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Drill Sets

Jobber Length Drill Sets



13 PCS



15 PCS



20 PCS



114 PCS



115PCS

Inch 13 PCS

"*"Metal Box, "**"Plastic Box

Specification	Rolled Black Oxide Order No.	Ground Black Order No.	Ground Bright Order No.	Ground TiN-Coatec Order No.
*13pcs 1/16-1/4" by 64ths	201-0004	208-0004	206-0004	207-0004
**13pcs 1/16-1/4" by 64ths	201-0003	208-0003	206-0003	207-0003

Inch 15 PCS, Metal Box

Specification	Rolled Black Oxide Order No.	Ground Black Order No.	Ground Bright Order No.	Ground TiN-Coated Order No.
15pcs 1/16-1/2"by 32nds	201-0015	208-0015	206-0015	207-0015

Inch 20 PCS, Metal Box

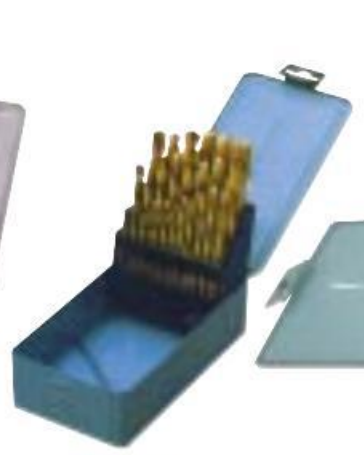
Specification	Rolled Black Oxide Order No.	Ground Black Order No.	Ground Bright Order No.	Ground TiN-Coated Order No.
20pcs #61-80 HSS	201-0019	208-0019	206-0019	207-0019



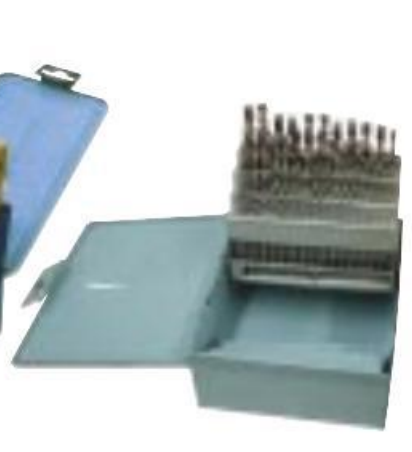
21 PCS



26 PCS



29 PCS



60 PCS

Inch 21 PCS, Metal Box

Specification	Rolled Black Oxide Order No.	Ground Black Order No.	Ground Bright Order No.	Ground TiN-Coated Order No.
1/16" to 3/8" by 64ths	201-0006	208-0021	206-0006	207-0006

Inch 26 PCS, Metal Box

Specification	Rolled Black Oxide Order No.	Ground Black Order No.	Ground Bright Order No.	Ground TiN-Coated Order No.
26pcs A-Z	201-0026	208-0026	206-0026	207-0026

Inch 29 PCS, Metal Box

Specification	Rolled Black Oxide Order No.	Ground Black Order No.	Ground Bright Order No.	Ground TiN-Coated Order No.
29pcs 1/16-1/2" by 64ths	201-0008	208-0008	206-0008	207-0008

Inch 60 PCS, Metal Box

Specification	Rolled Black Oxide Order No.	Ground Black Order No.	Ground Bright Order No.	Ground TiN-Coated Order No.
60pcs #1-60 HSS	201-0018	208-0018	206-0018	207-0018

Inch & Metric 114 PCS, Metal Box

Specification	Rolled Black Oxide Order No.	Ground Black Order No.	Ground Bright Order No.	Ground TiN-Coated Order No.
114pcs 1/16-1/2" by 64ths, #1-60,1-13mm by .5mm	201-0009	208-0009	206-0009	207-0009

Inch 115 PCS, Metal Box

Specification	Rolled Black Oxide Order No.	Ground Black Order No.	Ground Bright Order No.	Ground TiN-Coated Order No.
115pcs 1/16-1/2" by 64ths A-Z, #1-60	201-0010	208-0010	206-0010	207-0010



13 PCS



19 PCS



25 PCS

Metric 13 PCS

"*"Metal Box, "**"Plastic Box

Specification	Rolled Black Oxide Order No.	Ground Black Order No.	Ground Bright Order No.	Ground TiN-Coated Order No.
*1.5-6.5mm by .5mm	201-0002	208-0002	206-0002	207-0002
**1.5-6.5mm by .5mm	201-0001	208-0001	206-0001	207-0001

Metric 19PCS, Metal Box

Specification	Rolled Black Oxide Order No.	Ground Black Order No.	Ground Bright Order No.	Ground TiN-Coated Order No.
1 to 10mm by .5mm	201-0005	208-0005	206-0005	207-0005

Metric 25PCS, Metal Box

Specification	Rolled Black Oxide Order No.	Ground Black Order No.	Ground Bright Order No.	Ground TiN-Coated Order No.
25pcs 1-13mm by .5mm	201-0007	208-0007	206-0007	207-0007



41 PCS



51 PCS

Metric 41PCS, Metal Box

Specification	Rolled Black Oxide Order No.	Ground Black Order No.	Ground Bright Order No.	Ground TiN-Coated Order No.
41pcs 6-10mm by .1mm	201-0016	208-0041	206-0016	207-0016
51pcs 1-6mm by .1mm	201-0017	208-0017	206-0016	207-0017

M35 Jobber Length Drill Sets

135° Split Point, Fully Ground



Metal Box

Pieces of Drills	Specification	Order No.
13	1/16-1/4'' by 1/64''	**209-5004**
21	1/16-3/8"x1/64"	**209-5006**
25	1-13.0x0.5mm	**209-5007**
26	A-Z	**209-5026**
29	1/16-1/2" by 1/64"	**209-5008**
60	1#-60#	**209-5018**
115	1/16-1/2", A-Z, 1#-60#	**209-5010**

HSS Screw Machine Drill Sets

135° Split Point, Fully Ground, Right Hand, Black Finished



Metal Box

Pieces of Drills	Specification	Order No.
26	A-Z	**208-1026**
29	1/16-1/2'' by 1/64''	**208-1029**
60	#1-60	**208-1060**
115	A-Z, 1/16-1/2" by1/64", #1-60	**208-1010**

Left Hand Jobber Length Drill Sets

118° Point, HSS Fully Ground, Bright Finished



Metal Box

Pieces of Drills	Specification	Order No.
26	A-Z	**206-2127**
29	1/16-1/2'' by 1/64''	**206-2129**
60	#1-60	**206-2130**
115	A-Z, 1/16-1/2" by1/64", #1-60	**206-2135**

M35 Screw Machine Drill Sets

135° Split Point, Fully Ground, Right Hand, Black Finished



Metal Box

Pieces of Drills	Specification	Order No.
26	A-Z	**208-1089**
29	1/16-1/2'' by 1/64''	**208-1088**
60	#1-60	**208-1080**
115	A-Z, 1/16-1/2" by1/64", #1-60	**208-1085**

Long Boy Drill Sets

118° Point, High Speed Steel



Metal Stand

Pieces	Specification	Order No.
25	1/8-1/2" by 1/64",8" Length	**201-8005**
25	1/8-1/2" by 1/64,10" Length	**201-8010**
25	1/8-1/2" by 1/64,12" Length	**201-8015**

Aircraft Extension Drill Sets

HSS, 118° Point, Right Hand

Metal Stand

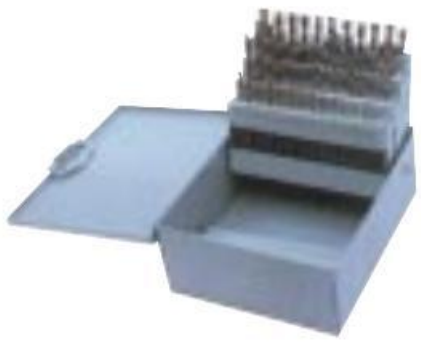
Pieces	Specification	Order No.
13	1/16” to 1/4” by 64ths, 6” length	**434-0301**
29	1/16 to 1/2” by 64ths, 12”length	**434-0302**
60	No.1 to 60, 6” length	**434-0303**
60	No.1 to 60, 12”length	**434-0304**
13	1/8” - 1/2” by 32nds, 8" Length	**434-0305**
13	1/8” - 1/2” by 32nds, 10" Length	**434-0306**
13	1/8” - 1/2” by 32nds, 12" Length	**434-0307**
11	3/16” - 1/2” by 32nds, 18" Length	**434-0308**



Fast Spiral Jobber Drill Sets

118° Point, HSS, Ground, Bright Finished

NEW



Metal Box

Pieces	Specification	Order No.
26	26pcs/set letter size blanks A to Z	**334-3596**
29	29pcs/set blanks 1/16'' to 1/2" by 64ths	**334-3599**
60	60pcs/set wire size blanks 1 to 60	**334-3590**
115	115pcs/set (1/16-1/2" by 1/64ths,A-Z,# 1-#60)	**334-3595**

Taper Length Drill Sets

High Speed Steel, For Deep Hole Drilling, Complete with Metal Box



Pieces of Drills	Specification	Order No.
16	33/64" to 3/4" by 64ths	**310-6916**
16	49/64" to 1" by 64ths	**310-6917**
26	A through Z	**310-6926**
29	1/16" to 1/2" by 64ths	**310-6929**
60	No.1 to No. 60	**310-6960**

Silver & Deming Drill Sets





Pieces of Drills	Shank	Specification	Wooden Stand Order No.	Plastic Case Order No.
5	1/2"	17/32", 9/16", 5/8", 3/4", 1"	**301-0204**	
5	1/2	9/16",5/8",3/4",7/8", 1"	**301-0215**	**301-0205**
6	1/2	1-1/8" to 1-1/2" by 16ths ,exclude 7/16"	**301-0206**	
8	1/2	9/16-1" by 16ths	**301-0218**	**301-0208**
8	1/2	1-1/16 to 1-1/2" by 16ths	**301-0288**	**301-0298**
10	1/2	9/16 to 1"by 16ths ,1-1/8",1-1/4"	**301-0210**	
12	1/2	9/16 to 1-1/4" by 16ths	**301-0212**	
13	1/2	17/32 to 1" by 16ths & 32nds	**301-0213**	
16	1/2	17/32 to 1" by 32nds	**301-0216**	
17	1/2	17/32 to 1-1/32" by 32nds	**301-0217**	
32	1/2	33/64 to 1" by 64ths	**301-0232**	
40	1/2	33/64" to 1" by 64ths & 1-1/16" to 1-1/2" by16ths	**301-0240**	
5	3/4	1,1-1/8,1-1/4,1-3/8,1-1/2"	**301-0225**	**301-0235**
6	3/4	7/8,1,1-1/8,1-1/4,1-3/8,1-1/2"	**301-2024**	
16	1/4	17/64 to 1/2" by 64ths	**301-0096**	
8	3/8	25/64 to 1/2" by 64ths	**301-0398**	

Inch Step Drill Sets

High Speed Steel



3 Piece Sets

Specification	HSS Order No.	TiN Coated Order No.
1/8-1/2", 3/16-1/2", 1/4-3/4" Blister Card	**331-3681**	**331-3682**

Metric Step Drill Sets

High Speed Steel



3 Piece Sets

Specification	Case	HSS Order No.	TiN Coated Order No.
4-12mm, 6-20mm, 6-30mm	Wooden	**331-3480**	**331-3482**
4-12mm, 6-20mm, 6-30mm	Metal	**331-3481**	**331-3483**

Drill Blank Sets

High Speed Steel, Ground



Pieces	Specification	Order No.
20	20pcs/set wire size blanks #61-80	**305-8320**
26	26pcs/set letter size blanks A to Z	**305-8326**
29	29pcs/set blanks 1/16'' to 1/2'' by 64ths	**305-8329**
60	60pcs/set wire size blanks 1 to 60	**305-8360**
115	115pcs/set (1/16-1/2" by 1/64ths,A-Z,# 1-#60)	**305-8315**

Masonry Drill Sets



Pieces	Specification	Order No.
5	4,5,6,7,8mm	**340-2000**
7	4,5,6,7,8,10,12mm	**340-2010**
8	3,4,5,6,7,8,9,10mm	**240-2020**

No Case

Specification	Order No.
4pcs/set 1/4,5/16,3/8,1/2"	**340-2004**
7pcs/set 1/8,3/16,1/4,5/16,3/8,7/16,1/2"	**340-2005**
6pcs/set 3/16,1/4,5/16,3/8,1/2,5/8"	**240-2006**
6pcs/set 1/4,5/16,3/8,1/2,5/8,3/4"	**240-2007**

Extra Long Drills

High Speed Steel, 118° Point



Dia.	Flute Length	OAL	Order No.
1/8"	5"	8"	**300-1008**
9/64	5	8	**300-1009**
5/32	5	8	**300-1010**
11/64	5	8	**300-1011**
3/16	5	8	**300-1012**
13/64	5	8	**300-1013**
7/32	5	8	**300-1014**
15/64	5	8	**300-1015**
1/4	5	8	**300-1016**
17/64	5	8	**300-1017**
9/32	5	8	**300-1018**
19/64	5	8	**300-1019**
5/16	5	8	**300-1020**
21/64	5	8	**300-1021**
11/32	5	8	**300-1022**
23/64	5	8	**300-1023**
3/8	5	8	**300-1024**
25/64	5	8	**300-1025**
13/32	5	8	**300-1026**
27/64	5	8	**300-1027**
7/16	5	8	**300-1028**
29/64	5	8	**300-1029**
15/32	5	8	**300-1030**
31/64	5	8	**300-1031**
1/2	5	8	**300-1032**
1/8	7	10	**300-1108**
9/64	7	10	**300-1109**
5/32	7	10	**300-1110**
11/64	7	10	**300-1111**
3/16	7	10	**300-1112**
13/64	7	10	**300-1113**
7/32	7	10	**300-1114**
15/64	7	10	**300-1115**
1/4	7	10	**300-1116**
17/64	7	10	**300-1117**
9/32	7	10	**300-1118**
19/64	7	10	**300-1119**
5/16	7	10	**300-1120**
21/64	7	10	**300-1121**
11/32	7	10	**300-1122**
23/64	7	10	**300-1123**
3/8	7	10	**300-1124**
25/64	7	10	**300-1125**
13/32	7	10	**300-1126**
27/64	7	10	**300-1127**
7/16	7	10	**300-1128**
29/64	7	10	**300-1129**
15/32	7	10	**300-1130**
31/64	7	10	**300-1131**
1/2	7	10	**300-1132**
9/16	8	10	**300-1136**
3/64	9	12	**300-1203**
1/8	9	12	**300-1208**
9/64	9	12	**300-1209**
5/32	9	12	**300-1210**
11/64	9	12	**300-1211**
3/16	9	12	**300-1212**
13/64	9	12	**300-1213**
7/32	9	12	**300-1214**
15/64	9	12	**300-1215**
1/4	9	12	**300-1216**
17/64	9	12	**300-1217**
9/32	9	12	**300-1218**
19/64	9	12	**300-1219**
5/16	9	12	**300-1220**
21/64	9	12	**300-1221**
11/32	9	12	**300-1222**
23/64	9	12	**300-1223**
3/8	9	12	**300-1224**
25/64	9	12	**300-1225**
13/32	9	12	**300-1226**
27/64	9	12	**300-1227**
7/16	9	12	**300-1228**
29/64	9	12	**300-1229**
15/32	9	12	**300-1230**
31/64	9	12	**300-1231**
1/2	9	12	**300-1232**
33/64	9	12	**300-1233**

Dia.	Flute Length	OAL	Order No.
17/32	9	12	**300-1234**
35/64	9	12	**300-1235**
9/16	9	12	**300-1236**
37/64	9	12	**300-1237**
19/32	9	12	**300-1238**
39/64	9	12	**300-1239**
5/8	9	12	**300-1240**
41/64	9	12	**300-1241**
21/32	9	12	**300-1242**
43/64	9	12	**300-1243**
11/16	9	12	**300-1244**
23/32	9	12	**300-1246**
3/4	9	12	**300-1248**
49/64	9	12	**300-1249**
25/32	9	12	**300-1250**
13/16	9	12	**300-1252**
27/32	9	12	**300-1254**
7/8	9	12	**300-1256**
29/32	9	12	**300-1258**
15/16	9	12	**300-1260**
31/32	9	12	**300-1262**
63/64	9	12	**300-1263**
1	9	12	**300-1264**
3/16	14	18	**300-1812**
13/64	14	18	**300-1813**
7/32	14	18	**300-1814**
15/64	14	18	**300-1815**
1/4	14	18	**300-1816**
17/64	14	18	**300-1817**
9/32	14	18	**300-1818**
19/64	14	18	**300-1819**
5/16	14	18	**300-1820**
21/64	14	18	**300-1821**
11/32	14	18	**300-1822**
23/64	14	18	**300-1823**
3/8	14	18	**300-1824**
25/64	14	18	**300-1825**
13/32	14	18	**300-1826**
27/64	14	18	**300-1827**
7/16	14	18	**300-1828**
29/64	14	18	**300-1829**
15/32	14	18	**300-1830**
31/64	14	18	**300-1831**
1/2	14	18	**300-1832**
33/64	14	18	**300-1833**
17/32	14	18	**300-1834**
35/64	14	18	**300-1835**
9/16	14	18	**300-1836**
37/64	14	18	**300-1837**
19/32	14	18	**300-1838**
39/64	14	18	**300-1839**
5/8	14	18	**300-1840**
21/32	14	18	**300-1842**
11/16	14	18	**300-1844**
3/4	14	18	**300-1248**
25/32	14	18	**300-1850**
16/16	14	18	**300-1852**
27/32	14	18	**300-1854**
55/64	14	18	**300-1855**
7/8	14	18	**300-1856**
15/16	14	18	**300-1860**
31/32	14	18	**300-1862**
1	14	18	**300-1854**
1-3/16	14	18	**300-1876**
3/8	18	24	**300-2424**
7/16	18	24	**300-2428**
1/2	18	24	**300-2432**
5/8	18	24	**300-2440**
11/16	18	24	**300-2444**
3/4	18	24	**300-2448**
1316	18	24	**300-2452**
7/8	18	24	**300-2456**
15/16	18	24	**300-2460**
1	18	24	**300-2464**
1-1/8	18	24	**300-2472**
1-3/16	18	24	**300-2476**
1-1/4	18	24	**300-2480**

Fast/Slow Spiral Jobber Length Drills

Fast HSS Ground, 118° Point, Bright Finish

- The helix angle(35° -40°). Right hand cutting direction.
- The combination of fast spiral and high helix angle as well as the wider flutes provide very efficient chip movement and ejection.
- Suited for soft nonferrous materials and alloys, such as magnesium, zinc alloys.

Slow HSS Ground, 118° Point, Bright Finish

- The helix angle(10° -12°) and wider flute design promotes better chip flow and ejection.
- The slow spiral helix also reduces the tendency for the drill to frab on entering or exiting the hole.



Letter Sizes

Size	Flute Length	OAL	Fast Order No.	Slow Order No.
A	2-5/8"	3-7/8"	**334-3701**	**334-4701**
B	2-3/4	4	**334-3702**	**334-4702**
C	2-3/4	4	**334-3703**	**334-4703**
D	2-3/4	4	**334-3704**	**334-4704**
E	2-3/4	4	**334-3705**	**334-4705**
F	2-7/8	4-1/8	**334-3706**	**334-4706**
G	2-7/8	4-1/8	**334-3707**	**334-4707**
H	2-7/8	4-1/8	**334-3708**	**334-4708**
I	2-7/8	4-1/8	**334-3709**	**334-4709**
J	2-7/8	4-1/8	**334-3710**	**334-4710**
K	2-15/16	4-1/4	**334-3711**	**334-4711**
L	2-15/16	4-1/4	**334-3712**	**334-4712**
M	3-1/16	4-3/8	**334-3713**	**334-4713**
N	3-1/16	4-3/8	**334-3714**	**334-4714**
O	3-3/16	4-1/2	**334-3715**	**334-4715**
P	3-5/16	4-5/8	**334-3716**	**334-4716**
Q	3-7/16	4-3/4	**334-3717**	**334-4717**
R	3-7/16	4-3/4	**334-3718**	**334-4718**
S	3-1/2	4-7/8	**334-3719**	**334-4719**
T	3-1/2	4-7/8	**334-3720**	**334-4720**
U	3-5/8	5	**334-3721**	**334-4721**
V	3-5/8	5	**334-3722**	**334-4722**
W	3-3/4	5-1/8	**334-3723**	**334-4723**
X	3-3/4	5-1/8	**334-3724**	**334-4724**
Y	3-7/8	5-1/4	**334-3725**	**334-4725**
Z	3-7/8	5-1/4	**334-3726**	**334-4726**

Fractional Sizes

Size	Flute Length	OAL	Fast Order No.	Slow Order No.
1/64"	3/16"	3/4"	**334-3501**	**334-4501**
1/32	1/2	1-3/8	**334-3502**	**334-4502**
3/64	3/4	1-3/4	**334-3503**	**334-4503**
1/16	7/8	1-7/8	**334-3504**	**334-4504**
5/64	1	2	**334-3505**	**334-4505**
3/32	1-1/4	2-1/4	**334-3506**	**334-4506**
7/64	1-1/2	2-5/8	**334-3507**	**334-4507**
1/8	1-5/8	2-3/4	**334-3508**	**334-4508**
9/64	1-3/4	2-7/8	**334-3509**	**334-4509**
5/32	2	3-1/8	**334-3510**	**334-4510**
11/64	2-1/8	3-1/4	**334-3511**	**334-4511**
3/16	2-5/16	3-1/2	**334-3512**	**334-4512**
13/64	2-7/16	3-5/8	**334-3513**	**334-4513**
7/32	2-1/2	3-3/4	**334-3514**	**334-4514**
15/64	2-5/8	3-7/8	**334-3515**	**334-4515**
1/4	2-3/4	4	**334-3516**	**334-4516**
17/64	2-7/8	4-1/8	**334-3517**	**334-4517**
9/32	2-15/16	4-1/4	**334-3518**	**334-4518**
19/64	3-1/16	4-3/8	**334-3519**	**334-4519**
5/16	3-3/16	4-1/2	**334-3520**	**334-4520**
21/64	3-5/16	4-5/8	**334-3521**	**334-4521**
11/32	3-7/16	4-3/4	**334-3522**	**334-4522**
23/64	3-1/2	4-7/8	**334-3523**	**334-4523**
3/8	3-5/8	5	**334-3524**	**334-4524**
25/64	3-3/4	5-1/8	**334-3525**	**334-4525**
13/32	3-7/8	5-1/4	**334-3526**	**334-4526**
27/64	3-15/16	5-3/8	**334-3527**	**334-4527**
7/16	4-1/16	5-1/2	**334-3528**	**334-4528**
29/64	4-3/16	5-5/8	**334-3529**	**334-4529**
15/32	4-5/16	5-3/4	**334-3530**	**334-4530**
31/64	4-3/8	5-7/8	**334-3531**	**334-4531**
1/2	4-1/2	6	**334-3532**	**334-4532**
33/64	4-13/16	6-5/8	**334-3533**	**334-4533**
17/32	4-13/16	6-5/8	**334-3534**	**334-4534**
35/64	4-13/16	6-5/8	**334-3535**	**334-4535**
9/16	4-13/16	6-5/8	**334-3536**	**334-4536**
37/64	4-13/16	6-5/8	**334-3537**	**334-4537**
19/32	5-3/16	7-1/8	**334-3538**	**334-4538**
39/64	5-3/16	7-1/8	**334-3539**	**334-4539**
5/8	5-3/16	7-1/8	**334-3540**	**334-4540**
41/64	5-3/16	7-1/8	**334-3541**	**334-4541**
21/32	5-3/16	7-1/8	**334-3542**	**334-4542**
43/64	5-5/8	7-5/8	**334-3543**	**334-4543**
11/16	5-5/8	7-5/8	**334-3544**	**334-4544**

Number Sizes

Size	Flute Length	OAL	Fast Order No.	Slow Order No.
#1	2-5/8"	3-7/8"	**334-3601**	**334-4601**
#2	2-5/8	3-7/8	**334-3602**	**334-4602**
#3	2-1/2	3-3/4	**334-3603**	**334-4603**
#4	2-1/2	3-3/4	**334-3604**	**334-4604**
#5	2-1/2	3-3/4	**334-3605**	**334-4605**
#6	2-1/2	3-3/4	**334-3606**	**334-4606**
#7	2-7/16	3-5/8	**334-3607**	**334-4607**
#8	2-7/16	3-5/8	**334-3608**	**334-4608**
#9	2-7/16	3-5/8	**334-3609**	**334-4609**
#10	2-7/16	3-5/8	**334-3610**	**334-4610**
#11	2-5/16	3-1/2	**334-3611**	**334-4611**
#12	2-5/16	3-1/2	**334-3612**	**334-4612**
#13	2-5/16	3-1/2	**334-3613**	**334-4613**
#14	2-3/16	3-3/8	**334-3614**	**334-4614**
#15	2-3/16	3-3/8	**334-3615**	**334-4615**
#16	2-3/16	3-3/8	**334-3616**	**334-4616**
#17	2-3/16	3-3/8	**334-3617**	**334-4617**
#18	2-1/8	3-1/4	**334-3618**	**334-4618**
#9	2-1/8	3-1/4	**334-3619**	**334-4619**
#20	2-1/8	3-1/4	**334-3620**	**334-4620**
#21	2-1/8	3-1/4	**334-3621**	**334-4621**
#22	2	3-1/8	**334-3622**	**334-4622**
#23	2	3-1/8	**334-3623**	**334-4623**
#24	2	3-1/8	**334-3624**	**334-4624**
#25	1-7/8	3	**334-3625**	**334-4625**
#26	1-7/8	3	**334-3626**	**334-4626**
#27	1-7/8	3	**334-3627**	**334-4627**
#28	1-3/4	2-7/8	**334-3628**	**334-4628**
#29	1-3/4	2-7/8	**334-3629**	**334-4629**
#30	1-5/8	2-3/4	**334-3630**	**334-4630**
#31	1-5/8	2-3/4	**334-3631**	**334-4631**
#32	1-5/8	2-3/4	**334-3632**	**334-4632**
#33	1-1/2	2-5/8	**334-3633**	**334-4633**
#34	1-1/2	2-5/8	**334-3634**	**334-4634**
#35	1-1/2	2-5/8	**334-3635**	**334-4635**
#36	1-7/16	2-1/2	**334-3636**	**334-4636**
#37	1-7/16	2-1/2	**334-3637**	**334-4637**
#38	1-7/16	2-1/2	**334-3638**	**334-4638**
#39	1-3/8	2-3/8	**334-3639**	**334-4639**
#40	1-3/8	2-3/8	**334-3640**	**334-4640**
#41	1-3/8	2-3/8	**334-3641**	**334-4641**
#42	1-1/4	2-1/4	**334-3642**	**334-4642**
#43	1-1/4	2-1/4	**334-3643**	**334-4643**
#44	1-1/8	2-1/8	**334-3644**	**334-4644**
#45	1-1/8	2-1/8	**334-3645**	**334-4645**
#46	1-1/8	2-1/8	**334-3646**	**334-4646**
#47	1	2	**334-3647**	**334-4647**
#48	1	2	**334-3648**	**334-4648**
#49	1	2	**334-3649**	**334-4649**
#50	1	2	**334-3650**	**334-4650**
#51	1	2	**334-3651**	**334-4651**
#52	7/8	1-7/8	**334-3652**	**334-4652**
#53	7/8	1-7/8	**334-3653**	**334-4653**
#54	7/8	1-7/8	**334-3654**	**334-4654**
#55	7/8	1-7/8	**334-3655**	**334-4655**
#56	3/4	1-3/4	**334-3656**	**334-4656**
#57	3/4	1-3/4	**334-3657**	**334-4657**
#58	11/16	1-5/8	**334-3658**	**334-4658**
#59	11/16	1-5/8	**334-3659**	**334-4659**
#60	11/16	1-5/8	**334-3660**	**334-4660**
#61	11/16	1-5/8	**334-3661**	**334-4661**
#62	5/8	1-1/2	**334-3662**	**334-4662**
#63	5/8	1-1/2	**334-3663**	**334-4663**
#64	5/8	1-1/2	**334-3664**	**334-4664**
#65	5/8	1-1/2	**334-3665**	**334-4665**
#66	1/2	1-3/8	**334-3666**	**334-4666**
#67	1/2	1-3/8	**334-3667**	**334-4667**
#68	1/2	1-3/8	**334-3668**	**334-4668**
#69	1/2	1-3/8	**334-3669**	**334-4669**
#70	3/8	1-1/4	**334-3670**	**334-4670**
#71	3/8	1-1/4	**334-3671**	**334-4671**
#72	5/16	1-1/8	**334-3672**	**334-4672**
#73	5/16	1-1/8	**334-3673**	**334-4673**
#74	1/4	1	**334-3674**	**334-4674**
#75	1/4	1	**334-3675**	**334-4675**
#76	3/16	7/8	**334-3676**	**334-4676**
#77	3/16	7/8	**334-3677**	**334-4677**
#78	3/16	7/8	**334-3678**	**334-4678**
#79	1/8	3/4	**334-3679**	**334-4679**
#80	1/8	3/4	**334-3680**	**334-4680**

Jobber Length Drills

High Speed Steel, 118° Point

- Right hand cutting direction.
- Suited for a wide range of materials.
- Features a standard helix.



Fractional Sizes

Size	Flute Length	OAL	Rolled Black Oxide Order No.	Ground Black Oxide Order No.	Ground Bright Order No.	Ground TiN-Coated Order No.
1/64"	3/16"	3/4"	234-4001	334-4001	334-3001	334-5001
1/32	1/2	1-3/8	234-4002	334-4002	334-3002	334-5002
3/64	3/4	1-3/4	234-4003	334-4003	334-3003	334-5003
1/16	7/8	1-7/8	234-4004	334-4004	334-3004	334-5004
5/64	1	2	234-4005	334-4005	334-3005	334-5005
3/32	1-1/4	2-1/4	234-4006	334-4006	334-3006	334-5006
7/64	1-1/2	2-5/8	234-4007	334-4007	334-3007	334-5007
1/8	1-5/8	2-3/4	234-4008	334-4008	334-3008	334-5008
9/64	1-3/4	2-7/8	234-4009	334-4009	334-3009	334-5009
5/32	2	3-1/8	234-4010	334-4010	334-3010	334-5010
11/64	2-1/8	3-1/4	234-4011	334-4011	334-3011	334-5011
3/16	2-5/16	3-1/2	234-4012	334-4012	334-3012	334-5012
13/64	2-7/16	3-5/8	234-4013	334-4013	334-3013	334-5013
7/32	2-1/2	3-3/4	234-4014	334-4014	334-3014	334-5014
15/64	2-5/8	3-7/8	234-4015	334-4015	334-3015	334-5015
1/4	2-3/4	4	234-4016	334-4016	334-3016	334-5016
17/64	2-7/8	4-1/8	234-4017	334-4017	334-3017	334-5017
9/32	2-15/16	4-1/4	234-4018	334-4018	334-3018	334-5018
19/64	3-1/16	4-3/8	234-4019	334-4019	334-3019	334-5019
5/16	3-3/16	4-1/2	234-4020	334-4020	334-3020	334-5020
21/64	3-5/16	4-5/8	234-4021	334-4021	334-3021	334-5021
11/32	3-7/16	4-3/4	234-4022	334-4022	334-3022	334-5022
23/64	3-1/2	4-7/8	234-4023	334-4023	334-3023	334-5023
3/8	3-5/8	5	234-4024	334-4024	334-3024	334-5024
25/64	3-3/4	5-1/8	234-4025	334-4025	334-3025	334-5025
13/32	3-7/8	5-1/4	234-4026	334-4026	334-3026	334-5026
27/64	3-15/16	5-3/8	234-4027	334-4027	334-3027	334-5027
7/16	4-1/16	5-1/2	234-4028	334-4028	334-3028	334-5028
29/64	4-3/16	5-5/8	234-4029	334-4029	334-3029	334-5029
15/32	4-5/16	5-3/4	234-4030	334-4030	334-3030	334-5030
31/64	4-3/8	5-7/8	234-4031	334-4031	334-3031	334-5031
1/2	4-1/2	6	234-4032	334-4032	334-3032	334-5032
33/64	4-13/16	6-5/8		334-4033	334-3033	334-5033
17/32	4-13/16	6-5/8		334-4034	334-3034	334-5034
35/64	4-13/16	6-5/8		334-4035	334-3035	334-5035
9/16	4-13/16	6-5/8		334-4036	334-3036	334-5036
37/64	4-13/16	6-5/8		334-4037	334-3037	334-5037
19/32	5-3/16	7-1/8		334-4038	334-3038	334-5038
39/64	5-3/16	7-1/8		334-4039	334-3039	334-5039
5/8	5-3/16	7-1/8		334-4040	334-3040	334-5040
41/64	5-3/16	7-1/8		334-4041	334-3041	334-5041
21/32	5-3/16	7-1/8		334-4042	334-3042	334-5042
43/64	5-5/8	7-5/8		334-4043	334-3043	334-5043
11/16	5-5/8	7-5/8		334-4044	334-3044	334-5044

Letter Sizes

Size	Flute Length	OAL	Rolled Black Oxide Order No.	Ground Black Oxide Order No.	Ground Bright Order No.	Ground TiN-Coated Order No.
A	2-5/8"	3-7/8"	234-4201	334-4201	334-3201	334-5201
B	2-3/4	4	234-4202	334-4202	334-3202	334-5202
C	2-3/4	4	234-4203	334-4203	334-3203	334-5203
D	2-3/4	4	234-4204	334-4204	334-3204	334-5204
E	2-3/4	4	234-4205	334-4205	334-3205	334-5205
F	2-7/8	4-1/8	234-4206	334-4206	334-3206	334-5206
G	2-7/8	4-1/8	234-4207	334-4207	334-3207	334-5207
H	2-7/8	4-1/8	234-4208	334-4208	334-3208	334-5208
I	2-7/8	4-1/8	234-4209	334-4209	334-3209	334-5209
J	2-7/8	4-1/8	234-4210	334-4210	334-3210	334-5210
K	2-15/16	4-1/4	234-4211	334-4211	334-3211	334-5211
L	2-15/16	4-1/4	234-4212	334-4212	334-3212	334-5212
M	3-1/16	4-3/8	234-4213	334-4213	334-3213	334-5213
N	3-1/16	4-3/8	234-4214	334-4214	334-3214	334-5214
O	3-3/16	4-1/2	234-4215	334-4215	334-3215	334-5215
P	3-5/16	4-5/8	234-4216	334-4216	334-3216	334-5216
Q	3-7/16	4-3/4	234-4217	334-4217	334-3217	334-5217
R	3-7/16	4-3/4	234-4218	334-4218	334-3218	334-5218
S	3-1/2	4-7/8	234-4219	334-4219	334-3219	334-5219
T	3-1/2	4-7/8	234-4220	334-4220	334-3220	334-5220
U	3-5/8	5	234-4221	334-4221	334-3221	334-5221
V	3-5/8	5	234-4222	334-4222	334-3222	334-5222
W	3-3/4	5-1/8	234-4223	334-4223	334-3223	334-5223
X	3-3/4	5-1/8	234-4224	334-4224	334-3224	334-5224
Y	3-7/8	5-1/4	234-4225	334-4225	334-3225	334-5225
Z	3-7/8	5-1/4	234-4226	334-4226	334-3226	334-5226

Number Sizes

Size	Flute Length	OAL	Rolled Black Oxide Order No.	Ground Black Oxide Order No.	Ground Bright Order No.	Ground TiN-Coated Order No.
#1	2-5/8"	3-7/8"	234-4101	334-4101	334-3101	334-5101
#2	2-5/8	3-7/8	234-4102	334-4102	334-3102	334-5102
#3	2-1/2	3-3/4	234-4103	334-4103	334-3103	334-5103
#4	2-1/2	3-3/4	234-4104	334-4104	334-3104	334-5104
#5	2-1/2	3-3/4	234-4105	334-4105	334-3105	334-5105
#6	2-1/2	3-3/4	234-4106	334-4106	334-3106	334-5106
#7	2-7/16	3-5/8	234-4107	334-4107	334-3107	334-5107
#8	2-7/16	3-5/8	234-4108	334-4108	334-3108	334-5108
#9	2-7/16	3-5/8	234-4109	334-4109	334-3109	334-5109
#10	2-7/16	3-5/8	234-4110	334-4110	334-3110	334-5110
#11	2-5/16	3-1/2	234-4111	334-4111	334-3111	334-5111
#12	2-5/16	3-1/2	234-4112	334-4112	334-3112	334-5112
#13	2-5/16	3-1/2	234-4113	334-4113	334-3113	334-5113
#14	2-3/16	3-3/8	234-4114	334-4114	334-3114	334-5114
#15	2-3/16	3-3/8	234-4115	334-4115	334-3115	334-5115
#16	2-3/16	3-3/8	234-4116	334-4116	334-3116	334-5116
#17	2-3/16	3-3/8	234-4117	334-4117	334-3117	334-5117
#18	2-1/8	3-1/4	234-4118	334-4118	334-3118	334-5118
#19	2-1/8	3-1/4	234-4119	334-4119	334-3119	334-5119
#20	2-1/8	3-1/4	234-4120	334-4120	334-3120	334-5120
#21	2-1/8	3-1/4	234-4121	334-4121	334-3121	334-5121
#22	2	3-1/8	234-4122	334-4122	334-3122	334-5122
#23	2	3-1/8	234-4123	334-4123	334-3123	334-5123
#24	2	3-1/8	234-4124	334-4124	334-3124	334-5124
#25	1-7/8	3	234-4125	334-4125	334-3125	334-5125
#26	1-7/8	3	234-4126	334-4126	334-3126	334-5126
#27	1-7/8	3	234-4127	334-4127	334-3127	334-5127
#28	1-3/4	2-7/8	234-4128	334-4128	334-3128	334-5128
#29	1-3/4	2-7/8	234-4129	334-4129	334-3129	334-5129
#30	1-5/8	2-3/4	234-4130	334-4130	334-3130	334-5130
#31	1-5/8	2-3/4	234-4131	334-4131	334-3131	334-5131
#32	1-5/8	2-3/4	234-4132	334-4132	334-3132	334-5132
#33	1-1/2	2-5/8	234-4133	334-4133	334-3133	334-5133
#34	1-1/2	2-5/8	234-4134	334-4134	334-3134	334-5134
#35	1-1/2	2-5/8	234-4135	334-4135	334-3135	334-5135
#36	1-7/16	2-1/2	234-4136	334-4136	334-3136	334-5136
#37	1-7/16	2-1/2	234-4137	334-4137	334-3137	334-5137
#38	1-7/16	2-1/2	234-4138	334-4138	334-3138	334-5138
#39	1-3/8	2-3/8	234-4139	334-4139	334-3139	334-5139
#40	1-3/8	2-3/8	234-4140	334-4140	334-3140	334-5140
#41	1-3/8	2-3/8	234-4141	334-4141	334-3141	334-5141
#42	1-1/4	2-1/4	234-4142	334-4142	334-3142	334-5142
#43	1-1/4	2-1/4	234-4143	334-4143	334-3143	334-5143
#44	1-1/8	2-1/8	234-4144	334-4144	334-3144	334-5144
#45	1-1/8	2-1/8	234-4145	334-4145	334-3145	334-5145
#46	1-1/8	2-1/8	234-4146	334-4146	334-3146	334-5146
#47	1	2	234-4147	334-4147	334-3147	334-5147
#48	1	2	234-4148	334-4148	334-3148	334-5148
#49	1	2	234-4149	334-4149	334-3149	334-5149
#50	1	2	234-4150	334-4150	334-3150	334-5150
#51	1	2	234-4151	334-4151	334-3151	334-5151
#52	7/8	1-7/8	234-4152	334-4152	334-3152	334-5152
#53	7/8	1-7/8	234-4153	334-4153	334-3153	334-5153
#54	7/8	1-7/8	234-4154	334-4154	334-3154	334-5154
#55	7/8	1-7/8	234-4155	334-4155	334-3155	334-5155
#56	3/4	1-3/4	234-4156	334-4156	334-3156	334-5156
#57	3/4	1-3/4	234-4157	334-4157	334-3157	334-5157
#58	11/16	1-5/8	234-4158	334-4158	334-3158	334-5158
#59	11/16	1-5/8	234-4159	334-4159	334-3159	334-5159
#60	11/16	1-5/8	234-4160	334-4160	334-3160	334-5160
#61	11/16	1-5/8	234-4161	334-4161	334-3161	334-5161
#62	5/8	1-1/2	234-4162	334-4162	334-3162	334-5162
#63	5/8	1-1/2	234-4163	334-4163	334-3163	334-5163
#64	5/8	1-1/2	234-4164	334-4164	334-3164	334-5164
#65	5/8	1-1/2	234-4165	334-4165	334-3165	334-5165
#66	1/2	1-3/8	234-4166	334-4166	334-3166	334-5166
#67	1/2	1-3/8	234-4167	334-4167	334-3167	334-5167
#68	1/2	1-3/8	234-4168	334-4168	334-3168	334-5168
#69	1/2	1-3/8	234-4169	334-4169	334-3169	334-5169
#70	3/8	1-1/4	234-4170	334-4170	334-3170	334-5170
#71	3/8	1-1/4	234-4171	334-4171	334-3171	334-5171
#72	5/16	1-1/8	234-4172	334-4172	334-3172	334-5172
#73	5/16	1-1/8	234-4173	334-4173	334-3173	334-5173
#74	1/4	1	234-4174	334-4174	334-3174	334-5174
#75	1/4	1	234-4175	334-4175	334-3175	334-5175
#76	3/16	7/8	234-4176	334-4176	334-3176	334-5176
#77	3/16	7/8	234-4177	334-4177	334-3177	334-5177
#78	3/16	7/8	234-4178	334-4178	334-3178	334-5178
#79	1/8	3/4	234-4179	334-4179	334-3179	334-5179
#80	1/8	3/4	234-4180	334-4180	334-3180	334-5180

Left Hand Jobber Drills

High Speed Steel, 118° Point

- Used extensively in screw machine operations and close multiple spindle operations where the spindles operate alternately left hand and right hand.
- Use requires left hand spindle rotation

Fractional Sizes

Size (in.)	Flute Length	OAL	Ground Bright Order No.
1/64"	3/16"	3/4	**234-9301**
1/32	1/2	1-3/8	**234-9302**
3/64	3/4	1-3/4	**234-9303**
1/16	7/8	1-7/8	**234-9304**
5/64	1	2	**234-9305**
3/32	1-1/4	2-1/4	**234-9306**
7/64	1-1/2	2-5/8	**234-9307**
1/8	1-5/8	2-3/4	**234-9308**
9/64	1-3/4	2-7/8	**234-9309**
5/32	2	3-1/8	**234-9310**
11/64	2-1/8	3-1/4	**234-9311**
3/16	2-5/16	3-1/2	**234-9312**
13-64	2-7/16	3-5/8	**234-9313**
7/32	2-1/2	3-3/4	**234-9314**
15/34	2-5/8	3-7/8	**234-9315**
1/4	2-3/4	4	**234-9316**
17/64	2-7/8	4-1/8	**234-9317**
9/32	2-15/16	4-1/4	**234-9318**
19/64	3-1/16	4-3/8	**234-9319**
5/16	3-3/16	4-1/2	**234-9320**
21/64	3-5/16	4-5/8	**234-9321**
11/32	3-7/16	4-3/4	**234-9322**
23/64	3-1/2	4-7/8	**234-9323**
3/8	3-5/8	5	**234-9324**
25/64	3-3/4	5-1/8	**234-9325**
13/32	3-7/8	5-1/4	**234-9326**
27/64	3-15/16	5-3/8	**234-9327**
7/16	4-1/16	5-1/2	**234-9328**
29/64	4-3/16	5-5/8	**234-9329**
15/62	4-5/16	5-3/4	**234-9330**
31/64	4-3/8	5-7/8	**234-9331**
1/2	4-1/2	6	**234-9332**

Letter Sizes

Size (in.)	Flute Length	OAL	Ground Bright Order No.
A	2-5/8"	3-7/8"	**234-9601**
B	2-3/4	4	**234-9602**
C	2-3/4	4	**234-9603**
D	2-3/4	4	**234-9604**
E	2-3/4	4	**234-9605**
F	2-7/8	4-1/8	**234-9606**
G	2-7/8	4-1/8	**234-9607**
H	2-7/8	4-1/8	**234-9608**
I	2-7/8	4-1/8	**234-9609**
J	2-7/8	4-1/8	**234-9610**
K	2-15/16	4-1/4	**234-9611**
L	2-15/16	4-1/4	**234-9612**
M	3-1/16	4-3/8	**234-9613**
N	3-1/16	4-3/8	**234-9614**
O	3-3/16	4-1/2	**234-9615**
P	3-5/16	4-5/8	**234-9616**
Q	3-7/16	4-3/4	**234-9617**
R	3-7/16	4-3/4	**234-9618**
S	3-1/2	4-7/8	**234-9619**
T	3-1/2	4-7/8	**234-9620**
U	3-5/8	5	**234-9621**
V	3-5/8	5	**234-9622**
W	3-3/4	5-1/8	**234-9623**
X	3-3/4	5-1/8	**234-9624**
Y	3-7/8	5-1/4	**234-9625**
Z	3-7/8	5-1/4	**234-9626**

NEW



Number Sizes

Size (in.)	Flute Length	OAL	Ground Bright Order No.
#1	2-5/8"	3-7/8"	**234-9501**
#2	2-5/8	3-7/8	**234-9502**
#3	2-1/2	3-3/4	**234-9503**
#4	2-1/2	3-3/4	**234-9504**
#5	2-1/2	3-3/4	**234-9505**
#6	2-1/2	3-3/4	**234-9506**
#7	2-7/16	3-5/8	**234-9507**
#8	2-7/16	3-5/8	**234-9508**
#9	2-7/16	3-5/8	**234-9509**
#10	2-7/16	3-5/8	**234-9510**
#11	2-5/16	3-1/2	**234-9511**
#12	2-5/16	3-1/2	**234-9512**
#13	2-5/16	3-1/2	**234-9513**
#14	2-3/16	3-3/8	**234-9514**
#15	2-3/16	3-3/8	**234-9515**
#16	2-3/16	3-3/8	**234-9516**
#17	2-3/16	3-3/8	**234-9517**
#18	2-1/8	3-1/4	**234-9518**
#19	2-1/8	3-1/4	**234-9519**
#20	2-1/8	3-1/4	**234-9520**
#21	2-1/8	3-1/4	**234-9521**
#22	2	3-1/8	**234-9522**
#23	2	3-1/8	**234-9523**
#24	2	3-1/8	**234-9524**
#25	1-7/8	3	**234-9525**
#26	1-7/8	3	**234-9526**
#27	1-7/8	3	**234-9527**
#28	1-3/4	2-7/8	**234-9528**
#29	1-3/4	2-7/8	**234-9529**
#30	1-5/8	2-3/4	**234-9530**
#31	1-5/8	2-3/4	**234-9531**
#32	1-5/8	2-3/4	**234-9532**
#33	1-1/2	2-5/8	**234-9533**
#34	1-1/2	2-5/8	**234-9534**
#35	1-1/2	2-5/8	**234-9535**
#36	1-7/16	2-1/2	**234-9536**
#37	1-7/16	2-1/2	**234-9537**
#38	1-7/16	2-1/2	**234-9538**
#39	1-3/8	2-3/8	**234-9539**
#40	1-3/8	2-3/8	**234-9540**
#41	1-3/8	2-3/8	**234-9541**
#42	1-1/4	2-1/4	**234-9542**
#43	1-1/4	2-1/4	**234-9543**
#44	1-1/8	2-1/8	**234-9544**
#45	1-1/8	2-1/8	**234-9545**
#46	1-1/8	2-1/8	**234-9546**
#47	1	2	**234-9547**
#48	1	2	**234-9548**
#49	1	2	**234-9549**
#50	1	2	**234-9550**
#51	1	2	**234-9551**
#52	7/8	1-7/8	**234-9552**
#53	7/8	1-7/8	**234-9553**
#54	7/8	1-7/8	**234-9554**
#55	7/8	1-7/8	**234-9555**
#56	3/4	1-3/4	**234-9556**
#57	3/4	1-3/4	**234-9557**
#58	11/16	1-5/8	**234-9558**
#59	11/16	1-5/8	**234-9559**
#60	11/16	1-5/8	**234-9560**
#61	11/16	1-5/8	**234-9561**
#62	5/8	1-1/2	**234-9562**
#63	5/8	1-1/2	**234-9563**
#64	5/8	1-1/2	**234-9564**
#65	5/8	1-1/2	**234-9565**
#66	1/2	1-3/8	**234-9566**
#67	1/2	1-3/8	**234-9567**
#68	1/2	1-3/8	**234-9568**
#69	1/2	1-3/8	**234-9569**
#70	3/8	1-1/4	**234-9570**
#71	3/8	1-1/4	**234-9571**
#72	5/16	1-1/8	**234-9572**
#73	5/16	1-1/8	**234-9573**
#74	1/4	1	**234-9574**
#75	1/4	1	**234-9575**
#76	3/16	7/8	**234-9576**
#77	3/16	7/8	**234-9577**
#78	3/16	7/8	**234-9578**
#79	1/8	3/4	**234-9579**
#80	1/8	3/4	**234-9580**

Metric Jobber Drills

HSS Ground, 118° Point, Oxide

Metric jobber drills are designed for general purpose use in a wide range of materials.



Size (mm)	Flute Length	OAL (mm)	Order No.	Size (mm)	Flute Length	OAL (mm)	Order No.	Size (mm)	Flute Length	OAL (mm)	Order No.	Size mm	Flute Length	OAL (mm)	Order No.
0.30	3	19	**309-0030**	2.90	41	70	**309-0290**	7.00	73	105	**309-0700**	11.30	106	143	**309-1130**
0.35	3	19	**309-0035**	2.95	41	70	**309-0295**	7.10	75	108	**309-0710**	11.40	106	143	**309-1140**
0.40	5	19	**309-0040**	3.00	41	70	**309-0300**	7.20	75	108	**309-0720**	11.50	106	143	**309-1150**
0.45	5	22	**309-0045**	3.05	41	70	**309-0305**	7.25	75	108	**309-0725**	11.60	106	143	**309-1160**
0.50	5	22	**309-0050**	3.10	41	70	**309-0310**	7.30	75	108	**309-0730**	11.70	106	143	**309-1170**
0.55	6	25	**309-0055**	3.15	41	70	**309-0315**	7.40	78	111	**309-0740**	11.75	106	143	**309-1175**
0.60	8	29	**309-0060**	3.20	41	70	**309-0320**	7.50	78	111	**309-0750**	11.80	110	146	**309-1180**
0.65	10	32	**309-0065**	3.25	41	70	**309-0325**	7.60	78	111	**309-0760**	11.90	110	146	**309-1190**
0.70	10	32	**309-0070**	3.30	44	73	**309-0330**	7.70	81	114	**309-0770**	12.00	111	149	**309-1200**
0.75	13	35	**309-0075**	3.40	44	73	**309-0340**	7.75	81	114	**309-0775**	12.10	111	149	**309-1210**
0.80	13	35	**309-0080**	3.50	44	73	**309-0350**	7.80	81	114	**309-0780**	12.20	111	149	**309-1220**
0.85	16	38	**309-0085**	3.60	48	76	**309-0360**	7.90	81	114	**309-0790**	12.25	111	149	**309-1225**
0.90	16	38	**309-0090**	3.70	48	76	**309-0370**	8.00	81	114	**309-0800**	12.30	111	149	**309-1230**
0.95	16	38	**309-0095**	3.75	48	76	**309-0375**	8.10	84	117	**309-0810**	12.40	111	149	**309-1240**
1.00	17	41	**309-0100**	3.80	48	76	**309-0380**	8.20	84	117	**309-0820**	12.50	114	152	**309-1250**
1.05	17	41	**309-0105**	3.90	51	79	**309-0390**	8.25	84	117	**309-0825**	12.60	114	152	**309-1260**
1.10	19	44	**309-0110**	4.00	54	83	**309-0400**	8.30	84	117	**309-0830**	12.70	114	152	**309-1270**
1.15	19	44	**309-0115**	4.10	54	83	**309-0410**	8.40	87	121	**309-0840**	12.75	114	152	**309-1275**
1.20	22	48	**309-0120**	4.20	54	83	**309-0420**	8.50	87	121	**309-0850**	12.80	114	152	**309-1280**
1.25	22	48	**309-0125**	4.25	54	83	**309-0425**	8.60	87	121	**309-0860**	12.90	114	152	**309-1290**
1.30	22	48	**309-0130**	4.30	54	83	**309-0430**	8.70	87	121	**309-0870**	13.00	114	152	**309-1300**
1.35	22	48	**309-0135**	4.40	56	86	**309-0440**	8.75	89	124	**309-0875**	13.10	114	152	**309-1310**
1.40	22	48	**309-0140**	4.50	56	86	**309-0450**	8.80	89	124	**309-0880**	13.20	122	168	**309-1320**
1.45	22	48	**309-0145**	4.60	56	86	**309-0460**	8.90	89	124	**309-0890**	13.25	122	168	**309-1325**
1.50	22	48	**309-0150**	4.70	59	89	**309-0470**	9.00	89	124	**309-0900**	13.30	122	168	**309-1330**
1.55	22	48	**309-0155**	4.75	59	89	**309-0475**	9.10	89	124	**309-0910**	13.40	122	168	**309-1340**
1.60	22	48	**309-0160**	4.80	59	89	**309-0480**	9.20	92	127	**309-0920**	13.50	122	168	**309-1350**
1.65	25	51	**309-0165**	4.90	62	92	**309-0490**	9.25	92	127	**309-0925**	13.60	122	168	**309-1360**
1.70	25	51	**309-0170**	5.00	62	92	**309-0500**	9.30	92	127	**309-0930**	13.70	122	168	**309-1370**
1.75	25	51	**309-0175**	5.10	62	92	**309-0510**	9.40	92	127	**309-0940**	13.75	122	168	**309-1375**
1.80	25	51	**309-0180**	5.20	64	95	**309-0520**	9.50	92	127	**309-0950**	13.80	122	168	**309-1380**
1.85	25	51	**309-0185**	5.25	64	95	**309-0525**	9.60	95	130	**309-0960**	13.90	122	168	**309-1390**
1.90	25	51	**309-0190**	5.30	64	95	**309-0530**	9.70	95	130	**309-0970**	14.00	122	168	**309-1400**
1.95	25	51	**309-0195**	5.40	64	95	**309-0540**	9.75	95	130	**309-0975**	14.25	122	168	**309-1425**
2.00	25	51	**309-0200**	5.50	64	95	**309-0550**	9.80	95	130	**309-0980**	14.50	122	168	**309-1450**
2.05	29	54	**309-0205**	5.60	67	98	**309-0560**	9.90	95	130	**309-0990**	14.75	132	181	**309-1475**
2.10	29	54	**309-0210**	5.70	67	98	**309-0570**	10.00	95	130	**309-1000**	15.00	132	181	**309-1500**
2.15	29	54	**309-0215**	5.75	67	98	**309-0575**	10.10	95	130	**309-1010**	15.25	132	181	**309-1525**
2.20	32	57	**309-0220**	5.80	67	98	**309-0580**	10.20	98	133	**309-1020**	15.50	132	181	**309-1550**
2.25	32	57	**309-0225**	5.90	67	98	**309-0590**	10.25	98	133	**309-1025**	15.75	132	181	**309-1575**
2.30	32	57	**309-0230**	6.00	70	102	**309-0600**	10.30	98	133	**309-1030**	16.00	132	181	**309-1600**
2.35	32	57	**309-0235**	6.10	70	102	**309-0610**	10.40	98	133	**309-1040**	16.25	132	181	**309-1625**
2.40	35	60	**309-0240**	6.20	70	102	**309-0620**	10.50	98	133	**309-1050**	16.50	132	181	**309-1650**
2.45	35	60	**309-0245**	6.25	70	102	**309-0625**	10.60	98	133	**309-1060**	17.00	143	194	**309-1700**
2.50	35	60	**309-0250**	6.30	70	102	**309-0630**	10.70	98	133	**309-1070**	17.50	143	194	**309-1750**
2.55	35	60	**309-0255**	6.40	73	105	**309-0640**	10.75	98	133	**309-1075**	18.00	143	194	**309-1800**
2.60	37	64	**309-0260**	6.50	73	105	**309-0650**	10.80	103	140	**309-1080**	18.50	115	205	**309-1850**
2.65	37	64	**309-0265**	6.60	73	105	**309-0660**	10.90	103	140	**309-1090**	19.00	115	205	**309-1900**
2.70	37	64	**309-0270**	6.70	73	105	**309-0670**	11.00	103	140	**309-1100**	19.50	210	215	**309-1950**
2.75	37	64	**309-0275**	6.75	73	105	**309-0675**	11.10	103	140	**309-1110**	20.00	210	215	**309-2000**
2.80	38	67	**309-0280**	6.80	73	105	**309-0680**	11.20	106	143	**309-1120**				
2.85	38	67	**309-0285**	6.90	73	105	**309-0690**	11.25	106	143	**309-1125**				

DIN338 Cobalt Jobber Length Drills

DIN Length, High Speed Steel, 135° Point, Fully Ground

- For general purpose portable and production drilling.
- Right hand cutting direction.
- Manufactured to DIN length.



Size (mm)	Flute Length mm(in.)	OAL mm(in.)	Order No.	Size (mm)	Flute Length mm(in.)	OAL mm(in.)	Order No.	Size (mm)	Flute Length mm(in.)	OAL mm(in.)	Order No.
.15	1.50(1/16)	19(3/4)	**332-0015**	3.00	33.00(1-5/16)	61(2-13/32)	**332-0300**	8.90	81.00(3-3/16)	125(4-29/32)	**332-0890**
.16	1.50(1/16)	19(3/4)	**332-0016**	3.10	36.00(1-7/16)	65(2-9/16)	**332-0310**	9.00	81.00(3-3/16)	125(4-29/32)	**332-0900**
.17	1.50(1/16)	19(3/4)	**332-0017**	3.20	36.00(1-7/16)	65(2-9/16)	**332-0320**	9.10	81.00(3-3/16)	125(4-29/32)	**332-0910**
.18	1.50(1/16)	19(3/4)	**332-0018**	3.25	36.00(1-7/16)	65(2-9/16)	**332-0325**	9.20	81.00(3-3/16)	125(4-29/32)	**332-0920**
.19	1.50(1/16)	19(3/4)	**332-0019**	3.30	36.00(1-7/16)	65(2-9/16)	**332-0330**	9.25	81.00(3-3/16)	125(4-29/32)	**332-0925**
.20	2.50(3/32)	19(3/4)	**332-0020**	3.40	39.00(1-17/32)	70(2-3/4)	**332-0340**	9.30	81.00(3-3/16)	125(4-29/32)	**332-0930**
.21	2.50(3/32)	19(3/4)	**332-0021**	3.50	39.00(1-17/32)	70(2-3/4)	**332-0350**	9.40	81.00(3-3/16)	125(4-29/32)	**332-0940**
.22	2.50(3/32)	19(3/4)	**332-0022**	3.60	39.00(1-17/32)	70(2-3/4)	**332-0360**	9.50	81.00(3-3/16)	125(4-29/32)	**332-0950**
.23	2.50(3/32)	19(3/4)	**332-0023**	3.70	39.00(1-17/32)	70(2-3/4)	**332-0370**	9.60	87.00(3-7/16)	133(5-1/4)	**332-0960**
.24	2.50(3/32)	19(3/4)	**332-0024**	3.75	39.00(1-17/32)	70(2-3/4)	**332-0375**	9.70	87.00(3-7/16)	133(5-1/4)	**332-0970**
.25	3.00(1/8)	19(3/4)	**332-0025**	3.80	43.00(1-11/16)	75(2-15/16)	**332-0380**	9.75	87.00(3-7/16)	133(5-1/4)	**332-0975**
.26	3.00(1/8)	19(3/4)	**332-0026**	3.90	43.00(1-11/16)	75(2-15/16)	**332-0390**	9.80	87.00(3-7/16)	133(5-1/4)	**332-0980**
.27	3.00(1/8)	19(3/4)	**332-0027**	4.00	43.00(1-11/16)	75(2-15/16)	**332-0400**	9.90	87.00(3-7/16)	133(5-1/4)	**332-0990**
.28	3.00(1/8)	19(3/4)	**332-0028**	4.10	43.00(1-11/16)	75(2-15/16)	**332-0410**	10.00	87.00(3-7/16)	133(5-1/4)	**332-1000**
.29	3.00(1/8)	19(3/4)	**332-0029**	4.20	43.00(1-11/16)	75(2-15/16)	**332-0420**	10.10	87.00(3-7/16)	133(5-1/4)	**332-1010**
.30	3.00(1/8)	19(3/4)	**332-0030**	4.25	43.00(1-11/16)	75(2-15/16)	**332-0425**	10.20	87.00(3-7/16)	133(5-1/4)	**332-1020**
.32	4.00(5/32)	19(3/4)	**332-0032**	4.30	47.00(1-27/32)	80(3-5/32)	**332-0430**	10.25	87.00(3-7/16)	133(5-1/4)	**332-1025**
.34	4.00(5/32)	19(3/4)	**332-0034**	4.40	47.00(1-27/32)	80(3-5/32)	**332-0440**	10.30	87.00(3-7/16)	133(5-1/4)	**332-1030**
.35	4.00(5/32)	19(3/4)	**332-0035**	4.50	47.00(1-27/32)	80(3-5/32)	**332-0450**	10.40	87.00(3-7/16)	133(5-1/4)	**332-1040**
.36	4.00(5/32)	19(3/4)	**332-0036**	4.60	47.00(1-27/32)	80(3-5/32)	**332-0460**	10.50	87.00(3-7/16)	133(5-1/4)	**332-1050**
.38	4.00(5/32)	19(3/4)	**332-0038**	4.70	47.00(1-27/32)	80(3-5/32)	**332-0470**	10.60	87.00(3-7/16)	133(5-1/4)	**332-1060**
.40	5.00(3/16)	20(25/32)	**332-0040**	4.75	47.00(1-27/32)	80(3-5/32)	**332-0475**	10.70	94.00(3-11/16)	142(5-19/32)	**332-1070**
.42	5.00(3/16)	20(25/32)	**332-0042**	4.80	52.00(2-1/16)	86(3-3/8)	**332-0480**	10.80	94.00(3-11/16)	142(5-19/32)	**332-1080**
.44	5.00(3/16)	20(25/32)	**332-0044**	4.90	52.00(2-1/16)	86(3-3/8)	**332-0490**	10.90	94.00(3-11/16)	142(5-19/32)	**332-1090**
.45	5.00(3/16)	20(25/32)	**332-0045**	5.00	52.00(2-1/16)	86(3-3/8)	**332-0500**	11.00	94.00(3-11/16)	142(5-19/32)	**332-1100**
.46	5.00(3/16)	20(25/32)	**332-0046**	5.10	52.00(2-1/16)	86(3-3/8)	**332-0510**	11.10	94.00(3-11/16)	142(5-19/32)	**332-1110**
.48	5.00(3/16)	20(25/32)	**332-0048**	5.20	52.00(2-1/16)	86(3-3/8)	**332-0520**	11.20	94.00(3-11/16)	142(5-19/32)	**332-1120**
.50	6.00(1/4)	22(7/8)	**332-0050**	5.25	52.00(2-1/16)	86(3-3/8)	**332-0525**	11.30	94.00(3-11/16)	142(5-19/32)	**332-1130**
.55	7.00(9/32)	24(15/16)	**332-0055**	5.30	52.00(2-1/16)	86(3-3/8)	**332-0530**	11.40	94.00(3-11/16)	142(5-19/32)	**332-1140**
.60	7.00(9/32)	24(15/16)	**332-0060**	5.40	57.00(2-1/4)	93(3-21/32)	**332-0540**	11.50	94.00(3-11/16)	142(5-19/32)	**332-1150**
.65	8.00(5/16)	26(1-1/32)	**332-0065**	5.50	57.00(2-1/4)	93(3-21/32)	**332-0550**	11.60	94.00(3-11/16)	142(5-19/32)	**332-1160**
.70	9.00(11/32)	28(1-3/32)	**332-0070**	5.60	57.00(2-1/4)	93(3-21/32)	**332-0560**	11.70	94.00(3-11/16)	142(5-19/32)	**332-1170**
.75	9.00(11/32)	28(1-3/32)	**332-0075**	5.70	57.00(2-1/4)	93(3-21/32)	**332-0570**	11.80	94.00(3-11/16)	142(5-19/32)	**332-1180**
.80	10.00(13/32)	30(1-3/16)	**332-0080**	5.75	57.00(2-1/4)	93(3-21/32)	**332-0575**	11.90	101.00(3-31/32)	151(5-15/16)	**332-1190**
.85	10.00(13/32)	30(1-3/16)	**332-0085**	5.80	57.00(2-1/4)	93(3-21/32)	**332-0580**	12.00	101.00(3-31/32)	151(5-15/16)	**332-1200**
.90	11.00(27/64)	32(1-1/4)	**332-0090**	5.90	57.00(2-1/4)	93(3-21/32)	**332-0590**	12.10	101.00(3-31/32)	151(5-15/16)	**332-1210**
.95	11.00(27/64)	32(1-1/4)	**332-0095**	6.00	57.00(2-1/4)	93(3-21/32)	**332-0600**	12.20	101.00(3-31/32)	151(5-15/16)	**332-1220**
1.00	12.00(15/32)	34(1-11/32)	**332-0100**	6.10	63.00(2-15/32)	101(3-21/32)	**332-0610**	12.30	101.00(3-31/32)	151(5-15/16)	**332-1230**
1.05	12.00(15/32)	34(1-11/32)	**332-0105**	6.20	63.00(2-15/32)	101(3-21/32)	**332-0620**	12.40	101.00(3-31/32)	151(5-15/16)	**332-1240**
1.10	14.00(9/16)	36(1-7/16)	**332-0110**	6.25	63.00(2-15/32)	101(3-21/32)	**332-0625**	12.50	101.00(3-31/32)	151(5-15/16)	**332-1250**
1.15	14.00(9/16)	36(1-7/16)	**332-0115**	6.30	63.00(2-15/32)	101(3-21/32)	**332-0630**	12.60	101.00(3-31/32)	151(5-15/16)	**332-1260**
1.20	16.00(5/8)	38(1-1/2)	**332-0120**	6.40	63.00(2-15/32)	101(3-21/32)	**332-0640**	12.70	101.00(3-31/32)	151(5-15/16)	**332-1270**
1.25	16.00(5/8)	38(1-1/2)	**332-0125**	6.50	63.00(2-15/32)	101(3-21/32)	**332-0650**	12.80	101.00(3-31/32)	151(5-15/16)	**332-1280**
1.30	16.00(5/8)	38(1-1/2)	**332-0130**	6.60	63.00(2-15/32)	101(3-21/32)	**332-0660**	12.90	101.00(3-31/32)	151(5-15/16)	**332-1290**
1.35	18.00(23/32)	40(1-9/16)	**332-0135**	6.70	63.00(2-15/32)	101(3-21/32)	**332-0670**	13.00	101.00(3-31/32)	151(5-15/16)	**332-1300**
1.40	18.00(23/32)	40(1-9/16)	**332-0140**	6.75	63.00(2-15/32)	101(3-21/32)	**332-0675**	13.10	101.00(3-31/32)	151(5-15/16)	**332-1310**
1.45	18.00(23/32)	40(1-9/16)	**332-0145**	6.80	63.00(2-15/32)	101(3-21/32)	**332-0680**	13.20	101.00(3-31/32)	151(5-15/16)	**332-1320**
1.50	18.00(23/32)	40(1-9/16)	**332-0150**	6.90	69.00(2-23/32)	109(4-9/32)	**332-0690**	13.30	108.00(4-1/4)	160(6-5/16)	**332-1330**
1.55	20.00(25/32)	43(1-11/16)	**332-0155**	7.00	69.00(2-23/32)	109(4-9/32)	**332-0700**	13.40	108.00(4-1/4)	160(6-5/16)	**332-1340**
1.60	20.00(25/32)	43(1-11/16)	**332-0160**	7.10	69.00(2-23/32)	109(4-9/32)	**332-0710**	13.50	108.00(4-1/4)	160(6-5/16)	**332-1350**
1.65	20.00(25/32)	43(1-11/16)	**332-0165**	7.20	69.00(2-23/32)	109(4-9/32)	**332-0720**	13.60	108.00(4-1/4)	160(6-5/16)	**332-1360**
1.70	20.00(25/32)	43(1-11/16)	**332-0170**	7.25	69.00(2-23/32)	109(4-9/32)	**332-0725**	13.70	108.00(4-1/4)	160(6-5/16)	**332-1370**
1.75	22.00(7/8)	46(1-13/16)	**332-0175**	7.30	69.00(2-23/32)	109(4-9/32)	**332-0730**	13.75	108.00(4-1/4)	160(6-5/16)	**332-1375**
1.80	22.00(7/8)	46(1-13/16)	**332-0180**	7.40	69.00(2-23/32)	109(4-9/32)	**332-0740**	13.80	108.00(4-1/4)	160(6-5/16)	**332-1380**
1.85	22.00(7/8)	46(1-13/16)	**332-0185**	7.50	69.00(2-23/32)	109(4-9/32)	**332-0750**	13.90	108.00(4-1/4)	160(6-5/16)	**332-1390**
1.90	22.00(7/8)	46(1-13/16)	**332-0190**	7.60	75.00(2-15/16)	117(4-19/32)	**332-0760**	14.00	108.00(4-1/4)	160(6-5/16)	**332-1400**
1.95	24.00(15/16)	49(1-15/16)	**332-0195**	7.70	75.00(2-15/16)	117(4-19/32)	**332-0770**	14.25	114.00(4-1/2)	169(6-5/8)	**332-1425**
2.00	24.00(15/16)	49(1-15/16)	**332-0200**	7.75	75.00(2-15/16)	117(4-19/32)	**332-0775**	14.50	114.00(4-1/2)	169(6-5/8)	**332-1450**
2.05	24.00(15/16)	49(1-15/16)	**332-0205**	7.80	75.00(2-15/16)	117(4-19/32)	**332-0780**	14.75	114.00(4-1/2)	169(6-5/8)	**332-1475**
2.10	24.00(15/16)	49(1-15/16)	**332-0210**	7.85	75.00(2-15/16)	117(4-19/32)	**332-0785**	15.00	114.00(4-1/2)	169(6-5/8)	**332-1500**
2.15	27.00(1-1/16)	53(2-3/32)	**332-0215**	7.90	75.00(2-15/16)	117(4-19/32)	**332-0790**	15.25	120.00(4-3/4)	178(7)	**332-1525**
2.20	27.00(1-1/16)	53(2-3/32)	**332-0220**	8.00	75.00(2-15/16)	117(4-19/32)	**332-0800**	15.50	120.00(4-3/4)	178(7)	**332-1550**
2.25	27.00(1-1/16)	53(2-3/32)	**332-0225**	8.10	75.00(2-15/16)	117(4-19/32)	**332-0810**	15.75	120.00(4-3/4)	178(7)	**332-1575**
2.30	27.00(1-1/16)	53(2-3/32)	**332-0230**	8.20	75.00(2-15/16)	117(4-19/32)	**332-0820**	16.00	120.00(4-3/4)	178(7)	**332-1600**
2.35	27.00(1-1/16)	53(2-3/32)	**332-0235**	8.25	75.00(2-15/16)	117(4-19/32)	**332-0825**	16.25	125.00(4-29/32)	184(7-1/4)	**332-1625**
2.40	30.00(1-3/16)	57(2-1/4)	**332-0240**	8.30	75.00(2-15/16)	117(4-19/32)	**332-0830**	16.50	125.00(4-29/32)	184(7-1/4)	**332-1650**
2.45	30.00(1-3/16)	57(2-1/4)	**332-0245**	8.40	75.00(2-15/16)	117(4-19/32)	**332-0840**	16.75	125.00(4-29/32)	184(7-1/4)	**332-1675**
2.50	30.00(1-3/16)	57(2-1/4)	**332-0250**	8.50	75.00(2-15/16)	117(4-19/32)	**332-0850**	17.00	125.00(4-29/32)	184(7-1/4)	**332-1700**
2.60	30.00(1-3/16)	57(2-1/4)	**332-0260**	8.60	81.00(3-3/16)	125(4-29/32)	**332-0860**	17.25	130.00(5-3/32)	191(7-17/32)	**332-1725**
2.70	33.00(1-5/16)	61(2-13/32)	**332-0270**	8.70	81.00(3-3/16)	125(4-29/32)	**332-0870**	17.50	130.00(5-3/32)	191(7-17/32)	**332-1750**
2.75	33.00(1-5/16)	61(2-13/32)	**332-0275**	8.75	81.00(3-3/16)	125(4-29/32)	**332-0875**	18.00	130.00(5-3/32)	191(7-17/32)	**332-1800**
2.80	33.00(1-5/16)	61(2-13/32)	**332-0280**	8.80	81.00(3-3/16)	125(4-29/32)	**332-0880**	20.00	140.00(5-16/32)	205(8-2/32)	**332-2000**
2.90	33.00(1-5/16)	61(2-13/32)	**332-0290**								

Split Point Jobber Length Drills

135° Split Point, Fully Ground

- Right hand cutting direction.
- 135° Split point is self-centering and reduces thrust.
- Heavy duty operations in stainless steel, titanium, inconel, and other hard metals.



Fractional Sizes

Size	Flute Length	OAL	HSS Black Oxide Order No.	HSS TiN-Coated Order No.	M35 Cobalt Order No.
1/64"	3/16"	3/4"	134-2001	134-1001	330-4001
1/32	1/2	1-3/8	134-2002	134-1002	330-4002
3/64	3/4	1-3/4	134-2003	134-1003	330-4003
1/16	7/8	1-7/8	134-2004	134-1004	330-4004
5/64	1	2	134-2005	134-1005	330-4005
3/32	1-1/4	2-1/4	134-2006	134-1006	330-4006
7/64	1-1/2	2-5/8	134-2007	134-1007	330-4007
1/8	1-5/8	2-3/4	134-2008	134-1008	330-4008
9/64	1-3/4	2-7/8	134-2009	134-1009	330-4009
5/32	2	3-1/8	134-2010	134-1010	330-4010
11/64	2-1/8	3-1/4	134-2011	134-1011	330-4011
3/16	2-5/16	3-1/2	134-2012	134-1012	330-4012
13/64	2-7/16	3-5/8	134-2013	134-1013	330-4013
7/32	2-1/2	3-3/4	134-2014	134-1014	330-4014
15/64	2-5/8	3-7/8	134-2015	134-1015	330-4015
1/4	2-3/4	4	134-2016	134-1016	330-4016
17/64	2-7/8	4-1/8	134-2017	134-1017	330-4017
9/32	2-15/16	4-1/4	134-2018	134-1018	330-4018
19/64	3-1/16	4-3/8	134-2019	134-1019	330-4019
5/16	3-3/16	4-1/2	134-2020	134-1020	330-4020
21/64	3-5/16	4-5/8	134-2021	134-1021	330-4021
11/32	3-7/16	4-3/4	134-2022	134-1022	330-4022
23/64	3-1/2	4-7/8	134-2023	134-1023	330-4023
3/8	3-5/8	5	134-2024	134-1024	330-4024
25/64	3-3/4	5-1/8	134-2025	134-1025	330-4025
13/32	3-7/8	5-1/4	134-2026	134-1026	330-4026
27/64	3-15/16	5-3/8	134-2027	134-1027	330-4027
7/16	4-1/16	5-1/2	134-2028	134-1028	330-4028
29/64	4-3/16	5-5/8	134-2029	134-1029	330-4029
15/32	4-5/16	5-3/4	134-2030	134-1030	330-4030
31/64	4-3/8	5-7/8	134-2031	134-1031	330-4031
1/2	4-1/2	6	134-2032	134-1032	330-4032
33/64	4-13/16	6-5/8	134-2033	134-1033	330-4033
17/32	4-13/16	6-5/8	134-2034	134-1034	330-4034
35/64	4-13/16	6-5/8	134-2035	134-1035	330-4035
9/16	4-13/16	6-5/8	134-2036	134-1036	330-4036
37/64	4-13/16	6-5/8	134-2037	134-1037	330-4037
19/32	5-3/16	7-1/8	134-2038	134-1038	330-7038
39/64	5-3/16	7-1/8	134-2039	134-1039	330-4039
5/8	5-3/16	7-1/8	134-2040	134-1040	330-4040
41/64	5-3/16	7-1/8	134-2041	134-1041	330-4041
21/32	5-3/16	7-1/8	134-2042	134-1042	330-4042
43/64	5-5/8	7-5/8	134-2043	134-1043	330-4043
11/16	5-5/8	7-5/8	134-2044	134-1044	330-4044

Letter Sizes

Size	Flute Length	OAL	HSS Black Oxide Order No.	HSS TiN-Coated Order No.	M35 Cobalt TiN-Coated Order No.
A	2-5/8"	3-7/8"	134-2201	134-1201	330-4201
B	2-3/4	4	134-2202	134-1202	330-4202
C	2-3/4	4	134-2203	134-1203	330-4203
D	2-3/4	4	134-2204	134-1204	330-4204
E	2-3/4	4	134-2205	134-1205	330-4205
F	2-7/8	4-1/8	134-2206	134-1206	330-4206
G	2-7/8	4-1/8	134-2207	134-1207	330-4207
H	2-7/8	4-1/8	134-2208	134-1208	330-4208
I	2-7/8	4-1/8	134-2209	134-1209	330-4209
J	2-7/8	4-1/8	134-2210	134-1210	330-4210
K	2-15/16	4-1/4	134-2211	134-1211	330-4211
L	2-15/16	4-1/4	134-2212	134-1212	330-4212
M	3-1/16	4-3/8	134-2213	134-1213	330-4213
N	3-1/16	4-3/8	134-2214	134-1214	330-4214
O	3-3/16	4-1/2	134-2215	134-1215	330-4215
P	3-3/16	4-5/8	134-2216	134-1216	330-4216
Q	3-7/16	4-3/4	134-2217	134-1217	330-4217
R	3-7/16	4-3/4	134-2218	134-1218	330-4218
S	3-1/2	4-7/8	134-2219	134-1219	330-4219
T	3-1/2	4-7/8	134-2220	134-1220	330-4220
U	3-5/8	5	134-2221	134-1221	330-4221
V	3-5/8	5	134-2222	134-1222	330-4222
W	3-3/4	5-1/8	134-2223	134-1223	330-4223
X	3-3/4	5-1/8	134-2224	134-1224	330-4224
Y	3-7/8	5-1/4	134-2225	134-1225	330-4225
Z	3-7/8	5-1/4	134-2226	134-1226	330-4226

Number Sizes

Sze	Flute Length	OAL	HSS Black Oxide Order No.	HSS TiN-Coated Order No.	M35 Cobalt Order No.
#1	2-5/8"	3-7/8"	134-2101	134-1101	330-4101
#2	2-5/8	3-7/8	134-2102	134-1102	330-4102
#3	2-1/2	3-3/4	134-2103	134-1103	330-4103
#4	2-1/2	3-3/4	134-2104	134-1104	330-4104
#5	2-1/2	3-3/4	134-2105	134-1105	330-4105
#6	2-1/2	3-3/4	134-2106	134-1106	330-4106
#7	2-7/16	3-5/8	134-2107	134-1107	330-4107
#8	2-7/16	3-5/8	134-2108	134-1108	330-4108
#9	2-7/16	3-5/8	134-2109	134-1109	330-4109
#10	2-7/16	3-5/8	134-2110	134-1110	330-4110
#11	2-5/16	3-1/2	134-2111	134-1111	330-4111
#12	2-5/16	3-1/2	134-2112	134-1112	330-4112
#13	2-5/16	3-1/2	134-2113	134-1113	330-4113
#14	2-3/16	3-3/8	134-2114	134-1114	330-4114
#15	2-3/16	3-3/8	134-2115	134-1115	330-4115
#16	2-3/16	3-3/8	134-2116	134-1116	330-4116
#17	2-3/16	3-3/8	134-2117	134-1117	330-4117
#18	2-1/8	3-1/4	134-2118	134-1118	330-4118
#19	2-1/8	3-1/4	134-2119	134-1119	330-4119
#20	2-1/8	3-1/4	134-2120	134-1120	330-4120
#21	2-1/8	3-1/4	134-2121	134-1121	330-4121
#22	2	3-1/8	134-2122	134-1122	330-4122
#23	2	3-1/8	134-2123	134-1123	330-4123
#24	2	3-1/8	134-2124	134-1124	330-4124
#25	1-7/8	3	134-2125	134-1125	330-4125
#26	1-7/8	3	134-2126	134-1126	330-4126
#27	1-7/8	3	134-2127	134-1127	330-4127
#28	1-3/4	2-7/8	134-2128	134-1128	330-4128
#29	1-3/4	2-7/8	134-2129	134-1129	330-4129
#30	1-5/8	2-3/4	134-2130	134-1130	330-4130
#31	1-5/8	2-3/4	134-2131	134-1131	330-4131
#32	1-5/8	2-3/4	134-2132	134-1132	330-4132
#33	1-1/2	2-5/8	134-2133	134-1133	330-4133
#34	1-1/2	2-5/8	134-2134	134-1134	330-4134
#35	1-1/2	2-5/8	134-2135	134-1135	330-4135
#36	1-7/16	2-1/2	134-2136	134-1136	330-4136
#37	1-7/16	2-1/2	134-2137	134-1137	330-4137
#38	1-7/16	2-1/2	134-2138	134-1138	330-4138
#39	1-3/8	2-3/8	134-2139	134-1139	330-4139
#40	1-3/8	2-3/8	134-2140	134-1140	330-4140
#41	1-3/8	2-3/8	134-2141	134-1141	330-4141
#42	1-1/4	2-1/4	134-2142	134-1142	330-4142
#43	1-1/4	2-1/4	134-2143	134-1143	330-4143
#44	1-1/8	2-1/8	134-2144	134-1144	330-4144
#45	1-1/8	2-1/8	134-2145	134-1145	330-4145
#46	1-1/8	2-1/8	134-2146	134-1146	330-4146
#47	1	2	134-2147	134-1147	330-4147
#48	1	2	134-2148	134-1148	330-4148
#49	1	2	134-2149	134-1149	330-4149
#50	1	2	134-2150	134-1150	330-4150
#51	1	2	134-2151	134-1151	330-4151
#52	7/8	1-7/8	134-2152	134-1152	330-4152
#53	7/8	1-7/8	134-2153	134-1153	330-4153
#54	7/8	1-7/8	134-2154	134-1154	330-4154
#55	7/8	1-7/8	134-2155	134-1155	330-4155
#56	3/4	1-3/4	134-2156	134-1156	330-4156
#57	3/4	1-3/4	134-2157	134-1157	330-4157
#58	11/16	1-5/8	134-2158	134-1158	330-4158
#59	11/16	1-5/8	134-2159	134-1159	330-4159
#60	11/16	1-5/8	134-2160	134-1160	330-4160
#61	11/16	1-5/8	134-2161	134-1161	330-4161
#62	5/8	1-1/2	134-2162	134-1162	330-4162
#63	5/8	1-1/2	134-2163	134-1163	330-4163
#64	5/8	1-1/2	134-2164	134-1164	330-4164
#65	5/8	1-1/2	134-2165	134-1165	330-4165
#66	1/2	1-3/8	134-2166	134-1166	330-4166
#67	1/2	1-3/8	134-2167	134-1167	330-4167
#68	1/2	1-3/8	134-2168	134-1168	330-4168
#69	1/2	1-3/8	134-2169	134-1169	330-4169
#70	3/8	1-1/4	134-2170	134-1170	330-4170
#71	3/8	1-1/4	134-2171	134-1171	330-4171
#72	5/16	1-1/8	134-2172	134-1172	330-4172
#73	5/16	1-1/8	134-2173	134-1173	330-4173
#74	1/4	1-1/8	134-2174	134-1174	330-4174
#75	1/4	1-1/8	134-2175	134-1175	330-4175
#76	3/16	7/8	134-2176	134-1176	330-4176
#77	3/16	7/8	134-2177	134-1177	330-4177
#78	3/16	7/8	134-2178	134-1178	330-4178
#79	1/8	3/4	134-2179	134-1179	330-4179
#80	1/8	3/4	134-2180	134-1180	330-4180

Jobber Length Drills

118° , Ground

- Right hand cutting direction.
- Heavy duty operations in stainless steel, titanium, inconel, and other hard metals.

NEW



Fractional Sizes

Size	Flute Length	OAL	TiCN-Coated Order No.	TiALN-Coated Order No.
1/64"	3/16"	3/4"	335-3001	335-4001
1/32	1/2	1-3/8	335-3002	335-4002
3/64	3/4	1-3/4	335-3003	335-4003
1/16	7/8	1-7/8	335-3004	335-4004
5/64	1	2	335-3005	335-4005
3/32	1-1/4	2-1/4	335-3006	335-4006
7/64	1-1/2	2-5/8	335-3007	335-4007
1/8	1-5/8	2-3/4	335-3008	335-4008
9/64	1-3/4	2-7/8	335-3009	335-4009
5/32	2	3-1/8	335-3010	335-4010
11/64	2-1/8	3-1/4	335-3011	335-4011
3/16	2-5/16	3-1/2	335-3012	335-4012
13/64	2-7/16	3-5/8	335-3013	335-4013
7/32	2-1/2	3-3/4	335-3014	335-4014
15/64	2-5/8	3-7/8	335-3015	335-4015
1/4	2-3/4	4	335-3016	335-4016
17/64	2-7/8	4-1/8	335-3017	335-4017
9/32	2-15/16	4-1/4	335-3018	335-4018
19/64	3-1/16	4-3/8	335-3019	335-4019
5/16	3-3/16	4-1/2	335-3020	335-4020
21/64	3-5/16	4-5/8	335-3021	335-4021
11/32	3-7/16	4-3/4	335-3022	335-4022
23/64	3-1/2	4-7/8	335-3023	335-4023
3/8	3-5/8	5	335-3024	335-4024
25/64	3-3/4	5-1/8	335-3025	335-4025
13/32	3-7/8	5-1/4	335-3026	335-4026
27/64	3-15/16	5-3/8	335-3027	335-4027
7/16	4-1/16	5-1/2	335-3028	335-4028
29/64	4-3/16	5-5/8	335-3029	335-4029
15/32	4-5/16	5-3/4	335-3030	335-4030
31/64	4-3/8	5-7/8	335-3031	335-4031
1/2	4-1/2	6	335-3032	335-4032
33/64	4-13/16	6-5/8	335-3033	335-4033
17/32	4-13/16	6-5/8	335-3034	335-4034
35/64	4-13/16	6-5/8	335-3035	335-4035
9/16	4-13/16	6-5/8	335-3036	335-4036
37/64	4-13/16	6-5/8	335-3037	335-4037
19/32	5-3/16	7-1/8	335-3038	335-4038
39/64	5-3/16	7-1/8	335-3039	335-4039
5/8	5-3/16	7-1/8	335-3040	335-4040
41/64	5-3/16	7-1/8	335-3041	335-4041
21/32	5-3/16	7-1/8	335-3042	335-4042
43/64	5-5/8	7-5/8	335-3043	335-4043
11/16	5-5/8	7-5/8	335-3044	335-4044

Letter Sizes

Size	Flute Length	OAL	TiCN-Coated Order No.	TiALN-Coated Order No.
A	2-5/8"	3-7/8"	335-3201	335-4201
B	2-3/4	4	335-3202	335-4202
C	2-3/4	4	335-3203	335-4203
D	2-3/4	4	335-3204	335-4204
E	2-3/4	4	335-3205	335-4205
F	2-7/8	4-1/8	335-3206	335-4206
G	2-7/8	4-1/8	335-3207	335-4207
H	2-7/8	4-1/8	335-3208	335-4208
I	2-7/8	4-1/8	335-3209	335-4209
J	2-7/8	4-1/8	335-3210	335-4210
K	2-15/16	4-1/4	335-3211	335-4211
L	2-15/16	4-1/4	335-3212	335-4212
M	3-1/16	4-3/8	335-3213	335-4213
N	3-1/16	4-3/8	335-3214	335-4214
O	3-3/16	4-1/2	335-3215	335-4215
P	3-3/16	4-5/8	335-3216	335-4216
Q	3-7/16	4-3/4	335-3217	335-4217
R	3-7/16	4-3/4	335-3218	335-4218
S	3-1/2	4-7/8	335-3219	335-4219
T	3-1/2	4-7/8	335-3220	335-4220
U	3-5/8	5	335-3221	335-4221
V	3-5/8	5	335-3222	335-4222
W	3-3/4	5-1/8	335-3223	335-4223
X	3-3/4	5-1/8	335-3224	335-4224
Y	3-7/8	5-1/4	335-3225	335-4225
Z	3-7/8	5-1/4	335-3226	335-4226

Number Sizes

Sze	Flute Length	OAL	TiCN-Coated Order No.	TiALN-Coated Order No.
#1	2-5/8"	3-7/8"	335-3101	335-4101
#2	2-5/8	3-7/8	335-3102	335-4102
#3	2-1/2	3-3/4	335-3103	335-4103
#4	2-1/2	3-3/4	335-3104	335-4104
#5	2-1/2	3-3/4	335-3105	335-4105
#6	2-1/2	3-3/4	335-3106	335-4106
#7	2-7/16	3-5/8	335-3107	335-4107
#8	2-7/16	3-5/8	335-3108	335-4108
#9	2-7/16	3-5/8	335-3109	335-4109
#10	2-7/16	3-5/8	335-3110	335-4110
#11	2-5/16	3-1/2	335-3111	335-4111
#12	2-5/16	3-1/2	335-3112	335-4112
#13	2-5/16	3-1/2	335-3113	335-4113
#14	2-3/16	3-3/8	335-3114	335-4114
#15	2-3/16	3-3/8	335-3115	335-4115
#16	2-3/16	3-3/8	335-3116	335-4116
#17	2-3/16	3-3/8	335-3117	335-4117
#18	2-1/8	3-1/4	335-3118	335-4118
#19	2-1/8	3-1/4	335-3119	335-4119
#20	2-1/8	3-1/4	335-3120	335-4120
#21	2-1/8	3-1/4	335-3121	335-4120
#22	2	3-1/8	335-3122	335-4122
#23	2	3-1/8	335-3123	335-4123
#24	2	3-1/8	335-3124	335-4124
#25	1-7/8	3	335-3125	335-4125
#26	1-7/8	3	335-3126	335-4126
#27	1-7/8	3	335-3127	335-4127
#28	1-3/4	2-7/8	335-3128	335-4128
#29	1-3/4	2-7/8	335-3129	335-4129
#30	1-5/8	2-3/4	335-3130	335-4130
#31	1-5/8	2-3/4	335-3131	335-4131
#32	1-5/8	2-3/4	335-3132	335-4132
#33	1-1/2	2-5/8	335-3133	335-4133
#34	1-1/2	2-5/8	335-3134	335-4134
#35	1-1/2	2-5/8	335-3135	335-4135
#36	1-7/16	2-1/2	335-3136	335-4136
#37	1-7/16	2-1/2	335-3137	335-4137
#38	1-7/16	2-1/2	335-3138	335-4138
#39	1-3/8	2-3/8	335-3139	335-4139
#40	1-3/8	2-3/8	335-3140	335-4140
#41	1-3/8	2-3/8	335-3141	335-4141
#42	1-1/4	2-1/4	335-3142	335-4142
#43	1-1/4	2-1/4	335-3143	335-4143
#44	1-1/8	2-1/8	335-3144	335-4144
#45	1-1/8	2-1/8	335-3145	335-4145
#46	1-1/8	2-1/8	335-3146	335-4146
#47	1	2	335-3147	335-4147
#48	1	2	335-3147	335-4148
#49	1	2	335-3149	335-4149
#50	1	2	335-3150	335-4150
#51	1	2	335-3151	335-4151
#52	7/8	1-7/8	335-3152	335-4152
#53	7/8	1-7/8	335-3153	335-4153
#54	7/8	1-7/8	335-3154	335-4154
#55	7/8	1-7/8	335-3155	335-4155
#56	3/4	1-3/4	335-3156	331-4156
#57	3/4	1-3/4	335-3157	331-4157
#58	11/16	1-5/8	335-3158	331-4158
#59	11/16	1-5/8	335-3159	331-4159
#60	11/16	1-5/8	335-3160	331-4160
#61	11/16	1-5/8	335-3161	335-4161
#62	5/8	1-1/2	335-3162	335-4162
#63	5/8	1-1/2	335-3163	335-4163
#64	5/8	1-1/2	335-3164	335-4164
#65	5/8	1-1/2	335-3165	335-4165
#66	1/2	1-3/8	335-3166	335-4166
#67	1/2	1-3/8	335-3167	335-4167
#68	1/2	1-3/8	335-3168	335-4168
#69	1/2	1-3/8	335-3169	335-4169
#70	3/8	1-1/4	335-3170	335-4170
#71	3/8	1-1/4	335-3171	335-4171
#72	5/16	1-1/8	335-3172	335-4172
#73	5/16	1-1/8	335-3173	335-4173
#74	1/4	1-1/8	335-3174	335-4174
#75	1/4	1-1/8	335-3175	335-4175
#76	3/16	7/8	335-3176	335-4176
#77	3/16	7/8	335-3177	335-4177
#78	3/16	7/8	335-3178	335-4178
#79	1/8	3/4	335-3179	335-4179
#80	1/8	3/4	335-3180	335-4180

Screw Machine Drills

Ground, 135° Split Point, Right Hand



- Primarily for use in screw machines.
- Ideal medium duty portable or machine drilling of low tensile strength materials.
- 135 deg split point drills are self-centering and reduce “walking” at the drill point.
- Heavy-duty-short length provides increased rigidity.

Fractional Sizes

Size	Flute Length	OAL	HSS Black Oxide Order No.	HSS Bright Order No.	HSS TiN-Coated Order No.	M35 Cobalt Ground Order No.
3/64”	1/2”	1-3/8”	**334-1003**	**227-8003**	**227-2003**	**330-1003**
1/16	5/8	1-5/8	**334-1004**	**227-8004**	**227-2004**	**330-1004**
5/64	11/16	1-11/16	**334-1005**	**227-8005**	**227-2005**	**330-1005**
3/32	3/4	1-3/4	**334-1006**	**227-8006**	**227-2006**	**330-1006**
7/64	13/64	1-13/16	**334-1007**	**227-8007**	**227-2007**	**330-1007**
1/8	7/8	1-7/8	**334-1008**	**227-8008**	**227-2008**	**330-1008**
9/64	15/16	1-15/16	**334-1009**	**227-8009**	**227-2009**	**330-1009**
5/32	1	2-1/16	**334-1010**	**227-8010**	**227-2010**	**330-1010**
11/64	1-1/16	2-1/8	**334-1011**	**227-8011**	**227-2011**	**330-1011**
3/16	1-1/8	2-3/16	**334-1012**	**227-8012**	**227-2012**	**330-1012**
13/64	1-3/16	2-1/4	**334-1013**	**227-8013**	**227-2013**	**330-1013**
7/32	1-1/4	2-3/8	**334-1014**	**227-8014**	**227-2014**	**330-1014**
15/64	1-5/16	2-7/16	**334-1015**	**227-8015**	**227-2015**	**330-1015**
1/4	1-3/8	2-1/2	**334-1016**	**227-8016**	**227-2016**	**330-1016**
17/64	1-7/16	2-5/8	**334-1017**	**227-8017**	**227-2017**	**330-1017**
9/32	1-1/2	2-11/16	**334-1018**	**227-8018**	**227-2018**	**330-1018**
19/64	1-9/16	2-3/4	**334-1019**	**227-8019**	**227-2019**	**330-1019**
5/16	1-5/8	2-13/16	**334-1020**	**227-8020**	**227-2020**	**330-1020**
21/64	1-11/16	2-15/16	**334-1021**	**227-8021**	**227-2021**	**330-1021**
11/32	1-11/16	3	**334-1022**	**227-8022**	**227-2022**	**330-1022**
23/64	1-3/4	3-1/16	**334-1023**	**227-8023**	**227-2023**	**330-1023**
3/8	1-13/16	3-1/8	**334-1024**	**227-8024**	**227-2024**	**330-1024**
25/64	1-7/8	3-1/4	**334-1025**	**227-8025**	**227-2025**	**330-1025**
13/32	1-15/16	3-5/16	**334-1026**	**227-8026**	**227-2026**	**330-1026**
27/64	2	3-3/8	**334-1027**	**227-8027**	**227-2027**	**330-1027**
7/16	2-1/16	3-7/16	**334-1028**	**227-8028**	**227-2028**	**330-1028**
29/64	2-1/8	3-9/16	**334-1029**	**227-8029**	**227-2029**	**330-1029**
15/32	2-1/8	3-5/8	**334-1030**	**227-8030**	**227-2030**	**330-1030**
31/64	2-3/16	3-11/16	**334-1031**	**227-8031**	**227-2031**	**330-1031**
1/2	2-1/4	3-3/4	**334-1032**	**227-8032**	**227-2032**	**330-1032**
33/64	2-3/8	3-7/8	**334-1033**	**227-8033**	**227-2033**	**330-1033**
17/32	2-3/8	3-7/8	**334-1034**	**227-8034**	**227-2034**	**330-1034**
35/64	2-1/2	4	**334-1035**	**227-8035**	**227-2035**	**330-1035**
9/16	2-1/2	4	**334-1036**	**227-8036**	**227-2036**	**330-1036**
37/64	2-5/8	4-1/8	**334-1037**	**227-8037**	**227-2037**	**330-1037**
19/32	2-5/8	4-1/8	**334-1038**	**227-8038**	**227-2038**	**330-1038**
39/64	2-3/4	4-1/4	**334-1039**	**227-8039**	**227-2039**	**330-1039**
5/8	2-3/4	4-1/4	**334-1040**	**227-8040**	**227-2040**	**330-1040**
41/64	2-7/8	4-1/2	**334-1041**	**227-8041**	**227-2041**	**330-1041**
21/32	2-7/8	4-1/2	**334-1042**	**227-8042**	**227-2042**	**330-1042**
43/64	2-7/8	4-5/8	**334-1043**	**227-8043**	**227-2043**	**330-1043**
11/16	2-7/8	4-5/8	**334-1044**	**227-8044**	**227-2044**	**330-1044**
45/64	3	4-3/4	**334-1045**	**227-8045**	**227-2045**	**330-1045**
23/32	3	4-3/4	**334-1046**	**227-8046**	**227-2046**	**330-1046**
47/64	3-1/8	5	**334-1047**	**227-8047**	**227-2047**	**330-1047**
3/4	3-1/8	5	**334-1048**	**227-8048**	**227-2048**	**330-1048**
49/64	3-1/4	5-1/8	**334-1049**	**227-8049**	**227-2049**	**330-1049**
25/32	3-1/4	5-1/8	**334-1050**	**227-8050**	**227-2050**	**330-1050**
51/64	3-3/8	5-1/4	**334-1051**	**227-8051**	**227-2051**	**330-1051**
13/16	3-3/8	5-1/4	**334-1052**	**227-8052**	**227-2052**	**330-1052**
53/64	3-1/2	5-3/8	**334-1053**	**227-8053**	**227-2053**	**330-1053**
27/32	3-1/2	5-3/8	**334-1054**	**227-8054**	**227-2054**	**330-1054**
55/64	3-1/2	5-1/2	**334-1055**	**227-8055**	**227-2055**	**330-1055**
7/8	3-1/2	5-1/2	**334-1056**	**227-8056**	**227-2056**	**330-1056**
57/64	3-5/8	5-5/8	**334-1057**	**227-8057**	**227-2057**	**330-1057**
29/32	3-5/8	5-5/8	**334-1058**	**227-8058**	**227-2058**	**330-1058**

Fractional Sizes

Size	Flute Length	OAL	HSS Black Oxide Order No.	HSS Bright Order No.	HSS TiN-Coated Order No.	M35 Cobalt Ground Order No.
59/64”	3-3/4”	5-3/4”	**334-1059**	**227-8059**	**227-2059**	**330-1059**
15/16	3-3/4	5-3/4	**334-1060**	**227-8060**	**227-2060**	**330-1060**
61/64	3-7/8	5-7/8	**334-1061**	**227-8061**	**227-2061**	**330-1061**
31/32	3-7/8	5-7/8	**334-1062**	**227-8062**	**227-2062**	**330-1062**
63/64	4	6	**334-1063**	**227-8063**	**227-2063**	**330-1063**
1	4	6	**334-2100**	**227-8064**	**227-2064**	**330-1064**
1-1/16	4	6-1/4	**334-1104**	**227-8104**	**227-2104**	**330-1104**
1-1/8	4	6-3/8	**334-1108**	**227-8108**	**227-2108**	**330-1108**
1-3/16	4-1/4	6-5/8	**334-1112**	**227-8112**	**227-2112**	**330-1112**
1-1/4	4-3/8	6-3/4	**334-1116**	**227-8116**	**227-2116**	**330-1116**
1-5/16	4-3/8	7	**334-1120**	**227-8120**	**227-2120**	**330-1120**
1-3/8	4-1/2	7-1/8	**334-1124**	**227-8124**	**227-2124**	**330-1124**
1-7/16	4-3/4	7-3/8	**334-1128**	**227-8128**	**227-2128**	**330-1128**
1-1/2	4-7/8	7-1/2	**334-1132**	**227-8132**	**227-2132**	**330-1132**
1-9/16	4-7/8	7-3/4	**334-1136**	**227-8136**	**227-2136**	**330-1136**
1-5/8	4-7/8	7-3/4	**334-1140**	**227-8140**	**227-2140**	**330-1140**
1-11/16	5-1/8	8	**334-1144**	**227-8144**	**227-2144**	**330-1144**
1-3/4	5-1/8	8	**334-1148**	**227-8148**	**227-2148**	**330-1148**
1-13/16	5-3/8	8-1/4	**334-1152**	**227-8152**	**227-2152**	**330-1152**
1-7/8	5-3/8	8-1/4	**334-1156**	**227-8156**	**227-2156**	**330-1156**
1-15/16	5-5/8	8-1/2	**334-1160**	**227-8160**	**227-2160**	**330-1160**
2	5-5/8	8-1/2	**334-1164**	**227-8164**	**227-2164**	**330-1164**

Letter Sizes

Size	Flute Length	OAL	HSS Black Oxide Order No.	HSS Bright Order No.	HSS TiN-Coated Order No.	M35 Cobalt Order No.
A	1-5/16"	2-7/16”	**334-1301**	**227-8301**	**227-2301**	**330-1301**
B	1-3/8	2-1/2	**334-1302**	**227-8302**	**227-2302**	**330-1302**
C	1-3/8	2-1/2	**334-1303**	**227-8303**	**227-2303**	**330-1303**
D	1-3/8	2-1/2	**334-1304**	**227-8304**	**227-2304**	**330-1304**
E	1-3/8	2-1/2	**334-1305**	**227-8305**	**227-2305**	**330-1305**
F	1-7/16	2-5/8	**334-1306**	**227-8306**	**227-2306**	**330-1306**
G	1-7/16	2-5/8	**334-1307**	**227-8307**	**227-2307**	**330-1307**
H	1-1/2	2-11/16	**334-1308**	**227-8308**	**227-2308**	**330-1308**
I	1-1/2	2-11/16	**334-1309**	**227-8309**	**227-2309**	**330-1309**
J	1-1/2	2-11/16	**334-1310**	**227-8310**	**227-2310**	**330-1310**
K	1-1/2	2-11/16	**334-1311**	**227-8311**	**227-2311**	**330-1311**
L	1-9/16	2-3/4	**334-1312**	**227-8312**	**227-2312**	**330-1312**
M	1-9/16	2-3/4	**334-1313**	**227-8313**	**227-2313**	**330-1313**
N	1-5/8	2-13/16	**334-1314**	**227-8314**	**227-2314**	**330-1314**
O	1-11/16	2-15/16	**334-1315**	**227-8315**	**227-2315**	**330-1315**
P	1-11/16	2-15/16	**334-1316**	**227-8316**	**227-2316**	**330-1316**
Q	1-11/16	3	**334-1317**	**227-8317**	**227-2317**	**330-1317**
R	1-11/16	3	**334-1318**	**227-8318**	**227-2318**	**330-1318**
S	1-3/4	3-1/16	**334-1319**	**227-8319**	**227-2319**	**330-1319**
T	1-3/4	3-1/16	**334-1320**	**227-8320**	**227-2320**	**330-1320**
U	1-13/16	3-1/8	**334-1321**	**227-8321**	**227-2321**	**330-1321**
V	1-7/8	3-1/4	**334-1322**	**227-8322**	**227-2322**	**330-1322**
W	1-7/8	3-1/4	**334-1323**	**227-8323**	**227-2323**	**330-1323**
X	1-15/16	3-5/16	**334-1324**	**227-8324**	**227-2324**	**330-1324**
Y	1-15/16	3-5/16	**334-1325**	**227-8325**	**227-2325**	**330-1325**
Z	2	3-3/8	**334-1326**	**227-8326**	**227-2326**	**330-1326**

Screw Machine Drills Continued
Ground, 135° Split Point, Right Hand



Number Sizes

Size	Flute Length	OAL	Ground Black Oxide Order No.	Ground Bright Order No.	Ground TiN-Coated Order No.	M35 Cobalt Ground Order No.
#1	1-5/16"	2-7/16"	334-1201	227-8201	227-2201	330-1201
#2	1-5/16	2-7/16	334-1202	227-8202	227-2202	330-1202
#3	1-1/4	2-3/8	334-1203	227-8203	227-2203	330-1203
#4	1-1/4	2-3/8	334-1204	227-8204	227-2204	330-1204
#5	1-1/4	2-3/8	334-1205	227-8205	227-2205	330-1205
#6	1-1/4	2-3/8	334-1206	227-8206	227-2206	330-1206
#7	1-3/16	2-1/4	334-1207	227-8207	227-2207	330-1207
#8	1-3/16	2-1/4	334-1208	227-8208	227-2208	330-1208
#9	1-3/16	2-1/4	334-1209	227-8209	227-2209	330-1209
#10	1-3/16	2-1/4	334-1210	227-8210	227-2210	330-1210
#11	1-3/16	2-1/4	334-1211	227-8211	227-2211	330-1211
#12	1-3/16	2-1/4	334-1212	227-8212	227-2212	330-1212
#13	1-1/8	-3/16	334-1213	227-8213	227-2213	330-1213
#14	1-1/8	2-3/16	334-1214	227-8214	227-2214	330-1214
#15	1-1/8	2-3/16	334-1215	227-8215	227-2215	330-1215
#16	1-1/8	2-3/16	334-1216	227-8216	227-2216	330-1216
#17	1-1/8	2-3/16	334-1217	227-8217	227-2217	330-1217
#18	1-1/16	2-1/8	334-1218	227-8218	227-2218	330-1218
#19	1-1/16	2-1/8	334-1219	227-8219	227-2219	330-1219
#20	1-1/16	2-1/8	334-1220	227-8220	227-2220	330-1220
#21	1-1/16	2-1/8	334-1221	227-8221	227-2221	330-1221
#22	1-1/16	2-1/8	334-1222	227-8222	227-2222	330-1222
#23	1	2-1/16	334-1223	227-8223	227-2223	330-1223
#24	1	2-1/16	334-1224	227-8224	227-2224	330-1224
#25	1	2-1/16	334-1225	227-8225	227-2225	330-1225
#26	1	2-1/16	334-1226	227-8226	227-2226	330-1226
#27	1	2-1/16	334-1227	227-8227	227-2227	330-1227
#28	15/16	1-15/16	334-1228	227-8228	227-2228	330-1228
#29	15/16	1-15/16	334-1229	227-8229	227-2229	330-1229
#30	15/16	1-15/16	334-1230	227-8230	227-2230	330-1230
#31	7/8	1-7/8	334-1231	227-8231	227-2231	330-1231
#32	7/8	1-7/8	334-1232	227-8232	227-2232	330-1232
#33	7/8	1-7/8	334-1233	227-8233	227-2233	330-1233
#34	7/8	1-7/8	334-1234	227-8234	227-2234	330-1234
#35	7/8	1-7/8	334-1235	227-8235	227-2235	330-1235
#36	13/16	1-13/16	334-1236	227-8236	227-2236	330-1236
#37	13/16	1-13/16	334-1237	227-8237	227-2237	330-1237
#38	13/16	1-13/16	334-1238	227-8238	227-2238	330-1238
#39	13/16	1-13/16	334-1239	227-8239	227-2239	330-1239
#40	13/16	1-13/16	334-1240	227-8240	227-2240	330-1240
#41	13/16	1-13/16	334-1241	227-8241	227-2241	330-1241
#42	3/4	1-3/4	334-1242	227-8242	227-2242	330-1242
#43	3/4	1-3/4	334-1243	227-8243	227-2243	330-1243
#44	3/4	1-3/4	334-1244	227-8244	227-2244	330-1244
#45	3/4	1-3/4	334-1245	227-8245	227-2245	330-1245
#46	3/4	1-3/4	334-1246	227-8246	227-2246	330-1246
#47	3/4	1-3/4	334-1247	227-8247	227-2247	330-1247
#48	11/16	1-11/16	334-1248	227-8248	227-2248	330-1248
#49	11/16	1-11/16	334-1249	227-8249	227-2249	330-1249
#50	11/16	1-11/16	334-1250	227-8250	227-2250	330-1250
#51	11/16	1-11/16	334-1251	227-8251	227-2251	330-1251
#52	11/16	1-11/16	334-1252	227-8252	227-2252	330-1252
#53	5/8	1-5/8	334-1253	227-8253	227-2253	330-1253
#54	5/8	1-5/8	334-1254	227-8254	227-2254	330-1254
#55	5/8	1-5/8	334-1255	227-8255	227-2255	330-1255
#56	1/2	1-3/8	334-1256	227-8256	227-2256	330-1256
#57	1/2	1-3/8	334-1257	227-8257	227-2257	330-1257
#58	1/2	1-3/8	334-1258	227-8258	227-2258	330-1258
#59	1/2	1-3/8	334-1259	227-8259	227-2259	330-1259
#60	1/2	1-3/8	334-1260	227-8260	227-2260	330-1260

Metric Cobalt Screw Machine Drills
DIN 1897, M35 HSS, 135° Split Point, Ground

- Primarily for use in screw machines.
- Ideal medium duty portable or machine drilling of low tensile strength materials.
- 135° split point drills are self-centering and reduce "walking" at the drill point.
- Heavy-duty-short length provides increased rigidity.

