}{4}$	$\frac{7}{8}$	12
37.0	1.4567	1 $\frac{1}{4}$	8	3 $\frac{1}{2}$	$\frac{7}{8}$	12 $\frac{1}{2}$



DOWEL PIN SIZE REAMERS — CARBIDE TIPPED
STRAIGHT FLUTE & STRAIGHT SHANK

Cutting diameter tolerance plus .0000" minus .0002".

Decimal Tool Diameter	Dimensions		
	Shank Diameter	No. of Flutes	Overall Length
.1855	$11/64$	4	4 1/2
.1870	$11/64$	4	4 1/2
.2480	$15/64$	4	6
.2495	$15/64$	4	6
.3105	$9/32$	4	6
.3120	$9/32$	4	6
.3730	$5/16$	4	7
.3745	$5/16$	4	7
.4355	$3/8$	4	7
.4370	$3/8$	4	7
.4980	$7/16$	6	8
.4995	$7/16$	6	8
CASED SET OF ABOVE 12 REAMERS			



**OVER & UNDER SIZE REAMERS — CARBIDE TIPPED
STRAIGHT FLUTE & STRAIGHT SHANK**

Cutting diameter tolerance plus .0002" minus .0000".

Decimal Tool Diameter	Dimensions		
	Shank Diameter	No. of Flutes	Overall Length
.1865	$\frac{11}{64}$	4	4 1/2

Decimal Tool Diameter	Dimensions		
	Shank Diameter	No. of Flutes	Overall Length
.1885	$\frac{11}{64}$	4	4 $\frac{1}{2}$
.2490	$\frac{15}{64}$	4	6
.2510	$\frac{15}{64}$	4	6
.3115	$\frac{9}{32}$	4	6
.3135	$\frac{9}{32}$	4	6
.3740	$\frac{5}{16}$	4	7
.3760	$\frac{5}{16}$	4	7
.4365	$\frac{3}{8}$	4	7
.4385	$\frac{3}{8}$	4	7
.4990	$\frac{7}{16}$	6	8
.5010	$\frac{7}{16}$	6	8
.6240	$\frac{9}{16}$	6	9
.6260	$\frac{9}{16}$	6	9
.7490	$\frac{5}{8}$	6	9 $\frac{1}{2}$
.7510	$\frac{5}{8}$	6	9 $\frac{1}{2}$
.8740	$\frac{3}{4}$	6	10
.8760	$\frac{3}{4}$	6	10
.9990	$\frac{7}{8}$	8	10 $\frac{1}{2}$
1.0010	$\frac{7}{8}$	8	10 $\frac{1}{2}$



CHUCKING REAMERS — CARBIDE TIPPED STOCKED — SPECIAL DECIMAL SIZES

STOCKED DECIMAL - .0005 INCREMENTS

Please choose the Reamers that meets your requirement.

Decimal Tool Diameter
.1560
.1565
.1570
.1575
.1580
.1585

.6700	66.90
.6705	66.90

.6710	66.90
.6715	66.90
.6720	66.90
.6725	66.90
.6730	66.90
.6735	66.90
.6740	66.90
.6745	66.90
.6750	66.90
.6755	66.90
.6760	66.90
.6765	66.90
.6770	66.90
.6775	66.90
.6780	66.90
.6785	66.90
.6790	66.90
.6795	66.90
.6800	66.90
.6805	66.90
.6810	66.90
.6815	66.90
.6820	66.90
.6825	66.90
.6830	66.90
.6835	66.90
.6840	66.90
.6845	66.90
.6850	66.90
.6855	66.90
.6860	66.90
.6865	66.90

.6870	66.90
.6875	55.45
.6880	66.90
.6885	66.90
.6890	66.90
.6895	66.90
.6900	66.90
.6905	66.90
.6910	66.90
.6915	69.50
.6920	69.50
.6925	69.50
.6930	69.50
.6935	69.50
.6940	69.50
.6945	69.50
.6950	69.50
.6955	69.50
.6960	69.50
.6965	69.50
.6970	69.50
.6975	69.50
.6980	69.50
.6985	69.50
.6990	69.50
.6995	69.50
.7000	69.50
.7005	69.50
.7010	69.50
.7015	69.50
.7020	69.50
.7025	69.50

.7030	69.50
.7035	69.50
.7040	69.50
.7045	69.50
.7050	69.50
.7055	69.50
.7060	69.50
.7065	69.50
.7070	69.50
.7075	69.50
.7080	69.50
.7085	69.50
.7090	69.50
.7095	69.50
.7100	69.50
.7105	69.50
.7110	69.50
.7115	69.50
.7120	69.50
.7125	69.50
.7130	69.50
.7135	69.50
.7140	69.50
.7145	69.50
.7150	69.50
.7155	69.50
.7160	69.50
.7165	69.50
.7170	69.50
.7175	69.50
.7180	69.50
.7185	69.50

.7190	69.50
.7195	69.50
.7200	69.50
.7205	69.50
.7210	69.50
.7215	69.50
.7220	69.50
.7225	69.50
.7230	69.50
.7235	69.50
.7240	69.50
.7245	69.50
.7250	69.50
.7255	69.50
.7260	69.50
.7265	69.50
.7270	69.50
.7275	69.50
.7280	69.50
.7285	69.50
.7290	69.50
.7295	69.50
.7300	69.50
.7305	69.50
.7310	69.50
.7315	69.50
.7320	69.50
.7325	69.50
.7330	69.50
.7335	69.50
.7340	69.50
.7345	69.50

.7350	69.50
.7355	69.50
.7360	69.50
.7365	69.50
.7370	69.50
.7375	69.50
.7380	69.50
.7385	69.50
.7390	69.50
.7395	69.50
.7400	69.50
.7405	69.50
.7410	69.50
.7415	69.50
.7420	69.50
.7425	69.50
.7430	69.50
.7435	69.50
.7440	69.50
.7445	69.50
.7450	69.50
.7455	69.50
.7460	69.50
.7465	69.50
.7470	69.50
.7475	69.50
.7480	69.50
.7485	69.50
.7490	69.50
.7495	69.50
.7500	58.05
.7505	69.50

.7510	69.50
.7515	69.50
.7520	69.50
.7525	69.50
.7530	69.50
.7535	71.45
.7540	71.45
.7545	71.45
.7550	71.45
.7555	71.45



CHUCKING REAMERS — CARBIDE TIPPED

STRAIGHT POLISHED FLUTES & TAPER SHANK

Taper shank and straight polished flutes.
Carbide tips brazed to one piece hardened tool steel bodies.
Cutting diameter tolerance plus .0003" minus .0000".

Tool Diameter		Dimensions			
		Taper	No. of Flutes	Length	
Frac.	Dec.			Flute	Overall
¼	.2500	1	4	1 ½	6
9/32	.2813	1	4	1 ½	6

Tool Diameter		Dimensions			
		Taper	No. of Flutes	Length	
Frac.	Dec.			Flute	Overall
$\frac{5}{16}$	.3125	1	4	$1 \frac{1}{2}$	6
$\frac{11}{32}$	.3438	1	4	$1 \frac{1}{2}$	6
$\frac{3}{8}$	.3750	1	4	$1 \frac{3}{4}$	7
$\frac{13}{32}$	.4063	1	4	$1 \frac{3}{4}$	7
$\frac{7}{16}$	.4375	1	4	$1 \frac{3}{4}$	7
$\frac{15}{32}$	.4688	1	4	$1 \frac{3}{4}$	7
$\frac{1}{2}$	.5000	1	6	2	8
$\frac{17}{32}$	.5313	1	6	2	8
$\frac{9}{16}$	.5625	1	6	2	8
$\frac{19}{32}$	.5938	1	6	2	8
$\frac{5}{8}$	.6250	2	6	$2 \frac{1}{4}$	9
$\frac{21}{32}$	.6563	2	6	$2 \frac{1}{4}$	9
$\frac{11}{16}$	.6875	2	6	$2 \frac{1}{4}$	9
$\frac{23}{32}$	.7188	2	6	$2 \frac{1}{4}$	9
$\frac{3}{4}$	.7500	2	6	$2 \frac{1}{2}$	$9 \frac{1}{2}$
$\frac{25}{32}$	.7813	2	6	$2 \frac{1}{2}$	$9 \frac{1}{2}$
$\frac{13}{16}$	.8125	2	6	$2 \frac{1}{2}$	$9 \frac{1}{2}$
$\frac{27}{32}$	.8438	2	6	$2 \frac{1}{2}$	$9 \frac{1}{2}$
$\frac{7}{8}$	.8750	2	6	$2 \frac{5}{8}$	10
$\frac{29}{32}$	.9063	2	6	$2 \frac{5}{8}$	10
$\frac{15}{16}$	.9375	3	8	$2 \frac{5}{8}$	10
$\frac{31}{32}$	.9688	3	8	$2 \frac{5}{8}$	10
1	1.0000	3	8	$2 \frac{3}{4}$	$10 \frac{1}{2}$
$1 \frac{1}{16}$	1.0625	3	8	$2 \frac{3}{4}$	$10 \frac{1}{2}$
$1 \frac{1}{8}$	1.1250	3	8	$2 \frac{7}{8}$	11
$1 \frac{3}{16}$	1.1875	3	8	$2 \frac{7}{8}$	11
$1 \frac{1}{4}$	1.2500	4	8	3	$11 \frac{1}{2}$
$1 \frac{5}{16}$	1.3125	4	8	3	$11 \frac{1}{2}$

Tool Diameter		Dimensions			
		Taper	No. of Flutes	Length	
Frac.	Dec.			Flute	Overall
1 $\frac{3}{8}$	1.3750	4	8	3 $\frac{1}{4}$	12
1 $\frac{7}{16}$	1.4375	4	8	3 $\frac{1}{4}$	12
1 $\frac{1}{2}$	1.5000	4	8	3 $\frac{1}{2}$	12 $\frac{1}{2}$
1 $\frac{9}{16}$	1.5625	4	8	3 $\frac{1}{2}$	12 $\frac{1}{2}$
1 $\frac{5}{8}$	1.6250	4	8	3 $\frac{3}{4}$	13
1 $\frac{11}{16}$	1.6875	4	8	3 $\frac{3}{4}$	13
1 $\frac{3}{4}$	1.7500	4	10	4	13 $\frac{1}{2}$
1 $\frac{13}{16}$	1.8125	4	10	4	13 $\frac{1}{2}$
1 $\frac{7}{8}$	1.8750	4	10	4 $\frac{1}{4}$	14
1 $\frac{15}{16}$	1.9375	4	10	4 $\frac{1}{4}$	14
2	2.0000	4	12	4 $\frac{1}{4}$	14

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CARMET
TOOLS & INSERTS



CHUCKING REAMERS — CARBIDE TIPPED

STRAIGHT FLUTES & TAPER SHANK — METRIC SIZES

Tool Diameter		Dimensions				
		Taper	No. of Flutes	Length		
mm	Inch			Flute	Carbide	Overall
6.0	.2362	1	4	1 ½	½	6
6.5	.2559	1	4	1 ½	½	6
7.0	.2756	1	4	1 ½	½	6
7.5	.2953	1	4	1 ½	½	6
8.0	.3150	1	4	1 ½	½	6
8.5	.3346	1	4	1 ½	5/8	6
9.0	.3543	1	4	1 ¾	5/8	7
9.5	.3740	1	4	1 ¾	5/8	7
10.0	.3937	1	4	1 ¾	5/8	7
10.5	.4134	1	4	1 ¾	5/8	7
11.0	.4331	1	4	1 ¾	5/8	7
11.5	.4528	1	4	1 ¾	5/8	7
12.0	.4724	1	6	2	5/8	8
12.5	.4921	1	6	2	5/8	8
13.0	.5118	1	6	2	5/8	8
13.5	.5315	1	6	2	5/8	8
14.0	.5512	1	6	2	5/8	8
14.5	.5709	1	6	2	5/8	8
15.0	.5906	1	6	2	5/8	8
15.5	.6102	2	6	2 ¼	5/8	9
16.0	.6299	2	6	2 ¼	5/8	9
16.5	.6496	2	6	2 ¼	5/8	9
17.0	.6693	2	6	2 ¼	5/8	9
17.5	.6890	2	6	2 ¼	5/8	9
18.0	.7087	2	6	2 ¼	5/8	9
18.5	.7283	2	6	2 ½	¾	9 ½

Tool Diameter		Dimensions				
		Taper	No. of Flutes	Length		
				Flute	Carbide	Overall
mm	Inch					
19.0	.7480	2	6	2 ½	¾	9 ½
19.5	.7677	2	6	2 ½	¾	9 ½
20.0	.7874	2	6	2 ½	¾	9 ½
20.5	.8071	2	6	2 ½	¾	9 ½
21.0	.8268	2	6	2 ½	¾	9 ½
21.5	.8465	2	6	2 ½	¾	9 ½
22.0	.8661	2	6	2 5/8	¾	10
22.5	.8858	2	6	2 5/8	¾	10
23.0	.9055	2	6	2 5/8	¾	10
23.5	.9252	3	8	2 5/8	¾	10
24.0	.9449	3	8	2 5/8	¾	10
24.5	.9646	3	8	2 5/8	¾	10
25.0	.9843	3	8	2 ¾	¾	10 ½
25.5	1.0039	3	8	2 ¾	¾	10 ½
26.0	1.0236	3	8	2 ¾	¾	10 ½
27.0	1.0630	3	8	2 ¾	¾	10 ½
28.0	1.1024	3	8	2 7/8	7/8	11
29.0	1.1417	3	8	2 7/8	7/8	11
30.0	1.1811	3	8	2 7/8	7/8	11
31.0	1.2205	4	8	3	7/8	11 ½
32.0	1.2598	4	8	3	7/8	11 ½
33.0	1.2992	4	8	3	7/8	11 ½
34.0	1.3386	4	8	3 ¼	7/8	12
35.0	1.3780	4	8	3 ¼	7/8	12
36.0	1.4173	4	8	3 ¼	7/8	12
37.0	1.4567	4	8	3 ½	7/8	12 ½
38.0	1.4961	4	8	3 ½	7/8	12 ½
39.0	1.5354	4	8	3 ½	7/8	12 ½

Tool Diameter		Dimensions				
		Taper	No. of Flutes	Length		
mm	Inch			Flute	Carbide	Overall
40.0	1.5748	4	8	3 ³ / ₄	7/8	13
41.0	1.6142	4	8	3 ³ / ₄	7/8	13



**CHUCKING REAMERS — CARBIDE TIPPED
RIGHT SPIRAL FLUTES — STRAIGHT SHANK**

Straight shanks and polished spiral flutes.

Carbide tips brazed to one piece hardened tool steel bodies.

Cutting diameter tolerance plus .0003" minus .0000".

Tool Diameter		Dimensions			
		Shank Diameter	No. of Flutes	Length	
Frac.	Dec.			Flute	Overall
$\frac{3}{16}$	.1875	$\frac{11}{64}$	4	$1 \frac{1}{8}$	$4 \frac{1}{2}$
$\frac{7}{32}$	.2188	$\frac{13}{64}$	4	$1 \frac{1}{4}$	5
$\frac{15}{64}$	.2344	$\frac{7}{32}$	4	$1 \frac{1}{2}$	6
$\frac{1}{4}$	.2500	$\frac{15}{64}$	4	$1 \frac{1}{2}$	6
$\frac{9}{32}$	.2813	$\frac{15}{64}$	4	$1 \frac{1}{2}$	6
$\frac{5}{16}$	.3125	$\frac{9}{32}$	4	$1 \frac{1}{2}$	6
$\frac{11}{32}$	.3438	$\frac{9}{32}$	4	$1 \frac{1}{2}$	6
$\frac{3}{8}$	.3750	$\frac{5}{16}$	4	$1 \frac{3}{4}$	7
$\frac{13}{32}$	.4063	$\frac{5}{16}$	4	$1 \frac{3}{4}$	7
$\frac{7}{16}$	.4375	$\frac{3}{8}$	4	$1 \frac{3}{4}$	7
$\frac{15}{32}$	.4688	$\frac{3}{8}$	4	$1 \frac{3}{4}$	7
$\frac{1}{2}$	.5000	$\frac{7}{16}$	6	2	8
$\frac{17}{32}$	.5313	$\frac{7}{16}$	6	2	8
$\frac{9}{16}$	.5625	$\frac{7}{16}$	6	2	8
$\frac{19}{32}$	.5938	$\frac{7}{16}$	6	2	8
$\frac{5}{8}$	.6250	$\frac{9}{16}$	6	$2 \frac{1}{4}$	9
$\frac{21}{32}$	.6563	$\frac{9}{16}$	6	$2 \frac{1}{4}$	9
$\frac{11}{16}$	.6875	$\frac{9}{16}$	6	$2 \frac{1}{4}$	9
$\frac{23}{32}$	.7188	$\frac{9}{16}$	6	$2 \frac{1}{4}$	9
$\frac{3}{4}$	.7500	$\frac{5}{8}$	6	$2 \frac{1}{2}$	$9 \frac{1}{2}$
$\frac{25}{32}$	.7813	$\frac{5}{8}$	6	$2 \frac{1}{2}$	$9 \frac{1}{2}$
$\frac{13}{16}$	.8125	$\frac{5}{8}$	6	$2 \frac{1}{2}$	$9 \frac{1}{2}$
$\frac{27}{32}$	.8438	$\frac{5}{8}$	6	$2 \frac{1}{2}$	$9 \frac{1}{2}$
$\frac{7}{8}$	.8750	$\frac{3}{4}$	6	$2 \frac{5}{8}$	10
$\frac{29}{32}$	.9063	$\frac{3}{4}$	6	$2 \frac{5}{8}$	10
$\frac{15}{16}$	.9375	$\frac{3}{4}$	8	$2 \frac{5}{8}$	10
$\frac{31}{32}$	.9688	$\frac{3}{4}$	8	$2 \frac{5}{8}$	10
1	1.0000	$\frac{7}{8}$	8	$2 \frac{3}{4}$	$10 \frac{1}{2}$

Tool Diameter		Dimensions			
		Shank Diameter	No. of Flutes	Length	
Frac.	Dec.			Flute	Overall
1 ¹ / ₁₆	1.0625	⁷ / ₈	8	2 ³ / ₄	10 ¹ / ₂
1 ¹ / ₈	1.1250	⁷ / ₈	8	2 ⁷ / ₈	11
1 ³ / ₁₆	1.1875	1	8	2 ⁷ / ₈	11
1 ¹ / ₄	1.2500	1	8	3	11 ¹ / ₂
1 ⁵ / ₁₆	1.3125	1	8	3	11 ¹ / ₂
1 ³ / ₈	1.3750	1	8	3 ¹ / ₄	12
1 ⁷ / ₁₆	1.4375	1 ¹ / ₄	8	3 ¹ / ₄	12
1 ¹ / ₂	1.5000	1 ¹ / ₄	8	3 ¹ / ₂	12 ¹ / ₂



**CHUCKING REAMERS — CARBIDE TIPPED
LEFT SPIRAL FLUTES — STRAIGHT SHANK**

Straight shanks and polished spiral flutes.

Carbide tips brazed to one piece hardened tool steel bodies.

Cutting diameter tolerance plus .0003" minus .0000".

Tool Diameter		Dimensions			
		Shank Diameter	No. of Flutes	Length	
Frac.	Dec.			Flute	Overall
$\frac{3}{16}$	.1875	$\frac{11}{64}$	4	$1 \frac{1}{8}$	$4 \frac{1}{2}$
$\frac{7}{32}$	.2188	$\frac{13}{64}$	4	$1 \frac{1}{4}$	5
$\frac{15}{64}$	.2344	$\frac{7}{32}$	4	$1 \frac{1}{2}$	6
$\frac{1}{4}$	.2500	$\frac{15}{64}$	4	$1 \frac{1}{2}$	6
$\frac{9}{32}$	.2813	$\frac{15}{64}$	4	$1 \frac{1}{2}$	6
$\frac{5}{16}$	.3125	$\frac{9}{32}$	4	$1 \frac{1}{2}$	6
$\frac{11}{32}$	.3438	$\frac{9}{32}$	4	$1 \frac{1}{2}$	6
$\frac{3}{8}$	.3750	$\frac{5}{16}$	4	$1 \frac{3}{4}$	7
$\frac{13}{32}$	.4063	$\frac{5}{16}$	4	$1 \frac{3}{4}$	7
$\frac{7}{16}$	.4375	$\frac{3}{8}$	4	$1 \frac{3}{4}$	7
$\frac{15}{32}$	.4688	$\frac{3}{8}$	4	$1 \frac{3}{4}$	7
$\frac{1}{2}$	.5000	$\frac{7}{16}$	6	2	8
$\frac{17}{32}$	.5313	$\frac{7}{16}$	6	2	8
$\frac{9}{16}$	.5625	$\frac{7}{16}$	6	2	8
$\frac{19}{32}$	.5938	$\frac{7}{16}$	6	2	8
$\frac{5}{8}$	.6250	$\frac{9}{16}$	6	$2 \frac{1}{4}$	9
$\frac{21}{32}$	.6563	$\frac{9}{16}$	6	$2 \frac{1}{4}$	9
$\frac{11}{16}$	.6875	$\frac{9}{16}$	6	$2 \frac{1}{4}$	9
$\frac{23}{32}$	.7188	$\frac{9}{16}$	6	$2 \frac{1}{4}$	9
$\frac{3}{4}$	.7500	$\frac{5}{8}$	6	$2 \frac{1}{2}$	$9 \frac{1}{2}$
$\frac{25}{32}$	.7813	$\frac{5}{8}$	6	$2 \frac{1}{2}$	$9 \frac{1}{2}$
$\frac{13}{16}$	.8125	$\frac{5}{8}$	6	$2 \frac{1}{2}$	$9 \frac{1}{2}$
$\frac{27}{32}$	.8438	$\frac{5}{8}$	6	$2 \frac{1}{2}$	$9 \frac{1}{2}$
$\frac{7}{8}$	.8750	$\frac{3}{4}$	6	$2 \frac{5}{8}$	10
$\frac{29}{32}$	.9063	$\frac{3}{4}$	6	$2 \frac{5}{8}$	10
$\frac{15}{16}$	.9375	$\frac{3}{4}$	8	$2 \frac{5}{8}$	10
$\frac{31}{32}$	.9688	$\frac{3}{4}$	8	$2 \frac{5}{8}$	10
1	1.0000	$\frac{7}{8}$	8	$2 \frac{3}{4}$	$10 \frac{1}{2}$

Tool Diameter		Dimensions			
		Shank Diameter	No. of Flutes	Length	
Frac.	Dec.			Flute	Overall
1 $\frac{1}{16}$	1.0625	$\frac{7}{8}$	8	2 $\frac{3}{4}$	10 $\frac{1}{2}$
1 $\frac{1}{8}$	1.1250	$\frac{7}{8}$	8	2 $\frac{7}{8}$	11
1 $\frac{3}{16}$	1.1875	1	8	2 $\frac{7}{8}$	11
1 $\frac{1}{4}$	1.2500	1	8	3	11 $\frac{1}{2}$
1 $\frac{5}{16}$	1.3125	1	8	3	11 $\frac{1}{2}$
1 $\frac{3}{8}$	1.3750	1	8	3 $\frac{1}{4}$	12
1 $\frac{7}{16}$	1.4375	1 $\frac{1}{4}$	8	3 $\frac{1}{4}$	12
1 $\frac{1}{2}$	1.5000	1 $\frac{1}{4}$	8	3 $\frac{1}{2}$	12 $\frac{1}{2}$



SHELL REAMERS — CARBIDE TIPPED STRAIGHT FLUTES

Straight Polished Flutes.

Carbide Tips brazed to hardened tool steel bodies.

Arbor Hole tapered 1/8" per foot: Drive slots.

Cutting diameter tolerance:

thru 1" diameter: +.0001", +.0005",

over 1" diameter: +.0002", +.0006".

Tool Diameter		Dimensions					
		Hole Diam. Large End	Fits Arbor No.	No. of Flutes	Length		
Frac.	Dec.				Flute	Carbide	Overall
3/4	.7500	3/8	4	6	1 3/4	1	2 1/4
25/32	.7813	3/8	4	6	1 3/4	1	2 1/4
13/16	.8125	1/2	5	6	1 15/16	1	2 1/2
7/8	.8750	1/2	5	6	1 15/16	1	2 1/2
15/16	.9375	1/2	5	8	1 15/16	1	2 1/2
1	1.0000	1/2	5	8	1 15/16	1	2 1/2
1 1/16	1.0625	5/8	6	8	2 1/8	1	2 3/4
1 1/8	1.1250	5/8	6	8	2 1/8	1	2 3/4
1 3/16	1.1875	5/8	6	8	2 1/8	1 1/8	2 3/4

Tool Diameter		Dimensions					
		Hole Diam. Large End	Fits Arbor No.	No. of Flutes	Length		
					Flute	Carbide	Overall
Frac.	Dec.						
1 ¼	1.2500	5/8	6	8	2 1/8	1 1/8	2 ¾
1 5/16	1.3125	¾	7	8	2 ¼	1 1/8	3
1 3/8	1.3750	¾	7	8	2 ¼	1 1/8	3
1 7/16	1.4375	¾	7	8	2 ¼	1 1/8	3
1 ½	1.5000	¾	7	8	2 ¼	1 1/8	3
1 9/16	1.5625	¾	7	10	2 ¼	1 1/8	3
1 5/8	1.6250	¾	7	10	2 ¼	1 1/8	3
1 11/16	1.6875	1	8	10	2 ¾	1 1/8	3 ½
1 ¾	1.7500	1	8	10	2 ¾	1 1/8	3 ½
1 13/16	1.8125	1	8	10	2 ¾	1 1/8	3 ½
1 7/8	1.8750	1	8	10	2 ¾	1 1/8	3 ½
1 15/16	1.9375	1	8	10	2 ¾	1 1/8	3 ½
2	2.0000	1	8	10	2 ¾	1 1/8	3 ½
2 1/16	2.0625	1 ¼	9	12	2 7/8	1 1/8	3 ¾
2 1/8	2.1250	1 ¼	9	12	2 7/8	1 1/8	3 ¾
2 3/16	2.1875	1 ¼	9	12	2 7/8	1 1/8	3 ¾
2 ¼	2.2500	1 ¼	9	12	2 7/8	1 1/8	3 ¾
2 5/16	2.3125	1 ¼	9	12	2 7/8	1 1/8	3 ¾
2 3/8	2.3750	1 ¼	9	12	2 7/8	1 1/8	3 ¾
2 7/16	2.4375	1 ¼	9	12	2 7/8	1 1/8	3 ¾
2 ½	2.5000	1 ¼	9	12	2 7/8	1 1/8	3 ¾
2 9/16	2.5625	1 ½	10	14	3 1/8	1 1/8	4
2 5/8	2.6250	1 ½	10	14	3 1/8	1 1/8	4
2 11/16	2.6875	1 ½	10	14	3 1/8	1 1/8	4
2 ¾	2.7500	1 ½	10	14	3 1/8	1 1/8	4
2 13/16	2.8125	1 ½	10	14	3 1/8	1 1/8	4
2 7/8	2.8750	1 ½	10	14	3 1/8	1 1/8	4
2 15/16	2.9375	1 ½	10	14	3 1/8	1 1/8	4

Tool Diameter		Dimensions					
		Hole Diam. Large End	Fits Arbor No.	No. of Flutes	Length		
Frac.	Dec.				Flute	Carbide	Overall
3	3.0000	1 ½	10	14	3 ⅛	1 ⅛	4



CHUCKING REAMERS — CARBIDE TIPPED FLUTE LONG CARBIDE — STRAIGHT SHANK

Straight shank and straight polished flutes.

Flute long carbide brazed to one piece hardened tool steel bodies.

Cutting diameter tolerance plus .0003" minus .0000".

Tool Diameter		Dimensions			
		Shank Diameter	No. of Flutes	Length	
Frac.	Dec.			Flute & Carbide	Overall
3/16	.1875	11/64	4	1 ½	6
7/32	.2188	13/64	4	1 ½	6
15/64	.2344	7/32	4	1 ½	6

Tool Diameter		Dimensions			
r		Shank Diameter	No. of Flutes	Length	
Fraction	Decimal			Flute & Carbide	Overall
$\frac{1}{4}$	.2500	$\frac{15}{64}$	4	1 $\frac{1}{2}$	6
$\frac{9}{32}$	.2813	$\frac{15}{64}$	4	1 $\frac{1}{2}$	6
$\frac{5}{16}$	.3125	$\frac{9}{32}$	4	1 $\frac{1}{2}$	6
$\frac{11}{32}$	.3438	$\frac{9}{32}$	4	1 $\frac{1}{2}$	6
$\frac{3}{8}$	.3750	$\frac{5}{16}$	4	1 $\frac{3}{4}$	7
$\frac{13}{32}$	.4063	$\frac{5}{16}$	4	1 $\frac{3}{4}$	7
$\frac{7}{16}$	.4375	$\frac{3}{8}$	4	1 $\frac{3}{4}$	7
$\frac{15}{32}$	.4688	$\frac{3}{8}$	4	1 $\frac{3}{4}$	7
$\frac{1}{2}$	.5000	$\frac{7}{16}$	6	2	8
$\frac{17}{32}$	.5313	$\frac{7}{16}$	6	2	8
$\frac{9}{16}$	.5625	$\frac{7}{16}$	6	2	8
$\frac{19}{32}$	.5938	$\frac{7}{16}$	6	2	8
$\frac{5}{8}$	.6250	$\frac{9}{16}$	6	2	9

Tool Diameter		Dimensions			
r		Shank Diameter	No. of Flutes	Length	
Fraction	Decimal			Flute & Carbide	Overall
$\frac{21}{32}$	.65	$\frac{9}{16}$	6	2	9
$\frac{11}{16}$	.68	$\frac{9}{16}$	6	2	9
$\frac{23}{32}$	.71	$\frac{9}{16}$	6	2	9
$\frac{3}{4}$	.75	$\frac{5}{8}$	6	2	9 $\frac{1}{2}$
$\frac{25}{32}$	.78	$\frac{5}{8}$	6	2	9 $\frac{1}{2}$
$\frac{13}{16}$	.81	$\frac{5}{8}$	6	2	9 $\frac{1}{2}$
$\frac{27}{32}$	.84	$\frac{5}{8}$	6	2	9 $\frac{1}{2}$
$\frac{7}{8}$	.87	$\frac{3}{4}$	6	2 $\frac{1}{4}$	10
$\frac{29}{32}$	.90	$\frac{3}{4}$	6	2 $\frac{1}{4}$	10
$\frac{15}{16}$	.93	$\frac{3}{4}$	8	2 $\frac{1}{4}$	10
$\frac{31}{32}$	.96	$\frac{3}{4}$	8	2 $\frac{1}{4}$	10
1	1.00	$\frac{7}{8}$	8	2 $\frac{1}{4}$	10 $\frac{1}{2}$
1 $\frac{1}{16}$	1.06	$\frac{7}{8}$	8	2 $\frac{1}{4}$	10 $\frac{1}{2}$

Tool Diameter		Dimensions			
r		Shank Diameter	No. of Flutes	Length	
Fraction	Decimal			Flute & Carbide	Overall
1 1/8	1.1250	7/8	8	2 1/4	11
1 3/16	1.1875	1	8	2 1/4	11
1 1/4	1.2500	1	8	2 1/2	11 1/2
1 5/16	1.3125	1	8	2 1/2	11 1/2
1 3/8	1.3750	1	8	2 1/2	12
1 7/16	1.4375	1 1/4	8	2 1/2	12
1 1/2	1.5000	1 1/4	8	2 1/2	12 1/2
1 9/16	1.5625	1 1/4	8	2 1/2	12 1/2
1 5/8	1.6250	1 1/4	8	2 3/4	13
1 11/16	1.6875	1 1/4	8	2 3/4	13
1 3/4	1.7500	1 1/4	10	3	13 1/2
1 13/16	1.8125	1 1/2	10	3	13 1/2
1 7/8	1.8750	1 1/2	10	3 1/4	14

Tool Diameter		Dimensions			
		Shank Diameter	No. of Flutes	Length	
Frac.	Dec.			Flute & Carbide	Overall
1 ¹⁵ / ₁₆	1.9375	1 ¹ / ₂	10	3 ¹ / ₄	14
2	2.0000	1 ¹ / ₂	12	3 ¹ / ₄	14



CHUCKING REAMERS — CARBIDE TIPPED

STRAIGHT FLUTE LONG CARBIDE & STRAIGHT SHANK — METRIC SIZES

Tool Diameter		Dimensions			
		Shank Diameter	No. of Flutes	Length	
mm	Inch			Flute & Carbide	Overall
4.5	.1772	¹¹ / ₆₄	4	1 ¹ / ₂	6

Tool Diameter		Dimensions			
		Shank Diameter	No. of Flutes	Length	
				Flute & Carbide	Overall
mm	Inch				
5.0	.1969	$11/64$	4	1 ½	6
5.5	.2165	$13/64$	4	1 ½	6
6.0	.2362	$7/32$	4	1 ½	6
6.3	.2480	$15/64$	4	1 ½	6
6.5	.2559	$15/64$	4	1 ½	6
7.0	.2756	$15/64$	4	1 ½	6
7.5	.2953	$9/32$	4	1 ½	6
8.0	.3150	$9/32$	4	1 ½	6
8.5	.3346	$9/32$	4	1 ½	6
9.0	.3543	$5/16$	4	1 ¾	7
9.5	.3740	$5/16$	4	1 ¾	7
10.0	.3937	$5/16$	4	1 ¾	7
10.5	.4134	$3/8$	4	1 ¾	7
11.0	.4331	$3/8$	4	1 ¾	7
11.5	.4528	$3/8$	4	1 ¾	7
12.0	.4724	$7/16$	6	2	8
12.5	.4921	$7/16$	6	2	8
13.0	.5118	$7/16$	6	2	8
13.5	.5315	$7/16$	6	2	8
14.0	.5512	$7/16$	6	2	8
14.5	.5709	$7/16$	6	2	8
15.0	.5906	$7/16$	6	2	8
15.5	.6102	$9/16$	6	2	9
16.0	.6299	$9/16$	6	2	9
16.5	.6496	$9/16$	6	2	9
17.0	.6693	$9/16$	6	2	9
17.5	.6890	$9/16$	6	2	9
18.0	.7087	$9/16$	6	2	9

Tool Diameter		Dimensions			
		Shank Diameter	No. of Flutes	Length	
				Flute & Carbide	Overall
mm	Inch				
18.5	.7283	5/8	6	2	9 1/2
19.0	.7480	5/8	6	2	9 1/2
19.5	.7677	5/8	6	2	9 1/2
20.0	.7874	5/8	6	2	9 1/2
20.5	.8071	5/8	6	2	9 1/2
21.0	.8268	5/8	6	2	9 1/2
21.5	.8465	5/8	6	2	9 1/2
22.0	.8661	3/4	6	2 1/4	10
22.5	.8858	3/4	6	2 1/4	10
23.0	.9055	3/4	6	2 1/4	10
23.5	.9252	3/4	8	2 1/4	10
24.0	.9449	3/4	8	2 1/4	10
24.5	.9646	3/4	8	2 1/4	10
25.0	.9843	7/8	8	2 1/4	10 1/2
25.5	1.0039	7/8	8	2 1/4	10 1/2
26.0	1.0236	7/8	8	2 1/4	10 1/2
27.0	1.0630	7/8	8	2 1/4	10 1/2
28.0	1.1024	7/8	8	2 1/4	11
29.0	1.1417	1	8	2 1/4	11
30.0	1.1811	1	8	2 1/4	11
31.0	1.2205	1	8	2 1/2	11 1/2
32.0	1.2598	1	8	2 1/2	11 1/2
33.0	1.2992	1	8	2 1/2	11 1/2
34.0	1.3386	1	8	2 1/2	12
35.0	1.3780	1	8	2 1/2	12
36.0	1.4173	1 1/4	8	2 1/2	12
37.0	1.4567	1 1/4	8	2 1/2	12 1/2
38.0	1.4961	1 1/4	8	2 1/2	12 1/2



**CHUCKING REAMERS — CARBIDE TIPPED
STOCKED — SPECIAL DECIMAL SIZES**

Decimal Tool Diameter
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CHUCKING REAMERS — CARBIDE TIPPED STRAIGHT FLUTE LONG CARBIDE — TAPER SHANK

Taper shank and straight polished flutes.

Flute long carbide brazed to one piece hardened tool steel bodies.

Cutting diameter tolerance plus .0003" minus .0000".

Tool Diameter		Dimensions			
		Taper	No. of Flutes	Length	
Frac.	Dec.			Flute	Overall
¼	.2500	1	4	1 ½	6
9/32	.2813	1	4	1 ½	6
5/16	.3125	1	4	1 ½	6
11/32	.3438	1	4	1 ½	6
3/8	.3750	1	4	1 ¾	7
13/32	.4063	1	4	1 ¾	7
7/16	.4375	1	4	1 ¾	7
15/32	.4688	1	4	1 ¾	7
½	.5000	1	6	2	8
17/32	.5313	1	6	2	8
9/16	.5625	1	6	2	8
19/32	.5938	1	6	2	8
5/8	.6250	2	6	2	9
21/32	.6563	2	6	2	9
11/16	.6875	2	6	2	9
23/32	.7188	2	6	2	9
¾	.7500	2	6	2	9 ½
25/32	.7813	2	6	2	9 ½
13/16	.8125	2	6	2	9 ½
27/32	.8438	2	6	2	9 ½
7/8	.8750	2	6	2 ¼	10
29/32	.9063	2	6	2 ¼	10
15/16	.9375	3	8	2 ¼	10
31/32	.9688	3	8	2 ¼	10
1	1.0000	3	8	2 ¼	10 ½
1 1/16	1.0625	3	8	2 ¼	10 ½
1 1/8	1.1250	3	8	2 ¼	11
1 3/16	1.1875	3	8	2 ¼	11

Tool Diameter		Dimensions			
		Taper	No. of Flutes	Length	
Frac.	Dec.			Flute	Overall
1 ¼	1.2500	4	8	2 ½	11 ½
1 5/16	1.3125	4	8	2 ½	11 ½
1 3/8	1.3750	4	8	2 ½	12
1 7/16	1.4375	4	8	2 ½	12
1 ½	1.5000	4	8	2 ½	12 ½



**CHUCKING REAMERS — CARBIDE TIPPED
STRAIGHT FLUTE LONG CARBIDE & TAPER SHANK — METRIC
SIZES**

Tool Diameter		Dimensions			
		Taper	No. of Flutes	Length	
mm	Inch			Flute & Carbide	Overall
6.0	.2362	1	4	1 ½	6
6.5	.2559	1	4	1 ½	6
7.0	.2756	1	4	1 ½	6
7.5	.2953	1	4	1 ½	6

Tool Diameter		Dimensions			
		Taper	No. of Flutes	Length	
				Flute & Carbide	Overall
mm	Inch				
8.0	.3150	1	4	1 ½	6
8.5	.3346	1	4	1 ½	6
9.0	.3543	1	4	1 ¾	7
9.5	.3740	1	4	1 ¾	7
10.0	.3937	1	4	1 ¾	7
10.5	.4134	1	4	1 ¾	7
11.0	.4331	1	4	1 ¾	7
11.5	.4528	1	4	1 ¾	7
12.0	.4724	1	6	2	8
12.5	.4921	1	6	2	8
13.0	.5118	1	6	2	8
13.5	.5315	1	6	2	8
14.0	.5512	1	6	2	8
14.5	.5709	1	6	2	8
15.0	.5906	1	6	2	8
15.5	.6102	2	6	2	9
16.0	.6299	2	6	2	9
16.5	.6496	2	6	2	9
17.0	.6693	2	6	2	9
17.5	.6890	2	6	2	9
18.0	.7087	2	6	2	9
18.5	.7283	2	6	2	9 ½
19.0	.7480	2	6	2	9 ½
19.5	.7677	2	6	2	9 ½
20.0	.7874	2	6	2	9 ½
20.5	.8071	2	6	2	9 ½
21.0	.8268	2	6	2	9 ½
21.5	.8465	2	6	2	9 ½

Tool Diameter		Dimensions			
		Taper	No. of Flutes	Length	
				Flute & Carbide	Overall
mm	Inch				
22.0	.8661	2	6	2 ¼	10
22.5	.8858	2	6	2 ¼	10
23.0	.9055	2	6	2 ¼	10
23.5	.9252	3	8	2 ¼	10
24.0	.9449	3	8	2 ¼	10
24.5	.9646	3	8	2 ¼	10
25.0	.9843	3	8	2 ¼	10 ½
25.5	1.0039	3	8	2 ¼	10 ½
26.0	1.0236	3	8	2 ¼	10 ½
27.0	1.0630	3	8	2 ¼	10 ½
28.0	1.1024	3	8	2 ¼	11
29.0	1.1417	3	8	2 ¼	11
30.0	1.1811	3	8	2 ¼	11
31.0	1.2205	4	8	2 ½	11 ½
32.0	1.2598	4	8	2 ½	11 ½
33.0	1.2992	4	8	2 ½	11 ½
34.0	1.3386	4	8	2 ½	12
35.0	1.3780	4	8	2 ½	12
36.0	1.4173	4	8	2 ½	12
37.0	1.4567	4	8	2 ½	12 ½
38.0	1.4961	4	8	2 ½	12 ½



CHUCKING REAMERS — CARBIDE TIPPED FOR REAMING STEELS, TOUGH STEEL ALLOYS & CAST IRON

Steel cutting grade flute long carbide brazed to hardened tool steel bodies.

Special steel cutting tool geometry:

Tool Diameter		Dimensions			
		Max. Shank Diam.	No. of Flutes	Length	
Frac.	Dec.			Flute & Carbide	Overall
$\frac{3}{16}$	.1875	.1805	4	1 $\frac{1}{8}$	4 $\frac{1}{2}$
$\frac{13}{64}$	.2031	.1805	4	1 $\frac{1}{8}$	4 $\frac{1}{2}$
$\frac{7}{32}$	.2188	.2075	4	1 $\frac{1}{4}$	5
$\frac{15}{64}$	.2344	.2265	4	1 $\frac{1}{2}$	6
$\frac{1}{4}$	.2500	.2405	4	1 $\frac{1}{2}$	6
$\frac{17}{64}$	.2656	.2485	4	1 $\frac{1}{2}$	6
$\frac{9}{32}$	.2813	.2485	4	1 $\frac{1}{2}$	6
$\frac{19}{64}$	.2969	.2792	4	1 $\frac{1}{2}$	6
$\frac{5}{16}$	.3125	.2792	4	1 $\frac{1}{2}$	6
$\frac{21}{64}$	.3281	.2792	4	1 $\frac{1}{2}$	6
$\frac{11}{32}$	.3438	.2792	4	1 $\frac{1}{2}$	6
$\frac{23}{64}$	.3594	.3105	4	1 $\frac{3}{4}$	7
$\frac{3}{8}$	.3750	.3105	4	1 $\frac{3}{4}$	7
$\frac{25}{64}$	.3906	.3105	4	1 $\frac{3}{4}$	7
$\frac{13}{32}$	.4063	.3105	4	1 $\frac{3}{4}$	7

Tool Diameter		Dimensions			
		Max. Shank Diam.	No. of Flutes	Length	
Frac.	Dec.			Flute & Carbide	Overall
27/64	.4219	.3730	6	1 3/4	7
7/16	.4375	.3730	6	1 3/4	7
29/64	.4531	.3730	6	1 3/4	7
15/32	.4688	.3730	6	1 3/4	7
31/64	.4844	.4355	6	2	8
1/2	.5000	.4355	6	2	8
33/64	.5156	.4355	6	2	8
17/32	.5313	.4355	6	2	8
35/64	.5469	.4355	6	2	8
9/16	.5625	.4355	6	2	8
37/64	.5781	.4355	6	2	8
19/32	.5938	.4355	6	2	8
39/64	.6094	.5615	6	2 1/4	9
5/8	.6250	.5615	6	2 1/4	9
41/64	.6406	.5615	6	2 1/4	9
21/32	.6563	.5615	6	2 1/4	9
43/64	.6719	.5615	6	2 1/4	9
11/16	.6875	.5615	6	2 1/4	9
45/64	.7031	.5615	6	2 1/4	9
23/32	.7188	.5615	6	2 1/4	9
47/64	.7344	.6245	6	2 1/2	9 1/2
3/4	.7500	.6245	6	2 1/2	9 1/2
49/64	.7656	.6245	6	2 1/2	9 1/2
25/32	.7813	.6245	6	2 1/2	9 1/2
51/64	.7969	.6245	6	2 1/2	9 1/2
13/16	.8125	.6245	6	2 1/2	9 1/2
53/64	.8281	.6245	6	2 1/2	9 1/2
27/32	.8438	.6245	6	2 1/2	9 1/2

Tool Diameter		Dimensions			
		Max. Shank Diam.	No. of Flutes	Length	
Frac.	Dec.			Flute & Carbide	Overall
$\frac{55}{64}$	.8594	.7495	6	$2 \frac{5}{8}$	10
$\frac{7}{8}$	.8750	.7495	6	$2 \frac{5}{8}$	10
$\frac{57}{64}$	.8906	.7495	6	$2 \frac{5}{8}$	10
$\frac{29}{32}$	.9063	.7495	6	$2 \frac{5}{8}$	10
$\frac{59}{64}$	.9219	.7495	8	$2 \frac{5}{8}$	10
$\frac{15}{16}$	.9375	.7495	8	$2 \frac{5}{8}$	10
$\frac{61}{64}$	.9531	.7495	8	$2 \frac{5}{8}$	10
$\frac{31}{32}$	.9688	.7495	8	$2 \frac{5}{8}$	10
$\frac{63}{64}$	.9844	.8745	8	$2 \frac{3}{4}$	$10 \frac{1}{2}$
1	1.0000	.8745	8	$2 \frac{3}{4}$	$10 \frac{1}{2}$
$1 \frac{1}{16}$	1.0625	.8745	8	$2 \frac{3}{4}$	$10 \frac{1}{2}$
$1 \frac{1}{8}$	1.1250	.8745	8	$2 \frac{7}{8}$	11
$1 \frac{3}{16}$	1.1875	.9995	8	$2 \frac{7}{8}$	11
$1 \frac{1}{4}$	1.2500	.9995	8	3	$11 \frac{1}{2}$
$1 \frac{5}{16}$	1.3125	.9995	8	3	$11 \frac{1}{2}$
$1 \frac{3}{8}$	1.3750	.9995	8	$3 \frac{1}{4}$	12
$1 \frac{7}{16}$	1.4375	.9995	8	$3 \frac{1}{4}$	12
$1 \frac{1}{2}$	1.5000	1.2495	8	$3 \frac{1}{2}$	$12 \frac{1}{2}$



DOWEL PIN SIZE REAMERS — CARBIDE TIPPED STEEL CUTTING — STRAIGHT FLUTE & STRAIGHT SHANK

Cutting diameter tolerance plus .0000" minus .0002"

USE:

These precision ground carbide tipped reamers accurately finish dowel pin holes in steels, tough steel alloys and cast irons and result in properly fitted dowel pins subjected to shearing strain — assuring accurate alignment. Should be used in pairs .0005 and .0020 under fraction size — Note special minus .0002 tolerance.

Decimal Tool Diameter	Dimensions		
	Max. Shank Diam.	No. of Flutes	Overall Length
.1855	.1805	4	4 ½
.1870	.1805	4	4 ½
.2480	.2405	4	6
.2495	.2405	4	6
.3105	.2792	4	6
.3120	.2792	4	6
.3730	.3105	4	7
.3745	.3105	4	7
.4355	.3730	6	7
.4370	.3730	6	7
.4980	.4355	6	8
.4995	.4355	6	8
CASED SET OF ABOVE 12 REAMERS			



OVER & UNDER SIZE REAMERS — CARBIDE TIPPED

STEEL CUTTING — STRAIGHT FLUTE & STRAIGHT SHANK

Cutting diameter tolerance plus .0002" minus .0000"

Decimal Tool Diameter	Dimensions		
	Max. Shank Diam.	No. of Flutes	Overall Length
.1865	.1805	4	4 ½
.1885	.1805	4	4 ½
.2490	.2405	4	6
.2510	.2405	4	6
.3115	.2792	4	6
.3135	.2792	4	6
.3740	.3105	4	7
.3760	.3105	4	7
.4365	.3730	6	7
.4385	.3730	6	7
.4990	.4355	6	8
.5010	.4355	6	8
CASED SET OF ABOVE 12 REAMERS			



NAS 897 CHUCKING REAMERS — CARBIDE TIPPED STRAIGHT FLUTE & STRAIGHT SHANK

Carbide tips brazed to hardened tool steel bodies.

