

**TRIUMPH**  
**TWIST DRILL**  
A DIVISION OF MINNESOTA TWIST DRILL

**MADE IN THE U.S.A.**



**TRIUMPH<sup>®</sup>**  
**TWIST DRILL**  
A Division of Minnesota Twist Drill



**Exclusively Sold in Mexico**

# TOOLS WITH THE POWER TO PERFORM

## DRILLS

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<b>THUNDERBIT</b>		T1HD, BP1HD, T2HD, T3HD, MM1HD 135° Split Point HSS
<b>THUNDERBIT TIN</b>		T1HDG 135° Split Point HSS
<b>THUNDERBIT COBALT</b>		T1HDC 135° Split Point Cobalt
<b>MRO PLUS</b>		T101D, T102D, T103D 135° Split Point 3-FLT Shank HSS
<b>HEAVY-DUTY BLACK</b>		T1D, T2D, T3D 135° Split Point HSS
<b>GENERAL PURPOSE BLACK</b>		T1B, BP1B, T2B, T3B 118° Point HSS
<b>GENERAL PURPOSE BRIGHT</b>		T1, BP1, T2, T3, MM1 118° Point HSS
<b>HEAVY-DUTY COBALT</b>		T1C, BP1C, T2C, T3C 135° Split Point Cobalt
<b>GENERAL PURPOSE LEFT HAND</b>		T1L 118° Point HSS

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<b>HEAVY-DUTY BLACK</b>		T12HH, BP12HH, T12WW 6" Extension 135° Split Point HSS
<b>GENERAL PURPOSE BRIGHT</b>		T1290 12" Extension 118° Point HSS
<b>GENERAL PURPOSE BRIGHT</b>		T1813 18" Extension 118° Point HSS

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<b>THUNDERBIT</b>		T9FHD 118° Point 3-FLT 1/2" Shank HSS
<b>GENERAL PURPOSE S&amp;D</b>		T9F 118° Point 3-FLT 1/2" Shank HSS
<b>GENERAL PURPOSE S&amp;D</b>		T9 118° Point 1/2" Shank HSS
<b>GENERAL PURPOSE COBALT</b>		T9C 118° Point 1/2" Shank HSS

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<b>THUNDERBIT</b>		T8HD, BP8HD 135° Split Point HSS
<b>GENERAL PURPOSE BRIGHT</b>		T8, BP8 118° Point HSS
<b>GENERAL PURPOSE BRIGHT</b>		BP10 118° Point HSS
<b>GENERAL PURPOSE BRIGHT</b>		T1L 118° Point HSS

<b>THUNDERBIT</b>		HEXT4HD 135° Split Point HSS
<b>HEAVY-DUTY BLACK</b>		HEXT4 135° Split Point HSS

<b>MECHANIC'S LENGTH</b>		<i>P. 18</i>
<b>TRI-NADO</b>		T1M, BP1M, T8M 135° Split Point 3-FLT Shank HSS

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<b>HOLE SAW PILOT</b>		PD3F 118° Point HSS
<b>BODY DRILL DOUBLE END</b>		TSM8 135° Split Point HSS





**SOLID CARBIDE BURS** P. 36-37

<b>CARBIDE BUR</b>		SA-SN Carbide
<b>MINIATURE CARBIDE BUR</b>		SA-SN Carbide



**STEP DRILLS** P. 38

<b>STEP DRILLS</b>		TSD TSDHEX HSS
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**T.C.T. HOLE CUTTER** P. 39

<b>CARBIDE HOLE CUTTERS</b>		CTHC CTCHD Carbide
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**REAMER** P. 40

<b>ALIGNMENT KEAMER®</b>		TCR HSS
<b>ALIGNMENT KEAMER®</b>		THEXR HSS

**COUNTERSINK** P. 42

<b>CENTER REAMER</b>		T401 82° HSS
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<b>SPADE BIT</b>		TG6 Spade

**FLAT WOOD-BORING** P. 43

<b>WOOD-BORING BIT</b>		BPFWB Carbon
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**SCREW EXTRACTOR** P. 43

<b>EXTRACTOR</b>		T13CX BP13CX Carbon
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**ANNULAR** P. 44-45

<b>ANNULAR CUTTERS</b>		TACHSS HSS
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**ANNULAR CUTTER MACHINES**





CMD40	Cutter Capacity 1-1/2", Depth of Cut 2", Height 20", Weight 30.86 lbs
ELP50	Cutter Capacity 2", Depth of Cut 2", Height 7-1/16", Weight 24 lbs
E50FRV	Cutter Capacity 2", Depth of Cut 2", Height 17-9/16", Weight 35 lbs

**TAPS** P. 47-53

<b>THUNDER TAP®</b>		T61HD, PB61HD T62HD, BP62HD Straight Flute Hand Tap
<b>THUNDER TAP®</b>		T63HD, BP63HD, T64HD, BP64HD Spiral Point Tap
<b>THUNDER TAP®</b>		T65HD Taper Pipe Tap

**TAP WRENCH** P. 53

<b>STRAIGHT HANDLE</b>		JTW0, JTW5 JTW7 Carbon
<b>T-HANDLE</b>		JT20, JT30 JT40 Carbon

**DIES** P. 54-55

<b>DIES</b>		THSRD W109HD HSS / Carbon
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**DIES STOCK** P. 54-55

<b>STRAIGHT HANDLE</b>		TRD46, TRD47 TRD50, TRD52 TRD55 Carbon
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# INCH/METRIC TAP DRILL SIZES & DECIMAL EQUIVALENTS

DRILL SIZE	DECIMAL EQUIVALENT	DRILL SIZE	DECIMAL EQUIVALENT	DRILL SIZE	DECIMAL EQUIVALENT	DRILL SIZE	DECIMAL EQUIVALENT
1/64	.0156	4.5mm	.1772	Y	.4040	24mm	.9449
0.5mm	.0197	15	.1800	13/32	.4062	61/64	.9531
1/32	.0312	14	.1820	Z	.4130	24.5mm	.9646
1mm	.0394	13	.1850	10.5mm	.4134	31/32	.9688
60	.0400	3/16	.1875	27/64	.4219	25mm	.9843
59	.0410	12	.1890	11mm	.4331	63/64	.9844
58	.0420	11	.1910	7/16	.4375	1	1.000
57	.0430	10	.1935	11.5mm	.4528		
56	.0465	9	.1960	29/64	.4531		
3/64	.0469	5mm	.1969	15/32	.4688		
55	.0520	8	.1990	12mm	.4724		
54	.0550	7	.2010	31/64	.4844		
1.5mm	.0591	13/64	.2031	12.5mm	.4921		
53	.0595	6	.2040	1/2	.5000		
1/16	.0625	5	.2055	13mm	.5118		
52	.0635	4	.2090	33/64	.5156		
51	.0670	3	.2130	17/32	.5313		
50	.0700	5.5mm	.2165	13.5mm	.5315		
49	.0730	7/32	.2188	35/64	.5469		
48	.0760	2	.2210	14mm	.5512		
5/64	.0781	1	.2280	9/16	.5625		
47	.0785	A	.2340	14.5mm	.5709		
2mm	.0787	15/64	.2344	37/64	.5781		
46	.0810	6mm	.2362	15mm	.5906		
45	.0820	B	.2380	19/32	.5938		
44	.0860	C	.2420	39/64	.6094		
43	.0890	D	.2460	15.5mm	.6102		
42	.0935	1/4 & E	.2500	5/8	.6250		
3/32	.0938	6.5mm	.2559	16mm	.6299		
41	.0960	F	.2570	41/64	.6406		
40	.0980	G	.2610	16.5mm	.6496		
2.5mm	.0984	17/64	.2656	21/32	.6562		
39	.0995	H	.2260	17mm	.6693		
38	.1015	I	.2720	43/64	.6719		
37	.1040	7mm	.2756	11/16	.6875		
36	.1065	J	.2770	17.5mm	.6890		
7/64	.1094	K	.2810	45/64	.7031		
35	.1100	9/32	.2812	18mm	.7087		
34	.1110	L	.2900	23/32	.7188		
33	.1130	M	.2950	18.5mm	.7283		
32	.1160	7.5mm	.2953	47/64	.7344		
3mm	.1181	19/64	.2969	19mm	.7480		
31	.1200	N	.3020	3/4	.7500		
1/8	.1250	5/16	.3125	49/64	.7656		
30	.1285	8mm	.3150	19.5mm	.7677		
29	.1360	O	.3160	25/32	.7812		
3.5mm	.1378	P	.3230	20mm	.7874		
28	.1405	21/64	.3281	51/64	.7969		
9/64	.1406	Q	.3320	20.5mm	.8071		
27	.1440	8.5mm	.3346	13/16	.8125		
26	.1470	R	.3390	21mm	.8268		
25	.1495	11/32	.3438	53/64	.8281		
24	.1520	S	.3480	27/32	.8438		
23	.1540	9mm	.3543	21.5mm	.8465		
5/32	.1562	T	.3580	55/64	.8594		
22	.1570	23/64	.3594	22mm	.8661		
4mm	.1575	U	.3680	7/8	.8750		
21	.1590	9.5mm	.3740	22.5mm	.8858		
20	.1610	3/8	.3750	57/64	.8906		
19	.1660	V	.3770	23mm	.9055		
18	.1695	W	.3860	29/32	.9062		
11/64	.1719	25/64	.3906	59/64	.9219		
17	.1730	10mm	.3937	23.5mm	.9252		
16	.1770	X	.3970	15/16	.9375		



## STANDARD TAP & DRILL

4-40	43	3/8-16	5/16
6-32	36	3/8-24	Q
8-32	29	7/16-14	U
10-24	25	7/16-20	W
10-32	21	1/2-13	27/64
12-24	17	1/2-20	29/64
1/4-20	7	5/8-11	17/32
1/4-28	3	5/8-18	37/64
5/16-18	F	3/4-10	21/32
5/16-24	I	3/4-16	11/16

## METRIC TAP DRILL SIZES

METRIC TAP	TAP DRILL (mm)
M4 x 0.7	3.30
M4.5 x 0.75	3.70
M5 x 0.8	4.20
M6 x 1	5.00
M7 x 1	6.00
M8 x 1.25	6.70
M8 x 1	7.00
M10 x 1.5	8.50
M10 x 1.25	8.70
M12 x 1.75	10.20
M12 x 1.25	10.80
M14 x 2	12.00
M14 x 1.5	12.50
M16 x 2	14.00
M16 x 1.5	14.50
M18 x 2.5	15.50
M18 x 1.5	16.50
M20 x 2.5	17.50
M20 x 1.5	18.50
M22 x 2.5	19.50
M22 x 1.5	20.50
M24 x 3	21.00
M24 x 2	22.00

## PIPE THREAD SIZES (NPS)

THREAD	DRILL	THREAD	DRILL
1/8 - 27	11/32	1 - 11 1/2	1 5/32
1/4 - 18	7/16	1 1/4 - 11 1/2	1 1/2
3/8 - 18	37/64	1 1/2 - 11 1/2	1 3/4
1/2 - 14	23/32	2 - 11 1/2	2 7/32
3/4 - 14	59/64	2 1/2 - 8	2 21/32



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## APPLICATION GUIDE

Works Best in This Material	THUNDERBIT®	THUNDERBIT® COBALT	THUNDERBIT® TIN	MRO®	TORNADO®	Heavy-Duty Black Oxide	General Purpose Black Oxide	General Purpose Bright	Heavy-Duty Cobalt
Aluminum/Aluminum Alloys; Bronze, Soft and Medium			✓					✓	
Iron, Cast	✓	✓	✓	✓	✓	✓	✓		✓
Steel, Low and Medium Carbon	✓	✓	✓	✓	✓	✓	✓		✓
Steel, High Alloy	✓	✓	✓	✓	✓	✓			✓
Steel, Stainless and PH	✓	✓	✓	✓	✓		✓		✓
Tough, Medium and High-Tensile Strength Alloys	✓	✓	✓	✓	✓	✓			✓
Wood and Plastic			✓					✓	
<b>Point:</b>	<b>135° Split</b>	<b>135° Split</b>	<b>135° Split</b>	<b>135° Split</b>	<b>135° Split</b>	<b>135° Split</b>	<b>118°</b>	<b>118°</b>	<b>135° Split</b>
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## DRILL TROUBLESHOOTING GUIDE

Trouble	Possible Causes	Corrections
<b>Drill Breaks</b>	Spring or back lash in press or work Too little lip relief Speed too low in proportion to the feed Dull drill Possible chip congestion	Test press and work for rigidity and alignment Regrind properly Increase or decrease speed Sharpen drill Peck drill
<b>Outer Corner Breakdown</b>	Uneven hardness in work material Too much speed Improper cutting compound	Reduce speed Reduce speed Use proper cutting compound
<b>Drill Breaks in Brass or Wood</b>	Chips clog up flutes	Increase speed. Use drills designed for these materials
<b>Cutting Lips Chipped</b>	Too much feed Too much lip relief	Reduce feed Regrind properly
<b>Cracking or Checking in Cutting Edges</b>	Heated and cooled too quickly Too much feed	Warm slowly before using. Do not throw cold water on hot drill while grinding or drilling Reduce feed
<b>Hole too Large</b>	Unequal angle or length of the cutting edges or both Loose spindle	Regrind properly Test spindle for rigidity
<b>Only One Lip Cutting</b>	Unequal length or angle of cutting lips or both	Regrind drill properly
<b>Drill Splits up Center</b>	Too little lip relief Too much feed	Regrind with proper relief Reduce feed
<b>Rough Hole</b>	Dull or improperly ground drill Lack of lubricant or wrong lubricant Improper set-up Too much feed	Regrind properly Lubricate or change lubricant Check set-up Reduce feed

## DRILL POINT CHARACTERISTICS

Type	Performance Benefits	Comments
 <b>Conventional Point (118°)</b>	<ul style="list-style-type: none"> <li>General purpose</li> <li>Widely available</li> <li>Acceptable drill life</li> <li>Best suited in mild steel and aluminum</li> </ul>	<ul style="list-style-type: none"> <li>Not self-centering; "walking" can occur on hard surfaces</li> <li>May produce burrs on breakthrough</li> </ul>
 <b>Split Point (118° and 135°)</b>	<ul style="list-style-type: none"> <li>Self centering</li> <li>Excellent for portable drilling</li> <li>Longer drill life</li> <li>Good for drilling on curved surfaces</li> <li>Improved penetration rates</li> <li>Requires less effort</li> <li>Breaks up chips</li> <li>Best suited in alloy steels</li> </ul>	<ul style="list-style-type: none"> <li>Difficult to regrind</li> </ul>





# THUNDERBIT®

## THUNDERBIT The HOLE Story

**Unique spiral flute design improves chip ejection and coolant flow to the point**

**The heavy-duty core guarantees increased strength and reduced breakage**

**135° self-centering split point prevents "walking" and provides quick penetration**

**Friction-reducing black & bronze oxide surface treatments for higher drilling speeds**



THUNDERBIT®

GENERAL PURPOSE

THUNDERBIT® THUNDERBIT® THUNDERBIT® THUNDERBIT®  
COBALT TIN







**JOBBER LENGTH**

**THUNDERBIT®**

**DRILLS**



Point: 135° Split Point  
 Material: Premium Grade High Speed Steel  
 Coating/Finish: Black and Bronze Oxide  
 Other: Heavy-Duty Construction  
 3 Flats on Shank

Size	Decimal Equivalent	Flute Length	Overall Length	T1HD+ Packaging: Tube		T1HD+ Packaging: Bulk		BP1HD+ Packaging: Single	
				Stock #	Pkg Qty	Stock #	Pkg Qty	Stock #	Pkg Qty
1/16	.0625	7/8	1-7/8	014504	12	014504.20	288	014804	1
5/64	.0781	1	2	014505	12	014505.20	288	014805	1
3/32	.0938	1-1/4	2-1/4	014506	12	014506.20	288	014806	1
7/64	.1094	1-1/2	2-5/8	014507	12	014507.20	288	014807	1
1/8	.1250	1-5/8	2-3/4	014508	12	014508.20	288	014808	1
9/64	.1406	1-3/4	2-7/8	014509	12	014509.20	288	014809	1
5/32	.1562	2	3-1/8	014510	12	014510.20	288	014810	1
11/64	.1719	2-1/8	3-1/4	014511	12	014511.20	288	014811	1

**3-Flats on Shank**

3/16	.1875	2-5/16	3-1/2	014512	12	014512.20	288	014812	1
13/64	.2031	2-7/16	3-5/8	014513	12	014513.20	288	014813	1
7/32	.2188	2-1/2	3-3/4	014514	12	014514.20	288	014814	1
15/64	.2344	2-5/8	3-7/8	014515	12	014515.20	288	014815	1
1/4	.2500	2-3/4	4	014516	12	014516.20	288	014816	1
17/64	.2656	2-7/8	4-1/8	014517	12	014517.20	144	014817	1
9/32	.2812	2-15/16	4-1/4	014518	12	014518.20	144	014818	1
19/64	.2969	3-1/16	4-3/8	014519	12	014519.20	144	014819	1
5/16	.30125	3-3/16	4-1/2	014520	6	014520.20	144	014820	1
21/64	.3281	3-5/16	4-5/8	014521	6	014521.20	144	014821	1
11/32	.3438	3-7/16	4-3/4	014522	6	014522.20	144	014822	1
23/64	.3594	3-1/2	4-7/8	014523	6	014523.20	144	014823	1
3/8	.3750	3-5/8	5	014524	6	014524.20	144	014824	1
25/64	.3906	3-3/4	5-1/8	014525	6	014525.20	144	014825	1
13/32	.4062	3-7/8	5-1/4	014526	6	014526.20	144	014826	1
27/64	.4219	3-15/16	5-3/8	014527	6	014527.20	144	014827	1
7/16	.4375	4-1/16	5-1/2	014528	6	014528.20	144	014828	1
29/64	.4531	4-3/16	5-5/8	014529	6	014529.20	144	014829	1
15/32	.4688	4-5/16	5-3/4	014530	6	014530.20	144	014830	1
31/64	.4844	4-3/8	5-7/8	014531	6	014531.20	144	014831	1
1/2	.5000	4-1/2	6	014532	6	014532.20	144	014832	1

**Corresponding Sets**

Style	Description	Pieces	Size Range	Stock#
T19HD+	Metal Index	13 Piece	1/16"-1/4" by 64ths	099501
T18HD+	Metal Index	15 Piece	1/16"-1/2" by 32nds	099502
T180HD+	Metal Index	21 Piece	1/16"-3/8" by 64ths	099503
T17HDDC+	Clip-On Index	29 Piece	1/16"-1/2" by 64ths	099504
T17HD+	Metal Index	29 Piece	1/16"-1/2" by 64ths	099505
T123HD+	Metal Index	115 Piece	1/16"-1/2" by 64ths, #1- #60, A-Z	099508
T80HD+	Display		1/16"-1/2" by 64ths	099509



continued on next page

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Point: 135° Split Point  
 Material: Premium Grade High Speed Steel  
 Coating/Finish: Black and Bronze Oxide  
 Other: Heavy-Duty Construction  
 \*Sizes 3/16" and larger: 3 Flats on Shank

T2HD+					
Packaging: Tube					
Size	Decimal Equivalent	Flute Length	Overall Length	Stock #	Pkg Qty
60*	.0400	11/16	1-5/8	014660	12
59*	.0410	11/16	1-5/8	014659	12
58*	.0420	11/16	1-5/8	014658	12
57*	.0430	3/4	1-3/4	014657	12
56*	.0465	3/4	1-3/4	014656	12
55*	.0520	7/8	1-7/8	014655	12
54*	.0550	7/8	1-7/8	014654	12
53*	.0595	7/8	1-7/8	014653	12
52	.0635	7/8	1-7/8	014652	12
51	.0670	1	2	014651	12
50	.0700	1	2	014650	12
49	.0730	1	2	014649	12
48	.0760	1	2	014648	12
47	.0785	1	2	014647	12
46	.0810	1-1/8	2-1/8	014646	12
45	.0820	1-1/8	2-1/8	014645	12
44	.0860	1-1/8	2-1/8	014644	12
43	.0890	1-1/4	2-1/4	014643	12
42	.0935	1-1/4	2-1/4	014642	12
41	.0960	1-3/8	2-3/8	014641	12
40	.0980	1-3/8	2-3/8	014640	12
39	.0995	1-3/8	2-3/8	014639	12
38	.1015	1-7/16	2-1/2	014638	12
37	.1040	1-7/16	2-1/2	014637	12
36	.1065	1-7/16	2-1/2	014636	12
35	.1100	1-1/2	2-5/8	014635	12
34	.1110	1-1/2	2-5/8	014634	12
33	.1130	1-1/2	2-5/8	014633	12
32	.1160	1-5/8	2-3/4	014632	12
31	.1200	1-5/8	2-3/4	014631	12
30	.1285	1-5/8	2-3/4	014630	12
29	.1360	1-3/4	2-7/8	014629	12
28	.1405	1-3/4	2-7/8	014628	12
27	.1440	1-7/8	3	014627	12
26	.1470	1-7/8	3	014626	12
25	.1495	1-7/8	3	014625	12
24	.1520	2	3-1/8	014624	12
23	.1540	2	3-1/8	014623	12
22	.1570	2	3-1/8	014622	12
21	.1590	2-1/8	3-1/4	014621	12
20	.1610	2-1/8	3-1/4	014620	12
19	.1660	2-1/8	3-1/4	014619	12
18	.1695	2-1/8	3-1/4	014618	12
17	.1730	2-3/16	3-3/8	014617	12
16	.1770	2-3/16	3-3/8	014616	12
15	.1800	2-3/16	3-3/8	014615	12
14	.1820	2-3/16	3-3/8	014614	12
13	.1850	2-5/16	3-1/2	014613	12
12**	.1890	2-5/16	3-1/2	014612	12
11**	.1910	2-5/16	3-1/2	014611	12
10**	.1935	2-7/16	3-5/8	014610	12
9**	.1960	2-7/16	3-5/8	014609	12
8**	.1990	2-7/16	3-5/8	014608	12
7**	.2010	2-7/16	3-5/8	014607	12
6**	.2040	2-1/2	3-3/4	014606	12
5**	.2055	2-1/2	3-3/4	014605	12
4**	.2090	2-1/2	3-3/4	014604	12
3**	.2130	2-1/2	3-3/4	014603	12
2**	.2210	2-5/8	3-7/8	014602	12
1**	.2280	2-5/8	3-7/8	014601	12

T3HD+					
Packaging: Tube					
Size	Decimal Equivalent	Flute Length	Overall Length	Stock #	Pkg Qty
A	.2340	2-5/8	3-7/8	014701	12
B	.2380	2-3/4	4	014702	12
C	.2420	2-3/4	4	014703	12
D	.2460	2-3/4	4	014704	12
E	.2500	2-3/4	4	014705	12
F	.2570	2-7/8	4-1/8	014706	12
G	.2610	2-7/8	4-1/8	014707	12
H	.2660	2-7/8	4-1/8	014708	12
I	.2720	2-7/8	4-1/8	014709	12
J	.2770	2-7/8	4-1/8	014710	12
K	.2810	2-15/16	4-1/4	014711	12
L	.2900	2-15/16	4-1/4	014712	12
M	.2950	3-1/16	4-3/8	014713	12
N	.3020	3-1/16	4-3/8	014714	12
O	.3160	3-3/16	4-1/2	014715	6
P	.3230	3-5/16	4-5/8	014716	6
Q	.3320	3-7/16	4-3/4	014717	6
R	.3390	3-7/16	4-3/4	014718	6
S	.3480	3-1/2	4-7/8	014719	6
T	.3580	3-1/2	4-7/8	014720	6
U	.3680	3-5/8	5	014721	6
V	.3770	3-5/8	5	014722	6
W	.3860	3-3/4	5-1/8	014723	6
X	.3970	3-3/4	5-1/8	014724	6
Y	.4040	3-7/8	5-1/4	014725	6
Z	.4130	3-7/8	5-1/4	014726	6

All Letter Sizes: 3 Flats on Shank

### Corresponding Sets

Style	Description	Pieces	Size Range	Stock #
T22HD+	Metal Index	60 Piece	#1- #60	099506
T25HD+	Metal Index	26 Piece	A - Z	099507
T123HD+	Metal Index	115 Piece	1/16"-1/2" by 64ths, #1- #60, A-Z	099508



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\*Not Split Point

\*\*1-12: 3 Flats on Shank

800-942-1501



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**JOBBER LENGTH**

**THUNDERBIT®**



Point: 135° Split Point  
 Material: Premium Grade High Speed Steel  
 Coating/Finish: Black and Bronze Oxide  
 Other: Heavy-Duty Construction

**DRILLS**

Size	Decimal Equivalent	Flute Length	Overall Length	T1HD Packaging: Tube		T1HD Packaging: Bulk		BP1HD Packaging: Card	
				Stock #	Pkg Qty	Stock #	Pkg Qty	Stock #	Pkg Qty
1/16	.0625	7/8	1-7/8	012504	12	012504.20	288	014004	1
5/64	.0781	1	2	012505	12	012505.20	288	014005	1
3/32	.0938	1-1/4	2-1/4	012506	12	012506.20	288	014006	1
7/64	.1094	1-1/2	2-5/8	012507	12	012507.20	288	014007	1
1/8	.1250	1-5/8	2-3/4	012508	12	012508.20	288	014008	1
9/64	.1406	1-3/4	2-7/8	012509	12	012509.20	288	014009	1
5/32	.1562	2	3-1/8	012510	12	012510.20	288	014010	1
11/64	.1719	2-1/8	3-1/4	012511	12	012511.20	288	014011	1
3/16	.1875	2-5/16	3-1/2	012512	12	012512.20	288	014012	1
13/64	.2031	2-7/16	3-5/8	012513	12	012513.20	288	014013	1
7/32	.2188	2-1/2	3-3/4	012514	12	012514.20	288	014014	1
15/64	.2344	2-5/8	3-7/8	012515	12	012515.20	288	014015	1
1/4	.2500	2-3/4	4	012516	12	012516.20	288	014016	1
17/64	.2656	2-7/8	4-1/8	012517	12	012517.20	144	014017	1
9/32	.2812	2-15/16	4-1/4	012518	12	012518.20	144	014018	1
19/64	.2969	3-1/16	4-3/8	012519	12	012519.20	144	014019	1
5/16	.30125	3-3/16	4-1/2	012520	6	012520.20	144	014020	1
21/64	.3281	3-5/16	4-5/8	012521	6	012521.20	144	014021	1
11/32	.3438	3-7/16	4-3/4	012522	6	012522.20	144	014022	1
23/64	.3594	3-1/2	4-7/8	012523	6	012523.20	144	014023	1
3/8	.3750	3-5/8	5	012524	6	012524.20	144	014024	1
25/64	.3906	3-3/4	5-1/8	012525	6	012525.20	144	014025	1
13/32	.4062	3-7/8	5-1/4	012526	6	012526.20	144	014026	1
27/64	.4219	3-15/16	5-3/8	012527	6	012527.20	144	014027	1
7/16	.4375	4-1/16	5-1/2	012528	6	012528.20	144	014028	1
29/64	.4531	4-3/16	5-5/8	012529	6	012529.20	144	014029	1
15/32	.4688	4-5/16	5-3/4	012530	6	012530.20	144	014030	1
31/64	.4844	4-3/8	5-7/8	012531	6	012531.20	144	014031	1
1/2	.5000	4-1/2	6	012532	6	012532.20	144	014032	1

**Corresponding Sets**

Style	Description	Pieces	Size Range	Stock #
SAD13HD	Select-A-Drill	13 Piece	1/16"-1/4" by 64ths	090495
SAD21HD	Select-A-Drill	21 Piece	1/16"-3/8" by 64ths	090496
T19HD	Metal Index	13 Piece	1/16"-1/4" by 64ths	099858
T18HD	Metal Index	15 Piece	1/16"-1/2" by 32nds	099857
T180HD	Metal Index	21 Piece	1/16"-3/8" by 64ths	099861
T17HDDC	Clip-On Index	29 Piece	1/16"-1/2" by 64ths	099855
T17HD	Metal Index	29 Piece	1/16"-1/2" by 64ths	099856
T123HD	Metal Index	115 Piece	1/16"-1/2" by 64ths, #1- #60, A-Z	099862
T80HD	Display		1/16"-1/2" by 64ths	099995



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Point: 135° Split Point  
 Material: Premium Grade High Speed Steel  
 Coating/Finish: Black and Bronze Oxide  
 Other: Heavy-Duty Construction

### T2HD

Packaging: Tube

Size	Decimal Equivalent	Flute Length	Overall Length	Stock #	Pkg Qty
60	.0400	11/16	1-5/8	012660	12
59	.0410	11/16	1-5/8	012659	12
58	.0420	11/16	1-5/8	012658	12
57	.0430	3/4	1-3/4	012657	12
56	.0465	3/4	1-3/4	012656	12
55	.0520	7/8	1-7/8	012655	12
54	.0550	7/8	1-7/8	012654	12
53	.0595	7/8	1-7/8	012653	12
52	.0635	7/8	1-7/8	012652	12
51	.0670	1	2	012651	12
50	.0700	1	2	012650	12
49	.0730	1	2	012649	12
48	.0760	1	2	012648	12
47	.0785	1	2	012647	12
46	.0810	1-1/8	2-1/8	012646	12
45	.0820	1-1/8	2-1/8	012645	12
44	.0860	1-1/8	2-1/8	012644	12
43	.0890	1-1/4	2-1/4	012643	12
42	.0935	1-1/4	2-1/4	012642	12
41	.0960	1-3/8	2-3/8	012641	12
40	.0980	1-3/8	2-3/8	012640	12
39	.0995	1-3/8	2-3/8	012639	12
38	.1015	1-7/16	2-1/2	012638	12
37	.1040	1-7/16	2-1/2	012637	12
36	.1065	1-7/16	2-1/2	012636	12
35	.1100	1-1/2	2-5/8	012635	12
34	.1110	1-1/2	2-5/8	012634	12
33	.1130	1-1/2	2-5/8	012633	12
32	.1160	1-5/8	2-3/4	012632	12
31	.1200	1-5/8	2-3/4	012631	12
30	.1285	1-5/8	2-3/4	012630	12
29	.1360	1-3/4	2-7/8	012629	12
28	.1405	1-3/4	2-7/8	012628	12
27	.1440	1-7/8	3	012627	12
26	.1470	1-7/8	3	012626	12
25	.1495	1-7/8	3	012625	12
24	.1520	2	3-1/8	012624	12
23	.1540	2	3-1/8	012623	12
22	.1570	2	3-1/8	012622	12
21	.1590	2-1/8	3-1/4	012621	12
20	.1610	2-1/8	3-1/4	012620	12
19	.1660	2-1/8	3-1/4	012619	12
18	.1695	2-1/8	3-1/4	012618	12
17	.1730	2-3/16	3-3/8	012617	12
16	.1770	2-3/16	3-3/8	012616	12
15	.1800	2-3/16	3-3/8	012615	12
14	.1820	2-3/16	3-3/8	012614	12
13	.1850	2-5/16	3-1/2	012613	12
12	.1890	2-5/16	3-1/2	012612	12
11	.1910	2-5/16	3-1/2	012611	12
10	.1935	2-7/16	3-5/8	012610	12
9	.1960	2-7/16	3-5/8	012609	12
8	.1990	2-7/16	3-5/8	012608	12
7	.2010	2-7/16	3-5/8	012607	12
6	.2040	2-1/2	3-3/4	012606	12
5	.2055	2-1/2	3-3/4	012605	12
4	.2090	2-1/2	3-3/4	012604	12
3	.2130	2-1/2	3-3/4	012603	12
2	.2210	2-5/8	3-7/8	012602	12
1	.2280	2-5/8	3-7/8	012601	12