Size (mm)	Flute Length (mm)	OAL (mm)	Order No.	Size (mm)	Flute Length (mm)	OAL (mm)	Order No.
1.0	6	26	330-6010	5.9	28	66	330-6059
1.1	7	28	330-6011	6.0	28	66	330-6060
1.2	8	30	330-6012	6.1	31	70	330-6061
1.3	8	30	330-6013	6.2	31	70	330-6062
1.4	9	32	330-6014	6.3	31	70	330-6063
1.5	9	32	330-6015	6.4	31	70	330-6064
1.6	10	34	330-6016	6.5	31	70	330-6065
1.7	10	34	330-6017	6.6	34	74	330-6066
1.8	11	36	330-6018	6.7	34	74	330-6067
1.9	11	36	330-6019	6.8	34	74	330-6068
2.0	12	38	330-6020	6.9	34	74	330-6069
2.1	12	38	330-6021	7.0	34	74	330-6070
2.2	13	40	330-6022	7.1	34	74	330-6071
2.3	13	40	330-6023	7.2	34	74	330-6072
2.4	14	43	330-6024	7.3	34	74	330-6073
2.5	14	43	330-6025	7.4	34	74	330-6074
2.6	14	43	330-6026	7.5	34	74	330-6075
2.7	16	46	330-6027	7.6	37	79	330-6076
2.8	16	46	330-6028	7.7	37	79	330-6077
2.9	16	46	330-6029	7.8	37	79	330-6078
3.0	16	46	330-6030	7.9	37	79	330-6079
3.1	18	49	330-6031	8.0	37	79	330-6080
3.2	18	49	330-6032	8.25	37	79	330-6082
3.25	18	49	330-6133	8.5	37	79	330-6085
3.3	18	49	330-6033	8.7	40	84	330-6087
3.4	20	52	330-6034	9.0	40	84	330-6090
3.5	20	52	330-6035	9.3	40	84	330-6093
3.6	20	52	330-6036	9.4	40	84	330-6094
3.7	20	52	330-6037	9.5	43	89	330-6095
3.8	22	55	330-6038	9.6	43	89	330-6096
3.9	22	55	330-6039	9.8	43	89	330-6098
4.0	22	55	330-6040	9.9	43	89	330-6099
4.1	22	55	330-6041	10.0	43	89	330-6100
4.2	22	55	330-6042	10.1	43	89	330-6101
4.3	24	58	330-6043	10.2	43	89	330-6102
4.4	24	58	330-6044	10.4	43	89	330-6104
4.5	24	58	330-6045	10.5	43	89	330-6105
4.6	24	58	330-6046	10.7	47	95	330-6107
4.7	24	58	330-6047	11.0	47	95	330-6110
4.8	26	62	330-6048	11.1	47	95	330-6111
4.9	26	62	330-6049	11.5	47	95	330-6115
5.0	26	62	330-6050	11.9	47	95	330-6119
5.1	26	62	330-6051	12.0	51	102	330-6120
5.2	26	62	330-6052	12.3	51	102	330-6123
5.3	26	62	330-6053	12.4	51	102	330-6124
5.4	28	66	330-6054	12.5	51	102	330-6125
5.5	28	66	330-6055	13.0	51	102	330-6130
5.6	28	66	330-6056	13.5	54	107	330-6135
5.7	28	66	330-6057	14.0	54	107	330-6140
5.8	28	66	330-6058				

Split Point Parabolic Jobber Drills

HSS, 135° Point, Ground

- Drill holes to 15 diameters holes
- Eliminate peck feeding
- Rapid chip disposal
- Increased coolant flow

Fractional Sizes

Size	Flute Length	OAL	Bright Order No.	Black Oxide Order No.	TiN-Coated Order No.
1/64"	3/16"	3/4"	134-8301	134-8001	134-9001
1/32	1/2	1-3/8	134-8302	134-8002	134-9002
3/64	3/4	1-3/4	134-8303	134-8003	134-9003
1/16	7/8	1-7/8	134-8304	134-8004	134-9004
5/64	1	2	134-8305	134-8005	134-9005
3/32	1-1/4	2-1/4	134-8306	134-8006	134-9006
7/64	1-1/2	2-5/8	134-8307	134-8007	134-9007
1/8	1-5/8	2-3/4	134-8308	134-8008	134-9008
9/64	1-3/4	2-7/8	134-8309	134-8009	134-9009
5/32	2	3-1/8	134-8310	134-8010	134-9010
11/64	2-1/8	3-1/4	134-8311	134-8011	134-9011
3/16	2-5/16	3-1/2	134-8312	134-8012	134-9012
13/64	2-7/16	3-5/8	134-8313	134-8013	134-9013
7/32	2-1/2	3-3/4	134-8314	134-8014	134-9014
15/64	2-5/8	3-7/8	134-8315	134-8015	134-9015
1/4	2-3/4	4	134-8316	134-8016	134-9016
17/64	2-7/8	4-1/8	134-8317	134-8017	134-9017
9/32	2-15/16	4-1/4	134-8318	134-8018	134-9018
19/64	3-1/16	4-3/8	134-8319	134-8019	134-9019
5/16	3-3/16	4-1/2	134-8320	134-8020	134-9020
21/64	3-5/16	4-5/8	134-8321	134-8021	134-9021
11/32	3-7/16	4-3/4	134-8322	134-8022	134-9022
23/64	3-1/2	4-7/8	134-8323	134-8023	134-9023
3/8	3-5/8	5	134-8324	134-8024	134-9024
25/64	3-3/4	5-1/8	134-8325	134-8025	134-9025
13/32	3-7/8	5-1/4	134-8326	134-8026	134-9026
27/64	3-15/16	5-3/8	134-8327	134-8027	134-9027
7/16	4-1/16	5-1/2	134-8328	134-8028	134-9028
29/64	4-3/16	5-5/8	134-8329	134-8029	134-9029
15/32	4-5/16	5-3/4	134-8330	134-8030	134-9030
31/64	4-3/8	5-7/8	134-8331	134-8031	134-9031
1/2	4-1/2	6	134-8332	134-8032	134-9032
33/64	4-13/16	6-5/8	134-8333	134-8033	134-9033
17/32	4-13/16	6-5/8	134-8334	134-8034	134-9034
35/64	4-13/16	6-5/8	134-8335	134-8035	134-9035
9/16	4-13/16	6-5/8	134-8336	134-8036	134-9036
37/64	4-13/16	6-5/8	134-8337	134-8037	134-9037
19/32	5-3/16	7-1/8	134-8338	134-8038	134-9038
39/64	5-3/16	7-1/8	134-8339	134-8039	134-9039
5/8	5-3/16	7-1/8	134-8340	134-8040	134-9040
41/64	5-3/16	7-1/8	134-8341	134-8041	134-9041
21/32	5-3/16	7-1/8	134-8342	134-8042	134-9042
43/64	5-5/8	7-5/8	134-8343	134-8043	134-9043
11/16	5-5/8	7-5/8	134-8344	134-8044	134-9044

Letter Sizes

Size	Flute Length	OAL	Bright Order No.	Black Oxide Order No.	TiN-Coated Order No.
A	2-5/8"	3-7/8"	134-8801	134-8201	134-9201
B	2-3/4	4	134-8802	134-8202	134-9202
C	2-3/4	4	134-8803	134-8203	134-9203
D	2-3/4	4	134-8804	134-8204	134-9204
E	2-3/4	4	134-8805	134-8205	134-9205
F	2-7/8	4-1/8	134-8806	134-8206	134-9206
G	2-7/8	4-1/8	134-8807	134-8207	134-9207
H	2-7/8	4-1/8	134-8808	134-8208	134-9208
I	2-7/8	4-1/8	134-8809	134-8209	134-9209
J	2-7/8	4-1/8	134-8810	134-8210	134-9210
K	2-15/16	4-1/4	134-8811	134-8211	134-9211
L	2-15/16	4-1/4	134-8812	134-8212	134-9212
M	3-1/16	4-3/8	134-8813	134-8213	134-9213
N	3-1/16	4-3/8	134-8814	134-8214	134-9214
O	3-3/16	4-1/2	134-8815	134-8215	134-9215
P	3-5/16	4-5/8	134-8816	134-8216	134-9216
Q	3-7/16	4-3/4	134-8817	134-8217	134-9217
R	3-7/16	4-3/4	134-8818	134-8218	134-9218
S	3-1/2	4-7/8	134-8819	134-8219	134-9219
T	3-1/2	4-7/8	134-8820	134-8220	134-9220
U	3-5/8	5	134-8821	134-8221	134-9221
V	3-5/8	5	134-8822	134-8222	134-9222
W	3-3/4	5-1/8	134-8823	134-8223	134-9223
X	3-3/4	5-1/8	134-8824	134-8224	134-9224
Y	3-7/8	5-1/4	134-8825	134-8225	134-9225
Z	3-7/8	5-1/4	134-8826	134-8226	134-9226



Number Sizes

Size	Flute Length	OAL	\Bright Order No.	Black Oxide Order No.	TiN-Coated Order No.
#1	2-5/8"	3-7/8"	134-8401	134-8101	134-9101
#2	2-5/8	3-7/8	134-8402	134-8102	134-9102
#3	2-1/2	3-3/4	134-8403	134-8103	134-9103
#4	2-1/2	3-3/4	134-8404	134-8104	134-9104
#5	2-1/2	3-3/4	134-8405	134-8105	134-9105
#6	2-1/2	3-3/4	134-8406	134-8106	134-9106
#7	2-7/16	3-5/8	134-8407	134-8107	134-9107
#8	2-7/16	3-5/8	134-8408	134-8108	134-9108
#9	2-7/16	3-5/8	134-8409	134-8109	134-9109
#10	2-7/16	3-5/8	134-8410	134-8110	134-9110
#11	2-5/16	3-1/2	134-8411	134-8111	134-8111
#12	2-5/16	3-1/2	134-8412	134-8112	134-9112
#13	2-5/16	3-1/2	134-8413	134-8113	134-9113
#14	2-3/16	3-3/8	134-8414	134-8114	134-9114
#15	2-3/16	3-3/8	134-8415	134-8115	134-9115
#16	2-3/16	3-3/8	134-8416	134-8116	134-9116
#17	2-3/16	3-3/8	134-8417	134-8117	134-9117
#18	2-1/8	3-1/4	134-8418	134-8118	134-9118
#19	2-1/8	3-1/4	134-8419	134-8119	134-9119
#20	2-1/8	3-1/4	134-8420	134-8120	134-9120
#21	2-1/8	3-1/4	134-8421	134-8121	134-9121
#22	2	3-1/8	134-8422	134-8122	134-9122
#23	2	3-1/8	134-8423	134-8123	134-9123
#24	2	3-1/8	134-8424	134-8124	134-9124
#25	1-7/8	3	134-8425	134-8125	134-9125
#26	1-7/8	3	134-8426	134-8126	134-9126
#27	1-7/8	3	134-8427	134-8127	134-9127
#28	1-3/4	2-7/8	134-8428	134-8128	134-9128
#29	1-3/4	2-7/8	134-8429	134-8129	134-9129
#30	1-5/8	2-3/4	134-8430	134-8130	134-9130
#31	1-5/8	2-3/4	134-8431	134-8131	134-9131
#32	1-5/8	2-3/4	134-8432	134-8132	134-9132
#33	1-1/2	2-5/8	134-8433	134-8133	134-9133
#34	1-1/2	2-5/8	134-8434	134-8134	134-9134
#35	1-1/2	2-5/8	134-8435	134-8135	134-9135
#36	1-7/16	2-1/2	134-8436	134-8136	134-9136
#37	1-7/16	2-1/2	134-8437	134-8137	134-8137
#38	1-7/16	2-1/2	134-8438	134-8138	134-8138
#39	1-3/8	2-3/8	134-8439	134-8139	134-9139
#40	1-3/8	2-3/8	134-8440	134-8140	134-9140
#41	1-3/8	2-3/8	134-8441	134-8141	134-9141
#42	1-1/4	2-1/4	134-8442	134-8142	134-9142
#43	1-1/4	2-1/4	134-8443	134-8143	134-9143
#44	1-1/8	2-1/8	134-8444	134-8144	134-9144
#45	1-1/8	2-1/8	134-8445	134-8145	134-9145
#46	1-1/8	2-1/8	134-8446	134-8146	134-9146
#47	1	2	134-8447	134-8147	134-9147
#48	1	2	134-8448	134-8148	134-9148
#49	1	2	134-8449	134-8149	134-9149
#50	1	2	134-8450	134-8150	134-9150
#51	1	2	134-8451	134-8151	134-9151
#52	7/8	1-7/8	134-8452	134-8152	134-9152
#53	7/8	1-7/8	134-8453	134-8153	134-9153
#54	7/8	1-7/8	134-8454	134-8154	134-8154
#55	7/8	1-7/8	134-8455	134-8155	134-9155
#56	3/4	1-3/4	134-8456	134-8156	134-9156
#57	3/4	1-3/4	134-8457	134-8157	134-9157
#58	11/16	1-5/8	134-8458	134-8158	134-9158
#59	11/16	1-5/8	134-8459	134-8159	134-9159
#60	11/16	1-5/8	134-8460	134-8160	134-9160

Split Point Parabolic Taper Length Drills

HSS, 135° Point, Ground

- The wide land parabolic flute design provides superior performance in a greater range of materials and applications
- Unique flute form produces closer tolerances due to improved chip and coolant flow, and higher torsional rigidity 135° Self-centering split point reduces thrust
- Taper length(longer flute and overall length) improves reach and deep hole drilling capability



Fractional Sizes

Size	Flute Length	OAL	Bright Order No.	Black Oxide Order No.	TiN-Coated Order No.
1/64"	5/16"	1-1/2"	134-8901	134-8501	134-9501
1/32	3/4	2	134-8902	134-8502	134-9502
3/64	1-1/8"	2-1/4	134-8903	134-8503	134-9503
1/16	1-3/4	3	134-8904	134-8504	134-9504
5/64	2	3-3/4	134-8905	134-8505	134-9505
3/32	2-1/4	4-1/4	134-8906	134-8506	134-9506
7/64	2-1/2	4-5/8	134-8907	134-8507	134-9507
1/8	2-3/4	5-/18	134-8908	134-8508	134-9508
9/64	3	5-3/8	134-8909	134-8509	134-9509
5/32	3	5-3/8	134-8910	134-8510	134-9510
11/64	3-3/8	5-3/4	134-8911	134-8511	134-9511
3/16	3-3/8	5-3/4	134-8912	134-8512	134-9512
13/64	3-5/8	6	134-8913	134-8513	134-9513
7/32	3-5/8	6	134-8914	134-8514	134-9514
15/64	3-3/4	6-1/8	134-8915	134-8515	134-9515
1/4	3-3/4	6-1/8	134-8916	134-8516	134-9516
17/16	3-7/8	6-1/4	134-8917	134-8517	134-9517
9/32	3-7/8	6-1/4	134-8918	134-8518	134-9518
19/64	4	6-3/8	134-8919	134-8519	134-9519
5/16	4	6-3/8	134-8920	134-8520	134-9520
21/64	4-1/8	6-1/2	134-8921	134-8521	134-9521
11/32	4-1/8	6-1/2	134-8922	134-8522	134-9522
23/64	4-1/4	6-3/4	134-8923	134-8523	134-9523
3/8	4-1/4	6-3/4	134-8924	134-8524	134-9524
25/64	4-3/8	7	134-8925	134-8525	134-9525
13/32	4-3/8	7	134-8926	134-8526	134-9526
27/64	4-5/8	7-1/4	134-8927	134-8527	134-9527
7/16	4-5/8	7-1/4	134-8928	134-8528	134-9528
29/64	4-3/4	7-1/2	134-8929	134-8529	134-9529
15/32	4-3/4	7-1/2	134-8930	134-8530	134-9530
31/64	4-3/4	7-3/4	134-8931	134-8531	134-9531
1/2	4-3/4	7-3/4	134-8932	134-8532	134-9532
33/64	4-3/4	8	134-8933	134-8533	134-9533
17/32	4-3/4	8	134-8934	134-8534	134-9534
35/64	4-7/8	8-1/4	134-8935	134-8535	134-9535
9/16	4-7/8	8-1/4	134-8936	134-8536	134-9536
37/64	4-7/8	8-3/4	134-8937	134-8537	134-9537
19/32	4-7/8	8-3/4	134-8938	134-8538	134-9538
39/64	4-7/8	8-3/4	134-8939	134-8539	134-9539
5/8	4-7/8	8-3/4	134-8940	134-8540	134-9540
41/64	5-1/8	9	134-8941	134-8541	134-9541
21/32	5-1/8	9	134-8942	134-8542	134-9542
43/64	5-3/8	9-1/4	134-8943	134-8543	134-9543
11/16	5-3/8	9-1/4	134-8944	134-8544	134-9544
45/64	5-5/8	9-1/2	134-8945	134-8545	134-9545
23/32	5-5/8	9-1/2	134-8946	134-8546	134-9546
47/64	5-7/8	9-3/4	134-8947	134-8547	134-9547
3/4	5-7/8	9-3/4	134-8948	134-8548	134-9548
49/64	6	9-7/8	134-8949	134-8549	134-9549
25/32	6	9-7/8	134-8950	134-8550	134-9550
51/64	6-1/8"	10	134-8951	134-8551	134-9551
13/16	6-1/8	10	134-8952	134-8552	134-9552
53/64	6-1/8	10	134-8953	134-8553	134-9553
27/32	6-1/8	10	134-8954	134-8554	134-9554
55/64	6-1/8	10	134-8955	134-8555	134-9555
7/8	6-1/8	10	134-8956	134-8556	134-9556
57/64	6-1/8	10	134-8957	134-8557	134-9557
29/32	6-1/8	10	134-8958	134-8558	134-9558
59/64	6-1/8	10-3/4	134-8959	134-8559	134-9559
15/16	6-1/8	10-3/4	134-8960	134-8560	134-9560
61/64	6-3/8	11	134-8961	134-8561	134-9561
31/32	6-3/8	11	134-8962	134-8562	134-9562
63/64	6-3/8	11	134-8963	134-8563	134-9563
1	6-3/8	11	134-8964	134-8564	134-9564

Number Sizes

Size	Flute Length	OAL	Bright Order No.	Black Oxide Order No.	TiN-Coated Order No.
#1	3-3/4"	6-1/8"	134-9301	134-8601	134-9601
#2	3-3/4	6-1/8	134-9302	134-8602	134-9602
#3	3-5/8	6	134-9303	134-8603	134-9603
#4	3-5/8	6	134-9304	134-8604	134-9604
#5	3-5/8	6	134-9305	134-8605	134-9605
#6	3-5/8	6	134-9306	134-8606	134-9606
#7	3-5/8	6	134-9307	134-8607	134-9607
#8	3-5/8	6	134-9308	134-8608	134-9608
#9	3-5/8	6	134-9309	134-8609	134-9609
#10	3-5/8	6	134-9310	134-8610	134-9610
#11	3-5/8	6	134-9311	134-8611	134-9611
#12	3-5/8	6	134-9312	134-8612	134-9612
#13	3-3/8	5-3/4	134-9313	134-8613	134-9613
#14	3-3/8	5-3/4	134-9314	134-8614	134-9614
#15	3-3/8	5-3/4	134-9315	134-8615	134-9615
#16	3-3/8	5-3/4	134-9316	134-8616	134-9616
#17	3-3/8	5-3/4	134-9317	134-8617	134-9617
#18	3-3/8	5-3/4	134-9318	134-8618	134-9618
#19	3-3/8	5-3/4	134-9319	134-8619	134-9619
#20	3-3/8	5-3/4	134-9320	134-8620	134-9620
#21	3-3/8	5-3/4	134-9321	134-8621	134-9621
#22	3-3/8	5-3/4	134-9322	134-8622	134-9622
#23	3	5-3/8	134-9323	134-8623	134-9623
#24	3	5-3/8	134-9324	134-8624	134-9624
#25	3	5-3/8	134-9325	134-8625	134-9625
#26	3	5-3/8	134-9326	134-8626	134-9626
#27	3	5-3/8	134-9327	134-8627	134-9627
#28	3	5-3/8	134-9328	134-8628	134-9628
#29	3	5-3/8	134-9329	134-8629	134-9629
#30	3	5-3/8	134-9330	134-8630	134-9630
#31	2-3/4	5-1/8	134-9331	134-8631	134-9631
#32	2-3/4	5-1/8	134-9332	134-8632	134-9632
#33	2-3/4	5-1/8	134-9333	134-8633	134-9633
#34	2-3/4	5-1/8	134-9334	134-8634	134-9634
#35	2-3/4	5-1/8	134-9335	134-8635	134-9635
#36	2-1/2	4-5/8	134-9336	134-8636	134-9636
#37	2-1/2	4-5/8	134-9337	134-8637	134-9637
#38	2-1/2	4-5/8	134-9338	134-8638	134-9638
#39	2-1/2	4-5/8	134-9339	134-8639	134-9639
#40	2-1/2	4-5/8	134-9340	134-8640	134-9640
#41	2-1/2	4-5/8	134-9341	134-8641	134-9641
#42	2-1/4	4-1/4	134-9342	134-8642	134-9642
#43	2-1/4	4-1/4	134-9343	134-8643	134-9643
#44	2-1/4	4-1/4	134-9344	134-8644	134-9644
#45	2-1/4	4-1/4	134-9345	134-8645	134-9645
#46	2-1/4	4-1/4	134-9346	134-8646	134-9646
#47	2-1/4	4-1/4	134-9347	134-8647	134-9647
#48	2	3-3/4	134-9348	134-8648	134-9648
#49	2	3-3/4	134-9349	134-8649	134-9649
#50	2	3-3/4	134-9350	134-8650	134-9650
#51	2	3-3/4	134-9351	134-8651	134-9651
#52	2	3-3/4	134-9352	134-8652	134-9652
#53	1-3/4	3	134-9353	134-8653	134-9653
#54	1-3/4	3	134-9354	134-8654	134-9654
#55	1-3/4	3	134-9355	134-8655	134-9655
#56	1-1/8	2-1/4	134-9356	134-8656	134-9656
#57	1-1/8	2-1/4	134-9357	134-8657	134-8657
#58	1-1/8	2-1/4	134-9358	134-8658	134-9658
#59	1-1/8	2-1/4	134-9359	134-8659	134-9659
#60	1-1/8	2-1/4	134-9360	134-8660	134-9660

Letter Sizes

Size	Flute Length	OAL	Bright Order No.	Black Oxide Order No.	TiN-Coated Order No.
A	3-3/4"	6-1/8"	134-8731	134-8701	134-9701
B	3-3/4	6-1/8	134-8732	134-8702	134-9702
C	3-3/4	6-1/8	134-8733	134-8703	134-9703
D	3-3/4	6-1/8	134-8734	134-8704	134-9704
E	3-3/4	6-1/8	134-8735	134-8705	134-9705
F	3-7/8	6-1/4	134-8736	134-8706	134-9706
G	3-7/8	6-1/4	134-8737	134-8707	134-9707
H	3-7/8	6-1/4	134-8738	134-8708	134-9708
I	3-7/8	6-1/4	134-8739	134-8709	134-9709
J	3-7/8	6-1/4	134-8740	134-8710	134-9710
K	3-7/8	6-1/4	134-8741	134-8711	134-9711
L	4	6-3/8	134-8742	134-8712	134-9712
M	4	6-3/8	134-8743	134-8713	134-9713
N	4	6-3/8	134-8744	134-8714	134-9714
O	4-1/8	6-1/2	134-8745	134-8715	134-9715
P	4-1/8	6-1/2	134-8746	134-8716	134-9716
Q	4-1/8	6-1/2	134-8747	134-8717	134-9717
R	4-1/8	6-1/2	134-8748	134-8718	134-9718
S	4-1/4	6-3/4	134-8749	134-8719	134-9719
T	4-1/4	6-3/4	134-8730	134-8720	134-9720
U	4-1/4	6-3/4	134-8731	134-8721	134-9721
V	4-3/8	7	134-8732	134-8722	134-9722
W	4-3/8	7	134-8733	134-8723	134-9723
X	4-3/8	7	134-8734	134-8724	134-9724
Y	4-3/8	7	134-8735	134-8725	134-9725
Z	4-5/8	7-1/4	134-8736	134-8726	134-9726

Taper Length Drills-Black Oxide

High Speed Steel, Right Hand

- Designed for general purpose drilling where a length longer than jobber drill length is required.
- Performs very well in a wide range of materials.
- Shank diameter is the same as drill diameter.



M35, Right Hand

- Taper length is a longer straight shank general purpose drill used where a deeper hole is required. Shank size is the same as the diameter of the drill
- Cobalt drills are more durable than HSS. When used in applications that generate higher temperatures, cobalt retains its strength and hardness while offering more abrasion resistance then HSS.
- Fore use in high-tensile alloys, titanium, Inconel and highnickel stainless steels.

NEW



Fractional Sizes

Size	Flute Length	OAL	HSS 118° Order No.	HSS 135° Order No.	M35-135° Order No.
1/64"	5/16"	1-1/2"	**310-2001**	**310-3001**	**310-8001**
1/32	3/4	2	**310-2002**	**310-3002**	**310-8002**
3/64	1-1/8	2-1/4	**310-2003**	**310-3003**	**310-8003**
1/16	1-3/4	3	**310-2004**	**310-3004**	**310-8004**
5/64	2	3-3/4	**310-2005**	**310-3005**	**310-8005**
3/32	2-1/4	4-1/4	**310-2006**	**310-3006**	**310-8006**
7/64	2-1/2	4-5/8	**310-2007**	**310-3007**	**310-8007**
1/8	2-3/4	5-1/8	**310-2008**	**310-3008**	**310-8008**
9/64	3	5-3/8	**310-2009**	**310-3009**	**310-8009**
5/32	3	5-3/8	**310-2010**	**310-3010**	**310-8010**
11/64	3-3/8	5-3/4	**310-2011**	**310-3011**	**310-8011**
3/16	3-3/8	5-3/4	**310-2012**	**310-3012**	**310-8012**
13/64	3-5/8	6	**310-2013**	**310-3013**	**310-8013**
7/32	3-5/8	6	**310-2014**	**310-3014**	**310-8014**
15/64	3-3/4	6-1/8	**310-2015**	**310-3015**	**310-8015**
1/4	3-3/4	6-1/8	**310-2016**	**310-3016**	**310-8016**
17/64	3-7/8	6-1/4	**310-2017**	**310-3017**	**310-8017**
9/32	3-7/8	6-1/4	**310-2018**	**310-3018**	**310-8018**
19/64	4	6-3/8	**310-2019**	**310-3019**	**310-8019**
5/16	4	6-3/8	**310-2020**	**310-3020**	**310-8020**
21/64	4-1/8	6-1/2	**310-2021**	**310-3021**	**310-8021**
11/32	4-1/8	6-1/2	**310-2022**	**310-3022**	**310-8022**
23/64	4-1/4	6-3/4	**310-2023**	**310-3023**	**310-8023**
3/8	4-1/4	6-3/4	**310-2024**	**310-3024**	**310-8024**
25/64	4-3/8	7	**310-2025**	**310-3025**	**310-8025**
13/32	4-3/8	7	**310-2026**	**310-3026**	**310-8026**
27/64	4-5/8	7-1/4	**310-2027**	**310-3027**	**310-8027**
7/16	4-5/8	7-1/4	**310-2028**	**310-3028**	**310-8028**
29/64	4-3/4	7-1/2	**310-2029**	**310-3029**	**310-8029**
15/32	4-3/4	7-1/2	**310-2030**	**310-3030**	**310-8030**
31/64	4-3/4	7-3/4	**310-2031**	**310-3031**	**310-8031**
1/2"	4-3/4	7-3/4	**310-2032**	**310-3032**	**310-8032**
33/64	4-3/4	8	**310-2033**	**310-3033**	**310-8033**
17/32	4-3/4	8	**310-2034**	**310-3034**	**310-8034**
35/64	4-7/8	8-1/4	**310-2035**	**310-3035**	**310-8035**
9/16	4-7/8	8-1/4	**310-2036**	**310-3036**	**310-8036**
37/6	4-7/8	8-3/4	**310-2037**	**310-3037**	**310-8037**
19/32	4-7/8	8-3/4	**310-2038**	**310-3038**	**310-8038**
39/64	4-7/8	8-3/4	**310-2039**	**310-3039**	**310-8039**
5/8	4-7/8	8-3/4	**310-2040**	**310-3040**	**310-8040**
41/64	5-1/8	9	**310-2041**	**310-3041**	**310-8041**
21/32	5-1/8	9	**310-2042**	**310-3042**	**310-8042**
43/64	5-3/8	9-1/4	**310-2043**	**310-3043**	**310-8043**
11/16	5-3/8	9-1/4	**310-2044**	**310-3044**	**310-8044**
45/64	5-5/8	9-1/2	**310-2045**	**310-3045**	**310-8045**
23/32	5-5/8	9-1/2	**310-2046**	**310-3046**	**310-8046**
47/64	5-7/8	9-3/4	**310-2047**	**310-3047**	**310-8047**

Size	Flute Length	OAL	HSS 118° Order No.	HSS 135° Order No.	M35-135° Order No.
3/4	5-7/8	9-3/4	**310-2048**	**310-3048**	**310-8048**
49/64	6	9-7/8	**310-2049**	**310-2049**	**310-8049**
25/32	6	9-7/8	**310-2050**	**310-2050**	**310-8050**
51/64	6-1/8"	10	**310-2051**	**310-2051**	**310-8051**
13/16	6-1/8	10	**310-2052**	**310-2052**	**310-8052**
53/64	6-1/8	10	**310-2053**	**310-2053**	**310-8053**
27/32	6-1/8	10	**310-2054**	**310-2054**	**310-8054**
55/64	6-1/8	10	**310-2055**	**310-2055**	**310-8055**
7/8	6-1/8	10	**310-2056**	**310-2056**	**310-8056**
57/64	6-1/8	10	**310-2057**	**310-2057**	**310-8057**
29/32	6-1/8	10	**310-2058**	**310-2058**	**310-8058**
59/64	6-1/8	10-3/4	**310-2059**	**310-2059**	**310-8059**
15/16	6-1/8	10-3/4	**310-2060**	**310-2060**	**310-8060**
61/64	6-3/8	11	**310-2061**	**310-2061**	**310-8061**
31/32	6-3/8	11	**310-2062**	**310-2062**	**310-8062**
63/64"	6-3/8	11	**310-2063**	**310-2063**	**310-8063**
1	6-3/8	11	**310-2064**	**310-2064**	**310-8064**
1-1/32	6-1/2	11-1/8	**310-2102**	**310-2102**	**310-8102**
1-3/64	6-5/8	11-1/4	**310-2103**	**310-2103**	**310-8103**
1-1/16	6-5/8	11-1/4	**310-2104**	**310-2104**	**310-8104**
1-5/64	6-7/8	11-1/2	**310-2105**	**310-2105**	**310-8105**
1-3/32	6-7/8	11-1/2	**310-2106**	**310-2106**	**310-8106**
1-1/8	7-1/8	11-3/4	**310-2108**	**310-2108**	**310-8108**
1-5/32	7-1/4	11-7/8	**310-2110**	**310-2110**	**310-8110**
1-11/64	7-3/8	12	**310-2111**	**310-2111**	**310-8111**
1-3/16	7-3/8	12	**310-2112**	**310-2112**	**310-8112**
1-13/64	7-1/2	12-1/8	**310-2113**	**310-2113**	**310-8113**
1-7/32	7-1/2	12-1/8	**310-2114**	**310-2114**	**310-8114**
1-1/4	7-7/8	12-1/2	**310-2116**	**310-2116**	**310-8116**
1-9/32	8-1/2	14-1/8	**310-2118**	**310-2118**	**310-8118**
1-5/16	8-5/8	14-1/4	**310-2120**	**310-2120**	**310-8120**
1-11/32	8-3/4	14-3/8	**310-2122**	**310-2122**	**310-8122**
1-3/8	8-7/8	14-1/2	**310-2124**	**310-2124**	**310-8124**
1-13/32	9	14-5/8	**310-2126**	**310-2126**	**310-8126**
1-7/16	9-1/8	14-3/4	**310-2128**	**310-2128**	**310-8128**
1-15/32	9-1/4	14-7/8	**310-2130**	**310-2130**	**310-8130**
1-1/2	9-3/8	15	**310-2132**	**310-2132**	**310-8132**
1-9/16	9-5/8	15-1/4	**310-2136**	**310-2136**	**310-8136**
1-5/8	9-7/8	15-5/8	**310-2140**	**310-2140**	**310-8140**
1-21/32	9-7/8	15-5/8	**310-2142**	**310-2142**	**310-8142**
1-11/16	10	15-3/4	**310-2144**	**310-2144**	**310-8144**
1-3/4	10-1/2	16-1/4	**310-2148**	**310-2148**	**310-8148**
1-13/16	10-1/2	16-1/4	**310-2152**	**310-2152**	**310-8152**
1-7/8	10-3/4	16-1/2	**310-2156**	**310-2156**	**310-8156**
1-15/16	10-3/4	16-5/8	**310-2160**	**310-2160**	**310-8160**
2	10-3/4	16-5/8	**310-2164**	**310-2164**	**310-8164**

Taper Length Drills-Black Oxide Continued

High Speed Steel, Right Hand

- Designed for general purpose drilling where a length longer than jobber drill length is required.
- Performs very well in a wide range of materials.
- Shank diameter is the same as drill diameter.



M35, Right Hand

- Taper length is a longer straight shank general purpose drill used where a deeper hole is required. Shank size is the same as the diameter of the drill
- Cobalt drills are more durable than HSS. When used in applications that generate higher temperatures, cobalt retains its strength and hardness while offering more abrasion resistance then HSS.
- Fore use in high-tensile alloys, titanium, Inconel and highnickel stainless steels.



Number Sizes

Size	Flute Length	OAL	HSS 118° Order No.	HSS 135° Order No.	M35-135° Order No.
#1	3-3/4"	6-1/8"	310-2401	310-3401	310-8401
#2	3-3/4	6-1/8	310-2402	310-3402	310-8402
#3	3-5/8	6	310-2403	310-3403	310-8403
#4	3-5/8	6	310-2404	310-3404	310-8404
#5	3-5/8	6	310-2405	310-3405	310-8405
#6	3-5/8	6	310-2406	310-3406	310-8406
#7	3-5/8	6	310-2407	310-3407	310-8407
#8	3-5/8	6	310-2408	310-3408	310-8408
#9	3-5/8	6	310-2409	310-3409	310-8409
#10	3-5/8	6	310-2410	310-3410	310-8410
#11	3-5/8	6	310-2411	310-3411	310-8411
#12	3-5/8	6	310-2412	310-3412	310-8412
#13	3-3/8	5-3/4	310-2413	310-3413	310-8413
#14	3-3/8	5-3/4	310-2414	310-3414	310-8414
#15	3-3/8	5-3/4	310-2415	310-3415	310-8415
#16	3-3/8	5-3/4	310-2416	310-3416	310-8416
#17	3-3/8	5-3/4	310-2417	310-3417	310-8417
#18	3-3/8	5-3/4	310-2418	310-3418	310-8418
#19	3-3/8	5-3/4	310-2419	310-3419	310-8419
#20	3-3/8	5-3/4	310-2420	310-3420	310-8420
#21	3-3/8	5-3/4	310-2421	310-3421	310-8421
#22	3-3/8	5-3/4	310-2422	310-3422	310-8422
#23	3	5-3/8	310-2423	310-3423	310-8423
#24	3	5-3/8	310-2424	310-3424	310-8424
#25	3	5-3/8	310-2425	310-3425	310-8425
#26	3	5-3/8	310-2426	310-3426	310-8426
#27	3	5-3/8	310-2427	310-3427	310-8427
#28	3	5-3/8	310-2428	310-3428	310-8428
#29	3	5-3/8	310-2429	310-3429	310-8429
#30	3	5-3/8	310-2430	310-3430	310-8430
#31	2-3/4	5-1/8	310-2431	310-3431	310-8431
#32	2-3/4	5-1/8	310-2432	310-3432	310-8432
#33	2-3/4	5-1/8	310-2433	310-3433	310-8433
#34	2-3/4	5-1/8	310-2434	310-3434	310-8434
#35	2-3/4	5-1/8	310-2435	310-3435	310-8435
#36	2-1/2	4-5/8	310-2436	310-3436	310-8436
#37	2-1/2	4-5/8	310-2437	310-3437	310-8437
#38	2-1/2	4-5/8	310-2438	310-3438	310-8438
#39	2-1/2	4-5/8	310-2439	310-3439	310-8439
#40	2-1/2	4-5/8	310-2440	310-3440	310-8440
#41	2-1/2	4-5/8	310-2441	310-3441	310-8441
#42	2-1/4	4-1/4	310-2442	310-3442	310-8442
#43	2-1/4	4-1/4	310-2443	310-3443	310-8443
#44	2-1/4	4-1/4	310-2444	310-3444	310-8444
#45	2-1/4	4-1/4	310-2445	310-3445	310-8445
#46	2-1/4	4-1/4	310-2446	310-3446	310-8446
#47	2-1/4	4-1/4	310-2447	310-3447	310-8447
#48	2	3-3/4	310-2448	310-3448	310-8448
#49	2	3-3/4	310-2449	310-3449	310-8449
#50	2	3-3/4	310-2450	310-3450	310-8450
#51	2	3-3/4	310-2451	310-3451	310-8451
#52	2	3-3/4	310-2452	310-3452	310-8452
#53	1-3/4	3	310-2453	310-3453	310-8453
#54	1-3/4	3	310-2454	310-3454	310-8454
#55	1-3/4	3	310-2455	310-3455	310-8455
#56	1-1/8	2-1/4	310-2456	310-3456	310-8456
#57	1-1/8	2-1/4	310-2457	310-3457	310-8457
#58	1-1/8	2-1/4	310-2458	310-3458	310-8458
#59	1-1/8	2-1/4	310-2459	310-3459	310-8459
#60	1-1/8	2-1/4	310-2460	310-3460	310-8460

Letter Sizes

Size	Flute Length	OAL	HSS 118° Order No.	HSS 135° Order No.	M35-135° Order No.
A	3-3/4"	6-1/8"	310-2301	310-3701	310-8301
B	3-3/4	6-1/8	310-2302	310-3702	310-8302
C	3-3/4	6-1/8	310-2303	310-3703	310-8303
D	3-3/4	6-1/8	310-2304	310-3704	310-8304
E	3-3/4	6-1/8	310-2305	310-3705	310-8305
F	3-7/8	6-1/4	310-2306	310-3706	310-8306
G	3-7/8	6-1/4	310-2307	310-3707	310-8307
H	3-7/8	6-1/4	310-2308	310-3708	310-8308
I	3-7/8	6-1/4	310-2309	310-3709	310-8309
J	3-7/8	6-1/4	310-2310	310-3710	310-8310
K	3-7/8	6-1/4	310-2311	310-3711	310-8311
L	4	6-3/8	310-2312	310-3712	310-8312
M	4	6-3/8	310-2313	310-3713	310-8313
N	4	6-3/8	310-2314	310-3714	310-8314
O	4-1/8	6-1/2	310-2315	310-3715	310-8315
P	4-1/8	6-1/2	310-2316	310-3716	310-8316
Q	4-1/8	6-1/2	310-2317	310-3717	310-8317
R	4-1/8	6-1/2	310-2318	310-3718	310-8318
S	4-1/4	6-3/4	310-2319	310-3719	310-8319
T	4-1/4	6-3/4	310-2320	310-3720	310-8320
U	4-1/4	6-3/4	310-2321	310-3721	310-8321
V	4-3/8	7	310-2322	310-3722	310-8322
W	4-3/8	7	310-2323	310-3723	310-8323
X	4-3/8	7	310-2324	310-3724	310-8324
Y	4-3/8	7	310-2325	310-3725	310-8325
Z	4-5/8	7-1/4	310-2326	310-3726	310-8326

Fast Spiral Taper Length Drills

High Speed Steel, 118° Point, Right Hand, Ground

- Designed for drilling deeper holes.
- The high helix angle and wide flute improve ejection of chip further.
- Helix angle 35-40Degree.



Fractional Sizes

Size	Flute Length	OAL	Order No.	Size	Flute Length	OAL	Order No.
3/64"	1-1/8"	2-1/4"	**310-5003**	51/64"	6-1/8"	10"	**310-5051**
1/16	1-3/4	3	**310-5004**	13/16	6-1/8	10	**310-5052**
5/64	2	3-3/4	**310-5005**	53/64	6-1/8	10	**310-5053**
3/32	2-1/4	4-1/4	**310-5006**	27/32	6-1/8	10	**310-5054**
7/64	2-1/2	4-5/8	**310-5007**	55/64	6-1/8	10	**310-5055**
1/8	2-3/4	5-1/8	**310-5008**	7/8	6-1/8	10	**310-5056**
9/64	3	5-3/8	**310-5009**	57/64	6-1/8	10	**310-5057**
5/32	3	5-3/8	**310-5010**	29/32	6-1/8	10	**310-5058**
11/64	3-3/8	5-3/4	**310-5011**	59/64	6-1/8	10-3/4	**310-5059**
3/16	3-3/8	5-3/4	**310-5012**	15/16	6-1/8	10-3/4	**310-5060**
13/64	3-5/8	6	**310-5013**	61/64	6-3/8	11	**310-5061**
7/32	3-5/8	6	**310-5014**	31/32	6-3/8	11	**310-5062**
15/64	3-3/4	6-1/8	**310-5015**	63/64	6-3/8	11	**310-5063**
1/4	3-3/4	6-1/8	**310-5016**	1	6-3/8	11	**310-5064**
17/64	3-7/8	6-1/4	**310-5017**	1-1/64	6-1/2	11-1/8	**310-5101**
9/32	3-7/8	6-1/4	**310-5018**	1-1/32	6-1/2	11-1/8	**310-5102**
19/64	4	6-3/8	**310-5019**	1-3/64	6-5/8	11-1/4	**310-5103**
5/16	4	6-3/8	**310-5020**	1-1/16	6-5/8	11-1/4	**310-5104**
21/64	4-1/8	6-1/2	**310-5021**	1-5/64	6-7/8	11-1/2	**310-5105**
11/32	4-1/8	6-1/2	**310-5022**	1-3/32	6-7/8	11-1/2	**310-5106**
23/64	4-1/4	6-3/4	**310-5023**	1-7/64	7-1/8	11-3/4	**310-5107**
3/8	4-1/4	6-3/4	**310-5024**	1-1/8	7-1/8	11-3/4	**310-5108**
25/64	4-3/8	7	**310-5025**	1-9/64	7-1/4	11-7/8	**310-5109**
13/32	4-3/8	7	**310-5026**	1-5/32	7-1/4	11-7/8	**310-5110**
27/64	4-5/8	7-1/4	**310-5027**	1-11/64	7-3/8	12	**310-5111**
7/16	4-5/8	7-1/4	**310-5028**	1-3/16	7-3/8	12	**310-5112**
29/64	4-3/4	7-1/2	**310-5029**	1-13/64	7-1/2	12-1/8	**310-5113**
15/32	4-3/4	7-1/2	**310-5030**	1-7/32	7-1/2	12-1/8	**310-5114**
31/64	4-3/4	7-3/4	**310-5031**	1-15/64	7-7/8	12-1/2	**310-5115**
1/2	4-3/4	7-3/4	**310-5032**	1-1/4	7-7/8	12-1/2	**310-5116**
33/64	4-3/4	8	**310-5033**	1-17/64	8-1/2	14	**310-5117**
17/32	4-3/4	8	**310-5034**	1-9/32	8-1/2	14-1/8	**310-5118**
35/64	4-7/8	8-1/4	**310-5035**	1-5/16	8-5/8	14-1/4	**310-5120**
9/16	4-7/8	8-1/4	**310-5036**	1-11/32	8-3/4	14-3/8	**310-5122**
37/64	4-7/8	8-3/4	**310-5037**	1-3/8	8-7/8	14-1/2	**310-5124**
19/32	4-7/8	8-3/4	**310-5038**	1-13/32	9	14-5/8	**310-5126**
39/64	4-7/8	8-3/4	**310-5039**	1-7/16	9-1/8	14-3/4	**310-5128**
5/8	4-7/8	8-3/4	**310-5040**	1-15/32	9-1/4	14-7/8	**310-5130**
41/64	5-1/8	9	**310-5041**	1-1/2	9-3/8	15	**310-5132**
21/32	5-1/8	9	**310-5042**	1-35/64	9-5/8	14-3/4	**310-5135**
43/64	5-3/8	9-1/4	**310-5043**	1-9/16	9-5/8	15-1/4	**310-5136**
11/16	5-3/8	9-1/4	**310-5044**	1-5/8	9-7/8	15-5/8	**310-5140**
45/64	5-5/8	9-1/2	**310-5045**	1-21/32	9-7/8	15-3/4	**310-5142**
23/32	5-5/8	9-1/2	**310-5046**	1-11/16	10	15-3/4	**310-5144**
47/64	5-7/8	9-3/4	**310-5047**	1-3/4	10-1/2	16-1/4	**310-5148**
3/4	5-7/8	9-3/4	**310-5048**	1-13/16	10-1/2	16-1/4	**310-5152**
49/64	6	9-7/8	**310-5049**	1-7/8	10-3/4	16-1/2	**310-5156**
25/32	6	9-7/8	**310-5050**		10-3/4	16-5/8	**310-5160**

Letter Sizes

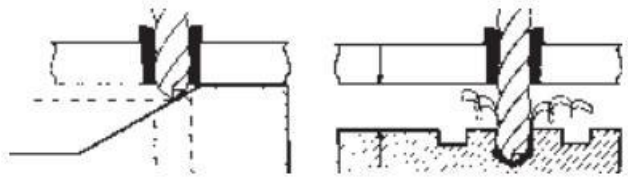
Size	Flute Length	OAL	Order No.	Size	Flute Length	OAL	Order No.
A	3-3/4"	6-1/8"	**310-5301**	N	4"	6-3/8''	**310-5314**
B	3-3/4	6-1/8	**310-5302**	O	4-1/8	6-1/2	**310-5315**
C	3-3/4	6-1/8	**310-5303**	P	4-1/8	6-1/2	**310-5316**
D	3-3/4	6-1/8	**310-5304**	Q	4-1/8	6-1/2	**310-5317**
E	3-3/4	6-1/8	**310-5305**	R	4-1/8	6-1/2	**310-5318**
F	3-7/8	6-1/4	**310-5306**	S	4-1/4	6-3/4	**310-5319**
G	3-7/8	6-1/4	**310-5307**	T	4-1/4	6-3/4	**310-5320**
H	3-7/8	6-1/4	**310-5308**	U	4-1/4	6-3/4	**310-5321**
I	3-7/8	6-1/4	**310-5309**	V	4-3/8	7	**310-5322**
J	3-7/8	6-1/4	**310-5310**	W	4-3/8	7	**310-5323**
K	3-7/8	6-1/4	**310-5311**	X	4-3/8	7	**310-5324**
L	4	6-3/8	**310-5312**	Y	4-3/8	7	**310-5325**
M	4	6-3/8	**310-5313**	Z	4-5/8	7-1/4	**310-5326**

Number Sizes

Size	Flute Length	OAL	Order No.	Size	Flute Length	OAL	Order No.
#1	3-3/4"	6-1/8"	**310-5401**	#31	2-3/4"	5-1/8"	**310-5431**
#2	3-3/4	6-1/8	**310-5402**	#32	2-3/4	5-1/8	**310-5432**
#3	3-5/8	6	**310-5403**	#33	2-3/4	5-1/8	**310-5433**
#4	3-5/8	6	**310-5404**	#34	2-3/4	5-1/8	**310-5434**
#5	3-5/8	6	**310-5405**	#35	2-3/4	5-1/8	**310-5435**
#6	3-5/8	6	**310-5406**	#36	2-1/2	4-5/8	**310-5436**
#7	3-5/8	6	**310-5407**	#37	2-1/2	4-5/8	**310-5437**
#8	3-5/8	6	**310-5408**	#38	2-1/2	4-5/8	**310-5438**
#9	3-5/8	6	**310-5409**	#39	2-1/2	4-5/8	**310-5439**
#10	3-5/8	6	**310-5410**	#40	2-1/2	4-5/8	**310-5440**
#11	3-5/8	6	**310-5411**	#41	2-1/2	4-5/8	**310-5441**
#12	3-5/8	6	**310-5412**	#42	2-1/4	4-1/4	**310-5442**
#13	3-3/8	5-3/4	**310-5413**	#43	2-1/4	4-1/4	**310-5443**
#14	3-3/8	5-3/4	**310-5414**	#44	2-1/4	4-1/4	**310-5444**
#15	3-3/8	5-3/4	**310-5415**	#45	2-1/4	4-1/4	**310-5445**
#16	3-3/8	5-3/4	**310-5416**	#46	2-1/4	4-1/4	**310-5446**
#17	3-3/8	5-3/4	**310-5417**	#47	2-1/4	4-1/4	**310-5447**
#18	3-3/8	5-3/4	**310-5418**	#48	2	3-3/4	**310-5448**
#19	3-3/8	5-3/4	**310-5419**	#49	2	3-3/4	**310-5449**
#20	3-3/8	5-3/4	**310-5420**	#50	2	3-3/4	**310-5450**
#21	3-3/8	5-3/4	**310-5421**	#51	2	3-3/4	**310-5451**
#22	3-3/8	5-3/4	**310-5422**	#52	2	3-3/4	**310-5452**
#23	3	5-3/8	**310-5423**	#53	1-3/4	3	**310-5453**
#24	3	5-3/8	**310-5424**	#54	1-3/4	3	**310-5454**
#25	3	5-3/8	**310-5425**	#55	1-3/4	3	**310-5455**
#26	3	5-3/8	**310-5426**	#56	1-1/8	2-1/4	**310-5456**
#27	3	5-3/8	**310-5427**	#57	1-1/8	2-1/4	**310-5457**
#28	3	5-3/8	**310-5428**	#58	1-1/8	2-1/4	**310-5458**
#29	3	5-3/8	**310-5429**	#59	1-1/8	2-1/4	**310-5459**
#30	3	-3/8	**310-5430**	#60	1-1/8	2-1/4	**310-5460**

DIN340 Twist Drills

HSS , Ground/Black Oxide

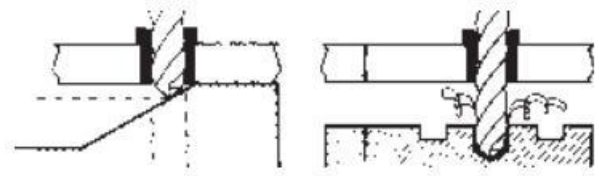


- Taper length is a longer, straight shank, general purpose drill used where a deeper holes is required.
- Shank diameter is the same as the drill diameter.

Size (mm)	Flute Length	OAL	Order No.	Size (mm)	Flute Length	OAL	Order No.	Size (mm)	Flute Length	OAL	Order No.
3	66	100	**310-2530**	8.2	109	165	**310-2582**	13.25	134	205	**310-2842**
3.1	69	106	**310-2531**	8.25	109	165	**310-2822**	13.3	140	214	**310-2633**
3.2	69	106	**310-2532**	8.3	109	165	**310-2583**	13.4	140	214	**310-2634**
3.25	69	106	**310-2802**	8.4	109	165	**310-2584**	13.5	140	214	**310-2635**
3.3	69	106	**310-2533**	8.5	109	165	**310-2585**	13.6	140	214	**310-2636**
3.4	73	112	**310-2534**	8.6	115	175	**310-2586**	13.7	140	214	**310-2637**
3.5	73	112	**310-2535**	8.7	115	175	**310-2587**	13.75	140	214	**310-2844**
3.6	73	112	**310-2536**	8.75	115	175	**310-2824**	13.8	140	214	**310-2638**
3.7	73	112	**310-2537**	8.8	115	175	**310-2588**	13.9	140	214	**310-2639**
3.75	73	112	**310-2804**	8.9	115	175	**310-2589**	14.0	140	214	**310-2640**
3.8	78	119	**310-2538**	9.0	115	175	**310-2590**	14.25	144	220	**310-2846**
3.9	78	119	**310-2539**	9.1	115	175	**310-2591**	14.5	144	220	**310-2641**
4.0	78	119	**310-3540**	9.2	115	175	**310-2592**	14.75	144	220	**310-2848**
4.1	78	119	**310-2541**	9.25	115	175	**310-2826**	15.0	144	220	**310-2620**
4.2	78	119	**310-2542**	9.3	115	175	**310-2593**	15.25	144	220	**310-2850**
4.25	78	119	**310-2806**	9.4	115	175	**310-2594**	15.5	149	227	**310-2655**
4.3	82	126	**310-2543**	9.5	115	175	**310-2595**	15.75	149	227	**310-2852**
4.4	82	126	**310-2544**	9.6	121	184	**310-2596**	16.0	149	227	**310-2660**
4.5	82	126	**310-2545**	9.7	121	184	**310-2597**	16.25	154	235	**310-2854**
4.6	82	126	**310-2546**	9.75	121	184	**310-2828**	16.5	154	235	**310-2665**
4.7	82	126	**310-2547**	9.8	121	184	**310-2598**	16.75	154	235	**310-2856**
4.75	82	126	**310-2808**	9.9	121	184	**310-2599**	17.0	154	235	**310-2670**
4.8	87	132	**310-2548**	10.0	121	184	**310-2600**	17.25	158	241	**310-2858**
4.9	87	132	**310-2549**	10.1	121	184	**310-2601**	17.5	158	241	**310-2675**
5.0	87	132	**310-2550**	10.2	121	184	**310-2602**	17.75	158	241	**310-2860**
5.1	87	132	**310-2551**	10.25	121	184	**310-2830**	18.0	158	241	**310-2680**
5.2	87	132	**310-2552**	10.3	121	184	**310-2603**	18.25	162	247	**310-2862**
5.25	87	132	**310-2810**	10.4	121	184	**310-2604**	18.5	162	247	**310-2685**
5.3	87	132	**310-2553**	10.5	121	184	**310-3605**	18.75	162	247	**310-2864**
5.4	91	139	**310-2554**	10.6	121	184	**310-2606**	19.0	162	247	**310-2690**
5.5	91	139	**310-2555**	10.7	128	195	**310-2607**	19.25	166	254	**310-2866**
5.6	91	139	**310-2556**	10.75	128	195	**310-2832**	19.5	166	254	**310-2695**
5.7	91	139	**310-2557**	10.8	128	195	**310-2608**	19.75	166	254	**310-2868**
5.75	91	139	**310-2812**	10.9	128	195	**310-2609**	20.0	166	254	**310-2700**
5.8	91	139	**310-2558**	11.0	128	195	**310-2610**	20.25	166	254	**310-2870**
5.9	91	139	**310-2559**	11.1	128	195	**310-2611**	20.5	166	254	**310-2705**
6.0	91	139	**310-2560**	11.2	128	195	**310-2612**	20.75	171	261	**310-2872**
6.1	97	148	**310-2561**	11.25	128	195	**310-2834**	21.0	171	261	**310-2710**
6.2	97	148	**310-2562**	11.3	128	195	**310-2613**	21.25	171	261	**310-2874**
6.25	97	148	**310-2814**	11.4	128	195	**310-2614**	21.5	171	261	**310-2715**
6.3	97	148	**310-2563**	11.5	128	195	**310-2615**	21.75	176	268	**310-2876**
6.4	97	148	**310-2564**	11.6	128	195	**310-2616**	22.0	176	268	**310-2720**
6.5	97	148	**310-2565**	11.7	128	195	**310-2617**	22.25	176	268	**310-2878**
6.6	97	148	**310-2566**	11.75	128	195	**310-2836**	22.5	176	268	**310-2725**
6.7	97	148	**310-2567**	11.8	128	195	**310-2618**	22.75	180	275	**310-2880**
6.75	102	159	**310-2816**	11.9	134	205	**310-2619**	23.0	180	275	**310-2730**
6.8	102	156	**310-2568**	12.0	134	205	**310-2620**	23.25	180	275	**310-2882**
6.9	102	156	**310-2569**	12.1	134	205	**310-2621**	23.5	180	275	**310-2735**
7.0	102	156	**310-2570**	12.2	134	205	**310-2622**	23.75	180	275	**310-2884**
7.1	102	156	**310-2571**	12.25	134	205	**310-2838**	24.0	180	275	**310-2740**
7.2	102	156	**310-2572**	12.3	134	205	**310-2623**	24.25	180	275	**310-2886**
7.25	102	156	**310-2818**	12.4	134	205	**310-2624**	24.5	185	282	**310-2745**
7.3	102	156	**310-2573**	12.5	134	205	**310-2624**	24.75	185	282	**310-2888**
7.4	102	156	**310-2574**	12.6	134	205	**310-2626**	25.0	185	282	**310-2750**
7.5	102	156	**310-2575**	12.7	134	205	**310-2627**	25.5	190	290	**310-2755**
7.6	109	165	**310-2576**	12.75	134	205	**310-2840**	26.0	190	290	**310-2760**
7.7	109	165	**310-2577**	12.8	134	205	**310-2628**	26.5	190	290	**310-2765**
7.75	109	168	**310-3820**	12.9	134	205	**310-2629**	27.0	195	298	**310-2770**
7.8	109	165	**310-2578**	13.0	134	205	**310-2630**	27.5	195	298	**310-2775**
7.9	109	165	**310-2579**	13.1	134	205	**310-2631**	28.0	195	298	**310-2780**
8.0	109	165	**310-2580**	13.2	134	205	**310-2632**				
8.1	109	165	**310-2581**								

DIN340 Twist Drills

HSS, Ground



- Taper length is a longer, straight shank, general purpose drill used where a deeper holes is required.
- Shank diameter is the same as the drill diameter.



Size (mm)	Flute Length	OAL	Bright Order No.	Ground TiN-Coated	Size (mm)	Flute Length	OAL	Bright Order No.	Ground TiN-Coated	Size (mm)	Flute Length	OAL	Bright Order No.	Ground TiN-Coated
3	66mm	100mm	**305-0300**	**203-1030**	7.75	109	165	**305-0775**		12.3	134	205	**305-1230**	**203-4123**
3.1	69	106	**305-0310**	**203-1031**	7.8	109	165	**305-0780**	**203-4078**	12.4	134	205	**305-1240**	**203-4124**
3.2	69	106	**305-0320**	**203-4032**	7.9	109	165	**305-0790**	**203-4079**	12.5	134	205	**305-1250**	**203-4125**
3.25	69	106	**305-0325**		8.0	109	165	**305-0800**	**203-4080**	12.6	134	205	**305-1260**	**203-4126**
3.3	69	106	**305-0330**	**203-4033**	8.1	109	165	**305-0810**	**203-4081**	12.7	134	205	**305-1270**	**203-4127**
3.4	73	112	**305-0340**	**203-4034**	8.2	109	165	**305-0820**	**203-4082**	12.75	134	205	**305-1275**	
3.5	73	112	**305-0350**	**203-4035**	8.25	109	165	**305-0825**		12.8	134	205	**305-1280**	**203-4128**
3.6	73	112	**305-0360**	**203-4036**	8.3	109	165	**305-0830**	**203-4083**	12.9	134	205	**305-1290**	**203-4129**
3.7	73	112	**305-0370**	**203-4037**	8.4	109	165	**305-0840**	**203-4084**	13.0	134	205	**305-1300**	**203-4130**
3.75	73	112	**305-0375**		8.5	109	165	**305-0850**	**203-4085**	13.1	134	205	**305-1310**	**203-4131**
3.8	78	119	**305-0380**	**203-4038**	8.6	115	175	**305-0860**	**203-4086**	13.2	134	205	**305-1320**	**203-4132**
3.9	78	119	**305-0390**	**203-4039**	8.7	115	175	**305-0870**	**203-4087**	13.25	134	205	**305-1325**	
4.0	78	119	**305-0400**	**203-4040**	8.75	115	175	**305-0875**		13.3	140	214	**305-1330**	**203-4133**
4.1	78	119	**305-0410**	**203-4041**	8.8	115	175	**305-0880**	**203-4088**	13.4	140	214	**305-1340**	**203-4133**
4.2	78	119	**305-0420**	**203-4042**	8.9	115	175	**305-0890**	**203-4089**	13.5	140	214	**305-1350**	**203-4134**
4.25	78	119	**305-0425**		9.0	115	175	**305-0900**	**203-4090**	13.6	140	214	**305-1360**	**203-4136**
4.3	82	126	**305-0430**	**203-4043**	9.1	115	175	**305-0910**	**203-4091**	13.7	140	214	**305-1370**	**203-4137**
4.4	82	126	**305-0440**	**203-4044**	9.2	115	175	**305-0920**	**203-4092**	13.8	140	214	**305-1380**	**203-4138**
4.5	82	126	**305-0450**	**203-4045**	9.25	115	175	**305-0925**		13.9	140	214	**305-1390**	**203-4139**
4.6	82	126	**305-0460**	**203-4046**	9.3	115	175	**305-0930**	**203-4093**	14.0	140	214	**305-1400**	**203-4140**
4.7	82	126	**305-0470**	**203-4047**	9.4	115	175	**305-0940**	**203-4094**	14.25	144	220	**305-1425**	**203-4142**
4.75	82	126	**305-0475**		9.5	115	175	**305-0950**	**203-4095**	14.5	144	220	**305-1450**	**213-4150**
4.8	87	132	**305-0480**	**203-4048**	9.6	121	184	**305-0960**	**203-4096**	14.75	144	220	**305-1475**	**203-4147**
4.9	87	132	**305-0490**	**203-4049**	9.7	121	184	**305-0970**	**203-4097**	15.0	144	220	**305-1450**	**203-4150**
5.0	87	132	**305-0500**	**203-4050**	9.75	121	184	**305-0975**		15.25	149	227	**305-1525**	**203-4152**
5.1	87	132	**305-0510**	**203-4051**	9.8	121	184	**305-0980**	**203-4098**	15.5	149	227	**305-1550**	**203-4155**
5.2	87	132	**305-0520**	**203-4052**	9.9	121	184	**305-0990**	**203-4099**	15.75	149	227	**305-1575**	**203-4157**
5.25	87	132	**305-0525**		10.0	121	184	**305-1000**	**203-4100**	16.0	149	227	**305-1600**	**203-4160**
5.3	87	132	**305-0530**	**203-4053**	10.1	121	184	**305-1010**	**203-4101**	16.25	154	235	**305-1625**	**203-4162**
5.4	91	139	**305-0540**	**203-4054**	10.2	121	184	**305-1020**	**203-4102**	16.5	154	235	**305-1650**	**203-4165**
5.5	91	139	**305-0550**	**203-4055**	10.25	121	184	**305-1025**		16.75	154	235	**305-1675**	**203-4167**
5.6	91	139	**305-0560**	**203-4056**	10.3	121	184	**305-1030**	**203-4103**	17.0	154	235	**305-1700**	**203-4170**
5.7	91	139	**305-0570**	**203-4057**	10.4	121	184	**305-1040**	**203-4104**	17.25	158	241	**305-1725**	**203-4172**
5.75	91	139	**305-0575**		10.5	121	184	**305-1050**	**203-4105**	17.5	158	241	**305-1750**	**203-4175**
5.8	91	139	**305-0580**	**203-4058**	10.6	121	184	**305-1060**	**203-4106**	17.75	158	241	**305-1775**	**203-4177**
5.9	91	139	**305-0590**	**203-4059**	10.7	128	195	**305-1070**	**203-4107**	18.0	158	241	**305-1800**	**203-4180**
6.0	91	139	**305-0600**	**203-4060**	10.75	128	195	**305-1075**		18.5	162	247	**305-1850**	**203-4185**
6.1	97	148	**305-0610**	**203-4061**	10.8	128	195	**305-1080**	**203-4108**	19.0	162	247	**305-1900**	**203-4190**
6.2	97	148	**305-0620**	**203-4062**	10.9	128	195	**305-1090**	**203-4108**	19.5	166	254	**305-1950**	**203-4195**
6.25	97	148	**305-0625**		11.0	128	195	**305-1100**	**203-4110**	20.0	166	254	**305-2000**	**203-4197**
6.3	97	148	**305-0630**	**203-4063**	11.1	128	195	**305-1110**	**203-4111**	20.5	166	254	**305-2050**	**203-4200**
6.4	97	148	**305-0640**	**203-4064**	11.2	128	195	**305-1120**	**203-4112**	21.0	171	261	**305-2100**	
6.5	97	148	**305-0650**	**203-4065**	11.25	128	195	**305-1125**		21.5	171	261	**305-2150**	
6.6	97	148	**305-0660**	**203-4066**	11.3	128	195	**305-1130**	**203-4113**	22.0	176	268	**305-2200**	
6.7	97	148	**305-0670**	**203-4067**	11.4	128	195	**305-1140**	**203-4114**	22.5	176	268	**305-2250**	
6.8	102	156	**305-0680**	**203-4068**	11.5	128	195	**305-1150**	**203-4115**	23.0	180	275	**305-2300**	
6.9	102	156	**305-0690**	**203-4069**	11.6	128	195	**305-1160**	**203-4116**	23.5	180	275	**305-2350**	
7.0	102	156	**305-0700**	**203-4070**	11.7	128	195	**305-1170**	**203-4117**	24.0	180	275	**305-2340**	
7.1	102	156	**305-0710**	**203-4071**	11.75	128	195	**305-1175**		24.5	185	282	**305-2350**	
7.2	102	156	**305-0720**	**203-7072**	11.8	128	195	**305-1180**	**203-4118**	25.0	185	282	**305-2500**	
7.25	102	156	**305-0725**		11.9	134	205	**305-1190**	**203-4119**					
7.3	102	156	**305-0730**	**203-4073**	12.0	134	205	**305-1200**	**203-4120**					
7.4	102	156	**305-0740**	**203-4074**	12.1	134	205	**305-1210**	**203-4121**					
7.5	102	156	**305-0750**	**203-4075**	12.2	134	205	**305-1220**	**203-4122**					
7.6	109	165	**305-0760**	**203-4076**	12.25	134	205	**305-1225**						
7.7	109	165	**305-0770**	**203-4077**										

HSS Ground Drill Blanks

- Used for punches, gages, pins or special tools.
- Made of hardened high speed steel and ground.
- Fully hardened to HRC 63-65.



Tolerance limits

0" - .2500"	+ .0000" - .0005"
.251"- .3906"	+ .0000" - .0009"
.391" - 1.0000"	+ .0000" - .0010"

Fractional Sizes

Size	OAL	Order No.	Size	OAL	Order No.	Size	OAL	Order No.
1/64"	3/4"	**305-8101**	23/64	4-7/8	**305-8123**	45/64	6	**305-8145**
1/32	1-3/8	**305-8102**	3/8	5	**305-8124**	23/32	6	**305-8146**
3/64	1-3/4	**305-8103**	25/64	5-1/8	**305-8125**	47/64	6	**305-8147**
1/16	1-7/8	**305-8104**	13/32	5-1/4	**305-8126**	3/4	6	**305-8148**
5/64	2	**305-8105**	27/64	5-3/8	**305-8127**	49/64	6	**305-8149**
3/32	2-1/4	**305-8106**	7/16	5-1/2	**305-8128**	25/32	6	**305-8150**
7/64	2-5/8	**305-8107**	29/64	5-5/8	**305-8129**	51/64	6	**305-8151**
1/8	2-3/4	**305-8108**	15/32	5-3/4	**305-8130**	13/16	6	**305-8152**
9/64	2-7/8	**305-8109**	31/64	5-7/8	**305-8131**	53/64	6	**305-8153**
5/32	3-1/8	**305-8110**	1/2	6	**305-8132**	27/32	6	**305-8154**
11/64	3-1/4	**305-8111**	3/64	6	**305-8133**	55/64	6	**305-8155**
3/16	3-1/2	**305-8112**	17/32	6	**305-8134**	7/8	6	**305-8156**
13/64	3-5/8	**305-8113**	35/64	6	**305-8135**	57/64	6	**305-8157**
7/32	3-3/4	**305-8114**	9/16	6	**305-8136**	29/32	6	**305-8158**
15/64	3-7/8	**305-8115**	37/64	6	**305-8137**	59/64	6	**305-8159**
1/4	4	**305-8116**	19/32	6	**305-8138**	15/16	6	**305-8160**
17/64	4-1/8	**305-8117**	39/64	6	**305-8139**	61/64	6	**305-8161**
9/32	4-1/4	**305-8118**	5/8	6	**305-8140**	31/32	6	**305-8162**
19/64	4-3/8	**305-8119**	41/64	6	**305-8141**	63/64	6	**305-8163**
5/16	4-1/2	**305-8120**	21/32	6	**305-8142**	1	6	**305-8164**
21/64	4-5/8	**305-8121**	43/ 64	6	**305-8143**			
11/32	4-3/4	**305-8122**	11/16	6	**305-8144**			

Number Sizes

Size	OAL	Order No.	Size	OAL	Order No.	Size	OAL	Order No.
#1	3-7/8"	**305-8001**	#28	2-7/8	**305-8028**	#55	1-7/8	**305-8055**
#2	3-7/8	**305-8002**	#29	2-7/8	**305-8029**	#56	1-3/4	**305-8056**
#3	3-3/4	**305-8003**	#30	2-3/4	**305-8030**	#57	1-3/4	**305-8057**
#4	3-3/4	**305-8004**	#31	2-3/4	**305-8031**	#58	1-5/8	**305-8058**
#5	3-3/4	**305-8005**	#32	2-3/4	**305-8032**	#59	1-5/8	**305-8059**
#6	3-3/4	**305-8006**	#33	2-5/8	**305-8033**	#60	1-5/8	**305-8060**
#7	3-5/8	**305-8007**	#34	2-5/8	**305-8034**	#61	1-5/8	**305-8061**
#8	3-5/8	**305-8008**	#35	2-5/8	**305-8035**	#62	1-1/2	**305-8062**
#9	3-5/8	**305-8009**	#36	2-1/2	**305-8036**	#63	1-1/2	**305-8063**
#10	3-5/8	**305-8010**	#37	2-1/2	**305-8037**	#64	1-1/2	**305-8064**
#11	3-1/2	**305-8011**	#38	2-1/2	**305-8038**	#65	1-1/2	**305-8065**
#12	3-1/2	**305-8012**	#39	2-3/8	**305-8039**	#66	1-3/8	**305-8066**
#13	3-1/2	**305-8013**	#40	2-3/8	**305-8040**	#67	1-3/8	**305-8067**
#14	3-3/8	**305-8014**	#41	2-3/8"	**305-8041**	#68	1-3/8	**305-8068**
#15	3-3/8	**305-8015**	#42	2-1/4	**305-8042**	#69	1-3/8	**305-8069**
#16	3-3/8	**305-8016**	#43	2-1/4	**305-8043**	#70	1-1/4	**305-8070**
#17	3-3/8	**305-8017**	#44	2-1/8	**305-8044**	#71	1-1/4	**305-8071**
#18	3-1/4	**305-8018**	#45	2-1/8	**305-8045**	#72	1-1/8	**305-8072**
#19	3-1/4	**305-8019**	#46	2-1/8	**305-8046**	#73	1-1/8	**305-8073**
#20	3-1/4	**305-8020**	#47	2	**305-8047**	#74	1	**305-8074**
#21	3-1/4	**305-8021**	#48	2	**305-8048**	#75	1	**305-8075**
#22	3-1/8	**305-8022**	#49	2	**305-8049**	#76	7/8	**305-8076**
#23	3-1/8	**305-8023**	#50	2	**305-8050**	#77	7/8	**305-8077**
#24	3-1/8	**305-8024**	#51	2	**305-8051**	#78	7/8	**305-8078**
#25	3	**305-8025**	#52	1-7/8	**305-8052**	#79	3/4	**305-8079**
#26	3	**305-8026**	#53	1-7/8	**305-8053**	#80	3/4	**305-8080**
#27	3	**305-8027**	#54	1-7/8	**305-8054**			

Letter Sizes

Size	OAL	Order No.	Size	OAL	Order No.	Size	OAL	Order No.
A	3-7/8"	**305-8201**	J	4-1/8	**305-8210**	S	4-7/8	**305-8219**
B	4	**305-8202**	K	4-1/4	**305-8211**	T	4-7/8	**305-8220**
C	4	**305-8203**	L	4-1/4	**305-8212**	U	5	**305-8221**
D	4	**305-8204**	M	4-3/8	**305-8213**	V	5	**305-8222**
E	4	**305-8205**	N	4-3/8	**305-8214**	W	5-1/8	**305-8223**
F	4-1/8	**305-8206**	O	4-1/2	**305-8215**	X	5-1/8	**305-8224**
G	4-1/8	**305-8207**	P	4-5/8	**305-8216**	Y	5-1/4	**305-8225**
H	4-1/8	**305-8208**	Q	4-3/4	**305-8217**	Z	5-1/4	**305-8226**
I	4-1/8	**305-8209**	R	4-3/4	**305-8218**			

Drill Blank Sets

High Speed Steel, Ground

Pieces	Specification	Order No.
115	(1/16-1/2" by 1/64ths,A-Z,# 1-#60) with metal index	**305-8315**
20	wire size blanks #61-80	**305-8320**
26	letter size blanks A to Z	**305-8326**
29	blanks 1/16" to 1/2" by 64ths	**305-8329**
60	wire size blanks #1 to #60	**305-8360**



Metric Ground HSS Drill Blanks

- Used for punches, gages, pins or special tools.
- Made of hardened high speed steel and ground.
- Fully hardened to HRC63-65.

Tolerance limits

0" - .2500"	+ .0000" - .0005"
.251"- .3906"	+ .0000" - .0009"
.391" - 1.0000"	+ .0000" - .0010"



Metric

Size	Decimal Equivalent	OAL	Order No.	Size	Decimal Equivalent	OAL	Order No.	Size	Decimal Equivalent	OAL	Order No.
0.35mm	0.0138(in)	19mm	**305-6035**	3.10	0.1220	65	**305-6310**	7.25	0.2854	109	**305-6725**
0.40	0.0157	20	**305-6040**	3.20	0.1260	65	**305-6320**	7.30	0.2874	109	**305-6730**
0.45	0.0177	20	**305-6045**	3.25	0.1280	65	**305-6325**	7.40	0.2913	109	**305-6740**
0.50	0.0197	22	**305-6050**	3.30	0.1299	65	**305-6330**	7.50	0.2953	109	**305-6750**
0.55	0.0217	24	**305-6055**	3.40	0.1339	70	**305-6340**	7.60	0.2992	117	**305-6760**
0.60	0.0236	24	**305-6060**	3.50	0.1378	70	**305-6350**	7.70	0.3031	117	**305-6770**
0.65	0.0256	26	**305-6065**	3.60	0.1417	70	**305-6360**	7.75	0.3051	117	**305-6775**
0.70	0.0276	28	**305-6070**	3.70	0.1457	70	**305-6370**	7.80	0.3071	117	**305-6780**
0.75	0.0295	28	**305-6075**	3.75	0.1476	70	**305-6375**	7.90	0.3110	117	**305-6790**
0.80	0.0315	30	**305-6080**	3.80	0.1496	75	**305-6380**	8.00	0.3150	117	**305-6800**
0.85	0.0335	30	**305-6085**	3.90	0.1535	75	**305-6390**	8.10	0.3189	117	**305-6810**
0.90	0.0354	32	**305-6090**	4.00	0.1575	75	**305-6400**	8.20	0.3228	117	**305-6820**
0.95	0.0374	32	**305-6095**	4.10	0.1614	75	**305-6410**	8.25	0.3248	117	**305-6825**
1.00	0.0394	34	**305-6100**	4.20	0.1654	75	**305-6420**	8.30	0.3268	117	**305-6830**
1.05	0.0413	34	**305-6105**	4.25	0.1673	75	**305-6425**	8.40	0.3307	117	**305-6840**
1.10	0.0433	36	**305-6110**	4.30	0.1693	80	**305-6430**	8.50	0.3346	117	**305-6850**
1.15	0.0453	36	**305-6115**	4.40	0.1732	80	**305-6440**	8.60	0.3386	125	**305-6860**
1.20	0.0472	38	**305-6120**	4.50	0.1772	80	**305-6450**	8.70	0.3425	125	**305-6870**
1.25	0.0492	38	**305-6125**	4.60	0.1811	80	**305-6460**	8.75	0.3445	125	**305-6875**
1.30	0.0512	38	**305-6130**	4.70	0.1850	80	**305-6470**	8.80	0.3465	125	**305-6880**
1.35	0.0531	40	**305-6135**	4.75	0.1870	80	**305-6475**	8.90	0.3504	125	**305-6890**
1.40	0.0551	40	**305-6140**	4.80	0.1890	86	**305-6480**	9.00	0.3543	125	**305-6900**
1.45	0.0571	40	**305-6145**	4.90	0.1929	86	**305-6490**	9.10	0.3583	125	**305-6910**
1.50	0.0591	40	**305-6150**	5.00	0.1969	86	**305-6500**	9.20	0.3622	125	**305-6920**
1.55	0.0610	43	**305-6155**	5.10	0.2008	86	**305-6510**	9.25	0.3642	125	**305-6925**
1.60	0.0630	43	**305-6160**	5.20	0.2047	86	**305-6520**	9.30	0.3661	125	**305-6930**
1.65	0.0650	43	**305-6165**	5.25	0.2067	86	**305-6525**	9.40	0.3701	125	**305-6940**
1.70	0.0669	43	**305-6170**	5.30	0.2087	86	**305-6530**	9.50	0.3740	125	**305-6950**
1.75	0.0689	46	**305-6175**	5.40	0.2126	93	**305-6540**	9.60	0.3780	133	**305-6960**
1.80	0.0709	46	**305-6180**	5.50	0.2165	93	**305-6555**	9.70	0.3819	133	**305-6970**
1.85	0.0728	46	**305-6185**	5.60	0.2205	93	**305-6560**	9.75	0.3839	133	**305-6975**
1.90	0.0748	46	**305-6190**	5.70	0.2244	93	**305-6570**	9.80	0.3858	133	**305-6980**
1.95	0.0768	49	**305-6195**	5.75	0.2264	93	**305-6575**	9.90	0.3898	133	**305-6990**
2.00	0.0787	49	**305-6200**	5.80	0.2283	93	**305-6580**	10.00	0.3937	133	**305-7000**
2.05	0.0807	49	**305-6205**	5.90	0.2323	93	**305-6590**	10.50	0.4134	136	**305-7050**
2.10	0.0827	49	**305-6210**	6.00	0.2362	93	**305-6600**	11.00	0.4331	140	**305-7100**
2.15	0.0846	53	**305-6215**	6.10	0.2402	101	**305-6610**	11.50	0.4528	142	**305-7150**
2.20	0.0866	53	**305-6220**	6.20	0.2441	101	**305-6620**	12.00	0.4724	149	**305-7200**
2.25	0.0886	53	**305-6225**	6.25	0.2461	101	**305-6625**	12.50	0.4921	152	**305-7250**
2.30	0.0906	53	**305-6230**	6.30	0.2480	101	**305-6630**	12.60	0.4921	152	**305-7260**
2.35	0.0925	53	**305-6235**	6.40	0.2520	101	**305-6640**	13.00		152	**305-7300**
2.40	0.0945	57	**305-6240**	6.50	0.2559	101	**305-6650**	13.50		168	**305-7350**
2.45	0.0965	57	**305-6245**	6.60	0.2598	101	**305-6660**	14.00		168	**305-7400**
2.50	0.0984	57	**305-6250**	6.70	0.2638	101	**305-6670**	14.50		168	**305-7450**
2.60	0.1024	57	**305-6260**	6.75	0.2657	109	**305-6675**	15.00		181	**305-7500**
2.70	0.1063	61	**305-6270**	6.80	0.2677	109	**305-6680**	15.50		181	**305-7550**
2.75	0.1083	61	**305-6275**	6.90	0.2717	109	**305-6690**	16.00		181	**305-7600**
2.80	0.1102	61	**305-6280**	7.00	0.2756	109	**305-6700**	16.50		181	**305-7650**
2.90	0.1142	61	**305-6290**	7.10	0.2795	109	**305-6710**	17.00		194	**305-7700**
3.00	0.1181	61	**305-6300**	7.20	0.2835	109	**305-6720**	17.50		194	**305-7750**

DIN338 HSS Twist Drills



Size (mm)	Flute Length (mm)	OAL (mm)	Rolled Black Oxide Order No.	Ground Bright Order No.	Ground TiN-Coated Order No.	Size (mm)	Flute Length (mm)	OAL (mm)	Rolled Black Oxide Order No.	Ground Bright Order No.	Ground TiN-Coated Order No.
0.20	2.5	19	**201-0020**	**206-0020**	**207-0020**	4.00	43	75	**201-0400**	**206-0400**	**207-0400**
0.30	3	19	**201-0030**	**206-0030**	**207-0030**	4.05	43	75	**201-0405**	**206-0405**	**207-0405**
0.50	6	22	**201-0050**	**206-0050**	**207-0050**	4.10	43	75	**201-0410**	**206-0410**	**207-0410**
0.55	7	24	**201-0055**	**206-0055**	**207-0055**	4.15	43	75	**201-0415**	**206-0415**	**207-0415**
0.60	7	24	**201-0060**	**206-0060**	**207-0060**	4.20	43	75	**201-0420**	**206-0420**	**207-0420**
0.65	8	26	**201-0065**	**206-0065**	**207-0065**	4.25	43	75	**201-0425**	**206-0425**	**207-0425**
0.70	9	28	**201-0070**	**206-0070**	**207-0070**	4.30	47	80	**201-0430**	**206-0430**	**207-0430**
0.75	9	28	**201-0075**	**206-0075**	**207-0075**	4.35	47	80	**201-0435**	**206-0435**	**207-0435**
0.80	10	30	**201-0080**	**206-0080**	**207-0080**	4.40	47	80	**201-0440**	**206-0440**	**207-0440**
0.85	11	32	**201-0085**	**206-0085**	**207-0085**	4.45	47	80	**201-0445**	**206-0445**	**207-0445**
0.90	11	32	**201-0090**	**206-0090**	**207-0090**	4.50	47	80	**201-0450**	**206-0450**	**207-0450**
0.95	11	32	**201-0095**	**206-0095**	**207-0095**	4.55	47	80	**201-0455**	**206-0455**	**207-0455**
0.98	12	34	**201-0098**	**206-0098**	**207-0098**	4.60	47	80	**201-0460**	**206-0460**	**207-0460**
1.00	12	34	**201-0100**	**206-0100**	**207-0100**	4.65	47	80	**201-0465**	**206-0465**	**207-0465**
1.05	12	34	**201-0105**	**206-0105**	**207-0105**	4.70	47	80	**201-0470**	**206-0470**	**207-0470**
1.10	14	36	**201-0110**	**206-0110**	**207-0110**	4.75	47	80	**201-0475**	**206-0475**	**207-0475**
1.15	14	36	**201-0115**	**206-0115**	**207-0115**	4.80	52	86	**201-0480**	**206-0480**	**207-0480**
1.20	16	38	**201-0120**	**206-0120**	**207-0120**	4.85	52	86	**201-0485**	**206-0485**	**207-0485**
1.25	16	38	**201-0125**	**206-0125**	**207-0125**	4.90	52	86	**201-0490**	**206-0490**	**207-0490**
1.30	16	38	**201-0130**	**206-0130**	**207-0130**	4.95	52	86	**201-0495**	**206-0495**	**207-0495**
1.35	18	40	**201-0135**	**206-0135**	**207-0135**	5.00	52	86	**201-0500**	**206-0500**	**207-0500**
1.40	18	40	**201-0140**	**206-0140**	**207-0140**	5.10	52	86	**201-0510**	**206-0510**	**207-0510**
1.45	18	40	**201-0145**	**206-0145**	**207-0145**	5.20	52	86	**201-0520**	**206-0520**	**207-0520**
1.50	18	40	**201-0150**	**206-0150**	**207-0150**	5.25	52	86	**201-0525**	**206-0525**	**207-0525**
1.55	20	43	**201-0155**	**206-0155**	**207-0155**	5.30	52	86	**201-0530**	**206-0530**	**207-0530**
1.60	20	43	**201-0160**	**206-0160**	**207-0160**	5.40	57	93	**201-0540**	**206-0540**	**207-0540**
1.65	20	43	**201-0165**	**206-0165**	**207-0165**	5.50	57	93	**201-0550**	**206-0550**	**207-0550**
1.70	20	43	**201-0170**	**206-0170**	**207-0170**	5.60	57	93	**201-0560**	**206-0560**	**207-0560**
1.75	22	48	**201-0175**	**206-0175**	**207-0175**	5.70	57	93	**201-0570**	**206-0570**	**207-0570**
1.80	22	48	**201-0180**	**206-0180**	**207-0180**	5.75	57	93	**201-0575**	**206-0575**	**207-0575**
1.85	22	48	**201-0185**	**206-0185**	**207-0185**	5.80	57	93	**201-0580**	**206-0580**	**207-0580**
1.90	22	48	**201-0190**	**206-0190**	**207-0190**	5.90	57	93	**201-0590**	**206-0590**	**207-0590**
1.95	24	49	**201-0195**	**206-0195**	**207-0195**	6.00	57	93	**201-0600**	**206-0600**	**207-0600**
2.00	24	49	**201-0200**	**206-0200**	**207-0200**	6.10	63	101	**201-0610**	**206-0610**	**207-0610**
2.05	24	49	**201-0205**	**206-0205**	**207-0205**	6.20	63	101	**201-0620**	**206-0620**	**207-0620**
2.10	24	49	**201-0210**	**206-0210**	**207-0210**	6.25	63	101	**201-0625**	**206-0625**	**207-0625**
2.15	27	53	**201-0215**	**206-0215**	**207-0215**	6.30	63	101	**201-0630**	**206-0630**	**207-0630**
2.20	27	53	**201-0220**	**206-0220**	**207-0220**	6.35	63	101	**201-0635**	**206-0635**	**207-0635**
2.25	27	53	**201-0225**	**206-0225**	**207-0225**	6.40	63	101	**201-0640**	**206-0640**	**207-0640**
2.30	27	53	**201-0230**	**206-0230**	**207-0230**	6.50	63	101	**201-0650**	**206-0650**	**207-0650**
2.35	27	53	**201-0235**	**206-0235**	**207-0235**	6.60	63	101	**201-0660**	**206-0660**	**207-0660**
2.40	30	57	**201-0240**	**206-0240**	**207-0240**	6.70	63	101	**201-0670**	**206-0670**	**207-0670**
2.45	30	57	**201-0245**	**206-0245**	**207-0245**	6.75	69	109	**201-0675**	**206-0675**	**207-0675**
2.50	30	57	**201-0250**	**206-0250**	**207-0250**	6.80	69	109	**201-0680**	**206-0680**	**207-0680**
2.55	30	57	**201-0255**	**206-0255**	**207-0255**	6.90	69	109	**201-0690**	**206-0690**	**207-0690**
2.60	30	57	**201-0260**	**206-0260**	**207-0260**	7.00	69	109	**201-0700**	**206-0700**	**207-0700**
2.65	30	57	**201-0265**	**206-0265**	**207-0265**	7.10	69	109	**201-0710**	**206-0710**	**207-0710**
2.70	33	61	**201-0270**	**206-0270**	**207-0270**	7.20	69	109	**201-0720**	**206-0720**	**207-0720**
2.75	33	61	**201-0275**	**206-0275**	**207-0275**	7.25	69	109	**201-0725**	**206-0725**	**207-0725**
2.80	33	61	**201-0280**	**206-0280**	**207-0280**	7.30	69	109	**201-0730**	**206-0730**	**207-0730**
2.85	33	61	**201-0285**	**206-0285**	**207-0285**	7.40	69	109	**201-0740**	**206-0740**	**207-0740**
2.90	33	61	**201-0290**	**206-0290**	**207-0290**	7.50	69	109	**201-0750**	**206-0750**	**207-0750**
2.95	33	61	**201-0295**	**206-0295**	**207-0295**	7.60	75	117	**201-0760**	**206-0760**	**207-0760**
3.00	33	61	**201-0300**	**206-0300**	**207-0300**	7.70	75	117	**201-0770**	**206-0770**	**207-0770**
3.05	36	65	**201-0305**	**206-0305**	**207-0305**	7.75	75	117	**201-0775**	**206-0775**	**207-0775**
3.10	36	65	**201-0310**	**206-0310**	**207-0310**	7.80	75	117	**201-0780**	**206-0780**	**207-0780**
3.15	36	65	**201-0315**	**206-0315**	**207-0315**	7.90	75	117	**201-0790**	**206-0790**	**207-0790**
3.20	36	65	**201-0320**	**206-0320**	**207-0320**	8.00	75	117	**201-0800**	**206-0800**	**207-0800**
3.25	36	65	**201-0325**	**206-0325**	**207-0325**	8.10	75	117	**201-0810**	**206-0810**	**207-0810**
3.30	36	65	**201-0330**	**206-0330**	**207-0330**	8.20	75	117	**201-0820**	**206-0820**	**207-0820**
3.35	36	65	**201-0335**	**206-0335**	**207-0335**	8.25	75	117	**201-0825**	**206-0825**	**207-0825**
3.40	39	70	**201-0340**	**206-0340**	**207-0340**	8.30	75	117	**201-0830**	**206-0830**	**207-0830**
3.45	39	70	**201-0345**	**206-0345**	**207-0345**	8.40	75	117	**201-0840**	**206-0840**	**207-0840**
3.50	39	70	**201-0350**	**206-0350**	**207-0350**	8.50	75	117	**201-0850**	**206-0850**	**207-0850**
3.55	39	70	**201-0355**	**206-0355**	**207-0355**	8.60	81	125	**201-0860**	**206-0860**	**207-0860**
3.60	39	70	**201-0360**	**206-0360**	**207-0360**	8.70	81	125	**201-0870**	**206-0870**	**207-0870**
3.65	39	70	**201-0365**	**206-0365**	**207-0365**	8.75	81	125	**201-0875**	**206-0875**	**207-0875**
3.70	39	70	**201-0370**	**206-0370**	**207-0370**	8.80	81	125	**201-0880**	**206-0880**	**207-0880**
3.75	39	70	**201-0375**	**206-0375**	**207-0375**	8.90	81	125	**201-0890**	**206-0890**	**207-0890**
3.80	43	75	**201-0380**	**206-0380**	**207-0380**	9.00	81	125	**201-0900**	**206-0900**	**207-0900**
3.85	43	75	**201-0385**	**206-0385**	**207-0385**	9.10	81	125	**201-0910**	**206-0910**	**207-0910**
3.90	43	75	**201-0390**	**206-0390**	**207-0390**	9.20	81	125	**201-0920**	**206-0920**	**207-0920**
3.95	43	75	**201-0395**	**206-0395**	**207-0395**	9.25	81	125	**201-0925**	**206-0925**	**207-0925**

DIN338 HSS Twist Drills Continued



Size (mm)	Flute Length (mm	OAL (mm)	Rolled Black Oxide Order No.	Ground Bright Order No.	Ground TiN-Coated Order No.	Size (mm)	Flute Length (mm)	OAL (mm)	Rolled Black Oxide Order No.	Ground Bright Order No.	Ground TiN-Coated Order No.
9.30	81	125	**201-0930**	**206-0930**	**207-0930**	12.40	101	151	**201-1240**	**206-1240**	**207-1240**
9.40	81	125	**201-0940**	**206-0940**	**207-0940**	12.50	101	151	**201-1250**	**206-1250**	**207-1250**
9.50	81	125	**201-0950**	**206-0950**	**207-0950**	12.60	101	151	**201-1200**	**206-1260**	**207-1260**
9.60	87	133	**201-0960**	**206-0960**	**207-0960**	12.70	101	151	**201-1200**	**206-1270**	**207-1270**
9.70	87	133	**201-0970**	**206-0970**	**207-0970**	12.75	101	151	**201-1250**	**206-1275**	**207-1275**
9.75	87	133	**201-0975**	**206-0975**	**207-0975**	12.80	101	151	**201-1200**	**206-1280**	**207-1280**
9.80	87	133	**201-0980**	**206-0980**	**207-0980**	12.90	101	151	**201-1200**	**206-1290**	**207-1290**
9.90	87	133	**201-0990**	**206-0990**	**207-0990**	13.00	101	151	**201-1300**	**206-1300**	**207-1300**
10.00	87	133	**201-1000**	**206-1000**	**207-1000**	13.10	101	151	**201-1310**	**206-1310**	**207-1310**
10.10	87	133	**201-1010**	**206-1010**	**207-1010**	13.20	101	151	**201-1320**	**206-1320**	**207-1320**
10.20	87	133	**201-1020**	**206-1020**	**207-1020**	13.25	108	160	**201-1325**	**206-1325**	**207-1325**
10.25	87	133	**201-1025**	**206-1025**	**207-1025**	13.30	108	160	**201-1330**	**206-1330**	**207-1330**
10.30	87	133	**201-1030**	**206-1030**	**207-1030**	13.40	108	160	**201-1340**	**206-1340**	**207-1340**
10.40	87	133	**201-1040**	**206-1040**	**207-1040**	13.50	108	160	**201-1350**	**206-1350**	**207-1350**
10.50	87	133	**201-1050**	**206-1050**	**207-1050**	13.60	108	160	**201-1360**	**206-1360**	**207-1360**
10.60	94	142	**201-1060**	**206-1060**	**207-1060**	13.70	108	160	**201-1370**	**206-1370**	**207-1370**
10.70	94	142	**201-1070**	**206-1070**	**207-1070**	13.75	108	160	**201-1375**	**206-1375**	**207-1375**
10.75	94	142	**201-1075**	**206-1075**	**207-1075**	13.80	108	160	**201-1380**	**206-1380**	**207-1380**
10.80	94	142	**201-1080**	**206-1080**	**207-1080**	13.90	108	160	**201-1390**	**206-1390**	**207-1390**
10.90	94	142	**201-1090**	**206-1090**	**207-1090**	14.00	108	160	**201-1400**	**206-1400**	**207-1400**
11.00	94	142	**201-1100**	**206-1100**	**207-1100**	14.25	114	169	**201-1425**	**206-1425**	**207-1425**
11.10	94	142	**201-1110**	**206-1110**	**207-1110**	14.50	114	169	**201-1450**	**206-1450**	**207-1450**
11.20	94	142	**201-1120**	**206-1120**	**207-1120**	14.75	114	169	**201-1475**	**206-1475**	**207-1475**
11.25	94	142	**201-1125**	**206-1125**	**207-1125**	15.00	114	169	**201-1500**	**206-1500**	**207-1500**
11.30	94	142	**201-1130**	**206-1130**	**207-1130**	15.25	120	178	**201-1525**	**206-1525**	**207-1525**
11.40	94	142	**201-1140**	**206-1140**	**207-1140**	15.50	120	178	**201-1550**	**206-1550**	**207-1550**
11.50	94	142	**201-1150**	**206-1150**	**207-1150**	15.75	120	178	**201-1575**	**206-1575**	**207-1575**
11.60	94	142	**201-1160**	**206-1160**	**207-1160**	16.00	120	178	**201-1600**	**206-1600**	**207-1600**
11.70	94	142	**201-1170**	**206-1170**	**207-1170**	16.50	125	187	**201-1650**	**206-1650**	**207-1650**
11.75	94	142	**201-1175**	**206-1175**	**207-1175**	17.00	125	187	**201-1700**	**206-1700**	**207-1700**
11.80	94	142	**201-1180**	**206-1180**	**207-1180**	17.50	130	191	**201-1750**	**206-1750**	**207-1750**
11.90	101	151	**201-1190**	**206-1190**	**207-1190**	18.00	130	191	**201-1800**	**206-1800**	**207-1800**
12.00	101	151	**201-1200**	**206-1200**	**207-1200**	18.50	135	198	**201-1850**	**206-1850**	**207-1850**
12.10	101	151	**201-1210**	**206-1210**	**207-1210**	19.00	135	198	**201-1900**	**206-1900**	**207-1900**
12.20	101	151	**201-1220**	**206-1220**	**207-1220**	19.50	140	205	**201-1950**	**206-1950**	**207-1950**
12.25	101	151	**201-1225**	**206-1225**	**207-1225**	20.00	140	205	**201-2000**	**206-2000**	**207-2000**
12.30	101	151	**201-1230**	**206-1230**	**207-1230**						

Drill Guide

For drilling perfact pocket holes in face frames quickly and easily.



Order No. 830-2020

Drill Stop Sets

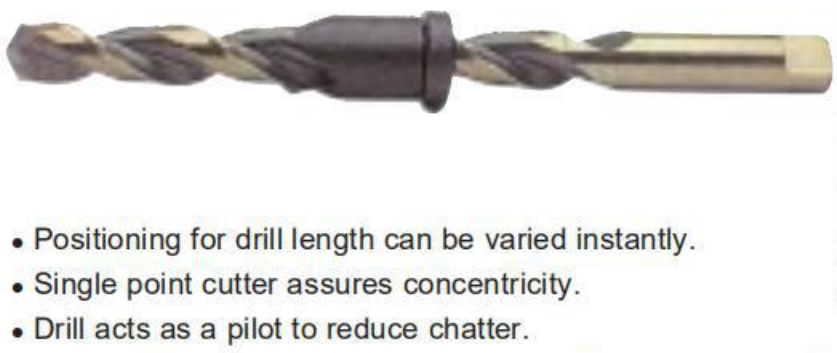
Allows drilling to exact depth. Locks onto the bit for drill press depth precision.



Pieces	Specification	Order No.
7	1/8", 3/16", 1/4", 5/16", 3/8", 7/16", 1/2".	**300-0007**
4	5/8", 3/4", 7/8", 1"	**300-0004**

Chamfer Bit

Drill and chamfer and deburr in one operation.



- Positioning for drill length can be varied instantly.
- Single point cutter assures concentricity.
- Drill acts as a pilot to reduce chatter.
- Easily resharpened on any drill grinder without damage to the drill.
- Can provide an additional chamfer diameter to a multi-diameter drill.
- 90° Included angle.
- Drill bit not included.

Drill Size	Dimensions A	B	C	D	Order No.
1/8"	7/16"	1/4"	5/8	5/16"	**830-2030**

DIN1897 Twist/Screw Drills

High Speed Steel, Ground



- Primarily for use in screw machines.
- Ideal medium duty portable or machine drilling of low tensile strength materials.
- Heavy-duty-short length provides increased rigidity.

Size (mm)	Flute Length (mm)	OAL (mm)	Bright Order No.	TiN-Coated Order No.	Black Oxide Order No.	Size (mm)	Flute Length (mm)	OAL (mm)	Bright Order No.	TiN-Coated Order No.	Black Oxide Order No.
1.00	6	26	**202-4010**	**202-5010**	**334-9010**	8.0	37	79	**202-4080**	**202-5080**	**234-9080**
1.10	7	28	**202-4011**	**202-5011**	**334-9011**	8.5	37	79	**202-4085**	**202-5085**	**234-9085**
1.20	8	30	**202-4012**	**202-5012**	**334-9012**	9.0	40	84	**202-4090**	**202-5090**	**234-9090**
1.30	8	30	**202-4013**	**202-5013**	**334-9013**	9.5	40	84	**202-4095**	**202-5095**	**234-9095**
1.40	9	32	**202-4014**	**202-5014**	**334-9014**	10.0	43	89	**202-4100**	**202-5100**	**234-9100**
1.50	9	32	**202-4015**	**202-5015**	**334-9015**	10.10	43	89	**202-4101**	**202-5101**	**234-9101**
1.60	10	34	**202-4016**	**202-5016**	**334-9016**	10.20	43	89	**202-4102**	**202-5102**	**234-9102**
1.70	10	34	**202-4017**	**202-5017**	**334-9017**	10.30	43	89	**202-4103**	**202-5103**	**234-9103**
1.80	11	36	**202-4018**	**202-5018**	**334-9018**	10.40	43	89	**202-4104**	**202-5104**	**234-9104**
1.90	11	36	**202-4019**	**202-5019**	**334-9019**	10.50	43	89	**202-4105**	**202-5105**	**234-9105**
2.0	12	38	**202-4020**	**202-5020**	**334-9020**	10.60	43	89	**202-4106**	**202-5106**	**234-9106**
2.1	12	38	**202-4021**	**202-5021**	**334-9021**	10.70	47	95	**202-4107**	**202-5107**	**234-9107**
2.2	13	40	**202-4022**	**202-5022**	**334-9022**	10.80	47	95	**202-4108**	**202-5108**	**234-9108**
2.3	13	40	**202-4023**	**202-5023**	**334-9023**	10.90	47	95	**202-4109**	**202-5109**	**234-9109**
2.4	14	43	**202-4024**	**202-5024**	**334-9024**	11.00	47	95	**202-4110**	**202-5110**	**234-9110**
2.5	14	43	**202-4025**	**202-5025**	**334-9025**	11.10	47	95	**202-4111**	**202-5111**	**234-9111**
2.6	14	43	**202-4026**	**202-5026**	**334-9026**	11.20	47	95	**202-4112**	**202-5112**	**234-9112**
2.7	16	46	**202-4027**	**202-5027**	**334-9027**	11.30	47	95	**202-4113**	**202-5113**	**234-9113**
2.8	16	46	**202-4028**	**202-5028**	**334-9028**	11.40	47	95	**202-4114**	**202-5114**	**234-9114**
2.9	16	46	**202-4029**	**202-5029**	**334-9029**	11.50	47	95	**202-4115**	**202-5115**	**234-9115**
3.0	16	46	**202-4030**	**202-5030**	**334-9030**	11.60	47	95	**202-4116**	**202-5116**	**234-9116**
3.1	18	49	**202-4031**	**202-5031**	**334-9031**	11.70	47	95	**202-4117**	**202-5117**	**234-9117**
3.2	18	49	**202-4032**	**202-5032**	**334-9032**	11.80	47	95	**202-4118**	**202-5118**	**234-9118**
3.3	18	49	**202-4033**	**202-5033**	**334-9033**	11.90	51	102	**202-4119**	**202-5119**	**234-9119**
3.4	20	52	**202-4034**	**202-5034**	**334-9034**	12.00	51	102	**202-4120**	**202-5120**	**234-9120**
3.5	20	52	**202-4035**	**202-5035**	**334-9035**	12.10	51	102	**202-4121**	**202-5121**	**234-9121**
3.6	20	52	**202-4036**	**202-5036**	**334-9036**	12.20	51	102	**202-4122**	**202-5122**	**234-9122**
3.7	20	52	**202-4037**	**202-5037**	**334-9037**	12.30	51	102	**202-4123**	**202-5123**	**234-9123**
3.8	22	55	**202-4038**	**202-5038**	**334-9038**	12.40	51	102	**202-4124**	**202-5124**	**234-9124**
3.9	22	55	**202-4039**	**202-5039**	**334-9039**	12.50	51	102	**202-4125**	**202-5125**	**234-9125**
4.0	22	55	**202-4040**	**202-5040**	**334-9040**	12.60	51	102	**202-4126**	**202-5126**	**234-9126**
4.1	22	55	**202-4041**	**202-5041**	**334-9041**	12.70	51	102	**202-4127**	**202-5127**	**234-9127**
4.2	22	55	**202-4042**	**202-5042**	**334-9042**	12.80	51	102	**202-4128**	**202-5128**	**234-9128**
4.3	24	58	**202-4043**	**202-5043**	**334-9043**	12.90	51	102	**202-4129**	**202-5129**	**234-9129**
4.4	24	58	**202-4044**	**202-5044**	**334-9044**	13.00	51	102	**202-4130**	**202-5130**	**234-9130**
4.5	24	58	**202-4045**	**202-5045**	**334-9045**	13.10	51	102	**202-4131**	**202-5131**	**234-9131**
4.6	24	58	**202-4046**	**202-5046**	**334-9046**	13.20	51	102	**202-4132**	**202-5132**	**234-9132**
4.7	24	58	**202-4047**	**202-5047**	**334-9047**	13.30	54	107	**202-4133**	**202-5133**	**234-9133**
4.8	26	62	**202-4048**	**202-5048**	**334-9048**	13.40	54	107	**202-4134**	**202-5134**	**234-9134**
4.9	26	62	**202-4049**	**202-5049**	**334-9049**	13.50	54	107	**202-4135**	**202-5135**	**234-9135**
5.0	26	62	**202-4050**	**202-5050**	**334-9050**	13.60	54	107	**202-4136**	**202-5136**	**234-9136**
5.1	26	62	**202-4051**	**202-5051**	**334-9051**	13.70	54	107	**202-4137**	**202-5137**	**234-9137**
5.2	26	62	**202-4052**	**202-5052**	**334-9052**	13.80	54	107	**202-4138**	**202-5138**	**234-9138**
5.3	28	66	**202-4053**	**202-5053**	**334-9053**	13.90	54	107	**202-4139**	**202-5139**	**234-9139**
5.4	28	66	**202-4054**	**202-5054**	**334-9054**	14.00	54	107	**202-4140**	**202-5140**	**234-9140**
5.5	28	66	**202-4055**	**202-5055**	**334-9055**	14.25	56	111	**202-4142**	**202-5142**	**234-9142**
5.6	28	66	**202-4056**	**202-5056**	**334-9056**	14.50	56	111	**202-4145**	**202-5145**	**234-9145**
5.7	28	66	**202-4057**	**202-5057**	**334-9057**	14.75	56	111	**202-4147**	**202-5147**	**234-9147**
5.8	28	66	**202-4058**	**202-5058**	**334-9058**	15.00	56	111	**202-4150**	**202-5150**	**234-9150**
5.9	28	66	**202-4059**	**202-5059**	**334-9059**	15.25	58	115	**202-4152**	**202-5152**	**234-9152**
6.0	28	66	**202-4060**	**202-5060**	**334-9060**	15.50	58	115	**202-4155**	**202-5155**	**234-9155**
6.1	31	70	**202-4061**	**202-5061**	**334-9061**	15.75	58	115	**202-4157**	**202-5157**	**234-9157**
6.2	31	70	**202-4062**	**202-5062**	**334-9062**	16.00	58	115	**202-4160**	**202-5160**	**234-9160**
6.3	31	70	**202-4063**	**202-5063**	**334-9063**	16.25	60	119	**202-4162**	**202-5162**	**234-9162**
6.4	31	70	**202-4064**	**202-5064**	**334-9064**	16.50	60	119	**202-4165**	**202-5165**	**234-9165**
6.5	31	70	**202-4065**	**202-5065**	**334-9065**	16.75	60	119	**202-4167**	**202-5167**	**234-9167**
6.6	31	70	**202-4066**	**202-5066**	**334-9066**	17.00	60	119	**202-4170**	**202-5170**	**234-9170**
6.7	31	70	**202-4067**	**202-5067**	**334-9067**	17.25	62	123	**202-4172**	**202-5172**	**234-9172**
6.8	34	74	**202-4068**	**202-5068**	**334-9068**	17.50	62	123	**202-4175**	**202-5175**	**234-9175**
6.9	34	74	**202-4069**	**202-5069**	**334-9069**	17.75	62	123	**202-4177**	**202-5177**	**234-9177**
7.0	34	74	**202-4070**	**202-5070**	**334-9070**	18.00	62	123	**202-4180**	**202-5180**	**234-9180**
7.1	34	74	**202-4071**	**202-5071**	**334-9071**	18.25	64	127	**202-4182**	**202-5182**	**234-9182**
7.2	34	74	**202-4072**	**202-5072**	**334-9072**	18.50	64	127	**202-4185**	**202-5185**	**234-9185**
7.3	34	74	**202-4073**	**202-5073**	**334-9073**	18.75	64	127	**202-4187**	**202-5187**	**234-9187**
7.4	34	74	**202-4074**	**202-5074**	**334-9074**	19.00	64	127	**202-4190**	**202-5190**	**234-9190**
7.5	34	74	**202-4075**	**202-5075**	**334-9075**	19.25	66	131	**202-4192**	**202-5192**	**234-9192**
7.6	37	79	**202-4076**	**202-5076**	**334-9076**	19.50	66	131	**202-4195**	**202-5195**	**234-9195**
7.7	37	79	**202-4077**	**202-5077**	**334-9077**	19.75	66	131	**202-4197**	**202-5197**	**234-9197**
7.8	37	79	**202-4078**	**202-5078**	**334-9078**	20.00	66	131	**202-4200**	**202-5200**	**234-9200**
7.9	37	79	**202-4079**	**202-5079**	**334-9079**						

Aircraft Extension Drills

Ground,135° Split point, 6" & 12" Length

- Standard two flute design.
- Straight shanks correspond to the drill diameter.



Used to drill normal depth holes in hard to reach places,such as in airframe work, pulley hubs, etc.

Fractional Sizes

		HSS Black		HSS Bright		M35 Cobalt	
	Flute	6”	12”	6”	12”	6”	12”
Size	Length	Order No.	Order No.	Order No.	Order No.	Order No.	Order No.
3/64”	3/4”	434-5003	434-9003	434-4003	434-4003	434-7003	434-8003
1/16	7/8	434-5004	434-9004	434-0004	434-1004	434-7004	434-8004
5/64	1	434-5005	434-9005	434-0005	434-1005	434-7005	434-8005
3/32	1-1/4	434-5006	434-9006	434-0006	434-1006	434-7006	434-8006
7/64	1-1/2	434-5007	434-9007	434-0007	434-1007	434-7007	434-8007
1/8	1-5/8	434-5008	434-9008	434-0008	434-1008	434-7008	434-8008
9/64	1-3/4	434-5009	434-9009	434-0009	434-1009	434-7009	434-8009
5/32	2	434-5010	434-9010	434-0010	434-1010	434-7010	434-8010
11/64	2-1/8	434-5011	434-9011	434-0011	434-1011	434-7011	434-8011
3/16	2-5/16	434-5012	434-9012	434-0012	434-1012	434-7012	434-8012
13-64	2-7/16	434-5013	434-9013	434-0013	434-1013	434-7013	434-8013
7/32	2-1/2	434-5014	434-9014	434-0014	434-1014	434-7014	434-8014
15/34	2-5/8	434-5015	434-9015	434-0015	434-1015	434-7015	434-8015
1/4	2-3/4	434-5016	434-9016	434-0016	434-1016	434-7016	434-8016
17/64	2-7/8	434-5017	434-9017	434-0017	434-1017	434-7017	434-8017
9/32	2-15/16	434-5018	434-9018	434-0018	434-1018	434-7018	434-8018
19/64	3-1/16	434-5019	434-9019	434-0019	434-1019	434-7019	434-8019
5/16	3-3/16	434-5020	434-9020	434-0020	434-1020	434-7020	434-8020
21/64	3-5/16	434-5021	434-9021	434-0021	434-1021	434-7021	434-8021
11/32	3-7/16	434-5022	434-9022	434-0022	434-1022	434-7022	434-8022
23/64	3-1/2	434-5023	434-9023	434-0023	434-1023	434-7023	434-8023
3/8	3-5/8	434-5024	434-9024	434-0024	434-1024	434-7024	434-8024
25/64	3-3/4	434-5025	434-9025	434-0025	434-1025	434-7025	434-8025
13/32	3-7/8	434-5026	434-9026	434-0026	434-1026	434-7026	434-8026
27/64	3-15/16	434-5027	434-9027	434-0027	434-1027	434-7027	434-8027
7/16	4-1/16	434-5028	434-9028	434-0028	434-1028	434-7028	434-8028
29/64	4-3/16	434-5029	434-9029	434-0029	434-1029	434-7029	434-8029
15/62	4-5/16	434-5030	434-9030	434-0030	434-1030	434-7030	434-8030
31/64	4-3/8	434-5031	434-9031	434-0031	434-1031	434-7031	434-8031
1/2	4-1/2	434-5032	434-9032	434-0032	434-1032	434-7032	434-8032

Letter Sizes

		HSS Black		HSS Bright		M35 Cobalt	
	Flute	6”	12”	6”	12”	6”	12”
Size	Length	Order No.	Order No.	Order No.	Order No.	Order No.	Order No.
A	2-5/8”	434-5201	434-9201	434-0201	434-1201	434-7201	434-8201
B	2-3/4	434-5202	434-9202	434-0202	434-1202	434-7202	434-8202
C	2-3/4	434-5203	434-9203	434-0203	434-1203	434-7203	434-8203
D	2-3/4	434-5204	434-9204	434-0204	434-1204	434-7204	434-8204
E	2-3/4	434-5205	434-9205	434-0205	434-1205	434-7205	434-8205
F	2-3/4	434-5206	434-9206	434-0206	434-1206	434-7206	434-8206
G	2-7/8	434-5207	434-9207	434-0207	434-1207	434-7207	434-8207
H	2-7/8	434-5208	434-9208	434-0208	434-1208	434-7208	434-8208
I	2-7/8	434-5209	434-9209	434-0209	434-1209	434-7209	434-8209
J	2-7/8	434-5210	434-9210	434-0210	434-1210	434-7210	434-8210
K	2-15/16	434-5211	434-9211	434-0211	434-1211	434-7211	434-8211
L	2-15/16	434-5212	434-9212	434-0212	434-1212	434-7212	434-8212
M	3-1/16	434-5213	434-9213	434-0213	434-1213	434-7213	434-8213
N	3-1/16	434-5214	434-9214	434-0214	434-1214	434-7214	434-8214
O	3-3/16	434-5215	434-9215	434-0215	434-1215	434-7215	434-8215
P	3-5/16	434-5216	434-9216	434-0216	434-1216	434-7216	434-8216
Q	3-7/16	434-5217	434-9217	434-0217	434-1217	434-7217	434-8217
R	3-7/16	434-5218	434-9218	434-0218	434-1218	434-7218	434-8218
S	3-1/2	434-5219	434-9219	434-0219	434-1219	434-7219	434-8219
T	3-1/2	434-5220	434-9220	434-0220	434-1220	434-7220	434-8220
U	3-5/8	434-5221	434-9221	434-0221	434-1221	434-7221	434-8221
V	3-5/8	434-5222	434-9222	434-0222	434-1222	434-7222	434-8222
W	3-3/4	434-5223	434-9223	434-0223	434-1223	434-7223	434-8223
X	3-3/4	434-5224	434-9224	434-0224	434-1224	434-7224	434-8224
Y	3-7/8	434-5225	434-9225	434-0225	434-1225	434-7225	434-8225
Z	3-7/8	434-5226	434-9226	434-0226	434-1226	434-7226	434-8226

Number Sizes

		HSS Black		HSS Bright		M35 Cobalt	
	Flute	6”	12”	6”	12”	6”	12”
Size	Length	Order No.	Order No.	Order No.	Order No.	Order No.	Order No.
#1	2-5/8	434-5101	434-9101	434-0101	434-1101	434-7101	434-8101
#2	2-5/8	434-5102	434-9102	434-0102	434-1102	434-7102	434-8102
#3	2-1/2	434-5103	434-9103	434-0103	434-1103	434-7103	434-8103
#4	2-1/2	434-5104	434-9104	434-0104	434-1104	434-7104	434-8104
#5	2-1/2	434-5105	434-9105	434-0105	434-1105	434-7105	434-8105
#6	2-1/2	434-5106	434-9106	434-0106	434-1106	434-7105	434-8105
#7	2-7/16	434-5107	434-9107	434-0107	434-1107	434-7106	434-8106
#8	2-7/16	434-5108	434-9108	434-0108	434-1108	434-7107	434-8107
#9	2-7/16	434-5109	434-9109	434-0109	434-1109	434-7108	434-8108
#10	2-7/16	434-5110	434-5110	434-0110	434-1110	434-7109	434-8109
#11	2-5/16	434-5111	434-9111	434-0111	434-1111	434-7111	434-8111
#12	2-5/16	434-5112	434-9112	434-0112	434-1112	434-7112	434-8112
#13	2-5/16	434-5113	434-9113	434-0113	434-1113	434-7113	434-8113
#14	2-3/16	434-5114	434-9114	434-0114	434-1114	434-7114	434-8114
#15	2-3/16	434-5115	434-9115	434-0115	434-1115	434-7115	434-8115
#16	2-3/16	434-5116	434-9116	434-0116	434-1116	434-7116	434-8116
#17	2-3/16	434-5117	434-9117	434-0117	434-1117	434-7117	434-8117
#18	2-1/8	434-5118	434-9118	434-0118	434-1118	434-7118	434-8118
#19	2-1/8	434-5119	434-9119	434-0119	434-1119	434-7119	434-8119
#20	2-1/8	434-5120	434-9120	434-0120	434-1120	434-7120	434-8120
#21	2-1/8	434-5121	434-9121	434-0121	434-1121	434-7121	434-8121
#22	2	434-5122	434-9122	434-0122	434-1122	434-7122	434-8122
#23	2	434-5123	434-9123	434-0123	434-1123	434-7123	434-8123
#24	2	434-5124	434-9124	434-0124	434-1124	434-7124	434-8124
#25	1-7/8	434-5125	434-9125	434-0125	434-1125	434-7125	434-8125
#26	1-7/8	434-5126	434-9126	434-0126	434-1126	434-7126	434-8126
#27	1-7/8	434-5127	434-9127	434-0127	434-1127	434-7127	434-8127
#28	1-3/4	434-5128	434-9128	434-0128	434-1128	434-7128	434-8128
#29	1-3/4	434-5129	434-9129	434-0129	434-1129	434-7129	434-8129
#30	1-5/8	434-5130	434-9130	434-0130	434-1130	434-7130	434-8130
#31	1-5/8	434-5131	434-9131	434-0131	434-1131	434-7131	434-8131
#32	1-5/8	434-5132	434-9132	434-0132	434-1132	434-7132	434-8132
#33	1-1/2	434-5133	434-9133	434-0133	434-1133	434-7133	434-8133
#34	1-1/2	434-5134	434-9134	434-0134	434-1134	434-7134	434-8134
#35	1-1/2	434-5135	434-9135	434-0135	434-1135	434-7135	434-8135
#36	1-7/16	434-5136	434-9136	434-0136	434-1136	434-7136	434-8136
#37	1-7/16	434-5137	434-9137	434-0137	434-1137	434-7137	434-8137
#38	1-7/16	434-5138	434-9138	434-0138	434-1138	434-7138	434-8138
#39	1-3/8	434-5139	434-9139	434-0139	434-1139	434-7139	434-8139
#40	1-3/8	434-5140	434-9140	434-0140	434-1140	434-7140	434-8140
#41	1-3/8	434-5141	434-9141	434-0141	434-1141	434-7141	434-8141
#42	1-1/4	434-5142	434-9142	434-0142	434-1142	434-7142	434-8142
#43	1-1/4	434-5143	434-9143	434-0143	434-1143	434-7143	434-8143
#44	1-1/8	434-5144	434-9144	434-0144	434-1144	434-7144	434-8144
#45	1-1/8	434-5145	434-9145	434-0145	434-1145	434-7145	434-8145
#46	1-1/8	434-5146	434-9146	434-0146	434-1146	434-7146	434-8146
#47	1	434-5147	434-9147	434-0147	434-1147	434-7147	434-8147
#48	1	434-5148	434-9148	434-0148	434-1148	434-7148	434-8148
#49	1	434-5149	434-9149	434-0149	434-1149	434-7149	434-8149
#50	1	434-5150	434-9150	434-0150	434-1150	434-7150	434-8150
#51	1	434-5151	434-9151	434-0151	434-1151	434-7151	434-8151
#52	7/8	434-5152	434-9152	434-0152	434-1152	434-7152	434-8152
#53	7/8	434-5153	434-9153	434-0153	434-1153	434-7153	434-8153
#54	7/8	434-5154	434-9154	434-0154	434-1154	434-7154	434-8154
#55	7/8	434-5155	434-9155	434-0155	434-1155	434-7155	434-8155
#56	3/4	434-5156	434-9156	434-0156	434-1156	434-7156	434-8156
#57	3/4	434-5157	434-9157	434-0157	434-1157	434-7157	434-8157
#58	11/16	434-5158	434-9158	434-0158	434-1158	434-7158	434-8158
#59	11/16	434-5159	434-9159	434-0159	434-1159	434-7159	434-8159
#60	11/16	434-5160	434-9160	434-0160	434-1160	434-7160	434-8160

Solid Carbide Jobber Length Twist Drills

118° Point, Right Hand

- Precision ground to close diameter tolerances.
- Recommended for general purpose drilling in Cast Iron, Aluminum, Magnesium, Bronze, Masonite and Resin-Fiberglass Laminates.



Fractional Sizes

Size	Flute Length	OAL	Order No.	Size	Flute Length	OAL	Order No.	Size	Flute Length	OAL	Order No.
1/32"	3/8"	1-1/8"	**342-0002**	13/64"	1-3/4"	3"	**342-0013**	23/64"	2-1/2"	4"	**342-0023**
3/64	3/4	1-1/2	**342-0003**	7/32	1-3/4	3	**342-0014**	3/8	2-3/4	4-1/4	**342-0024**
1/16	3/4	1-1/2	**342-0004**	15/64	2	3-1/4	**342-0015**	25/64	2-7/8	4-1/2	**342-0025**
5/64	7/8	1-3/4	**342-0005**	1/4	2	3-1/4	**342-0016**	13/32	2-7/8	4-1/2	**342-0026**
3/32	1	2	**342-0006**	17/64	2-1/8	3-1/2	**342-0017**	27/64	2-7/8	4-1/2	**342-0027**
7/64	1-1/4	2-1/4	**342-0007**	9/32	2-1/8	3-1/2	**342-0018**	7/16	2-7/8	4-1/2	**342-0028**
1/8	1-1/4	2-1/4	**342-0008**	19/64	2-3/8	3-3/4	**342-0019**	29/64	3	4-3/4	**342-0029**
9/64	1-3/8	2-1/2	**342-0009**	5/16	2-3/8	3-3/4	**342-0020**	15/32	3	4-3/4	**342-0030**
5/32	1-3/8	2-1/2	**342-0010**	21/64	2-1/2	4	**342-0021**	31/64	3	4-3/4	**342-0031**
11/64	1-5/8	2-3/4	**342-0011**	11/32	2-1/2	4	**342-0022**	1/2	3	4-3/4	**342-0032**
3/16	1-5/8	2-3/4	**342-0012**								

Number Sizes

Size	Flute Length	OAL	Order No.	Size	Flute Length	OAL	Order No.	Size	Flute Length	OAL	Order No.
#1	1-3/4"	3"	**342-0101**	#21	1-3/8"	2-1/2"	**342-0121**	#41	1"	2"	**342-0141**
#2	1-3/4	3	**342-0102**	#22	1-3/8	2-1/2	**342-0122**	#42	1	2	**342-0142**
#3	1-3/4	3	**342-0103**	#23	1-3/8	2-1/2	**342-0123**	#43	1	2	**342-0143**
#4	1-3/4	3	**342-0104**	#24	1-3/8	2-1/2	**342-0124**	#44	1	2	**342-0144**
#5	1-3/4	3	**342-0105**	#25	1-3/8	2-1/2	**342-0125**	#45	7/8	1-3/4	**342-0145**
#6	1-3/4	3	**342-0106**	#26	1-3/8	2-1/2	**342-0126**	#46	7/8	1-3/4	**342-0146**
#7	1-3/4	3	**342-0107**	#27	1-3/8	2-1/2	**342-0127**	#47	7/8	1-3/4	**342-0147**
#8	1-3/4	3	**342-0108**	#28	1-3/8	2-1/2	**342-0128**	#48	7/8	1-3/4	**342-0148**
#9	1-3/4	3	**342-0109**	#29	1-3/8	2-1/2	**342-0129**	#49	7/8	1-3/4	**342-0149**
#10	1-5/8	2-3/4	**342-0110**	#30	1-1/4	2-1/4	**342-0130**	#50	7/8	1-3/4	**342-0150**
#11	1-5/8	2-3/4	**342-0111**	#31	1-1/4	2-1/4	**342-0131**	#51	3/4	1-1/2	**342-0151**
#12	1-5/8	2-3/4	**342-0112**	#32	1-1/4	2-1/4	**342-0132**	#52	3/4	1-1/2	**342-0152**
#13	1-5/8	2-3/4	**342-0113**	#33	1-1/4	2-1/4	**342-0133**	#53	3/4	1-1/2	**342-0153**
#14	1-5/8	2-3/4	**342-0114**	#34	1-1/4	2-1/4	**342-0134**	#54	3/4	1-1/2	**342-0154**
#15	1-5/8	2-3/4	**342-0115**	#35	1-1/4	2-1/4	**342-0135**	#55	3/4	1-1/2	**342-0155**
#16	1-5/8	2-3/4	**342-0116**	#36	1-1/4	2-1/4	**342-0136**	#56	3/4	1-1/2	**342-0156**
#17	1-5/8	2-3/4	**342-0117**	#37	1-1/4	2-1/4	**342-0137**	#57	3/4	1-1/2	**342-0157**
#18	1-5/8	2-3/4	**342-0118**	#38	1-1/4	2-1/4	**342-0138**	#58	3/4	1-1/2	**342-0158**
#19	1-5/8	2-3/4	**342-0119**	#39	1-1/4	2-1/4	**342-0139**	#59	3/4	1-1/2	**342-0159**
#20	1-3/8	2-1/2	**342-0120**	#40	1	2	**342-0140**	#60	3/4	1-1/2	**342-0160**

Letter Sizes

Size	Flute Length	OAL	Order No.	Size	Flute Length	OAL	Order No.	Size	Flute Length	OAL	Order No.
A	2 "	3-1/4"	**342-0201**	J	2-1/8"	3-1/2"	**342-0210**	S	2-1/2"	4"	**342-0219**
B	2	3-1/4	**342-0202**	K	2-1/8	3-1/2	**342-0211**	T	2-1/2	4	**342-0220**
C	2	3-1/4	**342-0203**	L	2-1/8	3-1/2	**342-0212**	U	2-3/4	4-1/4	**342-0221**
D	2	3-1/4	**342-0204**	M	2-3/8	3-3/4	**342-0213**	V	2-3/4	4-1/4	**342-0222**
E	2	3-1/4	**342-0205**	N	2-3/8	3-3/4	**342-0214**	W	2-7/8	4-1/2	**342-0223**
F	2	3-1/4	**342-0206**	O	2-3/8	3-3/4	**342-0215**	X	2-7/8	4-1/2	**342-0224**
G	2-1/8	3-1/2	**342-0207**	P	2-3/8	3-3/4	**342-0216**	Y	2-7/8	4-1/2	**342-0225**
H	2-1/8	3-1/2	**342-0208**	Q	2-1/2	4	**342-0217**	Z	2-7/8	4-1/2	**342-0226**
I	2-1/8	3-1/2	**342-0209**	R	2-1/2	4	**342-0218**				

Metric Sizes

Size (mm)	Flute Length (mm)	OAL (mm)	Order No.	Size (mm)	Flute Length (mm)	OAL (mm)	Order No.	Size (mm)	Flute Length (mm)	OAL (mm)	Order No.
2	22	44	**342-0301**	5.5	44	75	**342-0308**	9	70	100	**342-0315**
2.5	25	50	**342-0302**	6	50	82	**342-0309**	9.5	70	108	**342-0316**
3	32	57	**342-0303**	6.5	50	82	**342-0310**	10	73	114	**342-0317**
3.5	35	63	**342-0304**	7	54	89	**342-0311**	10.5	73	114	**342-0318**
4	35	63	**342-0305**	7.5	60	95	**342-0312**	11	73	114	**342-0319**
4.5	41	70	**342-0306**	8	60	95	**342-0313**	11.5	76	120	**342-0320**
5	44	75	**342-0307**	8.5	63	100	**342-0314**	12	76	120	**342-0321**

Carbide Tipped Jobber Drills

- For Cast Iron, or non-ferrous materials.