Tool Diameter		Dimensions				
		Max. Shank Diam.	No. of Flutes	Length		
Frac.	Dec.			Flute	Carbide	Overall
5/32	.1563	.1510	4	1	½	4
3/16	.1875	.1805	4	1 1/8	½	4 ½

Tool Diameter		Dimensions				
		Max. Shank Diam.	No. of Flutes	Length		
Frac.	Dec.			Flute	Carbide	Overall
7/32	.2188	.2075	4	1 1/4	1/2	5
15/64	.2344	.2265	4	1 1/2	1/2	6
1/4	.2500	.2405	4	1 1/2	1/2	6
9/32	.2813	.2485	4	1 1/2	1/2	6
5/16	.3125	.2792	6	1 1/2	1/2	6
5/16	.3125	.2792	4	1 1/2	1/2	6
11/32	.3438	.2792	6	1 1/2	5/8	6
11/32	.3438	.2792	4	1 1/2	5/8	6
3/8	.3750	.3105	6	1 3/4	5/8	7
3/8	.3750	.3105	4	1 3/4	5/8	7
13/32	.4063	.3105	4	1 3/4	5/8	7
13/32	.4063	.3105	6	1 3/4	5/8	7
7/16	.4375	.3730	6	1 3/4	5/8	7
15/32	.4688	.3730	6	1 3/4	5/8	7
1/2	.5000	.4355	6	2	5/8	8
17/32	.5313	.4355	6	2	5/8	8
9/16	.5625	.4355	6	2	5/8	8
19/32	.5938	.4355	6	2	5/8	8
5/8	.6250	.5615	6	2 1/4	5/8	9
21/32	.6563	.5615	6	2 1/4	5/8	9
11/16	.6875	.5615	6	2 1/4	5/8	9
23/32	.7188	.5615	6	2 1/4	5/8	9
3/4	.7500	.6245	6	2 1/2	3/4	9 1/2
25/32	.7813	.6245	6	2 1/2	3/4	9 1/2
13/16	.8125	.6245	6	2 1/2	3/4	9 1/2
27/32	.8438	.6245	6	2 1/2	3/4	9 1/2
7/8	.8750	.7495	6	2 5/8	3/4	10
29/32	.9063	.7495	6	2 5/8	3/4	10

Tool Diameter		Dimensions				
		Max. Shank Diam.	No. of Flutes	Length		
Frac.	Dec.			Flute	Carbide	Overall
15/16	.9375	.7495	8	2 5/8	3/4	10
31/32	.9688	.7495	8	2 5/8	3/4	10
1	1.0000	.8745	8	2 3/4	3/4	10 1/2
1 1/16	1.0625	.8745	8	2 3/4	3/4	10 1/2
1 1/8	1.1250	.8745	8	2 7/8	7/8	11
1 3/16	1.1875	.9995	8	2 7/8	7/8	11
1 1/4	1.2500	.9995	8	3	7/8	11 1/2
1 5/16	1.3125	.9995	8	3	7/8	11 1/2
1 3/8	1.3750	.9995	8	3 1/4	7/8	12
1 7/16	1.4375	.9995	8	3 1/4	7/8	12
1 1/2	1.5000	1.2495	8	3 1/2	7/8	12 1/2



NAS 7 CHUCKING REAMERS — CARBIDE TIPPED STRAIGHT FLUTE LONG CARBIDE & STRAIGHT SHANK

National Aerospace Standards.

Type "C" with flute long carbide tips.

Carbide tips brazed to hardened tool steel bodies.

Precision ground cutting edges.

Tool		Dimensions			
Diameter		Max. Shank Diam.	No. of Flutes	Length	
Frac.	Dec.			Flute & Carbide	Overall
3/16	.1875	.1805	4	1 1/8	4 1/2
7/32	.2188	.2075	4	1 1/4	5
15/64	.2344	.2265	4	1 1/2	6
1/4	.2500	.2405	4	1 1/2	6
9/32	.2813	.2485	4	1 1/2	6
5/16	.3125	.2792	4	1 1/2	6
11/32	.3438	.2792	4	1 1/2	6
3/8	.3750	.3105	4	1 3/4	7
13/32	.4063	.3105	4	1 3/4	7
7/16	.4375	.3730	6	1 3/4	7
15/32	.4688	.3730	6	1 3/4	7
1/2	.5000	.4355	6	2	8
17/32	.5313	.4355	6	2	8
9/16	.5625	.4355	6	2	8
19/32	.5938	.4355	6	2	8
5/8	.6250	.5615	6	2 1/4	9
21/32	.6563	.5615	6	2 1/4	9
11/16	.6875	.5615	6	2 1/4	9
23/32	.7188	.5615	6	2 1/4	9
3/4	.7500	.6245	6	2 1/2	9 1/2
25/32	.7813	.6245	6	2 1/2	9 1/2
13/16	.8125	.6245	6	2 1/2	9 1/2
27/32	.8438	.6245	6	2 1/2	9 1/2
7/8	.8750	.7495	6	2 5/8	10
29/32	.9063	.7495	6	2 5/8	10
15/16	.9375	.7495	8	2 5/8	10
31/32	.9688	.7495	8	2 5/8	10

Tool Diameter		Dimensions			
		Max. Shank Diam.	No. of Flutes	Length	
Frac.	Dec.			Flute & Carbide	Overall
1	1.0000	.8745	8	2 ³ / ₄	10 ¹ / ₂
1 ¹ / ₁₆	1.0625	.8745	8	2 ³ / ₄	10 ¹ / ₂
1 ¹ / ₈	1.1250	.8745	8	2 ⁷ / ₈	11
1 ³ / ₁₆	1.1875	.9995	8	2 ⁷ / ₈	11
1 ¹ / ₄	1.2500	.9995	8	3	11 ¹ / ₂
1 ⁵ / ₁₆	1.3125	.9995	8	3	11 ¹ / ₂
1 ³ / ₈	1.3750	.9995	8	3 ¹ / ₄	12
1 ⁷ / ₁₆	1.4375	.9995	8	3 ¹ / ₄	12
1 ¹ / ₂	1.5000	1.2495	8	3 ¹ / ₂	12 ¹ / ₂
1 ⁹ / ₁₆	1.5625	1.2495	8	3 ¹ / ₂	12 ¹ / ₂
1 ⁵ / ₈	1.6250	1.2495	8	3 ¹ / ₂	13
1 ¹¹ / ₁₆	1.6875	1.2495	8	3 ¹ / ₂	13
1 ³ / ₄	1.7500	1.2495	10	3 ¹ / ₂	13 ¹ / ₂
1 ¹³ / ₁₆	1.8125	1.4995	10	3 ¹ / ₂	13 ¹ / ₂
1 ⁷ / ₈	1.8750	1.4995	10	3 ¹ / ₂	14
1 ¹⁵ / ₁₆	1.9375	1.4995	10	3 ¹ / ₂	14
2	2.0000	1.4995	12	3 ¹ / ₂	14
2 ¹ / ₈	2.1250	1.4995	12	3 ¹ / ₂	14 ¹ / ₂
2 ¹ / ₄	2.2500	1.7495	12	3 ¹ / ₂	14 ¹ / ₂
2 ³ / ₈	2.3750	1.7495	12	3 ¹ / ₂	15
2 ¹ / ₂	2.5000	1.7495	12	3 ¹ / ₂	15



EXPANSION CHUCKING REAMERS — CARBIDE TIPPED

STRAIGHT FLUTE LONG CARBIDE & STRAIGHT SHANK

Expansion adjusting screw permits expansion of cutting diameter for regrinding after wear without reinserting carbide.

Straight shank and straight polished flutes.

Flute long carbide tips brazed to one piece hardened tool steel bodies.

Cutting diameter tolerance plus .0003" minus .000".

Tool Diameter		Dimensions			
		Shank Diameter	No. of Flutes	Length	
Frac.	Dec.			Flute	Overall
5/16	.3125	9/32	4	1	6
11/32	.3438	9/32	4	1	6
3/8	.3750	5/16	4	1	7
13/32	.4063	5/16	4	1	7
7/16	.4375	3/8	4	1	7
15/32	.4688	3/8	4	1	7
1/2	.5000	7/16	6	1	8
17/32	.5313	7/16	6	1	8
9/16	.5625	7/16	6	1 1/8	8
19/32	.5938	7/16	6	1 1/8	8
5/8	.6250	9/16	6	1 1/4	9
21/32	.6563	9/16	6	1 1/4	9
11/16	.6875	9/16	6	1 1/4	9
23/32	.7188	9/16	6	1 1/4	9
3/4	.7500	5/8	6	1 3/8	9 1/2

Tool Diameter		Dimensions			
		Shank Diameter	No. of Flutes	Length	
Frac.	Dec.			Flute	Overall
$\frac{25}{32}$	.7813	$\frac{5}{8}$	6	$1 \frac{3}{8}$	$9 \frac{1}{2}$
$\frac{13}{16}$	.8125	$\frac{5}{8}$	6	$1 \frac{3}{8}$	$9 \frac{1}{2}$
$\frac{27}{32}$	.8438	$\frac{5}{8}$	6	$1 \frac{3}{8}$	$9 \frac{1}{2}$
$\frac{7}{8}$	.8750	$\frac{3}{4}$	6	$1 \frac{1}{2}$	10
$\frac{29}{32}$	.9063	$\frac{3}{4}$	6	$1 \frac{1}{2}$	10
$\frac{15}{16}$	.9375	$\frac{3}{4}$	8	$1 \frac{1}{2}$	10
$\frac{31}{32}$	.9688	$\frac{3}{4}$	8	$1 \frac{1}{2}$	10
1	1.0000	$\frac{7}{8}$	8	$1 \frac{5}{8}$	$10 \frac{1}{2}$
$1 \frac{1}{32}$	1.0313	$\frac{7}{8}$	8	$1 \frac{5}{8}$	$10 \frac{1}{2}$
$1 \frac{1}{16}$	1.0625	$\frac{7}{8}$	8	$1 \frac{5}{8}$	$10 \frac{1}{2}$
$1 \frac{3}{32}$	1.0938	$\frac{7}{8}$	8	$1 \frac{3}{4}$	11
$1 \frac{1}{8}$	1.1250	$\frac{7}{8}$	8	$1 \frac{3}{4}$	11
$1 \frac{3}{16}$	1.1875	1	8	$1 \frac{3}{4}$	11
$1 \frac{1}{4}$	1.2500	1	8	$1 \frac{7}{8}$	$11 \frac{1}{2}$
$1 \frac{5}{16}$	1.3125	1	8	$1 \frac{7}{8}$	$11 \frac{1}{2}$
$1 \frac{3}{8}$	1.3750	1	8	2	12
$1 \frac{7}{16}$	1.4375	$1 \frac{1}{4}$	8	2	12
$1 \frac{1}{2}$	1.5000	$1 \frac{1}{4}$	8	$2 \frac{1}{8}$	$12 \frac{1}{2}$
$1 \frac{9}{16}$	1.5625	$1 \frac{1}{4}$	8	$2 \frac{1}{8}$	$12 \frac{1}{2}$
$1 \frac{5}{8}$	1.6250	$1 \frac{1}{4}$	8	$2 \frac{1}{4}$	13
$1 \frac{11}{16}$	1.6875	$1 \frac{1}{4}$	8	$2 \frac{1}{4}$	13
$1 \frac{3}{4}$	1.7500	$1 \frac{1}{4}$	10	$2 \frac{3}{8}$	$13 \frac{1}{2}$
$1 \frac{13}{16}$	1.8125	$1 \frac{1}{2}$	10	$2 \frac{3}{8}$	$13 \frac{1}{2}$
$1 \frac{7}{8}$	1.8750	$1 \frac{1}{2}$	10	$2 \frac{1}{2}$	14
$1 \frac{15}{16}$	1.9375	$1 \frac{1}{2}$	10	$2 \frac{1}{2}$	14
2	2.0000	$1 \frac{1}{2}$	12	$2 \frac{1}{2}$	14
$2 \frac{1}{8}$	2.1250	$1 \frac{1}{2}$	12	$2 \frac{3}{4}$	$14 \frac{1}{2}$
$2 \frac{1}{4}$	2.2500	$1 \frac{3}{4}$	12	$2 \frac{3}{4}$	$14 \frac{1}{2}$

Tool Diameter		Dimensions			
		Shank Diameter	No. of Flutes	Length	
Frac.	Dec.			Flute	Overall
2 3/8	2.3750	1 3/4	12	3	15
2 1/2	2.5000	1 3/4	12	3	15

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**EXPANSION CHUCKING REAMERS — CARBIDE TIPPED
STRAIGHT FLUTE LONG CARBIDE & STRAIGHT SHANK — METRIC SIZES**

Tool Diameter		Dimensions			
		Shank Diameter	No. of Flutes	Length	
mm	Inch			Flute & Carbide	Overall
7.5	.2953	9/32	4	1	6
8.0	.3150	9/32	4	1	6
8.5	.3346	9/32	4	1	6
9.0	.3543	5/16	4	1	7

Tool Diameter		Dimensions			
		Shank Diameter	No. of Flutes	Length	
				Flute & Carbide	Overall
mm	Inch				
9.5	.3740	$\frac{5}{16}$	4	1	7
10.0	.3937	$\frac{5}{16}$	4	1	7
10.5	.4134	$\frac{3}{8}$	4	1	7
11.0	.4331	$\frac{3}{8}$	4	1	7
11.5	.4528	$\frac{3}{8}$	4	1	7
12.0	.4724	$\frac{7}{16}$	6	1	8
12.5	.4921	$\frac{7}{16}$	6	1	8
13.0	.5118	$\frac{7}{16}$	6	1	8
13.5	.5315	$\frac{7}{16}$	6	1	8
14.0	.5512	$\frac{7}{16}$	6	1 $\frac{1}{8}$	8
14.5	.5709	$\frac{7}{16}$	6	1 $\frac{1}{8}$	8
15.0	.5906	$\frac{7}{16}$	6	1 $\frac{1}{8}$	8
15.5	.6102	$\frac{9}{16}$	6	1 $\frac{1}{4}$	9
16.0	.6299	$\frac{9}{16}$	6	1 $\frac{1}{4}$	9
16.5	.6496	$\frac{9}{16}$	6	1 $\frac{1}{4}$	9
17.0	.6693	$\frac{9}{16}$	6	1 $\frac{1}{4}$	9
17.5	.6890	$\frac{9}{16}$	6	1 $\frac{1}{4}$	9
18.0	.7087	$\frac{9}{16}$	6	1 $\frac{1}{4}$	9
18.5	.7283	$\frac{5}{8}$	6	1 $\frac{3}{8}$	9 $\frac{1}{2}$
19.0	.7480	$\frac{5}{8}$	6	1 $\frac{3}{8}$	9 $\frac{1}{2}$
19.5	.7677	$\frac{5}{8}$	6	1 $\frac{3}{8}$	9 $\frac{1}{2}$
20.0	.7874	$\frac{5}{8}$	6	1 $\frac{3}{8}$	9 $\frac{1}{2}$
20.5	.8071	$\frac{5}{8}$	6	1 $\frac{3}{8}$	9 $\frac{1}{2}$
21.0	.8268	$\frac{5}{8}$	6	1 $\frac{3}{8}$	9 $\frac{1}{2}$
21.5	.8465	$\frac{5}{8}$	6	1 $\frac{3}{8}$	9 $\frac{1}{2}$
22.0	.8661	$\frac{3}{4}$	6	1 $\frac{1}{2}$	10
22.5	.8858	$\frac{3}{4}$	6	1 $\frac{1}{2}$	10
23.0	.9055	$\frac{3}{4}$	6	1 $\frac{1}{2}$	10

23.5	.9252	$\frac{3}{4}$	8	1 $\frac{1}{2}$	10
24.0	.9449	$\frac{3}{4}$	8	1 $\frac{1}{2}$	10
24.5	.9646	$\frac{3}{4}$	8	1 $\frac{1}{2}$	10
25.0	.9843	$\frac{7}{8}$	8	1 $\frac{5}{8}$	10 $\frac{1}{2}$
25.5	1.0039	$\frac{7}{8}$	8	1 $\frac{5}{8}$	10 $\frac{1}{2}$
26.0	1.0236	$\frac{7}{8}$	8	1 $\frac{5}{8}$	10 $\frac{1}{2}$
27.0	1.0630	$\frac{7}{8}$	8	1 $\frac{5}{8}$	10 $\frac{1}{2}$
28.0	1.1024	$\frac{7}{8}$	8	1 $\frac{3}{4}$	11
29.0	1.1417	1	8	1 $\frac{3}{4}$	11
30.0	1.1811	1	8	1 $\frac{3}{4}$	11
31.0	1.2205	1	8	1 $\frac{7}{8}$	11 $\frac{1}{2}$
32.0	1.2598	1	8	1 $\frac{7}{8}$	11 $\frac{1}{2}$
33.0	1.2992	1	8	1 $\frac{7}{8}$	11 $\frac{1}{2}$
34.0	1.3386	1	8	2	12
35.0	1.3780	1	8	2	12
36.0	1.4173	1 $\frac{1}{4}$	8	2	12
37.0	1.4567	1 $\frac{1}{4}$	8	2 $\frac{1}{8}$	12 $\frac{1}{2}$
38.0	1.4961	1 $\frac{1}{4}$	8	2 $\frac{1}{8}$	12 $\frac{1}{2}$
39.0	1.5354	1 $\frac{1}{4}$	8	2 $\frac{1}{8}$	12 $\frac{1}{2}$
40.0	1.5748	1 $\frac{1}{4}$	8	2 $\frac{1}{4}$	13
41.0	1.6142	1 $\frac{1}{4}$	8	2 $\frac{1}{4}$	13
42.0	1.6535	1 $\frac{1}{4}$	8	2 $\frac{1}{4}$	13
43.0	1.6929	1 $\frac{1}{4}$	10	2 $\frac{3}{8}$	13 $\frac{1}{2}$
44.0	1.7323	1 $\frac{1}{4}$	10	2 $\frac{3}{8}$	13 $\frac{1}{2}$



EXPANSION CHUCKING REAMERS — CARBIDE TIPPED STRAIGHT FLUTE LONG CARBIDE & TAPER SHANK

Expansion adjusting screw permits expansion of cutting diameter for regrinding after wear without reinserting carbide.

Taper shank and straight polished flutes.

Flute long carbide tips brazed to one piece hardened tool steel bodies.

Cutting diameter tolerance plus .0003" minus .000".

Tool Diameter		Dimensions			
		Taper	No. of Flutes	Length	
Frac.	Dec.			Flute	Overall
5/16	.3125	1	4	1	6
11/32	.3438	1	4	1	6
3/8	.3750	1	4	1	7
13/32	.4063	1	4	1	7
7/16	.4375	1	4	1	7
15/32	.4688	1	4	1	7
1/2	.5000	1	6	1	8
17/32	.5313	1	6	1	8
9/16	.5625	1	6	1 1/8	8
19/32	.5938	1	6	1 1/8	8
5/8	.6250	2	6	1 1/4	9
21/32	.6563	2	6	1 1/4	9
11/16	.6875	2	6	1 1/4	9
23/32	.7188	2	6	1 1/4	9
3/4	.7500	2	6	1 3/8	9 1/2
25/32	.7813	2	6	1 3/8	9 1/2
13/16	.8125	2	6	1 3/8	9 1/2
27/32	.8438	2	6	1 3/8	9 1/2

Tool Diameter		Dimensions			
		Taper	No. of Flutes	Length	
Frac.	Dec.			Flute	Overall
7/8	.8750	2	6	1 1/2	10
29/32	.9063	2	6	1 1/2	10
15/16	.9375	3	8	1 1/2	10
31/32	.9688	3	8	1 1/2	10
1	1.0000	3	8	1 5/8	10 1/2
1 1/32	1.0313	3	8	1 5/8	10 1/2
1 1/16	1.0625	3	8	1 5/8	10 1/2
1 3/32	1.0938	3	8	1 3/4	11
1 1/8	1.1250	3	8	1 3/4	11
1 3/16	1.1875	3	8	1 3/4	11
1 1/4	1.2500	4	8	1 7/8	11 1/2
1 5/16	1.3125	4	8	1 7/8	11 1/2
1 3/8	1.3750	4	8	2	12
1 7/16	1.4375	4	8	2	12
1 1/2	1.5000	4	8	2 1/8	12 1/2
1 9/16	1.5625	4	8	2 1/8	12 1/2
1 5/8	1.6250	4	8	2 1/4	13
1 11/16	1.6875	4	8	2 1/4	13
1 3/4	1.7500	4	10	2 3/8	13 1/2
1 13/16	1.8125	4	10	2 3/8	13 1/2
1 7/8	1.8750	4	10	2 1/2	14
1 15/16	1.9375	4	10	2 1/2	14
2	2.0000	4	12	2 1/2	14
2 1/8	2.1250	5	12	2 3/4	14 1/2
2 1/4	2.2500	5	12	2 3/4	14 1/2
2 3/8	2.3750	5	12	3	15
2 1/2	2.5000	5	12	3	15



**EXPANSION CHUCKING REAMERS — CARBIDE TIPPED
STRAIGHT FLUTE LONG CARBIDE & TAPER SHANK — METRIC
SIZES**

Tool		Dimensions			
		Taper	No. of Flutes	Length	
mm	Inch			Flute & Carbide	Overall
7.5	.2953	1	4	1	6
8.0	.3150	1	4	1	6
8.5	.3346	1	4	1	6
9.0	.3543	1	4	1	7
9.5	.3740	1	4	1	7
10.0	.3937	1	4	1	7
10.5	.4134	1	4	1	7
11.0	.4331	1	4	1	7
11.5	.4528	1	4	1	7
12.0	.4724	1	6	1	8
12.5	.4921	1	6	1	8

Tool Diameter		Dimensions			
		Taper	No. of Flutes	Length	
				Flute & Carbide	Overall
mm	Inch				
13.0	.5118	1	6	1	8
13.5	.5315	1	6	1	8
14.0	.5512	1	6	1 1/8	8
14.5	.5709	1	6	1 1/8	8
15.0	.5906	1	6	1 1/8	8
15.5	.6102	2	6	1 1/4	9
16.0	.6299	2	6	1 1/4	9
16.5	.6496	2	6	1 1/4	9
17.0	.6693	2	6	1 1/4	9
17.5	.6890	2	6	1 1/4	9
18.0	.7087	2	6	1 1/4	9
18.5	.7283	2	6	1 3/8	9 1/2
19.0	.7480	2	6	1 3/8	9 1/2
19.5	.7677	2	6	1 3/8	9 1/2
20.0	.7874	2	6	1 3/8	9 1/2
20.5	.8071	2	6	1 3/8	9 1/2
21.0	.8268	2	6	1 3/8	9 1/2
21.5	.8465	2	6	1 3/8	9 1/2
22.0	.8661	2	6	1 1/2	10
22.5	.8858	2	6	1 1/2	10
23.0	.9055	2	6	1 1/2	10
23.5	.9252	3	8	1 1/2	10
24.0	.9449	3	8	1 1/2	10
24.5	.9646	3	8	1 1/2	10
25.0	.9843	3	8	1 5/8	10 1/2
25.5	1.0039	3	8	1 5/8	10 1/2
26.0	1.0236	3	8	1 5/8	10 1/2
27.0	1.0630	3	8	1 5/8	10 1/2

Tool Diameter		Dimensions			
		Taper	No. of Flutes	Length	
				Flute & Carbide	Overall
mm	Inch				
28.0	1.1024	3	8	1 ³ / ₄	11
29.0	1.1417	3	8	1 ³ / ₄	11
30.0	1.1811	3	8	1 ³ / ₄	11
31.0	1.2205	4	8	1 ⁷ / ₈	11 ¹ / ₂
32.0	1.2598	4	8	1 ⁷ / ₈	11 ¹ / ₂
33.0	1.2992	4	8	1 ⁷ / ₈	11 ¹ / ₂
34.0	1.3386	4	8	2	12
35.0	1.3780	4	8	2	12
36.0	1.4173	4	8	2	12
37.0	1.4567	4	8	2 ¹ / ₈	12 ¹ / ₂
38.0	1.4961	4	8	2 ¹ / ₈	12 ¹ / ₂
39.0	1.5354	4	8	2 ¹ / ₈	12 ¹ / ₂
40.0	1.5748	4	8	2 ¹ / ₄	13
41.0	1.6142	4	8	2 ¹ / ₄	13
42.0	1.6535	4	8	2 ¹ / ₄	13
43.0	1.6929	4	10	2 ³ / ₈	13 ¹ / ₂
44.0	1.7323	4	10	2 ³ / ₈	13 ¹ / ₂

CARMET
TOOLS & INSERTS



EXPANSION CHUCKING REAMERS — CARBIDE TIPPED STRAIGHT FLUTE LONG CARBIDE & TAPER SHANK

Expansion adjusting screw permits expansion of cutting diameter for regrinding after wear without reinserting carbide.

Taper shank and straight polished flutes.

Flute long carbide tips brazed to one piece hardened tool steel bodies.

Cutting diameter tolerance plus .0003" minus .000".

Tool Diameter		Dimensions			
		Taper	No. of Flutes	Length	
Frac.	Dec.			Flute	Overall
5/16	.3125	1	4	1	6
11/32	.3438	1	4	1	6
3/8	.3750	1	4	1	7
13/32	.4063	1	4	1	7
7/16	.4375	1	4	1	7
15/32	.4688	1	4	1	7
1/2	.5000	1	6	1	8
17/32	.5313	1	6	1	8
9/16	.5625	1	6	1 1/8	8
19/32	.5938	1	6	1 1/8	8
5/8	.6250	2	6	1 1/4	9
21/32	.6563	2	6	1 1/4	9
11/16	.6875	2	6	1 1/4	9
23/32	.7188	2	6	1 1/4	9
3/4	.7500	2	6	1 3/8	9 1/2
25/32	.7813	2	6	1 3/8	9 1/2
13/16	.8125	2	6	1 3/8	9 1/2
27/32	.8438	2	6	1 3/8	9 1/2
7/8	.8750	2	6	1 1/2	10
29/32	.9063	2	6	1 1/2	10

Tool Diameter		Dimensions			
		Taper	No. of Flutes	Length	
Frac.	Dec.			Flute	Overall
15/16	.9375	3	8	1 1/2	10
31/32	.9688	3	8	1 1/2	10
1	1.0000	3	8	1 5/8	10 1/2
1 1/32	1.0313	3	8	1 5/8	10 1/2
1 1/16	1.0625	3	8	1 5/8	10 1/2
1 3/32	1.0938	3	8	1 3/4	11
1 1/8	1.1250	3	8	1 3/4	11
1 3/16	1.1875	3	8	1 3/4	11
1 1/4	1.2500	4	8	1 7/8	11 1/2
1 5/16	1.3125	4	8	1 7/8	11 1/2
1 3/8	1.3750	4	8	2	12
1 7/16	1.4375	4	8	2	12
1 1/2	1.5000	4	8	2 1/8	12 1/2
1 9/16	1.5625	4	8	2 1/8	12 1/2
1 5/8	1.6250	4	8	2 1/4	13
1 11/16	1.6875	4	8	2 1/4	13
1 3/4	1.7500	4	10	2 3/8	13 1/2
1 13/16	1.8125	4	10	2 3/8	13 1/2
1 7/8	1.8750	4	10	2 1/2	14
1 15/16	1.9375	4	10	2 1/2	14
2	2.0000	4	12	2 1/2	14
2 1/8	2.1250	5	12	2 3/4	14 1/2
2 1/4	2.2500	5	12	2 3/4	14 1/2
2 3/8	2.3750	5	12	3	15
2 1/2	2.5000	5	12	3	15



EXTENDED LENGTH CHUCKING REAMERS — CARBIDE TIPPED STRAIGHT FLUTE LONG CARBIDE & STRAIGHT SHANK

Tool Diameter Range		Dimensions			
		Max. Shank Diam.	No. of Flutes	Length	
Low	High			Flute	Overall Range
* .1121	.1280	.1099	4	1 ½	2 9/32 – 6
* .1281	.1435	.1255	4	1 ½	2 17/32 – 6 ½
* .1436	.1590	.1411	4	1 ½	2 17/32 – 7
* .1591	.1750	.1567	4	1 ½	2 25/32 – 8
* .1751	.1910	.1724	4	1 ½	4 17/32 – 9
* .1911	.2210	.1880	4	1 ½	5 1/32 – 10
* .2211	.2530	.2193	4	1 ½	6 1/32 – 12
* .2531	.2840	.2505	4	1 ½	6 1/32 – 12
.2841	.3150	.2792	4	1 ½	6 1/32 – 12
.3151	.3470	.2792	4	1 ½	6 1/32 – 12
.3471	.3780	.3105	4	1 ¾	7 1/32 – 14
.3781	.4090	.3105	4	1 ¾	7 1/32 – 14
.4091	.4410	.3730	6	1 ¾	7 1/32 – 14
.4411	.4720	.3730	6	1 ¾	7 1/32 – 14
.4721	.5030	.4355	6	2	8 1/32 – 16

Tool Diameter Range		Dimensions			
		Max. Shank Diam.	No. of Flutes	Length	
Low	High			Flute	Overall Range
.5031	.5340	.4355	6	2	8 1/32 – 16
.5341	.5660	.4355	6	2	8 1/32 – 16
.5661	.5970	.4355	6	2	8 1/32 – 16
.5971	.6280	.5615	6	2 1/4	9 1/32 – 18
.6281	.6590	.5615	6	2 1/4	9 1/32 – 18
.6591	.6910	.5615	6	2 1/4	9 1/32 – 18
.6911	.7220	.5615	6	2 1/4	9 1/32 – 18
.7221	.7530	.6245	6	2 1/2	9 17/32 – 18
.7531	.7840		6	2 1/2	9 17/32 – 18
.7841	.8160		6	2 1/2	9 17/32 – 18
.8161	.8470		6	2 1/2	9 17/32 – 18
.8471	.8780		6	2 5/8	10 1/32 – 18
.8781	.9090		6	2 5/8	10 1/32 – 18
.9091	.9410		8	2 5/8	10 1/32 – 18
.9411	.9720		8	2 5/8	10 1/32 – 18
.9721	1.0030		8	2 3/4	10 17/32 – 18

*Solid Carbide





STRAIGHT FLUTES & STRAIGHT STEEL SHANK

TYPE 2800 – FINISHED FRACTIONAL SIZES

Solid carbide head.

Straight steel shank on .1911" tool diameter and larger (smaller sizes have a straight solid carbide shank).

Tool diameter tolerance thru .2500": plus .0002", minus .0000".

Tool diameter tolerance over .2500": plus .0003", minus .0000".

Shank diameter tolerance plus .0000", minus .0010".

TOOL DIAMETER		MAX SHANK DIAM.	NUMBER OF FLUTES	LENGTH		SPECIAL DECIMAL SIZE RANGE
FRAC.	DECIMAL			FLUTE	OVERALL	
* —	—	.0800	4	¾	3	.0811 – .0890
* 3/32	.0938	.0880	4	¾	3	.0891 – .0970
* 7/64	.1094	.0943	4	7/8	3 ½	.0971 – .1120
* 1/8	.1250	.1099	4	7/8	3 ½	.1121 – .1280
* 9/64	.1406	.1255	4	7/8	3 ½	.1281 – .1435
* 5/32	.1563	.1411	4	1	4	.1436 – .1590
* 11/64	.1719	.1567	4	1	4	.1591 – .1750
* 3/16	.1875	.1724	4	1 1/8	4 ½	.1751 – .1910
13/64	.2031	.1880	6	1 ¼	5	—

TOOL DIAMETER		MAX SHANK DIAM.	NUMBER OF FLUTES	LENGTH		SPECIAL DECIMAL SIZE RANGE
FRAC.	DECIMAL			FLUTE	OVERALL	
7/32	.2188	.1880	6	1 ¼	5	.1911 – .2210
15/64	.2344	.2193	6	1 ½	6	–
¼	.2500	.2193	6	1 ½	6	.2211 – .2530
17/64	.2656	.2505	6	1 ½	6	–
9/32	.2813	.2505	6	1 ½	6	.2531 – .2840
19/64	.2969	.2817	6	1 5/8	6	–
5/16	.3125	.2817	6	1 5/8	6	.2841 – .3150
21/64	.3281	.3130	6	1 5/8	6	–
11/32	.3438	.3130	6	1 5/8	6	.3151 – .3470
23/64	.3594	.3443	6	1 ¾	7	–
3/8	.3750	.3443	6	1 ¾	7	.3471 – .3780
25/64	.3906	.3755	6	1 ¾	7	–
13/32	.4063	.3755	6	1 ¾	7	.3781 – .4090
27/64	.4219	.4067	6	1 ¾	7	–
7/16	.4375	.4067	6	1 ¾	7	.4091 – .4410
29/64	.4531	.4380	6	1 ¾	8	–
15/32	.4688	.4380	6	1 ¾	8	.4411 – .4720
31/64	.4844	.4693	6	1 ¾	8	–
½	.5000	.4693	6	1 ¾	8	.4721 – .5030
33/64	.5156	.5005	6	1 7/8	9	–
17/32	.5313	.5005	6	1 7/8	9	.5031 – .5340
35/64	.5469	.5005	6	1 7/8	9	–
9/16	.5625	.5005	6	1 7/8	9	.5341 – .5660
37/64	.5781	.5630	6	1 7/8	9	–
19/32	.5938	.5630	6	1 7/8	9	.5661 – .5970
39/64	.6094	.5630	6	1 7/8	9	–
5/8	.6250	.5630	6	1 7/8	9	.5971 – .6280
21/32	.6563	.6255	6	2	9 ½	.6281 – .6590
11/16	.6875	.6255	6	2	9 ½	.6591 – .6910
23/32	.7188	.6880	6	2	9 ½	.6911 – .7220

TOOL DIAMETER		MAX SHANK DIAM.	NUMBER OF FLUTES	LENGTH		SPECIAL DECIMAL SIZE RANGE
FRAC.	DECIMAL			FLUTE	OVERALL	
¾	.7500	.6880	6	2	9 ½	.7221 – .7530
25/32	.7813	.7505	8	2	10	.7531 – .7840
13/16	.8125	.7817	8	2	10	.7841 – .8160
27/32	.8438	.8130	8	2	10	.8161 – .8470
7/8	.8750	.8440	8	2	10	.8471 – .8780
29/32	.9063	.8755	8	2	10	.8781 – .9090
15/16	.9375	.9067	8	2	10	.9091 – .9410
31/32	.9688	.9380	8	2	10	.9411 – .9720
1	1.0000	.9693	8	2	10	.9721 – 1.0030

* Solid carbide head and shank (.0811" - .1910" tool diameters)



RIGHT SPIRAL FLUTES & STRAIGHT STEEL SHANK

Solid carbide head.

Straight steel shank on .1911" tool diameter and larger (smaller sizes have a straight solid carbide shank).

Tool diameter tolerance thru .2500": plus .0002", minus .0000".

Tool diameter tolerance over .2500": plus .0003", minus .0000".

Shank diameter tolerance plus .0000", minus .0010".

TOOL DIAMETER		MAX SHANK DIAM.	NUMBER OF FLUTES	LENGTH		SPECIAL DECIMAL SIZE RANGE
FRAC.	DECIMAL			FLUTE	OVERALL	
* 1/8	.1250	.1099	4	7/8	3 1/2	.1121 – .1280
* 9/64	.1406	.1255	4	7/8	3 1/2	.1281 – .1435
* 5/32	.1563	.1411	4	1	4	.1436 – .1590
* 11/64	.1719	.1567	4	1	4	.1591 – .1750
* 3/16	.1875	.1724	4	1 1/8	4 1/2	.1751 – .1910
13/64	.2031	.1880	6	1 1/4	5	–
7/32	.2188	.1880	6	1 1/4	5	.1911 – .2210
15/64	.2344	.2193	6	1 1/2	6	–
1/4	.2500	.2193	6	1 1/2	6	.2211 – .2530
17/64	.2656	.2505	6	1 1/2	6	–
9/32	.2813	.2505	6	1 1/2	6	.2531 – .2840
19/64	.2969	.2817	6	1 5/8	6	–
5/16	.3125	.2817	6	1 5/8	6	.2841 – .3150
21/64	.3281	.3130	6	1 5/8	6	–
11/32	.3438	.3130	6	1 5/8	6	.3151 – .3470
23/64	.3594	.3443	6	1 3/4	7	–
3/8	.3750	.3443	6	1 3/4	7	.3471 – .3780
25/64	.3906	.3755	6	1 3/4	7	–
13/32	.4063	.3755	6	1 3/4	7	.3781 – .4090
27/64	.4219	.4067	6	1 3/4	7	–
7/16	.4375	.4067	6	1 3/4	7	.4091 – .4410
29/64	.4531	.4380	6	1 3/4	8	–
15/32	.4688	.4380	6	1 3/4	8	.4411 – .4720
31/64	.4844	.4693	6	1 3/4	8	–
1/2	.5000	.4693	6	1 3/4	8	.4721 – .5030
33/64	.5156	.5005	6	1 7/8	9	–
17/32	.5313	.5005	6	1 7/8	9	.5031 – .5340
35/64	.5469	.5005	6	1 7/8	9	–

TOOL DIAMETER		MAX SHANK DIAM.	NUMBER OF FLUTES	LENGTH		SPECIAL DECIMAL SIZE RANGE
FRAC.	DECIMAL			FLUTE	OVERALL	
$\frac{9}{16}$	.5625	.5005	6	1 $\frac{7}{8}$	9	.5341 – .5660
$\frac{37}{64}$	.5781	.5630	6	1 $\frac{7}{8}$	9	–
$\frac{19}{32}$	.5938	.5630	6	1 $\frac{7}{8}$	9	.5661 – .5970
$\frac{39}{64}$	.6094	.5630	6	1 $\frac{7}{8}$	9	–
$\frac{5}{8}$	.6250	.5630	6	1 $\frac{7}{8}$	9	.5971 – .6280
$\frac{21}{32}$	.6563	.6255	6	2	9 $\frac{1}{2}$	.6281 – .6590
$\frac{11}{16}$	.6875	.6255	6	2	9 $\frac{1}{2}$	.6591 – .6910
$\frac{23}{32}$	.7188	.6880	6	2	9 $\frac{1}{2}$	.6911 – .7220
$\frac{3}{4}$	.7500	.6880	6	2	9 $\frac{1}{2}$	.7221 – .7530
$\frac{25}{32}$	.7813	.7505	8	2	10	.7531 – .7840
$\frac{13}{16}$	.8125	.7817	8	2	10	.7841 – .8160
$\frac{27}{32}$	.8438	.8130	8	2	10	.8161 – .8470
$\frac{7}{8}$	.8750	.8440	8	2	10	.8471 – .8780
$\frac{29}{32}$	.9063	.8755	8	2	10	.8781 – .9090
$\frac{15}{16}$	.9375	.9067	8	2	10	.9091 – .9410
$\frac{31}{32}$	.9688	.9380	8	2	10	.9411 – .9720
1	1.0000	.9693	8	2	10	.9721 – 1.0030

* Solid carbide head and shank (.1121" - .1910" tool diameters)



LEFT SPIRAL FLUTES & STRAIGHT STEEL SHANK

Solid carbide head.

Straight steel shank on .1911" tool diameter and larger (smaller sizes have a straight solid carbide shank).

Tool diameter tolerance thru .2500": plus .0002", minus .0000".

Tool diameter tolerance over .2500": plus .0003", minus .0000".

Shank diameter tolerance plus .0000", minus .0010".

Left spiral flutes should not be used on blind holes.

TOOL DIAMETER		MAX SHANK DIAM.	NUMBER OF FLUTES	LENGTH		SPECIAL DECIMAL SIZE RANGE
FRAC.	DECIMAL			FLUTE	OVERALL	
* 1/8	.1250	.1099	4	7/8	3 1/2	.1121 – .1280
* 9/64	.1406	.1255	4	7/8	3 1/2	.1281 – .1435
* 5/32	.1563	.1411	4	1	4	.1436 – .1590
* 11/64	.1719	.1567	4	1	4	.1591 – .1750
* 3/16	.1875	.1724	4	1 1/8	4 1/2	.1751 – .1910

TOOL DIAMETER		MAX SHANK DIAM.	NUMBER OF FLUTES	LENGTH		SPECIAL DECIMAL SIZE RANGE
FRAC.	DECIMAL			FLUTE	OVERALL	
$13/64$	.2031	.1880	6	1 $1/4$	5	–
$7/32$	.2188	.1880	6	1 $1/4$	5	.1911 – .2210
$15/64$	.2344	.2193	6	1 $1/2$	6	–
$1/4$	.2500	.2193	6	1 $1/2$	6	.2211 – .2530
$17/64$	.2656	.2505	6	1 $1/2$	6	–
$9/32$	.2813	.2505	6	1 $1/2$	6	.2531 – .2840
$19/64$	.2969	.2817	6	1 $5/8$	6	–
$5/16$	.3125	.2817	6	1 $5/8$	6	.2841 – .3150
$21/64$	.3281	.3130	6	1 $5/8$	6	–
$11/32$	.3438	.3130	6	1 $5/8$	6	.3151 – .3470
$23/64$	.3594	.3443	6	1 $3/4$	7	–
$3/8$	.3750	.3443	6	1 $3/4$	7	.3471 – .3780
$25/64$	.3906	.3755	6	1 $3/4$	7	–
$13/32$	.4063	.3755	6	1 $3/4$	7	.3781 – .4090
$27/64$	.4219	.4067	6	1 $3/4$	7	–
$7/16$	.4375	.4067	6	1 $3/4$	7	.4091 – .4410
$29/64$	.4531	.4380	6	1 $3/4$	8	–
$15/32$	.4688	.4380	6	1 $3/4$	8	.4411 – .4720
$31/64$	.4844	.4693	6	1 $3/4$	8	–
$1/2$	.5000	.4693	6	1 $3/4$	8	.4721 – .5030

TOOL DIAMETER		MAX SHANK DIAM.	NUMBER OF FLUTES	LENGTH		SPECIAL DECIMAL SIZE RANGE
FRAC.	DECIMAL			FLUTE	OVERALL	
$\frac{33}{64}$	.5156	.5005	6	$1 \frac{7}{8}$	9	–
$\frac{17}{32}$	.5313	.5005	6	$1 \frac{7}{8}$	9	.5031 – .5340
$\frac{35}{64}$	.5469	.5005	6	$1 \frac{7}{8}$	9	–
$\frac{9}{16}$	.5625	.5005	6	$1 \frac{7}{8}$	9	.5341 – .5660
$\frac{37}{64}$	.5781	.5630	6	$1 \frac{7}{8}$	9	–
$\frac{19}{32}$	.5938	.5630	6	$1 \frac{7}{8}$	9	.5661 – .5970
$\frac{39}{64}$	.6094	.5630	6	$1 \frac{7}{8}$	9	–
$\frac{5}{8}$	.6250	.5630	6	$1 \frac{7}{8}$	9	.5971 – .6280
$\frac{21}{32}$	.6563	.6255	6	2	$9 \frac{1}{2}$	.6281 – .6590
$\frac{11}{16}$	.6875	.6255	6	2	$9 \frac{1}{2}$	.6591 – .6910
$\frac{23}{32}$	.7188	.6880	6	2	$9 \frac{1}{2}$	.6911 – .7220
$\frac{3}{4}$	.7500	.6880	6	2	$9 \frac{1}{2}$	.7221 – .7530
$\frac{25}{32}$	.7813	.7505	8	2	10	.7531 – .7840
$\frac{13}{16}$	.8125	.7817	8	2	10	.7841 – .8160
$\frac{27}{32}$	.8438	.8130	8	2	10	.8161 – .8470
$\frac{7}{8}$	.8750	.8440	8	2	10	.8471 – .8780
$\frac{29}{32}$	.9063	.8755	8	2	10	.8781 – .9090

TOOL DIAMETER		MAX SHANK DIAM.	NUMBER OF FLUTES	LENGTH		SPECIAL DECIMAL SIZE RANGE
FRAC.	DECIMAL			FLUTE	OVERALL	
15/16	.9375	.9067	8	2	10	.9091 – .9410
31/32	.9688	.9380	8	2	10	.9411 – .9720
1	1.0000	.9693	8	2	10	.9721 – 1.0030

* Solid carbide head and shank (.1121" - .1910" tool diameters)



CHUCKING REAMERS — SOLID CARBIDE STRAIGHT FLUTES & STRAIGHT SHANK — MODIFIED DIAMETERS — SHORT SERIES

Solid carbide head and straight shank

Tool diameter tolerance

thru .2500": plus .0002", minus .0000"

over .2500": plus .0003", minus .0000"

Shank diameter tolerance: plus .0000", minus .0010"

Tool Diameter Range		Dimensions			
Low	High	Max. Shank Diam.	No. of Flutes	Length	
				Flute	Overall
.0591	.0660	.0580	4	3/8	1 1/2

Tool Diameter Range		Dimensions			
		Max. Shank Diam.	No. of Flutes	Length	
Low	High			Flute	Overall
.074 1	.081 0	.0730	4	½	1 ¾
.089 1	.097 0	.0880	4	½	2
.097 1	.112 0	.0943	4	5/8	2 ¼
.112 1	.128 0	.1099	4	5/8	2 ¼
.128 1	.143 5	.1255	4	¾	2 ½
.143 6	.159 0	.1411	4	¾	2 ½
.159 1	.175 0	.1567	4	7/8	2 ¾
.175 1	.191 0	.1724	4	7/8	2 ¾
.191 1	.221 0	.1880	6	1	3
.221 1	.253 0	.2193	6	1	3
.253 1	.284 0	.2505	6	1 1/8	3 ¼
.284 1	.315 0	.2817	6	1 1/8	3 ¼
.315 1	.347 0	.3130	6	1 ¼	3 ½
.347 1	.378 0	.3443	6	1 ¼	3 ½
.378 1	.409 0	.3755	6	1 3/8	3 ¾

Tool Diameter Range		Dimensions			
		Max. Shank Diam.	No. of Flutes	Length	
Low	High			Flute	Overall
.409 1	.441 0	.4067	6	1 ³ / ₈	3 ³ / ₄
.441 1	.472 0	.4380	6	1 ¹ / ₂	4
.472 1	.515 0	.4693	6	1 ¹ / ₂	4



**CHUCKING REAMERS — SOLID CARBIDE
STRAIGHT FLUTES & STRAIGHT SHANK – SHORT SERIES**

STOCKED DECIMAL TOOL DIAMETERS (.0280 - .1765)

Decimal Tool Diameter
.0280
.0285
.0290
.0295
.0300
.0305

Decimal Tool Diameter
.0310
.0315
.0320
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.0335
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CHUCKING REAMERS — SOLID CARBIDE STRAIGHT FLUTES & STRAIGHT SHANK - SHORT SERIES

Tool Diameter			
Frac.	Wire / Letter	mm	Dec.
$\frac{1}{32}$		—	.0313
		1.0	.0394
		1.1	.0433
$\frac{3}{64}$		—	.0469
		1.2	.0472
		1.3	.0512
		1.4	.0551
		1.5	.0591
		1.6	.0625
$\frac{1}{16}$		1.7	.0669
		1.8	.0700
		1.9	.0732
	51	—	.0670
	50	—	.0700

		1.8	.0709
	49	—	.0730
		1.9	.0748
$\frac{5}{64}$	48	—	.0760
		—	.0781
	47	—	.0785
		2.0	.0787
	46	—	.0810
	45	—	.0820
		2.1	.0827
	44	—	.0860
		2.2	.0866
	43	—	.0890
		2.3	.0906
	42	—	.0935
$\frac{3}{32}$		—	.0938
		2.4	.0945
	41	—	.0960
	40	—	.0980
		2.5	.0984
	39	—	.0995
	38	—	.1015
		2.6	.1024
	37	—	.1040
		2.7	.1063
	36	—	.1065
		—	.1094
$\frac{7}{64}$			
	35	—	.1100
		2.8	.1102
	34	—	.1110
	33	—	.1130
		2.9	.1142

	32	—	.1160	
		3.0	.1181	
	31	—	.1200	
$\frac{1}{8}$		3.1	.1220	
		—	.1250	
		3.2	.1260	
		30	—	.1285
	29	3.3	.1299	
		3.4	.1339	
		—	.1360	
		3.5	.1378	
$\frac{9}{64}$	28	—	.1405	
		—	.1406	
		3.6	.1417	
	27	—	.1440	
		26	3.7	.1457
			—	.1470
		25	—	.1495
3.8	.1496			
	24	—	.1520	
		3.9	.1535	
	23	—	.1540	
		—	.1563	
$\frac{5}{32}$	22	—	.1570	
		4.0	.1575	
	21	—	.1590	
		20	—	.1610
	19	4.1	.1614	
		4.2	.1654	
		—	.1660	
		4.3	.1693	
	18	—	.1695	

$11/64$	17	—	.1719
		—	.1730
		4.4	.1732
	16	—	.1770
		4.5	.1772
	15	—	.1800
		4.6	.1811
$3/16$	14	—	.1820
		4.7	.1850
	13	—	.1875
		4.8	.1890
	11	—	.1910
		4.9	.1929
	10	—	.1935
		—	.1960
	8	5.0	.1969
		—	.1990
	7	5.1	.2008
		—	.2010
$13/64$	6	—	.2031
		—	.2040
		5.2	.2047
	5	—	.2055
	4	5.3	.2087
		—	.2090
		5.4	.2126
	3	—	.2130
$7/32$		5.5	.2165
		—	.2188
		5.6	.2205
	2	—	.2210
		5.7	.2244

	1	—	.2280
		5.8	.2283
		5.9	.2323
$\frac{15}{64}$	A	—	.2340
		—	.2344
		6.0	.2362
	B	—	.2380
		6.1	.2402
		—	.2420
	C	6.2	.2441
		—	.2460
		6.3	.2480
$\frac{1}{4}$	E	—	.2500
		6.4	.2520
		6.5	.2559
	F	—	.2570
		6.6	.2598
		—	.2610
	G	6.7	.2638
		—	.2656
		—	.2660
$\frac{17}{64}$	H	6.8	.2677
		6.9	.2717
		—	.2720
	I	7.0	.2756
		—	.2770
		7.1	.2795
	J	—	.2810
		—	.2813
		7.2	.2835
$\frac{9}{32}$	K	7.3	.2874
		—	.2900
		L	

		7.4	.2913
	M	—	.2950
		7.5	.2953
$\frac{19}{64}$		—	.2969
		7.6	.2992
	N	—	.3020
		7.7	.3031
$\frac{5}{16}$		7.8	.3071
		7.9	.3110
		—	.3125
		8.0	.3150
	O	—	.3160
		8.1	.3189
		8.2	.3228
	P	—	.3230
$\frac{21}{64}$		8.3	.3268
		—	.3281
		8.4	.3307
	Q	—	.3320
		8.5	.3346
		8.6	.3386
	R	—	.3390
		8.7	.3425
$\frac{11}{32}$		—	.3438
		8.8	.3465
	S	—	.3480
		8.9	.3504
		9.0	.3543
	T	—	.3580
		9.1	.3583
$\frac{23}{64}$		—	.3594
		9.2	.3622

U	9.3	.3661
	—	.3680
	9.4	.3701
3/8 V	9.5	.3740
	—	.3750
	—	.3770
	9.6	.3780

* Dimensions thru .0590" tool diameter: # of flutes = 4; flute length = 3/8" (except for .0312" & .0394" tool diameters, flute = 1/4"); overall length = 1 1/2"



CHUCKING REAMERS — SOLID CARBIDE RIGHT SPIRAL FLUTES — STRAIGHT SHANK — MODIFIED DIAMETERS — SHORT SERIES

Solid carbide head and straight shank

Tool diameter tolerance

thru .2500": plus .0002", minus .0000"

over .2500": plus .0003", minus .0000"

Shank diameter tolerance: plus .0000", minus .0010"

Tool Diameter Range		Dimensions			
		Max. Shank Diam.	No. of Flutes	Length	
Low	High			Flute	Overall
.0971	.1120	.0943	4	5/8	2 1/4
.1121	.1280	.1099	4	5/8	2 1/4
.1281	.1435	.1255	4	3/4	2 1/2

Tool Diameter Range		Dimensions			
		Max. Shank Diam.	No. of Flutes	Length	
				Flute	Overall
Low	High				
.1436	.1590	.1411	4	$\frac{3}{4}$	2 $\frac{1}{2}$
.1591	.1750	.1567	4	$\frac{7}{8}$	2 $\frac{3}{4}$
.1751	.1910	.1724	4	$\frac{7}{8}$	2 $\frac{3}{4}$
.1911	.2210	.1880	6	1	3
.2211	.2530	.2193	6	1	3
.2531	.2840	.2505	6	1 $\frac{1}{8}$	3 $\frac{1}{4}$
.2841	.3150	.2817	6	1 $\frac{1}{8}$	3 $\frac{1}{4}$
.3151	.3470	.3130	6	1 $\frac{1}{4}$	3 $\frac{1}{2}$
.3471	.3780	.3443	6	1 $\frac{1}{4}$	3 $\frac{1}{2}$
.3781	.4090	.3755	6	1 $\frac{3}{8}$	3 $\frac{3}{4}$
.4091	.4410	.4067	6	1 $\frac{3}{8}$	3 $\frac{3}{4}$
.4411	.4720	.4380	6	1 $\frac{1}{2}$	4
.4721	.5150	.4693	6	1 $\frac{1}{2}$	4



CHUCKING REAMERS — SOLID CARBIDE

LEFT SPIRAL FLUTES — STRAIGHT SHANK — MODIFIED DIAMETERS — SHORT SERIES

Tool diameter tolerance

thru .2500": plus .0002", minus .0000"

over .2500": plus .0003", minus .0000"

Shank diameter tolerance: plus .0000", minus .0010" Left spiral flutes should not be used on blind holes

Tool Diameter Range		Dimensions			
		Max. Shank Diam.	No. of Flutes	Length	
				Flute	Overall
Low	High				
.0971	.1120	.0943	4	5/8	2 1/4
.1121	.1280	.1099	4	5/8	2 1/4
.1281	.1435	.1255	4	3/4	2 1/2
.1436	.1590	.1411	4	3/4	2 1/2
.1591	.1750	.1567	4	7/8	2 3/4
.1751	.1910	.1724	4	7/8	2 3/4
.1911	.2210	.1880	6	1	3
.2211	.2530	.2193	6	1	3
.2531	.2840	.2505	6	1 1/8	3 1/4
.2841	.3150	.2817	6	1 1/8	3 1/4
.3151	.3470	.3130	6	1 1/4	3 1/2
.3471	.3780	.3443	6	1 1/4	3 1/2
.3781	.4090	.3755	6	1 3/8	3 3/4
.4091	.4410	.4067	6	1 3/8	3 3/4
.4411	.4720	.4380	6	1 1/2	4



SEMI FINISHED CHUCKING REAMERS

STRAIGHT FLUTES & STRAIGHT SHANK

SEMI-FINISHED

Before semi-finished reamers can be used, the cutting diameter must be finished ground and relieved. The reamer end must be faced and chamfered.