### T3HD

Packaging: Tube

Size	Decimal Equivalent	Flute Length	Overall Length	Stock #	Pkg Qty
A	.2340	2-5/8	3-7/8	012701	12
B	.2380	2-3/4	4	012702	12
C	.2420	2-3/4	4	012703	12
D	.2460	2-3/4	4	012704	12
E	.2500	2-3/4	4	012705	12
F	.2570	2-7/8	4-1/8	012706	12
G	.2610	2-7/8	4-1/8	012707	12
H	.2660	2-7/8	4-1/8	012708	12
I	.2720	2-7/8	4-1/8	012709	12
J	.2770	2-7/8	4-1/8	012710	12
K	.2810	2-15/16	4-1/4	012711	12
L	.2900	2-15/16	4-1/4	012712	12
M	.2950	3-1/16	4-3/8	012713	12
N	.3020	3-1/16	4-3/8	012714	12
O	.3160	3-3/16	4-1/2	012715	6
P	.3230	3-5/16	4-5/8	012716	6
Q	.3320	3-7/16	4-3/4	012717	6
R	.3390	3-7/16	4-3/4	012718	6
S	.3480	3-1/2	4-7/8	012719	6
T	.3580	3-1/2	4-7/8	012720	6
U	.3680	3-5/8	5	012721	6
V	.3770	3-5/8	5	012722	6
W	.3860	3-3/4	5-1/8	012723	6
X	.3970	3-3/4	5-1/8	012724	6
Y	.4040	3-7/8	5-1/4	012725	6
Z	.4130	3-7/8	5-1/4	012726	6

### Corresponding Sets

Style	Description	Pieces	Size Range	Stock #
T22HD	Metal Index	60 Piece	#1- #60	099859
T25HD	Metal Index	26 Piece	A - Z	099860
T123HD	Metal Index	115 Piece	1/16"-1/2" by 64ths, #1- #60, A-Z	099862



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**JOBBER LENGTH**



Point: 135° Split Point  
 Material: Premium Grade High Speed Steel  
 Coating/Finish: Black and Bronze Oxide  
 Other: Heavy-Duty Construction

**DRILLS**

**MM1HD**  
 Packaging: Tube

Size	Decimal Equivalent	Flute Length	Overall Length	Stock #	Pkg Qty
1.00	.0394	17	41	014310	12
1.50	.0591	22	48	014315	12
2.00	.0787	25	51	014320	12
2.50	.0984	35	60	014325	12
3.00	.1181	41	70	014330	12
3.50	.1378	44	73	014335	12
4.00	.1575	54	83	014340	12
4.50	.1772	56	86	014345	12
5.00	.1969	62	92	014350	12
5.50	.2165	64	95	014355	12
6.00	.2362	70	102	014360	12
6.50	.2559	73	105	014365	12
7.00	.2756	73	105	014370	6
7.50	.2953	78	111	014375	6
8.00	.3150	81	114	014380	6
8.50	.3346	87	121	014385	6
9.00	.3543	89	124	014390	6
9.50	.3740	92	127	014395	6
10.00	.3937	95	130	014400	6
10.50	.4134	98	133	014405	6
11.00	.4331	103	140	014410	6
11.50	.4528	106	143	014415	6
12.00	.4724	111	149	014420	6
12.50	.4921	114	152	014425	6
13.00	.5118	114	152	014430	1



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**Corresponding Sets**

Style	Description	Pieces	Size Range	Stock #
MM19HD	Metal Index	19 Piece	1mm-10mm x .5	099866
MM25HD	Metal Index	25 Piece	1mm-13mm x .5	099867



Point: 135° Split Point  
 Material: Premium High Speed Steel  
 Coating/Finish: Black and Bronze Oxide  
 Other: Heavy-Duty Construction  
 3/8" Reduced Shank

**T8HD**  
 Packaging: Tube

**BP8HD**  
 Packaging: Tube

Size	Decimal Equivalent	Flute Length	Overall Length	Stock #	Pkg Qty	Stock #	Pkg Qty
25/64	.3906	3-3/4	5-1/8	092125	6	095125	1
13/32	.4062	3-7/8	5-1/4	092126	6	095126	1
27/64	.4219	3-15/16	5-3/8	092127	6	095127	1
7/16	.4375	4-1/16	5-1/2	092128	6	095128	1
29/64	.4531	4-3/16	5-5/8	092129	6	095129	1
15/32	.4688	4-5/16	5-3/4	092130	6	095130	1
31/64	.4844	4-3/8	5-7/8	092131	6	095131	1
1/2	.5000	4-1/2	6	092132	6	095132	1

\*3/8" reduced shank

**Corresponding Sets**

Style	Description	Pieces	Size Range	Stock #
T815HD	Metal Index	15 Piece	1/16"-1/2" by 32nds	099104
T829HD	Metal Index	29 Piece	1/16"-1/2" by 64ths	099101





Point: 135° Split Point  
 Material: Cobalt, High Speed Steel  
 Coating/Finish: Bronze Oxide  
 Other: Heavy-Duty Construction

### T1HDC Packaging: Tube

Size	Decimal Equivalent	Flute Length	Overall Length	Stock #	Pkg Qty
1/16	.0625	7/8	1-7/8	013504	12
5/64	.0781	1	2	013505	12
3/32	.0938	1-1/4	2-1/4	013506	12
7/64	.1094	1-1/2	2-5/8	013507	12
1/8	.1250	1-5/8	2-3/4	013508	12
9/64	.1406	1-3/4	2-7/8	013509	12
5/32	.1562	2	3-1/8	013510	12
11/64	.1719	2-1/8	3-1/4	013511	12
3/16	.1875	2-5/16	3-1/2	013512	12
13/64	.2031	2-7/16	3-5/8	013513	12
7/32	.2188	2-1/2	3-3/4	013514	12
15/64	.2344	2-5/8	3-7/8	013515	12
1/4	.2500	2-3/4	4	013516	12
17/64	.2656	2-7/8	4-1/8	013517	12
9/32	.2812	2-15/16	4-1/4	013518	12
19/64	.2969	3-1/16	4-3/8	013519	12
5/16	.3125	3-3/16	4-1/2	013520	6
21/64	.3281	3-5/16	4-5/8	013521	6
11/32	.3438	3-7/16	4-3/4	013522	6
23/64	.3594	3-1/2	4-7/8	013523	6
3/8	.3750	3-5/8	5	013524	6
25/64	.3906	3-3/4	5-1/8	013525	6
13/32	.4062	3-7/8	5-1/4	013526	6
27/64	.4219	3-15/16	5-3/8	013527	6
7/16	.4375	4-1/16	5-1/2	013528	6
29/64	.4531	4-3/16	5-5/8	013529	6
15/32	.4688	4-5/16	5-3/4	013530	6
31/64	.4844	4-3/8	5-7/8	013531	6
1/2	.5000	4-1/2	6	013532	6



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### Corresponding Sets

Style	Description	Pieces	Size Range	Stock #
T19HDC	Metal Index	13 Piece	1/16"-1/4" by 64ths	099813
T18HDC	Metal Index	15 Piece	1/16"-1/2" by 32nds	099816
T180HDC	Metal Index	21 Piece	1/16"-3/8" by 64ths	099819
T17HDC	Metal Index	29 Piece	1/16"-1/2" by 64ths	099821
T17HDCDC	Clip On Index	29 Piece	1/16"-1/2" by 64ths	099854





**JOBBER LENGTH**

**THUNDERBIT<sup>®</sup>**  
**TiN**



Point: 135° Split Point  
Material: Premium Grade High Speed Steel  
Coating/Finish: TiN Coating  
Other: Heavy-Duty Construction

**DRILLS**

**T1HDG**

Packaging: Tube

Size	Decimal Equivalent	Flute Length	Overall Length	Stock #	Pkg Qty
1/16	.0625	7/8	1-7/8	012804	12
5/64	.0781	1	2	012805	12
3/32	.0938	1-1/4	2-1/4	012806	12
7/64	.1094	1-1/2	2-5/8	012807	12
1/8	.1250	1-5/8	2-3/4	012808	12
9/64	.1406	1-3/4	2-7/8	012809	12
5/32	.1562	2	3-1/8	012810	12
11/64	.1719	2-1/8	3-1/4	012811	12
3/16	.1875	2-5/16	3-1/2	012812	12
13/64	.2031	2-7/16	3-5/8	012813	12
7/32	.2188	2-1/2	3-3/4	012814	12
15/64	.2344	2-5/8	3-7/8	012815	12
1/4	.2500	2-3/4	4	012816	12
17/64	.2656	2-7/8	4-1/8	012817	12
9/32	.2812	2-15/16	4-1/4	012818	12
19/64	.2969	3-1/16	4-3/8	012819	12
5/16	.3125	3-3/16	4-1/2	012820	6
21/64	.3281	3-5/16	4-5/8	012821	6
11/32	.3438	3-7/16	4-3/4	012822	6
23/64	.3594	3-1/2	4-7/8	012823	6
3/8	.3750	3-5/8	5	012824	6
25/64	.3906	3-3/4	5-1/8	012825	6
13/32	.4062	3-7/8	5-1/4	012826	6
27/64	.4219	3-15/16	5-3/8	012827	6
7/16	.4375	4-1/16	5-1/2	012828	6
29/64	.4531	4-3/16	5-5/8	012829	6
15/32	.4688	4-5/16	5-3/4	012830	6
31/64	.4844	4-3/8	5-7/8	012831	6
1/2	.5000	4-1/2	6	012832	6



@triumphwistdrill

**Corresponding Sets**

Style	Description	Pieces	Size Range	Stock #
T19HDG	Metal Index	13 Piece	1/16"-1/4" by 64ths	093713
T18HDG	Metal Index	15 Piece	1/16"-1/2" by 32nds	093716
T180HDG	Metal Index	21 Piece	1/16"-3/8" by 64ths	093719
T17HDG	Metal Index	29 Piece	1/16"-1/2" by 64ths	093700
T17HDCG	Clip On Index	29 Piece	1/16"-1/2" by 64ths	093754





Point: 135°  
Material:  
Coating/Finish:  
Other:

Split Point  
Premium Grade High Speed Steel  
Black and Gold  
Heavy-Duty Construction  
Fractional, Wire, Letter sizes -  
3 Flats on Shank

**T101D**  
Packaging: Tube

Size	Decimal Equivalent	Flute Length	Overall Length	Stock #	Pkg Qty
1/16	.0625	7/8	1-7/8	022704	12
5/64	.0781	1	2	022705	12
3/32	.0938	1-1/4	2-1/4	022706	12
7/64	.1094	1-1/2	2-5/8	022707	12
1/8	.1250	1-5/8	2-3/4	022708	12
9/64	.1406	1-3/4	2-7/8	022709	12
5/32	.1562	2	3-1/8	022710	12
11/64	.1719	2-1/8	3-1/4	022711	12

**3-Flats on Shank**

3/16	.1875	2-5/16	3-1/2	022712	12
13/64	.2031	2-7/16	3-5/8	022713	12
7/32	.2188	2-1/2	3-3/4	022714	12
15/64	.2344	2-5/8	3-7/8	022715	12
1/4	.2500	2-3/4	4	022716	12
17/64	.2656	2-7/8	4-1/8	022717	12
9/32	.2812	2-15/16	4-1/4	022718	12
19/64	.2969	3-1/16	4-3/8	022719	12
5/16	.3125	3-3/16	4-1/2	022720	6
21/64	.3281	3-5/16	4-5/8	022721	6
11/32	.3438	3-7/16	4-3/4	022722	6
23/64	.3594	3-1/2	4-7/8	022723	6
3/8	.3750	3-5/8	5	022724	6
25/64	.3906	3-3/4	5-1/8	022725	6
13/32	.4062	3-7/8	5-1/4	022726	6
27/64	.4219	3-15/16	5-3/8	022727	6
7/16	.4375	4-1/16	5-1/2	022728	6
29/64	.4531	4-3/16	5-5/8	022729	6
15/32	.4688	4-5/16	5-3/4	022730	6
31/64	.4844	4-3/8	5-7/8	022731	6
1/2	.5000	4-1/2	6	022732	6

**Corresponding Sets**

Style	Description	Pieces	Size Range	Stock #
T1019D	Metal Index	13	1/16"-1/4" by 64ths	090113
T1018D	Metal Index	15	1/16"-1/2" by 32nds	090115
T10180D	Metal Index	21	1/16"-3/8" by 64ths	090121
T1017D	Metal Index	29	1/16"-1/2" by 64ths	090190
T1017DC	Round Twist Top Drill Caddy	29	1/16"-1/2" by 64ths	090192
T10123D	Metal Index	115	1/16"-1/2" by 64ths, #1- #60, A-Z	090196



@tools\_at\_work



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**JOBBER LENGTH**



Point: 135°  
Material:  
Coating/Finish:  
Other:

Split Point  
Premium Grade High Speed Steel  
Black and Gold  
Heavy-Duty Construction  
Fractional, Wire, Letter sizes -  
3 Flats on Shank

**DRILLS**

**T102D**

Packaging: Tube

Size	Decimal Equivalent	Flute Length	Overall Length	Stock #	Pkg Qty
60*	.0400	11/16	1-5/8	024760	12
59*	.0410	11/16	1-5/8	024759	12
58*	.0420	11/16	1-5/8	024758	12
57*	.0430	3/4	1-3/4	024757	12
56*	.0465	3/4	1-3/4	024756	12
55*	.0520	7/8	1-7/8	024755	12
54*	.0550	7/8	1-7/8	024754	12
53*	.0595	7/8	1-7/8	024753	12
52	.0635	7/8	1-7/8	024752	12
51	.0670	1	2	024751	12
50	.0700	1	2	024750	12
49	.0730	1	2	024749	12
48	.0760	1	2	024748	12
47	.0785	1	2	024747	12
46	.0810	1-1/8	2-1/8	024746	12
45	.0820	1-1/8	2-1/8	024745	12
44	.0860	1-1/8	2-1/8	024744	12
43	.0890	1-1/4	2-1/4	024743	12
42	.0935	1-1/4	2-1/4	024742	12
41	.0960	1-3/8	2-3/8	024741	12
40	.0980	1-3/8	2-3/8	024740	12
39	.0995	1-3/8	2-3/8	024739	12
38	.1015	1-7/16	2-1/2	024738	12
37	.1040	1-7/16	2-1/2	024737	12
36	.1065	1-7/16	2-1/2	024736	12
35	.1100	1-1/2	2-5/8	024735	12
34	.1110	1-1/2	2-5/8	024734	12
33	.1130	1-1/2	2-5/8	024733	12
32	.1160	1-5/8	2-3/4	024732	12
31	.1200	1-5/8	2-3/4	024731	12
30	.1285	1-5/8	2-3/4	024730	12
29	.1360	1-3/4	2-7/8	024729	12
28	.1405	1-3/4	2-7/8	024728	12
27	.1440	1-7/8	3	024727	12
26	.1470	1-7/8	3	024726	12
25	.1495	1-7/8	3	024725	12
24	.1520	2	3-1/8	024724	12
23	.1540	2	3-1/8	024723	12
22	.1570	2	3-1/8	024722	12
21	.1590	2-1/8	3-1/4	024721	12
20	.1610	2-1/8	3-1/4	024720	12
19	.1660	2-1/8	3-1/4	024719	12
18	.1695	2-1/8	3-1/4	024718	12
17	.1730	2-3/16	3-3/8	024717	12
16	.1770	2-3/16	3-3/8	024716	12
15	.1800	2-3/16	3-3/8	024715	12
14	.1820	2-3/16	3-3/8	024714	12
13	.1850	2-5/16	3-1/2	024713	12
12**	.1890	2-5/16	3-1/2	024712	12
11**	.1910	2-5/16	3-1/2	024711	12
10**	.1935	2-7/16	3-5/8	024710	12
9**	.1960	2-7/16	3-5/8	024709	12
8**	.1990	2-7/16	3-5/8	024708	12
7**	.2010	2-7/16	3-5/8	024707	12
6**	.2040	2-1/2	3-3/4	024706	12
5**	.2055	2-1/2	3-3/4	024705	12
4**	.2090	2-1/2	3-3/4	024704	12
3**	.2130	2-1/2	3-3/4	024703	12
2**	.2210	2-5/8	3-7/8	024702	12
1**	.2280	2-5/8	3-7/8	024701	12

\*Not Split Point

\*\*1-12: 3 Flats on Shank

**T103D**

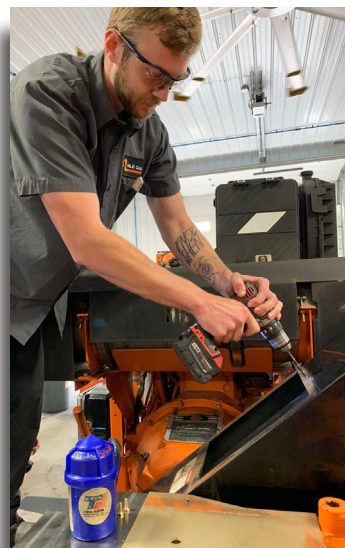
Packaging: Tube

Size	Decimal Equivalent	Flute Length	Overall Length	Stock #	Pkg Qty
A	.2340	2-5/8	3-7/8	026701	12
B	.2380	2-3/4	4	026702	12
C	.2420	2-3/4	4	026703	12
D	.2460	2-3/4	4	026704	12
E	.2500	2-3/4	4	026705	12
F	.2570	2-7/8	4-1/8	026706	12
G	.2610	2-7/8	4-1/8	026707	12
H	.2660	2-7/8	4-1/8	026708	12
I	.2720	2-7/8	4-1/8	026709	12
J	.2770	2-7/8	4-1/8	026710	12
K	.2810	2-15/16	4-1/4	026711	12
L	.2900	2-15/16	4-1/4	026712	12
M	.2950	3-1/16	4-3/8	026713	12
N	.3020	3-1/16	4-3/8	026714	12
O	.3160	3-3/16	4-1/2	026715	6
P	.3230	3-5/16	4-5/8	026716	6
Q	.3320	3-7/16	4-3/4	026717	6
R	.3390	3-7/16	4-3/4	026718	6
S	.3480	3-1/2	4-7/8	026719	6
T	.3580	3-1/2	4-7/8	026720	6
U	.3680	3-5/8	5	026721	6
V	.3770	3-5/8	5	026722	6
W	.3860	3-3/4	5-1/8	026723	6
X	.3970	3-3/4	5-1/8	026724	6
Y	.4040	3-7/8	5-1/4	026725	6
Z	.4130	3-7/8	5-1/4	026726	6

All Letter Sizes: 3 Flats on Shank

**Corresponding Sets**

Style	Description	Pieces	Size Range	Stock #
T10125D	Metal Index	26	A-Z	099828
T10123D	Metal Index	115	1/16"-1/2" by 64ths, #1- #60, A-Z	090196



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Point: 135° Split Point  
 Material: Premium Grade High Speed Steel  
 Coating/Finish: Black and Bronze Oxide  
 Other: Heavy-Duty Construction  
 \*Sizes 3/16" and larger: 3 Flats on Shank

Size	Decimal Equivalent	Flute Length	Overall Length	T1M Packaging: Tube		T1M Packaging: Bulk		BP1M Packaging: Card	
				Stock #	Pkg Qty	Stock #	Pkg Qty	Stock #	Pkg Qty
1/16	.0625	7/8	1-7/8	033304	12	033304.20	144	035304	1
5/64	.0781	1	2	033305	12	033305.20	144	035305	1
3/32	.0938	1-1/4	2-1/4	033306	12	033306.20	144	035306	1
7/64	.1094	1-5/16	2-3/8	033307	12	033307.20	144	035307	1
1/8	.1250	1-7/16	2-1/2	033308	12	033308.20	144	035308	1
9/64	.1406	1-9/16	2-5/8	033309	12	033309.20	144	035309	1
5/32	.1562	1-11/16	2-3/4	033310	12	033310.20	144	035310	1
11/64	.1719	1-13/16	2-7/8	033311	12	033311.20	144	035311	1
<b>3-Flats on Shank</b>									
3/16	.1875	1-7/8	3	033312	12	033312.20	144	035312	1
13/64	.2031	1-15/16	3-1/8	033313	12	033313.20	144	035313	1
7/32	.2188	2	3-1/4	033314	12	033314.20	144	035314	1
15/64	.2344	2-1/16	3-3/8	033315	12	033315.20	144	035315	1
1/4	.2500	2	3-1/2	033316	12	033316.20	144	035316	1
17/64	.2656	2-1/8	3-5/8	033317	12	033317.20	144	035317	1
9/32	.2812	2-1/4	3-3/4	033318	12	033318.20	144	035318	1
19/64	.2969	2-3/8	3-7/8	033319	12	033319.20	144	035319	1
5/16	.3125	2-1/2	4	033320	6	033320.20	144	035320	1
21/64	.3281	2-9/16	4-1/16	033321	6	033321.20	144	035321	1
11/32	.3438	2-5/8	4-1/8	033322	6	033322.20	144	035322	1
23/64	.3594	2-11/16	4-3/16	033323	6	033323.20	144	035323	1
3/8	.3750	2-11/16	4-1/4	033324	6	033324.20	144	035324	1
25/64*	.3906	2-3/4	4-5/16	033325	6	033325.20	144	035325	1
13/32*	.4062	2-13/16	4-3/8	033326	6	033326.20	144	035326	1
27/64	.4219	2-7/8	4-7/16	033327	6	033327.20	144	035327	1
7/16	.4375	2-15/16	4-1/2	033328	6	033328.20	144	035328	1
29/64	.4531	3	4-5/8	033329	6	033329.20	144	035329	1
15/32	.4688	3-1/8	4-3/4	033330	6	033330.20	144	035330	1
31/64	.4844	3-1/4	4-7/8	033331	6	033331.20	144	035331	1
1/2	.5000	3-3/8	5	033332	6	033332.20	144	035332	1

\*T1M, BP1M - Drill sizes 25/64" and 13/32" will fit a 3/8" chuck without reducing the shank

### T8M Reduced Shank

Packaging: Tube

Size	Decimal Equivalent	Flute Length	Overall Length	Stock #	Pkg Qty
<b>3-Flats on Shank</b>					
27/64	.4219	2-7/8	4-7/16	092627	6
7/16	.4375	2-15/16	4-1/2	092628	6
29/64	.4531	3	4-5/8	092629	6
15/32	.4688	3-1/8	4-3/4	092630	6
31/64	.4844	3-1/4	4-7/8	092631	6
1/2	.5000	3-3/8	5	092632	6

\*3/8" reduced shank

### Corresponding Sets

Style	Description	Pieces	Size Range	Stock #
T19M	Metal Index	13 Piece	1/16"-1/4" by 64ths	090547
T18M	Metal Index	15 Piece	1/16"-1/2" by 32nds	090551
T180M	Metal Index	21 Piece	1/16"-3/8" by 64ths	090549
T17MDC	Clip-On Index	29 Piece	1/16"-1/2" by 64ths	090553
T17M	Metal Index	29 Piece	1/16"-1/2" by 64ths	090552
T829M	Metal Index	29 Piece	1/16"-1/2" by 64ths (3/8" Reduced Shank)	090550



- TriNADO Drills are the perfect no-slip tool for your cordless drilling needs
- The TriNADO Drill series is longer than Screw Machine, but shorter than Jobber Length.
- Available in either Straight or Reduced Shank

Straight Shank



Reduced Shank





# JOBBER LENGTH



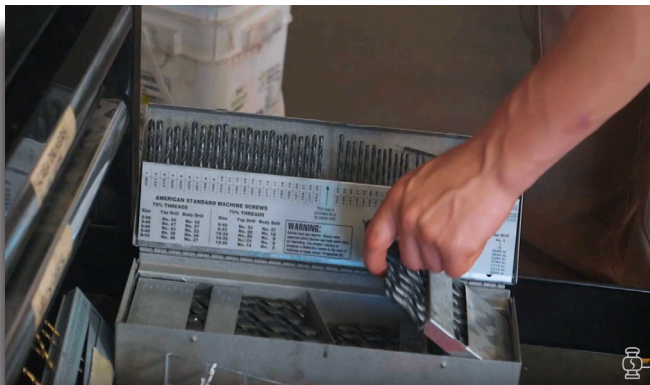
Point: 135° Split Point  
 Material: High Speed Steel  
 Coating/Finish: Black Oxide  
 Other: Heavy-Duty Construction

DRILLS

Size	Decimal Equivalent	Flute Length	Overall Length	T1D Packaging: Tube		T1D Packaging: Bulk	
				Stock#	Pkg Qty	Stock#	Pkg Qty
1/16	.0625	7/8	1-7/8	011404	12	011404.20	288
5/64	.0781	1	2	011405	12	011405.20	288
3/32	.0938	1-1/4	2-1/4	011406	12	011406.20	288
7/64	.1094	1-1/2	2-5/8	011407	12	011407.20	288
1/8	.1250	1-5/8	2-3/4	011408	12	011408.20	288
9/64	.1406	1-3/4	2-7/8	011409	12	011409.20	288
5/32	.1562	2	3-1/8	011410	12	011410.20	288
11/64	.1719	2-1/8	3-1/4	011411	12	011411.20	288
3/16	.1875	2-5/16	3-1/2	011412	12	011412.20	288
13/64	.2031	2-7/16	3-5/8	011413	12	011413.20	288
7/32	.2188	2-1/2	3-3/4	011414	12	011414.20	288
15/64	.2344	2-5/8	3-7/8	011415	12	011415.20	288
1/4	.2500	2-3/4	4	011416	12	011416.20	288
17/64	.2656	2-7/8	4-1/8	011417	12	011417.20	288
9/32	.2812	2-15/16	4-1/4	011418	12	011418.20	144
19/64	.2969	3-1/16	4-3/8	011419	12	011419.20	144
5/16	.3125	3-3/16	4-1/2	011420	6	011420.20	144
21/64	.3281	3-5/16	4-5/8	011421	6	011421.20	144
11/32	.3438	3-7/16	4-3/4	011422	6	011422.20	144
23/64	.3594	3-1/2	4-7/8	011423	6	011423.20	144
3/8	.3750	3-5/8	5	011424	6	011424.20	144
25/64	.3906	3-3/4	5-1/8	011425	6	011425.20	144
13/32	.4062	3-7/8	5-1/4	011426	6	011426.20	144
27/64	.4219	3-15/16	5-3/8	011427	6	011427.20	144
7/16	.4375	4-1/16	5-1/2	011428	6	011428.20	144
29/64	.4531	4-3/16	5-5/8	011429	6	011429.20	144
15/32	.4688	4-5/16	5-3/4	011430	6	011430.20	144
31/64	.4844	4-3/8	5-7/8	011431	6	011431.20	144
1/2	.5000	4-1/2	6	011432	6	011432.20	144

### Corresponding Sets

Style	Description	Pieces	Size Range	Stock #
T19D	Metal Index	13 Piece	1/16"-1/4" by 64ths	099815
T18D	Metal Index	15 Piece	1/16"-1/2" by 32nds	099809
T180D	Metal Index	21 Piece	1/16"-3/8" by 64ths	099836
T17DC	Clip-On Index	29 Piece	1/16"-1/2" by 64ths	099804
T17D	Metal Index	29 Piece	1/16"-1/2" by 64ths	099803
T123D	Metal Index	115 Piece	1/16"-1/2" by 64ths, #1- #60, A-Z	090561



@alecsteele

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# JOBBER LENGTH

## DRILLS



Point: 135° Split Point  
 Material: High Speed Steel  
 Coating/Finish: Black Oxide  
 Other: Heavy-Duty Construction