Fractional Sizes

Size	Flute Length	OAL	Order No.
1/8"	1-5/8"	2-3/4"	**343-0008**
9/64	1-3/4	2-7/8	**343-0009**
5/32	2	3-1/8	**343-0010**
11/64	2-1/8	3-1/4	**343-0011**
3/16	2-5/16	3-1/2	**343-0012**
13/64	2-7/16	3-5/8	**343-0013**
7/32	2-1/2	3-3/4	**343-0014**
15/64	2-5/8	3-7/8	**343-0015**
1/4	2-3/4	4	**343-0016**
17/64	2-7/8	4-1/8	**343-0017**
9/32	2-15/16	4-1/4	**343-0018**
19/64	3-1/16	4-3/8	**343-0019**
5/16	3-3/16	4-1/2	**343-0020**
21/64	3-5/16	4-5/8	**343-0021**
11/32	3-7/16	4-3/4	**343-0022**
23/64	3-1/2	4-7/8	**343-0023**
3/8	3-5/8	5	**343-0024**
25/64	3-3/4	5-1/8	**343-0025**
13/32	3-7/8	5-1/4	**343-0026**
27/64	3-15/16	5-3/8	**343-0027**
7/16	4-1/16	5-1/2	**343-0028**
29/64	4-3/16	5-5/8	**343-0029**
15/32	4-5/16	5-3/4	**343-0030**
31/64	4-3/8	5-7/8	**343-0031**
1/2	4-1/2	6	**343-0032**

Letter Sizes

Size	Flute Length	OAL	Order No.
A	2-5/8"	3-7/8"	**343-0201**
B	2-3/4	4	**343-0202**
C	2-3/4	4	**343-0203**
D	2-3/4	4	**343-0204**
E	2-3/4	4	**343-0205**
F	2-7/8	4-1/8	**343-0206**
G	2-7/8	4-1/8	**343-0207**
H	2-7/8	4-1/8	**343-0208**
I	2-7/8	4-1/8	**343-0209**
J	2-7/8	4-1/8	**343-0210**
K	2-15/16	4-1/4	**343-0211**
L	2-15/16	4-1/4	**343-0212**
M	3-1/16	4-3/8	**343-0213**
N	3-1/16	4-3/8	**343-0214**
O	3-3/16	4-1/2	**343-0215**
P	3-5/16	4-5/8	**343-0216**
Q	3-7/16	4-3/4	**343-0217**
R	3-7/16	4-3/4	**343-0218**
S	3-1/2	4-7/8	**343-0219**
T	3-1/2	4-7/8	**343-0220**
U	3-5/8	5	**343-0221**
V	3-5/8	5	**343-0222**
W	3-3/4	5-1/8	**343-0223**
X	3-3/4	5-1/8	**343-0224**
Y	3-7/8	5-1/4	**343-0225**
Z	3-7/8	5-1/4	**343-0226**

Number Sizes

Size	Flute Length	OAL	Order No.
#1	2-5/8"	3-7/8"	**343-0101**
#2	2-5/8	3-7/8	**343-0102**
#3	2-1/2	3-3/4	**343-0103**
#4	2-1/2	3-3/4	**343-0104**
#5	2-1/2	3-3/4	**343-0105**
#6	2-1/2	3-3/4	**343-0106**
#7	2-7/16	3-5/8	**343-0107**
#8	2-7/16	3-5/8	**343-0108**
#9	2-7/16	3-5/8	**343-0109**
#10	2-7/16	3-5/8	**343-0110**
#11	2-5/16	3-1/2	**343-0111**
#12	2-5/16	3-1/2	**343-0112**
#13	2-5/16	3-1/2	**343-0113**
#14	2-3/16	3-3/8	**343-0114**
#15	2-3/16	3-3/8	**343-0115**
#16	2-3/16	3-3/8	**343-0116**
#17	2-3/16	3-3/8	**343-0117**
#18	2-1/8	3-1/4	**343-0118**
#19	2-1/8	3-1/4	**343-0119**
#20	2-1/8	3-1/4	**343-0120**
#21	2-1/8	3-1/4	**343-0121**
#22	2	3-1/8	**343-0122**
#23	2	3-1/8	**343-0123**
#24	2	3-1/8	**343-0124**
#25	1-7/8	3	**343-0125**
#26	1-7/8	3	**343-0126**
#27	1-7/8	3	**343-0127**
#28	1-3/4	2-7/8	**343-0128**
#29	1-3/4	2-7/8	**343-0129**
#30	1-5/8	2-3/4	**343-0130**
#31	1-5/8	2-3/4	**343-0131**
#32	1-5/8	2-3/4	**343-0132**

Solid Carbide Circuit Board Drills

Use for drilling epoxy resin-glass fiber circuit boards.

- Solid carbide construction offers great rigidity.
- 1/8" shank 1-1/2" overall length.
- 130° included angle drill point.
- Recommended for use under high drill temperatures and when the drill body must withstand continuous abrasion.



Fractional Sizes

Size	Flute Length	Order No.
1/64"	3/16"	**534-0001**
1/32	1/4	**534-0002**
3/64	3/8	**534-0003**
1/16	3/8	**534-0004**
5/64	3/8	**534-0005**
3/32	3/8	**534-0006**
7/64	3/8	**534-0007**
1/8	3/8	**534-0008**
9/64	.49	**534-0009**
5/32	.49	**534-0010**
11/4	.49	**534-0011**
3/16	.49	**534-0012**
13/64	.49	**534-0013**
7/32	.49	**534-0014**
15/64	.49	**534-0015**
1/4	.49	**534-0016**

Number Sizes

Size	Flute Length	Order No.	Size	Flute Length	Order No.	Size	Flute Length	Order No.
31#	3/8"	**534-0131**	48#	3/8"	**534-0148**	65#	3/8"	**534-0165**
32#	3/8	**534-0132**	49#	3/8	**534-0149**	66#	1/4	**534-0166**
33#	3/8	**534-0133**	50#	3/8	**534-0150**	67#	1/4	**534-0167**
34#	3/8	**534-0134**	51#	3/8	**534-0151**	68#	1/4	**534-0168**
35#	3/8	**534-0135**	52#	3/8	**534-0152**	69#	1/4	**534-0169**
36#	3/8	**534-0136**	53#	3/8	**534-0153**	70#	3/16	**534-0170**
37#	3/8	**534-0137**	54#	3/8	**534-0154**	71#	3/16	**534-0171**
38#	3/8	**534-0138**	55#	3/8	**534-0155**	72#	3/16	**534-0172**
39#	3/8	**534-0139**	56#	3/8	**534-0156**	73#	3/16	**534-0173**
40#	3/8	**534-0140**	57#	3/8	**534-0157**	74#	3/16	**534-0174**
41#	3/8	**534-0141**	58#	3/8	**534-0158**	75#	3/16	**534-0175**
42#	3/8	**534-0142**	59#	3/8	**534-0159**	76#	3/16	**534-0176**
43#	3/8	**534-0143**	60#	3/8	**534-0160**	77#	3/16	**534-0177**
44#	3/8	**534-0144**	61#	3/8	**534-0161**	78#	3/16	**534-0178**
45#	3/8	**534-0145**	62#	3/8	**534-0162**	79#	3/16	**534-0179**
46#	3/8	**534-0146**	63#	3/8	**534-0163**	80#	3/16	**534-0180**
47#	3/8	**534-0147**	64#	3/8	**534-0164**			

Metric Sizes

Size (mm)	Flute Lengt	Order No.
.30	5.0mm	**534-0200**
.35	5.0	**534-0202**
.40	5.0	**534-0204**
.45	5.0	**534-0206**
.50	5.0	**534-0210**
.75	6.5	**534-0212**
1.00	9.5	**534-0214**
1.25	9.5	**534-0216**
1.50	9.5	**534-0218**
1.75	9.5	**534-0220**
2.00	9.5	**534-0222**
2.25	9.5	**534-0224**
2.50	9.5	**534-0226**
2.75	9.5	**534-0228**
3.00	9.5	**534-0230**

Center Drills

60° Angle, Plain Style, Ground



Size	Body Dia.	Drill Dia.	Overall Length	Ground Order No.
1	1/8"	3/64"	1-1/4"	**217-9001**
2	3/16	5/64	1-7/8	**217-9002**
3	1/4	7/64	2	**217-9003**
4	5/16	1/8	2-1/8	**217-9004**
5	7/16	3/16	2-3/4	**217-9005**
6	1/2	7/32	3	**217-9006**
7	5/8	1/4	3-1/4	**217-9007**
8	3/4	5/16	3-1/2	**217-9008**

Bell Type Center Drills

60/120° Angle, HSS, Ground



Size	Body Dia.	Drill Dia.	Bell Dia.	Overall Length	Order No.
#11	1/8"	3/64"	.1"	1-1/4"	**217-2011**
#12	3/16	1/16	.15	1-7/8	**217-2012**
#13	1/4	3/32	.2	2	**217-2013**
#14	5/16	7/64	.25	2-1/8	**217-2014**
#15	7/16	5/32	.35	2-3/4	**217-2015**
#16	1/2	3/16	.4	3	**217-2016**
#17	5/8	7/32	.5	3-1/4	**217-2017**
#18	3/4	1/4	.6	3-1/2	**217-2018**
#19	7/8	5/16	.7	3-5/8	**217-2019**
#20	1	3/8	.8	3-3/4	**217-2020**

Missile & Aircraft Mini Center Drills

60° Angle, HSS Ground



Size	Body Dia.	Drill Dia.	Overall Length	Order No.
000	1/8"	.020"	1-1/4"	**217-5000**
00	1/8	.025	1-1/4	**217-5001**
0	1/8	1/32	1-1/4	**217-5002**

Plain Center Drills

82° & 90° Angle, HSS Ground



Size	Body Dia.	Drill Dia.	Overall Length	82° Order No.	90° Order No.
1	1/8	3/64	1-1/4	**217-2001**	**217-0001**
2	3/16	5/64	1-7/8	**217-2002**	**217-0002**
3	1/4	7/64	2	**217-2003**	**217-0003**
4	5/16	1/8	2-1/8	**217-2004**	**217-0004**
5	7/16	3/16	2-3/4	**217-2005**	**217-0005**
6	1/2	7/32	3	**217-2006**	**217-0006**
7	5/8	1/4	3-1/4	**217-2007**	**217-0007**
8	3/4	5/16	3-1/2	**217-2008**	**217-0008**

Plain Center Drill Sets

5Pcs, HSS Ground



	82° Order No.	90° Order No.
5pcs: 1-5#	**217-9082**	**217-0015**

Long Series Center Drills



Size	Body Dia.	Drill Dia.	Overall Length	Ground Order No.
1#	1/8"	3/64"	3 "	**217-7103**
1#	1/8	3/64	4	**217-7104**
1#	1/8	3/64	5	**217-7105**
1#	1/8	3/64	6	**217-7106**
2#	3/16	5/64	3	**217-7203**
2#	3/16	5/64	4	**217-7204**
2#	3/16	5/64	5	**217-7205**
2#	3/16	5/64	6	**217-7206**
3#	1/4	7/64	4	**217-7304**
3#	1/4	7/64	5	**217-7305**
3#	1/4	7/64	6	**217-7306**
4#	5/16	1/8	4	**217-7404**
4#	5/16	1/8	5	**217-7405**
4#	5/16	1/8	6	**217-7406**
5#	7/16	3/16	4	**217-7504**
5#	7/16	3/16	5	**217-7505**
5#	7/16	3/16	6	**217-7506**
6#	1/2	7/32	4	**217-7604**
6#	1/2	7/32	5	**217-7605**
6#	1/2	7/32	6	**217-7606**
7#	5/8	1/4	6	**217-7706**
8#	3/4	5/16	6	**217-7806**

Metric Center Drills

DIN333A, Right Hand, HSS



Size	Shank Dia.	OAL	Order No.
.5mm	3.15mm	20mm	**212-0050**
.8	3.15	20	**212-0080**
1	3.15	31.5	**212-0100**
1.25	3.15	31.5	**212-0125**
1.6	4	35.5	**212-0160**
2	5	40	**212-0200**
2.5	6.3	45	**212-0250**
3.15	8	50	**212-0315**
4	10	59	**212-0400**
5	12.5	63	**212-0500**
6.3	16	71	**212-0630**
8	20	80	**212-0800**
10	25	100	**212-1000**
12.5	31.5	125	**212-1500**

Metric Center Drills

120° Bell Type



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Dia	Shank Dia	Overall Length	Ground Order No.
1.0mm	4mm	35.5mm	**217-4010**
1.25	5	40	**217-4013**
1.6	6.3	45	**217-4016**
2.0	8	50	**217-4020**
2.5	10	56	**217-4025**
3.15	11.2	60	**217-4032**
4.0	14	67	**217-4040**
5.0	18	75	**217-4050**
6.3	20	80	**217-4060**
8	25	100	**217-4080**
10	31.5	125	**217-4100**

Spotting & Centering Drills

High Speed Steel , Right Hand & Left Hand

Prevent misalignment frequently caused by using regular drills for centering.
These short drills can be chucked close to the point ensuring accuracy and true starts.



Size	Flute Length	OAL	90° Right Hand Order No.	90° Left Hand Order No.
1/8"	3/8"	1-1/4"	216-1108	216-1308
3/16	1/2	1-3/8	216-1112	216-1312
1/4	5/8	1-1/2	216-1116	216-1316
5/16	5/8	1-1/2	216-1120	216-1320
3/8	1	2	216-1124	216-1324
7/16	1	2	216-1128	216-1328
1/2	1	2	216-1132	216-1332
9/16	1	2	216-1136	216-1336
5/8	1-1/8	2-1/4	216-1140	216-1340
3/4	1-1/8	2-1/4	216-1148	216-1348
7/8	1-1/4	2-1/2	216-1156	216-1356
1	1-1/4	2-1/2	216-1164	216-1364
1-1/4	2	4	216-1178	216-1378
1-1/2	1-1/2	5	216-1194	216-1394
1-3/4	2-3/4	5-1/2	216-1210	216-1410

Size	Flute Length	OAL	118° Right Hand Order No.	118° Left Hand Order No.
1/8"	3/8"	1-1/4"	216-1508	216-1708
3/16	1/2	1-3/8	216-1512	216-1712
1/4	5/8	1-1/2	216-1516	216-1716
5/16	5/8	1-1/2	216-1520	216-1720
3/8	1	2	216-1524	216-1724
7/16	1	2	216-1528	216-1728
1/2	1	2	216-1532	216-1732
9/16	1	2	216-1536	216-1736
5/8	1-1/8	2-1/4	216-1540	216-1740
3/4	1-1/8	2-1/4	216-1548	216-1748
7/8	1-1/4	2-1/2	216-1556	216-1756
1	1-1/4	2-1/2	216-1564	216-1764
1-1/4	2	4	216-1578	216-1778
1-1/2	1-1/2	5	216-1594	216-1794
1-3/4	2-3/4	5-1/2	216-1610	216-1810

M35 Cobalt Spotting Drills

NEW

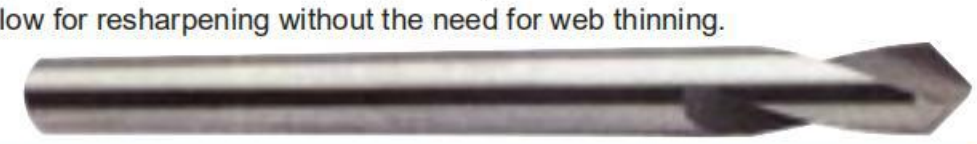


Size	Flute Length	OAL	90° Order No.	120° Order No.
0.118"	0.47"	2"	216-4101	216-4151
0.157	0.47	2-3/16	216-4102	216-4152
0.197	0.55	2-3/8	216-4104	216-4154
0.236	0.63	2-3/4	216-4106	216-4156
1/4	0.67	2-3/4	216-4108	216-4158
0.315	0.83	3-1/8	216-4110	216-4160
3/8	0.98	3-1/2	216-4112	216-4162
0.394	1.1	3-1/2	216-4114	216-4164
0.472	1.18	4	216-4116	216-4166
1/2	1.18	4	216-4118	216-4168
5/8	1.48	4-1/2	216-4120	216-4170
0.63	1.48	4-1/2	216-4122	216-4172
3/4	1.77	5-1/8	216-4124	216-4174
0.787	1.77	5-1/8	216-4126	216-4176
0.984	2.09	6	216-4128	216-4178
1	2.09	6-1/8	216-4130	216-4180

NC Spotting Drills

90° & 120° ,High Speed Steel

Designed with a narrow chisel edge for quick starting and a constant web to allow for resharpening without the need for web thinning.



Size	Flute Length	OAL	HSS 90° Order No.	HSS 120° Order No.	Tin Coated 90° Order No.	Tin Coated 120° Order No.
1/4"	3/4"	2-1/2"	216-2163	216-3163	216-6163	216-5163
		4	216-2164	216-3164	216-6164	216-5164
		6	216-2166	216-3166	216-6166	216-5166
3/8	1-1/8	3-1/8	216-2244	216-3244	216-6244	216-5244
		5	216-2245	216-3245	216-6245	216-5245
		7	216-2247	216-3247	216-6247	216-5247
1/2	1-3/8	3-3/4	216-2324	216-3324	216-6324	216-5324
		6	216-2326	216-3326	216-6326	216-5326
		8	216-2328	216-3328	216-6328	216-5328
5/8"	1-5/8"	4-3/8"	216-2405	216-3405	216-6405	216-5405
		7	216-2407	216-3407	216-6407	216-5407
		9	216-2409	216-3409	216-6409	216-5409
3/4	1-7/8	5	216-2485	216-3485	216-6485	216-5485
		8	216-2488	216-3488	216-6488	216-5488
		10	216-2489	216-3489	216-6489	216-5489
1	2-1/4	6	216-2646	216-3646	216-6646	216-5646
		8	216-2648	216-3648	216-6648	216-5648
		10	216-2649	216-3649	216-6649	216-5649

HSS Extra Short Spot Drills



Size (mm)	Flute Length (mm)	Overall Length (mm)	Order No.	Size (mm)	Flute Length (mm)	Overall Length (mm)	Order No.
3.1	16	40	213-0031	4.7	20	48	213-0047
3.2	16	40	213-0032	4.8	20	48	213-0048
3.3	16	41	213-0033	4.9	22	50	213-0049
4.1	16	44	213-0041	5.0	24	52	213-0050
4.2	16	44	213-0042	5.2	24	52	213-0052

HSS Double End Sheet Metal Drills



Size (in)	Flute Length (in)	Overall Length (in)	Order No.	Size (in)	Flute Length (in)	Overall Length (in)	Order No.
7/64	1/2	1-7/8	216-4407	3/16	5/8	2-5/16	216-4412
1/8	1/2	2	216-4408	7/32	5/8	2-5/8	216-4414
9/64			216-4409	1/4	3/4	2-7/8	216-4416
5/32	5/8	2-3/16	216-4410				

Size (mm)	Flute Length (mm)	Overall Length (mm)	Order No.	Size (mm)	Flute Length (mm)	Overall Length (mm)	Order No.
3.0	11	46	216-0030	4.1	14	55	216-0041
3.1	11	49	216-0031	4.2	14	55	216-0042
3.2	11	49	216-0032	4.5	17	58	216-0045
3.25	11	49	216-0033	4.8	17	62	216-0048
3.3	11	49	216-0034	5.0	17	62	216-0050
3.5	14	52	216-0035	5.2	17	62	216-0052
4.0	14	55	216-0040				

Inch Masonry Drills

Carbide Tipped



Inch

Size	Shank	Overall Length	Order No.	Size	Shank	Overall Length	Order No.
1/8"	1/8	3"	**340-3080**	9/16	3/8	6	**340-3358**
5/32	5/32	3	**340-3100**	9/16	1/2	6	**340-3360**
11/64	1/8	3-1/4	**340-3105**	9/16	1/2	8	**340-3361**
3/16	3/6	3	**340-3118**	9/16	1/2	12	**340-3362**
3/16	3/16	3.5	**340-3120**	9/16	1/2	16	**340-3363**
3/16	3/16	6	**340-3121**	9/16	1/2	18	**340-3364**
3/16	3/16	4	**340-3124**	9/16	3/8	12	**380-3465**
3/16	5/32	6	**340-3126**	9/16	1/2	13	**380-3467**
7/32	7/32	3.5	**340-3140**	19/32	1/2	6	**340-3380**
7/32	7/32	4	**340-3142**	5/8	3/8	6	**340-3495**
15/64	3/16	4	**340-3150**	5/8	3/8	13	**340-3497**
1/4	1/4	4	**340-3160**	5/8	1/2	6	**340-3400**
1/4	1/4	6	**340-3161**	5/8	1/2	8	**340-3401**
1/4	1/4	8	**340-3162**	5/8	1/2	12	**340-3402**
1/4	1/4	12	**340-3163**	5/8	1/2	16	**340-3403**
1/4	1/4	16	**340-3164**	5/8	1/2	18	**340-3404**
1/4	1/4	18	**340-3465**	21/32	1/2	6	**340-3420**
17/64	1/4	4	**340-3170**	11/16	1/2	6	**340-3430**
9/32	1/4	4	**340-3180**	23/32	1/2	6	**340-3460**
9/32	9/32	4	**340-3182**	23/32	1/2	8	**340-3461**
5/16	1/4	4	**340-3195**	23/32	1/2	12	**340-3462**
5/16	1/4	6	**340-3197**	23/32	1/2	16	**340-3463**
5/16	5/16	4	**340-3198**	23/32	1/2	18	**340-3464**
5/16	5/16	5	**340-3200**	3/4	1/2	6	**340-3480**
5/16	5/16	6	**340-3201**	3/4	1/2	8	**340-3481**
5/16	5/16	8	**340-3202**	3/4	1/2	12	**340-3482**
5/16	5/16	12	**340-3203**	3/4	1/2	16	**340-3483**
5/16	5/16	16	**340-3204**	3/4	1/2	18	**340-3484**
5/16	5/16	18	**340-3205**	3/4	1/2	13	**340-3488**
11/32	5/16	5	**340-3220**	25/32	1/2	6	**340-3500**
3/8	3/8	3	**340-3234**	25/32	1/2	8	**340-3501**
3/8	1/4	4	**340-3236**	25/32	1/2	12	**340-3502**
3/8	1/4	6	**340-3238**	25/32	1/2	16	**340-3503**
3/8	3/8	4	**340-3239**	25/32	1/2	18	**340-3504**
3/8	3/8	5	**340-3240**	27/32	1/2	6	**340-3540**
3/8	3/8	6	**340-3241**	7/8	1/2	6	**340-3560**
3/8	3/8	8	**340-3242**	1	1/2	12	**340-3561**
3/8"	3/8	12	**340-3243**	1	1/2	18	**340-3562**
3/8	3/8	16	**340-3244**	7/8	1/2	16	**340-3563**
3/8	3/8	18	**340-3245**	7/8	1/2	18	**340-3564**
7/16	1/4	4	**340-3276**	29/32	1/2	6	**340-3580**
7/16	3/8	6	**340-3280**	15/16	1/2	6	**340-3600**
7/16	3/8	12	**340-3282**	15/16	1/2	8	**340-3601**
7/16	3/8	18	**340-3284**	15/16	1/2	12	**340-3602**
15/32	3/8	6	**340-3300**	15/16	1/2	16	**340-3603**
15/32	3/8	8	**340-3301**	15/16	1/2	18	**340-3604**
15/32	3/8	12	**340-3302**	1	1/2	6	**340-3640**
15/32	3/8	16	**340-3303**	1	1/2	8	**340-3641**
15/32	3/8	18	**340-3304**	1	1/2	12	**340-3642**
1/2	1/4	4	**340-3318**	1	1/2	16	**340-3643**
1/2	1/4	6	**340-3319**	1	1/2	18	**340-3644**
1/2	1/2	6	**340-3320**	1-1/32	1/2	6	**340-3660**
1/2	1/2	8	**340-3321**	1-1/32	1/2	8	**340-3661**
1/2	1/2	12	**340-3322**	1-1/32	1/2	12	**340-3662**
1/2	1/2	16	**340-3323**	1-1/32	1/2	16	**340-3663**
1/2	1/2	18	**340-3324**	1-1/32	1/2	18	**340-3664**

Metric

Size (mm)	OAL (mm)	Order No.	Size (mm)	OAL (mm)	Order No.
3.0	60	**340-0030**	16.0	200	**340-0161**
4.0	75	**340-0040**	16.0	300	**340-0162**
5.0	85	**340-0050**	16.0	400	**340-0163**
5.5	85	**340-0055**	16.0	600	**340-0164**
6.0	100	**340-0060**	17.0	160	**340-0170**
6.0	150	**340-0061**	18.0	160	**340-0180**
6.0	200	**340-0062**	18.0	200	**340-0181**
6.0	300	**340-0063**	18.0	300	**340-0182**
6.0	400	**340-0064**	18.0	400	**340-0183**
6.5	100	**340-0065**	18.0	600	**340-0184**
7.0	100	**340-0070**	19.0	160	**340-0190**
8.0	120	**340-0080**	19.0	200	**340-0191**
8.0	150	**340-0081**	19.0	300	**340-0192**
8.0	200	**340-0082**	19.0	400	**340-0193**
8.0	300	**340-0083**	19.0	600	**340-0194**
8.0	400	**340-0084**	20.0	160	**340-0200**
8.0	600	**340-0085**	20.0	200	**340-0201**
9.0	120	**340-0090**	20.0	300	**340-0202**
10.0	120	**340-0100**	20.0	400	**340-0203**
10.0	150	**340-0101**	20.0	600	**340-0204**
10.0	200	**340-0102**	21.0	600	**340-0210**
10.0	300	**340-0103**	22.0	160	**340-0220**
10.0	400	**340-0104**	22.0	200	**340-0221**
10.0	600	**340-0105**	22.0	300	**340-0222**
11.0	150	**340-0110**	22.0	400	**340-0223**
12.0	150	**340-0120**	22.0	600	**340-0224**
12.0	200	**340-0121**	23.0	160	**340-0230**
12.0	300	**340-0122**	24.0	160	**340-0240**
12.0	400	**340-0123**	24.0	200	**340-0241**
12.0	600	**340-0124**	24.0	300	**340-0242**
13.0	150	**340-0130**	24.0	400	**340-0243**
13.0	200	**340-0131**	24.0	600	**340-0244**
13.0	300	**340-0132**	25.0	160	**340-0250**
13.0	400	**340-0133**	25.0	200	**340-0251**
13.0	600	**340-0134**	25.0	300	**340-0252**
14.0	150	**340-0140**	25.0	400	**340-0253**
14.0	200	**340-0141**	25.0	600	**340-0254**
14.0	300	**340-0142**	26.0	160	**340-0260**
14.0	400	**340-0143**	26.0	200	**340-0261**
14.0	600	**340-0144**	26.0	300	**340-0262**
15.0	150	**340-0150**	26.0	400	**340-0263**
16.0	150	**340-0160**	26.0	600	**340-0264**

Saw Drills

HSS, 135° Split Point, Spiral Point

- Used with your power drill to saw, ream, drill and cut through wood, metal and plastic.



Size	Flute Length	OAL	Order No.	Tin coated Order No.
1/8"	1-1/4"	2-1/2"	**334-0008**	**334-0108**
3/16	5	3-1/4	**334-0012**	**334-0112**
1/4	2-1/2	3-11/16	**334-0016**	**334-0116**

Hammer Drills

with Cylindrical Shank and 4 Shank Grooves



Size (mm)	Flute Length (mm)	Overall Length (mm)	Order No.	Size (mm)	Flute Length (mm)	Overall Length (mm)	Order No.	Size (mm)	Flute Length (mm)	Overall Length (mm)	Order No.
5.0	50	110	**211-0050**	12.0	100	160	**211-0120**	16.0	150	210	**211-0160**
5.0	100	160	**211-0051**	12.0	150	260	**211-0121**	16.0	100	160	**211-0161**
5.5	50	110	**211-0055**	12.0	150	210	**211-0122**	16.0	250	305	**211-0162**
6.0	50	110	**211-0060**	12.0	250	305	**211-0124**	16.0	300	350	**211-0163**
6.0	100	160	**211-0061**	12.0	300	350	**211-0125**	16.0	400	460	**211-0165**
6.5	100	110	**211-0065**	12.0	400	460	**211-0126**	18.0	200	250	**211-0181**
6.5	100	160	**211-0066**	13.0	100	160	**211-0130**	18.0	250	305	**211-0182**
7.0	50	110	**211-0070**	13.0	200	267	**211-0131**	18.0	300	350	**211-0183**
8.0	50	110	**211-0080**	13.0	250	305	**211-0132**	18.0	400	460	**211-0185**
8.0	100	160	**211-0081**	13.0	300	350	**211-0133**	19.0	250	305	**211-0192**
8.0	150	210	**211-0082**	13.0	400	460	**211-0134**	19.0	400	460	**211-0194**
8.0	200	267	**211-0083**	14.0	100	160	**211-0140**	20.0	200	250	**211-0200**
9.0	100	160	**211-0090**	14.0	150	210	**211-0141**	20.0	250	305	**211-0201**
10.0	100	160	**211-0100**	14.0	150	260	**211-0142**	20.0	300	350	**211-0202**
10.0	150	210	**211-0101**	14.0	250	305	**211-0143**	20.0	400	460	**211-0204**
10.0	200	260	**211-0102**	14.0	300	350	**211-0144**	22.0	300	350	**211-0223**
10.0	300	360	**211-0103**	14.0	400	460	**211-0146**	22.0	400	460	**211-0225**
10.0	350	110	**211-0105**	15.0	100	160	**211-0150**	25.0	300	350	**211-0252**
11.0	100	160	**211-0110**	15.0	200	260	**211-0151**	25.0	400	460	**211-0254**

Machine Wood Bits

with Center Point



Size (mm)	Order No.
3.0	**208-0030**
4.0	**208-0040**
5.0	**208-0050**
6.0	**208-0060**
7.0	**208-0070**
8.0	**208-0080**
9.0	**208-0090**
10.0	**208-0100**
11.0	**208-0110**
12.0	**208-0120**
13.0	**208-0130**

Size (mm)	Order No.
14.0	**208-0140**
15.0	**208-0150**
16.0	**208-0160**
18.0	**208-0180**
20.0	**208-0200**
22.0	**208-0220**
24.0	**208-0240**
26.0	**208-0260**
28.0	**208-0280**
30.0	**208-0300**

Spade Wood Bits



Size (mm)	Order No.
6.0	**331-3060**
8.0	**331-3080**
10.0	**331-3100**
12.0	**331-3120**
14.0	**331-3140**
16.0	**331-3160**
18.0	**331-3180**
20.0	**331-3200**
22.0	**331-3220**
24.0	**331-3240**

Size	Order No.
3/8"	**331-3002**
1/2	**331-3004**
5/8	**331-3006**
3/4	**331-3008**
7/8	**331-3012**
1	**331-3014**
1-3/32	**331-3016**
1-3/16	**331-3018**
1-1/4	**331-3020**
1-3/8	**331-3022**

Forstner Wood Bit Set



Pieces	Specification	Order No.
7	1/4", 3/8", 1/2", 5/8", 3/4", 7/8", 1"	**331-2070**

Spade Wood Bit Set



Spade Wood Bits in Plastic Pouch.

Pieces	Specification	Order No.
6	3/8", 1/2", 5/8", 3/4",7/8", 1"	**331-2060**

Hole Cutter

These Hole Cutters are recommended for use in hand held air or electric drill motors as well as light drill press applications in sheet metal, thin wall tubing, steel plate or any other larger diameter shallow hole cutting.
This tool centers quickly and is held securely in position after the pilot drill has entered the work piece. The cutter body then cuts a clean, burr-free hole faster than conventional twist drills or hole saws.
Tool life is significantly longer than other hole cutting tools.



Size	No. of Fultes	Order No.
1/2"	4	**350-0001**

Micro drill Adapter Precision Drill Fixture

- Finer sensitive control
- Reduced drill breakage
- Easier small hole drilling using large high speed machinery
- Reduction of rejected production parts due to broken drills
- Considtent precision operation, runs without down time
- Mutiple operations on a sigle set-up
- Applicable in mills, lathes, drill presses and jig borers

Easy operation
Grasp free turning ring, feed with gentle Finger pressure, Auto Return upon release. Has JT0 male taper.



Specification	Order No.
1/2" Stright shank, 3/4" Travel	**830-2022**

Double Spiral Fluters Step Drills

DIN Standard Step Drill

Point cut: split point DIN1412C
Point angle: 118 Degree
Step angle: 90 Degree
Surface: bright/titanium-nitride coated/black finished
Cutting Direction: right-hand cutting



Drilling range mm	Steps	Shank Dia.	Straight Shank HSS Order No.	Straight Shank TiN Coated Order No.	Hexagon Shank HSS Order No.	Hexagon Shank TiN Coated Order No.
4-12	5	6	331-3301	331-3331	331-3801	331-3831
4-12	9	6	331-3302	331-3332	331-3802	331-3832
3-12	10	6	331-3303	331-3333	331-3803	331-3833
3-14	13	6	331-3304	331-3334	331-3804	331-3834
4-20	9	8	331-3305	331-3335	331-3805	331-3835
4-22	10	8	331-3306	331-3336	331-3806	331-3836
4-24	11	8	331-3307	331-3337	331-3807	331-3837
4-30	14	10	331-3308	331-3338	331-3808	331-3838
4-32	15	10	331-3309	331-3339	331-3809	331-3839
4-39	13	12	331-3310	331-3340	331-3810	331-3840
5-28	7	10	331-3311	331-3341	331-3811	331-3841
5-35	13	12	331-3312	331-3342	331-3812	331-3842
6-18	7	8	331-3313	331-3343	331-3813	331-3843
6-20	8	8	331-3314	331-3344	331-3814	331-3844
6-30	13	10	331-3315	331-3345	331-3815	331-3845
6-35	13	12	331-3316	331-3346	331-3816	331-3846
6-37	11	12	331-3317	331-3347	331-3817	331-3847
6-38	12	12	331-3318	331-3348	331-3818	331-3848
9-36	10	12	331-3319	331-3349	331-3819	331-3849
10-20	11	8	331-3320	331-3350	331-3820	331-3850
14-24	6	8	331-3321	331-3351	331-3821	331-3851
20-30	11	10	331-3322	331-3352	331-3822	331-3852
20-34	14	10	331-3323	331-3353	331-3823	331-3853

NEW



Metal Case Sets

Specification	HSS Order No.	TiN Coated Order No.
4-12, 4-20, 6-30	331-3325	331-3355
4-12, 6-20, 6-30	331-3326	331-3356
4-12, 4-20, 4-32	331-3357	331-3357
4-12, 4-20, 4-30	331-3358	331-3358
1/8-1/2", 1/4-3/4", 3/16-7/8"	331-3652	331-3752



Plastic Case Sets

Specification	HSS Order No.	TiN Coated Order No.
4-12, 4-20, 6-30	331-3361	331-3365
4-12, 6-20, 6-30	331-3362	331-3366
4-12, 4-20, 4-32	331-3363	331-3367
4-12, 4-20, 4-30	331-3364	331-3368
1/8-1/2", 1/4-3/4", 3/16-7/8"	331-3653	331-3753



ANSI Standard

Drilling range	Steps	Shank Dia.	Straight Shank HSS Order No.	Straight Shank TiN Coated Order No.	Hexagon Shank HSS Order No.	Hexagon Shank TiN Coated Order No.
1/8-1/2"	7	1/4	331-3641	331-3661	331-3741	331-3761
1/8-1/2	13	1/4	331-3642	331-3662	331-3742	331-3762
1/8-3/8	5	1/4	331-3643	331-3663	331-3743	331-3763
1/4-3/4	9	3/8	331-3644	331-3664	331-3744	331-3764
1/4-7/8	11	3/8	331-3645	331-3665	331-3745	331-3765
1/4-1-3/8	10	3/8	331-3646	331-3666	331-3746	331-3766
3/16-1/2	6	1/4	331-3647	331-3667	331-3747	331-3767
3/16-9/16	7	1/4	331-3648	331-3668	331-3748	331-3768
3/16-7/8	12	3/8	331-3649	331-3669	331-3749	331-3769
9/16-1	8	3/8	331-3650	331-3670	331-3750	331-3770
13/16-1-3/8	10	1/2	331-3651	331-3671	331-3751	331-3771



Wooden Case Sets

Specification	HSS Order No.	TiN Coated Order No.
3-12, 4-12, 6-20	331-3371	331-3381
4-12, 4-20, 4-30	331-3372	331-3382
4-12, 4-20, 6-30	331-3373	331-3383
4-12, 4-20, 4-32	331-3374	331-3384
4-12, 4-22, 4-32	331-3375	331-3385
4-12, 6-20, 4-30	331-3376	331-3386
4-12, 6-20, 6-30	331-3377	331-3387
1/8-1/2",1/4-3/4", 3/16-7/8"	331-3654	331-3754
1/8-1/2",3/16-1/2",1/4-3/4"	331-3655	331-3755

Double Straight Fluters Step Drills

DIN Standard Step Drill

Point cut: split point DIN1412C
Point angle: 118 Degree
Step angle: 90 Degree
Surface: bright/titanium-nitride coated/black finished
Cutting Direction: right-hand cutting



Drilling range mm	Steps	Shank Dia.	Straight Shank HSS Order No.	Straight Shank TiN Coated Order No.	Hexagon Shank HSS Order No.	Hexagon Shank TiN Coated Order No.
4-12	5	6	331-3404	331-3444	331-3504	331-3544
4-12	9	6	331-3401	331-3441	331-3501	331-3541
3-12	10	6	331-3403	331-3441		
3-14	13	6	331-3406	331-3446		
4-20	9	8	331-3408	331-3448		
4-22	10	8	331-3409	331-3449		
4-24	11	8	331-3412	331-3452		
4-30	14	10	331-3414	331-3454		
4-32	15	10	331-3415	331-3455		
4-39	13	12	331-3417	331-3457		
5-28	7	10	331-3418	331-3458		
5-35	13	12	331-3422	331-3462	331-3522	331-3562
6-18	7	8	331-3420	331-3460		
6-20	8	8	331-3410	331-3450	331-3510	331-3550
6-30	13	10	331-3421	331-3461		
6-35	13	12	331-3423	331-3463		
6-37	11	12	331-3424	331-3464		
6-38	12	12	331-3425	331-3465		
9-36	10	12	331-3426	331-3466		
10-20	11	8	331-3427	331-3467		
14-24	6	8	331-3428	331-3468		
20-30	11	10	331-3429	331-3469		
20-34	14	10	331-3430	331-3470		

NEW



Metal Case Sets

Specification	HSS Order No.	TiN Coated Order No.
4-12, 4-20, 6-30	331-3471	331-3472
4-12, 6-20, 6-30	331-3481	331-3483
4-12, 4-20, 4-32	331-3473	331-3474
4-12, 4-20, 4-30	331-3475	331-3476
1/8-1/2", 1/4-3/4", 3/16-7/8"	331-3688	331-3689



Plastic Case Sets

Specification	HSS Order No.	TiN Coated Order No.
4-12, 4-20, 6-30	331-3477	331-3478
4-12, 6-20, 6-30	331-3479	331-3484
4-12, 4-20, 4-32	331-3485	331-3486
4-12, 4-20, 4-30	331-3487	331-3488
1/8-1/2", 1/4-3/4", 3/16-7/8"	331-3686	331-3687
1/8-1/2", 1/4-3/4", 3/16-7/8" Blistar Card	331-3681	331-3682



ANSI Standard

Drilling range	Steps	Shank Dia.	Straight Shank HSS Order No.	Straight Shank TiN Coated Order No.	Hexagon Shank HSS Order No.	Hexagon Shank TiN Coated Order No.
1/8-1/2"	7	1/4	331-3600	331-3620		
1/8-1/2	13	1/4	331-3601	331-3621	331-3701	331-3721
1/8-3/8	5	1/4	331-3602	331-3622		
1/4-3/4	9	3/8	331-3607	331-3627	331-3707	331-3727
1/4-7/8	11	3/8	331-3603	331-3623		
1/4-1-3/8	10	3/8	331-3605	331-3623		
3/16-1/2	6	1/4	331-3604	331-3624	331-3704	331-3724
3/16-9/16	7	1/4	331-3606	331-3626		
3/16-7/8	12	3/8	331-3610	331-3630	331-3710	331-3730
9/16-1	8	3/8	331-3608	331-3628		
13/16-1-3/8	10	1/2	331-3609	331-3629		



Wooden Case Sets

Specification	HSS Order No.	TiN Coated Order No.
3-12, 4-12, 6-20	331-3489	331-3490
4-12, 4-20, 4-30	331-3491	331-3492
4-12, 4-20, 6-30	331-3480	331-3482
4-12, 4-20, 4-32	331-3793	331-3494
4-12, 4-22, 4-32	331-3795	331-3496
4-12, 6-20, 4-30	331-3497	331-3498
4-12, 6-20, 6-30	331-3499	331-3500
1/8-1/2",1/4-3/4", 3/16-7/8"	331-3684	331-3685
1/8-1/2",3/16-1/2",1/4-3/4"	331-3680	331-3683

Core Drills

Straight Shank, 4 Flute, High Speed Steel

- Designed for both portable and stationary machines.
- Shank sizes correspond to the drill size.
- For use in both ferrous and non-ferrous metal, enlarging punched or drilled holes.



Size	Flute Length	Overall Length	Order No.	Size	Flute Length	Overall Length	Order No.
1/4"	3-1/2"	6-1/8"	**218-5016**	15/16"	6-1/8"	10-3/4"	**218-5060**
17/64	3-3/4	6-1/8	**218-5017**	31/32	6-3/8	11	**218-5062**
9/32	3-7/8	6-1/4	**218-5018**	1	6-3/8	11	**218-5064**
5/16	4	6-3/8	**218-5020**	1-1/32	6-1/2	11-1/8	**218-5066**
21/64	4-1/8	6-1/2	**218-5021**	1-1/16	6-5/8	11-1/4	**218-5068**
11/32	4-1/8	6-1/2	**218-5022**	1-3/32	6-7/8	11-1/2	**218-5070**
3/8	4-1/4	6-3/4	**218-5024**	1-1/8	7-1/8	11-3/4	**218-5072**
13/32	4-3/8	7	**218-5026**	1-5/32	7-1/4	11-7/8	**218-5074**
27/64	4-5/8	7-1/4	**218-5027**	1-3/16	7-3/8	12	**218-5076**
7/16	4-5/8	7-1/4	**218-5028**	1-7/32	7-1/2	12-1/8	**218-5078**
15/32	4-3/4	7-1/2	**218-5030**	1-1/4	7-7/8	12-1/2	**218-5080**
1/2	4-3/4	7-3/4	**218-5032**	1-9/32	8-1/2	14-1/8	**218-5082**
33/64	4-3/4	8	**218-5033**	1-5/16	8-5/8	14-1/4	**218-5084**
17/32	4-3/4	8	**218-5034**	1-11/32	8-3/4	14-3/8	**218-5086**
9/16	4-7/8	8-1/4	**218-5036**	1-3/8	8-7/8	14-1/2	**218-5088**
9/32	4-7/8	8-3/4	**218-5038**	1-13/32	9	14-5/8	**218-5090**
5/8	4-7/8	8-3/4	**218-5040**	1-7/16	9-1/8	14-3/4	**218-5092**
41/64	5	9	**218-5041**	1-15/32	9-1/4	14-7/8	**218-5094**
21/32	5-1/8	9	**218-5042**	1-1/2	9-3/8	15	**218-5096**
11/16	5-3/8	9-1/4	**218-5044**	1-9/16	9-5/8	15-1/4	**218-5100**
23/32	5-5/8	9-1/2	**218-5046**	1-5/8	9-7/8	15-5/8	**218-5104**
3/4	5-7/8	9-3/4	**218-5048**	1-11/16	10	15-3/4	**218-5108**
49/64	6	9-7/8	**218-5049**	1-3/4	10-1/2	16-1/4	**218-5112**
25/32	6	9-7/8	**218-5050**	1-13/16	10-1/2	16-1/4	**218-5116**
13/16	6-1/8	10	**218-5052**	1-7/8	10-3/4	16-1/2	**218-5120**
27/32	6-1/8	10	**218-5054**	1-15/16	10-3/4	16-5/8	**218-5124**
7/8	6-1/8	10	**218-5056**	2	10-3/4	16-5/8	**218-5128**
29/32	6-1/8	10	**218-5058**				

2"-4" Stub Length Taper Shank Drills

High Speed Steel, 118° Point

NEW



Size	Flute Len.	OAL	Shank	Order No.	Size	Flute Len.	OAL	Shank	Order No.
2"	5"	11"	MT4	**302-0501**	2-9/16	5	11	MT4	**302-0536**
2	5	12	MT5	**302-0503**	2-9/16	5	12	MT5	**302-0537**
2-1/16	5	11	MT4	**302-0505**	2-5/8	5	11	MT4	**302-0539**
2-1/16	5	12	MT5	**302-0507**	2-5/8	5	12	MT5	**302-0541**
2-1/8	5	11	MT4	**302-0509**	2-3/4	5	11	MT4	**302-0543**
2-1/8	5	12	MT5	**302-0511**	2-3/4	5	12	MT5	**302-0545**
2-3/16	5	11	MT4	**302-0513**	2-7/8	5	11	MT4	**302-0547**
2-3/16	5	12	MT5	**302-0515**	2-7/8	5	12	MT5	**302-0549**
2-1/4	5	11	MT4	**302-0517**	3	5	11	MT4	**302-0551**
2-1/4	5	12	MT5	**302-0519**	3	5	12	MT5	**302-0553**
2-5/16	5	11	MT4	**302-0521**	3-1/8	5	12	MT5	**302-0555**
2-5/16	5	12	MT5	**302-0523**	3-1/4	5	12	MT5	**302-0557**
2-3/8	5	11	MT4	**302-0525**	3-3/8	5	12	MT5	**302-0559**
2-3/8	5	12	MT5	**302-0527**	3-1/2	5	12	MT5	**302-0561**
2-7/16	5	11	MT4	**302-0529**	3-5/8	5	12	MT5	**302-0563**
2-7/16	5	12	MT5	**302-0531**	3-3/4	5	12	MT5	**302-0565**
2-1/2	5	11	MT4	**302-0533**	3-7/8	5	12	MT5	**302-0567**
2-1/2	5	12	MT5	**302-0535**	4	5	12	MT5	**302-0569**

Cobalt Inch Taper Shank Drills

Cobalt



Size	Flute Length	Overall Length	Shank Taper	Order No.	Size	Flute Length	Overall Length	Shank Taper	Order No.	Size	Flute Length	Overall Length	Shank Taper	Order No.
1/4"	2-7/8"	5-3/8"	MT1	**300-1616**	3/4"	5-7/8"	9-3/4"	MT2	**300-2648**	1-11/64	7-3/8	13	MT4	**300-4711**
17/64	3	5-7/8	MT1	**300-1617**	25/32	6	9-7/8	MT2	**300-2650**	1-3/16	7-3/8	13	MT4	**300-4712**
9/32	3	5-7/8	MT1	**300-1618**	13/16	6-1/8	10	MT2	**300-2652**	1-13/64	7-1/2	13-1/8	MT4	**300-4713**
19/64	3-1/8	6-3/8	MT1	**300-1619**	41/64	5-1/8	9-3/4	MT3	**300-3641**	1-7/32	7-1/2	13-1/8	MT4	**300-4714**
5/16	3-1/8	6-3/8	MT1	**300-1620**	21/32	5-1/8	9-3/4	MT3	**300-3642**	1-15/64	7-7/8	13-1/2	MT4	**300-4715**
21/64	3-1/4	6-1/2	MT1	**300-1621**	43/64	5-3/8	10	MT3	**300-3643**	1-1/4	7-7/8	13-1/2	MT4	**300-4716**
11/32	3-1/4	6-1/2	MT1	**300-1622**	11/16	5-3/8	10	MT3	**300-3644**	1-17/64	8-1/2	14-1/8	MT4	**300-4717**
23/64	3-1/2	6-3/4	MT1	**300-1623**	45/64	5-5/8	10-1/4	MT3	**300-3645**	1-9/32	8-1/2	14-1/8	MT4	**300-4718**
3/8	3-1/2	6-3/8	MT1	**300-1624**	23/64	5-5/8	10-1/4	MT3	**300-3646**	1-19/64	8-5/8	14-1/4	MT4	**300-4719**
13/32	3-5/8	6-5/8	MT1	**300-1626**	47/64	5-7/8	10-1/2	MT3	**300-3647**	1-5/6	8-5/8	14-1/4	MT4	**300-4720**
7/16	3-7/8	6-5/8	MT1	**300-1628**	3/4	5-7/8	10-1/2	MT3	**300-3648**	1-21/64	8-3/4	14-3/8	MT4	**300-4721**
15/32	4-1/8	6-7/8	MT1	**300-1630**	49/64	6	10-5/8	MT3	**300-3649**	1-11/32	8-3/4	14-3/8	MT4	**300-4722**
3/8	3-1/2	7-3/8	MT2	**300-2624**	25/32	6	10-7/8	MT3	**300-3650**	1-23/64	8-7/8	14-1/2	MT4	**300-4723**
25/64	3-5/8	7-1/2	MT2	**300-2625**	13/16	6-1/8	10-3/4	MT3	**300-3652**	1-3/8	8-7/8	14-1/2	MT4	**300-4724**
13/32	3-5/8	7-1/2	MT2	**300-2626**	27/32	6-1/8	10-3/4	MT3	**300-3654**	1-25/64	9	14-5/8	MT4	**300-4725**
27/64	3-7/8	7-3/4	MT2	**300-2627**	7/8	6-1/8	10-3/4	MT3	**300-3656**	1-13/32	9	14-5/8	MT4	**300-4726**
7/16	3-5/8	7-3/4	MT2	**300-2628**	29/32	6-1/8	10-3/4	MT3	**300-3658**	1-27/64	9-1/8	14-3/4	MT4	**300-4727**
29/64	4-1/8	8	MT2	**300-2629**	59/64"	6-1/8"	10-3/4"	MT3	**300-3659**	1-7/16	9-1/8	14-3/4	MT4	**300-4728**
15/32	4-1/8	8	MT2	**300-2630**	15/16	6-1/8	10-3/4	MT3	**300-3660**	1-29/64	9-1/4	14-7/8	MT4	**300-4729**
31/64	4-3/8	8-1/4	MT2	**300-2631**	61/64	6-3/8	11	MT3	**300-3661**	1-15/32	9-1/4	14-7/8	MT4	**300-4730**
1/2	4-3/8	8-1/4	MT2	**300-2632**	31/32	6-3/8	11	MT3	**300-3662**	1-31/64	9-3/8	15	MT4	**300-4731**
33/64	4-5/8	8-1/2	MT2	**300-2633**	1	6-3/8	11	MT3	**300-3664**	1-1/2	9-3/8	15	MT4	**300-4732**
17/32	4-5/8	8-1/2	MT2	**300-2634**	1-1/64	6-1/2	12-1/8	MT4	**300-4701**	1-5/16	8-5/8	15-7/8	MT5	**300-5720**
35/64	4-7/8	8-3/4	MT2	**300-2635**	1-1/32	6-1/2	12-1/8	MT4	**300-4702**	1-3/8	8-7/8	14-1/2	MT5	**300-5724**
9/16"	4-7/8"	8-3/4"	MT2	**300-2636**	1-3/64	6-5/8	12-1/4	MT4	**300-4703**	1-7/16	9-1/8	14-1/8	MT5	**300-5728**
37/64	4-7/8	8-3/4	MT2	**300-2637**	1-1/16	6-5/8	12-1/4	MT4	**300-4704**	1-1/2	9-3/8	16-3/8	MT5	**300-5732**
19/32	4-7/8	8-3/4	MT2	**300-2638**	1-5/64	6-7/8	12-1/2	MT4	**300-4705**	1-5/8	10	17	MT5	**300-5740**
39/64	4-7/8	8-3/4	MT2	**300-2639**	1-3/32	6-7/8	12-1/2	MT4	**300-4706**	1-3/4	10-1/8	17-1/8	MT5	**300-5748**
5/8	4-7/8	8-3/4	MT2	**300-2640**	1-7/64	7-1/8	12-3/4	MT4	**300-4707**	1-13/16	10-1/8	17-1/8	MT5	**300-5752**
21/32	5-1/8	9-3/4	MT2	**300-2642**	1-1/8	7-1/8	12-7/8	MT4	**300-4708**	1-7/8	10-3/4	17-3/8	MT5	**300-5756**
11/16	5-3/8	9-1/4	MT2	**300-2644**	1-9/64	7-1/4	12-7/8	MT4	**300-4709**	2	10-3/8	17-3/8	MT5	**300-5764**
23/32	5-5/8	9-1/2	MT2	**300-2646**	1-5/32	7-1/4	12-7/8	MT4	**300-4710**					

Taper Shank Drills

High Speed Steel, Right Hand,118°, Black Oxide

Designed to perform in a wide range of steel, ferrous and non-ferrous materials.



Size	Flute Length	Overall Length	Shank Taper	Order No.	Size	Flute Length	Overall Length	Shank Taper	Order No.	Size	Flute Length	Overall Length	Shank Taper	Order No.	Size	Flute Length	Overall Length	Shank Taper	Order No.
1/16"	1-1/4"	4-5/8"	MT1	**302-1004**	13/16"	6-1/8"	10"	MT2*	**302-2052**	1-31/64"	9-3/8"	15"	MT4	**302-4131**	2-5/64"	10-1/4"	17-3/8"	MT5	**302-5205**
5/64	1-3/8	4-3/4	MT1	**302-1005**	13/16	6-1/8	10-3/4	MT3	**302-3052**	1-1/2	9-3/8	15-3/8	MT2	**302-2132**	2-3/32	10-1/4	17-3/8	MT5	**302-5206**
3/32	1-1/2	4-7/8	MT1	**302-1006**	53/64	6-1/8	10	MT2	**302-2053**	1-1/2	9-3/8	14-3/8	MT3	**302-3132**	2-7/64	10-1/4	17-3/8	MT5	**302-5207**
7/64	1-5/8	5	MT1	**302-1007**	53/64	6-1/8	10-3/4	MT3	**302-3053**	1-1/2	9-3/8	15	MT4	**302-4132**	2-1/8	9	16-5/8	MT4	**302-4208**
1/8	1-7/8	5-1/8	MT1	**302-1008**	27/32	6-1/8	10	MT2*	**302-2054**	1-33/64	9-3/8	15	MT4*	**302-4133**	2-1/8	10-1/4	17-3/8	MT5	**302-5208**
9/64	2-1/8	5-3/8	MT1	**302-1009**	27/32	6-1/8	10-3/4	MT3	**302-3054**	1-33/64	9-3/8	16-3/8	MT5	**302-5133**	2-9/64	10-1/4	17-3/8	MT5	**302-5209**
5/32	2-1/8	5-3/8	MT1	**302-1010**	55/64	6-1/8	10	MT2*	**302-2055**	1-17/32	9-3/8	15	MT4	**302-4134**	2-5/32	10-1/4	17-3/8	MT5	**302-5210**
11/64	2-1/2	5-3/4	MT1	**302-1011**	55/64	6-1/8	10-3/4	MT3	**302-3055**	1-17/32	9-3/8	16-3/8	MT5	**302-5134**	2-11/64	10-1/4	17-3/8	MT5	**302-5211**
3/16	2-1/2	5-3/4	MT1	**302-1012**	7/8	6-1/8	10	MT2*	**302-2056**	1-35/64	9-5/8	15-1/4	MT4*	**302-4135**	2-3/16	10-1/4	16-5/8	MT4	**302-4212**
13/64	2-3/4	6	MT1	**302-1013**	7/8	6-1/8	10-3/4	MT3	**302-3056**	1-35/64	9-5/8	16-5/8	MT5	**302-5135**	2-3/16	10-1/4	17-3/8	MT5	**302-5212**
7/32	2-3/4	6	MT1	**302-1014**	57/64	6-1/8	10	MT2*	**302-2057**	1-9/16	9-5/8	15-1/4	MT4*	**302-4136**	2-13/64	10-1/8	17-3/8	MT5	**302-5213**
15/64	2-7/8	6-1/8	MT1	**302-1015**	57/64	6-1/8	10-3/4	MT3	**302-3057**	1-9/16	9-5/8	16-5/8	MT5	**302-5136**	2-7/32	10-1/8	17-3/8	MT5	**302-5214**
1/4	2-7/8	6-1/8	MT1	**302-1016**	29/32	6-1/8	10	MT2*	**302-2058**	1-37/64	9-7/8	15-1/2	MT4*	**302-4137**	2-1/4	10-1/8	16-5/8	MT4	**302-4216**
17/64	3	6-1/4	MT1	**302-1017**	29/32	6-1/8	10-3/4	MT3	**302-3058**	1-37/64	9-7/8	16-7/8	MT5	**302-5137**	2-1/4	10-1/8	17-3/8	MT5	**302-5216**
9/32	3	6-1/4	MT1	**302-1018**	59/64	6-1/8	10-1/4	MT2	**302-2059**	1-19/32	9-7/8	15-1/2	MT4*	**302-4138**	2-9/32	10-1/8	17-3/8	MT5	**302-5218**
19/64	3-1/8	6-3/8	MT1	**302-1019**	59/64	6-1/8	10-3/4	MT3	**302-3059**	1-19/32	9-7/8	16-7/8	MT5	**302-5138**	2-19/64	9-14	16-5/8	MT4	**302-4219**
5/16	3-1/8	6-3/8	MT1	**302-1020**	15/16	6-1/8	10-1/4	MT2	**302-2060**	1-39/64	10	15-5/8	MT4*	**302-4139**	2-5/16	10-1/8	16-5/8	MT4	**302-4220**
21/64	3-1/4	6-1/2	MT1	**302-1021**	15/16	6-1/8	10-3/4	MT3	**302-3060**	1-39/64	10	17	MT5	**302-5139**	2-5/16	10-1/8	17-3/8	MT5	**302-5220**
11/32	3-1/4	6-1/2	MT1	**302-1022**	61/64	6-3/8	11	MT3	**302-3061**	1-5/8	10	15-5/8	MT4	**302-4140**	2-11/32	10-1/8	17-3/8	MT5	**302-5222**
23/64	3-1/2	6-3/4	MT1	**302-1023**	31/32	6-3/8	11	MT3	**302-3062**	1-5/8	10	17	MT5	**302-5140**	2-3/8	10-1/8	16-5/8	MT4	**302-4224**
3/8	3-1/2	6-3/4	MT1	**302-1024**	63/64	6-3/8	11	MT3	**302-3063**	1-41/64	10-1/8	15-3/4	MT4*	**302-4141**	2-3/8	10-1/8	17-3/8	MT5	**302-5224**
3/8	3-1/2	7-3/8	MT2*	**302-2024**	1	6	10-3/4	MT2	**302-2100**	1-41/64	10-1/8	17-1/8	MT5	**302-5141**	2-25/64	10-1/8	17-3/8	MT5	**302-5215**
25/64	3-5/8	7	MT1	**302-1025**	1	6-3/8	11	MT3	**302-3100**	1-21/32	10-1/8	15-3/4	MT4	**302-4142**	2-13/32	11-1/4	18-3/4	MT5	**302-5226**
25/64	3-5/8	7-1/2	MT2*	**302-2025**	1	6-3/8	12	MT4*	**302-4100**	1-21/32	10-1/8	17-1/8	MT5	**302-5142**	2-7/16	11-1/4	17-3/8	MT4	**302-4228**
13/32	3-5/8	7	MT1	**302-1026**	1-1/64	6-1/2	11-1/8	MT3	**302-3101**	1-43/64	10-1/8	15-3/4	MT4*	**302-4143**	2-7/16	11-1/4	18-3/4	MT5	**302-5228**
13/32	3-5/8	7-1/2	MT2*	**302-2026**	1-1/32	6-1/2	11-1/8	MT3	**302-3102**	1-43/64	10-1/8	17-1/8	MT5	**302-5143**	2-15/32	11-1/4	18-3/4	MT5	**302-5230**
27/64	3-7/8	7-1/4	MT1	**302-1027**	1-1/32	6-1/2	12-1/8	MT4	**302-4102**	1-11/16	10-1/8	15-3/4	MT4*	**302-4144**	2-1/2	11-1/4	17-3/8	MT4	**302-4232**
27/64	3-7/8	7-3/4	MT2*	**302-2027**	1-3/64	6-5/8	11-1/4	MT3	**302-3103**	1-11/16	10-1/8	17-1/8	MT5	**302-5144**	2-1/2	11-1/4	18-3/4	MT5	**302-5232**
7/16	3-7/8	7-1/4	MT1	**302-1028**	1-3/64	6	11"	MT4	**302-4103**	1-45/64	10-1/8	15-3/4	MT4*	**302-4145**	2-17/32	11-7/8	19-1/4	MT5	**302-5234**
7/16	3-7/8	7-3/4	MT2*	**302-2028**	1-1/16	6-5/8	11-1/4	MT3	**302-3104**	1-45/64	10-1/8	17-1/8	MT5	**302-5145**	2-9/16	11-7/8	19-1/2	MT5	**302-5236**
29/64	4-1/8	7-1/2	MT1	**302-1029**	1-1/16	6-5/8	12-1/4	MT4*	**302-4104**	1-23/32	10-1/8	15-3/4	MT4*	**302-4146**	2-19/32	11-7/8	19-1/2	MT5	**302-5238**
29/64	4-1/8	8	MT2	**302-2029**	1-5/64	6-7/8	11-1/2	MT3*	**302-3105**	1-23/32	10-1/8	17-1/8	MT5	**302-5146**	2-5/8	11-7/8	19-1/2	MT5	**302-5240**
15/32	4-1/8	7-1/2	MT1	**302-1030**	1-5/64	6-7/8	12-1/2	MT4	**302-4105**	1-47/64	10-3/8	16-1/4	MT4*	**302-4147**	2-21/32	12-1/2	20	MT5	**302-5242**
15/32	4-1/8	8	MT2*	**302-2030**	1-3/32	6-7/8	11-1/2	MT3 *	**302-3106**	1-47/64	10-1/8	17-1/8	MT5	**302-5147**	2-11/16	12-3/4	20-3/8	MT5	**302-5244**
31/64	4-3/8	7-3/4	MT1	**302-1031**	1-3/32	6-7/8	12-1/2	MT4	**302-4106**	1-3/4	10-3/8	16-1/4	MT4*	**302-4148**	2-23/32	13	20-1/2	MT5	**302-5246**
31/64	4-3/8	8-1/4	MT2	**302-2031**	1-7/64	7-1/8	11-3/4	MT3*	**302-3107**	1-3/4	10-1/8	17-1/8	MT5	**302-5148**	2-3/4	12-3/4	20-3/8	MT5	**302-5248**
1/2	4-3/8	7-3/4	MT1*	**302-1032**	1-7/64	7-1/8	12-3/4	MT4	**302-4107**	1-49/64	10-3/8	16-1/4	MT4	**302-4149**	2-25/32	13	20-1/2	MT5	**302-5250**
1/2	4-3/8	8-1/4	MT2	**302-2032**	1-1/8	7-1/8	11-3/4	MT3*	**302-3108**	1-49/64	10-1/8	17-1/8	MT5	**302-5149**	2-13/16	13-3/8	21-1/8	MT5	**302-5252**
33/64	4-5/8	8	MT1*	**302-1033**	1-1/8	7-1/8	12-3/4	MT4	**302-4108**	1-25/32	10-3/8	16-1/4	MT4*	**302-4150**	2-27/32	13-1/2	21	MT5	**302-5254**
33/64	4-5/8	8-1/2	MT2	**302-2033**	1-9/64	7-1/4	11-7/8	MT3*	**302-3109**	1-25/32	10-1/8	17-1/8	MT5	**302-5150**	2-7/8	13-3/8	21-1/8	MT5	**302-5256**
17/32	4-5/8	8	MT1*	**302-1034**	1-9/64	7-1/4	12-7/8	MT4	**302-4109**	1-51/64	10-3/8	16-1/4	MT4	**302-4151**	2-57/64	9	16-1/2	MT5	**302-5257**
17/32	4-5/8	8-1/2	MT2	**302-2034**	1-5/32	7-1/4	11-7/8	MT3	**302-3110**	1-51/64	10-1/8	17-1/8	MT5	**302-5151**	2-29/32	13-1/2	21	MT5	**302-5258**
35/64	4-7/8	8-1/4	MT1*	**302-1035**	1-5/32	7-1/4	12-7/8	MT4	**302-4110**	1-13/16	10-3/8	16-1/4	MT4	**302-4152**	2-15/16	14	21-3/4	MT5	**302-5260**
35/64	4-7/8	8-3/4	MT2	**302-2035**	1-11/64	7-3/8	12	MT3*	**302-3111**	1-13/16	10-1/8	17-1/8	MT5	**302-5152**	2-31/32	14-1/2	22	MT5	**302-5262**
9/16	4-7/8	8-1/2	MT1*	**302-1036**	1-11/64	7-3/8	13	MT4	**302-4111**	1-53/64	10-3/8	16-1/4	MT4	**302-4153**	3	14	21-3/4	MT5	**302-5300**
9/16	4-7/8	8-3/4	MT2	**302-2036**	1-3/16	7-3/8	12	MT3*	**302-3112**	1-53/64	10-1/8	17-1/8	MT5	**302-5153**	3-1/16	14-1/8	22	MT5	**302-5304**
37/64	4-7/8	8-3/4	MT2	**302-2037**	1-3/16	7-3/8	13	MT4	**302-4112**	1-27/32	10-3/8	16-1/4	MT4*	**302-4154**	3-1/16	14-1/2	24-1/2	MT6	**302-6304**
19/32	4-7/8	8-3/4	MT2	**302-2038**	1-13/64	7-1/2	12-1/8	MT3	**302-3113**	1-27/32	10-1/8	17-1/8	MT5	**302-5154**	3-1/8	14-1/4	22	MT5	**302-5308**
39/64	4-7/8	8-3/4	MT2	**302-2039**	1-13/64	7-1/2	13-1/8	MT4	**302-4113**	1-55/64	10-3/8	16-1/2	MT4	**302-4155**	3-1/8	14-5/8	24-1/2	MT6	**302-6308**
5/8	4-7/8	8-3/4	MT2	**302-2040**	1-7/32	7-1/2	12-1/8	MT3*	**302-3114**	1-55/64	10-1/8	17-3/8	MT5	**302-5155**	3-3/16	14-1/4	23	MT5	**302-5312**
41/64	5-1/8	9	MT2	**302-2041**	1-7/32	7-1/2	13-1/8	MT4	**302-4114**	1-7/8	10-1/2	16-1/2	MT4*	**302-4156**	3-3/16	14-5/8	25-1/2	MT6	**302-6312**
41/64	5-1/8	9-3/4	MT3*	**302-3041**	1-15/64	7-7/8	12-1/2	MT3*	**302-3115**	1-7/8	10-3/4	17-3/8	MT5	**302-5156**	3-1/4	14-1/4	23	MT5	**302-5316**
21/32	5-1/8	9	MT2	**302-2042**	1-15/64	7-7/8	13-1/2	MT4	**302-4115**	1-57/64	10-1/2	16-1/2	MT4	**302-4157**	3-1/4	15-1/2	25-1/2	MT6	**302-6316**
21/32	5-1/8	9-3/4	MT3*	**302-3042**	1-1/4	7-7/8	12-1/2	MT3*	**302-3116**	1-57/64	10-3/8	17-3/8	MT5	**302-5157**	3-5/16	15-1/4	23	MT5	**302-5320**
43/64	5-3/8	9-1/4	MT2	**302-2043**	1-1/4	7-7/8	13-1/2	MT4	**302-4116**	1-29/32	10-1/2	16-1/2	MT4*	**302-4158**	3-5/16	15-1/2	25-1/2	MT6	**302-6320**
43/64	5-3/8	10	MT3*	**302-3043**	1-17/64	8-1/2	14-1/8	MT4	**302-4117**	1-29/32	10-3/8	17-3/8	MT5	**302-5158**	3-3/8	15-1/4	23	MT5	**302-5324**
11/16	5-3/8	9-1/4	MT2	**302-2044**	1-9/32	8-1/2	14-1/8	MT4	**302-4118**	1-59/64	10-1/2	16-1/2	MT4	**302-4159**	3-3/8	15-1/2	25-1/2	MT6	**302-6324**
11/16	5-3/8	10	MT3*	**302-3044**	1-19/64	8-5/8	14-1/4	MT4	**302-4119**	1-59/64	10-3/8	17-3/8	MT5	**302-5159**	3-13/32	15-1/4	23	MT6	**302-6326**
45/64	5-5/8	9-1/2	MT2	**302-2045**	1-5/16	8-5/8	14	MT3	**302-3120**	1-15/16	10-5/8	16-5/8	MT4	**302-4160**	3-7/16	15-1/4	23	MT5	**302-5328**
45/64	5-5/8	10-1/4	MT3*	**302-3045**	1-5/16	8-5/8	14-1/2	MT4	**302-4120**	1-15/16	10-3/8	17-3/8	MT5	**302-5160**	3-1/2	16-1/4	24	MT5	**302-5332**
23/32	5-5/8	9-1/2	MT2	**302-2046**	1-21/64	8-3/4	14-3/8	MT4	**302-4121**	1-61/64	10-5/8	16-5/8	MT4	**302-4161**	3-1/2	16-1/4	26-1/2	MT6	**302-6332**
23/32	5-5/8	10-1/4	MT3*	**302-3046**	1-11/32	8-3/4	14-1/2	MT4	**302-4122**	1-61/64	10-3/8	17-3/8	MT5	**302-5161**	3-5/8	16-1/4	25-7/8	MT6	**302-6340**
47/64	5-7/8	9-3/4	MT2	**302-2047**	1-23/64	8-7/8	14-1/2	MT4	**302-4123**	1-31/32	10-5/8	16-5/8	MT4	**302-4162**	3-11/16	16-1/4	26	MT6	**302-6344**
47/64	5-7/8	10-1/2	MT3*	**302-3047**	1-3/8	8-7/8	14	MT3	**302-3124**	1-31/32	10-3/8	17-3/8	MT5	**302-5162**	3-3/4	16-1/4	25-7/8	MT5	**302-5348**
3/4	5-7/8	9-3/4	MT2	**302-2048**	1-3/8	8-7/8	14-1/2	MT4	**302-4124**	1-63/64	10-5/8	16-5/8	MT4	**302-4163**	3-3/4	16-1/2	29	MT6	**302-6348**
3/4	5-7/8	10-1/2	MT3*	**302-3048**	1-25/64	9	14-5/8	MT4	**302-4125**	1-63/64	10-3/8	17-3/8	MT5	**302-5163**	3-13/16	16-1/4	26	MT6	**302-6352**
49/64	6	9-7/8	MT2	**302-2049**	1-13/32	9	14-5/8	MT4	**302-4126**	2	10-5/8	16-5/8	MT4*	**302-4200**	3-7/8	16-1/2	29	MT5	**302-5356**
49/64	6	10-5/8	MT3*	**302-3049**	1-27/64	9-1/8	14-3/4	MT4	**302-4127**	2	10-3/8	17-3/8	MT5	**302-5200**	3-7/8	16-1/2	29	MT6	**302-6356**
25/32	6	9-7/8	MT2	**302-2050**	1-7/16	9-1/8	14-1/4	MT3	**302-3128**	2-1/32	10-3/8	17-3/8	MT5	**302-5202**	4	16-1/2	29	MT5	**302-5400**
25/32	6	10-7/8	MT3*	**302-3050**	1-7/16	9-1/8	14-1/2	MT4	**302-4128**	2-1/16	9	16-5/8	MT4	**302-4204**	4	16-1/2	29	MT6	**302-6400**
51/64	6-1/8	10	MT2*	**302-2051**	1-29/64	9-1/4	14-7/8	MT4	**302-4129**	2-1/16	10-1/4	17-3/8	MT5	**302-5204**					
51/64	6-1/8	10-3/4	MT3	**302-3051**	1-15/32	9-1/4	14-7/8	MT4	**302-4130**										

*Indicates smaller or larger shank than standard.

Extra Long Taper Shank Drills

High Speed Steel, Right Hand,118°, Black Oxide

Designed to perform in a wide range of steel, ferrous and non-ferrous materials, where extra length is required.



Size	Flute Length	Overall Length	Shank Taper	Order No.	Size	Flute Length	Overall Length	Shank Taper	Order No.	Size	Flute Length	Overall Length	Shank Taper	Order No.
1/8"	7"	10"	MT1	**502-1008**	23/32	8	12	MT2	**502-1264**	1	10	15	MT3	**502-1550**
9/64	7	10	MT1	**502-1009**	47/64	8	12	MT2	**502-1266**	1-1/64	10	15	MT3	**502-1551**
5/32	7	10	MT1	**502-1010**	3/4	8	12	MT2	**502-1268**	1-1/32	10	15	MT3	**502-1552**
11/64	7	10	MT1	**502-1011**	49/64	8	12	MT2	**502-1270**	1-3/64	10	15	MT3	**502-1553**
3/16	7	10	MT1	**502-1012**	25/32	8	12	MT2	**502-1272**	1-1/16	10	15	MT3	**502-1554**
13/64	7	10	MT1	**502-1013**	13/16	8	12	MT3	**502-1274**	1-5/64	10	15	MT3	**502-1555**
7/32	7	10	MT1	**502-1014**	53/64	8	12	MT3	**502-1276**	1-3/32	10	15	MT4	**502-1556**
15/64	7	10	MT1	**502-1015**	27/32	8	12	MT3	**502-1278**	1-7/64	10	15	MT4	**502-1557**
1/4	7	10	MT1	**502-1016**	7/8	8	12	MT3	**502-1280**	1-1/8	10	15	MT4	**502-1558**
17/64	7	10	MT1	**502-1017**	15/16	8	12	MT3	**502-1282**	1-9/64	10	15	MT4	**502-1560**
9/32	7	10	MT1	**502-1018**	7/32	10	15	MT1	**502-1499**	1-5/32	10	15	MT4	**502-1561**
19/64	7	10	MT1	**502-1019**	3/16	10	15	MT1	**502-1500**	1-11/64	10	15	MT4	**502-1562**
5/16	7	10	MT1	**502-1020**	15/64	10	15	MT1	**502-1501**	1-3/16	10	15	MT4	**502-1563**
21/64	7	10	MT1	**502-1021**	1/4	10	15	MT1	**502-1502**	1-13/64	10	15	MT4	**502-1564**
11/32	7	10	MT1	**502-1022**	17/64	10	15	MT1	**502-1503**	1-7/32	10	15	MT4	**502-1565**
23/64	7	10	MT1	**502-1023**	9/32	10	15	MT1	**502-1504**	1-15/64	10	15	MT4	**502-1566**
3/8	7	10	MT1	**502-1024**	19/64	10	15	MT1	**502-1505**	1-1/4	10	15	MT4	**502-1567**
25/64	7	10	MT1	**502-1025**	5/16	10	15	MT1	**502-1506**	1/4	12	18	MT1	**502-1800**
13/32	7	10	MT1	**502-1026**	21/64	10	15	MT1	**502-1507**	17/64	12	18	MT1	**502-1801**
27/64	7	10	MT1	**502-1027**	11/32	10	15	MT1	**502-1508**	9/32	12	18	MT1	**502-1802**
7/16	7	10	MT1	**502-1028**	23/64	10	15	MT1	**502-1509**	19/64	12	18	MT1	**502-1803**
29/64	7	10	MT1	**502-1029**	3/8	10	15	MT1	**502-1510**	5/16	12	18	MT1	**502-1804**
15/32	7	10	MT1	**502-1030**	25/64	10	15	MT1	**502-1511**	11/32	12	18	MT1	**502-1805**
31/64	7	10	MT1	**502-1031**	13/32	10	15	MT1	**502-1512**	23/64	12	18	MT1	**502-1806**
1/2	7	10	MT1	**502-1032**	27/64	10	15	MT1	**502-1513**	3/8	12	18	MT1	**502-1807**
33/64	7	10	MT2	**502-1033**	7/16	10	15	MT1	**502-1514**	25/64	12	18	MT1	**502-1808**
17/32	7	10	MT2	**502-1034**	29/64	10	15	MT1	**502-1515**	13/32	12	18	MT1	**502-1809**
35/64	7	10	MT2	**502-1035**	15/32	10	15	MT1	**502-1516**	27/64	12	18	MT1	**502-1810**
21/32	7	10	MT1	**502-1042**	31/64	10	15	MT1	**502-1517**	7/16	12	18	MT1	**502-1811**
1/8	8	12	MT1	**502-1200**	1/2	10	15	MT2	**502-1518**	29/64	12	18	MT1	**502-1812**
3/16	8	12	MT1	**502-1202**	33/64	10	15	MT2	**502-1519**	15/32	12	18	MT1	**502-1813**
1/4	8	12	MT1	**502-1204**	17/32	10	15	MT2	**502-1520**	31/64	12	18	MT1	**502-1814**
17/64	8	12	MT1	**502-1206**	35/64	10	15	MT2	**502-1521**	1/2	12	18	MT2	**502-1815**
9/32	8	12	MT1	**502-1208**	9/16	10	15	MT2	**502-1522**	33/64	12	18	MT2	**502-1816**
19/64	8	12	MT1	**502-1210**	37/64	10	15	MT2	**502-1523**	17/32	12	18	MT2	**502-1817**
5/16	8	12	MT1	**502-1212**	19/32	10	15	MT2	**502-1524**	35/64	12	18	MT2	**502-1818**
21/64	8	12	MT1	**502-1214**	39/64"	10"	15"	MT2	**502-1525**	9/16	12	18	MT2	**502-1819**
11/32	8	12	MT1	**502-1216**	5/8	10	15	MT2	**502-1526**	37/64	12	18	MT2	**502-1820**
23/64	8	12	MT1	**502-1218**	41/64	10	15	MT2	**502-1527**	19/32	12	18	MT2	**502-1821**
3/8	8	12	MT1	**502-1220**	21/32	10	15	MT2	**502-1528**	39/64	12	18	MT2	**502-1822**
25/64	8	12	MT1	**502-1222**	43/64	10	15	MT2	**502-1529**	5/8	12	18	MT2	**502-1823**
13/32	8	12	MT1	**502-1224**	11/16	10	15	MT2	**502-1530**	41/64	12	18	MT2	**502-1824**
27/64	8	12	MT1	**502-1226**	45/64	10	15	MT2	**502-1531**	21/32	12	18	MT2	**502-1825**
7/16	8	12	MT1	**502-1228**	23/32	10	15	MT2	**502-1532**	43/64	12	18	MT2	**502-1826**
29/64	8	12	MT1	**502-1230**	47/64	10	15	MT2	**502-1533**	11/16	12	18	MT2	**502-1827**
15/32	8	12	MT1	**502-1232**	3/4	10	15	MT2	**502-1534**	45/64	12	18	MT2	**502-1828**
31/64	8	12	MT2	**502-1234**	49/64	10	15	MT2	**502-1535**	23/32	12	18	MT2	**502-1829**
1/2	8	12	MT2	**502-1236**	25/32	10	15	MT2	**502-1536**	47/64	12	18	MT2	**502-1830**
33/64	8	12	MT2	**502-1238**	51/64	10	15	MT2	**502-1537**	3/4	12	18	MT2	**502-1831**
17/32	8	12	MT2	**502-1240**	13/16	10	15	MT3	**502-1538**	49/64	12	18	MT2	**502-1832**
35/64	8	12	MT2	**502-1242**	53/64	10	15	MT3	**502-1539**	25/32	12	18	MT2	**502-1833**
9/16	8	12	MT2	**502-1244**	27/32	10	15	MT3	**502-1540**	51/64	12	18	MT2	**502-1834**
37/64	8	12	MT2	**502-1246**	55/64	10	15	MT3	**502-1541**	13/16	12	18	MT3	**502-1835**
19/32	8	12	MT2	**502-1248**	7/8	10	15	MT3	**502-1542**	53/64	12	18	MT3	**502-1836**
39/64	8	12	MT2	**502-1250**	57/64	10	15	MT3	**502-1543**	27/32	12	18	MT3	**502-1837**
5/8	8	12	MT2	**502-1252**	29/32	10	15	MT3	**502-1544**	55/64	12	18	MT3	**502-1838**
41/64	8	12	MT2	**502-1254**	59/64	10	15	MT3	**502-1545**	7/8	12	18	MT3	**502-1839**
21/32	8	12	MT2	**502-1256**	15/16	10	15	MT3	**502-1546**	57/64	12	18	MT3	**502-1840**
43/64	8	12	MT2	**502-1258**	61/64	10	15	MT3	**502-1547**	29/32	12	18	MT3	**502-1841**
11/16	8	12	MT2	**502-1260**	31/32	10	15	MT3	**502-1548**	59/64	12	18	MT3	**502-1842**
45/64	8	12	MT2	**502-1262**	63/64	10	15	MT3	**502-1549**	15/16	12	18	MT3	**502-1843**

Extra Long Taper Shank Drills Continued

High Speed Steel, Right Hand,118°, Black Oxide



Size	Flute Length	Overall Length	Shank Taper	Order No.	Size	Flute Length	Overall Length	Shank Taper	Order No.	Size	Flute Length	Overall Length	Shank Taper	Order No.
61/64	12	18	MT3	**502-1844**	43/64	17	24	MT2	**502-2318**	7/8	24	30	MT3	**502-3015**
31/32	12	18	MT3	**502-1845**	11/16	17	24	MT2	**502-2319**	15/16	24	30	MT3	**502-3017**
63/64	12	18	MT3	**502-1846**	45/64	17	24	MT2	**502-2320**	1	24	30	MT3	**502-3020**
1	12	18	MT3	**502-1847**	23/32	17	24	MT2	**502-2321**	1-1/16	24	30	MT3	**502-3021**
1-1/64	12	18	MT3	**502-1848**	47/64	17	24	MT2	**502-2322**	1-1/8	24	30	MT4	**502-3022**
1-1/32	12	18	MT3	**502-1849**	3/4	17	24	MT2	**502-2323**	1-5/16	24	30	MT4	**502-3023**
1-3/64	12	18	MT3	**502-1850**	49/64	17	24	MT3	**502-2324**	1-3/16	24	30	MT4	**502-3024**
1-1/16	12	18	MT3	**502-1851**	25/32	17	24	MT3	**502-2325**	1-1/4	24	30	MT4	**502-3025**
1-5/64	12	18	MT3	**502-1852**	51/64	17	24	MT3	**502-2326**	1-3/8	24	30	MT4	**502-3026**
1-3/32	12	18	MT4	**502-1853**	13/16	17	24	MT3	**502-2327**	1-7/16	24	30	MT4	**502-3027**
1-7/64	12	18	MT4	**502-1854**	53/64	17	24	MT3	**502-2328**	1-1/2	24	30	MT4	**502-3030**
1-1/8	12	18	MT4	**502-1855**	27/32	17	24	MT3	**502-2329**	1-9/16	24	30	MT5	**502-3031**
1-9/64	12	18	MT4	**502-1856**	55/64	17	24	MT3	**502-2330**	1-5/8	24	30	MT5	**502-3032**
1-5/32	12	18	MT4	**502-1857**	7/8	17	24	MT3	**502-2331**	1-11/16	24	30	MT5	**502-3033**
1-11/64	12	18	MT4	**502-1858**	57/64	17	24	MT3	**502-2332**	1-3/4	24	30	MT5	**502-3034**
1-3/16	12	18	MT4	**502-1859**	29/32	17	24	MT3	**502-2333**	1-7/8	24	30	MT5	**502-3036**
1-13/64	12	18	MT4	**502-1860**	59/64	17	24	MT3	**502-2334**	2	24	30	MT4	**502-3040**
1-7/32	12	18	MT4	**502-1861**	15/16	17	24	MT3	**502-2335**	2-1/16	24	30	MT5	**502-3041**
1-15/54	12	18	MT4	**502-1862**	61/64	17	24	MT3	**502-2336**	2-1/8	24	30	MT5	**502-3042**
1-1/4	12	18	MT4	**502-1863**	31/32	17	24	MT3	**502-2337**	2-1/4	24	30	MT5	**502-3043**
1-17/64	12	18	MT4	**502-1864**	63/64	17	24	MT3	**502-2338**	2-3/8	24	30	MT5	**502-3045**
1-9/32	12	18	MT4	**502-1865**	1	17	24	MT3	**502-2339**	2-7/16	24	30	MT5	**502-3046**
1-19/64	12	18	MT4	**502-1866**	1-1/64	17	24	MT3	**502-2340**	2-1/2	24	30	MT5	**502-3047**
1-5/16	12	18	MT4	**502-1867**	1-1/32	17	24	MT3	**502-2341**	2-5/8	24	30	MT5	**502-3048**
1-21/64	12	18	MT4	**502-1868**	1-3/64	17	24	MT3	**502-2342**	2-3/4	24	30	MT5	**502-3049**
1-11/32	12	18	MT4	**502-1869**	1-1/16	17	24	MT3	**502-2343**	3	24	30	MT5	**502-3050**
1-23/64	12	18	MT4	**502-1870**	1-5/64	17	24	MT3	**502-2344**	3-1/8	24	30	MT5	**502-3051**
1-3/8	12	18	MT4	**502-1871**	1-3/32	17	24	MT3	**502-2345**	3-1/4	24	30	MT5	**502-3052**
1-25/64	12	18	MT4	**502-1872**	1-7/64	17	24	MT3	**502-2346**	3-3/8	24	30	MT5	**502-3053**
1-13/32	12	18	MT4	**502-1873**	1-1/8	17	24	MT4	**502-2347**	3-1/2	24	30	MT5	**502-3054**
1-27/64	12	18	MT4	**502-1874**	1-9/64	17	24	MT4	**502-2348**	1-1/2	24	36	MT4	**502-3130**
1-7/16	12	18	MT4	**502-1875**	1-5/32	17	24	MT4	**502-2349**	5/8	24	36	MT2	**502-3140**
1-29/64	12	18	MT4	**502-1876**	1-11/64	17	24	MT4	**502-2350**	21/32	24	36	MT2	**502-3142**
1-15/32	12	18	MT4	**502-1877**	1-3/16	17	24	MT4	**502-2351**	11/16	24	36	MT2	**502-3144**
1-31/64	12	18	MT4	**502-1878**	1-13/64	17	24	MT4	**502-2352**	3/4	24	36	MT2	**502-3148**
1-1/2	12	18	MT4	**502-1879**	1-7/32	17	24	MT4	**502-2353**	13/16	24	36	MT3	**502-3152**
1-9/16	12	18	MT5	**502-1880**	1-15/64	17	24	MT4	**502-2354**	7/8	24	36	MT3	**502-3156**
1-5/8	12	18	MT5	**502-1881**	1-1/4	17	24	MT4	**502-2355**	15/16	24	36	MT3	**502-3160**
1-11/16	12	18	MT5	**502-1882**	1-17/64	17	24	MT4	**502-2356**	1	24	36	MT3	**502-3164**
1-3/4	12	18	MT5	**502-1883**	1-9/32	17	24	MT4	**502-2357**	1-1/16	24	36	MT3	**502-3204**
1-19/32	12	18	MT5	**502-1885**	1-19/64	17	24	MT4	**502-2358**	1-1/8	24	36	MT4	**502-3208**
1-25/32	12	18	MT5	**502-1887**	1-5/16	17	24	MT4	**502-2359**	1-3/16	24	36	MT4	**502-3212**
1-13/16	12	18	MT5	**502-1889**	1-21/64	17	24	MT4	**502-2360**	1-1/4	24	36	MT4	**502-3216**
1-7/8	12	18	MT5	**502-1891**	1-11/32	17	24	MT4	**502-2361**	1-5/16	24	36	MT4	**502-3220**
1-15/16	12	18	MT5	**502-1893**	1-23/64	17	24	MT4	**502-2362**	1-3/8	24	36	MT4	**502-3224**
2	12	18	MT5	**502-1895**	1-3/8	17	24	MT4	**502-2363**	1-7/16	24	36	MT4	**502-3228**
3/8	17	24	MT1	**502-2300**	1-25/64	17	24	MT4	**502-2364**	1-9/16	24	36	MT5	**502-3236**
25/64	17	24	MT1	**502-2301**	1-13/32	17	24	MT4	**502-2365**	1-5/8	24	36	MT5	**502-3240**
13/32	17	24	MT1	**502-2302**	1-27/64	17	24	MT4	**502-2366**	1-11/16	24	36	MT5	**502-3244**
27/64	17	24	MT1	**502-2303**	1-7/16	17	24	MT4	**502-2367**	1-3/4	24	36	MT5	**502-3248**
7/16	17	24	MT1	**502-2304**	1-29/64	17	24	MT4	**502-2368**	1-7/8	24	36	MT5	**502-3256**
15/32	17	24	MT1	**502-2305**	1-15/32	17	24	MT4	**502-2369**	2	24	36	MT5	**502-3264**
31/64	17	24	MT1	**502-2306**	1-31/64	17	24	MT4	**502-2370**	2-1/8	24	36	MT5	**502-3308**
1/2	17	24	MT2	**502-2307**	1-1/2	17	24	MT4	**502-2371**	2-1/4	24	36	MT5	**502-3316**
33/64	17	24	MT2	**502-2308**	1-9/16	17	24	MT5	**502-2372**	2-3/8	24	36	MT5	**502-3324**
17/32	17	24	MT2	**502-2309**	1-11/16	17	24	MT5	**502-2373**	2-1/2	24	36	MT5	**502-3332**
35/64	17	24	MT2	**502-2310**	1-3/4	17	24	MT5	**502-2374**	2-5/8	24	36	MT5	**502-3340**
9/16	17	24	MT2	**502-2311**	1-7/8	17	24	MT5	**502-2376**	2-3/4	24	36	MT5	**502-3348**
37/64	17	24	MT2	**502-2312**	2	17	24	MT5	**502-2377**	3	24	36	MT5	**502-3400**
19/32	17	24	MT2	**502-2313**	5/8	24	30	MT2	**502-3006**	3-1/8	24	36	MT5	**502-3408**
39/64	17	24	MT2	**502-2314**	21/32	24	30	MT2	**502-3007**	3-1/4	24	36	MT5	**502-3416**
5/8	17	24	MT2	**502-2315**	11/16	24	30	MT2	**502-3008**	3-3/8	24	36	MT5	**502-3424**
41/64	17	24	MT2	**502-2416**	3/4	24	30	MT2	**502-3010**	3-1/2	24	36	MT5	**502-3432**
21/32	17	24	MT2	**502-2317**	13/16	24	30	MT3	**502-3012**					

Metric Taper Shank Drills

DIN 345, High Speed Steel, Right Hand, Black Oxide



Size (mm)	Shank Taper	Flute Length (mm)	Overall Length (mm)	Order No.	Size (mm)	Shank Taper	Flute Length (mm)	Overall Length (mm)	Order No.	Size (mm)	Shank Taper	Flute Length (mm)	Overall Length (mm)	Order No.
5.00	MT1	52	133	**308-0500**	19.50	MT2	140	238	**308-1950**	36.00	MT4	195	344	**308-3600**
5.25	MT1	52	133	**308-0525**	19.75	MT2	140	238	**308-1975**	36.50	MT4	195	344	**308-3650**
5.50	MT1	57	138	**308-0550**	20.00	MT2	140	238	**308-2000**	37.00	MT4	195	344	**308-3700**
5.75	MT1	57	138	**308-0575**	20.25	MT2	145	243	**308-2025**	37.50	MT4	195	344	**308-3750**
6.00	MT1	57	138	**308-0600**	20.50	MT2	145	243	**308-2050**	38.00	MT4	200	349	**308-3800**
6.25	MT1	63	144	**308-0625**	20.75	MT2	145	243	**308-2075**	38.50	MT4	200	349	**308-3850**
6.50	MT1	63	144	**308-0650**	21.00	MT2	145	243	**308-2100**	39.00	MT4	200	349	**308-3900**
6.75	MT1	69	150	**308-0675**	21.25	MT2	150	248	**308-2125**	39.50	MT4	200	349	**308-3950**
7.00	MT1	69	150	**308-0700**	21.50	MT2	150	248	**308-2150**	40.00	MT4	200	349	**308-4000**
7.25	MT1	69	150	**308-0725**	21.75	MT2	150	248	**308-2175**	40.50	MT4	205	354	**308-4050**
7.50	MT1	69	150	**308-0750**	22.00	MT2	150	248	**308-2200**	41.00	MT4	205	354	**308-4100**
7.75	MT1	75	156	**308-0775**	22.25	MT2	150	248	**308-2225**	41.50	MT4	205	354	**308-4150**
8.00	MT1	75	156	**308-0800**	22.50	MT2	155	253	**308-2250**	42.00	MT4	205	354	**308-4200**
8.25	MT1	75	156	**308-0825**	22.75	MT2	155	253	**308-2275**	42.50	MT4	205	354	**308-4250**
8.50	MT1	75	156	**308-0850**	23.00	MT2	155	253	**308-2300**	43.00	MT4	210	359	**308-4300**
8.75	MT1	81	162	**308-0875**	23.25	MT3	155	276	**308-2325**	43.50	MT4	210	359	**308-4350**
9.00	MT1	81	162	**308-0900**	23.50	MT3	155	276	**308-2350**	44.00	MT4	210	359	**308-4400**
9.25	MT1	81	162	**308-0925**	23.75	MT3	160	281	**308-2375**	44.50	MT4	210	359	**308-4450**
9.50	MT1	81	162	**308-0950**	24.00	MT3	160	281	**308-2400**	45.00	MT4	210	359	**308-4500**
9.75	MT1	87	168	**308-0975**	24.25	MT3	160	281	**308-2425**	45.50	MT4	215	364	**308-4550**
10.00	MT1	87	168	**308-1000**	24.50	MT3	160	281	**308-2450**	46.00	MT4	215	364	**308-4600**
10.25	MT1	87	168	**308-1025**	24.75	MT3	160	281	**308-2475**	46.50	MT4	215	364	**308-4650**
10.50	MT1	87	168	**308-1050**	25.00	MT3	160	281	**308-2500**	47.00	MT4	215	364	**308-4700**
10.75	MT1	94	175	**308-1075**	25.25	MT3	165	286	**308-2525**	47.50	MT4	215	364	**308-4750**
11.00	MT1	94	175	**308-1100**	25.50	MT3	165	286	**308-2550**	48.00	MT4	220	369	**308-4800**
11.25	MT1	94	175	**308-1125**	25.75	MT3	165	286	**308-2575**	48.50	MT4	220	369	**308-4850**
11.50	MT1	94	175	**308-1150**	26.00	MT3	165	286	**308-2600**	49.00	MT4	220	369	**308-4900**
11.75	MT1	94	175	**308-1175**	26.25	MT3	165	286	**308-2625**	49.50	MT4	220	369	**308-4950**
12.00	MT1	101	182	**308-1200**	26.50	MT3	165	286	**308-2650**	50.00	MT4	220	369	**308-5000**
12.25	MT1	101	182	**308-1225**	26.75	MT3	170	291	**308-2675**	50.50	MT4	225	374	**308-5050**
12.50	MT1	101	182	**308-1250**	27.00	MT3	170	291	**308-2700**	51.00	MT5	225	412	**308-5100**
12.75	MT1	101	182	**308-1275**	27.25	MT3	170	291	**308-2725**	52.00	MT5	225	412	**308-5200**
13.00	MT1	101	182	**308-1300**	27.50	MT3	170	291	**308-2750**	53.00	MT5	225	412	**308-5300**
13.25	MT1	101	182	**308-1325**	27.75	MT3	170	291	**308-2775**	54.00	MT5	230	417	**308-5400**
13.50	MT1	108	189	**308-1350**	28.00	MT3	170	291	**308-2800**	55.00	MT5	230	417	**308-5500**
13.75	MT1	108	189	**308-1375**	28.25	MT3	175	296	**308-2825**	56.00	MT5	230	417	**308-5600**
14.00	MT2	108	189	**308-1400**	28.50	MT3	175	296	**308-2850**	57.00	MT5	235	422	**308-5700**
14.25	MT2	114	212	**308-1425**	28.75	MT3	175	296	**308-2875**	58.00	MT5	235	422	**308-5800**
14.50	MT2	114	212	**308-1450**	29.00	MT3	175	296	**308-2900**	59.00	MT5	235	422	**308-5900**
14.75	MT2	114	212	**308-1475**	29.25	MT3	175	296	**308-2925**	60.00	MT5	235	422	**308-6000**
15.00	MT2	114	212	**308-1500**	29.50	MT3	175	296	**308-2950**	61.00	MT5	240	427	**308-6100**
15.25	MT2	120	218	**308-1525**	29.75	MT3	175	296	**308-2975**	62.00	MT5	240	427	**308-6200**
15.50	MT2	120	218	**308-1550**	30.00	MT3	175	296	**308-3000**	63.00	MT5	240	427	**308-6300**
15.75	MT2	120	218	**308-1575**	30.25	MT3	180	301	**308-3025**	64.00	MT5	245	432	**308-6400**
16.00	MT2	120	218	**308-1600**	30.50	MT3	180	301	**308-3050**	65.00	MT5	245	432	**308-6500**
16.25	MT2	125	223	**308-1625**	30.75	MT3	180	301	**308-3075**	66.00	MT5	245	432	**308-6600**
16.50	MT2	125	223	**308-1650**	31.00	MT3	180	301	**308-3100**	67.00	MT5	245	432	**308-6700**
16.75	MT2	125	223	**308-1675**	31.25	MT3	180	301	**308-3125**	68.00	MT5	250	437	**308-6800**
17.00	MT2	125	223	**308-1700**	31.50	MT3	180	301	**308-3150**	69.00	MT5	250	437	**308-6900**
17.25	MT2	130	228	**308-1725**	31.75	MT3	185	306	**308-3175**	70.00	MT5	250	437	**308-7000**
17.50	MT2	130	228	**308-1750**	32.00	MT4	185	334	**308-3200**	71.00	MT5	250	437	**308-7100**
17.75	MT2	130	228	**308-1775**	32.50	MT4	185	334	**308-3250**	72.00	MT5	255	442	**308-7200**
18.00	MT2	130	228	**308-1800**	33.00	MT4	185	334	**308-3300**	73.00	MT5	255	442	**308-7300**
18.25	MT2	135	233	**308-1825**	33.50	MT4	185	334	**308-3350**	74.00	MT5	255	442	**308-7400**
18.50	MT2	135	233	**308-1850**	34.00	MT4	190	339	**308-3400**	75.00	MT5	255	442	**308-7500**
18.75	MT2	135	233	**308-1875**	34.50	MT4	190	339	**308-3450**	76.00	MT5	260	447	**308-7600**
19.00	MT2	135	233	**308-1900**	35.00	MT4	190	339	**308-3500**					
19.25	MT2	140	238	**303-1925**	35.50	MT4	190	339	**308-3550**					

Metric Taper Shank Drills

DIN 341, High Speed Steel, Right Hand, Black Oxide



Size (mm)	Shank Taper	Flute Length (mm)	Overall Length (mm)	Order No.
5.00	MT1	74	155	**341-0500**
5.25	MT1	74	155	**341-0525**
5.50	MT1	80	161	**341-0550**
5.75	MT1	80	161	**341-0575**
6.00	MT1	80	161	**341-0600**
6.25	MT1	86	167	**341-0625**
6.50	MT1	86	167	**341-0650**
6.75	MT1	93	174	**341-0675**
7.00	MT1	93	174	**341-0700**
7.25	MT1	93	174	**341-0725**
7.50	MT1	93	174	**341-0750**
7.75	MT1	100	181	**341-0775**
8.00	MT1	100	181	**341-0800**
8.25	MT1	100	181	**341-0825**
8.50	MT1	100	181	**341-0850**
8.75	MT1	107	188	**341-0875**
9.00	MT1	107	188	**341-0900**
9.25	MT1	107	188	**341-0925**
9.50	MT1	107	188	**341-0950**
9.75	MT1	116	197	**341-0975**
10.00	MT1	116	197	**341-1000**
10.25	MT1	116	197	**341-1025**
10.50	MT1	116	197	**341-1050**
10.75	MT1	125	206	**341-1075**
11.00	MT1	125	206	**341-1100**
11.25	MT1	125	206	**341-1125**
11.50	MT1	125	206	**341-1150**
11.75	MT1	125	206	**341-1175**
12.00	MT1	134	215	**341-1200**
12.25	MT1	134	215	**341-1225**
12.50	MT1	134	215	**341-1250**
12.75	MT1	134	215	**341-1275**
13.00	MT1	134	215	**341-1300**
13.25	MT1	134	215	**341-1325**
13.50	MT1	142	223	**341-1350**
13.75	MT1	142	223	**341-1375**
14.00	MT1	142	223	**341-1400**
14.25	MT2	147	245	**341-1425**
14.50	MT2	147	245	**341-1450**
14.75	MT2	147	245	**341-1475**
15.00	MT2	147	245	**341-1500**
15.25	MT2	153	251	**341-1525**
15.50	MT2	153	251	**341-1550**
15.75	MT2	153	251	**341-1575**
16.00	MT2	153	251	**341-1600**
16.25	MT2	159	255	**341-1625**
16.50	MT2	159	255	**341-1650**
16.75	MT2	159	255	**341-1675**
17.00	MT2	159	255	**341-1700**
17.25	MT2	165	263	**341-1725**
17.50	MT2	165	263	**341-1750**
17.75	MT2	165	263	**341-1775**
18.00	MT2	165	263	**341-1800**
18.25	MT2	171	269	**341-1825**
18.50	MT2	171	269	**341-1850**
18.75	MT2	171	269	**341-1875**
19.00	MT2	171	269	**341-1900**
19.25	MT2	177	275	**341-1925**
19.50	MT2	177	275	**341-1950**
19.75	MT2	177	275	**341-1975**
20.00	MT2	177	275	**341-2000**
20.25	MT2	184	282	**341-2025**
20.50	MT2	184	282	**341-2050**
20.75	MT2	184	282	**341-2075**
21.00	MT2	184	282	**341-2100**
21.25	MT2	191	289	**341-2125**
21.50	MT2	191	289	**341-2150**
21.75	MT2	191	289	**341-2175**
22.00	MT2	191	289	**341-2200**
22.25	MT2	191	289	**341-2225**
22.50	MT2	198	296	**341-2250**
22.75	MT2	198	296	**341-2275**
23.00	MT2	198	296	**341-2300**
23.25	MT3	198	319	**341-2325**
23.50	MT3	198	319	**341-2350**
23.75	MT3	206	327	**341-2375**
24.00	MT3	206	327	**341-2400**
24.25	MT3	206	327	**341-2425**
24.50	MT3	206	327	**341-2450**
24.75	MT3	206	327	**341-2475**
25.00	MT3	206	327	**341-2500**
25.25	MT3	214	335	**341-2525**
25.50	MT3	214	335	**341-2550**
25.75	MT3	214	335	**341-2575**
26.00	MT3	214	335	**341-2600**
26.25	MT3	214	335	**341-2625**
26.50	MT3	214	335	**341-2650**
26.75	MT3	222	343	**341-2675**
27.00	MT3	222	343	**341-2700**
27.25	MT3	222	343	**341-2725**
27.50	MT3	222	343	**341-2750**
27.75	MT3	222	343	**341-2775**
28.00	MT3	222	343	**341-2800**
28.25	MT3	230	351	**341-2825**
28.50	MT3	230	351	**341-2850**
28.75	MT3	230	351	**341-2875**
29.00	MT3	230	351	**341-2900**
29.25	MT3	230	351	**341-2925**
29.50	MT3	230	351	**341-2950**
29.75	MT3	230	351	**341-2975**
30.00	MT3	230	351	**341-3000**
30.25	MT3	239	360	**341-3025**
30.50	MT3	239	360	**341-3050**
30.75	MT3	239	360	**341-3075**
31.00	MT3	239	360	**341-3100**
31.25	MT3	239	360	**341-3125**
31.50	MT3	239	360	**341-3150**
31.75	MT3	248	369	**341-3175**
32.00	MT4	248	397	**341-3200**
32.50	MT4	248	397	**341-3250**
33.00	MT4	248	397	**341-3300**
33.50	MT4	248	397	**341-3350**
34.00	MT4	257	406	**341-3400**
34.50	MT4	257	406	**341-3450**
35.00	MT4	257	406	**341-3500**
35.50	MT4	257	406	**341-3550**
36.00	MT4	267	416	**341-3600**
36.50	MT4	267	416	**341-3650**
37.00	MT4	267	416	**341-3700**
37.50	MT4	267	416	**341-3750**
38.00	MT4	277	426	**341-3800**
38.50	MT4	277	426	**341-3850**
39.00	MT4	277	426	**341-3900**
39.50	MT4	277	426	**341-3950**
40.00	MT4	277	426	**341-4000**
40.50	MT4	287	436	**341-4050**
41.00	MT4	287	436	**341-4100**
41.50	MT4	287	436	**341-4150**
42.00	MT4	287	436	**341-4200**
42.50	MT4	287	436	**341-4250**
43.00	MT4	298	447	**341-4300**
43.50	MT4	298	447	**341-4350**
44.00	MT4	298	447	**341-4400**
44.50	MT4	298	447	**341-4450**
45.00	MT4	298	447	**341-4500**
45.50	MT4	310	459	**341-4550**
46.00	MT4	310	459	**341-4600**
46.50	MT4	310	459	**341-4650**
47.00	MT4	310	459	**341-4700**
47.50	MT4	310	459	**341-4750**
48.00	MT4	321	470	**341-4800**
48.50	MT4	321	470	**341-4850**
49.00	MT4	321	470	**341-4900**
49.50	MT4	321	470	**341-4950**
50.00	MT4	321	470	**341-5000**

Metric Taper Shank Drills

DIN 346, High Speed Steel, Right Hand, Black Oxide



Size (mm)	Shank Taper	Flute Length (mm)	Overall Length (mm)	Order No.	Size (mm)	Shank Taper	Flute Length (mm)	Overall Length (mm)	Order No.	Size (mm)	Shank Taper	Flute Length (mm)	Overall Length (mm)	Order No.
12.00	MT2	101	199	**346-1200**	22.25	MT3	150	271	**346-2225**	31.75	MT4	185	334	**346-3175**
12.25	MT2	101	199	**346-1225**	22.50	MT3	155	276	**346-2250**	40.50	MT5	205	392	**346-4050**
12.50	MT2	101	199	**346-1250**	22.75	MT3	155	276	**346-2275**	41.00	MT5	205	392	**346-4100**
12.75	MT2	101	199	**346-1275**	23.00	MT3	155	276	**346-2300**	41.50	MT5	205	392	**346-4150**
13.00	MT2	101	199	**346-1300**	26.75	MT4	170	319	**346-2675**	42.00	MT5	205	392	**346-4200**
13.25	MT2	101	199	**346-1325**	27.00	MT4	170	319	**346-2700**	42.50	MT5	205	392	**346-4250**
13.50	MT2	108	206	**346-1350**	27.25	MT4	170	319	**346-2725**	43.00	MT5	210	397	**346-4300**
13.75	MT2	108	206	**346-1375**	27.50	MT4	170	319	**346-2750**	43.50	MT5	210	397	**346-4350**
14.00	MT2	108	206	**346-1400**	27.75	MT4	170	319	**346-2775**	44.00	MT5	210	397	**346-4400**
18.25	MT3	135	256	**346-1825**	28.00	MT4	170	319	**346-2800**	44.50	MT5	210	397	**346-4450**
18.50	MT3	135	256	**346-1850**	28.25	MT4	175	324	**346-2825**	45.00	MT5	210	397	**346-4500**
18.75	MT3	135	256	**346-1875**	28.50	MT4	175	324	**346-2850**	45.50	MT5	215	402	**346-4550**
19.00	MT3	135	256	**346-1900**	28.75	MT4	175	324	**346-2875**	46.00	MT5	215	402	**346-4600**
19.25	MT3	140	261	**346-1925**	29.00	MT4	175	324	**346-2900**	46.50	MT5	215	402	**346-4650**
19.50	MT3	140	261	**346-1950**	29.25	MT4	175	324	**346-2925**	47.00	MT5	215	402	**346-4700**
20.00	MT3	140	261	**346-2000**	29.50	MT4	175	324	**346-2950**	47.50	MT5	215	402	**346-4750**
20.25	MT3	145	266	**346-2025**	29.75	MT4	175	324	**346-2975**	48.00	MT5	220	407	**346-4800**
20.50	MT3	145	266	**346-2050**	30.00	MT4	175	324	**346-3000**	48.50	MT5	220	407	**346-4850**
20.75	MT3	145	266	**346-2075**	30.25	MT4	180	329	**346-3025**	49.00	MT5	220	407	**346-4900**
21.00	MT3	145	266	**346-2100**	30.50	MT4	180	329	**346-3050**	49.50	MT5	220	407	**346-4950**
21.25	MT3	150	271	**346-2125**	30.75	MT4	180	329	**346-3075**	50.00	MT5	220	407	**346-5000**
21.50	MT3	150	271	**346-2150**	31.00	MT4	180	329	**346-3100**	50.50	MT5	225	412	**346-5050**
21.75	MT3	150	271	**346-2175**	31.25	MT4	180	329	**346-3125**					
22.00	MT3	150	271	**346-2200**	31.50	MT4	180	329	**346-3150**					

Cobalt Metric Taper Shank Drills

DIN 345

Cobalt



Size (mm)	Shank Taper	Flute Length (mm)	Overall Length (mm)	Order No.	Size (mm)	Shank Taper	Flute Length (mm)	Overall Length (mm)	Order No.	Size (mm)	Shank Taper	Flute Length (mm)	Overall Length (mm)	Order No.
10.00	MT1	87	168	**345-1000**	19.00	MT2	135	223	**345-1900**	28.00	MT3	170	291	**345-2800**
10.50	MT1	87	168	**345-1050**	19.50	MT2	140	238	**345-1950**	28.50	MT3	175	296	**345-2850**
11.00	MT1	94	175	**345-1100**	20.00	MT2	140	238	**345-2000**	29.00	MT3	175	296	**345-2900**
12.00	MT1	101	182	**345-1200**	20.50	MT2	145	243	**345-2050**	30.00	MT3	175	296	**345-3000**
12.50	MT1	101	182	**345-1250**	21.00	MT2	145	243	**345-2100**	30.50	MT3	180	301	**345-3050**
12.75	MT1	101	182	**345-1275**	21.50	MT2	150	248	**345-2150**	31.00	MT3	180	301	**345-3100**
13.00	MT1	101	182	**345-1300**	22.00	MT2	150	248	**345-2200**	31.50	MT3	180	301	**345-3150**
13.50	MT1	108	189	**345-1350**	22.50	MT2	155	253	**345-2250**	32.00	MT4	185	334	**345-3200**
14.00	MT2	108	189	**345-1400**	23.00	MT2	155	253	**345-2300**	33.00	MT4	185	334	**345-3300**
14.50	MT2	114	212	**345-1450**	23.50	MT3	155	276	**345-2350**	33.50	MT4	185	334	**345-3350**
15.00	MT2	114	212	**345-1500**	24.00	MT3	160	281	**345-2400**	34.00	MT4	190	339	**345-3400**
15.50	MT2	120	218	**345-1550**	24.50	MT3	160	281	**345-2450**	34.50	MT4	190	339	**345-3450**
16.00	MT2	120	218	**345-1600**	25.00	MT3	160	281	**345-2500**	35.00	MT4	190	339	**345-3500**
16.50	MT2	125	223	**345-1650**	25.50	MT3	165	286	**345-2550**	38.00	MT4	200	349	**345-3800**
17.00	MT2	125	223	**345-1700**	26.00	MT3	165	286	**345-2600**	43.00	MT4	210	359	**345-4300**
17.50	MT2	130	228	**345-1750**	26.50	MT3	165	286	**345-2650**	44.50	MT4	210	359	**345-4450**
18.00	MT2	130	228	**345-1800**	27.00	MT3	170	291	**345-2700**	45.00	MT4	210	359	**345-4500**
18.50	MT2	135	223	**345-1850**	27.50	MT3	170	291	**345-2750**	50.00	MT4	220	369	**345-5000**

Silver & Deming Drills

High Speed Steel, Black Oxide

Also called reduced shank drills,with 3/8", 1/4" shank, drilling large hole sizes than each drill chuck capacity

6" Overall Length, 3" Flute Length

3/8" shank



Size	Order No.	Size	Order No.	Size	Order No.
25/64"	**301-0325**	31/64"	**301-0331**	5/8"	**301-0340**
13/32	**301-0326**	1/2	**301-0332**	21/32	**301-0342**
27/64	**301-0327**	17/32	**301-0334**	11/16	**301-0344**
7/16	**301-0328**	9/16	**301-0336**	23/32	**301-0346**
29/64	**301-0329**	19/32	**301-0338**	3/4	**301-0348**
15/32	**301-0330**				

1/4" Shank



Size	Order No.	Size	Order No.	Size	Order No.
17/64"	**301-0017**	23/64"	**301-0023**	7/16"	**301-0028**
9/32	**301-0018**	3/8	**301-0024**	29/64	**301-0029**
19/64	**301-0019**	25/64	**301-0025**	15/32	**301-0030**
5/16	**301-0020**	13/32	**301-0026**	31/64	**301-0031**
21/64	**301-0021**	27/64	**301-0027**	1/2	**301-0032**
11/32	**301-0022**				

Silver & Deming Drills

Also called reduced shank drills,with 1/2", 3/4", 1/4", 3/8" shank, drilling large hole sizes than each drill chuck capacity

High Speed Steel, Black Oxide

6" Overall Length, 3" Flute Length









1/2" Shank

Size	Order No.	Size	Order No.	Size	Order No.	Size	Order No.
1/2"	**301-1032**	49/64"	**301-1049**	1-1/32"	**301-1102**	1-19/64 "	**301-1119**
33/64	**301-1033**	25/32	**301-1050**	1-3/64	**301-1103**	1-5/16	**301-1120**
17/32	**301-1034**	51/64	**301-1051**	1-1/16	**301-1104**	1-21/64	**301-1121**
35/64	**301-1035**	13/16	**301-1052**	1-5/64	**301-1105**	1-11/32	**301-1122**
9/16	**301-1036**	53/64	**301-1053**	1-3/32	**301-1106**	1-23/64	**301-1123**
37/64	**301-1037**	27/32	**301-1054**	1-7/64	**301-1107**	1-3/8	**301-1124**
19/32	**301-1038**	55/64	**301-1055**	1-1/8	**301-1108**	1-25/64	**301-1125**
39/64	**301-1039**	7/8	**301-1056**	1-9/64	**301-1109**	1-13/32	**301-1126**
5/8	**301-1040**	57/64	**301-1057**	1-5/32	**301-1110**	1-27/64	**301-1127**
41/64	**301-1041**	29/32	**301-1058**	1-11/64	**301-1111**	1-7/16	**301-1128**
21/32	**301-1042**	59/64	**301-1059**	1-3/16	**301-1112**	1-29/64	**301-1129**
43/64	**301-1043**	15/16	**301-1060**	1-13/64	**301-1113**	1-15/32	**301-1130**
11/16	**301-1044**	61/64	**301-1061**	1-7/32	**301-1114**	1-31/64	**301-1131**
45/64	**301-1045**	31/32	**301-1062**	1-15/64	**301-1115**	1-1/2	**301-1132**
23/32	**301-1046**	63/64	**301-1063**	1-1/4	**301-1116**		
47/64	**301-1047**	1	**301-1064**	1-17/64	**301-1117**		
3/4	**301-1048**	1-1/64	**301-1101**	1-9/32	**301-1118**		

Size (mm)	Order No.	Size (mm)	Order No.	Size (mm)	Order No.	Size (mm)	Order No.
12.50	**301-1025**	17.10	**301-1171**	23.75	**301-1237**	31.25	**301-1312**
13.00	**301-1030**	17.50	**301-1175**	24.00	**301-1240**	32.00	**301-1320**
13.80	**301-1138**	17.75	**301-1177**	25.00	**301-1250**	32.50	**301-1325**
14.00	**301-1140**	17.80	**301-1178**	25.50	**301-1255**	33.00	**301-1330**
14.25	**301-1142**	18.00	**301-1180**	26.00	**301-1260**	34.00	**301-1340**
14.50	**301-1145**	19.75	**301-1197**	26.75	**301-1267**	34.50	**301-1345**
15.00	**301-1150**	20.00	**301-1200**	27.00	**301-1270**	36.00	**301-1360**
16.00	**301-1160**	20.50	**301-1205**	27.50	**301-1275**	37.00	**301-1370**
16.50	**301-1165**	21.50	**301-1215**	28.50	**301-1285**	38.00	**301-1380**
16.75	**301-1167**	22.00	**301-1220**	30.00	**301-1300**	41.00	**301-1410**
17.00	**301-1170**	22.50	**301-1225**	30.50	**301-1305**		

3/4" Shank

Size	Order No.	Size	Order No.	Size	Order No.	Size	Order No.
25/32"	**301-1950**	1-3/32"	**301-2006**	1-13/32"	**301-2026**	1-23/32"	**301-2046**
13/16	**301-1952**	1-1/8	**301-2008**	1-7/16	**301-2028**	1-3/4	**301-2048**
27/32	**301-1954**	1-5/32	**301-2010**	1-15/32	**301-2030**	1-25/32	**301-2050**
7/8	**301-1956**	1-3/16	**301-2012**	1-1/2	**301-2032**	1-13/16	**301-2052**
29/32	**301-1958**	1-7/32	**301-2014**	1-17/32	**301-2034**	1-27/32	**301-2054**
15/16	**301-1960**	1-1/4	**301-2016**	1-9/16	**301-2036**	1-7/8	**301-2056**
31/32	**301-1962**	1-9/32	**301-2018**	1-19/32	**301-2038**	1-29/32	**301-2058**
1	**301-2000**	1-5/16	**301-2020**	1-5/8	**301-2040**	1-15/16	**301-2060**
1-1/32	**301-2002**	1-11/32	**301-2022**	1-21/32	**301-2042**	1-31/32	**301-2062**
1-1/16	**301-2004**	1-3/8	**301-2024**	1-11/16	**301-2044**	2	**301-2064**

Silver & Deming Drill Sets

Shank	Pieces of Drills	Specification	Wooden Stand Order No.	Plastic Case Order No.
1/4"	16	17/64 to 1/2" by 64ths	**301-0096**	
3/8	8	25/64 to 1/2" by 64ths	**301-0398**	
1/2	5	17/32", 9/16", 5/8", 3/4", 1"	**301-0204**	
1/2	5	9/16",5/8",3/4",7/8", 1"	**301-0215**	**301-0205**
1/2	6	1-1/8" to 1-3/8" by 16ths and 1-1/2"	**301-0206**	
1/2	8	9/16-1" by 16ths	**301-0218**	**301-0208**
1/2	8	1-1/16 to 1-1/2" by 16ths	**301-0288**	**301-0298**
1/2	10	9/16 to 1"by 16ths ,1-1/8",1-1/4"	**301-0210**	
1/2	12	9/16 to 1-1/4" by 16ths	**301-0212**	
1/2	13	17/32 to 1" by 16ths & 32nds	**301-0213**	
1/2	16	17/32 to 1" by 32nds	**301-0216**	
1/2	17	17/32 to 1-1/32" by 32nds	**301-0217**	
1/2	32	33/64 to 1" by 64ths	**301-0232**	
1/2	40	33/64" to 1" by 64ths & 1-1/16" to 1-1/2" by16ths	**301-0240**	
3/4	5	1,1-1/8,1-1/4,1-3/8,1-1/2"	**301-0225**	**301-0235**



Silver & Deming Drills

HSS, 1/2" Shank

Inch

Size (In.)	Order No.	Size (In.)	Order No.	Size (In.)	Order No.
33/64	**301-1833**	11/16	**301-1844**	55/64	**301-1855**
17/32	**301-1834**	45/64	**301-1845**	7/8	**301-1856**
35/64	**301-1835**	23/32	**301-1846**	57/64	**301-1857**
9/16	**301-1836**	47/64	**301-1847**	29/32	**301-1858**
37/64	**301-1837**	3/4	**301-1848**	59/64	**301-1859**
19/32	**301-1838**	49/64	**301-1849**	15/16	**301-1560**
39/64	**301-1839**	25/32	**301-1850**	61/64	**301-1861**
5/8	**301-1840**	51/64	**301-1851**	31/32	**301-1862**
41/64	**301-1841**	13/16	**301-1852**	63/64	**301-1863**
21/32	**301-1842**	53/64	**301-1853**	1	**301-1864**
43/64	**301-1843**	27/32	**301-1854**		

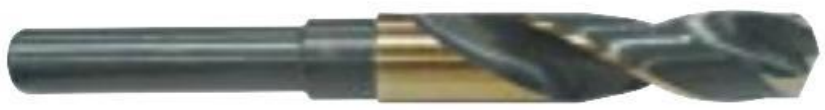
Metric

Size (mm)	Order No.	Size (mm)	Order No.	Size (mm)	Order No.
14	**301-1814**	18	**301-1818**	22	**301-1822**
15	**301-1815**	19	**301-1819**	23	**301-1823**
16	**301-1816**	20	**301-1820**	24	**301-1824**
17	**301-1817**	21	**301-1821**	25	**301-1825**

M35 Cobalt Silver & Deming Drills

1/2" Shank, 135° Split Point





Individual

Size	Order No.	Size	Order No.	Size	Order No.
33/64"	**301-0833**	1-3/16"	**301-0855**	55/64"	**301-0912**
17/32"	**301-0834**	1-13/64"	**301-0856**	7/8"	**301-0913**
35/64"	**301-0835**	1-7/32"	**301-0857**	57/64"	**301-0914**
9/16"	**301-0836**	1-15/64"	**301-0858**	29/32"	**301-0915**
37/64"	**301-0837**	1-1/4"	**301-0859**	59/64"	**301-0916**
19/32"	**301-0838**	1-17/64"	**301-0860**	15/16"	**301-0917**
39/64"	**301-0839**	1-9/32"	**301-0861**	61/64"	**301-0918**
5/8"	**301-0840**	1-19/64"	**301-0862**	31/32"	**301-0919**
41/64"	**301-0841**	1-5/16"	**301-0863**	63/64"	**301-0920**
21/32"	**301-0842**	1-21/64"	**301-0864**	1"	**301-0921**
43/64"	**301-0843**	1-11/32"	**301-0901**	1-1/64"	**301-0922**
11/16"	**301-0844**	1-23/64"	**301-0902**	1-1/32"	**301-0923**
45/64"	**301-0845**	1-3/8"	**301-0903**	1-3/64"	**301-0924**
23/32"	**301-0846**	1-25/64"	**301-0904**	1-1/16"	**301-0925**
47/64"	**301-0847**	1-13/32"	**301-0905**	1-5/64"	**301-0926**
3/4"	**301-0848**	1-27/64"	**301-0906**	1-3/32"	**301-0927**
49/64"	**301-0849**	1-7/16"	**301-0907**	1-7/64"	**301-0928**
25/32"	**301-0850**	1-29/64"	**301-0908**	1-1/8"	**301-0929**
51/64"	**301-0851**	1-15/32	**301-0909**	1-9/64"	**301-0930**
13/16"	**301-0852**	1-31/64"	**301-0910**	1-5/32"	**301-0931**
53/64"	**301-0853**	1-1/2"	**301-0911**	1-11/64	**301-0932**
27/32"	**301-0854**				

Sets

Pieces	Specification	Order No.
5	9/16 - 1" by 8ths, wooden stand	**301-0995**
16	7/32 - 1" by 32nds.carton box	**301-0996**
8	9/16 - 1" by 16ths.Carton Box	**301-0997**
8	9/16 - 1" by 16ths.wooden stand	**301-0998**
8	9/16 - 1" by 16ths.Metal Case	**301-0999**





Single Flute Countersinks

High Speed Steel

Size	Shank Dia.	Shank Length	OAL	60° Order No.	82° Order No.	90° Order No.	100° Order No.
3/16"	3/16"			380-5601	380-5801	380-5901	380-5101
1/4	3/16	1-1/2	3/4	380-5600	380-5800	380-5900	380-5100
1/4	1/4	1-1/2	3/4	380-5602	380-5802	380-5902	380-5102
5/16	1/4	1-3/4	7/8	380-5603	380-5803	380-5903	380-5103
3/8	1/4	1-3/4	7/8	380-5604	380-5804	380-5904	380-5104
1/2	1/4	2	1	380-5606	380-5806	380-5906	380-5106
1/2	3/8	2	1	380-5607	380-5807	380-5907	380-5107
5/8	3/8	2-1/4	1	380-5608	380-5808	380-5908	380-5108
5/8	1/2	2-1/4	1	380-5610	380-5810	380-5910	380-5110
3/4	3/8	2-1/4	1	380-5612	380-5812	380-5912	380-5112
3/4	1/2	2-1/2	1-1/4	380-5614	380-5814	380-5914	380-5114
7/8	1/2	2-1/2	1-1/4	380-5615	380-5815	380-5915	380-5115
1	1/2	2-3/4	1-1/2	380-5616	380-5816	380-5916	380-5116
1-1/4	1/2	3-3/8	1-5/8	380-5618	380-5818	380-5918	380-5118
1-1/4	3/4			380-5620	380-5820	380-5920	380-5120
1-1/2	1/2	3-1/2	1-3/4	380-5622	380-5822	380-5922	380-5122
1-1/2	3/4	3-1/2	1-3/4	380-5624	380-5824	380-5924	380-5124
1-3/4	3/4			380-5626	380-5826	380-5926	380-5126
2	3/4	4	2	380-5628	380-5828	380-5928	380-5128
2	1/2	4	2	380-5627	380-5827	380-5927	380-5127
6Pcs/set: 1/4,3/8,1/2" with 1/4" Shk, 5/8,3/4, 1" with 1/2"Shk				380-5696	380-5896	380-5996	380-5196
5Pcs/set: 1/4,3/8,1/2". with 1/4" Shk, 3/4,1" with1/2" Shk				380-5695	380-5895	380-5995	380-5195
9-pc/set 3/16, 1/4, 5/16, 3/8, 1/2, 5/8, 3/4, 7/8, 1"				380-5699	380-5899	380-5999	380-5199



3 Flute Countersinks

High Speed Steel

Use for countersinking holes for centers or for enlarging existing holes.