Semi-Finished Tool Diameter Range	
Low	High
.1770	.2040
.2041	.2210
.2211	.2380
.2381	.2530

Semi-Finished Tool Diameter Range	
Low	High
.2531	.2840
.2841	.3150
.3151	.3470
.3471	.3780
.3781	.4090
.4091	.4410
.4411	.4720
.4721	.5030
.5031	.5340
.5341	.5660
.5661	.5970
.5971	.6280
.6281	.6590
.6591	.6910
.6911	.7220
.7221	.7530
.7531	.7840
.7841	.8160
.8161	.8470
.8471	.8780
.8781	.9090
.9091	.9410
.9411	.9720
.9721	1.0030
1.0031	1.0660
1.0661	1.1280
1.1281	1.1905
1.1906	1.2530
1.2531	1.3155
1.3156	1.3780

Semi-Finished Tool Diameter Range	
Low	High
1.3781	1.4405



SEMI FINISHED CHUCKING REAMERS

STRAIGHT FLUTES & TAPER SHANK

SEMI-FINISHED

Before semi-finished reamers can be used, the cutting diameter must be finished ground

Semi-Finished Tool Diameter Range	
Low	High
.2381	.2530
.2531	.2840
.2841	.3150
.3151	.3470
.3471	.3780
.3781	.4090
.4091	.4410
.4411	.4720
.4721	.5030
.5031	.5340
.5341	.5660
.5661	.5970

Semi-Finished Tool Diameter Range	
Low	High
.5971	.6280
.6281	.6590
.6591	.6910
.6911	.7220
.7221	.7530
.7531	.7840
.7841	.8160
.8161	.8470
.8471	.8780
.8781	.9090
.9091	.9410
.9411	.9720
.9721	1.0030
1.0031	1.0660
1.0661	1.1280
1.1281	1.1905
1.1906	1.2530
1.2531	1.3155
1.3156	1.3780
1.3781	1.4405
1.4406	1.5030



SEMI FINISHED CHUCKING REAMERS

RIGHT SPIRAL FLUTES & STRAIGHT SHANK

SEMI-FINISHED

Before semi-finished reamers can be used, the cutting diameter must be finished ground and relieved. The reamer end must be faced and chamfered.

Semi-Finished Tool Diameter Range	
Low	High
.1770	.2040
.2041	.2210
.2211	.2380
.2381	.2530
.2531	.2840
.2841	.3150
.3151	.3470
.3471	.3780
.3781	.4090
.4091	.4410
.4411	.4720
.4721	.5030
.5031	.5340
.5341	.5660
.5661	.5970
.5971	.6280
.6281	.6590
.6591	.6910
.6911	.7220

.7221	.7530
.7531	.7840
.7841	.8160
.8161	.8470
.8471	.8780
.8781	.9090
.9091	.9410
.9411	.9720
.9721	1.0030
1.0031	1.0660
1.0661	1.1280
1.1281	1.1905
1.1906	1.2530
1.2531	1.3155
1.3156	1.3780
1.3781	1.4405
1.4406	1.5030



SEMI FINISHED CHUCKING REAMERS

STRAIGHT FLUTES

SEMI-FINISHED

Before semi-finished reamers can be used, the cutting diameter must be finished ground and relieved.

The reamer end must be faced and chamfered.

Semi-Finished Tool Diameter Range	
Low	High
.1770	.2040
.2041	.2210
.2211	.2380
.2381	.2530
.2531	.2840
.2841	.3150
.3151	.3470
.3471	.3780
.3781	.4090
.4091	.4410
.4411	.4720
.4721	.5030
.5031	.5340
.5341	.5660
.5661	.5970
.5971	.6280
.6281	.6590
.6591	.6910
.6911	.7220
.7221	.7530
.7531	.7840
.7841	.8160
.8161	.8470
.8471	.8780
.8781	.9090

Semi-Finished Tool Diameter Range	
Low	High
.9091	.9410
.9411	.9720
.9721	1.0030
1.0031	1.0660
1.0661	1.1280
1.1281	1.1905
1.1906	1.2530
1.2531	1.3155
1.3156	1.3780
1.3781	1.4405
1.4406	1.5030



SEMI FINISHED CHUCKING REAMERS

LEFT SPIRAL FLUTES

SEMI-FINISHED

Before semi-finished reamers can be used, the cutting diameter must be finished ground and relieved. The reamer end must be faced and chamfered.

Semi-Finished Tool Diameter Range	
Low	High
.1770	.2040
.2041	.2210
.2211	.2380
.2381	.2530
.2531	.2840
.2841	.3150
.3151	.3470
.3471	.3780
.3781	.4090
.4091	.4410
.4411	.4720
.4721	.5030
.5031	.5340
.5341	.5660
.5661	.5970
.5971	.6280
.6281	.6590
.6591	.6910
.6911	.7220
.7221	.7530
.7531	.7840
.7841	.8160
.8161	.8470
.8471	.8780
.8781	.9090
.9091	.9410
.9411	.9720
.9721	1.0030
1.0031	1.0660
1.0661	1.1280

1.1281	1.1905
1.1906	1.2530
1.2531	1.3155
1.3156	1.3780
1.3781	1.4405
1.4406	1.5030



SEMI FINISHED CHUCKING REAMERS

STRAIGHT FLUTE LONG CARBIDE & STRAIGHT SHANK

SEMI-FINISHED

Before semi-finished reamers can be used, the cutting diameter must be finished ground and relieved. The reamer end must be faced and chamfered.

Semi-Finished Tool Diameter Range	
Low	High
.1770	.2040
.2041	.2210
.2211	.2380
.2381	.2530
.2531	.2840

Semi-Finished Tool Diameter Range	
Low	High
.2841	.3150
.3151	.3470
.3471	.3780
.3781	.4090
.4091	.4410
.4411	.4720
.4721	.5030
.5031	.5340
.5341	.5660
.5661	.5970
.5971	.6280
.6281	.6590
.6591	.6910
.6911	.7220
.7221	.7530
.7531	.7840
.7841	.8160
.8161	.8470
.8471	.8780
.8781	.9090
.9091	.9410
.9411	.9720
.9721	1.0030
1.0031	1.0660
1.0661	1.1280
1.1281	1.1905
1.1906	1.2530
1.2531	1.3155
1.3156	1.3780
1.3781	1.4405

Semi-Finished Tool Diameter Range	
Low	High
1.4406	1.5030



SEMI FINISHED EXPANSION CHUCKING REAMERS

STRAIGHT FLUTE LONG CARBIDE & STRAIGHT SHANK

SEMI-FINISHED

Before semi-finished reamers can be used, the cutting diameter must be finished ground and relieved. The reamer end must be faced and chamfered.

Semi-Finished Tool Diameter Range	
Low	High
.2841	.3150
.3151	.3470
.3471	.3780
.3781	.4090
.4091	.4410
.4411	.4720
.4721	.5030

Semi-Finished Tool Diameter Range	
Low	High
.5031	.5340
.5341	.5660
.5661	.5970
.5971	.6280
.6281	.6590
.6591	.6910
.6911	.7220
.7221	.7530
.7531	.7840
.7841	.8160
.8161	.8470
.8471	.8780
.8781	.9090
.9091	.9410
.9411	.9720
.9721	1.0030
1.0031	1.0660
1.0661	1.1280
1.1281	1.1905
1.1906	1.2530
1.2531	1.3155
1.3156	1.3780
1.3781	1.4405
1.4406	1.5030



CENTERS — CARBIDE TIPPED MORSE TAPER — FULL CENTER

Carbide tips brazed to tool steel bodies.
Center precision ground to 60° included angle.
Center concentric to precision ground taper.

Morse Taper Shank	Dimensions		
	Carbide Diam.	Length	
		Carbide	Overall
1	1/4	7/16	3 5/16
2	5/16	9/16	4 3/16
3	1/2	7/8	5 1/4
4	1/2	7/8	6 3/4
5	5/8	1 1/16	8 1/2



CENTERS — CARBIDE TIPPED MORSE TAPER — HALF CENTER

Half centers provide clearance for the grinding wheel or turning tool when machining a small diameter near the end of a part.

Morse Taper Shank	Dimensions				
	Carbide Diam.	Height Above Center	Length		
			Carbide	Undercut	Overall
1	1/4	9/64	7/16	1	3 5/16
2	5/16	11/64	9/16	1 3/8	4 3/16
3	3/8	13/64	11/16	1 11/16	5 1/4
4	1/2	17/64	7/8	2 1/4	6 3/4



CENTERS — CARBIDE TIPPED BROWN & SHARPE TAPER — FULL CENTER

Carbide tips brazed to tool steel bodies.
Center precision ground to 60° included angle.
Center concentric to precision ground taper.

Brown & Sharpe Taper Shank	Dimensions		
	Carbide Diam.	Length	
		Carbide	Overall
7	5/16	9/16	4 1/2
8	3/8	11/16	5 11/32
9	1/2	7/8	6
10	1/2	7/8	8 17/32
11	5/8	1 1/16	10 1/8



CENTERS — CARBIDE TIPPED

BROWN & SHARPE TAPER — HALF CENTER

Half centers provide clearance for the grinding wheel or turning tool when machining a small diameter near the end of a part.

Brown & Sharpe Taper Shank	Dimensions				
	Carbide Diam.	Height Above Center	Length		
			Carbide	Undercut	Overall
7	$\frac{5}{16}$	$\frac{11}{64}$	$\frac{9}{16}$	1 $\frac{1}{8}$	4 $\frac{1}{2}$
8	$\frac{5}{16}$	$\frac{11}{64}$	$\frac{9}{16}$	1 $\frac{5}{16}$	5 $\frac{11}{32}$
9	$\frac{3}{8}$	$\frac{13}{64}$	$\frac{11}{16}$	1 $\frac{1}{2}$	6
10	$\frac{1}{2}$	$\frac{17}{64}$	$\frac{7}{8}$	2 $\frac{1}{4}$	8 $\frac{17}{32}$
11	$\frac{5}{8}$	$\frac{3}{8}$	1 $\frac{1}{16}$	2 $\frac{1}{2}$	10 $\frac{1}{8}$



CENTERS — CARBIDE TIPPED

JARRO TAPER — HALF CENTER

Half centers provide clearance for the grinding wheel or turning tool when machining a small diameter near the end of a part.

Jarno Taper Shank	Dimensions				
	Carbide Diam.	Height Above Center	Length		
			Carbide	Undercut	Overall
4	1/4	9/64	7/16	25/32	3
5	1/4	9/64	7/16	15/16	3 5/8
6	5/16	11/64	9/16	1 1/8	4 1/2
7	3/8	13/64	11/16	1 3/16	5 1/4
8	1/2	17/64	7/8	1 3/8	6
9	1/2	17/64	7/8	1 5/8	6 3/4
10	1/2	17/64	7/8	2	7 1/2
11	1/2	17/64	7/8	2	8 1/4
12	5/8	21/64	1 1/16	2 1/4	9



CENTERS — CARBIDE TIPPED JARNO TAPER — FULL CENTER

Carbide tips brazed to tool steel bodies.

Center precision ground to 60° included angle.

Center concentric to precision ground taper.

Jarno Taper Shank	Dimensions		
	Carbide Diam.	Length	
		Carbide	Overall
4	1/4	7/16	3

Jarno Taper Shank	Dimensions		
	Carbide Diam.	Length	
		Carbide	Overall
5	1/4	7/16	3 5/8
6	5/16	9/16	4 1/2
7	3/8	11/16	5 1/4
8	1/2	7/8	6
9	1/2	7/8	6 3/4
10	1/2	7/8	7 1/2
11	1/2	7/8	8 1/4
12	5/8	1 1/16	9



COUNTERBORES — CARBIDE TIPPED
REDUCED SHANK — INTERCHANGEABLE PILOT TYPE

Furnished with 1/64" corner radius

Carbide tips brazed to tough alloy steel body

Tool diameter tolerance: plus .001", minus .000"

Shank diameter tolerance: plus .0000", minus .0005"

Tool Diameter		Dimensions				Overall Length
		Diameter			Overall Length	
Frac.	Dec.	Min. Cut	Pilot Hole	Small Shank		Length
1/4	.2500	1/8	.0938	1/4	2 3/8	
9/32	.2813	1/8	.0938	1/4	2 3/8	
5/16	.3125	1/8	.0938	1/4	2 3/8	
11/32	.3438	1/8	.0938	1/4	2 3/8	
3/8	.3750	1/8	.0938	1/4	2 3/8	
13/32	.4063	.1560	.1250	1/4	2 3/4	
7/16	.4375	.1560	.1250	1/4	2 3/4	
15/32	.4688	.1560	.1250	1/4	2 3/4	
1/2	.5000	.1560	.1250	1/4	2 3/4	
17/32	.5313	.1560	.1250	1/4	2 3/4	
9/16	.5625	.1560	.1250	1/4	2 3/4	
19/32	.5938	.1560	.1250	1/4	2 3/4	
5/8	.6250	.1560	.1250	1/4	2 3/4	
21/32	.6563	.2190	.1875	1/4	2 3/4	
11/16	.6875	.2190	.1875	1/4	2 3/4	
23/32	.7188	.2190	.1875	1/4	2 3/4	
3/4	.7500	.2190	.1875	1/4	2 3/4	
25/32	.7813	.2190	.1875	1/4	2 3/4	
13/16	.8125	.2190	.1875	1/4	2 3/4	
27/32	.8438	.2190	.1875	1/4	2 3/4	
7/8	.8750	.2190	.1875	1/4	2 3/4	
29/32	.9063	.2190	.1875	1/4	2 3/4	
15/16	.9375	.2190	.1875	1/4	2 3/4	
31/32	.9688	.2190	.1875	1/4	2 3/4	
1	1.0000	.2190	.1875	1/4	2 3/4	
1 1/16	1.0625	.2190	.1875	3/8	2 3/4	
1 1/8	1.1250	.2190	.1875	3/8	2 3/4	
1 3/16	1.1875	.2190	.1875	3/8	2 3/4	

Tool		Dimensions				Overall Length
Diameter		Diameter				
Frac.	Dec.	Min. Cut	Pilot Hole	Small Shank		
1 1/4	1.2500	.2810	.2500	3/8	2 3/4	
1 5/16	1.3125	.2810	.2500	3/8	2 3/4	
1 3/8	1.3750	.2810	.2500	3/8	2 3/4	
1 7/16	1.4375	.2810	.2500	3/8	2 3/4	
1 1/2	1.5000	.2810	.2500	3/8	2 3/4	
1 9/16	1.5625	.3430	.3125	1/2	3 1/16	
1 5/8	1.6250	.3430	.3125	1/2	3 1/16	
1 11/16	1.6875	.3430	.3125	1/2	3 1/16	
1 3/4	1.7500	.3430	.3125	1/2	3 1/16	
1 13/16	1.8125	.3430	.3125	1/2	3 1/16	
1 7/8	1.8750	.3430	.3125	1/2	3 1/16	
1 15/16	1.9375	.3430	.3125	1/2	3 1/16	
2	2.0000	.3430	.3125	1/2	3 1/16	



COUNTERBORES — CARBIDE TIPPED FOUR FLUTES — STRAIGHT SHANK

For machining cast iron, non ferrous materials, composites, plastics and non-metals.

Right spiral polished flutes.

Carbide tips brazed to hardened alloy steel bodies.

Cutting diameter tolerance — plus .001", minus .000".

Shank diameter tolerance — plus .0000", minus .0005".

Tool Diameter		Dimensions				
		Diameter			No. of Flutes	Overall Length
Frac.	Dec.	Min. Cut	Pilot Hole	Shank		
1/2	.5000	.2280	.1875	7/16	4	4 5/16
17/32	.5313	.2280	.1875	1/2	4	4 5/16
9/16	.5625	.2280	.1875	1/2	4	4 5/16
19/32	.5938	.2280	.1875	1/2	4	5 1/8
5/8	.6250	.2280	.1875	1/2	4	5 1/8
21/32	.6563	.2280	.1875	1/2	4	5 1/8

Tool Diameter		Dimensions				
		Diameter			No. of Flutes	Overall Length
Frac.	Dec.	Min. Cut	Pilot Hole	Shank		
1 ¹ / ₁₆	.6875	.2280	.1875	1/2	4	5 1/8
2 ³ / ₃₂	.7188	.2900	.2500	1/2	4	5 3/8
3/4	.7500	.2900	.2500	1/2	4	5 3/8
2 ⁵ / ₃₂	.7813	.2900	.2500	5/8	4	5 3/8
1 ³ / ₁₆	.8125	.2900	.2500	5/8	4	5 3/8
2 ⁷ / ₃₂	.8438	.2900	.2500	3/4	4	5 3/8
7/8	.8750	.2900	.2500	3/4	4	5 3/8
2 ⁹ / ₃₂	.9063	.2900	.2500	3/4	4	6 1/8
1 ⁵ / ₁₆	.9375	.2900	.2500	3/4	4	6 1/8
3 ¹ / ₃₂	.9688	.3530	.3125	3/4	4	6 3/8
1	1.0000	.3530	.3125	3/4	4	6 3/8
1 1/16	1.0625	.3530	.3125	3/4	4	6 3/8
1 1/8	1.1250	.3530	.3125	1	4	6 3/8
1 3/16	1.1875	.3530	.3125	1	4	6 3/8



COUNTERBORES — CARBIDE TIPPED THREE/FOUR FLUTES — STRAIGHT SHANK

For machining cast iron, non ferrous materials, composites, plastics and non-metals.

Right spiral polished flutes.

Carbide tips brazed to hardened alloy steel bodies.

Cutting diameter tolerance — plus .001", minus .000".

Shank diameter tolerance — plus .0000", minus .0005".

Tool Diameter		Dimensions				
		Diameter			Shank	No. of Flutes	Overall Length
Frac.	Dec.	Min. Cut	Pilot Hole			
1/4	.2500	.1140	.0938	15/64	3	3 13/16
9/32	.2813	.1140	.0938	17/64	3	3 13/16
5/16	.3125	.1140	.0938	19/64	3	3 13/16
11/32	.3438	.1140	.0938	5/16	3	3 13/16
3/8	.3750	.1820	.1563	5/16	3	4 1/16

Tool		Dimensions				
Diameter		Diameter			No. of Flutes	Overall Length
Frac.	Dec.	Min. Cut	Pilot Hole	Shank		
13/32	.4063	.1820	.1563	3/8	3	4 1/16
7/16	.4375	.1820	.1563	3/8	3	4 1/16
15/32	.4688	.2280	.1875	7/16	3	4 5/16
1/2	.5000	.2280	.1875	7/16	3	4 5/16
17/32	.5313	.2280	.1875	1/2	3	4 5/16
9/16	.5625	.2280	.1875	1/2	3	4 5/16
19/32	.5938	.2280	.1875	1/2	3	5 1/8
5/8	.6250	.2280	.1875	1/2	3	5 1/8
21/32	.6563	.2280	.1875	1/2	3	5 1/8
11/16	.6875	.2280	.1875	1/2	3	5 1/8
23/32	.7188	.2900	.2500	1/2	3	5 3/8
3/4	.7500	.2900	.2500	1/2	3	5 3/8
25/32	.7813	.2900	.2500	5/8	3	5 3/8
13/16	.8125	.2900	.2500	5/8	3	5 3/8
27/32	.8438	.2900	.2500	3/4	3	5 3/8
7/8	.8750	.2900	.2500	3/4	3	5 3/8
29/32	.9063	.2900	.2500	3/4	3	6 1/8
15/16	.9375	.2900	.2500	3/4	3	6 1/8
31/32	.9688	.3530	.3125	3/4	3	6 3/8
1	1.0000	.3530	.3125	3/4	3	6 3/8
1 1/16	1.0625	.3530	.3125	3/4	3	6 3/8
1 1/8	1.1250	.3530	.3125	1	3	6 3/8
1 3/16	1.1875	.3530	.3125	1	3	6 3/8
1 1/4	1.2500	.4260	.3750	1	4	6 5/8
1 5/16	1.3125	.4260	.3750	1	4	6 5/8
1 3/8	1.3750	.4260	.3750	1	4	6 5/8
1 7/16	1.4375	.4260	.3750	1 1/4	4	7 7/8
1 1/2	1.5000	.4260	.3750	1 1/4	4	7 7/8

Tool Diameter		Dimensions				
		Diameter			No. of Flutes	Overall Length
Frac.	Dec.	Min. Cut	Pilot Hole	Shank		
1 ⁹ / ₁₆	1.5625	.4890	.4375	1 ¹ / ₄	4	8 ¹ / ₈
1 ⁵ / ₈	1.6250	.4890	.4375	1 ¹ / ₄	4	8 ¹ / ₈
1 ¹¹ / ₁₆	1.6875	.4890	.4375	1 ¹ / ₄	4	8 ¹ / ₈
1 ³ / ₄	1.7500	.4890	.4375	1 ¹ / ₄	4	8 ¹ / ₈
1 ¹³ / ₁₆	1.8125	.4890	.4375	1 ¹ / ₂	4	8 ¹ / ₈
1 ⁷ / ₈	1.8750	.4890	.4375	1 ¹ / ₂	4	8 ¹ / ₈
1 ¹⁵ / ₁₆	1.9375	.4890	.4375	1 ¹ / ₂	4	8 ¹ / ₈
2	2.0000	.5510	.5000	1 ¹ / ₂	4	8 ³ / ₈



COUNTERBORES — CARBIDE TIPPED FOUR FLUTES — TAPER SHANK

For machining cast iron, non ferrous materials, composites, plastics and non-metals.

Carbide tips brazed to hardened alloy steel bodies.

Right spiral polished flutes.

Cutting diameter tolerance — plus .001", minus .000".

Shank diameter tolerance — plus .0000", minus .0005".

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Tool Diameter		Dimensions				
		Diameter		Taper	No. of Flutes	Overall Length
Frac.	Dec.	Min. Cut	Pilot Hole			
1/2	.5000	.2280	.1875	1	4	4 5/16
17/32	.5313	.2280	.1875	1	4	4 5/16
9/16	.5625	.2280	.1875	1	4	4 5/16
19/32	.5938	.2280	.1875	2	4	5 1/8
5/8	.6250	.2280	.1875	2	4	5 1/8
21/32	.6563	.2280	.1875	2	4	5 1/8
11/16	.6875	.2280	.1875	2	4	5 1/8
23/32	.7188	.2900	.2500	2	4	5 3/8
3/4	.7500	.2900	.2500	2	4	5 3/8
25/32	.7813	.2900	.2500	2	4	5 3/8

Tool Diameter		Dimensions				
		Diameter		Taper	No. of Flutes	Overall Length
Frac.	Dec.	Min. Cut	Pilot Hole			
$\frac{13}{16}$	.8125	.2900	.2500	2	4	$5 \frac{3}{8}$
$\frac{27}{32}$	.8438	.2900	.2500	2	4	$5 \frac{3}{8}$
$\frac{7}{8}$	.8750	.2900	.2500	2	4	$5 \frac{3}{8}$
$\frac{29}{32}$	.9063	.2900	.2500	3	4	$6 \frac{1}{8}$
$\frac{15}{16}$	.9375	.2900	.2500	3	4	$6 \frac{1}{8}$
$\frac{31}{32}$	.9688	.3530	.3125	3	4	$6 \frac{3}{8}$
1	1.0000	.3530	.3125	3	4	$6 \frac{3}{8}$
$1 \frac{1}{16}$	1.0625	.3530	.3125	3	4	$6 \frac{3}{8}$
$1 \frac{1}{8}$	1.1250	.3530	.3125	3	4	$6 \frac{3}{8}$
$1 \frac{3}{16}$	1.1875	.3530	.3125	3	4	$6 \frac{3}{8}$



COUNTERBORES — CARBIDE TIPPED

For machining cast iron, non ferrous materials, composites, plastics and non-metals.

Carbide tips brazed to hardened alloy steel bodies.

Right spiral polished flutes.

Cutting diameter tolerance — plus .001", minus .000".

Shank diameter tolerance — plus .0000", minus .0005".

Tool Diameter		Dimensions				
		Diameter		Taper	No. of Flutes	Overall Length
Frac.	Dec.	Min. Cut	Pilot Hole			
1/4	.2500	.1140	.0938	1	3	3 13/16
9/32	.2813	.1140	.0938	1	3	3 13/16
5/16	.3125	.1140	.0938	1	3	3 13/16
11/32	.3438	.1140	.0938	1	3	3 13/16
3/8	.3750	.1820	.1563	1	3	4 1/16
13/32	.4063	.1820	.1563	1	3	4 1/16
7/16	.4375	.1820	.1563	1	3	4 1/16
15/32	.4688	.2280	.1875	1	3	4 5/16

Tool Diameter		Dimensions				
		Diameter		Taper	No. of Flutes	Overall Length
Frac.	Dec.	Min. Cut	Pilot Hole			
1/2	.5000	.2280	.1875	1	3	4 5/16
17/32	.5313	.2280	.1875	1	3	4 5/16
9/16	.5625	.2280	.1875	1	3	4 5/16
19/32	.5938	.2280	.1875	2	3	5 1/8
5/8	.6250	.2280	.1875	2	3	5 1/8
21/32	.6563	.2280	.1875	2	3	5 1/8
11/16	.6875	.2280	.1875	2	3	5 1/8
23/32	.7188	.2900	.2500	2	3	5 3/8
3/4	.7500	.2900	.2500	2	3	5 3/8
25/32	.7813	.2900	.2500	2	3	5 3/8
13/16	.8125	.2900	.2500	2	3	5 3/8
27/32	.8438	.2900	.2500	2	3	5 3/8
7/8	.8750	.2900	.2500	2	3	5 3/8
29/32	.9063	.2900	.2500	3	3	6 1/8
15/16	.9375	.2900	.2500	3	3	6 1/8
31/32	.9688	.3530	.3125	3	3	6 3/8
1	1.0000	.3530	.3125	3	3	6 3/8
1 1/16	1.0625	.3530	.3125	3	3	6 3/8
1 1/8	1.1250	.3530	.3125	3	3	6 3/8
1 3/16	1.1875	.3530	.3125	3	3	6 3/8
1 1/4	1.2500	.4260	.3750	3	4	6 5/8
1 5/16	1.3125	.4260	.3750	3	4	6 5/8
1 3/8	1.3750	.4260	.3750	3	4	6 5/8
1 7/16	1.4375	.4260	.3750	4	4	7 7/8
1 1/2	1.5000	.4260	.3750	4	4	7 7/8
1 9/16	1.5625	.4890	.4375	4	4	8 1/8
1 5/8	1.6250	.4890	.4375	4	4	8 1/8
1 11/16	1.6875	.4890	.4375	4	4	8 1/8

Tool Diameter		Dimensions				
		Diameter		Taper	No. of Flutes	Overall Length
Frac.	Dec.	Min. Cut	Pilot Hole			
1 3/4	1.7500	.4890	.4375	4	4	8 1/8
1 13/16	1.8125	.4890	.4375	4	4	8 1/8
1 7/8	1.8750	.4890	.4375	4	4	8 1/8
1 15/16	1.9375	.4890	.4375	4	4	8 1/8
2	2.0000	.5510	.5000	4	4	8 3/8



**COUNTERBORES — CARBIDE TIPPED
STEEL CUTTING — STRAIGHT SHANK**

Carbide tips brazed to hardened alloy steel bodies.

Right hand spiral polished flutes.

Cutting diameter tolerance — plus .001" minus .000".

Shank diameter tolerance — plus .0000" minus .0005".

Tool Diameter		Dimensions				
		Diameter			No. of Flutes	Overall Length
Frac.	Dec.	Min. Cut	Pilot Hole	Shank		
1/4	.2500	.1140	.0938	15/64	3	3 13/16
9/32	.2813	.1140	.0938	17/64	3	3 13/16
5/16	.3125	.1140	.0938	19/64	3	3 13/16
11/32	.3438	.1140	.0938	5/16	3	3 13/16
3/8	.3750	.1820	.1563	5/16	3	4 1/16
13/32	.4063	.1820	.1563	3/8	3	4 1/16
7/16	.4375	.1820	.1563	3/8	3	4 1/16
15/32	.4688	.2280	.1875	7/16	3	4 5/16
1/2	.5000	.2280	.1875	7/16	3	4 5/16
17/32	.5313	.2280	.1875	1/2	3	4 5/16
9/16	.5625	.2280	.1875	1/2	3	4 5/16
19/32	.5938	.2280	.1875	1/2	3	5 1/8
5/8	.6250	.2280	.1875	1/2	3	5 1/8
21/32	.6563	.2280	.1875	1/2	3	5 1/8
11/16	.6875	.2280	.1875	1/2	3	5 1/8
23/32	.7188	.2900	.2500	1/2	3	5 3/8
3/4	.7500	.2900	.2500	1/2	3	5 3/8
25/32	.7813	.2900	.2500	5/8	3	5 3/8
13/16	.8125	.2900	.2500	5/8	3	5 3/8
27/32	.8438	.2900	.2500	3/4	3	5 3/8
7/8	.8750	.2900	.2500	3/4	3	5 3/8
29/32	.9063	.2900	.2500	3/4	3	6 1/8
15/16	.9375	.2900	.2500	3/4	3	6 1/8
31/32	.9688	.3530	.3125	3/4	3	6 3/8
1	1.0000	.3530	.3125	3/4	3	6 3/8
1 1/16	1.0625	.3530	.3125	3/4	3	6 3/8
1 1/8	1.1250	.3530	.3125	1	3	6 3/8

Tool Diameter		Dimensions				
		Diameter			Shank	No. of Flutes	Overall Length
Frac.	Dec.	Min. Cut	Pilot Hole			
1 ³ / ₁₆	1.1875	.3530	.3125	1	3	6 ³ / ₈
1 ¹ / ₄	1.2500	.4260	.3750	1	4	6 ⁵ / ₈
1 ⁵ / ₁₆	1.3125	.4260	.3750	1	4	6 ⁵ / ₈
1 ³ / ₈	1.3750	.4260	.3750	1	4	6 ⁵ / ₈
1 ⁷ / ₁₆	1.4375	.4260	.3750	1 ¹ / ₄	4	7 ⁷ / ₈
1 ¹ / ₂	1.5000	.4260	.3750	1 ¹ / ₄	4	7 ⁷ / ₈
1 ⁹ / ₁₆	1.5625	.4890	.4375	1 ¹ / ₄	4	8 ¹ / ₈
1 ⁵ / ₈	1.6250	.4890	.4375	1 ¹ / ₄	4	8 ¹ / ₈
1 ¹¹ / ₁₆	1.6875	.4890	.4375	1 ¹ / ₄	4	8 ¹ / ₈
1 ³ / ₄	1.7500	.4890	.4375	1 ¹ / ₄	4	8 ¹ / ₈
1 ¹³ / ₁₆	1.8125	.4890	.4375	1 ¹ / ₂	4	8 ¹ / ₈
1 ⁷ / ₈	1.8750	.4890	.4375	1 ¹ / ₂	4	8 ¹ / ₈
1 ¹⁵ / ₁₆	1.9375	.4890	.4375	1 ¹ / ₂	4	8 ¹ / ₈
2	2.0000	.5510	.5000	1 ¹ / ₂	4	8 ³ / ₈



COUNTERBORES — CARBIDE TIPPED STEEL CUTTING — TAPER SHANK

TYPE 2511 — STEEL CUTTING — TAPER SHANK

Carbide tips brazed to hardened alloy steel bodies.

Right hand spiral polished flutes.

Cutting diameter tolerance — plus .001" minus .000".

Shank diameter tolerance — plus .0000" minus .0005".

Tool Diameter		Dimensions				
		Diameter		Taper	No. of Flutes	Overall Length
Frac.	Dec.	Min. Cut	Pilot Hole			
1/4	.2500	.1140	.0938	1	3	3 13/16
9/32	.2813	.1140	.0938	1	3	3 13/16
5/16	.3125	.1140	.0938	1	3	3 13/16
11/32	.3438	.1140	.0938	1	3	3 13/16
3/8	.3750	.1820	.1563	1	3	4 1/16
13/32	.4063	.1820	.1563	1	3	4 1/16
7/16	.4375	.1820	.1563	1	3	4 1/16
15/32	.4688	.2280	.1875	1	3	4 5/16
1/2	.5000	.2280	.1875	1	3	4 5/16
17/32	.5313	.2280	.1875	1	3	4 5/16
9/16	.5625	.2280	.1875	1	3	4 5/16
19/32	.5938	.2280	.1875	2	3	5 1/8

Tool Diameter		Dimensions				
		Diameter		Taper	No. of Flutes	Overall Length
		Frac.	Dec.				Min. Cut	Pilot Hole
5/8	.6250	.2280	.1875	2	3	5 1/8
21/32	.6563	.2280	.1875	2	3	5 1/8
11/16	.6875	.2280	.1875	2	3	5 1/8
23/32	.7188	.2900	.2500	2	3	5 3/8
3/4	.7500	.2900	.2500	2	3	5 3/8
25/32	.7813	.2900	.2500	2	3	5 3/8
13/16	.8125	.2900	.2500	2	3	5 3/8
27/32	.8438	.2900	.2500	2	3	5 3/8
7/8	.8750	.2900	.2500	2	3	5 3/8
29/32	.9063	.2900	.2500	3	3	6 1/8
15/16	.9375	.2900	.2500	3	3	6 1/8
31/32	.9688	.3530	.3125	3	3	6 3/8
1	1.0000	.3530	.3125	3	3	6 3/8
1 1/16	1.0625	.3530	.3125	3	3	6 3/8
1 1/8	1.1250	.3530	.3125	3	3	6 3/8
1 3/16	1.1875	.3530	.3125	3	3	6 3/8
1 1/4	1.2500	.4260	.3750	3	4	6 5/8
1 5/16	1.3125	.4260	.3750	3	4	6 5/8
1 3/8	1.3750	.4260	.3750	3	4	6 5/8
1 7/16	1.4375	.4260	.3750	4	4	7 7/8
1 1/2	1.5000	.4260	.3750	4	4	7 7/8
1 9/16	1.5625	.4890	.4375	4	4	8 1/8
1 5/8	1.6250	.4890	.4375	4	4	8 1/8
1 11/16	1.6875	.4890	.4375	4	4	8 1/8
1 3/4	1.7500	.4890	.4375	4	4	8 1/8
1 13/16	1.8125	.4890	.4375	4	4	8 1/8
1 7/8	1.8750	.4890	.4375	4	4	8 1/8
1 15/16	1.9375	.4890	.4375	4	4	8 1/8

Tool Diameter		Dimensions				
		Diameter		Taper	No. of Flutes	Overall Length
Frac.	Dec.	Min. Cut	Pilot Hole			
2	2.0000	.5510	.5000	4	4	8 ³ / ₈



COUNTERBORE PILOTS

CARBON STEEL PILOTS

The shank diameter ordered must be the same as the pilot shank hole diameter in the counterbore to be used.

The pilot diameter is always larger than the shank diameter and is determined by part to be machined.

Intermediate decimal or metric pilot diameters.

Shank diameter tolerance plus .0000" minus .0005".

Pilot diameter tolerance.

1/8 to 1/4 minus .001" minus .002".

9/32 to 7/8 minus .003" minus .004".

15/16 to 1-1/8 minus .005" minus .006".

Pilot Head Diameter		Shank Diameter
Frac.	Dec.	
1/8	.1250	3/32
5/32	.1563	3/32
3/16	.1875	3/32
3/16	.1875	5/32
7/32	.2188	5/32
7/32	.2188	3/32
7/32	.2188	3/16
1/4	.2500	5/32
1/4	.2500	3/32
1/4	.2500	3/16
9/32	.2813	1/4
9/32	.2813	3/32
9/32	.2813	3/16
9/32	.2813	5/32
5/16	.3125	1/4
5/16	.3125	3/32
5/16	.3125	3/16
5/16	.3125	5/32
11/32	.3438	1/4
11/32	.3438	3/32
11/32	.3438	3/16
11/32	.3438	5/32
11/32	.3438	5/16
3/8	.3750	5/32
3/8	.3750	5/16
3/8	.3750	1/4
3/8	.3750	3/16
13/32	.4063	1/4
13/32	.4063	3/16
13/32	.4063	5/32

Pilot Head Diameter		Shank Diameter
Frac.	Dec.	
$\frac{13}{32}$	.4063	$\frac{5}{16}$
$\frac{7}{16}$	.4375	$\frac{1}{4}$
$\frac{7}{16}$	.4375	$\frac{3}{16}$
$\frac{7}{16}$	.4375	$\frac{5}{32}$
$\frac{7}{16}$	.4375	$\frac{3}{8}$
$\frac{7}{16}$	.4375	$\frac{5}{16}$
$\frac{15}{32}$	.4688	$\frac{1}{4}$
$\frac{15}{32}$	.4688	$\frac{3}{16}$
$\frac{15}{32}$	.4688	$\frac{5}{16}$
$\frac{1}{2}$	.5000	$\frac{5}{16}$
$\frac{1}{2}$	.5000	$\frac{7}{16}$
$\frac{1}{2}$	.5000	$\frac{1}{4}$
$\frac{1}{2}$	.5000	$\frac{3}{16}$
$\frac{1}{2}$	.5000	$\frac{3}{8}$
$\frac{17}{32}$	.5313	$\frac{5}{16}$
$\frac{17}{32}$	.5313	$\frac{7}{16}$
$\frac{17}{32}$	.5313	$\frac{1}{4}$
$\frac{17}{32}$	.5313	$\frac{3}{16}$
$\frac{9}{16}$	.5625	$\frac{1}{4}$
$\frac{9}{16}$	.5625	$\frac{3}{16}$
$\frac{9}{16}$	.5625	$\frac{5}{16}$
$\frac{9}{16}$	.5625	$\frac{7}{16}$
$\frac{9}{16}$	.5625	$\frac{1}{2}$
$\frac{9}{16}$	.5625	$\frac{3}{8}$
$\frac{19}{32}$	.5938	$\frac{1}{4}$
$\frac{19}{32}$	.5938	$\frac{5}{16}$
$\frac{19}{32}$	.5938	$\frac{7}{16}$
$\frac{19}{32}$	.5938	$\frac{1}{2}$
$\frac{5}{8}$	.6250	$\frac{7}{16}$
$\frac{5}{8}$	.6250	$\frac{1}{2}$

Pilot Head Diameter		Shank Diameter
Frac.	Dec.	
$\frac{5}{8}$	.6250	$\frac{3}{8}$
$\frac{5}{8}$	.6250	$\frac{3}{16}$
$\frac{5}{8}$	.6250	$\frac{1}{4}$
$\frac{5}{8}$	.6250	$\frac{5}{16}$
$\frac{21}{32}$	.6563	$\frac{5}{16}$
$\frac{21}{32}$	.6563	$\frac{7}{16}$
$\frac{21}{32}$	.6563	$\frac{3}{16}$
$\frac{21}{32}$	.6563	$\frac{1}{4}$
$\frac{11}{16}$	.6875	$\frac{1}{2}$
$\frac{11}{16}$	.6875	$\frac{5}{16}$
$\frac{11}{16}$	.6875	$\frac{3}{8}$
$\frac{11}{16}$	.6875	$\frac{7}{16}$
$\frac{11}{16}$	.6875	$\frac{3}{16}$
$\frac{11}{16}$	.6875	$\frac{1}{4}$
$\frac{23}{32}$	.7188	$\frac{1}{4}$
$\frac{23}{32}$	.7188	$\frac{1}{2}$
$\frac{23}{32}$	.7188	$\frac{5}{16}$
$\frac{23}{32}$	.7188	$\frac{7}{16}$
$\frac{3}{4}$	.7500	$\frac{3}{16}$
$\frac{3}{4}$	.7500	$\frac{1}{4}$
$\frac{3}{4}$	.7500	$\frac{3}{8}$
$\frac{3}{4}$	.7500	$\frac{1}{2}$
$\frac{3}{4}$	.7500	$\frac{5}{16}$
$\frac{3}{4}$	.7500	$\frac{7}{16}$
$\frac{25}{32}$	.7813	$\frac{5}{16}$
$\frac{25}{32}$	.7813	$\frac{7}{16}$
$\frac{25}{32}$	.7813	$\frac{1}{4}$
$\frac{25}{32}$	.7813	$\frac{1}{2}$
$\frac{13}{16}$	.8125	$\frac{1}{2}$
$\frac{13}{16}$	.8125	$\frac{5}{16}$

Pilot Head Diameter		Shank Diameter
Frac.	Dec.	
$\frac{13}{16}$	.8125	$\frac{3}{16}$
$\frac{13}{16}$	.8125	$\frac{7}{16}$
$\frac{13}{16}$	.8125	$\frac{3}{8}$
$\frac{13}{16}$	.8125	$\frac{1}{4}$
$\frac{27}{32}$	.8438	$\frac{1}{4}$
$\frac{7}{8}$	.8750	$\frac{3}{8}$
$\frac{7}{8}$	.8750	$\frac{1}{4}$
$\frac{7}{8}$	.8750	$\frac{1}{2}$
$\frac{7}{8}$	.8750	$\frac{5}{16}$
$\frac{7}{8}$	.8750	$\frac{3}{16}$
$\frac{7}{8}$	.8750	$\frac{7}{16}$
$\frac{15}{16}$	.9375	$\frac{3}{8}$
$\frac{15}{16}$	.9375	$\frac{1}{4}$
$\frac{15}{16}$	.9375	$\frac{1}{2}$
$\frac{15}{16}$	.9375	$\frac{5}{16}$
$\frac{15}{16}$	.9375	$\frac{3}{16}$
$\frac{15}{16}$	.9375	$\frac{7}{16}$
1	1.0000	$\frac{7}{16}$
1	1.0000	$\frac{3}{8}$
1	1.0000	$\frac{1}{4}$
1	1.0000	$\frac{1}{2}$
1	1.0000	$\frac{5}{16}$
1	1.0000	$\frac{3}{16}$
$1 \frac{1}{16}$	1.0625	$\frac{1}{2}$
$1 \frac{1}{16}$	1.0625	$\frac{5}{16}$
$1 \frac{1}{16}$	1.0625	$\frac{7}{16}$
$1 \frac{1}{16}$	1.0625	$\frac{3}{8}$
$1 \frac{1}{8}$	1.1250	$\frac{1}{2}$
$1 \frac{1}{8}$	1.1250	$\frac{5}{16}$
$1 \frac{1}{8}$	1.1250	$\frac{7}{16}$

Pilot Head Diameter		Shank Diameter
Frac.	Dec.	
1 1/8	1.1250	3/8



CAPSCREW COUNTERBORES — CARBIDE TIPPED STRAIGHT SHANK

Carbide tips brazed to hardened alloy steel bodies.

Right spiral smooth flutes.

Integral pilot type.

Tools are designed with appropriate carbide grade and tool geometry for material being machined.

The pilot is manufactured in nominal screw body diameters as well as 1/64" and 1/32" over size diameters.

TOOL DIAMETER		PILOT DIAMETER	PILOT LENGTH	SHANK DIAMETER	OVERALL LENGTH	NUMBER OF FLUTES
DECIMAL	SCREW SIZE					
.3820	1/4	.2500	.3125	5/16	5 5/8	3
.3980	1/4	.2650	.3125	5/16	5 5/8	3
.4140	1/4	.2810	.3125	5/16	5 5/8	3
.4750	5/16	.3125	.3750	3/8	6 1/8	3
.4910	5/16	.3280	.3750	3/8	6 1/8	3

TOOL DIAMETER		PILOT DIAMETER	PILOT LENGTH	SHANK DIAMETER	OVERALL LENGTH	NUMBER OF FLUTES
DECIMAL	SCREW SIZE					
.5070	5/16	.3430	.3750	3/8	6 1/8	3
.5720	3/8	.3750	.5000	1/2	6 1/2	3
.5880	3/8	.3900	.5000	1/2	6 1/2	3
.6040	3/8	.4060	.5000	1/2	6 1/2	3
.6630	7/16	.4375	.5000	1/2	7	3
.6790	7/16	.4530	.5000	1/2	7	3
.6950	7/16	.4680	.5000	1/2	7	3
.7570	1/2	.5000	.5000	1/2	7 1/2	3
.7730	1/2	.5150	.5000	1/2	7 1/2	3
.7890	1/2	.5310	.5000	1/2	7 1/2	3
.8510	9/16	.5625	.5625	5/8	7 5/8	3
.8670	9/16	.5780	.5625	5/8	7 5/8	3
.8830	9/16	.5930	.5625	5/8	7 5/8	3
.9450	5/8	.6250	.6250	5/8	7 5/8	3
.9610	5/8	.6400	.6250	5/8	7 5/8	3
.9770	5/8	.6560	.6250	5/8	7 5/8	3
1.1330	3/4	.7500	.7500	3/4	7 3/4	3
1.1490	3/4	.7650	.7500	3/4	7 3/4	3
1.1650	3/4	.7810	.7500	3/4	7 3/4	3
1.3220	7/8	.8750	.8750	7/8	8 1/8	4
1.3380	7/8	.8910	.8750	7/8	8 1/8	4
1.3540	7/8	.9060	.8750	7/8	8 1/8	4
1.5100	1	1.0000	1.0000	1	8 1/2	4
1.5260	1	1.0150	1.0000	1	8 1/2	4
1.5420	1	1.0310	1.0000	1	8 1/2	4



CAPSCREW COUNTERBORES — CARBIDE TIPPED STRAIGHT SHANK

Carbide tips brazed to hardened alloy steel bodies.