### T2D

Packaging: Tube

Size	Decimal Equivalent	Flute Length	Overall Length	Stock #	Pkg Qty
60*	.0400	11/16	1-5/8	012460	12
59*	.0410	11/16	1-5/8	012459	12
58*	.0420	11/16	1-5/8	012458	12
57*	.0430	3/4	1-3/4	012457	12
56*	.0465	3/4	1-3/4	012456	12
55*	.0520	7/8	1-7/8	012455	12
54*	.0550	7/8	1-7/8	012454	12
53*	.0595	7/8	1-7/8	012453	12
52	.0635	7/8	1-7/8	012452	12
51	.0670	1	2	012451	12
50	.0700	1	2	012450	12
49	.0730	1	2	012449	12
48	.0760	1	2	012448	12
47	.0785	1	2	012447	12
46	.0810	1-1/8	2-1/8	012446	12
45	.0820	1-1/8	2-1/8	012445	12
44	.0860	1-1/8	2-1/8	012444	12
43	.0890	1-1/4	2-1/4	012443	12
42	.0935	1-1/4	2-1/4	012442	12
41	.0960	1-3/8	2-3/8	012441	12
40	.0980	1-3/8	2-3/8	012440	12
39	.0995	1-3/8	2-3/8	012439	12
38	.1015	1-7/16	2-1/2	012438	12
37	.1040	1-7/16	2-1/2	012437	12
36	.1065	1-7/16	2-1/2	012436	12
35	.1100	1-1/2	2-5/8	012435	12
34	.1110	1-1/2	2-5/8	012434	12
33	.1130	1-1/2	2-5/8	012433	12
32	.1160	1-5/8	2-3/4	012432	12
31	.1200	1-5/8	2-3/4	012431	12
30	.1285	1-5/8	2-3/4	012430	12
29	.1360	1-3/4	2-7/8	012429	12
28	.1405	1-3/4	2-7/8	012428	12
27	.1440	1-7/8	3	012427	12
26	.1470	1-7/8	3	012426	12
25	.1495	1-7/8	3	012425	12
24	.1520	2	3-1/8	012424	12
23	.1540	2	3-1/8	012423	12
22	.1570	2	3-1/8	012422	12
21	.1590	2-1/8	3-1/4	012421	12
20	.1610	2-1/8	3-1/4	012420	12
19	.1660	2-1/8	3-1/4	012419	12
18	.1695	2-1/8	3-1/4	012418	12
17	.1730	2-3/16	3-3/8	012417	12
16	.1770	2-3/16	3-3/8	012416	12
15	.1800	2-3/16	3-3/8	012415	12
14	.1820	2-3/16	3-3/8	012414	12
13	.1850	2-5/16	3-1/2	012413	12
12	.1890	2-5/16	3-1/2	012412	12
11	.1910	2-5/16	3-1/2	012411	12
10	.1935	2-7/16	3-5/8	012410	12
9	.1960	2-7/16	3-5/8	012409	12
8	.1990	2-7/16	3-5/8	012408	12
7	.2010	2-7/16	3-5/8	012407	12
6	.2040	2-1/2	3-3/4	012406	12
5	.2055	2-1/2	3-3/4	012405	12
4	.2090	2-1/2	3-3/4	012404	12
3	.2130	2-1/2	3-3/4	012403	12
2	.2210	2-5/8	3-7/8	012402	12
1	.2280	2-5/8	3-7/8	012401	12

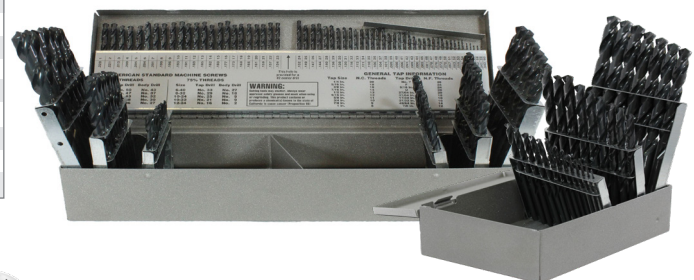
### T3D

Packaging: Tube

Size	Decimal Equivalent	Flute Length	Overall Length	Stock #	Pkg Qty
A	.2340	2-5/8	3-7/8	013401	12
B	.2380	2-3/4	4	013402	12
C	.2420	2-3/4	4	013403	12
D	.2460	2-3/4	4	013404	12
E	.2500	2-3/4	4	013405	12
F	.2570	2-7/8	4-1/8	013406	12
G	.2610	2-7/8	4-1/8	013407	12
H	.2660	2-7/8	4-1/8	013408	12
I	.2720	2-7/8	4-1/8	013409	12
J	.2770	2-7/8	4-1/8	013410	12
K	.2810	2-15/16	4-1/4	013411	12
L	.2900	2-15/16	4-1/4	013412	12
M	.2950	3-1/16	4-3/8	013413	12
N	.3020	3-1/16	4-3/8	013414	12
O	.3160	3-3/16	4-1/2	013415	6
P	.3230	3-5/16	4-5/8	013416	6
Q	.3320	3-7/16	4-3/4	013417	6
R	.3390	3-7/16	4-3/4	013418	6
S	.3480	3-1/2	4-7/8	013419	6
T	.3580	3-1/2	4-7/8	013420	6
U	.3680	3-5/8	5	013421	6
V	.3770	3-5/8	5	013422	6
W	.3860	3-3/4	5-1/8	013423	6
X	.3970	3-3/4	5-1/8	013424	6
Y	.4040	3-7/8	5-1/4	013425	6
Z	.4130	3-7/8	5-1/4	013426	6



@triumphwistdrill



\*Not split point





# JOBBER LENGTH



Point: 118° Point  
 Material: High Speed Steel  
 Coating/Finish: Black Oxide  
 Other: General Purpose

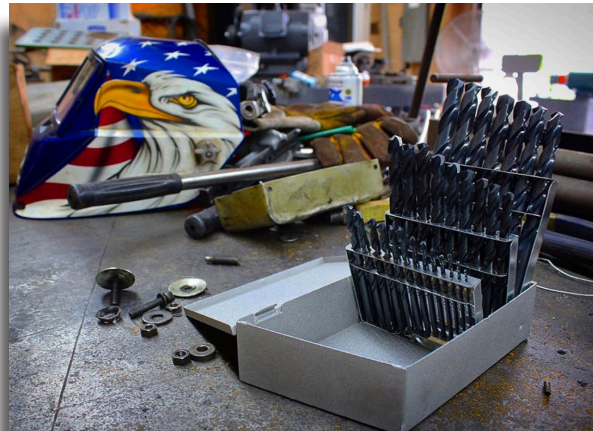
DRILLS

Size	Decimal Equivalent	Flute Length	Overall Length	T1B Packaging: Tube		T1B Packaging: Bulk		BP1B Packaging: Card	
				Stock #	Pkg Qty	Stock #	Pkg Qty	Stock #	Pkg Qty
1/64	.0156	3/16	3/4	011201	12	-	-	-	-
1/32	.0312	1/2	1-3/8	011202	12	011202.20	288	-	-
3/64	.0469	3/4	1-3/4	011203	12	011203.20	288	-	-
1/16	.0625	7/8	1-7/8	011204	12	011204.20	288	011304	1
5/64	.0781	1	2	011205	12	011205.20	288	011305	1
3/32	.0938	1-1/4	2-1/4	011206	12	011206.20	288	011306	1
7/64	.1094	1-1/2	2-5/8	011207	12	011207.20	288	011307	1
1/8	.1250	1-5/8	2-3/4	011208	12	011208.20	288	011308	1
9/64	.1406	1-3/4	2-7/8	011209	12	011209.20	288	011309	1
5/32	.1562	2	3-1/8	011210	12	011210.20	288	011310	1
11/64	.1719	2-1/8	3-1/4	011211	12	011211.20	288	011311	1
3/16	.1875	2-5/16	3-1/2	011212	12	011212.20	288	011312	1
13/64	.2031	2-7/16	3-5/8	011213	12	011213.20	288	011313	1
7/32	.2188	2-1/2	3-3/4	011214	12	011214.20	288	011314	1
15/64	.2344	2-5/8	3-7/8	011215	12	011215.20	288	011315	1
1/4	.2500	2-3/4	4	011216	12	011216.20	288	011316	1
17/64	.2656	2-7/8	4-1/8	011217	12	011217.20	144	011317	1
9/32	.2812	2-15/16	4-1/4	011218	12	011218.20	144	011318	1
19/64	.2969	3-1/16	4-3/8	011219	12	011219.20	144	011319	1
5/16	.3125	3-3/16	4-1/2	011220	6	011220.20	144	011320	1
21/64	.3281	3-5/16	4-5/8	011221	6	011221.20	144	011321	1
11/32	.3438	3-7/16	4-3/4	011222	6	011222.20	144	011322	1
23/64	.3594	3-1/2	4-7/8	011223	6	011223.20	144	011323	1
3/8	.3750	3-5/8	5	011224	6	011224.20	144	011324	1
25/64	.3906	3-3/4	5-1/8	011225	6	011225.20	144	011325	1
13/32	.4062	3-7/8	5-1/4	011226	6	011226.20	144	011326	1
27/64	.4219	3-15/16	5-3/8	011227	6	011227.20	144	011327	1
7/16	.4375	4-1/16	5-1/2	011228	6	011228.20	144	011328	1
29/64	.4531	4-3/16	5-5/8	011229	6	011229.20	144	011329	1
15/32	.4688	4-5/16	5-3/4	011230	6	011230.20	144	011330	1
31/64	.4844	4-3/8	5-7/8	011231	6	011231.20	144	011331	1
1/2	.5000	4-1/2	6	011232	6	011232.20	144	011321	1

### Corresponding Sets

Style	Description	Pieces	Size Range	Stock#
T17B	Metal Index	29 Piece	1/16"-1/2" by 64ths	099802
T18B	Metal Index	15 Piece	1/16"-1/2" by 32nds	099808
T19B	Metal Index	13 Piece	1/16"-1/4" by 64ths	099814
T22B	Metal Index	60 Piece	#1 - #60	099820
T25B	Metal Index	26 Piece	A - Z	099827
T123B	Metal Index	115 Piece	1/16"-1/2 by 64ths, #1- #60, A-Z	099832
T180B	Metal Index	21 Piece	1/16"-3/8" by 64ths	099835
T815B*	Metal Index	15 Piece	1/16"-1/2" by 32nds	099812
T829B*	Metal Index	29 Piece	1/16"-1/2" by 64ths	099833

\*3/8" Reduced Shank



@triumphtwistdrill



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Point: 118° Point  
 Material: High Speed Steel  
 Coating/Finish: Black Oxide  
 Other: General Purpose

### T2B Packaging: Tube

Size	Decimal Equivalent	Flute Length	Overall Length	Stock #	Pkg Qty
60	.0400	11/16	1-5/8	012260	12
59	.0410	11/16	1-5/8	012259	12
58	.0420	11/16	1-5/8	012258	12
57	.0430	3/4	1-3/4	012257	12
56	.0465	3/4	1-3/4	012256	12
55	.0520	7/8	1-7/8	012255	12
54	.0550	7/8	1-7/8	012254	12
53	.0595	7/8	1-7/8	012253	12
52	.0635	7/8	1-7/8	012252	12
51	.0670	1	2	012251	12
50	.0700	1	2	012250	12
49	.0730	1	2	012249	12
48	.0760	1	2	012248	12
47	.0785	1	2	012247	12
46	.0810	1-1/8	2-1/8	012246	12
45	.0820	1-1/8	2-1/8	012245	12
44	.0860	1-1/8	2-1/8	012244	12
43	.0890	1-1/4	2-1/4	012243	12
42	.0935	1-1/4	2-1/4	012242	12
41	.0960	1-3/8	2-3/8	012241	12
40	.0980	1-3/8	2-3/8	012240	12
39	.0995	1-3/8	2-3/8	012239	12
38	.1015	1-7/16	2-1/2	012238	12
37	.1040	1-7/16	2-1/2	012237	12
36	.1065	1-7/16	2-1/2	012236	12
35	.1100	1-1/2	2-5/8	012235	12
34	.1110	1-1/2	2-5/8	012234	12
33	.1130	1-1/2	2-5/8	012233	12
32	.1160	1-5/8	2-3/4	012232	12
31	.1200	1-5/8	2-3/4	012231	12
30	.1285	1-5/8	2-3/4	012230	12
29	.1360	1-3/4	2-7/8	012229	12
28	.1405	1-3/4	2-7/8	012228	12
27	.1440	1-7/8	3	012227	12
26	.1470	1-7/8	3	012226	12
25	.1495	1-7/8	3	012225	12
24	.1520	2	3-1/8	012224	12
23	.1540	2	3-1/8	012223	12
22	.1570	2	3-1/8	012222	12
21	.1590	2-1/8	3-1/4	012221	12
20	.1610	2-1/8	3-1/4	012220	12
19	.1660	2-1/8	3-1/4	012219	12
18	.1695	2-1/8	3-1/4	012218	12
17	.1730	2-3/16	3-3/8	012217	12
16	.1770	2-3/16	3-3/8	012216	12
15	.1800	2-3/16	3-3/8	012215	12
14	.1820	2-3/16	3-3/8	012214	12
13	.1850	2-5/16	3-1/2	012213	12
12	.1890	2-5/16	3-1/2	012212	12
11	.1910	2-5/16	3-1/2	012211	12
10	.1935	2-7/16	3-5/8	012210	12
9	.1960	2-7/16	3-5/8	012209	12
8	.1990	2-7/16	3-5/8	012208	12
7	.2010	2-7/16	3-5/8	012207	12
6	.2040	2-1/2	3-3/4	012206	12
5	.2055	2-1/2	3-3/4	012205	12
4	.2090	2-1/2	3-3/4	012204	12
3	.2130	2-1/2	3-3/4	012203	12
2	.2210	2-5/8	3-7/8	012202	12
1	.2280	2-5/8	3-7/8	012201	12

### T2B Packaging: Bulk

Size	Decimal Equivalent	Flute Length	Overall Length	Stock #	Pkg Qty
59	.0410	11/16	1-5/8	012259.20	288
58	.0420	11/16	1-5/8	012258.20	288
57	.0430	3/4	1-3/4	012257.20	288
56	.0465	3/4	1-3/4	012256.20	288
55	.0520	7/8	1-7/8	012255.20	288
54	.0550	7/8	1-7/8	012254.20	288
53	.0595	7/8	1-7/8	012253.20	288
52	.0635	7/8	1-7/8	012252.20	288
40	.0980	1-3/8	2-3/8	012240.20	288
36	.1065	1-7/16	2-1/2	012236.20	288
31	.1200	1-5/8	2-3/4	012231.20	288
30	.1285	1-5/8	2-3/4	012230.20	288
29	.1360	1-3/4	2-7/8	012229.20	288
28	.1405	1-3/4	2-7/8	012228.20	288
25	.1495	1-7/8	3	012225.20	288
21	.1590	2-1/8	3-1/4	012221.20	288
20	.1610	2-1/8	3-1/4	012220.20	288
16	.1770	2-3/16	3-3/8	012216.20	288
10	.1935	2-7/16	3-5/8	012210.20	288
7	.2010	2-7/16	3-5/8	012207.20	288
6	.2040	2-1/2	3-3/4	012206.20	288
2	.2210	2-5/8	3-7/8	012202.20	288
1	.2280	2-5/8	3-7/8	012201.20	288

### T3B Packaging: Tube

Size	Decimal Equivalent	Flute Length	Overall Length	Stock #	Pkg Qty
A	.2340	2-5/8	3-7/8	013201	12
B	.2380	2-3/4	4	013202	12
C	.2420	2-3/4	4	013203	12
D	.2460	2-3/4	4	013204	12
E	.2500	2-3/4	4	013205	12
F	.2570	2-7/8	4-1/8	013206	12
G	.2610	2-7/8	4-1/8	013207	12
H	.2660	2-7/8	4-1/8	013208	12
I	.2720	2-7/8	4-1/8	013209	12
J	.2770	2-7/8	4-1/8	013210	12
K	.2810	2-15/16	4-1/4	013211	12
L	.2900	2-15/16	4-1/4	013212	12
M	.2950	3-1/16	4-3/8	013213	12
N	.3020	3-1/16	4-3/8	013214	12
O	.3160	3-3/16	4-1/2	013215	6
P	.3230	3-5/16	4-5/8	013216	6
Q	.3320	3-7/16	4-3/4	013217	6
R	.3390	3-7/16	4-3/4	013218	6
S	.3480	3-1/2	4-7/8	013219	6
T	.3580	3-1/2	4-7/8	013220	6
U	.3680	3-5/8	5	013221	6
V	.3770	3-5/8	5	013222	6
W	.3860	3-3/4	5-1/8	013223	6
X	.3970	3-3/4	5-1/8	013224	6
Y	.4040	3-7/8	5-1/4	013225	6
Z	.4130	3-7/8	5-1/4	013226	6





# JOBBER LENGTH



Point: 118° Point  
 Material: High Speed Steel  
 Coating/Finish: Bright Finish  
 Other: General Purpose

DRILLS

Size	Decimal Equivalent	Flute Length	Overall Length	T1 Packaging: Tube		T1 Packaging: Bulk		BP1 Packaging: Card	
				Stock#	Pkg Qty	Stock#	Pkg Qty	Stock#	Pkg Qty
1/64	.0156	3/16	3/4	011001	12	-	-	-	-
1/32	.0312	1/2	1-3/8	011002	12	011002.20	288	-	-
3/64	.0469	3/4	1-3/4	011003	12	011003.20	288	-	-
1/16	.0625	7/8	1-7/8	011004	12	011004.20	288	011604	1
5/64	.0781	1	2	011005	12	011005.20	288	011605	1
3/32	.0938	1-1/4	2-1/4	011006	12	011006.20	288	011606	1
7/64	.1094	1-1/2	2-5/8	011007	12	011007.20	288	011607	1
1/8	.1250	1-5/8	2-3/4	011008	12	011008.20	288	011608	1
9/64	.1406	1-3/4	2-7/8	011009	12	011009.20	288	011609	1
5/32	.1562	2	3-1/8	011010	12	011010.20	288	011610	1
11/64	.1719	2-1/8	3-1/4	011011	12	011011.20	288	011611	1
3/16	.1875	2-5/16	3-1/2	011012	12	011012.20	288	011612	1
13/64	.2031	2-7/16	3-5/8	011013	12	011013.20	288	011613	1
7/32	.2188	2-1/2	3-3/4	011014	12	011014.20	288	011614	1
15/64	.2344	2-5/8	3-7/8	011015	12	011015.20	288	011615	1
1/4	.2500	2-3/4	4	011016	12	011016.20	288	011616	1
17/64	.2656	2-7/8	4-1/8	011017	12	011017.20	144	011617	1
9/32	.2812	2-15/16	4-1/4	011018	12	011018.20	144	011618	1
19/64	.2969	3-1/16	4-3/8	011019	12	011019.20	144	011619	1
5/16	.3125	3-3/16	4-1/2	011020	6	011020.20	144	011620	1
21/64	.3281	3-5/16	4-5/8	011021	6	011021.20	144	011621	1
11/32	.3438	3-7/16	4-3/4	011022	6	011022.20	144	011622	1
23/64	.3594	3-1/2	4-7/8	011023	6	011023.20	144	011623	1
3/8	.3750	3-5/8	5	011024	6	011024.20	144	011624	1
25/64	.3906	3-3/4	5-1/8	011025	6	011025.20	144	011625	1
13/32	.4062	3-7/8	5-1/4	011026	6	011026.20	144	011626	1
27/64	.4219	3-15/16	5-3/8	011027	6	011027.20	144	011627	1
7/16	.4375	4-1/16	5-1/2	011028	6	011028.20	144	011628	1
29/64	.4531	4-3/16	5-5/8	011029	6	011029.20	144	011629	1
15/32	.4688	4-5/16	5-3/4	011030	6	011030.20	144	011630	1
31/64	.4844	4-3/8	5-7/8	011031	6	011031.20	144	011631	1
1/2	.5000	4-1/2	6	011032	6	011032.20	144	011632	1

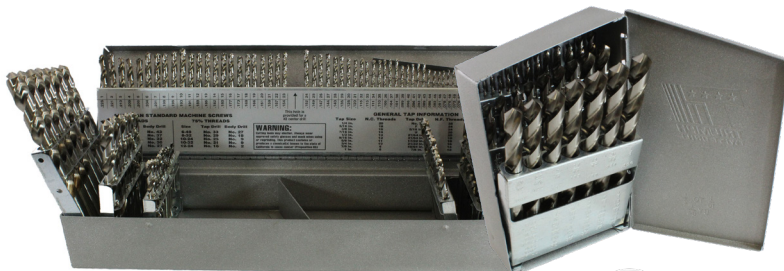
### Corresponding Sets

Style	Description	Pieces	Size Range	Stock#
SAD13	Select-A-Drill	13 Piece	1/16"-1/4" by 64ths	090490
SAD21	Select-A-Drill	21 Piece	1/16"-3/8" by 64ths	090491
T14P*	Metal Index	14 Piece	1/16", 5/64", 3/32", 7/64", 1/8", 9/64", 5/32, 3/16", 7/32", 1/4", 5/16", 3/8", 7/16", 1/2"	090614
T17	Metal Index	29 Piece	1/16"-1/2" by 64ths	090517
T18	Metal Index	15 Piece	1/16"-1/2" by 32nds	090518
T19	Metal Index	13 Piece	1/16"-1/4" by 64ths	090519
T180	Metal Index	21 Piece	1/16"-3/8" by 64ths	090580
T123	Metal Index	115 Piece	1/16"-1/2" by 64ths, #1-#60, A-Z	090560

\*Sizes over 1/4" are 1/4" reduced shank



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continued on next page





# JOBBER LENGTH

## DRILLS



Point: 118° Point  
 Material: High Speed Steel  
 Coating/Finish: Bright Finish  
 Other: General Purpose

### T2 Packaging: Tube

Size	Decimal Equivalent	Flute Length	Overall Length	Stock #	Pkg Qty
80	.0135	1/8	3/4	012080	12
79	.0145	1/8	3/4	012079	12
78	.0160	3/16	7/8	012078	12
77	.0180	3/16	7/8	012077	12
76	.0200	3/16	7/8	012076	12
75	.0210	1/4	1	012075	12
74	.0225	1/4	1	012074	12
73	.0240	5/16	1-1/8	012073	12
72	.0250	5/16	1-1/8	012072	12
71	.0260	3/8	1-1/4	012071	12
70	.0280	3/8	1-1/4	012070	12
69	.0292	1/2	1-3/8	012069	12
68	.0310	1/2	1-3/8	012068	12
67	.0320	1/2	1-3/8	012067	12
66	.0330	1/2	1-3/8	012066	12
65	.0350	5/8	1-1/2	012065	12
64	.0360	5/8	1-1/2	012064	12
63	.0370	5/8	1-1/2	012063	12
62	.0380	5/8	1-1/2	012062	12
61	.0390	11/16	1-5/8	012061	12
60	.0400	11/16	1-5/8	012060	12
59	.0410	11/16	1-5/8	012059	12
58	.0420	11/16	1-5/8	012058	12
57	.0430	3/4	1-3/4	012057	12
56	.0465	3/4	1-3/4	012056	12
55	.0520	7/8	1-7/8	012055	12
54	.0550	7/8	1-7/8	012054	12
53	.0595	7/8	1-7/8	012053	12
52	.0635	7/8	1-7/8	012052	12
51	.0670	1	2	012051	12
50	.0700	1	2	012050	12
49	.0730	1	2	012049	12
48	.0760	1	2	012048	12
47	.0785	1	2	012047	12
46	.0810	1-1/8	2-1/8	012046	12
45	.0820	1-1/8	2-1/8	012045	12
44	.0860	1-1/8	2-1/8	012044	12
43	.0890	1-1/4	2-1/4	012043	12
42	.0935	1-1/4	2-1/4	012042	12
41	.0960	1-3/8	2-3/8	012041	12
40	.0980	1-3/8	2-3/8	012040	12
39	.0995	1-3/8	2-3/8	012039	12
38	.1015	1-7/16	2-1/2	012038	12
37	.1040	1-7/16	2-1/2	012037	12
36	.1065	1-7/16	2-1/2	012036	12
35	.1100	1-1/2	2-5/8	012035	12
34	.1110	1-1/2	2-5/8	012034	12
33	.1130	1-1/2	2-5/8	012033	12
32	.1160	1-5/8	2-3/4	012032	12
31	.1200	1-5/8	2-3/4	012031	12
30	.1285	1-5/8	2-3/4	012030	12
29	.1405	1-3/4	2-7/8	012029	12
28	.1405	1-3/4	2-7/8	012028	12
27	.1440	1-7/8	3	012027	12
26	.1470	1-7/8	3	012026	12
25	.1495	1-7/8	3	012025	12
24	.1520	2	3-1/8	012024	12
23	.1540	2	3-1/8	012023	12
22	.1570	2	3-1/8	012022	12
21	.1590	2-1/8	3-1/4	012021	12
20	.1610	2-1/8	3-1/4	012020	12

### T2 Packaging: Tube

Size	Decimal Equivalent	Flute Length	Overall Length	Stock #	Pkg Qty
19	.1660	2-1/8	3-1/4	012019	12
18	.1695	2-1/8	3-1/4	012018	12
17	.1730	2-3/16	3-3/8	012017	12
16	.1770	2-3/16	3-3/8	012016	12
15	.1800	2-3/16	3-3/8	012015	12
14	.1820	2-3/16	3-3/8	012014	12
13	.1850	2-5/16	3-1/2	012013	12
12	.1890	2-5/16	3-1/2	012012	12
11	.1910	2-5/16	3-1/2	012011	12
10	.1935	2-7/16	3-5/8	012010	12
9	.1960	2-7/16	3-5/8	012009	12
8	.1990	2-7/16	3-5/8	012008	12
7	.2010	2-7/16	3-5/8	012007	12
6	.2040	2-1/2	3-3/4	012006	12
5	.2055	2-1/2	3-3/4	012005	12
4	.2090	2-1/2	3-3/4	012004	12
3	.2130	2-1/2	3-3/4	012003	12
2	.2210	2-5/8	3-7/8	012002	12
1	.2280	2-5/8	3-7/8	012001	12

### T2 Packaging: Bulk

Size	Decimal Equivalent	Flute Length	Overall Length	Stock #	Pkg Qty
77	.0180	3/16	7/8	012077.20	288
76	.0200	3/16	7/8	012076.20	288
74	.0225	1/4	1	012074.20	288
73	.0240	5/16	1-1/8	012073.20	288
70	.0280	3/8	1-1/4	012070.20	288
69	.0292	1/2	1-3/8	012069.20	288
67	.0320	1/2	1-3/8	012067.20	288
66	.0330	1/2	1-3/8	012066.20	288
63	.0370	5/8	1-1/2	012063.20	288
60	.0400	11/16	1-5/8	012060.20	288
58	.0420	11/16	1-5/8	012058.20	288
56	.0465	3/4	1-3/4	012056.20	288
55	.0520	7/8	1-7/8	012055.20	288
54	.0550	7/8	1-7/8	012054.20	288
53	.0595	7/8	1-7/8	012053.20	288
50	.0700	1	2	012050.20	288
44	.0860	1-1/8	2-1/8	012044.20	288
36	.1065	1-7/16	2-1/2	012036.20	288
35	.1100	1-1/2	2-5/8	012035.20	288
32	.1160	1-5/8	2-3/4	012032.20	288
31	.1200	1-5/8	2-3/4	012031.20	288
29	.1360	1-3/4	2-7/8	012029.20	288
25	.1495	1-7/8	3	012025.20	288
21	.1590	2-1/8	3-1/4	012021.20	288
10	.1935	2-7/16	3-5/8	012010.20	288
7	.2010	2-7/16	3-5/8	012007.20	288

### Corresponding Sets

Style	Description	Pieces	Size Range	Stock #
T22	Metal Index	60 Piece	#1- #60	090522
T23	Metal Index	20 Piece	#61- #80	090523
T123	Metal Index	115 Piece	1/16"-1/2" by 64ths, #1- #60, A-Z	090560

continued on next page

800-942-1501



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# JOBBER LENGTH



Point: 118° Point  
 Material: High Speed Steel  
 Coating/Finish: Bright Finish  
 Other: General Purpose

**DRILLS**

### T3

Packaging: Tube

### MM1

Packaging: Tube

Size	Decimal Equivalent	Flute Length	Overall Length	Stock #	Pkg Qty
A	.2340	2-5/8	3-7/8	013001	12
B	.2380	2-3/4	4	013002	12
C	.2420	2-3/4	4	013003	12
D	.2460	2-3/4	4	013004	12
E	.2500	2-3/4	4	013005	12
F	.2570	2-7/8	4-1/8	013006	12
G	.2610	2-7/8	4-1/8	013007	12
H	.2660	2-7/8	4-1/8	013008	12
I	.2720	2-7/8	4-1/8	013009	12
J	.2770	2-7/8	4-1/8	013010	12
K	.2810	2-15/16	4-1/4	013011	12
L	.2900	2-15/16	4-1/4	013012	12
M	.2950	3-1/16	4-3/8	013013	12
N	.3020	3-1/16	4-3/8	013014	12
O	.3160	3-3/16	4-1/2	013015	6
P	.3230	3-5/16	4-5/8	013016	6
Q	.3320	3-7/16	4-3/4	013017	6
R	.3390	3-7/16	4-3/4	013018	6
S	.3480	3-1/2	4-7/8	013019	6
T	.3580	3-1/2	4-7/8	013020	6
U	.3680	3-5/8	5	013021	6
V	.3770	3-5/8	5	013022	6
W	.3860	3-3/4	5-1/8	013023	6
X	.3970	3-3/4	5-1/8	013024	6
Y	.4040	3-7/8	5-1/4	013025	6
Z	.4130	3-7/8	5-1/4	013026	6

Size	Decimal Equivalent	Flute Length	Overall Length	Stock #	Pkg Qty
1.00	.0394	17	41	013910	12
1.20	.0472	22	48	013912	12
1.50	.0591	22	48	013915	12
2.00	.0787	25	51	013920	12
2.50	.0984	35	60	013925	12
3.00	.1181	41	70	013930	12
3.30	.1299	44	73	013933	12
3.50	.1378	44	73	013935	12
4.00	.1575	54	83	013940	12
4.20	.1654	54	83	013942	12
4.50	.1772	56	86	013945	12
5.00	.1969	62	92	013950	12
5.10	.2008	62	92	013951	12
5.30	.2087	64	95	013953	12
5.50	.2165	64	95	013955	12
6.00	.2362	70	102	013960	12
6.50	.2559	73	105	013965	12
6.90	.2717	73	105	013969	6
7.00	.2756	73	105	013970	6
7.20	.2835	75	108	013972	6
7.50	.2953	78	111	013975	6
8.00	.3150	81	114	013980	6
8.30	.3268	84	117	013983	6
8.50	.3346	87	121	013985	6
9.00	.3543	89	124	013990	6
10.00	.3937	95	130	013800	6
10.50	.4134	98	133	013805	6
11.00	.4331	103	140	013810	6
11.50	.4528	106	143	013811	6
12.00	.4724	111	149	013812	6
12.50	.4921	114	152	013813	6
13.00	.5118	114	152	013814	1

#### Corresponding Sets

Style	Description	# of Pieces	Size Range	Stock #
T123	Metal Index	115 Piece	1/16"-1/2" by 64ths, #1- #60, A-Z	090560