Size	Shank Dia.	Shank Length	Overall Length	60° Order No.	82° Order No.	90° Order No.	100° Order No.	110° Order No.	120° Order No.
1/4"	3/16"	3/4"	1-1/2"	380-8116	380-8316	380-8516	380-8716	380-7516	380-7716
3/8	1/4	7/8	1-3/4	380-8124	380-8324	380-8524	380-8724	380-7524	380-7724
1/2	3/8	1	2	380-8132	380-8332	380-8532	380-8732	380-7532	380-7732
5/8	3/8	1	2-1/4	380-8140	380-8340	380-8540	380-8740	380-7540	380-7740
3/4	1/2	1-1/4	2-5/8	380-8148	380-8348	380-8548	380-8748	380-7548	380-7748
7/8	1/2	1-1/2	2-1/2	380-8156	380-8356	380-8556	380-8756	380-7556	380-7756
1	1/2	1-1/4	2-3/4	380-8164	380-8364	380-8564	380-8764	380-7564	380-7764
1-1/4	3/4	1-1/4	3	380-8180	380-8380	380-8580	380-8780	380-7580	380-7780
1-1/2	3/4	1-1/4	3	380-8196	380-8396	380-8596	380-8796	380-7596	380-7796
2	3/4	1-1/4	3-1/4	380-8228	380-8428	380-8628	380-8828	380-7628	380-7828
5pcs/set: 1/4, 3/8, 1/2, 3/4, 1"				380-8285	380-8485	380-8685	380-8885	380-7685	380-7885
6pcs/set: 1/4, 3/8, 1/2, 5/8, 3/4, 1"				380-8286	380-8486	380-8686	380-8886	380-7686	380-7886
9pcs:1/4, 3/8, 1/2, 5/8, 3/4, 1,1-1/4,1-1/2,2"				380-8289	380-8489	380-8689	380-8889	380-7989	380-7889



4 Flute Machine Countersinks

High Speed Steel

Size	Shank Dia.	Shank Length	Overall Length	60° Order No.	82° Order No.	90° Order No.	120° Order No.	100° Order No.
1/4	3/16	3/4	1-1/2	380-1216	380-1416	380-1316	380-1332	380-1716
5-16	1/4	7/8	1-3/4	380-1220	380-1420	380-1320	380-1340	380-1720
1/2"	1/2"	2-1/4"	3-7/8"	380-1232	380-1432	380-1332	380-1348	380-1732
5/8	1/2	2-1/4	4	380-1240	380-1440	380-1340	380-1356	380-1740
3/4	1/2	2-1/4	4-1/8	380-1248	380-1448	380-1348	380-1364	380-1748
7/8	1/2	2-1/4	4-1/4	380-1256	380-1456	380-1356	380-1380	380-1756
1	1/2	2-1/4	4-3/8	380-1264	380-1464	380-1364	380-1396	380-1764
1-1/4	1/2	2-1/4	5	380-1280	380-1480	380-1380	380-1397	380-1780
1-1/2	1/2	2-1/4	5-3/8	380-1296	380-1496	380-1396	380-1305	380-1796
2	3/4	2-1/8	4-3/8	380-1297	380-1497	380-1397	380-1307	380-1797
5pcs/set: 1/2,5/8,3/4,7/8,1"				380-1205	380-1405	380-1305		
7pcs/set: 1/2,5/8,3/4,7/8,1,1-1/4,1-1/2"				380-1207	380-1407	380-1307		

6 Flute Chatterless Countersinks



High Speed Steel

Size	Shank Diameter	Overall Length	60° Order No.	82° Order No.	90° Order No.	100° Order No.	110° Order No.	120° Order No.
3/16"	3/16"	1-1/2"	380-6005	380-6105	380-6205	380-6405	380-6505	380-6305
1/4	1/4	2	380-6010	380-6110	380-6210	380-6410	380-6510	380-6310
5/16	1/4	2	380-6015	380-6115	380-6215	380-6415	380-6515	380-6315
3/8	1/4	2	380-6020	380-6120	380-6220	380-6420	380-6520	380-6320
1/2	1/4	2	380-6025	380-6125	380-6225	380-6425	380-6525	380-6325
5/8	1/2	2-3/4	380-6030	380-6130	380-6230	380-6430	380-6530	380-6330
3/4	1/2	2-3/4	380-6035	380-6135	380-6235	380-6435	380-6535	380-6335
7/8	1/2	2-3/4	380-6040	380-6140	380-6240	380-6440	380-6540	380-6340
1	1/2	2-3/4	380-6045	380-6145	380-6245	380-6445	380-6545	380-6345
1-1/4	3/4	3-3/8	380-6050	380-6150	380-6250	380-6450	380-6550	380-6350
1-1/2	3/4	3-1/2	380-6055	380-6155	380-6255	380-6455	380-6555	380-6355
1-3/4	1	4-1/4	380-6060	380-6160	380-6260	380-6460	380-6560	380-6360
2	1	4-3/8	380-6065	380-6165	380-6265	380-6465	380-6565	380-6365
8pcs /set in wooden stand (1/4-1")			380-6080	380-6180	380-6280	380-6480	380-6580	380-6380
5pcs/set in wooden Stand(1/4,3/8,1/2,3/4,1")			380-6085	380-6185	380-6285	380-6485	380-6585	380-6385
10pcs/set in wooden stand(3/16--1-1/4")			380-6090	380-6190	380-6290	380-6490	380-6590	380-6390
11pcs/set in wooden Stand(3/16-1-1/2")			380-6091	380-6191	380-6291	380-6491	380-6591	380-6391
10pcs/set in wooden Stand(1/4-1-1/2")			380-6092	380-6192	380-6292	380-6492	380-6592	380-6392



Cobalt M35

Size	Shank Diameter	Overall Length	60° Order No.	82° Order No.	90° Order No.	100° Order No.	110° Order No.	120° Order No.
3/16"	3/16"	1-1/2"	380-7005	380-7105	380-7205	380-6705	380-7605	380-7805
1/4	1/4	2	380-7010	380-7110	380-7210	380-6710	380-7610	380-7810
5/16	1/4	2	380-7015	380-7115	380-7215	380-6715	380-7615	380-7815
3/8	1/4	2	380-7020	380-7120	380-7220	380-6720	380-7620	380-7820
1/2	1/4	2	380-7025	380-7125	380-7225	380-6725	380-7625	380-7825
5/8	1/2	2-3/4	380-7030	380-7130	380-7230	380-6730	380-7630	380-7830
3/4	1/2	2-3/4	380-7035	380-7135	380-7235	380-6735	380-7635	380-7835
7/8	1/2	2-3/4	380-7040	380-7140	380-7240	380-6740	380-7640	380-7840
1	1/2	2-3/4	380-7045	380-7145	380-7245	380-6745	380-7645	380-7845
1-1/4	3/4	3-3/8	380-7050	380-7150	380-7250	380-6750	380-7650	380-7850
1-1/2	3/4	3-1/2	380-7055	380-7155	380-7255	380-6755	380-7655	380-7855
1-3/4	1	4-1/4	380-7060	380-7160	380-7260	380-6760	380-7660	380-7860
2	1	4-3/8	380-7065	380-7165	380-7265	380-6765	380-7665	380-7865
8pcs /set in wooden stand (1/4-1")			380-7080	380-7180	380-7280	380-6780	380-7680	380-7880
10pcs/set in wooden stand(3/16--1-1/4")			380-7090	380-7190	380-7290	380-6790	380-7690	380-7890

DIN335C 90° 3 Flute Countersinks

Individuals





Size	Shank Dia.	Overall Length	HSS Order No.	HSS TiN Order No.	Cobalt Order No.
4.3mm	4	40	381-6043	381-7043	381-8043
5mm	4	40	381-6050	381-7050	381-8050
5.3mm	4	40	381-6053	381-7053	381-8053
5.8mm	5	45	381-6058	381-7058	381-8058
6mm	5	45	381-6060	381-7060	381-8060
6.3mm	5	45	381-6063	381-7063	381-8063
7mm	6	50	381-6070	381-7070	381-8070
7.3mm	6	50	381-6073	381-7073	381-8073
8mm	6	50	381-6080	381-7080	381-8080
8.3mm	6	50	381-6083	381-7083	381-8083
9.4mm	6	50	381-6094	381-7094	381-8094
10mm	6	50	381-6100	381-7100	381-8100
10.4mm	6	50	381-6104	381-7104	381-8104
11.5mm	8	56	381-6115	381-7115	381-8115
12.4mm	8	56	381-6124	381-7124	381-8124
13.4mm	8	56	381-6134	381-7134	381-8134
15mm	10	60	381-6150	381-7150	381-8150
16.5mm	10	60	381-6165	381-7165	381-8165
19mm	10	63	381-6190	381-7190	381-8190
20.5mm	10	63	381-6205	381-7205	381-8205
23mm	10	67	381-6230	381-7230	381-8230
25mm	10	67	381-6250	381-7250	381-8250
26mm	10	67	381-6260	381-7260	381-8260
28mm	12	71	381-6280	381-7280	381-8280
30mm	12	71	381-6300	381-7300	381-8300
31mm	12	71	381-6310	381-7310	381-8310
6 Pcs/set:: 6.3, 8.3, 10.4, 12.4, 16.5, 20.5mm			381-6906	381-7906	381-8906
12 Pcs/set: 5.3, 5.8, 6.3, 7.3, 8.3, 9.4, 10.4, 12.4, 13.4, 16.5, 20.5, 25mm			381-6912	381-7912	381-8912





Inch Countersinks & Deburring Tools

High Speed Steel

Individuals

Range	Shank Dia.	Description	60° Order No.	82° Order No.	90° Order No.
1/16" - 15/64"	1/4"	0 double end	380-0815	380-1815	380-2815
5/32 - 13/32	1/4	1 single end	380-0816	380-1816	380-2816
3/16 - 17/32	1/4	2 single end	380-0817	380-1817	380-2817
3/16 - 25/32	1/2	3 single end	380-0818	380-1818	380-2818
9/16 - 1-1/16	1/2	4 single end	380-0819	380-1819	380-2819
5/8 - 1-15/32	1/2	5 single end	380-0822	380-1822	380-2822
3/4 - 1-3/4	5/8	6 single end	380-0823	380-1823	380-2823
1 - 2	5/8	7 single end	380-0824	380-1824	380-2824
1-1/4 - 2-1/2	3/4	8 single end	380-0825	380-1825	380-2825

Sets

Pieces	Description	Plastic Stand Order No.	Wooden stand Order No.
5Pcs	60° 1 each of: 1/16" to 9/16"	380-0811	380-0810
5Pcs	82° 1 each of: 1/16 to 9/16	380-1811	380-1810
5Pcs	90° 1 each of: 1/16 to 9/16	380-2811	380-2810

Metric Countersinks & Deburring Tools

High Speed Steel

Individuals

Range	Head Dia.	Shank Dia.	Length	60° Order No.	82° Order No.	90° Order No.
2-5mm	10	6	45	380-3002	380-3102	380-3202
5-10mm	14	8	48	380-3005	380-3105	380-3205
10-15mm	21	10	65	380-3010	380-3110	380-3210
15-20mm	28	12	85	380-3015	380-3115	380-3215
20-25mm	35	15	102	380-3020	380-3120	380-3220
25-30mm	44	15	115	380-3025	380-3125	380-3225
30-35mm	48	15	127	380-3030	380-3130	380-3230
35-40mm	53	15	136	380-3035	380-3135	380-3235
40-50mm	64	18	166	380-3040	380-3140	380-3240

Sets

Pieces	Description	Order No.
4Pcs/set	60° 1 each of 2/5mm - 15/20mm	380-3402
4Pcs/set	82° 1 each of 2/5mm - 15/20mm	380-3404
4Pcs/set	90° 1 each of 2/5mm - 15/20mm	380-3406
5Pcs/set	60° 1 each of 2/5mm - 20/25mm	380-3602
5Pcs/set	82° 1 each of 2/5mm - 20/25mm	380-3604
5Pcs/set	90° 1 each of 2/5mm - 20/25mm	380-3606



2 Flute Solid Pilot Counterbores

High Speed Steel, Straight Shank

Machine Screw Sizes

Screw Size	Pilot Dia.	Cutting Size & Shank Dia.	Overall Length	Order No.
2#	.085"	.155"	2-1/2"	381-5102
3#	.098	.176	3-1/2	381-5103
4#	.111	.198	2-5/8	381-5104
5#	.124	.220	2-5/8	381-5105
6#	.137	.241	2-5/8	381-5106
8#	.163	.285	2-3/4	381-5108
10#	.189	.328	2-7/8	381-5110
12#	.215	.372	3	381-5112
4Pcs/set: 2, 4, 6, 8 & 10				381-9050

2 Flute Solid Counterbores

High Speed Steel, Straight Shank



Fractional Sizes

Pilot Dia.	Cutting Size Dia.	Shank Dia.	Overall Length	Order No.
1/4"	13/32"	5/16"	3-5/8"	**381-5316**
5/16	15/32	3/8	4	**381-5320**
3/8	19/32	7/16	4-3/8	**381-5324**
7/16	21/32	1/2	4-3/4	**381-5328**
1/2	25/32	9/16	5-1/4	**381-5332**
4Pcs/set, 2 Flute Fractional Set for Fillister Head Screws:1/4,5/16,3/8&1/2-Straight shank				**381-9040**

Interchangeable Pilots Counterbores

High Speed Steel, Straight Shank, Right Hand

Use for counter boring holes for socket heads of cap screws



Size	Overall Length	No. of Flutes	Pilot Hole Dia.	Shank Dia.	Shank Length	Straight Shank Order No.	Shank Taper	Taper Shank Order No.
3/16"	3"	3	3/32"	15/64	2-3/8"	**381-2012**	MT1	**381-4012**
13/64	3	3	3/32	15/64	2-3/8	**381-2013**	MT1	**381-4013**
7/32	3	3	3/32	15/64	2-3/8	**381-2014**	MT1	**381-4014**
15/64	3-13/16	3	3/32	15/64	3-1/16	**381-2015**	MT1	**381-4015**
1/4	3-13/16	3	3/32	15/64	3-1/16	**381-2016**	MT1	**381-4016**
17/64	3-13/16	3	3/32	17/64	3-1/16	**381-2017**	MT1	**381-4017**
9/32	3-13/16	3	3/32	17/64	3-1/16	**381-2018**	MT1	**381-4018**
19/64	3-13/16	3	3/32	17/64	3-1/16	**381-2019**	MT1	**381-4019**
5/16	3-13/16	3	3/32	19/64	3-1/16	**381-2020**	MT1	**381-4020**
21/64	3-13/16	3	3/32	5/16	3-1/16	**381-2021**	MT1	**381-4021**
11/32	3-13/16	3	3/32	5/16	3-1/16	**381-2022**	MT1	**381-4022**
23/64	4-1/16	3	5/32	5/16	3-1/16	**381-2023**	MT1	**381-4023**
3/8	4-1/16	3	5/32	5/16	3-1/16	**381-2024**	MT1	**381-4024**
25/64	4-1/16	3	5/32	3/8	3-1/16	**381-2025**	MT1	**381-4025**
13/32	4-1/16	3	5/32	3/8	3-1/16	**381-2026**	MT1	**381-4026**
27/64	4-1/16	3	5/32	3/8	3-1/16	**381-2027**	MT1	**381-4027**
7/16	4-1/16	3	5/32	3/8	3-1/16	**381-2028**	MT1	**381-4028**
29/64	4-5/16	3	3/16	7/16	3-1/16	**381-2029**	MT1	**381-4029**
15/32	4-5/16	3	3/16	7/16	3-1/16	**381-2030**	MT1	**381-4030**
31/64	4-5/16	3	3/16	7/16	3-1/16	**381-2031**	MT1	**381-4031**
1/2	4-5/16	3	3/16	7/16	3-1/16	**381-2032**	MT1	**381-4032**
33/64	4-5/16	3	3/16	1/2	3-1/16	**381-2033**	MT1	**381-4033**
17/32	4-5/16	3	3/16	1/2	3-1/16	**381-2034**	MT1	**381-4034**
35/64	4-5/16	3	3/16	1/2	3-1/16	**381-2035**	MT1	**381-4035**
16	4-5/16	3	3/16	1/2	3-1/16	**381-2036**	MT1	**381-4036**
37/64	5-1/8	3	3/16	1/2	3-7/8	**381-2037**	MT2	**381-4037**
19/32	5-1/8	3	3/16	1/2	3-7/8	**381-2038**	MT2	**381-4038**
39/64	5-1/8	3	3/16	1/2	3-7/8	**381-2039**	MT2	**381-4039**
8	5-1/8	3	3/16	1/2	3-7/8	**381-2040**	MT2	**381-4040**
41/64	5-1/8	3	3/16	1/2	3-7/8	**381-2041**	MT2	**381-4041**
21/32	5-1/8	3	3/16	1/2	3-7/8	**381-2042**	MT2	**381-4042**
43/64	5-1/8	3	3/16	1/2	3-7/8	**381-2043**	MT2	**381-4043**
11/16	5-1/8	3	3/16	1/2	3-7/8	**381-2044**	MT2	**381-4044**
45/64	5-3/8	3	1/4	1/2	3-7/8	**381-2045**	MT2	**381-4045**
23/32	5-3/8	3	1/4	1/2	3-7/8	**381-2046**	MT2	**381-4046**
47/64	5-3/8	3	1/4	1/2	3-7/8	**381-2047**	MT2	**381-4047**
3/4	5-3/8	3	1/4	1/2	3-7/8	**381-2048**	MT2	**381-4048**
49/64	5-3/8	3	1/4	5/8	3-7/8	**381-2049**	MT2	**381-4049**
25/32	5-3/8	3	1/4	5/8	3-7/8	**381-2050**	MT2	**381-4050**
51/64	5-3/8	3	1/4	5/8	3-7/8	**381-2051**	MT2	**381-4051**
13/16	5-3/8	3	1/4	5/8	3-7/8	**381-2052**	MT2	**381-4052**

Size	Overall Length	No. of Flutes	Pilot Hole Dia.	Shank Dia.	Shank Length	Straight Shank Order No.	Shank Taper	Taper Shank Order No.
53/64"	5-3/8"	3	1/4"	3/4"	3-7/8"	**381-2053**	MT2	**381-4053**
27/32	5-3/8	3	1/4	3/4	3-7/8	**381-2054**	MT2	**381-4054**
55/64	5-3/8	3	1/4	3/4	3-7/8	**381-2055**	MT2	**381-4055**
7/8	5-3/8	3	1/4	3/4	3-7/8	**381-2056**	MT2	**381-4056**
57/64	6-1/8	3	1/4	3/4	4-5/8	**381-2057**	MT2	**381-4057**
29/32	6-1/8	3	1/4	3/4	4-5/8	**381-2058**	MT2	**381-4058**
59/64	6-1/8	3	1/4	3/4	4-5/8	**381-2059**	MT2	**381-4059**
15/16	6-1/8	3	1/4	3/4	4-5/8	**381-2060**	MT3	**381-4060**
61/64	6-3/8	3	1/4	3/4	4-5/8	**381-2061**	MT3	**381-4061**
31/32	6-3/8	3	5/16	3/4	4-5/8	**381-2062**	MT3	**381-4062**
63/64	6-3/8	3	5/16	3/4	4-5/8	**381-2063**	MT3	**381-4063**
1	6-3/8	3	5/16	3/4	4-5/8	**381-2064**	MT3	**381-4064**
1-1/16	6-3/8	3	5/16	3/4	4-5/8	**381-2068**	MT3	**381-4068**
1-1/8	6-3/8	3	5/16	1	4-5/8	**381-2072**	MT3	**381-4072**
1-3/16	6-3/8	3	5/16	1	4-5/8	**381-2076**	MT3	**381-4076**
1-1/4	6-5/8	5	3/8	1	4-5/8	**381-2080**	MT3	**381-4080**
1-5/16	6-5/8	5	3/8	1	4-5/8	**381-2084**	MT3	**381-4084**
1-3/8	6-5/8	5	3/8	1	4-5/8	**381-2088**	MT3	**381-4088**
1-7/16	7-7/8	5	3/8	1-1/4	5-7/8	**381-2090**	MT4	**381-4090**
1-1/2	7-7/8	5	3/8	1-1/4	5-7/8	**381-2096**	MT4	**381-4096**
1-9/16	8-1/8	5	7/16	1-1/4	5-7/8	**381-2100**	MT4	**381-4100**
1-5/8	8-1/8	5	7/16	1-1/4	5-7/8	**381-2104**	MT4	**381-4104**
1-11/16	8-1/8	5	7/16	1-1/4	5-7/8	**381-2108**	MT4	**381-4108**
1-3/4	8-1/8	5	7/16	1-1/4	5-7/8	**381-2112**	MT4	**381-4112**
1-13/16	8-1/8	5	7/16	1-1/2	5-7/8	**381-2116**	MT4	**381-4116**
1-7/8	8-1/8	5	7/16	1-1/2	5-7/8	**381-2120**	MT4	**381-4120**
1-15/16	8-1/8	5	7/16	1-1/2	5-7/8	**381-2124**	MT4	**381-4124**
2	8-3/8	5	1/2	1-1/2	5-7/8	**381-2128**	MT4	**381-4128**
2-1/16	9-7/8	5	1/2	1-1/2	7-3/8	**381-2136**	MT5	**381-4136**
2-1/8	9-7/8	5	1/2	1-1/2	7-3/8	**381-2144**	MT5	**381-4144**
2-3/16	9-7/8	5	1/2	1-1/2	7-3/8	**381-2152**	MT5	**381-4152**
2-1/4	9-7/8	5	1/2	1-1/2	7-3/8	**381-2160**	MT5	**381-4160**
2-5/16	9-7/8	5	1/2	1-1/2	7-3/8	**381-2168**	MT5	**381-4168**
2-3/8	9-7/8	5	1/2	1-3/4	7-3/8	**381-2176**	MT5	**381-4176**
2-7/16	9-7/8	5	1/2	1-3/4	7-3/8	**381-2184**	MT5	**381-4184**
2-1/2	9-7/8	5	1/2	1-3/4	7-3/8	**381-2192**	MT5	**381-4192**
2-9/16	9-7/8	5	1/2	1-3/4	7-3/8	**381-2200**	MT5	**381-4200**
2-5/8	9-7/8	5	1/2	1-3/4	7-3/8	**381-2208**	MT5	**381-4208**
2-3/4	9-7/8	5	1/2	1-3/4	7-3/8	**381-2216**	MT5	**381-4216**
2-7/8	9-7/8	5	1/2	1-3/4	7-3/8	**381-2224**	MT5	**381-4224**
3	9-7/8	5	1/2	1-3/4	7-3/8	**381-2232**	MT5	**381-4232**

Interchange Pilots for Counterbores



- Shank Diameters of interchangeable pilots must be same with the pilot holes of counterbore when choosing pilots.

	Pilot Shank Diameter								
Pilot Dia.	3/32" Order No.	1/8" Order No.	5/32" Order No.	3/16" . Order No.	1/4" Order No.	5/16" Order No.	3/8" Order No.	7/16" Order No.	1/2" Order No.
1/8"	381-3005	381-3105							
5/32	381-3009	381-3109	381-3203						
3/16	381-3013	381-3113	381-3205						
7/32	381-3017	381-3117	381-3209	381-3305					
1/4	381-3021	381-3121	381-3213	381-3309	381-3405				
9/32	381-3025	381-3125	381-3217	381-3313	381-3409				
5/16	381-3029	381-3129	381-3221	381-3317	381-3413				
11/32	381-3033	381-3133	381-3225	381-3321	381-3417				
3/8	381-3037	381-3137	381-3229	381-3325	381-3421	381-3505			
13/32		381-3141	381-3233	381-3329	381-3425	381-3509			
7/16		381-3145	381-3237	381-3333	381-3429	381-3513	381-3605	381-3705	381-3805
15/32		381-3149	381-3241	381-3337	381-3433	381-3517	381-3609	381-3707	381-3807
1/2		381-3153	381-3245	381-3341	381-3437	381-3521	381-3613	381-3709	381-3809
17/32				381-3345	381-3441	381-3525	381-3617	381-3713	381-3813
9/16		381-3157		381-3349	381-3445	381-3529	381-3621	381-3715	381-3817
19/32				381-3353	381-3449	381-3533	381-3625	381-3716	381-3819
5/8				381-3357	381-3453	381-3537	381-3629	381-3717	381-3821
21/32				381-3359	381-3457	381-3541	381-3633	381-3719	381-3823
11/16				381-3361	381-3461	381-3545	381-3637	381-3721	381-3825
23/32				381-3365	381-3465	381-3549	381-3641	381-3723	381-3827
3/4				381-3369	381-3469	381-3553	381-3645	381-3725	381-3829
25/32				381-3373	381-3473	381-3557	381-3649	381-3729	381-3833
13/16				381-3377	381-3477	381-3561	381-3653	381-3733	381-3837
27/32				381-3381	381-3481	381-3565	381-3657	381-3735	381-3839
7/8				381-3385	381-3485	381-3569	381-3661	381-3737	381-3841
29/32						381-3573	381-3665	381-3739	381-3843
15/16						381-3577	381-3669	381-3741	381-3845
31/32						381-3578	381-3670	381-3743	381-3847
1						381-3581	381-3673	381-3745	381-3849
1-1/16						381-3585	381-3677	381-3749	381-3853
1-1/8						381-3589	381-3681	381-3753	381-3857
1-3/16							381-3685	381-3757	381-3861
1-1/4							381-3689	381-3761	381-3865
1-5/16							381-3693	381-3765	381-3869
1-3/8							381-3697	381-3769	381-3873
1-7/16								381-3773	381-3877
1-1/2								381-3777	381-3881
1-9/16									381-3885
1-5/8									381-3889
1-11/16									381-3893
1-3/4									381-3897
1-13/16									381-3901
1-7/8									381-3905
1-15/16									381-3909
2									381-3913

Interchangeable Pilots Counterbore Sets

39 Piece Inch 3 Flute Counterbore Set

Each Set Included:

13 Counterbores: 1/4-1" by 16ths

26 Pilots: 1/8", 5/32", 3/16", 1/4" with 3/32" shank
3/16", 7/32", 1/4", 9/32", 5/16" with 5/32" shank
1/4", 5/16", 3/8", 7/16", 1/2" with 3/16" shank
5/16", 3/8", 7/16", 1/2", 9/16", 5/8" with 1/4" shank
3/8", 7/16", 1/2", 9/16", 5/8", 3/4" with 5/16" shank

Order No. 381-2939

Packed in wooden fitted case





Metric, High Speed Steel, Straight Shank

21 Piece Set

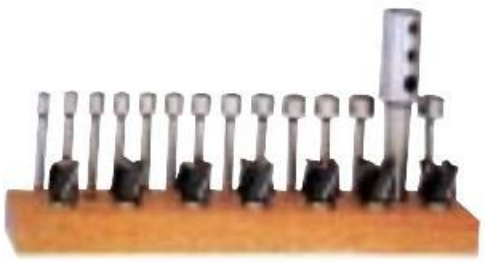
Set Included one each of following:
Pilots: 4,4.5, 5, 5.5, 6, 6.5, 7, 7.5, 8,
8.5, 9, 9.5, 10, 10.5mm
Counterbores: 8.5, 9.5, l0.5,
11.5, 13.5, 16.5mm
1 Piece Straight Shank Holder



Order No.381-2921

22 Piece Set

Set Included one each of following:
Pilots: 12, 13, 14, 15, 16, 17, 18, 19,
20, 21, 22, 23, 24, 25mm
Counterbores :26, 28, 30, 32,
33, 34, 36mm
1 Piece of MT2 Taper Shank Holder



Order No.381-2922

HSS 4 Flute Interchangeable Pilot Aircraft Counterbores

Long Series - 1/2" or smaller Straight Shank

Can be used in any 1/2" capacity tool or machine.



Size	Shank Dia.	Hole Dia.	Overall Length	Order No.	Size	Shank Dia.	Hole Dia.	Overall Length	Order No.
1/4"	15/16"	3/32"	4"	**381-0301**	23/32"	1/2"	3/16"	5-3/8"	**381-0316**
9/32	17/64	3/32	4	**381-0302**	3/4	1/2	3/16	5-3/8	**381-0317**
5/16	119/64	3/32	4	**381-0303**	25/32	1/2	3/16	5-3/8	**381-0318**
11/32	5/16x	3/32	4	**381-0304**	13/16	1/2	3/16	5-3/8	**381-0319**
3/8	15/16	3/32	4	**381-0305**	7/8	1/2	3/16	5-3/8	**381-0320**
13/32	3/8	1/8	4	**381-0306**	15/16	1/2	3/16	5-3/8	**381-0321**
7/16	3/8	1/8	4	**381-0307**	1	1/2	3/16	5-3/8	**381-0322**
15/32	7/16	1/8	4-1/4	**381-0308**	1-1/16	1/2	3/16	5-1/2	**381-0323**
1/2	7/16	1/8	4-1/4	**381-0309**	1-1/8	1/2	3/16	5-1/2	**381-0324**
17/32	1/2	1/8	4-1/4	**381-0310**	1-3/16	1/2	3/16	5-1/2	**381-0325**
9/16	1/2	1/8	4-1/4	**381-0311**	1-1/4	1/2	3/16	5-1/2	**381-0326**
19/32	1/2	1/8	4-1/4	**381-0312**	1-5/16	1/2	1/4	5-1/2	**381-0327**
5/8	1/2	1/8	4-1/4	**381-0313**	1-3/8	1/2	1/4	5-1/2	**381-0328**
21/32	1/2	3/16	5-3/8	**381-0314**	1-7/16	1/2	1/4	5-1/2	**381-0329**
11/16	1/2	3/16	5-3/8	**381-0315**	1-1/2	1/2	1/4	5-1/2	**381-0330**

Short Series - 1/4" Straight Shank

Can be used in 1/4" electric or pneumatic drills especially in aircraft work



Size	Hole Dia.	Overall Length	Order No.	Size	Hole Dia.	Overall Length	Order No.
1/4"	3/32"	2-3/8"	**381-0401**	21/32"	3/16"	3-1/8"	**381-0414**
9/32	3/32	2-3/8	**381-0402**	11/16	3/16	3-1/8	**381-0415**
5/16	3/32	2-3/8	**381-0403**	23/32	3/16	3-1/8	**381-0416**
11/32	3/32	2-3/8	**381-0404**	3/4	3/16	3-1/8	**381-0417**
3/8	3/32	2-3/8	**381-0405**	25/32	3/16	3-1/8	**381-0418**
13/32	1/8	2-13/16	**381-0406**	13/16	3/16	3-1/8	**381-0419**
7/16	1/8	2-13/16	**381-0407**	27/32	3/16	3-1/8	**381-0420**
15/32	1/8	2-13/16	**381-0408**	7/8	3/16	3-1/8	**381-0421**
1/2	1/8	2-13/16	**381-0409**	29/32	3/16	3-1/8	**381-0422**
17/32	1/8	2-13/16	**381-0410**	15/16	3/16	3-1/8	**381-0423**
9/16	1/8	2-13/16	**381-0411**	31/32	3/16	3-1/8	**381-0424**
19/32	1/8	2-13/16	**381-0412**	1	3/16	3-1/8	**381-0425**
5/8	1/8	2-13/16	**381-0413**				

Taper Shank Counterbores

3 Flute, High Speed Steel



Cap Screw Size	Cutter Dia.	Pilot Dia.	Overall Length	Shank Taper	Order No.	Cap Screw Size	Cutter Dia.	Pilot Dia.	Overall Length	Shank Taper	Order No.
1/4"	13/32"	9/32"	5-3/4"	MT2	**381-1025**	5/8"	31/32"	21/32"	7-1/2"	MT2	**381-1050**
5/16	1/2	11/32	6	MT2	**381-1030**	5/8	11/16	1	7-1/2	MT2	**381-1053**
3/8	19/32	13/32	6-1/2	MT2	**381-1035**	3/4	1-3/16	13/16	9	MT3	**381-1055**
7/16	11/16	15/32	7	MT2	**381-1040**	7/8	1-3/8	15/16	9	MT3	**381-1060**
1/2	25/32	17/32	7-1/4	MT2	**381-1045**	1	1-9/16	1-1/16	10	MT3	**381-1065**

Cap Screw Counterbores

3 Flute, High Speed Steel, Straight Shank



Screw Size	Pilot Dia.	Cutting Dia.	Shank Dia.	Overall Length	Order No.	Screw Size	Pilot Dia.	Cutting Dia.	Shank Dia.	Overall Length	Order No.
5#	0.1410"	0.2210"	3/16"	3"	**381-0005**	7/16"	15/32"	11/16"	1/2"	7"	**381-0040**
6#	0.1500	0.2420	7/32	3	**381-0010**	1/2	17/32	25/32	3/4	7-1/2	**381-0045**
8#	11/64	19/64	1/4	3	**381-0015**	5/8	21/32	31/32	3/4	7-1/2	**381-0050**
10#	13/64	21/64	5/16	3-1/2	**381-0020**	3/4	13/16	1-3/16	1	8	**381-0055**
1/4	9/32	13/32	3/8	5	**381-0025**	7/8	15/16	1-3/8	1	8	**381-0060**
5/16	11/32	1/2	7/16	5	**381-0030**	1	1-1/16	1-9/16	1	10	**381-0065**
3/8	13/32	19/32	1/2	6	**381-0035**						

Cap Screw Counterbores

High Speed Steel, Straight Shank



Screw Size	Pilot Dia.	Cutting Dia.	Flute Length	Shank Dia.	Overall Length	Order No.	Screw Size	Pilot Dia.	Cutting Dia.	Flute Length	Shank Dia.	Overall Length	Order No.
4-40	0.1120	0.1860	11/16	5/32	3-7/8	**381-0070**	3/8	0.3750	0.5720	1-5/8	1/2	6-1/2	**381-0110**
4-40	0.1270	0.2020	11/16	5/32	3-7/8	**381-0071**	3/8	0.3900	0.5880	1-5/8	1/2	6-1/2	**381-0115**
4-40	0.1430	0.180	11/16	5/32	3-7/8	**381-0072**	3/8	0.4060	0.6040	1-5/8	1/2	6-1/2	**381-0120**
5-40	0.1250	0.2050	11/16	3/16	4-1/8	**381-0074**	7/16	.4370	0.6630	1-11/16	1/2	7	**381-0125**
5-40	0.1400	0.2210	11/16	3/16	4-1/8	**381-0075**	7/16	.4520	0.6790	1-11/16	1/2	7	**381-0130**
5-40	0.1560	0.2370	11/16	3/16	4-1/8	**381-0076**	7/16	.4680	0.6950	1-11/16	1/2	7	**381-0135**
6-32	0.1380	0.2280	7/8	7/32	4-5/8	**381-0078**	1/2	0.5000	0.7570	2	1/2	7-1/2	**381-0140**
6-32	0.1530	0.2440	7/8	7/32	4-5/8	**381-0079**	1/2	0.5150	0.7730	2	1/2	7-1/2	**381-0145**
6-32	0.1690	0.2600	7/8	7/32	4-5/8	**381-0080**	1/2	0.5310	0.7890	2	1/2	7-1/2	**381-0150**
8-32	0.1640	0.2720	15/16	1/4	5	**381-0083**	5/8	0.6250	0.9450	2	5/8	7-5/8	**381-0155**
8-32	0.1790	0.2880	15/16	1/4	5	**381-0084**	5/8	0.6400	0.9610	2	5/8	7-5/8	**381-0160**
8-32	0.1950	0.3040	15/16	1/4	5	**381-0085**	5/8	0.6560	0.9770	2	5/8	7-5/8	**381-0165**
10-32	0.1900	0.3140	1-1/8	9/32	5-1/4	**381-0087**	3/4	0.7500	1.1330	2-1/8	3/4	7-3/4	**381-0170**
10-32	0.2050	0.3300	1-1/8	9/32	5-1/4	**381-0088**	3/4	0.7650	1.1490	2-1/8	3/4	7-3/4	**381-0175**
10-32	0.2210	0.3460	1-1/8	9/32	5-1/4	**381-0089**	3/4	0.7810	1.1650	2-1/8	3/4	7-3/4	**381-0180**
1/4	0.2810	0.4140	1-5/16	5/16	5-5/8	**381-0094**	7/8	0.8750	1.3220	2-1/8	7/8	8-1/8	**381-0185**
1/4	0.2650	0.3980	1-5/16	5/16	5-5/8	**381-0095**	7/8	0.8910	1.3380	2-1/8	7/8	8-1/8	**381-0190**
1/4	0.2500	0.3820	1-5/16	5/16	5-5/8	**381-0096**	7/8	0.9060	1.3540	2-1/8	7/8	8-1/8	**381-0195**
5/16	0.3120	0.4750	1-5/16	3/8	6-1/8	**381-0098**	1	1.0000	1.5100	2-1/4	1	8-1/2	**381-0200**
5/16	0.3280	0.4910	1-5/16	3/8	6-1/8	**381-0100**	1	1.0150	1.5260	2-1/4	1	8-1/2	**381-0205**
5/16	0.3430	0.5070	1-5/16	3/8	6-1/8	**381-0105**	1	1.0310	1.5420	2-1/4	1	8-1/2	**381-0210**

Sets

Pieces	Descriptions	Order No.
4pcs	4Pcs/set, Size:#6,#8,#10,1/4".	**381-9301**
4pcs	4Pcs/set,Size:1/4,5/16,3/8&1/2"	**381-9302**
4pcs	4Pcs/set,Size:1/2,5/8,3/4&1"	**381-9303**
4pcs	4Pcs/set,Size:1/4,5/16,3/8&1/2"	**381-9304**
6pcs	1/4,5/16,3/8,1/2,5/8 and 3/4"	**381-9060**
7pcs	6#,8#,10#,1/4,5/16,3/8 and 1/2"	**381-9070**
10pcs	4-40 through 1/2", 1/32" Oversized Pilots	**381-9101**
10pcs	4-40 through 1/2", 1/64" Oversized Pilots	**381-9102**
10pcs	4-40 through 1/2", Standard Size Pilots	**381-9103**



Metric Capscrew Counterbores

High Speed Steel

3Flute, Straight Shank



Screw Size	Pilot Dia	Cutter Dia.	Shank Dia.	OAL	Cutter Length	Shank Length	Order No.	Screw Size	Pilot Dia	Cutter Dia.	Shank Dia.	OAL	Cutter Length	Shank Length	Order No.
M2	2.2	4.3	4.3	56	10		**381-1502**	m6	6.4	11	8	80	18	35.5	**381-1506**
M3	3.2	6	5	71	14	31.5	**381-1503**	M8	8.4	15	12.5	100	22	40	**381-1508**
M4	4.3	8	5	71	14	31.5	**381-1504**	M10	10.5	18	12.5	100	22	40	**381-1510**
M5	5.3	10	8	80	18	35.5	**381-1505**	M12	13	20	12.5	100	22	40	**381-1512**



3Flute, Taper Shank

Screw Size	Pilot Dia.	Cutter Dia.	Cutter Length	Shank Taper	OAL	Order No.	Screw Size	Pilot Dia.	Cutter Dia.	Cutter Length	Shank Taper	OAL	Order No.
M14	15	24	60.325	MT2	228.6	**381-1614**	M20	21	33	79.375	MT2	254	**381-1620**
M16	17	26	79.375	MT2	228.6	**381-1616**	M24	25.4	40	79.375	MT3	254	**381-1624**

Capscrew Counterbore Sets

Pieces	Descriptions	Set Order No.
6pcs	Metric 3,4,5,6,8,10mm	**381-9061**
7pcs	Metric 3,4,5,6,8,10,12mm	**381-9079**
8pcs	Metric 3,4,5,6,8,10,12,14mm	**381-9080**





Straight Shank Chucking Reamers

Straight Flute, HSS & M35 Cobalt

- Right hand cutting direction,
- Designed for general purpose machine reaming in most materials, using screw machines, turret lathes, drill presses and machining centers.
- Precision engineered design for exceptional quality and accuracy.
- Ground with a 45 deg. Chamfer, suitable for reaming most materials.





Fractional Sizes

Size	Flute Length	Overall Length	HSS Order No.	M35 Order No.	Size	Flute Length	Overall Length	HSS Order No.	M35 Order No.	Size	Flute Length	Overall Length	HSS Order No.	M35 Order No.
3/64"	1/2"	2-1/2"	**331-1003**	**331-1303**	15/32"	1-3/4"	7"	**331-1030**	**331-1330**	57/64"	2-5/8"	10"	**331-1057**	**331-1357**
1/16	1/2	2-1/2	**331-1004**	**331-1304**	31/64	2	8	**331-1031**	**331-1331**	29/32	2-5/8	10	**331-1058**	**331-1358**
5/64	3/4	3	**331-1005**	**331-1305**	1/2	2	8	**331-1032**	**331-1332**	59/64	2-5/8	10	**331-1059**	**331-1359**
3/32	3/4	3	**331-1006**	**331-1306**	33/64	2	8	**331-1033**	**331-1333**	15/16	2-5/8	10	**331-1060**	**331-1360**
7/64	7/8	3-1/2	**331-1007**	**331-1307**	17/32	2	8	**331-1034**	**331-1334**	61/64	2-5/8	10	**331-1061**	**331-1361**
1/8	7/8	3-1/2	**331-1008**	**331-1308**	35/64	2	8	**331-1035**	**331-1335**	31/32	2-5/8	10	**331-1062**	**331-1362**
9/64	1	4	**331-1009**	**331-1309**	9/16	2	8	**331-1036**	**331-1336**	63/64	2-3/4	10	**331-1063**	**331-1363**
5/32	1	4	**331-1010**	**331-1310**	37/64	2	8	**331-1037**	**331-1337**	1	2-3/4	10-1/2	**331-1100**	**331-1364**
11/64	1-1/8	4-1/2	**331-1011**	**331-1311**	19/32	2	8	**331-1038**	**331-1338**	1-1/32	2-3/4	10-1/2	**331-1102**	**331-1366**
3/16	1-1/8	4-1/2	**331-1012**	**331-1312**	39/64	2-1/4	9	**331-1039**	**331-1339**	1-1/16	2-3/4	10-1/2	**331-1104**	**331-1368**
13/64	1-1/4	5	**331-1013**	**331-1313**	5/8	2-1/4	9	**331-1040**	**331-1340**	1-3/32	2-7/8	10-1/2	**331-1106**	**331-1370**
7/32	1-1/4	5	**331-1014**	**331-1314**	41/64	2-1/4	9	**331-1041**	**331-1341**	1-1/8	2-7/8	11	**331-1108**	**331-1372**
15/64	1-1/2	6	**331-1015**	**331-1315**	21/32	2-1/4	9	**331-1042**	**331-1342**	1-5/32	2-7/8	11	**331-1110**	**331-1374**
1/4	1-1/2	6	**331-1016**	**331-1316**	43/64	2-1/4	9	**331-1043**	**331-1343**	1-3/16	2-7/8	11	**331-1112**	**331-1376**
17/64	1-1/2	6	**331-1017**	**331-1317**	11/16	2-1/4	9	**331-1044**	**331-1344**	1-7/32	2-7/8	11	**331-1114**	**331-1378**
9/32	1-1/2	6	**331-1018**	**331-1318**	45/64	2-1/4	9	**331-1045**	**331-1345**	1-1/4	3	11-1/2	**331-1116**	**331-1380**
19/64	1-1/2	6	**331-1019**	**331-1319**	23/32	2-1/4	9	**331-1046**	**331-1346**	1-9/32	3	11-1/2	**331-1118**	**331-1382**
5/16	1-1/2	6	**331-1020**	**331-1320**	47/64	2-1/2	9-1/2	**331-1047**	**331-1347**	1-5/16	3	11-1/2	**331-1120**	**331-1384**
21/64	1-1/2	6	**331-1021**	**331-1321**	3/4	2-1/2	9-1/2	**331-1048**	**331-1348**	1-3/8	3-1/4	12	**331-1124**	**331-1386**
11/32	1-1/2	6	**331-1022**	**331-1322**	49/64	2-1/2	9-1/2	**331-1049**	**331-1349**	1-7/16	3-1/2	12-1/2	**331-1128**	**331-1388**
23/64	1-3/4	7	**331-1023**	**331-1323**	25/32	2-1/2	9-1/2	**331-1050**	**331-1350**	1-1/2	3-1/2	12-1/2	**331-1132**	**331-1390**
3/8	1-3/4	7	**331-1024**	**331-1324**	51/64	2-1/2	9-1/2	**331-1051**	**331-1351**	1-9/16	3-1/2	12-1/2	**331-1136**	**331-1392**
25/64	1-3/4	7	**331-1025**	**331-1325**	13/16	2-1/2	9-1/2	**331-1052**	**331-1352**	1-5/8	3-1/2	13	**331-1140**	**331-1394**
13/32	1-3/4	7	**331-1026**	**331-1326**	53/64	2-1/2	9-1/2	**331-1053**	**331-1353**	1-11/16	3-1/2	13	**331-1144**	**331-1396**
27/64	1-3/4	7	**331-1027**	**331-1327**	27/32	2-1/2	9-1/2	**331-1054**	**331-1354**	1-3/4	4	13-1/2	**331-1148**	**331-1398**
7/16	1-3/4	7	**331-1028**	**331-1328**	55/64	2-5/8	9-1/2	**331-1055**	**331-1355**	1-7/8	4	14	**331-1156**	**331-1199**
29/64	1-3/4	7	**331-1029**	**331-1329**	7/8	2-5/8	10	**331-1056**	**331-1356**	2	4	14	**331-1200**	**331-1400**

Number Sizes

Size	Flute Length	Overall Length	HSS Order No.	M35 Order No.	Size	Flute Length	Overall Length	HSS Order No.	M35 Order No.	Size	Flute Length	Overall Length	HSS Order No.	M35 Order No.
No.1	1-1/2"	6"	**331-0201**	**331-1401**	No.21	1/8"	4-1/2"	**331-0221**	**331-1421**	No.41	7/8"	3-1/2"	**331-0241**	**331-1441**
No.2	1-1/2	6	**331-0202**	**331-1402**	No.22	1	4	**331-0222**	**331-1422**	No.42	3/4	3	**331-0242**	**331-1442**
No.3	1-1/4	5	**331-0203**	**331-1403**	No.23	1	4	**331-0223**	**331-1423**	No.43	3/4	3	**331-0243**	**331-1443**
No.4	1-1/4	5	**331-0204**	**331-1404**	No.24	1	4	**331-0224**	**331-1424**	No.44	3/4	3	**331-0244**	**331-1444**
No.5	1-1/4	5	**331-0205**	**331-1405**	No.25	1	4	**331-0225**	**331-1425**	No.45	3/4	3	**331-0245**	**331-1445**
No.6	1-1/4	5	**331-0206**	**331-1406**	No.26	1	4	**331-0226**	**331-1426**	No.46	3/4"	3"	**331-0246**	**331-1446**
No.7	1-1/4	5	**331-0207**	**331-1407**	No.27	1	4	**331-0227**	**331-1427**	No.47	3/4	3	**331-0247**	**331-1447**
No.8	1-1/4	5	**331-0208**	**331-1408**	No.28	1	4	**331-0228**	**331-1428**	No.48	3/4	3	**331-0248**	**331-1448**
No.9	1-1/4	5	**331-0209**	**331-1409**	No.29	1	4	**331-0229**	**331-1429**	No.49	3/4	3	**331-0249**	**331-1449**
No.10	1-1/4	5	**331-0210**	**331-1410**	No.30	7/8	3-1/2	**331-0230**	**331-1430**	No.50	3/4	3	**331-0250**	**331-1450**
No.11	1-1/4	5	**331-0211**	**331-1411**	No.31	7/8	3-1/2	**331-0231**	**331-1431**	No.51	3/4	3	**331-0251**	**331-1451**
No.12	1-1/8	4-1/2	**331-0212**	**331-1412**	No.32	7/8	3-1/2	**331-0232**	**331-1432**	No.52	1/2	2-1/2	**331-0252**	**331-1452**
No.13	1-1/8	4-1/2	**331-0213**	**331-1413**	No.33	7/8	3-1/2	**331-0233**	**331-1433**	No.53	1/2	2-1/2	**331-0253**	**331-1453**
No.14	1-1/8	4-1/2	**331-0214**	**331-1414**	No.34	7/8	3-1/2	**331-0234**	**331-1434**	No.54	1/2	2-1/2	**331-0254**	**331-1454**
No.15	1-1/8	4-1/2	**331-0215**	**331-1415**	No.35	7/8	3-1/2	**331-0235**	**331-1435**	No.55	1/2	2-1/2	**331-0255**	**331-1455**
No.16	1-1/8	4-1/2	**331-0216**	**331-1416**	No.36	7/8	3-1/2	**331-0236**	**331-1436**	No.56	1/2	2-1/2	**331-0256**	**331-1456**
No.17	1-1/8	4-1/2	**331-0217**	**331-1417**	No.37	7/8	3-1/2	**331-0237**	**331-1437**	No.57	1/2	2-1/2	**331-0257**	**331-1457**
No.18	1-1/8	4-1/2	**331-0218**	**331-1418**	No.38	7/8	3-1/2	**331-0238**	**331-1438**	No.58	1/2	2-1/2	**331-0258**	**331-1458**
No.19	1-1/8	4-1/2	**331-0219**	**331-1419**	No.39	7/8	3-1/2	**331-0239**	**331-1439**	No.59	1/2	2-1/2	**331-0259**	**331-1459**
No.20	1-1/8	4-1/2	**331-0220**	**331-1420**	No.40	7/8	3-1/2	**331-0240**	**331-1440**	No.60	1/2	2-1/2	**331-0260**	**331-1460**

Straight Shank Chucking Reamers Continued

Straight Flute, HSS & M35 Cobalt

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Letter Sizes

Size	Flute Length	Overall Length	HSS Order No.	M35 Order No.	Size	Flute Length	Overall Length	HSS Order No.	M35 Order No.	Size	Flute Length	Overall Length	HSS Order No.	M35 Order No.
A	1-1/2	6”	**331-1501**	**331-0001**	J	1-1/2	6”	**331-1510**	**331-0010**	S	1-3/4	7”	**331-1519**	**331-0019**
B	1-1/2	6	**331-1502**	**331-0002**	K	1-1/2	6	**331-1511**	**331-0011**	T	1-3/4	7	**331-1520**	**331-0020**
C	1-1/2	6	**331-1503**	**331-0003**	L	1-1/2	6	**331-1512**	**331-0012**	U	1-3/4	7	**331-1521**	**331-0021**
D	1-1/2	6	**331-1504**	**331-0004**	M	1-1/2	6	**331-1513**	**331-0013**	V	1-3/4	7	**331-1522**	**331-0022**
E	1-1/2	6	**331-1505**	**331-0005**	N	1-1/2	6	**331-1514**	**331-0014**	W	1-3/4	7	**331-1523**	**331-0023**
F	1-1/2	6	**331-1506**	**331-0006**	O	1-1/2	6	**331-1515**	**331-0015**	X	1-3/4	7	**331-1524**	**331-0024**
G	1-1/2	6	**331-1507**	**331-0007**	P	1-1/2	6	**331-1516**	**331-0016**	Y	1-3/4	7	**331-1525**	**331-0025**
H	1-1/2	6	**331-1508**	**331-0008**	Q	1-1/2	6	**331-1517**	**331-0017**	Z	1-3/4	7	**331-1526**	**331-0026**
I	1-1/2	6	**331-1509**	**331-0009**	R	1-1/2	6	**331-1518**	**331-0018**					

Spiral Flute Chucking Reamers

High Speed Steel, Straight Shank, Right Hand

- Provides better surface finish than straight flute reamers.
- Spiral flutes pull chips away from part, providing excellent chip removal, especially in blind holes.
- Right hand spiral – right hand cut.
- Use for difficult-to-ream materials.
- Best choice for interrupted cuts such as keyways or cross holes.



Fractional Sizes

Size	Decimal Size	Flute Length	Overall Length	No. of Flute	HSS Order No.	M35Cobalt Order No.	Size	Decimal Size	Flute Length	Overall Length	No. of Flute	HSS Order No.	M35Cobalt Order No.
1/8”	.1250”	7/8”	3-1/2”	4	**241-2005**	**241-5005**	35/64”	.5469	2”	8”	6	**241-2126**	**241-5126**
9/64	.1406	1	4	4	**241-2010**	**241-5010**	9/16	.5625	2	8	6	**241-2130**	**241-5130**
5/32	.1562	1	4	4	**241-2015**	**241-5015**	37/64	.5781	2	8	6	**241-2131**	**241-5131**
11/64	.1719	1-1/8	4-1/2	6	**241-2020**	**241-5020**	19/32	.5938	2	8	6	**241-2135**	**241-5135**
3/16	.1875	1-1/8	4-1/2	6	**241-2025**	**241-5025**	39/64	.6094	2-1/4	9	8	**241-2139**	**241-5139**
13/64	.2031	1-1/4	5	6	**241-2030**	**241-5030**	5/8	.6250	2-1/4	9	8	**241-2140**	**241-5140**
7/32	.2188	1-1/4	5	6	**241-2035**	**241-5035**	41/64	.6406	2-1/4	9	8	**241-2144**	**241-5144**
15/64	.2344	1-1/2	6	6	**241-2040**	**241-5040**	21/32	.6562	2-1/4	9	8	**241-2145**	**241-5145**
1/4	.2500	1-1/2	6	6	**241-2045**	**241-5045**	11/16	.6875	2-1/4	9	8	**241-2150**	**241-5150**
17/64	.2656	1-1/2	6	6	**241-2050**	**241-5050**	23/32	.7188	2-1/4	9	8	**241-2155**	**241-5155**
9/32	.2812	1-1/2	6	6	**241-2055**	**241-5055**	3/4	.7500	2-1/2	9-1/2	8	**241-2160**	**241-5160**
19/64	.2969	1-1/2	6	6	**241-2060**	**241-5060**	25/32	.7812	2-1/2	9-1/2	8	**241-2165**	**241-5165**
5/16	.3125	1-1/2	6	6	**241-2065**	**241-5065**	13/16	.8125	2-1/2	9-1/2	8	**241-2170**	**241-5170**
21/64	.3281	1-1/2	6	6	**241-2070**	**241-5070**	27/32	.8438	2-1/2	9-1/2	8	**241-2175**	**241-5175**
11/32	.3438	1-1/2	6	6	**241-2075**	**241-5075**	7/8	.8750	2-5/8	10	8	**241-2180**	**241-5180**
23/64	.3594	1-3/4	7	6	**241-2080**	**241-5080**	29/32	.9062	2-5/8	10	8	**241-2185**	**241-5185**
3/8	.3750	1-3/4	7	6	**241-2085**	**241-5085**	15/16	.9375	2-5/8	10	8	**241-2190**	**241-5190**
25/64	.3906	1-3/4	7	6	**241-2090**	**241-5090**	31/32	.9688	2-5/8	10	8	**241-2195**	**241-5195**
13/32	.4062	1-3/4	7	6	**241-2095**	**241-5095**	1	1.0000	2-3/4	10-1/2	8	**241-2200**	**241-5200**
27/64	.4219	1-3/4	7	6	**241-2100**	**241-5100**	1-1/16	1.0625	2-3/4	10-1/2	10	**241-2205**	**241-5205**
7/16	.3745	1-3/4	7	6	**241-2101**	**241-5101**	1-1/8	1.1250	2-7/8	11	10	**241-2210**	**241-5210**
29/64	.4531	1-3/4	7	6	**241-2105**	**241-5105**	1-3/16	1.1875	2-7/8	11	10	**241-2215**	**241-5215**
15/32	.4688	1-3/4	7	6	**241-2110**	**241-5110**	1-1/4	1.2500	3	11-1/2	10	**241-2220**	**241-5220**
31/64	.4844	2	8	6	**241-2115**	**241-5115**	1-5/16	1.3125	3-1/4	12	10	**241-2225**	**241-5225**
1/2	.5000	2	8	6	**241-2120**	**241-5120**	1-3/8	1.3750	3-1/4	12	12	**241-2230**	**241-5230**
33/64	.5156	2	8	6	**241-2121**	**241-5121**	1-7/16	1.4375	3-1/2	12-1/2	12	**241-2235**	**241-5235**
17/32	.5312	2	8	6	**241-2125**	**241-5125**	1-1/2	1.5000	3-1/2	12-1/2	12	**241-2240**	**241-5240**

Metric HSS Straight Shank Chucking Reamers

High Speed Steel, M35
Straight Shank,
Straight Flute





Fractional Sizes

Size	Flute Length	Overall Length	HSS Order No.	M35Cobalt Order No.	Size	Flute Length	Overall Length	HSS Order No.	M35Cobalt Order No.
2.50mm	7/8"	3-1/2"	**331-5725**		12.00mm	2"	7"	**331-5820**	**331-5573**
3.00	7/8	3-1/2	**331-5730**	**331-5555**	12.50	2	8	**331-5825**	
3.50	1	4	**331-5735**		13.00	2	8	**331-5830**	
4.00	1-1/8	4-1/2	**331-5740**	**331-5557**	13.50	2	8	**331-5835**	
4.50	1-1/8	4-1/2	**331-5745**		14.00	2	8	**331-5840**	
5.00	1-1/4	5	**331-5750**	**331-5559**	14.20	2	8	**331-5845**	
5.50	1-1/4	5	**331-5755**		15.00	2	8	**331-5850**	
6.00	1-1/2	6	**331-5760**		16.00	2-1/4	8	**331-5860**	
6.50	1-1/2	6	**331-5765**	**331-5561**	17.00	2-1/4	9	**331-5870**	
7.00	1-1/2	6	**331-5770**	**331-5563**	18.00	2-1/4	9	**331-5880**	
7.50	1-1/2	6	**331-5775**		19.00	2-1/4	9	**331-5890**	
8.00	1-1/2	6	**331-5780**	**331-5565**	19.50	2-1/4	9-1/2	**331-5595**	
8.50	1-1/2	6	**331-5785**		20.00	2-1/2	9-1/2	**331-5900**	
9.00	1-3/4	7	**331-5790**	**331-5567**	21.00	2-1/2	9-1/2	**331-5910**	
9.50	1-3/4	7	**331-5795**		22.00	2-1/2	9-1/2	**331-5920**	
10.00	1-3/4	7	**331-5800**	**331-5569**	23.00	2-5/8	10	**331-5930**	
10.50	1-3/4	7	**331-5805**		24.00	2-5/8	10	**331-5940**	
11.00	1-3/4	7	**331-5810**		25.00	2-5/8	10	**331-5950**	
11.50	1-3/4	7	**331-5815**						

Metric Chucking Reamers

DIN212/A, High Speed Steel,
Straight Shank,
Straight Flute



Size (mm)	Flute Length (mm)	Overall Length (mm)	Shank Dia. (mm)	No. of Flute	Order No.	Size (mm)	Flute Length (mm)	Overall Length (mm)	Shank Dia. (mm)	No. of Flute	Order No.
1.0	6	34	2	4	**331-5010**	13.5	44	151	10	6	**331-5135**
1.5	8	40	2	4	**331-5015**	14.0	47	160	12.5	6	**331-5140**
2.0	11	49	2	4	**331-5020**	14.5	50	162	12.5	6	**331-5145**
2.5	14	57	2.5	4	**331-5025**	15.0	50	162	12.5	6	**331-5150**
3.0	15	61	3	6	**331-5030**	15.5	52	170	12.5	8	**331-5155**
3.5	18	70	3.5	6	**331-5035**	16.0	52	170	12.5	8	**331-5160**
4.0	19	75	4	6	**331-5040**	16.5	54	175	14	8	**331-5165**
4.5	21	80	4.5	6	**331-5045**	17.0	54	175	14	8	**331-5170**
5.0	23	86	5	6	**331-5050**	17.5	56	182	14	8	**331-5175**
5.5	26	93	5.6	6	**331-5055**	18.0	56	182	14	8	**331-5180**
6.0	26	93	5.6	6	**331-5060**	18.5	58	189	16	8	**331-5185**
6.5	28	101	6.3	6	**331-5065**	19.0	58	189	16	8	**331-5190**
7.0	31	109	7.1	6	**331-5070**	19.5	60	195	16	8	**331-5195**
7.5	31	109	7.1	6	**331-5075**	20.0	60	195	16	8	**331-5200**
8.0	33	117	8	6	**331-5080**	20.5	60	215	18	8	**331-5205**
8.5	33	117	8	6	**331-5085**	21.0	60	215	18	8	**331-5210**
9.0	36	125	9	6	**331-5090**	21.5	60	225	18	8	**331-5215**
9.5	36	125	9	6	**331-5095**	22.0	60	225	18	8	**331-5220**
10.0	38	133	10	6	**331-5100**	22.5	60	230	18	8	**331-5225**
10.5	38	133	10	6	**331-5105**	23.0	60	230	18	8	**331-5230**
11.0	41	142	10	6	**331-5110**	23.5	60	240	20	8	**331-5235**
11.5	41	142	10	6	**331-5115**	24.0	60	240	20	8	**331-5240**
12.0	44	151	10	6	**331-5120**	24.5	60	245	20	8	**331-5245**
12.5	44	151	10	6	**331-5125**	25.0	60	245	20	8	**331-5250**
13.0	44	151	10	6	**331-5130**						

Special Decimal Chucking Reamers

High Speed Steel, Straight Shank, Straight Flute



Size	Flute Length	Overall Length	Order No.	Size	Flute Length	Overall Length	Order No.	Size	Flute Length	Overall Length	Order No.
.0160"	1/2"	1-3/8"	**339-0160**	.1010"	7/8"	3-1/2"	**339-1010**	.1535"	1"	4"	**339-1535**
.0200	1/2	1-3/8	**339-0200**	.1020	7/8	3-1/2	**339-1020**	.1545	1	4	**339-1545**
.0210	1/2	1-3/8	**339-0210**	.1025	7/8	3-1/2	**339-1025**	.1550	1	4	**339-1550**
.0310	1/2	1-3/8	**339-0310**	.1030	7/8	3-1/2	**339-1030**	.1555	1	4	**339-1555**
.0327	1/2	1-3/8	**339-0327**	.1050	7/8	3-1/2	**339-1050**	.1557	1	4	**339-1557**
.0390	1/2	1-3/8	**339-0390**	.1055	7/8	3-1/2	**339-1055**	.1558	1	4	**339-1558**
.0415	1/2	1-3/8	**339-0415**	.1060	7/8	3-1/2	**339-1060**	.1565	1	4	**339-1565**
.0435	1/2	1-3/8	**339-0435**	.1070	7/8	3-1/2	**339-1070**	.1580	1	4	**339-1580**
.0445	1/2	1-3/8	**339-0445**	.1080	7/8	3-1/2	**339-1080**	.1595	1-1/8	4-1/2	**339-1595**
.0450	1/2	1-3/8	**339-0450**	.1090	7/8	3-1/2	**339-1090**	.1600	1-1/8	4-1/2	**339-1600**
.0460	1/2	1-3/8	**339-0460**	.1095	7/8	3-1/2	**339-1095**	.1605	1-1/8	4-1/2	**339-1605**
.0470	1/2	1-3/8	**339-0470**	.1105	7/8	3-1/2	**339-1105**	.1620	1-1/8	4-1/2	**339-1620**
.0485	1/2	1-3/8	**339-0485**	.1125	7/8	3-1/2	**339-1125**	.1630	1-1/8	4-1/2	**339-1630**
.0510	1/2	1-3/8	**339-0510**	.1135	7/8	3-1/2	**339-1135**	.1635	1-1/8	4-1/2	**339-1635**
.0570	1/2	1-3/8	**339-0570**	.1140	7/8	3-1/2	**339-1140**	.1645	1-1/8	4-1/2	**339-1645**
.0580	1/2	1-3/8	**339-0580**	.1150	7/8	3-1/2	**339-1150**	.1650	1-1/8	4-1/2	**339-1650**
.0585	1/2	1-3/8	**339-0585**	.1155	7/8	3-1/2	**339-1155**	.1655	1-1/8	4-1/2	**339-1655**
.0590	1/2	1-3/8	**339-0590**	.1190	7/8	3-1/2	**339-1190**	.1665	1-1/8	4-1/2	**339-1665**
.0600	1/2	1-3/8	**339-0600**	.1195	7/8	3-1/2	**339-1195**	.1675	1-1/8	4-1/2	**339-1675**
.0605	1/2	1-3/8	**339-0605**	.1205	7/8	3-1/2	**339-1205**	.1680	1-1/8	4-1/2	**339-1680**
.0610	1/2	1-3/8	**339-0610**	.1210	7/8	3-1/2	**339-1210**	.1685	1-1/8	4-1/2	**339-1685**
.0615	1/2	1-3/8	**339-0615**	.1211	7/8	3-1/2	**339-1211**	.1690	1-1/8	4-1/2	**339-1690**
.0620	1/2	1-3/8	**339-0620**	.1215	7/8	3-1/2	**339-1215**	.1700	1-1/8	4-1/2	**339-1700**
.0630	1/2	1-3/8	**339-0630**	.1220	7/8	3-1/2	**339-1220**	.1710	1-1/8	4-1/2	**339-1710**
.0640	1/2	1-3/8	**339-0640**	.1223	7/8	3-1/2	**339-1223**	.1719	1-1/8	4-1/2	**339-1719**
.0645	1/2	1-3/8	**339-0645**	.1225	7/8	3-1/2	**339-1225**	.1720	1-1/8	4-1/2	**339-1720**
.0650	1/2	1-3/8	**339-0650**	.1230	7/8	3-1/2	**339-1230**	.1724	1-1/8	4-1/2	**339-1724**
.0655	1/2	1-3/8	**339-0655**	.1235	7/8	3-1/2	**339-1235**	.1725	1-1/8	4-1/2	**339-1725**
.0665	1/2	1-3/8	**339-0665**	.1240	7/8	3-1/2	**339-1240**	.1735	1-1/8	4-1/2	**339-1735**
.0675	3/4	3	**339-0675**	.1245	7/8	3-1/2	**339-1245**	.1740	1-1/8	4-1/2	**339-1740**
.0680	3/4	3	**339-0680**	.1255	7/8	3-1/2	**339-1255**	.1745	1-1/8	4-1/2	**339-1745**
.0705	3/4	3	**339-0705**	.1260	7/8	3-1/2	**339-1260**	.1750	1-1/8	4-1/2	**339-1750**
.0710	3/4	3	**339-0710**	.1265	7/8	3-1/2	**339-1265**	.1760	1-1/8	4-1/2	**339-1760**
.0720	3/4	3	**339-0720**	.1270	7/8	3-1/2	**339-1270**	.1770	1-1/8	4-1/2	**339-1770**
.0735	3/4	3	**339-0735**	.1275	7/8	3-1/2	**339-1275**	.1775	1-1/8	4-1/2	**339-1775**
.0745	3/4	3	**339-0745**	.1280	7/8	3-1/2	**339-1280**	.1785	1-1/8	4-1/2	**339-1785**
.0750	3/4	3	**339-0750**	.1285	7/8	3-1/2	**339-1285**	.1790	1-1/8	4-1/2	**339-1790**
.0755	3/4	3	**339-0755**	.1290	7/8	3-1/2	**339-1290**	.1795	1-1/8	4-1/2	**339-1795**
.0765	3/4	3	**339-0765**	.1300	7/8	3-1/2	**339-1300**	.1800	1-1/8	4-1/2	**339-1800**
.0770	3/4	3	**339-0770**	.1310	7/8	3-1/2	**339-1310**	.1810	1-1/8	4-1/2	**339-1810**
.0780	3/4	3	**339-0780**	.1320	7/8	3-1/2	**339-1320**	.1815	1-1/8	4-1/2	**339-1815**
.0790	3/4	3	**339-0790**	.1330	7/8	3-1/2	**339-1330**	.1820	1-1/8	4-1/2	**339-1820**
.0800	3/4	3	**339-0800**	.1335	7/8	3-1/2	**339-1335**	.1825	1-1/8	4-1/2	**339-1825**
.0805	3/4	3	**339-0805**	.1340	7/8	3-1/2	**339-1340**	.1830	1-1/8	4-1/2	**339-1830**
.0815	3/4	3	**339-0815**	.1345	7/8	3-1/2	**339-1345**	.1832	1-1/8	4-1/2	**339-1832**
.0825	3/4	3	**339-0825**	.1350	7/8	3-1/2	**339-1350**	.1835	1-1/8	4-1/2	**339-1835**
.0830	3/4	3	**339-0830**	.1355	7/8	3-1/2	**339-1355**	.1840	1-1/8	4-1/2	**339-1840**
.0840	3/4	3	**339-0840**	.1370	1	4	**339-1370**	.1845	1-1/8	4-1/2	**339-1845**
.0845	3/4	3	**339-0845**	.1380	1	4	**339-1380**	.1850	1-1/8	4-1/2	**339-1850**
.0850	3/4	3	**339-0850**	.1385	1	4	**339-1385**	.1855	1-1/8	4-1/2	**339-1855**
.0865	3/4	3	**339-0865**	.1390	1	4	**339-1390**	.1860	1-1/8	4-1/2	**339-1860**
.0870	3/4	3	**339-0870**	.1395	1	4	**339-1395**	.1865	1-1/8	4-1/2	**339-1865**
.0885	3/4	3	**339-0885**	.1400	1	4	**339-1400**	.1867	1-1/8	4-1/2	**339-1867**
.0895	3/4	3	**339-0895**	.1410	1	4	**339-1410**	.1870	1-1/8	4-1/2	**339-1870**
.0900	3/4	3	**339-0900**	.1420	1	4	**339-1420**	.1875	1-1/8	4-1/2	**339-1875**
.0905	3/4	3	**339-0905**	.1425	1	4	**339-1425**	.1880	1-1/8	4-1/2	**339-1880**
.0910	3/4	3	**339-0910**	.1430	1	4	**339-1430**	.1885	1-1/8	4-1/2	**339-1885**
.0915	3/4	3	**339-0915**	.1435	1	4	**339-1435**	.1890	1-1/8	4-1/2	**339-1890**
.0920	3/4	3	**339-0920**	.1440	1	4	**339-1440**	.1892	1-1/8	4-1/2	**339-1892**
.0925	3/4	3	**339-0925**	.1445	1	4	**339-1445**	.1895	1-1/8	4-1/2	**339-1895**
.0930	3/4	3	**339-0930**	.1450	1	4	**339-1450**	.1900	1-1/8	4-1/2	**339-1900**
.0938	3/4	3	**339-0938**	.1460	1	4	**339-1460**	.1905	1-1/8	4-1/2	**339-1905**
.0940	3/4	3	**339-0940**	.1470	1	4	**339-1470**	.1910	1-1/4	5	**339-1910**
.0945	3/4	3	**339-0945**	.1475	1	4	**339-1475**	.1920	1-1/4	5	**339-1920**
.0950	3/4	3	**339-0950**	.1480	1	4	**339-1480**	.1925	1-1/4	5	**339-1925**
.0955	3/4	3	**339-0955**	.1485	1	4	**339-1485**	.1930	1-1/4	5	**339-1930**
.0965	7/8	3-1/2	**339-0965**	.1490	1	4	**339-1490**	.1945	1-1/4	5	**339-1945**
.0970	7/8	3-1/2	**339-0970**	.1505	1	4	**339-1505**	.1950	1-1/4	5	**339-1950**
.0975	7/8	3-1/2	**339-0975**	.1515	1	4	**339-1515**	.1965	1-1/4	5	**339-1965**
.0990	7/8	3-1/2	**339-0990**	.1520	1	4	**339-1520**	.1970	1-1/4	5	**339-1970**
.1000	7/8	3-1/2	**339-1000**	.1525	1	4	**339-1525**	.1975	1-1/4	5	**339-1975**
.1005	7/8	3-1/2	**339-1005**	.1530	1	4	**339-1530**	.1980	1-1/4	5	**339-1980**

Special Decimal Chucking Reamers Continued

High Speed Steel, Straight Shank, Straight Flute



Size	Flute Length	Overall Length	Order No.	Size	Flute Length	Overall Length	Order No.	Size	Flute Length	Overall Length	Order No.
.1985"	1-1/4"	5"	**339-1985**	2.455"	1-1/2"	6"	**339-2455**	.3075"	1-1/2"	6"	**339-3075**
.1995	1-1/4	5	**339-1995**	.2470	1-1/2	6	**339-2470**	.3080	1-1/2	6	**339-3080**
.2000	1-1/4	5	**339-2000**	.2475	1-1/2	6	**339-2475**	.3090	1-1/2	6	**339-3090**
.2005	1-1/4	5	**339-2005**	.2480	1-1/2	6	**339-2480**	.3100	1-1/2	6	**339-3100**
.2015	1-1/4	5	**339-2015**	.2485	1-1/2	6	**339-2485**	.3105	1-1/2	6	**339-3105**
.2020	1-1/4	5	**339-2020**	.2490	1-1/2	6	**339-2490**	.3110	1-1/2	6	**339-3110**
.2025	1-1/4	5	**339-2025**	.2495	1-1/2	6	**339-2495**	.3115	1-1/2	6	**339-3115**
.2045	1-1/4	5	**339-2045**	.2501	1-1/2	6	**339-2501**	.3120	1-1/2	6	**339-3120**
.2050	1-1/4	5	**339-2050**	.2505	1-1/2	6	**339-2505**	.3130	1-1/2	6	**339-3130**
.2060	1-1/4	5	**339-2060**	.2510	1-1/2	6	**339-2510**	.3135	1-1/2	6	**339-3135**
.2070	1-1/4	5	**339-2070**	.2515	1-1/2	6	**339-2515**	.3140	1-1/2	6	**339-3140**
.2080	1-1/4	5	**339-2080**	.2520	1-1/2	6	**339-2520**	.3145	1-1/2	6	**339-3145**
.2085	1-1/4	5	**339-2085**	.2525	1-1/2	6	**339-2525**	.3150	1-1/2	6	**339-3150**
.2090	1-1/4	5	**339-2090**	.2530	1-1/2	6	**339-2530**	.3165	1-1/2	6	**339-3165**
.2100	1-1/4	5	**339-2100**	.2535	1-1/2	6	**339-2535**	.3170	1-1/2	6	**339-3170**
.2105	1-1/4	5	**339-2105**	.2540	1-1/2	6	**339-2540**	.3180	1-1/2	6	**339-3180**
.2110	1-1/4	5	**339-2110**	.2550	1-1/2	6	**339-2550**	.3190	1-1/2	6	**339-3190**
.2115	1-1/4	5	**339-2115**	.2560	1-1/2	6	**339-2560**	.3200	1-1/2	6	**339-3200**
.2120	1-1/4	5	**339-2120**	.2570	1-1/2	6	**339-2570**	.3205	1-1/2	6	**339-3205**
.2125	1-1/4	5	**339-2125**	.2575	1-1/2	6	**339-2575**	.3210	1-1/2	6	**339-3210**
.2126	1-1/4	5	**339-2126**	.2580	1-1/2	6	**339-2580**	.3220	1-1/2	6	**339-3220**
.2135	1-1/4	5	**339-2135**	.2585	1-1/2	6	**339-2585**	.3225	1-1/2	6	**339-3225**
.2140	1-1/4	5	**339-2140**	.2590	1-1/2	6	**339-2590**	.3235	1-1/2	6	**339-3235**
.2150	1-1/4	5	**339-2150**	.2600	1-1/2	6	**339-2600**	.3240	1-1/2	6	**339-3240**
.2155	1-1/4	5	**339-2155**	.2620	1-1/2	6	**339-2620**	.3250	1-1/2	6	**339-3250**
.2157	1-1/4	5	**339-2157**	.2630	1-1/2	6	**339-2630**	.3255	1-1/2	6	**339-3255**
.2160	1-1/4	5	**339-2160**	.2640	1-1/2	6	**339-2640**	.3260	1-1/2	6	**339-3260**
.2170	1-1/4	5	**339-2170**	.2650	1-1/2	6	**339-2650**	.3270	1-1/2	6	**339-3270**
.2180	1-1/4	5	**339-2180**	.2655	1-1/2	6	**339-2655**	.3280	1-1/2	6	**339-3280**
.2185	1-1/4	5	**339-2185**	.2660	1-1/2	6	**339-2660**	.3290	1-1/2	6	**339-3290**
.2190	1-1/4	5	**339-2190**	.2680	1-1/2	6	**339-2680**	.3300	1-1/2	6	**339-3300**
.2195	1-1/4	5	**339-2195**	.2690	1-1/2	6	**339-2690**	.3310	1-1/2	6	**339-3310**
.2200	1-1/4	5	**339-2200**	.2700	1-1/2	6	**339-2700**	.3330	1-1/2	6	**339-3330**
.2205	1-1/4	5	**339-2205**	.2725	1-1/2	6	**339-2725**	.3340	1-1/2	6	**339-3340**
.2210	1-1/2	6	**339-2210**	.2740	1-1/2	6	**339-2740**	.3350	1-1/2	6	**339-3350**
.2215	1-1/2	6	**339-2215**	.2745	1-1/2	6	**339-2745**	.3360	1-1/2	6	**339-3360**
.2220	1-1/2	6	**339-2220**	.2750	1-1/2	6	**339-2750**	.3370	1-1/2	6	**339-3370**
.2225	1-1/2	6	**339-2225**	.2755	1-1/2	6	**339-2755**	.3380	1-1/2	6	**339-3380**
.2230	1-1/2	6	**339-2230**	.2760	1-1/2	6	**339-2760**	.3400	1-1/2	6	**339-3400**
.2235	1-1/2	6	**339-2235**	.2765	1-1/2	6	**339-2765**	.3410	1-1/2	6	**339-3410**
.2340	1-1/2	6	**339-2340**	.2790	1-1/2	6	**339-2790**	.3420	1-1/2	6	**339-3420**
.2245	1-1/2	6	**339-2245**	.2800	1-1/2	6	**339-2800**	.3425	1-1/2	6	**339-3425**
.2250	1-1/2	6	**339-2250**	.2814	1-1/2	6	**339-2814**	.3430	1-1/2	6	**339-3430**
.2255	1-1/2	6	**339-2255**	.2815	1-1/2	6	**339-2815**	.3434	1-1/2	6	**339-3434**
.2265	1-1/2	6	**339-2265**	.2818	1-1/2	6	**339-2818**	.3435	1-1/2	6	**339-3435**
.2270	1-1/2	6	**339-2270**	.2820	1-1/2	6	**339-2820**	.3440	1-1/2	6	**339-3440**
.2275	1-1/2	6	**339-2275**	.2830	1-1/2	6	**339-2830**	.3443	1-1/2	6	**339-3443**
.2280	1-1/2	6	**339-2280**	.2840	1-1/2	6	**339-2840**	.3445	1-1/2	6	**339-3445**
.2285	1-1/2	6	**339-2285**	.2850	1-1/2	6	**339-2850**	.3450	1-1/2	6	**339-3450**
.2290	1-1/2	6	**339-2290**	.2860	1-1/2	6	**339-2860**	.3455	1-1/2	6	**339-3455**
.2295	1-1/2	6	**339-2295**	.2870	1-1/2	6	**339-2870**	.3460	1-1/2	6	**339-3460**
.2320	1-1/2	6	**339-2320**	.2875	1-1/2	6	**339-2875**	.3470	1-1/2	6	**339-3470**
.2325	1-1/2	6	**339-2325**	.2890	1-1/2	6	**339-2890**	.3474	1-1/2	6	**339-3474**
.2330	1-1/2	6	**339-2330**	.2898	1-1/2	6	**339-2898**	.3475	1-1/2	6	**339-3475**
.2335	1-1/2	6	**339-2335**	.2900	1-1/2	6	**339-2900**	.3490	1-3/4	7	**339-3490**
.2350	1-1/2	6	**339-2350**	.2910	1-1/2	6	**339-2910**	.3500	1-3/4	7	**339-3500**
.2355	1-1/2	6	**339-2355**	.2920	1-1/2	6	**339-2920**	.3520	1-3/4	7	**339-3520**
.2360	1-1/2	6	**339-2360**	.2940	1-1/2	6	**339-2940**	.3530	1-3/4	7	**339-3530**
.2365	1-1/2	6	**339-2365**	.2960	1-1/2	6	**339-2960**	.3535	1-3/4	7	**339-3535**
.2370	1-1/2	6	**339-2370**	.2961	1-1/2	6	**339-2961**	.3540	1-3/4	7	**339-3540**
.2375	1-1/2	6	**339-2375**	.2965	1-1/2	6	**339-2965**	.3555	1-3/4	7	**339-3555**
.2380	1-1/2	6	**339-2380**	.2969	1-1/2	6	**339-2969**	.3560	1-3/4	7	**339-3560**
.2385	1-1/2	6	**339-2385**	.2970	1-1/2	6	**339-2970**	.3600	1-3/4	7	**339-3600**
.2390	1-1/2	6	**339-2390**	.2975	1-1/2	6	**339-2975**	.3615	1-3/4	7	**339-3615**
.2395	1-1/2	6	**339-2395**	.2980	1-1/2	6	**339-2980**	.3620	1-3/4	7	**339-3620**
.2400	1-1/2	6	**339-2400**	.3000	1-1/2	6	**339-3000**	.3650	1-3/4	7	**339-3650**
.2410	1-1/2	6	**339-2410**	.3010	1-1/2	6	**339-3010**	.3660	1-3/4	7	**339-3660**
.2415	1-1/2	6	**339-2415**	.3030	1-1/2	6	**339-3030**	.3690	1-3/4	7	**339-3690**
.2425	1-1/2	6	**339-2425**	.3040	1-1/2	6	**339-3040**	.3700	1-3/4	7	**339-3700**
.2430	1-1/2	6	**339-2430**	.3050	1-1/2	6	**339-3050**	.3710	1-3/4	7	**339-3710**
.2440	1-1/2	6	**339-2440**	.3060	1-1/2	6	**339-3060**	.3715	1-3/4	7	**339-3715**
.2445	1-1/2	6	**339-2445**	.3070	1-1/2	6	**339-3070**	.3720	1-3/4	7	**339-3720**

Special Decimal Chucking Reamers continued

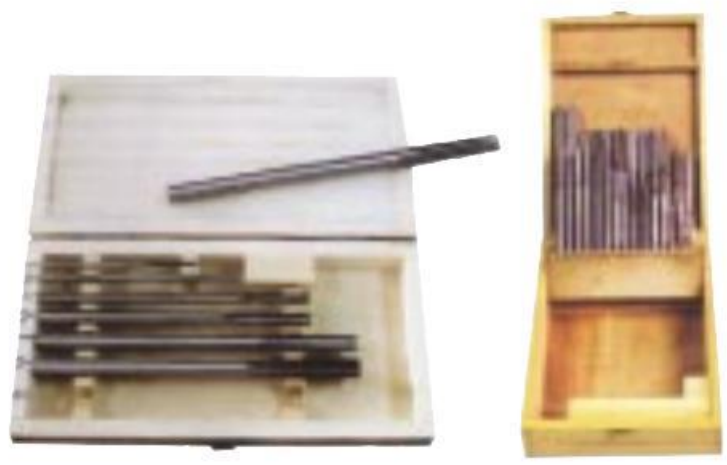
High Speed Steel, Straight Shank, Straight Flute



Size	Flute Length	Overall Length	Order No.	Size	Flute Length	Overall Length	Order No.	Size	Flute Length	Overall Length	Order No.
.3725"	1-3/4"	7"	**339-3725**	.4410"	1-3/4"	7"	**339-4410**	.5130"	2"	8"	**339-5130**
.3730	1-3/4	7	**339-3730**	.4420	1-3/4	7	**339-4420**	.5140	2	8	**339-5140**
.3735	1-3/4	7	**339-3735**	.4425	1-3/4	7	**339-4425**	.5150	2	8	**339-5150**
.3740	1-3/4	7	**339-3740**	.4430	1-3/4	7	**339-4430**	.5160	2	8	**339-5160**
.3745	1-3/4	7	**339-3745**	.4450	1-3/4	7	**339-4450**	.5170	2	8	**339-5170**
.3752	1-3/4	7	**339-3752**	.4460	1-3/4	7	**339-4460**	.5180	2	8	**339-5180**
.3755	1-3/4	7	**339-3755**	.4480	1-3/4	7	**339-4480**	.5200	2	8	**339-5200**
.3760	1-3/4	7	**339-3760**	.4500	1-3/4	7	**339-4500**	.5210	2	8	**339-5210**
.3765	1-3/4	7	**339-3765**	.4510	1-3/4	7	**339-4510**	.5250	2	8	**339-5250**
.3770	1-3/4	7	**339-3770**	.4520	1-3/4	7	**339-4520**	.5300	2	8	**339-5300**
.3780	1-3/4	7	**339-3780**	.4530	1-3/4	7	**339-4530**	.5615	2	8	**339-5615**
.3790	1-3/4	7	**339-3790**	.4550	1-3/4	7	**339-4550**	.5635	2	8	**339-5635**
.3800	1-3/4	7	**339-3800**	.4560	1-3/4	7	**339-4560**	.5950	2	8	**339-5950**
.3810	1-3/4	7	**339-3810**	.4580	1-3/4	7	**339-4580**	.6005	2	8	**339-6005**
.3820	1-3/4	7	**339-3820**	.4590	1-3/4	7	**339-4590**	.6125	2-1/4	9	**339-6125**
.3830	1-3/4	7	**339-3830**	.4600	1-3/4	7	**339-4600**	.6160	2-1/4	9	**339-6160**
.3840	1-3/4	7	**339-3840**	.4610	1-3/4	7	**339-4610**	.6200	2-1/4	9	**339-6200**
.3850	1-3/4	7	**339-3850**	.4650	1-3/4	7	**339-4650**	.6220	2-1/4	9	**339-6220**
.3860	1-3/4	7	**339-3860**	.4660	1-3/4	7	**339-4660**	.6230	2-1/4	9	**339-6230**
.3870	1-3/4	7	**339-3870**	.4670	1-3/4	7	**339-4670**	.6240	2-1/4	9	**339-6240**
.3880	1-3/4	7	**339-3880**	.4680	1-3/4	7	**339-4680**	.6245	2-1/4	9	**339-2645**
.3885	1-3/4	7	**339-3885**	.4690	1-3/4	7	**339-4690**	.6255	2-1/4	9	**339-6255**
.3900	1-3/4	7	**339-3900**	.4700	1-3/4	7	**339-4700**	.6260	2-1/4	9	**339-6260**
.3910	1-3/4	7	**339-3910**	.4710	1-3/4	7	**339-4710**	.6270	2-1/4	9	**339-6270**
.3920	1-3/4	7	**339-3920**	.4720	1-3/4	7	**339-4720**	.6280	2-1/4	9	**339-6280**
.3925	1-3/4	7	**339-3925**	.4725	2	8	**339-4725**	.6300	2-1/4	9	**339-6300**
.3930	1-3/4	7	**339-3930**	.4730	2	8	**339-4730**	.6330	2-1/4	9	**339-6330**
.3940	1-3/4	7	**339-3940**	.4735	2	8	**339-4735**	.6350	2-1/4	9	**339-6350**
.3950	1-3/4	7	**339-3950**	.4740	2	8	**339-4740**	.6870	2-1/4	9	**339-6870**
.3955	1-3/4	7	**339-3955**	.4750	2	8	**339-4750**	.6905	2-1/4	9	**339-6905**
.3960	1-3/4	7	**339-3960**	.4760	2	8	**339-4760**	.7070	2-1/4	9	**339-7070**
.3980	1-3/4	7	**339-3980**	.4770	2	8	**339-4770**	.7120	2-1/4	9	**339-7120**
.4000	1-3/4	7	**339-4000**	.4780	2	8	**339-4780**	.7235	2-1/2	9-1/2	**339-7235**
.4030	1-3/4	7	**339-4030**	.4800	2	8	**339-4800**	.7470	2-1/2	9-1/2	**339-7470**
.4050	1-3/4	7	**339-4050**	.4820	2	8	**339-4820**	.7495	2-1/2	9-1/2	**339-7495**
.4060	1-3/4	7	**339-4060**	.4830	2	8	**339-4830**	.7500	2-1/2	9-1/2	**339-7500**
.4070	1-3/4	7	**339-4070**	.4870	2	8	**339-4870**	.7505	2-1/2	9-1/2	**339-7505**
.4090	1-3/4	7	**339-4090**	.4890	2	8	**339-4890**	.7510	2-1/2	9-1/2	**339-7510**
.4100	1-3/4	7	**339-4100**	.4900	2	8	**339-4900**	.7520	2-1/2	9-1/2	**339-7520**
.4110	1-3/4	7	**339-4110**	.4910	2	8	**339-4910**	.7530	2-1/2	9-1/2	**339-7530**
.4120	1-3/4	7	**339-4120**	.4920	2	8	**339-4920**	.7550	2-1/2	9-1/2	**339-7550**
.4210	1-3/4	7	**339-4210**	.4930	2	8	**339-4930**	.8080	2-1/2	9-1/2	**339-8080**
.4250	1-3/4	7	**339-4250**	.4940	2	8	**339-4940**	.8115	2-5/8	10	**339-8115**
.4270	1-3/4	7	**339-4270**	.4950	2	8	**339-4950**	.8130	2-5/8	10	**339-8130**
.4280	1-3/4	7	**339-4280**	.4960	2	8	**339-4960**	.8275	2-5/8	10	**339-8275**
.4285	1-3/4	7	**339-4285**	.4970	2	8	**339-4970**	.8530	2-5/8	10	**339-8530**
.4295	1-3/4	7	**339-4295**	.4980	2	8	**339-4980**	.8745	2-5/8	10	**339-8745**
.4300	1-3/4	7	**339-4300**	.4990	2	8	**339-4990**	.8760	2-5/8	10	**339-8760**
.4310	1-3/4	7	**339-4310**	.4995	2	8	**339-4995**	.8780	2-5/8	10	**339-8780**
.4320	1-3/4	7	**339-4320**	.5005	2	8	**339-5005**	.8950	2-5/8	10	**339-8950**
.4340	1-3/4	7	**339-4340**	.5015	2	8	**339-5015**	.9595	2-3/4	10-1/2	**339-9595**
.4350	1-3/4	7	**339-4350**	.5020	2	8	**339-5020**	.9915	2-3/4	10-1/2	**339-9915**
.4355	1-3/4	7	**339-4355**	.5030	2	8	**339-5030**	.9950	2-3/4	10-1/2	**339-9950**
.4360	1-3/4	7	**339-4360**	.5040	2	8	**339-5040**	.9960	2-3/4	10-1/2	**339-9960**
.4370	1-3/4	7	**339-4370**	.5050	2	8	**339-5050**	.9970	2-3/4	10-1/2	**339-9970**
.4371	1-3/4	7	**339-4371**	.5060	2	8	**339-5060**	.9980	2-3/4	10-1/2	**339-9980**
.4373	1-3/4	7	**339-4373**	.5070	2	8	**339-5070**	.9990	2-3/4	10-1/2	**339-9990**
.4374	1-3/4	7	**339-4374**	.5080	2	8	**339-5080**	.9995	2-3/4	10-1/2	**339-9995**
.4380	1-3/4	7	**339-4380**	.5090	2	8	**339-5090**	1.0010	2-3/4	10-1/2	**339-0010**
.4385	1-3/4	7	**339-4385**	.5100	2	8	**339-5100**	1.0020	2-3/4	10-1/2	**339-0020**
.4390	1-3/4	7	**339-4390**	.5110	2	8	**339-5110**	1.0030	2-3/4	10-1/2	**339-0030**
.4400	1-3/4	7	**339-4400**	.5120	2	8	**339-5120**	1.0100	2-3/4	10-1/2	**339-0100**

Straight Shank Chucking Reamer Sets

Pieces	Description	Order No.
14	0.124-0.501" pouch	**331-1002**
25	1/8-1/2"x1/64" in Metal Case	**331-1001**
26	A to Z in Metal Case	**331-0000**
29	1/16" to 1/2" by 64ths in Metal Case	**331-1000**
60	No. 1-60 in Metal Case	**331-0200**



Carbide Tipped Chucking Reamers

C2 Grade, Straight Flute, Right Hand Cutting



- Special steel cutting tool geometry: positive radial rake (behind center).

Straight Shank

Size	Flute Length	Overall Length	Order No.	Size	Flute Length	Overall Length	Order No.	Size	Flute Length	Overall Length	Order No.	Size	Flute Length	Overall Length	Order No.
3/16"	1-1/18"	4-1/2"	**241-1012**	15/32"	1-3/4"	7"	**241-1030**	3/4"	2-1/2"	9-1/2"	**241-1048**	1-1/16"	2-3/4"	10-1/2"	**241-1068**
7/32	1-1/4	5	**241-1014**	1/2	2	8	**241-1032**	25/32	2-1/2	9-1/2	**241-1050**	1-1/8	2-7/8	11	**241-1072**
1/4	1-1/2	6	**241-1016**	17/32	2	8	**241-1034**	13/16	2-1/2	9-1/2	**241-1052**	1-3/16	2-7/8	11	**241-1076**
9/32	1-1/2	6	**241-1018**	9/16	2	8	**241-1036**	27/32	2-1/2	9-1/2	**241-1054**	1-1/4	3	11-1/2	**241-1080**
5/16	1-1/2	6	**241-1020**	19/32	2	8	**241-1038**	7/8	2-5/8	10	**241-1056**	1-5/16	3	11-1/2	**241-1084**
11/32	1-1/2	6	**241-1022**	5/8	2-1/4	9	**241-1040**	29/32	2-5/8	10	**241-1058**	1-3/8	3-1/4	12	**241-1088**
3/8	1-3/4	7	**241-1024**	21/32	2-1/4	9	**241-1042**	15/16	2-5/8	10	**241-1060**	1-7/16	3-1/4	12	**241-1092**
13/32	1-3/4	7	**241-1026**	11/16	2-1/4	9	**241-1044**	31/32	2-5/8	10	**241-1062**	1-1/2	3-1/2	12-1/2	**241-1096**
7/16	1-3/4	7	**241-1028**	23/32	2-1/4	9	**241-1046**	1	2-3/4	10-1/2	**241-1064**				

Taper Shank



Size	Flute Length	Overall Length	Shank Taper	Order No.	Size	Flute Length	Overall Length	Shank Taper	Order No.	Size	Flute Length	Overall Length	Shank Taper	Order No.
1/2"	2"	8"	MT1	**241-1132**	11/16	2-1/4	9	MT2	**241-1144**	7/8	2-5/8	10	MT2	**241-1156**
9/16	2	8	MT1	**241-1136**	3/4	2-1/2	9-1/2	MT2	**241-1148**	15/16	2-5/8	10	MT3	**241-1160**
5/8	2-1/4	9	MT2	**241-1140**	13/16	2-1/2	9-1/2	MT2	**241-1152**	1	2-3/4	10-1/2	MT3	**241-1164**

Taper Pin & Die Maker Reamers

High Speed Steel



Size	Small End Dia.	Large End Dia.	Flute Length	Overall Length	Straight Flute Order No.	Spiral Flute Order No.	Size	Small End Dia.	Large End Dia.	Flute Length	Overall Length	Straight Flute Order No.	Spiral Flute Order No.
7/0	.0497"	.0666"	13/16"	1-13/16"	**331-8200**	**331-8300**	5	.2409"	.2994"	2-13/16"	4-5/16"	**331-8222**	**331-8322**
6/0	.0611	.0806	15/16	1-15/16	**331-8202**	**331-8302**	6	.2773	.354	3-11/16	5-7/16	**331-8224**	**331-8324**
5/0	.0719	.0966	1-3/16	2-3/16	**331-8204**	**331-8304**	7	.3297	.422	4-7/16	6-5/16	**331-8226**	**331-8326**
4/0	.0869	.1142	1-5/16	2-5/16	**331-8206**	**331-8306**	8	.3971	.505	5-3/16	7-3/16	**331-8228**	**331-8328**
3/0	.1029	.1302	1-5/16	2-5/16	**331-8208**	**331-8308**	9	.4805	.6066	6-1/16	8-5/16	**331-8230**	**331-8330**
2/0	.1137	.1462	1-9/16	2-9/16	**331-8210**	**331-8310**	10	.5799	.7216	6-13/16	9-5/16	**331-8232**	**331-8332**
0	.1287	.1638	1-11/16	2-15/16	**331-8212**	**331-8312**	11	.7060	.8780	8-1/4	11-1/4	**331-8234**	**331-8334**
1	.1447	.1798	1-11/16	2-15/16	**331-8214**	**331-8314**	12	.8420	1.0500	10	13-5/8	**331-8236**	**331-8336**
2	.1605	.2008	1-15/16	3-3/16	**331-8216**	**331-8316**	13	1.0090	1.2590	12	16	**331-8238**	**331-8338**
3	.1813	.2294	2-5/16	3-11/16	**331-8218**	**331-8318**	14	1.2500	1.5420	14	18-1/4	**331-8240**	**331-8340**
4	.2071	.2604	2-9/16	4-1/16	**331-8220**	**331-8320**							

HSS Taper Pin Reamet Sets

Pieces	Description	Straight Flute Order No.	Spiral Flute Order No.
6	0-5#	**331-8250**	**331-8350**
11	0-10#	**331-8255**	**331-8355**

Brown & Sharpe Taper Finishing Reamers

High Speed Steel

- Right hand(clockwise rotation) Cutting Direction.
- Available as hand style reamers.
- Hand reamers have straight shanks and square sriving area.



B & S Taper	Small End Diameter	Large End Diameter	Shank Diameter	Flute Length	Overall Length	HSS Order No.	B & S Taper	Small End Diameter	Large End Diameter	Shank Diameter	Flute Length	Overall Length	HSS Order No.
1#	0.200"	0.320"	9/32"	2-7/8"	4-3/4"	**337-6801**	7#	0.600"	0.803"	3/4"	4-7/8"	7-1/2"	**337-6807**
2	0.250	0.380	11-32	3-1/8	5-1/8	**337-6802**	8	0.750	0.979	13/16	5-1/2	8-1/8	**337-6808**
3	0.312	0.453	13-32	3-3/8	5-1/2	**337-6803**	9	0.900	1.155	1	6-1/8	8-7/8	**337-6809**
4	0.350	0.504	6/7	3-11/16	5-7/8	**337-6804**	10	1.045	1.340	1-1/8	6-7/8	9-3/4	**337-6810**
5	0.450	0.617	6/16	4	6-3/8	**337-6805**	11	1.250	1.568	1-1/3	7-5/8	10-5/8	**337-6811**
6	0.500	0.682	5/8	4-3/8	6-7/8	**337-6806**	12	1.500	1.844	1-9/16	8-1/4	11-3/8	**337-6812**

Taper Shank Chucking Reamers

High Speed Steel, Right Hand,Spiral & Straight Flute



Fractional Sizes

Size	Flute Length	Overall Length	Shank Taper	Straight Flute Order No.	Spiral Flute Order No.	Size	Flute Length	Overall Length	Shank Taper	Straight Flute Order No.	Spiral Flute Order No.
1/4"	1-1/2"	6"	MT1	**241-3005**	**241-4005**	15/16"	2-5/8"	10"	MT3	**241-3115**	**241-4115**
9/32	1-1/2	6	MT1	**241-3010**	**241-4010**	31/32	2-5/8	10	MT3	**241-3120**	**241-4120**
5/16	1-1/2	6	MT1	**241-3015**	**241-4015**	1	2-3/4	10-1/2	MT3	**241-3125**	**241-4125**
11/32	1-1/2	6	MT1	**241-3020**	**241-4020**	1-1/32	2-3/4	10-1/2	MT3	**241-3127**	**241-4127**
3/8	1-3/4	7	MT1	**241-3025**	**241-4025**	1-1/16	2-3/4	10-1/2	MT3	**241-3130**	**241-4130**
13/32	1-3/4	7	MT1	**241-3030**	**241-4030**	1-3/32	2-3/4	10-1/2	MT3	**241-3132**	**241-4132**
7/16	1-3/4	7	MT1	**241-3035**	**241-4035**	1-1/8	2-7/8	11	MT3	**241-3135**	**241-4135**
15/32	1-3/4	7	MT1	**241-3040**	**241-4040**	1-5/32	2-7/8	11	MT3	**241-3137**	**241-4137**
1/2	2	8	MT1	**241-3045**	**241-4045**	1-3/16	2-7/8	11	MT3	**241-3140**	**241-4140**
17/32	2	8	MT1	**241-3050**	**241-4050**	1-1/4	3	11-1/2	MT4	**241-3145**	**241-4145**
9/16	2	8	MT1	**241-3055**	**241-4055**	1-9/32	3	11-1/2	MT4	**241-3147**	**241-4147**
19/32	2	8	MT1	**241-3060**	**241-4060**	1-5/16	3	11-1/2	MT4	**241-3150**	**241-4150**
5/8	2-1/4	9	MT2	**241-3065**	**241-4065**	1-3/8	3-1/4	12	MT4	**241-3155**	**241-4155**
21/32	2-1/4	9	MT2	**241-3070**	**241-4070**	1-7/16	3-1/4	12	MT4	**241-3160**	**241-4160**
11/16	2-1/4	9	MT2	**241-3075**	**241-4075**	1-1/2	3-1/2	12-1/2	MT4	**241-3165**	**241-4165**
23/32	2-1/4	9	MT2	**241-3080**	**241-4080**	1-9/16	3-1/2	12-1/2	MT4	**241-3170**	**241-4170**
3/4	2-1/2	9-1/2	MT2	**241-3085**	**241-4085**	1-5/8	3-1/2	13	MT4	**241-3175**	**241-4175**
25/32	2-1/2	9-1/2	MT2	**241-3090**	**241-4090**	1-11/16	4	13-1/2	MT4	**241-3180**	**241-4180**
13/16	2-1/2	9-1/2	MT2	**241-3095**	**241-4095**	1-3/4	4	13-1/2	MT4	**241-3185**	**241-4185**
27/32	2-1/2	9-1/2	MT2	**241-3100**	**241-4100**	1-7/8	4	14	MT4	**241-3190**	**241-4190**
7/8	2-5/8	10	MT2	**241-3105**	**241-4105**	2	4	14-1/2	MT4	**241-3195**	**241-4195**
29/32	2-5/8	10	MT2	**241-3110**	**241-4110**						

Metric Taper Shank Chucking Reamers

DIN208/A, High Speed Steel, Straight Flute



Size (mm)	Flute Length (mm)	Overall Length (mm)	Shank Taper	Order No.	Size (mm)	Flute Length (mm)	Overall Length (mm)	Shank Taper	Order No.
5	23	133	MT1	**337-1050**	23	66	241	MT2	**337-1230**
6	26	138	MT1	**337-1060**	24	68	268	MT3	**337-1240**
7	31	150	MT1	**337-1070**	25	68	268	MT3	**337-1250**
8	33	156	MT1	**337-1080**	26	70	273	MT3	**337-1260**
9	36	162	MT1	**337-1090**	27	71	277	MT3	**337-1270**
10	38	168	MT1	**337-1100**	28	71	277	MT3	**337-1280**
11	41	175	MT1	**337-1110**	29	73	281	MT3	**337-1290**
12	44	185	MT1	**337-1120**	30	73	281	MT3	**337-1300**
13	44	182	MT1	**337-1130**	31	75	285	MT3	**337-1310**
14	47	189	MT1	**337-1140**	32	77	317	MT4	**337-1320**
15	50	204	MT2	**337-1150**	33	77	317	MT4	**337-1330**
16	52	210	MT2	**337-1160**	34	78	321	MT4	**337-1340**
17	54	214	MT2	**337-1170**	35	78	321	MT4	**337-1350**
18	56	219	MT2	**337-1180**	36	79	325	MT4	**337-1360**
19	58	223	MT2	**337-1190**	37	79	325	MT4	**337-1370**
20	60	228	MT2	**337-1200**	38	81	329	MT4	**337-1380**
21	62	232	MT2	**337-1210**	40	81	329	MT4	**337-1400**
22	64	237	MT2	**337-1220**					

Expansion Chucking Reamers

High Speed Steel, Straight Flute

- An economical, general purpose high production reamer designed to maintain initial size by compensating for wear on the cutting edge.
- Expansion feature allows resharpening with retaining the original size.
- Expand by tightening the end adjusting screw and regrind to original size.