Right spiral smooth flutes.

Integral pilot type.

Tools are designed with appropriate carbide grade and tool geometry for material being machined.

The pilot is manufactured in nominal screw body diameters as well as 1/64" and 1/32" over size diameters.

TOOL DIAMETER		PILOT DIAMETER	PILOT LENGTH	SHANK DIAMETER	OVERALL LENGTH	NUMBER OF FLUTES
DECIMAL	SCREW SIZE MM					
.3543	5	5.5	⁹ / ₃₂	⁵ / ₁₆	5 ⁵ / ₈	3
.4134	6	6.5	⁵ / ₁₆	⁵ / ₁₆	5 ⁵ / ₈	3
.5315	8	8.5	³ / ₈	¹ / ₂	6 ¹ / ₂	3
.6496	10	10.5	¹ / ₂	¹ / ₂	7	3
.7283	12	12.5	¹ / ₂	¹ / ₂	7 ¹ / ₂	3
.8465	14	14.5	⁹ / ₁₆	⁵ / ₈	7 ⁵ / ₈	3
.9646	16	16.5	⁵ / ₈	⁵ / ₈	7 ⁵ / ₈	3
1.2008	20	20.5	³ / ₄	⁷ / ₈	8	3



CAPSCREW COUNTERBORES — CARBIDE TIPPED STRAIGHT SHANK

Carbide tips brazed to hardened alloy steel bodies.

Right spiral smooth flutes.

Integral pilot type.

Tools are designed with appropriate carbide grade and tool geometry for material being machined.

The pilot is manufactured in nominal screw body diameters as well as 1/64" and 1/32" over size diameters.

TOOL DIAMETER		PILOT DIAMETER	PILOT LENGTH	SHANK DIAMETER	OVERALL LENGTH	NUMBER OF FLUTES
DECIMAL	SCREW SIZE					
.3820	1/4	.2500	.3125	5/16	5 5/8	3
.3980	1/4	.2650	.3125	5/16	5 5/8	3
.4140	1/4	.2810	.3125	5/16	5 5/8	3
.4750	5/16	.3125	.3750	3/8	6 1/8	3
.4910	5/16	.3280	.3750	3/8	6 1/8	3
.5070	5/16	.3430	.3750	3/8	6 1/8	3
.5720	3/8	.3750	.5000	1/2	6 1/2	3
.5880	3/8	.3900	.5000	1/2	6 1/2	3
.6040	3/8	.4060	.5000	1/2	6 1/2	3
.6630	7/16	.4375	.5000	1/2	7	3
.6790	7/16	.4530	.5000	1/2	7	3

TOOL DIAMETER		PILOT DIAMETER	PILOT LENGTH	SHANK DIAMETER	OVERALL LENGTH	NUMBER OF FLUTES
DECIMAL	SCREW SIZE					
.6950	7/16	.4680	.5000	1/2	7	3
.7570	1/2	.5000	.5000	1/2	7 1/2	3
.7730	1/2	.5150	.5000	1/2	7 1/2	3
.7890	1/2	.5310	.5000	1/2	7 1/2	3
.8510	9/16	.5625	.5625	5/8	7 5/8	3
.8670	9/16	.5780	.5625	5/8	7 5/8	3
.8830	9/16	.5930	.5625	5/8	7 5/8	3
.9450	5/8	.6250	.6250	5/8	7 5/8	3
.9610	5/8	.6400	.6250	5/8	7 5/8	3
.9770	5/8	.6560	.6250	5/8	7 5/8	3
1.1330	3/4	.7500	.7500	3/4	7 3/4	3
1.1490	3/4	.7650	.7500	3/4	7 3/4	3
1.1650	3/4	.7810	.7500	3/4	7 3/4	3
1.3220	7/8	.8750	.8750	7/8	8 1/8	4
1.3380	7/8	.8910	.8750	7/8	8 1/8	4
1.3540	7/8	.9060	.8750	7/8	8 1/8	4
1.5100	1	1.0000	1.0000	1	8 1/2	4
1.5260	1	1.0150	1.0000	1	8 1/2	4
1.5420	1	1.0310	1.0000	1	8 1/2	4



CAPSCREW COUNTERBORES — CARBIDE TIPPED STRAIGHT SHANK

Carbide tips brazed to hardened alloy steel bodies.

Right spiral smooth flutes.

Integral pilot type.

Tools are designed with appropriate carbide grade and tool geometry for material being machined.

The pilot is manufactured in nominal screw body diameters as well as 1/64" and 1/32" over size

Below are the critical dimensions of our Capscrew Counterbores. Please choose the Counterbores that meets your tooling needs.

TOOL DIAMETER		PILOT DIAMETER	PILOT LENGTH	SHANK DIAMETER	OVERALL LENGTH	NUMBER OF FLUTES
DECIMAL	SCREW SIZE MM					
.3543	5	5.5	$\frac{9}{32}$	$\frac{5}{16}$	5 $\frac{5}{8}$	3
.4134	6	6.5	$\frac{5}{16}$	$\frac{5}{16}$	5 $\frac{5}{8}$	3
.5315	8	8.5	$\frac{3}{8}$	$\frac{1}{2}$	6 $\frac{1}{2}$	3
.6496	10	10.5	$\frac{1}{2}$	$\frac{1}{2}$	7	3
.7283	12	12.5	$\frac{1}{2}$	$\frac{1}{2}$	7 $\frac{1}{2}$	3
.8465	14	14.5	$\frac{9}{16}$	$\frac{5}{8}$	7 $\frac{5}{8}$	3
.9646	16	16.5	$\frac{5}{8}$	$\frac{5}{8}$	7 $\frac{5}{8}$	3
1.2008	20	20.5	$\frac{3}{4}$	$\frac{7}{8}$	8	3



S.A.E. PORTS — MS16142 · J514F · J1926 CARBIDE TIPPED STRAIGHT SHANK

5° axial rake.

Negative radial rake.

Full form relieved cutting edges without O.D. lands provide true form and size for the tool life.

Can be resharpended with a simple face grind.

Heat treated bodies.

All tolerances within military specs.

TUBE		DIMENSIONS								
NO	SIZ E	THREA D SIZE	DIAMETER			SEALIN G SEAT ANGLE	LENGTH			
			REAME R	SPOTFAC E	SHAN K		SHAN K	REAME R	HEA D	OVERAL L
2	1/8	5/16 - 24	.2720	.6820	.5000	12°	2	.4730	1 1/8	3 1/8
3	3/16	3/8 - 24	.3350	.7600	.5000	12°	2	.4730	1 1/4	3 1/4
4	1/4	7/16 - 20	.3890	.8380	.5000	12°	2	.5520	1 1/4	3 1/4
5	5/16	1/2 - 20	.4520	.9160	.5000	12°	2	.5520	1 1/4	3 1/4
6	3/8	9/16 - 18	.5090	.9790	.5000	12°	2	.6140	1 1/4	3 1/4

TUBE		DIMENSIONS								
NO	SIZ E	THREA D SIZE	DIAMETER			SEALIN G SEAT ANGLE	LENGTH			
			REAME R	SPOTFAC E	SHAN K		SHAN K	REAME R	HEA D	OVERAL L
8	1/2	3/4 - 16	.6890	1.1980	.7500	15°	2	.6930	1 3/8	3 3/8
10	5/8	7/8 - 14	.8060	1.3540	.7500	15°	2	.7860	1 5/8	3 5/8
12	3/4	1 1/16 - 12	.9810	1.6350	.7500	15°	2 1/4	.9110	1 7/8	4 1/8
14	7/8	1 3/16 - 12	1.1060	1.7750	.7500	15°	2 1/4	.9110	1 7/8	4 1/8
16	1	1 5/16 - 12	1.2310	1.9200	.7500	15°	2 1/4	.9110	1 7/8	4 1/8
20	1 1/4	1 5/8 - 12	1.5440	2.2800	1.0000	15°	2 1/4	.9110	2	4 1/4
24	1 1/2	1 7/8 - 12	1.7940	2.5700	1.0000	15°	2 1/4	.9110	2	4 1/4
32	2	2 1/2 - 12	2.4190	3.4900	1.0000	15°	2 1/4	.9110	2 1/4	4 1/2



S.A.E. PORTS — MS16142 · J514F · J1926 CARBIDE TIPPED STRAIGHT SHANK

5° axial rake.

Negative radial rake.

Full form relieved cutting edges without O.D. lands provide true form and size for the tool life.

Can be resharpened with a simple face grind.

Heat treated bodies.

All tolerances within military specs.

Below are the critical dimensions of our S.A.E Ports - MS16142 Port Contour Cutters. Please choose the Port Contour Cutters that meets your tooling needs.

TUBE		DIMENSIONS								
NO	SIZ E	THREA D SIZE	DIAMETER			SEALIN G SEAT ANGLE	LENGTH			
			REAME R	SPOTFAC E	SHAN K		SHAN K	REAME R	HEA D	OVERAL L
2	1/8	5/16 - 24	.2720	.6820	.5000	12°	2	.4730	1 1/8	3 1/8
3	3/16	3/8 - 24	.3350	.7600	.5000	12°	2	.4730	1 1/4	3 1/4
4	1/4	7/16 - 20	.3890	.8380	.5000	12°	2	.5520	1 1/4	3 1/4

TUBE		DIMENSIONS								
NO	SIZ E	THREA D SIZE	DIAMETER			SEALIN G SEAT ANGLE	LENGTH			
			REAME R	SPOTFAC E	SHAN K		SHAN K	REAME R	HEA D	OVERAL L
5	5/16	1/2 - 20	.4520	.9160	.5000	12°	2	.5520	1 1/4	3 1/4
6	3/8	9/16 - 18	.5090	.9790	.5000	12°	2	.6140	1 1/4	3 1/4
8	1/2	3/4 - 16	.6890	1.1980	.7500	15°	2	.6930	1 3/8	3 3/8
10	5/8	7/8 - 14	.8060	1.3540	.7500	15°	2	.7860	1 5/8	3 5/8
12	3/4	1 1/16 - 12	.9810	1.6350	.7500	15°	2 1/4	.9110	1 7/8	4 1/8
14	7/8	1 3/16 - 12	1.1060	1.7750	.7500	15°	2 1/4	.9110	1 7/8	4 1/8
16	1	1 5/16 - 12	1.2310	1.9200	.7500	15°	2 1/4	.9110	1 7/8	4 1/8
20	1 1/4	1 5/8 - 12	1.5440	2.2800	1.0000	15°	2 1/4	.9110	2	4 1/4
24	1 1/2	1 7/8 - 12	1.7940	2.5700	1.0000	15°	2 1/4	.9110	2	4 1/4
32	2	2 1/2 - 12	2.4190	3.4900	1.0000	15°	2 1/4	.9110	2 1/4	4 1/2



MS 33649 INTEGRAL REAMER PILOT — CARBIDE TIPPED STRAIGHT SHANK

5° axial rake.

Negative radial rake.

Full form relieved cutting edges without O.D. lands provide true form and size for the tool life.

Can be resharpened with a simple face grind.

Heat treated bodies.

All tolerances within military specs.

TUBE		DIMENSIONS							
NO.	SIZE	THREAD SIZE	DIAMETER			LENGTH			
			REAMER	SPOTFACE	SHANK	SHANK	REAMER	HEAD	OVERALL
1	1/16	1/4 - 28	.2150	.6500	.5000	2	.4070	1	3
2	1/8	5/16 - 24	.2750	.7420	.5000	2	.5820	1 1/8	3 1/8
3	3/16	3/8 - 24	.3390	.8050	.5000	2	.5880	1 1/4	3 1/4
4	1/4	7/16 - 20	.3930	.8880	.5000	2	.6610	1 1/4	3 1/4
5	5/16	1/2 - 20	.4550	.9500	.5000	2	.6610	1 1/4	3 1/4
6	3/8	9/16 - 18	.5120	1.0120	.5000	2	.7140	1 1/2	3 1/2
7	7/16	5/8 - 18	.5750	1.1050	.5000	2	.7300	1 1/2	3 1/2
8	1/2	3/4 - 16	.6930	1.2400	.7500	2	.8390	1 5/8	3 5/8
9	9/16	13/16 - 16	.7560	1.3020	.7500	2	.8550	1 5/8	3 5/8
10	5/8	7/8 - 14	.8100	1.4150	.7500	2 1/4	.9350	1 7/8	4 1/8

TUBE		DIMENSIONS							
NO.	SIZE	THREAD SIZE	DIAMETER			LENGTH			
			REAMER	SPOTFACE	SHANK	SHANK	REAMER	HEAD	OVERALL
11	1 ¹ / ₁₆	1 – 12	.9250	1.6020	.7500	2 1/4	1.0690	2 1/8	4 3/8
12	3/4	1 1/16 – 12	.9870	1.6650	.7500	2 1/4	1.0690	2 1/8	4 3/8
14	7/8	1 3/16 – 12	1.1120	1.7900	.7500	2 1/4	1.0690	2 1/8	4 3/8
16	1	1 5/16 – 12	1.2370	1.9650	.7500	2 1/4	1.0690	2 1/8	4 3/8
18	1 1/8	1 1/2 – 12	1.4250	2.0900	.7500	2 1/4	1.1210	2 1/4	4 1/2
20	1 1/4	1 5/8 – 12	1.5500	2.3100	1.0000	2 1/4	1.1210	2 1/4	4 1/2
24	1 1/2	1 7/8 – 12	1.8000	2.6000	1.0000	2 1/4	1.1320	2 1/4	4 1/2
32	2	2 1/2 – 12	2.4250	3.5200	1.0000	2 1/2	1.3730	2 1/2	5



MS 33649 INTEGRAL REAMER PILOT — CARBIDE TIPPED STRAIGHT SHANK

5° axial rake.

Negative radial rake.

Full form relieved cutting edges without O.D. lands provide true form and size for the tool life.

Can be resharpened with a simple face grind.

Heat treated bodies.

All tolerances within military specs.

TUBE		DIMENSIONS							
NO.	SIZE	THREAD SIZE	DIAMETER			LENGTH			
			REAMER	SPOTFACE	SHANK	SHANK	REAMER	HEAD	OVERALL
1	1/16	1/4 - 28	.2150	.6500	.5000	2	.4070	1	3
2	1/8	5/16 - 24	.2750	.7420	.5000	2	.5820	1 1/8	3 1/8
3	3/16	3/8 - 24	.3390	.8050	.5000	2	.5880	1 1/4	3 1/4
4	1/4	7/16 - 20	.3930	.8880	.5000	2	.6610	1 1/4	3 1/4
5	5/16	1/2 - 20	.4550	.9500	.5000	2	.6610	1 1/4	3 1/4
6	3/8	9/16 - 18	.5120	1.0120	.5000	2	.7140	1 1/2	3 1/2
7	7/16	5/8 - 18	.5750	1.1050	.5000	2	.7300	1 1/2	3 1/2
8	1/2	3/4 - 16	.6930	1.2400	.7500	2	.8390	1 5/8	3 5/8
9	9/16	13/16 - 16	.7560	1.3020	.7500	2	.8550	1 5/8	3 5/8
10	5/8	7/8 - 14	.8100	1.4150	.7500	2 1/4	.9350	1 7/8	4 1/8
11	11/16	1 - 12	.9250	1.6020	.7500	2 1/4	1.0690	2 1/8	4 3/8
12	3/4	1 1/16 - 12	.9870	1.6650	.7500	2 1/4	1.0690	2 1/8	4 3/8
14	7/8	1 3/16 - 12	1.1120	1.7900	.7500	2 1/4	1.0690	2 1/8	4 3/8
16	1	1 5/16 - 12	1.2370	1.9650	.7500	2 1/4	1.0690	2 1/8	4 3/8
18	1 1/8	1 1/2 - 12	1.4250	2.0900	.7500	2 1/4	1.1210	2 1/4	4 1/2
20	1 1/4	1 5/8 - 12	1.5500	2.3100	1.0000	2 1/4	1.1210	2 1/4	4 1/2
24	1 1/2	1 7/8 - 12	1.8000	2.6000	1.0000	2 1/4	1.1320	2 1/4	4 1/2
32	2	2 1/2 - 12	2.4250	3.5200	1.0000	2 1/2	1.3730	2 1/2	5

CARMET
TOOLS & INSERTS



END MILLS — CARBIDE TIPPED TWO STRAIGHT FLUTES

Flute long carbide tips brazed to hardened alloy steel bodies.

Cutting diameter NC tolerance plus .002" minus .000".

Straight shanks with drive flats.

Tool		Dimensions			
Diameter		Shank Diameter	No. of Flutes	Length	
Frac.	Dec.			Carbide	Overall
1/4	.2500	3/8	2	1/2	2 1/2
5/16	.3125	3/8	2	5/8	2 1/2
3/8	.3750	3/8	2	5/8	2 1/2
7/16	.4375	3/8	2	1	2 11/16
1/2	.5000	1/2	2	1	3 1/4
9/16	.5625	1/2	2	1	3 3/8
5/8	.6250	1/2	2	1	3 3/8
11/16	.6875	5/8	2	1	3 3/8
3/4	.7500	5/8	2	1	3 5/8
13/16	.8125	5/8	2	1	3 5/8
7/8	.8750	5/8	2	1 1/4	4
15/16	.9375	7/8	2	1 1/4	4
1	1.0000	7/8	2	1 1/4	4
1 1/8	1.1250	1	2	1 1/4	4 1/4
1 1/4	1.2500	1	2	1 1/4	4 1/4
1 1/2	1.5000	1 1/4	2	1 1/2	4 1/2
1 3/4	1.7500	1 1/4	2	1 1/2	4 1/2
2	2.0000	1 1/4	2	1 1/2	4 1/2



END MILLS — CARBIDE TIPPED TWO STRAIGHT FLUTES

Steel cutting grade flute long carbide tips brazed to hardened alloy steel bodies.

Cutting diameter NC tolerance plus .002" minus .000".

Straight shanks with drive flats.

Tool Diameter		Dimensions			
Frac.	Dec.	Shank Diameter	No. of Flutes	Length	
				Carbide	Overall
1/4	.2500	3/8	2	1/2	2 1/2
5/16	.3125	3/8	2	5/8	2 1/2
3/8	.3750	3/8	2	5/8	2 1/2
7/16	.4375	3/8	2	1	2 11/16
1/2	.5000	1/2	2	1	3 1/4
9/16	.5625	1/2	2	1	3 3/8
5/8	.6250	1/2	2	1	3 3/8
3/4	.7500	5/8	2	1	3 5/8
7/8	.8750	5/8	2	1 1/4	4
1	1.0000	7/8	2	1 1/4	4
1 1/8	1.1250	1	2	1 1/4	4 1/4
1 1/4	1.2500	1	2	1 1/4	4 1/4
1 1/2	1.5000	1 1/4	2	1 1/2	4 1/2

Tool Diameter		Dimensions			
Frac.	Dec.	Shank Diameter	No. of Flutes	Length	
				Carbide	Overall
1 3/4	1.7500	1 1/4	2	1 1/2	4 1/2
2	2.0000	1 1/4	2	1 1/2	4 1/2



END MILLS — CARBIDE TIPPED

6° RIGHT SPIRAL FLUTES

Flute long carbide tips brazed to hardened alloy steel bodies.

Cutting diameter NC tolerance plus .002" minus .000".

Straight shanks with drive flats.

Tool Diameter		Dimensions			
Frac.	Dec.	Shank Diameter	No. of Flutes	Length	
				Carbide	Overall
1/4	.2500	3/8	2	1/2	2 1/2
5/16	.3125	3/8	2	5/8	2 1/2
3/8	.3750	3/8	2	5/8	2 1/2
7/16	.4375	3/8	2	1	2 11/16
1/2	.5000	1/2	2	1	3 1/4
9/16	.5625	1/2	2	1	3 3/8

Tool Diameter		Dimensions			
		Shank Diameter	No. of Flutes	Length	
Frac.	Dec.			Carbide	Overall
5/8	.6250	1/2	4	1	3 3/8
3/4	.7500	5/8	4	1	3 5/8
7/8	.8750	5/8	4	1 1/4	4
1	1.0000	7/8	4	1 1/4	4
1 1/8	1.1250	1	4	1 1/4	4 1/4
1 1/4	1.2500	1	4	1 1/4	4 1/4
1 1/2	1.5000	1 1/4	4	1 1/2	4 1/2
1 3/4	1.7500	1 1/4	6	1 1/2	4 1/2
2	2.0000	1 1/4	6	1 1/2	4 1/2



END MILLS — CARBIDE TIPPED STRAIGHT FLUTES

Flute long carbide tips brazed to hardened alloy steel bodies.

Cutting diameter NC tolerance plus .002" minus .000".

Straight shanks with drive flats.

Tool Diameter		Dimensions			
		Shank Diameter	No. of Flutes	Length	
Frac.	Dec.			Carbide	Overall
1/4	.2500	3/8	4	1/2	2 1/2
5/16	.3125	3/8	4	5/8	2 1/2
3/8	.3750	3/8	4	5/8	2 1/2
7/16	.4375	3/8	4	1	2 11/16
1/2	.5000	1/2	4	1	3 1/4
9/16	.5625	1/2	4	1	3 3/8
5/8	.6250	1/2	4	1	3 3/8
11/16	.6875	5/8	4	1	3 3/8
3/4	.7500	5/8	4	1	3 5/8
13/16	.8125	5/8	4	1	3 5/8
7/8	.8750	5/8	4	1 1/4	4
15/16	.9375	7/8	4	1 1/4	4
1	1.0000	7/8	4	1 1/4	4
1 1/8	1.1250	1	4	1 1/4	4 1/4
1 1/4	1.2500	1	4	1 1/4	4 1/4
1 1/2	1.5000	1 1/4	4	1 1/2	4 1/2
1 3/4	1.7500	1 1/4	6	1 1/2	4 1/2
2	2.0000	1 1/4	6	1 1/2	4 1/2



END MILLS — CARBIDE TIPPED 6° RIGHT SPIRAL FLUTES

Steel cutting grade flute long carbide tips brazed to hardened alloy steel bodies.
Cutting diameter NC tolerance plus .002" minus .000".
Straight shanks with drive flats.

Tool Diameter		Dimensions			
Frac.	Dec.	Shank Diameter	No. of Flutes	Length	
				Carbide	Overall
1/4	.2500	3/8	2	1/2	2 1/2
5/16	.3125	3/8	2	5/8	2 1/2
3/8	.3750	3/8	2	5/8	2 1/2
7/16	.4375	3/8	2	1	2 11/16
1/2	.5000	1/2	4	1	3 1/4
9/16	.5625	1/2	4	1	3 3/8
5/8	.6250	1/2	4	1	3 3/8
3/4	.7500	5/8	4	1	3 5/8
7/8	.8750	5/8	4	1 1/4	4
1	1.0000	7/8	6	1 1/4	4
1 1/8	1.1250	1	6	1 1/4	4 1/4

7/8	.8750	5/8	4	1 1/4	4	122.55
1	1.0000	7/8	6	1 1/4	4	140.90
1 1/8	1.1250	1	6	1 1/4	4 1/4	149.45
1 1/4	1.2500	1	6	1 1/4	4 1/4	180.60

1 1/2	1.5000	1 1/4	6	1 1/2	4 1/2	219.65
1 3/4	1.7500	1 1/4	8	1 1/2	4 1/2	264.50
2	2.0000	1 1/4	8	1 1/2	4 1/2	295.30



END MILLS — CARBIDE TIPPED

6° LEFT SPIRAL FLUTES

Steel cutting grade flute long carbide tips brazed to hardened tool steel bodies.

Cutting diameter NC tolerance plus .002" minus .000".

Tool Diameter		Dimensions			
		Shank Diameter	No. of Flutes	Length	
Frac.	Dec.			Carbide	Overall
1/4	.2500	3/8	2	1/2	2 1/2
5/16	.3125	3/8	2	5/8	2 1/2
3/8	.3750	3/8	2	5/8	2 1/2
7/16	.4375	3/8	2	1	2 11/16
1/2	.5000	1/2	4	1	3 1/4
9/16	.5625	1/2	4	1	3 3/8
5/8	.6250	1/2	4	1	3 3/8

Tool Diameter		Dimensions			
		Shank Diameter	No. of Flutes	Length	
Frac.	Dec.			Carbide	Overall
$\frac{3}{4}$	.7500	$\frac{5}{8}$	4	1	$3 \frac{5}{8}$
$\frac{7}{8}$	.8750	$\frac{5}{8}$	4	$1 \frac{1}{4}$	4
1	1.0000	$\frac{7}{8}$	6	$1 \frac{1}{4}$	4
$1 \frac{1}{8}$	1.1250	1	6	$1 \frac{1}{4}$	$4 \frac{1}{4}$
$1 \frac{1}{4}$	1.2500	1	6	$1 \frac{1}{4}$	$4 \frac{1}{4}$
$1 \frac{1}{2}$	1.5000	$1 \frac{1}{4}$	6	$1 \frac{1}{2}$	$4 \frac{1}{2}$
$1 \frac{3}{4}$	1.7500	$1 \frac{1}{4}$	8	$1 \frac{1}{2}$	$4 \frac{1}{2}$
2	2.0000	$1 \frac{1}{4}$	8	$1 \frac{1}{2}$	$4 \frac{1}{2}$



CORNER ROUND END MILLS — CARBIDE TIPPED

CORNER ROUNDING END MILLS FOR NON-FERROUS MATERIALS AND CAST IRON

All sizes have three flutes and are used to mill round corners on square edges.

Circle Radius	Tool Diameter	Dimensions			
		Diameter		Length	
		Shank	End	Carbide	Overall
$\frac{1}{16}$	$\frac{7}{16}$	$\frac{3}{8}$	$\frac{17}{64}$	$\frac{13}{32}$	$2 \frac{3}{4}$

Circle Radius	Tool Diameter	Dimensions			
		Diameter		Length	
		Shank	End	Carbide	Overall
$3/32$	$1/2$	$3/8$	$17/64$	$13/32$	$2\ 3/4$
$1/8$	$5/8$	$1/2$	$19/64$	$13/32$	3
$5/32$	$3/4$	$1/2$	$23/64$	$13/32$	3
$3/16$	$7/8$	$3/4$	$13/32$	$13/32$	$3\ 1/4$
$1/4$	1	$3/4$	$13/32$	$15/32$	$3\ 1/4$
$5/16$	$1\ 1/8$	$7/8$	$13/32$	$19/32$	$3\ 1/2$
$3/8$	$1\ 1/4$	$7/8$	$13/32$	$25/32$	$3\ 3/4$
$7/16$	$1\ 3/8$	1	$13/32$	$7/8$	4
$1/2$	$1\ 1/2$	1	$13/32$	1	4
$5/8$	2	$1\ 1/4$	$21/32$	$1\ 7/32$	$4\ 1/4$



CORNER ROUND END MILLS — CARBIDE TIPPED
CORNER ROUND END MILLS FOR STEEL

All sizes have three flutes and are used to mill round corners on square edges.

Circle Radius	Tool Diameter	Dimensions			
		Diameter		Length	
		Shank	End	Carbide	Overall
1/16	7/16	3/8	17/64	13/32	2 3/4
3/32	1/2	3/8	17/64	13/32	2 3/4
1/8	5/8	1/2	19/64	13/32	3
5/32	3/4	1/2	23/64	13/32	3
3/16	7/8	3/4	13/32	13/32	3 1/4
1/4	1	3/4	13/32	15/32	3 1/4
5/16	1 1/8	7/8	13/32	19/32	3 1/2
3/8	1 1/4	7/8	13/32	25/32	3 3/4
7/16	1 3/8	1	13/32	7/8	4
1/2	1 1/2	1	13/32	1	4
5/8	2	1 1/4	21/32	1 7/32	4 1/4



SHELL END MILLS — CARBIDE TIPPED FOR NON-FERROUS MACHINING

Right hand spiral.

Carbide tips brazed to hardened alloy steel bodies.

Cutting diameter tolerance plus 1/16" minus .000".

Arbor hole tolerance plus .001" minus .0000".

Tool	Dimensions				
	Arbor Hole	Overall Length	Drive Slots		No. of Teeth
			Width	Depth	
Diameter					
1 1/4	1/2	1	1/4	5/32	4
1 1/2	1/2	1 1/8	1/4	5/32	4
1 3/4	3/4	1 1/4	5/16	3/16	4
2	3/4	1 3/8	5/16	3/16	4
2 1/4	1	1 1/2	3/8	7/32	6
2 1/2	1	1 5/8	3/8	7/32	6
2 3/4	1	1 5/8	3/8	7/32	6
3	1 1/4	1 3/4	1/2	9/32	6
3 1/2	1 1/4	1 7/8	1/2	9/32	6
4	1 1/2	2 1/4	5/8	3/8	6



SHELL END MILLS — CARBIDE TIPPED FOR CAST IRON MACHINING

Carbide tips brazed to hardened alloy steel bodies.

Cutting diameter tolerance plus 1/16" minus .000".

Arbor hole tolerance plus .001" minus .0000".

Tool	Dimensions				
	Arbor Hole	Overall Length	Drive Slots		No. of Teeth
			Width	Depth	
Diameter					
1 1/4	1/2	1	1/4	5/32	4
1 1/2	1/2	1 1/8	1/4	5/32	4
1 3/4	3/4	1 1/4	5/16	3/16	4
2	3/4	1 3/8	5/16	3/16	4
2 1/4	1	1 1/2	3/8	7/32	6
2 1/2	1	1 5/8	3/8	7/32	6
2 3/4	1	1 5/8	3/8	7/32	6
3	1 1/4	1 3/4	1/2	9/32	6
3 1/2	1 1/4	1 7/8	1/2	9/32	8
4	1 1/2	2 1/4	5/8	3/8	8



SHELL END MILLS — CARBIDE TIPPED FOR STEEL MACHINING

Left-hand spiral absorbs the impact shock on entering steel.

Carbide tips brazed to hardened alloy steel bodies.

Cutting diameter tolerance plus 1/16" minus .000".

Arbor hole tolerance plus .001" minus .0000".

Tool	Dimensions				
	Arbor Hole	Overall Length	Drive Slots		No. of Teeth
			Width	Depth	
1 1/4	1/2	1	1/4	5/32	4

Tool	Dimensions					
	Diameter	Arbor Hole	Overall Length	Drive Slots		No. of Teeth
				Width	Depth	
1 1/2	1/2	1 1/8	1/4	5/32	4	
1 3/4	3/4	1 1/4	5/16	3/16	4	
2	3/4	1 3/8	5/16	3/16	4	
2 1/4	1	1 1/2	3/8	7/32	6	
2 1/2	1	1 5/8	3/8	7/32	6	
2 3/4	1	1 5/8	3/8	7/32	6	
3	1 1/4	1 3/4	1/2	9/32	6	
3 1/2	1 1/4	1 7/8	1/2	9/32	6	
4	1 1/2	2 1/4	5/8	3/8	6	



HIGH SPIRAL END MILLS — CARBIDE TIPPED 25° RIGHT SPIRAL FLUTES

Flute long carbide tips brazed to hardened alloy steel bodies.
Cutting diameter NC tolerance plus .002" minus .000".

Tool		Dimensions			
		Shank Diameter	No. of Flutes	Length	
Frac.	Dec.			Carbide	Overall
1/2	.5000	3/8	2	1	3
1/2	.5000	1/2	2	1	3
9/16	.5625	1/2	2	1	3

Tool Diameter		Dimensions			
		Shank Diameter	No. of Flutes	Length	
Frac.	Dec.			Carbide	Overall
5/8	.6250	1/2	2	1 1/4	3 1/4
5/8	.6250	5/8	2	1 1/4	3 3/8
11/16	.6875	1/2	2	1 1/4	3 1/4
11/16	.6875	5/8	2	1 1/4	3 3/8
3/4	.7500	1/2	2	1 1/4	3 1/4
3/4	.7500	5/8	2	1 1/4	3 3/8
13/16	.8125	5/8	2	1 1/2	3 5/8
7/8	.8750	5/8	2	1 1/2	3 5/8
7/8	.8750	7/8	2	1 1/2	3 3/4
15/16	.9375	5/8	2	1 1/2	3 3/4
15/16	.9375	7/8	2	1 1/2	3 3/4
1	1.0000	7/8	2	1 1/2	3 3/4
1	1.0000	1	2	1 1/2	4
1 1/8	1.1250	1	2	1 3/4	4 1/4
1 1/4	1.2500	1	3	1 3/4	4 1/4
1 3/8	1.3750	1	3	1 3/4	4 1/4
1 1/2	1.5000	1 1/4	3	2	4 1/2
1 5/8	1.6250	1 1/4	3	2	4 1/2
1 3/4	1.7500	1 1/4	3	2	4 1/2
1 7/8	1.8750	1 1/4	3	2	4 1/2
2	2.0000	1 1/4	3	2	4 1/2

.3151	.3470
.3471	.3780
.3781	.4090
.4091	.4410
.4411	.4720
.4721	.5030
.5031	.5340

.5341	.5660
.5661	.5970
.5971	.6280
.6281	.6590
.6591	.6910
.6911	.7220
.7221	.7530
.7531	.7840
.7841	.8160
.8161	.8470
.8471	.8780
.8781	.9090
.9091	.9410
.9411	.9720
.9721	1.0030
1.0031	1.0660
1.0661	1.1280
1.1281	1.1905
1.1906	1.2530
1.2531	1.3155
1.3156	1.3780
1.3781	1.4405
1.4406	1.5030



SEMI FINISHED EXPANSION CHUCKING REAMERS

STRAIGHT FLUTE LONG CARBIDE & STRAIGHT SHANK

SEMI-FINISHED

Before semi-finished reamers can be used, the cutting diameter must be finished ground and relieved. The reamer end must be faced and chamfered.

Semi-Finished Tool Diameter Range	
Low	High
.2841	.3150
.3151	.3470
.3471	.3780
.3781	.4090
.4091	.4410
.4411	.4720
.4721	.5030
.5031	.5340
.5341	.5660
.5661	.5970
.5971	.6280
.6281	.6590
.6591	.6910
.6911	.7220
.7221	.7530
.7531	.7840
.7841	.8160
.8161	.8470
.8471	.8780
.8781	.9090

Semi-Finished Tool Diameter Range	
Low	High
.9091	.9410
.9411	.9720
.9721	1.0030
1.0031	1.0660
1.0661	1.1280
1.1281	1.1905
1.1906	1.2530
1.2531	1.3155
1.3156	1.3780
1.3781	1.4405
1.4406	1.5030



CENTERS — CARBIDE TIPPED MORSE TAPER — FULL CENTER

Carbide tips brazed to tool steel bodies.
Center precision ground to 60° included angle.
Center concentric to precision ground taper.

Morse Taper Shank	Dimensions		
	Carbide Diam.	Length	
		Carbide	Overall
1	1/4	7/16	3 5/16
2	5/16	9/16	4 3/16
3	1/2	7/8	5 1/4
4	1/2	7/8	6 3/4
5	5/8	1 1/16	8 1/2



CENTERS — CARBIDE TIPPED MORSE TAPER — HALF CENTER

Half centers provide clearance for the grinding wheel or turning tool when machining a small diameter near the end of a part.

Morse Taper Shank	Dimensions				
	Carbide Diam.	Height Above Center	Length		
			Carbide	Undercut	Overall
1	1/4	9/64	7/16	1	3 5/16
2	5/16	11/64	9/16	1 3/8	4 3/16
3	3/8	13/64	11/16	1 11/16	5 1/4
4	1/2	17/64	7/8	2 1/4	6 3/4



CENTERS — CARBIDE TIPPED BROWN & SHARPE TAPER — FULL CENTER

Carbide tips brazed to tool steel bodies.
Center precision ground to 60° included angle.
Center concentric to precision ground taper.

Brown & Sharpe Taper Shank	Dimensions		
	Carbide Diam.	Length	
		Carbide	Overall
7	$\frac{5}{16}$	$\frac{9}{16}$	4 $\frac{1}{2}$
8	$\frac{3}{8}$	$\frac{11}{16}$	5 $\frac{11}{32}$
9	$\frac{1}{2}$	$\frac{7}{8}$	6
10	$\frac{1}{2}$	$\frac{7}{8}$	8 $\frac{17}{32}$
11	$\frac{5}{8}$	1 $\frac{1}{16}$	10 $\frac{1}{8}$



CENTERS — CARBIDE TIPPED BROWN & SHARPE TAPER — HALF CENTER

Half centers provide clearance for the grinding wheel or turning tool when machining a small diameter near the end of a part.

Brown & Sharpe Taper Shank	Dimensions				
	Carbide Diam.	Height Above Center	Length		
			Carbide	Undercut	Overall
7	$\frac{5}{16}$	$\frac{11}{64}$	$\frac{9}{16}$	1 $\frac{1}{8}$	4 $\frac{1}{2}$
8	$\frac{5}{16}$	$\frac{11}{64}$	$\frac{9}{16}$	1 $\frac{5}{16}$	5 $\frac{11}{32}$
9	$\frac{3}{8}$	$\frac{13}{64}$	$\frac{11}{16}$	1 $\frac{1}{2}$	6
10	$\frac{1}{2}$	$\frac{17}{64}$	$\frac{7}{8}$	2 $\frac{1}{4}$	8 $\frac{17}{32}$
11	$\frac{5}{8}$	$\frac{3}{8}$	1 $\frac{1}{16}$	2 $\frac{1}{2}$	10 $\frac{1}{8}$



CENTERS — CARBIDE TIPPED JARNO TAPER — HALF CENTER

Half centers provide clearance for the grinding wheel or turning tool when machining a small diameter near the end of a part.

Jarno Taper Shank	Dimensions				
	Carbide Diam.	Height Above Center	Length		
			Carbide	Undercut	Overall
4	$\frac{1}{4}$	$\frac{9}{64}$	$\frac{7}{16}$	$\frac{25}{32}$	3
5	$\frac{1}{4}$	$\frac{9}{64}$	$\frac{7}{16}$	$\frac{15}{16}$	3 $\frac{5}{8}$
6	$\frac{5}{16}$	$\frac{11}{64}$	$\frac{9}{16}$	1 $\frac{1}{8}$	4 $\frac{1}{2}$
7	$\frac{3}{8}$	$\frac{13}{64}$	$\frac{11}{16}$	1 $\frac{3}{16}$	5 $\frac{1}{4}$

Jarno Taper Shank	Dimensions				
	Carbide Diam.	Height Above Center	Length		
			Carbide	Undercut	Overall
8	1/2	17/64	7/8	1 3/8	6
9	1/2	17/64	7/8	1 5/8	6 3/4
10	1/2	17/64	7/8	2	7 1/2
11	1/2	17/64	7/8	2	8 1/4
12	5/8	21/64	1 1/16	2 1/4	9



CENTERS — CARBIDE TIPPED

JARNO TAPER — FULL CENTER

Carbide tips brazed to tool steel bodies.

Center precision ground to 60° included angle.

Center concentric to precision ground taper.

Jarno Taper Shank	Dimensions		
	Carbide Diam.	Length	
		Carbide	Overall
4	1/4	7/16	3
5	1/4	7/16	3 5/8
6	5/16	9/16	4 1/2
7	3/8	11/16	5 1/4
8	1/2	7/8	6
9	1/2	7/8	6 3/4

Jarno Taper Shank	Dimensions		
	Carbide Diam.	Length	
		Carbide	Overall
10	1/2	7/8	7 1/2
11	1/2	7/8	8 1/4
12	5/8	1 1/16	9



COUNTERBORES — CARBIDE TIPPED
REDUCED SHANK — INTERCHANGEABLE PILOT TYPE

Furnished with 1/64" corner radius

Carbide tips brazed to tough alloy steel body

Tool diameter tolerance: plus .001", minus .000"

Shank diameter tolerance: plus .0000", minus .0005"

Tool Diameter		Dimensions				Overall Length
		Diameter			Small Shank	
Frac.	Dec.	Min. Cut	Pilot Hole			
1/4	.2500	1/8	.0938	1/4	2 3/8	
9/32	.2813	1/8	.0938	1/4	2 3/8	
5/16	.3125	1/8	.0938	1/4	2 3/8	
11/32	.3438	1/8	.0938	1/4	2 3/8	
3/8	.3750	1/8	.0938	1/4	2 3/8	
13/32	.4063	.1560	.1250	1/4	2 3/4	
7/16	.4375	.1560	.1250	1/4	2 3/4	
15/32	.4688	.1560	.1250	1/4	2 3/4	
1/2	.5000	.1560	.1250	1/4	2 3/4	
17/32	.5313	.1560	.1250	1/4	2 3/4	
9/16	.5625	.1560	.1250	1/4	2 3/4	
19/32	.5938	.1560	.1250	1/4	2 3/4	
5/8	.6250	.1560	.1250	1/4	2 3/4	
21/32	.6563	.2190	.1875	1/4	2 3/4	
11/16	.6875	.2190	.1875	1/4	2 3/4	
23/32	.7188	.2190	.1875	1/4	2 3/4	
3/4	.7500	.2190	.1875	1/4	2 3/4	
25/32	.7813	.2190	.1875	1/4	2 3/4	
13/16	.8125	.2190	.1875	1/4	2 3/4	
27/32	.8438	.2190	.1875	1/4	2 3/4	
7/8	.8750	.2190	.1875	1/4	2 3/4	
29/32	.9063	.2190	.1875	1/4	2 3/4	
15/16	.9375	.2190	.1875	1/4	2 3/4	
31/32	.9688	.2190	.1875	1/4	2 3/4	
1	1.0000	.2190	.1875	1/4	2 3/4	
1 1/16	1.0625	.2190	.1875	3/8	2 3/4	
1 1/8	1.1250	.2190	.1875	3/8	2 3/4	
1 3/16	1.1875	.2190	.1875	3/8	2 3/4	

Tool		Dimensions				Overall Length
Diameter		Diameter				
Frac.	Dec.	Min. Cut	Pilot Hole	Small Shank		
1 1/4	1.2500	.2810	.2500	3/8	2 3/4	
1 5/16	1.3125	.2810	.2500	3/8	2 3/4	
1 3/8	1.3750	.2810	.2500	3/8	2 3/4	
1 7/16	1.4375	.2810	.2500	3/8	2 3/4	
1 1/2	1.5000	.2810	.2500	3/8	2 3/4	
1 9/16	1.5625	.3430	.3125	1/2	3 1/16	
1 5/8	1.6250	.3430	.3125	1/2	3 1/16	
1 11/16	1.6875	.3430	.3125	1/2	3 1/16	
1 3/4	1.7500	.3430	.3125	1/2	3 1/16	
1 13/16	1.8125	.3430	.3125	1/2	3 1/16	
1 7/8	1.8750	.3430	.3125	1/2	3 1/16	
1 15/16	1.9375	.3430	.3125	1/2	3 1/16	
2	2.0000	.3430	.3125	1/2	3 1/16	



COUNTERBORES — CARBIDE TIPPED FOUR FLUTES — STRAIGHT SHANK

For machining cast iron, non ferrous materials, composites, plastics and non-metals.

Right spiral polished flutes.

Carbide tips brazed to hardened alloy steel bodies.

Cutting diameter tolerance — plus .001", minus .000".

Shank diameter tolerance — plus .0000", minus .0005".

Tool Diameter		Dimensions				
		Diameter			No. of Flutes	Overall Length
Frac.	Dec.	Min. Cut	Pilot Hole	Shank		
1/2	.5000	.2280	.1875	7/16	4	4 5/16
17/32	.5313	.2280	.1875	1/2	4	4 5/16
9/16	.5625	.2280	.1875	1/2	4	4 5/16
19/32	.5938	.2280	.1875	1/2	4	5 1/8
5/8	.6250	.2280	.1875	1/2	4	5 1/8
21/32	.6563	.2280	.1875	1/2	4	5 1/8

Tool Diameter		Dimensions				
		Diameter			No. of Flutes	Overall Length
Frac.	Dec.	Min. Cut	Pilot Hole	Shank		
$1^{1/16}$	.6875	.2280	.1875	$1/2$	4	$5 \frac{1}{8}$
$2^{3/32}$	.7188	.2900	.2500	$1/2$	4	$5 \frac{3}{8}$
$3/4$	.7500	.2900	.2500	$1/2$	4	$5 \frac{3}{8}$
$2^{5/32}$	.7813	.2900	.2500	$5/8$	4	$5 \frac{3}{8}$
$1^{3/16}$	.8125	.2900	.2500	$5/8$	4	$5 \frac{3}{8}$
$2^{7/32}$	.8438	.2900	.2500	$3/4$	4	$5 \frac{3}{8}$
$7/8$	.8750	.2900	.2500	$3/4$	4	$5 \frac{3}{8}$
$2^{9/32}$	.9063	.2900	.2500	$3/4$	4	$6 \frac{1}{8}$
$1^{5/16}$	.9375	.2900	.2500	$3/4$	4	$6 \frac{1}{8}$
$3^{1/32}$	.9688	.3530	.3125	$3/4$	4	$6 \frac{3}{8}$
1	1.0000	.3530	.3125	$3/4$	4	$6 \frac{3}{8}$
$1 \frac{1}{16}$	1.0625	.3530	.3125	$3/4$	4	$6 \frac{3}{8}$
$1 \frac{1}{8}$	1.1250	.3530	.3125	1	4	$6 \frac{3}{8}$
$1 \frac{3}{16}$	1.1875	.3530	.3125	1	4	$6 \frac{3}{8}$



COUNTERBORES — CARBIDE TIPPED THREE/FOUR FLUTES — STRAIGHT SHANK

For machining cast iron, non ferrous materials, composites, plastics and non-metals.

Right spiral polished flutes.

Carbide tips brazed to hardened alloy steel bodies.

Cutting diameter tolerance — plus .001", minus .000".

Shank diameter tolerance — plus .0000", minus .0005".

Tool Diameter		Dimensions				
		Diameter			Shank	No. of Flutes	Overall Length
Frac.	Dec.	Min. Cut	Pilot Hole			
1/4	.2500	.1140	.0938	15/64	3	3 13/16
9/32	.2813	.1140	.0938	17/64	3	3 13/16
5/16	.3125	.1140	.0938	19/64	3	3 13/16
11/32	.3438	.1140	.0938	5/16	3	3 13/16
3/8	.3750	.1820	.1563	5/16	3	4 1/16

Tool Diameter		Dimensions				
		Diameter			No. of Flutes	Overall Length
Frac.	Dec.	Min. Cut	Pilot Hole	Shank		
13/32	.4063	.1820	.1563	3/8	3	4 1/16
7/16	.4375	.1820	.1563	3/8	3	4 1/16
15/32	.4688	.2280	.1875	7/16	3	4 5/16
1/2	.5000	.2280	.1875	7/16	3	4 5/16
17/32	.5313	.2280	.1875	1/2	3	4 5/16
9/16	.5625	.2280	.1875	1/2	3	4 5/16
19/32	.5938	.2280	.1875	1/2	3	5 1/8
5/8	.6250	.2280	.1875	1/2	3	5 1/8
21/32	.6563	.2280	.1875	1/2	3	5 1/8
11/16	.6875	.2280	.1875	1/2	3	5 1/8
23/32	.7188	.2900	.2500	1/2	3	5 3/8
3/4	.7500	.2900	.2500	1/2	3	5 3/8
25/32	.7813	.2900	.2500	5/8	3	5 3/8
13/16	.8125	.2900	.2500	5/8	3	5 3/8
27/32	.8438	.2900	.2500	3/4	3	5 3/8
7/8	.8750	.2900	.2500	3/4	3	5 3/8
29/32	.9063	.2900	.2500	3/4	3	6 1/8
15/16	.9375	.2900	.2500	3/4	3	6 1/8
31/32	.9688	.3530	.3125	3/4	3	6 3/8
1	1.0000	.3530	.3125	3/4	3	6 3/8
1 1/16	1.0625	.3530	.3125	3/4	3	6 3/8
1 1/8	1.1250	.3530	.3125	1	3	6 3/8
1 3/16	1.1875	.3530	.3125	1	3	6 3/8
1 1/4	1.2500	.4260	.3750	1	4	6 5/8
1 5/16	1.3125	.4260	.3750	1	4	6 5/8
1 3/8	1.3750	.4260	.3750	1	4	6 5/8
1 7/16	1.4375	.4260	.3750	1 1/4	4	7 7/8
1 1/2	1.5000	.4260	.3750	1 1/4	4	7 7/8

Tool Diameter		Dimensions				
		Diameter			No. of Flutes	Overall Length
Frac.	Dec.	Min. Cut	Pilot Hole	Shank		
1 ⁹ / ₁₆	1.5625	.4890	.4375	1 ¹ / ₄	4	8 ¹ / ₈
1 ⁵ / ₈	1.6250	.4890	.4375	1 ¹ / ₄	4	8 ¹ / ₈
1 ¹¹ / ₁₆	1.6875	.4890	.4375	1 ¹ / ₄	4	8 ¹ / ₈
1 ³ / ₄	1.7500	.4890	.4375	1 ¹ / ₄	4	8 ¹ / ₈
1 ¹³ / ₁₆	1.8125	.4890	.4375	1 ¹ / ₂	4	8 ¹ / ₈
1 ⁷ / ₈	1.8750	.4890	.4375	1 ¹ / ₂	4	8 ¹ / ₈
1 ¹⁵ / ₁₆	1.9375	.4890	.4375	1 ¹ / ₂	4	8 ¹ / ₈
2	2.0000	.5510	.5000	1 ¹ / ₂	4	8 ³ / ₈



COUNTERBORES — CARBIDE TIPPED FOUR FLUTES — TAPER SHANK

For machining cast iron, non ferrous materials, composites, plastics and non-metals.

Carbide tips brazed to hardened alloy steel bodies.

Right spiral polished flutes.