Point: 118° Point  
 Material: High Speed Steel  
 Coating/Finish: Bright Finish  
 Other: 3/8" Reduced Shank

### T8

Packaging: Tube

### BP8

Packaging: Tube

Size	Decimal Equivalent	Flute Length	Overall Length	Stock #	Pkg Qty	Stock #	Pkg Qty
25/64	.3906	3-3/4	5-1/8	091825	6	-	-
13/32	.4062	3-7/8	5-1/4	091826	6	-	-
27/64	.4219	3-15/16	5-3/8	091827	6	-	-
7/16	.4375	4-1/16	5-1/2	091828	6	091928	1
29/64	.4531	4-3/16	5-5/8	091829	6	-	-
15/32	.4688	4-5/16	5-3/4	091830	6	-	-
31/64	.4844	4-3/8	5-7/8	091831	6	-	-
1/2	.5000	4-1/2	6	091832	6	091932	1

#### Corresponding Sets

Style	Description	Pieces	Size Range	Stock #
T815	Metal Index	15 Piece	1/16"-1/2" by 32nds	090815
T829	Metal Index	29 Piece	1/16"-1/2" by 64ths	090829





# JOBBER LENGTH

**DRILLS**



Point: 135° Split Point  
 Material: Cobalt, High Speed Steel  
 Coating/Finish: Bronze Oxide  
 Other: Heavy-Duty Construction

T1C Size	Decimal Equivalent	Flute Length	Overall Length	T1C Packaging: Tube		T1C Packaging: Bulk		BP1C Packaging: Card	
				Stock #	Pkg Qty	Stock #	Pkg Qty	Stock #	Pkg Qty
1/16	.0625	7/8	1-7/8	011504	12	011504.20	288	014204	1
5/64	.0781	1	2	011505	12	011505.20	288	014205	1
3/32	.0938	1-1/4	2-1/4	011506	12	011506.20	288	014206	1
7/64	.1094	1-1/2	2-5/8	011507	12	011507.20	288	014207	1
1/8	.1250	1-5/8	2-3/4	011508	12	011508.20	288	014208	1
9/64	.1406	1-3/4	2-7/8	011509	12	011509.20	288	014209	1
5/32	.1562	2	3-1/8	011510	12	011510.20	288	014210	1
11/64	.1719	2-1/8	3-1/4	011511	12	011511.20	288	014211	1
3/16	.1875	2-5/16	3-1/2	011512	12	011512.20	288	014212	1
13/64	.2031	2-7/16	3-5/8	011513	12	011513.20	288	014213	1
7/32	.2188	2-1/2	3-3/4	011514	12	011514.20	288	014214	1
15/64	.2344	2-5/8	3-7/8	011515	12	011515.20	288	014215	1
1/4	.2500	2-3/4	4	011516	12	011516.20	288	014216	1
17/64	.2656	2-7/8	4-1/8	011517	12	011517.20	144	014217	1
9/32	.2812	2-15/16	4-1/4	011518	12	011518.20	144	014218	1
19/64	.2969	3-1/16	4-3/8	011519	12	011519.20	144	014219	1
5/16	.3125	3-3/16	4-1/2	011520	6	011520.20	144	014220	1
21/64	.3281	3-5/16	4-5/8	011521	6	011521.20	144	014221	1
11/32	.3438	3-7/16	4-3/4	011522	6	011522.20	144	014222	1
23/64	.3594	3-1/2	4-7/8	011523	6	011523.20	144	014223	1
3/8	.3750	3-5/8	5	011524	6	011524.20	144	014224	1
25/64	.3906	3-3/4	5-1/8	011525	6	011525.20	144	014225	1
13/32	.4062	3-7/8	5-1/4	011526	6	011526.20	144	014226	1
27/64	.4219	3-15/16	5-3/8	011527	6	011527.20	144	014227	1
7/16	.4375	4-1/16	5-1/2	011528	6	011528.20	144	014228	1
29/64	.4531	4-3/16	5-5/8	011529	6	011529.20	144	014229	1
15/32	.4688	4-5/16	5-3/4	011530	6	011530.20	144	014230	1
31/64	.4844	4-3/8	5-7/8	011531	6	011531.20	144	014231	1
1/2	.5000	4-1/2	6	011532	6	011532.20	144	014232	1

### Corresponding Sets

Style	Description	Pieces	Size Range	Stock #
T19C	Metal Index	13 Piece	1/16"-1/4" by 64ths	099823
T18C	Metal Index	15 Piece	1/16"-1/2" by 32nds	099826
T180C	Metal Index	21 Piece	1/16"-3/8" by 64ths	099825
T17C	Metal Index	29 Piece	1/16"-1/2" by 64ths	099822
T123C	Metal Index	115 Piece	1/16"-1/2" by 64ths, #1- #60, A-Z	099831



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# JOBBER LENGTH



Point: 135° Split Point  
 Material: Cobalt, High Speed Steel  
 Coating/Finish: Bronze Oxide  
 Other: Heavy-Duty Construction

**DRILLS**

## T2C

Packaging: Tube

## T3C

Packaging: Tube

Size	Decimal Equivalent	Flute Length	Overall Length	Stock #	Pkg Qty
60	.0400	11/16	1-5/8	011760	12
59	.0410	11/16	1-5/8	011759	12
58	.0420	11/16	1-5/8	011758	12
57	.0430	3/4	1-3/4	011757	12
56	.0465	3/4	1-3/4	011756	12
55	.0520	7/8	1-7/8	011755	12
54	.0550	7/8	1-7/8	011754	12
53	.0595	7/8	1-7/8	011753	12
52	.0635	7/8	1-7/8	011752	12
51	.0670	1	2	011751	12
50	.0700	1	2	011750	12
49	.0730	1	2	011749	12
48	.0760	1	2	011748	12
47	.0785	1	2	011747	12
46	.0810	1-1/8	2-1/8	011746	12
45	.0820	1-1/8	2-1/8	011745	12
44	.0860	1-1/8	2-1/8	011744	12
43	.0890	1-1/4	2-1/4	011743	12
42	.0935	1-1/4	2-1/4	011742	12
41	.0960	1-3/8	2-3/8	011741	12
40	.0980	1-3/8	2-3/8	011740	12
39	.0995	1-3/8	2-3/8	011739	12
38	.1015	1-7/16	2-1/2	011738	12
37	.1040	1-7/16	2-1/2	011737	12
36	.1065	1-7/16	2-1/2	011736	12
35	.1100	1-1/2	2-5/8	011735	12
34	.1110	1-1/2	2-5/8	011734	12
33	.1130	1-1/2	2-5/8	011733	12
32	.1160	1-5/8	2-3/4	011732	12
31	.1200	1-5/8	2-3/4	011731	12
30	.1285	1-5/8	2-3/4	011730	12
29	.1360	1-3/4	2-7/8	011729	12
28	.1405	1-3/4	2-7/8	011728	12
27	.1440	1-7/8	3	011727	12
26	.1470	1-7/8	3	011726	12
25	.1495	1-7/8	3	011725	12
24	.1520	2	3-1/8	011724	12
23	.1540	2	3-1/8	011723	12
22	.1570	2	3-1/8	011722	12
21	.1590	2-1/8	3-1/4	011721	12
20	.1610	2-1/8	3-1/4	011720	12
19	.1660	2-1/8	3-1/4	011719	12
18	.1695	2-1/8	3-1/4	011718	12
17	.1730	2-3/16	3-3/8	011717	12
16	.1770	2-3/16	3-3/8	011716	12
15	.1800	2-3/16	3-3/8	011715	12
14	.1820	2-3/16	3-3/8	011714	12
13	.1850	2-5/16	3-1/2	011713	12
12	.1890	2-5/16	3-1/2	011712	12
11	.1910	2-5/16	3-1/2	011711	12
10	.1935	2-7/16	3-5/8	011710	12
9	.1960	2-7/16	3-5/8	011709	12
8	.1990	2-7/16	3-5/8	011708	12
7	.2010	2-7/16	3-5/8	011707	12
6	.2040	2-1/2	3-3/4	011706	12
5	.2055	2-1/2	3-3/4	011705	12
4	.2090	2-1/2	3-3/4	011704	12
3	.2130	2-1/2	3-3/4	011703	12
2	.2210	2-5/8	3-7/8	011702	12
1	.2280	2-5/8	3-7/8	011701	12

Size	Decimal Equivalent	Flute Length	Overall Length	Stock #	Pkg Qty
A	.2340	2-5/8	3-7/8	011901	12
B	.2380	2-3/4	4	011902	12
C	.2420	2-3/4	4	011903	12
D	.2460	2-3/4	4	011904	12
E	.2500	2-3/4	4	011905	12
F	.2570	2-7/8	4-1/8	011906	12
G	.2610	2-7/8	4-1/8	011907	12
H	.2660	2-7/8	4-1/8	011908	12
I	.2720	2-7/8	4-1/8	011909	12
J	.2770	2-7/8	4-1/8	011910	12
K	.2810	2-15/16	4-1/4	011911	12
L	.2900	2-15/16	4-1/4	011912	12
M	.2950	3-1/16	4-3/8	011913	12
N	.3020	3-1/16	4-3/8	011914	12
O	.3160	3-3/16	4-1/2	011915	6
P	.3230	3-5/16	4-5/8	011916	6
Q	.3320	3-7/16	4-3/4	011917	6
R	.3390	3-7/16	4-3/4	011918	6
S	.3480	3-1/2	4-7/8	011919	6
T	.3580	3-1/2	4-7/8	011920	6
U	.3680	3-5/8	5	011921	6
V	.3770	3-5/8	5	011922	6
W	.3860	3-3/4	5-1/8	011923	6
X	.3970	3-3/4	5-1/8	011924	6
Y	.4040	3-7/8	5-1/4	011925	6
Z	.4130	3-7/8	5-1/4	011926	6



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# SCREW MACHINE



DRILLS



Point: 135° Split Point  
 Material: Premium Grade, High Speed Steel  
 Coating/Finish: Black and Bronze Oxide  
 Other: Heavy-Duty Construction



Point: 135° Split Point  
 Material: Cobalt  
 Coating/Finish: Bronze Oxide  
 Other: Heavy-Duty Construction

## T4HD

Packaging: Tube

Size	Decimal Equivalent	Flute Length	Overall Length	Stock #	Pkg Qty
1/16	.0625	5/8	1-5/8	060404	12
5/64	.0781	11/16	1-11/16	060405	12
3/32	.0938	3/4	1-3/4	060406	12
7/64	.1094	13/16	1-13/16	060407	12
1/8	.1250	7/8	1-7/8	060408	12
9/64	.1406	15/16	1-15/16	060409	12
5/32	.1562	1	2-1/16	060410	12
11/64	.1719	1-1/16	2-1/8	060411	12
3/16	.1875	1-1/8	2-3/16	060412	12
13/64	.2031	1-3/16	2-1/4	060413	12
7/32	.2188	1-1/4	2-3/8	060414	12
15/64	.2344	1-5/16	2-7/16	060415	12
1/4	.2500	1-3/8	2-1/2	060416	12
17/64	.2656	1-7/16	2-5/8	060417	12
9/32	.2812	1-1/2	2-11/16	060418	12
19/64	.2969	1-9/16	2-3/4	060419	12
5/16	.3125	1-5/8	2-13/16	060420	6
21/64	.3281	1-11/16	2-15/16	060421	6
11/32	.3438	1-11/16	3	060422	6
23/64	.3594	1-3/4	3-1/16	060423	6
3/8	.3750	1-13/16	3-1/8	060424	6
25/64	.3906	1-7/8	3-1/4	060425	6
13/32	.4062	1-15/16	3-5/16	060426	6
27/64	.4219	2	3-3/8	060427	6
7/16	.4375	2-1/16	3-7/16	060428	6
29/64	.4531	2-1/8	3-9/16	060429	6
15/32	.4688	2-1/8	3-5/8	060430	6
31/64	.4844	2-3/16	3-11/16	060431	6
1/2	.5000	2-1/4	3-3/4	060432	6

## T4C

Packaging: Tube

Size	Decimal Equivalent	Flute Length	Overall Length	Stock #	Pkg Qty
1/16	.0625	5/8	1-5/8	046604	12
5/64	.0781	11/16	1-11/16	046605	12
3/32	.0938	3/4	1-3/4	046606	12
7/64	.1094	13/16	1-13/16	046607	12
1/8	.1250	7/8	1-7/8	046608	12
9/64	.1406	15/16	1-15/16	046609	12
5/32	.1562	1	2-1/16	046610	12
11/64	.1719	1-1/16	2-1/8	046611	12
3/16	.1875	1-1/8	2-3/16	046612	12
13/64	.2031	1-3/16	2-1/4	046613	12
7/32	.2188	1-1/4	2-3/8	046614	12
15/64	.2344	1-5/16	2-7/16	046615	12
1/4	.2500	1-3/8	2-1/2	046616	12
17/64	.2656	1-7/16	2-5/8	046617	12
9/32	.2812	1-1/2	2-11/16	046618	12
19/64	.2969	1-9/16	2-3/4	046619	12
5/16	.3125	1-5/8	2-13/16	046620	6
21/64	.3281	1-11/16	2-15/16	046621	6
11/32	.3438	1-11/16	3	046622	6
23/64	.3594	1-3/4	3-1/16	046623	6
3/8	.3750	1-13/16	3-1/8	046624	6
25/64	.3906	1-7/8	3-1/4	046625	6
13/32	.4062	1-15/16	3-5/16	046626	6
27/64	.4219	2	3-3/8	046627	6
7/16	.4375	2-1/16	3-7/16	046628	6
29/64	.4531	2-1/8	3-9/16	046629	6
15/32	.4688	2-1/8	3-5/8	046630	6
31/64	.4844	2-3/16	3-11/16	046631	6
1/2	.5000	2-1/4	3-3/4	046632	6

## T4HD

Packaging: Bulk

Size	Decimal Equivalent	Flute Length	Overall Length	Stock #	Pkg Qty
1/8	.1250	7/8	1-7/8	060408.20	288
5/32	.1562	1	2-1/16	060410.20	288
3/16	.1875	1-1/8	2-3/16	060412.20	288
7/32	.2188	1-1/4	2-3/8	060414.20	288
1/4	.2500	1-3/8	2-1/2	060416.20	288
9/32	.2812	1-1/2	2-11/16	060418.20	72
5/16	.3125	1-5/8	2-13/16	060420.20	72

### Corresponding Set

Style	Description	Pieces	Size Range	Stock #
T29HD	Metal Index	29 Piece	1/16"-1/2" by 64ths	090568





# SCREW MACHINE



Point: 135° Split Point  
 Material: High Speed Steel  
 Coating/Finish: Black Oxide  
 Other: Heavy-Duty Construction

DRILLS

### T4 Packaging: Tube

Size	Decimal Equivalent	Flute Length	Overall Length	Stock #	Pkg Qty
3/64*	.0469	1/2	1-3/8	044403	12
1/16	.0625	5/8	1-5/8	044404	12
5/64	.0781	11/16	1-11/16	044405	12
3/32	.0938	3/4	1-3/4	044406	12
7/64	.1094	13/16	1-13/16	044407	12
1/8	.1250	7/8	1-7/8	044408	12
9/64	.1406	15/16	1-15/16	044409	12
5/32	.1562	1	2-1/16	044410	12
11/64	.1719	1-1/16	2-1/8	044411	12
3/16	.1875	1-1/8	2-3/16	044412	12
13/64	.2031	1-3/16	2-1/4	044413	12
7/32	.2188	1-1/4	2-3/8	044414	12
15/64	.2344	1-5/16	2-7/16	044415	12
1/4	.2500	1-3/8	2-1/2	044416	12
17/64	.2656	1-7/16	2-5/8	044417	12
9/32	.2812	1-1/2	2-11/16	044418	12
19/64	.2969	1-9/16	2-3/4	044419	12
5/16	.3125	1-5/8	2-13/16	044420	6
21/64	.3281	1-11/16	2-15/16	044421	6
11/32	.3438	1-11/16	3	044422	6
23/64	.3594	1-3/4	3-1/16	044423	6
3/8	.3750	1-13/16	3-1/8	044424	6
25/64	.3906	1-7/8	3-1/4	044425	6
13/32	.4062	1-15/16	3-5/16	044426	6
27/64	.4219	2	3-3/8	044427	6
7/16	.4375	2-1/16	3-7/16	044428	6
29/64	.4531	2-1/8	3-9/16	044429	6
15/32	.4688	2-1/8	3-5/8	044430	6
31/64	.4844	2-3/16	3-11/16	044431	6
1/2	.5000	2-1/4	3-3/4	044432	6

\*Size 3/64 - Conventional 135° Point

### T4 Packaging: Bulk

Size	Decimal Equivalent	Flute Length	Overall Length	Stock #	Pkg Qty
1/8	.1250	7/8	1-7/8	044408.20	144
9/64	.1406	15/16	1-15/16	044409.20	144
5/32	.1562	1	2-1/16	044410.20	144
3/16	.1875	1-1/8	2-3/16	044412.20	144
13/64	.2031	1-3/16	2-1/4	044413.20	144

### Corresponding Set

Style	Description	Pieces	Size Range	Stock #
T29	Metal Index	29 Piece	1/16"-1/2" by 64ths	090569

### T5 Packaging: Tube

Size	Decimal Equivalent	Flute Length	Overall Length	Stock #	Pkg Qty
60*	.0400	1/2	1-3/8	044560	12
59*	.0410	1/2	1-3/8	044559	12
58*	.0420	1/2	1-3/8	044558	12
57*	.0430	1/2	1-3/8	044557	12
56*	.0465	1/2	1-3/8	044556	12
55*	.0520	5/8	1-5/8	044555	12
54*	.0550	5/8	1-5/8	044554	12
53*	.0595	5/8	1-5/8	044553	12
52	.0635	11/16	1-11/16	044552	12
51	.0670	11/16	1-11/16	044551	12
50	.0700	11/16	1-11/16	044550	12
49	.0730	11/16	1-11/16	044549	12
48	.0760	11/16	1-11/16	044548	12
47	.0785	11/16	1-11/16	044547	12
46	.0810	3/4	1-3/4	044546	12
45	.0820	3/4	1-3/4	044545	12
44	.0860	3/4	1-3/4	044544	12
43	.0890	3/4	1-3/4	044543	12
42	.0935	3/4	1-3/4	044542	12
41	.0960	13/16	1-13/16	044541	12
40	.0980	13/16	1-13/16	044540	12
39	.0995	13/16	1-13/16	044539	12
38	.1015	13/16	1-13/16	044538	12
37	.1040	13/16	1-13/16	044537	12
36	.1065	13/16	1-13/16	044536	12
35	.1100	7/8	1-7/8	044535	12
34	.1110	7/8	1-7/8	044534	12
33	.1130	7/8	1-7/8	044533	12
32	.1160	7/8	1-7/8	044532	12
31	.1200	7/8	1-7/8	044531	12
30	.1285	15/16	1-15/16	044530	12
29	.1360	15/16	1-15/16	044529	12
28	.1405	15/16	1-15/16	044528	12
27	.1440	1	2-1/16	044527	12
26	.1470	1	2-1/16	044526	12
25	.1495	1	2-1/16	044525	12
24	.1520	1	2-1/16	044524	12
23	.1540	1	2-1/16	044523	12
22	.1570	1-1/16	2-1/8	044522	12
21	.1590	1-1/16	2-1/8	044521	12
20	.1610	1-1/16	2-1/8	044520	12
19	.1660	1-1/16	2-1/8	044519	12
18	.1695	1-1/16	2-1/8	044518	12
17	.1730	1-1/8	2-3/16	044517	12
16	.1770	1-1/8	2-3/16	044516	12
15	.1800	1-1/8	2-3/16	044515	12
14	.1820	1-1/8	2-3/16	044514	12
13	.1850	1-1/8	2-3/16	044513	12
12	.1890	1-3/16	2-1/4	044512	12
11	.1910	1-3/16	2-1/4	044511	12
10	.1935	1-3/16	2-1/4	044510	12
9	.1960	1-3/16	2-1/4	044509	12
8	.1990	1-3/16	2-1/4	044508	12
7	.2010	1-3/16	2-1/4	044507	12
6	.2040	1-1/4	2-3/8	044506	12
5	.2055	1-1/4	2-3/8	044505	12
4	.2090	1-1/4	2-3/8	044504	12
3	.2130	1-1/4	2-3/8	044503	12
2	.2210	1-5/16	2-7/16	044502	12
1	.2280	1-5/16	2-7/16	044501	12

\*Size 60 - 53 - Conventional 135° Point

### T5 Packaging: Bulk

Size	Decimal Equivalent	Flute Length	Overall Length	Stock #	Pkg Qty
60	.0400	1/2	1-3/8	044560.20	72



# AIRCRAFT EXTENSION



DRILLS



Point: 135° Split Point  
 Material: High Speed Steel  
 Coating/Finish: Black Oxide  
 Other: 6" Aircraft Extension, Heavy-Duty Construction

Size	Decimal Equivalent	Flute Length	Overall Length	T6HH Packaging: Tube		T6HH Packaging: Bulk		BP6HH Packaging: Tube	
				Stock #	Pkg Qty	Stock #	Pkg Qty	Stock #	Pkg Qty
7/64	.1094	1-1/2	6	057507	6	057507.20	144	057707	1
1/8	.1250	1-5/8	6	057508	6	057508.20	144	057708	1
9/64	.1406	1-3/4	6	057509	6	057509.20	144	057709	1
5/32	.1562	2	6	057510	6	057510.20	144	057710	1
11/64	.1719	2-1/8	6	057511	6	057511.20	144	057711	1
3/16	.1875	2-5/16	6	057512	6	057512.20	144	057712	1
13/64	.2031	2-7/16	6	057513	6	057513.20	144	057713	1
7/32	.2188	2-1/2	6	057514	6	057514.20	144	057714	1
15/64	.2344	2-5/8	6	057515	6	057515.20	144	057715	1
1/4	.2500	2-3/4	6	057516	6	057516.20	144	057716	1
17/64	.2656	2-7/8	6	057517	6	057517.20	144	057717	1
9/32	.2812	2-15/16	6	057518	6	057518.20	144	057718	1
19/64	.2969	3-1/16	6	057519	6	057519.20	144	057719	1
5/16	.3125	3-3/16	6	057520	6	057520.20	144	057720	1
21/64	.3281	3-5/16	6	057521	6	057521.20	144	057721	1
11/32	.3438	3-7/16	6	057522	6	057522.20	144	057722	1
23/64	.3594	3-1/2	6	057523	6	057523.20	144	057723	1
3/8	.3750	3-5/8	6	057524	6	057524.20	144	057724	1
7/16	.4375	4-1/16	6	057528	6	057528.20	144	057728	1
1/2	.5000	4-1/2	6	057532	6	057532.20	144	057732	1

Size	Decimal Equivalent	Flute Length	Overall Length	T6WW Packaging: Tube	
				Stock #	Pkg Qty
40	.0980	1-3/8	6	057640	6
33	.1130	1-1/2	6	057633	6
30	.1285	1-5/8	6	057630	6
29	.1360	1-3/4	6	057629	6
27	.1440	1-7/8	6	057627	6
25	.1495	1-7/8	6	057625	6
21	.1590	2-1/8	6	057621	6
20	.1610	2-1/8	6	057620	6
19	.1660	2-1/8	6	057619	6
18	.1695	2-1/8	6	057618	6
11	.1910	2-5/16	6	057611	6
10	.1935	2-7/16	6	057610	6
9	.1960	2-7/16	6	057609	6
6	.2040	2-1/2	6	057606	6
5	.2055	2-1/2	6	057605	6
2	.2210	2-5/8	6	057602	6

Size	Decimal Equivalent	Flute Length	Overall Length	T6WW Packaging: Bulk	
				Stock #	Pkg Qty
30	.1285	1-5/8	6	057630.20	144
20	.1610	2-1/8	6	057620.20	144





# EXTRA LENGTH



Point: 135° Split Point  
 Material: High Speed Steel  
 Coating/Finish: Black Oxide  
 Other: 12" Aircraft Extension  
 Heavy-Duty Construction



Point: 118° Point  
 Material: High Speed Steel  
 Coating/Finish: Bright Finish  
 Other: General Purpose

### T12HH

Packaging: Tube

Size	Decimal Equivalent	Flute Length	Overall Length	Stock #	Pkg Qty
5/64	.0781	1	12	058505	6
3/32	.0938	1-1/4	12	058506	6
7/64	.1094	1-1/2	12	058507	6
1/8	.1250	1-5/8	12	058508	6
9/64	.1406	1-3/4	12	058509	6
5/32	.1562	2	12	058510	6
11/64	.1719	2-1/8	12	058511	6
3/16	.1875	2-5/16	12	058512	6
7/32	.2188	2-1/2	12	058514	6
1/4	.2500	2-3/4	12	058516	6
17/64	.2656	2-7/8	12	058517	6
9/32	.2812	2-15/16	12	058518	6
19/64	.2969	3-1/16	12	058519	6
5/16	.3125	3-3/16	12	058520	3
11/32	.3438	3-7/16	12	058522	3
3/8	.3750	3-5/8	12	058524	3
13/32	.4062	3-7/8	12	058526	3
7/16	.4375	4-1/16	12	058528	3
15/32	.4688	4-5/16	12	058530	3
1/2	.5000	4-1/2	12	058532	3

### T1290

Packaging: Tube

Size	Decimal Equivalent	Flute Length	Overall Length	Stock #	Pkg Qty
1/8	.1250	9	12	059808	1
5/32	.1562	9	12	059810	1
3/16	.2031	9	12	059812	1
7/32	.2188	9	12	059814	1
1/4	.2500	9	12	059816	1
9/32	.2812	9	12	059818	1
5/16	.3125	9	12	059820	1
11/32	.3438	9	12	059822	1
3/8	.3750	9	12	059824	1
13/32	.4062	9	12	059826	1
7/16	.4375	9	12	059828	1
15/32	.4688	9	12	059830	1
1/2	.5000	9	12	059832	1
17/32*	.5312	9	12	059834	1
9/16*	.5625	9	12	059836	1
5/8*	.6250	9	12	059840	1

\* Black oxide

### BP12HH

Packaging: Tube

Size	Decimal Equivalent	Flute Length	Overall Length	Stock #	Pkg Qty
1/8	.1250	1-5/8	12	058408	1
3/16	.1875	2-5/16	12	058412	1
1/4	.2500	2-3/4	12	058416	1
5/16	.3125	3-3/16	12	058420	1
3/8	.3750	3-5/8	12	058424	1
7/16	.4375	4-1/16	12	058428	1
1/2	.5000	4-1/2	12	058432	1

### T1813

Packaging: Tube

Size	Decimal Equivalent	Flute Length	Overall Length	Stock #	Pkg Qty
1/4	.2500	13	18	059916	1
5/16	.3125	13	18	059920	1
3/8	.3750	13	18	059924	1
7/16	.4375	13	18	059928	1
1/2	.5000	13	18	059932	1
9/16*	.6250	13	18	059936	1
5/8*	.6250	13	18	059940	1

\* Black oxide

### T12WW

Packaging: Tube

Size	Decimal Equivalent	Flute Length	Overall Length	Stock #	Pkg Qty
40	.0980	1-3/8	12	058640	6
30	.1285	1-5/8	12	058630	6
20	.1610	2-1/8	12	058620	6
17	.1730	2-3/16	12	058617	6
11	.1910	2-5/16	12	058611	6
10	.1935	2-7/16	12	058610	6
7	.2010	2-7/16	12	058607	6
1	.2280	2-5/8	12	058601	6





# BRIGHT FINISHED JOBBER

DRILLS



Point: 118° Point  
 Material: High Speed Steel  
 Coating/Finish: Bright Finish  
 Other: Left Handed

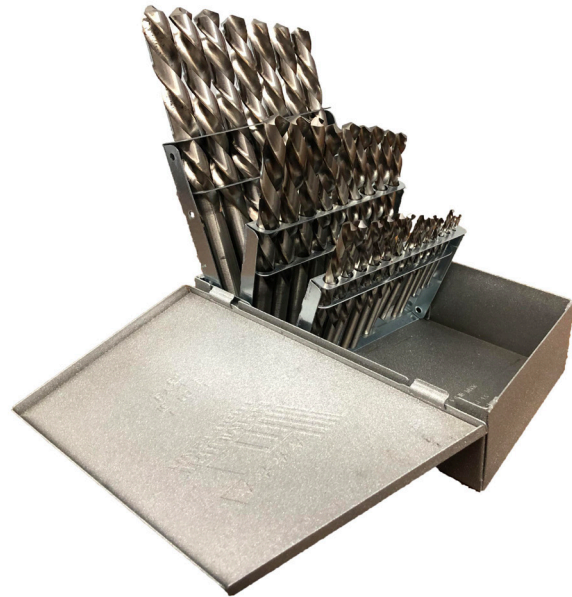
### T1L

Packaging: Tube

Size	Decimal Equivalent	Flute Length	Overall Length	Stock #	Pkg Qty
1/16	.0625	7/8	1-7/8	011104	12
5/64	.0781	1	2	011105	12
3/32	.0938	1-1/4	2-1/4	011106	12
7/64	.1094	1-1/2	2-5/8	011107	12
1/8	.1250	1-5/8	2-3/4	011108	12
9/64	.1406	1-3/4	2-7/8	011109	12
5/32	.1562	2	3-1/8	011110	12
11/64	.1719	2-1/8	3-1/4	011111	12
3/16	.1875	2-5/16	3-1/2	011112	12
13/64	.2031	2-7/16	3-5/8	011113	12
7/32	.2188	2-1/2	3-3/4	011114	12
15/64	.2344	2-5/8	3-7/8	011115	12
1/4	.2500	2-3/4	4	011116	12
17/64	.2656	2-7/8	4-1/8	011117	12
9/32	.2812	2-15/16	4-1/4	011118	12
19/64	.2969	3-1/16	4-3/8	011119	12
5/16	.3125	3-3/16	4-1/2	011120	6
21/64	.3281	3-5/16	4-5/8	011121	6
11/32	.3438	3-7/16	4-3/4	011122	6
23/64	.3594	3-1/2	4-7/8	011123	6
3/8	.3750	3-5/8	5	011124	6
25/64	.3906	3-3/4	5-1/8	011125	6
13/32	.4062	3-7/8	5-1/4	011126	6
27/64	.4219	3-15/16	5-3/8	011127	6
7/16	.4375	4-1/16	5-1/2	011128	6
29/64	.4531	4-3/16	5-5/8	011129	6
15/32	.4688	4-5/16	5-3/4	011130	6
31/64	.4844	4-3/8	5-7/8	011131	6
1/2	.5000	4-1/2	6	011132	6

### Corresponding Set

Style	Description	Pieces	Size Range	Stock #
T17L	Metal Index	29 Piece	1/16"-1/2" by 64ths	011199



Left-handed drill bits can be used to drill out broken bolts.