Straight Shank

Size	Shank Dia.	Flute Length	Overall Length	Straight Shank Order No.
3/8"	5/16"	3/4"	7"	**331-9202**
13/32	5/16	3/4	7	**331-9204**
7/16	3/8	7/8	7	**331-9206**
15/32	3/8	7/8	7	**331-9208**
1/2	7/16	1	8	**331-9210**
17/32	7/16	1	8	**331-9212**
9/16	7/16	1-1/8	8	**331-9214**
19/32	7/16	1-1/8	8	**331-9216**
5/8	9/16	1-1/4	9	**331-9218**
21/32	9/16	1-1/4	9	**331-9220**
11/16	9/16	1-1/4	9	**331-9222**
23/32	9/16	1-1/4	9	**331-9224**
3/4	5/8	1-3/8	9-1/2	**331-9226**
25/32	5/8	1-3/8	9-1/2	**331-9228**
13/16	5/8	1-3/8	9-1/2	**331-9230**
27/32	5/8	1-3/8	9-1/2	**331-9232**
7/8	3/4	1-1/2	10	**331-9234**
29/32	3/4	1-1/2	10	**331-9236**
15/16	3/4	1-1/2	10	**331-9238**
31/32	3/4	1-1/2	10	**331-9240**
1	7/8	1-5/8	10-1/2	**331-9242**
1-1/32	7/8	1-5/8	10-1/2	**331-9244**
1-1/16	7/8	1-5/8	10-1/2	**331-9246**
1-3/32	7/8	1-5/8	10-1/2	**331-9248**
1-1/8	7/8	1-3/4	11	**331-9250**
1-5/32	7/8	1-3/4	11	**331-9252**
1-3/16	1	1-3/4	11	**331-9254**
1-7/32	1	1-3/4	11	**331-9256**
1-1/4	1	1-7/8	11-1/2	**331-9258**
1-5/16	1	1-7/8	11-1/2	**331-9260**
1-3/8	1	2	12	**331-9262**
1-7/16	1-1/4	2	12	**331-9264**
1-1/2	1-1/4	2-1/8	12-1/2	**331-9266**
1-9/16	1-1/4	2-1/8	12-1/2	**331-9268**
1-5/8	1-1/4	2-1/4	13	**331-9270**
1-11/16	1-1/4	2-1/4	13	**331-9272**
1-3/4	1-1/4	2-3/8	13-1/2	**331-9274**
1-13/16	1-1/2	2-3/8	13-1/2	**331-9276**
1-7/8	1-1/2	2-1/2	14	**331-9278**
1-15/16	1-1/2	2-1/2	14	**331-9280**
2	1-1/2	2-1/2	14	**331-9282**
2-1/8	1-1/2	2-3/4	14-1/2	**331-9284**
2-1/4	1-3/4	2-3/4	14-1/2	**331-9286**
2-1/2	1-3/4	3	15	**331-9288**



Taper Shank

Size	Flue Length	Overall Length	Shank Taper	Taper Shank Order No.
3/8"	3/4"	7"	MT1	**331-9302**
13/32	3/4	7	MT1	**331-9304**
7/16	7/8	7	MT1	**331-9306**
15/32	7/8	7	MT1	**331-9308**
1/2	1	8	MT1	**331-9310**
17/32	1	8	MT1	**331-9312**
9/16	1-1/8	8	MT1	**331-9314**
19/32	1-1/8	8	MT1	**331-9316**
5/8	1-1/4	9	MT2	**331-9318**
21/32	1-1/4	9	MT2	**331-9320**
11/16	1-1/4	9	MT2	**331-9322**
23/32	1-1/4	9	MT2	**331-9324**
3/4	1-3/8	9-1/2	MT2	**331-9326**
25/32	1-3/8	9-1/2	MT2	**331-9328**
13/16	1-3/8	9-1/2	MT2	**331-9330**
27/32	1-3/8	9-1/2	MT2	**331-9332**
7/8	1-1/2	10	MT2	**331-9334**
29/32	1-1/2	10	MT2	**331-9336**
15/16	1-1/2	10	MT3	**331-9338**
31/32	1-1/2	10	MT3	**331-9340**
1	1-5/8	10-1/2	MT3	**331-9342**
1-1/32	1-5/8	10-1/2	MT3	**331-9344**
1-1/16	1-5/8	10-1/2	MT3	**331-9346**
1-3/32	1-5/8	10-1/2	MT3	**331-9348**
1-1/8	1-3/4	11	MT3	**331-9350**
1-5/32	1-3/4	11	MT3	**331-9352**
1-3/16	1-3/4	11	MT3	**331-9354**
1-7/32	1-3/4	11	MT3	**331-9356**
1-1/4	1-7/8	11-1/2	MT4	**331-9358**
1-5/16	1-7/8	11-1/2	MT4	**331-9360**
1-3/8	2	12	MT4	**331-9362**
1-7/16	2	12	MT4	**331-9364**
1-1/2	2-1/8	12-1/2	MT4	**331-9366**
1-5/8	2-1/4	13	MT4	**331-9370**
1-3/4	2-3/8	13-1/2	MT5	**331-9374**
1-7/8	2-1/2	14	MT5	**331-9378**
2	2-1/2	14	MT5	**331-9382**
2-1/8	2-3/4	14-1/2	MT5	**331-9384**
2-1/4	2-3/4	14-1/2	MT5	**331-9385**
2-3/8	3	15	MT5	**331-9386**
2-1/2	3	15	MT5	**331-9388**

Morse Taper Reamers

High Speed Steel

- Each morse taper reamer set consists of one finishing and one roughing reamer.



Hand Use , Straight Shank

Size	Dia. of Small End	Dia. of Large End	Flute Length	Overall Length	Roughing Reamer Order No.	Finishing Reamer Order No.	2 Pcs/set Order No.
MT0	.2503"	.3674"	2-1/4"	3-3/4"	**337-6100**	**337-6200**	**337-6500**
MT1	.3674	.5170	3	5	**337-6110**	**337-6210**	**337-6510**
MT2	.5696	.7441	3-1/2	6	**337-6120**	**337-6220**	**337-6520**
MT3	.7448	.9881	4-1/4	7-1/4	**337-6130**	**337-6230**	**337-6530**
MT4	1.0167	1.2893	5-1/4	8-1/2	**337-6140**	**337-6240**	**337-6540**
MT5	1.4717	1.8005	6-1/4	9-3/4	**337-6150**	**337-6250**	**337-6550**
MT6	2.1119	2.5550	8-1/2	12-1/4	**337-6160**	**337-6260**	**337-6560**



Machine Use, Taper Shank

Size	Dia. of Small End	Dia. of Large End	Flute Length	Overall Length	Roughing Reamer Order No.	Finishing Reamer Order No.	2 Pcs/set Order No.
MT0	.2503"	.3674"	2-1/4"	3-3/4"	**337-6300**	**337-6400**	**337-6600**
MT1	.3674	.5170	3	5	**337-6310**	**337-6410**	**337-6610**
MT2	.5696	.7441	3-1/2	6	**337-6320**	**337-6420**	**337-6620**
MT3	.7448	.9881	4-1/4	7-1/4	**337-6330**	**337-6430**	**337-6630**
MT4	1.0167	1.2893	5-1/4	8-1/2	**337-6340**	**337-6440**	**337-6640**
MT5	1.4717	1.8005	6-1/4	9-3/4	**337-6350**	**337-6450**	**337-6650**
MT6	2.1119	2.5550	8-1/2	12-1/4	**337-6360**	**337-6460**	**337-6660**

Taper Shank Bridge Reamers

High Speed Steel

- Featured two flute type: straight flute and spiral flute.
- Spiral flute reamers with left hand spiral flute and right hand cut.



Size	Flute Length	Overall Length	Shank Taper	Straight Flute Order No.	Spiral Flute Order No.	Size	Flute Length	Overall Length	Shank Taper	Straight Flute Order No.	Spiral Flute Order No.
17/64"	2-3/4"	5-1/2"	MT1	**331-9002**	**331-9102**	15/16"	7-3/8"	12"	MT3	**331-9046**	**331-9146**
19/64	2	5-1/4	MT1	**331-9004**	**331-9104**	1	7-3/8	12	MT3	**331-9048**	**331-9148**
5/16	4-3/8	8-1/4	MT1	**331-9006**	**331-9106**	1-1/32	7-1/2	12-1/4	MT3	**331-9050**	**331-9150**
11/32	4	7-1/4	MT1	**331-9008**	**331-9108**	1-1/16	7-3/8	12	MT3	**331-9052**	**331-9152**
3/8	4-3/8	8-1/4	MT2	**331-9010**	**331-9110**	1-3/32	6-13/16	11-1/2	MT3	**331-9054**	**331-9154**
13/32	4-3/8	8-1/4	MT2	**331-9012**	**331-9112**	1-1/8	7-3/8	12	MT3	**331-9056**	**331-9156**
27/64	4-3/8	8-1/4	MT2	**331-9014**	**331-9114**	1-5/32	7-1/2	11-1/2	MT3	**331-9058**	**331-9158**
7/16	4-3/8	8-1/4	MT2	**331-9016**	**331-9116**	1-3/16	7-3/8	12	MT3	**331-9060**	**331-9160**
15/32	5-1/8	9	MT2	**331-9018**	**331-9118**	1-1/4	7-3/8	13	MT4	**331-9062**	**331-9162**
1/2	5-1/8	9	MT2	**331-9020**	**331-9120**	1-5/16	7-3/8	13	MT4	**331-9064**	**331-9164**
17/32	5-1/8	9	MT2	**331-9022**	**331-9122**	1-3/8	7-3/8	13	MT4	**331-9066**	**331-9166**
9/16	5-1/8	9	MT2	**331-9024**	**331-9124**	1-7/16	7-3/8	13	MT4	**331-9068**	**331-9168**
19/32	6-1/8	10-7/8	MT2	**331-9026**	**331-9126**	1-15/32	6-7/8	13	MT4	**331-9070**	**331-9170**
5/8	6-1/8	10	MT2	**331-9028**	**331-9128**	1-1/2	7-3/8	13	MT4	**331-9072**	**331-9172**
21/32	7	12	MT2	**331-9030**	**331-9130**	1-9/16	7-3/8	13	MT4	**331-9074**	**331-9174**
11/16	7-1/8	11-3/4	MT2	**331-9032**	**331-9132**	1-5/8	7-3/8	13	MT4	**331-9076**	**331-9176**
11/16	7-1/8	11-3/4	MT3	**331-9034**	**331-9134**	1-11/16	7-3/8	13	MT4	**331-9078**	**331-9178**
23/32	7-1/8	11-3/4	MT3	**331-9036**	**331-9136**	1-3/4	7-3/8	13	MT4	**331-9080**	**331-9180**
3/4	7-3/8	12	MT3	**331-9038**	**331-9138**	1-13/16	7-3/8	13	MT4	**331-9082**	**331-9182**
25/32	7-3/8	12	MT3	**331-9040**	**331-9140**	1-7/8	7-3/8	13	MT4	**331-9084**	**331-9184**
13/16	7-3/8	12	MT3	**331-9042**	**331-9142**	1-15/16	7-3/8	13	MT4	**331-9086**	**331-9186**
7/8	7-3/8	12	MT3	**331-9044**	**331-9144**	2	7-3/8	13	MT4	**331-9088**	**331-9188**

Metric Taper Shank Bridge Reamers

High Speed Steel



Size (mm)	Flute Length (mm)	Overall Length (mm)	Shank Taper	Straight Flute Order No.	Spiral Flute Order No.	Size (mm)	Flute Length (mm)	Overall Length (mm)	Shank Taper	Straight Flute Order No.	Spiral Flute Order No.
6.4	75	151	MT1	**331-9431**	**331-9631**	23	165	281	MT3	**331-9488**	**331-9688**
7.4	80	156	MT1	**331-9434**	**331-9634**	24	180	296	MT3	**331-9491**	**331-9691**
8	85	161	MT1	**331-9437**	**331-9637**	25	180	296	MT3	**331-9494**	**331-9694**
8.4	85	161	MT1	**331-9440**	**331-9640**	26	180	296	MT3	**331-9497**	**331-9697**
9	90	166	MT1	**331-9443**	**331-9643**	27	195	311	MT3	**331-9500**	**331-9700**
9.5	90	166	MT1	**331-9446**	**331-9646**	28	195	311	MT3	**331-9503**	**331-9703**
10	95	171	MT1	**331-9449**	**331-9649**	29	195	311	MT3	**331-9506**	**331-9706**
11	100	176	MT1	**331-9452**	**331-9652**	30	195	311	MT3	**331-9509**	**331-9709**
12	105	199	MT2	**331-9455**	**331-9655**	31	210	326	MT3	**331-9512**	**331-9712**
13	105	199	MT2	**331-9458**	**331-9658**	32	210	354	MT4	**331-9515**	**331-9715**
14	115	209	MT2	**331-9461**	**331-9661**	33	210	354	MT4	**331-9518**	**331-9718**
15	125	219	MT2	**331-9464**	**331-9664**	34	220	364	MT4	**331-9521**	**331-9721**
16	135	229	MT2	**331-9467**	**331-9667**	35	220	364	MT4	**331-9524**	**331-9724**
17	135	251	MT3	**331-9470**	**331-9670**	36	220	364	MT4	**331-9527**	**331-9727**
18	145	261	MT3	**331-9473**	**331-9673**	37	220	364	MT4	**331-9530**	**331-9730**
19	145	261	MT3	**331-9476**	**331-9676**	38	230	374	MT4	**331-9533**	**331-9733**
20	155	271	MT3	**331-9479**	**331-9679**	39	230	374	MT4	**331-9536**	**331-9736**
21	155	271	MT3	**331-9482**	**331-9682**	40	230	374	MT4	**331-9539**	**331-9739**
22	165	281	MT3	**331-9485**	**331-9685**						

Inch Hand Reamers

High Speed Steel

- Straight flute for most jobs.
- Spiral flute for holes with keyways or other interruptions.


Spiral Flute


Straight Flute

Left Hand Spiral with Right Hand Cut , Straight Flute, Staight Shank

Size	Flute Length	Overall Length	Straight Flute Order No.	Spiral Flute Order No.	Size	Flute Length	Overall Length	Straight Flute Order No.	Spiral Flute Order No.
1/8"	1-1/2"	3"	**337-0108**	**337-0308**	21/32"	3-11/16"	7-3/8"	**337-0142**	**337-0342**
9/64	1-5/8	3-1/4	**337-0109**	**337-0309**	11/16	3-7/8	7-3/4	**337-0144**	**337-0344**
5/32	1-5/8	3-1/4	**337-0110**	**337-0310**	23/32	4-1/16	8-1/8	**337-0146**	**337-0346**
11/64	1-3/4	3-1/2	**337-0111**	**337-0311**	3/4	4-3/16	8-3/8	**337-0148**	**337-0348**
3/16	1-3/4	3-1/2	**337-0112**	**337-0312**	25/32	4-3/8	8-3/4	**337-0150**	**337-0350**
7/32	1-7/8	3-3/4	**337-0114**	**337-0314**	13/16	4-9/16	9-1/8	**337-0152**	**337-0352**
1/4	2	4	**337-0116**	**337-0316**	27/32	4-11/16	9-3/8	**337-0154**	**337-0354**
9/32	2-1/8	4-1/4	**337-0118**	**337-0318**	7/8	4-7/8	9-3/4	**337-0156**	**337-0356**
5/16	2-1/4	4-1/2	**337-0120**	**337-0320**	29/32	5	10	**337-0158**	**337-0358**
11/32	2-3/8	4-3/4	**337-0122**	**337-0322**	15/16	5-1/8	10-1/4	**337-0160**	**337-0360**
3/8	2-1/2	5	**337-0124**	**337-0324**	31/32	5-5/16	10-5/8	**337-0162**	**337-0362**
25/64	2-1/2	4-3/4	**337-0125**	**337-0325**	1	5-7/16	10-7/8	**337-0164**	**337-0364**
13/32	2-5/8	5-1/4	**337-0126**	**337-0326**	1-1/16	5-5/8	11-1/4	**337-0168**	**337-0368**
7/16	2-3/4	5-1/2	**337-0128**	**337-0328**	1-1/8	5-13/16	11-5/8	**337-0172**	**337-0372**
15/32	2-7/8	5-3/4	**337-0130**	**337-0330**	1-3/16	6	12	**337-0176**	**337-0376**
31/64	3	6	**337-0131**	**337-0331**	1-1/4	6-1/8	12-1/4	**337-0180**	**337-0380**
1/2	3	6	**337-0132**	**337-0332**	1-5/16	6-1/4	12-1/2	**337-0184**	**337-0384**
17/32	3-1/8	6-1/4	**337-0134**	**337-0334**	1-3/8	6-5/16	12-5/8	**337-0188**	**337-0388**
9/16	3-1/4	6-1/2	**337-0136**	**337-0336**	1-7/16	6-7/16	12-7/8	**337-0192**	**337-0392**
19/32	3-3/8	6-3/4	**337-0138**	**337-0338**	1-1/2	6-1/2	13	**337-0196**	**337-0396**
5/8	3-1/2	7	**337-0140**	**337-0340**					

Metric Hand Reamers

DIN 206/A & 206/B


Spiral


Straight

High Speed Steel, Right Hand, Spiral & Straight Flute, Straight Shank

Size (mm)	Flute Length (mm)	Overall Length (mm)	Straight Flute DIN206/A Order No.	Spiral Flute DIN206/B Order No.	Size (mm)	Flute Length (mm)	Overall Length (mm)	Straight Flute DIN206/A Order No.	Spiral Flute DIN206/B
3.0	31	62	**337-2030**	**337-3030**	11.5	71	142	**337-2115**	**337-3115**
3.2	33	66	**337-2032**	**337-3032**	12.0	76	152	**337-2120**	**337-3120**
3.5	35	71	**337-2035**	**337-3035**	12.5	76	152	**337-2125**	**337-3125**
4.0	38	76	**337-2040**	**337-3040**	13.0	76	152	**337-2130**	**337-3130**
4.5	41	81	**337-2045**	**337-3045**	13.5	81	163	**337-2135**	**337-3135**
5.0	44	87	**337-2050**	**337-3050**	14.0	81	163	**337-2140**	**337-3140**
5.5	47	93	**337-2055**	**337-3055**	14.5	81	163	**337-2145**	**337-3145**
6.0	47	93	**337-2060**	**337-3060**	15.0	81	163	**337-2150**	**337-3150**
6.5	50	100	**337-2065**	**337-3065**	15.5	87	175	**337-2155**	**337-3155**
7.0	54	107	**337-2070**	**337-3070**	16.0	87	175	**337-2160**	**337-3160**
7.5	54	107	**337-2075**	**337-3075**	16.5	87	175	**337-2165**	**337-3165**
8.0	58	115	**337-2080**	**337-3080**	17.0	87	175	**337-2170**	**337-3170**
8.5	58	115	**337-2085**	**337-3085**	17.5	93	188	**337-2175**	**337-3175**
9.0	62	124	**337-2090**	**337-3090**	18.0	93	188	**337-2180**	**337-3180**
9.5	62	124	**337-2095**	**337-3095**	18.5	93	188	**337-2185**	**337-3185**
10.0	66	133	**337-2100**	**337-3100**	19.0	93	188	**337-2190**	**337-3190**
10.5	66	133	**337-2105**	**337-3105**	19.5	100	201	**337-2195**	**337-3195**
11.0	71	142	**337-2110**	**337-3110**	20.0	100	201	**337-2200**	**337-3200**

Hex Shank Taper Car Reamers

High Speed Stee, 5 Flute, Left Hand Spiral, Right Hand Cut



Size	Flute Length	Overall Length	Hex Shank Size	Order No.
11/16"	4-1/2"	6-1/2"	1-1/16"	**337-5444**
13/16	5	7	1-1/4	**337-5452**
15/16	5	7	1-7/16	**337-5460**
1-1/16	5	7	1-5/8	**337-5468**

Taper Car Reamers



Taper Shank

Size	Flute Length	Overall Length	Shank Taper	Order No.
5/16"	2-3/4"	5-11/16"	MT1	**337-5020**
3/8	2-3/4	5-11/16	MT1	**337-5024**
7/16	3-1/2	6-15/16	MT2	**337-5028**
1/2	4	7-9/16	MT2	**337-5032**
9/16	4	7-9/16	MT2	**337-5036**
5/8	4-1/2	8-1/16	MT2	**337-5040**
11/16	4-1/2	8-13/16	MT3	**337-5044**
3/4	5	9-1/2	MT3	**337-5048**
13/16	5	9-1/2	MT3	**337-5052**
15/16	5	9-1/2	MT3	**337-5056**
1	5	9-1/2	MT3	**337-5064**
1-1/16	5	9-1/2	MT3	**337-5068**



3 Equal-Flat Straight Shank

Size	Flute Length	Overall Length	Shank Dia.	Shank Length	Order No.
5/16"	2-3/4"	4-5/8"	5/16"	1-1/2"	**337-5220**
3/8	2-3/4	4-5/8	3/8	1-1/2	**337-5224**
7/16	3-1/2	5-3/8	7/16	1-1/2	**337-5228**
1/2	4	5-7/8	1/2	1-1/2	**337-5232**
9/16	4	5-7/8	1/2	1-1/2	**337-5236**
5/8	4-1/2	6-3/8	1/2	1-1/2	**337-5240**
11/16	4-1/2	6-3/8	1/2	1-1/2	**337-5244**
3/4	5	6-7/8	1/2	1-1/2	**337-5248**
13/16	5	6-7/8	1/2	1-1/2	**337-5252**
7/8	5	6-7/8	1/2	1-1/2	**337-5256**
15/16	5	6-7/8	1/2	1-1/2	**337-5260**
1	5	6-7/8	1/2	1-1/2	**337-5264**
1-1/16	5	6-7/8	1/2	1-1/2	**337-5268**

Expansion Hand Reamers

High Speed Steel, Right Hand

- Straight flute for most jobs.
- Spiral flute for holes with keyways or other interruptions.

Expansion limits:

1/4" -15/32"	.006"
1/2" - 31/32"	.010"
1" - 1-1/2"	.012"
1-1/2"-2"	.015"



Straight



Spiral

Size	Flute Length	Overall Length	No. of Flute	Straight Flute Order No.	Spiral Flute Order No.	Size	Flute Length	Overall Length	No. of Flute	Straight Flute Order No.	Spiral Flute Order No.
1/4"	1-7/16"	3-7/8"	6"	**349-1016**	**349-3016**	27/32"	3-1/2"	8"	8"	**349-1054**	**349-3054**
9/32	1-3/4	4	6	**349-1018**	**349-3018**	7/8	4	9	8	**349-1056**	**349-3056**
5/16	1-3/4	4	6	**349-1020**	**349-3020**	29/32	4	9	8	**349-1058**	**349-3058**
3/8	2	5	6	**349-1024**	**349-3024**	15/16	4	9	8	**349-1060**	**349-3060**
13/32	2	5	6	**349-1026**	**349-3026**	31/32	4	9	8	**349-1062**	**349-3062**
7/16	2	5	6	**349-1028**	**349-3028**	1	4-1/2	10	8	**349-1064**	**349-3064**
15/32	2	5	6	**349-1030**	**349-3030**	1-1/16	4-1/2	10	8	**349-1068**	**349-3068**
1/2	2	5-1/2	6	**349-1032**	**349-3032**	1-1/8	4-3/4	10-1/2	8	**349-1072**	**349-3072**
17/32	2	5-1/2	6	**349-1034**	**349-3034**	1-3/16	4-3/4	10-1/2	8	**349-1076**	**349-3076**
9/16	2-1/2	6	6	**349-1036**	**349-3036**	1-1/4	5	11	8	**349-1080**	**349-3080**
19/32	2-1/2	6	6	**349-1038**	**349-3038**	1-5/16	5	11	10	**349-1084**	**349-3084**
5/8	3	7	6	**349-1040**	**349-3040**	1-3/8	5-1/4	11-1/2	10	**349-1088**	**349-3088**
21/32	3	7	6	**349-1042**	**349-3042**	1-7/16	5-1/4	11-1/2	10	**349-1092**	**349-3092**
11/16	3	7	6	**349-1044**	**349-3044**	1-1/2	5-1/2	12	10	**349-1096**	**349-3096**
23/32	3	7	6	**349-1046**	**349-3046**	1-3/4	5-1/2	12-3/8	12	**349-1112**	**349-3112**
3/4	3-1/2	8	8	**349-1048**	**349-3048**	1-7/8	5-1/2	12-3/8	12	**349-1120**	**349-3120**
25/32	3-1/2	8	8	**349-1050**	**349-3050**	2	5-1/2	13-1/8	12	**349-1128**	**349-3128**
13/16	3-1/2	8	8	**349-1052**	**349-3052**						

Metric Expansion Hand Reamers

DIN859, High Speed Steel, Spiral Flute



Size (mm)	Flute Length (mm)	Total Length (mm)	Square Size (mm)	No. of Flute	Order No.	Size (mm)	Flute Length (mm)	Total Length (mm)	Square Size (mm)	No. of Flute	Order No.
6	47	93	7	6	**349-5006**	17	87	175	16	9	**349-5017**
7	54	107	8	9	**349-5007**	18	93	188	18	9	**349-5018**
8	58	115	9	9	**349-5008**	19	93	188	18	9	**349-5019**
9	62	124	10	9	**349-5009**	20	100	201	20	12	**349-5020**
10	66	133	11	9	**349-5010**	21	100	201	20	12	**349-5021**
11	71	142	12	9	**349-5011**	22	107	201	22	12	**349-5022**
12	76	152	13	9	**349-5012**	23	107	201	22	12	**349-5023**
13	76	152	13	9	**349-5013**	24	115	231	24	12	**349-5024**
14	81	163	14	9	**349-5014**	25	115	231	24	12	**349-5025**
15	81	163	14	9	**349-5015**	30	124	247	26	12	**349-5030**
16	87	175	16	9	**349-5016**						

Jobber Reamers

High Speed Steel, Taper Shank, Straight Flute

Longer flute length than regular chucking reamer for using on jobs where a long er flute machine reamer needed



Size	Flute Length	Overall Length	Shank Taper	Order No.	Size	Flute Length	Overall Length	Shank Taper	Order No.
1/4"	2"	5-3/16"	1	**337-4016**	3/4"	4-3/16"	8-3/8"	2	**337-4048**
9/32	2	5-3/16	1	**337-4018**	25/32	4-3/16	8-3/8	2	**337-4050**
5/16	2-1/4	5-1/2	1	**337-4020**	13/16	4-9/16	8-13/16	2	**337-4052**
11/32	2-1/4	5-1/2	1	**337-4022**	27/32	4-7/8	9-3/16	2	**337-4054**
3/8	2-1/2	5-13/16	1	**337-4024**	7/8	4-7/8	9-3/16	2	**337-4056**
13/32	2-1/2	5-13/16	1	**337-4026**	15/16	5-1/8	10	3	**337-4060**
7/16	2-3/4	6-1/8	1	**337-4028**	1	5-7/16	10-3/8	3	**337-4064**
15/32	2-3/4	6-1/8	1	**337-4030**	1-1/16	5-5/8	10-5/8	3	**337-4068**
1/2	3	6-7/16	1	**337-4032**	1-1/8	5-13/16	10-7/8	3	**337-4072**
17/32	3	6-7/16	1	**337-4034**	1-3/16	6	11-1/8	3	**337-4076**
9/16	3-1/4	6-3/4	1	**337-4036**	1-1/4	6-1/8	12-9/16	4	**337-4080**
19/32	3-1/4	6-3/4	1	**337-4038**	1-5/16	6-1/4	12-11/16	4	**337-4084**
5/8	3-1/2	7-9/16	2	**337-4040**	1-3/8	6-5/16	12-13/16	4	**337-4088**
21/32	3-1/2	7-9/16	2	**337-4042**	1-7/16	6-7/16	13	4	**337-4092**
11/16	3-7/8	8	2	**337-4044**	1-1/2	6-1/2	13-1/8	4	**337-4096**
23/32	3-7/8	8	2	**337-4046**					

Adjustable Blade Reamers

High Speed Steel

- Reamer sizes can be achieved by loosening or tightening two adjustable nuts.
- Featured replaceable and regroundable reamer blades.



Size Range	Size	Overall Length	Order No.	Size Range	Size	Overall Length	Order No.
1/4 to 9/32"	8/A	3-1/2"	**337-1601**	23/32 to 25/32"	E	7-1/4"	**337-1612**
9/32 to 5/16	7/A	3-3/4	**337-1602**	25/32 to 27/32	F	7-3/4	**337-1613**
5/16 to 11/32	6/A	4	**337-1603**	27/32 to 15/16	G	8-1/4	**337-1614**
11/32 to 3/8	5/A	4-1/4	**337-1604**	15/16 to 1-1/16	H	8-3/4	**337-1615**
3/8 to 13/32	4/A	4-1/2	**337-1605**	1-1/16 to 1-3/16	I	10	**337-1616**
13/32 to 7/16	3/A	4-3/4	**337-1606**	1-3/16 to 1-11/32	J	11	**337-1617**
7/16 to 15/32	2/A	5	**337-1607**	1-11/32 to 1-1/2	K	12	**337-1618**
15/32 to 17/32	A	5-1/4	**337-1608**	1-1/2 to 1-13/16	L	13	**337-1619**
17/32 to 19/32	B	5-3/4	**337-1609**	1-13/16to 2-7/32	M	15	**337-1620**
19/32 to 21/32	C	6-1/4	**337-1610**	2-7/32 to 2-3/4	N	17	**337-1621**
21/32 to 23/32	D	6-3/4	**337-1611**	2-3/4 to 3-11/32	O	19	**337-1622**

Metric Adjustable Blade Reamers

High Speed Steel



Size Range (mm)	Flute Length (mm)	Overall Length (mm)	Order No.	Size Range (mm)	Flute Length (mm)	Overall Length (mm)	Order No.
6.50 to 7. 00	35	85	**337-1510**	19. 00 to 21. 00	60	180	**337-1543**
7. 00 to 7.75	35	90	**337-1513**	21. 00 to 23. 00	65	195	**337-1546**
7.75 to 8.50	38	100	**337-1516**	23. 00 to 26. 00	72	215	**337-1549**
9.25 to 10. 00	38	115	**337-1519**	26. 00 to 29.50	80	240	**337-1552**
10. 00 to 10.75	38	125	**337-1522**	29.50 to 33.50	85	270	**337-1555**
10.75 to 11.75	38	130	**337-1525**	33.50 to 38. 00	95	310	**337-1558**
11.75 to 12.75	44	135	**337-1528**	38. 00 to 44. 00	105	350	**337-1561**
12.75 to 13.75	48	145	**337-1531**	44. 00 to 54. 00	120	400	**337-1564**
13.75 to 15.25	52	150	**337-1534**	54. 00 to 64. 00	120	460	**337-1567**
15.25 to 17. 00	55	165	**337-1537**	64. 00 to 74. 00	135	510	**337-1570**
17. 00 to 19. 00	60	170	**337-1540**	74. 00 to 84. 00	135	510	**337-1573**

Shell Reamers

High Speed Steel, Right Hand

Designed as a sizing or finishing reamer , can be held on an arbor which complete with driving lugs

O.D.Tolerance:

3/4" - 1"	+ .0005"	- .0001"
Over 1"	+ .0006"	- .0002"



Size	Overall Length	Hole Diameter	No. of Flutes	Fitting Arbor No.	Straight Flute Order No.	Spiral Flute Order No.	Size	Overall Length	Hole Diameter	No. of Flutes	Fitting Arbor No.	Straight Flute Order No.	Spiral Flute Order No.
3/4"	2-1/4"	3/8"	10	4	**337-7048**	**337-8048**	2-7/16"	3-3/4"	1-1/4"	14	9	**337-7156**	**337-8156**
13/16	2-1/2	1/2	10	5	**337-7052**	**337-8052**	2-1/2	3-3/4	1-1/4	14	9	**337-7160**	**337-8160**
7/8	2-1/2	1/2	10	5	**337-7056**	**337-8056**	2-9/16	4	1-1/2	16	10	**337-7164**	**337-8164**
15/16	2-1/2	1/2	10	5	**337-7060**	**337-8060**	2-5/8	4	1-1/2	16	10	**337-7168**	**337-8168**
1	2-1/2	1/2	10	5	**337-7064**	**337-8064**	2-11/16	4	1-1/2	16	10	**337-7172**	**337-8172**
1-1/16	2-3/4	5/8	10	6	**337-7068**	**337-8068**	2-3/4	4	1-1/2	16	10	**337-7176**	**337-8176**
1-1/8	2-3/4	5/8	10	6	**337-7072**	**337-8072**	2-13/16	4	1-1/2	16	10	**337-7180**	**337-8180**
1-3/16	2-3/4	5/8	10	6	**337-7076**	**337-8076**	2-7/8	4	1-1/2	16	10	**337-7184**	**337-8184**
1-1/4	2-3/4	5/8	12	6	**337-7080**	**337-8080**	2-15/16	4	1-1/2	16	10	**337-7188**	**337-8188**
1-5/16	3	3/4	12	7	**337-7084**	**337-8084**	3	4	1-1/2	16	10	**337-7192**	**337-8192**
1-3/8	3	3/4	12	7	**337-7088**	**337-8088**	3-1/16	4-1/2	1-3/4	18	11	**337-7196**	**337-8196**
1-7/16	3	3/4	12	7	**337-7092**	**337-8092**	3-1/8	4-1/2	1-3/4	18	11	**337-7200**	**337-8200**
1-1/2	3	3/4	12	7	**337-7096**	**337-8096**	3-3/16	4-1/2	1-3/4	18	11	**337-7204**	**337-8204**
1-9/16	3	3/4	12	7	**337-7100**	**337-8100**	3-1/4	4-1/2	1-3/4	18	11	**337-7208**	**337-8208**
1-5/8	3	3/4	12	7	**337-7104**	**337-8104**	3-5/16	4-1/2	1-3/4	18	11	**337-7212**	**337-8212**
1-11/16	3-1/2	1	12	8	**337-7108**	**337-8108**	3-3/8	4-1/2	1-3/4	18	11	**337-7216**	**337-8216**
1-3/4	3-1/2	1	12	8	**337-7112**	**337-8112**	3-7/16	4-1/2	1-3/4	18	11	**337-7220**	**337-8220**
1-13/16	3-1/2	1	12	8	**337-7116**	**337-8116**	3-1/2	4-1/2	1-3/4	18	11	**337-7224**	**337-8224**
1-7/8	3-1/2	1	12	8	**337-7120**	**337-8120**	3-9/16	5	2	20	12	**337-7228**	**337-8228**
1-15/16	3-1/2	1	12	8	**337-7124**	**337-8124**	3-5/8	5	2	20	12	**337-7232**	**337-8232**
2	3-1/2	1	14	8	**337-7128**	**337-8128**	3-11/16	5	2	20	12	**337-7236**	**337-8236**
2-1/16	3-3/4	1-1/4	14	9	**337-7132**	**337-8132**	3-3/4	5	2	20	12	**337-7240**	**337-8240**
2-1/8	3-3/4	1-1/4	14	9	**337-7136**	**337-8136**	3-13/16	5	2	20	12	**337-7244**	**337-8244**
2-3/16	3-3/4	1-1/4	14	9	**337-7140**	**337-8140**	3-7/8	5	2	20	12	**337-7248**	**337-8248**
2-1/4	3-3/4	1-1/4	14	9	**337-7144**	**337-8144**	3-15/16	5	2	20	12	**337-7252**	**337-8252**
2-5/16	3-3/4	1-1/4	14	9	**337-7148**	**337-8148**	4	5	2	20	12	**337-7256**	**337-8256**
2-3/8	3-3/4	1-1/4	14	9	**337-7152**	**337-8152**							

Metric Shell Reamers

High Speed Steel

- Featured two flute types



Size (mm)	Hole Dia. (mm)	Overall Length (mm)	DIN219A Straight Flute Order No.	DIN219B Spiral Flute Order No.	Size (mm)	Hole Dia. (mm)	Overall Length (mm)	DIN219A Straight Flute Order No.	DIN219B Spiral Flute Order No.
20	10	40	**337-9120**	**337-9320**	35	16	50	**337-9135**	**337-9335**
21	10	40	**337-9121**	**337-9321**	36	19	56	**337-9136**	**337-9336**
22	10	40	**337-9122**	**337-9322**	38	19	56	**337-9138**	**337-9338**
23	10	40	**337-9123**	**337-9323**	40	19	56	**337-9140**	**337-9340**
24	13	45	**337-9124**	**337-9324**	42	19	56	**337-9142**	**337-9342**
25	13	45	**337-9125**	**337-9325**	45	22	63	**337-9145**	**337-9345**
26	13	45	**337-9126**	**337-9326**	48	22	63	**337-9148**	**337-9348**
27	13	45	**337-9127**	**337-9327**	50	22	63	**337-9150**	**337-9350**
28	13	45	**337-9128**	**337-9328**	52	27	71	**337-9152**	**337-9352**
29	13	45	**337-9129**	**337-9329**	55	27	71	**337-9155**	**337-9355**
30	13	45	**337-9130**	**337-9330**	60	27	71	**337-9160**	**337-9360**
32	16	50	**337-9132**	**337-9332**					

Taper Pipe Reamers

High Speed Steel,
Right Hand Cut Taper 3/4 inch per foot

Designed for reaming holes to be tapped with American Standard Taper Pipe Taps(NPT)



Size	Large End Dia.	Small End Dia.	Flute Length	Overall Length	Straight Flute Order No.	Spiral Flute Order No.
1/16"	.291"	.245"	3/4"	2"	**337-1704**	**337-0704**
1/8	.362	.316	3/4	2-1/8	**337-1708**	**337-0708**
1/4	.472	.406	1-1/16	2-7/16	**337-1716**	**337-0716**
3/8	.606	.540	1-1/16	2-9/16	**337-1724**	**337-0724**
1/2	.751	.665	1-3/8	3-1/8	**337-1732**	**337-0732**
3/4	.962	.876	1-3/8	3-1/4	**337-1748**	**337-0748**
1	1.212	1.103	1-3/4	3-3/4	**337-1764**	**337-0764**
1-1/4	1.553	1.444	1-3/4	4	**337-1780**	**337-0780**
1-1/2	1.793	1.684	1-3/4	4-1/4	**337-1796**	**337-0796**
2	2.268	2.159	1-3/4	4-1/2	**337-1828**	**337-0828**
2-1/2	2.772	2.561	2-5/8	5-1/2	**337-1860**	**337-0860**
3	3.380	3.202	2-3/4	6	**337-1892**	**337-0892**

Shell Reamer Arbors

Straight Shank



Size	Shank Dia.	Fits Shell Reamer	Order No.
#4	1/2"	21/32"-25/32"	**331-2204**
#5	5/8	13/16"-1-1/32"	**331-2205**
#6	3/4	1-1/16"-1-9/32"	**331-2206**
#7	7/8	1-5/16"-1-5/8"	**331-2207**
#8	1-1/8	1-11/16"-2"	**331-2208**
#9	1-3/8	2-1/16"-2-1/2"	**331-2209**
#10	1-5/8	2-9/16"-3"	**331-2210**
#11	2	3-1/16"-3-1/2"	**331-2211**
#12	2-1/8	3-9/16"-4"	**331-2212**

Taper Shank



Size	Shank Taper	Fits Shell Reamer	Order No.
#4	MT2	21/32"-25/32"	**331-2304**
#5	MT2	13/16"-1-1/32"	**331-2305**
#6	MT3	1-1/16"-1-9/32"	**331-2306**
#7	MT3	1-5/16"-1-5/8"	**331-2307**
#8	MT4	1-11/16"-2"	**331-2308**
#9	MT4	2-1/16"-2-1/2"	**331-2309**
#10	MT5	2-9/16"-3"	**331-2310**
#11	MT5	3-1/16"-3-1/2"	**331-2311**
#12	MT5	3-9/16"-4"	**331-2312**

E-Z Eject Shell Reamer Arbors

Straight Shank



Size	Shank Dia.	Fits Shell Reamer	Overall Length	Order No.
#4	1/2"	21/32"-25/32"	9"	**331-2002**
#5	5/8	13/16"-1-1/32"	9-1/2	**331-2004**
#6	3/4	1-1/16"-1-9/32"	10	**331-2006**
#7	7/8	1-5/16"-1-5/8"	11	**331-2008**
#8	1-1/8	1-11/16"-2"	12	**331-2010**
#9	1-3/8	2-1/16"-2-1/2"	13	**331-2012**
#10	1-5/8	2-9/16"-3"	14	**331-2014**
#11	2	3-1/16"-3-1/2"	15	**331-2016**
#12	2-1/8	3-9/16"-4"	16	**331-2018**

Taper Shank



Size	Shank Taper	Arbor Dia.	Fits Shell Reamer	Overall Length	Order No.
#4	MT2	3/8"	21/32"-25/32"	9"	**331-2102**
#5	MT2	1/2	13/16"-1-1/32"	9-1/2	**331-2104**
#6	MT3	5/8	1-1/16"-1-9/32"	10	**331-2106**
#7	MT3	3/4	1-5/16"-1-5/8"	11	**331-2108**
#8	MT4	1	1-11/16"	12	**331-2110**
#9	MT4	1-1/4	2-1/16"-2-1/2"	13	**331-2112**
#10	MT5	1-1/2	2-9/16"-3"	14	**331-2114**
#11	MT5	1-3/4	3-1/16"-3-1/2"	15	**331-2116**
#12	MT5	2	3-9/16"-4"	16	**331-2118**

DIN217 Taper Shank Shell Reamer Arbors

Taper Shank



Fitting Range (mm)	Shank Taper	Arbor Size (mm)	OAL (mm)	Order No.
20-23	MT3	10	250	**331-2511**
23.6-30	MT3	13	250	**331-2514**
30-35.5	MT3	16	261	**331-2517**
35.5-42.5	MT4	19	298	**331-2520**
42.5-50.8	MT4	22	312	**331-2523**

Fitting Range (mm)	Shank Taper	Arbor Size (mm)	OAL (mm)	Order No.
50.8-60	MT5	27	358	**331-2526**
60-71	MT5	32	379	**331-2529**
71-85	MT5	40	396	**331-2532**
85-101.6	MT5	50	416	**331-2535**

NPT Taper Pipe Tap Sets

Ground Thread



3 Piece Tap Sets

Set includes one each: Taps (3 Sizes).

Sets

Descriptions	Wooden Case Order No.
H.S.S.	**314-9503**
Carbon Steel	**314-9603**

Thread Size & Pitch
1-1/4"-11-1/2
1-1/2"-11-1/2
2"-11-1/2



4 Piece Tap Sets

NEW

Set includes one each: Taps (4 Sizes).

Sets

Descriptions	Wooden Case Order No.
Carbon Steel	**314-9604**

Thread Size
1
1-1/4
1-1/2
2"



6 Piece Tap Sets

Set includes one each: Taps (6 Sizes).

Sets

Descriptions	Wooden Case Order No.
H.S.S.	**314-9506**
Carbon Steel	**314-9606**

Thread Size & Pitch
1/4"-18
3/8-18
1/2-14

Thread Size & Pitch
3/4-14
1"-11-1/2
1-1/4"-11-1/2



6 Piece Tap Sets

NEW

Set includes one each: Taps (6 Sizes).1/8,1/4,3/8,1/2,3/4,&1"

Sets

Descriptions	Wooden Case Order No.
Carbon Steel	**314-9605**

Thread Size
1/8"
1/4"
3/8"

Thread Size
1/2"
3/4"
1"

Tap & Die Sets

Ground Thread



Plastic Case

12 Piece Tap & Die Sets

Set includes one each of:
Taps and1" O.D. Round Dies(5 Sizes).
Adjustable Die Stock 1".
Straight Handle Tap Wrench1/16"-1/2".



Polyethylene Case

Sets

Descriptions	Polyethylene Case Order No.	Plastic Case Order No.
H.S.S	**314-9512**	**314-9513**
Carbon Steel	**314-9612**	**314-9613**

Thread Size & Pitch
1/4"-20NC
5/16-18 NC
3/8-16 NC

Thread Size & Pitch
7/16-14 NC
1/2-13NC

Tap & Die Sets

Ground Thread



12 Piece Tap & Die Sets

Set includes one each of:
Taps and1" O.D. Round Dies(5 Sizes).
Adjustable Die Stock 1".
Straight Handle Tap Wrench1/16"-1/2".

Descriptions	Plastic Case Order No.
H.S.S	**314-9514**
Carbon Steel	**314-9614**

Thread Size & Pitch
1/4"-28 NF
5/16-24NF
3/8-24 NF

Thread Size & Pitch
7/16-20 NF
1/2-20NF



16 Piece Tap & Die Sets

Set includes one each of:
Taps and1-1/2" O.D. Round Dies (7 Sizes).
Adjustable Die Stock 1-1/2".
Straight Handle Tap Wrench1/4"-3/4".

Descriptions	Plastic Case Order No.
H.S.S	**314-9516**
Carbon Steel	**314-9616**

Thread Size & Pitch
1/4"-28 NF
5/16-24NF
3/8-24 NF
7/16-20 NF

Thread Size & Pitch
1/2-20NF
5/8-18 NF
3/4-16 NF



16 Piece Tap & Die Sets

Set includes one each of:
Taps and1-1/2" O.D. Round Dies(7Sizes).
Adjustable Die Stock 1-1/2".
Straight Handle Tap Wrench1/4"-3/4".

Descriptions	Plastic Case Order No.
H.S.S	**314-9517**
Carbon Steel	**314-9617**

Thread Size & Pitch
1/4"-20NC
5/16-18 NC
3/8-16 NC
7/16-14 NC

Thread Size & Pitch
1/2-13NC
5/8-11NC
3/4-10 NC



20 Piece Tap & Die Sets

Set includes one each of:
Taps and 1" O.D. Round Dies(9 Sizes).
Adjustable Die Stock.
Straight Handle Tap Wrench.

Descriptions	Polyethylene Case Order No.
H.S.S	**314-9520**
Carbon Steel	**314-9620**

Thread Size & Pitch
6-32NC
8-32NC
10-24NC
12-24NC
1/4-20NC

Thread Size & Pitch
5/16-18NC
3/8-16NC
7/16-14NC
1/2-13NC



21 Piece Tap & Die Sets

Set includes one each of:
Taps and1-1/2" O.D. Round dies.(8 Sizes)
Die Stock 1-1/2".
Straight Handle Tap Wrench1/4"-3/4".
T-Tap Wrench 1/4"-1/2"
Screw Driver
Screw Pitch Gage 12-40 Pitch

Descriptions	Plastic Case Order No.
H.S.S	**314-9523**
Carbon Steel	**314-9623**

Thread Size & Pitch
1/4"-20NC
5/16-18 NC
3/8-16 NC
7/16-14 NC

Thread Size & Pitch
1/2-13NC
9/16-12NC
5/8-11NC
3/4-10 NC

Tap & Die Sets

Ground Thread



21 Piece Tap & Die Sets

NEW

Set includes one each of:
Taps & 1" Adj. Dies. (18 Size)
Die Holder 1".
Tap Wrench 1/16"-1/2".
T-Tap Wrench.

Descriptions	Metal Case Order No.
H.S.S	**314-9521**
Carbon Steel	**314-9621**

Thread Size & Pitch
M2X0.4,
M2.5X0.45,
M3X0.6,
M3.5X0.6,
M4X0.75,

Thread Size & Pitch
M4.5X0.75,
M5X0.9,
M5.5X0.9,
M6X1.0.



21 Piece Die Sets

NEW

Set includes one each of:
NC,NF, 1/4 to 1" carbon-Hex, rethreading die set

Descriptions	Wooden Case Order No.
Carbon Steel	**314-9820**

Thread Size & Pitch
1/4-20
1/4-28
5/16-18
5/16-24
3/8-16
3/8-24
7/16-14
7/16-20
1/2-13
1/2-20

Thread Size & Pitch
9/16-12
9/16-18
5/8-11
5/8-18
3/4-10
3/4-16
7/8-9
7/8-14
1-8
1-14



22 Piece Tap & Die Sets

NEW

Set includes one each of:
10sizes each1/4-20 to 1/2-20,Tap & 1" OD Adjust.
DIE,T- Handle Tap Wrench & Die Stock

Descriptions	Wooden Case Order No.
H.S.S	**314-9526**
Left Hand HSS	**314-9527**

Thread Size & Pitch
1/4-20
1/4-28
5/16-18
5/16-24
3/8-16

Thread Size & Pitch
3/8-24
7/16-14
7/16-20
1/2-13
1/2-20



22 Piece Tap & Die Sets

Set includes one each of:
Taps and1" O.D. round dies. (10Sizes)
Die Stock 1".
Straight Handle Tap Wrench1/16"-1/2".

Descriptions	Plastic Case Order No.
H.S.S	**314-9522**
Carbon Steel	**314-9622**

Thread Size & Pitch
1/4"-20NC
5/16-18 NC
3/8-16 NC
7/16-14 NC
1/2-13NC

Thread Size & Pitch
1/4"-28 NF
5/16-24NF
3/8-24 NF
7/16-20 NF
1/2-20NF



22 Piece Tap & Die Sets

Set includes one each of:
Taps and 1" & 1-1/2" O.D. ADJ. Round Dies(9 Sizes).
Adjustable Die Stock 1" & 1-1/2".
Straight Handle Tap Wrench 1/2-3/4".
T-Tap Wrench.

Descriptions	Wooden Case Order No.
H.S.S	**314-9519**
Carbon Steel	**314-9619**

Thread Size & Pitch
M6x1.0,
M7x1.0,
M8x1.25,
M9x1.25,
M10x1.5,

Thread Size & Pitch
M11x1.5,
M12x1.75,
M14x2.0,
M16x2.0

Tap & Die Sets

Ground Thread



23 Piece Tap & Die Sets

Set includes one each of:
Taps and Dies.(20Sizes)
Tap wrench,
T-Tap wrench,
Die Stocks.

Descriptions	Metal Case Order No.
Carbon Steel	**314-9823**

Thread Size & Pitch	Thread Size & Pitch
0-80NC	5-40NC
1-64NC	6-32NC
2-56NC	8-32NC
3-48NC	10-24NC
4-40NC	12-24NC



24 Piece Tap & Die Sets

NEW

Set includes one each of:
M3-M12,1/8NPT,
Hex Die, (11sizes),
Tap wrench,
Die Stock

Descriptions	Metal Case Order No.
H.S.S	**314-9525**

Thread Size & Pitch	Thread Size & Pitch
M3x0.50,	M9x1.25,
M4x0.70,	M10x1.50,
M5x0.80,	M12x1.50,
M6x1.00,	M12x1.75,
M7x1.00,	1/8"NPT
M8x1.25,	



30 Piece Tap & Die Sets

Set includes one each of:
Taps and1-1/2" O.D. Round Dies.(14 Sizes)
Die Stock 1-1/2".
Straight Handle Tap wrench1/4"-3/4".

Descriptions	Plastic Case Order No.
H.S.S	**314-9530**
Carbon Steel	**314-9630**

Thread Size & Pitch	Thread Size & Pitch
1/4"-20NC	1/4"-28 NF
5/16-18 NC	5/16-24NF
3/8-16 NC	3/8-24 NF
7/16-14 NC	7/16-20 NF
1/2-13NC	1/2-20NF
5/8-11NC	5/8-18 NF
3/4-10 NC	3/4-16 NF



32 Piece Metric Tap and Die Set DIN 352 Taps & DIN 223 Dies

Set includes one each:
Taps (21 metric thread sizes)
Dies (7 metric thread sizes)
Adjustable die stock.
Adjustable handle tap wrench.
Screw pitch gage.
Screw driver.
Remark: V= Coarse Tap, M= Middle Tap, F= Fine Tap.

Descriptions	Plastic Case Order No.	Metal Case Order No.
H.S.S	**314-9532**	**314-9533**
Carbon Steel	**314-9632**	**314-9633**

Size of Dies
M3x0.5
M4x0.7
M5x0.8
M6x1.0
M8x1.25
M10x1.5
M12x1.75

Thread Size & Pitch		
M3(V)	M3(M)	M3(F)
M4(V)	M4(M)	M4(F)
M5(V)	M5(M)	M5(F)
M6(V)	M6(M)	M6(F)
M8(V)	M8(M)	M8(F)
M10(V)	M10(M)	M10(F)
M12(V)	M12(M)	M12(F)



39 Piece Metric Tap & Die Sets 3mm-12mm

Set includes one each:
Taps and1" round dies.
(17 metric thread sizes)
Adjustable die stock.
Adjustable handle tap wrench.
T-Tap wrench
Screw pitch gage.
Screw driver.

Dsecriptions	Plastic Case Order No.
H.S.S	**314-9535**
Carbon Steel	**314-9635**

Thread Size & Pitch	Thread Size & Pitch
3mmx0.5	7mmx0.75
3mmx0.6	7mmx1.0
4mmx0.7	8mmx1.0
4mmx0.75	8mmx1.25
5mmx0.8	10mmx1.25
5mmx0.9	10mmx1.5
6mmx0.75	12mmx1.5
6mmx1.0	12mmx1.75
	1/8-27 NPT

Tap & Die Sets

Ground Thread



39 Piece Tap & Die Sets

Set includes one each of:

Taps and1" O.D. Round Dies.(17Sizes)
Die Stock 1".
Straight Handle Tap Wrench 1/16"-1/2"
T handle Tap Wrench0-1/4".
Screw Driver
Screw Pitch Gage

Descriptions	Plastic Case Order No.
H.S.S	**314-9540**
Carbon Steel	**314-9640**

Thread Size & Pitch
4-40NC
6-32NC
8-32NC
10-24NC
12-24NC
1/4-20NC
5/16-18 NC
3/8-16 NC
7/16-14 NC
1/2-13NC

Thread Size & Pitch
10-32NF
1/4-28 NF
5/16-24NF
3/8-24 NF
7/16-20 NF
1/2-20NF
1/8-27 NPT



39 Piece Tap & Die Sets

Set includes one each of:

17sizes plug taps & 1"OD Dies.
Adj. Die stock,
Straight handle Tap wrench,
T-tap wrench,
Screw pitch gage,
Screwdriver.

NEW

Descriptions	Plastic Case Order No.
H.S.S	**314-9539**

Thread Size & Pitch
4-40,
6-32,
8-32,
10-24,
10-32,
12-24,
1/4-20,
1/4-28,
5/16-18,

Thread Size & Pitch
5/16-24,
3/8-16,
3/8-24,
7/16-14,
7/16-20,
1/2-13,
1/2-20 ,
1/8-27NPT



39 Piece Tap & Die Sets

Set includes one each of:

Taps and1" Hex Dies.(17 Sizes)
Hex Die Stock.
Straight Handle Tap Wrench
1/16"-1/2"
T handle Tap Wrench0-1/4".
Screw Driver
Screw Pitch Gage

Descriptions	Plastic Case Order No.
Carbon Steel	**314-9639**

Thread Size & Pitch
4-40NC
6-32NC
8-32NC
10-24NC
12-24NC
1/4-20NC
5/16-18 NC
3/8-16 NC
7/16-14 NC
1/2-13NC

Thread Size & Pitch
10-32NF
1/4-28 NF
5/16-24NF
3/8-24 NF
7/16-20 NF
1/2-20NF
1/8-27 NPT



40 Piece Tap & Die Sets

Set includes one each of:

#4 to 1/2", 1 of each Plug Tap and Round Adj. Die
Tap Wrenches
Die Stocks Screwdriver
Pitch Gage

NEW

Descriptions	Plastic Case Order No.
H.S.S	**314-9537**
Carbon Steel	**314-9637**

Thread Size & Pitch
4-40NC,
6-32NC,
8-32NC,
10-24NC,
12-24NC,
1/4-20NC,
5/16-18NC,
3/8-16NC,
7/16-14NC,
1/2-13NC

Thread Size & Pitch
#10-32NF,
1/4-28NF,
5/16-24NF,
3/8-24NF,
7/16-20NF,
1/2-20NF
1/8-27 NPT

Tap & Die Sets

Ground Thread



40 Piece Tap & Die Sets

Set includes one each of:
Taps and1" Hex Dies.(17Sizes)
Adj. Die stock,
Straight handle Tap wrench,
2 pcs of T-tap wrenchs,
Screw pitch gage,
Screwdriver.

Descriptions	Plastic Case Order No.
H.S.S	**314-9538**
Carbon Steel	**314-9638**

NEW

Thread Size & Pitch
4-40,
6-32,
8-32,
10-24,
10-32,
12-24,
1/4-20,
1/4-28,
5/16-18,

Thread Size & Pitch
5/16-24,
3/8-16,
3/8-24,
7/16-14,
7/16-20,
1/2-13,
1/2-20,
1/8NPT.



41 Piece Tap & Die Sets

Set includes one each of:
Taps and1" HEX Dies.(17Sizes)
Die stock,
Straight handle tap wrehcn,
3/8" & 1/2" T-tap wrench,
Metric screw pitch gage, screwdriver

Descriptions	Plastic Case Order No.
H.S.S	**314-9543**
Carbon Steel	**314-9643**

NEW

Thread Size & Pitch
3X.5
3X.6
4X.7
4X.75
5X.8
5X.9
6X.75
6X1.0
7X.75

Thread Size & Pitch
17X1.0
8X1.0
8X1.25
10X1.25
10X1.5
12X1.5
12X1.75
1/8-27NPT



41Piece Tap & Die Sets

Set includes one each of:
18 Size(Plug Tap & 1-1/2". Solid Round Die NC NF NPT)
Adj. Handle Tap Wrench
Die Stock;
T-Handle Tap Wrench;
Screw Pitch Gage;
Screwdriver,
With plastic case

Descriptions	Plastic Case Order No.
H.S.S	**314-9542**
Carbon Steel	**314-9642**

NEW

Thread Size & Pitch
1/4-20NC
5/16-18NC
3/8-16NC
7/16-14NC
1/2-13NC
9/16-12NC
5/8-11NC
3/4-10NC

Thread Size & Pitch
1/4-28NF
5/16-24NF
3/8-24NF
7/16-20NF
1/2-20NF
9/16-18NF
5/8-18NF
3/4-16NF
1/8-27NPT
1/4-18NPT



41 Piece Tap & Die Sets

Set includes one each of:
Taps and1-1/2" O.D. Round Dies.
(18 Sizes)
Die Stock 1-1/2".
Straight Handle Tap Wrench1/4"-3/4".
T-Tap Wrench 0-1/4"
Screw Driver
Screw Pitch Gage 12-40 Pitch

Descriptions	Plastic Case Order No.
H.S.S	**314-9541**
Carbon Steel	**314-9641**

Thread Size & Pitch
1/4"-20NC
5/16-18 NC
3/8-16 NC
7/16-14 NC
1/2-13NC
9/16-12NC
5/8-11NC
3/4-10 NC

Thread Size & Pitch
1/4"-28 NF
5/16-24NF
3/8-24 NF
7/16-20 NF
1/2-20NF
9/16-18NF
5/8-18 NF
3/4-16 NF
1/8-27 NPT
1/4-18NPT

Tap & Die Sets

Ground Thread



44 Piece Tap & Die Sets

Set includes one each of:
20sizes each,M2-M18, 1" & 1-1/2"OD Adjust die,
2each of Tap wrench and Die Stock

Descriptions	Wooden Case Order No.
H.S.S	**314-9566**

48 Piece Tap & Die Sets

NEW

Set includes one each of:
22sizes each,#6-3/4", 1" & 1-1/2"OD Adjust die,
2each of Tap wrench and Die Stock

Descriptions	Wooden Case Order No.
Carbon Steel	**314-9567**
Left Hand HSS	**314-9568**



44 Piece Tap & Die Sets

Set includes one each:
Taps and Round Dies.(20 Sizes)
2" Adjustable Die Stock with Adapter.
Straight Handle Tap Wrench
T-Handle Tap Wrench.
Screw Driver

Descriptions	Plastic Case Order No.
H.S.S	**314-9551**
Carbon Steel	**314-9651**

Thread Size & Pitch
1/4"-20NC
5/16-18 NC
3/8-16 NC
7/16-14 NC
1/2-13NC
9/16-12NC
5/8-11NC
3/4-10 NC
7/8-9NC
1-8 NC

Thread Size & Pitch
1/4"-28 NF
5/16-24NF
3/8-24 NF
7/16-20 NF
1/2-20NF
9/16-18NF
5/8-18 NF
3/4-16 NF
7/8-14 NF
1-14NS



44 Piece Metric Tap & Die Sets
6mm-24mm

Set includes one each:
Taps and adjustable dies.
(20 metric thread sizes)
Adjustable die stock.
Adjustable handle tap wrench.
T-Tap wrench
Screw driver.

Descriptions	Plastic Case Order No.	Metal Case Order No.
H.S.S	**314-9547**	**314-9548**
Carbon Steel	**314-9647**	**314-9648**

Thread Size & Pitch
6mmx0.75
6mmx1.0
8mmx1.0
8mmx1.25
10mmx1.25
10mmx1.5
12mmx1.5
12mmx1.75
14mmx1.5
14mmx2.0

Thread Size & Pitch
16mmx1.5
16mmx2.0
18mmx1.5
18mmx2.5
20mmx1.5
20mmx2.5
22mmx1.5
22mmx2.5
24mmx1.5
24mmx3.0



44 Piece Tap & Die Sets

Set includes one each:
Plug Taps and Adjustable Dies
for the 20 thread sizes.
Die Stock with Adapter.
Straight Handle Tap Wrench.
T-Handle Tap Wrench.
Screw Driver.

Descriptions	Plastic Case Order No.	Metal Case Order No.
H.S.S	**314-9545**	**314-9546**
Carbon Steel	**314-9645**	**314-9646**

Thread Size & Pitch
1/4" -20NC
5/16-18 NC
3/8-16NC
7/16-14NC
1/2-13NC
9/16-12NC
5/8-11NC
3/4-10NC
7/8-9NC
1-8NC
1-14NF

Thread Size & Pitch
1/4"-18NF
5/16-24NF
3/8-24NF
7/16-20NF
1/2-20NF
9/16-18NF
5/8-18NF
3/4-16NF
7/8-14NF

Tap & Die Sets

Ground Thread



45 Piece Tap & Die Sets

Set includes one each:

Taps and Round Dies.(20 Sizes)
Die Stock 1-1/2".
Adjustable Die Stock 2".
Straight Handle Tap Wrench1/4"-3/4".
Straight Handle Tap Wrench3/8"-1".
Screw Driver

Descriptions	Plastic Case Order No.
H.S.S	**314-9544**
Carbon Steel	**314-9644**

Thread Size & Pitch
1/4"-20NC
5/16-18 NC
3/8-16 NC
7/16-14 NC
1/2-13NC
9/16-12NC
5/8-11NC
3/4-10 NC
7/8-9NC
1-8 NC

Thread Size & Pitch
1/4"-28 NF
5/16-24NF
3/8-24 NF
7/16-20 NF
1/2-20NF
9/16-18NF
5/8-18 NF
3/4-16 NF
7/8-14 NF
1-14NS



59 Piece Tap & Die Sets

Set includes one each of:

Taps and Hex Dies.(44Sizes)
Tap wrenchs,
Die Stock,
Screwdriver,
Pitch gage & Screw Extractors

Descriptions	Plastic Case Order No.
H.S.S	**314-9558**
Carbon Steel	**314-9658**

Thread Size & Pitch
#6-32
#8-32
#10-24
#10-32
#12-24
1/4-20
5/16-18
3/8-16
7/16-14
1/2-13
1/4-28

Thread Size & Pitch
5/16-24
3/8-24
7/16-20
1/2-20
1/8-27NPT
1/4-18NPT
9/16-12
9/16-18
5/8-11
3/4-10
3/4-16



59 Piece Tap & Die Sets

Set includes one each of:

Taps and Round Dies.(44Sizes)
Tap wrenchs,
Die Stocks,
Screwdriver,
Pitch gage & Screw Extractors

Descriptions	Plastic Case Order No.
H.S.S	**314-9559**
Carbon Steel	**314-9659**

Thread Size & Pitch
#6-32
#8-32
#10-24
#10-32
#12-24
1/4-20
5/16-18
3/8-16
7/16-14
1/2-13
1/4-28

Thread Size & Pitch
5/16-24
3/8-24
7/16-20
1/2-20
1/8-27NPT
1/4-18NPT
9/16-12
9/16-18
5/8-11
3/4-10
3/4-16



60 Piece Metric, Inch Tap & Die Sets

Set includes one each:

Plug taps and 1" round dies.(27 sizes)
Adjustable die stock.
Adjustable handle tap wrench.
T-Handle tap wrench.
Screw driver.
2 Screw pitch gage.

Descriptions	Plastic Case Order No.	Metal Case Order No.
H.S.S	**314-9560**	**314-9561**
Carbon Steel	**314-9660**	**314-9661**

Thread Size & Pitch
1/4"-20NC
5/16-18NC
3/8-16NC
7/16-14NC
1/2-13NC
4-40NC
6-32NC
8-32NC
10-24NC
12-24NC

Thread Size & Pitch
1/4"-28NF
5/16-24NF
3/8-24NF
7/16-20NF
1/2-20NF
10-32NF
1/8-27 NPT

Thread Size & Pitch
3mmx.5
4mmx.7
5mmx.8
6mmx1.0
7mmx1.0
8mmx1.25
9mmx1.25
10mmx1.5
10mmx1.0
12mmx1.75

Tap & Die Sets

Ground Thread



64 Piece Tap & Die Sets

Set includes one each:

Taps and Round Dies.(28 Sizes)
Die Stock 1" O.D.
Die Stock 1-1/2" O.D.
Die Stock 2" O.D.
Straight Handle Tap Wrench 1/16"-1/2"
Straight Handle Tap Wrench 3/8"-1"
T-Handle Tap Wrench 0-1/4".
Screw Driver
Screw Pitch Gage 12-40 Pitch

Descriptions	Plastic Case Order No.
H.S.S	**314-9564**
Carbon Steel	**314-9664**

Thread Size & Pitch
4-40NC
6-32NC
8-32NC
10-24NC
12-24NC
1/4-20NC
5/16-18 NC
3/8-16 NC
7/16-14 NC
1/2-13NC
9/16-12NC
5/8-11NC
3/4-10 NC
7/8-9NC
1-8 NC

Thread Size & Pitch
10-32NF
1/4-28 NF
5/16-24NF
3/8-24 NF
7/16-20 NF
1/2-20NF
9/16-18NF
5/8-18 NF
3/4-16 NF
7/8-14 NF
1/8-27 NPT
1/4-18NPT
1-14NS



110 Piece Tap & Die Sets

Set includes one each:

Taper Taps, Bottom Taps and Round Dies.
(35 Sizes)
Die Stock 1" O.D.
Die Stock 1-1/2" O.D.
Straight Handle Tap Wrench 1/4"-3/4"
Straight Handle Tap Wrench 1/16"-1/2"
T-Handle Tap Wrench 0-1/4".

Descriptions	Plastic Case Order No.
H.S.S	**314-9596**
Carbon Steel	**314-9696**

Thread Size & Pitch
4-40NC
6-32NC
8-32NC
10-24NC
12-24NC
1/4-20NC
5/16-18 NC
3/8-16 NC
7/16-14 NC
1/2-13NC
9/16-12NC
5/8-11NC
3/4-10 NC

Thread Size & Pitch
10-32NF
1/4-28 NF
5/16-24NF
3/8-24 NF
7/16-20 NF
1/2-20NF
9/16-18NF
5/8-18 NF
3/4-16 NF
1/4-24NS
1/4-32NS
1/8-27 NPT
1/4-18NPT

Thread Size & Pitch
M6X1.0
M8X1.25
M10X1.0
M10X1.5
M11X1.5
M12X1.5
M12X1.75
M14X1.25
M18X1.5

Drill & Tap Sets

HSS, Ground



Description	Sizes	Order No.
Inch	Tap(NC):6-32,8-32,10-24,10-32,1/4-20,5/16-18,3/8-16,7/16-14,1/2-13 Drill:36#,29#,25#,21#,7#,F,5/16,U,27/64"	**314-9581**
Inch	Tap(NF),6-40,8-36,10-24,10-32,1/4-28,5/16-24,3/8-24,7/16-20,1/2-20 Drill:33#,29#,25#,21#,3#,I,Q,25/64",29/64"	**314-9582**
Metric	Tap:M2.5x0.45,3.0x0.5,3.5x0.6,4.0x0.7,5.0x0.8,6.0x1.0,8.0x1.25, 10.0x1.50,12.0x1.75 Drill:2.05,2.5,2.9,3.3,4.2,5.0,6.7,8.5,10.20mm.	**314-9583**
18pcs	HSS Ground,18pcs.Sprial Point Tap(NC):6-32,8-32,10-24,10-32,1/4-20, 5/16-18,3/8-16,7/16-14,1/2-13; Drill:36#,29#,25#,21#,7#,F,5/16,U,27/64"	**314-9586**
18pcs	HSS Ground,18pcs.Sprial Point Tap(NF),6-40,8-36,10-24,10-32,1/4-28, 5/16-24,3/8-24,7/16-20,1/2-20, Drill:33#,29#,25#,21#,3#,I,Q,25/64",29/64"	**314-9587**
18pcs	HSS Ground,18pcs.Sprial Point Tap:M2.5x0.45,3.0x0.5,3.5x0.6,4.0x0.7,5.0x0.8, 6.0x1.0,8.0x1.25,10.0x1.50,12.0x1.75, Drill:2.05,2.5,2.9,3.3,4.2,5.0,6.7,8.5,10.20.	**314-9588**



29 Piece Metric Tap and Drill Set DIN 352

Set includes one each:

Taps (21 metric thread sizes)
Drills (7 metric sizes)
Adjustable handle tap wrench.

Dsecriptions	Metal Case Order No.
H.S.S	**314-9529**

Remark: V= Coarse Tap, M= Middle Tap, F= Fine Tap.

Size of Drills	Thread Size & Pitch		
M3	M3(V)	M3(M)	M3(F)
M4	M4(V)	M4(M)	M4(F)
M5	M5(V)	M5(M)	M5(F)
M6	M6(V)	M6(M)	M6(F)
M8	M8(V)	M8(M)	M8(F)
M10	M10(V)	M10(M)	M10(F)
M12	M12(V)	M12(M)	M12(F)

Hand Taps-Taper Style

High Speed Steel, Ground Thread

- Use for hand or machine tapping in a wide variety of materials.
- Ensures easy starting.
- Higher volume of working teeth reduces tapping torque.
- Seven to ten thread chamfer.



Size	Thread Limit	No.of Flute	Thread Length	Overall Length	Order No.	Size	Thread Limit	No.of Flute	Thread Length	Overall Length	Order No.
0-80NF	H-1	2	5/16"	1-5/8"	**440-1000**	5/16"-18NC	H-3	4	1-1/8"	2-23/32"	**440-1156**
0-80NF	H-2	2	5/16	1-5/8	**440-1002**	5/16-18NC	H-5	4	1-1/8	2-23/32	**440-1158**
1-64NC	H-1	2	3/8	1-11/16	**440-1004**	5/16-24NF	H-3	2	1-1/8	2-23/32	**440-1165**
1-64NC	H-2	2	3/8	1-11/16	**440-1006**	5/16-24NF	H-3	3	1-1/8	2-23/32	**440-1168**
1-72NF	H-1	2	3/8	1-11/16	**440-1008**	5/16-24NF	H-1	4	1-1/8	2-23/32	**440-1170**
1-72NF	H-2	2	3/8	1-11/16	**440-1009**	5/16-24NF	H-2	4	1-1/8	2-23/32	**440-1172**
2-56NC	H-1	2	7/16	1-3/4	**440-1010**	5/16-24NF	H-3	4	1-1/8	2-23/32	**440-1174**
2-56NC	H-2	2	7/16	1-3/4	**440-1011**	5/16-24NF	H-4	4	1-1/8	2-23/32	**440-1176**
2-56NC	H-1	3	7/16	1-3/4	**440-1012**	3/8-16NC	H-3	3	1-1/4	2-15/16	**440-1182**
2-56NC	H-2	3	7/16	1-3/4	**440-1013**	3/8-16NC	H-5	3	1-1/4	2-15/16	**440-1183**
2-64NF	H-1	3	7/16	1-3/4	**440-1014**	3/8-16NC	H-1	4	1-1/4	2-15/16	**440-1184**
2-64NF	H-2	3	7/16	1-3/4	**440-1015**	3/8-16NC	H-2	4	1-1/4	2-15/16	**440-1186**
3-48NC	H-2	3	1/2	1-3/4	**440-1018**	3/8-16NC	H-3	4	1-1/4	2-15/16	**440-1188**
3-56NF	H-1	3	1/2	1-3/4	**440-1019**	3/8-16NC	H-5	4	1-1/4	2-15/16	**440-1190**
3-56NF	H-2	3	1/2	1-3/4	**440-1020**	3/8-24NF	H-3	3	1-1/4	2-15/16	**440-1224**
4-36	H-2	3	1/2	1-13/16	**440-1022**	3/8-24NF	H-1	4	1-1/4	2-15/16	**440-1226**
4-40NC	H-1	3	9/16	1-7/8	**440-1025**	3/8-24NF	H-2	4	1-1/4	2-15/16	**440-1228**
4-40NC	H-2	3	9/16	1-7/8	**440-1026**	3/8-24NF	H-3	4	1-1/4	2-15/16	**440-1230**
4-48NF	H-2	2	9/16	1-7/8	**440-1030**	3/8-24NF	H-4	4	1-1/4	2-15/16	**440-1232**
4-48NF	H-2	3	9/16	1-7/8	**440-1032**	7/16-14NC	H-3	3	1-7/16	3-5/32	**440-1234**
5-40NC	H-2	2	5/8	1-15/16	**440-1033**	7/16-14NC	H-5	3	1-7/16	3-5/32	**440-1236**
5-40NC	H-2	3	5/8	1-15/16	**440-1035**	7/16-14NC	H-2	4	1-7/16	3-5/32	**440-1240**
5-44NF	H-2	3	5/8	1-15/16	**440-1037**	7/16-14NC	H-3	4	1-7/16	3-5/32	**440-1242**
6-32NC	H-2	2	11/16	2	**440-1039**	7/16-14NC	H-5	4	1-7/16	3-5/32	**440-1244**
6-32NC	H-3	2	11/16	2	**440-1040**	7/16-20NF	H-3	3	1-7/16	3-5/32	**440-1246**
6-32NC	H-1	3	11/16	2	**440-1041**	7/16-20NF	H-2	4	1-7/16	3-5/32	**440-1256**
6-32NC	H-2	3	11/16	2	**440-1042**	7/16-20NF	H-3	4	1-7/16	3-5/32	**440-1258**
6-32NC	H-3	3	11/16	2	**440-1043**	7/16-20NF	H-5	4	1-7/16	3-5/32	**440-1260**
6-40NF	H-2	2	11/16	2	**440-1047**	1/2-13NC	H-3	3	1-21-32	3-3/8	**440-1262**
6-40NF	H-2	3	11/16	2	**440-1049**	1/2-13NC	H-5	3	1-21-32	3-3/8	**440-1264**
8-32NC	H-2	2	3/4	2-1/8	**440-1051**	1/2-13NC	H-1	4	1-21-32	3-3/8	**440-1266**
8-32NC	H-3	2	3/4	2-1/8	**440-1052**	1/2-13NC	H-2	4	1-21-32	3-3/8	**440-1268**
8-32NC	H-2	3	3/4	2-1/8	**440-1054**	1/2-13NC	H-3	4	1-21-32	3-3/8	**440-1270**
8-32NC	H-3	3	3/4	2-1/8	**440-1055**	1/2-13NC	H-5	4	1-21-32	3-3/8	**440-1272**
8-32NC	H-1	4	3/4	2-1/8	**440-1057**	1/2-20NF	H-3	3	1-21-32	3-3/8	**440-1276**
8-32NC	H-2	4	3/4	2-1/8	**440-1058**	1/2-20NF	H-5	3	1-21-32	3-3/8	**440-1278**
8-32NC	H-3	4	3/4	2-1/8	**440-1059**	1/2-20NF	H-1	4	1-21-32	3-3/8	**440-1280**
8-36NF	H-2	2	3/4	2-1/8	**440-1063**	1/2-20NF	H-2	4	1-21-32	3-3/8	**440-1282**
8-36NF	H-2	4	3/4	2-1/8	**440-1065**	1/2-20NF	H-3	4	1-21-32	3-3/8	**440-1284**
10-24NC	H-2	2	7/8	2-3/8	**440-1066**	1/2-20NF	H-5	4	1-21-32	3-3/8	**440-1286**
10-24NC	H-3	2	7/8	2-3/8	**440-1067**	9/16-12NC	H-1	4	1-21-32	3-19/32	**440-1312**
10-24NC	H-2	3	7/8	2-3/8	**440-1068**	9/16-12NC	H-3	4	1-21-32	3-19/32	**440-1316**
10-24NC	H-3	3	7/8	2-3/8	**440-1069**	9/16-12NC	H-5	4	1-21-32	3-19/32	**440-1318**
10-24NC	H-1	4	7/8'	2-3/8	**440-1071**	9/16-18NF	H-2	4	1-21-32	3-19/32	**440-1322**
10-24NC	H-2	4	7/8	2-3/8	**440-1072**	9/16-18NF	H-3	4	1-21-32	3-19/32	**440-1324**
10-24NC	H-3	4	7/8	2-3/8	**440-1073**	9/16-18NF	H-5	4	1-21-32	3-19/32	**440-1326**
10-32NF	H-2	2	7/8	2-3/8	**440-1078**	5/8-11NC	H-2	4	1-13/16	3-13/16	**440-1330**
10-32NF	H-3	2	7/8	2-3/8	**440-1079**	5/8-11NC	H-3	4	1-13/16	3-13/16	**440-1332**
10-32NF	H-2	3	7/8	2-3/8	**440-1080**	5/8-11NC	H-5	4	1-13/16	3-13/16	**440-1334**
10-32NF	H-3	3	7/8	2-3/8	**440-1081**	5/8-18NF	H-1	4	1-13/16	3-13/16	**440-1338**
10-32NF	H-1	4	7/8	2-3/8	**440-1083**	5/8-18NF	H-2	4	1-13/16	3-13/16	**440-1340**
10-32NF	H-2	4	7/8	2-3/8	**440-1084**	5/8-18NF	H-3	4	1-13/16	3-13/16	**440-1342**
10-32NF	H-3	4	7/8	2-3/8	**440-1085**	5/8-18NF	H-5	4	1-13/16	3-13/16	**440-1343**
12-24NC	H-3	4	15/16	2-3/8	**440-1090**	11/16-11NS	H-3	4	1-13/16	4-1/32	**440-1344**
12-28NF	H-1	4	15/16	2-3/8	**440-1091**	11/16-16NS	H-3	4	1-13/16	4-1/32	**440-1345**
12-28NF	H-3	4	15/16	2-3/8	**440-1092**	3/4-10NC	H-3	4	2	4-1/4	**440-1350**
1/4-20NC	H-3	2	1	2-1/2	**440-1102**	3/4-10NC	H-5	4	2	4-1/4	**440-1352**
1/4-20NC	H-3	3	1	2-1/2	**440-1108**	3/4-16NF	H-1	4	2	4-1/4	**440-1354**
1/4-20NC	H-5	3	1	2-1/2	**440-1110**	3/4-16NF	H-3	4	2	4-1/4	**440-1358**
1/4-20NC	H-1	4	1	2-1/2	**440-1112**	3/4-16NC	H-5	4	2	4-1/4	**440-1360**
1/4-20NC	H-2	4	1	2-1/2	**440-1114**	7/8-9NC	H-4	4	2-7/32	4-11/16	**440-1366**
1/4-20NC	H-3	4	1	2-1/2	**440-1116**	7/8-14NF	H-4	4	2-7/32	4-11/16	**440-1374**
1/4-20NC	H-5	4	1	2-1/2	**440-1118**	1-8NC	H-4	4	2-1/2	5-1/8	**440-1380**
1/4-28NF	H-3	2	1	2-1/2	**440-1132**	1-12NF	H-4	4	2-1/2	5-1/8	**440-1388**
1/4-28NF	H-3	3	1	2-1/2	**440-1134**	1-14NS	H-4	4	2-1/2	5-1/8	**440-1394**
1/4-28NF	H-1	4	1	2-1/2	**440-1136**	1-1/8-7NC	H-4	4	2-9/16	5-7/16	**440-1398**
1/4-28NF	H-2	4	1	2-1/2	**440-1138**	1-1/8-12NF	H-4	4	2-9/16	5-7/16	**440-1400**
1/4-28NF	H-3	4	1	2-1/2	**440-1140**	1-1/4-7NC	H-4	4	2-9/16	5-3/4	**440-1402**
1/4-28NF	H-4	4	1	2-1/2	**440-1142**	1-1/4-12NF	H-4	6	2-9/16	5-3/4	**440-1404**
5/16-18NC	H-3	2	1-1/8	2-23/32	**440-1144**	1-3/8-6NC	H-4	4	3	6-1/16	**440-1406**
5/16-18NC	H-3	3	1-1/8	2-23/32	**440-1148**	1-3/8-12NF	H-4	6	3	6-1/16	**440-1408**
5/16-18NC	H-1	4	1-1/8	2-23/32	**440-1152**	1-1/2-6NC	H-4	4	3	6-3/8	**440-1410**
5/16-18NC	H-2	4	1-1/8	2-23/32	**440-1154**	1-1/2-12NF	H-4	6	3	6-3/8	**440-1412**

Hand Taps-Plug Style

High Speed Steel, Ground Thread



- Used for hand tapping or general machine and CNC tapping in wide variety of materials.
- The most versatile choice for through and semi-blind holes.
- Three to five thread chamfer.

Size	Thread Limit	No.osf Flute	Thread Length	OAL	Order No.	Size	Thread Limit	No.of Flute	Thread Length	OAL	Order No.	Size	Thread Limit	No.of Flute	Thread Length	OAL	Order No.
0-80NF	H-1	2	5/16"	1-5/8"	**440-2000**	10-32NF	H-2	2	7/8"	2-3/8"	**440-2078**	7/16"-20NF	H-5	3	1-7/16"	3-5/32"	**440-2254**
0-80NF	H-2	2	5/16	1-5/8	**440-2002**	10-32NF	H-3	2	7/8	2-3/8	**440-2079**	7/16-20NF	H-2	4	1-7/16	3-5/32	**440-2256**
1-64NC	H-1	2	3/8	1-11/16	**440-2004**	10-32NF	H-2	3	7/8	2-3/8	**440-2080**	7/16-20NF	H-3	4	1-7/16	3-5/32	**440-2258**
1-64NC	H-2	2	3/8	1-11/16	**440-2006**	10-32NF	H-3	3	7/8	2-3/8	**440-2081**	7/16-20NF	H-5	4	1-7/16	3-5/32	**440-2260**
1-72NF	H-1	2	3/8	1-11/16	**440-2008**	10-32NF	H-7	3	7/8	2-3/8	**440-2082**	7/16-20NF	H-11	4	1-7/16	3-5/32	**440-2261**
1-72NF	H-2	2	3/8	1-11/16	**440-2009**	10-32NF	H-1	4	7/8	2-3/8	**440-2083**	1/2-13NC	H-3	3	1-21/32	3-3/8	**440-2262**
2-56NC	H-1	2	7/16	1-3/4	**440-2010**	10-32NF	H-2	4	7/8	2-3/8	**440-2084**	1/2-13NC	H-5	3	1-21/32	3-3/8	**440-2264**
2-56NC	H-2	2	7/16	1-3/4	**440-2011**	10-32NF	H-3	4	7/8	2-3/8	**440-2085**	1/2-13NC	H-1	4	1-21/32	3-3/8	**440-2266**
2-56NC	H-1	3	7/16	1-3/4	**440-2012**	10-32NF	H-4	4	7/8	2-3/8	**440-2086**	1/2-13NC	H-2	4	1-21/32	3-3/8	**440-2268**
2-56NC	H-2	3	7/16	1-3/4	**440-2013**	10-32NF	H-5	4	7/8	2-3/8	**440-2087**	1/2-13NC	H-3	4	1-21/32	3-3/8	**440-2270**
2-64NF	H-1	3	7/16	1-3/4	**440-2014**	10-32NF	H-7	4	7/8	2-3/8	**440-2088**	1/2-13NC	H-5	4	1-21/32	3-3/8	**440-2272**
2-64NF	H-2	3	7/16	1-3/4	**440-2015**	12-24NC	H-1	4	15/16	2-3/8	**440-2089**	1/2-13NC	H-11	4	1-21/32	3-3/8	**440-2274**
3-48NC	H-2	2	1/2	1-13/16	**440-2016**	12-24NC	H-3	4	15/16	2-3/8	**440-2090**	1/2-20NF	H-3	3	1-21/32	3-3/8	**440-2276**
3-48NC	H-1	3	1/2	1-13/16	**440-2017**	12-28NF	H-1	4	15/16	2-3/8	**440-2091**	1/2-20NF	H-5	3	1-21/32	3-3/8	**440-2278**
3-48NC	H-2	3	1/2	1-13/16	**440-2018**	12-28NF	H-3	4	15/16	2-3/8	**440-2092**	1/2-20NF	H-1	4	1-21/32	3-3/8	**440-2280**
3-56NF	H-1	3	1/2	1-13/16	**440-2019**	14-20	H-3	4	1-1/4	2-9/16	**440-2093**	1/2-20NF	H-2	4	1-21/32	3-3/8	**440-2282**
3-56NF	H-2	3	1/2	1-13/16	**440-2020**	14-24	H-3	4	1-1/4	2-5/8	**440-2094**	1/2-20NF	H-3	4	1-21/32	3-3/8	**440-2284**
4-36	H-1	3	1/2	1-13/16	**440-2021**	1/4-20NC	H-3	2	1	2-1/2	**440-2102**	1/2-20NF	H-5	4	1-21/32	3-3/8	**440-2286**
4-36	H-2	3	1/2	1-13/16	**440-2022**	1/4-20NC	H-1	3	1	2-1/2	**440-2104**	9/16-12NC	H-2	4	1-21/32	3-19/32	**440-2314**
4-40NC	H-1	2	9/16	1-7/8	**440-2023**	1/4-20NC	H-2	3	1	2-1/2	**440-2106**	9/16-12NC	H-3	4	1-21/32	3-19/32	**440-2316**
4-40NC	H-2	2	9/16	1-7/8	**440-2024**	1/4-20NC	H-3	3	1	2-1/2	**440-2108**	9/16-12NC	H-5	4	1-21/32	3-19/32	**440-2318**
4-40NC	H-1	3	9/16	1-7/8	**440-2025**	1/4-20NC	H-5	3	1	2-1/2	**440-2110**	9/16-18NF	H-1	4	1-21/32	3-19/32	**440-2320**
4-40NC	H-2	3	9/16	1-7/8	**440-2026**	1/4-20NC	H-1	4	1	2-1/2	**440-2112**	9/16-18NF	H-2	4	1-21/32	3-19/32	**440-2322**
4-40NC	H-3	3	9/16	1-7/8	**440-2027**	1/4-20NC	H-2	4	1	2-1/2	**440-2114**	9/16-18NF	H-3	4	1-21/32	3-19/32	**440-2324**
4-40NC	H-4	4	9/16	1-7/8	**440-2028**	1/4-20NC	H-3	4	1	2-1/2	**440-2116**	9/16-18NF	H-5	4	1-21/32	3-19/32	**440-2326**
4-40NC	H-5	5	9/16	1-7/8	**440-2029**	1/4-20NC	H-5	4	1	2-1/2	**440-2118**	5/8-11NC	H-1	4	1-13/16	3-13/16	**440-2328**
4-48NF	H-2	2	9/16	1-7/8	**440-2030**	1/4-20NC	H-6	4	1	2-1/2	**440-2120**	5/8-11NC	H-2	4	1-13/16	3-13/16	**440-2330**
4-48NF	H-1	3	9/16	1-7/8	**440-2031**	1/4-20NC	H-7	4	1	2-1/2	**440-2122**	5/8-11NC	H-3	4	1-13/16	3-13/16	**440-2332**
4-48NF	H-2	3	9/16	1-7/8	**440-2032**	1/4-20NC	H-11	4	1	2-1/2	**440-2124**	5/8-11NC	H-5	4	1-13/16	3-13/16	**440-2334**
5-40NC	H-2	2	5/8	1-15/16	**440-2033**	1/4-28NF	H-3	2	1	2-1/2	**440-2132**	5/8-11NC	H-11	4	1-13/16	3-13/16	**440-2336**
5-40NC	H-1	3	5/8	1-15/16	**440-2034**	1/4-28NF	H-3	3	1	2-1/2	**440-2134**	5/8-18NF	H-1	4	1-13/16	3-13/16	**440-2338**
5-40NC	H-2	3	5/8	1-15/16	**440-2035**	1/4-28NF	H-1	4	1	2-1/2	**440-2136**	5/8-18NF	H-2	4	1-13/16	3-13/16	**440-2340**
5-44NF	H-1	3	5/8	1-15/16	**440-2036**	1/4-28NF	H-2	4	1	2-1/2	**440-2138**	5/8-18NF	H-3	4	1-13/16	3-13/16	**440-2342**
5-44NF	H-2	3	5/8	1-15/16	**440-2037**	1/4-28NF	H-3	4	1	2-1/2	**440-2140**	5/8-18NF	H-5	4	1-13/16	3-13/16	**440-2343**
6-32NC	H-1	2	11/16	2	**440-2038**	1/4-28NF	H-4	4	1	2-1/2	**440-2142**	11/16-11NS	H-3	4	1-13/16	4-1/32	**440-2344**
6-32NC	H-2	2	11/16	2	**440-2039**	5/16-18NC	H-3	2	1-1/8	2-23/32	**440-2144**	11/16-16NS	H-3	4	1-13/16	4-1/32	**440-2345**
6-32NC	H-3	2	11/16	2	**440-2040**	5/16-18NC	H-1	3	1-1/8	2-23/32	**440-2146**	3/4-10NC	H-1	4	2	4-1/4	**440-2346**
6-32NC	H-1	3	11/16	2	**440-2041**	5/16-18NC	H-3	3	1-1/8	2-23/32	**440-2148**	3/4-10NC	H-2	4	2	4-1/4	**440-2348**
6-32NC	H-2	3	11/16	2	**440-2042**	5/16-18NC	H-5	3	1-1/8	2-23/32	**440-2150**	3/4-10NC	H-3	4	2	4-1/4	**440-2350**
6-32NC	H-3	3	11/16	2	**440-2043**	5/16-18NC	H-1	4	1-1/8	2-23/32	**440-2152**	3/4-10NC	H-5	4	2	4-1/4	**440-2352**
6-32NC	H-7	3	11/16	2	**440-2044**	5/16-18NC	H-2	4	1-1/8	2-23/32	**440-2154**	3/4-16NF	H-1	4	2	4-1/4	**440-2354**
6-32NC	H-4	4	11/16	2	**440-2045**	5/16-18NC	H-3	4	1-1/8	2-23/32	**440-2156**	3/4-16NF	H-2	4	2	4-1/4	**440-2356**
6-32NC	H-5	5	11/16	2	**440-2046**	5/16-18NC	H-5	4	1-1/8	2-23/32	**440-2158**	3/4-16NF	H-3	4	2	4-1/4	**440-2358**
6-40NF	H-2	2	11/16	2	**440-2047**	5/16-18NC	H-6	4	1-1/8	2-23/32	**440-2160**	3/4-16NF	H-5	4	2	4-1/4	**440-2360**
6-40NF	H-1	3	11/16	2	**440-2048**	5/16-18NC	H-7	4	1-1/8	2-23/32	**440-2162**	7/8-9NC	H-2	4	2-7/32	4-11/16	**440-2362**
6-40NF	H-2	3	11/16	2	**440-2049**	5/16-18NC	H-11	4	1-1/8	2-23/32	**440-2164**	7/8-9NC	H-3	4	2-7/32	4-11/16	**440-2364**
8-32NC	H-1	2	3/4	2-1/8	**440-2050**	5/16-24NF	H-3	2	1-1/8	2-23/32	**440-2165**	7/8-9NC	H-4	4	2-7/32	4-11/16	**440-2366**
8-32NC	H-2	2	3/4	2-1/8	**440-2051**	5/16-24NF	H-1	3	1-1/8	2-23/32	**440-2166**	7/8-9NC	H-6	4	2-7/32	4-11/16	**440-2367**
8-32NC	H-3	2	3/4	2-1/8	**440-2052**	5/16-24NF	H-3	3	1-1/8	2-23/32	**440-2168**	7/8-14NF	H-1	4	2-7/32	4-11/16	**440-2368**
8-32NC	H-1	3	3/4	2-1/8	**440-2053**	5/16-24NF	H-1	4	1-1/8	2-23/32	**440-2170**	7/8-14NF	H-2	4	2-7/32	4-11/16	**440-2370**
8-32NC	H-2	3	3/4	2-1/8	**440-2054**	5/16-24NF	H-2	4	1-1/8	2-23/32	**440-2172**	7/8-14NF	H-3	4	2-7/32	4-11/16	**440-2372**
8-32NC	H-3	3	3/4	2-1/8	**440-2055**	5/16-24NF	H-3	4	1-1/8	2-23/32	**440-2174**	7/8-14NF	H-4	4	2-7/32	4-11/16	**440-2374**
8-32NC	H-7	3	3/4	2-1/8	**440-2056**	5/16-24NF	H-4	4	1-1/8	2-23/32	**440-2176**	7/8-14NF	H-6	4	2-7/32	4-11/16	**440-2375**
8-32NC	H-1	4	3/4	2-1/8	**440-2057**	3/8-16NC	H-1	3	1-1/4	2-15/16	**440-2180**	1-8NC	H-1	4	2-1/2	5-1/8	**440-2376**
8-32NC	H-2	4	3/4	2-1/8	**440-2058**	3/8-16NC	H-3	3	1-1/4	2-15/16	**440-2182**	1-8NC	H-2	4	2-1/2	5-1/8	**440-2378**
8-32NC	H-3	4	3/4	2-1/8	**440-2059**	3/8-16NC	H-5	3	1-1/4	2-15/16	**440-2183**	1-8NC	H-4	4	2-1/2	5-1/8	**440-2380**
8-32NC	H-4	4	3/4	2-1/8	**440-2060**	3/8-16NC	H-1	4	1-1/4	2-15/16	**440-2184**	1-8NC	H-6	4	2-1/2	5-1/8	**440-2382**
8-32NC	H-5	4	3/4	2-1/8	**440-2061**	3/8-16NC	H-2	4	1-1/4	2-15/16	**440-2186**	1-12NF	H-1	4	2-1/2	5-1/8	**440-2384**
8-32NC	H-7	4	3/4	2-1/8	**440-2062**	3/8-16NC	H-3	4	1-1/4	2-15/16	**440-2188**	1-12NF	H-2	4	2-1/2	5-1/8	**440-2386**
8-36NF	H-2	2	3/4	2-1/8	**440-2063**	3/8-16NC	H-5	4	1-1/4	2-15/16	**440-2190**	1-12NF	H-4	4	2-1/2	5-1/8	**440-2388**
8-36NF	H-1	4	3/4	2-1/8	**440-2064**	3/8-16NC	H-7	4	1-1/4	2-15/16	**440-2192**	1-12NF	H-6	4	2-1/2	5-1/8	**440-2390**
8-36NF	H-2	4	3/4	2-1/8	**440-2065**	3/8-16NC	H-11	4	1-1/4	2-15/16	**440-2194**	1-14NS	H-2	4	2-1/2	5-1/8	**440-2392**
10-24NC	H-2	2	7/8	2-3/8	**440-2066**	3/8-24NF	H-3	3	1-1/4	2-15/16	**440-2224**	1-14NS	H-4	4	2-1/2	5-1/8	**440-2394**
10-24NC	H-3	2	7/8	2-3/8	**440-2067**	3/8-24NF	H-1	4	1-1/4	2-15/16	**440-2226**	1-14NS	H-6	4	2-1/2	5-1/8	**440-2396**
10-24NC	H-2	3	7/8	2-3/8	**440-2068**	3/8-24NF	H-2	4	1-1/4	2-15/16	**440-2228**	1-1/8-7NC	H-4	4	2-9/16	5-3/4	**440-2398**
10-24NC	H-3	3	7/8	2-3/8	**440-2069**	3/8-24NF	H-3	4	1-1/4	2-15/16	**440-2230**	1-1/8-12NF	H-4	4	2-9/16	5-3/4	**440-2400**
10-24NC	H-7	3	7/8	2-3/8	**440-2070**	3/8-24NF	H-4	4	1-1/4	2-15/16	**440-2232**	1-1/4-7NC	H-4	4	2-9/16	5-3/4	**440-2402**
10-24NC	H-1	4	7/8	2-3/8	**440-2071**	7/16-14NC	H-3	3	1-7/16	3-5/32	**440-2234**	1-1/4-12NF	H-4	6	2-9/16	5-3/4	**440-2404**
10-24NC	H-2	4	7/8	2-3/8	**440-2072**	7/16-14NC	H-5	3	1-7/16	3-5/32	**440-2236**	1-3/8-6NC	H-4	4	3	6-1/16	**440-2406**
10-24NC	H-3	4	7/8	2-3/8	**440-2073**	7/16-14NC	H-1	4	1-7/16	3-5/32	**440-2238**	1-3/8-12NF	H-4	6	3	6-1/16	**440-2408**
10-24NC	H-4	4	7/8	2-3/8	**440-2074**	7/16-14NC	H-2	4	1-7/16	3-5/32	**440-2240**	1-1/2-6NC	H-4	4	3	6-3/8	**440-2410**
10-24NC	H-5	4	7/8	2-3/8	**440-2075**	7/16-14NC	H-3	4	1-7/16	3-5/32	**440-2242**	1-1/2-12NF	H-4	6	3	6-3/8	**440-2412**
10-24NC	H-7	4	7/8	2-3/8	**440-2076**	7/16-14NC	H-5	4	1-7/16	3-5/32	**440-2244**						
10-32NF	H-1	3	7/8	2-3/8	**440-2077**	7/16-20NF	H-3	3	1-7/16	3-5/32	**440-2246**						

Hand Taps-Bottoming Style

High Speed Steel, Ground Thread

- Used for tapping blind holes requiring full threads near the bottom of the hole.
- Featured for hand tapping general machine or CNC tapping in a wide variety of materials.
- One to two thread chamfer.



Size	Thread Limit	No.of Flute	Thread Length	Overall Length	Order No.	Size	Thread Limit	No.of Flute	Thread Length	Overall Length	Order No.	Size	Thread Limit	No.of Flute	Thread Length	Overall Length	Order No.
0-80NF	H-1	2"	5/16"	1-5/8"	**440-3000**	10-32NF	H-2	2	7/8"	2-3/8"	**440-3078**	7/16"-14NC	H-5	4	1-7/16"	3-5/32"	**440-3244**
0-80NF	H-2	2	5/16	1-5/8	**440-3002**	10-32NF	H-3	2	7/8	2-3/8	**440-3079**	7/16-20NF	H-3	3	1-7/16	3-5/32	**440-3246**
1-64NC	H-1	2	3/8	1-11/16	**440-3004**	10-32NF	H-2	3	7/8	2-3/8	**440-3080**	7/16-20NF	H-5	3	1-7/16	3-5/32	**440-3254**
1-64NC	H-2	2	3/8	1-11/16	**440-3006**	10-32NF	H-3	3	7/8	2-3/8	**440-3081**	7/16-20NF	H-2	4	1-7/16	3-5/32	**440-3256**
1-72NF	H-1	2	3/8	1-11/16	**440-3008**	10-32NF	H-7	3	7/8	2-3/8	**440-3082**	7/16-20NF	H-3	4	1-7/16	3-5/32	**440-3258**
1-72NF	H-2	2	3/8	1-11/16	**440-3009**	10-32NF	H-1	4	7/8	2-3/8	**440-3083**	7/16-20NF	H-5	4	1-7/16	3-5/32	**440-3260**
2-56NC	H-2	2	7/16	1-3/4	**440-3011**	10-32NF	H-2	4	7/8	2-3/8	**440-3084**	1/2-13NC	H-3	3	1-21/32	3-3/8	**440-3262**
2-56NC	H-1	3	7/16	1-3/4	**440-3012**	10-32NF	H-3	4	7/8	2-3/8	**440-3085**	1/2-13NC	H-5	3	1-21/32	3-3/8	**440-3264**
2-56NC	H-2	3	7/16	1-3/4	**440-3013**	10-32NF	H-7	4	7/8	2-3/8	**440-3088**	1/2-13NC	H-1	4	1-21/32	3-3/8	**440-3266**
2-64NF	H-1	3	7/16	1-3/4	**440-3014**	12-24NC	H-3	4	15/16	2-3/8	**440-3090**	1/2-13NC	H-2	4	1-21/32	3-3/8	**440-3268**
2-64NF	H-2	3	7/16	1-3/4	**440-3015**	12-28NF	H-1	4	15/16	2-3/8	**440-3091**	1/2-13NC	H-3	4	1-21/32	3-3/8	**440-3270**
3-48NC	H-2	2	1/2	1-13/16	**440-3016**	12-28NF	H-3	4	15/16	2-3/8	**440-3092**	1/2-13NC	H-5	4	1-21/32	3-3/8	**440-3272**
3-48NC	H-2	3	1/2	1-13/16	**440-3018**	14-24	H-3	4	1-1/4	2-5/8	**440-3094**	1/2-20NF	H-3	3	1-21/32	3-3/8	**440-3276**
3-56NF	H-1	3	1/2	1-13/16	**440-3019**	1/4-20NC	H-3	2	1	2-1/2	**440-3102**	1/2-20NF	H-5	3	1-21/32	3-3/8	**440-3278**
3-56NF	H-2	3	1/2	1-13/16	**440-3020**	1/4-20NC	H-5	2	1	2-1/2	**440-3103**	1/2-20NF	H-1	4	1-21/32	3-3/8	**440-3280**
4-36	H-2	3	9/16	1-7/8	**440-3022**	1/4-20NC	H-2	3	1	2-1/2	**440-3106**	1/2-20NF	H-2	4	1-21/32	3-3/8	**440-3282**
4-40NC	H-1	2	9/16	1-7/8	**440-3023**	1/4-20NC	H-3	3	1	2-1/2	**440-3108**	1/2-20NF	H-3	4	1-21/32	3-3/8	**440-3284**
4-40NC	H-2	2	9/16	1-7/8	**440-3024**	1/4-20NC	H-5	3	1	2-1/2	**440-3110**	1/2-20NF	H-5	4	1-21/32	3-3/8	**440-3286**
4-40NC	H-1	3	9/16	1-7/8	**440-3025**	1/4-20NC	H-1	4	1	2-1/2	**440-3112**	9/16-12NC	H-2	4	1-21/32	3-19/16	**440-3314**
4-40NC	H-2	3	9/16	1-7/8	**440-3026**	1/4-20NC	H-2	4	1	2-1/2	**440-3114**	9/16-12NC	H-3	4	1-21/32	3-19/16	**440-3316**
4-48NF	H-2	2	9/16	1-7/8	**440-3030**	1/4-20NC	H-3	4	1	2-1/2	**440-3116**	9/16-12NC	H-5	4	1-21/32	3-19/16	**440-3318**
4-48NF	H-2	3	9/16	1-7/8	**440-3032**	1/4-20NC	H-5	4	1	2-1/2	**440-3118**	9/16-18NF	H-2	4	1-21/32	3-19/16	**440-3322**
5-40NC	H-2	2	5/8	1-15/16	**440-3033**	1/4-28NF	H-3	2	1	2-1/2	**440-3132**	9/16-18NF	H-3	4	1-21/32	3-19/16	**440-3324**
5-40NC	H-7	3	5/8	1-15/16	**440-3034**	1/4-28NF	H-3	3	1	2-1/2	**440-3134**	9/16-18NF	H-5	4	1-21/32	3-19/16	**440-3326**
5-40NC	H-2	3	5/8	1-15/16	**440-3035**	1/4-28NF	H-1	4	1	2-1/2	**440-3136**	5/8-11NC	H-1	4	1-13/16	3-13/16	**440-3328**
5-44NF	H-1	3	5/8	1-15/16	**440-3036**	1/4-28NF	H-2	4	1	2-1/2	**440-3138**	5/8-11NC	H-2	4	1-13/16	3-13/16	**440-3330**
5-44NF	H-2	3	5/8	1-15/16	**440-3037**	1/4-28NF	H-3	4	1	2-1/2	**440-3140**	5/8-11NC	H-3	4	1-13/16	3-13/16	**440-3332**
6-32NC	H-1	2	11/16	2	**440-3038**	1/4-28NF	H-4	4	1	2-1/2	**440-3142**	5/8-11NC	H-5	4	1-13/16	3-13/16	**440-3334**
6-32NC	H-2	2	11/16	2	**440-3039**	5/16-18NC	H-3	2	1-1/8	2-23/32	**440-3144**	5/8-18NF	H-1	4	1-13/16	3-13/16	**440-3338**
6-32NC	H-3	2	11/16	2	**440-3040**	5/16-18NC	H-5	2	1-1/8	2-23/32	**440-3145**	5/8-18NF	H-2	4	1-13/16	3-13/16	**440-3340**
6-32NC	H-1	3	11/16	2	**440-3041**	5/16-18NC	H-3	3	1-1/8	2-23/32	**440-3148**	5/8-18NF	H-3	4	1-13/16	3-13/16	**440-3342**
6-32NC	H-2	3	11/16	2	**440-3042**	5/16-18NC	H-5	3	1-1/8	2-23/32	**440-3150**	5/8-18NF	H-5	4	1-13/16	3-13/16	**440-3343**
6-32NC	H-3	3	11/16	2	**440-3043**	5/16-18NC	H-1	4	1-1/8	2-23/32	**440-3152**	11/16-11NS	H-3	4	1-13/16	4-1/32	**440-3344**
6-32NC	H-7	3	11/16	2	**440-3044**	5/16-18NC	H-2	4	1-1/8	2-23/32	**440-3154**	11/16-16NS	H-3	4	1-13/16	4-1/32	**440-3345**
6-40NF	H-2	2	11/16	2	**440-3047**	5/16-18NC	H-3	4	1-1/8	2-23/32	**440-3156**	3/4-10NC	H-1	4	2	4-1/4	**440-3346**
6-40NF	H-1	3	11/16	2	**440-3048**	5/16-18NC	H-5	4	1-1/8	2-23/32	**440-3158**	3/4-10NC	H-3	4	2	4-1/4	**440-3350**
6-40NF	H-2	3	11/16	2	**440-3049**	5/16-24NF	H-3	3	1-1/8	2-23/32	**440-3168**	3/4-10NC	H-5	4	2	4-1/4	**440-3352**
8-32NC	H-2	2	3/4	2-1/8	**440-3051**	5/16-24NF	H-1	4	1-1/8	2-23/32	**440-3170**	3/4-16NF	H-1	4	2	4-1/4	**440-3354**
8-32NC	H-3	2	3/4	2-1/8	**440-3052**	5/16-24NF	H-2	4	1-1/8	2-23/32	**440-3172**	3/4-16NF	H-2	4	2	4-1/4	**440-3356**
8-32NC	H-2	3	3/4	2-1/8	**440-3054**	5/16-24NF	H-3	4	1-1/8	2-23/32	**440-3174**	3/4-16NF	H-3	4	2	4-1/4	**440-3358**
8-32NC	H-3	3	3/4	2-1/8	**440-3055**	5/16-24NF	H-4	4	1-1/8	2-23/32	**440-3176**	3/4-16NC	H-5	4	2	4-1/4	**440-3360**
8-32NC	H-7	3	3/4	2-1/8	**440-3056**	3/8-16NC	H-1	3	1-1/4	2-15/16	**440-3180**	7/8-9NC	H-1	4	2-7/32	4-11/16	**440-3361**
8-32NC	H-1	4	3/4	2-1/8	**440-3057**	3/8-16NC	H-3	3	1-1/4	2-15/16	**440-3182**	7/8-9NC	H-4	4	2-7/32	4-11/16	**440-3366**
8-32NC	H-2	4	3/4	2-1/8	**440-3058**	3/8-16NC	H-5	3	1-1/4	2-15/16	**440-3183**	7/8-9NC	H-6	4	2-7/32	4-11/16	**440-3367**
8-32NC	H-3	4	3/4	2-1/8	**440-3059**	3/8-16NC	H-1	4	1-1/4	2-15/16	**440-3184**	7/8-14NF	H-4	4	2-7/32	4-11/16	**440-3374**
8-32NC	H-7	4	3/4	2-1/8	**440-3062**	3/8-16NC	H-2	4	1-1/4	2-15/16	**440-3186**	7/8-14NF	H-6	4	2-7/32	4-11/16	**440-3375**
8-36NF	H-2	2	3/4	2-1/8	**440-3063**	3/8-16NC	H-3	4	1-1/4	2-15/16	**440-3188**	1-8NC	H-1	4	2-1/2	5-1/8	**440-3376**
8-36NF	H-1	4	3/4	2-1/8	**440-3064**	3/8-16NC	H-5	4	1-1/4	2-15/16	**440-3190**	1-8NC	H-4	4	2-1/2	5-1/8	**440-3380**
8-36NF	H-2	4	3/4	2-1/8	**440-3065**	3/8-24NF	H-3	3	1-1/4	2-15/16	**440-3224**	1-12NF	H-4	4	2-1/2	5-1/8	**440-3388**
10-24NCH	-2	2	7/8	2-3/8	**440-3066**	3/8-24NF	H-1	4	1-1/4	2-15/16	**440-3226**	1-14NS	H-4	4	2-1/2	5-1/8	**440-3394**
10-24NCH	-3	2	7/8	2-3/8	**440-3067**	3/8-24NF	H-2	4	1-1/4	2-15/16	**440-3228**	1-1/8-7NC	H-4	4	2-9/16	5-3/4	**440-3398**
10-24NCH	-3	3	7/8	2-3/8	**440-3069**	3/8-24NF	H-3	4	1-1/4	2-15/16	**440-3230**	1-1/8-12NF	H-4	4	2-9/16	5-3/4	**440-3400**
10-24NCH	-7	3	7/8	2-3/8	**440-3070**	3/8-24NF	H-4	4	1-1/4	2-15/16	**440-3232**	1-1/4-7NC	H-4	4	2-9/16	5-3/4	**440-3402**
10-24NCH	-1	4	7/8	2-3/8	**440-3071**	7/16-14NC	H-3	3	1-7/16	3-5/32	**440-3234**	1-1/4-12NF	H-4	6	2-9/16	5-3/4	**440-3404**
10-24NCH	-2	4	7/8	2-3/8	**440-3072**	7/16-14NC	H-5	3	1-7/16	3-5/32	**440-3236**	1-3/8-6NC	H-4	4	3	6-1/16	**440-3406**
10-24NCH	-3	4	7/8	2-3/8	**440-3073**	7/16-14NC	H-1	4	1-7/16	3-5/32	**440-3238**	1-3/8-12NF	H-4	6	3	6-1/16	**440-3408**
10-24NCH	-7	4	7/8	2-3/8	**440-3076**	7/16-14NC	H-2	4	1-7/16	3-5/32	**440-3240**	1-1/2-6NC	H-4	4	3	6-3/8	**440-3410**
10-32NFH	-1	2	7/8	2-3/8	**440-3077**	7/16-14NC	H-3	4	1-7/16	3-5/32	**440-3242**	1-1/2-12NF	H-4	6	3	6-3/8	**440-3412**

Carbon Steel Hand Taps

NEW



Ground Thread

Tap Size	Taper Order No.	Plug Order No.	Bottoming Order No.
0-80NF	312-1002	312-2002	312-3002
1-64NC	312-1012	312-2012	312-3012
1-72NF	312-1022	312-2022	312-3022
2-56NC	312-1030	312-2030	312-3030
2-64NF	312-1032	312-2032	312-3032
3-48NC	312-1042	312-2042	312-3042
3-56	312-1052	312-2052	312-3052
4-36	312-1062	312-2062	312-3062
4-40NC	312-1065	312-2065	312-3065
4-48	312-1072	312-2072	312-3072
5-40NC	312-1082	312-2082	312-3082
5-44	312-1092	312-2092	312-3092
5-56	312-1102	312-2102	312-3102
6-32NC	312-1112	312-2112	312-3112
6-36	312-1115	312-2115	312-3115
6-40	312-1122	312-2122	312-3122
8-32NC	312-1125	312-2125	312-3125
8-36	312-1132	312-2132	312-3132
10-24NC	312-1142	312-2142	312-3142
10-32	312-1152	312-2152	312-3152
2-24NC	312-1155	312-2155	312-3155
12-28	312-1162	312-2162	312-3162
14-24	312-1172	312-2172	312-3172
1/16”-64	312-1173	312-2173	312-3173
3/32”-48 NC	312-1174	312-2174	312-3174
3/32”-50	312-1175	312-2175	312-3175
1/8”-40	312-1176	312-2176	312-3176
5/32”-32 NC	312-1177	312-2177	312-3177
5/32”-36	312-1178	312-2178	312-3178
3/16”-24 NC	312-1179	312-2179	312-3179
3/16”-32	312-1180	312-2180	312-3180
7/32”-24NC	312-1181	312-2181	312-3181
7/32”-32	312-1182	312-2182	312-3182
1/4”-20 NC	312-1183	312-2183	312-3183
1/4”-24	312-1184	312-2184	312-3184
1/4”-28	312-1185	312-2185	312-3185
1/4”-32	312-1187	312-2187	312-3187
5/16”-18	312-1192	312-2192	312-3192
5/16”-24	312-1202	312-2202	312-3202
5/16”-32	312-1205	312-2205	312-3205
3/8”-16NC	312-1212	312-2212	312-3212
3/8”-24NF	312-1222	312-2222	312-3222
7/16”-14NC	312-1232	312-2232	312-3232
7/16”-20NF	312-1235	312-2235	312-3235
1/2”-12	312-1238	312-2238	312-3238
1/2”-13NC	312-1242	312-2242	312-3242
1/2”-20NF	312-1252	312-2252	312-3252
9/16”-12NC	312-1262	312-2262	312-3262
9/16”-18NF	312-1272	312-2272	312-3272
5/8”-11NC	312-1282	312-2282	312-3282
5/8”-18NF	312-1292	312-2292	312-3292
11/16”-11NS	312-1293	312-2293	312-3293
11/16”-16NS	312-1294	312-2294	312-3294
3/4”-10NC	312-1295	312-2295	312-3295
3/4”-16NF	312-1296	312-2296	312-3296
3/4”-19	312-1297	312-2297	312-3297
7/8”-9NC	312-1298	312-2298	312-3298
7/8”-14	312-1299	312-2299	312-3299
1”-8NC	312-1300	312-2300	312-3300
1”-12	312-1301	312-2301	312-3301
1”-14	312-1302	312-2302	312-3302
1-1/8”-7 NC	312-1305	312-2305	312-3305
1-1/8”-12	312-1312	312-2312	312-3312
1-1/4”-7NC	312-1315	312-2315	312-3315
1-1/4”-12	312-1322	312-2322	312-3322
1-3/8”-6 NC	312-1332	312-2332	312-3332
1-3/8”-12	312-1342	312-2342	312-3342
1-1/2”-6 NC	312-1352	312-2352	312-3352
1-1/2-12	312-1353	312-2353	312-3353
1-5/8”-5 NC	312-1354	312-2354	312-3354
1-5/8”-18	312-1355	312-2355	312-3355
1-3/4”-5 NC	312-1356	312-2356	312-3356
1-3/4:-12	312-1357	312-2357	312-3357
1-3/4”-16	312-1358	312-2358	312-3358
1-7/8”-5 NC	312-1359	312-2359	312-3359
1-7/8”-16	312-1360	312-2360	312-3360
2”-4-1/2 NC	312-1362	312-2362	312-3362
2”-12	312-1365	312-2365	312-3365
2”-16	312-1368	312-2368	312-3368
2-1/4”-4-1/2	312-1372	312-2372	312-3372

Left Hand Taps & Sets

HSS, Ground Thread

NEW

- Use in wide variety of materials to create left hand threaded holes
- Set Includes: 1 Each of same available tap size:taper, plug and bottoming



Size	Taper Order No.	Plug Order No.	Bottoming Order No.	3pc Set Order No.
0-80	313-1002	311-5002	313-2002	313-5002
1-64	313-1012	311-5012	313-2012	313-5012
1-72	313-1022	311-5022	313-2022	313-5022
2-56	313-1032	311-5032	313-2032	313-5032
2-64	313-1042	311-5042	313-2042	313-5042
3-48	313-1052	311-5052	313-2052	313-5052
3-56	313-1062	311-5062	313-2062	313-5062
4-40	313-1072	311-5072	313-2072	313-5072
4-48	313-1082	311-5082	313-2082	313-5082
5-40	313-1092	311-5092	313-2092	313-5092
5-44	313-1102	311-5102	313-2102	313-5102
6-32	313-1112	311-5112	313-2112	313-5112
6-40	313-1122	311-5122	313-2122	313-5122
8-32	313-1132	311-5132	313-2132	313-5132
8-36	313-1142	311-5142	313-2142	313-5142
10-24	313-1152	311-5152	313-2152	313-5152
10-32	313-1162	311-5162	313-2162	313-5162
12-24	313-1172	311-5172	313-2172	313-5172
12-28	313-1182	311-5182	313-2182	313-5182
14-24	313-1192	311-5192	313-2192	313-5192
1/4-20	313-1202	311-5202	313-2202	313-5202
1/4-28	313-1212	311-5212	313-2212	313-5212
5/16-18	313-1222	311-5222	313-2222	313-5222
5/16-24	313-1232	311-5232	313-2232	313-5232
3/8-16	313-1242	311-5242	313-2242	313-5242
3/8-24	313-1252	311-5252	313-2252	313-5252
7/16-14	313-1262	311-5262	313-2262	313-5262
7/16-20	313-1272	311-5272	313-2272	313-5272
7/16-28	313-1274	311-5274	313-2274	313-5274
1/2-13	313-1282	311-5282	313-2282	313-5282
1/2”-20	313-1292	311-5292	313-2292	313-5292
9/16-12	313-1302	311-5302	313-2302	313-5302
9/16-18	313-1312	311-5312	313-2312	313-5312
5/8-11	313-1322	311-5322	313-2322	313-5322
5/8-18	313-1332	311-5332	313-2332	313-5332
3/4-10	313-1342	311-5342	313-2342	313-5342
3/4-16	313-1352	311-5352	313-2352	313-5352
7/8-9	313-1362	311-5362	313-2362	313-5362
7/8-14	313-1372	311-5372	313-2372	313-5372
1-8	313-1382	311-5382	313-2382	313-5382
1-12	313-1392	311-5392	313-2392	313-5392
1-14	313-1402	311-5402	313-2402	313-5402
1-1/8-7	313-1412	311-5412	313-2412	313-5412
1-1/8-12	313-1422	311-5422	313-2422	313-5422
1-1/4-7	313-1432	311-5432	313-2432	313-5432
1-1/4-10	313-1442	311-5442	313-2442	313-5442
1-1/4-12	313-1452	311-5452	313-2452	313-5452
1-3/8-6	313-1462	311-5462	313-2462	313-5462
1-3/8-12	313-1472	311-5472	313-2472	313-5472
1-1/2-6	313-1482	311-5482	313-2482	313-5482
1-1/2-12	313-1492	311-5492	313-2492	313-5492
1-5/8-5	313-1502	311-5502	313-2502	313-5502
1-3/4-5	313-1512	311-5512	313-2512	313-5512
2-6	313-1522	311-5522	313-2522	313-5522
2-1/4-4	313-1532	311-5532	313-2532	313-5532
2-1/4-4-1/2	313-1542	311-5542	313-2542	313-5542
2-1/4-8	313-1552	311-5552	313-2552	313-5552
2-1/2-4	313-1562	311-5562	313-2562	313-5562
2-1/2-6	313-1572	311-5572	313-2572	313-5572

Metric Hand Taps

High Speed Steel, Ground Thread



Size	Thread Limits	No.of Flute	Taper Order No.	Plug Order No.	Bottoming Order No.	3pc Set Order No.	Size	Thread Limits	No.of Flute	Taper Order No.	Plug Order No.	Bottoming Order No.	3pc Set Order No.
1.50x0.35mm	D-1	2		411-2004			14.00x1.50mm	D-3	4		411-2182		
1.60x0.35mm	D-1	2		411-2006			14.00x1.50mm	D-6	4		411-2184		
1.60x0.35mm	D-3	2		411-2008			14.00x1.50mm	D-7	4	311-4371		311-4373	311-4374
1.80x0.35mm	D-1	2		411-2010			14.00x2.00mm	D-3	4		411-2188		
1.80x0.35mm	D-2	2		411-2012			14.00x2.00mm	D-7	4	311-4381	411-2190	311-4383	311-4384
1.80x0.35mm	D-3	2		411-2014			16.00x1.00mm	D-6	4	311-4391	411-2198	311-4393	311-4394
2.00x0.40mm	D-1	3		411-2018			16.00x1.50mm	D-3	4		411-2202		
2.00x0.40mm	D-3	3	311-4021	411-2020	311-4023	311-4024	16.00x1.50mm	D-6	4		411-2204		
2.00x0.45mm	D-2	3		411-2022			16.00x1.50mm	D-7	4	311-4401		311-4403	311-4404
2.00x0.45mm	D-3	3	311-2031		311-4043	311-4044	16.00x2.00mm	D-4	4		411-2206		
2.20x0.45mm	D-1	3		411-2024			16.00x2.00mm	D-7	4	311-4411	411-2208	311-4413	311-4414
2.20x0.45mm	D-2	3	311-4041	411-2026	311-4043	311-4044	18.00x1.00mm	D-6	4		411-2214		
2.20x0.45mm	D-3	3		411-2028			18.00x1.50mm	D-3	4		411-2218		
2.30x0.40mm	D-3	3		411-2030			18.00x1.50mm	H-4	4		411-2220		
2.50x0.45mm	D-1	3		411-2032			18.00x1.50mm	D-6	4		411-2222		
2.50x0.45mm	D-3	3	311-4051	411-2034	311-4053	311-4054	18.00x1.50mm	D-7	4	311-4421		311-4423	311-4434
2.60x0.45mm	D-2	3		411-2036			18.00x2.00mm	D-6	4		411-2223		
2.60x0.45mm	D-3	3		411-2037			8.00x2.00mm	D-7	4	311-4431		311-4433	311-4434
3.00x0.35mm	D-3	3	311-4061		311-4063	311-4064	18.00x2.50mm	D-4	4		411-2224		
3.00x0.50mm	D-1	3		411-2040			18.00x2.50mm	D-7	4	311-4441	411-2226	311-4443	311-4444
3.00x0.50mm	D-3	3	311-4071	411-2042	311-4073	311-4074	20.00x1.00mm	D-7	4		411-2230		
3.00x0.60mm	D-3	3		411-2046			20.00x1.50mm	D-3	4		411-2234		
3.50x0.35mm	D-3	3	311-4081		311-4083	311-4084	20.00x1.50mm	D-6	4		411-2236		
3.50x0.60mm	D-1	3		411-2050			20.00x2.00mm	D-6	4	311-4451	411-2238	311-4453	311-4454
3.50x0.60mm	D-3	3	311-4091		311-4093	311-4094	20.00x2.50mm	D-4	4		411-2240		
3.50x0.60mm	D-4	3		411-2052			20.00x2.50mm	D-7	4	311-4461	411-2242	311-4463	311-4464
4.00x0.50mm	D-4	4	311-4101	411-2054	311-4103	311-4104	22.00x1.00mm	D-6	4		411-2244		
4.00x0.70mm	D-1	4		411-2056			22.00x1.50mm	D-3	4		411-2246		
4.00x0.70mm	D-4	4	311-4111	411-2058	311-4113	311-4114	22.00x1.50mm	D-6	4		411-2248		
4.00x0.75mm	D-4	4	311-4121	411-2060	311-4123	311-4124	22.00x2.00mm	D-6	4	311-4471	411-2249	311-4473	311-4474
4.50x0.75mm	D-2	4		411-2066			22.00x2.50mm	D-4	4		411-2250		
4.50x0.75mm	D-4	4	311-4131	411-2068	311-4133	311-4134	22.00x2.50mm	D-6	4		411-2252		
5.00x0.50mm	D-4	4	311-4141	411-2070	311-4143	311-4144	22.00x2.50mm	D-7	4	311-4481	411-2254	311-4483	311-4484
5.00x0.8.mm	D-2	4		411-2076			24.00x1.00mm	D-7	4		411-2256		
5.00x0.8.mm	D-4	4	311-4161	411-2078	311-4163	311-4164	24.00x1.50mm	D-7	4		411-2258		
5.00x0.90mm	D-3	4	311-4151	411-2080	311-4153	311-4154	24.00x2.00mm	D-4	4		411-2260		
6.00x0.50mm	D-4	4	311-4181	411-2084	311-4183	311-4184	24.00x2.00mm	D-7	4		411-2262		
6.00x0.75mm	D-3	4		411-2086			24.00x2.00mm	D-8	4	311-4491		311-4493	311-4494
6.00x0.75mm	D-4	4		411-2087			24.00x3.00mm	D-4	4		411-2264		
6.00x0.75mm	D-5	4	311-4191		311-4193	311-4194	24.00x3.00mm	D-8	4	311-4501	411-2266	311-4503	311-4504
6.00x1.00mm	D-3	4		411-2088			26.00x1.50mm	D-8	4	311-4511		311-4513	311-4514
6.00x1.00mm	D-5	4	311-4101	411-2090	311-4103	311-4204	27.00x1.50mm	D-7	4		411-2272		
6.30x1.00mm	D-5	4		411-2094			27.00x2.00mm	D-5	4		411-2274		
7.00x1.00mm	D-3	4		411-2100			27.00x2.00mm	D-7	4		411-2276		
7.00x1.00mm	D-5	4	311-4221	411-2102	311-4223	311-4224	27.00x3.00mm	D-8	4		411-2278		
8.00x0.75mm	D-4	4		411-2108			27.00x3.00mm	D-9	4		411-2280		
8.00x1.00mm	D-3	4		411-2110			28.00x2.00mm	D-8	4	311-4521		311-4523	311-4524
8.00x1.00mm	D-5	4	311-4231	411-2112	311-4233	311-4234	30.00x1.50mm	D-7	4		411-2284		
8.00x1.25mm	D-3	4		411-2114			30.00x2.00mm	D-5	4		411-2286		
8.00x1.25mm	D-5	4	311-4241	411-2116	311-4243	311-4244	30.00x2.00mm	D-7	4		411-2288		
9.00X1.00mm	D-6	4	311-4251		311-4253	311-4254	30.00x2.00mm	D-9	4	311-4531		311-4533	311-4534
9.00x1.25mm	D-4	4		411-2122			30.00x3.50mm	D-5	4		411-2292		
9.00X1.25mm	D-6	4	311-4261		311-4263	311-4264	30.00x3.50mm	D-9	4	311-4541	411-2294	311-4543	311-4544
10.00x0.75mm	D-5	4		411-2128			32.00x2.00mm	D-7	4		411-2296		
10.00x1.00mm	D-5	4		411-2130			32.00x2.00mm	D-7	6		411-2298		
10.00x1.00mm	D-6	4	311-4271		311-4273	311-4274	33.00x2.00mm	D-5	4		411-2300		
10.00x1.25mm	D-3	4		411-2132			33.00x2.00mm	D-7	6		411-2301		
10.00x1.25mm	D-5	4		411-2134			33.00x2.00mm	D-7	4		411-2302		
10.00x1.25mm	D-6	4	311-4281		311-4283	311-4284	33.00x2.00mm	D-9		311-4551		311-4553	311-4554
10.00x1.50mm	D-3	4		411-2136			33.00x3.00mm	D-5	4		411-2303		
10.00x1.50mm	D-6	4	311-4291	411-2138	311-4293	311-4294	33.00x3.50mm	D-5	4		411-2304		
10.00X1.75mm	D-6	4	311-4301		311-4303	311-4304	33.00x3.50mm	D-9	4		411-2306		
11.00x1.00mm	D-3	4	311-4311	411-2142	311-4313	311-4314	36.00x3.00mm	D-5	4		411-2308		
11.00x1.50mm	D-5	4		411-2146			36.00x3.00mm	D-8	4		411-2310		
11.00x1.50mm	D-6	4	311-4321	411-2147	311-4323	311-4324	36.00x3.60mm	D-9	4		411-2312		
12.00x1.00mm	D-5	4		411-2150			36.00x4.00mm	D-5	4		411-2314		
12.00x1.25mm	D-3	4		411-2152			36.00x4.00mm	D-9	4		411-2316		
12.00x1.25mm	D-5	4		411-2154			38.00x4.00mm	D-9	4		411-2317		
12.00X1.25mm	D-6	4	311-4331		311-4333	311-4334	39.00x3.00mm	D-6	4		411-2318		
12.00x1.50mm	D-5	4		411-2156			39.00x3.00mm	D-8	6	311-4561	411-2320	311-4563	311-4564
12.00x1.50mm	D-6	4	311-4341		311-4343	311-4344	39.00x4.00mm	D-6	4		411-2322		
12.00x1.75mm	D-3	4		411-2158			39.00x4.00mm	D-9	4		411-2324		
12.00x1.75mm	D-6	4	311-4451	411-2160	311-4353	311-4354	42.00x4.5mm	D-1	6		411-2326		
14.00x1.00mm	D-6	4		411-2178			45.00x4.50mm	D-1	6		411-2328		
14.00x1.25mm	H-4	4		411-2180			48.00x4.50mm	D-1	6		411-2330		
14.00x1.25mm	D-6	4		411-2181			48.00x5.00mm	D-1	6		411-2332		

Spiral Point Taps

High Speed Steel, Ground Thread

- Designed for greater strength which enableshigher speeds and faster production.
- Shearing action of the point pushes chips ahead of the cutting action to reduce loading of the flutes.