Cutting diameter tolerance — plus .001", minus .000".

Shank diameter tolerance — plus .0000", minus .0005".

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Tool Diameter		Dimensions				
		Diameter		Taper	No. of Flutes	Overall Length
Frac.	Dec.	Min. Cut	Pilot Hole			
1/2	.5000	.2280	.1875	1	4	4 5/16
17/32	.5313	.2280	.1875	1	4	4 5/16
9/16	.5625	.2280	.1875	1	4	4 5/16
19/32	.5938	.2280	.1875	2	4	5 1/8
5/8	.6250	.2280	.1875	2	4	5 1/8
21/32	.6563	.2280	.1875	2	4	5 1/8
11/16	.6875	.2280	.1875	2	4	5 1/8
23/32	.7188	.2900	.2500	2	4	5 3/8
3/4	.7500	.2900	.2500	2	4	5 3/8
25/32	.7813	.2900	.2500	2	4	5 3/8

Tool Diameter		Dimensions				
		Diameter		Taper	No. of Flutes	Overall Length
Frac.	Dec.	Min. Cut	Pilot Hole			
$13/16$	.8125	.2900	.2500	2	4	$5 \frac{3}{8}$
$27/32$	.8438	.2900	.2500	2	4	$5 \frac{3}{8}$
$7/8$	.8750	.2900	.2500	2	4	$5 \frac{3}{8}$
$29/32$	.9063	.2900	.2500	3	4	$6 \frac{1}{8}$
$15/16$	.9375	.2900	.2500	3	4	$6 \frac{1}{8}$
$31/32$	.9688	.3530	.3125	3	4	$6 \frac{3}{8}$
1	1.0000	.3530	.3125	3	4	$6 \frac{3}{8}$
$1 \frac{1}{16}$	1.0625	.3530	.3125	3	4	$6 \frac{3}{8}$
$1 \frac{1}{8}$	1.1250	.3530	.3125	3	4	$6 \frac{3}{8}$
$1 \frac{3}{16}$	1.1875	.3530	.3125	3	4	$6 \frac{3}{8}$



COUNTERBORES — CARBIDE TIPPED

For machining cast iron, non ferrous materials, composites, plastics and non-metals.

Carbide tips brazed to hardened alloy steel bodies.

Right spiral polished flutes.

Cutting diameter tolerance — plus .001", minus .000".

Shank diameter tolerance — plus .0000", minus .0005".

Tool Diameter		Dimensions				
		Diameter		Taper	No. of Flutes	Overall Length
Frac.	Dec.	Min. Cut	Pilot Hole			
1/4	.2500	.1140	.0938	1	3	3 13/16
9/32	.2813	.1140	.0938	1	3	3 13/16
5/16	.3125	.1140	.0938	1	3	3 13/16
11/32	.3438	.1140	.0938	1	3	3 13/16
3/8	.3750	.1820	.1563	1	3	4 1/16
13/32	.4063	.1820	.1563	1	3	4 1/16
7/16	.4375	.1820	.1563	1	3	4 1/16
15/32	.4688	.2280	.1875	1	3	4 5/16

Tool Diameter		Dimensions				
		Diameter		Taper	No. of Flutes	Overall Length
Frac.	Dec.	Min. Cut	Pilot Hole			
1/2	.5000	.2280	.1875	1	3	4 5/16
17/32	.5313	.2280	.1875	1	3	4 5/16
9/16	.5625	.2280	.1875	1	3	4 5/16
19/32	.5938	.2280	.1875	2	3	5 1/8
5/8	.6250	.2280	.1875	2	3	5 1/8
21/32	.6563	.2280	.1875	2	3	5 1/8
11/16	.6875	.2280	.1875	2	3	5 1/8
23/32	.7188	.2900	.2500	2	3	5 3/8
3/4	.7500	.2900	.2500	2	3	5 3/8
25/32	.7813	.2900	.2500	2	3	5 3/8
13/16	.8125	.2900	.2500	2	3	5 3/8
27/32	.8438	.2900	.2500	2	3	5 3/8
7/8	.8750	.2900	.2500	2	3	5 3/8
29/32	.9063	.2900	.2500	3	3	6 1/8
15/16	.9375	.2900	.2500	3	3	6 1/8
31/32	.9688	.3530	.3125	3	3	6 3/8
1	1.0000	.3530	.3125	3	3	6 3/8
1 1/16	1.0625	.3530	.3125	3	3	6 3/8
1 1/8	1.1250	.3530	.3125	3	3	6 3/8
1 3/16	1.1875	.3530	.3125	3	3	6 3/8
1 1/4	1.2500	.4260	.3750	3	4	6 5/8
1 5/16	1.3125	.4260	.3750	3	4	6 5/8
1 3/8	1.3750	.4260	.3750	3	4	6 5/8
1 7/16	1.4375	.4260	.3750	4	4	7 7/8
1 1/2	1.5000	.4260	.3750	4	4	7 7/8
1 9/16	1.5625	.4890	.4375	4	4	8 1/8
1 5/8	1.6250	.4890	.4375	4	4	8 1/8
1 11/16	1.6875	.4890	.4375	4	4	8 1/8

Tool Diameter		Dimensions				
		Diameter		Taper	No. of Flutes	Overall Length
Frac.	Dec.	Min. Cut	Pilot Hole			
1 3/4	1.7500	.4890	.4375	4	4	8 1/8
1 13/16	1.8125	.4890	.4375	4	4	8 1/8
1 7/8	1.8750	.4890	.4375	4	4	8 1/8
1 15/16	1.9375	.4890	.4375	4	4	8 1/8
2	2.0000	.5510	.5000	4	4	8 3/8



**COUNTERBORES — CARBIDE TIPPED
STEEL CUTTING — STRAIGHT SHANK**

Carbide tips brazed to hardened alloy steel bodies.

Right hand spiral polished flutes.

Cutting diameter tolerance — plus .001" minus .000".

Shank diameter tolerance — plus .0000" minus .0005".

Tool Diameter		Dimensions				
		Diameter			No. of Flutes	Overall Length
Frac.	Dec.	Min. Cut	Pilot Hole	Shank		
1/4	.2500	.1140	.0938	15/64	3	3 13/16
9/32	.2813	.1140	.0938	17/64	3	3 13/16
5/16	.3125	.1140	.0938	19/64	3	3 13/16
11/32	.3438	.1140	.0938	5/16	3	3 13/16
3/8	.3750	.1820	.1563	5/16	3	4 1/16
13/32	.4063	.1820	.1563	3/8	3	4 1/16
7/16	.4375	.1820	.1563	3/8	3	4 1/16
15/32	.4688	.2280	.1875	7/16	3	4 5/16
1/2	.5000	.2280	.1875	7/16	3	4 5/16
17/32	.5313	.2280	.1875	1/2	3	4 5/16
9/16	.5625	.2280	.1875	1/2	3	4 5/16
19/32	.5938	.2280	.1875	1/2	3	5 1/8
5/8	.6250	.2280	.1875	1/2	3	5 1/8
21/32	.6563	.2280	.1875	1/2	3	5 1/8
11/16	.6875	.2280	.1875	1/2	3	5 1/8
23/32	.7188	.2900	.2500	1/2	3	5 3/8
3/4	.7500	.2900	.2500	1/2	3	5 3/8
25/32	.7813	.2900	.2500	5/8	3	5 3/8
13/16	.8125	.2900	.2500	5/8	3	5 3/8
27/32	.8438	.2900	.2500	3/4	3	5 3/8
7/8	.8750	.2900	.2500	3/4	3	5 3/8
29/32	.9063	.2900	.2500	3/4	3	6 1/8
15/16	.9375	.2900	.2500	3/4	3	6 1/8
31/32	.9688	.3530	.3125	3/4	3	6 3/8
1	1.0000	.3530	.3125	3/4	3	6 3/8
1 1/16	1.0625	.3530	.3125	3/4	3	6 3/8
1 1/8	1.1250	.3530	.3125	1	3	6 3/8

Tool Diameter		Dimensions				
		Diameter			Shank	No. of Flutes	Overall Length
Frac.	Dec.	Min. Cut	Pilot Hole			
1 ³ / ₁₆	1.1875	.3530	.3125	1	3	6 ³ / ₈
1 ¹ / ₄	1.2500	.4260	.3750	1	4	6 ⁵ / ₈
1 ⁵ / ₁₆	1.3125	.4260	.3750	1	4	6 ⁵ / ₈
1 ³ / ₈	1.3750	.4260	.3750	1	4	6 ⁵ / ₈
1 ⁷ / ₁₆	1.4375	.4260	.3750	1 ¹ / ₄	4	7 ⁷ / ₈
1 ¹ / ₂	1.5000	.4260	.3750	1 ¹ / ₄	4	7 ⁷ / ₈
1 ⁹ / ₁₆	1.5625	.4890	.4375	1 ¹ / ₄	4	8 ¹ / ₈
1 ⁵ / ₈	1.6250	.4890	.4375	1 ¹ / ₄	4	8 ¹ / ₈
1 ¹¹ / ₁₆	1.6875	.4890	.4375	1 ¹ / ₄	4	8 ¹ / ₈
1 ³ / ₄	1.7500	.4890	.4375	1 ¹ / ₄	4	8 ¹ / ₈
1 ¹³ / ₁₆	1.8125	.4890	.4375	1 ¹ / ₂	4	8 ¹ / ₈
1 ⁷ / ₈	1.8750	.4890	.4375	1 ¹ / ₂	4	8 ¹ / ₈
1 ¹⁵ / ₁₆	1.9375	.4890	.4375	1 ¹ / ₂	4	8 ¹ / ₈
2	2.0000	.5510	.5000	1 ¹ / ₂	4	8 ³ / ₈



COUNTERBORES — CARBIDE TIPPED STEEL CUTTING — TAPER SHANK

TYPE 2511 — STEEL CUTTING — TAPER SHANK

Carbide tips brazed to hardened alloy steel bodies.

Right hand spiral polished flutes.

Cutting diameter tolerance — plus .001" minus .000".

Shank diameter tolerance — plus .0000" minus .0005".

Tool Diameter		Dimensions				
		Diameter		Taper	No. of Flutes	Overall Length
Frac.	Dec.	Min. Cut	Pilot Hole			
1/4	.2500	.1140	.0938	1	3	3 13/16
9/32	.2813	.1140	.0938	1	3	3 13/16
5/16	.3125	.1140	.0938	1	3	3 13/16
11/32	.3438	.1140	.0938	1	3	3 13/16
3/8	.3750	.1820	.1563	1	3	4 1/16
13/32	.4063	.1820	.1563	1	3	4 1/16
7/16	.4375	.1820	.1563	1	3	4 1/16
15/32	.4688	.2280	.1875	1	3	4 5/16
1/2	.5000	.2280	.1875	1	3	4 5/16
17/32	.5313	.2280	.1875	1	3	4 5/16
9/16	.5625	.2280	.1875	1	3	4 5/16
19/32	.5938	.2280	.1875	2	3	5 1/8

Tool Diameter		Dimensions				
		Diameter		Taper	No. of Flutes	Overall Length
		Frac.	Dec.				Min. Cut	Pilot Hole
5/8	.6250	.2280	.1875	2	3	5 1/8
21/32	.6563	.2280	.1875	2	3	5 1/8
11/16	.6875	.2280	.1875	2	3	5 1/8
23/32	.7188	.2900	.2500	2	3	5 3/8
3/4	.7500	.2900	.2500	2	3	5 3/8
25/32	.7813	.2900	.2500	2	3	5 3/8
13/16	.8125	.2900	.2500	2	3	5 3/8
27/32	.8438	.2900	.2500	2	3	5 3/8
7/8	.8750	.2900	.2500	2	3	5 3/8
29/32	.9063	.2900	.2500	3	3	6 1/8
15/16	.9375	.2900	.2500	3	3	6 1/8
31/32	.9688	.3530	.3125	3	3	6 3/8
1	1.0000	.3530	.3125	3	3	6 3/8
1 1/16	1.0625	.3530	.3125	3	3	6 3/8
1 1/8	1.1250	.3530	.3125	3	3	6 3/8
1 3/16	1.1875	.3530	.3125	3	3	6 3/8
1 1/4	1.2500	.4260	.3750	3	4	6 5/8
1 5/16	1.3125	.4260	.3750	3	4	6 5/8
1 3/8	1.3750	.4260	.3750	3	4	6 5/8
1 7/16	1.4375	.4260	.3750	4	4	7 7/8
1 1/2	1.5000	.4260	.3750	4	4	7 7/8
1 9/16	1.5625	.4890	.4375	4	4	8 1/8
1 5/8	1.6250	.4890	.4375	4	4	8 1/8
1 11/16	1.6875	.4890	.4375	4	4	8 1/8
1 3/4	1.7500	.4890	.4375	4	4	8 1/8
1 13/16	1.8125	.4890	.4375	4	4	8 1/8
1 7/8	1.8750	.4890	.4375	4	4	8 1/8
1 15/16	1.9375	.4890	.4375	4	4	8 1/8

Tool Diameter		Dimensions				
		Diameter		Taper	No. of Flutes	Overall Length
Frac.	Dec.	Min. Cut	Pilot Hole			
2	2.0000	.5510	.5000	4	4	8 ³ / ₈



COUNTERBORE PILOTS

CARBON STEEL PILOTS

The shank diameter ordered must be the same as the pilot shank hole diameter in the counterbore to be used.

The pilot diameter is always larger than the shank diameter and is determined by part to be machined.

Intermediate decimal or metric pilot diameters.

Shank diameter tolerance plus .0000" minus .0005".

Pilot diameter tolerance.

1/8 to 1/4 minus .001" minus .002".

9/32 to 7/8 minus .003" minus .004".

15/16 to 1-1/8 minus .005" minus .006".

Pilot Head Diameter		Shank Diameter
Frac.	Dec.	
1/8	.1250	3/32
5/32	.1563	3/32
3/16	.1875	3/32
3/16	.1875	5/32
7/32	.2188	5/32
7/32	.2188	3/32
7/32	.2188	3/16
1/4	.2500	5/32
1/4	.2500	3/32
1/4	.2500	3/16
9/32	.2813	1/4
9/32	.2813	3/32
9/32	.2813	3/16
9/32	.2813	5/32
5/16	.3125	1/4
5/16	.3125	3/32
5/16	.3125	3/16
5/16	.3125	5/32
11/32	.3438	1/4
11/32	.3438	3/32
11/32	.3438	3/16
11/32	.3438	5/32
11/32	.3438	5/16
3/8	.3750	5/32
3/8	.3750	5/16
3/8	.3750	1/4
3/8	.3750	3/16
13/32	.4063	1/4
13/32	.4063	3/16
13/32	.4063	5/32

Pilot Head Diameter		Shank Diameter
Frac.	Dec.	
$\frac{13}{32}$	.4063	$\frac{5}{16}$
$\frac{7}{16}$	.4375	$\frac{1}{4}$
$\frac{7}{16}$	.4375	$\frac{3}{16}$
$\frac{7}{16}$	.4375	$\frac{5}{32}$
$\frac{7}{16}$	.4375	$\frac{3}{8}$
$\frac{7}{16}$	.4375	$\frac{5}{16}$
$\frac{15}{32}$	.4688	$\frac{1}{4}$
$\frac{15}{32}$	.4688	$\frac{3}{16}$
$\frac{15}{32}$	.4688	$\frac{5}{16}$
$\frac{1}{2}$	.5000	$\frac{5}{16}$
$\frac{1}{2}$	.5000	$\frac{7}{16}$
$\frac{1}{2}$	.5000	$\frac{1}{4}$
$\frac{1}{2}$	.5000	$\frac{3}{16}$
$\frac{1}{2}$	.5000	$\frac{3}{8}$
$\frac{17}{32}$	.5313	$\frac{5}{16}$
$\frac{17}{32}$	.5313	$\frac{7}{16}$
$\frac{17}{32}$	.5313	$\frac{1}{4}$
$\frac{17}{32}$	.5313	$\frac{3}{16}$
$\frac{9}{16}$	.5625	$\frac{1}{4}$
$\frac{9}{16}$	.5625	$\frac{3}{16}$
$\frac{9}{16}$	.5625	$\frac{5}{16}$
$\frac{9}{16}$	.5625	$\frac{7}{16}$
$\frac{9}{16}$	.5625	$\frac{1}{2}$
$\frac{9}{16}$	.5625	$\frac{3}{8}$
$\frac{19}{32}$	.5938	$\frac{1}{4}$
$\frac{19}{32}$	.5938	$\frac{5}{16}$
$\frac{19}{32}$	.5938	$\frac{7}{16}$
$\frac{19}{32}$	.5938	$\frac{1}{2}$
$\frac{5}{8}$	.6250	$\frac{7}{16}$
$\frac{5}{8}$	.6250	$\frac{1}{2}$

Pilot Head Diameter		Shank Diameter
Frac.	Dec.	
$\frac{5}{8}$	.6250	$\frac{3}{8}$
$\frac{5}{8}$	.6250	$\frac{3}{16}$
$\frac{5}{8}$	.6250	$\frac{1}{4}$
$\frac{5}{8}$	.6250	$\frac{5}{16}$
$\frac{21}{32}$	.6563	$\frac{5}{16}$
$\frac{21}{32}$	.6563	$\frac{7}{16}$
$\frac{21}{32}$	.6563	$\frac{3}{16}$
$\frac{21}{32}$	.6563	$\frac{1}{4}$
$\frac{11}{16}$	.6875	$\frac{1}{2}$
$\frac{11}{16}$	.6875	$\frac{5}{16}$
$\frac{11}{16}$	.6875	$\frac{3}{8}$
$\frac{11}{16}$	.6875	$\frac{7}{16}$
$\frac{11}{16}$	.6875	$\frac{3}{16}$
$\frac{11}{16}$	.6875	$\frac{1}{4}$
$\frac{23}{32}$	.7188	$\frac{1}{4}$
$\frac{23}{32}$	.7188	$\frac{1}{2}$
$\frac{23}{32}$	.7188	$\frac{5}{16}$
$\frac{23}{32}$	.7188	$\frac{7}{16}$
$\frac{3}{4}$	.7500	$\frac{3}{16}$
$\frac{3}{4}$	.7500	$\frac{1}{4}$
$\frac{3}{4}$	.7500	$\frac{3}{8}$
$\frac{3}{4}$	.7500	$\frac{1}{2}$
$\frac{3}{4}$	.7500	$\frac{5}{16}$
$\frac{3}{4}$	.7500	$\frac{7}{16}$
$\frac{25}{32}$	.7813	$\frac{5}{16}$
$\frac{25}{32}$	.7813	$\frac{7}{16}$
$\frac{25}{32}$	.7813	$\frac{1}{4}$
$\frac{25}{32}$	.7813	$\frac{1}{2}$
$\frac{13}{16}$	.8125	$\frac{1}{2}$
$\frac{13}{16}$	.8125	$\frac{5}{16}$

Pilot Head Diameter		Shank Diameter
Frac.	Dec.	
$\frac{13}{16}$	.8125	$\frac{3}{16}$
$\frac{13}{16}$	.8125	$\frac{7}{16}$
$\frac{13}{16}$	.8125	$\frac{3}{8}$
$\frac{13}{16}$	.8125	$\frac{1}{4}$
$\frac{27}{32}$	.8438	$\frac{1}{4}$
$\frac{7}{8}$	.8750	$\frac{3}{8}$
$\frac{7}{8}$	.8750	$\frac{1}{4}$
$\frac{7}{8}$	.8750	$\frac{1}{2}$
$\frac{7}{8}$	.8750	$\frac{5}{16}$
$\frac{7}{8}$	.8750	$\frac{3}{16}$
$\frac{7}{8}$	.8750	$\frac{7}{16}$
$\frac{15}{16}$	.9375	$\frac{3}{8}$
$\frac{15}{16}$	.9375	$\frac{1}{4}$
$\frac{15}{16}$	.9375	$\frac{1}{2}$
$\frac{15}{16}$	.9375	$\frac{5}{16}$
$\frac{15}{16}$	.9375	$\frac{3}{16}$
$\frac{15}{16}$	.9375	$\frac{7}{16}$
1	1.0000	$\frac{7}{16}$
1	1.0000	$\frac{3}{8}$
1	1.0000	$\frac{1}{4}$
1	1.0000	$\frac{1}{2}$
1	1.0000	$\frac{5}{16}$
1	1.0000	$\frac{3}{16}$
$1 \frac{1}{16}$	1.0625	$\frac{1}{2}$
$1 \frac{1}{16}$	1.0625	$\frac{5}{16}$
$1 \frac{1}{16}$	1.0625	$\frac{7}{16}$
$1 \frac{1}{16}$	1.0625	$\frac{3}{8}$
$1 \frac{1}{8}$	1.1250	$\frac{1}{2}$
$1 \frac{1}{8}$	1.1250	$\frac{5}{16}$
$1 \frac{1}{8}$	1.1250	$\frac{7}{16}$

Pilot Head Diameter		Shank Diameter
Frac.	Dec.	
1 1/8	1.1250	3/8



CAPSCREW COUNTERBORES — CARBIDE TIPPED STRAIGHT SHANK

Carbide tips brazed to hardened alloy steel bodies.

Right spiral smooth flutes.

Integral pilot type.

Tools are designed with appropriate carbide grade and tool geometry for material being machined.

The pilot is manufactured in nominal screw body diameters as well as 1/64" and 1/32" over size diameters.

TOOL DIAMETER		PILOT DIAMETER	PILOT LENGTH	SHANK DIAMETER	OVERALL LENGTH	NUMBER OF FLUTES
DECIMAL	SCREW SIZE					
.3820	1/4	.2500	.3125	5/16	5 5/8	3
.3980	1/4	.2650	.3125	5/16	5 5/8	3
.4140	1/4	.2810	.3125	5/16	5 5/8	3
.4750	5/16	.3125	.3750	3/8	6 1/8	3
.4910	5/16	.3280	.3750	3/8	6 1/8	3

TOOL DIAMETER		PILOT DIAMETER	PILOT LENGTH	SHANK DIAMETER	OVERALL LENGTH	NUMBER OF FLUTES
DECIMAL	SCREW SIZE					
.5070	$\frac{5}{16}$	.3430	.3750	$\frac{3}{8}$	6 $\frac{1}{8}$	3
.5720	$\frac{3}{8}$	.3750	.5000	$\frac{1}{2}$	6 $\frac{1}{2}$	3
.5880	$\frac{3}{8}$	.3900	.5000	$\frac{1}{2}$	6 $\frac{1}{2}$	3
.6040	$\frac{3}{8}$	.4060	.5000	$\frac{1}{2}$	6 $\frac{1}{2}$	3
.6630	$\frac{7}{16}$	.4375	.5000	$\frac{1}{2}$	7	3
.6790	$\frac{7}{16}$	.4530	.5000	$\frac{1}{2}$	7	3
.6950	$\frac{7}{16}$	.4680	.5000	$\frac{1}{2}$	7	3
.7570	$\frac{1}{2}$	.5000	.5000	$\frac{1}{2}$	7 $\frac{1}{2}$	3
.7730	$\frac{1}{2}$	.5150	.5000	$\frac{1}{2}$	7 $\frac{1}{2}$	3
.7890	$\frac{1}{2}$	.5310	.5000	$\frac{1}{2}$	7 $\frac{1}{2}$	3
.8510	$\frac{9}{16}$	.5625	.5625	$\frac{5}{8}$	7 $\frac{5}{8}$	3
.8670	$\frac{9}{16}$	.5780	.5625	$\frac{5}{8}$	7 $\frac{5}{8}$	3
.8830	$\frac{9}{16}$	.5930	.5625	$\frac{5}{8}$	7 $\frac{5}{8}$	3
.9450	$\frac{5}{8}$	.6250	.6250	$\frac{5}{8}$	7 $\frac{5}{8}$	3
.9610	$\frac{5}{8}$	.6400	.6250	$\frac{5}{8}$	7 $\frac{5}{8}$	3
.9770	$\frac{5}{8}$	.6560	.6250	$\frac{5}{8}$	7 $\frac{5}{8}$	3
1.1330	$\frac{3}{4}$	.7500	.7500	$\frac{3}{4}$	7 $\frac{3}{4}$	3
1.1490	$\frac{3}{4}$	.7650	.7500	$\frac{3}{4}$	7 $\frac{3}{4}$	3
1.1650	$\frac{3}{4}$	.7810	.7500	$\frac{3}{4}$	7 $\frac{3}{4}$	3
1.3220	$\frac{7}{8}$	.8750	.8750	$\frac{7}{8}$	8 $\frac{1}{8}$	4
1.3380	$\frac{7}{8}$	.8910	.8750	$\frac{7}{8}$	8 $\frac{1}{8}$	4
1.3540	$\frac{7}{8}$	.9060	.8750	$\frac{7}{8}$	8 $\frac{1}{8}$	4
1.5100	1	1.0000	1.0000	1	8 $\frac{1}{2}$	4
1.5260	1	1.0150	1.0000	1	8 $\frac{1}{2}$	4
1.5420	1	1.0310	1.0000	1	8 $\frac{1}{2}$	4



CAPSCREW COUNTERBORES — CARBIDE TIPPED STRAIGHT SHANK

Carbide tips brazed to hardened alloy steel bodies.

Right spiral smooth flutes.

Integral pilot type.

Tools are designed with appropriate carbide grade and tool geometry for material being machined.

The pilot is manufactured in nominal screw body diameters as well as 1/64" and 1/32" over size diameters.

TOOL DIAMETER		PILOT DIAMETER	PILOT LENGTH	SHANK DIAMETER	OVERALL LENGTH	NUMBER OF FLUTES
DECIMAL	SCREW SIZE MM					
.3543	5	5.5	$\frac{9}{32}$	$\frac{5}{16}$	5 $\frac{5}{8}$	3
.4134	6	6.5	$\frac{5}{16}$	$\frac{5}{16}$	5 $\frac{5}{8}$	3
.5315	8	8.5	$\frac{3}{8}$	$\frac{1}{2}$	6 $\frac{1}{2}$	3
.6496	10	10.5	$\frac{1}{2}$	$\frac{1}{2}$	7	3
.7283	12	12.5	$\frac{1}{2}$	$\frac{1}{2}$	7 $\frac{1}{2}$	3
.8465	14	14.5	$\frac{9}{16}$	$\frac{5}{8}$	7 $\frac{5}{8}$	3
.9646	16	16.5	$\frac{5}{8}$	$\frac{5}{8}$	7 $\frac{5}{8}$	3
1.2008	20	20.5	$\frac{3}{4}$	$\frac{7}{8}$	8	3



CAPSCREW COUNTERBORES — CARBIDE TIPPED STRAIGHT SHANK

Carbide tips brazed to hardened alloy steel bodies.

Right spiral smooth flutes.

Integral pilot type.

Tools are designed with appropriate carbide grade and tool geometry for material being machined.

The pilot is manufactured in nominal screw body diameters as well as 1/64" and 1/32" over size diameters.

TOOL DIAMETER		PILOT DIAMETER	PILOT LENGTH	SHANK DIAMETER	OVERALL LENGTH	NUMBER OF FLUTES
DECIMAL	SCREW SIZE					
.3820	1/4	.2500	.3125	5/16	5 5/8	3
.3980	1/4	.2650	.3125	5/16	5 5/8	3
.4140	1/4	.2810	.3125	5/16	5 5/8	3
.4750	5/16	.3125	.3750	3/8	6 1/8	3
.4910	5/16	.3280	.3750	3/8	6 1/8	3
.5070	5/16	.3430	.3750	3/8	6 1/8	3
.5720	3/8	.3750	.5000	1/2	6 1/2	3
.5880	3/8	.3900	.5000	1/2	6 1/2	3
.6040	3/8	.4060	.5000	1/2	6 1/2	3
.6630	7/16	.4375	.5000	1/2	7	3
.6790	7/16	.4530	.5000	1/2	7	3

TOOL DIAMETER		PILOT DIAMETER	PILOT LENGTH	SHANK DIAMETER	OVERALL LENGTH	NUMBER OF FLUTES
DECIMAL	SCREW SIZE					
.6950	$\frac{7}{16}$	.4680	.5000	$\frac{1}{2}$	7	3
.7570	$\frac{1}{2}$	.5000	.5000	$\frac{1}{2}$	7 $\frac{1}{2}$	3
.7730	$\frac{1}{2}$	.5150	.5000	$\frac{1}{2}$	7 $\frac{1}{2}$	3
.7890	$\frac{1}{2}$	.5310	.5000	$\frac{1}{2}$	7 $\frac{1}{2}$	3
.8510	$\frac{9}{16}$	.5625	.5625	$\frac{5}{8}$	7 $\frac{5}{8}$	3
.8670	$\frac{9}{16}$	.5780	.5625	$\frac{5}{8}$	7 $\frac{5}{8}$	3
.8830	$\frac{9}{16}$	.5930	.5625	$\frac{5}{8}$	7 $\frac{5}{8}$	3
.9450	$\frac{5}{8}$	.6250	.6250	$\frac{5}{8}$	7 $\frac{5}{8}$	3
.9610	$\frac{5}{8}$	.6400	.6250	$\frac{5}{8}$	7 $\frac{5}{8}$	3
.9770	$\frac{5}{8}$	.6560	.6250	$\frac{5}{8}$	7 $\frac{5}{8}$	3
1.1330	$\frac{3}{4}$	.7500	.7500	$\frac{3}{4}$	7 $\frac{3}{4}$	3
1.1490	$\frac{3}{4}$	.7650	.7500	$\frac{3}{4}$	7 $\frac{3}{4}$	3
1.1650	$\frac{3}{4}$	.7810	.7500	$\frac{3}{4}$	7 $\frac{3}{4}$	3
1.3220	$\frac{7}{8}$	.8750	.8750	$\frac{7}{8}$	8 $\frac{1}{8}$	4
1.3380	$\frac{7}{8}$	.8910	.8750	$\frac{7}{8}$	8 $\frac{1}{8}$	4
1.3540	$\frac{7}{8}$	.9060	.8750	$\frac{7}{8}$	8 $\frac{1}{8}$	4
1.5100	1	1.0000	1.0000	1	8 $\frac{1}{2}$	4
1.5260	1	1.0150	1.0000	1	8 $\frac{1}{2}$	4
1.5420	1	1.0310	1.0000	1	8 $\frac{1}{2}$	4



CAPSCREW COUNTERBORES — CARBIDE TIPPED STRAIGHT SHANK

Carbide tips brazed to hardened alloy steel bodies.

Right spiral smooth flutes.

Integral pilot type.

Tools are designed with appropriate carbide grade and tool geometry for material being machined.

The pilot is manufactured in nominal screw body diameters as well as 1/64" and 1/32" over size

Below are the critical dimensions of our Capscrew Counterbores. Please choose the Counterbores that meets your tooling needs.

TOOL DIAMETER		PILOT DIAMETER	PILOT LENGTH	SHANK DIAMETER	OVERALL LENGTH	NUMBER OF FLUTES
DECIMAL	SCREW SIZE MM					
.3543	5	5.5	$\frac{9}{32}$	$\frac{5}{16}$	5 $\frac{5}{8}$	3
.4134	6	6.5	$\frac{5}{16}$	$\frac{5}{16}$	5 $\frac{5}{8}$	3
.5315	8	8.5	$\frac{3}{8}$	$\frac{1}{2}$	6 $\frac{1}{2}$	3
.6496	10	10.5	$\frac{1}{2}$	$\frac{1}{2}$	7	3
.7283	12	12.5	$\frac{1}{2}$	$\frac{1}{2}$	7 $\frac{1}{2}$	3
.8465	14	14.5	$\frac{9}{16}$	$\frac{5}{8}$	7 $\frac{5}{8}$	3
.9646	16	16.5	$\frac{5}{8}$	$\frac{5}{8}$	7 $\frac{5}{8}$	3
1.2008	20	20.5	$\frac{3}{4}$	$\frac{7}{8}$	8	3



S.A.E. PORTS — MS16142 · J514F · J1926 CARBIDE TIPPED STRAIGHT SHANK

5° axial rake.

Negative radial rake.

Full form relieved cutting edges without O.D. lands provide true form and size for the tool life.

Can be resharpended with a simple face grind.

Heat treated bodies.

All tolerances within military specs.

TUBE		DIMENSIONS								
NO	SIZ E	THREA D SIZE	DIAMETER			SEALIN G SEAT ANGLE	LENGTH			
			REAME R	SPOTFAC E	SHAN K		SHAN K	REAME R	HEA D	OVERAL L
2	1/8	5/16 – 24	.2720	.6820	.5000	12°	2	.4730	1 1/8	3 1/8
3	3/16	3/8 – 24	.3350	.7600	.5000	12°	2	.4730	1 1/4	3 1/4
4	1/4	7/16 – 20	.3890	.8380	.5000	12°	2	.5520	1 1/4	3 1/4
5	5/16	1/2 – 20	.4520	.9160	.5000	12°	2	.5520	1 1/4	3 1/4
6	3/8	9/16 – 18	.5090	.9790	.5000	12°	2	.6140	1 1/4	3 1/4

TUBE		DIMENSIONS								
NO	SIZ E	THREA D SIZE	DIAMETER			SEALIN G SEAT ANGLE	LENGTH			
			REAME R	SPOTFAC E	SHAN K		SHAN K	REAME R	HEA D	OVERAL L
8	1/2	3/4 - 16	.6890	1.1980	.7500	15°	2	.6930	1 3/8	3 3/8
10	5/8	7/8 - 14	.8060	1.3540	.7500	15°	2	.7860	1 5/8	3 5/8
12	3/4	1 1/16 - 12	.9810	1.6350	.7500	15°	2 1/4	.9110	1 7/8	4 1/8
14	7/8	1 3/16 - 12	1.1060	1.7750	.7500	15°	2 1/4	.9110	1 7/8	4 1/8
16	1	1 5/16 - 12	1.2310	1.9200	.7500	15°	2 1/4	.9110	1 7/8	4 1/8
20	1 1/4	1 5/8 - 12	1.5440	2.2800	1.0000	15°	2 1/4	.9110	2	4 1/4
24	1 1/2	1 7/8 - 12	1.7940	2.5700	1.0000	15°	2 1/4	.9110	2	4 1/4
32	2	2 1/2 - 12	2.4190	3.4900	1.0000	15°	2 1/4	.9110	2 1/4	4 1/2



S.A.E. PORTS — MS16142 · J514F · J1926 CARBIDE TIPPED STRAIGHT SHANK

5° axial rake.

Negative radial rake.

Full form relieved cutting edges without O.D. lands provide true form and size for the tool life.

Can be resharpened with a simple face grind.

Heat treated bodies.

All tolerances within military specs.

Below are the critical dimensions of our S.A.E Ports - MS16142 Port Contour Cutters. Please choose the Port Contour Cutters that meets your tooling needs.

TUBE		DIMENSIONS								
NO	SIZ E	THREA D SIZE	DIAMETER			SEALIN G SEAT ANGLE	LENGTH			
			REAME R	SPOTFAC E	SHAN K		SHAN K	REAME R	HEA D	OVERAL L
2	1/8	5/16 - 24	.2720	.6820	.5000	12°	2	.4730	1 1/8	3 1/8
3	3/16	3/8 - 24	.3350	.7600	.5000	12°	2	.4730	1 1/4	3 1/4
4	1/4	7/16 - 20	.3890	.8380	.5000	12°	2	.5520	1 1/4	3 1/4

TUBE		DIMENSIONS								
NO	SIZ E	THREA D SIZE	DIAMETER			SEALIN G SEAT ANGLE	LENGTH			
			REAME R	SPOTFAC E	SHAN K		SHAN K	REAME R	HEA D	OVERAL L
5	5/16	1/2 - 20	.4520	.9160	.5000	12°	2	.5520	1 1/4	3 1/4
6	3/8	9/16 - 18	.5090	.9790	.5000	12°	2	.6140	1 1/4	3 1/4
8	1/2	3/4 - 16	.6890	1.1980	.7500	15°	2	.6930	1 3/8	3 3/8
10	5/8	7/8 - 14	.8060	1.3540	.7500	15°	2	.7860	1 5/8	3 5/8
12	3/4	1 1/16 - 12	.9810	1.6350	.7500	15°	2 1/4	.9110	1 7/8	4 1/8
14	7/8	1 3/16 - 12	1.1060	1.7750	.7500	15°	2 1/4	.9110	1 7/8	4 1/8
16	1	1 5/16 - 12	1.2310	1.9200	.7500	15°	2 1/4	.9110	1 7/8	4 1/8
20	1 1/4	1 5/8 - 12	1.5440	2.2800	1.0000	15°	2 1/4	.9110	2	4 1/4
24	1 1/2	1 7/8 - 12	1.7940	2.5700	1.0000	15°	2 1/4	.9110	2	4 1/4
32	2	2 1/2 - 12	2.4190	3.4900	1.0000	15°	2 1/4	.9110	2 1/4	4 1/2



MS 33649 INTEGRAL REAMER PILOT — CARBIDE TIPPED STRAIGHT SHANK

5° axial rake.

Negative radial rake.

Full form relieved cutting edges without O.D. lands provide true form and size for the tool life.

Can be resharpener with a simple face grind.

Heat treated bodies.

All tolerances within military specs.

TUBE		DIMENSIONS							
NO.	SIZE	THREAD SIZE	DIAMETER			LENGTH			
			REAMER	SPOTFACE	SHANK	SHANK	REAMER	HEAD	OVERALL
1	1/16	1/4 - 28	.2150	.6500	.5000	2	.4070	1	3
2	1/8	5/16 - 24	.2750	.7420	.5000	2	.5820	1 1/8	3 1/8
3	3/16	3/8 - 24	.3390	.8050	.5000	2	.5880	1 1/4	3 1/4
4	1/4	7/16 - 20	.3930	.8880	.5000	2	.6610	1 1/4	3 1/4
5	5/16	1/2 - 20	.4550	.9500	.5000	2	.6610	1 1/4	3 1/4
6	3/8	9/16 - 18	.5120	1.0120	.5000	2	.7140	1 1/2	3 1/2
7	7/16	5/8 - 18	.5750	1.1050	.5000	2	.7300	1 1/2	3 1/2
8	1/2	3/4 - 16	.6930	1.2400	.7500	2	.8390	1 5/8	3 5/8
9	9/16	13/16 - 16	.7560	1.3020	.7500	2	.8550	1 5/8	3 5/8
10	5/8	7/8 - 14	.8100	1.4150	.7500	2 1/4	.9350	1 7/8	4 1/8

TUBE		DIMENSIONS							
NO.	SIZE	THREAD SIZE	DIAMETER			LENGTH			
			REAMER	SPOTFACE	SHANK	SHANK	REAMER	HEAD	OVERALL
11	1 ¹ / ₁₆	1 – 12	.9250	1.6020	.7500	2 1/4	1.0690	2 1/8	4 3/8
12	3/4	1 1/16 – 12	.9870	1.6650	.7500	2 1/4	1.0690	2 1/8	4 3/8
14	7/8	1 3/16 – 12	1.1120	1.7900	.7500	2 1/4	1.0690	2 1/8	4 3/8
16	1	1 5/16 – 12	1.2370	1.9650	.7500	2 1/4	1.0690	2 1/8	4 3/8
18	1 1/8	1 1/2 – 12	1.4250	2.0900	.7500	2 1/4	1.1210	2 1/4	4 1/2
20	1 1/4	1 5/8 – 12	1.5500	2.3100	1.0000	2 1/4	1.1210	2 1/4	4 1/2
24	1 1/2	1 7/8 – 12	1.8000	2.6000	1.0000	2 1/4	1.1320	2 1/4	4 1/2
32	2	2 1/2 – 12	2.4250	3.5200	1.0000	2 1/2	1.3730	2 1/2	5



MS 3369 INTEGRAL REAMER PILOT — CARBIDE TIPPED STRAIGHT SHANK

5° axial rake.

Negative radial rake.

Full form relieved cutting edges without O.D. lands provide true form and size for the tool life.

Can be resharpened with a simple face grind.

Heat treated bodies.

All tolerances within military specs.

TUBE		DIMENSIONS							
NO.	SIZE	THREAD SIZE	DIAMETER			LENGTH			
			REAMER	SPOTFACE	SHANK	SHANK	REAMER	HEAD	OVERALL
1	1/16	1/4 - 28	.2150	.6500	.5000	2	.4070	1	3
2	1/8	5/16 - 24	.2750	.7420	.5000	2	.5820	1 1/8	3 1/8
3	3/16	3/8 - 24	.3390	.8050	.5000	2	.5880	1 1/4	3 1/4
4	1/4	7/16 - 20	.3930	.8880	.5000	2	.6610	1 1/4	3 1/4
5	5/16	1/2 - 20	.4550	.9500	.5000	2	.6610	1 1/4	3 1/4
6	3/8	9/16 - 18	.5120	1.0120	.5000	2	.7140	1 1/2	3 1/2
7	7/16	5/8 - 18	.5750	1.1050	.5000	2	.7300	1 1/2	3 1/2
8	1/2	3/4 - 16	.6930	1.2400	.7500	2	.8390	1 5/8	3 5/8
9	9/16	13/16 - 16	.7560	1.3020	.7500	2	.8550	1 5/8	3 5/8
10	5/8	7/8 - 14	.8100	1.4150	.7500	2 1/4	.9350	1 7/8	4 1/8
11	11/16	1 - 12	.9250	1.6020	.7500	2 1/4	1.0690	2 1/8	4 3/8
12	3/4	1 1/16 - 12	.9870	1.6650	.7500	2 1/4	1.0690	2 1/8	4 3/8
14	7/8	1 3/16 - 12	1.1120	1.7900	.7500	2 1/4	1.0690	2 1/8	4 3/8
16	1	1 5/16 - 12	1.2370	1.9650	.7500	2 1/4	1.0690	2 1/8	4 3/8
18	1 1/8	1 1/2 - 12	1.4250	2.0900	.7500	2 1/4	1.1210	2 1/4	4 1/2
20	1 1/4	1 5/8 - 12	1.5500	2.3100	1.0000	2 1/4	1.1210	2 1/4	4 1/2
24	1 1/2	1 7/8 - 12	1.8000	2.6000	1.0000	2 1/4	1.1320	2 1/4	4 1/2
32	2	2 1/2 - 12	2.4250	3.5200	1.0000	2 1/2	1.3730	2 1/2	5

CARMET
TOOLS & INSERTS



END MILLS — CARBIDE TIPPED TWO STRAIGHT FLUTES

Flute long carbide tips brazed to hardened alloy steel bodies.

Cutting diameter NC tolerance plus .002" minus .000".

Straight shanks with drive flats.

Tool		Dimensions			
Diameter		Shank Diameter	No. of Flutes	Length	
Frac.	Dec.			Carbide	Overall
1/4	.2500	3/8	2	1/2	2 1/2
5/16	.3125	3/8	2	5/8	2 1/2
3/8	.3750	3/8	2	5/8	2 1/2
7/16	.4375	3/8	2	1	2 11/16
1/2	.5000	1/2	2	1	3 1/4
9/16	.5625	1/2	2	1	3 3/8
5/8	.6250	1/2	2	1	3 3/8
11/16	.6875	5/8	2	1	3 3/8
3/4	.7500	5/8	2	1	3 5/8
13/16	.8125	5/8	2	1	3 5/8
7/8	.8750	5/8	2	1 1/4	4
15/16	.9375	7/8	2	1 1/4	4
1	1.0000	7/8	2	1 1/4	4
1 1/8	1.1250	1	2	1 1/4	4 1/4
1 1/4	1.2500	1	2	1 1/4	4 1/4
1 1/2	1.5000	1 1/4	2	1 1/2	4 1/2
1 3/4	1.7500	1 1/4	2	1 1/2	4 1/2
2	2.0000	1 1/4	2	1 1/2	4 1/2



END MILLS — CARBIDE TIPPED TWO STRAIGHT FLUTES

Steel cutting grade flute long carbide tips brazed to hardened alloy steel bodies.

Cutting diameter NC tolerance plus .002" minus .000".

Straight shanks with drive flats.

Tool Diameter		Dimensions			
Frac.	Dec.	Shank Diameter	No. of Flutes	Length	
				Carbide	Overall
1/4	.2500	3/8	2	1/2	2 1/2
5/16	.3125	3/8	2	5/8	2 1/2
3/8	.3750	3/8	2	5/8	2 1/2
7/16	.4375	3/8	2	1	2 11/16
1/2	.5000	1/2	2	1	3 1/4
9/16	.5625	1/2	2	1	3 3/8
5/8	.6250	1/2	2	1	3 3/8
3/4	.7500	5/8	2	1	3 5/8
7/8	.8750	5/8	2	1 1/4	4
1	1.0000	7/8	2	1 1/4	4
1 1/8	1.1250	1	2	1 1/4	4 1/4
1 1/4	1.2500	1	2	1 1/4	4 1/4
1 1/2	1.5000	1 1/4	2	1 1/2	4 1/2

Tool Diameter		Dimensions			
Frac.	Dec.	Shank Diameter	No. of Flutes	Length	
				Carbide	Overall
1 3/4	1.7500	1 1/4	2	1 1/2	4 1/2
2	2.0000	1 1/4	2	1 1/2	4 1/2



END MILLS — CARBIDE TIPPED

6° RIGHT SPIRAL FLUTES

Flute long carbide tips brazed to hardened alloy steel bodies.

Cutting diameter NC tolerance plus .002" minus .000".

Straight shanks with drive flats.

Tool Diameter		Dimensions			
Frac.	Dec.	Shank Diameter	No. of Flutes	Length	
				Carbide	Overall
1/4	.2500	3/8	2	1/2	2 1/2
5/16	.3125	3/8	2	5/8	2 1/2
3/8	.3750	3/8	2	5/8	2 1/2
7/16	.4375	3/8	2	1	2 11/16
1/2	.5000	1/2	2	1	3 1/4
9/16	.5625	1/2	2	1	3 3/8

Tool Diameter		Dimensions			
		Shank Diameter	No. of Flutes	Length	
Frac.	Dec.			Carbide	Overall
5/8	.6250	1/2	4	1	3 3/8
3/4	.7500	5/8	4	1	3 5/8
7/8	.8750	5/8	4	1 1/4	4
1	1.0000	7/8	4	1 1/4	4
1 1/8	1.1250	1	4	1 1/4	4 1/4
1 1/4	1.2500	1	4	1 1/4	4 1/4
1 1/2	1.5000	1 1/4	4	1 1/2	4 1/2
1 3/4	1.7500	1 1/4	6	1 1/2	4 1/2
2	2.0000	1 1/4	6	1 1/2	4 1/2



END MILLS — CARBIDE TIPPED STRAIGHT FLUTES

Flute long carbide tips brazed to hardened alloy steel bodies.

Cutting diameter NC tolerance plus .002" minus .000".

Straight shanks with drive flats.

Tool Diameter		Dimensions			
		Shank Diameter	No. of Flutes	Length	
Frac.	Dec.			Carbide	Overall
1/4	.2500	3/8	4	1/2	2 1/2
5/16	.3125	3/8	4	5/8	2 1/2
3/8	.3750	3/8	4	5/8	2 1/2
7/16	.4375	3/8	4	1	2 11/16
1/2	.5000	1/2	4	1	3 1/4
9/16	.5625	1/2	4	1	3 3/8
5/8	.6250	1/2	4	1	3 3/8
11/16	.6875	5/8	4	1	3 3/8
3/4	.7500	5/8	4	1	3 5/8
13/16	.8125	5/8	4	1	3 5/8
7/8	.8750	5/8	4	1 1/4	4
15/16	.9375	7/8	4	1 1/4	4
1	1.0000	7/8	4	1 1/4	4
1 1/8	1.1250	1	4	1 1/4	4 1/4
1 1/4	1.2500	1	4	1 1/4	4 1/4
1 1/2	1.5000	1 1/4	4	1 1/2	4 1/2
1 3/4	1.7500	1 1/4	6	1 1/2	4 1/2
2	2.0000	1 1/4	6	1 1/2	4 1/2



END MILLS — CARBIDE TIPPED 6° RIGHT SPIRAL FLUTES

Steel cutting grade flute long carbide tips brazed to hardened alloy steel bodies.
Cutting diameter NC tolerance plus .002" minus .000".
Straight shanks with drive flats.

Tool Diameter		Dimensions			
Frac.	Dec.	Shank Diameter	No. of Flutes	Length	
				Carbide	Overall
1/4	.2500	3/8	2	1/2	2 1/2
5/16	.3125	3/8	2	5/8	2 1/2
3/8	.3750	3/8	2	5/8	2 1/2
7/16	.4375	3/8	2	1	2 11/16
1/2	.5000	1/2	4	1	3 1/4
9/16	.5625	1/2	4	1	3 3/8
5/8	.6250	1/2	4	1	3 3/8
3/4	.7500	5/8	4	1	3 5/8
7/8	.8750	5/8	4	1 1/4	4
1	1.0000	7/8	6	1 1/4	4
1 1/8	1.1250	1	6	1 1/4	4 1/4

7/8	.8750	5/8	4	1 1/4	4
1	1.0000	7/8	6	1 1/4	4
1 1/8	1.1250	1	6	1 1/4	4 1/4
1 1/4	1.2500	1	6	1 1/4	4 1/4

1 1/2	1.5000	1 1/4	6	1 1/2	4 1/2
1 3/4	1.7500	1 1/4	8	1 1/2	4 1/2
2	2.0000	1 1/4	8	1 1/2	4 1/2



END MILLS — CARBIDE TIPPED

6° LEFT SPIRAL FLUTES

Steel cutting grade flute long carbide tips brazed to hardened tool steel bodies.

Cutting diameter NC tolerance plus .002" minus .000".