Point: 118° Point  
 Material: High Speed Steel  
 Coating/Finish: Bright Finish  
 Other: 1/4" Reduced Shank, Economy Length



Point: 118° Split Point  
 Material: High Speed Steel  
 Coating/Finish: Bright Finish  
 Other: 1/4" Reduced Shank, Intermediate Length

### BP7

Packaging: Tube

Size	Decimal Equivalent	Flute Length	Overall Length	Stock #	Pkg Qty
5/16	.3125	2-1/4	4	091670	1
3/8	.3750	2-1/4	4	091674	1
7/16	.4375	2-1/4	4	091678	1
1/2	.5000	2-1/4	4	091682	1

### BP10

Packaging: Tube

Size	Decimal Equivalent	Flute Length	Overall Length	Stock #	Pkg Qty
5/16	.3125	2-1/2	3-13/16	091640	1
3/8	.3750	2-7/8	4-1/4	091644	1
7/16	.4375	3-3/8	4-11/16	091648	1
1/2	.5000	3-5/8	5-1/16	091652	1







# REDUCED SHANK S&D



Point: 118° Split Point  
 Material: Premium Grade High Speed Steel  
 Coating/Finish: Black and Bronze Oxide  
 Other: Silver & Deming, High Performance  
 3 Flats on Shank  
 1/2" Shank



Point: 118° Point  
 Material: Premium High Speed Steel  
 Coating/Finish: Black Oxide Flutes  
 Other: Silver & Deming  
 3 Flats on Shank  
 1/2" Shank

DRILLS

## T9FHD

Packaging: Tube

Size	Decimal Equivalent	Flute Length	Overall Length	Stock #	Pkg Qty
33/64	.5156	3	6	094133	1
17/32	.5312	3	6	094134	1
35/64	.5469	3	6	094135	1
9/16	.5625	3	6	094136	1
37/64	.5781	3	6	094137	1
19/32	.5938	3	6	094138	1
39/64	.6094	3	6	094139	1
5/8	.6250	3	6	094140	1
41/64	.6406	3	6	094141	1
21/32	.6562	3	6	094142	1
43/64	.6719	3	6	094143	1
11/16	.6875	3	6	094144	1
45/64	.7031	3	6	094145	1
23/32	.7188	3	6	094146	1
47/64	.7344	3	6	094147	1
3/4	.7500	3	6	094148	1
49/64	.7656	3	6	094149	1
25/32	.7812	3	6	094150	1
51/64	.7969	3	6	094151	1
13/16	.8125	3	6	094152	1
53/64	.8281	3	6	094153	1
27/32	.8438	3	6	094154	1
55/64	.8594	3	6	094155	1
7/8	.8750	3	6	094156	1
57/64	.8906	3	6	094157	1
29/32	.9062	3	6	094158	1
59/64	.9219	3	6	094159	1
15/16	.9375	3	6	094160	1
61/64	.9531	3	6	094161	1
31/32	.9688	3	6	094162	1
63/64	.9844	3	6	094163	1
1"	1.0000	3	6	094164	1

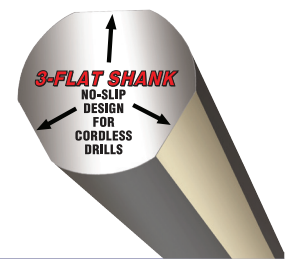
## T9F

Packaging: Tube

Size	Decimal Equivalent	Flute Length	Overall Length	Stock #	Pkg Qty
33/64	.5156	3	6	092833	1
17/32	.5312	3	6	092834	1
35/64	.5469	3	6	092835	1
9/16	.5625	3	6	092836	1
37/64	.5781	3	6	092837	1
19/32	.5938	3	6	092838	1
39/64	.6094	3	6	092839	1
5/8	.6250	3	6	092840	1
41/64	.6406	3	6	092841	1
21/32	.6562	3	6	092842	1
43/64	.6719	3	6	092843	1
11/16	.6875	3	6	092844	1
45/64	.7031	3	6	092845	1
23/32	.7188	3	6	092846	1
47/64	.7344	3	6	092847	1
3/4	.7500	3	6	092848	1
49/64	.7656	3	6	092849	1
25/32	.7812	3	6	092850	1
51/64	.7969	3	6	092851	1
13/16	.8125	3	6	092852	1
53/64	.8281	3	6	092853	1
27/32	.8438	3	6	092854	1
55/64	.8594	3	6	092855	1
7/8	.8750	3	6	092856	1
57/64	.8906	3	6	092857	1
29/32	.9062	3	6	092858	1
59/64	.9219	3	6	092859	1
15/16	.9375	3	6	092860	1
61/64	.9531	3	6	092861	1
31/32	.9688	3	6	092862	1
63/64	.9844	3	6	092863	1
1"	1.0000	3	6	092864	1
1-1/32	1.0312	3	6	092866	1
1-1/16	1.0625	3	6	092868	1
1-3/32	1.0938	3	6	092870	1
1-1/8	1.1250	3	6	092872	1
1-5/32	1.1562	3	6	092874	1
1-3/16	1.1875	3	6	092876	1
1-7/32	1.2188	3	6	092878	1
1-1/4	1.2500	3	6	092880	1
1-5/16	1.3125	3	6	092884	1
1-3/8	1.3750	3	6	092888	1
1-7/16	1.4375	3	6	092892	1
1-1/2	1.5000	3	6	092896	1

### Corresponding Sets

Style	Description	Pieces	Size Range	Stock #
T98F	Molded Case	8 Piece	9/16"-1" by 16ths	090596
T98FHD	Molded Case	8 Piece	9/16"-1" by 16ths	090595
T933FHD	Metal Stand	33 Piece	1/2"-1" by 64ths	090593



# REDUCED SHANK S&D



DRILLS



Point: 118° Point  
 Material: Premium High Speed Steel  
 Coating/Finish: Black Oxide Flutes  
 Other: Silver & Deming, 1/2" Round Shank

Size	Decimal Equivalent	Flute Length	Overall Length	T9 Packaging: Tube		T9 Packaging: Bulk	
				Stock #	Pkg Qty	Stock #	Pkg Qty
33/64	.5156	3	6	091733	1	091733.20	25
17/32	.5312	3	6	091734	1	091734.20	25
35/64	.5469	3	6	091735	1	091735.20	25
9/16	.5625	3	6	091736	1	091736.20	25
37/64	.5781	3	6	091737	1	091737.20	25
19/32	.5938	3	6	091738	1	091738.20	25
39/64	.6094	3	6	091739	1	091739.20	25
5/8	.6250	3	6	091740	1	091740.20	25
41/64	.6406	3	6	091741	1	091741.20	25
21/32	.6562	3	6	091742	1	091742.20	25
43/64	.6719	3	6	091743	1	091743.20	25
11/16	.6875	3	6	091744	1	091744.20	25
45/64	.7031	3	6	091745	1	091745.20	25
23/32	.7188	3	6	091746	1	091746.20	25
47/64	.7344	3	6	091747	1	091747.20	25
3/4	.7500	3	6	091748	1	091748.20	25
49/64	.7656	3	6	091749	1	091749.20	25
25/32	.7812	3	6	091750	1	091750.20	25
51/64	.7969	3	6	091751	1	091751.20	25
13/16	.8125	3	6	091752	1	091752.20	25
53/64	.8281	3	6	091753	1	091753.20	25
27/32	.8438	3	6	091754	1	091754.20	25
55/64	.8594	3	6	091755	1	091755.20	25
7/8	.8750	3	6	091756	1	091756.20	25
57/64	.8906	3	6	091757	1	091757.20	25
29/32	.9062	3	6	091758	1	091758.20	25
59/64	.9219	3	6	091759	1	091759.20	25
15/16	.9375	3	6	091760	1	091760.20	25
61/64	.9531	3	6	091761	1	091761.20	25
31/32	.9688	3	6	091762	1	091762.20	25
63/64	.9844	3	6	091763	1	091763.20	25
1"	1.0000	3	6	091764	1	091764.20	25
1-1/64	1.0156	3	6	091765	1	091765.20	25
1-1/32	1.0312	3	6	091766	1	091766.20	25
1-3/64	1.0469	3	6	091767	1	091767.20	25
1-1/16	1.0625	3	6	091768	1	091768.20	25
1-3/32	1.0938	3	6	091770	1	091770.20	25
1-1/8	1.1250	3	6	091772	1	091772.20	25
1-5/32	1.1562	3	6	091774	1	091774.20	25
1-3/16	1.1875	3	6	091776	1	091776.20	25
1-7/32	1.2188	3	6	091778	1	091778.20	25
1-1/4	1.2500	3	6	091780	1	091780.20	25
1-9/32	1.2812	3	6	091782	1	091782.20	25
1-5/16	1.3125	3	6	091784	1	091784.20	25
1-3/8	1.3750	3	6	091788	1	091788.20	25
1-7/16	1.4375	3	6	091792	1	091792.20	25
1-1/2	1.5000	3	6	091796	1	091796.20	25

### Corresponding Sets

Style	Description	Pieces	Size Range	Stock#
T98	Molded Case	8 Piece	9/16"-1" by 16ths	090598
T933	Metal Stand	33 Piece	1/2"-1" by 64ths	090599





# REDUCED SHANK S&D



Point: 118° Split Point  
 Material: Premium High Speed Steel, Cobalt  
 Coating/Finish: Black and Bronze Oxide  
 Other: Silver & Deming, 1/2" Reduced Shank

DRILLS

## T9C

Packaging: Tube

Size	Decimal Equivalent	Flute Length	Overall Length	Stock #	Pkg Qty
33/64	.5156	3	6	092033	1
17/32	.5312	3	6	092034	1
35/64	.5469	3	6	092035	1
9/16	.5625	3	6	092036	1
37/64	.5781	3	6	092037	1
19/32	.5938	3	6	092038	1
39/64	.6094	3	6	092039	1
5/8	.6250	3	6	092040	1
41/64	.6406	3	6	092041	1
21/32	.6562	3	6	092042	1
43/64	.6719	3	6	092043	1
11/16	.6875	3	6	092044	1
45/64	.7031	3	6	092045	1
23/32	.7188	3	6	092046	1
47/64	.7344	3	6	092047	1
3/4	.7500	3	6	092048	1
49/64	.7656	3	6	092049	1
25/32	.7812	3	6	092050	1
51/64	.7969	3	6	092051	1
13/16	.8125	3	6	092052	1
53/64	.8281	3	6	092053	1
27/32	.8438	3	6	092054	1
55/64	.8594	3	6	092055	1
7/8	.8750	3	6	092056	1
57/64	.8906	3	6	092057	1
29/32	.9062	3	6	092058	1
59/64	.9219	3	6	092059	1
15/16	.9375	3	6	092060	1
61/64	.9531	3	6	092061	1
31/32	.9688	3	6	092062	1
63/64	.9844	3	6	092063	1
1"	1.0000	3	6	092064	1



@triumphtwistdrill

### Corresponding Set

Style	Description	Pieces	Size Range	Stock #
T98C	Molded Case	8 Piece	9/16" - 1" by 16ths	090909





**SA (Cylinder)**

Style	Cutting Diameter	Length of Cut	Stock #	Pkg Qty
SA-1	1/4"	5/8"	071423	1
SA-2	5/16"	3/4"	071501	1
SA-3	3/8"	3/4"	071424	1
SA-4	7/16"	1"	071502	1
SA-5	1/2"	1"	071425	1
SA-6	5/8"	1"	071503	1
SA-7	3/4"	1"	071426	1
SA-9	1"	1"	071504	1



**SB (Cylinder with End Cut)**

Style	Cutting Diameter	Length of Cut	Stock #	Pkg Qty
SB-1	1/4"	5/8"	071427	1
SB-3	3/8"	3/4"	071428	1
SB-4	7/16"	1"	071505	1
SB-5	1/2"	1"	071429	1
SB-6	5/8"	1"	071506	1
SB-7	3/4"	1"	071430	1



**SC (Cylinder with Radius, Ball Nose)**

Style	Cutting Diameter	Length of Cut	Stock #	Pkg Qty
SC-1	1/4"	5/8"	071433	1
SC-2	5/16"	3/4"	071507	1
SC-3	3/8"	3/4"	071434	1
SC-4	7/16"	1"	071508	1
SC-5	1/2"	1"	071435	1
SC-6	5/8"	1"	071436	1
SC-7	3/4"	1"	071509	1
SC-9	1"	1"	071510	1



**SD (Ball)**

Style	Cutting Diameter	Length of Cut	Stock #	Pkg Qty
SD-1	1/4"	1/4"	071439	1
SD-2	5/16"	5/16"	071511	1
SD-3	3/8"	3/8"	071440	1
SD-4	7/16"	7/16"	071512	1
SD-5	1/2"	1/2"	071441	1
SD-6	5/8"	5/8"	071513	1
SD-7	3/4"	3/4"	071514	1
SD-9	1"	1"	071515	1



**SE (Oval)**

Style	Cutting Diameter	Length of Cut	Stock #	Pkg Qty
SE-1	1/4"	3/8"	071443	1
SE-3	3/8"	5/8"	071444	1
SE-5	1/2"	7/8"	071445	1
SE-6	5/8"	1"	071446	1
SE-7	3/4"	1"	071516	1



**SF (Tree with Radius)**

Style	Cutting Diameter	Length of Cut	Stock #	Pkg Qty
SF-1	1/4"	5/8"	071449	1
SF-3	3/8"	3/4"	071450	1
SF-4	7/16"	1"	071517	1
SF-5	1/2"	1"	071451	1
SF-6	5/8"	1"	071452	1
SF-7	3/4"	1"	071518	1



**SG (Tree Shape)**

Style	Cutting Diameter	Length of Cut	Stock #	Pkg Qty
SG-1	1/4"	5/8"	071455	1
SG-2	5/16"	3/4"	071519	1
SG-3	3/8"	3/4"	071456	1
SG-5	1/2"	1"	071457	1
SG-6	5/8"	1"	071520	1
SG-7	3/4"	1"	071521	1



**SH (Flame)**

Style	Cutting Diameter	Length of Cut	Stock #	Pkg Qty
SH-1	1/4"	1/2"	071459	1
SH-2	5/16"	3/4"	071522	1
SH-5	1/2"	1-1/4"	071460	1
SH-6	5/8"	1-7/16"	071523	1
SH-7	3/4"	1-5/8"	071524	1



**SJ (60° Cone)**

Style	Cutting Diameter	Length of Cut	Stock #	Pkg Qty
SJ-1	1/4"	3/16"	071462	1
SJ-3	3/8"	1/4"	071463	1
SJ-5	1/2"	7/16"	071464	1

**SPECIAL PURPOSE**





# SOLID CARBIDE BURS



## SK (90° Cone)

Style	Cutting Diameter	Length of Cut	Stock #	Pkg Qty
SK-1	1/4"	1/8"	071466	1
SK-3	3/8"	3/16"	071467	1
SK-5	1/2"	1/4"	071468	1



## SL (14° Taper with Radius)

Style	Cutting Diameter	Length of Cut	Stock #	Pkg Qty
SL-1	1/4"	5/8"	071470	1
SL-2	5/16"	7/8"	071526	1
SL-3	3/8"	1-1/16"	071471	1
SL-4	1/2"	1-1/8"	071472	1
SL-5	5/8"	1-3/16"	071473	1
SL-6	5/8"	1-5/16"	071527	1
SL-7	3/4"	1-1/2"	071474	1



## SM (Cone)

Style	Cutting Diameter	Length of Cut	Stock #	Pkg Qty
SM-1	1/4"	1/2"	071528	1
SM-2	1/4"	3/4"	071477	1
SM-3	1/4"	1"	071529	1
SM-4	3/8"	5/8"	071478	1
SM-5	1/2"	7/8"	071479	1
SM-6	5/8"	1"	071530	1



## SN (Inverted Cone)

Style	Cutting Diameter	Length of Cut	Stock #	Pkg Qty
SN-1	1/4"	5/16"	071481	1
SN-2	3/8"	3/8"	071482	1
SN-4	1/2"	1/2"	071483	1
SN-7	3/4"	5/8"	071531	1

## Corresponding Sets

Plastic Case - 9 Piece	Stock #
<b>BUR 14 SET, 1/4" Cut, 1/4" Shank</b> SA-1, SC-1, SD-1, SE-1, SF-1, SG-1, SH-1, SL-1, SM-2	071485
<b>BUR 38 SET, 3/8" Cut, 1/4" Shank</b> SA-3, SC-3, SD-3, SE-3, SF-3, SG-3, SH-1, SL-3, SM-4	071487
<b>BUR 12 SET, 1/2" Cut, 1/4" Shank</b> SA-5, SC-5, SD-5, SE-5, SF-5, SG-5, SH-5, SL-4, SM-5	071488



## Miniature Double Cut, 1/8" Shank

Style	Cutting Diameter	Length of Cut	Stock #	Pkg Qty
SA-51	1/4"	1/2"	071421	1
SC-51	1/4"	1/2"	071431	1
SD-51	1/4"	7/32"	071437	1
SE-51	1/4"	3/8"	071442	1
SF-51	1/4"	1/2"	071447	1
SG-51	1/4"	1/2"	071453	1
SM-51	1/4"	1/2"	071475	1

## Miniature 1-1/2" Overall Length

Style	Cutting Diameter	Length of Cut	Stock #	Pkg Qty
SA-43	1/8"	9/16"	071422	1
SC-42	1/8"	9/16"	071432	1
SD-42	1/8"	1/8"	071438	1
SE-41	1/8"	7/32"	071484	1
SF-42	1/8"	1/2"	071448	1
SG-43	1/8"	3/8"	071454	1
SH-41	1/8"	1/4"	071458	1
SJ-42	1/8"	3/32"	071461	1
SK-42	1/8"	1/16"	071465	1
SL-41	1/8"	3/8"	071532	1
SL-42	1/8"	1/2"	071469	1
SM-42	1/8"	7/16"	071476	1
SM-43	1/8"	1/2"	071533	1
SN-42	1/8"	3/16"	071480	1

## Miniature Corresponding Set

Plastic Case - 9 Piece	Stock #
<b>BUR 18 SET, 1/8" Cut, 1/8" Shank</b> SA-43, SC-42, SD-42, SE-41, SF-42, SG-43, SH-41, SL-42, SN-42	071486



## Recommended Applications:

Brass, Bronze, Copper, Cast Iron, Steel 40-55 Rc, Steel 55-60 Rc, Steel, Nickel, Chrome Stainless Steel, Steel Weldments, Titanium

SPECIAL PURPOSE



# STEP DRILLS



Point: 135° Self-Centering Split Point  
 Material: High Speed Steel - M2  
 Coating/Finish: Bright Finish

**SPECIAL PURPOSE**

**TSD**  
 Packaging: Tube

**TSDHEX**  
 Packaging: Tube

**079001**



**13 Steps: 1/8" - 1/2"**  
 (1/8", 5/32", 3/16", 7/32", 1/4", 9/32", 5/16",  
 11/32", 3/8", 13/32", 7/16", 15/32", 1/2")

1/4" Shank, 3-Flats

**079011**



**13 Steps: 1/8" - 1/2"**  
 (1/8", 5/32", 3/16", 7/32", 1/4", 9/32", 5/16",  
 11/32", 3/8", 13/32", 7/16", 15/32", 1/2")

HEX Shank

**079002**



**6 Steps: 3/16" - 1/2"**  
 (3/16", 1/4", 5/16", 3/8", 7/16", 1/2")

1/4" Shank, 3-Flats

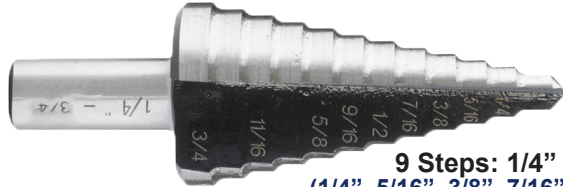
**079012**



**6 Steps: 3/16" - 1/2"**  
 (3/16", 1/4", 5/16", 3/8", 7/16", 1/2")

HEX Shank

**079003**



**9 Steps: 1/4" - 3/4"**  
 (1/4", 5/16", 3/8", 7/16", 1/2",  
 9/16", 5/8", 11/16", 3/4")

1/4" Shank, 3-Flats

**079013**



**9 Steps: 1/4" - 3/4"**  
 (1/4", 5/16", 3/8", 7/16", 1/2",  
 9/16", 5/8", 11/16", 3/4")

HEX Shank

**079004**



**12 Steps: 3/16" - 7/8"**  
 (3/16", 1/4", 5/16", 3/8", 7/16", 1/2", 9/16",  
 5/8", 11/16", 3/4", 13/16", 7/8")

1/4" Shank, 3-Flats

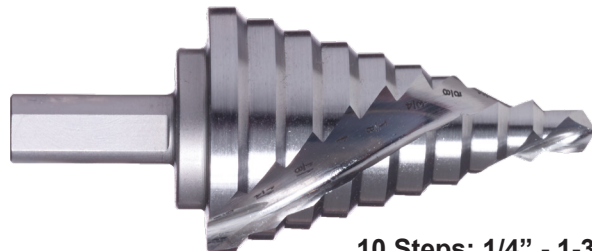
**079014**



**12 Steps: 3/16" - 7/8"**  
 (3/16", 1/4", 5/16", 3/8", 7/16", 1/2", 9/16",  
 5/8", 11/16", 3/4", 13/16", 7/8")

HEX Shank

**079005**



**10 Steps: 1/4" - 1-3/8"**  
 (1/4", 3/8", 1/2", 5/8", 3/4", 7/8",  
 1", 1-1/8", 1-1/4", 1-3/8")

1/4" Shank, 3-Flats

**079015**



**12 Steps: 7/16" - 1-1/8"**  
 (7/16", 1/2", 9/16", 5/8", 11/16", 3/4", 13/16",  
 7/8", 15/16", 1", 1-1/16", 1-1/8")

HEX Shank





# T.C.T. HOLE CUTTERS



Point: 135° Point  
 Material: High Speed Steel  
 Coating/Finish: Grey Finish  
 Other: Carbide Tip



**CTHC**  
 Packaging: Tube

Size	Depth	Shank	Stock #	Pkg Qty
5/8	3/16"	3/8	078001	1
11/16	3/16"	3/8	078002	1
3/4	3/16"	3/8	078003	1
13/16	3/16"	3/8	078004	1
7/8	3/16"	3/8	078005	1
15/16	3/16"	3/8	078006	1
1	3/16"	3/8	078007	1
1-1/16	3/16"	3/8	078008	1
1-1/8	3/16"	3/8	078009	1
1-1/4	3/16"	3/8	078010	1
1-3/8	3/16"	3/8	078011	1
1-1/2	3/16"	3/8	078012	1
1-5/8	3/16"	3/8	078013	1
1-3/4	3/16"	3/8	078014	1
1-7/8	3/16"	3/8	078015	1
2	3/16"	3/8	078016	1
2-1/8	3/16"	3/8	078017	1
2-1/4	3/16"	3/8	078018	1
2-3/8	3/16"	3/8	078019	1
2-1/2	3/16"	3/8	078020	1
2-3/4	3/16"	3/8	078021	1
3	3/16"	3/8	078022	1
3-1/4	3/16"	3/8	078023	1
3-1/2	3/16"	3/8	078024	1
3-5/8	3/16"	3/8	078025	1
4	3/16"	3/8	078026	1

\*For stainless steel, sheet metal and tubing up to 3/16" thick



**CTHCHD**  
 Packaging: Tube

Size	Depth	Shank	Stock #	Pkg Qty
9/16	1-3/8"	1/2	078027	1
5/8	1-3/8"	1/2	078028	1
11/16	1-3/8"	1/2	078029	1
3/4	1-3/8"	1/2	078030	1
13/16	1-3/8"	1/2	078031	1
7/8	1-3/8"	1/2	078032	1
15/16	1-3/8"	1/2	078033	1
1	1-3/8"	1/2	078034	1
1-1/16	1-3/8"	1/2	078035	1
1-1/8	1-3/8"	1/2	078036	1
1-3/16	1-3/8"	1/2	078037	1
1-1/4	1-3/8"	1/2	078038	1
1-3/8	1-3/8"	1/2	078039	1
1-1/2	1-3/8"	1/2	078040	1
1-5/8	1-3/8"	1/2	078041	1
1-3/4	1-3/8"	1/2	078042	1
1-7/8	1-3/8"	1/2	078043	1
2	1-3/8"	1/2	078044	1
2-1/8	1-3/8"	1/2	078045	1
2-1/4	1-3/8"	1/2	078046	1
2-3/8	1-3/8"	1/2	078047	1
2-1/2	1-3/8"	1/2	078048	1

\*For Stainless Steel, Steel Plate, Iron, Aluminum, Copper, Cast Iron, Fiberglass and Plastics up to 1-3/8" thick

**SPECIAL PURPOSE**



**CTHC**  
 Packaging: Tube

Part	Description	Stock #	Pkg Qty
HF- PILOT	CENTER DRILL φ6mm x 50L	078049	1
HF-S	SPRING 1.2MM X 16L	078050	1
HM-PILOT	CENTER DRILL φ6mm x 75L	078051	1
HM-S	SPRING 1.2MM X 50L	078052	1

\*Replacement Parts



**Recommended RPM**

Size	Steel (RPM)	Stainless Steel (RPM)
9/16" - 13/16"	700-1000	300-700
7/8" - 1-3/16"	500-800	200-450
1-1/4" - 1-9/16"	300-600	175-315
1-5/8" - 2"	200-500	120-225
2-1/16" - 2-3/8"	200-400	95-195
2-7/16" - 3"	150-300	80-150
3-1/16" - 5"	100-200	60-120





Point: 1/2" Shank, 3-Flatted Shank  
 Material: High Speed Steel  
 Coating/Finish: Black and Bronze Oxide  
 Other: 3 Flats on Shank

**SPECIAL  
PURPOSE**

**TCR**

Packaging: Tube

Size	Decimal Equivalent	Flute Length	Overall Length	Stock #	Pkg Qty
7/16	.4375	2-1/4	4"	072279	1
3/8*	.3750	3-1/16	5-1/4	072280	1
1/2	.5000	3-3/4	5-15/16	072281	1
9/16	.5625	4-5/16	6-9/16	072282	1
5/8	.6250	4-5/16	6-9/16	072283	1
11/16	.6875	4-13/16	7"	072284	1
3/4	.7500	4-13/16	7"	072285	1
13/16	.8125	5-1/8	7-1/4	072286	1
7/8	.8750	5-1/8	7-1/4	072287	1
15/16	.9375	5-1/8	7-1/4	072288	1
1"	1.0000	5-1/8	7-1/4	072289	1
1-1/16	1.0625	5-1/4	7-1/4	072291	1
1-1/8**	1.1250	5-1/4	7-1/4	072292	1
1-3/16**	1.1875	5-1/4	7-1/4	072293	1
1-1/4**	1.2500	5-1/2	7-1/2	072294	1
1-5/16**	1.3125	5-1/2	7-1/2	072295	1
1-3/8**	1.3750	5-1/2	7-1/2	072296	1
1-7/16**	1.4375	5-1/2	7-1/2	072297	1
1-1/2**	1.5000	5-1/2	7-1/2	072298	1

**Corresponding Set**

Style	Description	Pieces	Size Range	Stock #
TCR3	Resealable Plastic Tube	3 Piece	1/2", 5/8", 3/4"	072290



\*3/8" shank

\*\* 1-1/8 - 1-1/2" = 3/4" shank



Point: Spiral Flute, Hex Nut  
 Material: High Speed Steel  
 Coating/Finish: Black and Bronze Oxide  
 Other: Car Length

**THEXR**

Packaging: Tube

Size	Decimal Equivalent	Hex Diameter	Flute Length	Overall Length	Stock #	Pkg Qty
1/2	.5000	1-1/16	4"	5-1/2	073381	1
9/16	.5625	1-1/16	4"	5-7/8	073382	1
5/8	.6250	1-1/16	4-1/2	6"	073383	1
11/16	.6875	1-1/16	4-1/2	6-3/8	073384	1
3/4	.7500	1-1/4	5"	7"	073385	1
13/16	.8125	1-1/4	5"	7"	073386	1
7/8	.8750	1-7/16	5"	7"	073387	1
15/16	.9375	1-7/16	5"	7"	073388	1
1"	1.0000	1-7/16	5"	7"	073389	1
1-1/16	1.0625	1-5/8	5"	7"	073390	1
1-1/8	1.1250	1-5/8	5"	7"	073391	1
1-3/16	1.1875	1-13/16	5"	7"	073392	1
1-1/4	1.2500	1-13/16	5"	7"	073393	1
1-5/16	1.3125	2"	5"	7-7/8	073394	1



@triumphtwistdrill





# HEX DRILLS



Point: 135° Self-Centering Split Point  
 Material: High Speed Steel  
 Coating/Finish: Black & Gold Oxide  
 Other: 1/4" HEX Shank for HEX or adjustable power tool chucks.



### HEXT4HD

Packaging: Tube

### HEXT4HD

Packaging: Bulk

Size	Decimal Equivalent	Flute Length	Overall Length	Stock#	Pkg Qty	Stock #	Pkg Qty
1/16	.0625	5/8	2-1/4	045504	1	045504.20	72
3/32	.0938	3/4	2-7/16	045506	1	045506.20	72
1/8	.1250	7/8	2-5/8	045508	1	045508.20	72
5/32	.1562	1	2-13/16	045510	1	045510.20	72
3/16	.1875	1-1/8	3	045512	1	045512.20	72
7/32	.2188	1-1/4	3-1/8	045514	1	045514.20	72
1/4	.2500	1-3/8	3-3/16	045516	1	045516.20	72

#### Corresponding Set

Style	Description	Piece	Size Range	Stock #
T47HEXHD	Plastic Case	7 Piece	1/16"-1/4" by 32nds	045532



SPECIAL PURPOSE



Point: 135° Self-Centering Split Point  
 Material: High Speed Steel  
 Coating/Finish: Black Oxide  
 Other: 1/4" HEX Shank for HEX or adjustable power tool chucks.