Size	No.of Flute	Thread Limit	Plug Order No.	Bottoming Order No.
0-80NF	2	H-1	**311-9002**	**311-9402**
0-80NF	2	H-2	**311-9004**	**311-9404**
1-64NC	2	H-1	**311-9006**	**311-9406**
1-64NC	2	H-2	**311-9008**	**311-9408**
1-72NF	2	H-1	**311-9010**	**311-9410**
1-72NF	2	H-2	**311-9012**	**311-9412**
2-56NC	2	H-2	**311-9014**	**311-9414**
2-64NF	2	H-2	**311-9016**	**311-9416**
3-48NC	2	H-2	**311-9018**	**311-9418**
3-56NF	2	H-2	**311-9020**	**311-9420**
4-40NC	2	H-2	**311-9022**	**311-9422**
4-40NC	2	H-7	**311-9024**	**311-9424**
4-48NF	2	H-2	**311-9026**	**311-9426**
5-40NC	2	H-2	**311-9028**	**311-9428**
5-40NC	2	H-7	**311-9030**	**311-9430**
5-44NF	2	H-2	**311-9032**	**311-9433**
6-32NC	2	H-2	**311-9034**	**311-9435**
6-32NC	2	H-3	**311-9036**	**311-9436**
6-32NC	2	H-7	**311-9038**	**311-9438**
6-40NF	2	H-2	**311-9040**	**311-9440**
8-32NC	2	H-2	**311-9042**	**311-9442**
8-32NC	2	H-3	**311-9044**	**311-9444**
8-32NC	2	H-7	**311-9046**	**311-9446**
8-36NF	2	H-2	**311-9048**	**311-9448**
10-24NC	2	H-2	**311-9050**	**311-9450**
10-24NC	2	H-3	**311-9052**	**311-9452**
10-24NC	2	H-7	**311-9054**	**311-9454**
10-32NF	2	H-2	**311-9056**	**311-9456**
10-32NF	2	H-3	**311-9058**	**311-9458**
10-32NF	2	H-7	**311-9060**	**311-9460**
12-24NC	2	H-3	**311-9062**	**311-9462**
12-28NF	2	H-3	**311-9064**	**311-9464**
1/4-20NC	2	H-2	**311-9066**	**311-9466**
1/4-20NC	2	H-3	**311-9068**	**311-9468**
1/4-20NC	2	H-5	**311-9070**	**311-9470**
1/4-20NC	3	H-2	**311-9072**	**311-9472**
1/4-20NC	3	H-3	**311-9074**	**311-9474**
1/4-20NC	3	H-5	**311-9076**	**311-9476**
1/4-28NF	2	H-2	**311-9078**	**311-9478**
1/4-28NF	2	H-3	**311-9080**	**311-9480**
1/4-28NF	3	H-2	**311-9082**	**311-9482**
1/4-28NF	3	H-3	**311-9084**	**311-9484**
5/16-18NC	2	H-2	**311-9086**	**311-9486**
5/16-18NC	2	H-3	**311-9088**	**311-9488**
5/16"-18NC	2	H-5	**311-9090**	
5/16-18NC	3	H-2	**311-9092**	
5/16-18NC	3	H-3	**311-9094**	
5/16-18NC	3	H-5	**311-9096**	
5/16-24NF	2	H2	**311-9098**	
5/16-24NF	2	H3	**311-9100**	**311-9489**
5/16-24NF	3	H3	**311-9102**	
3/8-16NC	3	H2	**311-9104**	
3/8-16NC	3	H3	**311-9106**	
3/8-16NC	3	H5	**311-9108**	
3/8-24NF	3	H2	**311-9110**	
3/8-24NF	3	H3	**311-9112**	
7/16-14NC	3	H3	**311-9114**	

Size	No.of Flute	Thread Limit	Plug Order No.	Bottoming Order No.
7/16-14NC	3	H5	**311-9116**	
7/16-20NF	3	H3	**311-9118**	**311-9495**
7/16-20NF	3	H5	**311-9120**	
1/2-13NC	3	H3	**311-9122**	
1/2-13NC	3	H5	**311-9124**	
1/2-20NF	3	H3	**311-9126**	**311-9496**
1/2-20NF	3	H5	**311-9128**	
9/16-12NC	3	H3	**311-9130**	
9/16-12NC	3	H5	**311-9132**	
9/16-18NF	3	H3	**311-9134**	
9/16-18NF	3	H5	**311-9136**	
5/8-11NC	3	H3	**311-9138**	
5/8-11NC	3	H5	**311-9140**	
5/8-18NF	3	H3	**311-9142**	
5/8-18NF	3	H5	**311-9144**	
11/16-11NS	3	H3	**311-9146**	
11/16-16NS	3	H3	**311-9148**	
3/4-10NC	3	H3	**311-9150**	
3/4-10NC	3	H5	**311-9152**	
3/4-16NF	3	H3	**311-9154**	
3/4-16NF	3	H5	**311-9156**	
7/8-9NC	3	H4	**311-9158**	
7/8-9NC	4	H4	**311-9160**	
7/8-14NF	3	H4	**311-9162**	
7/8-14NF	4	H4	**311-9164**	
1-8NC	3	H4	**311-9166**	
1-8NC	4	H4	**311-9168**	
1-12NF	4	H4	**311-9170**	
1-14NS	4	H4	**311-9172**	
1-12NF	3	H4	**311-9174**	
1-14NS	3	H4	**311-9176**	

Long Spiral Point Taps

High Speed Steel,Regular Shank

NEW

Size	Thread Limits	OAL	Order No.
4-40	GH3	6"	**311-2150**
6-32	GH3	6	**311-2152**
8-32	GH3	6	**311-2154**
10-24	GH3	6	**311-2156**
10-32	GH3	6	**311-2158**
1/4-20	GH3	6	**311-2160**
1/4-28	GH3	6	**311-2162**
5/16-16	GH3	6	**311-2164**
5/16-24	GH3	6	**311-2166**
3/8-16	GH3	6	**311-2168**
3/8-24	GH3	6	**311-2170**
7/16-14	GH3	6	**311-2172**
7/16-20	GH3	6	**311-2174**
1/2-13	GH3	6	**311-2176**
1/2-20	GH3	6	**311-2178**

HSS Long Spiral Point Taps-Plug

NEW

Reduced Shank



Size	No. of Flutes	Thread Limits	OAL	Order No.
4-40	2	H-2	4"	**311-2301**
4-48	2	H-2	4	**311-2302**
5-40	2	H-2	4	**311-2303**
6-32	2	H-3	4	**311-2305**
6-32	2	H-3	5	**311-2306**
6-32	2	H-3	6	**311-2307**
6-40	2	H-3	4	**311-2308**
8-32	2	H-3	4	**311-2309**
8-32	2	H-3	5	**311-2310**
8-32	2	H-3	6	**311-2311**
10-24	2	H-3	4	**311-2313**
10-24	2	H-3	5	**311-2314**
10-24	2	H-3	6	**311-2315**
10-32	2	H-3	4	**311-2317**
10-32	2	H-3	5	**311-2318**
10-32	2	H-3	6	**311-2319**
1/4-20	2	H-3	4	**311-2320**
1/4-20	2	H-3	6	**311-2321**
1/4-28	2	H-3	6	**311-2323**
5/16-18	2	H-3	4	**311-2324**
5/16-18	2	H-3	6	**311-2325**
5/16-24	2	H-3	6	**311-2327**
3/8-16	3	H-3	4	**311-2328**
3/8-16	3	H-3	6	**311-2329**
3/8-24	3	H-3	6	**311-2331**
7/16-14	3	H-3	6	**311-2333**
7/16-20	3	H-3	6	**311-2335**
1/2-13	3	H-3	6	**311-2337**
1/2-20	3	H-3	6	**311-2339**
5/8-11	3	H-3	6	**311-2340**

Regular Shank

Size	No. of Flutes	Thread Limits	OAL	Order No.
4-40	2	H-2	4"	**311-2341**
4-48	2	H-2	4	**311-2342**
5-40	2	H-2	4	**311-2343**
6-32	2	H-3	4	**311-2345**
6-32	2	H-3	5	**311-2346**
6-32	2	H-3	6	**311-2347**
6-40	2	H-3	4	**311-2348**
8-32	2	H-3	4	**311-2349**
8-32	2	H-3	5	**311-2350**
8-32	2	H-3	6	**311-2351**
10-24	2	H-3	4	**311-2353**
10-24	2	H-3	5	**311-2354**
10-24	2	H-3	6	**311-2355**
10-32	2	H-3	4	**311-2357**
10-32	2	H-3	5	**311-2358**
10-32	2	H-3	6	**311-2359**
1/4-20	2	H-3	4	**311-2360**
1/4-20	2	H-3	6	**311-2361**
1/4-28	2	H-3	6	**311-2363**
5/16-18	2	H-3	4	**311-2364**
5/16-18	2	H-3	6	**311-2365**
5/16-24	2	H-3	6	**311-2367**
3/8-16	3	H-3	4	**311-2368**
3/8-16	3	H-3	6	**311-2369**
3/8-24	3	H-3	6	**311-2331**
7/16-14	3	H-3	6	**311-2333**
7/16-20	3	H-3	6	**311-2335**
1/2-13	3	H-3	6	**311-2337**
1/2-20	3	H-3	6	**311-2379**

Left Hand Spiral Point Taps

HSS, Ground Thread

Spiral point is designed to push the chips ahead of the cutting action, helping to recduce loading in the flutes



Tap Size	No. of Flutes	Thread Limits	Order No.	Tap Size	No. of Flutes	Thread Limits	Order No.
0-80NF	2	H-1	**440-7002**	5/16"-18NC	2	H-2	**440-7086**
0-80NF	2	H-2	**440-7004**	5/16"-18NC	2	H-3	**440-7088**
1-64NC	2	H-1	**440-7006**	5/16"-18NC	2	H-5	**440-7090**
1-64NC	2	H-2	**440-7008**	5/16"-18NC	3	H-2	**440-7092**
1-72NF	2	H-1	**440-7010**	5/16"-18NC	3	H-3	**440-7094**
1-72NF	2	H-2	**440-7012**	5/16"-18NC	3	H-5	**440-7096**
2-56NC	2	H-2	**440-7014**	5/16"-18NC	3	H-5	**440-7097**
2-64NF	2	H-2	**440-7016**	5/16"-24NF	2	H-2	**440-7098**
3-48NC	2	H-2	**440-7018**	5/16"-24NF	2	H-3	**440-7100**
3-56NF	2	H-2	**413-7020**	5/16"-24NF	3	H-3	**440-7102**
4-36	2	H-1	**413-7021**	5/16"-32	2	H-3	**440-7103**
4-40NC	2	H-2	**440-7022**	3/8"-16NC	3	H-2	**440-7104**
4-40NC	2	H-7	**440-7024**	3/8"-16NC	3	H-3	**440-7106**
4-48NF	2	H-2	**440-7026**	3/8"-16NC	3	H-5	**440-7108**
5-40NC	2	H-2	**440-7028**	3/8"-24NF	3	H-2	**440-7110**
5-40NC	2	H-7	**440-7030**	3/8"-24NF	3	H-3	**440-7112**
5-44NF	2	H-2	**440-7032**	3/8"-32	3	H-3	**440-7113**
6-32NC	2	H-2	**440-7034**	7/16"-14NC	3	H-3	**440-7114**
6-32NC	2	H-3	**440-7036**	7/16"-14NC	3	H-5	**440-7116**
6-32NC	2	H-7	**440-7038**	7/16"-20NF	3	H-3	**440-7118**
6-40NF	2	H-3	**440-7039**	7/16"-20NF	3	H-5	**440-7120**
6-40NF	2	H-2	**440-7040**	1/2"-13NC	3	H-3	**440-7122**
6-48	2	H-3	**440-7041**	1/2"-13NC	3	H-5	**440-7124**
8-32NC	2	H-2	**440-7042**	1/2"-20NF	3	H-3	**440-7126**
8-32NC	2	H-3	**440-7044**	1/2"-24	3	H-3	**440-7127**
8-32NC	3	H-3	**440-7046**	1/2"-20NF	3	H-5	**440-7128**
8-36NF	2	H-2	**440-7047**	1/2"-28	3	H-3	**440-7129**
8-36NF	3	H-3	**440-7048**	9/16"-12NC	3	H-3	**440-7130**
8-40	2	H-3	**440-7049**	9/16"-12NC	3	H-5	**440-7132**
10-24NC	2	H-2	**440-7050**	9/16"-18NF	3	H-3	**440-7134**
10-24NC	3	H-3	**440-7052**	9/16"-18NF	3	H-5	**440-7136**
10-24NC	2	H-7	**440-7054**	5/8"-11NC	3	H-3	**440-7138**
10-32NF	2	H-2	**440-7056**	5/8"-11NC	3	H-5	**440-7140**
10-32NF	3	H-2	**440-7058**	5/8"-18NF	3	H-3	**440-7142**
10-32NF	2	H-7	**440-7060**	5/8"-18NF	3	H-5	**440-7144**
10-40	2	H-3	**440-7061**	11/16"-11NS	3	H-3	**440-7146**
12-24NC	3	H-3	**440-7062**	11/16"-16NS	3	H-3	**440-7148**
12-28NF	3	H-3	**440-7064**	3/4"-10NC	3	H-3	**440-7150**
12-32	2	H-3	**440-7065**	3/4"-10NC	3	H-5	**440-7152**
1/4"-20NC	2	H-2	**440-7066**	3/4"-16NF	3	H-3	**440-7154**
1/4"-20NC	2	H-3	**440-7068**	3/4"-16NF	3	H-5	**440-7156**
1/4"-20NC	2	H-5	**440-7070**	7/8"-9NC	3	H-4	**440-7158**
1/4"-20NC	3	H-2	**440-7072**	7/8"-9NC	4	H-4	**440-7160**
1/4"-20NC	3	H-3	**440-7074**	7/8"-14NF	3	H-4	**440-7162**
1/4"-20NC	3	H-5	**440-7076**	7/8"-14NF	4	H-4	**440-7164**
1/4"-24	2	H-3	**440-7077**	1"-8NC	3	H-3	**440-7165**
1/4"-28NF	2	H-2	**440-7078**	1"-8NC	3	H-4	**440-7166**
1/4"-32	2	H-3	**440-7079**	1"-8NC	4	H-4	**440-7168**
1/4"-28NF	2	H-3	**440-7080**	1"-12NF	4	H-4	**440-7170**
1/4"-28NF	2	H-2	**440-7082**	1"-14NS	4	H-4	**440-7172**
1/4"-28NF	3	H-3	**440-7084**	1"-12NF	3	H-4	**440-7174**
1/4"-40	2	H-3	**440-7085**	1"-14NS	3	H-4	**440-7176**

Cobalt (M35) Spiral Point Taps

HSS, Ground Thread





Tap Size	No. of Flutes	Thread Limits	Order No.	Tap Size	No. of Flutes	Thread Limits	Order No.
0-80NF	2	H-1	**413-9002**	5/16"-18NC	3	H-5	**413-9097**
0-80NF	2	H-2	**413-9004**	5/16"-24NF	2	H-2	**413-9098**
1-64NC	2	H-1	**413-9006**	5/16"-24NF	2	H-3	**413-9100**
1-64NC	2	H-2	**413-9008**	5/16"-24NF	2	H-4	**413-9101**
1-72NF	2	H-1	**413-9010**	5/16"-24NF	3	H-3	**413-9102**
1-72NF	2	H-2	**413-9012**	5/16"-32	2	H-3	**413-9103**
2-56NC	2	H-1	**413-9013**	3/8"-16NC	3	H-2	**413-9104**
2-56NC	2	H-2	**413-9014**	3/8"-16NC	3	H-3	**413-9106**
2-64NF	2	H-1	**413-9015**	3/8"-16NC	3	H-5	**413-9108**
2-64NF	2	H-2	**413-9016**	3/8"-24NF	3	H-4	**413-9109**
3-48NC	2	H-1	**413-9017**	3/8"-24NF	3	H-2	**413-9110**
3-48NC	2	H-2	**413-9018**	3/8"-24NF	3	H-5	**413-9111**
3-56NF	2	H-1	**413-9019**	3/8"-24NF	3	H-3	**413-9112**
3-56NF	2	H-2	**413-9020**	3/8"-32	3	H-3	**413-9113**
4-36	2	H-1	**413-9021**	7/16"-14NC	3	H-3	**413-9114**
4-40NC	2	H-2	**413-9022**	7/16"-14NC	3	H-2	**413-9115**
4-40NC	2	H-1	**413-9023**	7/16"-14NC	3	H-5	**413-9116**
4-40NC	2	H-7	**413-9024**	7/16"-14NC	3	H-4	**413-9117**
4-48NF	2	H-1	**413-9025**	7/16"-20NF	3	H-3	**413-9118**
4-48NF	2	H-2	**413-9026**	7/16"-20NF	3	H-2	**413-9119**
5-40NC	2	H-1	**413-9027**	7/16"-20NF	3	H-5	**413-9120**
5-40NC	2	H-2	**413-9028**	7/16"-20NF	3	H-4	**413-9121**
5-40NC	2	H-3	**413-9029**	1/2"-13NC	3	H-3	**413-9122**
5-40NC	2	H-7	**413-9030**	1/2"-13NC	3	H-2	**413-9123**
5-44NF	2	H-1	**413-9031**	1/2"-13NC	3	H-5	**413-9124**
5-44NF	2	H-2	**413-9032**	1/2"-13NC	3	H-4	**413-9125**
5-44NF	2	H-3	**413-9033**	1/2"-20NF	3	H-3	**413-9126**
6-32NC	2	H-2	**413-9034**	1/2"-24	3	H-3	**413-9127**
6-32NC	2	H-1	**413-9035**	1/2"-20NF	3	H-5	**413-9128**
6-32NC	2	H-3	**413-9036**	1/2"-28	3	H-3	**413-9129**
6-32NC	2	H-7	**413-9038**	9/16"-12NC	3	H-3	**413-9130**
6-40NF	2	H-3	**413-9039**	9/16"-12NC	3	H-5	**413-9132**
6-40NF	2	H-2	**413-9040**	9/16"-18NF	3	H-3	**413-9134**
6-48	2	H-3	**413-9041**	9/16"-18NF	3	H-5	**413-9136**
8-32NC	2	H-2	**413-9042**	5/8"-11NC	3	H-3	**413-9138**
8-32NC	2	H-1	**413-9043**	5/8"-11NC	3	H-5	**413-9140**
8-32NC	2	H-3	**413-9044**	5/8"-18NF	3	H-3	**413-9142**
8-32NC	2	H-7	**413-9046**	5/8"-18NF	3	H-5	**413-9144**
8-36NF	2	H-3	**413-9047**	11/16"-11NS	3	H-3	**413-9146**
8-36NF	2	H-2	**413-9048**	1/16"-16NS	3	H-3	**413-9148**
8-40	2	H-3	**413-9049**	3/4"-10NC	3	H-3	**413-9150**
10-24NC	2	H-2	**413-9050**	3/4"-10NC	3	H-5	**413-9152**
10-24NC	2	H-1	**413-9051**	3/4"-16NF	3	H-3	**413-9154**
10-24NC	2	H-3	**413-9052**	3/4"-16NF	3	H-5	**413-9156**
10-24NC	2	H-7	**413-9054**	7/8"-9NC	3	H-2	**413-9157**
10-32NF	2	H-2	**413-9056**	7/8"-9NC	3	H-4	**413-9158**
10-32NF	2	H-1	**413-9057**	7/8"-9NC	4	H-4	**413-9160**
10-32NF	2	H-3	**413-9058**	7/8"-14NF	3	H-2	**413-9161**
10-32NF	2	H-7	**413-9060**	7/8"-14NF	3	H-4	**413-9162**
10-40	2	H-3	**413-9061**	7/8"-14NF	3	H-3	**413-9163**
12-24NC	2	H-3	**413-9062**	7/8"-14NF	4	H-4	**413-9164**
12-24NC	2	H-2	**413-9063**	1"-8NC	3	H-3	**413-9165**
12-28NF	2	H-3	**413-9064**	1"-8NC	3	H-4	**413-9166**
12-32	2	H-3	**413-9065**	1"-8NC	4	H-4	**413-9168**
1/4"-20NC	2	H-2	**413-9066**	1"-12NF	4	H-4	**413-9170**
1/4"-20NC	2	H-1	**413-9067**	1"-14NS	4	H-4	**413-9172**
1/4"-20NC	2	H-3	**413-9068**	1"-12NF	3	H-3	**413-9173**
1/4"-20NC	2	H-5	**413-9070**	1"-12NF	3	H-4	**413-9174**
1/4"-20NC	3	H-2	**413-9072**	1"-12NF	3	H-5	**413-9175**
1/4"-20NC	3	H-3	**413-9074**	1"-14NS	3	H-4	**413-9176**
1/4"-20NC	3	H-5	**413-9076**	1"-14NS	3	H-3	**413-9177**
1/4"-24	2	H-3	**413-9077**	4-36	2	H-2	**413-9180**
1/4"-28NF	2	H-2	**413-9078**	6-40NF	2	H-1	**413-9182**
1/4"-32	2	H-3	**413-9079**	8-36NF	2	H-1	**413-9184**
1/4"-28NF	2	H-3	**413-9080**	12-24NC	2	H-1	**413-9186**
1/4"-28NF	2	H-1	**413-9081**	12-28NF	2	H-2	**413-9187**
1/4"-28NF	2	H-2	**413-9082**	14-20NS	2	H-2	**413-9188**
1/4"-28NF	2	H-3	**413-9084**	14-20NS	2	H-3	**413-9189**
1/4"-40	2	H-3	**413-9085**	14-24NS	2	H-2	**413-9190**
5/16"-18NC	2	H-2	**413-4086**	14-24NS	2	H-3	**413-9191**
5/16"-18NC	2	H-3	**413-9088**	1/4"-28NF	2	H-4	**413-9192**
5/16"-18NC	2	H-5	**413-9090**	1/2"-20NF	3	H-1	**413-9193**
5/16"-18NC	3	H-2	**413-9092**	1/2"-20NF	3	H-2	**413-9194**
5/16"-18NC	3	H-3	**413-9094**	1/2"-13NC	3	H-1	**413-9195**
5/16"-18NC	3	H-5	**413-9096**				

Metric Spiral Point Taps-Plug Style

HSS, Ground Thread

Spiral point is designed to push the chips ahead of the cutting action, helping to recduce loading in the flutes



Size	Pitch	No.of Flute	Thread Limit	Order No.
1.60	.35	2	D-2	**311-8009**
1.60	.35	2	D-3	**311-8010**
1.80	.35	2	D-2	**311-8020**
2.0	.40	2	D-3	**311-8030**
2.0	.45	2	D-2	**311-8034**
2.2	.45	2	D-2	**311-8040**
2.50	.45	2	D-2	**311-8049**
2.50	.45	2	D-3	**311-8050**
2.60	.45	2	D-2	**311-8052**
3.0	.35	2	D-3	**311-8055**
3.0	.50	2	D-3	**311-8060**
3.0	.60	2	D-2	**311-8064**
3.5	.50	2	D-4	**311-8069**
3.5	.60	2	D-4	**311-8070**
4.0	.50	2	D-4	**311-8080**
4.0	.70	2	D-4	**311-8090**
4.0	.75	2	D-4	**311-8094**
4.0	.80	2	D-4	**311-8096**
4.5	.75	2	D-4	**311-8100**
5.0	.50	2	D-4	**311-8110**
5.0	.75	2		**311-8115**
5.0	.80	2	D-2	**311-8118**
5.0	.80	2	D-4	**311-8120**
5.0	.90	2	D-3	**311-8122**
5.0	1.0	2	D-4	**311-8125**
6.0	.75	2	D-3	**311-8129**
6.0	.75	2	D-4	**311-8130**
6.0	1.00	2	D-5	**311-8140**
6.3	1.00	2	D-5	**311-8150**
7.0	.50	2		**311-8151**
7.0	.75	2	D-5	**311-8152**
7.0	1.00	2	D-5	**311-8155**
7.0	1.00	3		**311-8160**
8.0	.75	2	D-5	**311-8170**
8.0	.75	4	D-3	**311-8172**
8.0	1.00	2	D-3	**311-8178**
8.0	1.00	2	D-5	**311-8180**
8.0	1.00	3	D-5	**311-8182**
8.0	1.25	2	D-3	**311-8188**
8.0	1.25	2	D-5	**311-8190**
9.0	.50			**311-8191**
9.0	1.00	3	D-5	**311-8192**
9.0	1.25	2	D-5	**311-8193**
9.0	1.25	3	D-5	**311-8194**
10.0	1.00	3	D-5	**311-8200**
10.0	1.00	3	D-6	**311-8202**
10.0	1.25	3	D-3	**311-8209**
10.0	1.25	3	D-5	**311-8210**
10.0	1.50	3	D-6	**311-8220**
11.0	1.50	3	D-5	**311-8222**
12.0	1.00	3		**311-8229**
12.0	1.25	3	D-5	**311-8230**
12.0	1.5	3	D-6	**311-8240**
12.0	1.75	3	D-6	**311-8250**
12.5	1.75	3	D-6	**311-8252**
14.0	1.00	3	D-5	**311-8260**
14.0	1.25	3	D-5	**311-8270**
14.0	1.25	3	D-7	**311-8272**
14.0	1.50	3	D-3	**311-8278**
14.0	1.50	3	D-6	**311-8280**
14.0	1.50	3	D-7	**311-8282**
14.0	2.00	3	D-7	**311-8290**
16.0	1.50	3	D-6	**311-8300**
16.0	2.00	3	D-7	**311-8310**
18.0	1.00	4	D-4	**311-8317**
18.0	1.50			**311-8318**
18.0	2.0			**311-8319**
18.0	2.50	3	D-7	**311-8320**
20.0	1.50			**311-8328**
20.0	2.50	3	D-7	**311-8330**

Spiral Point Taps & Hand Taps

Fluteless X-PressTaps

High Speed Steel

These taps have no flutes or cuting edges. The X-Press Tap cold forms internal threads in ductile metals such as copper, zinc, lead, leaded steels, magnesium, die castings and aluminum. Used where chip removal is a problem.



Size	Thread Length	OAL	Order No.
1-64NC	3/8”	1-11/16”	**311-7104**
1-72NF	3/8	1-11/16	**311-7106**
2-64NF	7/16	1-3/4	**311-7108**
3-48NC	1/2	1-13/16	**311-7112**
3-56NF	1/2	1-13/16	**311-7114**
4-40NC	9/16	1-7/8	**311-7116**
4-48NF	9/16	1-7/8	**311-7118**
5-40NC	5/8	1-15/16	**311-7120**
5-44NF	5/8	1-15/16	**311-7122**
6-32NC	11/16	2	**311-7124**
6-40NF	11/16	2	**311-7126**
8-32NC	3/4	2-1/8	**311-7128**
8-36NF	3/4	2-1/8	**311-7130**
10-24NC	7/8	2-3/8	**311-7132**
10-32NF	7/8	2-3/8	**311-7134**
12-24NC	15/16	2-3/8	**311-7136**
12-28NF	15/16	2-3/8	**311-7138**
1/4-20NC	1	2-1/2	**311-7148**
1/4-28NF	1	2-1/2	**311-7150**
5/16-18NC	1-1/8	2-23/32	**311-7156**
5/16-24NF	1-1/8	2-23/32	**311-7158**
3/8-16NC	1-1/4	2-15/16	**311-7160**
3/8-24NF	1-1/4	2-15/16	**311-7162**
7/1614NC	1-7/16	3-5/32	**311-7166**
7/16-20NF	1-7/16	3-5/32	**311-7168**
1/2-13NC	1-21/32	3-3/8	**311-7170**
1/2-20NF	1-21/32	3-3/8	**311-7172**
9/16-12NC	1-21/32	3-19/32	**311-7176**
5/8-11NC	1-13/16	3-13/16	**311-7180**
5/8-18NF	1-13/16	3-13/16	**311-7182**
3/4-10NC	2	4-1/4	**311-7184**
3/4-16NF	2	4-1/4	**311-7186**

Fluteless Spiral Point Assembly Taps

High Speed Steel

Reccommended for High Speed Steel Taping Thin Materials Available while supplies Last.



Size	Thread Length	OAL	Order No.
3-48NC	1/2”	1-13/16”	**311-7006**
3-56NF	1/2	1-13/16	**311-7008**
4-40NC	9/16	1-7/8	**311-7010**
4-48NF	9/16	1-7/8	**311-7012**
5-40NC	5/8	1-15/16	**311-7016**
5-44NF	5/8	1-15/16	**311-7018**
6-32NF	11/16	2	**311-7022**
6-40NF	11/16	2	**311-7024**
8-32NC	3/4	2-1/8	**311-7028**
8-36NF	3/4	2-1/8	**311-7030**
10-24NC	7/8	2-3/8	**311-7034**
10-32NF	7/8	2-3/8	**311-7036**
12-28NF	15/16	2-3/8	**311-7040**
5/16-24NF	1-1/8	2-23/32	**311-7044**
3/8-16NC	1-1/4	2-15/16	**311-7050**
3/8-24NF	1-1/4	2-15/16	**311-7052**
7/16-14NC	1-7/16	3-5/32	**311-7056**
7/16-20NF	1-7/16	3-5/32	**311-7058**
1/2-13NC	1-21/32	3-3/8	**311-7062**

+ .005" Oversized Taps

High Speed Steel, Ground Thread



Plug Type

Size	No.of Flute	Order No.	Size	No.of Flute	Order No.
4-40	3	**312-7030**	1/2”-13	4	**312-7013**
5-40	3	**312-7035**	1/2-20	4	**312-7014**
6-32	3	**312-7001**	9/16-12	4	**312-7015**
8-32	4	**312-7002**	9/16-18	4	**312-7016**
10-24	4	**312-7003**	5/8-11	4	**312-7017**
10-32	4	**312-7004**	5/8-18	4	**312-7018**
1/4-20	4	**312-7005**	3/4-10	4	**312-7019**
1/4-28	4	**312-7006**	3/4-16	4	**312-7020**
5/16-18	4	**312-7007**	7/8-9	4	**312-7021**
5/16-24	4	**312-7008**	7/8-14	4	**312-7022**
3/8-16	4	**312-7009**	1-8	4	**312-7023**
3/8-24	4	**312-7010**	1-12	4	**312-7024**
7/16-14	4	**312-7011**	1-14	4	**312-7025**
7/16-20	4	**312-7012**			

Spiral Point Plug Type



Size	No.of Flute	Order No.	Size	No.of Flute	Order No.
4-40	2	**312-7102**	7/16”-20	3	**312-7128**
5-40	2	**312-7104**	1/2-13	3	**312-7130**
6-32	2	**312-7106**	1/2-20	3	**312-7132**
8-32	2	**312-7108**	9/16-12	3	**312-7134**
10-24	2	**312-7110**	9/16-18	3	**312-7136**
10-32	2	**312-7112**	5/8-11	3	**312-7138**
1/4-20	2	**312-7114**	5/8-18	3	**312-7140**
1/4-28	2	**312-7116**	3/4-10	3	**312-7142**
5/16-18	2	**312-7118**	3/4-16	3	**312-7144**
5/16-24	2	**312-7120**	7/8-9	3	**312-7146**
3/8-16	3	**312-7122**	7/8-14	3	**312-7148**
3/8-24	3	**312-7124**	1-8	3	**312-7150**
7/16-14	3	**312-7126**			

TiN Coated Hand Taps-Plug Style



Machine Screw Sizes

Size	No.of Flute	Thread Length	Order No.	Size	No.of Flute	Thread Legth	Order No.
0-80	2	5/16”	**311-1979**	5-40	3	5/8”	**311-2009**
1-64	2	3/8	**311-1982**	5-44	3	5/8	**311-2012**
1-72	2	3/8	**311-1985**	6-32	3	11/16	**311-2015**
2-56	3	7/16	**311-1988**	6-40	3	11/16	**311-2018**
2-64	3	7/16	**311-1993**	8-32	4	3/4	**311-2023**
3-48	3	1/2	**311-1994**	8-36	4	3/4	**311-2024**
3-56	3	1/2	**311-1997**	10-24	4	7/8	**311-2027**
4-36	3	9/16	**311-2001**	10-32	4	7/8	**311-2030**
4-40	3	5/8	**311-2003**	12-24	4	15/16	**311-2033**
4-48	3	9/16	**311-2006**	12-28	4	15/16	**311-2036**

Fractional Sizes

Size	No.of Flute	Thread Length	Order No.	Size	No.of Flute	Thread Length	Order No.
1/4”-20	4	1”	**311-2039**	3/4"-10	4	2"	**311-2074**
1/4-28	4	1	**311-2042**	3/4-16	4	2	**311-2078**
5/16-18	4	1-1/8	**311-2045**	7/8-9	4	2-7/32	**311-2083**
5/16-24	4	1-1/8	**311-2048**	7/8-14	4	2-7/32	**311-2084**
3/8-16	4	1-1/4	**311-2053**	1-8	4	2-1/2	**311-2087**
3/8-24	4	1-1/4	**311-2054**	1-12	4	2-1/2	**311-2090**
7/16-14	4	1-7/16	**311-2057**	1-1/8-7	4	2-9/16	**311-2093**
7/16-20	4	1-7/16	**311-2060**	1-1/8-12	4	2-9/16	**311-2096**
1/2-13	4	1-21/32	**311-2063**	1-1/4-7	4	2-9/16	**311-2099**
1/2-20	4	1-21/32	**311-2066**	1-1/4-12	4	2-9/16	**311-2102**
9/16-12	4	1-21/32	**311-2067**	1-3/8-6	6	3	**311-2105**
9/16-18	4	1-21/32	**311-2068**	1-3/8-12	6	3	**311-2108**
5/8-11	4	1-13/16	**311-2069**	1-1/2-6	4	3	**311-2113**
5/8-18	4	1-13/16	**311-2072**	1-1/2-12	6	3	**311-2114**

Special Thread Hand Taps

High Speed Steel, Ground Thread



Size	Taper Order No.	Plug Order No.	Bottoming Order No.
4-32	312-6500	311-3500	313-3500
4-36	312-6501	311-3501	313-3501
4-44	312-6503	311-3503	313-3503
4-56	312-6506	311-3506	313-3506
4-60	312-6509	311-3509	313-3509
5-32	312-6512	311-3512	313-3512
5-36	312-6515	311-3515	313-3515
5-48	312-6518	311-3518	313-3518
5-60	312-6521	311-3521	313-3521
6-36	312-6524	311-3524	313-3524
6-48	312-6527	311-3527	313-3527
6-56	312-6530	311-3530	313-3530
6-60	312-6533	311-3533	313-3533
8-24	312-6536	311-3536	313-3536
8-30	312-6539	311-3539	313-3539
8-40	312-6542	311-3542	313-3542
8-48	312-6545	311-3545	313-3545
8-56	312-6548	311-3548	313-3548
8-60	312-6551	311-3551	313-3551
8-64	312-6552	311-3552	313-3552
8-80	312-6553	311-3553	313-3553
10-28	312-6554	311-3554	313-3554
10-30	312-6557	311-3557	313-3557
10-36	312-6560	311-3560	313-3560
10-40	312-6563	311-3563	313-3563
10-46	312-6566	311-3566	313-3566
10-48	312-6569	311-3569	313-3569
10-56	312-6572	311-3572	313-3572
10-60	312-6575	311-3575	313-3575
10-64	312-6576	311-3576	313-3576
10-80	312-6577	311-3577	313-3577
12-30	312-6578	311-3578	313-3578
12-32	312-6581	311-3581	313-3581
12-36	312-6584	311-3584	313-3584
12-40	312-6587	311-3587	313-3587
12-48	312-6590	311-3590	313-3590
12-56	312-6593	311-3593	313-3593
1/16-72	312-6596	311-3596	313-3596
3/32-36	312-6599	311-3599	313-3599
3/32-48	312-6602	311-3602	313-3602
3/32-50	312-6605	311-3605	313-3605
3/32-56	312-6608	311-3608	313-3608
1/8-36	312-6611	311-3611	313-3611
1/8-40	312-6614	311-3614	313-3614
5/32-24	312-6617	311-3617	313-3617
5/32-26	312-6620	311-3620	313-3620
5/32-32	312-6623	311-3623	313-3623
5/32-36	312-6626	311-3626	313-3626
5/32-38	312-6629	311-3629	313-3629
5/32-40	312-6632	311-3632	313-3632
5/32-64	312-6635	311-3635	313-3635
3/16-20	312-6638	311-3638	313-3638
3/16-24	312-6641	311-3641	313-3641
3/16-28	312-6644	311-3644	313-3644
3/16-32	312-6647	311-3647	313-3647
3/16-36	312-6650	311-3650	313-3650
7/32-24	312-6653	311-3653	313-3653
7/32-28	312-6656	311-3656	313-3656
7/32-32	312-6659	311-3659	313-3659
7/32-40	312-6662	311-3662	313-3662
7/32-48	312-6665	311-3665	313-3665
1/4-14	312-6668	311-3668	313-3668
1/4-16	312-6671	311-3671	313-3671
1/4-18	312-6674	311-3674	313-3674
1/4-24	312-7600	311-4600	313-4600
1/4-27	312-6700	311-3700	313-3700
1/4-30	312-6702	311-3702	313-3702
1/4-32*	312-7602	311-4602	313-4602
1/4-36	312-6704	311-3704	313-3704
1/4-40	312-7604	311-4604	313-4604
1/4-48	312-6706	311-3706	313-3706
1/4-56	312-6708	311-3708	313-3708
1/4-60	312-6710	311-3710	313-3710
1/4-80	312-6711	311-3711	313-3711
9/32-18	312-6712	311-3712	313-3712
9/32-24	312-6714	311-3714	313-3714
9/32-32	312-6716	311-3716	313-3716
5/16-12	312-6718	311-3718	313-3718

Size	Taper Order No.	Plug Order No.	Bottoming Order No.
5/16"-16	312-6720	311-3720	313-3720
5/16-20	312-7606	311-4606	313-4606
5/16-27	312-6722	311-3722	313-3722
5/16-28	312-6724	311-3724	313-3724
5/16-30	312-6726	311-3726	313-3726
5/16-32*	312-7608	311-4608	313-4608
5/16-36	312-6728	311-3728	313-3728
5/16-40	312-7610	311-4610	313-4610
5/16-48	312-6730	311-3730	313-3730
5/16-56	312-6732	311-3732	313-3732
3/8-14	312-7612	311-4612	313-4612
3/8-18	312-7614	311-4614	313-4614
3/8-20	312-7616	311-4616	313-4616
3/8-26	312-6734	311-3734	313-3734
3/8-27	312-6736	311-3736	313-3736
3/8-28	312-6738	311-3738	313-3738
3/8-32*	312-7618	311-4618	313-4618
3/8-36	312-6740	311-3740	313-3740
3/8-40	312-6742	311-3742	313-3742
3/8-48	312-6744	311-3744	313-3744
3/8-56	312-6746	311-3746	313-3746
7/16-12	312-6748	311-3748	313-3748
7/16-16	312-6750	311-3750	313-3750
7/16-18	312-6752	311-3752	313-3752
7/16-24	312-7620	311-4620	313-4620
7/16-27	312-7622	311-4622	313-4622
7/16-28*	312-6754	311-3754	313-3754
7/16-32	312-6756	311-3756	313-3756
7/16-36	312-6758	311-3758	313-3758
7/16-40	312-6760	311-3760	313-3760
7/16-48	312-6762	311-3762	313-3762
15/32-32	312-7624	311-4624	313-4624
1/2-12	312-7626	311-4626	313-4626
1/2-14	312-7628	311-4628	313-4628
1/2-16	312-7630	311-4630	313-4630
1/2-18	312-7632	311-4632	313-4632
1/2-24	312-7634	311-4634	313-4634
1/2-27	312-6764	311-3764	313-3764
1/2-28*	312-7633	311-4633	313-4633
1/2-30	312-6766	311-3766	313-3766
1/2-32	312-7636	311-4636	313-4636
1/2-36	312-6768	311-3768	313-3768
1/2-40	312-6770	311-3770	313-3770
1/2-48	312-6772	311-3772	313-3772
9/16-10	312-7638	311-4638	313-4638
9/16-14	312-6774	311-3774	313-3774
9/16-16	312-7640	311-4640	313-4640
9/16-20	312-7642	311-4642	313-4642
9/16-24*	312-7644	311-4644	313-4644
9/16-27	312-6776	311-3776	313-3776
9/16-28	312-6778	311-3778	313-3778
9/16-32	312-6780	311-3780	313-3780
9/16-36	312-6782	311-3782	313-3782
9/16-40	312-6784	311-3784	313-3784
5/8-10	312-6786	311-3786	313-3786
5/8-12	312-7646	311-4646	313-4646
5/8-14	312-6788	311-3788	313-3788
5/8-16	312-7648	311-4648	313-4648
5/8-20	312-7650	311-4650	313-4650
5/8-24*	312-7652	311-4652	313-4652
5/8-27	312-6790	311-3790	313-3790
5/8-28	312-6791	311-3791	313-3791
5/8-32	312-7654	311-4654	313-4654
5/8-36	312-7656	311-4656	313-4656
5/8-40	312-6792	311-3792	313-3792
5/8-48	312-6794	311-3794	313-3794
11/16-11	312-7658	311-4658	313-4658
11/16-12	312-6796	311-3796	313-3796
11/16-16	312-7660	311-4660	313-4660
11/16-18	312-7662	311-4662	313-4662
11/16-20	312-7664	311-4664	313-4664
11/16-24*	312-7666	311-4666	313-4666
11/16-27	312-6798	311-3798	313-3798
11/16-28	312-6800	311-3800	313-3800
11/16-32	312-7668	311-4668	313-4668
11/16-36	312-6802	311-3802	313-3802
11/16-40	312-6804	311-3804	313-3804
3/4-12	312-7670	311-4670	313-4670

Special Thread Taps

Special Thread Hand Taps continueed

High Speed Steel, Ground Thread



Size	Taper Order No.	Plug Order No.	Bottoming Order No.
3/4"-14	312-6806	311-3806	313-3806
3/4-18	312-7672	311-4672	313-4672
3/4-20*	312-7674	311-4674	313-4674
3/4-24	312-7676	311-4676	313-4676
3/4-26	312-6808	311-3808	313-3808
3/4-27	312-7678	311-4678	313-4678
3/4-28	312-7679	311-4679	313-4679
3/4-32	312-7680	311-4680	313-4680
3/4-36	312-6810	311-3810	313-3810
3/4-40	312-6812	311-3812	313-3812
13/16-10	312-6814	311-3814	313-3814
13/16-12	312-6816	311-3816	313-3816
13/16-16	312-7682	311-4682	313-4682
13/16-18	312-6818	311-3816	313-3816
13/16-20*	312-7684	311-4684	313-4684
13/16-24	312-6820	311-3818	313-3818
13/16-30	312-6822	311-3822	313-3822
13/16-32	312-7686	311-4686	313-4686
7/8-10	312-6824	311-3824	313-3824
7/8-12	312-7688	311-4688	313-4688
7/8-16	312-7690	311-4690	313-4690
7/8-18	312-7692	311-4692	313-4692
7/8-20*	312-7694	311-4694	313-4694
7/8-24	312-6826	311-3826	313-3826
7/8-30	312-6828	311-3828	313-3828
7/8-32	312-6830	311-3830	313-3830
7/8-36	312-6832	311-3832	313-3832
7/8-40	312-6834	311-3834	313-3834
15/16-8	312-6836	311-3836	313-3836
15/16-12	312-7696	311-4696	313-4696
15/16-16	312-7698	311-4698	313-4698
15/16-18	312-7699	311-4699	313-4699
15/16-20*	312-7700	311-4700	313-4700
15/16-24	312-6838	311-3838	313-3838
15/16-27	312-7702	311-4702	313-4702
15/16-30	312-6840	311-3840	313-3840
15/16-32	312-7704	311-4704	313-4704
1"-10	312-7706	311-4706	313-4706
1"-16	312-7708	311-4708	313-4708
1"-18	312-7710	311-4710	313-4710
1"-20*	312-7712	311-4712	313-4712
1"-24	312-6842	311-3842	313-3842
1"-32	312-7714	311-4714	313-4714
1"-36	312-6844	311-3844	313-3844
1"-40	312-6846	311-3846	313-3846
1"-48	312-6848	311-3848	313-3848
1-1/16-8	312-7716	311-4716	313-4716
1-1/16-10	312-7718	311-4718	313-4718
1-1/16-12	312-7720	311-4720	313-4720
1-1/16-14	312-7722	311-4722	313-4722
1-1/16-16	312-7724	311-4724	313-4724
1-1/16-18*	312-7726	311-4726	313-4726
1-1/16-20	312-7728	311-4728	313-4728
1-1/16-24	312-7730	311-4730	313-4730
1-1/16-32	312-7732	311-4732	313-4732
1-1/8-8	312-7734	311-4734	313-4734
1-1/8-10	312-7736	311-4736	313-4736
1-1/8-14	312-6850	311-3850	313-3850
1-1/8-16	312-7738	311-4738	313-4738
1-1/8-18*	312-7740	311-4740	313-4740
1-1/8-20	312-6852	311-3852	313-3852
1-1/8-24	312-6854	311-3854	313-3854
1-1/8-27	312-6856	311-3856	313-3856
1-1/8-32	312-7742	311-4742	313-4742
1-3/16-8	312-7744	311-4744	313-4744
1-3/16-10	312-7746	311-4746	313-4746
1-3/16-12	312-7748	311-4748	313-4748
1-3/16-14	312-7750	311-4750	313-4750
1-3/16-16	312-7752	311-4752	313-4752
1-3/16-18*	312-7754	311-4754	313-4754
1-3/16-20	312-7756	311-4756	313-4756
1-3/16-24	312-7758	311-4758	313-4758
1-3/16-32	312-7760	311-4760	313-4760
1-1/4-8	312-7762	311-4762	313-4762
1-1/4-10	312-7764	311-4764	313-4764
1-1/4-14	312-7766	311-4766	313-4766
1-1/4-16	312-7768	311-4768	313-4768
1-1/4-18*	312-7770	311-4770	313-4770

Size	Taper Order No.	Plug Order No.	Bottoming Order No.
1-1/4"-20	312-7772	311-4772	313-4772
1-1/4-24	312-7773	311-4773	313-4773
1-1/4-27	312-6858	311-3858	313-3858
1-1/4-28	312-6860	311-3860	313-3860
1-1/4-32	312-7774	311-4774	313-4774
1-1/4-40	312-7775	311-4775	313-4775
1-5/16-8	312-7776	311-4776	313-4776
1-5/16-12	312-7778	311-4778	313-4778
1-5/16-16	312-7780	311-4780	313-4780
1-5/16-18	312-7782	311-4782	313-4782
1-5/16-20	312-7783	311-4783	313-4783
1-5/16-24	312-6862	311-3862	313-3862
1-5/16-32	312-6864	311-3864	313-3864
1-3/8-8	312-7784	311-4784	313-4784
1-3/8-10	312-7786	311-4786	313-4786
1-3/8-14	312-7788	311-4788	313-4788
1-3/8-16	312-7790	311-4790	313-4790
1-3/8-18*	312-7792	311-4792	313-4792
1-3/8-20	312-7794	311-4794	313-4794
1-3/8-24	312-7795	311-4795	313-4795
1-3/8-32	312-6866	311-3866	313-3866
1-3/8-40	312-6868	311-3868	313-3868
1-7/16-8	312-7796	311-4796	313-4796
1-7/16-12	312-7797	311-4797	313-4797
1-7/16-16	312-7798	311-4798	313-4798
1-7/16-18	312-7800	311-4800	313-4800
1-7/16-36	312-6870	311-3870	313-3870
1-1/2-8	312-7802	311-4802	313-4802
1-1/2-10	312-7804	311-4804	313-4804
1-1/2-14	312-7805	311-4805	313-4805
1-1/2-16	312-7806	311-4806	313-4806
1-1/2-18*	312-7808	311-4808	313-4808
1-1/2-20	312-7810	311-4810	313-4810
1-1/2-24	312-7811	311-4811	313-4811
1-1/2-28	312-6872	311-3872	313-3872
1-1/2-32	312-6874	311-3874	313-3874
1-9/16-8	312-6876	311-3876	313-3876
1-9/16-12	312-7812	311-4812	313-4812
1-9/16-16	312-7813	311-4813	313-4813
1-9/16-18	312-7814	311-4814	313-4814
1-9/16-20	312-7816	311-4816	313-4816
1-5/8-5	312-6878	311-3878	313-3878
1-5/8-5-1/2	312-7818	311-4818	313-4818
1-5/8-8	312-7820	311-4820	313-4820
1-5/8-10	312-7822	311-4822	313-4822
1-5/8-12	312-7824	311-4824	313-4824
1-5/8-14	312-7826	311-4826	313-4826
1-5/8-16	312-7828	311-4828	313-4828
1-5/8-18	312-7830	311-4830	313-4830
1-5/8-20	312-7832	311-4832	313-4832
1-5/8-24	312-7834	311-4834	313-4834
1-11/16-12	312-7836	311-4836	313-4836
1-11/16-16	312-7837	311-4837	313-4837
1-11/16-18	312-7838	311-4838	313-4838
1-11/16-20	312-7839	311-4839	313-4839
1-11/16-36	312-6880	311-3880	313-3880
1-3/4-5	312-7840	311-4840	313-4840
1-3/4-6	312-7842	311-4842	313-4842
1-3/4-8	312-7844	311-4844	313-4844
1-3/4-10	312-7846	311-4846	313-4846
1-3/4-12	312-7848	311-4848	313-4848
1-3/4-14	312-6884	311-3884	313-3884
1-3/4-16	312-7850	311-4850	313-4850
1-3/4-18	312-7852	311-4852	313-4852
1-3/4-20	312-7854	311-4854	313-4854
1-3/4-24	312-7856	311-4856	313-4856
1-13/16-8	312-7858	311-4858	313-4858
1-13/16-16	312-7860	311-4860	313-4860
1-13/16-18	312-7862	311-4862	313-4862
1-13/16-20	312-7863	311-4863	313-4863
1-13/16-28	312-6890	311-3890	313-3890
1-7/8-5	312-7864	311-4864	313-4864
1-7/8-7	312-7866	311-4866	313-4866
1-7/8-8	312-7868	311-4868	313-4868
1-7/8-10	312-7870	311-4870	313-4870
1-7/8-12	312-7872	311-4872	313-4872
1-7/8-16	312-7874	311-4874	313-4874
1-7/8-18	312-7876	311-4876	313-4876

* NEF Thread

Special Thread Hand Taps continueed

Size	Taper Order No.	Plug Order No.	Bottoming Order No.
1-7/8"-20	312-7878	311-4878	313-4878
1-15/16-12	312-7880	311-4880	313-4880
1-15/16-16	312-7882	311-4882	313-4882
1-15/16-18	312-6892	311-3892	313-3892
1-15/16-20	312-6894	311-3894	313-3894
2"-4-1/2	312-7884	311-4884	313-4884
2"-6	312-7886	311-4886	313-4886
2"-8	312-7888	311-4888	313-4888
2"-10	312-7890	311-4890	313-4890
2"-12	312-7892	311-4892	313-4892
2"-14	312-7894	311-4894	313-4894
2"-16	312-7896	311-4896	313-4896
2"-18	312-6896	311-3896	313-3896
2"-20	312-7898	311-4898	313-4898
2-1/8-8	312-7900	311-4900	313-4900
2-1/8-10	312-7901	311-4901	313-4901
2-1/8-12	312-7902	311-4902	313-4902
2-1/8-16	312-7903	311-4903	313-4903
2-1/8-18	312-7904	311-4904	313-4904
2-1/8-20	312-7905	311-4905	313-4905
2-3/16-20	312-7906	311-4906	313-4906
2-1/4-4-1/2	312-7908	311-4908	313-4908
2-1/4-6	312-6898	311-3898	313-3898
2-1/4-8	312-7910	311-4910	313-4910
2-1/4-10	312-6900	311-3900	313-3900
2-1/4-12	312-7912	311-4912	313-4912
2-1/4-14	312-7914	311-4914	313-4914
2-1/4-16	312-7915	311-4915	313-4915
2-1/4-18	312-7916	311-4916	313-4916
2-1/4-20	312-7917	311-4917	313-4917
2-3/8-4-1/2	312-7918	311-4918	313-4918
2-3/8-8	312-7920	311-4920	313-4920
2-3/8-10	312-6902	311-3902	313-3902
2-3/8-12	312-7922	311-4922	313-4922
2-3/8-14	312-7924	311-4924	313-4924
2-3/8-16	312-6906	311-3906	313-3906
2-3/8-18	312-6908	311-3908	313-3908
2-3/8-20	312-6910	311-3910	313-3910
2-1/2-4	312-7926	311-4926	313-4926
2-1/2-6	312-7928	311-4928	313-4928
2-1/2-8	312-7930	311-4930	313-4930
2-1/2-12	312-7932	311-4932	313-4932
2-1/2-16	312-7934	311-4934	313-4934
2-1/2-18	312-7936	311-4936	313-4936
2-1/2-20	312-6914	311-3914	313-3914
2-5/8-8	312-7938	311-4938	313-4938
2-5/8-12	312-7940	311-4940	313-4940
2-5/8-16	312-7942	311-4942	313-4942
2-5/8-18	312-7944	311-4944	313-4944
2-3/4-4	312-7946	311-4946	313-4946
2-3/4-8	312-7948	311-4948	313-4948
2-3/4-12	312-7950	311-4950	313-4950
2-3/4-16	312-7952	311-4952	313-4952
2-3/4-18	312-7954	311-4954	313-4954
2-7/8-8	312-7958	311-4956	313-4956
2-7/8-12	312-7956	311-4958	313-4958
2-7/8-14	312-6916	311-3916	313-3916
2-7/8-16	312-7960	311-4960	313-4960
2-7/8-18	312-6918	311-3918	313-3918
3"-4	312-7962	311-4962	313-4962
3"-8	312-7964	311-4964	313-4964
3"-12	312-7966	311-4966	313-4966
3"-16	312-6920	311-3920	313-3920
3"-18	312-6922	311-3922	313-3922
3-1/4-4	312-7968	311-4968	313-4968
3-1/4-8	312-7970	311-4970	313-4970
3-1/4-12	312-7972	311-4972	313-4972
3-1/2-4	312-7974	311-4974	313-4974
3-1/2-8	312-7976	311-4976	313-4976
3-1/2-12	312-7978	311-4978	313-4978
3-3/4-4	312-7980	311-4980	313-4980
3-3/4-8	312-6924	311-3924	313-3924
3-3/4-12	312-7982	311-4982	313-4982
4"-4	312-6926	311-3926	313-3926
4"-8	312-7984	311-4984	313-4984
4"-12	312-7986	311-4986	313-4986
4"-16	312-6928	311-3928	313-3928

* NEF Thread

Metric Special Hand Taps

NEW

HSS, Ground Thread



Size	Plug Order No.	Bottoming Order No.	Size	Plug Order No.	Bottoming Order No.
1.4x0.30	411-6014	411-7014	18x1.25	411-6183	411-7183
1.7x0.20	411-6017	411-7017	18x1.75	411-6184	411-7184
1.7x0.35	411-6018	411-7018	19x0.50	411-6191	411-7191
2.0x0.25	411-6020	411-7020	19x1.00	411-6192	411-7192
2.0x0.45	411-6022	411-7022	19x1.50	411-6193	411-7193
2.3x0.40	411-6023	411-7023	19x2.00	411-6194	411-7194
2.5x0.20	411-6025	411-7025	20x1.00	411-6201	411-7201
2.6x0.35	411-6026	411-7026	20x1.25	411-6202	411-7202
2.6x0.45	411-6027	411-7027	20x2.00	411-6203	411-7203
3.0x0.35	411-6030	411-7030	21x1.00	411-6211	411-7211
3.0x0.60	411-6031	411-7031	21x1.25	411-6212	411-7212
4.0x0.50	411-6040	411-7040	21x1.50	411-6213	411-7213
4.5x0.50	411-6045	411-7045	21x2.00	411-6214	411-7214
5.0x0.50	411-6050	411-7050	21x2.50	411-6215	411-7215
5x0.75	411-6051	411-7051	22x1.00	411-6221	411-7221
5x0.90	411-6052	411-7052	22x2.00	411-6222	411-7222
5.5x0.70	411-6055	411-7055	23x1.00	411-6231	411-7231
5.5x0.90	411-6056	411-7056	23x1.50	411-6232	411-7232
6.0x0.50	411-6060	411-7060	23x2.00	411-6233	411-7233
6.0x0.75	411-6061	411-7061	23x2.50	411-6234	411-7234
7x0.50	411-6071	411-7071	23x3.00	411-6235	411-7235
7x0.75	411-6072	411-7072	24x1.00	411-6241	411-7241
7x1.25	411-6073	411-7073	25x1.00	411-6251	411-7251
8x0.50	411-6080	411-7080	25x1.50	411-6252	411-7252
8x0.75	411-6081	411-7081	25x2.00	411-6253	411-7253
8x1.50	411-6083	411-7083	25x3.00	411-6254	411-7254
9.0x0.50	411-6090	411-7090	26x1.50	411-6261	411-7261
9x0.75	411-6091	411-7091	26x2.00	411-6262	411-7262
9x1.00	411-6092	411-7092	27x1.00	411-6271	411-7271
9x1.25	411-6093	411-7093	27x2.50	411-6272	411-7272
10x0.50	411-6101	411-7101	28x2.00	411-6282	411-7282
10x0.75	411-6102	411-7102	30x1.00	411-6301	411-7301
10x1.00	411-6103	411-7103	30x2.50	411-6302	411-7302
11x0.50	411-6111	411-7111	30x3.00	411-6303	411-7303
11x0.75	411-6112	411-7112	32x1.50	411-6321	411-7321
11x1.00	411-6113	411-7113	32x2.00	411-6322	411-7322
11x1.25	411-6114	411-7114	33x1.50	411-6331	411-7331
11x1.50	411-6115	411-7115	33x2.00	411-6332	411-7332
12x0.50	411-6121	411-7121	34x1.50	411-6341	411-7341
12x0.75	411-6122	411-7122	35x1.50	411-6351	411-7351
12x1.00	411-6123	411-7123	38x1.50	411-6381	411-7381
12x1.50	411-6124	411-7124	39x1.50	411-6391	411-7391
13x0.50	411-6131	411-7131	40x1.50	411-6401	411-7401
13x0.75	411-6132	411-7132	42x1.50	411-6421	411-7421
13x1.00	411-6133	411-7133	42x3.00	411-6422	411-7422
13x1.50	411-6134	411-7134	42x4.50	411-6423	411-7423
13x2.00	411-6135	411-7135	45x1.50	411-6451	411-7451
14x0.50	411-6141	411-7141	45x3.00	411-6452	411-7452
14x0.75	411-6142	411-7142	46x4.50	411-6461	411-7461
14x1.00	411-6143	411-7143	48x1.50	411-6481	411-7481
14x1.50	411-6144	411-7144	48x3.00	411-6483	411-7483
15x0.50	411-6151	411-7151	48x4.50	411-6484	411-7484
15x1.00	411-6152	411-7152	48x5.00	411-6485	411-7485
15x1.50	411-6153	411-7153	50x1.50	411-6501	411-7501
15x2.00	411-6154	411-7154	50x3.00	411-6503	411-7503
16x0.50	411-6161	411-7161	52x1.50	411-6521	411-7521
16x0.75	411-6162	411-7162	52x3.00	411-6523	411-7523
16x1.00	411-6163	411-7163	52x5.00	411-6525	411-7525
16x1.25	411-6164	411-7164	56x3.00	411-6563	411-7563
16x1.75	411-6165	411-7165	56x4.00	411-6564	411-7564
17x0.50	411-6171	411-7171	56x5.50	411-6565	411-7565
17x1.00	411-6172	411-7172	64x1.50	411-6641	411-7641
17x1.50	411-6173	411-7173	64x3.00	411-6643	411-7643
17x0.20	411-6174	411-7174	64x6.00	411-6646	411-7646
18x0.50	411-6181	411-7181	72x3.00	411-6723	411-7723
18x1.00	411-6182	411-7182	72x6.00	411-6726	411-7726

Pulley & Drill Taps

Screw Thread Insert Taps (S.T.I)

High Speed Steel, Ground Thread, Straight Flute



Tap Size	Plug Order No.	Bottom Order No.	Tap Size	Plug Order No.	Bottom Order No.
2-56 NC	**311-9200**	**311-9300**	1-8 NC	**311-9234**	**311-9334**
3-48 NC	**311-9202**	**311-9302**	3-56 NF	**311-9250**	**311-9350**
4-40NC	**311-9204**	**311-9304**	4-48 NF	**311-9252**	**311-9352**
5-40 NC	**311-9206**	**311-9306**	6-40 NF	**311-9254**	**311-9354**
6-32 NC	**311-9208**	**311-9308**	8-36 NF	**311-9256**	**311-9356**
8-32 NC	**311-9210**	**311-9310**	10-32 NF	**311-9258**	**311-9358**
10-24 NC	**311-9212**	**311-9312**	1/4-28 NF	**311-9260**	**311-9360**
12-24 NC	**311-9214**	**311-9314**	5/16-24 NF	**311-9262**	**311-9362**
1/4-20 NC	**311-9216**	**311-9316**	3/8-24 NF	**311-9264**	**311-9364**
5/16-18 NC	**311-9218**	**311-9318**	7/16-20 NF	**311-9266**	**311-9366**
3/8-16 NC	**311-9220**	**311-9320**	1/2-20 NF	**311-9268**	**311-9368**
7/16-14 NC	**311-9222**	**311-9322**	9/16-18 NF	**311-9270**	**311-9370**
1/2-13 NC	**311-9224**	**311-9324**	5/8-18 NF	**311-9272**	**311-9372**
9/16-12 NC	**311-9226**	**311-9326**	3/4-16 NF	**311-9274**	**311-9374**
5/8-11 NC	**311-9228**	**311-9328**	7/8-14 NF	**311-9276**	**311-9376**
3/4-10 NC	**311-9230**	**311-9330**	1-12 NF	**311-9278**	**311-9378**
7/8-9 NC	**311-9232**	**311-9332**	1-14 NF	**311-9280**	**311-9380**

Acme TandemTaps

High Speed Steel, Chamfer: 3-5 Threads Ground Thread, Class 2G



Size	Thread Length	Overall length	Max. Depth of Bronze or Steel Nut	Max. Depth of Brass or Cast Iron Nut	Order No.
3/8"-12	2-9/16"	5"			**312-0302**
7/16-12	2-9/16	5			**312-0304**
1/2-10	2-9/16	2-9/16	1"	1-1/2"	**312-0306**
5/8-8	3-3/16	6-1/4	1-1/4	1-7/8	**312-0308**
3/4-6	4-5/16	7-15/16	1-1/2	2-1/4	**312-0310**
7/8-6	4-3/8	8-5/8	1-3/4	2-5/8	**312-0312**
1-5	5-1/4	10-1/8	2	3	**312-0314**
1-1/8-5	5-1/4	10-3/4	2-1/4	3-3/8	**312-0316**
1-1/4-5	5-1/4	11-1/8	2-1/2	3-3/4	**312-0318**
1-3/8-4	5-7/8	12-1/4	2-3/4	4-1/8	**312-0320**
1-1/2-4	5-7/8	12-5/8	3	4-1/2	**312-0322**
2"-4	6-1/2	14-7/8			**312-0328**

Left Hand

Size	Thread Length	Overall length	Max. Depth of Bronze or Steel Nut	Max. Depth of Brass or Cast Iron Nut	Order No.
3/8"-12	2-9/16"	5"			**312-9017**
7/16-12	2-9/16	5			**312-9018**
1/2-10	2-9/16	2-9/16	1"	1-1/2"	**312-9019**
5/8"-8	3-3/16	6-1/4	1-1/4	1-7/8	**312-9020**
3/4-6	4-5/16	7-15/16	1-1/2	2-1/4	**312-9021**
7/8-6	4-3/8	8-5/8	1-3/4	2-5/8	**312-9022**
1-5	5-1/4	10-1/8	2	3	**312-9023**
1-1/8-5	5-1/4	10-3/4	2-1/4	3-3/8	**312-9024**
1-1/4-5	5-1/4	11-1/8	2-1/2	3-3/4	**312-9025**

HSS Ground Pulley Taps



Size	No.of Flute	H limit	OAL	Order No.	Size	No.of Flute	H limit	OAL	Order No.
1/4"-20NC	4	H-3	4"	**312-0402**	3/8-16NC	4	H-3	8"	**312-0610**
5/16-18NC	4	H-3	4	**312-0404**	3/8-24NF	4	H-3	8	**312-0612**
3/8-16NC	4	H-3	4	**312-0406**	7/16-14NC	4	H-3	8	**312-0614**
6-32NC	3	H-3	6	**312-0502**	7/16-20NF	4	H-3	8	**312-0616**
6-40NF	3	H-2	6	**312-0504**	1/2-13NC	4	H-3	8	**312-0618**
8-32NC	3	H-3	6	**312-0506**	1/2-20NF	4	H-3	8	**312-0620**
8-36NF	3	H-3	6	**312-0508**	5/8-11NC	4	H-3	8	**312-0622**
10-24NC	3	H-3	6	**312-0510**	5/8-18NF	4	H-3	8	**312-0624**
10-32NF	3	H-3	6	**312-0512**	3/4-10NC	4	H-3	8	**312-0626**
1/4-20NC	4	H-3	6	**312-0514**	7/8-9NC	4	H-4	8	**312-0628**
1/4-28NF	4	H-3	6	**312-0516**	1-8NC	4	H-4	8	**312-0630**
5/16-18NC	4	H-3	6	**312-0518**	3/8-16NC	4	H-3	10	**312-0702**
5/16-24NF	4	H-3	6	**312-0520**	3/8-24NF	4	H-3	10	**312-0704**
3/8-16NC	4	H-3	6	**312-0522**	7/16-14NC	4	H-3	10	**312-0706**
3/8-24NF	4	H-3	6	**312-0524**	7/16-20NF	4	H-3	10	**312-0708**
7/16-14NC	4	H-3	6	**312-0526**	1/2-13NC	4	H-3	10	**312-0709**
7/16-20NF	4	H-3	6	**312-0528**	5/8-11NC	4	H-3	10	**312-0710**
1/2-13NC	4	H-3	6	**312-0530**	3/4-10NC	4	H-3	10	**312-0712**
1/2-20NF	4	H-3	6	**312-0532**	7/8-9NC	4	H-4	10	**312-0714**
5/8-11NC	4	H-3	6	**312-0534**	3/8-16NC	4	H-3	12	**312-0802**
5/8-18NF	4	H-3	6	**312-0536**	7/16-14NC	4	H-3	12	**312-0804**
3/4-10NC	4	H-3	6	**312-0538**	1/2-13NC	4	H-3	12	**312-0806**
7/8-9NC	4	H-4	6	**312-0540**	5/8-11NC	4	H-3	12	**312-0808**
1/4-20NC	4	H-3	8	**312-0602**	5/8-18NF	4	H-3	12	**312-0810**
1/4-28NF	4	H-3	8	**312-0604**	3/4-10NC	4	H-3	12	**312-0812**
5/16-18NC	4	H-3	8	**312-0606**	1-8NC	4	H-4	12	**312-0814**
5/16"-24NF	4	H-3	8	**312-0608**					

HSS Ground Pulley Taps ,Spiral point

NEW



Size	No.of Flute	H limit	OAL	Order No.	Size	No.of Flute	H limit	OAL	Order No.
1/4"-20NC	4	H-3	4"	**312-4410**	3/8-16NC	3	H-3	8"	**312-4610**
5/16-18NC	4	H-3	4	**312-4412**	3/8-24NF	3	H-3	8	**312-4612**
3/8-16NC	4	H-3	4	**312-4414**	7/16-14NC	3	H-3	8	**312-4614**
6-32NC	3	H-3	6	**312-4502**	7/16-20NF	3	H-3	8	**312-4616**
6-40NF	3	H-2	6	**312-4504**	1/2-13NC	3	H-3	8	**312-4618**
8-32NC	2	H-3	6	**312-4506**	1/2-20NF	3	H-3	8	**312-4620**
8-36NF	2	H-3	6	**312-4508**	5/8-11NC	3	H-3	8	**312-4622**
10-24NC	2	H-3	6	**312-4510**	5/8-18NF	3	H-3	8	**312-4624**
10-32NF	2	H-3	6	**312-4512**	3/4-10NC	3	H-3	8	**312-4626**
1/4-20NC	2	H-3	6	**312-4514**	7/8-9NC	3	H-4	8	**312-4628**
1/4-28NF	2	H-3	6	**312-4516**	1-8NC	3	H-4	8	**312-4630**
5/16-18NC	2	H-3	6	**312-4518**	3/8-16NC	3	H-3	10	**312-4702**
5/16-24NF	2	H-3	6	**312-4520**	3/8-24NF	3	H-3	10	**312-4704**
3/8-16NC	3	H-3	6	**312-4522**	7/16-14NC	3	H-3	10	**312-4706**
3/8-24NF	3	H-3	6	**312-4524**	7/16-20NF	3	H-3	10	**312-4708**
7/16-14NC	3	H-3	6	**312-4526**	1/2-13NC	3	H-3	10	**312-4709**
7/16-20NF	3	H-3	6	**312-4528**	5/8-11NC	3	H-3	10	**312-4710**
1/2-13NC	3	H-3	6	**312-4530**	3/4-10NC	3	H-3	10	**312-4712**
1/2-20NF	3	H-3	6	**312-4532**	7/8-9NC	3	H-4	10	**312-4714**
5/8-11NC	3	H-3	6	**312-4534**	3/8-16NC	3	H-3	12	**312-4802**
5/8-18NF	3	H-3	6	**312-4536**	7/16-14NC	3	H-3	12	**312-4804**
3/4-10NC	3	H-3	6	**312-4538**	1/2-13NC	3	H-3	12	**312-4806**
7/8-9NC	3	H-4	6	**312-4540**	5/8-11NC	3	H-3	12	**312-4808**
1/4-20NC	2	H-3	8	**312-4602**	5/8-18NF	3	H-3	12	**312-4810**
1/4-28NF	2	H-3	8	**312-4604**	3/4-10NC	3	H-3	12	**312-4812**
5/16-18NC	2	H-3	8	**312-4606**	3/4"-16NF	3	H-3	12	**312-4813**
5/16"-24NF	2	H-3	8	**312-4608**	1-8NC	4	H-4	12	**312-4814**

Single Pass Combination Drill Taps

HSS, Ground Thread



Size	Thread Limit	Thread Length	Drill Length	Drill Size	Overall Length	H.S.S Order No.	TiN-Coated Order No.
4-40NC	H-2	9/16"	1/4"	.0890"	1-7/8"	**312-0102**	**312-0202**
4-48NF	H-2	9/16	1/4	.0930	1-7/8	**312-0104**	**312-0204**
5-40NC	H-2	5/8	9/32	.1015	1-15/16	**312-0106**	**312-0206**
5-44NF	H-2	5/8	9/32	.1040	1-15/16	**312-0108**	**312-0208**
6-32NC	H-3	11/16	5/16	.1095	2	**312-0110**	**312-0210**
6-40NF	H-2	11/16	5/16	.1150	2	**312-0112**	**312-0212**
8-32NC	H-3	3/4	3/8	.1360	2-1/8	**312-0114**	**312-0214**
8-36NF	H-3	3/4	3/8	.1385	2-1/8	**312-0116**	**312-0216**
10-24NC	H-3	7/8	13/32	.1520	2-3/8	**312-0118**	**312-0218**
10-32NF	H-3	7/8	13/32	.1610	2-3/8	**312-0120**	**312-0220**
12-24NC	H-3	7/8	15/32	.1770	2-3/8	**312-0122**	**312-0222**
12-28NF	H-3	7/8	15/32	.1835	2-3/8	**312-0124**	**312-0224**
1/4-20NC	H-3	15/16	17/32	.2010	2-1/2	**312-0126**	**312-0226**
1/4-28NF	H-3	15/16	17/32	.2175	2-1/2	**312-0128**	**312-0228**
5/16-18NC	H-3	1-1/8	11/16	.2570	3	**312-0130**	**312-0230**
5/16-24NF	H-3	1-1/8	11/16	.2720	3	**312-0132**	**312-0232**
3/8-16NC	H-3	1-1/4	13/16	.3125	3-1/2	**312-0134**	**312-0234**
3/8-24NF	H-3	1-1/4	13/16	.3345	3-1/2	**312-0136**	**312-0236**
7/16-14NC	H-3	1-7/16	1	.3680	3-7/8	**312-0138**	**312-0238**
7/16-20NF	H-3	1-7/16	1	.3890	3-7/8	**312-0140**	**312-0240**
1/2-13NC	H-3	1-21/32	1-1/8	.4250	4-1/4	**312-0142**	**312-0242**
1/2-20N	H-3	1-21/32	1-1/8	.4510	4-1/4	**312-0144**	**312-0244**

Size	Limit	Thread Length	Drill Length	Drill Size	Overall Length	H.S.S Order No.	TiN-Coated Order No.
3x.5mm	D-3	13/32"	.1015"	9/32"	1-15/16"	**312-0162**	**312-0262**
3.5x.6mm	D-4	7/16	.1180	5/16	2	**312-0164**	**312-0264**
4x.7mm	D-4	1/2	.1340	3/8	2-1/8	**312-0166**	**312-0266**
4.5x.75mm	D-4	5/8	.1520	13/32	2-3/8	**312-0168**	**312-0268**
5x.8mm	D-4	5/8	.1700	13/32	2-3/8	**312-0170**	**312-0270**
6x1.00mm	D-5	25/32	.2030	17/32	2-1/2	**312-0172**	**312-0272**
7x1.00mm	D-5	15/16	.2420	11/16	2-27/32	**312-0174**	**312-0274**
8x1.25mm	D-5	15/16	.2735	11/16	2-27/32	**312-0176**	**312-0276**
10x1.5mm	D-6	1-1/16	.3440	13/16	3-3/8	**312-0178**	**312-0278**
12x1.75mm	D-6	1-3/8	.4140	1-1/8	4-1/16	**312-0180**	**312-0280**

Metric Hand Taps

DIN 352

3 Piece

High Speed Steel



Size	Taper Order No.	Plug Order No.	Bottoming Order No.	Set Orde No.
M2-.4mm	**324-1020**	**324-2020**	**324-3020**	**311-1219**
M2.5-.45mm	**324-1025**	**324-2025**	**324-3025**	**311-1221**
M2.6-.45mm	**324-1026**	**324-2026**	**324-3026**	**311-1226**
M3-.5mm	**324-1030**	**324-2030**	**324-3030**	**311-1203**
M3.5-.6mm	**324-1035**	**324-2035**	**324-3035**	**311-1235**
M4-.7mm	**324-1040**	**324-2040**	**324-3040**	**311-1204**
M5-.8mm	**324-1050**	**324-2050**	**324-3050**	**311-1205**
M6-1.0mm	**324-1060**	**324-2060**	**324-3060**	**311-1206**
M7-1.0mm	**324-1070**	**324-2070**	**324-3070**	**311-1207**
M8-1.25mm	**324-1080**	**324-2080**	**324-3080**	**311-1208**
M9-1.25mm	**324-1090**	**324-2090**	**324-3090**	**311-1209**
M10-1.50mm	**324-1100**	**324-2100**	**324-3100**	**311-1210**
M12-1.75mm	**324-1120**	**324-2120**	**324-3120**	**311-1212**
M14-2.0mm	**324-1140**	**324-2140**	**324-3140**	**311-1214**
M16-2.0mm	**324-1160**	**324-2160**	**324-3160**	**311-1216**
M18-2.5mm	**324-1180**	**324-2180**	**324-3180**	**311-1218**
M20-2.5mm	**324-1200**	**324-2200**	**324-3200**	**311-1220**
M22-2.5mm	**324-1220**	**324-2220**	**324-3220**	**311-1222**
M24-3.0mm	**324-1240**	**324-2240**	**324-3240**	**311-1224**
M27-3.0mm	**324-1270**	**324-2270**	**324-3270**	**311-1227**
M30-3.5mm	**324-1300**	**324-2300**	**324-3300**	**311-1230**
M33-3.5mm	**324-1330**	**324-2330**	**324-3330**	**311-1233**
M36-4.0mm	**324-1360**	**324-2360**	**324-3360**	**311-1236**
M39-4.0mm	**324-1390**	**324-2390**	**324-3390**	**311-1239**
M42-4.5mm	**324-1420**	**324-2420**	**324-3420**	**311-1242**
M45-4.5mm	**324-1450**	**324-2450**	**324-3450**	**311-1245**
M48-5.0mm	**324-1480**	**324-2480**	**324-3480**	**311-1248**
M52-5.0mm	**324-1520**	**324-2520**	**324-3520**	**311-1252**
M56-5.5mm	**324-1560**	**324-2560**	**324-3560**	**311-1256**
M60-5.5mm	**324-1600**	**324-2600**	**324-3600**	**311-1260**
M64-6.0mm	**324-1640**	**324-2640**	**324-3640**	**311-1264**
M68-6.0mm	**324-1680**	**324-2680**	**324-3680**	**311-1268**

Metric Hand Tap Sets

DIN 351

3 Piece

High Speed Steel

Right Hand



Size	Overall Length	Order No.	Size	Overall Length	Order No.
1/16"-60	32mm	**311-3004**	5/8"-11	90mm	**311-3040**
3/32-48	36mm	**311-3006**	3/8-10	105mm	**311-3048**
1/8-40	40mm	**311-3008**	7/8-9	110mm	**311-3056**
5/32-32	45mm	**311-3010**	1-8	110mm	**311-3100**
3/16-24	50mm	**311-3012**	1-1/8-7	132mm	**311-3108**
7/32-24	50mm	**311-3014**	1-1/4-7	132mm	**311-3116**
1/4-20	56mm	**311-3016**	1-3/8-6	150mm	**311-3124**
5/16-18	63mm	**311-3020**	1-1/2-6	150mm	**311-3132**
3/8-16	70mm	**311-3024**	1-5/8-5	160mm	**311-3140**
7/16-14	75mm	**311-3028**	1-3/4-5	160mm	**311-3148**
1/2-12	80mm	**311-3032**	1-7/8-4-1/2	190mm	**311-3156**
9/16-12	80mm	**311-3036**	2-4-1/2	190mm	**311-3200**

Metric Hand Tap Sets

MF DIN 2181

2 Piece

High Speed Steel



Size	Order No.	Size	Order No.
M3-.35mm	**311-1302**	M12-1.5mm	**311-1324**
M4-.35mm	**311-1304**	M14-1.0mm	**311-1326**
M4-.5mm	**311-1306**	M14-1.25mm	**311-1328**
M5-.5mm	**311-1308**	M14-1.5mm	**311-1330**
M6-.75mm	**311-1310**	M16-1.0mm	**311-1332**
M8-.75mm	**311-1312**	M16-1.5mm	**311-1334**
M8-1.0mm	**311-1314**	M18-1.5mm	**311-1336**
M10-1.0mm	**311-1316**	M20-1.5mm	**311-1338**
M10-1.25mm	**311-1318**	M22-1.5mm	**311-1340**
M12-1.0mm	**311-1320**	M24-1.5mm	**311-1342**
M12-1.25mm	**311-1322**		

Metric Machine Taps

Metric Hand Tap Sets

DIN 5157
2 Piece, High Speed Steel,
Right Hand



Size	Overall Length	Order No.	Size	Overall Length	Order No.
1/8"-28	63mm	**311-1008**	5/8"-14	90mm	**311-1040**
1/4-19	70mm	**311-1016**	3/4-14	100mm	**311-1048**
3/8-19	70mm	**311-1024**	7/8-14	100mm	**311-1056**
1/2-14	80mm	**311-1032**	1-11	110mm	**311-1064**

Metric Single Pass Drill Taps

High Speed Steel,
Ground Thread,
German Pattern



Size	Drill Length	Thread Length	Overall Length	H.S.S Order No.	TiN-Coated Order No.
M3	5mm	6	36	**312-8003**	**312-8103**
M4	6mm	8	39	**312-8004**	**312-8104**
M5	7mm	9	41	**312-8005**	**312-8105**
M6	8mm	11	44	**312-8006**	**312-8106**
M8	11mm	14	51	**312-8008**	**312-8108**
M10	15mm	17	59	**312-8010**	**312-8110**

Metric Machine Taps

DIN 371
High Speed Steel
Thread Ground
Right Hand



High Speed Steel

Size	Straight Flute Taper "A" Order No.	Straight Flute Bottom "C" Order No.	Spiral Flute 15° Flute Order No.	Spiral Flute 35° Flute Order No.	Spiral Point Order No.
M2-.4mm	**311-1602**	**311-1702**	**311-1622**	**311-1722**	**311-1612**
M3-.5mm	**311-1603**	**311-1703**	**311-1623**	**311-1723**	**311-1613**
M4-.7mm	**311-1604**	**311-1704**	**311-1624**	**311-1724**	**311-1614**
M5-.8mm	**311-1605**	**311-1705**	**311-1625**	**311-1725**	**311-1615**
M6-1.0mm	**311-1606**	**311-1706**	**311-1626**	**311-1726**	**311-1616**
M8-1.25mm	**311-1608**	**311-1708**	**311-1628**	**311-1728**	**311-1618**
M10-1.5mm	**311-1610**	**311-1710**	**311-1630**	**311-1730**	**311-1620**

HSS, TiN Coated

Size	Straight Flute Taper"A" Order No.	Straight Flute Bottom"C" Order No.	Spiral Flute 15° Flute Order No.	Spiral Flute 35° Flute Order No.	Spiral Point Order No.
M2-.4mm	**311-1632**	**311-1732**	**311-1652**	**311-1752**	**311-1642**
M3-.5mm	**311-1633**	**311-1733**	**311-1653**	**311-1753**	**311-1643**
M4-.7mm	**311-1634**	**311-1734**	**311-1654**	**311-1754**	**311-1644**
M5-.8mm	**311-1635**	**311-1735**	**311-1655**	**311-1755**	**311-1645**
M6-1.0mm	**311-1636**	**311-1736**	**311-1656**	**311-1756**	**311-1646**
M8-1.25mm	**311-1638**	**311-1738**	**311-1658**	**311-1758**	**311-1648**
M10-1.5mm	**311-1640**	**311-1740**	**311-1660**	**311-1760**	**311-1650**

Metric Nut Taps

DIN 357
High Speed Steel
Right Hand



Size	Order No.	Size	Order No.
M3x.5mm	**311-1503**	M8x1.25mm	**311-1508**
M4x.7mm	**311-1504**	M10x1.50mm	**311-1510**
M5x.8mm	**311-1505**	M12x1.75mm	**311-1512**
M6x1.0mm	**311-1506**		

Metric Machine Taps

DIN 376
High Speed Steel
Thread Ground
Right Hand



High Speed Steel

Size	Straight Flute Taper "A" Order No.	Straight Flute Bottom "C" Order No.	Spiral Flute 15° Flute Order No.	Spiral Flute 35° Flute Order No.	Spiral Point Order No.
M3-0.5mm	**311-1403**	**311-2403**	**311-1463**	**311-2463**	**311-1433**
M4-0.7mm	**311-1404**	**311-2404**	**311-1464**	**311-2464**	**311-1434**
M5-0.8mm	**311-1405**	**311-2405**	**311-1465**	**311-2465**	**311-1435**
M6-1.0mm	**311-1406**	**311-2406**	**311-1466**	**311-2466**	**311-1436**
M8-1.25mm	**311-1408**	**311-2408**	**311-1468**	**311-2468**	**311-1438**
M10-1.5mm	**311-1410**	**311-2410**	**311-1470**	**311-2470**	**311-1440**
M12-1.75mm	**311-1412**	**311-2412**	**311-1472**	**311-2472**	**311-1442**
M14-2.0mm	**311-1414**	**311-2414**	**311-1474**	**311-2474**	**311-1444**
M16-2.0mm	**311-1416**	**311-2416**	**311-1476**	**311-2476**	**311-1446**
M18-2.5mm	**311-1418**	**311-2418**	**311-1478**	**311-2478**	**311-1448**
M20-2.5mm	**311-1420**	**311-2420**	**311-1480**	**311-2480**	**311-1450**
M22-2.5mm	**311-1422**	**311-2422**	**311-1482**	**311-2482**	**311-1452**
M24-3.0mm	**311-1424**	**311-2424**	**311-1484**	**311-2484**	**311-1454**
M27-3.0mm	**311-1427**	**311-2427**	**311-1487**	**311-2487**	**311-1457**
M30-3.5mm	**311-1430**	**311-2430**	**311-1490**	**311-2490**	**311-1460**

HSS, TiN Coated

Size	Straight Flute Taper "A" Order No.	Straight Flute Bottom "C" Order No.	Spiral Flute 15° Flute Order No.	Spiral Flute 35° Flute Order No.	Spiral Point Order No.
M3-0.5mm	**311-2503**	**311-2603**	**311-2563**	**311-2663**	**311-2633**
M4-0.7mm	**311-2504**	**311-2604**	**311-2564**	**311-2664**	**311-2634**
M5-0.8mm	**311-2505**	**311-2605**	**311-2565**	**311-2665**	**311-2635**
M6-1.0mm	**311-2506**	**311-2606**	**311-2566**	**311-2666**	**311-2636**
M8-1.25mm	**311-2508**	**311-2608**	**311-2568**	**311-2668**	**311-2638**
M10-1.5mm	**311-2510**	**311-2610**	**311-2570**	**311-2670**	**311-2640**
M12-1.75mm	**311-2512**	**311-2612**	**311-2572**	**311-2672**	**311-2642**
M14-2.0mm	**311-2514**	**311-2614**	**311-2574**	**311-2674**	**311-2644**
M16-2.0mm	**311-2516**	**311-2616**	**311-2576**	**311-2676**	**311-2646**
M18-2.5mm	**311-2518**	**311-2618**	**311-2578**	**311-2678**	**311-2648**
M20-2.5mm	**311-2520**	**311-2620**	**311-2580**	**311-2680**	**311-2650**
M22-2.5mm	**311-2522**	**311-2622**	**311-2582**	**311-2682**	**311-2652**
M24-3.0mm	**311-2524**	**311-2624**	**311-2584**	**311-2684**	**311-2654**
M27-3.0mm	**311-2527**	**311-2627**	**311-2587**	**311-2687**	**311-2657**
M30-3.5mm	**311-2530**	**311-2630**	**311-2590**	**311-2690**	**311-2660**

NPT Taper Pipe Taps

Carbon Steel, Ground Thread



Size	Order No.	Size	Order No.	Size	Order No.
1/8"-27	**312-6010**	1-11-1/2	**312-6035**	2-1/2"-8	**312-6055**
1/4-18	**312-6015**	1-1/4"-11-1/2	**312-6040**	3-8	**312-6060**
3/8-18	**312-6020**	1-1/2-11-1/2	**312-6045**	3-1/2"-8	**312-6065**
1/2"-14	**312-6025**	2-11-1/2	**312-6050**	4"-8	**312-6070**
3/4-14	**312-6030**				

NPT & NPTF Taper Pipe Taps

HSS, Ground Thread



Size	No.of Flute	Flute Length	Overall Length	NPT Order No.	NPTF Order No.
1/16"-27	4	11/16"	2-1/8"	**311-6005**	**311-6205**
*1/8-27	4	3/4	2-1/8	**311-6010**	**311-6208**
1/8-27	4	3/4	2-1/8	**311-6011**	**311-6210**
1/4-18	4	1-1/16	2-7/16	**311-6015**	**311-6215**
3/8-18	4	1-1/16	2-9/16	**311-6020**	**311-6220**
1/2-14	4	1-3/8	3-1/8	**311-6025**	**311-6225**
3/4-14	5	1-3/8	3-1/4	**311-6030**	**311-6230**
1-11-1/2	5	1-3/4"	3-1/4"	**311-6035**	**311-6235**
1-1/4-11-1/2	5	1-3/4	4	**311-6040**	**311-6240**
1-1/2-11-1/2	7	1-3/4	4-1/4	**311-6045**	**311-6245**
2-11-1/2	7	1-3/4	4-1/2	**311-6050**	**311-6250**
2-1/2-8	8	2-9/16	5-1/2	**311-6055**	**311-6255**
3-8	8	2-5/8	6	**311-6060**	**311-6260**
3-1/2-8	8	2-11/16	6-1/2	**311-6065**	**311-6265**

* Small Shank

HSS NPT Long Taper Pipe Taps



Size	Threads Per Inch	Thread Length	OAL	Order No.
1/8"	27	3/4"	4"	**311-6702**
1/4	18	1-1/16	4	**311-6712**
3/8	18	1-1/16	4	**311-6717**
1/2	14	1-3/8	4	**311-6722**
3/4	14	1-3/8	4	**311-6722**
1	11	1-3/4	4	**311-6727**
1/8	27	3/4"	6	**311-6732**
1/4"	18	1-1/16"	6"	**311-6737**
3/8	18	1-1/16	6	**311-6742**
1/2	14	1-3/8	6	**311-6747**
3/4	14	1-3/8	6	**311-6752**
1	11-1/2	1-3/4	6	**311-6757**
1-1/4	11-1/2	1-3/4	6	**311-6762**
1-1/2	11-1/2	1-3/4	8	**311-6767**

TiN Coated Taper Pipe Taps



Tap Size	No.of Flute	Thread Length	Overall Length	Order No.
1/16"-27	5	11/16"	2-1/8"	**318-3305**
1/8-27	5	3/4	2-1/8	**318-3310**
1/4-18	5	1-1/16	2-7/8	**318-3315**
3/8-18	5	1-1/16	2-9/16	**318-3320**
1/2"-14	5	1-3/8"	3-1/8"	**318-3325**
3/4-14	5	1-3/8	3-1/4	**318-3330**
1-11-1/2	5	1-3/4	3-3/4	**318-3335**

NPS Straight Pipe Taps

High Speed Steel, Ground Thread



Size	Order No.	Size	Order No.	Size	Order No.
1/8"-27	**311-6310**	3/4-14	**311-6330**	1-1/2-11-1/2	**311-6345**
1/4-18	**311-6315**	1-11-1/2	**311-6335**	2-11-1/2	**311-6350**
3/8-18	**311-6320**	1-1/4-11-1/2	**311-6340**	3-8	**311-6360**
1/2-14	**311-6325**				

NPSF Straight Pipe Taps

High Speed Steel, Ground Thread

- Use for tapping holes to be used with tapered * 0.4375"Shank, **0.3125"Shank threading pipe and fittings in low pressure applications when a sealer is used
- Adheres to be same specifcations as taper pipe taps except the thread is straight



Size	Threads Per Inch	No.of Flutes	Thread Length	Overall Length	NPSF Order No.
1/16	27	4	11/16	2-1/8	**311-6805**
*1/8	27	4	3/4	2-1/8	**311-6808**
**1/8	27	4	3/4	2-1/8	**311-6810**
1/4	18	4	1-1/16	2-7/16	**311-6815**
3/8	18	4	1-1/16	2-9/16	**311-6820**
1/2	14	4	1-3/8	3-1/8	**311-6825**
3/4	14	5	1-3/8	3-1/4	**311-6830**
1	11-1/2	5	1-3/4	3-3/4	**311-6835**
1-1/4	11-1/2	5	1-3/4	4	**311-6840**
1-1/2	11-1/2	7	1-3/4	4-1/4	**311-6845**
2	11-1/2	7	1-3/4	4-1/2	**311-6850**
2-1/2	8	8	2-9/16	5-1/2	**311-6855**
3	8	8	2-5/8	6	**311-6860**
3-1/2	8	8	2-11/16	6-1/2	**311-6865**
4	8	8	2-3/4	6-3/4	**311-6870**

*0.4375"Shank, **0.3125"Shank

Interrupted NPS Straight Pipe Taps

High Speed Steel, Ground Thread

- Use for tapping holes to be used with tapered * 0.4375"Shank, **0.3125"Shank threading pipe and fittings in low pressure applications when a sealer is used
- Adheres to be same specifcations as taper pipe taps except the threads straight



Size	Threads Per Inch	No.of Flutes	Thread Length	Overall Length	Interrupted NPS Order No.
1/16	27	4	11/16	2-1/8	**311-6905**
*1/8	27	4	3/4	2-1/8	**311-6908**
**1/8	27	4	3/4	2-1/8	**311-6910**
1/4	18	4	1-1/16	2-7/16	**311-6915**
3/8	18	4	1-1/16	2-9/16	**311-6920**
1/2	14	4	1-3/8	3-1/8	**311-6925**
3/4	14	5	1-3/8	3-1/4	**311-6930**
1	11-1/2	5	1-3/4	3-3/4	**311-6935**
1-1/4	11-1/2	5	1-3/4	4	**311-6940**
1-1/2	11-1/2	7	1-3/4	4-1/4	**311-6945**
2	11-1/2	7	1-3/4	4-1/2	**311-6950**
2-1/2	8	8	2-9/16	5-1/2	**311-6955**
3	8	8	2-5/8	6	**311-6960**
3-1/2	8	8	2-11/16	6-1/2	**311-6965**
4	8	8	2-3/4	6-3/4	**311-6970**

*0.3125"Shank, **0.4375"Shank

55° Whitworth Thread British Pipe Taps

HSS, Right Hand, Ground Thread, Bottoming



- 55° Whitworth thread form.
- BSPP: British standard parallel straight pipe.
- BSPT: British standard taper pipe.

Tap Size	BSPP Order No.	BSPT Order No.
1/8"-28	**311-6530**	**311-6560**
1/4-19	**311-6531**	**311-6561**
3/8-19	**311-6532**	**311-6562**
1/2-14	**311-6533**	**311-6563**
5/8-14	**311-6534**	**311-6564**
3/4-14	**311-6535**	**311-6565**
7/8-14	**311-6536**	**311-6566**
1-11	**311-6537**	**311-6567**
1-1/4-11	**311-6538**	**311-6568**
1-1/2-11	**311-6539**	**311-6569**
1-3/4-11	**311-6540**	**311-6570**
2-11	**311-6541**	**311-6571**
2-1/2-11	**311-6542**	**311-6572**
3-11	**311-6543**	**311-6573**

NPT Taper Pipe Taps -Interrupted Thread

High Speed Steel, Ground Thread



Size	No.of Flute	Thread Length	Overall Length	Order No.
1/16"-27	5	3/4"	2-1/8"	**311-6105**
*1/8-27	5	3/4	2-1/8	**311-6110**
1/8-27	5	3/4	2-1/8	**311-6111**
1/4-18	5	1-1/16	2-7/16	**311-6115**
3/8-18	5	1-1/16	2-9/16	**311-6120**
1/2-14	5	1-3/8	3-1/8	**311-6125**
3/4"-14	5	1-3/8	3-1/4	**311-6130**
1-11-1/2	5	1-3/4	3-3/4	**311-6135**
1-1/4-11-1/2	5	1-3/4	4	**311-6140**
1-1/2-11-1/2	7	1-3/4	4-1/4	**311-6145**
2-11-1/2	7	1-3/4	4-1/2	**311-6150**

*0.3125"Shank,**0.4375"Shank

TiN Coated Straight Pipe Taps



Tap Size	No.of Flute	Thread Length	Overall Length	Order No.
1/8"-27	4	3/4"	2-1/8"	**318-3403**
1/4-18	4	1-1/16	2-1/8	**318-3406**
1/4-18	4	1-1/16	2-9/16	**318-3409**
3/8-18	4	1-1/16	2-9/16	**318-3412**
1/2-14	4	1-3/8	3-1/8	**318-3415**

Interrupted NPTF Taper Pipe Taps

High Speed Steel



Thread Size	Thread length	OAL	No. of Flutes	Order No.
1/16"-27	11/16"	2-1/8"	4	**312-6105**
*1/8"-27	3/4"	2-1/8"	4	**312-6108***
**1/8"-27	3/4"	2-1/8"	4	**312-6110****
1/4"-18	1-1/16"	2-7/16"	4	**312-6115**
3/8"-18	1-1/16"	2-9/16"	4	**312-6120**
1/2"-14	1-3/8"	3-1/8"	4	**312-6125**
3/4"-14	1-3/8"	3-1/4"	5	**312-6130**
1"-11-1/2	1-3/4"	3-1/4"	5	**312-4135**
1-1/4"-11-1/2	1-3/4"	4"	5	**312-6140**
1-1/2"-11-1/2	1-3/4"	4-1/4"	7	**312-6145**
2"-11-1/2	1-3/4"	4-1/2"	7	**312-6150**
2-1/2"-8	2-9/16"	5-1/2"	8	**312-6155**
3"-8	2-5/8"	6"	8	**312-6160**
3-1/2"	2-11/16"	6-1/2"	8	**312-6165**

*0.3125"Shank,**0.4375" shank

Tap Extractor for Pipe Taps

- For use with standard pipe taps



Complete Extractor

Tap Size	4 Flute Order No.	5 Flute Order No.
1/8"	**312-8941**	**312-8951**
1/4	**312-8942**	**312-8952**
3/8	**312-8943**	**312-8953**
1/2	**312-8944**	**312-8954**
3/4		**312-8955**

30° Slow Spiral Flute Taps

HSS, Ground



Size	Threads Per Inch	Thread Type	Flutes Limits	No. of Flutes	Order No.	Size	Threads Per Inch	Thread Type	Flutes Limits	No. of Flutes	Order No.
3	48	NC	H2	2	**311-8710**	5/16	18	NC	H3	3	**311-8742**
3	56	NF	H2	2	**311-8712**	5/16	24	NF	H3	3	**311-8744**
4	48	NC	H2	2	**311-8714**	3/8	16	NC	H3	3	**311-8746**
4	40	NF	H2	2	**311-8716**	3/8	24	NF	H3	3	**311-8748**
5	48	NC	H2	2	**311-8718**	7/16	14	NC	H3	3	**311-8750**
5	44	NF	H2	2	**311-8720**	7/16	20	NF	H3	3	**311-8752**
6	32	NC	H3	2	**311-8722**	1/2	13	NC	H3	3	**311-8754**
6	40	NF	H3	2	**311-8724**	1/2	20	NF	H3	4	**311-8756**
8	32	NC	H3	3	**311-8726**	9/16	12	NC	H3	3	**311-8758**
8	36	NF	H3	3	**311-8728**	9/16	18	NF	H3	3	**311-8760**
10	24	NC	H3	3	**311-8730**	5/8	11	NC	H3	4	**311-8762**
10	32	NF	H3	3	**311-8732**	5/8	18	NF	H3	4	**311-8764**
12	24	NC	H3	3	**311-8734**	3/4	10	NC	H3	4	**311-8766**
12	28	NF	H3	3	**311-8736**	3/4	16	NF	H3	4	**311-8768**
1/4	20	NC	H3	3	**311-8738**	7/8	9	NC	H3	3	**311-8770**
1/4	28	NF	H3	3	**311-8740**						

45° Fast Spiral Flute Taps

HSS , Ground

- Fast spiral improves chip drawing action in relatively deep blind hols
- Suited for tapping aluminum, magnesium, brass, copper and zinc die cast materials
- Surface treated to resist loading and galling



Bottoming

Size	Threads Per Inch	Thread Type	Flutes Limits	No. of Flutes	Order No.
3	48	NC	H2	2	**311-8510**
3	56	NF	H2	2	**311-8512**
4	40	NC	H2	2	**311-8514**
4	48	NF	H2	2	**311-8516**
5	40	NC	H2	2	**311-8518**
5	44	NF	H2	2	**311-8520**
6	32	NC	H3	2	**311-8522**
6	40	NF	H3	2	**311-8524**
8	32	NC	H3	3	**311-8526**
8	36	NF	H3	3	**311-8528**
10	24	NC	H3	3	**311-8530**
10	32	NF	H3	3	**311-8532**
12	24	NC	H3	3	**311-8534**
12	28	NF	H3	3	**311-8536**
1/4	20	NC	H3	3	**311-8538**
1/4	28	NF	H3	3	**311-8540**
5/16	18	NC	H3	3	**311-8542**
5/16	24	NF	H3	3	**311-8544**
3/8	16	NC	H3	3	**311-8546**
3/8	24	NF	H3	3	**311-8548**
7/16	14	NC	H3	3	**311-8550**
7/16	20	NF	H3	3	**311-8552**
1/2	13	NC	H3	3	**311-8554**
1/2	20	NF	H3	4	**311-8556**
9/16	12	NC	H3	3	**311-8558**
9/16	18	NF	H3	3	**311-8560**
5/8	11	NC	H3	4	**311-8562**
5/8	18	NF	H3	4	**311-8564**
3/4	10	NC	H3	4	**311-8566**
3/4	16	NF	H3	4	**311-8568**



Plug

Size	Threads Per Inch	Thread Type	Flutes Limits	No. of Flutes	Order No.
3	48	NC	H2	2	**311-8410**
3	56	NF	H2	2	**311-8412**
4	40	NC	H2	2	**311-8414**
4	48	NF	H2	2	**311-8416**
5	40	NC	H2	2	**311-8418**
5	44	NF	H2	2	**311-8420**
6	32	NC	H3	2	**311-8422**
6	40	NF	H3	2	**311-8424**
8	32	NC	H3	3	**311-8426**
8	32	NC	H3	2	**311-8427**
8	36	NF	H3	3	**311-8428**
10	24	NC	H3	3	**311-8430**
10	32	NF	H3	3	**311-8432**
10	32	NF	H3	2	**311-8433**
12	24	NC	H3	3	**311-8434**
12	28	NF	H3	3	**311-8436**
1/4	20	NC	H3	3	**311-8438**
1/4	28	NF	H3	3	**311-8440**
5/16	18	NC	H3	3	**311-8442**
5/16	24	NF	H3	3	**311-8444**
3/8	16	NC	H3	3	**311-8446**
3/8	24	NF	H3	3	**311-8448**
7/16	14	NC	H3	3	**311-8450**
7/16	20	NF	H3	3	**311-8452**
1/2	13	NC	H3	3	**311-8454**
1/2	20	NF	H3	3	**311-8456**
9/16	12	NC	H3	3	**311-8458**
9/16	18	NF	H3	3	**311-8460**
5/8	11	NC	H3	4	**311-8462**
5/8	18	NF	H3	3	**311-8464**
3/4	10	NC	H3	4	**311-8466**
3/4	16	NF	H3	3	**311-8468**
7/8	9	NC	H3	3	**311-8470**
7/8	14	NF	H3	3	**311-8472**
1	8	NC	H4	3	**311-8474**
1-1/2	12	NF	H4	3	**311-8476**
1-1/24	14	NS	H4	3	**311-8478**

Adjustable Round Dies

Carbon Steel, Standard Thread, Right Hand Cutting



13/16" O.D.

Size	Order No.
2-56	**314-3000**
5-40	**314-3001**
2-64	**314-3002**
8-32	**314-3003**
6-40	**314-3004**
8-36	**314-3005**
10-32	**314-3006**
12-24	**314-3008**
12-28	**314-3010**
14-20	**314-3012**
14-24	**314-3014**
1/4-20	**314-3016**
1/4-28	**314-3018**
5/16-24	**314-3020**

1" O.D.

Size	Order No.	Size	Order No.
5-40	**314-3102**	3/16"-18	**314-3121**
5-44	**314-3104**	1/4-20	**314-3122**
6-32	**314-3106**	1/4-28	**314-3123**
8-32	**314-3108**	5/16-18	**314-3124**
8-36	**314-3110**	5/16-24	**314-3126**
10-32	**314-3111**	3/8-16	**314-3127**
12-24	**314-3112**	3/8-24	**314-3128**
12-28	**314-3114**	7/16-14	**314-3130**
14-20	**314-3116**	7/16-20	**314-3132**
14-24	**314-3118**	1/2-13	**314-3134**
3/16-24	**314-3120**	1/2-20	**314-3136**

1-1/2" O.D.

Size	Order No.
12-24	**314-3208**
12-28	**314-3210**
14-20	**314-3212**
14-24	**314-3214**
1/4-20	**314-3216**
1/4-28	**314-3218**
5/16-18	**314-3220**
5/16-24	**314-3222**
3/8-24	**314-3224**
7/16-14	**314-3225**
7/16-20	**314-3226**
1/2-13	**314-3227**
9/16-18	**314-3228**
5/8-11	**314-3229**
5/8-18	**314-3230**
3/4-10	**314-3231**
3/4-16	**314-3232**
1/2-20	**314-3236**
9/16-12	**314-3240**

2" O.D.

Size	Order No.
1/4"-20	**314-3308**
1/4-28	**314-3310**
14-20	**314-3312**
14-28	**314-3314**
5/16-24	**314-3315**
5/16-18	**314-3316**
3/8-24	**314-3318**
3/8-16	**314-3319**
7/16-20	**314-3320**
7/16-14	**314-3321**
7/16-28	**314-3322**
1/2-13	**314-3324**
1/2-20	**314-3326**
3/4-10	**314-3328**
3/4-16	**314-3330**
7/8-9	**314-3331**
7/8-14	**314-3332**
1-8	**314-3334**
1-12	**314-3336**

2-1/2" O.D.

Size	Order No.
9/16"-12	**314-3428**
9/16-18	**314-3430**
5/8-11	**314-3432**
5/8-18	**314-3434**
1-12	**314-3436**
1-1/4-7	**314-3438**
1-1/4-12	**314-3440**
1-1/2"-12	**314-3442**

3" O.D.

Size	Order No.
1-1/4"-12	**314-3538**
1-1/4-7	**314-3539**
1-1/8-7	**314-3540**
1-3/8-6	**314-3542**
1-3/8-12	**314-3544**
1-1/2"-6	**314-3545**
1-5/8-5	**314-3546**

Adjustable Round Dies

High Speed Steel, Standard Thread, Right Hand Cutting



13/16" O.D.