Tool Diameter		Dimensions			
		Shank Diameter	No. of Flutes	Length	
Frac.	Dec.			Carbide	Overall
1/4	.2500	3/8	2	1/2	2 1/2
5/16	.3125	3/8	2	5/8	2 1/2
3/8	.3750	3/8	2	5/8	2 1/2
7/16	.4375	3/8	2	1	2 11/16
1/2	.5000	1/2	4	1	3 1/4
9/16	.5625	1/2	4	1	3 3/8
5/8	.6250	1/2	4	1	3 3/8

Tool Diameter		Dimensions			
		Shank Diameter	No. of Flutes	Length	
Frac.	Dec.			Carbide	Overall
$\frac{3}{4}$	.7500	$\frac{5}{8}$	4	1	$3 \frac{5}{8}$
$\frac{7}{8}$	.8750	$\frac{5}{8}$	4	$1 \frac{1}{4}$	4
1	1.0000	$\frac{7}{8}$	6	$1 \frac{1}{4}$	4
$1 \frac{1}{8}$	1.1250	1	6	$1 \frac{1}{4}$	$4 \frac{1}{4}$
$1 \frac{1}{4}$	1.2500	1	6	$1 \frac{1}{4}$	$4 \frac{1}{4}$
$1 \frac{1}{2}$	1.5000	$1 \frac{1}{4}$	6	$1 \frac{1}{2}$	$4 \frac{1}{2}$
$1 \frac{3}{4}$	1.7500	$1 \frac{1}{4}$	8	$1 \frac{1}{2}$	$4 \frac{1}{2}$
2	2.0000	$1 \frac{1}{4}$	8	$1 \frac{1}{2}$	$4 \frac{1}{2}$



CORNER ROUND END MILLS — CARBIDE TIPPED

CORNER ROUNDING END MILLS FOR NON-FERROUS MATERIALS AND CAST IRON

All sizes have three flutes and are used to mill round corners on square edges.

Circle Radius	Tool Diameter	Dimensions			
		Diameter		Length	
		Shank	End	Carbide	Overall
$\frac{1}{16}$	$\frac{7}{16}$	$\frac{3}{8}$	$\frac{17}{64}$	$\frac{13}{32}$	$2 \frac{3}{4}$

Circle Radius	Tool Diameter	Dimensions			
		Diameter		Length	
		Shank	End	Carbide	Overall
$3/32$	$1/2$	$3/8$	$17/64$	$13/32$	$2\ 3/4$
$1/8$	$5/8$	$1/2$	$19/64$	$13/32$	3
$5/32$	$3/4$	$1/2$	$23/64$	$13/32$	3
$3/16$	$7/8$	$3/4$	$13/32$	$13/32$	$3\ 1/4$
$1/4$	1	$3/4$	$13/32$	$15/32$	$3\ 1/4$
$5/16$	$1\ 1/8$	$7/8$	$13/32$	$19/32$	$3\ 1/2$
$3/8$	$1\ 1/4$	$7/8$	$13/32$	$25/32$	$3\ 3/4$
$7/16$	$1\ 3/8$	1	$13/32$	$7/8$	4
$1/2$	$1\ 1/2$	1	$13/32$	1	4
$5/8$	2	$1\ 1/4$	$21/32$	$1\ 7/32$	$4\ 1/4$



CORNER ROUND END MILLS — CARBIDE TIPPED
CORNER ROUND END MILLS FOR STEEL

All sizes have three flutes and are used to mill round corners on square edges.

Circle Radius	Tool Diameter	Dimensions			
		Diameter		Length	
		Shank	End	Carbide	Overall
1/16	7/16	3/8	17/64	13/32	2 3/4
3/32	1/2	3/8	17/64	13/32	2 3/4
1/8	5/8	1/2	19/64	13/32	3
5/32	3/4	1/2	23/64	13/32	3
3/16	7/8	3/4	13/32	13/32	3 1/4
1/4	1	3/4	13/32	15/32	3 1/4
5/16	1 1/8	7/8	13/32	19/32	3 1/2
3/8	1 1/4	7/8	13/32	25/32	3 3/4
7/16	1 3/8	1	13/32	7/8	4
1/2	1 1/2	1	13/32	1	4
5/8	2	1 1/4	21/32	1 7/32	4 1/4



SHELL END MILLS — CARBIDE TIPPED FOR NON-FERROUS MACHINING

Right hand spiral.

Carbide tips brazed to hardened alloy steel bodies.

Cutting diameter tolerance plus 1/16" minus .000".

Arbor hole tolerance plus .001" minus .0000".

Tool	Dimensions				
	Arbor Hole	Overall Length	Drive Slots		No. of Teeth
			Width	Depth	
Diameter					
1 1/4	1/2	1	1/4	5/32	4
1 1/2	1/2	1 1/8	1/4	5/32	4
1 3/4	3/4	1 1/4	5/16	3/16	4
2	3/4	1 3/8	5/16	3/16	4
2 1/4	1	1 1/2	3/8	7/32	6
2 1/2	1	1 5/8	3/8	7/32	6
2 3/4	1	1 5/8	3/8	7/32	6
3	1 1/4	1 3/4	1/2	9/32	6
3 1/2	1 1/4	1 7/8	1/2	9/32	6
4	1 1/2	2 1/4	5/8	3/8	6



SHELL END MILLS — CARBIDE TIPPED FOR CAST IRON MACHINING

Carbide tips brazed to hardened alloy steel bodies.

Cutting diameter tolerance plus 1/16" minus .000".

Arbor hole tolerance plus .001" minus .0000".

Tool	Dimensions				
	Arbor Hole	Overall Length	Drive Slots		No. of Teeth
			Width	Depth	
Diameter					
1 1/4	1/2	1	1/4	5/32	4
1 1/2	1/2	1 1/8	1/4	5/32	4
1 3/4	3/4	1 1/4	5/16	3/16	4
2	3/4	1 3/8	5/16	3/16	4
2 1/4	1	1 1/2	3/8	7/32	6
2 1/2	1	1 5/8	3/8	7/32	6
2 3/4	1	1 5/8	3/8	7/32	6
3	1 1/4	1 3/4	1/2	9/32	6
3 1/2	1 1/4	1 7/8	1/2	9/32	8
4	1 1/2	2 1/4	5/8	3/8	8



SHELL END MILLS — CARBIDE TIPPED FOR STEEL MACHINING

Left-hand spiral absorbs the impact shock on entering steel.

Carbide tips brazed to hardened alloy steel bodies.

Cutting diameter tolerance plus 1/16" minus .000".

Arbor hole tolerance plus .001" minus .0000".

Tool	Dimensions				
	Arbor Hole	Overall Length	Drive Slots		No. of Teeth
			Width	Depth	
1 1/4	1/2	1	1/4	5/32	4

Tool	Dimensions					
	Diameter	Arbor Hole	Overall Length	Drive Slots		No. of Teeth
				Width	Depth	
1 1/2	1/2	1 1/8	1/4	5/32	4	
1 3/4	3/4	1 1/4	5/16	3/16	4	
2	3/4	1 3/8	5/16	3/16	4	
2 1/4	1	1 1/2	3/8	7/32	6	
2 1/2	1	1 5/8	3/8	7/32	6	
2 3/4	1	1 5/8	3/8	7/32	6	
3	1 1/4	1 3/4	1/2	9/32	6	
3 1/2	1 1/4	1 7/8	1/2	9/32	6	
4	1 1/2	2 1/4	5/8	3/8	6	



HIGH SPIRAL END MILLS — CARBIDE TIPPED 25° RIGHT SPIRAL FLUTES

Flute long carbide tips brazed to hardened alloy steel bodies.
Cutting diameter NC tolerance plus .002" minus .000".

Tool		Dimensions			
		Shank Diameter	No. of Flutes	Length	
Frac.	Dec.			Carbide	Overall
1/2	.5000	3/8	2	1	3
1/2	.5000	1/2	2	1	3
9/16	.5625	1/2	2	1	3

Tool Diameter		Dimensions			
		Shank Diameter	No. of Flutes	Length	
Frac.	Dec.			Carbide	Overall
$\frac{5}{8}$	.6250	$\frac{1}{2}$	2	1 $\frac{1}{4}$	3 $\frac{1}{4}$
$\frac{5}{8}$	.6250	$\frac{5}{8}$	2	1 $\frac{1}{4}$	3 $\frac{3}{8}$
$\frac{11}{16}$	.6875	$\frac{1}{2}$	2	1 $\frac{1}{4}$	3 $\frac{1}{4}$
$\frac{11}{16}$	.6875	$\frac{5}{8}$	2	1 $\frac{1}{4}$	3 $\frac{3}{8}$
$\frac{3}{4}$	.7500	$\frac{1}{2}$	2	1 $\frac{1}{4}$	3 $\frac{1}{4}$
$\frac{3}{4}$	.7500	$\frac{5}{8}$	2	1 $\frac{1}{4}$	3 $\frac{3}{8}$
$\frac{13}{16}$	.8125	$\frac{5}{8}$	2	1 $\frac{1}{2}$	3 $\frac{5}{8}$
$\frac{7}{8}$	.8750	$\frac{5}{8}$	2	1 $\frac{1}{2}$	3 $\frac{5}{8}$
$\frac{7}{8}$	.8750	$\frac{7}{8}$	2	1 $\frac{1}{2}$	3 $\frac{3}{4}$
$\frac{15}{16}$	.9375	$\frac{5}{8}$	2	1 $\frac{1}{2}$	3 $\frac{3}{4}$
$\frac{15}{16}$	.9375	$\frac{7}{8}$	2	1 $\frac{1}{2}$	3 $\frac{3}{4}$
1	1.0000	$\frac{7}{8}$	2	1 $\frac{1}{2}$	3 $\frac{3}{4}$
1	1.0000	1	2	1 $\frac{1}{2}$	4
1 $\frac{1}{8}$	1.1250	1	2	1 $\frac{3}{4}$	4 $\frac{1}{4}$
1 $\frac{1}{4}$	1.2500	1	3	1 $\frac{3}{4}$	4 $\frac{1}{4}$
1 $\frac{3}{8}$	1.3750	1	3	1 $\frac{3}{4}$	4 $\frac{1}{4}$
1 $\frac{1}{2}$	1.5000	1 $\frac{1}{4}$	3	2	4 $\frac{1}{2}$
1 $\frac{5}{8}$	1.6250	1 $\frac{1}{4}$	3	2	4 $\frac{1}{2}$
1 $\frac{3}{4}$	1.7500	1 $\frac{1}{4}$	3	2	4 $\frac{1}{2}$
1 $\frac{7}{8}$	1.8750	1 $\frac{1}{4}$	3	2	4 $\frac{1}{2}$
2	2.0000	1 $\frac{1}{4}$	3	2	4 $\frac{1}{2}$



HIGH SPIRAL END MILLS — CARBIDE TIPPED 15° RIGHT SPIRAL FLUTES

Flute long, steel cutting grade carbide tips brazed to hardened alloy steel bodies.
Cutting diameter NC tolerance plus .002" minus .000".
Straight shank with drive flats.

Tool Diameter		Dimensions			
		Shank Diameter	No. of Flutes	Length	
Frac.	Dec.			Carbide	Overall
1/2	.5000	3/8	4	1	3
1/2	.5000	1/2	4	1	3
9/16	.5625	1/2	4	1	3
5/8	.6250	1/2	4	1 1/4	3 1/4
5/8	.6250	5/8	4	1 1/4	3 3/8
11/16	.6875	1/2	4	1 1/4	3 1/4
11/16	.6875	5/8	4	1 1/4	3 3/8
3/4	.7500	1/2	4	1 1/4	3 1/4
3/4	.7500	5/8	4	1 1/4	3 3/8
13/16	.8125	5/8	4	1 1/2	3 5/8
7/8	.8750	5/8	4	1 1/2	3 5/8
7/8	.8750	7/8	4	1 1/2	3 3/4
15/16	.9375	5/8	4	1 1/2	3 3/4
15/16	.9375	7/8	4	1 1/2	3 3/4

Tool Diameter		Dimensions			
		Shank Diameter	No. of Flutes	Length	
Frac.	Dec.			Carbide	Overall
1	1.0000	$\frac{7}{8}$	6	1 $\frac{1}{2}$	3 $\frac{3}{4}$
1	1.0000	1	6	1 $\frac{1}{2}$	4
1 $\frac{1}{8}$	1.1250	1	6	1 $\frac{3}{4}$	4 $\frac{1}{4}$
1 $\frac{1}{4}$	1.2500	1	6	1 $\frac{3}{4}$	4 $\frac{1}{4}$
1 $\frac{3}{8}$	1.3750	1	6	1 $\frac{3}{4}$	4 $\frac{1}{4}$
1 $\frac{1}{2}$	1.5000	1 $\frac{1}{4}$	6	2	4 $\frac{1}{2}$
1 $\frac{5}{8}$	1.6250	1 $\frac{1}{4}$	8	2	4 $\frac{1}{2}$
1 $\frac{3}{4}$	1.7500	1 $\frac{1}{4}$	8	2	4 $\frac{1}{2}$
1 $\frac{7}{8}$	1.8750	1 $\frac{1}{4}$	8	2	4 $\frac{1}{2}$
2	2.0000	1 $\frac{1}{4}$	8	2	4 $\frac{1}{2}$



CENTER CUTTING END MILLS — CARBIDE TIPPED THREE STRAIGHT FLUTES

Three straight flutes.

One flute is center cutting

General purpose carbide.

Carbide tips brazed to hardened alloy steel bodies.

Cutting diameter NC tolerance plus .002" minus .000".

Tool Diameter		Dimensions		
		Shank Diameter	Length	
Frac.	Dec.		Carbide	Overall
3/8	.3750	3/8	1/2	2 1/2
7/16	.4375	3/8	3/4	2 1/2
1/2	.5000	1/2	3/4	3
9/16	.5625	1/2	3/4	3
5/8	.6250	5/8	3/4	3 1/4
3/4	.7500	5/8	3/4	3 3/8
7/8	.8750	7/8	3/4	3 3/4
1	1.0000	7/8	3/4	3 3/4
1 1/8	1.1250	1	3/4	4
1 1/4	1.2500	1	3/4	4
1 1/2	1.5000	1 1/4	3/4	4



CENTER CUTTING END MILLS — CARBIDE TIPPED THREE STRAIGHT FLUTES

Three straight flutes.

One flute is center cutting

Steel cutting grade carbide.

Carbide tips brazed to hardened alloy steel bodies.

Cutting diameter NC tolerance plus .002" minus .000".

Tool Diameter		Dimensions		
		Shank Diameter	Length	
Frac.	Dec.		Carbide	Overall
3/8	.3750	3/8	1/2	2 1/2
7/16	.4375	3/8	3/4	2 1/2
1/2	.5000	1/2	3/4	3
9/16	.5625	1/2	3/4	3
5/8	.6250	5/8	3/4	3 1/4
3/4	.7500	5/8	3/4	3 3/8
7/8	.8750	7/8	3/4	3 3/4
1	1.0000	7/8	3/4	3 3/4
1 1/8	1.1250	1	3/4	4
1 1/4	1.2500	1	3/4	4
1 1/2	1.5000	1 1/4	3/4	4



CENTER CUTTING END MILLS — CARBIDE TIPPED TWO 25° RIGHT SPIRAL FLUTES

Two 25° right spiral shear cutting flutes.

One flute is center cutting

Large flute capacity for heavy milling of non-ferrous material.

Carbide tips brazed to hardened alloy steel bodies.

Cutting diameter NC tolerance plus .002" minus .000".

Tool		Dimensions			
Diameter		Shank Diameter	No. of Flutes	Length	
Frac.	Dec.			Carbide	Overall
1/2	.5000	1/2	2	1	3
5/8	.6250	5/8	2	1 1/4	3 3/8
3/4	.7500	3/4	2	1 1/4	3 3/8
7/8	.8750	7/8	2	1 1/2	3 3/4
1	1.0000	1	2	1 1/2	4
1 1/4	1.2500	1 1/4	2	1 3/4	4 1/4
1 1/2	1.5000	1 1/2	2	2	4 3/4



SPIRAL FLUTE COUNTERSINKS — CARBIDE TIPPED 60° SINGLE FLUTE COUNTERSINKS

The single flute design with a positive rake assures burr-free holes.

Right spiral flute.

Carbide tips brazed to hardened alloy steel bodies.

Not recommended for portable tool use - see three flute types.

Tool Diameter	Diameter	
	Min. Cut	Shank
1/4	1/16	3/16
3/8	5/64	1/4
1/2	3/32	3/8
3/4	1/8	1/2
1	1/8	1/2
1 1/4	5/32	1/2
1 1/2	3/16	1/2



SPIRAL FLUTE COUNTERSINKS — CARBIDE TIPPED 82° SINGLE FLUTE COUNTERSINKS

The single flute design with a positive rake assures burr-free holes.

Right spiral flute.

Carbide tips brazed to hardened alloy steel bodies.

Not recommended for portable tool use - see three flute types.

Tool Diameter	Diameter	
	Min. Cut	Shank
1/4	1/16	3/16
3/8	5/64	1/4
1/2	3/32	3/8

Tool Diameter	Diameter	
	Min. Cut	Shank
$\frac{3}{4}$	$\frac{1}{8}$	$\frac{1}{2}$
1	$\frac{1}{8}$	$\frac{1}{2}$
1 $\frac{1}{4}$	$\frac{5}{32}$	$\frac{1}{2}$
1 $\frac{1}{2}$	$\frac{3}{16}$	$\frac{1}{2}$

CARMET
TOOLS & INSERTS



SPIRAL FLUTE COUNTERSINKS — CARBIDE TIPPED 90° SINGLE FLUTE COUNTERSINKS

Carbide tips brazed to hardened alloy steel bodies.

Not recommended for portable tool use - see three flute types.

Tool Diameter	Diameter	
	Min. Cut	Shank
$\frac{1}{4}$	$\frac{1}{16}$	$\frac{3}{16}$
$\frac{3}{8}$	$\frac{5}{64}$	$\frac{1}{4}$
$\frac{1}{2}$	$\frac{3}{32}$	$\frac{3}{8}$
$\frac{3}{4}$	$\frac{1}{8}$	$\frac{1}{2}$
1	$\frac{1}{8}$	$\frac{1}{2}$
1 $\frac{1}{4}$	$\frac{5}{32}$	$\frac{1}{2}$
1 $\frac{1}{2}$	$\frac{3}{16}$	$\frac{1}{2}$



SPIRAL FLUTE COUNTERSINKS — CARBIDE TIPPED 100° SINGLE FLUTE COUNTERSINKS

Right spiral flute.

Carbide tips brazed to hardened alloy steel bodies.

Not recommended for portable tool use - see three flute types.

Tool Diameter	Diameter	
	Min. Cut	Shank
1/4	1/16	3/16
3/8	5/64	1/4
1/2	3/32	3/8
3/4	1/8	1/2
1	1/8	1/2
1 1/4	5/32	1/2
1 1/2	3/16	1/2



SPIRAL FLUTE COUNTERSINKS — CARBIDE TIPPED 60° THREE FLUTE COUNTERSINKS

Right spiral flutes.

Carbide tips brazed to hardened alloy steel bodies.

Tool Diameter	Diameter	
	Min. Cut	Shank
1/4	5/64	3/16
3/8	7/64	1/4
1/2	9/64	3/8
5/8	9/64	3/8
3/4	3/16	1/2
7/8	3/16	1/2
1	1/4	1/2
1 1/4	5/16	1/2
1 1/2	3/8	1/2



SPIRAL FLUTE COUNTERSINKS — CARBIDE TIPPED 82° THREE FLUTE COUNTERSINKS

Right spiral flutes.

Carbide tips brazed to hardened alloy steel bodies.

Tool Diameter	Diameter	
	Min. Cut	Shank
1/4	5/64	3/16
3/8	7/64	1/4
1/2	9/64	3/8
5/8	9/64	3/8
3/4	3/16	1/2
7/8	3/16	1/2
1	1/4	1/2
1 1/4	5/16	1/2
1 1/2	3/8	1/2



SPIRAL FLUTE COUNTERSINKS — CARBIDE TIPPED 90° THREE FLUTE COUNTERSINKS

Right spiral flutes.

Carbide tips brazed to hardened alloy steel bodies.

Tool Diameter	Diameter	
	Min. Cut	Shank
1/4	5/64	3/16
3/8	7/64	1/4
1/2	9/64	3/8
5/8	9/64	3/8
3/4	3/16	1/2
7/8	3/16	1/2
1	1/4	1/2
1 1/4	5/16	1/2
1 1/2	3/8	1/2



SPIRAL FLUTE COUNTERSINKS — CARBIDE TIPPED

100° THREE FLUTE COUNTERSINKS

Right spiral flutes.

Carbide tips brazed to hardened alloy steel bodies.

Tool Diameter	Diameter	
	Min. Cut	Shank
1/4	5/64	3/16
3/8	7/64	1/4
1/2	9/64	3/8
5/8	9/64	3/8
3/4	3/16	1/2
7/8	3/16	1/2
1	1/4	1/2
1 1/4	5/16	1/2
1 1/2	3/8	1/2



SINGLE ANGLE CUTTERS 45° RIGHT — CARBIDE TIPPED

Carbide tips brazed to alloy steel bodies.

General purpose cutters for cutting non-ferrous materials and cast iron.

TOOL DIAMETER	WIDTH	ARBOR HOLE	NO. OF TEETH
3	1/2	1	8
4	1/2	1 1/4	10
4	3/4	1 1/4	10



SINGLE ANGLE CUTTERS 45° LEFT — CARBIDE TIPPED

Carbide tips brazed to alloy steel bodies.

General purpose cutters for cutting non-ferrous materials and cast iron.

TOOL DIAMETER	WIDTH	ARBOR HOLE	NO. OF TEETH
3	1/2	1	8
4	1/2	1 1/4	10
4	3/4	1 1/4	10



SINGLE ANGLE CUTTERS 60° RIGHT — CARBIDE TIPPED

Carbide tips brazed to alloy steel bodies.

General purpose cutters for cutting non-ferrous materials and cast iron.

TOOL DIAMETER	WIDTH	ARBOR HOLE	NO. OF TEETH
3	1/2	1	8
4	1/2	1 1/4	10
4	3/4	1 1/4	10



SINGLE ANGLE CUTTERS 60° LEFT — CARBIDE TIPPED

Carbide tips brazed to alloy steel bodies.

General purpose cutters for cutting non-ferrous materials and cast iron.

TOOL DIAMETER	WIDTH	ARBOR HOLE	NO. OF TEETH
3	1/2	1	8
4	1/2	1 1/4	10
4	3/4	1 1/4	10



DOUBLE ANGLE CUTTERS — 45° INCLUDED CARBIDE TIPPED

Carbide tips brazed to alloy steel bodies.

General purpose cutters for cutting non-ferrous materials and cast iron.

TOOL DIAMETER	WIDTH	ARBOR HOLE	NO. OF TEETH
3	1/2	1	8
4	1/2	1 1/4	10



DOUBLE ANGLE CUTTERS 60° INCLUDED — CARBIDE TIPPED

Carbide tips brazed to alloy steel bodies.

General purpose cutters for cutting non-ferrous materials and cast iron.

TOOL DIAMETER	WIDTH	ARBOR HOLE	NO. OF TEETH
2 ³ / ₄	¹ / ₂	1	8
3	¹ / ₂	1	8
4	¹ / ₂	1 ¹ / ₄	10
4	³ / ₄	1 ¹ / ₄	10
4	1	1 ¹ / ₄	10



DOUBLE ANGLE CUTTERS 90° INCLUDED — CARBIDE TIPPED

Carbide tips brazed to alloy steel bodies.

General purpose cutters for cutting non-ferrous materials and cast iron.

TOOL DIAMETER	WIDTH	ARBOR HOLE	NO. OF TEETH
2 ³ / ₄	¹ / ₂	1	8
3	¹ / ₂	1	8
4	¹ / ₂	1 ¹ / ₄	10
4	³ / ₄	1 ¹ / ₄	10
4	1	1 ¹ / ₄	10



SIDE MILLING CUTTERS — CARBIDE TIPPED FOR NON-FERROUS MACHINING

Use for production milling of aluminum, magnesium, zinc, brass, bronze, plastics and non-metals.

Carbide tips brazed to alloy steel bodies.

Cutting diameter tolerance plus 1/16" minus .000".

Face width tolerance plus .001" minus .000".

Arbor hole tolerance plus .001" minus .000".

Tool Diameter	Face Width		Dimensions	
	Frac.	Dec.	Arbor Hole	No. of Teeth
3	1/4	.2500	1	4
3	5/16	.3125	1	4
3	3/8	.3750	1	4
3	7/16	.4375	1	4
3	1/2	.5000	1	4
4	1/4	.2500	1	4
4	5/16	.3125	1	4

Tool Diameter	Face Width		Dimensions	
	Frac.	Dec.	Arbor Hole	No. of Teeth
4	3/8	.3750	1	4
4	3/8	.3750	1 1/4	4
4	7/16	.4375	1	4
4	1/2	.5000	1	4
4	1/2	.5000	1 1/4	4
4	9/16	.5625	1	4
4	5/8	.6250	1 1/4	4
4	5/8	.6250	1	4
4	3/4	.7500	1	4
4	3/4	.7500	1 1/4	4
5	1/4	.2500	1	6
5	7/16	.4375	1 1/4	6
5	1/2	.5000	1 1/4	6
5	1/2	.5000	1	6
5	9/16	.5625	1 1/4	6
5	5/8	.6250	1 1/4	6
5	3/4	.7500	1	6
5	3/4	.7500	1 1/4	6
5	1	1.0000	1 1/4	6
6	3/8	.3750	1	6
6	1/2	.5000	1	6
6	1/2	.5000	1 1/4	6
6	5/8	.6250	1 1/4	6
6	3/4	.7500	1 1/4	6
6	3/4	.7500	1	6
6	1	1.0000	1 1/4	6
8	3/4	.7500	1 1/4	8
8	3/4	.7500	1 1/2	8
8	1	1.0000	1 1/2	8
8	1	1.0000	1 1/4	8



SIDE MILLING CUTTERS — CARBIDE TIPPED FOR CAST IRON

For slotting, straddle milling and face milling.

Carbide tips brazed to tool steel bodies.

Cutting diameter tolerance plus 1/16" minus .000".

Face width tolerance plus .001" minus .000".

Arbor hole tolerance plus .001" minus .000".

Tool Diameter	Face Width		Dimensions	
	Frac.	Dec.	Arbor Hole	No. of Teeth
3	1/4	.2500	1	6
3	5/16	.3125	1	6
3	3/8	.3750	1	6
3	7/16	.4375	1	6
3	1/2	.5000	1	6
4	1/4	.2500	1	8
4	5/16	.3125	1	8
4	3/8	.3750	1	8
4	3/8	.3750	1 1/4	8

Tool Diameter	Face Width		Dimensions	
	Frac.	Dec.	Arbor Hole	No. of Teeth
4	7/16	.4375	1	8
4	1/2	.5000	1	8
4	1/2	.5000	1 1/4	8
4	9/16	.5625	1	8
4	5/8	.6250	1 1/4	8
4	5/8	.6250	1	8
4	3/4	.7500	1	8
4	3/4	.7500	1 1/4	8
5	1/4	.2500	1	10
5	5/16	.3125	1	10
5	3/8	.3750	1 1/4	10
5	7/16	.4375	1 1/4	10
5	1/2	.5000	1	10
5	1/2	.5000	1 1/4	10
5	9/16	.5625	1 1/4	10
5	5/8	.6250	1 1/4	10
5	3/4	.7500	1	10
5	3/4	.7500	1 1/4	10
5	1	1.0000	1 1/4	10
6	3/8	.3750	1 1/4	12
6	1/2	.5000	1	12
6	1/2	.5000	1 1/4	12
6	5/8	.6250	1 1/4	12
6	3/4	.7500	1	12
6	3/4	.7500	1 1/4	12
6	1	1.0000	1 1/4	12
8	3/4	.7500	1 1/4	12
8	3/4	.7500	1 1/2	12
8	1	1.0000	1 1/4	12
8	1	1.0000	1 1/2	12



SIDE MILLING CUTTERS — CARBIDE TIPPED FOR STEEL

For slotting, straddle milling and face milling.

Carbide tips brazed to alloy steel bodies.

Cutting diameter tolerance plus 1/16" minus .000".

Face width tolerance plus .001" minus .000".

Arbor hole tolerance plus .001" minus .000".

Tool Diameter	Face Width		Dimensions	
	Frac.	Dec.	Arbor Hole	No. of Teeth
3	1/4	.2500	1	6
3	5/16	.3125	1	6
3	3/8	.3750	1	6

Tool Diameter	Face Width		Dimensions	
	Frac.	Dec.	Arbor Hole	No. of Teeth
3	7/16	.4375	1	6
3	1/2	.5000	1	6
4	1/4	.2500	1	8
4	5/16	.3125	1	8
4	3/8	.3750	1	8
4	3/8	.3750	1 1/4	8
4	7/16	.4375	1	8
4	1/2	.5000	1	8
4	1/2	.5000	1 1/4	8
4	9/16	.5625	1	8
4	5/8	.6250	1 1/4	8
4	5/8	.6250	1	8
4	3/4	.7500	1	8
4	3/4	.7500	1 1/4	8
5	1/4	.2500	1	10
5	5/16	.3125	1	10
5	3/8	.3750	1 1/4	10
5	7/16	.4375	1 1/4	10
5	1/2	.5000	1	10
5	1/2	.5000	1 1/4	10
5	9/16	.5625	1 1/4	10
5	5/8	.6250	1 1/4	10
5	3/4	.7500	1	10
5	3/4	.7500	1 1/4	10
5	1	1.0000	1 1/4	10
6	3/8	.3750	1 1/4	12
6	1/2	.5000	1	12
6	1/2	.5000	1 1/4	12
6	5/8	.6250	1 1/4	12
6	3/4	.7500	1	12

Tool Diameter	Face Width		Dimensions	
	Frac.	Dec.	Arbor Hole	No. of Teeth
6	3/4	.7500	1 1/4	12
6	1	1.0000	1 1/4	12
8	3/4	.7500	1 1/4	12
8	3/4	.7500	1 1/2	12
8	1	1.0000	1 1/4	12
8	1	1.0000	1 1/2	12



SIDE MILLING CUTTERS — CARBIDE TIPPED FOR HIGH TEMP ALLOY

For slotting, straddle milling and face milling.

Carbide tips brazed to alloy steel bodies.

Cutting diameter tolerance plus 1/16" minus .000".

Face width tolerance plus .001" minus .000".

Arbor hole tolerance plus .001" minus .000".

Tool Diameter	Face Width		Dimensions	
	Frac.	Dec.	Arbor Hole	No. of Teeth
3	1/4	.2500	1	8
3	5/16	.3125	1	8
3	3/8	.3750	1	8
3	1/2	.5000	1	8
4	1/4	.2500	1	10
4	5/16	.3125	1	10
4	3/8	.3750	1	10
4	3/8	.3750	1 1/4	10
4	7/16	.4375	1	10
4	1/2	.5000	1 1/4	10
4	1/2	.5000	1	10
4	5/8	.6250	1	10
4	5/8	.6250	1 1/4	10
4	3/4	.7500	1	10
4	3/4	.7500	1 1/4	10
5	1/2	.5000	1	12
5	1/2	.5000	1 1/4	12
5	5/8	.6250	1 1/4	12
5	3/4	.7500	1	12
5	3/4	.7500	1 1/4	12
6	1/2	.5000	1	14
6	1/2	.5000	1 1/4	14
6	5/8	.6250	1 1/4	14
6	3/4	.7500	1 1/4	14
6	3/4	.7500	1	14
8	3/4	.7500	1 1/4	14



SIDE MILLING CUTTERS — STAGGERED TOOTH FOR MOST MATERIALS

Tool diameter tolerance plus 1/16" minus .000".

Face width tolerance plus .001" minus .000".

Arbor hole tolerance plus .001" minus .000".

Tool Diameter	Face Width		Dimensions	
	Frac.	Dec.	Arbor Hole	No. of Teeth
3	$\frac{3}{16}$	.1875	1	8
3	$\frac{1}{4}$	.2500	1	8
3	$\frac{5}{16}$	.3125	1	8
3	$\frac{3}{8}$	.3750	1	8
3	$\frac{1}{2}$	.5000	1	8
3	$\frac{5}{8}$	.6250	1	8
4	$\frac{3}{16}$	.1875	1	10
4	$\frac{1}{4}$	.2500	1	10
4	$\frac{5}{16}$	.3125	1	10
4	$\frac{3}{8}$	.3750	1	10

Tool Diameter	Face Width		Dimensions	
	Frac.	Dec.	Arbor Hole	No. of Teeth
4	1/2	.5000	1	10
4	5/8	.6250	1	10
4	3/4	.7500	1	10
6	1/4	.2500	1 1/4	14
6	5/16	.3125	1 1/4	14
6	3/8	.3750	1 1/4	14
6	1/2	.5000	1 1/4	14
6	5/8	.6250	1 1/4	14
6	3/4	.7500	1 1/4	14
6	1	1.0000	1 1/4	14



SLITTING SAWS — COARSE TOOTH — CARBIDE TIPPED FOR NON-FERROUS MACHINING

Precision ground.

Cutting diameter tolerance plus 1/16" minus .000".

Arbor hole tolerance plus .001" minus .000".

Face width tolerance plus .001" minus .000".

Tool Diameter	Face Width		Dimensions	
	Frac.	Dec.	Arbor Hole	No. of Teeth
3	3/32	.0938	1	6
3	1/8	.1250	1	6
3	3/16	.1875	1	6
3	1/4	.2500	1	6
3	5/16	.3125	1	6
3	3/8	.3750	1	6
4	3/32	.0938	1	6
4	1/8	.1250	1	6
4	3/16	.1875	1	6
4	1/4	.2500	1	6

Tool Diameter	Face Width		Dimensions	
	Frac.	Dec.	Arbor Hole	No. of Teeth
4	$\frac{5}{16}$	.3125	1	6
4	$\frac{3}{8}$	.3750	1	6
4	$\frac{3}{8}$	.3750	1 $\frac{1}{4}$	6
5	$\frac{3}{32}$	.0938	1	8
6	$\frac{1}{8}$	.1250	1 $\frac{1}{4}$	8
6	$\frac{3}{16}$	.1875	1 $\frac{1}{4}$	8
6	$\frac{1}{4}$	.2500	1 $\frac{1}{4}$	8
8	$\frac{1}{8}$	.1250	1 $\frac{1}{4}$	10



SLITTING SAWS — COARSE TOOTH — CARBIDE TIPPED FOR CAST IRON

Cutting diameter tolerance plus $\frac{1}{16}$ " minus .000".

Arbor hole tolerance plus .001" minus .000".

Face width tolerance plus .001" minus .000".

Tool Diameter	Face Width		Dimensions	
	Frac.	Dec.	Arbor Hole	No. of Teeth
3	$\frac{3}{32}$	.0938	1	6
3	$\frac{1}{8}$	.1250	1	6
3	$\frac{3}{16}$	.1875	1	6
3	$\frac{1}{4}$	.2500	1	6
3	$\frac{5}{16}$	.3125	1	6
3	$\frac{3}{8}$	.3750	1	6
4	$\frac{3}{32}$	.0938	1	8
4	$\frac{1}{8}$	.1250	1	8
4	$\frac{3}{16}$	.1875	1	8
4	$\frac{1}{4}$	.2500	1	8
4	$\frac{5}{16}$	.3125	1	8
4	$\frac{3}{8}$	.3750	1	8
4	$\frac{3}{8}$	.3750	1 $\frac{1}{4}$	8
5	$\frac{3}{32}$	.0938	1	10
5	$\frac{1}{8}$	.1250	1	10
5	$\frac{3}{16}$	.1875	1	10
6	$\frac{1}{8}$	.1250	1 $\frac{1}{4}$	12
6	$\frac{3}{16}$	.1875	1 $\frac{1}{4}$	12
6	$\frac{1}{4}$	.2500	1 $\frac{1}{4}$	12
8	$\frac{3}{16}$	.1875	1 $\frac{1}{4}$	16
8	$\frac{1}{4}$	.2500	1 $\frac{1}{4}$	16



SLITTING SAWS — COARSE TOOTH — CARBIDE TIPPED FOR STEEL

Arbor hole tolerance plus .001" minus .000".

Face width tolerance plus .001" minus .000".

Cutting diameter tolerance plus 1/16" minus .000".

Tool Diameter	Face Width		Dimensions	
	Frac.	Dec.	Arbor Hole	No. of Teeth
3	$\frac{3}{32}$	.0938	1	8
3	$\frac{1}{8}$	.1250	1	8
3	$\frac{3}{16}$	.1875	1	8
3	$\frac{1}{4}$	.2500	1	8
3	$\frac{5}{16}$	.3125	1	8
3	$\frac{3}{8}$	.3750	1	8
4	$\frac{3}{32}$	.0938	1	8
4	$\frac{1}{8}$	.1250	1	8
4	$\frac{3}{16}$	.1875	1	8
4	$\frac{1}{4}$	.2500	1	8

Tool Diameter	Face Width		Dimensions	
	Frac.	Dec.	Arbor Hole	No. of Teeth
4	5/16	.3125	1	8
4	3/8	.3750	1	8
4	3/8	.3750	1 1/4	8
5	3/32	.0938	1	10
5	1/8	.1250	1	10
5	3/16	.1875	1	10
6	1/8	.1250	1 1/4	12
6	3/16	.1875	1 1/4	12
6	1/4	.2500	1 1/4	12
8	3/16	.1875	1 1/4	16
8	1/4	.2500	1 1/4	16



**SLITTING SAWS — COARSE TOOTH — CARBIDE TIPPED
FOR HIGH TEMP ALLOY**

Cutting diameter tolerance plus 1/16" minus .000".

Arbor hole tolerance plus .001" minus .000".

Face width tolerance plus .001" minus .000".

Tool	Face Width	Dimensions	Price	
Diameter	Frac.	Dec.	Arbor Hole	No. of Teeth
3	$\frac{3}{32}$	.0938	1	8
3	$\frac{1}{8}$	.1250	1	8
3	$\frac{3}{16}$	.1875	1	8
3	$\frac{1}{4}$	.2500	1	8
3	$\frac{5}{16}$	.3125	1	8
3	$\frac{3}{8}$	.3750	1	8
4	$\frac{3}{32}$	.0938	1	10
4	$\frac{1}{8}$	.1250	1	10
4	$\frac{3}{16}$	.1875	1	10
4	$\frac{1}{4}$	.2500	1	10
4	$\frac{5}{16}$	.3125	1	10
4	$\frac{3}{8}$	.3750	1	10
4	$\frac{3}{8}$	.3750	1 $\frac{1}{4}$	10
5	$\frac{3}{32}$	.0938	1	12
5	$\frac{1}{8}$	.1250	1	12
5	$\frac{3}{16}$	.1875	1	12
6	$\frac{1}{8}$	.1250	1 $\frac{1}{4}$	14
6	$\frac{3}{16}$	.1875	1 $\frac{1}{4}$	14
6	$\frac{1}{4}$	.2500	1 $\frac{1}{4}$	14



SLITTING SAWS — STANDARD TOOTH — CARBIDE TIPPED FOR NON-FERROUS MACHINING

Cutting diameter tolerance plus 1/16" minus .000".

Arbor hole tolerance plus .001" minus .000".

Face width tolerance plus .001" minus .000".

Designed with more teeth for better finishes.

Tool Diameter	Face Width		Dimensions	
	Frac.	Dec.	Arbor Hole	No. of Teeth
3	1/16	.0625	1	12
3	5/64	.0781	1	12
3	3/32	.0938	1	12
3	7/64	.1094	1	12
3	1/8	.1250	1	12
3	1/8	.1250	1 1/4	12
3	5/32	.1563	1	12
3	3/16	.1875	1	12
3	7/32	.2188	1	12

Tool Diameter	Face Width		Dimensions	
	Frac.	Dec.	Arbor Hole	No. of Teeth
3	1/4	.2500	1	12
3	5/16	.3125	1	12
3	3/8	.3750	1	12
4	1/16	.0625	1	14
4	1/16	.0625	1 1/4	14
4	5/64	.0781	1	14
4	5/64	.0781	1 1/4	14
4	3/32	.0938	1 1/4	14
4	3/32	.0938	1	14
4	7/64	.1094	1	14
4	7/64	.1094	1 1/4	14
4	1/8	.1250	1	14
4	1/8	.1250	1 1/4	14
4	5/32	.1563	1	14
4	5/32	.1563	1 1/4	14
4	3/16	.1875	1	14
4	3/16	.1875	1 1/4	14
4	7/32	.2188	1	14
4	7/32	.2188	1 1/4	14
4	1/4	.2500	1	14
4	1/4	.2500	1 1/4	14
4	5/16	.3125	1 1/4	14
4	5/16	.3125	1	14
4	3/8	.3750	1	14
4	3/8	.3750	1 1/4	14
5	5/64	.0781	1 1/4	16
5	5/64	.0781	1	16
5	3/32	.0938	1	16
5	3/32	.0938	1 1/4	16
5	7/64	.1094	1	16
5	7/64	.1094	1 1/4	16

Tool Diameter	Face Width		Dimensions	
	Frac.	Dec.	Arbor Hole	No. of Teeth
5	1/8	.1250	1	16
5	1/8	.1250	1 1/4	16
5	5/32	.1563	1	16
5	5/32	.1563	1 1/4	16
5	3/16	.1875	1	16
5	3/16	.1875	1 1/4	16
5	7/32	.2188	1	16
5	7/32	.2188	1 1/4	16
5	1/4	.2500	1 1/4	16
5	1/4	.2500	1	16
5	5/16	.3125	1	16
5	5/16	.3125	1 1/4	16
5	3/8	.3750	1	16
5	3/8	.3750	1 1/4	16
6	5/64	.0781	1	18
6	5/64	.0781	1 1/4	18
6	3/32	.0938	1	18
6	3/32	.0938	1 1/4	18
6	7/64	.1094	1	18
6	7/64	.1094	1 1/4	18
6	1/8	.1250	1	18
6	1/8	.1250	1 1/4	18
6	5/32	.1563	1 1/4	18
6	5/32	.1563	1	18
6	3/16	.1875	1	18
6	3/16	.1875	1 1/4	18
6	7/32	.2188	1	18
6	7/32	.2188	1 1/4	18
6	1/4	.2500	1	18
6	1/4	.2500	1 1/4	18

Tool Diameter	Face Width		Dimensions	
	Frac.	Dec.	Arbor Hole	No. of Teeth
6	$\frac{5}{16}$	.3125	1	18
6	$\frac{5}{16}$	.3125	1 $\frac{1}{4}$	18
6	$\frac{3}{8}$	.3750	1	18
6	$\frac{3}{8}$	.3750	1 $\frac{1}{4}$	18
8	$\frac{1}{8}$	.1250	1 $\frac{1}{4}$	24
8	$\frac{5}{32}$	.1563	1 $\frac{1}{4}$	24
8	$\frac{3}{16}$	.1875	1 $\frac{1}{4}$	24
8	$\frac{1}{4}$	.2500	1 $\frac{1}{4}$	24



SLITTING SAWS — STANDARD TOOTH — CARBIDE TIPPED FOR NON-FERROUS MACHINING

Cutting diameter tolerance plus $\frac{1}{16}$ " minus .000".

Arbor hole tolerance plus .001" minus .000".

Face width tolerance plus .001" minus .000".

Designed with more teeth for better finishes.

Tool	Face Width		Dimensions	
	Diameter	Frac.	Dec.	Arbor Hole	No. of Teeth
3	1/16	.0625	1	12
3	5/64	.0781	1	12
3	3/32	.0938	1	12
3	7/64	.1094	1	12
3	1/8	.1250	1	12
3	1/8	.1250	1 1/4	12
3	5/32	.1563	1	12
3	3/16	.1875	1	12
3	7/32	.2188	1	12
3	1/4	.2500	1	12
3	5/16	.3125	1	12
3	3/8	.3750	1	12
4	1/16	.0625	1	14
4	1/16	.0625	1 1/4	14
4	5/64	.0781	1	14
4	5/64	.0781	1 1/4	14
4	3/32	.0938	1 1/4	14
4	3/32	.0938	1	14
4	7/64	.1094	1	14
4	7/64	.1094	1 1/4	14
4	1/8	.1250	1	14
4	1/8	.1250	1 1/4	14
4	5/32	.1563	1	14
4	5/32	.1563	1 1/4	14
4	3/16	.1875	1	14
4	3/16	.1875	1 1/4	14
4	7/32	.2188	1	14
4	7/32	.2188	1 1/4	14
4	1/4	.2500	1	14

Tool Diameter	Face Width		Dimensions	
	Frac.	Dec.	Arbor Hole	No. of Teeth
4	1/4	.2500	1 1/4	14
4	5/16	.3125	1 1/4	14
4	5/16	.3125	1	14
4	3/8	.3750	1	14
4	3/8	.3750	1 1/4	14
5	5/64	.0781	1 1/4	16
5	5/64	.0781	1	16
5	3/32	.0938	1	16
5	3/32	.0938	1 1/4	16
5	7/64	.1094	1	16
5	7/64	.1094	1 1/4	16
5	1/8	.1250	1	16
5	1/8	.1250	1 1/4	16
5	5/32	.1563	1	16
5	5/32	.1563	1 1/4	16
5	3/16	.1875	1	16
5	3/16	.1875	1 1/4	16
5	7/32	.2188	1	16
5	7/32	.2188	1 1/4	16
5	1/4	.2500	1 1/4	16
5	1/4	.2500	1	16
5	5/16	.3125	1	16
5	5/16	.3125	1 1/4	16
5	3/8	.3750	1	16
5	3/8	.3750	1 1/4	16
6	5/64	.0781	1	18
6	5/64	.0781	1 1/4	18
6	3/32	.0938	1	18
6	3/32	.0938	1 1/4	18
6	7/64	.1094	1	18
6	7/64	.1094	1 1/4	18

Tool Diameter	Face Width		Dimensions	
	Frac.	Dec.	Arbor Hole	No. of Teeth
6	1/8	.1250	1	18
6	1/8	.1250	1 1/4	18
6	5/32	.1563	1 1/4	18
6	5/32	.1563	1	18
6	3/16	.1875	1	18
6	3/16	.1875	1 1/4	18
6	7/32	.2188	1	18
6	7/32	.2188	1 1/4	18
6	1/4	.2500	1	18
6	1/4	.2500	1 1/4	18
6	5/16	.3125	1	18
6	5/16	.3125	1 1/4	18
6	3/8	.3750	1	18
6	3/8	.3750	1 1/4	18
8	1/8	.1250	1 1/4	24
8	5/32	.1563	1 1/4	24
8	3/16	.1875	1 1/4	24
8	1/4	.2500	1 1/4	24



SLITTING SAWS — STANDARD TOOTH — CARBIDE TIPPED FOR CAST IRON

Cutting diameter tolerance plus 1/16" minus .000".

Arbor hole tolerance plus .001" minus .000".

Face width tolerance plus .001" minus .000".

Designed with more teeth for better finishes.

Tool Diameter	Face Width		Dimensions	
	Frac.	Dec.	Arbor Hole	No. of Teeth
3	1/16	.0625	1	12
3	5/64	.0781	1	12
3	3/32	.0938	1	12
3	7/64	.1094	1	12
3	1/8	.1250	1	12
3	1/8	.1250	1 1/4	12
3	5/32	.1563	1	12
3	3/16	.1875	1	12
3	7/32	.2188	1	12
3	1/4	.2500	1	12
3	5/16	.3125	1	12
3	3/8	.3750	1	12

Tool Diameter	Face Width		Dimensions	
	Frac.	Dec.	Arbor Hole	No. of Teeth
4	1/16	.0625	1	14
4	5/64	.0781	1	14
4	5/64	.0781	1 1/4	14
4	3/32	.0938	1	14
4	3/32	.0938	1 1/4	14
4	7/64	.1094	1	14
4	7/64	.1094	1 1/4	14
4	1/8	.1250	1 1/4	14
4	1/8	.1250	1	14
4	5/32	.1563	1	14
4	5/32	.1563	1 1/4	14
4	3/16	.1875	1 1/4	14
4	3/16	.1875	1	14
4	7/32	.2188	1	14
4	7/32	.2188	1 1/4	14
4	1/4	.2500	1	14
4	1/4	.2500	1 1/4	14
4	5/16	.3125	1	14
4	5/16	.3125	1 1/4	14
4	3/8	.3750	1	14
4	3/8	.3750	1 1/4	14
5	5/64	.0781	1	16
5	5/64	.0781	1 1/4	16
5	3/32	.0938	1	16
5	3/32	.0938	1 1/4	16
5	7/64	.1094	1 1/4	16
5	7/64	.1094	1	16
5	1/8	.1250	1	16
5	1/8	.1250	1 1/4	16
5	5/32	.1563	1 1/4	16

Tool Diameter	Face Width		Dimensions	
	Frac.	Dec.	Arbor Hole	No. of Teeth
5	$\frac{5}{32}$	.1563	1	16
5	$\frac{3}{16}$	.1875	1	16
5	$\frac{3}{16}$	.1875	1 $\frac{1}{4}$	16
5	$\frac{7}{32}$	.2188	1	16
5	$\frac{7}{32}$	.2188	1 $\frac{1}{4}$	16
5	$\frac{1}{4}$	.2500	1	16
5	$\frac{1}{4}$	.2500	1 $\frac{1}{4}$	16
5	$\frac{5}{16}$	.3125	1	16
5	$\frac{5}{16}$	.3125	1 $\frac{1}{4}$	16
5	$\frac{3}{8}$	.3750	1 $\frac{1}{4}$	16
5	$\frac{3}{8}$	.3750	1	16
6	$\frac{5}{64}$	.0781	1	18
6	$\frac{5}{64}$	.0781	1 $\frac{1}{4}$	18
6	$\frac{3}{32}$	.0938	1 $\frac{1}{4}$	18
6	$\frac{3}{32}$	.0938	1	18
6	$\frac{7}{64}$	.1094	1	18
6	$\frac{7}{64}$	.1094	1 $\frac{1}{4}$	18
6	$\frac{1}{8}$	.1250	1	18
6	$\frac{1}{8}$	.1250	1 $\frac{1}{4}$	18

6	$\frac{7}{64}$	.1094	1	18
6	$\frac{7}{64}$	.1094	1 $\frac{1}{4}$	18
6	$\frac{1}{8}$	.1250	1	18
6	$\frac{1}{8}$	.1250	1 $\frac{1}{4}$	18
6	$\frac{5}{32}$	.1563	1	18
6	$\frac{5}{32}$	.1563	1 $\frac{1}{4}$	18
6	$\frac{3}{16}$	.1875	1	18

6	$\frac{3}{16}$	.1875	1 $\frac{1}{4}$	18
6	$\frac{7}{32}$	.2188	1	18
6	$\frac{7}{32}$	.2188	1 $\frac{1}{4}$	18
6	$\frac{1}{4}$	.2500	1	18
6	$\frac{1}{4}$	.2500	1 $\frac{1}{4}$	18
6	$\frac{5}{16}$	.3125	1 $\frac{1}{4}$	18
6	$\frac{5}{16}$	.3125	1	18
6	$\frac{3}{8}$	.3750	1	18
6	$\frac{3}{8}$	.3750	1 $\frac{1}{4}$	18
8	$\frac{1}{8}$	.1250	1 $\frac{1}{4}$	24
8	$\frac{5}{32}$	.1563	1 $\frac{1}{4}$	24
8	$\frac{3}{16}$	.1875	1 $\frac{1}{4}$	24
8	$\frac{1}{4}$	.2500	1 $\frac{1}{4}$	24



SLITTING SAWS — STANDARD TOOTH — CARBIDE TIPPED FOR STEEL

Cutting diameter tolerance plus 1/16" minus .000".