### HEXT4

Packaging: Tube

### HEXT4

Packaging: Bulk

Size	Decimal Equivalent	Flute Length	Overall Length	Stock #	Pkg Qty	Stock #	Pkg Qty
1/16	.0625	5/8	2-1/4	045404	1	045404.20	72
3/32	.0938	3/4	2-7/16	045406	1	045406.20	72
1/8	.1250	7/8	2-5/8	045408	1	045408.20	72
5/32	.1562	1	2-13/16	045410	1	045410.20	72
3/16	.1875	1-1/8	3	045412	1	045412.20	72
7/32	.2188	1-1/4	3-1/8	045414	1	045414.20	72
1/4	.2500	1-3/8	3-3/16	045416	1	045416.20	72

#### Corresponding Set

Style	Description	Pieces	Size Range	Stock #
T47HEX	Plastic Case	7 Piece	1/16"-1/4" by 32nds	045432



# SPECIAL PURPOSE



Point: 135° Split Point, Double End  
 Material: High Speed Steel  
 Coating/Finish: Black Oxide  
 Other: Recommended use in thin sheet metal.  
 Popular for pop-rivet drilling applications

SPECIAL PURPOSE

Size	Decimal Equivalent	Flute Length	Overall Length	TSM8 Packaging: Tube		TSM8 Packaging: Bulk	
				Stock #	Pkg Qty	Stock #	Pkg Qty
7/64	.1094	1/2	1-7/8	098807	12	098807.20	288
1/8	.1250	1/2	2	098808	12	098808.20	288
9/64	.1406	1/2	2	098809	12	098809.20	288
5/32	.1562	1/2	2-1/16	098810	12	098810.20	288
3/16	.1875	1/2	2-3/16	098812	12	098812.20	288
7/32	.2188	1/2	2-3/8	098814	12	098814.20	288
1/4	.2500	1/2	2-1/2	098816	12	098816.20	288
11	.1910	1/2	2-1/4	098811	12	098811.20	288
20	.1610	1/2	2-1/8	098820	12	098820.20	288
30	.1285	1/2	2	098830	12	098830.20	288



Point: 135° Self-Centering Split Point  
 Material: High Speed Steel  
 Coating/Finish: Bright Finish  
 Other: 3 Flats on Shank Prevents Slippage in 3-Jaw Chuck

Size	Decimal Equivalent	Flute Length	Overall Length	PD3F Packaging: Tube		PD3F Packaging: Bulk	
				Stock #	Pkg Qty	Stock #	Pkg Qty
1/4	.2500	1-3/8	4-1/4	093216	12	093216.20	288



Point: 82° Point  
 Material: High Speed Steel  
 Coating/Finish: Black Oxide  
 Other: Used for countersinking screw heads

Size	Shank Diameter	Overall Length	T401 Packaging: Tube	
			Stock #	Pkg Qty
1/4	3/16	1-1/2	039416	1
3/8	1/4	1-3/4	039417	1
1/2	3/8	2	039418	1
5/8	3/8	2-1/4	039419	1
3/4	1/2	2-5/8	039420	1
1"	1/2	3	039464	1





# SPECIAL PURPOSE



Point: Dimond Tipped Core Bit  
 Material: Hex Shank, Core Extraction  
 Coating/Finish: Blue Finish  
 Other: Sandstones & Ceramics

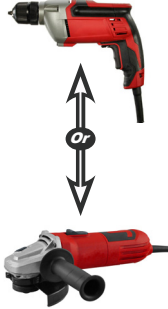


Point: Spade Point  
 Material: Carbide-Tipped Point  
 Coating/Finish: Gray Finish  
 Other: Glass & Tile Drill

## TG7

Packaging: Tube

Size	Overall Length	Stock #	Pkg Qty
15/64	2-11/64	039201	1
1/4	2-11/64	039202	1
9/32	2-11/64	039203	1
5/16	2-11/64	039204	1
3/8	2-9/16	039205	1
15/32	2-9/16	039206	1
1/2	2-9/16	039207	1
19/32	2-3/4	039208	1
25/32	2-3/4	039210	1
1	2-3/4	039211	1



\* Run Wet  
 \* For : Glaze, Sandstone, Glazed Sandstone, Sandware, Terracotta, Marble & Tile

## TG6

Packaging: Tube

Size	Minimum Diameter Equivalent	Shank Dia.	Overall Length	Stock #	Pkg Qty
1/8	.134	.107	2-1/8	039108	1
3/16	.198	.155	2-1/4	039112	1
1/4	.260	.175	2-9/16	039116	1
5/16	.327	.215	3	039120	1
3/8	.390	.235	3-1/2	039124	1
1/2	.525	.312	3-1/2	039132	1

SPECIAL PURPOSE



Point: Flat Woodboring Bit  
 Material: Carbon Steel  
 Coating/Finish: Gray Finish  
 Other: 3-flats or quick-hex.



Point: Screw Extractor, Spiral Flute  
 Material: Carbon Steel  
 Coating/Finish: Gray Finish  
 Other: Removing threaded pipe sections

## BPFWB

Packaging: Tube

Size	Decimal Equivalent	Overall Length	Stock #	Pkg Qty
5/16	.3125	6	094620	1
3/8	.3750	6	094624	1
7/16	.4375	6	094628	1
1/2	.5000	6	094632	1
9/16	.5625	6	094636	1
5/8	.6250	6	094640	1
11/16	.6875	6	094644	1
3/4	.7500	6	094648	1
13/16	.8125	6	094652	1
7/8	.8750	6	094656	1
15/16	.9375	6	094660	1
1"	1.0000	6	094664	1
1-1/8	1.1250	6	094708	1
1-1/4	1.2500	6	094716	1
1-3/8	1.3750	6	094724	1
1-1/2	1.5000	6	094732	1

### Corresponding Set

Style	Description	Pieces	Size Range	Stock #
84	Plastic Case	6 Piece	3/8, 1/2, 5/8, 3/4, 7/8, 1"	094286



## T13CX

Packaging: Tube

Screw Ext#	For Removing Screw Size	Use Drill Size	Stock #	Pkg Qty
1	3/32 to 5/32	1/16 to 5/64	098131	12
2	5/32 to 7/32	3/32 to 7/64	098132	12
3	7/32 to 9/32	9/64 to 5/32	098133	12
4	9/32 to 3/8	7/32 to 1/4	098134	6
5	3/8 to 5/8, 1/8, 1/4 pipe	17/64 to 19/64	098135	6
6	5/8 to 7/8, 3/8 pipe	25/64 to 27/64	098136	1
7	7/8 to 1-1/8, 1/2 pipe	33/64 to 35/64	098137	1
8	1-1/8 to 1-3/8, 3/4 pipe	25/32 to 27/32	098138	1
9	1-3/8 and up, 1" pipe	1-1/16 to 1-1/8	098139	1

## BP13CX

Packaging: Tube

Screw Ext#	For Removing Screw Size	Use Drill Size	Stock #	Pkg Qty
1	3/32 to 5/32	1/16 to 5/64	098231	1
2	5/32 to 7/32	3/32 to 7/64	098232	1
3	7/32 to 9/32	9/64 to 5/32	098233	1
4	9/32 to 3/8	7/32 to 1/4	098234	1
5	3/8 to 5/8, 1/8 & 1/4 pipe	17/64 to 19/64	098235	1

### Corresponding Sets

Style	Description	Pieces	Size Range	Stock #
T20CX	Plastic Case	6 Piece	#1- #6	098145
T40CX	Plastic Case	4 Piece	#2- #5	098140
T50CX	Plastic Case	10 Piece	10 pc Drill & Extractor	098150



# ANNULAR CUTTERS



Material: High Speed Steel  
 Coating/Finish: Bright Finish  
 Other: Chipbreaker Tooth Design

## TACHSS

Packaging: Tube

Cutter Diamer	1" Depth of Cut Stock #	2" Depth of Cut Stock #	Pkg Qty
7/16"	088501	088527	1
1/2"	088502	088528	1
9/16"	088503	088529	1
5/8"	088504	088530	1
11/16"	088505	088531	1
3/4"	088506	088532	1
13/16"	088507	088533	1
7/8"	088508	088534	1
15/16"	088509	088535	1
1"	088510	088536	1
1-1/16"	088511	088537	1
1-1/8"	088512	088538	1
1-3/16"	088513	088539	1
1-1/4"	088514	088540	1
1-5/16"	088515	088541	1
1-3/8"	088516	088542	1
1-7/16"	088517	088543	1
1-1/2"	088518	088544	1
1-9/16"	088519	088545	1
1-5/8"	088520	088546	1
1-11/16"	088521	088547	1
1-3/4"	088522	088548	1
1-13/16"	088523	088549	1
1-7/8"	088524	088550	1
1-15/16"	088525	088551	1
2"	088526	088552	1

Spring-loaded pilot ejects the center as a "slug"



## TAC Pilots

Packaging: Tube

Description	Stock #	Pkg Qty
<b>For 7/16" Diameter</b>		
For 1" Depth of Cut, Short	3/16" x 3" 087499	1
For 2" Depth of Cut, Long	3/16" x 4" 087498	1
<b>For 1/2" Diameter and larger</b>		
For 1" Depth of Cut, Short	1/4" x 3" 087497	1
For 2" Depth of Cut, Long	1/4" x 4" 087496	1

CMD40	087553
Cutter Capacity	1-1/2"
Depth of Cut	2"
Twist Drill Capacity	1/2"
No Load RPM (Variable)	270-610
Motor Specs	110v/ 1000w/ 10Amps
Height	20"
Stroke	3-3/4"
Magnet Dimensions	3-1/8" x 2" x 6-1/2"
Weight	30.86 lbs
Magnet Strength	1650 lbs
Arbor Type	3/4" Set Screw



ELP50	087554
Cutter Capacity	2"
Depth of Cut	2"
Twist Drill Capacity	N/A"
Motor Speed (variable/2 gears)	250 (low) / 500(high)
Motor Specs	110v/ 1500w/ -10AMP 230v/ 1500w/ -10AMP
Height	7-1/16"
Stroke	2-1/2"
Magnet Dimensions	7-9/16" x 3-1/8" x 2"
Weight	24 lbs
Magnet Strength	2250 lbs
Spindle Type	3/4" Diameter



E50FRV	087555
Cutter Capacity	2"
Depth of Cut	2"
Twist Drill Capacity	3/4"
No Load RPM	100-265 (low) / 200-500(high)
Motor Specs	110v/ 1000w/ 12Amps
Height	17-9/16"
Stroke	4-11/16"
Magnet Dimensions	4" x 7-7/8" x 6-1/4"
Weight	35 lbs
Magnet Strength	3000 lbs
Arbor Type	2 Morse Taper



- Designed for cutting large diameter holes accurately, cleanly and effortlessly
- Faster feed, lower thrust & longer tool life
- Recommended for use in the building and construction market in such materials as thin sheet metal and angle iron





# ANNULAR CUTTERS



**SPECIAL  
PURPOSE**



**087554  
ELP50**  
**Capacity:**



7 1/16"  
(7.0625")





## TAP TROUBLESHOOTING GUIDE

Trouble	Possible Cause	Correction
<b>Oversize Pitch Diameter</b>	Incorrect tap  Chip packing  Galling	<ul style="list-style-type: none"> <li>• Use correct "H" limit</li> <li>• Use longer chamfered tap</li> <li>• Use spiral pointed tap</li> <li>• Use larger drill size</li> <li>• Shorten length of thread in blind holes</li> <li>• Reduce tapping speed</li> <li>• Use lubricants</li> </ul>
<b>Torn or Rough Threads</b>	Dull tap Chamfer too short  Galling	<ul style="list-style-type: none"> <li>• Resharpen or replace</li> <li>• Increase chamfer length</li> <li>• Use lubricant</li> <li>• Reduce speed</li> <li>• Use larger drill</li> </ul>
<b>Breakage</b>	Incorrect tap selection  Excessive tapping torque  Operating conditions	<ul style="list-style-type: none"> <li>• Increase chamfer length</li> <li>• Use spiral pointed taps in through holes</li> <li>• Tapping too deep</li> <li>• Increase hole size</li> <li>• Shorten thread length</li> <li>• Increase chamfer length</li> <li>• Reduce tapping speed</li> <li>• Avoid bottoming out the tap</li> </ul>
<b>Chipping</b>	Incorrect tap selection  Operating conditions	<ul style="list-style-type: none"> <li>• Increase chamfer length</li> <li>• Avoid chip packing in flutes</li> <li>• Reduce tapping speed</li> <li>• Use larger drill</li> <li>• Ensure adequate lubricant</li> </ul>
<b>Excessive Wear</b>	Incorrect tap selection  Operating conditions	<ul style="list-style-type: none"> <li>• Increase chamfer length</li> <li>• Reduce tapping speed</li> <li>• Ensure adequate lubricant</li> <li>• Use larger drill</li> </ul>

## TAP SELECTION GUIDE

- **Straight Flute Taps** contain most of the chip in the flutes and can be used for through or blind holes.
- **Spiral Point Taps** push the chips forward and are recommended for through holes.
- **Taper Taps** are used for starting threads in tougher materials.
- **Bottoming Taps** are used for blind holes, to obtain the maximum length of thread.
- **Plug Taps** are suitable for either through or blind holes, where ample clearance remains between the thread and the bottom of the hole.





# STRAIGHT FLUTE TAP



Material: High Speed Steel  
 Size: Machine Screw  
 Coating/Finish: Bronze Oxide  
 Chamfer: Taper (7-10 threads long); Plug (3-5 threads long)  
 Bottoming (1-2 threads long)

Size	Pkg Qty	Thread Limit	# of Flutes	Drill Size	T62HDT Taper	T62HDP Plug	T62HDB Bottoming
4-40 NC	12	H2	3	43	071040	071090	071140
6-32 NC	12	H3	3	36	071041	071091	071141
6-40 NF	12	H2	3	33	071042	071092	071142
8-32 NC	12	H3	4	29	071043	071093	071143
8-36 NF	12	H2	4	29	071044	071094	071144
10-24 NC	12	H3	4	25	071045	071095	071145
10-32 NF	12	H3	4	21	071046	071096	071146
12-24 NC	12	H3	4	16	071047	071097	071147
12-28 NF	12	H3	4	15	071048	071098	071148

Packaging: Snap Pack



Material: High Speed Steel  
 Size: Fractional  
 Coating/Finish: Bronze Oxide  
 Chamfer: Taper (7-10 threads long); Plug (3-5 threads long)  
 Bottoming (1-2 threads long)

Size	Pkg Qty	Thread Limit	# of Flutes	Drill Size	T61HDT Taper	T61HDP Plug	T61HDB Bottoming
1/4-20 NC	6	H3	4	7	071000	071060	071100
1/4-28 NF	6	H3	4	3	071001	071061	071101
5/16-18 NC	6	H3	4	F	071002	071062	071102
5/16-24 NF	6	H3	4	I	071003	071063	071103
3/8-16 NC	6	H3	4	5/16	071004	071064	071104
3/8-24 NF	6	H3	4	Q	071005	071065	071105
7/16-14 NC	3	H3	4	U	071006	071066	071106
7/16-20 NF	3	H3	4	25/64	071007	071067	071107
1/2-13 NC	3	H3	4	27/64	071008	071068	071108
1/2-20 NF	3	H3	4	29/64	071009	071069	071109
9/16-12 NC	1	H3	4	31/64	071010	071070	071110
9/16-18 NF	1	H3	4	33/64	071011	071071	071111
5/8-11 NC	1	H3	4	17/32	071012	071072	071112
5/8-18 NF	1	H3	4	37/64	071013	071073	071113
3/4-10 NC	1	H3	4	21/32	071014	071074	071114
3/4-16 NF	1	H3	4	11/16	071015	071075	071115
7/8-9 NC	1	H3	4	49/64	071016	071076	071116
7/8-14 NF	1	H3	4	13/16	071017	071077	071117
1-8 NC	1	H3	4	7/8	071018	071078	071118
1-12 NF	1	H3	4	59/64	071019	071079	071119
1-1/8-7 NC	1	H3	4	63/64	071020	071080	071120

Packaging: 1/4-20 through 1/2-20 = Snap Pack; 9/16-1/2 through 1-1/8-7 = Tube

NC = National Course    NF = National Fine  
 NS = National Special    NPT = National Pipe Thread



Straight flute taps can be used in through or blind holes





Material: High Speed Steel  
 Size: Machine Screw  
 Coating/Finish: Bronze Oxide  
 Chamfer: Taper (7-10 threads long); Plug (3-5 threads long)  
 Bottoming (1-2 threads long)

Size	Pkg Qty	Thread Limit	# of Flutes	Drill Size	BP62HDT Taper	BP62HDP Plug	BP62HDB Bottoming
4-40 NC	1	H2	3	43	071350	071360	071370
6-32 NC	1	H3	3	36	071351	071361	071371
6-40 NF	1	H3	3	33	071352	071362	071372
8-32 NC	1	H3	4	29	071353	071363	071373
8-36 NF	1	H3	4	29	071354	071364	071374
10-24 NC	1	H3	4	25	071355	071365	071375
10-32 NF	1	H3	4	21	071356	071366	071376
12-24 NC	1	H3	4	16	071357	071367	071377
12-28 NF	1	H3	4	15	071358	071368	071378

Packaging: Tube



Material: High Speed Steel  
 Size: Fractional  
 Coating/Finish: Bronze Oxide  
 Chamfer: Taper (7-10 threads long); Plug (3-5 threads long)  
 Bottoming (1-2 threads long)

Size	Pkg Qty	Thread Limit	# of Flutes	Drill Size	BP61HDT Taper	BP61HDP Plug	BP61HDB Bottoming
1/4-20 NC	1	H3	4	7	071300	071315	071330
1/4-28 NF	1	H3	4	3	071301	071316	071331
5/16-18 NC	1	H3	4	F	071302	071317	071332
5/16-24 NF	1	H3	4	I	071303	071318	071333
3/8-16 NC	1	H3	4	5/16	071304	071319	071334
3/8-24 NF	1	H3	4	Q	071305	071320	071335
7/16-14 NC	1	H3	4	U	071306	071321	071336
7/16-20 NF	1	H3	4	25/64	071307	071322	071337
1/2-13 NC	1	H3	4	27/64	071308	071323	071338
1/2-20 NF	1	H3	4	29/64	071309	071324	071339

Packaging: Tube

NC = National Course    NF = National Fine  
 NS = National Special    NPT = National Pipe Thread



Straight flute taps can be used in through or blind holes







# SPIRAL POINT TAP



Material: High Speed Steel  
 Size: Machine Screw  
 Coating/Finish: Bronze Oxide  
 Chamfer: Plug (3-5 threads long)

Size	Pkg Qty	Thread Limit	# of Flutes	Drill Size	T64HD Plug
4-40 NC	12	H2	2	43	071230
6-32 NC	12	H3	2	36	071231
8-32 NC	12	H3	2	29	071232
10-24 NC	12	H3	2	25	071233
10-32 NF	12	H3	2	21	071234
12-24 NC	12	H3	2	16	071235

Packaging: Snap Pack



Material: High Speed Steel  
 Size: Fractional  
 Coating/Finish: Bronze Oxide  
 Chamfer: Plug (3-5 threads long)

Size	Pkg Qty	Thread Limit	# of Flutes	Drill Size	T63HD Plug
1/4-20 NC	6	H3	2	7	071200
1/4-28 NF	6	H3	2	3	071201
5/16-18 NC	6	H3	2	F	071202
5/16-24 NF	6	H3	2	I	071203
3/8-16 NC	6	H3	3	5/16	071204
3/8-24 NF	3	H3	3	Q	071205
7/16-14 NC	3	H3	3	U	071206
7/16-20 NF	3	H3	3	25/64	071207
1/2-13 NC	3	H3	3	27/64	071208
1/2-20 NF	3	H3	3	29/64	071209

Packaging: Snap Pack

TAPS & DIES

NC = National Course    NF = National Fine  
 NS = National Special    NPT = National Pipe Thread



Spiral point taps are recommended for through holes





Material: High Speed Steel  
 Size: Machine Screw  
 Coating/Finish: Bronze Oxide  
 Chamfer: Plug (3-5 threads long)

Size	Pkg Qty	Thread Limit	# of Flutes	Drill Size	BP64HD Plug
4-40 NC	1	H2	2	43	071415
6-32 NC	1	H3	2	36	071416
8-32 NC	1	H3	2	29	071417
10-24 NC	1	H3	2	25	071418
10-32 NF	1	H3	2	21	071419
12-24 NC	1	H3	2	16	071420

Packaging: Tube



Material: High Speed Steel  
 Size: Fractional  
 Coating/Finish: Bronze Oxide  
 Chamfer: Plug (3-5 threads long)

### Corresponding ThunderTap Sets

#### T66HSET

3 Piece, Fractional  
 Packaging: Plastic Case  
 (1) each Taper, Plug, Bottom Tap



Size	Pkg Qty	Thread Limit	# of Flutes	Drill Size	BP63HD Plug
1/4-20 NC	1	H3	2	7	071400
1/4-28 NF	1	H3	2	3	071401
5/16-18 NC	1	H3	2	F	071402
5/16-24 NF	1	H3	2	I	071403
3/8-16 NC	1	H3	3	5/16	071404
3/8-24 NF	1	H3	3	Q	071405
7/16-14 NC	1	H3	3	U	071406
7/16-20 NF	1	H3	3	25/64	071407
1/2-13 NC	1	H3	3	27/64	071408
1/2-20 NF	1	H3	3	29/64	071409

Packaging: Tube

Size	Stock #
1/4-20 NC	071600
1/4-28 NF	071601
5/16-18 NC	071602
5/16-24 NF	071603
3/8-16 NC	071604
3/8-24 NF	071605
7/16-14 NC	071606
7/16-20 NF	071607
1/2-13 NC	071608
1/2-20 NF	071609
9/16-12 NC	071610
9/16-18 NF	071611
5/8-11 NC	071612
5/8-18 NF	071613
3/4-10 NC	071614
3/4-16 NF	071615
7/8-9 NC	071616
7/8-14 NF	071617
1-8 NC	071618
1-12 NF	071619

NC = National Course    NF = National Fine  
 NS = National Special    NPT = National Pipe Thread



Spiral point taps are recommended for through holes





# TAPER PIPE TAP



Material: High Speed Steel  
 Size: Fractional  
 Coating/Finish: Bronze Oxide  
 Chamfer: Taper (7-10 threads long)

Size	Pkg Qty	# of Flutes	Drill Size	T65HD Taper
1/8-27 NPT	1	4	R	071250
1/4-18 NPT	1	4	7/16	071251
3/8-18 NPT	1	4	37/64	071252
1/2-14 NPT	1	4	45/64	071253
3/4 -14 NPT	1	5	59/64	071254
1-11-1/2 NPT	1	5	1-5/32	071255
1-1/4-11-1/2 NPT	1	5	1-1/2	071256
1-1/2-11-1/2 NPT	1	7	1-47/64	071257

Packaging: Tube



@triumphwistdrill

TAPS & DIES

NC = National Course    NF = National Fine  
 NS = National Special    NPT = National Pipe Thread





Material: High Speed Steel  
 Size: Metric  
 Coating/Finish: Bronze Oxide  
 Chamfer: Taper (7-10 threads long); Plug (3-5 threads long)  
 Bottoming (1-2 threads long)

Size	Pkg Qty	Thread Limit	# of Flutes	Drill Size	T61HDT Taper	T61HDP Plug	T61HDB Bottoming
M1.6 x 0.35	1	D3	2	1.25mm	075000	075001	075002
M1.8 x 0.35	1	D3	2	1.45mm	075004	075005	075006
M2 x 0.4	1	D3	3	1.60mm	075008	075009	075010
M2.2 x 0.45	1	D3	3	1.75mm	075012	075013	075014
M2.5 x 0.45	1	D3	3	2.05mm	075016	075017	075018
M3 x 0.5	1	D3	3	2.50mm	075020	075021	075022
M3.5 x 0.6	1	D4	3	2.90mm	075024	075025	075026
M4 x 0.7	1	D4	4	3.30mm	075028	075029	075030
M4.5 x 0.75	1	D4	4	3.70mm	075032	075033	075034
M5 x 0.8	1	D4	4	4.20mm	075036	075037	075038
M6 x 1.0	1	D5	4	5.00mm	075040	075041	075042
M7 x 1.0	1	D5	4	6.00mm	075044	075045	075046
M8 x 1.25	1	D5	4	6.70mm	075048	075049	075050
M8 x 1.0	1	D5	4	7.00mm	075052	075053	075054
M10 x 1.5	1	D6	4	8.50mm	075057	075058	075059
M10 x 1.25	1	D5	4	8.70mm	075061	075062	075063
M12 x 1.75	1	D6	4	10.20mm	075065	075066	075067
M12 x 1.25	1	D5	4	10.80mm	075069	075070	075071
M14 x 2.0	1	D7	4	12.00mm	075074	075075	075076
M14 x 1.5	1	D6	4	12.50mm	075078	075079	075080
M16 x 2.0	1	D7	4	14.00mm	075083	075084	075085
M16 x 1.5	1	D6	4	14.50mm	075087	075088	075089
M18 x 2.5	1	D7	4	15.50mm	075092	075093	075094
M18 x 1.5	1	D6	4	16.50mm	075096	075097	075098
M20 x 2.5	1	D7	4	17.50mm	075099	075100	075101
M22 x 2.5	1	D7	4	19.50mm	-	075107	-
M22 x 1.5	1	D6	4	20.50mm	075109	075110	075111
M24 x 3.0	1	D8	4	21.00mm	075113	075114	075115

Packaging: Tube

### Corresponding ThunderTap Sets

#### T66HDSET

3 Piece, Metric  
 Packaging: Plastic Case  
 (1) each Taper, Plug, Bottom Tap



Size	Stock #
M2 x 0.4 D3	075151
M3 x 0.5 D3	075152
M4 x 0.7 D4	075153
M5 x 0.8 D4	075154
M6 x 1.0 D5	075155
M7 x 1.0 D5	075156
M8 x 1.25 D5	075157
M10 x 1.5 D6	075158
M12 x 1.75 D6	075159
M14 x 2 D7	075160
M16 x 2 D7	075161
M18 x 2.5 D7	075162
M20 x 2.5 D7	075163
M24 x 3 D8	075164



Straight flute taps can be used in through or blind holes





# SPIRAL POINT TAP



Material: High Speed Steel  
 Size: Metric  
 Coating/Finish: Bronze Oxide  
 Chamfer: Plug (3-5 threads long)

Size	Pkg Qty	Thread Limit	# of Flutes	Drill Size	T61HDT Plug
M1.6 x 0.35	1	D3	2	1.25mm	075003
M1.8 x 0.35	1	D3	2	1.45mm	075007
M2 x 0.4	1	D3	2	1.60mm	075011
M2.2 x 0.45	1	D3	2	1.75mm	075015
M2.5 x 0.45	1	D3	2	2.05mm	075019
M3 x 0.5	1	D3	2	2.50mm	075023
M3.5 x 0.6	1	D4	2	2.90mm	075027
M4 x 0.7	1	D4	2	3.30mm	075031
M4.5 x 0.75	1	D4	2	3.70mm	075035
M5 x 0.8	1	D4	2	4.20mm	075039
M6 x 1.0	1	D5	2	5.00mm	075043
M7 x 1.0	1	D5	2	6.00mm	075047
M8 x 1.25	1	D5	2	6.70mm	075051
M8 x 1.0	1	D5	2	7.00mm	075055
M10 x 1.5	1	D6	3	8.50mm	075060
M10 x 1.25	1	D5	3	8.70mm	075064
M12 x 1.75	1	D6	3	10.20mm	075068
M12 x 1.25	1	D5	3	10.80mm	075072
M14 x 2.0	1	D7	3	12.00mm	075077
M14 x 1.5	1	D6	3	12.50mm	075081
M16 x 2.0	1	D7	3	14.00mm	075086
M16 x 1.5	1	D6	3	14.50mm	075090
M18 x 2.5	1	D7	3	15.50mm	075095

Packaging: Tube



### T-Handle

Packaging: Tube

Style	Handle	Capacity	Stock #	Pkg Qty
JT20	Tap Wrench	0 to 1/4	069902	1
JT30	Tap Wrench	12 to 5/16	069903	1
JT40	Tap Wrench	1/4 to 1/2	069904	1



### Straight Handle

Packaging: Tube

Style	Handle	Capacity	Stock #	Pkg Qty
JTW0	Tap Wrench	0 to 3/16	069900	1
JTW5	Tap Wrench	10 to 1/2	069905	1
JTW7	Tap Wrench (Wrapped)	3/8 to 1"	069907	1

TAPS & DIES



Spiral point taps are recommended for through holes



# SPLIT ROUND ADJUSTABLE DIES



Material: High Speed Steel  
 Coating/Finish: Bright Finish  
 Other: Used for cutting right-hand threads