Size	Order No.
0-80	**314-1000**
1-64	**314-1002**
1-72	**314-1004**
2-56	**314-1006**
2-64	**314-1008**
3-48	**314-1010**
3-56	**314-1012**
4-40	**314-1014**
4-48	**314-1016**
5-40	**314-1018**
5-44	**314-1020**
6-32	**314-1022**
6-40	**314-1024**
8-32	**314-1026**
8-36	**314-1028**
10-24	**314-1030**
10-32	**314-1032**
12-24	**314-1034**
12-28	**314-1036**
14-24	**314-1038**
1/4-20	**314-1040**
1/4-28	**314-1042**
5/16-18	**314-1044**
5/16-24	**314-1046**

1" O.D.

Size	Order No.
1-64	**314-1102**
1-72	**314-1104**
2-56	**314-1106**
2-64	**314-1108**
3-48	**314-1110**
3-56	**314-1112**
4-40	**314-1114**
4-48	**314-1116**
5-40	**314-1118**
5-44	**314-1120**
6-32	**314-1122**
6-40	**314-1124**
8-32	**314-1126**
8-36	**314-1128**
10-24	**314-1130**
10-32	**314-1132**
12-24	**314-1134**
12-28	**314-1136**
14-24	**314-1138**
1/4-20	**314-1140**
1/4-28	**314-1142**
5/16-18	**314-1144**
5/16-24	**314-1146**
3/8-16	**314-1148**
3/8-24	**314-1150**
7/16-14	**314-1152**
7/16-20	**314-1154**
1/2-13	**314-1156**
1/2-20	**314-1158**

1-1/2" O.D.

Size	Order No.
1/4"-20	**314-1240**
1/4-28	**314-1242**
5/16-18	**314-1244**
5/16-24	**314-1246**
3/8-16	**314-1248**
3/8-24	**314-1250**
7/16-14	**314-1252**
7/16-20	**314-1256**
1/2-13	**314-1258**
1/2-20	**314-1260**
9/16-12	**314-1262**
9/16-18	**314-1264**
5/8-11	**314-1266**
5/8-18	**314-1268**
3/4-10	**314-1270**
3/4-16	**314-1272**

2" O.D.

Size	Order No.
1/4"-20	**314-1340**
1/4-28	**314-1342**
5/16-18	**314-1344**
5/16-24	**314-1346**
3/8-16	**314-1348**
3/8-24	**314-1350**
7/16-14	**314-1352**
7/16-20	**314-1354**
1/2-13	**314-1356**
1/2-20	**314-1358**
9/16-12	**314-1360**
9/16-18	**314-1362**
5/8-11	**314-1364**
5/8-18	**314-1366**
3/4-10	**314-1368**
3/4-16	**314-1370**
7/8-9	**314-1372**
7/8-14	**314-1374**
1-8	**314-1378**
1-12	**314-1380**

2-1/2" O.D.

Size	Order No.
3/4"-10	**314-1468**
3/4-16	**314-1470**
7/8-9	**314-1472**
7/8-14	**314-1474**
1-8	**314-1476**
1-14	**314-1478**
1-1/8-7	**314-1480**
1-1/8-12	**314-1482**
1-1/4-7	**314-1484**
1-1/4-12	**314-1486**
1-3/8-6	**314-1488**
1-3/8-12	**314-1490**
1-1/2-6	**314-1492**
1-1/2-12	**314-1494**

3" O.D.

Size	Order No.
1-1/4"-12	**314-1505**
1-1/4-7	**314-1507**
1-1/2-6	**314-1509**

Left Hand Adjustable Round Dies

NC&NF Thread, High Speed Steel



13/16" O.D.

Size	Order No.
0-80	314-4000
1-64	314-4002
1-72	314-4004
2-56	314-4006
2-64	314-4008
3-48	314-4010
3-56	314-4012
4-40	314-4014
4-48	314-4016
5-40	314-4018
5-44	314-4020
6-32	314-4022
6-40	314-4024
8-32	314-4026
8-36	314-4028
10-24	314-4030
10-32	314-4032
12-24	314-4034
12-28	314-4036
1/4-20	314-4040
1/4-28	314-4042

1" O.D.

Size	Order No.
5-44	314-4120
6-32	314-4122
6-40	314-4124
8-32	314-4126
8-36	314-4128
10-24	314-4130
10-32	314-4132
12-24	314-4134
12-28	314-4136
14-24	314-4138
1/4-20	314-4140
1/4-28	314-4142
5/16-18	314-4144
5/16-24	314-4146
3/8-16	314-4148
3/8-24	314-4150
7/16-14	314-4152
7/16-20	314-4154
1/2-13	314-4156
1/2-20	314-4158

1-1/2" O.D.

Size	Order No.
1/4”-20	314-4240
1/4-28	314-4242
5/16-18	314-4244
5/16-24	314-4246
3/8-16	314-4248
3/8-24	314-4252
3/8-32	314-4254
7/16-14	314-4256
7/16-20	314-4258
1/2-13	314-4260
1/2-20	314-4262
9/16-12	314-4264
9/16-18	314-4266
5/8-11	314-4268
5/8-18	314-4270
3/4-10	314-4272
3/4-16	314-4274

2" O.D.

Size	Order No.
3/4”-10	314-4370
3/4-16	314-4372
7/8-9	314-4374
7/8-14	314-4376
1-8	314-4378
1-12	314-4379
1-14	314-4380

2-1/2" O.D.

Size	Order No.
1-1/8”-7	314-4480
1-1/8-12	314-4482
1-1/4-7	314-4484
1-1/4-12	314-4486
1-3/8-6	314-4488
1-3/8-12	314-4490
1-1/2-6	314-4492
1-1/2-12	314-4494
1-3/4-18	314-4496

NPT & NPS Adjustable Round Pipe Dies

High Speed Steel



Outside Dia.	Size	NPT Order No.	NPS Order No.
1"	1/16”-27	315-2110	315-2210
1	1/8-27	315-2115	315-2215
1-1/2	1/8-27	315-2120	315-2220
1-1/2	1/4-18	315-2122	315-2222
1-1/2	3/8-18	315-2124	315-2224
2	1/4-18	315-2130	315-2230
2	3/8-18	315-2132	315-2232
2	1/2-14	315-2134	315-2234
2	3/4-14	315-2136	315-2236
2-1/2	1-11-1/2	315-2140	315-2240
3	1-1/4-11-1/2	315-2150	315-2250
3	1-1/2-11-1/2	315-2152	315-2252
4	1-1/2-11-1/2	315-2162	315-2262
4	2-11-1/2	315-2160	315-2260
5	2-1/2-8	315-2170	315-2270
5	3-8	315-2171	315-2271
5	3-1/2-8	315-2172	315-2272

Left Hand Adjustable Round Dies

Carbon Steel,
NC&NF Threads



Size	13/16”O.D. Order No.	Size	13/16”O.D. Order No.
1-72	314-5002	6-32	314-5018
2-64	314-5004	6-40	314-5020
3-48	314-5006	8-32	314-5022
3-56	314-5008	8-36	314-5024
4-40	314-5010	10-24	314-5026
4-48	314-5012	10-32	314-5028
5-40	314-5014	12-24	314-5030
5-44	314-5016	12-28	314-5032

Size	1-1/2”O.D. Order No.
1/4”-20	314-5140
5/16-18	314-5142
5/16-24	314-5144
7/16-14	314-5146
7/16-20	314-5148
9/16-12	314-5150
9/16-16	314-5152
5/8-11	314-5154

Size	2”O.D. Order No.	Size	2”O.D. Order No.
1/4”-20	314-5240	9/16”-12	314-5258
1/4-24	314-5242	9/16-18	314-5260
1/16-18	314-5244	5/8-11	314-5262
1/16-24	314-5246	5/8-18	314-5264
3/8-16	314-5248	3/4-10	314-5266
3/8-24	314-5250	3/4-16	314-5268
7/16-14	314-5252	7/8-9	314-5270
1/2-13	314-5254	7/8-14	314-5272
1/2-20	314-5256	1-8	314-5274

Metric Adjustable Round Dies

High Speed Steel
Right Hand



Outside Dia.	Size x Pitch	Order No.
1”	2.0x0.4mm	314-1610
1	2.2x0.45mm	314-1612
1	2.3x0.4mm	314-1614
1	2.5x0.45mm	314-1616
1	2.6x0.45mm	314-1618
1	3.0x0.5mm	314-1620
1	3.0x0.6mm	314-1622
1	3.5x0.6mm	314-1624
1	4.0x0.5mm	314-1626
1	4.0x0.7mm	314-1628
1	5.0x0.5mm	314-1630
1	5.0x0.8mm	314-1632
1	6.0x0.5mm	314-1634
1	6.0x0.75mm	314-1636
1	6.0x1.0mm	314-1638
1	7.0x1.0mm	314-1640
1	8.0x0.75mm	314-1642
1	8.0x1.0mm	314-1644
1	8.0x1.25mm	314-1646
1	9.0x1.25mm	314-1648

Outside Dia.	Size x Pitch	Order No.
1	10.0x0.75mm	314-1650
1	10.0x1.0mm	314-1652
1	10.0x1.25mm	314-1654
1	10.0x1.5mm	314-1656
1	11.0x1.5mm	314-1658
1-1/2	10.0x1.25mm	314-1706
1-1/2	11.0x1.5mm	314-1718
1-1/2	12.0x1.0mm	314-1720
1-1/2	12.0x1.25mm	314-1722
1-1/2	12.0x1.50mm	314-1724
1-1/2	12.0x1.75mm	314-1726
1-1/2	14.0x1.0mm	314-1728
1-1/2	14.0x1.25mm	314-1730
1-1/2	14.0x1.5mm	314-1732
1-1/2	14.0x2.0mm	314-1734
1-1/2	16.0x1.0mm	314-1736
1-1/2	16.0x1.5mm	314-1738
1-1/2	16.0x2.0mm	314-1740
1-1/2	17.0x1.5mm	314-1741
1-1/2	18.0x1.0mm	314-1742
1-1/2	18.0x1.5mm	314-1744

Outside Dia.	Size x Pitch	Order No.
1-1/2”	18.0x2.0mm	314-1746
1-1/2	18.0x2.5mm	314-1748
1-1/2	20.0x1.0mm	314-1750
1-1/2	20.0x1.5mm	314-1752
1-1/2	20.0x2.0mm	314-1754
1-1/2	20.0x2.5mm	314-1756
2	20.0x1.25mm	314-1812
2	22.0x1.0mm	314-1830
2	22.0x1.5mm	314-1832
2	22.0x2.0mm	314-1834
2	22.0x2.5mm	314-1836
2	24.0x1.0mm	314-1838
2	24.0x1.5mm	314-1840
2	24.0x2.0mm	314-1842
2	24.0x3.0mm	314-1844
2	27.0x1.5mm	314-1846
2	27.0x2.0mm	314-1848
2	27.0x3.0mm	314-1850
2	30.0x1.5mm	314-1852
2	30.0x2.0mm	314-1854
2	30.0x3.5mm	314-1856

Special Pitch Adjustable Dies



High Speed Steel, Right Hand

Size	Outside Diameter	Order No.	Size	Outside Diameter	Order No.	Size	Outside Diameter	Order No.
4-32	13/16	**315-1010**	5/16"-12	1	**315-1130**	9/16"-40	1-1/2	**315-1247**
4-36	13/16	**315-1012**	5/16-16	1	**315-1131**	9/16-48	1-1/2	**315-1248**
4-56	13/16	**315-1014**	5/16-20	1	**315-1132**	5/8-10	1-1/2	**315-1249**
4-60	13/16	**315-1015**	5/16-27	1	**315-1133**	5/8-12	1-1/2	**315-1250**
4-64	13/16	**315-1013**	5/16-28	1	**315-1134**	5/8-14	1-1/2	**315-1251**
4-72	13/16	**315-3015**	5/16-32	1	**315-1135**	5/8-16	1-1/2	**315-1252**
4-80	13/16	**315-1016**	5/16-36	1	**315-1136**	5/8-20	1-1/2	**315-1253**
5-32	13/16	**315-1018**	5/16-40	1	**315-1137**	5/8-24	1-1/2	**315-1254**
5-36	13/16	**315-1019**	5/16-48	1	**315-1138**	5/8-27	1-1/2	**315-1255**
5-48	13/16	**315-1020**	5/16-56	1	**315-1139**	5/8-28	1-1/2	**315-1256**
5-56	13/16	**315-3023**	5/16-64	1	**315-3091**	5/8-32	1-1/2	**315-1257**
5-60	13/16	**315-1021**	5/16-72	1	**315-3095**	5/8-36	1-1/2	**315-1258**
5-64	13/16	**315-3031**	3/8-14	1	**315-1140**	5/8-40	1-1/2	**315-1259**
5-72	13/16	**315-3035**	3/8-18	1	**315-1141**	5/8-48	1-1/2	**315-1290**
5-80	13/16	**315-1017**	3/8-20	1	**315-1142**	5/8-56	1-1/2	**315-1260**
6-30	13/16	**315-1022**	3/8-26	1	**315-1180**	5/8-64	1-1/2	**315-3167**
6-36	13/16	**315-1024**	3/8-27	1	**315-1143**	11/16-11	1-1/2	**315-1261**
6-48	13/16	**315-1026**	3/8-28	1	**315-1144**	11/16-12	1-1/2	**315-3171**
6-56	13/16	**315-1028**	3/8-30	1	**315-1183**	11/16-16	1-1/2	**315-1262**
6-60	13/16	**315-1030**	3/8-32	1	**315-1145**	11/16-18	1-1/2	**315-1263**
6-64	13/16	**315-3043**	3/8-36	1	**315-1146**	11/16-20	1-1/2	**315-1264**
6-72	13/16	**315-3044**	3/8-40	1	**315-1147**	11/16-24	1-1/2	**315-1265**
6-80	13/16	**315-1032**	3/8-48	1	**315-1148**	11/16-27	1-1/2	**315-1266**
8-24	13/16	**315-1034**	3/8-56	1	**315-1149**	11/16-28	1-1/2	**315-1267**
8-30	13/16	**315-1036**	3/8-60	1	**315-3103**	11/16-32	1-1/2	**315-1268**
8-40	13/16	**315-1038**	3/8-64	1	**315-3107**	11/16-36	1-1/2	**315-1293**
8-48	13/16	**315-1040**	3/8-72	1	**315-3111**	11/16-40	1-1/2	**315-1269**
8-56	13/16	**315-1042**	3/8-80	1	**315-1150**	3/4-11-1/2	1-1/2	**315-3175**
8-60	13/16	**315-1043**	7/16-12	1	**315-1185**	3/4-12	1-1/2	**315-1271**
8-64	13/16	**315-1045**	7/16-16	1	**315-1151**	3/4-14	1-1/2	**315-1272**
8-72	13/16	**315-1044**	7/16-18	1	**315-1152**	3/4-18	1-1/2	**315-1273**
8-80	13/16	**315-1046**	7/16-24	1	**315-1153**	3/4-20	1-1/2	**315-1274**
10-28	13/16	**315-1048**	7/16-27	1	**315-1154**	3/4-24	1-1/2	**315-1275**
10-30	13/16	**315-1050**	7/16-28	1	**315-1155**	3/4-26	1-1/2	**315-1295**
10-36	13/16	**315-1052**	7/16-30	1	**315-3119**	3/4-27	1-1/2	**315-1276**
10-40	13/16	**315-1054**	7/16-32	1	**315-1156**	3/4-28	1-1/2	**315-1277**
10-48	13/16	**315-1056**	7/16-36	1	**315-1157**	3/4-30	1-1/2	**315-1278**
10-56	13/16	**315-1058**	7/16-40	1	**315-1158**	3/4-32	1-1/2	**315-1279**
10-60	13/16	**315-1059**	7/16-48	1	**315-1159**	3/4-36	1-1/2	**315-1280**
10-64	13/16	**315-1060**	7/16-56	1	**315-1186**	3/4-40	1-1/2	**315-1281**
10-80	13/16	**315-1062**	7/16-64	1	**315-3127**	3/4-48	1-1/2	**315-3179**
12-24	13/16	**315-1063**	1/2-12	1	**315-1160**	3/4-56	1-1/2	**315-3183**
12-30	13/16	**315-1064**	1/2-14	1	**315-1161**	3/4-64	1-1/2	**315-3187**
12-32	13/16	**315-1066**	1/2-16	1	**315-1162**	13/16-10	2	**315-1309**
12-36	13/16	**315-1068**	1/2-18	1	**315-1163**	13/16-12	2	**315-1310**
12-40	13/16	**315-1070**	1/2-24	1	**315-1164**	13/16-14	2	**315-1311**
12-48	13/16	**315-1072**	1/2-26	1	**315-3131**	13/16-16	2	**315-1312**
12-56	13/16	**315-1074**	1/2-27	1	**315-1165**	13/16-18	2	**315-1313**
12-64	13/16	**315-3045**	1/2-28	1	**315-1166**	13/16-20	2	**315-1314**
5/32-40	1	**315-1102**	1/2-30	1	**315-1167**	13/16-24	2	**315-1315**
7/32-24	1	**315-1106**	1/2-32	1	**315-1168**	13/16-27	2	**315-3195**
7/32-28	1	**315-1107**	1/2-36	1	**315-1169**	13/16-28	2	**315-3199**
7/32-32	1	**315-1108**	1/2-40	1	**315-1170**	13/16-30	2	**315-1317**
7/32-40	1	**315-1109**	1/2-48	1	**315-1171**	13/16-32	2	**315-1316**
1/4-14	1	**315-1112**	1/2-56	1	**315-1172**	7/8-10	2	**315-1319**
1/4-16	1	**315-1113**	1/2-60	1	**315-3135**	7/8-12	2	**315-1320**
1/4-18	1	**315-1120**	1/2-64	1	**315-3139**	7/8-16	2	**315-1321**
1/4-24	1	**315-1121**	1/2-67	1	**315-3143**	7/8-18	2	**315-1322**
1/4-27	1	**315-1122**	1/2-72	1	**315-3147**	7/8-20	2	**315-1323**
1/4-30	1	**315-1114**	1/2-80	1	**315-1173**	7/8-24	2	**315-1324**
1/4-32	1	**315-1123**	1/4-32	1-1/2	**315-1200**	7/8-27	2	**315-1325**
1/4-36	1	**315-1124**	5/16-32	1-1/2	**315-1210**	7/8-28	2	**315-1326**
1/4-40	1	**315-1125**	3/8-32	1-1/2	**315-1220**	7/8-32	2	**315-1327**
1/4-48	1	**315-1126**	1/2-32	1-1/2	**315-1230**	7/8-36	2	**315-1328**
1/4-56	1	**315-1127**	9/16-14	1-1/2	**315-1238**	7/8-40	2	**315-1329**
1/4-60	1	**315-1119**	9/16-16	1-1/2	**315-1240**	15/16-9	2	**315-1337**
1/4-64	1	**315-1128**	9/16-20	1-1/2	**315-1241**	15/16-10	2	**315-3219**
1/4-72	1	**315-3079**	9/16-24	1-1/2	**315-1242**	15/16-12	2	**315-1330**
1/4-80	1	**315-1129**	9/16-27	1-1/2	**315-1243**	15/16-14	2	**315-1338**
9/32-24	1	**315-1116**	9/16-28	1-1/2	**315-1244**	15/16-16	2	**315-1331**
9/32-32	1	**315-1118**	9/16-32	1-1/2	**315-1245**	15/16-18	2	**315-1332**
15/16-20	2	**315-1333**	9/16-36	1-1/2	**315-1246**	15/16-24	2	**315-1334**

Special Pitch Adjustable Dies Continued



High Speed Steel, Right Hand

Size	Outside Diameter	Order No.	Size	Outside Diameter	Order No.	Size	Outside Diameter	Order No.
15/16"-27	2	**315-1335**	1-7/16"-16	2-1/2	**315-1572**	2"-10	3	**315-1672**
15/16-32	2	**315-1336**	1-7/16-18	2-1/2	**315-1573**	2-12	3	**315-1673**
1-10	2	**315-1340**	1-7/16-20	2-1/2	**315-1574**	2-14	3	**315-1674**
1-16	2	**315-1341**	1-7/16-24	2-1/2	**315-1575**	2-16	3	**315-1675**
1-18	2	**315-1342**	1-7/16-32	2-1/2	**315-1577**	2-18	3	**315-1676**
1-20	2	**315-1343**	1-1/2-8	2-1/2	**315-1580**	2-20	3	**315-1679**
1-24	2	**315-1344**	1-1/2-10	2-1/2	**315-1587**	2-24	3	**315-1680**
1-27	2	**315-1345**	1-1/2-14	2-1/2	**315-1581**	2-32	3	**315-3387**
1-28	2	**315-1346**	1-1/2-16	2-1/2	**315-1582**	2-1/8-8	4	**315-1710**
1- 32	2	**315-1347**	1-1/2-18	2-1/2	**315-1583**	2-1/8-10	4	**315-1711**
1-36	2	**315-1349**	1-1/2-20	2-1/2	**315-1584**	2-1/8-12	4	**315-1712**
1-40	2	**315-1348**	1-1/2-24	2-1/2	**315-1585**	2-1/8-16	4	**315-1714**
1-48	2	**315-3227**	1-1/2-28	2-1/2	**315-1588**	2-1/8-18	4	**315-1716**
1-56	2	**315-1350**	1-1/2-32	2-1/2	**315-1589**	2-1/8-20	4	**315-1718**
1-64	2	**315-3235**	1-1/2-40	2-1/2	**315-1586**	2-1/4-4-1/2	4	**315-1719**
1-1/16-8	2-1/2	**315-1410**	1-1/2-27	3	**315-3323**	2-1/4-8	4	**315-1726**
1-1/16-10	2-1/2	**315-3239**	1-1/2-28	3	**315-3327**	2-1/4-10	4	**315-1727**
1-1/16-12	2-1/2	**315-1411**	1-1/2-32	3	**315-3331**	2-1/4-12	4	**315-1720**
1-1/16-14	2-1/2	**315-1412**	1-9/16-12	3	**315-1610**	2-1/4-16	4	**315-1722**
1-1/16-16	2-1/2	**315-1413**	1-9/16-16	3	**315-1611**	2-1/4-18	4	**315-1724**
1-1/16-18	2-1/2	**315-1414**	1-9/16-18	3	**315-1612**	2-1/4-20	4	**315-1728**
1-1/16-20	2-1/2	**315-1415**	1-9/16-20	3	**315-1613**	2-5/16-14	4	**315-3415**
1-1/16-24	2-1/2	**315-1416**	1-9/16-24	3	**315-1614**	2-5/16-16	4	**315-3419**
1-1/16-27	2-1/2	**315-3243**	1-5/8-4	3	**315-1618**	2-3/8-8	4	**315-1730**
1-1/16-32	2-1/2	**315-1417**	1-5/8-5	3	**315-1619**	2-3/8-10	4	**315-1731**
1-1/8-8	2-1/2	**315-1520**	1-5/8-5-1/2	3	**315-1620**	2-3/8-12	4	**315-1732**
1-1/8-10	2-1/2	**315-1527**	1-5/8-8	3	**315-1621**	2-3/8-14	4	**315-1733**
1-1/8-14	2-1/2	**315-1521**	1-5/8-10	3	**315-1622**	2-3/8-16	4	**315-1734**
1-1/8-16	2-1/2	**315-1522**	1-5/8-12	3	**315-1623**	2-3/8-18	4	**315-1736**
1-1/8-18	2-1/2	**315-1523**	1-5/8-14	3	**315-1624**	2-3/8-20	4	**315-1738**
1-1/8-20	2-1/2	**315-1524**	1-5/8-16	3	**315-1625**	2-1/2-4	4	**315-1740**
1-1/8-24	2-1/2	**315-1525**	1-5/8-18	3	**315-1626**	2-1/2-8	4	**315-1742**
1-1/8-27	2-1/2	**315-1528**	1-5/8-20	3	**315-1627**	2-1/2-10	4	**315-1743**
1-1/8-32	2-1/2	**315-1526**	1-5/8-24	3	**315-1628**	2-1/2-12	4	**315-1744**
1-3/16-8	2-1/2	**315-1535**	1-11/16-6	3	**315-3343**	2-1/2-14	4	**315-1745**
1-3/16-12	2-1/2	**315-1530**	1-11/16-12	3	**315-1633**	2-1/2-16	4	**315-1746**
1-3/16-14	2-1/2	**315-1536**	1-11/16-14	3	**315-1635**	2-1/2-18	4	**315-1748**
1-3/16-16	2-1/2	**315-1531**	1-11/16-16	3	**315-1630**	2-1/2-20	4	**315-1750**
1-3/16-18	2-1/2	**315-1532**	1-11/16-18	3	**315-1631**	2-5/8-8	5	**315-1820**
1-3/16-20	2-1/2	**315-1533**	1-11/16-20	3	**315-1632**	2-5/8-10	5	**315-1821**
1-3/16-24	2-1/2	**315-1534**	1-11/16-24	3	**315-1634**	2-5/8-12	5	**315-1822**
1-3/16-32	2-1/2	**315-1537**	1-3/4-5	3	**315-1640**	2-5/8-16	5	**315-1824**
1-1/4-8	2-1/2	**315-1540**	1-3/4-6	3	**315-3359**	2-5/8-18	5	**315-1826**
1-1/4-10	2-1/2	**315-1541**	1-3/4-8	3	**315-1641**	2-3/4- 8	5	**315-1830**
1-1/4-14	2-1/2	**315-1542**	1-3/4-10	3	**315-1642**	2-3/4-10	5	**315-1831**
1-1/4-16	2-1/2	**315-1543**	1-3/4-12	3	**315-1643**	2-3/4-12	5	**315-1832**
1-1/4-18	2-1/2	**315-1544**	1-3/4-14	3	**315-1644**	2-3/4-14	5	**315-1833**
1-1/4-20	2-1/2	**315-1545**	1-3/4-16	3	**315-1645**	2-3/4-16	5	**315-1834**
1-1/4-24	2-1/2	**315-1546**	1-3/4-18	3	**315-1646**	2-3/4-18	5	**315-1836**
1-1/4-27	2-1/2	**315-1547**	1-3/4-20	3	**315-1647**	2-7/8-8	5	**315-1840**
1-1/4-28	2-1/2	**315-1548**	1-3/4-24	3	**315-1648**	2-7/8-10	5	**315-1841**
1-1/4-32	2-1/2	**315-3275**	1-3/4-32	3	**315-3363**	2-7/8-12	5	**315-1842**
1-1/4-40	2-1/2	**315-3279**	1-13/16-12	3	**315-1650**	2-7/8-14	5	**315-1843**
1-5/16-8	2-1/2	**315-1554**	1-13/16-16	3	**315-1651**	2-7/8-16	5	**315-1844**
1-5/16-12	2-1/2	**315-1550**	1-13/16-18	3	**315-1652**	2-7/8-18	5	**315-1846**
1-5/16-16	2-1/2	**315-1551**	1-13/16-20	3	**315-1653**	3-4	5	**315-1849**
1-5/16-18	2-1/2	**315-1552**	1-7/8-5	3	**315-1660**	3-8	5	**315-1850**
1-5/16-20	2-1/2	**315-1553**	1-7/8-8	3	**315-1667**	3-12	5	**315-1852**
1-5/16-24	2-1/2	**315-1557**	1-7/8-10	3	**315-1661**	3-16	5	**315-1854**
1-5/16-32	2-1/2	**315-1558**	1-7/8-12	3	**315-1662**	3-18	5	**315-1856**
1-3/8-8	2-1/2	**315-1560**	1-7/8-14	3	**315-1663**	3-1/4-8	5	**315-1860**
1-3/8-10	2-1/2	**315-1561**	1-7/8-16	3	**315-1664**	3-1/4-12	5	**315-1862**
1-3/8-14	2-1/2	**315-1566**	1-7/8-18	3	**315-1665**	3-1/2-4	5	**315-1869**
1-3/8-16	2-1/2	**315-1562**	1-7/8-20	3	**315-1666**	3-1/2-4-1/2	5	**315-1874**
1-3/8-18	2-1/2	**315-1563**	1-7/8-24	3	**315-3319**	3-1/2-8	5	**315-1870**
1-3/8-20	2-1/2	**315-1564**	1-15/16-12	3	**315-1681**	3-1/2-12	5	**315-1872**
1-3/8-24	2-1/2	**315-1565**	1-15/16-16	3	**315-1682**	3-3/4-8	6	**315-1876**
1-3/8-27	2-1/2	**315-1568**	1-15/16-18	3	**315-1684**	3-3/4-12	6	**315-1880**
1-3/8-32	2-1/2	**315-1567**	1-15/16-20	3	**315-1686**	4-8	6	**315-1884**
1-7/16-8	2-1/2	**315-1570**	2-4-1/2	3	**315-1670**	4-12	6	**315-1888**
1-7/16-12	2-1/2	**315-1571**	2-6	3	**315-1677**	4-16	6	**315-1892**
1-7/16-14	2-1/2	**315-3307**	2-8	3	**315-1671**			

Round Solid Dies

High Speed Steel & Carbon Steel

NEW



13/16"OD

Size	HSS Order No.	Carbon Steel Order No.
0-80	**314-6000**	**314-7000**
1-64	**314-6005**	**314-7005**
1-72	**314-6010**	**314-7010**
2-56	**314-6015**	**314-7015**
2-64	**314-6020**	**314-7020**
3-48	**314-6025**	**314-7025**
3-56	**314-6030**	**314-7030**
4-40	**314-6035**	**314-7035**
4-48	**314-6040**	**314-7040**
5-40	**314-6045**	**314-7045**
5-44	**314-6050**	**314-7050**
6-32	**314-6055**	**314-7055**
6-40	**314-6060**	**314-7060**
8-32	**314-6065**	**314-7065**
8-36	**314-6070**	**314-7070**
10-24	**314-6075**	**314-7075**
10-32	**314-6080**	**314-7080**
12-24	**314-6085**	**314-7085**
12-28	**314-6090**	**314-7090**

1"OD

Size	HSS Order No.	Carbon Steel Order No.
4-40	**314-6100**	**314-7100**
1/8-27	**314-6102**	
4-48	**314-6105**	**314-7105**
6-32	**314-6110**	**314-7110**
6-40	**314-6115**	**314-7115**
8-32	**314-6120**	**314-7120**
8-36	**314-6125**	**314-7125**
10-24	**314-6130**	**314-7130**
10-32	**314-6135**	**314-7135**
12-24	**314-6140**	**314-7140**
12-28	**314-6145**	**314-7145**
1/4-20	**314-6150**	**314-7150**
1/4-24	**314-6152**	
1/4-28	**314-6155**	**314-7155**
1/4-32	**314-6157**	
5/16-18	**314-6160**	**314-7160**
5/16-24	**314-6165**	**314-7165**
3/8-16	**314-6170**	**314-7170**
3/8-24	**314-6175**	**314-7175**
7/16-14	**314-6180**	**314-7180**
7/16-20	**314-6185**	**314-7185**
1/2-13	**314-6190**	**314-7190**
1/2-20	**314-6195**	**314-7195**
1/8-27		**314-7196**

1-1/2"OD

Size	HSS Order No.	Carbon Steel Order No.
1/8-27	**314-6200**	
1/4-18	**314-6201**	
1/4-20	**314-6210**	**314-7210**
1/4-28	**314-6215**	**314-7215**
5/16-18	**314-6220**	**314-7220**
5/16-24	**314-6225**	**314-7225**
3/8-16	**314-6230**	**314-7230**
3/8-24	**314-6235**	**314-7235**
7/16-14	**314-6240**	**314-7240**
7/16-20	**314-6245**	**314-7245**
1/2-13	**314-6250**	**314-7250**
1/2-20	**314-6255**	**314-7255**
9/16-12	**314-6260**	**314-7260**
9/16-18	**314-6265**	**314-7265**
5/8-11	**314-6270**	**314-7270**
5/8-18	**314-6275**	**314-7275**
3/4-10	**314-6280**	**314-7280**
3/4-16	**314-6285**	**314-7285**
1/8-27		**314-7296**
1/4-18		**314-7297**

2"OD

Size	HSS Order No.	Carbon Steel Order No.
9/16-12	**314-6310**	**314-7310**
9/16-18	**314-6315**	**314-7315**
5/8-11	**314-6320**	**314-7320**
5/8-18	**314-6325**	**314-7325**
3/4-10	**314-6330**	**314-7330**
3/4-16	**314-6335**	**314-7335**
7/8-9	**314-6340**	**314-7340**
7/8-14	**314-6345**	**314-7345**
1-8	**314-6350**	**314-7350**
1-12	**314-6355**	**314-7355**
1-14	**314-6360**	**314-7360**

Metric Round Solid Dies

1"OD

Size	HSS Order No.
M2X0.4	**314-6500**
M2.5X0.45	**314-6505**
M3X0.5	**314-6510**
M4X0.7	**314-6515**
M5X0.8	**314-6520**
M6X1.0	**314-6525**
M7X1.0	**314-6530**
M8X1.25	**314-6535**
M10X1.5	**314-6540**
M12X1.75	**314-6545**

1-1/2"OD

Size	HSS Order No.
M10X1.0	**314-6610**
M10X1.25	**314-6612**
M10X1.5	**314-6614**
M11X1.5	**314-6616**
M12X1.0	**314-6618**
M12X1.25	**314-6620**
M12X1.5	**314-6622**
M12X1.75	**314-6624**
M14X1.0	**314-6626**
M14X1.25	**314-6628**

1-1/2"OD

Size	HSS Order No.
M14X1.5	**314-6630**
M14X2.0	**314-6632**
M16X1.0	**314-6634**
M16X1.5	**314-6636**
M16X2.0	**314-6638**
M18X1.0	**314-6640**
M18X1.5	**314-6642**
M18X2.0	**314-6644**
M18X2.5	**314-6646**
M20X1.0	**314-6648**

1-1/2"OD

Size	HSS Order No.
M20X1.5	**314-6650**
M20X2.0	**314-6652**
M20X2.5	**314-6654**

British Stand Whitworth (B.S.W.) Round Adjustable Dies

55° Thread Angle carbon Steel

NEW



3/16"OD

Size	Order No.
3/16-24	**365-0102**

1"OD

Size	Order No.
1/8"-28	**365-0100**
1/4-20	**365-0404**
5/16-18	**365-0106**
3/8-16	**365-0108**

1-1/2"OD

Size	Order No.
1/4"-19	**365-0101**
7/16-14	**365-0110**
1/2-12	**365-0112**
9/16-12	**365-0114**
5/8-11	**365-0116**

2"OD

Size	Order No.
3/4-10 2"OD	**365-0120**
7/8-9 2"OD	**365-0122**
1-8 2"OD	**365-0124**

3"OD

Size	Order No.
1-1/4"-7	**365-0130**
1-3/8-6	**365-0132**
1-1/2-6	**365-0134**

Round Dies



DIN 223 B
High Speed Steel
For ISO metric thread as per DIN 13

Thread	Pitch	Outside	Order No.	Thread	Pitch	Outside	Order No.	Thread	Pitch	Outside	Order No.
M2	.4	16x5mm	**314-9001**	M10	1.5	30x11mm	**314-9019**	M30	3.5	65x25mm	**314-9037**
M2.5	.45	16x5mm	**314-9003**	M12	1.75	38x14mm	**314-9021**	M33	2.0	65x25mm	**314-9038**
M3	.5	20x5mm	**314-9005**	M14	2.0	38x14mm	**314-9023**	M33	3.5	65x25mm	**314-9039**
M3.5	.6	20x5mm	**314-9007**	M16	2.0	45x14mm	**314-9025**	M36	4.0	65x25mm	**314-9041**
M4	.7	20x5mm	**314-9009**	M18	2.5	45x18mm	**314-9027**	M39	4.0	75x30mm	**314-9043**
M5	.8	20x7mm	**314-9011**	M20	2.5	45x18mm	**314-9029**	M42	4.5	75x30mm	**314-9045**
M6	1.0	20x7mm	**314-9013**	M22	2.5	55x22mm	**314-9031**	M45	4.5	90x36mm	**314-9047**
M7	1.0	25x9mm	**314-9015**	M24	3.0	55x22mm	**314-9033**	M48	5.0	90x36mm	**314-9049**
M8	1.25	25x9mm	**314-9017**	M27	3.0	65x25mm	**314-9035**	M52	5.0	90x36mm	**314-9051**

DIN 223 B
High Speed Steel

Thread	Pitch	Outside	Order No.	Thread	Pitch	Outside	Order No.
M3	0.5	25 x 9**mm**	**314-9103**	M8	1.25	25 x 9**mm**	**314-9108**
M4	0.7	25 x 9**mm**	**314-9104**	M10	1.5	25 x 9**mm**	**314-9110**
M5	0.8	25 x 9**mm**	**314-9105**	M12	1.75	25 x 9**mm**	**314-9112**
M6	1.0	25 x 9**mm**	**314-9106**				

DIN 223
High Speed Steel For B.S.W Thread as per DIN 11

Thread	Threads Per inch	Outside	Order No.	Thread	Threads Per inch	Outside	Order No.	Thread	Threads Per inch	Outside	Order No.
1/16”	60	16mm	**314-1101**	3/8”	16	30mm	**314-1117**	1-1/8”	7	65mm	**314-1133**
3/32	48	16mm	**314-1103**	7/16	14	30mm	**314-1119**	1-1/4	7	65mm	**314-1135**
1/8	40	20mm	**314-1105**	1/2	12	38mm	**314-1121**	1-3/8	6	65mm	**314-1137**
5/32	32	20mm	**314-1107**	9/16	12	38mm	**314-1123**	1-1/2	6	75mm	**314-1139**
3/16	24	20mm	**314-1109**	5/8	11	45mm	**314-1125**	1-5/8	5	75mm	**314-1141**
7/32	24	20mm	**314-1111**	3/4	10	45mm	**314-1127**	1-3/4	5	90mm	**314-1143**
1/4	20	20mm	**314-1113**	7/8	9	55mm	**314-1129**	1-7/8	4-1/2	90mm	**314-1145**
5/16	18	25mm	**314-1115**	1	8	55mm	**314-1131**	2	4-1/2	90mm	**314-1147**

DIN 5158
High Speed Steel For B.S.P. thread as per DIN 228

Thread	Threads Per Inch	Outside	Order No.	Thread	Threads Per Inch	Outside	Order No.	Thread	Threads Per Inch	Outside	Order No.
G1/16	28	25mm	**314-1023**	G1/2	14	45mm	**314-1007**	G1	11	65mm	**314-1015**
G1/8	28	30mm	**314-1001**	G5/8	14	55mm	**314-1009**	G1-1/8	11	75mm	**314-1017**
G1/4	19	38mm	**314-1003**	G3/4	14	55mm	**314-1011**	G1-1/4	11	75mm	**314-1019**
G3/8	19	45mm	**314-1005**	G7/8	14	65mm	**314-1013**	G1-1/2	11	90mm	**314-1021**

DIN 223 B
For ISO metric fine thread as per DIN 13
High Speed Steel

Thread (mm)	Pitch (mm)	Outside	Order No.	Thread (mm)	Pitch (mm)	Outside	Order No.	Thread (mm)	Pitch (mm)	Outside	Order No.
M3	.35	20x5mm	**314-9201**	M10	1.25	30x11mm	**314-9215**	M20	1.0	45x14mm	**314-9234**
M4	.35	20x5mm	**314-9203**	M12	1.0	30x11mm	**314-9217**	M20	1.5	45x14mm	**314-9235**
M4	.50	20x5mm	**314-9205**	M12	1.25	38x11mm	**314-9219**	M22	1.0	55x16mm	**314-9236**
M5	.50	20x5mm	**314-9207**	M12	1.5	38x10mm	**314-9221**	M22	1.5	55x16mm	**314-9237**
M6	.50	20x5mm	**314-9208**	M14	1.0	38x10mm	**314-9223**	M22	2.0	55x16mm	**314-9238**
M6	.75	25x7mm	**314-9209**	M14	1.25	38x10mm	**314-9225**	M24	1.5	55x16mm	**314-9239**
M8	.50	25x9mm	**314-9210**	M14	1.5	38x10mm	**314-9227**	M24	2.0	55x16mm	**314-9241**
M8	.75	25x9mm	**314-9211**	M16	1.0	45x14mm	**314-9229**	M27	1.5	65x18mm	**314-9243**
M8	1.0	25x9mm	**314-9212**	M16	1.5	45x14mm	**314-9231**	M27	2.0	65x18mm	**314-9245**
M10	1.0	30x11mm	**314-9213**	M18	1.0	45x14mm	**314-9232**	M30	1.5	65x18mm	**314-9247**
M10	.75	30x11mm	**314-9214**	M18	1.5	45x14mm	**314-9233**	M30	2.0	65x18mm	**314-9249**

Hexagon Rethreading Dies



High Speed Steel and Carbon Steel, Right Hand

- Used for repairing damaging or rusting threads.

Pipe Thread

Size	Across Flats	Thickness	Carbon Steel Order No.	HSS Order No.	Size	Across Flats	Thickness	Carbon Steel Order No.	HSS Order No.
1/8"-27 NPT	25/32"	3/8"	**365-0005**	**367-0005**	1/2"-14NPT	1-7/16"	3/4"	**365-0020**	**367-0020**
1/4"-18NPT	1-1/16	1/2	**365-0010**	**367-0010**	3/4"-14NPT	1-13/16	1	**365-0025**	**367-0025**
3/8"-18NPT	1-1/4	5/8	**365-0015**	**367-0015**	1"-11-1/2NPT	2-3/16	1	**365-0030**	**367-0030**

Standard Thread

Size	Across Flats	Thickness	Carbon Steel Order No.	HSS Order No.	Size	Across Flats	Thickness	CarbonSteel Order No.	HSS Order No.
1/4"-20NC	19/32"	1/4"	**365-0161**	**367-0161**	3/4"-10NC	1-7/16"	3/4"	**365-0481**	**367-0481**
1/4"-28NF	19/32	1/4	**365-0162**	**367-0162**	3/4"-16NF	1-7/16	3/4	**365-0482**	**367-0482**
5/16"-18NC	11/16	5/16	**365-0201**	**367-0201**	7/8"-9NC	1-5/8	7/8	**365-0561**	**367-0561**
5/16"-24NF	11/16	5/16	**365-0202**	**367-0202**	7/8"-14NF	1-5/8	7/8	**365-0562**	**367-0562**
3/8"-16NC	25/32	3/8	**365-0241**	**367-0241**	1"-8NC	1-13/16	1	**365-0641**	**367-0641**
3/8"-24NF	25/32	3/8	**365-0242**	**367-0242**	1"-12NF	1-13/16	1	**365-0642**	**367-0642**
7/16"-14NC	7/8	7/16	**365-0281**	**367-0281**	1"-14NS	1-13/16	1	**365-0643**	**367-0643**
7/16"-20NF	7/8	7/16	**365-0282**	**367-0282**	1-1/8"-7NC	2	1	**365-1081**	**367-1081**
1/2"-13NC	1-1/16	1/2	**365-0321**	**367-0321**	1-1/8"-12NF	2	1	**365-1082**	**367-1082**
1/2"-20NF	1-1/16	1/2	**365-0322**	**367-0322**	1-1/4"-7NC	2-3/16	1	**365-1161**	**367-1161**
9/16"-12NC	1-1/16	1/2	**365-0361**	**367-0361**	1-1/4"-12NF	2-3/16	1	**365-1162**	**367-1162**
9/16"-18NF	1-1/16	1/2	**365-0362**	**367-0362**	1-3/8"-6NC	2-3/8	1	**365-1241**	**367-1241**
5/8"-11NC	1-1/4	5/8	**365-0401**	**367-0401**	1-3/8"-12NF	2-3/8	1	**365-1242**	**367-1242**
5/8"-18NF	1-1/4	5/8	**365-0402**	**367-0402**	1-1/2"-6NC	2-9/16	1	**365-1321**	**367-1321**
11/16"-11NS	1-7/16	3/4	**365-0441**	**367-0441**	1-1/2"-12NF	2-9/16	1	**365-1322**	**367-1322**
11/16"-16NS	1-7/16	3/4	**365-0442**	**367-0442**					

Metric Hexagon Rethreading Dies



High Speed Steel and Carbon Steel, Right Hand

Ues for repairing damaging or rusting threads.

Size	Across Flats	Thickness	Carbon Steel Order No.	HSS Order No.	Size	Across Flats	Thickness	Carbon Steel Order No.	HSS Order No.
5.0x0.5mm	19/32"	1/4"	**364-0051**	**367-6051**	18.0x1.5mm	1-7/16"	3/4"	**364-0183**	
5.0x0.75mm	19/32	1/4	**364-0052**		18.0x2.0mm	1-7/16	3/4	**364-0184**	
5.0x0.8mm	19/32	1/4	**364-0053**		18.0x2.5mm	1-7/16	3/4	**364-0185**	
5.0x0.9mm	19/32	1/4	**364-0054**	**367-6054**	20.0x1.0mm	1-7/16	3/4	**364-0201**	**367-6201**
5.5x0.9mm	19/32	1/4	**364-0055**	**367-6055**	20.0x1.25mm	1-7/16	3/4	**364-0202**	
6.0x0.5mm	19/32	1/4	**364-0061**		20.0x1.5mm	1-7/16	3/4	**364-0203**	
6.0x0.75mm	19/32	1/4	**364-0062**		20.0x2.0mm	1-7/16	3/4	**364-0204**	
6.0x1.0mm	19/32	1/4	**364-0063**	**367-6063**	20.0x2.5mm	1-7/16	3/4	**364-0205**	
7.0x0.75mm	11/16	5/16	**364-0072**		22.0x1.25mm	1-5/8	7/8	**364-0221**	
7.0x1.0mm	11/16	5/16	**364-0073**	**367-6073**	22.0x1.5mm	1-5/8	7/8	**364-0222**	
8.0x0.75mm	11/16	5/16	**364-0081**		22.0x2.5mm	1-5/8	7/8	**364-0223**	**367-6223**
8.0x1.0mm	11/16	5/16	**364-0082**		24.0x1.5mm	1-13/16	1	**364-0241**	
8.0x1.25mm	11/16	5/16	**364-0083**	**367-6083**	24.0x2.0mm	1-13/16	1	**364-0242**	**367-6242**
9.0x0.75mm	25/32	3/8	**364-0091**		24.0x3.0mm	1-13/16	1	**364-0243**	**367-6243**
9.0x1.0mm	25/32	3/8	**364-0092**		26.0x1.5mm	2	1	**364-0261**	**367-6261**
9.0x1.25mm	25/32	3/8	**364-0093**		27.0x1.5mm	2	1	**364-0271**	
10.0x0.75mm	25/32	3/8	**364-0101**		27.0x2.0mm	2	1	**364-0272**	
10.0x1.0mm	7/8	3/8	**364-0102**		27.0x3.0mm	2	1	**364-0273**	
10.0x1.25mm	25/32	3/8	**364-0103**		30x1.5mm	2-3/16	1	**364-0301**	
10.0x1.5mm	25/32	3/8	**364-0104**	**367-9104**	30x2.0mm	2-3/16	1	**364-0302**	
11.0x1.0mm	7/8	7/16	**364-0111**		30x3.5mm	2-3/16	1	**364-0304**	**367-6304**
11.0x1.5mm	7/8	7/16	**364-0112**	**367-6112**	32x2.0mm	2-3/16	1	**364-0321**	**367-6321**
12.0x1.0mm	1-1/16	1/2	**364-0121**	**367-6121**	32x3.5mm	2-3/16	1	**364-0322**	**367-6322**
12.0x1.25mm	1-1/16	1/2	**364-0122**		33x2.0mm	2-3/16	1	**364-0331**	**367-6331**
12.0x1.5mm	1-1/16	1/2	**364-0123**		33x3.5mm	2-3/16	1	**364-0332**	
12.0x1.75mm	1-1/16	1/2	**364-0124**	**367-6124**	36x3.0mm	2-3/8	1	**364-0361**	
14.0x1.0mm	1-1/16	1/2	**364-0141**		36x4.0mm	2-3/8	1	**364-0362**	**367-6362**
14.0x1.25mm	1-1/16	1/2	**364-0142**		39x3.0mm	3-1/8	1	**364-0391**	
14.0x1.5mm	1-1/16	1/2	**364-0143**		39x4.0mm	3-1/8	1	**364-0392**	**367-6392**
14.0x2.0mm	1-1/16	1/2	**364-0144**	**367-6144**	42x4.5mm	3-1/8	1	**364-0421**	**363-6421**
16.0x1.0mm	1-1/4	5/8	**364-0161**		45x4.5mm	3-1/8	1	**364-0451**	
16.0x1.5mm	1-1/4	5/8	**364-0162**	**367-6162**	48x5.0mm	3-1/8	1-1/4	**364-0481**	
16.0x2.0mm	1-1/4	5/8	**364-0163**	**367-6163**	52x5.0mm	3-1/2	1-1/4	**364-0521**	
18.0x1.00mm	1-7/16	3/4	**364-0181**						

Left Hand Hexagon Rethreading Dies

Carbon Steel



Size	Across Flat	Thickness	Order No.	Size	Across Flat	Thickness	Order No.
1/4"-20NC	19/32 "	1/4"	**366-0161**	3/4"-10NC	1-7/16"	3/4"	**366-0481**
1/4"-28NF	19/32	1/4	**366-0162**	3/4"-16NF	1-7/16	3/4	**366-0482**
5/16"-18NC	11/16	5/16	**366-0201**	7/8"-9NC	1-5/8	7/8	**366-0561**
5/16"-24NF	11/16	5/16	**366-0202**	7/8"-14NF	1-5/8	7/8	**366-0562**
3/8"-16NC	25/32	3/8	**366-0241**	1"-8NC	1-13/16	1	**366-0641**
3/8"-24NF	25/32	3/8	**366-0242**	1"-12NF	1-13/16	1	**366-0642**
7/16"-14NC	7/8	7/16	**366-0281**	1"-14NS	1-13/16	1	**366-0643**
7/16"-20NF	7/8	7/16	**366-0282**	1-1/8"-7NC	2	1	**366-1081**
1/2"-13NC	1-1/16	1/2	**366-0321**	1-1/8"-12NF	2	1	**366-1082**
1/2"-20NF	1-1/16	1/2	**366-0322**	1-1/4"-7NC	2-3/16	1	**366-1161**
9/16"-12NC	1-1/16	1/2	**366-0361**	1-1/4"-12NF	2-3/16	1	**366-1162**
9/16"-18NF	1-1/16	1/2	**366-0362**	1-3/8"-6NC	2-3/8	1	**366-1241**
5/8"-11NC	1-1/4	5/8	**366-0401**	1-3/8"-12NF	2-3/8	1	**366-1242**
5/8"-18NF	1-1/4	5/8	**366-0402**	1-1/2"-6NC	2-9/16	1	**366-1321**
11/16"-11NS	1-7/16	3/4	**366-0441**	1-1/2"-12NF	2-9/16	1	**366-1322**
11/16"-16NS	1-7/16	3/4	**366-0442**				

Special Thread Hexagon Rethreading Dies

High Speed Steel &Carbon Steel, Right Hand



Size	Across Flat	Thickness	Carbon Steel Order No.	HSS Order No.	Size	Across Flat	Thickness	Carbon Steel Order No.	HSS Order No.
1-1/8"-8	2"	1"	**365-1084**	**367-1084**	2-1/4"-8	3-1/2"	1-1/4"	**365-2165**	**367-2165**
1-1/8"-16	2	1	**365-1085**	**367-1085**	2-1/4"-12	3-1/2	1-1/4	**365-2166**	**367-2166**
1-1/8"-18	2	1	**365-1086**	**367-1086**	2-1/4"-16	3-1/2	1-1/4	**365-2167**	**367-2167**
1-1/4"-8	2-3/16	1	**365-1164**	**367-1164**	2-1/4"-18	3-1/2	1-1/4	**365-2168**	**367-2168**
1-1/4"-16	2-3/16	1	**365-1165**	**367-1165**	2-3/8"-8	4-1/2	1-1/2	**365-2244**	**367-2244**
1-1/4"-18	2-3/16	1	**365-1166**	**367-1166**	2-3/8"-12	4-1/2	1-1/2	**365-2245**	**367-2245**
1-3/8"-8	2-3/8	1	**365-1244**	**367-1244**	2-1/2"-4	4-1/2	1-1/2	**365-2324**	**367-2324**
1-3/8"-16	2-3/8	1	**365-1245**	**367-1245**	2-1/2"-8	4-1/2	1-1/2	**365-2325**	**367-2325**
1-3/8"-18	2-3/8	1	**365-1246**	**367-1246**	2-1/2"-12	4-1/2	1-1/2	**365-2326**	**367-2326**
1-1/2"-8	2-9/16	1	**365-1324**	**367-1324**	2-5/8"-8	4-1/2	1-1/2	**365-2404**	**367-2404**
1-1/2"-16	2-9/16	1	**365-1325**	**367-1325**	2-5/8"-12	4-1/2	1-5/8	**365-2405**	**367-2405**
1-1/2"-18	2-9/16	1	**365-1326**	**367-1326**	2-3/4"-4	4-1/2	1-5/8	**365-2484**	**367-2484**
1-5/8"-5-1/2	3-1/8	1	**365-1404**	**367-1404**	2-3/4"-8	4-1/2	1-5/8	**365-2485**	**367-2485**
1-5/8"-8	3-1/8	1	**365-1405**	**367-1405**	2-3/4"-12	4-1/2	1-5/8	**365-2486**	**367-2486**
1-5/8"-12	3-1/8	1	**365-1406**	**367-1406**	2-7/8"-8			**365-2564**	**367-2564**
1-5/8"-16	3-1/8	1	**365-1407**	**367-1407**	2-7/8"-12			**365-2565**	**367-2565**
1-5/8"-18	3-1/8	1	**365-1408**	**367-1408**	3"-4			**365-3004**	**367-3004**
1-3/4"-5	3-1/8	1	**365-1484**	**367-1484**	3"-8			**365-3005**	**367-3005**
1-3/4"-8	3-1/8	1	**365-1485**	**367-1485**	3"-12			**365-3006**	**367-3006**
1-3/4"-12	3-1/8	1	**365-1486**	**367-1486**	3-1/4"-4			**365-3164**	**367-3164**
1-3/4"-16	3-1/8	1	**365-1487**	**367-1487**	3-1/4"-8			**365-3165**	**367-3165**
1-3/4"-18	3-1/8	1	**365-1488**	**367-1488**	3-1/4"-12			**365-3166**	**367-3166**
1-7/8"-5	3-1/8	1-1/4	**365-1564**	**367-1564**	3-1/2"-4			**365-3324**	**367-3324**
1-7/8"-8	3-1/8	1-1/4	**365-1565**	**367-1565**	3-1/2"-8			**365-3325**	**367-3325**
1-7/8"-12	3-1/8	1-1/4	**365-1566**	**367-1566**	3-1/2"-12			**365-3326**	**367-3326**
1-7/8"-16	3-1/8	1-1/4	**365-1567**	**367-1567**	3-3/4"-4			**365-3484**	**367-3484**
1-7/8"-18	3-1/8	1-1/4	**365-1568**	**367-1568**	3-3/4"-8			**365-3485**	**367-3485**
2"-4-1/2.	3-1/2	1-1/4	**365-2004**	**367-2004**	3-3/4"-12			**365-3486**	**367-3486**
2"-8	3-1/2	1-1/4	**365-2005**	**367-2005**	4"-8			**365-4004**	**367-4004**
2"-12	3-1/2	1-1/4	**365-2006**	**367-2006**	4"-12			**365-4005**	**367-4005**
2"-16	3-1/2	1-1/4	**365-2007**	**367-2007**	4-1/2"-8			**365-4324**	**367-4324**
2"-18	3-1/2	1-1/4	**365-2008**	**367-2008**	4-1/2"-12			**365-4325**	**367-4325**
2-1/8"-8	3-1/2	1-1/4	**365-2084**	**367-2084**	5"-8			**365-5004**	**367-5004**
2-1/8"-12	3-1/2	1-1/4	**365-2085**	**367-2085**	5"-12			**365-5005**	**367-5005**
2-1/4"-4-1/2	3-1/2	1-1/4	**365-2164**	**367-2164**					

British Standard Hexagon Rethreading Dies

55° Thread Angle carbon Steel



Use for rethreading applications.

Straight Pipe-BSP

Size	Order No.
1/8"-28	365-2708
1/4"-19	365-2716
3/8"-19	365-2724
1/2"-14	365-2732
5/8"-14	365-2740
3/4"-14	365-2748
7/8"-14	365-2756
1"-11	365-2800
1-1/4"-11	365-2816
1-1/2"-11	365-2832
1-3/4"-11	365-2848
2"-11	365-2900

Taper Pipe-BSPT

Size	Order No.
1/8"-28	365-3708
1/4"-19	365-3716
3/8"-19	365-3724
1/2"-14	365-3732
5/8"-14	365-3740
3/4"-14	365-3748
7/8"-14	365-3756
1"-11	365-3800
1-1/4"-11	365-3816
1-1/2"-11	365-3832
1-3/4"-11	365-3848
2"-11	365-3900

British Stand Whitworth (B.S.W.) Rethreading Hexagon Dies

55° Thread Angle carbon Steel



Use for rethreading applications.

Size	Order No.
3/16"-24	365-4712
1/4"-20	365-4716
5/16"-18	365-4720
7/16"-14	365-4728
1/2"-12	365-4732
9/16"-12	365-4736
5/8"-11	365-4740

Size	Order No.
3/4"-10	365-4748
7/8"-9	365-4756
1"-8	365-4800
1-1/4"-7	365-4816
1-3/8"-6	365-4820
1-1/2"-6	365-4832

Die Adaptors

- Easily converts rond dies to hex dies.
- Great tool to use where conventional die stocks cannot swing due to lack of space.

4pcs/set includes: 13/16"-2"

Order No.318-2290



Die Dia.	Across Flats	Order No.
13/16"	1-1/16"	318-2250
1	1-1/4	318-2255
1-1/2	1-31/32	318-2260

Die Dia.	Across Flats	Order No.
2"	2-9/16"	318-2265
2-1/2	2-3/4	318-2270
3	3.63	318-2275

Die Holders

- Ideal for short or medium run threading at shafts.
- Used safely on lathes, milling machines and tapping heads.



Body	Shank	Die Dia.	Order No.
1- 1/2" D x 1"	1/2"D	13/16"	318-2031
1- 1/2D x1	1/2D x 2	1	318-2032
2D x1	3/4D x 2	1-1/2	318-2033
3Pcs/set, one each of above size			318-2333

Hand Tappers

- Assures straight perpendicular tapped holes.
- Can be used vertical, horizontal or inverted.
- Equipped with tap guide, precision ground work table, tap spindle, wrench & nine steel tap adapters: 6, 8, 10, 1/4", 5/16", 3/8", 7/16", 1/2" & 5/8".



Order No. 318-0001

Adaptors & Set

Adaptor Sizes	Order No.
#6	318-0101
#8	318-0102
#10	318-0103
1/4"	318-0104
5/16"	318-0105
3/8"	318-0106
7/16"	318-0107
1/2"	318-0108
5/8"	318-0109
9Pcs/set	318-0119

Specifications

Descriptions	
Table Length	12-1/2"
Table Width	6-1/2
Table Area	6-1/2 x 10
Height	13
Clearance Height	7
Depth of Throat	7-1/2
Weight (Approx.)	37 lbs.

E-Z Hand Tappers

Standard Tapper

Perpendicular tapped holes. Both units are complete with tap guide, machined word table, tap spindle wrench, and steel tap adapters for use with spiral point taps.



Order No.318-0007

Adaptors & Set

Adaptor Sizes	Order No.
#8	318-0700
#10	318-0701
1/4"	318-0702
5/16"	318-0703
3/8"	318-0704
7/16"	318-0705
1/2"	318-0706
5/8"	318-0707
3/4"	318-0708
9Pcs/set	318-0709

Specifications

Descriptions	
Table Size	13x8"
Height	14
Clearance Height	7
Depth of Throat	7-1/2
Approx. Weight	35 lbs
Tap Adapters	9 (#8-3/4")

E-Z Hand Tappers

Mini Tapper



Specifications

Descriptions	Order No.318-0003
Table Size	8-1/2x6"
Height	9"
Clearance Height	3-3/4"
Depth of Throat	4-1/2"
Approx. Weight	12 lbs
Tap Adapters (318-0013)	7 (#0-5/16")

3 Screw Type Die Stocks

Die stocks for those dies with 1" outside diameter or under are single screw tightened design.



Die Dia.	OAL	Order No.
5/8"	5"	318-2302
13/16	6-1/4	318-2304
*1	9	318-2306
*1-1/2"	12"	318-2308
*2	19-1/2	318-2310
2-1/2	20	318-2312
3"	22"	318-2314
4	29	318-2316
5	33	318-2318

* use with round adjustable dies.

4pcs/set

includes 13/16,1,1-1/2,2"

Order No.318-2320

5pcs/set

includes 13/16,1,1-1/2,2, 2-1/2"

Order No.318-2321

Plain Die Stocks

Hold both hex and round dies



Die Diameter	Order No.
5/8" for Hex Dies	318-2210
13/16 for Round Dies	318-2220
1 for Hex or Round Dies	318-2230

DIN 225 Die Stocks

zinc die casting made



Size	Length	For Dies	Order No.
16 x 5mm	160	M 1-2.6	318-2025
20 x 5mm	200	M 3-4	318-2030
20 x 7mm	200	M 4.5-6	318-2035
25 x 9mm	224	M 7-9	318-2040
30 x 11mm	280	M 10-11	318-2045
38 x 14mm	315	M 12-14	318-2050
45 x 18mm	450	M 16-20	318-2055
55 x 22mm	560	M 22-24	318-2060
65 x 25mm	630	M 27-36	318-2065

Tap Wrenches

DIN 1814

Adjustable zinc die casting made



Size	Length	For Taps	Order No.
0	125mm	M 1-8	318-0200
1	188mm	M 1-10	318-0215
1-1/2	215mm	M 1-12	318-0220
2	280mm	M 3.5-12	318-0225
3	375mm	M 5-20	318-0230
4	500mm	M 11-27	318-0235
5	700mm	M 13-32	318-0240

Tap Wrenches

Extension Tap Wrenches

- Attractive finish.
- Made of steel.
- Precision tap extension.
- 4 jaw chuck.



Tap Capacity	Order No.
# 0-1/4"(1.5-6mm)	318-0140
# 12-1/2"(6-12mm)	318-0145

DIN377 Socket Extension Tap Wrenches



Size	Description	Order No.
2.1x60mm	for tap DIN352 M1-2.6	318-5021
2.4x70mm		318-5024
2.7x80mm	for tap DIN352 M3	318-5027
3.0x90mm	for tap DIN352 M3.5	318-5030
3.4x95mm	for tap DIN352 M4	318-5034
3.8x100mm		318-5038
4.3x105mm	for tap DIN351NO.10UNC	318-5043
4.9x110mm	for tap DIN352 M4.5-8	318-5049
5.5x115mm	for tap DIN352 M9-10	318-5055
6.2x120mm	for tap DIN352 M11	318-5062
7.0x125mm	for tap DIN352 M12	318-5070
8.0x125mm		318-5080
9.0x130mm	for tap DIN352 M13-16	318-5090
10.0x140mm		318-5100
11.0x150mm	for tap DIN352 M18	318-5110
12.0x155mm	for tap DIN352 M20	318-5120
13.0x160mm		318-5130
14.5x175mm	for tap DIN352 M22-24	318-5145
16.0x180mm	for tap DIN352 M27	318-5160
18.0x200mm	for tap DIN352 M30	318-5180
20.0x220mm	for tap DIN352 M32	318-5200
22.0x230mm	for tap DIN352 M36	318-5220

Mini Tap Wrenches

- Handy tapping tool.
- Ideally suitable for jewelers, watch makers, and small tapping appllication



Tap Capacity	Order No.
1/4" (6mm)	318-0251
1/2" (12mm)	318-0252
2 piece set	318-0254

Tap Wrenches & Taper Guides

Tap Wrenches

Piloted Spindle Tap Wrenches

Used for threading a drilled hole manually at one machine location without moving the workpiece.



Tap Capacity	Order No.
#0-1/4"(1.5mm-6mm)	318-0180
#12-1/2"(6mm-12mm)	318-0182

Extra Long Tap Wrenches

- 13" long.
- Shiny ground finish.
- Jaws are hardened and tempered.
- Jaws are replaceable.



Tap Capacity	Plain Type Order No.	Ratchet Type Order No.
5/32-1/4" (4-6mm)	318-0131	318-0136
1/4-1/2" (6-12mm)	318-0132	318-0137
2 piece set	318-0130	318-0135

T-Handle Tap Wrenches

1/16 to 1/2"

T-Handle tap wrenches are used for holding taps, reamers and other small tools to be turned by hand



Tap Capacity	Plain Order No.	Ratchet Order No.
(0-8#) 1/16-5/32" (1.5-4mm)	318-0010	318-0050
(0-14#) 5/32-1/4" (4-6mm)	318-0015	318-0055
(12-14#) 1/4-1/2" (6-12mm)	318-0020	318-0060
3 piece set	318-0030	318-0070

T-Handle Tap Wrenches European Style

Ratchet shift key makes clockwise or counterclockwise rotation



Description	Plain Order No.	Ratchet Order No.
Length 85mm, for tap DIN M3-10	318-5305	318-5315
Length 110mm, for tap DIN M5-12	318-5310	318-5320
length 250mm, for tap DINM3-10	318-5306	318-5335
length 300mm, for tap DIN M5-12	318-5311	318-5340

Tapping Fixture

Tap Holes up to 1/2" Diameter

- Eliminate tap Breakage.
- Perfect alignment for Tapping and Reaming.
- Including: 1 Tapping Gudie, 1Tap Wrench, and a Set of Jaws.



Order No. 318-0000

Tap Guide

- 1/2" Dia. hardened shank
- 3/16" Dia. hardened tension Pin
- Adjustable tension spring
- Reversible tension pin for male and female hole centering
- With this tool you start every tap straight



Order No. 318-0090

Machine Taping Guide

- Provide sensitive feel for hand tapping small holes on milling machines, drilling presses, and lathes.
- Starts every hole straight and prevents tap breakage
- Shank dia. 3/8" handle dia. 1"
- 0 to 12 tap capacity



Order No. 318-0095

Teflon Tapes



Specification	Order No.
260" x 1/2"	841-0001
260 x 3/4	841-0002
520 x 1/2	841-0003
520 x 3/4	841-0004

Single End Mill Sets

Center Cutting, Ground

M2 HSS







Pieces	Flute	Description	Wooden Case M2 Order No.	Wooden Case TiN-Coated Order No.	Plastic Case M2 Order No.	Plastic Case TiN-Coated Order No.	End Mill Only M2 Order No.	End Mill Only TiN-Coated Order No.
20	2&4	1 each of 3/16" to 3/4" by 16ths	320-1000	320-0000	329-1000	329-0000	320-1100	320-0100
10	2	1 each of 3/16" to 3/4" by 16ths	320-1001	320-0001	329-1001	329-0001	320-1101	320-0101
10	4	1 each of 3/16"to 3/4"by 16ths	320-1002	320-0002	329-1002	329-0002	320-1102	320-0102
10	2&4	1 each of 1/4",3/8",1/2",5/8",3/4"	320-1003	320-0003	329-1003	329-0003	320-1103	320-0103
3	2	1 each of 1/8, 1/4, 3/8"	320-1008	320-0008			320-1108	320-0108
3	4	1 each of 1/8, 1/4, 3/8"	320-1009	320-0009			320-1109	320-0109
20	4	2 each of 3/16" to 3/4"by 16ths	320-4001	320-3001	329-4001	329-3001	320-4101	320-3101
20	2&4	1 each of 3,4,5,6,8,10,12,14,18,20mm	320-1004	320-0004	329-1004	329-0004	320-1104	320-0104
20	2&4	1 each of 3,4,5,6,8,10,12,14,16,20mm	320-1005	320-0005	329-1005	329-0005	320-1105	320-0105
10	2	1 each of 3,4,5,6,8,10,12,14,18,20mm	320-1006	320-0006	329-1006	329-0006	320-1106	320-0106
10	4	1 each of 3,4,5,6,8,10,12,14,18,20mm	320-1007	320-0007	329-1007	329-0007	320-1107	320-0107
9	4	1 each of 4,5,6,8,10,12,14,16,18mm	320-1010					

Double End Mill Sets

Center Cutting, Ground

M2 HSS







Pieces	Flute	Description	Wooden Case M2 Order No.	Wooden Case TiN-Coated Order No.	Plastic Case M2 Order No.	Plastic Case TiN-Coated Order No.	End Mill Only M2 Order No.	End Mill Only TiN-Coated Order No.
20	2&4	1 each of 3/16"to 3/4"by 16ths	320-9001	320-8001	329-9001	329-8001	320-9101	320-8101
10	4	1 each of 3/16"to 3/4"by 16ths	320-9002	320-8002	329-9002	329-8002	320-9102	320-8102
10	2	1 each of 3/16"to 3/4" by 16ths	320-9003	320-8003	329-9003	329-8003	320-9103	320-8103
10	2&4	1 each of 1/4",3/8",1/2",5/8",3/4"	320-9004	320-8004	329-9004	329-8004	320-9104	320-8104

M42 8% Cobalt Single End Mill Sets



Pieces	Flute	Description	Wooden Case Order No.	Plastic Case Order No.	End Mill Only Order No.
20	2&4	1 each of 3/16" to 3/4" by 16ths	723-0000	723-0010	723-0110
10	2	1 each of 3/16" to 3/4" by 16ths	723-0001	723-0011	723-0111
10	4	1 each of 3/16"to 3/4"by 16ths	723-0002	723-0012	723-0112
10	2&4	1 each of 1/4",3/8",1/2",5/8",3/4"	723-0003	723-0013	723-0113

M42 8% Cobalt Double End Mill Sets



Pieces	Flute	Description	Wooden Case Order No.	Plastic Case Order No.	End Mill Only Order No.
20	2&4	1 each of 3/16" to 3/4" by 16ths	723-9000	723-9010	723-9020
10	2	1 each of 3/16" to 3/4" by 16ths	723-9001	723-9011	723-9021
10	4	1 each of 3/16"to 3/4"by 16ths	723-9002	723-9012	723-9022
10	2&4	1 each of 1/4",3/8",1/2",5/8",3/4"	723-9003	723-9013	723-9023

Single End Mill Sets

Center Cutting, Ground,
Wooden stand



M2

No.of Piece	No.of Flute	Shank Dia.	Descriptions	M2 Order No.	TiN-Coated Order No.
6	2	3/8"	1/8, 3/16, 1/4, 5/16, 3/8, 1/2"	320-2006	320-5006
6	4	3/8"	1/8, 3/16, 1/4, 5/16, 3/8, 1/2"	320-2016	320-5016
6	2	3/4"	1", 3/4, 7/8, 1-1/8, 1-1/4, 1-1/2"	320-2066	320-5066
6	4	3/4"	1", 3/4, 7/8, 1-1/8, 1-1/4, 1-1/2"	320-2076	320-5076
6	4	3/4"	3/4, 7/8,1"	320-2086	320-5086
	6	3/4"	1-1/8, 1-1/4, 1-1/2"		
12	2&4	3/8"	1/8, 3/16, 1/4, 5/16, 3/8, 1/2"	320-2026	320-5026
14	2	3/8	1/8,5/32,3/16,1/4,5/16,3/8"	320-2014	320-5014
		1/2	1/2,9/16"		
		5/8	5/8,11/16,3/4"		
		3/4	13/16,7/8,1"		

M42

No.of Piece	No.of Flute	Shank Dia.	Descriptions	M42 Order No.	TiN Coated Order No.
4	4	3/8"	1/4, 5/16, 3/8"	723-2544	
		1/2"	1/2"		
6	2	3/8"	1/8, 3/16, 1/4, 5/16, 3/8, 1/2"	723-2406	
6	4	3/8"	1/8, 3/16, 1/4, 5/16, 3/8, 1/2"	723-2416	
8	2&4	3/8"	1/4, 5/16, 3/8 & 1/2"	723-2548	
		1/2"	1/2"		
12	2&4	3/8"	1/8, 3/16, 1/4, 5/16, 3/8, 1/2"	723-2512	
6	2	3/8"	1/8, 3/16, 1/4, 5/16, 3/8"	723-2526	723-2626
		1/2"	1/2"		
6	4	3/8"	1/8, 3/16, 1/4, 5/16, 3/8"	723-2546	723-2646
		1/2"	1/2"		

Double End Mill Sets

Center Cutting, Ground,
Wooden stand



M2

No.of Piece	No.of Flute	Shank Dia.	Descriptions	M2 Order No.	TiN Coated Order No.
6	2	3/ 8"	1/8,5/32,3/16,1/4,5/16,3/8"	320-2106	320-5106
6	4	3/ 8	1/8,5/32,3/16,1/4,5/16,3/8"	320-2116	320-5116
6	2	3/8	1/8, 3/16, 1/4, 5/16, 3/8"	320-2226	320-5226
		1/2	1/2"		
6	4	3/8	1/8, 3/16, 1/4, 5/16, 3/8"	320-2246	320-5246
		1/2	1/2"		
12	2&4	3/8	1/8,5/32,3/16,1/4,5/16,3/8"	320-2036	320-5036
14	2	3/8	1/8,5/32,3/16,1/4,5/16,3/8"	320-2114	320-5114
		1/2	1/2"		
		5/8	9/16,5/8"		
		3/4	11/16,3/4"		
		7/8	13/16,7/8"		
		1	1"		
14	4	3/8	1/8,5/32,3/16,1/4,5/16,3/8"	320-2214	320-5214
		1/2	1/2"		
		5/8	9/16,5/8"		
		3/4	11/16,3/4"		
		7/8	13/16,7/8"		
		1	1"		

M42

No.of Piece	No.of Flute	Shank Dia.	Descriptions	Center Cutting Order No.	Order No.
6	2	3/8"	1/8, 3/16, 1/4, 5/16, 3/8,	723-2426	723-2226
		1/2	1/2"		
6	4	3/8"	1/8, 3/16, 1/4, 5/16, 3/8,	723-2446	723-2246
		1/2	1/2"		
12	2&4	3/8"	1/8, 3/16, 1/4, 5/16, 3/8,	723-2256	723-4456
		1/2	1/2"		

Ball Nose Single End Mill Sets

Center Cutting, Ground, Wooden Stand

Pieces	No.of Flute	Shank Dia.	Descriptions	M2 Order No.	TiN Coated Order No.
4	2		7/8,1,1-1/4,1-1/2"	320-2004	320-5004
9	2	3/8"	1/8,3/16,1/4,5/16,3/8"	320-2009	320-5009
		1/2"	7/16,1/2,5/8"		
		3/4"	3/4"		
6	2	3/8"	1/8,3/16,1/4,5/16,3/8"	320-2007	320-5007
		1/2"	1/2"		
6	4	3/8"	1/8,3/16,1/4,5/16,3/8"	320-2046	
		1/2	1/2"		



Miniature Double End Mill Sets

3/16" Shank, Wooden Stand

Pieces	No. of Flute	Descriptions	HSS Order No.	TiN Coated Order No.	Cobalt Order No.
5	2	1/16,3/32,1/8,5/32,3/16"	320-2305	320-5305	
5	4	1/16,3/32,1/8,5/32,3/16"	320-2405	320-5405	
9	4	Stub Length, 1each of 1/16 to 3/16" by 64ths	320-2409	320-5409	723-2409
9	4	Regular Length, 1each of 1/16-3/16" by 64ths	320-2419	320-5419	723-2419
11	2	Stub Length, 1each of 1/32-3/16" by 64ths	320-2411	320-5411	723-2411
11	2	Regular Length, 1each of 1/32-3/16" by 64ths	320-2421	320-5421	723-2421
10	2 & 4	1/16,3/32,1/8,5/32,3/16"	320-2610	320-5610	



3/16" Shank End Mills

High Speed Steel

Used for small diameter milling, slotting, engraving, pocketing and similar applications.

2 Flute Double End Mills



Regular Length

Size	Flute Length	Overall Length	M2 Order No.	M2Al Order No.	TiN-Coated Order No.
1/32"	3/32"	2-1/4"	**720-1630**	**721-1630**	**722-1630**
3/64	9/64	2-1/4	**720-1632**	**721-1632**	**722-1632**
1/16	3/16	2-1/4	**720-1634**	**721-1634**	**722-1634**
5/64	15/64	2-1/4	**720-1636**	**721-1636**	**722-1636**
3/32	9/32	2-1/4	**720-1638**	**721-1638**	**722-1638**
7/64	21/64	2-1/4	**720-1640**	**721-1640**	**722-1640**
1/8	3/8	2-1/4	**720-1642**	**721-1642**	**722-1642**
9/64	13/32	2-1/4	**720-1644**	**721-1644**	**722-1644**
5/32	7/16	2-1/4	**720-1646**	**721-1646**	**722-1646**
11/64	1/2	2-1/4	**720-1648**	**721-1648**	**722-1648**
3/16	1/2	2-1/4	**720-1650**	**721-1650**	**722-1650**

Stub Length

Size	Flute Length	Overall Length	TiN-Coated Order No.	M2Al Order No.	M2 Order No.
1/32"	3/64"	2"	**722-1600**	**721-1600**	**720-1600**
3/64	1/16	2	**722-1602**	**721-1602**	**720-1602**
1/16	3/32	2	**722-1604**	**721-1604**	**720-1604**
5/64	1/8	2	**722-1606**	**721-1606**	**720-1606**
3/32	9/64	2	**722-1608**	**721-1608**	**720-1608**
7/64	5/32	2	**722-1610**	**721-1610**	**720-1610**
1/8	3/16	2	**722-1612**	**721-1612**	**720-1612**
9/64	7/32	2	**722-1614**	**721-1614**	**720-1614**
5/32	15/64	2	**722-1616**	**721-1616**	**720-1616**
11/64	1/4	2	**722-1618**	**721-1618**	**720-1618**
3/16	9/32	2	**722-1620**	**721-1620**	**720-1620**

Long Length

Size	Length Below Shank	Flute Length	Overall Length	M2 Order No.	M2Al Order No.	TiN-Coated Order No.
1/16"	3/8"	7/32"	2-1/2"	**720-1652**	**721-1652**	**722-1652**
5/64	3/8	1/4	2-1/2	**720-1654**	**721-1654**	**722-1654**
3/32	1/2	9/32	2-5/8	**720-1656**	**721-1656**	**722-1656**
7/64	1/2	9/32	2-5/8	**720-1658**	**721-1658**	**722-1658**
1/8	3/4	3/4	3-1/8	**720-1660**	**721-1660**	**722-1660**
9/64	3/4	3/4	3-1/8	**720-1662**	**721-1662**	**722-1662**
5/32	7/8	7/8	3-1/4	**720-1664**	**721-1664**	**722-1664**
11/64	7/8	7/8	3-1/4	**720-1666**	**721-1666**	**722-1666**
3/16	1	1	3-3/8	**720-1668**	**721-1668**	**722-1668**

2 Flute Ball Nose Double End Mills

Regular Length

Size	Flute Length	Overall Length	M2 Order No.	M2Al Order No.	TiN-Coated Order No.
1/32"	3/32"	2-1/4"	**720-1730**	**721-1730**	**722-1730**
3/64	9/64	2-1/4	**720-1732**	**721-1732**	**722-1732**
1/16	3/16	2-1/4	**720-1734**	**721-1734**	**722-1734**
5/64	15/64	2-1/4	**720-1736**	**721-1736**	**722-1736**
3/32	9/32	2-1/4	**720-1738**	**721-1738**	**722-1738**
7/64	21/64	2-1/4	**720-1740**	**721-1740**	**722-1740**
1/8	3/8	2-1/4	**720-1742**	**721-1742**	**722-1742**
9/64	27/64	2-1/4	**720-1744**	**721-1744**	**722-1744**
5/32	7/16	2-1/4	**720-1746**	**721-1746**	**722-1746**
11/64	1/2	2-1/4	**720-1748**	**721-1748**	**722-1748**
3/16	1/2	2-1/4	**720-1750**	**721-1750**	**722-1750**

Stub Length

Size	Flute Length	Overall Length	M2 Order No.	M2Al Order No.	TiN-Coated Order No.
1/32"	3/64"	2"	**720-1700**	**721-1700**	**722-1700**
3/64	1/16	2	**720-1702**	**721-1702**	**722-1702**
1/16	3/32	2	**720-1704**	**721-1704**	**722-1704**
5/64	1/8	2	**720-1706**	**721-1706**	**722-1706**
3/32	9/64	2	**720-1708**	**721-1708**	**722-1708**
7/64	5/32	2	**720-1710**	**721-1710**	**722-1710**
1/8	3/16	2	**720-1712**	**721-1712**	**722-1712**
9/64	7/32	2	**720-1714**	**721-1714**	**722-1714**
5/32	15/64	2	**720-1716**	**721-1716**	**722-1716**
11/64	1/4	2	**720-1718**	**721-1718**	**722-1718**
3/16	9/32	2	**720-1720**	**721-1720**	**722-1720**

Long Length

Size	Flute Length	Overall Length	M2 Order No.	M2Al Order No.	TiN-Coated Order No.
1/16"	7/32"	2-1/2"	**720-1752**	**721-1752**	**722-1752**
5/64	1/4	2-1/2	**720-1754**	**721-1754**	**722-1754**
3/32	9/32	2-5/8	**720-1756**	**721-1756**	**722-1756**
7/64	9/32	2-5/8	**720-1758**	**721-1758**	**722-1758**
1/8	3/4	3-1/8	**720-1760**	**721-1760**	**722-1760**
9/64	3/4	3-1/8	**720-1762**	**721-1762**	**722-1762**
5/32	7/8	3-1/4	**720-1764**	**721-1764**	**722-1764**
11/64	7/8	3-1/4	**720-1766**	**721-1766**	**722-1766**
3/16	1	3-3/8	**720-1768**	**721-1768**	**722-1768**

4 Flute Center Cutting Double End Mills



Regular Length

Size	Flute Length	Overall Length	M2 Order No.	M2Al Order No.	TiN-Coated Order No.
1/16"	3/16"	2-1/4"	**720-4318**	**721-4318**	**722-4318**
5/64	15/64	2-1/4	**720-4320**	**721-4320**	**722-4320**
3/32	9/32	2-1/4	**720-4322**	**721-4322**	**722-4322**
7/64	21/64	2-1/4	**720-4324**	**721-4324**	**722-4324**
1/8	3/8	2-1/4	**720-4326**	**721-4326**	**722-4326**
9/64	13/32	2-1/4	**720-4328**	**721-4328**	**722-4328**
5/32	7/16	2-1/4	**720-4330**	**721-4330**	**722-4330**
11/64	1/2	2-1/4	**720-4332**	**721-4332**	**722-4332**
3/16	1/2	2-1/4	**720-4334**	**721-4334**	**722-4334**

Stub Length

Size	Flute Length	Overall Length	M2 Order No.	M2Al Order No.	TiN-Coated Order No.
1/16"	3/32"	2"	**720-4300**	**721-4300**	**722-4300**
5/64	5/32	2	**720-4302**	**721-4302**	**722-4302**
3/32	9/64	2	**720-4303**	**721-4303**	**722-4303**
3/32	5/32	2	**720-4304**	**721-4304**	**722-4304**
7/64	5/32	2	**720-4306**	**721-4306**	**722-4306**
1/8	3/16	2	**720-4308**	**721-4308**	**722-4308**
9/64	7/32	2	**720-4310**	**721-4310**	**722-4310**
5/32	15/64	2	**720-4311**	**721-4311**	**722-4311**
5/32	1/4	2	**720-4312**	**721-4312**	**722-4312**
11/64	9/32	2	**720-4314**	**721-4314**	**722-4314**
3/16	9/32	2	**720-4316**	**721-4316**	**722-4316**

Long Length

Size	Length Below Shank	Flute Length	Overall Length	M2 Order No.	M2Al Order No.	TiN-Coated Order No.
1/16"	3/8"	7/32"	2-1/2"	**720-4336**	**721-4336**	**722-4336**
5/64	3/8	1/4	2-1/2	**720-4338**	**721-4338**	**722-4338**
3/32	1/2	9/32	2-5/8	**720-4340**	**721-4340**	**722-4340**
7/64	1/2	9/32	2-5/8	**720-4342**	**721-4342**	**722-4342**
1/8	3/4	3/4	3-1/8	**720-4344**	**721-4344**	**722-4344**
9/64	3/4	3/4	3-1/8	**720-4346**	**721-4346**	**722-4346**
5/32	7/8	7/8	3-1/4	**720-4348**	**721-4348**	**722-4348**
11/64	7/8	7/8	3-1/4	**720-4350**	**721-4350**	**722-4350**
3/16	1	1	3-3/8	**720-4352**	**721-4352**	**722-4352**

3/16" Shank End Mills

3/16" Shank Single Miniature End Mills

High Speed Steel

Used for small diameter milling, slotting, engraving, pocketing and similar applications.

2 Flute Single End Mill



Dia.	Flute Length	Overall Length	Order No.
11/32"	3/32"	1-11/16"	**720-1902**
3/64	5/32	1-11/16	**720-1903**
1/16	7/32	1-11/16	**720-1904**
5/64	1/4	1-1/8	**720-1905**
3/32	5/16	1-1/8	**720-1906**
7/64	11/32	1-5/16	**720-1907**
1/8"	3/8"	1-5/16"	**720-1908**
9/64	13/32	1-7/16	**720-1909**
5/32	7/16	1-7/16	**720-1910**
11/64	15/32	1-11/16	**720-1911**
3/16	1/2	1-11/16	**720-1902**

4 Flute Single End Mill



Dia.	Flute Length	Overall Length	Order No.
5/64"	1/4"	1-11/16"	**720-2900**
3/32	5/16	1-11/16	**720-2902**
7/64	11/32	1-11/16	**720-2904**
1/8	3/8	1-11/16	**720-2906**
9/64	13/32	1-11/16	**720-2908**
5/32	7/16	1-11/16	**720-2910**
11/64	15/32	1-11/16	**720-2912**
3/16	1/2	1-11/16	**720-2914**

M42 8% Cobalt 3/16" Shank End Mills

use for small diameter milling, slotting, engraving, pocketing and similar applications.

2 Flute Double End Mills

Cobalt



Regular Length

Size	Flute Length	Overall Length	Order No.
1/32"	3/32"	2-1/4"	**723-1630**
3/64	9/64	2-1/4	**723-1632**
1/16	3/16	2-1/4	**723-1634**
5/64	15/64	2-1/4	**723-1636**
3/32	9/32	2-1/4	**723-1638**
7/64	21/64	2-1/4	**723-1640**
1/8	3/8	2-1/4	**723-1642**
9/64	13/32	2-1/4	**723-1644**
5/32	7/16	2-1/4	**723-1646**
11/64	1/2	2-1/4	**723-1648**
3/16	1/2	2-1/4	**723-1650**

Long Length

Size	Length Below Shank	Flute Length	Overall Length	Order No.
1/16"	3/8"	7/32"	2-1/2"	**723-1652**
5/64	3/8	1/4	2-1/2	**723-1654**
3/32	1/2	9/32	2-5/8	**723-1656**
7/64	1/2	9/32	2-5/8	**723-1658**
1/8	3/4	3/4	3-1/8	**723-1660**
9/64	3/4	3/4	3-1/8	**723-1662**
5/32	7/8	7/8	3-1/4	**723-1664**
11/64	7/8	7/8	3-1/4	**723-1666**
3/16	1	1	3-3/8	**723-1668**

Stub Length

Size	Flute Length	Overall Length	Order No.
1/32"	3/64"	2"	**723-1600**
3/64	1/16	2	**723-1602**
1/16	3/32	2	**723-1604**
5/64	1/8	2	**723-1606**
3/32	9/64	2	**723-1608**
7/64	5/32	2	**723-1610**
1/8	3/16	2	**723-1612**
9/64	7/32	2	**723-1614**
5/32	15/64	2	**723-1616**
11/64	1/4	2	**723-1618**
3/16	9/32	2	**723-1620**

2 Flute Ball Nose Double End Mills

Cobalt



Regular Length

Size	Flute Length	Overall Length	Order No.
1/32"	3/32"	2-1/4"	**723-1730**
3/64	9/64	2-1/4	**723-1732**
1/16	3/16	2-1/4	**723-1734**
5/64	15/64	2-1/4	**723-1736**
3/32	9/32	2-1/4	**723-1738**
7/64	21/64	2-1/4	**723-1740**
1/8	3/8	2-1/4	**723-1742**
9/64	27/64	2-1/4	**723-1744**
5/32	7/16	2-1/4	**723-1746**
11/64	1/2	2-1/4	**723-1748**
3/16	1/2	2-1/4	**723-1750**

Long Length

Size	Length Below Shank	Flute Length	Overall Length	Order No.
1/16"	7/32"	2-1/2"		**723-1752**
5/64	1/4	2-1/2		**723-1754**
3/32	9/32	2-5/8		**723-1756**
7/64	9/32	2-5/8		**723-1758**
1/8	3/4	3-1/8		**723-1760**
9/64	3/4	3-1/8		**723-1762**
5/32	7/8	3-1/4		**723-1764**
11/64	7/8	3-1/4		**723-1766**
3/16	1	3-3/8		**723-1768**

Stub Length

Size	Flute Length	Overall Length	Order No.
1/32"	3/64"	2"	**723-1700**
3/64	1/16	2	**723-1702**
1/16	3/32	2	**723-1704**
5/64	1/8	2	**723-1706**
3/32	9/64	2	**723-1708**
7/64	5/32	2	**723-1710**
1/8	3/16	2	**723-1712**
9/64	7/32	2	**723-1714**
5/32	15/64	2	**723-1716**
11/64	1/4	2	**723-1718**
3/16	9/32	2	**723-1720**

4 Flute Center Cutting Double End Mills

Cobalt



Regular Length

Size	Flute Length	Overall Length	Order No.
1/16"	3/16"	2-1/4"	**723-4318**
5/64	15/64	2-1/4	**723-4320**
3/32	9/32	2-1/4	**723-4322**
7/64	21/64	2-1/4	**723-4324**
1/8	3/8	2-1/4	**723-4326**
9/64	13/32	2-1/4	**723-4328**
5/32	7/16	2-1/4	**723-4330**
11/64	1/2	2-1/4	**723-4332**
3/16	1/2	2-1/4	**723-4334**

Long Length

Size	Length Below Shank	Flute Length	Overall Length	Order No.
1/16"	3/8"	7/32"	2-1/2"	**723-4336**
5/64	3/8	1/4	2-1/2	**723-4338**
3/32	1/2	9/32	2-5/8	**723-4340**
7/64	1/2	9/32	2-5/8	**723-4342**
1/8	3/4	3/4	3-1/8	**723-4344**
9/64	3/4	3/4	3-1/8	**723-4346**
5/32	7/8	7/8	3-1/4	**723-4348**
11/64	7/8	7/8	3-1/4	**723-4350**
3/16	1	1	3-3/8	**723-4352**

Stub Length

Size	Flute Length	Overall Length	Order No.
1/16"	3/32"	2"	**723-4300**
5/64	5/32	2	**723-4302**
3/32	9/64	2	**723-4303**
3/32	5/32	2	**723-4304**
7/64	5/32	2	**723-4306**
1/8	3/16	2	**723-4308**
9/64	7/32	2	**723-4310**
5/32	15/64	2	**723-4311**
5/32	1/4	2	**723-4312**
11/64	9/32	2	**723-4314**
3/16	9/32	2	**723-4316**

2 Flute Single End Mills

High Speed Steel

- Use for milling slots, pockets and plunge cuts.
- 2 Flutes allows maximum space for chip ejection.
- Suitable for use in a wide range of ferrous and non-ferrous materials.
- TiN coating improves tool life and allows elevated speeds and feeds.



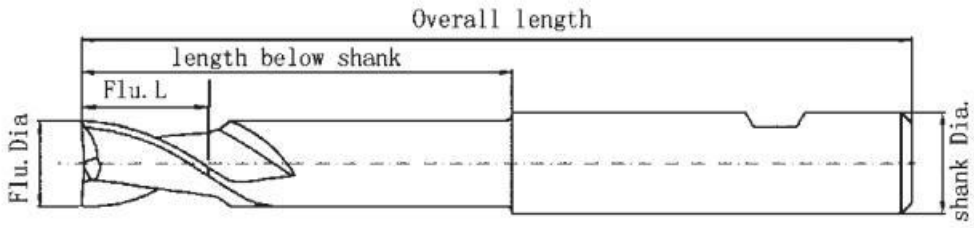
Regular Length

Size	Shank Dia.	Flute Length	Overall Length	M2 Order No.	M2AI Order No.	TiN-Coated Order No.	Size	Shank Dia.	Flute Length	Overall Length	M2 Order No.	M2AI Order No.	TiN-Coated Order No.
1/8"	3/8"	3/8"	2-5/16"	**720-1001**	**721-1001**	**722-1001**	15/16"	5/8"	1-1/2"	3-5/8"	**720-1091**	**721-1091**	**722-1091**
9/64	3/8	3/8	2-5/16	**720-1003**	**721-1003**	**722-1003**	15/16	3/4	1-1/2	3-3/4	**720-1093**	**721-1093**	**722-1093**
5/32	3/8	7/16	2-5/16	**720-1005**	**721-1005**	**722-1005**	15/16	7/8	1-1/2	3-3/4	**720-1095**	**721-1095**	**722-1095**
11/64	3/8	7/16	2-5/16	**720-1007**	**721-1007**	**722-1007**	31/32	1/2	1-1/2	3-1/2	**720-1097**	**721-1097**	**722-1097**
3/16	3/8	7/16	2-5/16	**720-1009**	**721-1009**	**722-1009**	1	1/2	1-1/2	3-1/2	**720-1099**	**721-1099**	**722-1099**
13/64	3/8	7/16	2-5/16	**720-1011**	**721-1011**	**722-1011**	1	1/2	1-1/2	3-5/8	**720-1102**	**721-1102**	**722-1102**
7/32	3/8	1/2	2-5/16	**720-1012**	**721-1012**	**722-1012**	1	5/8	1-1/2	3-5/8	**720-1101**	**721-1101**	**722-1101**
7/32	3/8	1/2	2-3/8	**720-1013**	**721-1013**	**722-1013**	1	3/4	1-1/2	3-3/4	**720-1103**	**721-1103**	**722-1103**
15/64	3/8	1/2	2-3/8	**720-1015**	**721-1015**	**722-1015**	1	7/8	1-1/2	3-3/4	**720-1105**	**721-1105**	**722-1105**
1/4	3/8	3/8	2-1/4	**720-1016**	**721-1016**	**722-1016**	1	1	1-5/8	4-1/8	**720-1107**	**721-1107**	**722-1107**
1/4	3/8	1/2	2-5/16	**720-1017**	**721-1017**	**722-1017**	1-1/16	3/4	1-5/8	3-3/4	**720-1109**	**721-1109**	**722-1109**
17/64	3/8	9/16	2-3/8	**720-1019**	**721-1019**	**722-1019**	1-1/16	5/8	1-5/8	3-7/8	**720-1100**	**721-1100**	**722-1100**
9/32	3/8	1/2	2-5/16	**720-1020**	**721-1020**	**722-1020**	1-1/16	3/4	1-5/8	3-7/8	**720-1108**	**721-1108**	**722-1108**
9/32	3/8	9/16	2-3/8	**720-1021**	**721-1021**	**722-1021**	1-1/16	7/8	1-5/8	3-7/8	**720-1110**	**721-1110**	**722-1110**
19/64	3/8	9/16	2-3/8	**720-1023**	**721-1023**	**722-1023**	1-1/8	3/4	1-1/2	3-3/4	**720-1112**	**721-1112**	**722-1112**
5/16	3/8	9/16	2-5/16	**720-1025**	**721-1025**	**722-1025**	1-1/8	3/4	1-5/8	3-7/8	**720-1111**	**721-1111**	**722-1111**
21/64	3/8	9/16	2-3/8	**720-1027**	**721-1027**	**722-1027**	1-1/8	7/8	1-5/8	3-7/8	**720-1113**	**721-1113**	**722-1113**
11/32	3/8	9/16	2-5/16	**720-1028**	**721-1028**	**722-1028**	1-1/8	1	1-5/8	4-1/8	**720-1115**	**721-1115**	**722-1115**
11/32	3/8	9/16	2-3/8	**720-1029**	**721-1029**	**722-1029**	1-3/16	3/4	1-5/8	3-7/8	**720-1117**	**721-1117**	**722-1117**
23/64	3/8	9/16	2-3/8	**720-1031**	**721-1031**	**722-1031**	1-3/16	1	1-5/8	4-1/8	**720-1118**	**721-1118**	**722-1118**
3/8	3/8	9/16	2-5/16	**720-1033**	**721-1033**	**722-1033**	1-1/4	3/4	1-5/8	3-7/8	**720-1119**	**721-1119**	**722-1119**
13/32	3/8	13/16	2-1/2	**720-1035**	**721-1035**	**722-1035**	1-1/4	7/8	1-5/8	3-7/8	**720-1121**	**721-1121**	**722-1121**
7/16	3/8	13/16	2-1/2	**720-1037**	**721-1037**	**722-1037**	1-1/4	1	1-5/8	4-1/8	**720-1123**	**721-1123**	**722-1123**
15/32	3/8	13/16	2-1/2	**720-1036**	**721-1036**	**722-1036**	1-1/4	1-1/4	1-5/8	4-1/8	**720-1125**	**721-1125**	**722-1125**
15/32	1/2	7/8	2-1/2	**720-1038**	**721-1038**	**722-1038**	1-5/16	3/4	1-5/8	3-7/8	**720-1127**	**721-1127**	**722-1127**
15/32	1/2	1	3	**720-1039**	**721-1039**	**722-1039**	1-3/8	3/4	1-5/8	3-7/8	**720-1129**	**721-1129**	**722-1129**
1/2	3/8	13/16	2-1/2	**720-1041**	**721-1041**	**722-1041**	1-3/8	3/4	1-5/8	4	**720-1130**	**721-1130**	**722-1130**
1/2	3/8	1	3	**720-1042**	**721-1042**	**722-1042**	1-3/8	1	1-5/8	4-1/8	**720-1131**	**721-1131**	**722-1131**
1/2	1/2	1	3	**720-1043**	**721-1043**	**722-1043**	1-7/16	3/4	1-5/8	3-7/8	**720-1133**	**721-1133**	**722-1133**
1/2	1/2	1-1/8	3-1/8	**720-1044**	**721-1044**	**722-1044**	1-1/2	3/4	1-5/8	3-7/8	**720-1135**	**721-1135**	**722-1135**
17/32	1/2	1-1/8	3-1/8	**720-1045**	**721-1045**	**722-1045**	1-1/2	3/4	1-5/8	4-1/8	**720-1136**	**721-1136**	**722-1136**
9/16	1/2	1-1/8	3-1/8	**720-1047**	**721-1047**	**722-1047**	1-1/2	1	1-5/8	4-1/8	**720-1137**	**721-1137**	**722-1137**
19/32	1/2	1-1/8	3-1/8	**720-1049**	**721-1049**	**722-1049**	1-1/2	1-1/4	1-5/8	4-1/8	**720-1139**	**721-1139**	**722-1139**
5/8	1/2	1-1/8	3-1/8	**720-1051**	**721-1051**	**722-1051**	1-5/8	3/4	1-5/8	3-7/8	**720-1141**	**721-1141**	**722-1141**
5/8	5/8	1-5/16	3-7/16	**720-1053**	**721-1053**	**722-1053**	1-5/8	3/4	1-5/8	4-1/8	**720-1142**	**721-1142**	**722-1142**
21/32	1/2	1-5/16	3-5/16	**720-1055**	**721-1055**	**722-1055**	1-5/8	1-1/4	1-5/8	4-1/8	**720-1143**	**721-1143**	**722-1143**
11/16	1/2	1-5/16	3-5/16	**720-1057**	**721-1057**	**722-1057**	1-3/4	3/4	1-5/8	3-7/8	**720-1145**	**721-1145**	**722-1145**
11/16	5/8	1-5/16	3-7/16	**720-1059**	**721-1059**	**722-1059**	1-3/4	3/4	1-5/8	4-1/8	**720-1146**	**721-1146**	**722-1146**
23/32	1/2	1-5/16	3-5/16	**720-1061**	**721-1061**	**722-1061**	1-3/4	1-1/4	1-5/8	4-1/8	**720-1147**	**721-1147**	**722-1147**
3/4	1/2	1-5/16	3-5/16	**720-1063**	**721-1063**	**722-1063**	1-7/8	3/4	1-5/8	3-7/8	**720-1149**	**721-1149**	**722-1149**
3/4	5/8	1-5/16	3-7/16	**720-1065**	**721-1065**	**722-1065**	1-7/8	3/4	1-5/8	4-1/8	**720-1150**	**721-1150**	**722-1150**
3/4	3/4	1-5/16	3-7/16	**720-1066**	**721-1066**	**722-1066**	1-7/8	1-1/4	1-5/8	4-1/8	**720-1151**	**721-1151**	**722-1151**
3/4	3/4	1-5/16	3-9/16	**720-1067**	**721-1067**	**722-1067**	2	3/4	1-5/8	3-7/8	**720-1153**	**721-1153**	**722-1153**
3/4	3/4	1-3/4	4	**720-1069**	**721-1069**	**722-1069**	2	3/4	1-5/8	4-1/8	**720-1154**	**721-1154**	**722-1154**
25/32	1/2	1-1/2	3-1/2	**720-1071**	**721-1071**	**722-1071**	2	1-1/4	1-5/8	4-1/8	**720-1155**	**721-1155**	**722-1155**
13/16	1/2	1-1/2	3-5/16	**720-1077**	**721-1077**	**722-1077**	2	1-1/4	2-1/2	5	**720-1156**	**721-1156**	**722-1156**
13/16	1/2	1-1/2	3-5/8	**720-1072**	**721-1072**	**722-1072**	2	2	2	5-3/4	**720-1157**	**721-1157**	**722-1157**
13/16	5/8	1-1/2	3-5/8	**720-1073**	**721-1073**	**722-1073**	2	2	3	6-3/4	**720-1159**	**721-1159**	**722-1159**
13/16	3/4	1-1/2	3-3/4	**720-1075**	**721-1075**	**722-1075**	2	2	4	7-3/4	**720-1160**	**721-1160**	**722-1160**
27/32	1/2	1-1/2	3-1/2	**720-1079**	**721-1079**	**722-1079**	2-1/4	1-1/4	1-5/8	4-1/8	**720-1161**	**721-1161**	**722-1161**
7/8	1/2	1-1/2	3-1/2	**720-1081**	**721-1081**	**722-1081**	2-1/2	2	4	7-5/8	**720-1162**	**721-1162**	**722-1162**
7/8	1/2	1-1/2	3-5/8	**720-1082**	**721-1082**	**722-1082**	2-1/2	2	4	7-3/4	**720-1163**	**721-1163**	**722-1163**
7/8	5/8	1-1/2	3-5/8	**720-1083**	**721-1083**	**722-1083**	2-1/2	2	6	9-5/8	**720-1164**	**721-1164**	**722-1164**
7/8	3/4	1-1/2	3-3/4	**720-1085**	**721-1085**	**722-1085**	2-1/2	2	6	9-3/4	**720-1165**	**721-1165**	**722-1165**
7/8	7/8	1-1/2	3-3/4	**720-1087**	**721-1087**	**722-1087**	3	2-1/2	4	7-3/4	**720-1167**	**721-1167**	**722-1167**
29/32	1/2	1-1/2	3-1/2	**720-1089**	**721-1089**	**722-1089**							
15/16	1/2	1-1/2	3-5/8	**720-1090**	**721-1090**	**722-1090**							

2 Flute Single End Mills

High Speed Steel, Extend Shank

- Use for milling slots, pockets and plunge cuts.
- 2 Flutes allows maximum space for chip ejection.
- Suitable for use in a wide range of ferrous and non-ferrous materials.
- TiN coating improves tool life and allows elevated speeds and feeds.



Size	Shank Dia.	Length Below shank	Flute Length	Overall Length	M2 Order No.	M2Al Order No.	TiN-Coated Order No.
1/8"	3/8"	13/16"	3/8"	2-3/8"	**720-1171**	**721-1171**	**722-1171**
3/16	3/8	1-1/8	1/2	2-11/16	**720-1173**	**721-1173**	**722-1173**
3/16	3/8	1-1/2	5/8	3-1/16	**720-1172**	**721-1172**	**722-1172**
1/4	3/8	1	5/8	3-1/16	**720-1174**	**721-1174**	**722-1174**
1/4	3/8	1-1/2	5/8	3-1/16	**720-1175**	**721-1175**	**722-1175**
5/16	3/8	1-3/4	3/4	3-5/16	**720-1177**	**721-1177**	**722-1177**
5/16	3/8	1-1/2	3/4	3-1/4	**720-1178**	**721-1178**	**722-1178**
3/8	3/8	1-3/4	3/4	3-5/16	**720-1179**	**721-1179**	**722-1179**
3/8	3/8	1-3/4	7/8	3-5/16	**720-1180**	**721-1180**	**722-1180**
1/2	1/2	2-1/4	1	4	**720-1181**	**721-1181**	**722-1181**
1/2	1/2	2-1/4	1-7/8	4	**720-1182**	**721-1182**	**722-1182**
5/8	1/2	2-3/4	1-3/8	4-5/8	**720-1184**	**721-1184**	**722-1184**
5/8	5/8	2-3/4	1-3/8	4-5/8	**720-1183**	**721-1183**	**722-1183**
5/8	5/8	2-3/4	2	4-5/8	**720-1188**	**721-1188**	**722-1188**
3/4	1/2	3-3/8	1-5/8	5-3/8	**720-1186**	**721-1186**	**722-1186**
3/4	3/4	3-3/8	1-5/8	5-3/8	**720-1185**	**721-1185**	**722-1185**
7/8	7/8	4	2	6	**720-1187**	**721-1187**	**722-1187**
1	1	5	2-1/2	7-1/4	**720-1189**	**721-1189**	**722-1189**
1-1/4	1-1/4	5	3	7-1/4	**720-1191**	**721-1191**	**722-1191**

Medium Length & Long Length

- Use for milling slots, pockets and plunge cuts.
- TiN coating facilitates chip flow and allows elevated feeds.



Size	Shank Dia.	Flute Length	Overall Length	M2 Order No.	M2Al Order No.	TiN-Coated Order No.	Size	Shank Dia.	Flute Length	Overall Length	M2 Order No.	M2Al Order No.	TiN-Coated Order No.
3/16"	3/8"	3/4"	2-5/8"	**720-1201**	**721-1201**	**722-1201**	1"	1"	2"	4-1/2"	**720-1249**	**721-1249**	**722-1249**
7/32	3/8	1-1/4	3-1/8	**720-1203**	**721-1203**	**722-1203**	1	1	2-1/4	4-3/4	**720-1251**	**721-1251**	**722-1251**
1/4	3/8	1	2-3/4	**720-1204**	**721-1204**	**722-1204**	1	1	2-1/2	5	**720-1253**	**721-1253**	**722-1253**
1/4	3/8	1	3-1/16	**720-1205**	**721-1205**	**722-1205**	1	1	3	5-1/2	**720-1255**	**721-1255**	**722-1255**
1/4	3/8	1-1/4	3-1/8	**720-1207**	**721-1207**	**722-1207**	1	1	3-1/2	6	**720-1257**	**721-1257**	**722-1257**
9/32	3/8	1-3/8	3-1/8	**720-1209**	**721-1209**	**722-1209**	1	1	4	6-1/2	**720-1259**	**721-1259**	**722-1259**
5/16	3/8	1-1/4	3	**720-1210**	**721-1210**	**722-1210**	1	1	4-5/8	7	**720-1261**	**721-1261**	**722-1261**
5/16	3/8	1-1/4	3-5/16	**720-1211**	**721-1211**	**722-1211**	1-1/8	1	2-1/4	4-3/4	**720-1263**	**721-1263**	**722-1263**
5/16	3/8	1-3/8	3-1/8	**720-1213**	**721-1213**	**722-1213**	1-1/8	1	3	4-3/4	**720-1265**	**721-1265**	**722-1265**
11/32	3/8	1-1/2	3-1/4	**720-1215**	**721-1215**	**722-1215**	1-1/8	1	3	5-1/2"	**720-1266**	**721-1266**	**722-1266**
3/8	3/8	1	2-3/4	**720-1217**	**721-1217**	**722-1217**	1-1/4	1	2-1/4	4-3/4	**720-1267**	**721-1267**	**722-1267**
3/8	3/8	1-1/2	3-1/4	**720-1219**	**721-1219**	**722-1219**	1-1/4	1-1/4	2-1/4	5-1/2	**720-1269**	**721-1269**	**722-1269**
7/16	1/2	1-3/4	3-3/4	**720-1221**	**721-1221**	**722-1221**	1-1/4	1	3	5-1/2	**720-1271**	**721-1271**	**722-1271**
1/2	1/2	1-1/2	3-1/2	**720-1223**	**721-1223**	**722-1223**	1-1/4	1-1/4	3	5-1/2	**720-1273**	**721-1273**	**722-1273**
1/2	1/2	2	4	**720-1225**	**721-1225**	**722-1225**	1-1/4	1-1/4	3-1/2	6	**720-1274**	**721-1274**	**722-1274**
1/2	1/2	3	5	**720-1226**	**721-1226**	**722-1226**	1-1/4	1-1/4	4-3/4	7-1/4	**720-1275**	**721-1275**	**722-1275**
5/8	5/8	1-5/8	3-3/4	**720-1227**	**721-1227**	**722-1227**	1-3/8	1	2-1/4	4-3/4	**720-1277**	**721-1277**	**722-1277**
5/8	5/8	2	4-1/8	**720-1229**	**721-1229**	**722-1229**	1-3/8	1	3	5-1/2	**720-1279**	**721-1279**	**722-1279**
5/8	5/8	2-3/8	4-1/2	**720-1230**	**721-1230**	**722-1230**	1-1/2	1-1/4	6	8-1/2	**720-1280**	**721-1280**	**722-1280**
5/8	5/8	2-1/2	4-5/8	**720-1231**	**721-1231**	**722-1231**	1-1/2	1-1/4	2-1/4	4-3/4	**720-1281**	**721-1281**	**722-1281**
5/8	5/8	3	5-1/8	**720-1233**	**721-1233**	**722-1233**	1-1/2	1-1/4	3	5-1/2	**720-1283**	**721-1283**	**722-1283**
5/8	5/8	4	6-1/8	**720-1234**	**721-1234**	**722-1234**	1-1/2	1-1/4	4	6-1/2	**720-1284**	**721-1284**	**722-1284**
3/4	3/4	1-3/4	4	**720-1235**	**721-1235**	**722-1235**	1-5/8	1-1/4	2-1/4	4-3/4	**720-1285**	**721-1285**	**722-1285**
3/4	3/4	2-1/4	4-1/2	**720-1237**	**721-1237**	**722-1237**	1-5/8	1-1/4	3	5-1/2	**720-1287**	**721-1287**	**722-1287**
3/4	3/4	2-1/2	4-3/4	**720-1239**	**721-1239**	**722-1239**	1-3/4	1-1/4	2-1/4	4-3/4	**720-1289**	**721-1289**	**722-1289**
3/4	3/4	3	5-1/4	**720-1241**	**721-1241**	**722-1241**	1-3/4	1-1/4	3	5-1/2	**720-1291**	**721-1291**	**722-1291**
3/4	3/4	3-1/2	5-3/4	**720-1243**	**721-1243**	**722-1243**	1-7/8	1-1/4	2-1/4	4-3/4	**720-1293**	**721-1293**	**722-1293**
3/4	3/4	4	6-1/4	**720-1244**	**721-1244**	**722-1244**	1-7/8	1-1/4	3	5-1/2	**720-1295**	**721-1295**	**722-1295**
7/8	7/8	2	4-1/4	**720-1245**	**721-1245**	**722-1245**	2	1-1/4	2-1/4	4-3/4	**720-1297**	**721-1297**	**722-1297**
7/8	7/8	2-1/2	4-3/4	**720-1247**	**721-1247**	**722-1247**	2	1-1/4	3	5-1/2	**720-1299**	**721-1299**	**722-1299**
7/8	7/8	3-1/2	5-3/4	**720-1248**	**721-1248**	**722-1248**	2	1-1/4	4	6-1/2	**720-1300**	**721-1300**	**722-1300**

2 Flute Single End Mills For Aluminum

Regular Long & Extra long Flute Length

- Recommended for milling aluminum and other non-ferrous materials.
- The helix angle sheers the material cleanly and helps eliminate chatter.
- Tin coating adds lubricity to minimize chip packing in the flutes.