Arbor hole tolerance plus .001" minus .000".

Face width tolerance plus .001" minus .000".

Designed with more teeth for better finishes.

Tool Diameter	Face Width		Dimensions	
	Frac.	Dec.	Arbor Hole	No. of Teeth
3	1/16	.0625	1	16
3	5/64	.0781	1	16
3	3/32	.0938	1	16
3	7/64	.1094	1	16
3	1/8	.1250	1	16
3	5/32	.1563	1	16
3	3/16	.1875	1	16

Tool Diameter	Face Width		Dimensions	
	Frac.	Dec.	Arbor Hole	No. of Teeth
3	$\frac{7}{32}$	.2188	1	16
3	$\frac{1}{4}$	.2500	1	16
3	$\frac{5}{16}$	.3125	1	16
3	$\frac{3}{8}$	.3750	1	16
4	$\frac{1}{16}$	.0625	1	20
4	$\frac{5}{64}$	.0781	1	20
4	$\frac{5}{64}$	.0781	1 $\frac{1}{4}$	20
4	$\frac{3}{32}$	.0938	1 $\frac{1}{4}$	20
4	$\frac{3}{32}$	.0938	1	20
4	$\frac{7}{64}$	.1094	1	20
4	$\frac{7}{64}$	.1094	1 $\frac{1}{4}$	20
4	$\frac{1}{8}$	.1250	1	20
4	$\frac{1}{8}$	.1250	1 $\frac{1}{4}$	20
4	$\frac{5}{32}$	.1563	1	20
4	$\frac{5}{32}$	.1563	1 $\frac{1}{4}$	20
4	$\frac{3}{16}$	.1875	1	20
4	$\frac{3}{16}$	.1875	1 $\frac{1}{4}$	20
4	$\frac{7}{32}$	.2188	1	20
4	$\frac{7}{32}$	.2188	1 $\frac{1}{4}$	20
4	$\frac{1}{4}$	.2500	1	20
4	$\frac{1}{4}$	.2500	1 $\frac{1}{4}$	20
4	$\frac{5}{16}$	.3125	1 $\frac{1}{4}$	20
4	$\frac{5}{16}$	.3125	1	20
4	$\frac{3}{8}$	.3750	1	20
4	$\frac{3}{8}$	.3750	1 $\frac{1}{4}$	20
5	$\frac{5}{64}$	.0781	1 $\frac{1}{4}$	24
5	$\frac{5}{64}$	.0781	1	24
5	$\frac{3}{32}$	.0938	1	24
5	$\frac{3}{32}$	.0938	1 $\frac{1}{4}$	24
5	$\frac{7}{64}$	.1094	1	24

Tool Diameter	Face Width		Dimensions	
	Frac.	Dec.	Arbor Hole	No. of Teeth
5	7/64	.1094	1 1/4	24
5	1/8	.1250	1	24
5	1/8	.1250	1 1/4	24
5	5/32	.1563	1	24
5	5/32	.1563	1 1/4	24
5	3/16	.1875	1	24
5	3/16	.1875	1 1/4	24
5	7/32	.2188	1	24
5	7/32	.2188	1 1/4	24
5	1/4	.2500	1 1/4	24
5	1/4	.2500	1	24
5	5/16	.3125	1	24
5	5/16	.3125	1 1/4	24
5	3/8	.3750	1	24
5	3/8	.3750	1 1/4	24
6	5/64	.0781	1	28
6	5/64	.0781	1 1/4	28
6	3/32	.0938	1	28
6	3/32	.0938	1 1/4	28
6	7/64	.1094	1	28
6	7/64	.1094	1 1/4	28
6	1/8	.1250	1	28
6	1/8	.1250	1 1/4	28
6	5/32	.1563	1 1/4	28
6	5/32	.1563	1	28
6	3/16	.1875	1	28
6	3/16	.1875	1 1/4	28
6	7/32	.2188	1 1/4	28
6	7/32	.2188	1	28
6	1/4	.2500	1	28
6	1/4	.2500	1 1/4	28

Tool Diameter	Face Width		Dimensions	
	Frac.	Dec.	Arbor Hole	No. of Teeth
6	$\frac{5}{16}$	.3125	1	28
6	$\frac{5}{16}$	.3125	1 $\frac{1}{4}$	28
6	$\frac{3}{8}$	.3750	1	28
6	$\frac{3}{8}$	.3750	1 $\frac{1}{4}$	28
8	$\frac{1}{8}$	.1250	1 $\frac{1}{4}$	24
8	$\frac{5}{32}$	.1563	1 $\frac{1}{4}$	24
8	$\frac{3}{16}$	.1875	1 $\frac{1}{4}$	24



SLITTING SAWS — STANDARD TOOTH — CARBIDE TIPPED FOR HIGH TEMP ALLOY

Cutting diameter tolerance plus 1/16" minus .000".

Arbor hole tolerance plus .001" minus .000".

Face width tolerance plus .001" minus .000".

Designed with more teeth for better finishes.

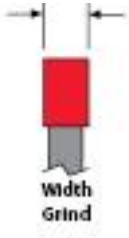
Tool Diameter	Face Width		Dimensions	
	Frac.	Dec.	Arbor Hole	No. of Teeth
3	1/16	.0625	1	12
3	5/64	.0781	1	12
3	3/32	.0938	1	12
3	7/64	.1094	1	12
3	1/8	.1250	1	12
3	1/8	.1250	1 1/4	12
3	5/32	.1563	1	12
3	3/16	.1875	1	12
3	7/32	.2188	1	12

Tool Diameter	Face Width		Dimensions	
	Frac.	Dec.	Arbor Hole	No. of Teeth
3	1/4	.2500	1	12
3	5/16	.3125	1	12
3	3/8	.3750	1	12
4	1/16	.0625	1	14
4	1/16	.0625	1 1/4	14
4	5/64	.0781	1 1/4	14
4	5/64	.0781	1	14
4	3/32	.0938	1	14
4	3/32	.0938	1 1/4	14
4	7/64	.1094	1	14
4	7/64	.1094	1 1/4	14
4	1/8	.1250	1	14
4	1/8	.1250	1 1/4	14
4	5/32	.1563	1	14
4	5/32	.1563	1 1/4	14
4	3/16	.1875	1	14
4	3/16	.1875	1 1/4	14
4	7/32	.2188	1	14
4	7/32	.2188	1 1/4	14
4	1/4	.2500	1 1/4	14
4	1/4	.2500	1	14
4	5/16	.3125	1	14
4	5/16	.3125	1 1/4	14
4	3/8	.3750	1 1/4	14
4	3/8	.3750	1	14
5	5/64	.0781	1	16
5	5/64	.0781	1 1/4	16
5	3/32	.0938	1	16
5	3/32	.0938	1 1/4	16
5	7/64	.1094	1	16
5	7/64	.1094	1 1/4	16

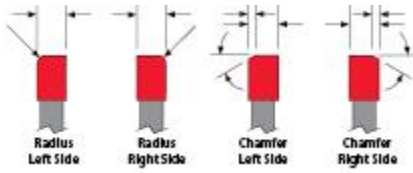
Tool Diameter	Face Width		Dimensions	
	Frac.	Dec.	Arbor Hole	No. of Teeth
5	1/8	.1250	1	16
5	1/8	.1250	1 1/4	16
5	5/32	.1563	1	16
5	5/32	.1563	1 1/4	16
5	3/16	.1875	1	16
5	3/16	.1875	1 1/4	16
5	7/32	.2188	1 1/4	16
5	7/32	.2188	1	16
5	1/4	.2500	1	16
5	1/4	.2500	1 1/4	16
5	5/16	.3125	1	16
5	5/16	.3125	1 1/4	16
5	3/8	.3750	1	16
5	3/8	.3750	1 1/4	16
6	5/64	.0781	1	18
6	5/64	.0781	1 1/4	18
6	3/32	.0938	1	18
6	3/32	.0938	1 1/4	18
6	7/64	.1094	1	18
6	7/64	.1094	1 1/4	18
6	1/8	.1250	1 1/4	18
6	1/8	.1250	1	18
6	5/32	.1563	1	18
6	5/32	.1563	1 1/4	18
6	3/16	.1875	1 1/4	18
6	3/16	.1875	1	18
6	7/32	.2188	1	18
6	7/32	.2188	1 1/4	18
6	1/4	.2500	1	18
6	1/4	.2500	1 1/4	18

Tool Diameter	Face Width		Dimensions	
	Frac.	Dec.	Arbor Hole	No. of Teeth
6	$\frac{5}{16}$	.3125	1	18
6	$\frac{5}{16}$	.3125	1 $\frac{1}{4}$	18
6	$\frac{3}{8}$	.3750	1	18
6	$\frac{3}{8}$	.3750	1 $\frac{1}{4}$	18
8	$\frac{1}{8}$	.1250	1 $\frac{1}{4}$	24
8	$\frac{5}{32}$	.1563	1 $\frac{1}{4}$	24
8	$\frac{3}{16}$	.1875	1 $\frac{1}{4}$	24
8	$\frac{1}{4}$	.2500	1 $\frac{1}{4}$	24

3" MILLING CUTTERS & SLITTING SAWS — CARBIDE TIPPED
Modified width between .0600" and .5312"



MODIFIED FACE WIDTH RANGE
0.0600 - 0.0703
0.0704 - 0.0859
0.0860 - 0.1015
0.1016 - 0.1171
0.1172 - 0.1406
0.1407 - 0.1718
0.1719 - 0.2031
0.2032 - 0.2343
0.2344 - 0.2812
0.2813 - 0.3437
0.3438 - 0.4062
0.4063 - 0.4687
0.4688 - 0.5312



Radius Notes

- Maximum radius on one side is .2656"
- Full radius and maximum radius on both sides is $\frac{1}{2}$ the width of the cutter
- A non-tangent radii must be quoted

Chamfer Notes

- Chamfer Angles can range from 0° to 45°
- Chamfer is measured off the OD
- Maximum chamfer is the LESSER of $\frac{1}{3}$ the width of the cutter OR .2656" length of angle when measured across the OD
- Chamfer Angle Tolerance: $\pm 1/2^\circ$
- Chamfers greater than 45°

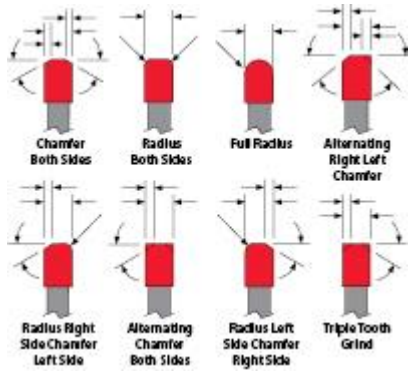
Corner Radius or Chamfer on ONE Side

TOOL DIAM	HUB WIDTH	MODIFIED FACE WIDTH RANGE
3	.0555	0.0600 - 0.0703
3	.0711	0.0704 - 0.0859
3	.0868	0.0860 - 0.1015
3	.1024	0.1016 - 0.1171
3	.1180	0.1172 - 0.1406
3	.1562	0.1407 - 0.1718
3	.1875	0.1719 - 0.2031
3	.2188	0.2032 - 0.2343
3	.2500	0.2344 - 0.2812
3	.3125	0.2813 - 0.3437

3	.3750	0.3438 - 0.4062
3	.4375	0.4063 - 0.4687
3	.5000	0.4688 - 0.5312

Corner Radius or Chamfer on BOTH Sides OR a Full Radius

TOOL DIAM	HUB WIDTH	MODIFIED FACE WIDTH RANGE
3	.0555	0.0600 - 0.0703
3	.0711	0.0704 - 0.0859
3	.0868	0.0860 - 0.1015
3	.1024	0.1016 - 0.1171
3	.1180	0.1172 - 0.1406
3	.1562	0.1407 - 0.1718
3	.1875	0.1719 - 0.2031
3	.2188	0.2032 - 0.2343
3	.2500	0.2344 - 0.2812
3	.3125	0.2813 - 0.3437
3	.3750	0.3438 - 0.4062
3	.4375	0.4063 - 0.4687
3	.5000	0.4688 - 0.5312



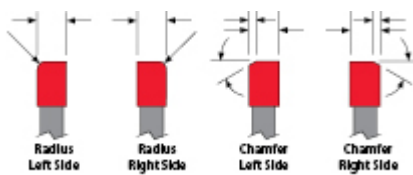
4" MILLING CUTTERS & SLITTING SAWS — CARBIDE TIPPED
Modified width between .0600" and .5312"



Modified width between .0600" and .5312"

TOOL DIAM	HUB WIDTH	MODIFIED FACE WIDTH RANGE
4	.0545	0.0600 - 0.0703
4	.0701	0.0704 - 0.0859
4	.0858	0.0860 - 0.1015
4	.1014	0.1016 - 0.1171
4	.1170	0.1172 - 0.1406
4	.1562	0.1407 - 0.1718
4	.1875	0.1719 - 0.2031
4	.2188	0.2032 - 0.2343
4	.2500	0.2344 - 0.2812
4	.3125	0.2813 - 0.3437
4	.3750	0.3438 - 0.4062
4	.4375	0.4063 - 0.4687
4	.5000	0.4688 - 0.5312

Corner Radius or Chamfer on ONE Side



Radius Notes

Maximum radius on one side is .2656"

Full radius and maximum radius on both sides is 1/2 the width of the cutter

A non-tangent radii must be quoted

Chamfer Notes

Chamfer Angles can range from 0° to 45°

Chamfer is measured off the OD

Maximum chamfer is the LESSER of 1/3 the width of the cutter OR .2656" length of angle when measured across the OD

Chamfer Angle Tolerance: +/- 1/2°

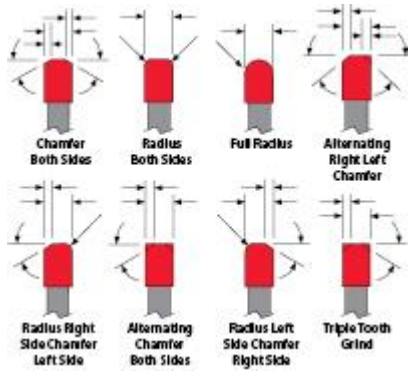
Chamfers greater than 45°

Corner Radius or Chamfer on ONE Side

TOOL DIAM	HUB WIDTH	MODIFIED FACE WIDTH RANGE
4	.0545	0.0600 - 0.0703
4	.0701	0.0704 - 0.0859
4	.0858	0.0860 - 0.1015
4	.1014	0.1016 - 0.1171
4	.1170	0.1172 - 0.1406
4	.1562	0.1407 - 0.1718
4	.1875	0.1719 - 0.2031
4	.2188	0.2032 - 0.2343
4	.2500	0.2344 - 0.2812
4	.3125	0.2813 - 0.3437
4	.3750	0.3438 - 0.4062
4	.4375	0.4063 - 0.4687
4	.5000	0.4688 - 0.5312

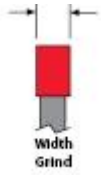
Specify right or left side for radius or chamfer

Corner Radius or Chamfer on BOTH Sides OR a Full Radius



TOOL DIAM	HUB WIDTH	MODIFIED
		FACE WIDTH RANGE
4	.0545	0.0600 - 0.0703
4	.0701	0.0704 - 0.0859
4	.0858	0.0860 - 0.1015
4	.1014	0.1016 - 0.1171
4	.1170	0.1172 - 0.1406
4	.1562	0.1407 - 0.1718
4	.1875	0.1719 - 0.2031
4	.2188	0.2032 - 0.2343
4	.2500	0.2344 - 0.2812
4	.3125	0.2813 - 0.3437
4	.3750	0.3438 - 0.4062
4	.4375	0.4063 - 0.4687
4	.5000	0.4688 - 0.5312

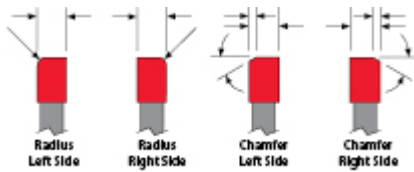
5" MILLING CUTTERS & SLITTING SAWS — CARBIDE TIPPED



Modified width between .0704" and .5312"

TOOL DIAM	HUB WIDTH	MODIFIED FACE WIDTH RANGE
5	.0691	0.0704 - 0.0859
5	.0848	0.0860 - 0.1015
5	.1004	0.1016 - 0.1171
5	.1160	0.1094 - 0.1406
5	.1562	0.1407 - 0.1718
5	.1875	0.1719 - 0.2031
5	.2188	0.2032 - 0.2343
5	.2500	0.2344 - 0.2812
5	.3125	0.2813 - 0.3437
5	.3750	0.3438 - 0.4062
5	.4375	0.4063 - 0.4687
5	.5000	0.4688 - 0.5312

Corner Radius or Chamfer on ONE Side



Radius Notes

Maximum radius on one side is .2656"

Full radius and maximum radius on both sides is 1/2 the width of the cutter

A non-tangent radii must be quoted

Chamfer Notes

Chamfer Angles can range from 0° to 45°

Chamfer is measured off the OD

Maximum chamfer is the LESSER of 1/3 the width of the cutter OR .2656" length of angle when measured across the OD

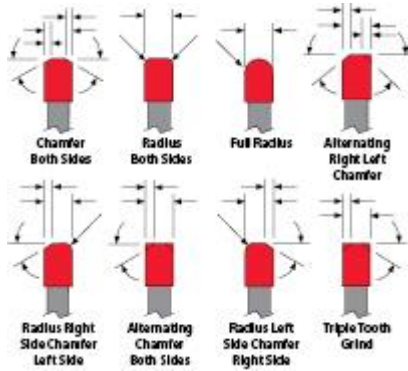
Chamfer Angle Tolerance: +/- 1/2°

Chamfers greater than 45°

TOOL DIAM	HUB WIDTH	MODIFIED FACE WIDTH RANGE
5	.0691	0.0704 - 0.0859
5	.0848	0.0860 - 0.1015
5	.1004	0.1016 - 0.1171
5	.1160	0.1094 - 0.1406
5	.1562	0.1407 - 0.1718
5	.1875	0.1719 - 0.2031
5	.2188	0.2032 - 0.2343
5	.2500	0.2344 - 0.2812
5	.3125	0.2813 - 0.3437
5	.3750	0.3438 - 0.4062
5	.4375	0.4063 - 0.4687
5	.5000	0.4688 - 0.5312

Specify right or left side for radius or chamfer

Corner Radius or Chamfer on BOTH Sides OR a Full Radius



OOL DIAM	HUB WIDTH	MODIFIED FACE WIDTH RANGE
5	.0691	0.0704 - 0.0859
5	.0848	0.0860 - 0.1015
5	.1004	0.1016 - 0.1171
5	.1160	0.1094 - 0.1406
5	.1562	0.1407 - 0.1718
5	.1875	0.1719 - 0.2031
5	.2188	0.2032 - 0.2343
5	.2500	0.2344 - 0.2812
5	.3125	0.2813 - 0.3437
5	.3750	0.3438 - 0.4062
5	.4375	0.4063 - 0.4687

5	.5000	0.4688 - 0.5312
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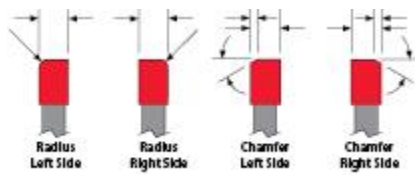
6" MILLING CUTTERS & SLITTING SAWS — CARBIDE TIPPED

Modified width between .0704" and .5312"



TOOL DIAM	HUB WIDTH	MODIFIED FACE WIDTH RANGE
6	.0681	0.0704 - 0.0859
6	.0838	0.0860 - 0.1015
6	.0994	0.1016 - 0.1171
6	.1150	0.1094 - 0.1406
6	.1562	0.1407 - 0.1718
6	.1875	0.1719 - 0.2031
6	.2188	0.2032 - 0.2343
6	.2500	0.2344 - 0.2812
6	.3125	0.2813 - 0.3437
6	.3750	0.3438 - 0.4062
6	.4375	0.4063 - 0.4687
6	.5000	0.4688 - 0.5312

Corner Radius or Chamfer on ONE Side



Radius Notes

Maximum radius on one side is .2656"

Full radius and maximum radius on both sides is 1/2 the width of the cutter

A non-tangent radii must be quoted

Chamfer Notes

Chamfer Angles can range from 0° to 45°

Chamfer is measured off the OD

Maximum chamfer is the LESSER of 1/3 the width of the cutter OR .2656" length of angle when measured across the OD

Chamfer Angle Tolerance: +/- 1/2°

Chamfers greater than 45°

TOOL DIAM	HUB WIDTH	MODIFIED FACE WIDTH RANGE
6	.0681	0.0704 - 0.0859
6	.0838	0.0860 - 0.1015
6	.0994	0.1016 - 0.1171
6	.1150	0.1094 - 0.1406
6	.1562	0.1407 - 0.1718
6	.1875	0.1719 - 0.2031
6	.2188	0.2032 - 0.2343

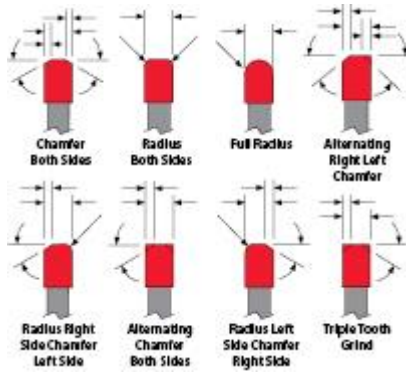
6	.2500	0.2344 - 0.2812
6	.3125	0.2813 - 0.3437
6	.3750	0.3438 - 0.4062
6	.4375	0.4063 - 0.4687
6	.5000	0.4688 - 0.5312

Specify right or left side for radius or chamfer

TOOL DIAM	HUB WIDTH	MODIFIED FACE WIDTH RANGE
6	.0681	0.0704 - 0.0859
6	.0838	0.0860 - 0.1015
6	.0994	0.1016 - 0.1171
6	.1150	0.1094 - 0.1406
6	.1562	0.1407 - 0.1718
6	.1875	0.1719 - 0.2031
6	.2188	0.2032 - 0.2343
6	.2500	0.2344 - 0.2812
6	.3125	0.2813 - 0.3437
6	.3750	0.3438 - 0.4062
6	.4375	0.4063 - 0.4687
6	.5000	0.4688 - 0.5312

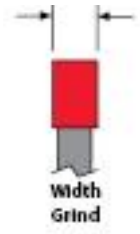
Specify right or left side for radius or chamfer

Corner Radius or Chamfer on BOTH Sides OR a Full Radius



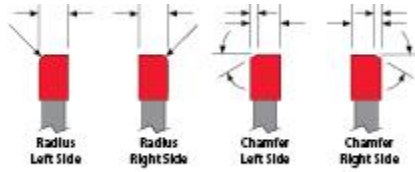
OOL DIAM	HUB WIDTH	MODIFIED FACE WIDTH RANGE
6	.0681	0.0704 - 0.0859
6	.0838	0.0860 - 0.1015
6	.0994	0.1016 - 0.1171
6	.1150	0.1094 - 0.1406
6	.1562	0.1407 - 0.1718
6	.1875	0.1719 - 0.2031
6	.2188	0.2032 - 0.2343
6	.2500	0.2344 - 0.2812
6	.3125	0.2813 - 0.3437
6	.3750	0.3438 - 0.4062
6	.4375	0.4063 - 0.4687
6	.5000	0.4688 - 0.5312

3" MILLING CUTTERS & SLITTING SAWS — CARBIDE TIPPED — FOR STEEL



Modified width between .0600" and .5312

TOOL DIAM	HUB WIDTH	MODIFIED FACE WIDTH RANGE
3	.0555	0.0600 - 0.0703
3	.0711	0.0704 - 0.0859
3	.0867	0.0860 - 0.1015
3	.1024	0.1016 - 0.1171
3	.1180	0.1172 - 0.1406
3	.1562	0.1407 - 0.1718
3	.1875	0.1719 - 0.2031
3	.2188	0.2032 - 0.2343
3	.2500	0.2344 - 0.2812
3	.3125	0.2813 - 0.3437
3	.3750	0.3438 - 0.4062
3	.4375	0.4063 - 0.4687
3	.5000	0.4688 - 0.5312



Radius Notes

Maximum radius on one side is .2656"

Full radius and maximum radius on both sides is 1/2 the width of the cutter

A non-tangent radii must be quoted

Chamfer Notes

Chamfer Angles can range from 0° to 45°

Chamfer is measured off the OD

Maximum chamfer is the LESSER of 1/3 the width of the cutter OR .2656" length of angle when measured across the OD

Chamfer Angle Tolerance: +/- 1/2°

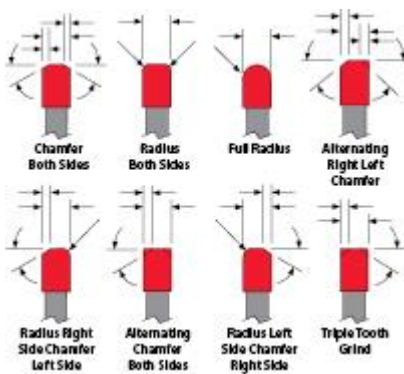
Chamfers greater than 45° must be quote

Corner Radius or Chamfer on ONE Side

TOOL DIAM	HUB WIDTH	MODIFIED FACE WIDTH RANGE
3	.0555	0.0600 - 0.0703
3	.0711	0.0704 - 0.0859
3	.0867	0.0860 - 0.1015
3	.1024	0.1016 - 0.1171
3	.1180	0.1172 - 0.1406
3	.1562	0.1407 - 0.1718

3	.1875	0.1719 - 0.2031
3	.2188	0.2032 - 0.2343
3	.2500	0.2344 - 0.2812
3	.3125	0.2813 - 0.3437
3	.3750	0.3438 - 0.4062
3	.4375	0.4063 - 0.4687
3	.5000	0.4688 - 0.5312

Specify right or left side for radius or chamfer



Corner Radius or Chamfer on BOTH Sides OR a Full Radius

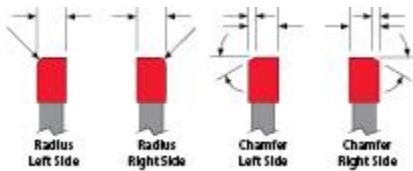
TOOL DIAM	HUB WIDTH	MODIFIED FACE WIDTH RANGE
3	.0555	0.0600 - 0.0703
3	.0711	0.0704 - 0.0859
3	.0867	0.0860 - 0.1015
3	.1024	0.1016 - 0.1171
3	.1180	0.1172 - 0.1406
3	.1562	0.1407 - 0.1718
3	.1875	0.1719 - 0.2031
3	.2188	0.2032 - 0.2343
3	.2500	0.2344 - 0.2812
3	.3125	0.2813 - 0.3437
3	.3750	0.3438 - 0.4062
3	.4375	0.4063 - 0.4687
3	.5000	0.4688 - 0.5312

4" MILLING CUTTERS & SLITTING SAWS — CARBIDE TIPPED — FOR STEEL

Modified width between .0600" and .5312"



OL DIAM	HUB WIDTH	MODIFIED
		FACE WIDTH RANGE
4	.0545	0.0600 - 0.0703
4	.0701	0.0704 - 0.0859
4	.0858	0.0860 - 0.1015
4	.1014	0.1016 - 0.1171
4	.1170	0.1172 - 0.1406
4	.1562	0.1407 - 0.1718
4	.1875	0.1719 - 0.2031
4	.2188	0.2032 - 0.2343
4	.2500	0.2344 - 0.2812
4	.3125	0.2813 - 0.3437
4	.3750	0.3438 - 0.4062
4	.4375	0.4063 - 0.4687
4	.5000	0.4688 - 0.5312



Radius Notes

Maximum radius on one side is .2656"

Full radius and maximum radius on both sides is 1/2 the width of the cutter

A non-tangent radii must be quoted

Chamfer Notes

Chamfer Angles can range from 0° to 45°

Chamfer is measured off the OD

Maximum chamfer is the LESSER of 1/3 the width of the cutter OR .2656" length of angle when measured across the OD

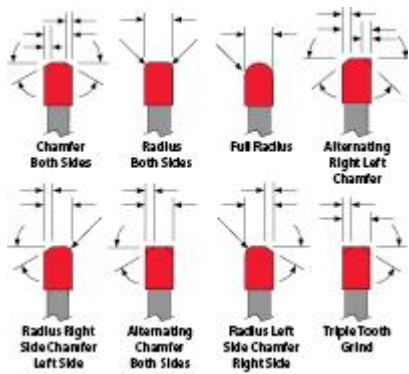
Chamfer Angle Tolerance: +/- 1/2°

Chamfers greater than 45° must be quoted

Corner Radius or Chamfer on ONE Side

TOOL DIAM	HUB WIDTH	MODIFIED FACE WIDTH RANGE
4	.0545	0.0600 - 0.0703
4	.0701	0.0704 - 0.0859
4	.0858	0.0860 - 0.1015
4	.1014	0.1016 - 0.1171
4	.1170	0.1172 - 0.1406
4	.1562	0.1407 - 0.1718
4	.1875	0.1719 - 0.2031
4	.2188	0.2032 - 0.2343
4	.2500	0.2344 - 0.2812
4	.3125	0.2813 - 0.3437
4	.3750	0.3438 - 0.4062
4	.4375	0.4063 - 0.4687
4	.5000	0.4688 - 0.5312

Specify right or left side for radius or chamfer

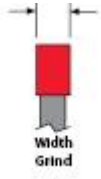


Corner Radius or Chamfer on BOTH Sides OR a Full Radius

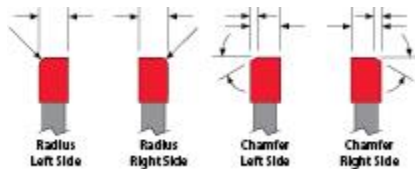
TOOL DIAM	HUB WIDTH	MODIFIED
		FACE WIDTH RANGE
4	.0545	0.0600 - 0.0703
4	.0701	0.0704 - 0.0859
4	.0858	0.0860 - 0.1015
4	.1014	0.1016 - 0.1171
4	.1170	0.1172 - 0.1406
4	.1562	0.1407 - 0.1718
4	.1875	0.1719 - 0.2031
4	.2188	0.2032 - 0.2343
4	.2500	0.2344 - 0.2812
4	.3125	0.2813 - 0.3437
4	.3750	0.3438 - 0.4062
4	.4375	0.4063 - 0.4687
4	.5000	0.4688 - 0.5312

5" MILLING CUTTERS & SLITTING SAWS — CARBIDE TIPPED — FOR STEEL

Modified width between .0704" and .5312"



OOL DIAM	HUB WIDTH	MODIFIED FACE WIDTH RANGE
5	.0691	0.0704 - 0.0859
5	.0848	0.0860 - 0.1015
5	.1004	0.1016 - 0.1171
5	.1160	0.1094 - 0.1406
5	.1562	0.1407 - 0.1718
5	.1875	0.1719 - 0.2031
5	.2188	0.2032 - 0.2343
5	.2500	0.2344 - 0.2812
5	.3125	0.2813 - 0.3437
5	.3750	0.3438 - 0.4062
5	.4375	0.4063 - 0.4687
5	.5000	0.4688 - 0.5312



Radius Notes

Maximum radius on one side is .2656"

Full radius and maximum radius on both sides is 1/2 the width of the cutter

A non-tangent radii must be quoted

Chamfer Notes

Chamfer Angles can range from 0° to 45°

Chamfer is measured off the OD

Maximum chamfer is the LESSER of 1/3 the width of the cutter OR .2656" length of angle when measured across the OD

Chamfer Angle Tolerance: +/- 1/2°

Chamfers greater than 45° must be quoted

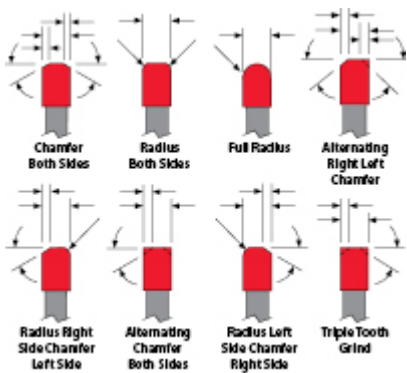
Corner Radius or Chamfer on ONE Side

TOOL DIAM	HUB WIDTH	MODIFIED FACE WIDTH RANGE
5	.0691	0.0704 - 0.0859
5	.0848	0.0860 - 0.1015
5	.1004	0.1016 - 0.1171
5	.1160	0.1094 - 0.1406
5	.1562	0.1407 - 0.1718
5	.1875	0.1719 - 0.2031

5	.2188	0.2032 - 0.2343
5	.2500	0.2344 - 0.2812
5	.3125	0.2813 - 0.3437
5	.3750	0.3438 - 0.4062
5	.4375	0.4063 - 0.4687
5	.5000	0.4688 - 0.5312

Specify right or left side for radius or chamfer

Corner Radius or Chamfer on BOTH Sides OR a Full Radius



TOOL DIAM	HUB WIDTH	MODIFIED FACE WIDTH RANGE
5	.0691	0.0704 - 0.0859
5	.0848	0.0860 - 0.1015
5	.1004	0.1016 - 0.1171
5	.1160	0.1094 - 0.1406
5	.1562	0.1407 - 0.1718
5	.1875	0.1719 - 0.2031

5	.2188	0.2032 - 0.2343
5	.2500	0.2344 - 0.2812
5	.3125	0.2813 - 0.3437
5	.3750	0.3438 - 0.4062
5	.4375	0.4063 - 0.4687
5	.5000	0.4688 - 0.5312

6" MILLING CUTTERS & SLITTING SAWS — CARBIDE TIPPED — FOR STEEL

Modified width between .0704" and .5312"

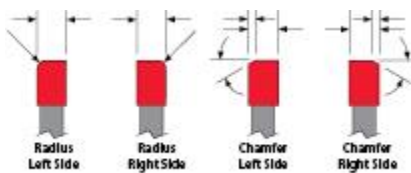


TOOL DIAM	HUB WIDTH	MODIFIED FACE WIDTH RANGE
6	.0681	0.0704 - 0.0859
6	.0838	0.0860 - 0.1015
6	.0994	0.1016 - 0.1171
6	.1150	0.1094 - 0.1406
6	.1562	0.1407 - 0.1718
6	.1875	0.1719 - 0.2031
6	.2188	0.2032 - 0.2343
6	.2500	0.2344 - 0.2812

6	.3125	0.2813 - 0.3437
6	.3750	0.3438 - 0.4062
6	.4375	0.4063 - 0.4687
6	.5000	0.4688 - 0.5312



Corner Radius or Chamfer on ONE Side



Radius Notes

Maximum radius on one side is .2656"

Full radius and maximum radius on both sides is 1/2 the width of the cutter

A non-tangent radii must be quoted

Chamfer Notes

Chamfer Angles can range from 0° to 45°

Chamfer is measured off the OD

Maximum chamfer is the LESSER of 1/3 the width of the cutter OR .2656" length of angle when measured across the OD

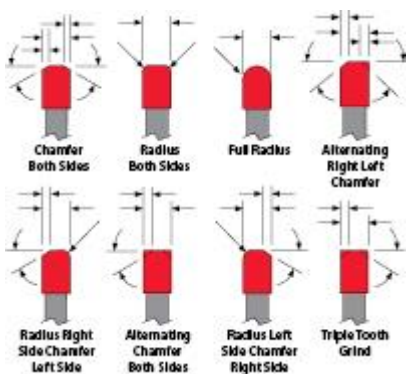
Chamfer Angle Tolerance: +/- 1/2°

Chamfers greater than 45° must be quoted

TOOL DIAM	HUB WIDTH	MODIFIED FACE WIDTH RANGE
6	.0681	0.0704 - 0.0859
6	.0838	0.0860 - 0.1015
6	.0994	0.1016 - 0.1171
6	.1150	0.1094 - 0.1406
6	.1562	0.1407 - 0.1718
6	.1875	0.1719 - 0.2031
6	.2188	0.2032 - 0.2343
6	.2500	0.2344 - 0.2812
6	.3125	0.2813 - 0.3437
6	.3750	0.3438 - 0.4062
6	.4375	0.4063 - 0.4687
6	.5000	0.4688 - 0.5312

Specify right or left side for radius or chamfer

Corner Sides OR a Full Radius Radius or Chamfer on BOTH



	1	3
6	.0681	0.0704 - 0.0859
6	.0838	0.0860 - 0.1015
6	.0994	0.1016 - 0.1171
6	.1150	0.1094 - 0.1406
6	.1562	0.1407 - 0.1718
6	.1875	0.1719 - 0.2031
6	.2188	0.2032 - 0.2343
6	.2500	0.2344 - 0.2812
6	.3125	0.2813 - 0.3437
6	.3750	0.3438 - 0.4062
6	.4375	0.4063 - 0.4687
6	.5000	0.4688 - 0.5312



DOUBLE ANGLE CUTTERS — CARBIDE TIPPED 60° – FOR NON-FERROUS & CAST IRON

Carbide tips brazed to hardened alloy steel bodies.

Right hand cut.

Straight shank with Weldon flats.

Angle tolerance: +/- 1/4°.

Tool diameter tolerance: plus .015", minus .000"; Corner radius: .010" - .020".

Tool Diameter	Shank Diam.	No. of Teeth	Overall Length	Cutter Width
3/4	3/8	6	2 3/8	3/16
1	1/2	6	2 27/32	5/16
1 3/8	5/8	6	3 7/32	7/16
1 1/2	5/8	6	3 3/8	1/2
1 7/8	3/4	6	3 25/32	5/8
2 1/4	7/8	6	4 5/32	3/4



DOUBLE ANGLE CUTTERS — CARBIDE TIPPED 60° – FOR STEEL

Carbide tips brazed to hardened alloy steel bodies.

Right hand cut.

Straight shank with Weldon flats.

Angle tolerance: +/- 1/4°.

Tool diameter tolerance: plus .015", minus .000"; Corner radius: .010" - .020".

Tool Diameter	Shank Diam.	No. of Teeth	Overall Length	Cutter Width
3/4	3/8	6	2 3/8	3/16
1	1/2	6	2 27/32	5/16
1 3/8	5/8	6	3 7/32	7/16
1 1/2	5/8	6	3 3/8	1/2

1 7/8	3/4	6	3 25/32	5/8
2 1/4	7/8	6	4 5/32	3/4



DOUBLE ANGLE CUTTERS — CARBIDE TIPPED 90° – FOR NON-FERROUS & CAST IRON

Carbide tips brazed to hardened alloy steel bodies.

Right hand cut.

Straight shank with Weldon flats.

Angle tolerance: +/- 1/4°.

Tool diameter tolerance: plus .015", minus .000"; Corner radius: .010" - .020".

Tool Diameter	Shank Diam.	No. of Teeth	Overall Length	Cutter Width
3/4	3/8	6	2 3/8	1/4
1	1/2	6	2 29/32	3/8
1 3/8	5/8	6	3 9/32	1/2
1 1/2	5/8	6	3 7/16	9/16
1 7/8	3/4	6	3 25/32	5/8

2 1/4	7/8	6	4 5/32	3/4
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DOUBLE ANGLE CUTTERS — CARBIDE TIPPED 90° – FOR STEEL

Carbide tips brazed to hardened alloy steel bodies.

Right hand cut.

Straight shank with Weldon flats.

Angle tolerance: +/- 1/4°.

Tool diameter tolerance: plus .015", minus .000"; Corner radius: .010" - .020".

Tool Diameter	Shank Diam.	No. of Teeth	Overall Length	Cutter Width
3/4	3/8	6	2 3/8	1/4
1	1/2	6	2 29/32	3/8
1 3/8	5/8	6	3 9/32	1/2
1 1/2	5/8	6	3 7/16	9/16
1 7/8	3/4	6	3 25/32	5/8

2 1/4	7/8	6	4 5/32	3/4
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**KEYSEAT CUTTERS — CARBIDE TIPPED
STRAIGHT TOOTH – NON-FERROUS & CAST IRON**

Fast cutting to close tolerances with longer tool life.

The last four digits of our EDP number is the American Standard Number.

Carbide tips brazed to hardened alloy steel bodies.

Cutting diameter tolerance plus .020", plus .015".

Face width tolerance plus .0000" minus .0005".

Straight shank — 1/2" diameter, 2" long.

American Standard No.	Tool Diameter	Dimensions			
		Face Width	Neck Diam.	Overall Length	No. of Teeth
204	1/2	1/16	.130	2 1/16	6
304	1/2	3/32	.160	2 3/32	6
404	1/2	1/8	.191	2 1/8	6
305	5/8	3/32	.191	2 3/32	6
405	5/8	1/8	.223	2 1/8	6
505	5/8	5/32	.252	2 5/32	6
605	5/8	3/16	.279	2 3/16	6
406	3/4	1/8	.217	2 1/8	6
506	3/4	5/32	.246	2 5/32	6
606	3/4	3/16	.279	2 3/16	6
	3/4	7/32	.342	2 7/32	6
806	3/4	1/4	.342	2 1/4	6
507	7/8	5/32	.246	2 5/32	6
607	7/8	3/16	.279	2 3/16	6
707	7/8	7/32	.312	2 7/32	6
807	7/8	1/4	.342	2 1/4	6
608	1	3/16	.279	2 3/16	8
708	1	7/32	.312	2 7/32	8
808	1	1/4	.342	2 1/4	8
	1	9/32	.401	2 9/32	8
1008	1	5/16	.401	2 5/16	8
	1	11/32	.467	2 11/32	8
1208	1	3/8	.467	2 3/8	8
609	1 1/8	3/16	.312	2 3/16	8
709	1 1/8	7/32	.342	2 7/32	8
809	1 1/8	1/4	.374	2 1/4	8
1009	1 1/8	5/16	.435	2 5/16	8
610	1 1/4	3/16	.312	2 3/16	8
710	1 1/4	7/32	.342	2 7/32	8
810	1 1/4	1/4	.374	2 1/4	8

	1 1/4	9/32	.435	2 9/32	8
1010	1 1/4	5/16	.435	2 5/16	8
	1 1/4	11/32	.467	2 11/32	8
1210	1 1/4	3/8	.467	2 3/8	8
811	1 3/8	1/4	.401	2 1/4	8
	1 3/8	9/32	.467	2 9/32	8
1011	1 3/8	5/16	.467	2 5/16	8
	1 3/8	11/32	.467	2 11/32	8
1211	1 3/8	3/8	.467	2 3/8	8
812	1 1/2	1/4	.435	2 1/4	8
	1 1/2	9/32	.467	2 9/32	8
1012	1 1/2	5/16	.467	2 5/16	8
	1 1/2	11/32	.467	2 11/32	8
1212	1 1/2	3/8	.467	2 3/8	8
	1 1/2	13/32	.467	2 13/32	8
	1 1/2	7/16	.467	2 7/16	8
	1 1/2	15/32	.467	2 15/32	8

CARMET
TOOLS & INSERTS



KEYSEAT CUTTERS — CARBIDE TIPPED

STRAIGHT TOOTH – STEEL

Fast cutting to close tolerances with longer tool life.

Carbide tips brazed to hardened alloy steel bodies.

Cutting diameter tolerance plus .020", plus .015".

Face width tolerance plus .0000" minus .0005".

Straight shank — 1/2" diameter, 2" long.

American Standard No.	Tool Diameter	Dimensions			
		Face Width	Neck Diam.	Overall Length	No. of Teeth
204	1/2	1/16	.130	2 1/16	6
304	1/2	3/32	.160	2 3/32	6
404	1/2	1/8	.191	2 1/8	6
305	5/8	3/32	.191	2 3/32	6
405	5/8	1/8	.223	2 1/8	6
505	5/8	5/32	.252	2 5/32	6
605	5/8	3/16	.279	2 3/16	6
406	3/4	1/8	.217	2 1/8	6
506	3/4	5/32	.246	2 5/32	6
606	3/4	3/16	.279	2 3/16	6
	3/4	7/32	.342	2 7/32	6
806	3/4	1/4	.342	2 1/4	6
507	7/8	5/32	.246	2 5/32	6
607	7/8	3/16	.279	2 3/16	6
707	7/8	7/32	.312	2 7/32	6
807	7/8	1/4	.342	2 1/4	6
608	1	3/16	.279	2 3/16	8
708	1	7/32	.312	2 7/32	8
808	1	1/4	.342	2 1/4	8
	1	9/32	.401	2 9/32	8
1008	1	5/16	.401	2 5/16	8
	1	11/32	.467	2 11/32	8

1208	1	$\frac{3}{8}$	.467	$2 \frac{3}{8}$	8
609	$1 \frac{1}{8}$	$\frac{3}{16}$	.312	$2 \frac{3}{16}$	8
709	$1 \frac{1}{8}$	$\frac{7}{32}$	.342	$2 \frac{7}{32}$	8
809	$1 \frac{1}{8}$	$\frac{1}{4}$	.374	$2 \frac{1}{4}$	8
	$1 \frac{1}{8}$	$\frac{9}{32}$	.435	$2 \frac{9}{32}$	8
1009	$1 \frac{1}{8}$	$\frac{5}{16}$	.435	$2 \frac{5}{16}$	8
610	$1 \frac{1}{4}$	$\frac{3}{16}$	.312	$2 \frac{3}{16}$	8
710	$1 \frac{1}{4}$	$\frac{7}{32}$	.342	$2 \frac{7}{32}$	8
810	$1 \frac{1}{4}$	$\frac{1}{4}$	.374	$2 \frac{1}{4}$	8
	$1 \frac{1}{4}$	$\frac{9}{32}$	.435	$2 \frac{9}{32}$	8
1010	$1 \frac{1}{4}$	$\frac{5}{16}$	.435	$2 \frac{5}{16}$	8
	$1 \frac{1}{4}$	$\frac{11}{32}$	.467	$2 \frac{11}{32}$	8
1210	$1 \frac{1}{4}$	$\frac{3}{8}$	.467	$2 \frac{3}{8}$	8
811	$1 \frac{3}{8}$	$\frac{1}{4}$	.401	$2 \frac{1}{4}$	8
	$1 \frac{3}{8}$	$\frac{9}{32}$	.467	$2 \frac{9}{32}$	8
1011	$1 \frac{3}{8}$	$\frac{5}{16}$	.467	$2 \frac{5}{16}$	8
	$1 \frac{3}{8}$	$\frac{11}{32}$	.467	$2 \frac{11}{32}$	8
1211	$1 \frac{3}{8}$	$\frac{3}{8}$	.467	$2 \frac{3}{8}$	8
812	$1 \frac{1}{2}$	$\frac{1}{4}$	.435	$2 \frac{1}{4}$	8
	$1 \frac{1}{2}$	$\frac{9}{32}$	.467	$2 \frac{9}{32}$	8
1012	$1 \frac{1}{2}$	$\frac{5}{16}$	.467	$2 \frac{5}{16}$	8
	$1 \frac{1}{2}$	$\frac{11}{32}$	.467	$2 \frac{11}{32}$	8
1212	$1 \frac{1}{2}$	$\frac{3}{8}$	.467	$2 \frac{3}{8}$	8
	$1 \frac{1}{2}$	$\frac{13}{32}$	.467	$2 \frac{13}{32}$	8
	$1 \frac{1}{2}$	$\frac{7}{16}$	.467	$2 \frac{7}{16}$	8
	$1 \frac{1}{2}$	$\frac{15}{32}$	.467	$2 \frac{15}{32}$	8
	$1 \frac{1}{2}$	$\frac{1}{2}$	.467	$2 \frac{1}{2}$	8



**KEYSEAT CUTTERS — CARBIDE TIPPED
STAGGERED TOOTH – NON-FERROUS & CAST IRON**

Alternate right and left axial rake.