## THSRD

Packaging: Tube

Size/ Pitch	Thread Designation	13/16" Stock #	1" Stock #	1-1/2" Stock #	2" Stock #	Pkg Qty
#0-80	NF	061001	061026	-	-	1
#1-64	NC	061002	061027	-	-	1
#1-72	NF	061003	061028	-	-	1
#2-56	NC	061004	061029	-	-	1
#2-64	NF	061005	061030	-	-	1
#3-48	NC	061006	061031	-	-	1
#3-56	NF	061007	061032	-	-	1
#4-36	NS	061008	061033	-	-	1
#4-40	NC	061009	061034	-	-	1
#4-48	NF	061010	061035	-	-	1
#5-40	NC	061011	061036	-	-	1
#5-44	NF	061012	061037	-	-	1
#6-32	NC	061013	061038	-	-	1
#6-40	NF	061014	061039	-	-	1
#8-32	NC	061015	061040	-	-	1
#8-36	NF	061016	061041	-	-	1
#10-24	NC	061017	061042	-	-	1
#10-32	NF	061018	061043	-	-	1
#12-24	NC	061019	061044	-	-	1
#12-28	NF	061020	061045	-	-	1
#14-20	NS	061021	061046	-	-	1
1/4-20	NC	061022	061047	-	-	1
1/4-28	NF	061023	061048	061059	-	1
5/16-18	NC	061024	061049	061060	-	1
5/16-24	NF	061025	061050	061061	-	1
3/8-16	NC	-	061051	061062	-	1
3/8-24	NF	-	061052	061063	-	1
7/16-14	NC	-	061053	061064	-	1
7/16-20	NF	-	061054	061065	-	1
1/2-13	NC	-	061055	061066	-	1
1/2-20	NF	-	061056	061067	-	1
9/16-12	NC	-	-	061068	-	1
9/16-18	NF	-	-	061069	-	1
5/8-11	NC	-	-	061070	061074	1
5/8-18	NF	-	-	061071	061075	1
3/4-10	NC	-	-	061072	061076	1
3/4-16	NF	-	-	061073	061077	1
7/8-9	NC	-	-	-	061078	1
7/8-14	NF	-	-	-	061079	1
1-8	NC	-	-	-	061080	1
1-12	NF	-	-	-	061081	1
1-14	NS	-	-	-	061082	1
1/8-27	NPT	-	061057	-	-	1
1/4-18	NPT	-	061058	-	-	1

TAPS & DIES



Packaging: Tube

Series	Size	Stock #	Pkg Qty
TRD46	ROUND 13/16"	069945	1
TRD47	ROUND 1"	069947	1
TRD52	ROUND 1-1/2"	069952	1
TRD55	ROUND 2"	069954	1

## Corresponding Tap & Die Sets

### THSRD24 - 071450

Tap & Die Set (24 Piece)

Tool	Size/ Pitch	Thread	Qty Ech
1" Round Die & ThunderTap	1/4-20	NC	1
	5/16-18	NC	1
	3/8-16	NC	1
	7/16-14	NC	1
	1/2-13	NC	1
	1/4-28	NF	1
	5/16-24	NF	1
	3/8-24	NF	1
	7/16-20	NF	1
	1/2-20	NF	1
	1/8-27	NPT	1
Die Stock	1"	-	1
Tap Wrench	1/4"-1/2"	-	1



### THSRD37 - 071452

Tap & Die Set (37 Piece)

Tool	Size/ Pitch	Thread	Qty Ech
1" Round Die & ThunderTap	1/4-20	NC	1
	5/16-18	NC	1
	3/8-16	NC	1
	7/16-14	NC	1
	1/2-13	NC	1
	4-40	NC	1
	6-32	NC	1
	8-32	NC	1
	10-24	NC	1
	12-24	NC	1
	1/4-28	NF	1
	5/16-24	NF	1
	3/8-24	NF	1
	7/16-20	NF	1
1/2-20	NF	1	
10-32	NF	1	
1/8-27	NPT	1	
Die Stock	1"	-	1
Tap Wrench	0-1/4"	-	1
Tap Wrench	1/4-1/2"	-	1



NC = National Course NF = National Fine  
 NS = National Special NPT = National Pipe Thread





# HEX RETHREADING DIES



Material: Carbon Steel  
 Coating/Finish: Bright Finish  
 Other: Used in repair work for rusty and or damaged threads

## W109HD

Packaging: Tube

Size/ Pitch	Thread Designation	Across Flats	Stock #	Pkg Qty
1/4-20	NC	19/32	069550	5
1/4-28	NF	19/32	069551	5
5/16-18	NC	11/16	069552	5
5/16-24	NF	11/16	069553	5
3/8-16	NC	25/32	069554	5
3/8-24	NF	25/32	069555	5
7/16-14	NC	7/8	069556	5
7/16-20	NF	7/8	069557	5
1/2-13	NC	1-1/16	069558	5
1/2-20	NF	1-1/16	069559	5
9/16-12	NC	1-1/16	069560	5
9/16-18	NF	1-1/16	069561	5
5/8-11	NC	1-1/4	069562	1
5/8-18	NF	1-1/4	069563	1
11/16-11	NS	1-7/16	069564	1
11/16-16	NS	1-7/16	069565	1
3/4-10	NC	1-7/16	069566	1
3/4-16	NF	1-7/16	069567	1
7/8-9	NC	1-5/8	069568	1
7/8-14	NF	1-5/8	069569	1
1-8	NC	1-13/16	069570	1*
1-12	NF	1-13/16	069571	1*
1-14	NS	1-13/16	069572	1*
1-1/8-7	NC	2	069573	1*
1-1/8-12	NF	2	069574	1*
1-1/4-7	NC	2-3/16	069575	1*
1-1/4-12	NF	2-3/16	069576	1*
1-3/8-6	NC	2-3/8	069427	1*
1-3/8-12	NF	2-3/8	069428	1*
1-1/2-6	NC	2-9/16	069441	1*
1-1/2-12	NF	2-9/16	069442	1*
1/8-27	NPT	25/32	069547	5
1/4-18	NPT	1-1/16	069548	5
3/8-18	NPT	1-1/4	069549	1
1/2-14	NPT	1-7/16	069577	1
3/4-14	NPT	1-13/16	069578	1*
1-11-1/2	NPT	2-13/16	069579	1*

\* = 1 per box



Packaging: Tube

Series	Size	Stock #	Pkg Qty
TRD50	HEX 1"	069950	1

## Tap & Die Sets

### T613 - 069926

Tap & Die Set (24 Piece)

Tool	Size/ Pitch	Thread	Qty Ech
1" Hex Die & Carbon Tap	1/4-20	NC	1
	5/16-18	NC	1
	3/8-16	NC	1
	7/16-14	NC	1
	1/2-13	NC	1
	1/4-28	NF	1
	5/16-24	NF	1
	3/8-24	NF	1
	7/16-20	NF	1
	1/2-20	NF	1
	1/8-27	NPT	1
Die Stock	1"	-	1
Tap Wrench	1/4"-1/2"	-	1



### T511 - 069961

Tap & Die Set (40 Piece)

Tool	Size/ Pitch	Thread	Qty Ech
1" Hex Die & Carbon Tap	1/4-20	NC	1
	5/16-18	NC	1
	3/8-16	NC	1
	7/16-14	NC	1
	1/2-13	NC	1
	4-40	NC	1
	6-32	NC	1
	8-32	NC	1
	10-24	NC	1
	12-24	NC	1
	1/4-28	NF	1
	5/16-24	NF	1
	3/8-24	NF	1
	7/16-20	NF	1
	1/2-20	NF	1
	10-32	NF	1
	1/8-27	NPT	1
Die Stock	1"	-	1
Tap Wrench	#0-1/4"	-	1
T-Handle	#0-1/4"	-	1
	1/4-1/2"	-	1
Pitch Gauge	Standard	-	1
Screwdriver	Flat	-	1



### T514 - 069964

Tap & Die Set (40 Piece)

Tool	Size/ Pitch	Qty Ech
1" Hex Die & Carbon Tap	M3-0.50	1
	M3-0.60	1
	M4-0.70	1
	M4-0.75	1
	M5-0.80	1
	M5-0.90	1
	M6-1.00	1
	M7-1.00	1
	M8-1.25	1
	M9-1.00	1
	M9-1.25	1
	M10-1.25	1
	M10-1.50	1
	M11-1.50	1
	M12-1.50	1
M12-1.75	1	
1/8-28	1	
Die Stock	1"	1
Tap Wrench	#4-1/2"	1
T-Handle	#0-1/4"	1
	1/4-1/2"	1
Pitch Gauge	Metric	1
Screwdriver	Flat	1



NC = National Course NF = National Fine  
 NS = National Special NPT = National Pipe Thread



# DRILL SETS



SETS

Jobber, Fractional (Metal Index)	Stock #
<b>13 Piece, 1/16"– 1/4" by 64ths</b>	
<b>T19</b> General Purpose, Bright Finish	090519
<b>T19B</b> General Purpose, Black Oxide	099814
<b>T19D</b> Heavy-Duty, Black Oxide	099815
<b>T19C</b> Cobalt, Bronze Oxide	099823
<b>T19HDC</b> ThunderBit®, Cobalt	099813
<b>T19HDG</b> ThunderBit®, TiN Coated	093713
<b>T19HD</b> ThunderBit®, Black & Bronze Oxide	099858
<b>T19HD+</b> ThunderBit®, Black & Bronze Oxide	099501



<b>15 Piece, 1/16"– 1/2" by 32nds</b>	
<b>T18</b> General Purpose, Bright Finish	090518
<b>T18B</b> General Purpose, Black Oxide	099808
<b>T18D</b> Heavy-Duty, Black Oxide	099809
<b>T18C</b> Cobalt, Bronze Oxide	099826
<b>T18HDC</b> ThunderBit®, Cobalt	099816
<b>T18HDG</b> ThunderBit®, TiN Coated	093716
<b>T18HD</b> ThunderBit®, Black & Bronze Oxide	099857
<b>T18HD+</b> ThunderBit®, Black & Bronze Oxide	099502



<b>21 Piece, 1/16"– 3/8" by 64ths</b>	
<b>T180</b> General Purpose, Bright Finish	090580
<b>T180B</b> General Purpose, Black Oxide	099835
<b>T180D</b> Heavy-Duty, Black Oxide	099836
<b>T180C</b> Cobalt, Bronze Oxide	099825
<b>T180HDC</b> ThunderBit®, Cobalt	099819
<b>T180HDG</b> ThunderBit®, TiN Coated	093719
<b>T180HD</b> ThunderBit®, Black & Bronze Oxide	099861
<b>T180HD+</b> ThunderBit®, Black & Bronze Oxide	099503



<b>29 Piece, 1/16"– 1/2" by 64ths</b>	
<b>T17</b> General Purpose, Bright Finish	090517
<b>T17L</b> General Purpose, L.H., Bright Finish	011199
<b>T17B</b> General Purpose, Black Oxide	099802
<b>T17D</b> Heavy-Duty, Black Oxide	099803
<b>T17C</b> Cobalt, Bronze Oxide	099822
<b>T17HDC</b> ThunderBit®, Cobalt	099821
<b>T17HDG</b> ThunderBit®, TiN Coated	093700
<b>T17HD</b> ThunderBit®, Black & Bronze Oxide	099856
<b>T17HD+</b> ThunderBit®, Black & Bronze Oxide	099505
<b>T17HDCDC, CLIP-ON INDEX</b> ThunderBit®, Cobalt	099854
<b>T17HDG, CLIP-ON INDEX</b> ThunderBit®, TiN Coated	093754
<b>T17HDDC, CLIP-ON INDEX</b> ThunderBit®, Black & Bronze Oxide	099855
<b>T17HDDC+, CLIP-ON INDEX</b> ThunderBit®, Black & Bronze Oxide	099504



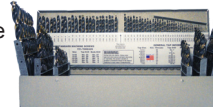
Jobber, Wire (Metal Index)	Stock #
<b>T22</b> 60 Piece, HSS, General Purpose, Bright Finish, #1- #60	090522
<b>T22B</b> 60 Piece, HSS, General Purpose, Black Oxide, #1- #60	099820
<b>T22HD</b> 60 Piece, ThunderBit®, Black & Bronze Oxide, #1- #60	099859
<b>T22HD+</b> 60 Piece, ThunderBit®, Black & Bronze Oxide, #1- #60	099506
<b>T23</b> 20 Piece, HSS, General Purpose, Bright Finish, #61- #80	090523



Jobber, Letter (Metal Index)	Stock #
<b>26 Piece, A-Z</b>	
<b>T25B</b> General Purpose, Black Oxide	099827
<b>T25HD</b> ThunderBit®, Black & Bronze Oxide	099860
<b>T25HD</b> ThunderBit®, Black & Bronze Oxide	099507

Jobber (Metal Index)	Stock #
<b>Metric</b>	
<b>MM19HD, 1mm-10mm x .5</b> ThunderBit®, Black & Bronze Oxide	099866
<b>MM25HD, 1mm-13mm x .5</b> ThunderBit®, Black & Bronze Oxide	099867

Jobber, Combination Sizes (Metal Index)	Stock #
<b>115 Piece, 1/16 - 1/2 by 64ths, #1- #60, A-Z</b>	
<b>T123</b> General Purpose, Bright Finish	090560
<b>T123B</b> General Purpose, Black Oxide	099832
<b>T123D</b> Heavy-Duty, Black Oxide	090561
<b>T123C</b> Cobalt, Bronze Oxide	099831
<b>T123HD</b> ThunderBit®, Black & Bronze Oxide	099862
<b>T123HD+</b> ThunderBit®, Black & Bronze Oxide	099508



Jobber, Miscellaneous	Stock #
<b>Select-A-Drill Case</b>	
<b>SAD13</b> 13 Piece, General Purpose, Bright Finish, 1/16 - 1/4 by 64ths	090490
<b>SAD13HD</b> 13 Piece, ThunderBit®, Black & Bronze Oxide, 1/16 - 1/4 by 64ths	090495
<b>SAD21</b> 21 Piece, General Purpose, Bright Finish, 1/16 - 3/8 by 64ths	090491
<b>SAD21HD</b> 21 Piece, ThunderBit®, Black & Bronze Oxide, 1/16 - 3/8 by 64ths	090496
<b>Metal Index</b>	
<b>T14P</b> 14 Piece, General Purpose, Bright Finish, 1/16, 5/64, 3/32, 7/64, 1/8, 9/64, 5/32, 3/16, 7/32, 1/4, 5/16, 3/8, 7/16, 1/2. Sizes over 1/4" have 1/4" reduced shank.	090614







# DRILL SETS

Jobber Length, MRO Plus®	Stock #
<b>T1019D</b> 13 Piece - Fractional 1/16 - 1/4 by 64ths	090113
<b>T1018D</b> 15 Piece - Fractional 1/16 - 1/2 by 32nds	090115
<b>T10180D</b> 21 Piece - Fractional 1/16 - 3/8 by 64ths	090121
<b>T10125D</b> 26 Piece - Letter A-Z	099828
<b>T1017D</b> 29 Piece - Fractional 1/16 - 1/2 by 64ths	090190
<b>T1017DC CLIP-ON INDEX</b> 29 Piece - Fractional 1/16 - 1/2 by 64ths	090192
<b>T10123D</b> 115 Piece, Fractional, Wire, Letter 1/16 - 1/2" by 64ths; #1-# 60; A-Z	090196



Mechanic's Length, TriNADO®	Stock #
<b>T19M</b> 13 Piece, Black & Bronze Oxide 1/16 - 1/4 by 64ths	090547
<b>T18M</b> 15 Piece, Black & Bronze Oxide 1/16 - 1/2 by 32nds	090551
<b>T180M</b> 21 Piece, Black & Bronze Oxide 1/16 - 3/8 by 64ths	090549
<b>T17M</b> 29 Piece, Black & Bronze Oxide 1/16 - 1/2 by 64ths	090552
<b>T829M</b> 29 Piece, Black & Bronze Oxide 1/16 - 1/2 by 64ths (3/8" Shank)	090550
<b>T17MDC CLIP-ON INDEX</b> 29 Piece, Black & Bronze Oxide 1/16 - 1/2 by 64ths	090553



Screw Machine (Metal Index)	Stock #
Fractional	
<b>T29</b> 29 Piece, Heavy-Duty, Black Oxide, 1/16 - 1/2 by 64ths	090569
<b>T29HD</b> 29 Piece, Black & Bronze Oxide, 1/16 - 1/2 by 64ths	090568



Combination Set	Stock #
<b>Metal Index</b>	
<b>TD18HDNC</b> 18 Piece, Metal Index ThunderBit: 7, F, 5/16, U, 27/64, 36, 29, 25, 16 ThunderTap: 1/4-20 NC, 5/16-18 NC, 3/8-16 NC, 7/16-14 NC, 1/2-13 NC, 6-32 NC, 8-32 NC, 10-24 NC, 12-24 NC	071497



Hex Shank, Thunderbit®	Stock #
<b>Plastic Case</b>	
<b>T47HEXHD</b> 7 Piece, Black & Bronze Oxide, 1/16 - 1/4 by 32nds	045532



Hex Shank	Stock #
<b>Plastic Case</b>	
<b>T47HEX</b> 7 Piece, General Purpose, Black Oxide, 1/16 - 1/4 by 32nds	045432



Reduced Shank	Stock #
<b>Metal Index</b>	
<b>T815</b> 15 Piece, General Purpose, Bright Finish, 1/16 - 1/2 by 32nds, 3/8" Shank	090815
<b>T815B</b> 15 Piece, General Purpose, Black Oxide, 1/16 - 1/2 by 32nds, 3/8" Shank	099812
<b>T815HD</b> 15 Piece, ThunderBit®, Black & Bronze Oxide, 1/16 - 1/2 by 32nds, 3/8" Shank	099104
<b>T829</b> 29 Piece, General Purpose, Bright Finish 1/16 - 1/2 by 64ths, 3/8" Shank	090829
<b>T829B</b> 29 Piece, General Purpose, Black Oxide 1/16 - 1/2 by 64ths, 3/8" Shank	099833
<b>T829HD</b> 29 Piece, ThunderBit®, Black & Bronze Oxide 1/16 - 1/2 by 64ths, 3/8" Shank	099101



Molded Plastic Case	Stock #
<b>T98</b> 8 Piece, Silver & Deming, Black Oxide (Round Shank), 9/16 - 1" by 16ths, 1/2" Shank	090598
<b>T98C</b> 8 Piece, Silver & Deming, Black & Bronze Oxide Cobalt, 9/16 - 1" by 16ths, 1/2" Shank	090909
<b>T98F</b> 8 Piece, Silver & Deming, Black Oxide (Flatted Shank), 9/16 - 1" by 16ths, 1/2" Shank	090596
<b>T98FHD</b> 8 Piece, ThunderBit®, Black & Bronze Oxide, (Flatted Shank), 9/16 - 1" by 16ths, 1/2" Shank	090595

Metal Stand	Stock #
<b>T933</b> 33 Piece, Silver & Deming, Black Oxide (Round Shank), 1/2 - 1" by 64ths, 1/2" Shank	090599
<b>T933FHD</b> 33 Piece, ThunderBit®, Black & Bronze Oxide, (Flatted Shank), 1/2 - 1" by 64ths, 1/2" Shank	090593

Extractor Sets	Stock #
<b>Plastic Case</b>	
<b>T20CX</b> #1-#6 (6 Piece)	098145
<b>T40CX</b> #2-#5 (4 Piece)	098140
<b>T50CX</b> 10 Pc Drill & Extractor	098150



SETS





## Counter or Wall

<b>540 Piece, see below for sizes included (drill bits not shown)</b>	<b>Stock #</b>
<b>T80</b> General Purpose, Bright Finish	069980
<b>T80HD</b> ThunderBit®, Black & Bronze Oxide	099995
<b>T80HD+</b> ThunderBit+®, Black & Bronze Oxide	099509
<b>Sizes Included (1/16 - 1/2 by 64ths)</b>	
(24) 1/16 - 7/64 (12) 17/64 - 5/16	
(60) 1/8 (6) 21/64-23/64	
(24) 9/64 - 11/64 (12) 3/8	
(48) 3/16 (6) 25/64-27/64	
(24) 13/64 - 15/64 (12) 7/16	
(60) 1/4 (6) 29/64-1/2	



## Counter Display

<b>Holds 29 Piece Jobber Length Drill Bits (drill bits not included)</b>	<b>Stock #</b>
<b>T80X</b> (14-1/4" H x 14" L x 12-3/4" Deep)	090970

Display Idea  
(Solid Carbide Burs)



## Counter or Wall

Tools not included

<b>Holds a variety of tools on hooks (tools not included)</b>	<b>Stock #</b>
<b>POPR</b> (13" W, 2' H)	090976



29 Piece  
Index Shown

## Metal Index

<b>Holds Jobber Length Drills (drills not included)</b>	<b>Stock #</b>
<b>13 Piece</b> 1/16 - 1/4 by 64ths	090919
<b>15 Piece</b> 1/16 - 1/2 by 32nds	090918
<b>21 Piece</b> 1/16 - 3/8 by 64ths	090980
<b>29 Piece</b> 1/16 - 1/2 by 64ths	090917
<b>115 Piece</b> 1/16 - 1/2 by 64ths; #1- #60, A-Z	090940



## Plastic Index

<b>Jobber and Mechanics Length Drills (drills not included)</b>	<b>Stock #</b>
<b>29 Piece (Jobber)</b> 1/16 - 1/2 by 64ths	090997.30
<b>29 Piece (Mechanics)</b> 1/16 - 1/2 by 64ths	091000.30

## T66HDSET THUNDER TAP®

3 Piece, Fractional  
Packaging: Plastic Case  
(1) each Taper, Plug, Bottom Tap

3 Piece, Metric  
Packaging: Plastic Case  
(1) each Taper, Plug, Bottom

Size	Stock #
1/4-20 NC	071600
1/4-28 NF	071601
5/16-18 NC	071602
5/16-24 NF	071603
3/8-16 NC	071604
3/8-24 NF	071605
7/16-14 NC	071606
7/16-20 NF	071607
1/2-13 NC	071608
1/2-20 NF	071609
9/16-12 NC	071610
9/16-18 NF	071611
5/8-11 NC	071612
5/8-18 NF	071613
3/4-10 NC	071614
3/4-16 NF	071615
7/8-9 NC	071616
7/8-14 NF	071617
1-8 NC	071618
1-12 NF	071619

Size	Stock #
M2 x 0.4 D3	075151
M3 x 0.5 D3	075152
M4 x 0.7 D4	075153
M5 x 0.8 D4	075154
M6 x 1.0 D5	075155
M7 x 1.0 D5	075156
M8 x 1.25 D5	075157
M10 x 1.5 D6	075158
M12 x 1.75 D6	075159
M14 x 2 D7	075160
M16 x 2 D7	075161
M18 x 2.5 D7	075162
M20 x 2.5 D7	075163
M24 x 3 D8	075164



Tap & Die Sets	Stock #
<b>1" Round Die &amp; ThunderTap</b> 1/4-20 NC, 5/16-18 NC, 3/8-16 NC, 7/16-14 NC, 1/2-13 NC, 1/4-28 NF, 5/16-24 NF, 3/8-24 NF, 7/16-20 NF, 1/2-20 NF, 1/8-27 NPT <b>Die Stock - 1"</b> <b>Tap Wrench- 1/4"-1/2"</b>	069926
<b>1" Round Die &amp; ThunderTap</b> 1/4-20 NC, 5/16-18 NC, 3/8-16 NC, 7/16-14 NC, 1/2-13 NC, 4-40 NC, 6-32 NC, 8-32 NC, 10-24 NC, 12-24 NC, 1/4-28 NF, 5/16-24 NF, 3/8-24 NF, 7/16-20 NF, 1/2-20 NF, 10-32 NC, 1/8-27 NPT <b>Die Stock - 1"</b> <b>Tap Wrench- 0-1/4", 1/4"-1/2"</b>	069963



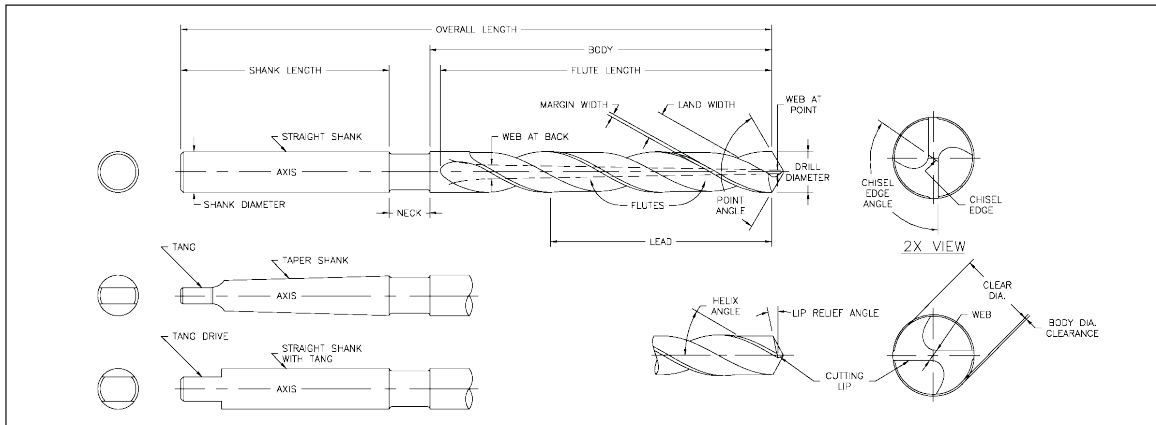
Bur Sets	Stock #
<b>BUR 14 SET, 1/4" Cut, 1/4" Shank</b> SA-1, SC-1, SD-1, SE-1, SF-1, SG-1, SH-1, SL-1, SM-2	071485
<b>BUR 38 SET, 3/8" Cut, 1/4" Shank</b> SA-3, SC-3, SD-3, SE-3, SF-3, SG-3, SH-1, SL-3, SM-4	071487
<b>BUR 12 SET, 1/2" Cut, 1/4" Shank</b> SA-5, SC-5, SD-5, SE-5, SF-5, SG-5, SH-5, SL-4, SM-5	071488

Miniature Bur Set	Stock #
<b>BUR 18 SET, 1/8" Cut, 1/8" Shank</b> SA-43, SC-42, SD-42, SE-41, SF-42, SG-43, SH-41, SL-42, SN-42	071486





# COMMON DRILLING TERMS



### Axis

The imaginary straight line which forms the lengthwise center of a drill

### Body

The section of a drill from the shank to the outer edges of the cutting lips

### Body Clearance Diameter

The portion of the land that has been cut away so it will not bind against the walls of the hole

### Chip Removal

The ability of a drill to pull material that has been cut away from the point, up the flutes and out of the hole

### Chisel Edge

The edge at the end of the web that connects the cutting lips

### Chisel Edge Angle

The angle between the chisel edge and cutting lip, as viewed from the end of a drill

### Cobalt Steel

A heat-resistant steel that produces increased drill life

### Drill Diameter

The diameter over the margins of a drill, measured at the point (Dia.)

### Feeds

Feed rates for drilling are determined by the drill diameter, machinability of materials and depth of the desired hole. Small drills, harder materials and deeper holes require additional considerations in selecting proper feed rates

### Flute

Groove cut in the body of drills to provide cutting surfaces, permit removal of chips and allow cutting fluid to reach cutting surfaces

### Flute Length

The distance from the outer edges of the cutting lips to the extreme back of the flutes

### Helix Angle

The angle formed between the leading edge of the land and the axis of a drill

### High Speed Steel

The high quality steel used in drills for most maintenance and industrial applications

### IPM

Feed rate in Inches Per Minute = IPR X RPM

### IPR

Inches Per Revolution (Feed)

### Land

The outer portion of the body between two adjacent flutes

### Land Width

The distance between the leading edge and heel of the land, measured at a right angle to the leading edge

### Lip Relief Angle

The relief angle at the outer corner of the lip

### Lip

The cutting edge of a two-flute drill which extends from the chisel edge to the outer edge

### Margin

The narrow raised surface on a drill body along the flute that stabilizes the drill in the hole

### Neck

The section of reduced diameter between the body and the shank of a drill

### Overall Length

The length from the end of the shank to the outer corners of the cutting lip

### Point

The cone-shaped cutting end of a drill, made from the ends of the lands and the web

### Point Angle

The angle of the cutting surfaces on a drill point, commonly 118° or 135°

### RPM

Revolutions Per Minute =  $\frac{SFM}{Dia.} \times 3.82$

### SFM

Surface Feet Per Minute = RPM X Dia. X .26

### Shank

The part of a drill by which it is held and driven

### Size

Measurement reference for diameter size of a drill, expressed as either fractional, wire, letter or metric

### Speed

The speed of a drill is determined by the rate which the outer edge of the tool rotates in relation to the material being cut. In general, the SFM is within a range based upon the workpiece material, its condition, hardness and depth of the hole. The deeper the hole, the greater tendency for more heat to be generated. Speed reduction is often recommended to minimize the amount of heat. It is usually best to start drilling at a slower speed and then increase.

### Split Point

A special point configuration that eliminates "walking" so holes stay on center

### Web

The central portion of the body that joins the lands. The extreme end of the web forms the chisel edge of a two-flute drill

### Web Thickness

The thickness of the web at the point, unless otherwise specified



# DECIMAL EQUIVALENTS



Size	Decimal Equivalent	Size	Decimal Equivalent	Size	Decimal Equivalent	Size	Decimal Equivalent
97	.0059	61	.0390	37	.1040	4.90 mm	.1929
96	.0063	1.00 mm	.0394	2.70 mm	.1063	10	.1935
95	.0067	60	.0400	36	.1065	9	.1960
94	.0071	59	.0410	2.75 mm	.1083	5.00 mm	.1969
93	.0075	1.05 mm	.0413	7/64"	.1094	8	.1990
92	.0079	58	.0420	35	.1100	5.10 mm	.2008
91	.0083	57	.0430	2.80 mm	.1102	7	.2010
90	.0087	1.10 mm	.0433	34	.1110	13/64"	.2031
89	.0091	1.15 mm	.0453	33	.1130	6	.2040
88	.0095	56	.0465	2.90 mm	.1142	5.20 mm	.2047
.25 mm	.0098	3/64"	.0469	32	.1160	5	.2055
87	.0100	1.20 mm	.0472	3.00 mm	.1181	5.25 mm	.2067
86	.0105	1.25 mm	.0492	31	.1200	5.30 mm	.2087
85	.0110	1.30 mm	.0512	3.10 mm	.1220	4	.2090
84	.0115	55	.0520	1/8"	.1250	5.40 mm	.2126
.30 mm	.0118	1.35 mm	.0531	3.20 mm	.1260	3	.2130
83	.0120	54	.0550	3.25 mm	.1280	5.50 mm	.2165
82	.0125	1.40 mm	.0551	30	.1285	7/32"	.2188
.32 mm	.0126	1.45 mm	.0571	3.30 mm	.1299	5.60 mm	.2205
81	.0130	1.50 mm	.0591	3.40 mm	.1339	2	.2210
80	.0135	53	.0595	29	.1360	5.70 mm	.2244
.35 mm	.0138	1.55 mm	.0610	3.50 mm	.1378	5.75 mm	.2264
.36 mm	.0142	1/16"	.0625	28	.1405	1	.2280
79	.0145	1.60 mm	.0630	9/64"	.1406	5.80 mm	.2283
.38 mm	.0150	52	.0635	3.60 mm	.1417	5.90 mm	.2323
1/64"	.0156	1.65 mm	.0650	27	.1440	A	.2340
.40 mm	.0157	1.70 mm	.0669	3.70 mm	.1457	15/64"	.2344
78	.0160	51	.0670	26	.1470	6.00 mm	.2362
.42 mm	.0165	1.75 mm	.0689	3.75 mm	.1476	B	.2380
.44 mm	.0173	50	.0700	25	.1495	6.10 mm	.2402
.45 mm	.0177	1.80 mm	.0709	3.80 mm	.1496	C	.2420
77	.0180	1.85 mm	.0728	24	.1520	6.20 mm	.2441
.46 mm	.0181	49	.0730	3.90 mm	.1535	D	.2460
.48 mm	.0189	1.90 mm	.0748	23	.1540	6.25 mm	.2461
.50 mm	.0197	48	.0760	5/32"	.1562	6.30 mm	.2480
76	.0200	1.95 mm	.0768	22	.1570	1/4" E	.2500
75	.0210	5/64"	.0781	4.00 mm	.1575	6.40 mm	.2520
.55 mm	.0217	47	.0785	21	.1590	6.50 mm	.2559
74	.0225	2.00 mm	.0787	20	.1610	F	.2570
.60 mm	.0236	2.05 mm	.0807	4.10 mm	.1614	6.60 mm	.2598
73	.0240	46	.0810	4.20 mm	.1654	G	.2610
72	.0250	45	.0820	19	.1660	6.70 mm	.2638
.65 mm	.0256	2.10 mm	.0827	4.25 mm	.1673	17/64"	.2656
71	.0260	2.15 mm	.0846	4.30 mm	.1693	6.75 mm	.2657
.70 mm	.0276	44	.0860	18	.1695	H	.2660
70	.0280	2.20 mm	.0866	11/64"	.1719	6.80 mm	.2677
69	.0292	2.25 mm	.0886	17	.1730	6.90 mm	.2717
.75 mm	.0295	43	.0890	4.40 mm	.1732	I	.2720
68	.0310	2.30 mm	.0906	16	.1770	7.00 mm	.2756
1/32"	.0312	2.35 mm	.0925	4.50 mm	.1772	J	.2770
.80 mm	.0315	42	.0935	15	.1800	7.10 mm	.2795
67	.0320	3/32"	.0938	4.60 mm	.1811	K	.2810
66	.0330	2.40 mm	.0945	14	.1820	9/32"	.2812
.85 mm	.0335	41	.0960	13	.1850	7.20 mm	.2835
65	.0350	2.45 mm	.0965	4.70 mm	.1850	7.25 mm	.2854
.90 mm	.0354	40	.0980	4.75 mm	.1870	7.30 mm	.2874
64	.0360	2.50 mm	.0984	3/16"	.1875	L	.2900
63	.0370	39	.0995	4.80 mm	.1890	7.40 mm	.2913
.95 mm	.0374	38	.1015	12	.1890	M	.2950
62	.0380	2.60 mm	.1024	11	.1910	7.50 mm	.2953





# DECIMAL EQUIVALENTS

Size	Decimal Equivalent	Size	Decimal Equivalent	Size	Decimal Equivalent	Size	Decimal Equivalent
19/64"	.2969	12.50 mm	.4921	1-1/64"	1.0156	39.00 mm	1.5354
7.60 mm	.2992	1/2"	.5000	26.00 mm	1.0236	1-35/64"	1.5469
N	.3020	13.00 mm	.5118	1-1/32"	1.0312	39.50 mm	1.5551
7.70 mm	.3031	33/64"	.5156	26.50 mm	1.0433	1-9/16"	1.5625
7.75 mm	.3051	17/32"	.5312	1-3/64"	1.0469	40.00 mm	1.5748
7.80 mm	.3071	13.50 mm	.5315	1-1/16"	1.0625	1-37/64"	1.5781
7.90 mm	.3110	35/64"	.5469	27.00 mm	1.0630	1-19/32"	1.5938
5/16"	.3125	14.00 mm	.5512	1-5/64"	1.0781	40.50 mm	1.5945
8.00 mm	.3150	9/16"	.5625	27.50 mm	1.0827	1-39/64"	1.6094
O	.3160	14.50 mm	.5709	1-3/32"	1.0938	41.00 mm	1.6142
8.10 mm	.3189	37/64"	.5781	28.00 mm	1.1024	1-5/8"	1.6250
8.20 mm	.3228	15.00 mm	.5906	1-7/64"	1.1094	41.50 mm	1.6339
P	.3230	19/32"	.5938	28.50 mm	1.1220	1-41/64"	1.6406
8.25 mm	.3248	39/64"	.6094	1-1/8"	1.1250	42.00 mm	1.6535
8.30 mm	.3268	15.50 mm	.6102	1-9/64"	1.1406	1-21/32"	1.6562
21/64"	.3281	5/8"	.6250	29.00 mm	1.1417	1-43/64"	1.6719
8.40 mm	.3307	16.00 mm	.6299	1-5/32"	1.1562	42.50 mm	1.6732
Q	.3320	41/64"	.6406	29.50 mm	1.1614	1-11/16"	1.6875
8.50 mm	.3346	16.50 mm	.6496	1-11/64"	1.1719	43.00 mm	1.6929
8.60 mm	.3386	21/32"	.6562	30.00 mm	1.1811	1-45/64"	1.7031
R	.3390	17.00 mm	.6693	1-3/16"	1.1875	43.50 mm	1.7126
8.70 mm	.3425	43/64"	.6719	30.50 mm	1.2008	1-23/32"	1.7188
11/32"	.3438	11/16"	.6875	1-13/64"	1.2031	44.00 mm	1.7323
8.75 mm	.3445	17.50 mm	.6890	1-7/32"	1.2188	1-47/64"	1.7344
8.80 mm	.3465	45/64"	.7031	31.00 mm	1.2205	1-3/4"	1.7500
S	.3480	18.00 mm	.7087	1-15/64"	1.2344	44.50 mm	1.7520
8.90 mm	.3504	23/32"	.7188	31.50 mm	1.2402	1-49/64"	1.7656
9.00 mm	.3543	18.50 mm	.7283	1-1/4"	1.2500	45.00 mm	1.7717
T	.3580	47/64"	.7344	32.00 mm	1.2598	1-25/32"	1.7812
9.10 mm	.3583	19.00 mm	.7480	1-17/64"	1.2656	45.50 mm	1.7913
23/64"	.3594	3/4"	.7500	32.50 mm	1.2795	1-51/64"	1.7969
9.20 mm	.3622	49/64"	.7656	1-9/32"	1.2812	46.00 mm	1.8110
9.25 mm	.3642	19.50 mm	.7677	1-19/64"	1.2969	1-13/16"	1.8125
9.30 mm	.3661	25/32"	.7812	33.00 mm	1.2992	1-53/64"	1.8281
U	.3680	20.00 mm	.7874	1-5/16"	1.3125	46.50 mm	1.8307
9.40 mm	.3701	51/64"	.7969	33.50 mm	1.3189	1-27/32"	1.8438
9.50 mm	.3740	20.50 mm	.8071	1-21/64"	1.3281	47.00 mm	1.8504
3/8"	.3750	13/16"	.8125	34.00 mm	1.3386	1-55/64"	1.8594
V	.3770	21.00 mm	.8268	1-11/32"	1.3438	47.50 mm	1.8701
9.60 mm	.3780	53/64"	.8281	34.50 mm	1.3583	1-7/8"	1.8750
9.70 mm	.3819	27/32"	.8438	1-23/64"	1.3594	48.00 mm	1.8898
9.75 mm	.3839	21.50 mm	.8465	1-3/8"	1.3750	1-57/64"	1.8906
9.80 mm	.3858	55/64"	.8594	35.00 mm	1.3780	1-29/32"	1.9062
W	.3860	22.00 mm	.8661	1-25/64"	1.3906	48.50 mm	1.9094
9.90 mm	.3898	7/8"	.8750	35.50 mm	1.3976	1-59/64"	1.9219
25/64"	.3906	22.50 mm	.8858	1-13/32"	1.4062	49.00 mm	1.9291
10.00 mm	.3937	57/64"	.8906	36.00 mm	1.4173	1-15/16"	1.9375
X	.3970	23.00 mm	.9055	1-27/64"	1.4219	49.50 mm	1.9488
Y	.4040	29/32"	.9062	36.50 mm	1.4370	1-61/64"	1.9531
13/32"	.4062	59/64"	.9219	1-7/16"	1.4375	50.00 mm	1.9685
Z	.4130	23.50 mm	.9252	1-29/64"	1.4531	1-31/32"	1.9688
10.50 mm	.4134	15/16"	.9375	37.00 mm	1.4567	1-63/64"	1.9844
27/64"	.4219	24.00 mm	.9449	1-15/32"	1.4688	50.50 mm	1.9882
11.00 mm	.4331	61/64"	.9531	37.50 mm	1.4764	2"	2.0000
7/16"	.4375	24.50 mm	.9646	1-31/64"	1.4844		
11.50 mm	.4528	31/32"	.9688	38.00 mm	1.4961		
29/64"	.4531	25.00 mm	.9843	1-1/2"	1.5000		
15/32"	.4688	63/64"	.9844	1-33/64"	1.5156		
12.00 mm	.4724	1"	1.0000	38.50 mm	1.5157		
31/64"	.4844	25.50 mm	1.0039	1-17/32"	1.5312		





## Black Oxide

Black oxide is the most basic surface treatment recommended for drilling in iron and steel. It is not recommended for drilling in aluminum, magnesium or similar materials.

Drilling with a black oxide treated drill provides:

- Increased tempering and stress relieving
- Reduced galling and chip welding
- Increased retention of lubricants

## TiN Coating

Titanium Nitride (TiN) performance coating can increase tool life and productivity by allowing higher speeds and heavier feeds. It is an excellent general purpose coating for protecting tools from wear. TiN coating is an excellent choice for drilling in iron and steel. It is also recommended for drilling in aluminum, magnesium or similar materials.

Drilling with a TiN coated drill provides:

- Increased surface hardness
- Reduced coefficient of friction
- Increased corrosion resistance
- A thermal barrier
- Additional tempering and stress relieving

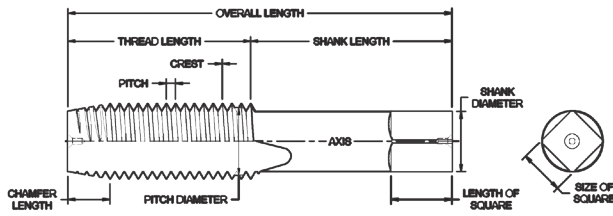
Diameter Size	Surface Feet per Minute														
	10'	12'	15'	20'	25'	30'	35'	40'	45'	50'	60'	70'	80'	90'	100'
1/64	2445	2934	3667	4889	6112	7334	8556	9778	11001	12223	14668	17112	19557	22001	24446
1/32	1222	1467	1833	2445	3056	3667	4278	4889	5500	6112	7334	8556	9778	11001	12223
3/64	815	978	1222	1630	2037	2445	2852	3259	3667	4074	4889	5704	6519	7334	8149
1/16	611	733	917	1222	1528	1833	2139	2445	2750	3056	3667	4278	4889	5500	6112
5/64	489	587	733	978	1222	1467	1711	1956	2200	2445	2934	3422	3911	4400	4889
3/32	407	489	611	815	1019	1222	1426	1630	1833	2037	2445	2852	3259	3667	4074
7/64	349	419	524	698	873	1048	1222	1397	1572	1746	2095	2445	2794	3143	3492
1/8	306	367	458	611	764	917	1070	1222	1375	1528	1833	2139	2445	2750	3056
9/64	272	326	407	543	679	815	951	1086	1222	1358	1630	1901	2173	2445	2716
5/32	244	293	367	489	611	733	856	978	1100	1222	1467	1711	1956	2200	2445
11/64	222	267	333	444	556	667	778	889	1000	1111	1333	1556	1778	2000	2222
3/16	204	244	306	407	509	611	713	815	917	1019	1222	1426	1630	1833	2037
13/64	188	226	282	376	470	564	658	752	846	940	1128	1316	1504	1692	1880
7/32	175	210	262	349	437	524	611	698	786	873	1048	1222	1397	1572	1746
15/64	163	196	244	326	407	489	570	652	733	815	978	1141	1304	1467	1630
1/4	153	183	229	306	382	458	535	611	688	764	917	1070	1222	1375	1528
9/32	136	163	204	272	340	407	475	543	611	679	815	951	1086	1222	1358
5/16	122	147	183	244	306	367	428	489	550	611	733	856	978	1100	1222
11/32	111	133	167	222	278	333	389	444	500	556	667	778	889	1000	1111
3/8	102	122	153	204	255	306	357	407	458	509	611	713	815	917	1019
13/32	94	113	141	188	235	282	329	376	423	470	564	658	752	846	940
7/16	87	105	131	175	218	262	306	349	393	437	524	611	698	786	873
15/32	81	98	122	163	204	244	285	326	367	407	489	570	652	733	815
1/2	76	92	115	153	191	229	267	306	344	382	458	535	611	688	764
9/16	68	81	102	136	170	204	238	272	306	340	407	475	543	611	679
5/8	61	73	92	122	153	183	214	244	275	306	367	428	489	550	611
11/16	56	67	83	111	139	167	194	222	250	278	333	389	444	500	556
3/4	51	61	76	102	127	153	178	204	229	255	306	357	407	458	509
13/16	47	56	71	94	118	141	165	188	212	235	282	329	376	423	470
7/8	44	52	65	87	109	131	153	175	196	218	262	306	349	393	437
15/16	41	49	61	81	102	122	143	163	183	204	244	285	326	367	407
1	38	46	57	76	95	115	134	153	172	191	229	267	306	344	382
1-1/8	34	41	51	68	85	102	119	136	153	170	204	238	272	306	340
1-1/4	31	37	46	61	76	92	107	122	138	153	183	214	244	275	306
1-3/8	28	33	42	56	69	83	97	111	125	139	167	194	222	250	278
1-1/2	25	31	38	51	64	76	89	102	115	127	153	178	204	229	255

Material	SFM	Material	SFM	Drill Dia. Range	Light	Medium	Heavy
Aluminum and its Alloys	200-300	Steel (Continued)		1/16 to 1/8"	.0005-.0010	.0010-.0020	.0020-.0040
Brass and Bronze (Ordinary)	150-300	Steel (.4 carbon to .5 carbon)	70-80	1/8 to 1/4"	.0010-.0030	.0030-.0050	.0040-.0060
Bronze (High Tensile)	70-150	Tool (1.2 carbon)	50-60	1/4 to 3/8"	.0030-.0050	.0050-.0070	.0060-.0100
Die Castings (Zinc Base)	300-400	Forgings	40-50	3/8 to 1/2"	.0040-.0060	.0050-.0080	.0080-.0120
Iron		Alloy—300 to 400 Brinell	20-30	1/2 to 3/4"	.0050-.0070	.0070-.0100	.0090-.0140
Cast (Soft)	100-150	High Tensile (Heat Treated)		3/4 to 1"	.0070-.0100	.0090-.0140	.0140-.0200
Cast (Medium hard)	70-100	35 to 40 Rockwell C	30-40				
Hard Chilled	30-40	40 to 45 Rockwell C	25-35				
Malleable	80-90	45 to 50 Rockwell C	15-25				
Magnesium and its Alloys	250-400	50 to 55 Rockwell C	7-15				
Monel Metal or High-Nickel Steel	30-50	Stainless Steel					
Plastics or Similar Materials (Bakelite)	100-300	Free Machining Grades	30-80				
Steel		Work Hardening Grades	15-50				
Mild (.2 carbon to .3 carbon)	80-110	Wood	300-400				

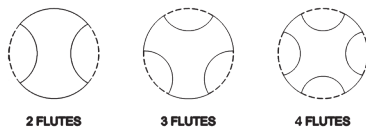




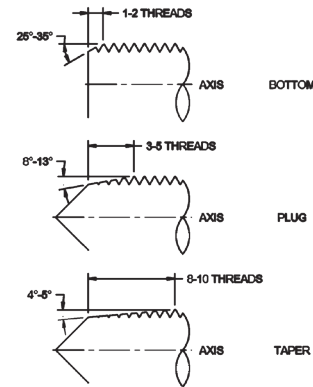
# COMMON TAPPING TERMS



## End Views



## Chamfer Styles in Standard Taps



### Angle of Thread

The angle included between the flanks of the thread measured in an axial plane

### Back Taper

A slight axial relief on the thread of the tap which makes the pitch diameter of the thread near the shank somewhat smaller than that of the chamfered end

### Bottoming Chamfer

The shortest chamfer (1-2 threads long) for threading close to the bottom of blind holes

### Chamfer

The tapering of the threads at the front end of each land of a tap, by cutting away and relieving the crest of the first few teeth, to distribute the cutting action over several teeth

### Chamfer Relief

The gradual decrease in land height from cutting edge to heel on the chamfered portion, to provide clearance for the cutting action as the tap advances

### Chordal Hook Angle

The angle between the chord passing through the root and crest of a thread form at the cutting face, and a radial line through the crest at the cutting edge

### Crest

The top surface joining the two flanks of a thread. The crest of an external thread is at its major diameter, while the crest of an internal thread is at its minor diameter

### Cutting Face

The leading side of the land in the direction of rotation for cutting on which the chip impinges

### Flutes

The longitudinal channels formed in a tap to create cutting edges on the thread profile, and to provide chip spaces and cutting fluid passages

### Height of Thread

The distance between the crest and the base of a thread measured normal to the axis

### Lead

The distance a screw thread advances axially in one complete turn. On a single lead screw or tap, the lead and pitch are identical. On a double-lead screw or tap, the lead is twice the pitch, etc.

### Pitch

The distance from any point on a screw or tap thread to a corresponding point on the next thread, measured parallel to the axis. The pitch equals one divided by the number of threads per inch

### Pitch Diameter

On a straight thread, the diameter of any imaginary coaxial cylinder, the surface of which would pass through the thread profile at such points as to make equal the width of the threads and the width of the spaces cut by the surface of the cylinder

On a taper thread, the diameter at a given distance from a reference plane perpendicular to the axis of an imaginary co-axial cone, the surface of which would pass through the thread profile at such points as to make equal the width of the threads and the width of the spaces cut by the surface of the cone

### Plug Chamfer

The most common chamfer (3-5 threads long), for hand or machine tapping in through or blind holes

### Rake

Any deviation of a straight cutting face of the tooth from a radial line.

**Positive Rake** means that the crest of the cutting face is angularly advanced ahead of the balance of the face of the tooth.

**Negative Rake** means that the same point is angularly behind the balance of the cutting face of the tooth. **Zero Rake** means that the cutting face is directly on the center line

### Spiral Point (Chip Driver)

A supplementary angular fluting cut in the cutting face of the land at the chamfer end. It is slightly longer than the chamfer on the tap, and of the opposite hand to that of rotation

### Taper Chamfer

A long chamfer (8-10 threads long) for easier starting and engagement in the work piece. More working teeth means that less tapping torque is required, and the chip load is reduced on each tooth

### Threads Per Inch

The number of threads in one inch of length



# TAP DRILL SELECTOR



## Machine Screw/Fractional

Tap Size	Tap Drill Size	Decimal Equivalent of Tap Drill (Inches)	Theoretical Percent of Thread	Probable Percent of Thread	
0-80	56	.0465	83	74	
	3/64	.0469	81	71	
	1.20 mm	.0472	79	69	
	1.25 mm	.0492	67	57	
1-64	54m	.0550	89	81	
	1.45 mm	.0571	78	71	
	53	.0595	67	59	
1-72	1.50 mm	.0591	77	68	
	53	.0595	75	67	
	1.55 mm	.0610	67	68	
2-56	51	.0670	82	74	
	1.75 mm	.0689	73	66	
	50	.0700	69	62	
	1.80 mm	.0709	65	58	
2-64	50	.0700	79	70	
	1.80 mm	.0709	74	66	
	49	.0730	64	56	
3-48	48	.0760	85	78	
	5/64	.0781	77	70	
	47	.0785	76	69	
	2.00 mm	.0787	75	68	
	46	.0810	67	60	
	45	.0820	63	56	
3-56	46	.0810	78	69	
	45	.0820	73	65	
	2.10 mm	.0827	70	62	
	2.15 mm	.0846	62	54	
4-40	44	.0860	80	74	
	2.20 mm	.0866	78	72	
	43	.0890	71	65	
	2.30 mm	.0906	66	60	
4-48	2.35 mm	.0925	72	72	
	42	.0935	68	61	
	3/32	.0938	68	60	
	2.40 mm	.0945	65	57	
5-40	40	.0980	83	76	
	39	.0995	79	71	
	38	.1015	72	65	
	2.60 mm	.1024	70	63	
5-44	38	.1015	79	72	
	2.60 mm	.1024	77	69	
	37	.1040	71	63	
	6-32	37	.1040	84	78
		36	.1065	78	72
7/64		.1095	70	64	
35		.1100	69	63	
34	.1110	67	60		
6-40	34	.1110	83	75	
	33	.1130	77	69	
	2.90 mm	.1142	73	65	
	32	.1160	68	60	

Tap Size	Tap Drill Size	Decimal Equivalent of Tap Drill (Inches)	Theoretical Percent of Thread	Probable Percent of Thread
8-32	3.40 mm	.1339	74	67
	29	.1360	69	62
8-36	29	.1360	78	70
	3.50 mm	.1378	72	65
10-24	27	.1440	85	79
	3.70 mm	.1457	82	76
	26	.1470	79	74
	25	.1495	75	69
	24	.1520	70	64
10-32	5/32	.1563	83	75
	22	.1570	81	73
	21	.1590	76	68
12-24	11/64	.1719	82	75
	17	.1730	79	73
	16	.1770	72	66
12-28	16	.1770	84	77
	15	.1800	78	70
	4.60 mm	.1811	75	67
	14	.1820	73	66
1/4-20	9	.1960	83	77
	8	.1990	79	73
	7	.2010	75	70
	13/64	.2031	72	66
1/4-28	5.40 mm	.2126	81	72
	3	.2130	80	72
5/16-18	F	.2570	77	72
	6.60 mm	.2598	73	68
	G	.2610	71	66
5/16-24	H	.2660	86	78
	6.80 mm	.2677	83	75
	I	.2720	75	67
3/8-16	7.80 mm	.3071	84	78
	7.90 mm	.3110	79	73
	5/16	.3125	77	72
	O	.3160	73	68
3/8-24	21/64	.3281	87	79
	8.40 mm	.3307	82	74
	Q	.3320	79	71
	8.50 mm	.3346	75	67
	7/16-14	T	.3580	86
23/64		.3594	84	79
9.20 mm		.3622	81	76
9.30 mm		.3661	77	72
U		.3680	75	70
9.40 mm		.3701	73	68
7/16-20	W	.3860	79	72
	25/64	.3906	72	65
1/2-13	10.50 mm	.4134	87	82
	27/64	.4219	78	73
1/2-20	29/64	.4531	72	65







# TAP DRILL SELECTOR

## Machine Screw/Fractional (con't)

Tap Size	Tap Drill Size	Decimal Equivalent of Tap Drill (Inches)	Theoretical Percent of Thread	Probable Percent of Thread
9/16-12	15/32	.4688	87	82
	31/64	.4844	72	68
9/16-18	1/2	.5000	87	80
5/8-11	17/32	.5313	79	75
5/8-18	9/16	.5625	87	80
3/4-10	41/64	.6406	84	80
	21/32	.6563	72	68
3/4-16	11/16	.6875	77	71
	17.50 mm	.6890	75	69
7/8-9	49/64	.7656	76	72
7/8-14	51/64	.7969	84	79
1"-8	55/64	.8594	87	83
	7/8	.8750	77	73
1"-12	29/32	.9063	87	81
	59/64	.9219	72	67
1"-14	59/64	.9219	84	78
1-1/8-7	31/32	.9688	84	81
	63/64	.9844	76	72
1-1/8-12	1-1/32	1.0313	87	80
1-1/4-7	1-3/32	1.0938	84	*
	1-7/64	1.1094	76	*
1-1/4-12	1-11/64	1.1719	72	*
1-3/8-6	1-13/64	1.2031	79	*
	1-7/32	1.2188	72	*
1-3/8-12	1-19/64	1.2969	72	*
1-1/2-6	1-21/64	1.3281	79	*
	1-11/32	1.3438	72	*
1-1/2-12	1-27/64	1.4219	72	*

\*Reaming recommended

### Tapping Speeds

Proper tapping speeds are very important in obtaining efficient tapping results. The optimum speed for tapping is the highest speed that conditions permit, consistent with acceptable tool life. Speeds must be lowered as the length of the hole increases. In short holes, taps with tapered chamfers can be operated faster than taps with bottoming chamfers. Speeds can be increased when vertical tapping, as compared to horizontal tapping.

The chart below suggests a starting point for selecting the speed to operate the tap.

### Tapping Speed Selector

Material	Speed (feet/min)	Material	Speed (feet/min)
Aluminum, Soft	90-110	Nuts, Cold Formed	60-80
Aluminum, Alloy	80-100	Plastics	60-80
Brass, Soft	90-110	Rubber, Hard	80-100
Brass, Hard	40-60	Screw Stock	65-90
Bronze, Soft	40-70	Steel, Alloy Grades	15-35
Bronze, Hard	30-50	Steel, Cast	20-35
Copper	50-60	Steel, Stainless	15-30
Die Castings	60-80	Steel, Tool Grades	25-40
Iron, Cast	70-100		

## Metric

Tap Size	Tap Drill Size	Decimal Equivalent of Tap Drill (Inches)	Theoretical Percent of Thread	Probable Percent of Thread
M1.6 x 0.35	1.20 mm	.0472	88	80
	1.25 mm	.0492	77	69
M2 x 0.40	1/16	.0625	79	72
	1.60 mm	.0630	77	69
	52	.0635	74	66
M2.5 x 0.45	2.05 mm	.0807	77	69
	46	.0810	76	67
	45	.0820	71	63
M3 x 0.50	40	.0980	79	70
	2.50 mm	.0984	77	68
	39	.0995	73	64
M3.5 x 0.60	33	.1130	81	72
	2.90 mm	.1142	77	68
	32	.1160	71	63
M4 x 0.70	3.20 mm	.1260	88	80
	30	.1285	81	73
	3.30 mm	.1299	77	69
M4.5 x 0.75	3.70 mm	.1457	82	74
	26	.1470	79	70
	25	.1495	72	64
M5 x 0.80	4.20 mm	.1654	77	69
	19	.1660	75	68
M6 x 1.00	10	.1935	84	76
	9	.1960	79	71
	5.00 mm	.1968	77	70
	8	.1990	73	65
M7 x 1.00	A	.2340	81	74
	6.00 mm	.2362	77	70
	B	.2380	74	66
M8 x 1.25	6.70 mm	.2638	80	74
	17/64	.2656	77	71
	H	.2660	77	70
	6.80 mm	.2677	74	68
M10 x 1.50	8.40 mm	.3307	82	76
	Q	.3320	80	75
	8.50 mm	.3346	77	71
M12 x 1.75	10.25 mm	.4035	77	72
	Y	.4040	76	71
	13/32	.4062	74	69
M14 x 2.00	15/32	.4688	81	76
	12.00 mm	.4724	77	72
M16 x 2.00	35/64	.5469	81	76
	14.00 mm	.5512	77	72
M20 x 2.50	11/16	.6875	78	74
	17.50 mm	.6890	77	73
M24 x 3.00	13/16	.8125	86	82
	21.00 mm	.8268	76	73
	53/64	.8281	76	73
M30 x 3.50	1-1/32	1.0312	83	80
	26.50 mm	1.0433	77	73
	1-3/64	1.0469	75	70
M36 x 4.00	1-17/64	1.2656	74	



# MANUFACTURING PLANT



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**Chisholm, MN**





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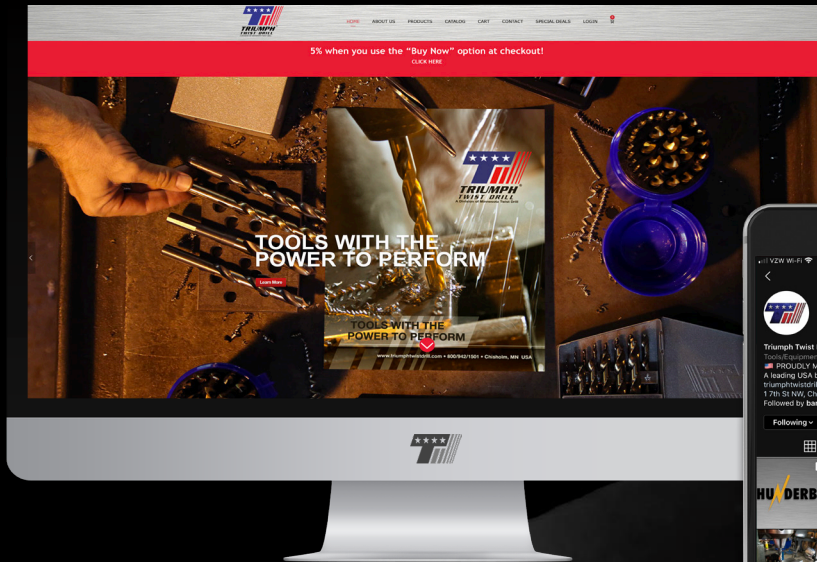
**Triumph Twist Drill**  
Hibbing, MN



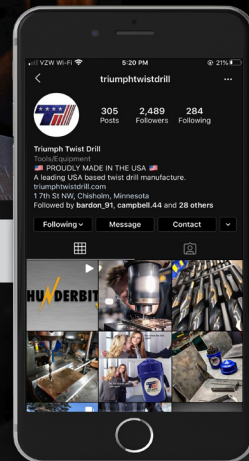


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