Carbide tips brazed to hardened alloy steel bodies.

Cutting diameter tolerance plus .020", plus .015".

Face width tolerance plus .0000" minus .0005".

American Standard No.	Tool Diameter	Dimensions			
		Face Width	Neck Diam.	Overall Length	No. of Teeth
204	1/2	1/16	.130	2 1/16	6
304	1/2	3/32	.160	2 3/32	6
404	1/2	1/8	.191	2 1/8	6
305	5/8	3/32	.191	2 3/32	6
405	5/8	1/8	.223	2 1/8	6

505	$\frac{5}{8}$	$\frac{5}{32}$	.252	$2 \frac{5}{32}$	6
605	$\frac{5}{8}$	$\frac{3}{16}$	.279	$2 \frac{3}{16}$	6
406	$\frac{3}{4}$	$\frac{1}{8}$	.217	$2 \frac{1}{8}$	6
506	$\frac{3}{4}$	$\frac{5}{32}$	.246	$2 \frac{5}{32}$	6
606	$\frac{3}{4}$	$\frac{3}{16}$	.279	$2 \frac{3}{16}$	6

406	$\frac{3}{4}$	$\frac{1}{8}$	.217	$2 \frac{1}{8}$	6
506	$\frac{3}{4}$	$\frac{5}{32}$	.246	$2 \frac{5}{32}$	6
606	$\frac{3}{4}$	$\frac{3}{16}$	.279	$2 \frac{3}{16}$	6
	$\frac{3}{4}$	$\frac{7}{32}$	.342	$2 \frac{7}{32}$	6
806	$\frac{3}{4}$	$\frac{1}{4}$	.342	$2 \frac{1}{4}$	6
507	$\frac{7}{8}$	$\frac{5}{32}$	.246	$2 \frac{5}{32}$	6
607	$\frac{7}{8}$	$\frac{3}{16}$	.279	$2 \frac{3}{16}$	6
707	$\frac{7}{8}$	$\frac{7}{32}$	.312	$2 \frac{7}{32}$	6
807	$\frac{7}{8}$	$\frac{1}{4}$	.342	$2 \frac{1}{4}$	6
608	1	$\frac{3}{16}$	.279	$2 \frac{3}{16}$	8
708	1	$\frac{7}{32}$	.312	$2 \frac{7}{32}$	8
808	1	$\frac{1}{4}$	.342	$2 \frac{1}{4}$	8
	1	$\frac{9}{32}$	.401	$2 \frac{9}{32}$	8
1008	1	$\frac{5}{16}$	.401	$2 \frac{5}{16}$	8
	1	$\frac{11}{32}$	.467	$2 \frac{11}{32}$	8
1208	1	$\frac{3}{8}$	.467	$2 \frac{3}{8}$	8
609	$1 \frac{1}{8}$	$\frac{3}{16}$	.312	$2 \frac{3}{16}$	8
709	$1 \frac{1}{8}$	$\frac{7}{32}$	.342	$2 \frac{7}{32}$	8
809	$1 \frac{1}{8}$	$\frac{1}{4}$	.374	$2 \frac{1}{4}$	8
1009	$1 \frac{1}{8}$	$\frac{5}{16}$	.435	$2 \frac{5}{16}$	8
610	$1 \frac{1}{4}$	$\frac{3}{16}$	.312	$2 \frac{3}{16}$	8
710	$1 \frac{1}{4}$	$\frac{7}{32}$	.342	$2 \frac{7}{32}$	8
810	$1 \frac{1}{4}$	$\frac{1}{4}$	.374	$2 \frac{1}{4}$	8
	$1 \frac{1}{4}$	$\frac{9}{32}$	.435	$2 \frac{9}{32}$	8

1010	1 1/4	5/16	.435	2 5/16	8
	1 1/4	11/32	.467	2 11/32	8
1210	1 1/4	3/8	.467	2 3/8	8
811	1 3/8	1/4	.401	2 1/4	8
	1 3/8	9/32	.467	2 9/32	8
1011	1 3/8	5/16	.467	2 5/16	8
	1 3/8	11/32	.467	2 11/32	8
1211	1 3/8	3/8	.467	2 3/8	8
812	1 1/2	1/4	.435	2 1/4	8
	1 1/2	9/32	.467	2 9/32	8
1012	1 1/2	5/16	.467	2 5/16	8
	1 1/2	11/32	.467	2 11/32	8
1212	1 1/2	3/8	.467	2 3/8	8
	1 1/2	13/32	.467	2 13/32	8
	1 1/2	7/16	.467	2 7/16	8
	1 1/2	15/32	.467	2 15/32	8
	1 1/2	1/2	.467	2 1/2	8

CARMET
TOOLS & INSERTS



KEYSEAT CUTTERS — CARBIDE TIPPED STAGGERED TOOTH — STEEL

Alternate right and left axial rake.

Carbide tips brazed to hardened alloy steel bodies.

Cutting diameter tolerance plus .020", plus .015".

Face width tolerance plus .0000" minus .0005".

American Standard No.	Tool Diameter	Dimensions			
		Face Width	Neck Diam.	Overall Length	No. of Teeth
204	1/2	1/16	.130	2 1/16	6
304	1/2	3/32	.160	2 3/32	6
404	1/2	1/8	.191	2 1/8	6
305	5/8	3/32	.191	2 3/32	6
405	5/8	1/8	.223	2 1/8	6
505	5/8	5/32	.252	2 5/32	6
605	5/8	3/16	.279	2 3/16	6
406	3/4	1/8	.217	2 1/8	6
506	3/4	5/32	.246	2 5/32	6
606	3/4	3/16	.279	2 3/16	6
	3/4	7/32	.342	2 7/32	6
806	3/4	1/4	.342	2 1/4	6
507	7/8	5/32	.246	2 5/32	6
607	7/8	3/16	.279	2 3/16	6
707	7/8	7/32	.312	2 7/32	6
807	7/8	1/4	.342	2 1/4	6
608	1	3/16	.279	2 3/16	8
708	1	7/32	.312	2 7/32	8
808	1	1/4	.342	2 1/4	8
	1	9/32	.401	2 9/32	8
1008	1	5/16	.401	2 5/16	8
	1	11/32	.467	2 11/32	8
1208	1	3/8	.467	2 3/8	8
609	1 1/8	3/16	.312	2 3/16	8
709	1 1/8	7/32	.342	2 7/32	8
809	1 1/8	1/4	.374	2 1/4	8
	1 1/8	9/32	.435	2 9/32	8
1009	1 1/8	5/16	.435	2 5/16	8
610	1 1/4	3/16	.312	2 3/16	8
710	1 1/4	7/32	.342	2 7/32	8

810	1 1/4	1/4	.374	2 1/4	8
	1 1/4	9/32	.435	2 9/32	8
1010	1 1/4	5/16	.435	2 5/16	8
	1 1/4	11/32	.467	2 11/32	8
1210	1 1/4	3/8	.467	2 3/8	8
811	1 3/8	1/4	.401	2 1/4	8
1011	1 3/8	9/32	.467	2 9/32	8
	1 3/8	5/16	.467	2 5/16	8
	1 3/8	11/32	.467	2 11/32	8
1211	1 3/8	3/8	.467	2 3/8	8
812	1 1/2	1/4	.435	2 1/4	8
	1 1/2	9/32	.467	2 9/32	8
1012	1 1/2	5/16	.467	2 5/16	8
	1 1/2	11/32	.467	2 11/32	8
1212	1 1/2	3/8	.467	2 3/8	8
	1 1/2	13/32	.467	2 13/32	8
	1 1/2	7/16	.467	2 7/16	8
	1 1/2	15/32	.467	2 15/32	8
	1 1/2	1/2	.467	2 1/2	8



T-SLOT CUTTERS – CARBIDE TIPPED T-SLOT CUTTERS FOR NON-FERROUS MATERIALS AND CAST IRON

Right and left hand helix with side cutting teeth.

Straight shank with drive flats. Cutting diameter tolerance plus .000", minus .010".

Bolt Diam.	Tool Diameter	Dimensions					
		Cutter Width	Diameter		Length		No. of Teeth
			Shank	Neck	Undercut	Overall	
1/4	9/16	15/64	1/2	17/64	35/64	2 19/32	6
5/16	21/32	17/64	1/2	21/64	39/64	2 11/16	6
3/8	25/32	21/64	3/4	13/32	55/64	3 1/4	6
1/2	31/32	25/64	3/4	17/32	63/64	3 7/16	6
5/8	1 1/4	31/64	1	21/32	1 9/64	3 15/16	6
3/4	1 15/32	5/8	1	25/32	1 1/2	4 7/16	6
1	1 27/32	53/64	1 1/4	1 1/32	1 43/64	4 13/16	8
1 1/4	2 7/32	1 3/32	1 1/4	1 7/32	1 31/32	5 3/8	8
1 1/2	2 21/32	1 11/32	1 1/4	1 17/32	2 1/8	5 29/32	8



T-SLOT CUTTERS – CARBIDE TIPPED T-SLOT CUTTERS FOR STEEL

Right and left hand helix with side cutting teeth.

Straight shank with drive flats. Cutting diameter tolerance plus .000", minus .010".

Bolt Diam.	Tool Diameter	Dimensions					
		Cutter Width	Diameter		Length		No. of Teeth
			Shank	Neck	Undercut	Overall	
1/4	9/16	15/64	1/2	17/64	35/64	2 19/32	6
5/16	21/32	17/64	1/2	21/64	39/64	2 11/16	6
3/8	25/32	21/64	3/4	13/32	55/64	3 1/4	6
1/2	31/32	25/64	3/4	17/32	63/64	3 7/16	6
5/8	1 1/4	31/64	1	21/32	1 9/64	3 15/16	6
3/4	1 15/32	5/8	1	25/32	1 1/2	4 7/16	6
1	1 27/32	53/64	1 1/4	1 1/32	1 43/64	4 13/16	8
1 1/4	2 7/32	1 3/32	1 1/4	1 7/32	1 31/32	5 3/8	8
1 1/2	2 21/32	1 11/32	1 1/4	1 17/32	2 1/8	5 29/32	8



DOVETAIL CUTTERS – CARBIDE TIPPED
45° DOVETAIL — FOR NON-FERROUS AND CAST IRON

45° included angle — right hand cut.

Straight shank with drive flats.

These dovetail cutters have a corner radius of .015" - .020"

Tool diameter tolerance: plus .015", minus .000".

Tool	Dimensions					
	Diameter	Cutter Width	Diameter		Overall Length	No. of Teeth
			Shank	Neck		
1/2	5/32	3/8	3/16	2 1/8	3	
3/4	1/4	3/8	1/4	2 1/4	3	
1	5/16	1/2	3/8	2 1/2	4	
1 1/4	3/8	5/8	1/2	2 3/4	4	
1 1/2	1/2	3/4	1/2	3 1/4	4	
2	5/8	1	3/4	4 1/4	6	
2 1/2	3/4	1 1/4	1	4 3/8	6	
3	1	1 1/4	1	4 1/2	6	



DOVETAIL CUTTERS – CARBIDE TIPPED
45° DOVETAIL — FOR STEEL

45° included angle — right hand cut.
Straight shank with drive flats.

Tool	Dimensions					
	Diameter	Cutter Width	Diameter		Overall Length	No. of Teeth
			Shank	Neck		
1/2	5/32	3/8	3/16	2 1/8	3	
3/4	1/4	3/8	1/4	2 1/4	3	
1	5/16	1/2	3/8	2 1/2	4	
1 1/4	3/8	5/8	1/2	2 3/4	4	
1 1/2	1/2	3/4	1/2	3 1/4	4	
2	5/8	1	3/4	4 1/4	6	
2 1/2	3/4	1 1/4	1	4 3/8	6	
3	1	1 1/4	1	4 1/2	6	



DOVETAIL CUTTERS – CARBIDE TIPPED
60° DOVETAIL — FOR NON-FERROUS AND CAST IRON

60° included angle — right hand cut.

Straight shank with drive flats

These dovetail cutters have a corner radius of .015" - .020"

Tool diameter tolerance: plus .015", minus .000".

Tool	Dimensions					
	Diameter	Cutter Width	Diameter		Overall Length	No. of Teeth
			Shank	Neck		
1/2	7/32	3/8	3/16	2 1/8	3	
3/4	1/4	3/8	1/4	2 1/4	3	
1	3/8	1/2	3/8	2 1/2	4	
1 1/4	1/2	5/8	1/2	2 3/4	4	
1 1/2	5/8	3/4	1/2	3 1/4	4	
2	3/4	1	3/4	4 1/4	6	
2 1/2	7/8	1 1/4	1	4 3/8	6	
3	1 1/8	1 1/4	1	4 1/2	6	



**DOVETAIL CUTTERS – CARBIDE TIPPED
60° DOVETAIL — FOR STEEL**

60° included angle — right hand cut.

Straight shank with drive flats

These dovetail cutters have a corner radius of .015" - .020"

Tool diameter tolerance: plus .015", minus .000".

Tool Diameter	Dimensions				
	Cutter Width	Diameter		Overall Length	No. of Teeth
		Shank	Neck		
1/2	7/32	3/8	3/16	2 1/8	3
3/4	1/4	3/8	1/4	2 1/4	3
1	3/8	1/2	3/8	2 1/2	4
1 1/4	1/2	5/8	1/2	2 3/4	4
1 1/2	5/8	3/4	1/2	3 1/4	4
2	3/4	1	3/4	4 1/4	6
2 1/2	7/8	1 1/4	1	4 3/8	6
3	1 1/8	1 1/4	1	4 1/2	6



CHAMFER MILLING CUTTERS — CARBIDE TIPPED 45° FOR NON-FERROUS & CAST IRON

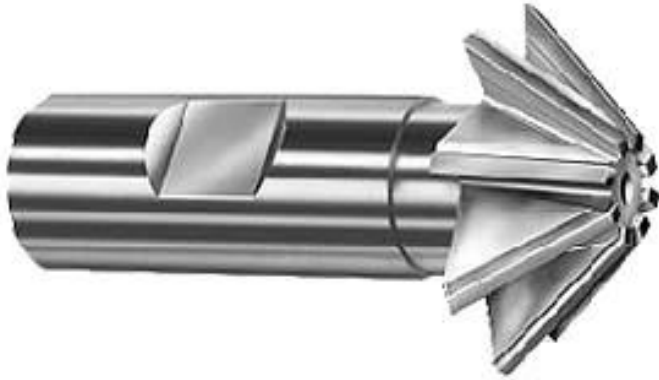
Right hand cut

Straight shank with Weldon flats

Tool diameter tolerance: plus .015", minus .000"

Tool	Dimensions			
	Diameter	Tool Width	Shank Diameter	Overall Length	No. of Teeth
1/2	1/8	3/8	2 1/8	4
3/4	3/16	3/8	2 1/8	6
1	5/16	1/2	2 1/2	6
1 1/2	1/2	3/4	2 3/4	8





CHAMFER MILLING CUTTERS — CARBIDE TIPPED 45° FOR STEEL

Right hand cut

Straight shank with Weldon flats

Tool diameter tolerance: plus .015", minus .000"

Tool Diameter	Dimensions			
	Tool Width	Shank Diameter	Overall Length	No. of Teeth
1/2	1/8	3/8	2 1/8	4
3/4	3/16	3/8	2 1/8	6
1	5/16	1/2	2 1/2	6
1 1/2	1/2	3/4	2 3/4	8



CHAMFER MILLING CUTTERS — CARBIDE TIPPED 60° FOR NON-FERROUS & CAST IRON

Right hand cut

Straight shank with Weldon flats

Tool diameter tolerance: plus .015", minus .000"

Tool Diameter	Dimensions			
	Tool Width	Shank Diameter	Overall Length	No. of Teeth
1/2	7/32	3/8	2 1/8	4
3/4	5/16	3/8	2 1/8	6
1	7/16	1/2	2 1/2	6
1 1/2	5/8	3/4	2 3/4	8



CHAMFER MILLING CUTTERS — CARBIDE TIPPED 60° FOR STEEL

Right hand cut

Straight shank with Weldon flats

Tool diameter tolerance: plus .015", minus .000"

Tool Diameter	Dimensions			
	Tool Width	Shank Diameter	Overall Length	No. of Teeth
1/2	7/32	3/8	2 1/8	4
3/4	5/16	3/8	2 1/8	6
1	7/16	1/2	2 1/2	6
1 1/2	5/8	3/4	2 3/4	8



RADIUS CUTTERS — CARBIDE TIPPED FOR NON-FERROUS & CAST IRONS

Right hand cut; Convex radius

Straight shank with Weldon flats

Tool diameter tolerance: plus .005", minus .000"

Tool radius tolerance

thru 1/8" radius: plus .001", minus .001"

over 1/8" radius: plus .002", minus .002"

Reduced neck diameter

Shortened shank or reduced shank diameter

Additional shank drive flat(s)

Tool Radius	Tool Diameter	Dimensions			
		Tool Width	Shank Diameter	Overall Length	No. of Teeth
1/32	3/4	1/16	1/2	3	6
1/16	3/4	1/8	1/2	3	6
3/32	7/8	3/16	1/2	3	6
1/8	1 1/4	1/4	3/4	3 1/2	6
5/32	1 5/16	5/16	3/4	3 1/2	6
3/16	1 3/8	3/8	3/4	3 1/2	6
1/4	1 1/2	1/2	3/4	4	6



RADIUS CUTTERS — CARBIDE TIPPED FOR STEEL

Right hand cut; Convex radius

Straight shank with Weldon flats

Tool diameter tolerance: plus .005", minus .000"

Tool radius tolerance

thru 1/8" radius: plus .001", minus .001"

over 1/8" radius: plus .002", minus .002"

Tool Radius	Tool Diameter	Dimensions			
		Tool Width	Shank Diameter	Overall Length	No. of Teeth
1/32	3/4	1/16	1/2	3	6
1/16	3/4	1/8	1/2	3	6
3/32	7/8	3/16	1/2	3	6
1/8	1 1/4	1/4	3/4	3 1/2	6
5/32	1 5/16	5/16	3/4	3 1/2	6
3/16	1 3/8	3/8	3/4	3 1/2	6
1/4	1 1/2	1/2	3/4	4	6



PREMIUM C2 FOR CAST IRON & NON-FERROUS

For machining to a square shoulder.

Tool Style	Dimensions			Packaging Quantity
	Shank Width	Shank Height	Shank Length	
AR-4	1/4	1/4	2	12
AR-5	5/16	5/16	2 1/4	12
AR-6	3/8	3/8	2 1/2	12
AR-7	7/16	7/16	3	12
AR-8	1/2	1/2	3 1/2	12
AR-10	5/8	5/8	4	12
AR-12	3/4	3/4	4 1/2	12
AR-16	1	1	7	6
AR-20	1 1/4	1 1/4	8	1
AR-44	1/2	1	7	12



BRAZED SINGLE POINT TOOLS — CARBIDE TIPPED PREMIUM C2 FOR CAST IRON & NON-FERROUS

For machining to a square shoulder.

Tool Style	Dimensions			Packaging Quantity
	Shank Width	Shank Height	Shank Length	
AL-4	1/4	1/4	2	12
AL-5	5/16	5/16	2 1/4	12
AL-6	3/8	3/8	2 1/2	12
AL-7	7/16	7/16	3	12
AL-8	1/2	1/2	3 1/2	12
AL-10	5/8	5/8	4	12
AL-12	3/4	3/4	4 1/2	12

AL-16	1	1	7	6
AL-44	1/2	1	7	12



BRAZED SINGLE POINT TOOLS — CARBIDE TIPPED PREMIUM C2 FOR CAST IRON & NON-FERROUS

For interrupted or irregular cuts.

Tool Style	Dimensions			Packaging Quantity
	Shank Width	Shank Height	Shank Length	
BR-4	1/4	1/4	2	12
BR-5	5/16	5/16	2 1/4	12
BR-6	3/8	3/8	2 1/2	12
BR-7	7/16	7/16	3	12
BR-8	1/2	1/2	3 1/2	12
BR-10	5/8	5/8	4	12
BR-12	3/4	3/4	4 1/2	12
BR-16	1	1	7	6
BR-20	1 1/4	1 1/4	8	1
BR-44	1/2	1	7	12



**BRAZED SINGLE POINT TOOLS — CARBIDE TIPPED
PREMIUM C2 FOR CAST IRON &**

For interrupted or irregular cuts.

Tool Style	Dimensions			Packaging Quantity
	Shank Width	Shank Height	Shank Length	
BL-4	1/4	1/4	2	12
BL-5	5/16	5/16	2 1/4	12
BL-6	3/8	3/8	2 1/2	12
BL-7	7/16	7/16	3	12
BL-8	1/2	1/2	3 1/2	12
BL-10	5/8	5/8	4	12
BL-12	3/4	3/4	4 1/2	12
BL-16	1	1	7	6
BL-20	1 1/4	1 1/4	8	1
BL-44	1/2	1	7	12



**BRAZED SINGLE POINT TOOLS — CARBIDE TIPPED
PREMIUM C2 FOR CAST IRON & NON-FERROUS**

C — 0° SQUARE NOSE
No nose radius.

Tool Style	Dimensions			Packaging Quantity
	Shank Width	Shank Height	Shank Length	
C-4	1/4	1/4	2	12
C-5	5/16	5/16	2 1/4	12
C-6	3/8	3/8	2 1/2	12
C-7	7/16	7/16	3	12
C-8	1/2	1/2	3 1/2	12
C-10	5/8	5/8	4	12
C-12	3/4	3/4	4 1/2	12
C-16	1	1	7	6
C-20	1 1/4	1 1/4	8	1
C-44	1/2	1	7	12



**BRAZED SINGLE POINT TOOLS — CARBIDE TIPPED
PREMIUM C2 FOR CAST IRON & NON-FERROUS**

D — 40° SIDE CUTTING EDGE ANGLE
80° Pointed nose.

Tool Style	Dimensions			Packaging Quantity
	Shank Width	Shank Height	Shank Length	
D-4	1/4	1/4	2	12

D-5	$\frac{5}{16}$	$\frac{5}{16}$	2 $\frac{1}{4}$	12
D-6	$\frac{3}{8}$	$\frac{3}{8}$	2 $\frac{1}{2}$	12
D-7	$\frac{7}{16}$	$\frac{7}{16}$	3	12
D-8	$\frac{1}{2}$	$\frac{1}{2}$	3 $\frac{1}{2}$	12
D-10	$\frac{5}{8}$	$\frac{5}{8}$	4	12
D-12	$\frac{3}{4}$	$\frac{3}{4}$	4 $\frac{1}{2}$	12
D-16	1	1	7	6



**BRAZED SINGLE POINT TOOLS — CARBIDE TIPPED
PREMIUM C2 FOR CAST IRON & NON-FERROUS
D — 40° SIDE CUTTING EDGE ANGLE**

80° Pointed nose.

Tool Style	Dimensions			Packaging Quantity
	Shank Width	Shank Height	Shank Length	
D-4	$\frac{1}{4}$	$\frac{1}{4}$	2	12
D-5	$\frac{5}{16}$	$\frac{5}{16}$	2 $\frac{1}{4}$	12
D-6	$\frac{3}{8}$	$\frac{3}{8}$	2 $\frac{1}{2}$	12
D-7	$\frac{7}{16}$	$\frac{7}{16}$	3	12
D-8	$\frac{1}{2}$	$\frac{1}{2}$	3 $\frac{1}{2}$	12
D-10	$\frac{5}{8}$	$\frac{5}{8}$	4	12
D-12	$\frac{3}{4}$	$\frac{3}{4}$	4 $\frac{1}{2}$	12
D-16	1	1	7	6



**BRAZED SINGLE POINT TOOLS — CARBIDE TIPPED
PREMIUM C2 FOR CAST IRON & NON-FERROUS
E — 60° INCLUDED ANGLE / 30° SIDE CUTTING EDGE ANGLE**
For threading, chamfering, notching and undercutting

Tool Style	Dimensions			Packaging Quantity
	Shank Width	Shank Height	Shank Length	
E-4	1/4	1/4	2	12
E-5	5/16	5/16	2 1/4	12
E-6	3/8	3/8	2 1/2	12
E-7	7/16	7/16	3	12
E-8	1/2	1/2	3 1/2	12
E-10	5/8	5/8	4	12
E-12	3/4	3/4	4 1/2	12
E-16	1	1	7	6



**BRAZED SINGLE POINT TOOLS — CARBIDE TIPPED
PREMIUM C2 FOR CAST IRON & NON-FERROUS
ER — 30° SIDE CUTTING EDGE ANGLE**

Offset for threading or boring

Tool Style	Dimensions			Packaging Quantity
	Shank Width	Shank Height	Shank Length	
ER-4	1/4	1/4	2	12
ER-5	5/16	5/16	2 1/4	12
ER-6	3/8	3/8	2 1/2	12
ER-8	1/2	1/2	3 1/2	12
ER-10	5/8	5/8	4	12
ER-12	3/4	3/4	4 1/2	12



**BRAZED SINGLE POINT TOOLS — CARBIDE TIPPED
PREMIUM C2 FOR CAST IRON & NON-FERROUS
EL — 30° SIDE CUTTING EDGE ANGLE**

Offset for threading or boring

Tool Style	Dimensions			Packaging Quantity
	Shank Width	Shank Height	Shank Length	
EL-4	1/4	1/4	2	12
EL-5	5/16	5/16	2 1/4	12
EL-6	3/8	3/8	2 1/2	12
EL-8	1/2	1/2	3 1/2	12
EL-10	5/8	5/8	4	12
EL-12	3/4	3/4	4 1/2	12



**BRAZED SINGLE POINT TOOLS — CARBIDE TIPPED
PREMIUM C2 FOR CAST IRON & NON-FERROUS
FR — 0° END CUTTING EDGE ANGLE**

Offset for facing to a square shoulder or close to chuck jaws.

Tool Style	Dimensions			Packaging Quantity
	Shank Width	Shank Height	Shank Length	
FR-8	1/2	1/2	3 1/2	12
FR-10	5/8	5/8	4	12
FR-12	3/4	3/4	4 1/2	6
FR-16	1	1	7	4
FR-44	1/2	1	6	6



**BRAZED SINGLE POINT TOOLS — CARBIDE TIPPED
PREMIUM C2 FOR CAST IRON & NON-FERROUS
FL — 0° END CUTTING EDGE ANGLE**

Offset for facing to a square shoulder or close to chuck jaws.

Tool Style	Dimensions			Packaging Quantity
	Shank Width	Shank Height	Shank Length	
FL-8	1/2	1/2	3 1/2	12
FL-10	5/8	5/8	4	12
FL-12	3/4	3/4	4 1/2	6
FL-16	1	1	7	4
FL-44	1/2	1	6	6



**BRAZED SINGLE POINT TOOLS — CARBIDE TIPPED
PREMIUM C2 FOR CAST IRON & NON-FERROUS
GR — 0° SIDE CUTTING EDGE ANGLE**

Offset for facing to a square shoulder or close to chuck jaws.

Tool Style	Dimensions			Packaging Quantity
	Shank Width	Shank Height	Shank Length	
GR-8	1/2	1/2	3 1/2	12
GR-10	5/8	5/8	4	12
GR-12	3/4	3/4	4 1/2	6
GR-16	1	1	7	4
GR-20	1 1/4	1 1/4	8	1
GR-44	1/2	1	6	6





**BRAZED SINGLE POINT TOOLS — CARBIDE TIPPED
PREMIUM C2 FOR CAST IRON & NON-FERROUS
GL — 0° SIDE CUTTING EDGE ANGLE**

Offset for facing or turning to a square shoulder or close to chuck jaws.

Tool Style	Dimensions			Packaging Quantity
	Shank Width	Shank Height	Shank Length	
GL-8	1/2	1/2	3 1/2	12
GL-10	5/8	5/8	4	12
GL-12	3/4	3/4	4 1/2	6
GL-16	1	1	7	4
GL-20	1 1/4	1 1/4	8	1
GL-44	1/2	1	6	6



**BRAZED SINGLE POINT TOOLS — CARBIDE TIPPED
PREMIUM C5-C6 FOR STEEL
AR — 0° SIDE CUTTING EDGE ANGLE**

For machining to a square shoulder.

Tool Style	Dimensions			Packaging Quantity
	Shank Width	Shank Height	Shank Length	
AR-4	1/4	1/4	2	12
AR-5	5/16	5/16	2 1/4	12
AR-6	3/8	3/8	2 1/2	12
AR-7	7/16	7/16	3	12
AR-8	1/2	1/2	3 1/2	12
AR-10	5/8	5/8	4	12
AR-12	3/4	3/4	4 1/2	12
AR-16	1	1	7	6
AR-20	1 1/4	1 1/4	8	1
AR-44	1/2	1	7	12



**BRAZED SINGLE POINT TOOLS — CARBIDE TIPPED
PREMIUM C5-C6 FOR STEEL
AL — 0° SIDE CUTTING EDGE ANGLE**

For machining to a square shoulder.

Tool Style	Dimensions			Packaging Quantity
	Shank Width	Shank Height	Shank Length	
AL-4	1/4	1/4	2	12
AL-5	5/16	5/16	2 1/4	12
AL-6	3/8	3/8	2 1/2	12

AL-7	$\frac{7}{16}$	$\frac{7}{16}$	3	12
AL-8	$\frac{1}{2}$	$\frac{1}{2}$	3 $\frac{1}{2}$	12
AL-10	$\frac{5}{8}$	$\frac{5}{8}$	4	12
AL-12	$\frac{3}{4}$	$\frac{3}{4}$	4 $\frac{1}{2}$	12
AL-16	1	1	7	6
AL-20	1 $\frac{1}{4}$	1 $\frac{1}{4}$	8	1
AL-44	$\frac{1}{2}$	1	7	12



**BRAZED SINGLE POINT TOOLS — CARBIDE TIPPED
PREMIUM C5-C6 FOR STEEL
BR — 15° SIDE CUTTING EDGE ANGLE**

For interrupted or irregular cuts.

Tool Style	Dimensions			Packaging Quantity
	Shank Width	Shank Height	Shank Length	
BR-4	$\frac{1}{4}$	$\frac{1}{4}$	2	12
BR-5	$\frac{5}{16}$	$\frac{5}{16}$	2 $\frac{1}{4}$	12
BR-6	$\frac{3}{8}$	$\frac{3}{8}$	2 $\frac{1}{2}$	12
BR-7	$\frac{7}{16}$	$\frac{7}{16}$	3	12
BR-8	$\frac{1}{2}$	$\frac{1}{2}$	3 $\frac{1}{2}$	12
BR-10	$\frac{5}{8}$	$\frac{5}{8}$	4	12
BR-12	$\frac{3}{4}$	$\frac{3}{4}$	4 $\frac{1}{2}$	12
BR-16	1	1	7	6
BR-20	1 $\frac{1}{4}$	1 $\frac{1}{4}$	8	1
BR-44	$\frac{1}{2}$	1	7	12



**BRAZED SINGLE POINT TOOLS — CARBIDE TIPPED
PREMIUM C5-C6 FOR STEEL
BL — 15° SIDE CUTTING EDGE ANGLE**

For interrupted or irregular cuts.

Tool Style	Dimensions			Packaging Quantity
	Shank Width	Shank Height	Shank Length	
BL-4	1/4	1/4	2	12
BL-5	5/16	5/16	2 1/4	12
BL-6	3/8	3/8	2 1/2	12
BL-7	7/16	7/16	3	12
BL-8	1/2	1/2	3 1/2	12
BL-10	5/8	5/8	4	12
BL-12	3/4	3/4	4 1/2	12
BL-16	1	1	7	6
BL-20	1 1/4	1 1/4	8	1
BL-44	1/2	1	7	12



BRAZED SINGLE POINT TOOLS — CARBIDE TIPPED

PREMIUM C5-C6 FOR STEEL

C — 0° SQUARE NOSE

No nose radius.

Tool Style	Dimensions			Packaging Quantity
	Shank Width	Shank Height	Shank Length	
C-4	1/4	1/4	2	12
C-5	5/16	5/16	2 1/4	12
C-6	3/8	3/8	2 1/2	12
C-7	7/16	7/16	3	12
C-8	1/2	1/2	3 1/2	12
C-10	5/8	5/8	4	12
C-12	3/4	3/4	4 1/2	12
C-16	1	1	7	6
C-20	1 1/4	1 1/4	8	1
C-44	1/2	1	7	12



BRAZED SINGLE POINT TOOLS — CARBIDE TIPPED PREMIUM C5-C6 FOR STEEL

D — 40° SIDE CUTTING

Tool Style	Dimensions			Packaging Quantity
	Shank Width	Shank Height	Shank Length	
D-4	1/4	1/4	2	12
D-5	5/16	5/16	2 1/4	12
D-6	3/8	3/8	2 1/2	12
D-7	7/16	7/16	3	12
D-8	1/2	1/2	3 1/2	12
D-10	5/8	5/8	4	12

D-12	$\frac{3}{4}$	$\frac{3}{4}$	4 $\frac{1}{2}$	12
D-16	1	1	7	6



BRAZED SINGLE POINT TOOLS — CARBIDE TIPPED

PREMIUM C5-C6 FOR STEEL

E — 60° INCLUDED ANGLE / 30° SIDE CUTTING EDGE ANGLE

For threading, chamfering, notching and undercutting

Tool Style	Dimensions			Packaging Quantity
	Shank Width	Shank Height	Shank Length	
E-4	$\frac{1}{4}$	$\frac{1}{4}$	2	12
E-5	$\frac{5}{16}$	$\frac{5}{16}$	2 $\frac{1}{4}$	12
E-6	$\frac{3}{8}$	$\frac{3}{8}$	2 $\frac{1}{2}$	12
E-7	$\frac{7}{16}$	$\frac{7}{16}$	3	12
E-8	$\frac{1}{2}$	$\frac{1}{2}$	3 $\frac{1}{2}$	12
E-10	$\frac{5}{8}$	$\frac{5}{8}$	4	12
E-12	$\frac{3}{4}$	$\frac{3}{4}$	4 $\frac{1}{2}$	12
E-16	1	1	7	6



BRAZED SINGLE POINT TOOLS — CARBIDE TIPPED

PREMIUM C5-C6 FOR STEEL

ER — 30° SIDE CUTTING EDGE ANGLE

Offset for threading or boring

Tool Style	Dimensions			Packaging Quantity
	Shank Width	Shank Height	Shank Length	
ER-4	1/4	1/4	2	12
ER-5	5/16	5/16	2 1/4	12
ER-6	3/8	3/8	2 1/2	12
ER-8	1/2	1/2	3 1/2	12
ER-10	5/8	5/8	4	12
ER-12	3/4	3/4	4 1/2	12



**BRAZED SINGLE POINT TOOLS — CARBIDE TIPPED
PREMIUM C5-C6 FOR STEEL
EL — 30° SIDE CUTTING EDGE ANGLE**

Offset for threading or boring

Tool Style	Dimensions			Packaging Quantity
	Shank Width	Shank Height	Shank Length	
EL-4	1/4	1/4	2	12
EL-5	5/16	5/16	2 1/4	12
EL-6	3/8	3/8	2 1/2	12
EL-8	1/2	1/2	3 1/2	12
EL-10	5/8	5/8	4	12
EL-12	3/4	3/4	4 1/2	12



BRAZED SINGLE POINT TOOLS — CARBIDE TIPPED
PREMIUM C5-C6 FOR STEEL
FR — 0° END CUTTING EDGE ANGLE

Offset for facing to a square shoulder or close to chuck jaws.

Tool Style	Dimensions			Packaging Quantity
	Shank Width	Shank Height	Shank Length	
FR-8	1/2	1/2	3 1/2	12
FR-10	5/8	5/8	4	12
FR-12	3/4	3/4	4 1/2	6
FR-16	1	1	7	4
FR-44	1/2	1	6	6



BRAZED SINGLE POINT TOOLS — CARBIDE TIPPED
PREMIUM C5-C6 FOR STEEL
FL — 0° END CUTTING EDGE ANGLE

Offset for facing to a square shoulder or close to chuck jaws.

Tool Style	Dimensions			Packaging Quantity
	Shank Width	Shank Height	Shank Length	
FL-8	1/2	1/2	3 1/2	12
FL-10	5/8	5/8	4	12
FL-12	3/4	3/4	4 1/2	6
FL-16	1	1	7	4
FL-44	1/2	1	6	6



**BRAZED SINGLE POINT TOOLS — CARBIDE TIPPED
PREMIUM C5-C6 FOR STEEL
GR — 0° SIDE CUTTING EDGE ANGLE**

Offset for facing or turning to a square shoulder or close to chuck jaws.

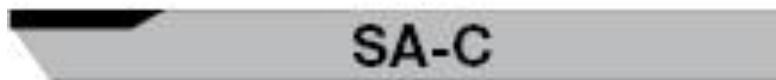
Tool Style	Dimensions			Packaging Quantity
	Shank Width	Shank Height	Shank Length	
GR-8	1/2	1/2	3 1/2	12
GR-10	5/8	5/8	4	12
GR-12	3/4	3/4	4 1/2	6
GR-16	1	1	7	4
GR-20	1 1/4	1 1/4	8	1
GR-44	1/2	1	6	6



BRAZED SINGLE POINT TOOLS — CARBIDE TIPPED
PREMIUM C5-C6 FOR STEEL
GL — 0° SIDE CUTTING EDGE ANGLE

Offset for facing or turning to a square shoulder or close to chuck jaws

Tool Style	Dimensions			Packaging Quantity
	Shank Width	Shank Height	Shank Length	
GL-8	1/2	1/2	3 1/2	12
GL-10	5/8	5/8	4	12
GL-12	3/4	3/4	4 1/2	6
GL-16	1	1	7	4
GL-20	1 1/4	1 1/4	8	1
GL-44	1/2	1	6	6



BRAZED CUT OFF TOOLS — CARBIDE TIPPED
S.A. SERIES SWISS AUTOMATIC TOOLS
S.A. SERIES SWISS AUTOMATIC TOOLS

Requires finish grind for cut-off, forming, or turning

Tool Style	Dimensions						Packaging Quantity
	Shank Width	Shank Height	Shank Length	Carbide Thickness	Cut-Off Width	Carbide Length	
SA6C	1/4	1/4	6	1/8	3/32	1 1/4	10
SA7C	9/32	9/32	6	1/8	3/32	1 1/4	10
SA8C	5/16	5/16	6	1/8	3/32	1 1/4	10
SA9C	3/8	3/8	6	1/8	3/32	1 1/4	10
SA10C	13/32	13/32	6	1/8	3/32	1 1/4	10
SA11C	7/16	7/16	6	3/32	1/8	1 1/4	10
SA11.5C	15/32	15/32	6	3/32	1/8	1 1/4	10
SA12C	1/2	1/2	6	3/32	1/8	1 1/4	10



SA-T

BRAZED CUT OFF TOOLS — CARBIDE TIPPED S.A. SERIES SWISS AUTOMATIC TOOLS

Requires finish grind for cut-off, forming, or turning

Tool Style	Dimensions						Packaging Quantity
	Shank Width	Shank Height	Shank Length	Carbide Thickness	Cut-Off Width	Carbide Length	
SA6T	1/4	1/4	6	3/32	1/8	1 1/4	10
SA7T	9/32	9/32	6	3/32	1/8	1 1/4	10
SA8T	5/16	5/16	6	3/32	3/16	1 1/4	10
SA9T	3/8	3/8	6	3/32	3/16	1 1/4	10
SA10T	13/32	13/32	6	3/32	3/16	1 1/4	10
SA11T	7/16	7/16	6	1/8	1/4	1	10

SA11.5T	$\frac{15}{32}$	$\frac{15}{32}$	6	$\frac{1}{8}$	$\frac{1}{4}$	1	10
SA12T	$\frac{1}{2}$	$\frac{1}{2}$	6	$\frac{1}{8}$	$\frac{1}{4}$	1	10



PREMIUM C2 FOR CAST IRON & NON-FERROUS

CT — STANDARD CUT-OFF TOOL

For stock cutoff of solid bars.

Finish ground – ready for use

Tool Style	Dimensions				Packaging Quantity
	Shank Width	Shank Height	Shank Length	Cut-Off Width	
CT-111	$\frac{1}{2}$	1	5	$\frac{1}{8}$	6
CT-122	$\frac{1}{2}$	1	5	$\frac{3}{16}$	6
CT-121	$\frac{1}{2}$	1	5	$\frac{1}{4}$	6
CT-120	$\frac{1}{2}$	1	5	$\frac{5}{16}$	6
CT-130	$\frac{5}{8}$	1 $\frac{1}{4}$	5	$\frac{3}{8}$	6
CT-140	$\frac{3}{4}$	1 $\frac{1}{2}$	6	$\frac{3}{8}$	6



BRAZED CUT-OFF TOOLS — CARBIDE TIPPED PREMIUM C2 FOR CAST IRON & NON-FERROUS

CTL — STANDARD CUT-OFF TOOL

For stock cutoff of solid bars.

Finish ground – ready for use.

Tool Style	Dimensions				Packaging Quantity
	Shank Width	Shank Height	Shank Length	Cut-Off Width	
CTL-111	1/2	1	5	1/8	6
CTL-122	1/2	1	5	3/16	6
CTL-121	1/2	1	5	1/4	6
CTL-120	1/2	1	5	5/16	6
CTL-130	5/8	1 1/4	5	3/8	6
CTL-140	3/4	1 1/2	6	3/8	6



BRAZED SINGLE POINT TOOLS — CARBIDE TIPPED PREMIUM C5-C6 FOR STEEL CT — STANDARD CUT-OFF TOOL

For stock cutoff of solid bars.

Finish ground – ready for use.

Tool Style	Dimensions				Packaging Quantity
	Shank Width	Shank Height	Shank Length	Cut-Off Width	
CT-111	1/2	1	5	1/8	6
CT-122	1/2	1	5	3/16	6
CT-121	1/2	1	5	1/4	6
CT-120	1/2	1	5	5/16	6
CT-130	5/8	1 1/4	5	3/8	6

CT-140	$\frac{3}{4}$	1 $\frac{1}{2}$	6	$\frac{3}{8}$	6
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**BRAZED SINGLE POINT TOOLS — CARBIDE TIPPED
PREMIUM C5-C6 FOR STEEL
CTL — STANDARD CUT-OFF TOOL**

For stock cutoff of solid bars.
Finish ground – ready for use.

Tool Style	Dimensions				Packaging Quantity
	Shank Width	Shank Height	Shank Length	Cut-Off Width	
CTL-111	$\frac{1}{2}$	1	5	$\frac{1}{8}$	6
CTL-122	$\frac{1}{2}$	1	5	$\frac{3}{16}$	6
CTL-121	$\frac{1}{2}$	1	5	$\frac{1}{4}$	6
CTL-120	$\frac{1}{2}$	1	5	$\frac{5}{16}$	6
CTL-130	$\frac{5}{8}$	1 $\frac{1}{4}$	5	$\frac{3}{8}$	6
CTL-140	$\frac{3}{4}$	1 $\frac{1}{2}$	6	$\frac{3}{8}$	6



CA

CARBIDE TIPPED RADIUS TOOL

<u>SIZE</u>	<u>TOOL NR</u>	<u>CUTTING DIRECTION</u>	<u>OVERALL LENGTH</u>
3/8"	R- AVE5	Right Hand	2-1/2"
3/8"	R- AVE6	Right Hand	2-1/2"
3/8"	R- AVE7	Right Hand	2-1/2"
3/8"	R- AVE8	Right Hand	2-1/2"
1/2"	R- AVE9	Right Hand	3-1/2"
1/2"	R- AVE10	Right Hand	3-1/2"
1/2"	R- AVE11	Right Hand	3-1/2"
1/2"	R- AVE12	Right Hand	3-1/2"
3/4"	R- AVE13	Right Hand	4-1/2"

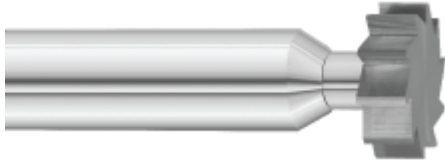
3/4"	R- AVE14	Right Hand	4-1/2"
3/4"	R- AVE15	Right Hand	4-1/2"
3/4"	R- AVE16	Right Hand	4-1/2"
3/8"	R- VEX5	Right Hand	2-1/2"
3/8"	R- VEX6	Right Hand	2-1/2"
3/8"	R- VEX7	Right Hand	2-1/2"
3/8"	R- VEX8	Right Hand	2-1/2"
1/2"	R- VEX9	Right Hand	3-1/2"
1/2"	R- VEX10	Right Hand	3-1/2"
1/2"	R- VEX11	Right Hand	3-1/2"
1/2"	R- VEX12	Right Hand	3-1/2"
3/4"	R- VEX13	Right Hand	4-1/2"
3/4"	R- VEX14	Right Hand	4-1/2"
3/4"	R- VEX15	Right Hand	4-1/2"
3/4"	R- VEX16	Right Hand	4-1/2"



Boring Tool

Max Depth of Hole	Cutting Diameter	Shank Diameter	Overall Length
0.1875	0.06	0.125	1.5
0.375	0.08	0.125	1.5
0.5	0.09	0.125	1.5
0.625	0.12	0.125	1.5
0.75	0.15	0.1875	2
1	0.18	0.1875	2
1.25	0.24	0.25	2.5
1.25	0.27	0.3125	2.5
1.25	0.21	0.25	2.5
1.25	0.3	0.3125	2.5
1.5	0.36	0.375	2.5
1.5	0.33	0.375	2.5

SOLID CARBIDE KEY SEAT CUTTER



S

Cutting Diameter	Face Width	Neck Diameter	Shank Diameter	Overall Length	Number of Flutes
0.375	0.0312	0.203	0.5	2.0312	8
0.375	0.0469	0.203	0.5	2.0469	8
0.375	0.0625	0.203	0.5	2.0625	8
0.375	0.0938	0.203	0.5	2.0938	8
0.375	0.125	0.203	0.5	2.125	8
0.5	0.0312	0.25	0.5	2.0312	10
0.5	0.0469	0.25	0.5	2.0469	10
0.5	0.0625	0.25	0.5	2.0625	10
0.5	0.0781	0.25	0.5	2.0781	10
0.5	0.0938	0.25	0.5	2.0938	10
0.5	0.1094	0.25	0.5	2.1093	10
0.5	0.125	0.25	0.5	2.125	10
0.625	0.0312	0.281	0.5	2.0312	10
0.625	0.0469	0.281	0.5	2.0469	10
0.625	0.0625	0.281	0.5	2.0625	10
0.625	0.0781	0.281	0.5	2.0781	10
0.625	0.0938	0.281	0.5	2.0938	10
0.625	0.1094	0.281	0.5	2.1093	10
0.625	0.125	0.281	0.5	2.125	10
0.625	0.1406	0.281	0.5	2.1406	10
0.625	0.1562	0.281	0.5	2.1562	10
0.625	0.1875	0.281	0.5	2.1875	10
0.75	0.0312	0.281	0.5	2.0312	10
0.75	0.0469	0.281	0.5	2.0469	10
0.75	0.0625	0.281	0.5	2.0625	10

0.75	0.0781	0.281	0.5	2.0781	10
0.75	0.0938	0.281	0.5	2.0938	10
0.75	0.1094	0.281	0.5	2.1093	10
0.75	0.125	0.281	0.5	2.125	10
0.75	0.1406	0.281	0.5	2.1406	10
0.75	0.1562	0.281	0.5	2.1562	10
0.75	0.1875	0.281	0.5	2.1875	10
0.75	0.2031	0.281	0.5	2.2031	10
0.75	0.2188	0.281	0.5	2.2188	10
0.75	0.2344	0.281	0.5	2.2343	10
0.75	0.25	0.281	0.5	2.25	10
0.875	0.0625	0.281	0.5	2.0625	12
0.875	0.125	0.281	0.5	2.125	12
0.875	0.1562	0.281	0.5	2.1562	12
0.875	0.1875	0.281	0.5	2.1875	12
0.875	0.2188	0.281	0.5	2.2188	12
0.875	0.25	0.281	0.5	2.25	12
1	0.0312	0.281	0.5	2.0312	12
1	0.0469	0.281	0.5	2.0469	12
1	0.0625	0.281	0.5	2.0625	12
1	0.0781	0.281	0.5	2.0781	12
1	0.0938	0.281	0.5	2.0938	12
1	0.125	0.281	0.5	2.125	12
1	0.1562	0.281	0.5	2.1562	12
1	0.1875	0.281	0.5	2.1875	12
1	0.2188	0.281	0.5	2.2188	12
1	0.25	0.281	0.5	2.25	12
1.125	0.125	0.281	0.5	2.125	14
1.125	0.1875	0.281	0.5	2.1875	14
1.125	0.2188	0.281	0.5	2.2188	14
1.125	0.25	0.281	0.5	2.25	14
1.25	0.0312	0.281	0.5	2.0312	14
1.25	0.0625	0.281	0.5	2.0625	14
1.25	0.0938	0.281	0.5	2.0938	14
1.25	0.125	0.281	0.5	2.125	14
1.25	0.1562	0.281	0.5	2.1562	14
1.25	0.1875	0.281	0.5	2.1875	14
1.25	0.2188	0.281	0.5	2.2188	14
1.25	0.25	0.281	0.5	2.25	14
1.5	0.0312	0.375	0.5	2.0312	16
1.5	0.0625	0.375	0.5	2.0625	16

1.5	0.0938	0.375	0.5	2.0938	16
1.5	0.125	0.375	0.5	2.125	16
1.5	0.1875	0.375	0.5	2.1875	16
1.5	0.25	0.375	0.5	2.25	16
1.5	0.3125	0.375	0.5	2.3125	16
1.5	0.375	0.375	0.5	2.375	16

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