Size	Shank Dia.	Flute Length	Overall Length	M2 Order No.	M2Al Order No.	TiN-Coated Order No.
1/4"	3/8"	5/8"	2-1/2"	**720-1501**	**721-1501**	**722-1501**
1/4	3/8	1-1/4	3-1/8	**720-1503**	**721-1503**	**722-1503**
1/4	3/8	1-3/4	3-1/2	**720-1505**	**721-1505**	**722-1505**
5/16	3/8	3/4	2-1/2	**720-1507**	**721-1507**	**722-1507**
5/16	3/8	1-3/8	3-1/8	**720-1509**	**721-1509**	**722-1509**
5/16	3/8	2	3-3/4	**720-1511**	**721-1511**	**722-1511**
3/8	3/8	3/4	2-1/2	**720-1513**	**721-1513**	**722-1513**
3/8	3/8	1-1/2	3-1/4	**720-1515**	**721-1515**	**722-1515**
3/8	3/8	2-1/2	4-1/4	**720-1517**	**721-1517**	**722-1517**
7/16	3/8	1	2-11/16	**720-1519**	**721-1519**	**722-1519**
7/16	1/2	1-3/4	3-3/4	**720-1521**	**721-1521**	**722-1521**
7/16	1/2	2-3/4	4-3/4	**720-1523**	**721-1523**	**722-1523**
1/2	1/2	1	3-1/4	**720-1525**	**721-1525**	**722-1525**
1/2	1/2	1-1/4	3-1/4	**720-1526**	**721-1526**	**722-1526**
1/2	1/2	2	4	**720-1527**	**721-1527**	**722-1527**
1/2	1/2	3	5	**720-1529**	**721-1529**	**722-1529**
5/8	1/2	1-3/8	3-3/8	**720-1530**	**721-1530**	**722-1530**
5/8	5/8	1-5/8	3-3/4	**720-1531**	**721-1531**	**722-1531**
5/8	5/8	2-1/2	4-5/8	**720-1533**	**721-1533**	**722-1533**
5/8	5/8	4	6-1/8	**720-1535**	**721-1535**	**722-1535**
3/4	1/2	1-5/8	3-5/8	**720-1536**	**721-1536**	**722-1536**

Size	Shank Dia.	Flute Length	Overall Length	M2 Order No.	M2Al Order No.	TiN-Coated Order No.
3/4	3/4	1-5/8	3-7/8"	**720-1537**	**721-1537**	**722-1537**
3/4	3/4	3	5-1/4	**720-1539**	**721-1539**	**722-1539**
3/4	3/4	4	6-1/4	**720-1541**	**721-1541**	**722-1541**
7/8	7/8	1-7/8	4-1/8	**720-1543**	**721-1543**	**722-1543**
7/8	7/8	3-1/2	5-3/4	**720-1545**	**721-1545**	**722-1545**
7/8	7/8	5	7-1/4	**720-1547**	**721-1547**	**722-1547**
1	3/4	1-7/8	4-1/8	**720-1551**	**721-1551**	**722-1551**
1	1	2	4-1/2	**720-1553**	**721-1553**	**722-1553**
1	1	4	6-1/2	**720-1555**	**721-1555**	**722-1555**
1	1	6	8-1/2	**720-1557**	**721-1557**	**722-1557**
1-1/4	1-1/4	2	4-1/2	**720-1559**	**721-1559**	**722-1559**
1-1/4	1-1/4	4	6-1/2	**720-1561**	**721-1561**	**722-1561**
1-1/4	1-1/4	6	8-1/2	**720-1563**	**721-1563**	**722-1563**
1-1/2	1-1/4	2	4-1/2	**720-1565**	**721-1565**	**722-1565**
1-1/2	1-1/4	4	6-1/2	**720-1567**	**721-1567**	**722-1567**
1-1/2	1-1/4	8	10-1/2	**720-1569**	**721-1569**	**722-1569**
1-3/4	1-1/4	2	4-1/2	**720-1571**	**721-1571**	**722-1571**
1-3/4	1-1/4	4	6-1/2	**720-1573**	**721-1573**	**722-1573**
2	1-1/4	2	4-1/2	**720-1575**	**721-1575**	**722-1575**
2	1-1/4	4	6-1/2	**720-1577**	**721-1577**	**722-1577**

2 Flute Keyway Single End Mills

High Speed Steel

Straight Flute

Available -0.001" -0.002" -0.003"
Under Nominal



Keyway W(In.)	Mill Dia.(In.)	Shank Dia.(In.)	LOC (In.)	OAL (In.)	Order No.
1/8	0.1220	3/8	3/8	2-5/16	**720-0001**
1/8	0.1230	3/8	3/8	2-5/16	**720-0003**
1/8	0.1240	3/8	3/8	2-5/16	**720-0005**
3/16	0.1845	3/8	3/8	2-5/16	**720-0007**
3/16	0.1855	3/8	3/8	2-5/16	**720-0009**
3/16	0.1865	3/8	3/8	2-5/16	**720-0011**
1/4	0.2470	3/8	1/2	2-5/16	**720-0013**
1/4	0.2480	3/8	1/2	2-5/16	**720-0015**
1/4	0.2490	3/8	1/2	2-5/16	**720-0017**
5/16	0.3095	3/8	9/16	2-5/16	**720-0019**
5/16	0.3105	3/8	9/16	2-5/16	**720-0021**
5/16	0.3115	3/8	9/16	2-5/16	**720-0023**
3/8	0.3720	3/8	9/16	2-5/16	**720-0025**
3/8	0.3730	3/8	9/16	2-5/16	**720-0027**
3/8	0.3740	3/8	9/16	2-5/16	**720-0029**
1/2	0.4970	1/2	1	3	**720-0031**
1/2	0.4980	1/2	1	3	**720-0033**
1/2	0.4990	1/2	1	3	**720-0035**

Keyway W(In.)	Mill Dia.(In.)	Shank Dia.(In.)	LOC (In.)	OAL (In.)	Order No.
5/8	0.6220	5/8	1-5/16	3-7/16	**720-0037**
5/8	0.6230	5/8	1-5/16	3-7/16	**720-0039**
5/8	0.6240	5/8	1-5/16	3-7/16	**720-0041**
3/4	0.7470	3/4	1-5/16	3-9/16	**720-0043**
3/4	0.7480	3/4	1-5/16	3-9/16	**720-0045**
3/4	0.7490	3/4	1-5/16	3-9/16	**720-0047**
7/8	0.8720	7/8	1-1/2	3-3/4	**720-0049**
7/8	0.8730	7/8	1-1/2	3-3/4	**720-0051**
7/8	0.8740	7/8	1-1/2	3-3/4	**720-0053**
1	0.9970	1	1-5/8	4-1/8	**720-0055**
1	0.9980	1	1-5/8	4-1/8	**720-0057**
1	0.9990	1	1-5/8	4-1/8	**720-0059**
1-1/4	1.2470	1-1/4	1-5/8	4-1/8	**720-0061**
1-1/4	1.2480	1-1/4	1-5/8	4-1/8	**720-0063**
1-1/4	1.2490	1-1/4	1-5/8	4-1/8	**720-0065**
1	1.4970	1-1/4	1-5/8	4-1/8	**720-0067**
1	1.4980	1-1/4	1-5/8	4-1/8	**720-0069**
1	1.4990	1-1/4	1-5/8	4-1/8	**720-0071**

M42 8% Cobalt 2 Flute Single End Mills

- Premium 8% cobalt is especially effective for machining high strength, heat-resistant, exotic and difficult-to-machine materials,





Regular Length

Size	Shank Dia.	Flute Length	Overall Length	Order No.	Size	Shank Dia.	Flute Length	Overall Length	Order No.
1/8"	3/8"	3/8"	2-5/16"	**723-1001**	15/16"	5/8"	1-1/2"	3-5/8"	**723-1091**
9/64	3/8	3/8	2-5/16	**723-1003**	15/16	3/4	1-1/2	3-5/8	**723-1094**
5/32	3/8	7/16	2-5/16	**723-1005**	15/16	3/4	1-1/2	3-3/4	**723-1093**
11/64	3/8	7/16	2-5/16	**723-1007**	15/16	7/8	1-1/2	3-3/4	**723-1095**
3/16	3/8	7/16	2-5/16	**723-1009**	31/32	1/2	1-1/2	3-1/2	**723-1097**
13/64	3/8	7/16	2-5/16	**723-1011**	1	1/2	1-1/2	3-1/2	**723-1099**
7/32	3/8	1/2	2-5/16	**723-1012**	1	5/8	1-1/2	3-5/8	**723-1101**
7/32	3/8	1/2	2-3/8	**723-1013**	1	1/2	1-1/2	3-5/8	**723-1102**
15/64	3/8	1/2	2-3/8	**723-1015**	1	3/4	1-1/2	3-3/4	**723-1103**
1/4	3/8	3/8	2-1/4	**723-1016**	1	7/8	1-1/2	3-3/4	**723-1105**
1/4	3/8	1/2	2-5/16	**723-1017**	1	5/8	1-5/8	4-1/8	**723-1104**
17/64	3/8	9/16	2-3/8	**723-1019**	1	1	1-5/8	4-1/8	**723-1107**
9/32	3/8	1/2	2-5/16	**723-1020**	1-1/16	3/4	1-5/8	3-3/4	**723-1109**
9/32	3/8	9/16	2-3/8	**723-1021**	1-1/16	5/8	1-5/8	3-7/8	**723-1100**
19/64	3/8	9/16	2-3/8	**723-1023**	1-1/16	3/4	1-5/8	3-7/8	**723-1108**
5/16	3/8	9/16	2-5/16	**723-1025**	1-1/16	7/8	1-5/8	3-7/8	**723-1110**
21/64	3/8	9/16	2-3/8	**723-1027**	1-1/8	3/4	1-1/2	3-3/4	**723-1112**
11/32	3/8	9/16	2-5/16	**723-1028**	1-1/8	3/4	1-5/8	3-7/8	**723-1111**
11/32	3/8	9/16	2-3/8	**723-1029**	1-1/8	7/8	1-5/8	3-7/8	**723-1113**
23/64	3/8	9/16	2-3/8	**723-1031**	1-1/8	1	1-5/8	3-7/8	**723-1114**
3/8	3/8	9/16	2-5/16	**723-1033**	1-1/8	1	1-5/8	4-1/8	**723-1115**
13/32	3/8	13/16	2-1/2	**723-1035**	1-3/16	3/4	1-5/8	3-7/8	**723-1117**
7/16	3/8	13/16	2-1/2	**723-1037**	1-3/16	1	1-5/8	4-1/8	**723-1098**
15/32	3/8	13/16	2-1/2	**723-1036**	1-3/16	1	1-5/8	4-1/8	**723-1118**
15/32	1/2	7/8	2-1/2	**723-1038**	1-1/4	3/4	1-5/8	3-7/8	**723-1119**
15/32	1/2	1	3	**723-1039**	1-1/4	7/8	1-5/8	3-7/8	**723-1121**
1/2	3/8	13/16	2-1/2	**723-1041**	1-1/4	1	1-5/8	4-1/8	**723-1123**
1/2	3/8	1	3	**723-1042**	1-1/4	1-1/4	1-5/8	4-1/8	**723-1125**
1/2	1/2	1	3	**723-1043**	1-5/16	3/4	1-5/8	3-7/8	**723-1127**
1/2	1/2	1-1/8	3-1/8	**723-1044**	1-3/8	3/4	1-5/8	3-7/8	**723-1129**
17/32	1/2	1-1/8	3-1/8	**723-1045**	1-3/8	1	1-5/8	3-7/8	**723-1132**
9/16	1/2	1-1/8	3-1/8	**723-1047**	1-3/8	3/4	1-5/8	4	**723-1130**
19/32	1/2	1-1/8	3-1/8	**723-1049**	1-3/8	3/4	1-5/8	4-1/8	**723-1128**
5/8	1/2	1-1/8	3-1/8	**723-1051**	1-3/8	1	1-5/8	4-1/8	**723-1131**
5/8	5/8	1-5/16	3-7/16	**723-1053**	1-7/16	3/4	1-5/8	3-7/8	**723-1133**
5/8	5/8	2	4-1/8	**723-1054**	1-1/2	3/4	1-5/8	3-7/8	**723-1135**
21/32	1/2	1-5/16	3-5/16	**723-1055**	1-1/2	3/4	1-5/8	4	**723-1134**
11/16	1/2	1-5/16	3-5/16	**723-1057**	1-1/2	3/4	1-5/8	4-1/8	**723-1136**
11/16	5/8	1-5/16	3-7/16	**723-1059**	1-1/2	1	1-5/8	4-1/8	**723-1137**
23/32	1/2	1-5/16	3-5/16	**723-1061**	1-1/2	1-1/4	1-5/8	4-1/8	**723-1139**
3/4	1/2	1-5/16	3-5/16	**723-1063**	1-5/8	3/4	1-5/8	3-7/8	**723-1141**
3/4	5/8	1-5/16	3-7/16	**723-1065**	1-5/8	3/4	1-5/8	4-1/8	**723-1142**
3/4	3/4	1-5/16	3-7/16	**723-1066**	1-5/8	1-1/4	1-5/8	4-1/8	**723-1143**
3/4	3/4	1-5/16	3-9/16	**723-1067**	1-3/4	3/4	1-5/8	3-7/8	**723-1145**
3/4	3/4	1-3/4	4	**723-1069**	1-3/4	3/4	1-5/8	4-1/8	**723-1146**
3/4	3/4	2-1/4	4-1/2	**723-1070**	1-3/4	1-1/4	1-5/8	4-1/8	**723-1147**
25/32	1/2	1-1/2	3-1/2	**723-1071**	1-7/8	3/4	1-5/8	3-7/8	**723-1149**
13/16	1/2	1-1/2	3-5/16	**723-1077**	1-7/8	3/4	1-5/8	4-1/8	**723-1150**
13/16	1/2	1-1/2	3-5/8	**723-1072**	1-7/8	1-1/4	1-5/8	4-1/8	**723-1151**
13/16	5/8	1-1/2	3-5/8	**723-1073**	2	3/4	1-5/8	3-7/8	**723-1153**
13/16	3/4	1-1/2	3-3/4	**723-1075**	2	3/4	1-5/8	4-1/8	**723-1154**
27/32	1/2	1-1/2	3-1/2	**723-1079**	2	1-1/4	1-5/8	4-1/8	**723-1155**
7/8	1/2	1-1/2	3-1/2	**723-1081**	2	1-1/4	2-1/2	5	**723-1156**
7/8	1/2	1-1/2	3-5/8	**723-1082**	2	2	2	5-3/4	**723-1157**
7/8	5/8	1-1/2	3-5/8	**723-1083**	2	2	3	6-3/4	**723-1159**
7/8	3/4	1-1/2	3-5/8	**723-1086**	2	2	4	7-3/4	**723-1160**
7/8	7/8	1-1/2	3-5/8	**723-1088**	2-1/4	1-1/4	1-5/8	4-1/8	**723-1161**
7/8	5/8	1-1/2	3-3/4	**723-1084**	2-1/2	2	4	7-5/8	**723-1162**
7/8	3/4	1-1/2	3-3/4	**723-1085**	2-1/2	2	4	7-3/4	**723-1163**
7/8	7/8	1-1/2	3-3/4	**723-1087**	2-1/2	2	6	9-5/8	**723-1164**
29/32	1/2	1-1/2	3-1/2	**723-1089**	2-1/2	2	6	9-3/4	**723-1165**
15/16	1/2	1-1/2	3-5/8	**723-1090**	3	2-1/2	4	7-3/4	**723-1167**

M42 8% Cobalt 2 Flute Single End Mills

- Use for milling slots, pockets and plunge cuts.

F.Y.I

M-42 cobalt end mills are more economocal than high speed steel end mills. They stay sharper longer to alow more cuts between grinds and reduce downtime to give you lower cost per machined workpiece!

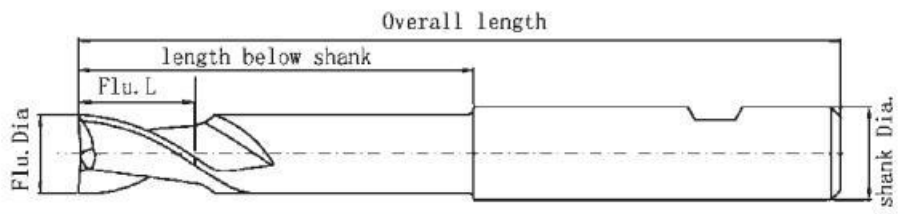
Cobalt



Medium Length & Long Length

Size	Shank Dia.	Flute Length	Overall Length	Order No.	Size	Shank Dia.	Flute Length	Overall Length	Order No.
3/16"	3/8"	3/4"	2-5/8"	**723-1201**	1"	1"	2"	4-1/2"	**723-1249**
7/32	3/8	1-1/4	3-1/8	**723-1203**	1	1	2-1/4	4-3/4	**723-1251**
1/4	3/8	1	2-3/4	**723-1204**	1	1	2-1/2	5	**723-1253**
1/4	3/8	1	3-1/16	**723-1205**	1	1	3	5-1/2	**723-1255**
1/4	3/8	1-1/4	3-1/8	**723-1207**	1	1	3-1/2	6	**723-1257**
9/32	3/8	1-3/8	3-1/8	**723-1209**	1	1	4	6-1/2	**723-1259**
5/16	3/8	1-1/4	3	**723-1210**	1	1	4-5/8	7	**723-1261**
5/16	3/8	1-1/4	3-5/16	**723-1211**	1-1/8	1	2-1/4	4-3/4	**723-1263**
5/16	3/8	1-3/8	3-1/8	**723-1213**	1-1/8	1	3	4-3/4	**723-1265**
11/32	3/8	1-1/2	3-1/4	**723-1215**	1-1/8	1	3	5-1/2"	**723-1266**
3/8	3/8	1	2-3/4	**723-1217**	1-1/4	1	2-1/4	4-3/4	**723-1267**
3/8	3/8	1-1/2	3-1/4	**723-1219**	1-1/4	1-1/4	2-1/4	5-1/2	**723-1269**
7/16	1/2	1-3/4	3-3/4	**723-1221**	1-1/4	1	3	5-1/2	**723-1271**
1/2	1/2	1-1/2	3-1/2	**723-1223**	1-1/4	1-1/4	3	5-1/2	**723-1273**
1/2	1/2	2	4	**723-1225**	1-1/4	1-1/4	3-1/2	6	**723-1274**
1/2	1/2	3	5	**723-1226**	1-1/4	1-1/4	4-3/4	7-1/4	**723-1275**
5/8	5/8	1-5/8	3-3/4	**723-1227**	1-3/8	1	2-1/4	4-3/4	**723-1277**
5/8	5/8	2	4-1/8	**723-1229**	1-3/8	1	3	5-1/2	**723-1279**
5/8	5/8	2-3/8	4-1/2	**723-1230**	1-1/2	1-1/4	6	8-1/2	**723-1280**
5/8	5/8	2-1/2	4-5/8	**723-1231**	1-1/2	1-1/4	2-1/4	4-3/4	**723-1281**
5/8	5/8	3	5-1/8	**723-1233**	1-1/2	1-1/4	3	5-1/2	**723-1283**
5/8	5/8	4	6-1/8	**723-1234**	1-1/2	1-1/4	4	6-1/2	**723-1284**
3/4	3/4	1-3/4	4	**723-1235**	1-5/8	1-1/4	2-1/4	4-3/4	**723-1285**
3/4	3/4	2-1/4	4-1/2	**723-1237**	1-5/8	1-1/4	3	5-1/2	**723-1287**
3/4	3/4	2-1/2	4-3/4	**723-1239**	1-3/4	1-1/4	2-1/4	4-3/4	**723-1289**
3/4	3/4	3	5-1/4	**723-1241**	1-3/4	1-1/4	3	5-1/2	**723-1291**
3/4	3/4	3-1/2	5-3/4	**723-1243**	1-7/8	1-1/4	2-1/4	4-3/4	**723-1293**
3/4	3/4	4	6-1/4	**723-1244**	1-7/8	1-1/4	3	5-1/2	**723-1295**
7/8	7/8	2	4-1/4	**723-1245**	2	1-1/4	2-1/4	4-3/4	**723-1297**
7/8	7/8	2-1/2	4-3/4	**723-1247**	2	1-1/4	3	5-1/2	**723-1299**
7/8	7/8	3-1/2	5-3/4	**723-1248**	2	1-1/4	4	6-1/2	**723-1300**

Cobalt





Extend Shank

Size	Shank Dia.	Length Below shank	Flute Length	Overall Length	Order No.	Size	Shank Dia.	Length Below shank	Flute Length	Overall Length	Order No.
1/8"	3/8"	13/16"	3/8"	2-3/8"	**723-1171**	1/2"	1/2"	2-1/4"	1-7/8"	4"	**723-1182**
3/16	3/8	1-1/8	1/2	2-11/16	**723-1173**	5/8	1/2	2-3/4	1-3/8	4-5/8	**723-1184**
3/16	3/8	1-1/2	5/8	3-1/16	**723-1172**	5/8	5/8	2-3/4	1-3/8	4-5/8	**723-1183**
1/4	3/8	1	5/8	3-1/16	**723-1174**	5/8	5/8	2-3/4	2	4-5/8	**723-1188**
1/4	3/8	1-1/2	5/8	3-1/16	**723-1175**	3/4	1/2	3-3/8	1-5/8	5-3/8	**723-1186**
5/16	3/8	1-3/4	3/4	3-5/16	**723-1177**	3/4	3/4	3-3/8	1-5/8	5-3/8	**723-1185**
5/16	3/8	1-1/2	3/4	3-1/4"	**723-1178**	7/8	7/8	4	2	6	**723-1187**
3/8	3/8	1-3/4	3/4	3-5/16	**723-1179**	1	1	5	2-1/2	7-1/4	**723-1189**
3/8	3/8	1-3/4	7/8	3-5/16	**723-1180**	1-1/4	1-1/4	5	3	7-1/4	**723-1191**
1/2	1/2	2-1/4	1	4	**723-1181**						

2 Flute/3 Flute End Mills

2 Flute Double End Mills

High Speed Steel

- Use for milling slots, pockets and for plunge cutting in a wide variety of materials.
- More economical in production milling than single end end mills.



Regular Length

Size	Shank Dia.	Flute Length	Overall Length	M2 Order No.	M2Al Order No.	TiN-Coated Order No.
5/64"	3/8"	5/16"	3-1/16"	**720-2000**	**721-2000**	**722-2000**
3/32	3/8	5/16	3-1/16	**720-2002**	**721-2002**	**722-2002**
7/64	3/8	5/16	3-1/16	**720-2004**	**721-2004**	**722-2004**
1/8	3/8	3/8	3-1/16	**720-2008**	**721-2008**	**722-2008**
9/64	3/8	7/16	3-1/8	**720-2010**	**721-2010**	**722-2010**
5/32	3/8	7/16	3-1/8	**720-2012**	**721-2012**	**722-2012**
11/64	3/8	7/16	3-1/8	**720-2014**	**721-2014**	**722-2014**
3/16	3/8	7/16	3-1/8	**720-2016**	**721-2016**	**722-2016**
13/64	3/8	1/2	3-1/8	**720-2018**	**721-2018**	**722-2018**
7/32	3/8	1/2	3-1/8	**720-2020**	**721-2020**	**722-2020**
15/64	3/8	1/2	3-1/8	**720-2022**	**721-2022**	**722-2022**
1/4	3/8	1/2	3-1/8	**720-2024**	**721-2024**	**722-2024**
17/64	3/8	9/16	3-1/8	**720-2026**	**721-2026**	**722-2026**
9/32	3/8	9/16	3-1/8	**720-2028**	**721-2028**	**722-2028**
19/64	3/8	9/16	3-1/8	**720-2030**	**721-2030**	**722-2030**
5/16	3/8	9/16	3-1/8	**720-2032**	**721-2032**	**722-2032**
21/64	3/8	9/16	3-1/8	**720-2034**	**721-2034**	**722-2034**
11/32	3/8	9/16	3-1/8	**720-2036**	**721-2036**	**722-2036**
23/64	3/8	9/16	3-1/8	**720-2038**	**721-2038**	**722-2038**
3/8	3/8	9/16	3-1/16	**720-2039**	**721-2039**	**722-2039**
3/8	3/8	9/16	3-1/8	**720-2040**	**721-2040**	**722-2040**
25/64	1/2	13/16	3-3/4	**720-2042**	**721-2042**	**722-2042**
13/32	1/2	13/16	3-3/4	**720-2044**	**721-2044**	**722-2044**
13/32	1/2	13/16	3-13/16	**720-2045**	**721-2045**	**722-2045**

Size	Shank Dia.	Flute Length	Overall Length	M2 Order No.	M2Al Order No.	TiN-Coated Order No.
27/64"	1/2"	13/16"	3-3/4"	**720-2046**	**721-2046**	**722-2046**
7/16	1/2	13/16	3-3/4	**720-2048**	**721-2048**	**722-2048**
29/64	1/2	13/16	3-3/4	**720-2050**	**721-2050**	**722-2050**
15/32	1/2	13/16	3-3/4	**720-2052**	**721-2052**	**722-2052**
31/64	1/2	13/16	3-3/4	**720-2054**	**721-2054**	**722-2054**
1/2	1/2	13/16	3-3/4	**720-2056**	**721-2056**	**722-2056**
17/32	5/8	1-1/8	4-1/2	**720-2058**	**721-2058**	**722-2058**
9/16	5/8	1-1/8	4-1/2	**720-2060**	**721-2060**	**722-2060**
19/32	5/8	1-1/8	4-1/2	**720-2062**	**721-2062**	**722-2062**
5/8	5/8	1-1/8	4-1/2	**720-2064**	**721-2064**	**722-2064**
5/8	1/2	1-1/8	4-1/2	**720-2065**	**721-2065**	**722-2065**
21/32	3/4	1-5/16	5	**720-2066**	**721-2066**	**722-2066**
11/16	3/4	1-5/16	5	**720-2068**	**721-2068**	**722-2068**
23/32	3/4	1-5/16	5	**720-2070**	**721-2070**	**722-2070**
3/4	3/4	1-5/16	5	**720-2072**	**721-2072**	**722-2072**
25/32	7/8	1-9/16	5-1/2	**720-2074**	**721-2074**	**722-2074**
13/16	7/8	1-9/16	5-1/2	**720-2076**	**721-2076**	**722-2076**
27/32	7/8	1-9/16	5-1/2	**720-2078**	**721-2078**	**722-2078**
7/8	7/8	1-9/16	5-1/2	**720-2080**	**721-2080**	**722-2080**
7/8	3/4	1-9/16	5-1/2	**720-2081**	**721-2081**	**722-2081**
29/32	1	1-5/8	5-7/8	**720-2082**	**721-2082**	**722-2082**
15/16	1	1-5/8	5-7/8	**720-2084**	**721-2084**	**722-2084**
31/32	1	1-5/8	5-7/8	**720-2086**	**721-2086**	**722-2086**
1	1	1-5/8	5-7/8	**720-2088**	**721-2088**	**722-2088**

M42 8% Cobalt 2 Flute Double End Mills

- Use for milling slots, pockets and for plunge cutting in a wide variety of materials.
- More economical in production milling than single end end mills.

Cobalt



Size	Shank Dia.	Flute Length	Overall Length	Order No.
5/64"	3/8"	5/16"	3-1/16"	**723-2000**
3/32	3/8	5/16	3-1/16	**723-2002**
7/64	3/8	5/16	3-1/16	**723-2004**
1/8	3/8	3/8	3-1/16	**723-2008**
9/64	3/8	7/16	3-1/8	**723-2010**
5/32	3/8	7/16	3-1/8	**723-2012**
11/64	3/8	7/16	3-1/8	**723-2014**
3/16	3/8	7/16	3-1/8	**723-2016**
13/64	3/8	1/2	3-1/8	**723-2018**
7/32	3/8	1/2	3-1/8	**723-2020**
15/64	3/8	1/2	3-1/8	**723-2022**
1/4	3/8	1/2	3-1/8	**723-2024**
17/64	3/8	9/16	3-1/8	**723-2026**
9/32	3/8	9/16	3-1/8	**723-2028**
19/64	3/8	9/16	3-1/8	**723-2030**
5/16	3/8	9/16	3-1/8	**723-2032**
21/64	3/8	9/16	3-1/8	**723-2034**
11/32	3/8	9/16	3-1/8	**723-2036**
23/64	3/8	9/16	3-1/8	**723-2038**
3/8	3/8	9/16	3-1/16	**723-2039**
3/8	3/8	9/16	3-1/8	**723-2040**
25/64	1/2	13/16	3-3/4	**723-2042**
13/32	1/2	13/16	3-3/4	**723-2044**
13/32	1/2	13/16	3-13/16	**723-2045**

Size	Shank Dia.	Flute Length	Overall Length	Order No.
27/64"	1/2"	13/16"	3-3/4"	**723-2046**
7/16	1/2	13/16	3-3/4	**723-2048**
29/64	1/2	13/16	3-3/4	**723-2050**
15/32	1/2	13/16	3-3/4	**723-2052**
31/64	1/2	13/16	3-3/4	**723-2054**
1/2	1/2	13/16	3-3/4	**723-2056**
17/32	5/8	1-1/8	4-1/2	**723-2058**
9/16	5/8	1-1/8	4-1/2	**723-2060**
19/32	5/8	1-1/8	4-1/2	**723-2062**
5/8	5/8	1-1/8	4-1/2	**723-2064**
5/8	1/2	1-1/8	4-1/2	**723-2065**
21/32	3/4	1-5/16	5	**723-2066**
11/16	3/4	1-5/16	5	**723-2068**
23/32	3/4	1-5/16	5	**723-2070**
3/4	3/4	1-5/16	5	**723-2072**
25/32	7/8	1-9/16	5-1/2	**723-2074**
13/16	7/8	1-9/16	5-1/2	**723-2076**
27/32	7/8	1-9/16	5-1/2	**723-2078**
7/8	7/8	1-9/16	5-1/2	**723-2080**
7/8	3/4	1-9/16	5-1/2	**723-2081**
29/32	1	1-5/8	5-7/8	**723-2082**
15/16	1	1-5/8	5-7/8	**723-2084**
31/32	1	1-5/8	5-7/8	**723-2086**
1	1	1-5/8	5-7/8	**723-2088**

1/4" Shank 3 Flute Single End Mills

High Speed Steel

Stud Length

Size	Shank Dia.	Flute Length	Overall Length	M2 Order No.	M2Al Order No.	TiN-Coated Order No.
1/16"	1/4"	3/32"	31/32"	**720-3700**	**721-3700**	**722-3700**
3/32	1/4	5/32	1-1/64	**720-3702**	**721-3702**	**722-3702**
1/8	1/4	3/16	1-3/32	**720-3704**	**721-3704**	**722-3704**
5/32	1/4	1/4	1-9/32	**720-3706**	**721-3706**	**722-3706**
3/16	1/4	9/32	1-11/32	**720-3708**	**721-3708**	**722-3708**
7/32	1/4	5/16	1-13/32	**720-3710**	**721-3710**	**722-3710**
1/4	1/4	3/8	1-13/32	**720-3712**	**721-3712**	**722-3712**

Long Length



Size	Shank Dia.	Flute Length	Overall Length	M2 Order No.	M2Al Order No.	TiN-Coated Order No.
1/16"	1/4"	5/32"	1-3/32"	**720-3714**	**721-3714**	**722-3714**
3/32	1/4	1/4	1-1/4	**720-3716**	**721-3716**	**722-3716**
1/8	1/4	5/16	1-11/32	**720-3718**	**721-3718**	**722-3718**
5/32	1/4	3/8	1-17/32	**720-3720**	**721-3720**	**722-3720**
3/16	1/4	7/16	1-21/32	**720-3722**	**721-3722**	**722-3722**
7/32	1/4	1/2	1-3/4	**720-372**	**721-3724**	**722-3724**
1/4	1/4	5/8	1-3/4	**720-3726**	**721-3726**	**722-3726**

3 Flute Single End Mills

Center Cutting, High Speed Steel

- Center cutting allows for plunge milling.
- Use in awide range of ferrous and non-ferrous materials.
- TiN coating improves tool life and allows elevated speeds and feeds.
- Combines the chip carrying ability of 2 flute end mills and the excellent finish produced by 4flute end mills.



Regular Length

Size	Shank Dia.	Flute Length	Overall Length	M2 Order No.	TiN-Coated Order No.
3/32"	3/8"	5/16"	2-5/16"	**720-3801**	**722-3801**
1/8	3/8	3/8	2-5/16	**720-3803**	**722-3803**
3/16	3/8	1/2	2-3/8	**720-3805**	**722-3805**
1/4	3/8	5/8	2-7/16	**720-3807**	**722-3807**
5/16	3/8	3/4	2-1/2	**720-3809**	**722-3809**
3/8	3/8	3/4	2-1/2	**720-3811**	**722-3811**
7/16	3/8	1	2-11/16	**720-3813**	**722-3813**
7/16	1/2	1	2-15/16	**720-3815**	**722-3815**
1/2	3/8	1	2-11/16	**720-3817**	**722-3817**
1/2	1/2	1-1/4	3-1/4	**720-3819**	**722-3819**
9/16	1/2	1-3/8	3-3/8	**720-3821**	**722-3821**
5/8	1/2	1-3/8	3-3/8	**720-3823**	**722-3823**
5/8	5/8	1-5/8	3-3/4	**720-3825**	**722-3825**
11/16	1/2	1-5/8	3-5/8	**720-3827**	**722-3827**
11/16	5/8	1-5/8	3-3/4	**720-3829**	**722-3829**
3/4	5/8	1-5/8	3-3/4	**720-3831**	**722-3831**
3/4	1/2	1-5/8	3-5/8	**720-3833**	**722-3833**
3/4	3/4	1-5/8	3-7/8	**720-3835**	**722-3835**
13/16	5/8	1-5/8	3-3/4	**720-3837**	**722-3837**
13/16	3/4	1-5/8	3-7/8	**720-3839**	**722-3839**
7/8	5/8	1-7/8	4	**720-3841**	**722-3841**

Size	Shank Dia.	Flute Length	Overall Length	M2 Order No.	TiN-Coated Order No.
7/8"	3/4"	1-7/8"	4-1/8"	**720-3843**	**722-3843**
7/8	7/8	1-7/8	4-7/8	**720-3845**	**722-3845**
7/8	1/2	1-5/8	3-5/8	**720-3847**	**722-3847**
15/16	7/8	1-7/8	4-1/8	**720-3849**	**722-3849**
15/16	5/8	1-7/8	4	**720-3851**	**722-3851**
1	5/8	1-7/8	4	**720-3853**	**722-3853**
1	3/4	1-7/8	4-1/8	**720-3855**	**722-3855**
1	7/8	1-7/8	4-1/8	**720-3857**	**722-3857**
1	1	2	4-1/2	**720-3859**	**722-3859**
1-1/8	1	2	4-1/2	**720-3861**	**722-3861**
1-1/4	1	2	4-1/2	**720-3863**	**722-3863**
1-1/4	1-1/4	2	4-1/2	**720-3865**	**722-3865**
1-3/8	1	2	4-1/2	**720-3867**	**722-3867**
1-3/8	1-1/4	2	4-1/2	**720-3869**	**722-3869**
1-1/2	1	2	4-1/2	**720-3871**	**722-3871**
1-1/2	1-1/4	2	4-1/2	**720-3873**	**722-3873**
1-3/4	1-1/4	2	4-1/2	**720-3875**	**722-3875**
2	1-1/4	2	4-1/2	**720-3877**	**722-3877**
2	2	3	5-3/4	**720-3879**	**722-3879**
2-1/2	2	4	7-5/8	**720-3881**	**722-3881**
2-1/2	2-1/2	4	8	**720-3883**	**722-3883**

Long Length

Size	Shank Dia.	Flute Length	Overall Length	M2 Order No.	M2Al Order No.	TiN-Coated Order No.
1/4	3/8	1-1/4	3-1/8	**720-6105**	**721-6105**	**722-6105**
5/16	3/8	1-3/8	3-1/8	**720-6110**	**721-6110**	**722-6110**
3/8	3/8	1-1/2	3-1/4	**720-6115**	**721-6115**	**722-6115**
7/16	1/2	1-3/4	3-3/4	**720-6120**	**721-6120**	**722-6120**
1/2	1/2	2	4	**720-6125**	**721-6125**	**722-6125**

Size	Shank Dia.	Flute Length	Overall Length	M2 Order No.	M2Al Order No.	TiN-Coated Order No.
5/8	5/8	2-1/2	4-5/8	**720-6130**	**721-6130**	**722-6130**
3/4	3/4	3	5-1/4	**720-6135**	**721-6135**	**722-6135**
7/8	7/8	3-1/2	5-3/4	**720-6140**	**721-6140**	**722-6140**
1	1	4	6-1/2	**720-6145**	**721-6145**	**722-6145**
1-1/4	1-1/4	4	6-1/2	**720-6150**	**721-6150**	**722-6150**
1-1/2	1-1/4	4	6-1/2	**720-6155**	**721-6155**	**722-6155**

3 Flute Double End Mills

Center Cutting, High Speed Steel

- Use in awide range of ferrous and non-ferrous materials.
- TiN coating improves tool life and allows elevated speeds and feeds.



Size	Shank Dia.	Flute Length	Overall Length	M2 Order No.	M2Al Order No.	TiN-Coated Order No.
3/32"	3/8"	5/16"	3-1/16"	**720-3002**	**721-3002**	**722-3002**
1/8	3/8	3/8	3-1/16	**720-3004**	**721-3004**	**722-3004**
5/32	3/8	7/16	3-1/8	**720-3006**	**721-3006**	**722-3006**
3/16	3/8	1/2	3-1/4	**720-3008**	**721-3008**	**722-3008**
7/32	3/8	9/16	3-1/4	**720-3010**	**721-3010**	**722-3010**
1/4	3/8	5/8	3-3/8	**720-3012**	**721-3012**	**722-3012**
9/32	3/8	11/16	3-3/8	**720-3014**	**721-3014**	**722-3014**
5/16	3/8	3/4	3-1/2	**720-3016**	**721-3016**	**722-3016**
11/32	3/8	3/4	3-1/2	**720-3018**	**721-3018**	**722-3018**
3/8	3/8	3/4	3-1/2	**720-3020**	**721-3020**	**722-3020**

Size	Shank Dia.	Flute Length	Overall Length	M2 Order No.	M2Al Order No.	TiN-Coated Order No.
7/16"	1/2"	1"	4-1/8"	**720-3022**	**721-3022**	**722-3022**
1/2	1/2	1	4-1/8	**720-3024**	**721-3024**	**722-3024**
9/16	5/8	1-3/8	5	**720-3026**	**721-3026**	**722-3026**
5/8	5/8	1-3/8	5	**720-3028**	**721-3028**	**722-3028**
11/16	3/4	1-1/2	5-3/8	**720-3030**	**721-3030**	**722-3030**
3/4	3/4	1-1/2	5-3/8	**720-3032**	**721-3032**	**722-3032**
13/16	7/8	1-3/4	5-7/8	**720-3034**	**721-3034**	**722-3034**
7/8	7/8	1-3/4	5-7/8	**720-3036**	**721-3036**	**722-3036**
15/16	1	1-3/4	6-1/8	**720-3038**	**721-3038**	**722-3038**
1	1	1-3/4	6-1/8	**720-3040**	**721-3040**	**722-3040**

M42 8% Cobalt 3 Flute Single End Mills

Center Cutting

Three-Flute End Mills—Have smoother cutting action with less chatter and flutter than two-flute tools and may eliminate the need for a second finishing cut.

- Center cutting allows for plunge milling.
- Combines the chip carrying ability of 2 flute end mills and the excellent finish produced by 4flute end mills.
- Use in awide range of ferrous and non-ferrous materials.
- T iN coating improves tool life and allows elevated speeds and feeds.



Regular Length

Size	Shank Dia.	Flute Length	Overall Length	M42 Order No.	Size	Shank Dia.	Flute Length	Overall Length	M42 Order No.
3/32"	3/8"	5/16"	2-5/16"	**723-3801**	7/8"	3/4"	1-7/8"	4-1/8"	**723-3843**
1/8	3/8	3/8	2-5/16	**723-3803**	7/8	7/8	1-7/8	4-7/8	**723-3845**
3/16	3/8	1/2	2-3/8	**723-3805**	7/8	1/2	1-5/8	3-5/8	**723-3847**
1/4	3/8	5/8	2-7/16	**723-3807**	15/16	7/8	1-7/8	4-1/8	**723-3849**
5/16	3/8	3/4	2-1/2	**723-3809**	15/16	5/8	1-7/8	4	**723-3851**
3/8	3/8	3/4	2-1/2	**723-3811**	1	5/8	1-7/8	4	**723-3853**
7/16	3/8	1	2-11/16	**723-3813**	1	3/4	1-7/8	4-1/8	**723-3855**
7/16	1/2	1	2-15/16	**723-3815**	1	7/8	1-7/8	4-1/8	**723-3857**
1/2	3/8	1	2-11/16	**723-3817**	1	1	2	4-1/2	**723-3859**
1/2	1/2	1-1/4	3-1/4	**723-3819**	1-1/8	1	2	4-1/2	**723-3861**
9/16	1/2	1-3/8	3-3/8	**723-3821**	1-1/4	1	2	4-1/2	**723-3863**
5/8	1/2	1-3/8	3-3/8	**723-3823**	1-1/4	1-1/4	2	4-1/2	**723-3865**
5/8	5/8	1-5/8	3-3/4	**723-3825**	1-3/8	1	2	4-1/2	**723-3867**
11/16	1/2	1-5/8	3-5/8	**723-3827**	1-3/8	1-1/4	2	4-1/2	**723-3869**
11/16	5/8	1-5/8	3-3/4	**723-3829**	1-1/2	1	2	4-1/2	**723-3871**
3/4	5/8	1-5/8	3-3/4	**723-3831**	1-1/2	1-1/4	2	4-1/2	**723-3873**
3/4	1/2	1-5/8	3-5/8	**723-3833**	1-3/4	1-1/4	2	4-1/2	**723-3875**
3/4	3/4	1-5/8	3-7/8	**723-3835**	2	1-1/4	2	4-1/2	**723-3877**
13/16	5/8	1-5/8	3-3/4	**723-3837**	2	2	3	5-3/4	**723-3879**
13/16	3/4	1-5/8	3-7/8	**723-3839**	2-1/2	2	4	7-5/8	**723-3881**
7/8	5/8	1-7/8	4	**723-3841**	2-1/2	2-1/2	4	8	**723-3883**

Long Length

Size	Shank Dia.	Flute Length	Overall Length	M42 Order No.	Size	Shank Dia.	Flute Length	Overall Length	M42 Order No.
1/4"	3/8"	1-1/4"	3-1/8"	**723-6105**	3/4"	3/4"	3"	5-1/4"	**723-6135**
5/16	3/8	1-3/8	3-1/8	**723-6110**	7/8	7/8	3-1/2	5-3/4	**723-6140**
3/8	3/8	1-1/2	3-1/4	**723-6115**	1	1	4	6-1/2	**723-6145**
7/16	1/2	1-3/4	3-3/4	**723-6120**	1-1/4	1-1/4	4	6-1/2	**723-6150**
1/2	1/2	2	4	**723-6125**	1-1/2	1-1/4	4	6-1/2	**723-6155**
5/8	5/8	2-1/2	4-5/8	**723-6130**					

M42 8% Cobalt 3 Flute 45° Helical Semi-Roughing & Finishing End Mills

Center Cutting





Size	Shank Dia.	Flute Length	Overall Length	Order No.	Tin-Coated Order No.	Size	Shank Dia.	Flute Length	Overall Length	Tin-Coated Order No.	Order No.
1/4"	3/8"	5/8"	2-7/16"	**723-9708**	**722-9708**	1	1	4	6-1/2	**723-9778**	**722-9778**
5/16	3/8	3/4	2-1/2	**723-9713**	**722-9713**	1-1/8	3/4	2	4-1/2	**723-9781**	**722-9781**
3/8	3/8	3/4	2-1/2	**723-9718**	**722-9718**	1-1/8	1	2	4-1/2	**723-9783**	**722-9783**
7/16	3/8	1	2-11/16	**723-9723**	**722-9723**	1-1/4	3/4	2	4-1/2	**723-9788**	**722-9788**
1/2	1/2	1-1/4	3-1/4	**723-9728**	**722-9728**	1-1/4	3/4	4	6-1/2	**723-9791**	**722-9791**
1/2	1/2	2	4	**723-9733**	**722-9733**	1-1/4	1	2	4-1/2	**723-9793**	**722-9793**
5/8	5/8	1-5/8	3-3/4	**723-9738**	**722-9738**	1-1/4	1-1/4	2	4-1/2	**723-9798**	**722-9798**
5/8	5/8	2-1/2	4-5/8	**723-9743**	**722-9743**	1-1/4	1-1/4	4	6-1/2	**723-9803**	**722-9803**
3/4	5/8	1-5/8	3-7/8	**723-9745**	**722-9745**	1-1/2	3/4	2	4-1/2	**723-9808**	**722-9808**
3/4	3/4	1-5/8	3-7/8	**723-9748**	**722-9748**	1-1/2	3/4	4	6-1/2	**723-9811**	**722-9811**
3/4	3/4	3	5-1/4	**723-9753**	**722-9753**	1-1/2	1-1/4	2	4-1/2	**723-9813**	**722-9813**
7/8	3/4	1-7/8	4-1/8	**723-9758**	**722-9758**	1-1/2	1-1/4	4	6-1/2	**723-9818**	**722-9818**
7/8	3/4	3-1/2	5-5/8	**723-9761**	**722-9761**	1-3/4	3/4	2	4-1/2	**723-9821**	**722-9821**
7/8	7/8	1-7/8	4-1/8	**723-9763**	**722-9763**	1-3/4	1-1/4	2	4-1/2	**723-9823**	**722-9823**
1	3/4	2	4-1/2	**723-9768**	**722-9768**	2	3/4	2	4-1/2	**723-9725**	**722-9725**
1	1	2	4-1/2	**723-9773**	**722-9773**	2	1-1/4	2	4-1/2	**723-9828**	**722-9828**

Multiple Flute Single End Mills

- Designed for general purpose work including cam milling, die sinking and slot milling.
- Suitable for use in a wide range of ferrous and non-ferrous materials.
- Excellent for use in finishing operations.
- Multi-flute design allows for higher feed rates.



Regular Length

Size	Shank Dia.	Flute Length	Overall Length	No.of Flute	M2 Order No.	M2Al Order No.	TiN-Coated Order No.
7/64"	3/8"	3/8"	2-5/16"	4	**720-3001**	**721-3001**	**722-3001**
1/8	3/8	3/8	2-5/16	4	**720-3003**	**721-3003**	**722-3003**
9/64	3/8	3/8	2-5/16	4	**720-3005**	**721-3005**	**722-3005**
5/32	3/8	3/8	2-5/16	4	**720-3420**	**721-3420**	**722-3420**
5/32	3/8	7/16	2-3/8	4	**720-3007**	**721-3007**	**722-3007**
11/64	3/8	7/16	2-3/8	4	**720-3009**	**721-3009**	**722-3009**
11/64	3/8	1/2	2-5/16	4	**720-3422**	**721-3422**	**722-3422**
3/16	3/8	1/2	2-3/8	4	**720-3011**	**721-3011**	**722-3011**
13/64	3/8	1/2	2-3/8	4	**720-3013**	**721-3013**	**722-3013**
7/32	3/8	9/16	2-1/2	4	**720-3015**	**721-3015**	**722-3015**
7/32	3/8	5/8	2-1/4	4	**720-3423**	**721-3423**	**722-3423**
7/32	3/8	5/8	2-3/8	4	**720-3425**	**721-3425**	**722-3426**
7/32	3/8	5/8	2-7/16	4	**720-3424**	**721-3424**	**722-3424**
15/64	3/8	9/16	2-1/2	4	**720-3017**	**721-3017**	**722-3017**
1/4	3/8	5/8	2-1/4	4	**720-3427**	**721-3427**	**722-3425**
1/4	3/8	5/8	2-7/16	4	**720-3428**	**721-3428**	**722-3428**
1/4	3/8	5/8	2-1/2	4	**720-3019**	**721-3019**	**722-3019**
17/64	3/8	5/8	2-1/2	4	**720-3021**	**721-3021**	**722-3021**
9/32	3/8	5/8	2-1/4	4	**720-3429**	**721-3429**	**722-3427**
9/32	3/8	11/16	2-1/2	4	**720-3023**	**721-3023**	**722-3023**
19/64	3/8	11/16	2-1/2	4	**720-3025**	**721-3025**	**722-3025**
5/16	3/8	3/4	2-1/4	4	**720-3431**	**721-3436**	**722-3436**
5/16	3/8	3/4	2-1/2	4	**720-3027**	**721-3027**	**722-3027**
21/64	3/8	3/4	2-1/2	4	**720-3029**	**721-3029**	**722-3029**
11/32	3/8	3/4	2-1/2	4	**720-3031**	**721-3031**	**722-3031**
23/64	3/8	3/4	2-1/2	4	**720-3033**	**721-3033**	**722-3033**
3/8	3/8	3/4	2-1/2	4	**720-3035**	**721-3035**	**722-3035**
13/32	3/8	1	2-11/16	4	**720-3037**	**721-3037**	**722-3037**
7/16	3/8	1	2-11/16	4	**720-3039**	**721-3039**	**722-3039**
15/32	3/8	1	2-11/16	4	**720-3042**	**721-3042**	**722-3042**
15/32	1/2	1-1/4	3-1/4	4	**720-3041**	**721-3041**	**722-3041**
1/2	3/8	1	2-11/16	4	**720-3043**	**721-3043**	**722-3043**
1/2	1/2	1-1/4	3-1/4	4	**720-3045**	**721-3045**	**722-3045**
1/2	1/2	1-1/4	3-1/4	6	**720-3046**	**721-3046**	**722-3046**
17/32	1/2	1-3/8	3-3/8	4	**720-3047**	**721-3047**	**722-3047**
9/16	1/2	1-3/8	3-3/8	4	**720-3049**	**721-3049**	**722-3049**
19/32	1/2	1-3/8	3-3/8	4	**720-3051**	**721-3051**	**722-3051**
5/8	1/2	1-3/8	3-3/8	4	**720-3053**	**721-3053**	**722-3053**
5/8	5/8	1-5/8	3-1/4	6	**720-3056**	**721-3056**	**722-3056**
5/8	5/8	1-5/8	3-3/4	4	**720-3055**	**721-3055**	**722-3055**
21/32	1/2	1-5/8	3-5/8	4	**720-3057**	**721-3057**	**722-3057**
11/16	1/2	1-5/8	3-5/8	4	**720-3059**	**721-3059**	**722-3059**
11/16	5/8	1-5/8	3-3/4	4	**720-3061**	**721-3061**	**722-3061**
23/32	1/2	1-5/8	3-5/8	4	**720-3063**	**721-3063**	**722-3063**
3/4	1/2	1-5/8	3-5/8	4	**720-3065**	**721-3065**	**722-3065**
3/4	5/8	1-5/8	3-5/8	4	**720-3066**	**721-3066**	**722-3066**
3/4	5/8	1-5/8	3-3/4	4	**720-3067**	**721-3067**	**722-3067**
3/4	3/4	1-5/8	3-7/8	4	**720-3068**	**721-3068**	**722-3068**
3/4	3/4	1-5/8	3-3/4	4	**720-3069**	**721-3069**	**722-3069**
3/4	3/4	1-5/8	3-3/4	6	**720-3070**	**721-3070**	**722-3070**
25/32	1/2	1-5/8	3-5/8	4	**720-3071**	**721-3071**	**722-3071**
13/16	1/2	1-3/4	3-3/4	4	**720-3072**	**721-3072**	**722-3072**
13/16	5/8	1-7/8	4	4	**720-3074**	**721-3074**	**722-3074**
13/16	5/8	1-7/8	4	6	**720-3073**	**721-3073**	**722-3073**
13/16	3/4	1-7/8	4-1/8	4	**720-3075**	**721-3075**	**722-3075**
27/32	1/2	1-5/8	3-5/8	4	**720-3077**	**721-3077**	**722-3077**
7/8	1/2	1-5/8	3-5/8	4	**720-3079**	**721-3079**	**722-3079**
7/8	1/2	1-5/8	3-5/8	6	**720-3081**	**721-3081**	**722-3081**
7/8	1/2	1-7/8	4	4	**720-3080**	**721-3080**	**722-3080**
7/8	1/2	1-7/8	4	6	**720-3082**	**721-3082**	**722-3082**
7/8	5/8	1-7/8	4	6	**720-3083**	**721-3083**	**722-3083**
7/8	3/4	1-7/8	4-1/8	4	**720-3085**	**721-3085**	**722-3085**
7/8	7/8	1-7/8	4-1/8	4	**720-3087**	**721-3087**	**722-3087**
7/8	3/4	1-7/8	4-1/8	6	**720-3086**	**721-3086**	**722-3086**
29/32	1/2	1-7/8	3-7/8	4	**720-3089**	**721-3089**	**722-3089**
15/16	1/2	1-7/8	4	4	**720-3090**	**721-3090**	**722-3090**
15/16	5/8	1-7/8	4	6	**720-3091**	**721-3091**	**722-3091**
15/16	5/8	1-7/8	4-1/8	6	**720-3438**	**721-3438**	**722-3092**
15/16	3/4	1-7/8	4-1/8	4	**720-3093**	**721-3093**	**722-3093**
15/16	3/4	1-7/8	4-1/8	6	**720-3170**	**721-3170**	**722-3170**
15/16	5/8	1-7/8	4-1/8	6	**720-3092**	**721-3092**	**722-3440**
15/16	7/8	1-7/8	4-1/8	4	**720-3095**	**721-3095**	**722-3095**
15/16	7/8	1-7/8	4-1/8	6	**720-3096**	**721-3096**	**722-3096**
31/32	1/2	1-7/8	3-7/8	4	**720-3097**	**721-3097**	**722-3097**
1	1/2	1-7/8	3-7/8	4	**720-3098**	**721-3098**	**722-3098**
1	1/2	1-7/8	4	4	**720-3099**	**721-3099**	**722-3099**

Size	Shank Dia.	Flute Length	Overall Length	No.of Flute	M2 Order No.	M2Al Order No.	TiN-Coated Order No.
1"	1/2"	1-7/8"	4"	6	**720-3100**	**721-3100**	**722-3100**
1	5/8	1-7/8	4	4	**720-3102**	**721-3102**	**722-3102**
1	5/8	1-7/8	4	6	**720-3101**	**721-3101**	**722-3101**
1	3/4	1-7/8	4	6	**720-3106**	**721-3106**	**722-3106**
1	3/4	1-7/8	4-1/8	4	**720-3103**	**721-3103**	**722-3103**
1	7/8	1-7/8	4-1/8	4	**720-3105**	**721-3105**	**722-3105**
1	3/4	2	4-1/2	4	**720-3104**	**721-3445**	**722-3445**
1	1	2	4-1/2	4	**720-3107**	**721-3107**	**722-3107**
1	1	2	4-1/2	6	**720-3108**	**721-3108**	**722-3108**
1-1/16	3/4	2	4-1/4	4	**720-3433**	**721-3433**	**722-3429**
1-1/16	3/4	2	4-1/4	6	**720-3109**	**721-3109**	**722-3109**
1-1/8	3/4	1-1/2	3-7/8	6	**720-3171**	**721-3181**	**722-3171**
1-1/8	3/4	2	4-1/8	6	**720-3110**	**721-3110**	**722-3110**
1-1/8	3/4	2	4-1/4	4	**720-3112**	**721-3112**	**722-3112**
1-1/8	3/4	2	4-1/4	6	**720-3111**	**721-3111**	**722-3111**
1-1/8	1	2	4-1/4	4	**720-3114**	**721-3114**	**722-3114**
1-1/8	7/8	2	4-1/4	6	**720-3113**	**721-3113**	**722-3113**
1-1/8	3/4	2	4-1/2	6	**720-3173**	**721-3173**	**722-3173**
1-1/8	1	2	4-1/2	6	**720-3115**	**721-3115**	**722-3115**
1-1/8	1	2-5/8	4-1/2	4	**720-3116**	**721-3116**	**722-3116**
1-3/16	3/4	2	4-1/4	6	**720-3117**	**721-3117**	**722-3117**
1-3/16	1	2	4-1/4	6	**720-3118**	**721-3118**	**722-3118**
1-1/4	3/4	2	4-1/4	6	**720-3119**	**721-3119**	**722-3119**
1-1/4	7/8	2	4-1/4	4	**720-3120**	**721-3120**	**722-3120**
1-1/4	7/8	2	4-1/4	6	**720-3121**	**721-3121**	**722-3121**
1-1/4	1	2	4-1/2	6	**720-3123**	**721-3123**	**722-3123**
1-1/4	1-1/4	2	4-1/2	4	**720-3124**	**721-3171**	**722-3124**
1-1/4	1-1/4	2	4-1/2	6	**720-3125**	**721-3125**	**722-3125**
1-1/4	1	4	6-1/2	6	**720-3122**	**721-3122**	**722-3122**
1-5/16	3/4	1-5/8	3-7/8	6	**720-3435**	**721-3435**	**722-3431**
1-5/16	3/4	2	4-1/2	6	**720-3127**	**721-3127**	**722-3127**
1-3/8	3/4	2	4-1/4	4	**720-3442**	**721-3442**	**722-3433**
1-3/8	3/4	2	4-1/4	6	**720-3128**	**721-3128**	**722-3128**
1-3/8	3/4	2	4-1/2	6	**720-3129**	**721-3129**	**722-3129**
1-3/8	1	2	4-1/2	6	**720-3131**	**721-3131**	**722-3131**
1-3/8	1-1/4	2	4-1/2	6	**720-3130**	**721-3130**	**722-3130**
1-7/16	3/4	1-5/8	3-7/8	6	**720-3132**	**721-3132**	**722-3132**
1-7/16	3/4	2	4-1/2	6	**720-3133**	**721-3133**	**722-3133**
1-1/2	3/4	2	4-3/8	4	**720-3446**	**721-3446**	**722-3435**
1-1/2	3/4	2	4-1/4	4	**720-3134**	**721-3134**	**722-3447**
1-1/2	3/4	2	4-1/2	4	**720-3448**	**721-3448**	**722-3134**
1-1/2	3/4	2	4-1/2	6	**720-3135**	**721-3135**	**722-3135**
1-1/2	1	2	4-1/2	4	**720-3136**	**721-3136**	**722-3136**
1-1/2	1	2	4-1/2	6	**720-3137**	**721-3137**	**722-3137**
1-1/2	1-1/4	2	4-1/2	4	**720-3141**	**721-3141**	**722-3141**
1-1/2	1-1/4	2	4-1/2	6	**720-3139**	**721-3139**	**722-3139**
1-5/8	3/4	1-5/8	3-7/8	6	**720-3142**	**721-3142**	**722-3142**
1-5/8	3/4	1-5/8	4-1/8	6	**720-3437**	**721-3437**	**722-3437**
1-5/8	3/4	1-5/8	4-1/8	6	**720-3140**	**721-3140**	**722-3140**
1-5/8	3/4	2	4-1/2	6	**720-3143**	**721-3143**	**722-3143**
1-5/8	1-1/4	2	4-1/2	4	**720-3144**	**721-3144**	**722-3144**
1-5/8	1-1/4	2	4-1/2	6	**720-3145**	**721-3145**	**722-3145**
1-3/4	3/4	1-1/2	3-7/8	6	**720-3172**	**721-3183**	**722-3172**
1-3/4	3/4	2	4-1/4	4	**720-3148**	**721-3148**	**722-3438**
1-3/4	3/4	2	4-1/2	4	**720-3146**	**721-3146**	**722-3148**
1-3/4	3/4	2	4-1/2	6	**720-3147**	**721-3147**	**722-3147**
1-3/4	1-1/4	2	4-1/2	4	**720-3151**	**721-3151**	**722-3151**
1-3/4	1-1/4	2	4-1/2	6	**720-3149**	**721-3149**	**722-3149**
1-13/16	3/4	2	4-1/4	4	**720-3152**	**721-3152**	**722-3152**
1-7/8	3/4	2	4-3/8	4	**720-3150**	**721-3150**	**722-3150**
1-7/8	3/4	2	4-1/2	6	**720-3153**	**721-3153**	**722-3153**
1-7/8	1-1/4	2	4-1/2	6	**722-3154**	**720-3154**	**721-3154**
1-7/8	1-1/4	2	4-1/2	8	**722-3155**	**720-3155**	**721-3155**
2	3/4	1-1/2	3-7/8	6	**720-3185**	**721-3185**	**722-3185**
2	3/4	2	4-1/4	4	**720-3156**	**721-3156**	**722-3156**
2	3/4	2	4-1/2	6	**720-3157**	**721-3157**	**722-3157**
2	3/4	2	4-1/2	8	**720-3158**	**721-3158**	**722-3158**
2	1-1/4	2	4-1/2	4	**720-3161**	**721-3161**	**722-3161**
2	1-1/4	2	4-1/2	6	**720-3163**	**721-3163**	**722-3163**
2	1-1/4	2	4-1/2	8	**720-3159**	**721-3159**	**722-3159**
2	1-1/4	2	5-1/2	6	**720-3165**	**721-3165**	**722-3165**
2	2	2	5-3/4	6	**720-3166**	**721-3166**	**722-3166**
2-1/4	1-1/4	2	4-1/2	6	**720-3167**	**721-3167**	**722-3167**
2-1/4	1-1/4	3	5-1/2	8	**720-3169**	**721-3169**	**722-3169**
2-1/2	2	4	7-5/8	6	**720-3168**	**721-3168**	**722-3168**

Multiple Flute Single End Mills

Long Flute



Size	Shank Dia.	Flute Length	Overall Length	No. of Flutes	M2 Order No.	M2Al Order No.	TiN-Coated Order No.	Size	Shank Dia.	Flute Length	Overall Length	No. of Flutes	M2 Order No.	M2Al Order No.	TiN-Coated Order No.
1/4"	3/8"	1-1/4"	3-1/16"	4	**720-3501**	**721-3501**	**722-3501**	1-1/4"	1"	4"	6-1/2"	6	**720-3521**	**721-3521**	**722-3521**
5/16	3/8	1-3/8	3-1/8	4	**720-3503**	**721-3503**	**722-3503**	1-1/4	1-1/4	4	6-1/2	4	**720-3523**	**721-3523**	**722-3523**
3/8	3/8	1-1/2	3-1/4	4	**720-3505**	**721-3505**	**722-3505**	1-1/4	1-1/4	4	6-1/2	6	**720-3525**	**721-3525**	**722-3525**
7/16	1/2	1-3/4	3-3/4	4	**720-3507**	**721-3507**	**722-3507**	1-3/8	1	4	6-1/2	6	**720-3527**	**721-3527**	**722-3527**
1/2	1/2	2	4	4	**720-3509**	**721-3509**	**722-3509**	1-1/2	1	4	6-1/2	6	**720-3529**	**721-3529**	**722-3529**
5/8	5/8	2-1/2	4-5/8	4	**720-3511**	**721-3511**	**722-3511**	1-1/2	1-1/4	4	6-1/2	4	**720-3531**	**721-3531**	**722-3531**
5/8	1/2	2-1/2	4-5/8	4	**720-3512**	**721-3512**	**722-3512**	1-1/2	1-1/4	4	6-1/2	6	**720-3533**	**721-3533**	**722-3533**
3/4	3/4	3	5-1/4	4	**720-3513**	**721-3513**	**722-3513**	1-3/4	1-1/4	4	6-1/2	4	**720-3534**	**721-3534**	**722-3534**
3/4	1/2	3	5-1/4	4	**720-3514**	**721-3514**	**722-3514**	1-3/4	1-1/4	4	6-1/2	6	**720-3535**	**721-3535**	**722-3535**
7/8	7/8	3-1/2	5-3/4	4	**720-3515**	**721-3515**	**722-3515**	2	1-1/4	4	6-1/2	4	**720-3537**	**721-3537**	**722-3537**
7/8	3/4	3-1/2	5-3/4	4	**720-3516**	**721-3516**	**722-3516**	2	1-1/4	4	6-1/2	6	**720-3539**	**721-3539**	**722-3539**
1	1	4	6-1/2	4	**720-3517**	**721-3517**	**722-3517**	2	1-1/4	4	6-1/2	8	**720-3541**	**721-3541**	**722-3541**
1-1/8	1	4	6-1/2	6	**720-3519**	**721-3519**	**722-3519**	2-1/2	2"	4	7-5/8	6	**720-3542**	**721-3542**	**722-3542**
1-1/4	3/4	4	6-1/2	6	**720-3520**	**721-3520**	**722-3520**								



Extra Long Flute

Size	Shank Dia.	Flute Length	Overall Length	No. of Flutes	M2 Order No.	M2Al Order No.	TiN-Coated Order No.	Size	Flute Length	Overall Length	No. of Flutes	M2 Order No.	M2Al Order No.	TiN-Coated Order No.
1/4"	3/8"	1-3/4"	3-9/16"	4	**720-3601**	**721-3601**	**722-3601**	7/8"	7/8"	5"	7-1/4"	4	**720-3613**	**721-3613**	**722-3613**
5/16	3/8	2	3-3/4	4	**720-3603**	**721-3603**	**722-3603**	1	1	6	8-1/2	4	**720-3615**	**721-3615**	**722-3615**
3/8	3/8	2-1/2	4-1/4	4	**720-3605**	**721-3605**	**722-3605**	1-1/4	1-1/4	6	8-1/2	6	**720-3617**	**721-3617**	**722-3617**
1/2	1/2	3	5	4	**720-3607**	**721-3607**	**722-3607**	1-1/4	1-1/4	6	8-1/2	4	**720-3618**	**721-3618**	**722-3618**
5/8	5/8	4	6-1/8	4	**720-3609**	**721-3609**	**722-3609**	1-1/2	1-1/4	6	8-1/2	6	**720-3619**	**721-3619**	**722-3619**
5/8	1/2	4	6-1/8	4	**720-3610**	**721-3610**	**722-3610**	1-1/2	1-1/4	6	8-1/2	4	**720-3620**	**721-3620**	**722-3620**
3/4	3/4	4	6-1/4	4	**720-3611**	**721-3611**	**722-3611**	1-1/2	1-1/4	8	10-9/16	6	**720-3621**	**721-3621**	**722-3621**
3/4	1/2	4	6-1/4	4	**720-3612**	**721-3612**	**722-3612**								

Multiple Flute Heavy Duty End Mills

- Designed for rough cutting applications in a wide range of materials.
- Positive lock shank provides th grip needed to withstand the high torque generated.



Large Diameter, Positive Lock

Size	Shank Dia.	Flute Length	Overall Length	No. of Flutes	M2 Order No.	Size	Shank Dia.	Flute Length	Overall Length	No. of Flutes	M2 Order No.
2"	2"	2"	5-3/4"	4	**720-3910**	2-1/2"	2-1/2"	6"	9-3/4"	4	**720-3929**
2	2	3	6-3/4	4	**720-3912**	2-1/2	2-1/2	6	9-3/4	6	**720-3930**
2	2	4	7-3/4	4	**720-3914**	2-1/2	2-1/2	8	11-3/4	4	**720-3931**
2	2	4	7-3/4	6	**720-3916**	2-1/2	2-1/2	8	11-3/4	6	**720-3932**
2	2	6	9-3/4	4	**720-3918**	2-1/2	2-1/2	10	13-3/4	4	**720-3933**
2	2	6	9-3/4	6	**720-3920**	2-1/2	2-1/2	10	13-3/4	6	**720-3934**
2	2	8	11-3/4	4	**720-3921**	3	2-1/2	4	8	4	**720-3935**
2	2	8	11-3/4	6	**720-3922**	3	2-1/2	4	8	6	**720-3936**
2	2	10	13-3/4	4	**720-3923**	3	2-1/2	6	10	4	**720-3937**
2	2	10	13-3/4	6	**720-3924**	3	2-1/2	6	10	6	**720-3938**
2	2	12	15-3/4	4	**720-3925**	3	2-1/2	8	12	4	**720-3939**
2	2	12	15-3/4	6	**720-3926**	3	2-1/2	8	12	6	**720-3940**
2-1/2	2-1/2	4	7-3/4	4	**720-3927**	3	2-1/2	10	14	4	**720-3941**
2-1/2	2-1/2	4	7-3/4	6	**720-3928**	3	2-1/2	10	14	6	**720-3942**

Multiple Flute Single End Mills

Center Cutting, High Speed Steel

- Recommended for finishing operations in a wide range of ferrous and non-ferrous materials.
- Center cutting design allows for plunge milling into solid material at the beginning of a slotting operation.
- TiN coating increases surface hardness and resists abrasive wear.

Four/Multiple-Flute End Mills-Produce finer finishes and last longer than two or three-flute tools. Compared to two-flute tools, *four-flute end mills* remove metal faster and can be fed two to three times faster; *six-flute end mills* can be fed three times faster.



Regular Length

Size	Shank Dia.	Flute Length	Overall Length	No. of Flutes	M2 Order No.	M2Al Order No.	TiN-Coated Order No.
1/8"	3/8"	3/8"	2-5/16"	4	**720-3201**	**721-3201**	**722-3201**
3/16	3/8	1/2	2-3/8	4	**720-3203**	**721-3203**	**722-3203**
1/4	3/8	5/8	2-7/16	4	**720-3204**	**721-3204**	**722-3204**
1/4	3/8	5/8	2-1/2	4	**720-3205**	**721-3205**	**722-3205**
5/16	3/8	3/4	2-1/2	4	**720-3207**	**721-3207**	**722-3207**
3/8	3/8	3/4	2-1/2	4	**720-3209**	**721-3209**	**722-3209**
7/16	3/8	13/16	2-1/2	4	**720-3208**	**721-3208**	**722-3208**
1/2	3/8	13/16	2-1/2	4	**720-3210**	**721-3210**	**722-3210**
1/2	1/2	1-1/4	3-1/4	4	**720-3211**	**721-3211**	**722-3211**
5/8	5/8	1-5/8	3-3/4	4	**720-3213**	**721-3213**	**722-3213**
9/16	1/2	1-3/8	3-3/8	4	**720-3214**	**721-3214**	**722-3214**
11/16	5/8	1-5/8	3-3/4	4	**720-3215**	**721-3215**	**722-3215**
3/4	5/8	1-5/8	3-3/4	4	**720-3216**	**721-3216**	**722-3216**
3/4	3/4	1-5/8	3-7/8	4	**720-3217**	**721-3217**	**722-3217**
7/8	3/4	1-7/8	4-1/8	4	**720-3218**	**721-3218**	**722-3218**
7/8	7/8	1-7/8	4-1/8	4	**720-3219**	**721-3219**	**722-3219**
1	3/4	1-7/8	4-1/8	4	**720-3220**	**721-3220**	**722-3220**
1	1	2	4-1/2	4	**720-3221**	**721-3221**	**722-3221**
1-1/8	1	2	4-1/2	4	**720-3223**	**721-3223**	**722-3223**
1-1/8	1	2	4-1/2	6	**720-3225**	**721-3225**	**722-3225**
1-1/4	1-1/4	2	4-1/2	4	**720-3227**	**721-3227**	**722-3227**
1-1/4	1-1/4	3	5-1/2	4	**720-3226**	**721-3226**	**722-3226**
1-1/4	1-1/4	2	4-1/2	6	**720-3228**	**721-3228**	**722-3228**
1-1/2	1-1/4	2	4-1/2	4	**720-3229**	**721-3229**	**722-3229**
1-1/2	1-1/4	2	4-1/2	6	**720-3230**	**721-3230**	**722-3230**
7/8	7/8	5	7-1/4	4	**720-3265**		



Long Length

Size	Shank Dia.	Flute Length	Overall Length	No. of Flutes	M2 Order No.	M2Al Order No.	TiN-Coated Order No.	Size	Shank Dia.	Flute Length	Overall Length	No. of Flutes	M2 Order No.	M2Al Order No.	TiN-Coated Order No.
1/4"	3/8"	1-1/4"	3-1/16"	4	**720-3301**	**721-3301**	**722-3301**	1-1/4"	1-1/4"	3"	5-1/2"	4	**720-3327**	**721-3327**	**722-3327**
5/16	3/8	1-3/8	3-1/8	4	**720-3303**	**721-3303**	**722-3303**	1-1/4	1-1/4	4	6-1/2	4	**720-3331**	**721-3331**	**722-3331**
3/8	3/8	1-1/2	3-1/4	4	**720-3305**	**721-3305**	**722-3305**	1-1/4	1-1/4	3	5-1/2	6	**720-3329**	**721-3329**	**722-3329**
7/16	1/2	1-3/4	3-3/4	4	**720-3306**	**721-3306**	**722-3306**	1-1/4	1	4	6-1/2	6	**720-3328**	**721-3328**	**722-3328**
1/2	1/2	2	4	4	**720-3307**	**721-3307**	**722-3307**	1-1/4	3/4	4	6-1/2	6	**720-3330**	**721-3330**	**722-3330**
5/8	1/2	2-1/2	4-5/8	4	**720-3308**	**721-3308**	**722-3308**	1-1/4	1-1/4	4	6-1/2	6	**720-3332**	**721-3332**	**722-3332**
5/8	5/8	2-1/2	4-5/8	4	**720-3309**	**721-3309**	**722-3309**	1-3/8	1	4	6-1/2	6	**720-3334**	**721-3334**	**722-3334**
5/8	5/8	3	5-1/8	4	**720-3311**	**721-3311**	**722-3311**	1-1/2	1-1/4	3	5-1/2	4	**720-3333**	**721-3333**	**722-3333**
3/4	3/4	2	4-1/4	4	**720-3315**	**721-3315**	**722-3315**	1-1/2	1-1/4	4	6-1/2	4	**720-3338**	**721-3338**	**722-3338**
3/4	3/4	3	5-1/4	4	**720-3313**	**721-3313**	**722-3313**	1-1/2	1-1/4	3	5-1/2	6	**720-3335**	**721-3335**	**722-3335**
3/4	1/2	3	5-1/4	4	**720-3318**	**721-3318**	**722-3318**	1-1/2	1-1/4	4	6-1/2	6	**720-3336**	**721-3336**	**722-3336**
3/4	3/4	2	4-1/4	6	**720-3317**	**721-3317**	**722-3317**	1-1/2	1	4	6-1/2	6	**720-3339**	**721-3339**	**722-3339**
7/8	7/8	3-1/2	5-3/4	4	**720-3319**	**721-3319**	**722-3319**	1-3/4	1-1/4	3	5-1/2	4	**720-3337**	**721-3337**	**722-3337**
1	1	3	5-1/2	4	**720-3321**	**721-3321**	**722-3321**	1-3/4	1-1/4	4	6-1/2	6	**720-3340**	**721-3340**	**722-3340**
1	3/4	4	6-1/2	4	**720-3322**	**721-3322**	**722-3322**	2	1-1/4	4	6-1/2	4	**720-3342**	**721-3342**	**722-3342**
1	1	4	6-1/2	4	**720-3325**	**721-3325**	**722-3325**	2	1-1/4	4	6-1/2	6	**720-3344**	**721-3344**	**722-3344**
1	1	3	5-1/2	6	**720-3323**	**721-3323**	**722-3323**	2	1-1/4	4	6-1/2	8	**720-3346**	**721-3346**	**722-3346**
1-1/8	1	4	6-1/2	6	**720-3324**	**721-3324**	**722-3324**	2-1/2	2	4	7-5/8	6	**720-3348**	**721-3348**	**722-3348**
1-1/8	3/4	4	6-1/2	6	**720-3326**	**721-3326**	**722-3326**								



Extra Long Length

Size	Shank Dia.	Flute Length	Overall Length	No. of Flutes	M2 Order No.	M2Al Order No.	TiN-Coated Order No.	Size	Shank Dia.	Flute Length	Overall Length	No. of Flutes	M2 Order No.	M2Al Order No.	TiN-Coated Order No.
1/4"	3/8"	1-3/4"	3-1/2"	4	**720-3401**	**721-3401**	**722-3401**	3/4"	1/2"	4"	6-1/4"	4	**720-3412**	**721-3412**	**722-3412**
1/4	3/8	1-3/4	3-9/16	4	**720-3402**	**721-3402**	**722-3402**	7/8	7/8	5	7-1/4	4	**720-3413**	**721-3413**	**722-3413**
5/16	3/8	2	3-3/4	4	**720-3403**	**721-3403**	**722-3403**	1	1	6	8-1/2	4	**720-3415**	**721-3415**	**722-3415**
3/8	3/8	2-1/2	4-1/4	4	**720-3405**	**721-3405**	**722-3405**	1-1/4	1-1/4	6	8-1/2	4	**720-3417**	**721-3417**	**722-3417**
1/2	1/2	3	5"	4	**720-3407**	**721-3407**	**722-3407**	1-1/4	1-1/4	6	8-1/2	6	**720-3418**	**721-3418**	**722-3418**
5/8	1/2	4	6-1/8	4	**720-3410**	**721-3410**	**722-3410**	1-1/2	1-1/4	6	8-1/2	4	**720-3419**	**721-3419**	**722-3419**
5/8	5/8	4	6-1/8	4	**720-3409**	**721-3409**	**722-3409**	1-1/2	1-1/4	6	8-1/2	6	**720-3416**	**721-3416**	**722-3416**
3/4	3/4	4	6-1/4	4	**720-3411**	**721-3411**	**722-3411**	1-1/2	1-1/4	8	10-9/16	6	**720-3400**	**721-3400**	**722-3400**

M42 8% Cobalt Multiple Flute Single End Mills

- Designed for general purpose work including cam milling, die sinking and slot milling.
- Suitable for use in a wide range of ferrous and non-ferrous materials.
- Excellent for use in finishing operations.
- Multi-flute design allows for higher feed rates.

Four/Multiple-Flute End Mills—Produce finer finishes and last longer than two or three-flute tools. Compared to two-flute tools, *four-flute end mills* remove metal faster and can be fed two to three times faster; *six-flute end mills* can be fed three times faster.





Regular Length

Size	Shank Dia.	Flute Length	Overall Length	No.of Flute	Order No.
7/64”	3/8”	3/8”	2-5/16”	4	**723-3001**
1/8	3/8	3/8	2-5/16	4	**723-3003**
9/64	3/8	3/8	2-5/16	4	**723-3005**
5/32	3/8	3/8	2-5/16	4	**723-3420**
5/32	3/8	7/16	2-3/8	4	**723-3007**
11/64	3/8	7/16	2-3/8	4	**723-3009**
11/64	3/8	1/2	2-5/16	4	**723-3422**
3/16	3/8	1/2	2-3/8	4	**723-3011**
13/64	3/8	1/2	2-3/8	4	**723-3013**
7/32	3/8	9/16	2-1/2	4	**723-3015**
7/32	3/8	5/8	2-7/16	4	**723-3424**
15/64	3/8	9/16	2-1/2	4	**723-3017**
1/4	3/8	5/8	2-7/16	4	**723-3426**
1/4	3/8	5/8	2-1/2	4	**723-3019**
17/64	3/8	5/8	2-1/2	4	**723-3021**
9/32	3/8	11/16	2-1/2	4	**723-3023**
19/64	3/8	11/16	2-1/2	4	**723-3025**
5/16	3/8	3/4	2-1/2	4	**723-3027**
21/64	3/8	3/4	2-1/2	4	**723-3029**
11/32	3/8	3/4	2-1/2	4	**723-3031**
23/64	3/8	3/4	2-1/2	4	**723-3033**
3/8	3/8	3/4	2-1/2	4	**723-3035**
13/32	3/8	1	2-11/16	4	**723-3037**
7/16	3/8	1	2-11/16	4	**723-3039**
15/32	3/8	1	2-11/16	4	**723-3042**
15/32	1/2	1-1/4	3-1/4	4	**723-3041**
1/2	3/8	1	2-11/16	4	**723-3043**
1/2	1/2	1-1/4	3-1/4	4	**723-3045**
1/2	1/2	1-1/4	3-1/4	6	**723-3046**
17/32	1/2	1-3/8	3-3/8	4	**723-3047**
9/16	1/2	1-3/8	3-3/8	4	**723-3049**
19/32	1/2	1-3/8	3-3/8	4	**723-3051**
5/8	1/2	1-3/8	3-3/8	4	**723-3053**
5/8	5/8	1-5/8	3-1/4	6	**723-3056**
5/8	5/8	1-5/8	3-3/4	4	**723-3055**
21/32	1/2	1-5/8	3-5/8	4	**723-3057**
11/16	1/2	1-5/8	3-5/8	4	**723-3059**
11/16	5/8	1-5/8	3-3/4	4	**723-3061**
23/32	1/2	1-5/8	3-5/8	4	**723-3063**
3/4	1/2	1-5/8	3-5/8	4	**723-3065**
3/4	5/8	1-5/8	3-5/8	4	**723-3066**
3/4	5/8	1-5/8	3-3/4	4	**723-3067**
3/4	3/4	1-5/8	3-3/4	4	**723-3069**
3/4	3/4	1-5/8	3-3/4	6	**723-3070**
25/32	1/2	1-5/8	3-5/8	4	**723-3071**
13/16	5/8	1-7/8	4	4	**723-3074**
13/16	5/8	1-7/8	4	6	**723-3073**
13/16	3/4	1-7/8	4-1/8	4	**723-3075**
27/32	1/2	1-5/8	3-5/8	4	**723-3077**
7/8	1/2	1-5/8	3-5/8	4	**723-3079**
7/8	1/2	1-5/8	3-5/8	6	**723-3081**
7/8	1/2	1-7/8	4	4	**723-3080**
7/8	1/2	1-7/8	4	6	**723-3082**
7/8	5/8	1-7/8	4	6	**723-3083**
7/8	3/4	1-7/8	4-1/8	4	**723-3085**
7/8	3/4	1-7/8	4-1/8	6	**723-3086**
7/8	7/8	1-7/8	4-1/8	4	**723-3087**
29/32	1/2	1-7/8	3-7/8	4	**723-3089**
15/16	1/2	1-7/8	4	4	**723-3090**
15/16	5/8	1-7/8	4	6	**723-3091**
15/16	5/8	1-7/8	4-1/8	6	**723-3092**
15/16	3/4	1-7/8	4-1/8	4	**723-3093**
15/16	3/4	1-7/8	4-1/8	6	**723-3170**
15/16	7/8	1-7/8	4-1/8	4	**723-3095**
15/16	7/8	1-7/8	4-1/8	6	**723-3096**
31/32	1/2	1-7/8	3-7/8	4	**723-3097**

Size	Shank Dia.	Flute Length	Overall Length	No.of Flute	Order No.
1”	1/2”	1-7/8”	3-7/8”	4”	**723-3098**
1	1/2	1-7/8	4	4	**723-3099**
1	1/2	1-7/8	4	6	**723-3100**
1	5/8	1-7/8	4	6	**723-3101**
1	5/8	1-7/8	4	4	**723-3102**
1	3/4	1-7/8	4	6	**723-3106**
1	3/4	1-7/8	4-1/8	4	**723-3103**
1	7/8	1-7/8	4-1/8	4	**723-3105**
1	3/4	2	4-1/2	4	**723-3104**
1	1	2	4-1/2	4	**723-3107**
1	1	2	4-1/2	6	**723-3108**
1-1/16	3/4	2	4-1/4	6	**723-3109**
1-1/8	3/4	1-1/2	3-7/8	6	**723-3171**
1-1/8	3/4	2	4-1/8	6	**723-3110**
1-1/8	3/4	2	4-1/4	4	**723-3112**
1-1/8	3/4	2	4-1/4	6	**723-3111**
1-1/8	7/8	2	4-1/4	6	**723-3113**
1-1/8	1	2	4-1/4	4	**723-3114**
1-1/8	1	2	4-1/2	6	**723-3115**
1-1/8	3/4	2	4-1/2	6	**723-3173**
1-1/8	1	2-5/8	4-1/2	4	**723-3116**
1-3/16	3/4	2	4-1/4	6	**723-3117**
1-3/16	1	2	4-1/4	6	**723-3118**
1-1/4	3/4	2	4-1/4	6	**723-3119**
1-1/4	7/8	2	4-1/4	4	**723-3120**
1-1/4	7/8	2	4-1/4	6	**723-3121**
1-1/4	1	2	4-1/2	6	**723-3123**
1-1/4	1-1/4	2	4-1/2	4	**723-3124**
1-1/4	1-1/4	2	4-1/2	6	**723-3125**
1-1/4	1-1/4	2	4-1/2	4	**723-3126**
1-1/4	1	4	6-1/2	6	**723-3122**
1-5/16	3/4	2	4-1/2	6	**723-3127**
1-3/8	3/4	2	4-1/4	6	**723-3128**
1-3/8	3/4	2	4-1/2	6	**723-3129**
1-3/8	1	2	4-1/2	6	**723-3131**
1-3/8	1-1/4	2	4-1/2	6	**723-3130**
1-7/16	3/4	2	4-1/2	6	**723-3133**
1-1/2	3/4	2	4-1/2	6	**723-3135**
1-1/2	1	2	4-1/2	4	**723-3136**
1-1/2	1	2	4-1/2	6	**723-3137**
1-1/2	1-1/4	2	4-1/2	4	**723-3141**
1-1/2	1-1/4	2	4-1/2	6	**723-3139**
1-5/8	3/4	1-5/8	3-7/8	6	**723-3142**
1-5/8	3/4	2	4-1/2	6	**723-3143**
1-5/8	1-1/4	2	4-1/2	4	**723-3144**
1-5/8	1-1/4	2	4-1/2	6	**723-3145**
1-3/4	3/4	1-1/2	3-7/8	6	**723-3172**
1-3/4	3/4	2	4-1/2	4	**723-3146**
1-3/4	3/4	2	4-1/2	6	**723-3147**
1-3/4	1-1/4	2	4-1/2	4	**723-3151**
1-3/4	1-1/4	2	4-1/2	6	**723-3149**
1-13/16	3/4	2	4-1/4	4	**723-3152**
1-7/8	3/4	2	4-1/2	6	**723-3153**
1-7/8	1-1/4	2	4-1/2	6	**723-3154**
1-7/8	1-1/4	2	4-1/2	8	**723-3155**
2	3/4	2	4-1/2	6	**723-3157**
2	3/4	2	4-1/2	8	**723-3158**
2	1-1/4	2	4-1/2	4	**723-3161**
2	1-1/4	2	4-1/2	6	**723-3163**
2	1-1/4	2	4-1/2	8	**723-3159**
2	1-1/4	2	5-1/2	6	**723-3165**
2	2	2	5-3/4	6	**723-3166**
2-1/4	1-1/4	2	4-1/2	6	**723-3167**
2-1/4	1-1/4	3	5-1/2	8	**723-3169**
2-1/2	2	4	7-5/8	6	**723-3168**

M42 8% Cobalt Multiple Flute Single End Mills continued

Three Flute End Mills— Have smoother cutting action with less chatter and flutter than two-flute tools and may eliminate the need for a second finishing cut.

Four/Multiple-Flute End Mills— Produce finer finishes and last longer than two or three-flute tools. Compared to two-flute tools, *four-flute end mills* remove metal faster and can be fed two to three times faster; *six-flute end mills* can be fed three times faster.

F.Y.I

M-42 cobalt end mills are more economocal than high speed steel end mills. They stay sharper longer to alow more cuts between grinds and reduce downtime to give you lower cost per machined workpiece!



Cobalt

Long Flute

Size	Shank Dia.	Flute Length	Overall Length	No. of Flutes	Order No.
1/4"	3/8"	1-1/4"	3-1/16"	4	**723-3501**
5/16	3/8	1-3/8	3-1/8	4	**723-3503**
3/8	3/8	1-1/2	3-1/4	4	**723-3505**
7/16	1/2	1-3/4	3-3/4	4	**723-3507**
1/2	1/2	2	4	4	**723-3509**
5/8	5/8	2-1/2	4-5/8	4	**723-3511**
5/8	1/2	2-1/2	4-5/8	4	**723-3512**
3/4	3/4	3	5-1/4	4	**723-3513**
3/4	1/2	3	5-1/4	4	**723-3514**
7/8	7/8	3-1/2	5-3/4	4	**723-3515**
7/8	3/4	3-1/2	5-3/4	4	**723-3516**
1	1	4	6-1/2	4	**723-3517**
1-1/8	1	4	6-1/2	6	**723-3519**
1-1/4	3/4	4	6-1/2	6	**723-3520**

Size	Shank Dia.	Flute Length	Overall Length	No. of Flutes	Order No.
1-1/4"	1"	4"	6-1/2"	6	**723-3521**
1-1/4	1-1/4	4	6-1/2	4	**723-3523**
1-1/4	1-1/4	4	6-1/2	6	**723-3525**
1-3/8	1	4	6-1/2	6	**723-3527**
1-1/2	1	4	6-1/2	6	**723-3529**
1-1/2	1-1/4	4	6-1/2	4	**723-3531**
1-1/2	1-1/4	4	6-1/2	6	**723-3533**
1-3/4	1-1/4	4	6-1/2	4	**723-3534**
1-3/4	1-1/4	4	6-1/2	6	**723-3535**
2	1-1/4	4	6-1/2	4	**723-3537**
2	1-1/4	4	6-1/2	6	**723-3539**
2	1-1/4	4	6-1/2	8	**723-3541**
2-1/2	2	4	7-5/8	6	**723-3542**



Cobalt

Extra Long Flute

Size	Shank Dia.	Flute Length	Overall Length	No. of Flutes	Order No.
1/4"	3/8"	1-3/4"	3-9/16"	4	**723-3601**
5/16	3/8	2	3-3/4	4	**723-3603**
3/8	3/8	2-1/2	4-1/4	4	**723-3605**
1/2	1/2	3	5	4	**723-3607**
5/8	5/8	4	6-1/8	4	**723-3609**
5/8	1/2	4	6-1/8	4	**723-3610**
3/4	3/4	4	6-1/4	4	**723-3611**
3/4	1/2	4	6-1/4	4	**723-3612**

Size	Shank Dia.	Flute Length	Overall Length	No. of Flutes	Order No.
7/8"	7/8"	5"	7-1/4"	4	**723-3613**
1	1	6	8-1/2	4	**723-3615**
1-1/4	1-1/4	6	8-1/2	6	**723-3617**
1-1/4	1-1/4	6	8-1/2	4	**723-3618**
1-1/2	1-1/4	6	8-1/2	6	**723-3619**
1-1/2	1-1/4	6	8-1/2	4	**723-3620**
1-1/2	1-1/4	8	10-9/16	6	**723-3621**

M42 8% Cobalt Multiple Flute Single End Mills

Center Cutting



- Suitable for use in a wide range of ferrous and non-ferrous materials.
- Excellent for use in finishing operations.
- Multi-flute design allows for higher feed rates.
- Center cutting is perfect for jobs that require drilling or plunge cutting to start a slot and for spot facing and counterboring.

Regular Length

Size	Shank Dia.	Flute Length	Overall Length	No. of Flute	Order No.
1/8"	3/8"	3/8"	2-5/16"	4	**723-3201**
3/16	3/8	1/2	2-3/8	4	**723-3203**
1/4	3/8	5/8	2-7/16	4	**723-3204**
1/4	3/8	5/8	2-1/2	4	**723-3205**
5/16	3/8	3/4	2-1/2	4	**723-3207**
3/8	3/8	3/4	2-1/2	4	**723-3209**
7/16	3/8	13/16	2-1/2	4	**723-3208**
7/16	3/8	1	2-11/16	4	**723-3901**
1/2	3/8	13/16	2-1/2	4	**723-3210**
1/2	3/8	1	2-11/16	4	**723-3903**
1/2	1/2	1-1/4	3-1/4	4	**723-3211**
9/16	1/2	1-1/8	3-3/8	4	**723-3214**
5/8	1/2	1-3/8	3-3/8	4	**723-3905**
5/8	5/8	1-5/8	3-3/4	4	**723-3213**
11/16	5/8	1-5/8	3-3/4	4	**723-3215**
3/4	1/2	1-5/8	3-5/8	4	**723-3907**
3/4	5/8	1-5/8	3-3/4	4	**723-3216**
3/4	3/4	1-5/8	3-7/8	4	**723-3217**
13/16	3/4	1-7/8	4-1/8	4	**723-3909**
7/8	5/8	1-1/2	3-5/8	4	**723-3911**
7/8	1/2	1-5/8	3-5/8	4	**723-3913**
7/8	1/2	1-7/8	4	4	**723-3914**
7/8	5/8	1-7/8	4	4	**723-3912**
7/8	3/4	1-7/8	4-1/8	4	**723-3218**
7/8	7/8	1-7/8	4-1/8	4	**723-3219**
15/16	3/4	1-7/8	4-1/8	4	**723-3916**
15/16	7/8	1-7/8	4-1/8	4	**723-3915**
1	1/2	1-7/8	3-7/8	4	**723-3917**
1	5/8	1-7/8	4	4	**723-3920**
1	5/8	1-7/8	4	6	**723-3919**
1	1/2	1-7/8	4-1/8	4	**723-3918**
1	3/4	1-7/8	4-1/8	4	**723-3220**
1	1	2	4-1/2	4	**723-3221**
1	1	3	5-1/2	4	**723-3222**
1-1/16	3/4	1-5/8	3-7/8	4	**723-3921**

Size	Shank Dia.	Flute Length	Overall Length	No. of Flute	Order No.
1-1/16"	3/4"	1-5/8"	3-7/8"	6	**723-3922**
1-1/8	3/4	1-1/2	3-7/8	6	**723-3924**
1-1/8	7/8	2	4-1/4	6	**723-3923**
1-1/8	1	2	4-1/2	4	**723-3223**
1-1/8	1	2	4-1/2	6	**723-3225**
1-3/16	3/4	1-1/2	3-7/8	6	**723-3926**
1-3/16	3/4	1-5/8	3-7/8	4	**723-3925**
1-1/4	3/4	1-1/2	3-7/8	6	**723-3928**
1-1/4	1-1/4	2	4-1/2	4	**723-3227**
1-1/4	1	2	4-1/2	6	**723-3927**
1-1/4	1-1/4	2	4-1/2	6	**723-3228**
1-1/4	1-1/4	3	5-1/2	4	**723-3226**
1-5/16	3/4	1-5/8	3-7/8	4	**723-3929**
1-5/16	3/4	2	4-3/8	6	**723-3930**
1-3/8	3/4	2	4-3/8	6	**723-3932**
1-3/8	1	2	4-1/2	6	**723-3931**
1-3/8	1-1/4	2	4-1/2	4	**723-3933**
1-7/16	3/4	1-5/8	3-7/8	4	**723-3935**
1-7/16	3/4	2	4-3/8	6	**723-3936**
1-1/2	3/4	2	4-3/8	6	**723-3938**
1-1/2	1-1/4	2	4-1/2	4	**723-3229**
1-1/2	1	2	4-1/2	6	**723-3937**
1-1/2	1-1/4	2	4-1/2	6	**723-3230**
1-5/8	3/4	1-5/8	4-1/8	4	**723-3939**
1-5/8	3/4	2	4-1/2	6	**723-3940**
1-5/8	1-1/4	2	4-1/2	6	**723-3941**
1-3/4	1-1/4	2	4-1/2	4	**723-3943**
1-3/4	3/4	2	4-1/2	6	**723-3944**
1-3/4	1-1/4	2	4-1/2	6	**723-3231**
1-7/8	3/4	2	4-3/8	6	**723-3951**
1-7/8	1-1/4	2	4-3/8	6	**723-3953**
2	3/4	2	4-1/2	6	**723-3955**
2	1-1/4	2	4-1/2	4	**723-3947**
2	1-1/4	2	4-1/2	6	**723-3239**
2	1-1/4	2	4-1/2	8	**723-3945**



Long Length



Size	Shank Dia.	Flute Length	Overall Length	No. of Flutes	Order No.
1/4"	3/8"	1-1/4"	3-1/16"	4	**723-3301**
5/16	3/8	1-3/8	3-1/8	4	**723-3303**
3/8	3/8	1-1/2	3-1/4	4	**723-3305**
7/16	1/2	1-3/4	3-3/4	4	**723-3306**
1/2	1/2	2	4	4	**723-3307**
5/8	1/2	2-1/2	4-5/8	4	**723-3308**
5/8	5/8	2-1/2	4-5/8	4	**723-3309**
5/8	5/8	3	5-1/8	4	**723-3311**
3/4	3/4	2	4-1/4	4	**723-3315**
3/4	3/4	3	5-1/4	4	**723-3313**
3/4	1/2	3	5-1/4	4	**723-3318**
3/4	3/4	2	4-1/4	6	**723-3317**
7/8	7/8	3-1/2	5-3/4	4	**723-3319**
1	1	3	5-1/2	4	**723-3321**
1	3/4	4	6-1/2	4	**723-3322**
1	1	4	6-1/2	4	**723-3325**
1	1	3	5-1/2	6	**723-3323**
1-1/8	1	4	6-1/2	6	**723-3324**
1-1/8	3/4	4	6-1/2	6	**723-3326**

Size	Shank Dia.	Flute Length	Overall Length	No. of Flutes	Order No.
1-1/4"	1-1/4"	3"	5-1/2"	4	**723-3327**
1-1/4	1-1/4	4	6-1/2	4	**723-3331**
1-1/4	1-1/4	3	5-1/2	6	**723-3329**
1-1/4	1	4	6-1/2	6	**723-3328**
1-1/4	3/4	4	6-1/2	6	**723-3330**
1-1/4	1-1/4	4	6-1/2	6	**723-3332**
1-3/8	1	4	6-1/2	6	**723-3334**
1-1/2	1-1/4	3	5-1/2	4	**723-3333**
1-1/2	1-1/4	4	6-1/2	4	**723-3338**
1-1/2	1-1/4	3	5-1/2	6	**723-3335**
1-1/2	1-1/4	4	6-1/2	6	**723-3336**
1-1/2	1	4	6-1/2	6	**723-3339**
1-3/4	1-1/4	3	5-1/2	4	**723-3337**
1-3/4	1-1/4	4	6-1/2	6	**723-3340**
2	1-1/4	4	6-1/2	4	**723-3342**
2	1-1/4	4	6-1/2	6	**723-3344**
2	1-1/4	4	6-1/2	8	**723-3346**
2-1/2	2	4	7-5/8	6	**723-3348**

M42 8% Cobalt Multiple Flute Single End Mills

Center Cutting

Cobalt



Extra Long Length

Size	Shank Dia.	Flute Length	Overall Length	No. of Flutes	Order No.	Size	Shank Dia.	Flute Length	Overall Length	No. of Flutes	Order No.
1/4"	3/8"	1-3/4"	3-1/2"	4	**723-3401**	3/4"	1/2"	4"	6-1/4"	4	**723-3412**
1/4	3/8	1-3/4	3-9/16	4	**723-3402**	7/8	7/8	5	7-1/4	4	**723-3413**
5/16	3/8	2	3-3/4	4	**723-3403**	1	1	6	8-1/2	4	**723-3415**
3/8	3/8	2-1/2	4-1/4	4	**723-3405**	1-1/4	1-1/4	6	8-1/2	4	**723-3417**
1/2	1/2	3	5"	4	**723-3407**	1-1/4	1-1/4	6	8-1/2	6	**723-3418**
5/8	1/2	4	6-1/8	4	**723-3410**	1-1/2	1-1/4	6	8-1/2	4	**723-3419**
5/8	5/8	4	6-1/8	4	**723-3409**	1-1/2	1-1/4	6	8-1/2	6	**723-3416**
3/4	3/4	4	6-1/4	4	**723-3411**	1-1/2	1-1/4	8	10-9/16	6	**723-3400**

4 Flute Double End Mills

High Speed Steel, Center Cutting



- Center cutting design allows for plunge milling into solid material at the beginning of a slotting operation.

Size	Shank Dia.	Flute Length	Overall Length	M2 Order No.	M2Al Order No.	TiN-Coated Order No.
1/8"	3/8"	3/8"	3-1/16"	**720-4102**	**721-4102**	**722-4102**
5/32	3/8	7/16	3-1/8	**720-4103**	**721-4103**	**722-4103**
3/16	3/8	1/2	3-1/4	**720-4104**	**721-4104**	**722-4104**
1/4	3/8	5/8	3-3/8	**720-4106**	**721-4106**	**722-4106**
5/16	3/8	3/4	3-1/2	**720-4108**	**721-4108**	**722-4108**
3/8	3/8	3/4	3-1/2	**720-4110**	**721-4110**	**722-4110**
1/2	1/2	1	4-1/8	**720-4112**	**721-4112**	**722-4112**
5/8	5/8	1-3/8	5	**720-4114**	**721-4114**	**722-4114**
3/4	3/4	1-5/8	5-5/8	**720-4116**	**721-4116**	**722-4116**
7/8	7/8	1-7/8	6-1/8	**720-4118**	**721-4118**	**722-4118**
1	1	1-7/8	6-3/8	**720-4120**	**721-4120**	**722-4120**

4 Flute Double End Mills

High Speed Steel

- Recommended for finishing operations in a wide range of ferrous and non-ferrous materials.
- Multiple flutes generate higher surface finish than 2 flute end mills.
- More economical in production milling than single end mills.



Size	Shank Dia.	Flute Length	Overall Length	M2 Order No.	M2Al Order No.	TiN-Coated Order No.
7/64"	3/8"	3/8"	3-1/16"	**720-4002**	**721-4002**	**722-4002**
1/8	3/8	3/8	3-1/16	**720-4004**	**721-4004**	**722-4004**
9/64	3/8	7/16	3-1/8	**720-4006**	**721-4006**	**722-4006**
5/32	3/8	7/16	3-1/8	**720-4008**	**721-4008**	**722-4008**
11/64	3/8	7/16	3-1/8	**720-4011**	**721-4011**	**722-4011**
11/64	3/8	1/2	3-1/4	**720-4010**	**721-4010**	**722-4010**
3/16	3/8	1/2	3-1/4	**720-4012**	**721-4012**	**722-4012**
13/64	3/8	1/2	3-1/4	**720-4013**	**721-4013**	**722-4013**
13/64	3/8	9/16	3-1/4	**720-4014**	**721-4014**	**722-4014**
7/32	3/8	9/16	3-1/4	**720-4016**	**721-4016**	**722-4016**
15/64	3/8	9/16	3-1/4	**720-4017**	**721-4017**	**722-4017**
15/64	3/8	5/8	3-3/8	**720-4018**	**721-4018**	**722-4018**
1/4	3/8	5/8	3-3/8	**720-4020**	**721-4020**	**722-4020**
17/64	3/8	11/16	3-3/8	**720-4022**	**721-4022**	**722-4022**
9/32	3/8	11/16	3-3/8	**720-4024**	**721-4024**	**722-4024**
19/64	3/8	11/16	3-3/8	**720-4025**	**721-4025**	**722-4025**
19/64	3/8	3/4	3-1/2	**720-4026**	**721-4026**	**722-4026**
5/16	3/8	3/4	3-1/2	**720-4028**	**721-4028**	**722-4028**
21/64	3/8	3/4	3-1/2	**720-4030**	**721-4030**	**722-4030**
11/32	3/8	3/4	3-1/2	**720-4032**	**721-4032**	**722-4032**
23/64	3/8	3/4	3-1/2	**720-4034**	**721-4034**	**722-4034**
3/8	3/8	3/4	3-1/2	**720-4036**	**721-4036**	**722-4036**
25/64	1/2	1	4-1/8	**720-4038**	**721-4038**	**722-4038**
13/32	1/2	1	4-1/8	**720-4040**	**721-4040**	**722-4040**

Size	Shank Dia.	Flute Length	Overall Length	M2 Order No.	M2Al Order No.	TiN-Coated Order No.
13/32	1/2	1	4-3/16	**720-4039**	**721-4039**	**722-4039**
27/64	1/2	1	4-1/8	**720-4042**	**721-4042**	**722-4042**
7/16	1/2	1	4-1/8	**720-4044**	**721-4044**	**722-4044**
29/64	1/2	1	4-1/8	**720-4046**	**721-4046**	**722-4046**
15/32	1/2	1	4-1/8	**720-4048**	**721-4048**	**722-4048**
31/64	1/2	1	4-1/8	**720-4050**	**721-4050**	**722-4050**
1/2	1/2	1	4-1/8	**720-4052**	**721-4052**	**722-4052**
17/32	5/8	1-3/8	5	**720-4054**	**721-4054**	**722-4054**
9/16	5/8	1-3/8	5	**720-4056**	**721-4056**	**722-4056**
19/32	5/8	1-3/8	5	**720-4058**	**721-4058**	**722-4058**
5/8	5/8	1-3/8	5	**720-4060**	**721-4060**	**722-4060**
21/32	3/4	1-5/8	5-5/8	**720-4062**	**721-4062**	**722-4062**
11/16	3/4	1-5/8	5-5/8	**720-4064**	**721-4064**	**722-4064**
23/32	3/4	1-5/8	5-5/8	**720-4066**	**721-4066**	**722-4066**
3/4	3/4	1-5/8	5-5/8	**720-4068**	**721-4068**	**722-4068**
25/32	7/8	1-7/8	6-1/8	**720-4070**	**721-4070**	**722-4070**
13/16	7/8	1-7/8	6-1/8	**720-4072**	**721-4072**	**722-4072**
27/32	7/8	1-7/8	6-1/8	**720-4074**	**721-4074**	**722-4074**
7/8	7/8	1-7/8	6-1/8	**720-4076**	**721-4076**	**722-4076**
29/32	1	1-7/8	6-3/8	**720-4078**	**721-4078**	**722-4078**
15/16	1	1-7/8	6-3/8	**720-4080**	**721-4080**	**722-4080**
31/32	1	1-7/8	6-3/8	**720-4082**	**721-4082**	**722-4082**
1	1	1-7/8	6-3/8	**720-4084**	**721-4084**	**722-4084**

M42 8% Cobalt 4 Flute Double End Mills

- Recommended for finishing operations in a wide range of ferrous and non-ferrous materials.
- Multiple flutes generate higher surface finish than 2 flute end mills.
- More economical in production milling than single end mills.

Cobalt



Size	Shank Dia.	Flute Length	Overall Length	Order No.	Size	Shank Dia.	Flute Length	Overall Length	Order No.
7/64"	3/8"	3/8"	3-1/16"	**723-4002**	13/32"	1/2"	1"	4-3/16"	**723-4039**
1/8	3/8	3/8	3-1/16	**723-4004**	27/64	1/2	1	4-1/8	**723-4042**
9/64	3/8	7/16	3-1/8	**723-4006**	7/16	1/2	1	4-1/8	**723-4044**
5/32	3/8	7/16	3-1/8	**723-4008**	29/64	1/2	1	4-1/8	**723-4046**
11/64	3/8	7/16	3-1/8	**723-4011**	15/32	1/2	1	4-1/8	**723-4048**
11/64	3/8	1/2	3-1/4	**723-4010**	31/64	1/2	1	4-1/8	**723-4050**
3/16	3/8	1/2	3-1/4	**723-4012**	1/2	1/2	1	4-1/8	**723-4052**
13/64	3/8	1/2	3-1/4	**723-4013**	17/32	5/8	1-3/8	5	**723-4054**
13/64	3/8	9/16	3-1/4	**723-4014**	9/16	5/8	1-3/8	5	**723-4056**
7/32	3/8	9/16	3-1/4	**723-4016**	19/32	5/8	1-3/8	5	**723-4058**
15/64	3/8	9/16	3-1/4	**723-4017**	5/8	5/8	1-3/8	5	**723-4060**
15/64	3/8	5/8	3-3/8	**723-4018**	21/32	3/4	1-5/8	5-5/8	**723-4062**
1/4	3/8	5/8	3-3/8	**723-4020**	11/16	3/4	1-5/8	5-5/8	**723-4064**
17/64	3/8	11/16	3-3/8	**723-4022**	23/32	3/4	1-5/8	5-5/8	**723-4066**
9/32	3/8	11/16	3-3/8	**723-4024**	3/4	3/4	1-5/8	5-5/8	**723-4068**
19/64	3/8	11/16	3-3/8	**723-4025**	25/32	7/8	1-7/8	6-1/8	**723-4070**
19/64	3/8	3/4	3-1/2	**723-4026**	13/16	7/8	1-7/8	6	**723-4072**
5/16	3/8	3/4	3-1/2	**723-4028**	27/32	7/8	1-7/8	6-1/8	**723-4074**
21/64	3/8	3/4	3-1/2	**723-4030**	7/8	7/8	1-7/8	6-1/8	**723-4076**
11/32	3/8	3/4	3-1/2	**723-4032**	29/32	1	1-7/8	6-3/8	**723-4078**
23/64	3/8	3/4	3-1/2	**723-4034**	15/16	1	1-7/8	6-3/8	**723-4080**
3/8	3/8	3/4	3-1/2	**723-4036**	31/32	1	1-7/8	6-3/8	**723-4082**
25/64	1/2	1	4-1/8	**723-4038**	1	1	1-7/8	6-3/8	**723-4084**
13/32	1/2	1	4-1/8	**723-4040**					

M42 8% Cobalt 4 Flute Double End Mills

Center Cutting

Cobalt



Size	Shank Dia.	Flute Length	Overall Length	Order No.	Size	Shank Dia.	Flute Length	Overall Length	Order No.
1/8"	3/8"	3/8"	3-1/16"	**723-4102**	9/16"	5/8"	1-3/8"	5	**723-4113**
5/32	3/8	7/16	3-1/8	**723-4103**	5/8	5/8	1-3/8	5	**723-4114**
3/16	3/8	1/2	3-1/4	**723-4104**	13/32	1/2	1	4-1/8	**723-4115**
7/32	3/8	9/16	3-1/4	**723-4105**	3/4	3/4	1-5/8	5-5/8	**723-4116**
1/4	3/8	5/8	3-3/8	**723-4106**	15/32	1/2	1	4-1/8	**723-4117**
9/32	3/8	11/16	3-3/8	**723-4107**	7/8	7/8	1-7/8	6-1/8	**723-4118**
5/16	3/8	3/4	3-1/2	**723-4108**	1	1	1-7/8	6-3/8	**723-4120**
11/32	3/8	3/4	3-1/2	**723-4109**	9/64	3/8	7/16	3-1/8	**723-4122**
3/8	3/8	3/4	3-1/2	**723-4110**	5/32	3/8	7/16	3-1/8	**723-4124**
7/16	1/2	1	4-1/8	**723-4111**	11/64	3/8	1/2	3-1/4	**723-4126**
1/2	1/2	1	4-1/8	**723-4112**	13/64	3/8	9/16	3-1/4	**723-4128**

M42 8% Cobalt 60° Helical Profiling End Mills

Center Cutting

Cobalt



Size	Shank Dia.	Flute Length	Overall Length	Flute No.	Order No.	Size	Shank Dia.	Flute Length	Overall Length	Flute No.	Order No.
1/4"	3/8"	5/8"	2-7/16"	3	**723-9500**	3/4	3/4	1-5/8	3-7/8	3	**723-9530**
5/16	3/8	3/4	2-1/2	3	**723-9505**	7/8	7/8	1-7/8	4-1/8	4	**723-9535**
3/8	3/8	3/4	2-1/2	3	**723-9510**	1	1	2	4-1/2	4	**723-9540**
7/16	3/8	1	2-11/16	3	**723-9515**	1-1/4	1-1/4	2	4-1/2	4	**723-9545**
1/2	1/2	1-1/4	3-1/4	3	**723-9520**	1-1/2	1-1/4	2	4-1/2	4	**723-9550**
5/8	5/8	1-5/8	3-3/4	3	**723-9525**	2	1-1/4	2	4-1/2	4	**723-9555**

ASP-30(Powdered Cobalt) Single End Mills

Center Cutting

Cobalt



Size	Shank Dia.	Flute Length	Overall Length	Flute No.	Order No.	Size	Shank Dia.	Flute Length	Overall Length	Flute No.	Order No.
1/4"	3/8"	5/8"	2-7/16"	3	**723-9408**	5/8	5/8	1-5/8	3-3/4	3	**723-9420**
5/16	3/8	3/4	2-1/2	3	**723-9410**	3/4	3/4	1-5/8	3-7/8	3	**723-9424**
3/8	3/8	3/4	2-1/2	3	**723-9412**	1	1	2	4-1/2	4	**723-9432**
1/2	1/2	1-1/4	3-1/4	3	**723-9416**						

Roughing End Mills

High Speed Steel



Regular Length

Size	Shank Dia.	Flute Length	Overall Length	No. Of Flutes	M2 Order No.	M2AI Order No.
1/4"	3/8"	3/4"	2-1/2"	4	**720-5001**	**721-5001**
1/4	3/8	5/8	2-7/16	4	**720-5002**	**721-5002**
1/4	3/8	1-1/4	3-1/16	4	**720-5003**	**721-5003**
5/16	3/8	3/4	2-1/2	4	**720-5005**	**721-5005**
5/16	3/8	1-3/8	3-1/8	4	**720-5007**	**721-5007**
3/8	3/8	3/4	2-1/2	4	**720-5008**	**721-5008**
3/8	3/8	7/8	2-5/8	4	**720-5009**	**721-5009**
3/8	3/8	1-1/2	3-1/4	4	**720-5011**	**721-5011**
7/16	3/8	1	2-11/16	4	**720-5012**	**721-5012**
1/2	1/2	1-1/4	3-1/4	4	**720-5013**	**721-5013**
5/8	5/8	1-5/8	3-3/4	4	**720-5017**	**721-5017**
11/16	5/8	1-5/8	3-3/4	4	**720-5019**	**721-5019**
3/4	5/8	1-5/8	3-3/4	4	**720-5020**	**721-5020**
3/4	5/8	1-5/8	3-7/8	4	**720-5021**	**721-5021**
3/4	3/4	1-5/8	3-3/4	4	**720-5025**	**721-5025**
7/8	3/4	1-5/8	4-1/8	4	**720-5027**	**721-5027**
7/8	7/8	1-7/8	4-1/8	4	**720-5029**	**721-5029**
15/16	3/4	1-7/8	4-1/8	4	**720-5031**	**721-5031**
1	3/4	2	4-1/2	6	**720-5033**	**721-5033**
1	1	2	4-1/2	6	**720-5035**	**721-5035**
1-1/8"	3/4"	2"	4-1/2"	6	**720-5037**	**721-5037**
1-1/8	1	2	4-1/2	6	**720-5039**	**721-5039**
1-1/4	3/4	2	4-1/2	6	**720-5041**	**721-5041**
1-1/4	1-1/4	2	4-1/2	6	**720-5043**	**721-5043**
1-1/2	3/4	2	4-1/2	6	**720-5045**	**721-5045**
1-1/2	1-1/4	2	4-1/2	6	**720-5047**	**721-5047**
1-3/4	3/4	2	4-1/2	6	**720-5049**	**721-5049**
1-3/4	1-1/4	2	5-3/4	6	**720-5050**	**721-5050**
1-3/4	1-1/4	2	4-1/2	6	**720-5051**	**721-5051**
2	3/4	2	4-1/2	8	**720-5053**	**721-5053**
2	1-1/4	2	4-1/2	6	**720-5054**	**721-5054**
2	1-1/4	2	4-1/2	8	**720-5055**	**721-5055**
2	1-1/4	2	6-1/2	8	**720-5056**	**721-5056**
2	2	2	5-3/4	8	**720-5057**	**721-5057**
2	2	3	6-3/4	6	**720-5058**	**721-5058**
2	2	4	7-3/4	8	**720-5059**	**721-5059**
2	2	4	7-3/4	6	**720-5060**	**721-5060**
2-1/2	2	4	7-3/4	8	**720-5061**	**721-5061**
2-1/2	2-1/2	4	7-3/4	8	**720-5063**	**721-5063**
2	2	3	6-3/4	8	**720-5065**	**721-5065**

Medium Length

Size	Shank Dia.	Flute Length	Overall Length	No. of Flutes	M2 Order No.	M2AI Order No.
2"	2"	5"	8-3/4"	8	**720-5101**	**721-5101**
2	2	6	9-3/4	8	**720-5103**	**721-5103**
2-1/2	2	6	9-3/4	8	**720-5105**	**721-5105**
2-1/2	2-1/2	6	9-3/4	8	**720-5107**	**721-5107**

Long Length

Size	Shank Dia.	Flute Length	Overall Length	No. of flutes	M2 Order No.	M2AI Order No.
1/2"	1/2"	2"	4"	4	**720-5201**	**721-5201**
5/8	5/8	2-1/2	4-5/8	4	**720-5203**	**721-5203**
3/4	5/8	3	5-1/4	4	**720-5205**	**721-5205**
3/4	5/8	3	5-1/8	4	**720-5207**	**721-5207**
3/4	3/4	3	5-1/4	4	**720-5209**	**721-5209**
7/8	3/4	3-1/2	5-5/8	4	**720-5211**	**721-5211**
7/8	7/8	3-1/2	5-3/4	4	**720-5213**	**721-5213**
1	1	4	6-1/2	6	**720-5215**	**721-5215**
1	1	6	8-1/2	6	**720-5217**	**721-5217**
1-1/4	1-1/4	3	5-1/2	6	**720-5218**	**721-5218**
1-1/4	3/4	4	6-1/4	6	**720-5219**	**721-5219**
1-1/4	1-1/4	4	6-1/2	6	**720-5221**	**721-5221**
1-1/4	1-1/4	6	8-1/2	6	**720-5223**	**721-5223**
1-1/2	1-1/4	3	5-1/2	6	**720-5224**	**721-5224**
1-1/2	3/4	4	6-1/4	6	**720-5225**	**721-5225**
1-1/2	1-1/4	4	6-1/2"	6	**720-5227**	**721-5227**
1-1/2	1-1/4	5	7-1/2	6	**720-5228**	**721-5228**
1-1/2	1-1/4	6	8-1/2	6	**720-5229**	**721-5229**
1-3/4	1-1/4	4	6-1/2	6	**720-5231**	**721-5231**
2	1-1/4	4	6-1/2	6	**720-5232**	**721-5232**
2	1-1/4	4	6-1/2	8	**720-5233**	**721-5233**
2	2	6	9-3/4	6	**720-5234**	**721-5234**
2	2	7	10-3/4	8	**720-5235**	**721-5235**
2	2	8	11-3/4	6	**720-5236**	**721-5236**
2	2	8	11-3/4	8	**720-5237**	**721-5237**
2	2	10	13-3/4	8	**720-5239**	**721-5239**
2	2	12	15-3/4	8	**720-5241**	**721-5241**
2-1/2	2	8	11-3/4	8	**720-5243**	**721-5243**
2-1/2	2-1/2	8	11-3/4	8	**720-5245**	**721-5245**
2-1/2	2-1/2	10	13-3/4	8	**720-5247**	**721-5247**
2-1/2	2-1/2	12	15-3/4	8	**720-5249**	**721-5249**

5 Flute Roughing End Mills

High Speed Steel



Size	Shank Dia.	Flute Length	Overall Length	M2 Order No.	M2AI Order No.	Size	Shank Dia.	Flute Length	Overall Length	M2 Order No.	M2AI Order No.
7/8"	3/4"	1-7/8"	4-1/8"	**720-5701**	**721-5701**	1"	3/4"	2"	4-1/2"	**720-5709**	**721-5709**
7/8	3/8	3-1/2	5-3/4	**720-5703**	**721-5703**	1	1	2	4-1/2	**720-5711**	**721-5711**
7/8	7/8	1-7/8	4-1/8	**720-5705**	**721-5705**	1	1	4	6-1/2	**720-5713**	**721-5713**
7/8	7/8	3-1/2	5-3/4	**720-5707**	**721-5707**	1-1/8	1	2	4-1/2	**720-5715**	**721-5715**

Roughing End Mills

M42 8% Cobalt Coarse Pitch Roughing End Mills

Non Center Cutting



- Remove more metal in less time.
- Need less horsepower.
- Have excellent performance on heavy duty machining.
- Tooth form provides excellent heat dissipation during heavy cutting jobs, is effective for cuts on high tensile steels.



Size	Shank Dia.	Flute Length	Overall Length	No. of Flute	Uncoated Order No.	TiN Coated Order No.
3/16"	3/8"	1/2"	2-3/8"	4	**723-5703**	**723-6703**
1/4	3/8	1/4	2-1/16	3	**723-5706**	**723-6706**
1/4	3/8	5/16	2-1/8	3	**723-5705**	**723-6705**
1/4	3/8	5/8	2-7/16	3	**723-5708**	**723-6708**
1/4	3/8	7/8	2-11/16	3	**723-5701**	**723-6701**
1/4	3/8	1-1/8	2-15/16	3	**723-5702**	**723-6702**
1/4	3/8	1-3/8	3-1/8	3	**723-5707**	**723-6707**
1/4	3/8	5/8	2-7/16	4	**723-5930**	**723-6930**
1/4	3/8	3/4	2-1/2	4	**723-5709**	**723-6709**
1/4	3/8	1-1/8	2-15/16	4	**723-5710**	**723-6710**
1/4	3/8	1-1/4	3-1/16	4	**723-5711**	**723-6711**
1/4	3/8	1-1/4	3-1/8	4	**723-5936**	**723-6936**
9/32	3/8	3/4	2-1/2	3	**723-5712**	**723-6712**
5/16	3/8	7/16	2-3/16	3	**723-5714**	**723-6714**
5/16	3/8	3/4	2-1/2	3	**723-5715**	**723-6715**
5/16	3/8	1-1/8	2-15/16	3	**723-5717**	**723-6717**
5/16	3/8	3/4	2-1/2	4	**723-5716**	**723-6716**
5/16	3/8	1-3/8	3-1/8	4	**723-5941**	**723-6941**
5/16	3/8	1-3/8	3-3/16	4	**723-5942**	**723-6942**
5/16	3/8	1-3/8	3-3/8	4	**723-5713**	**723-6713**
11/32	3/8	3/4	2-1/2	3	**723-5725**	**723-6725**
3/8	3/8	3/8	2-5/32	3	**723-5718**	**723-6718**
3/8	3/8	1/2	2-5/16	3	**723-5946**	**723-6946**
3/8	3/8	7/8	2-7/8	3	**723-5949**	**723-6949**
3/8	3/8	3/8	2-5/32	4	**723-5719**	**723-6719**
3/8	3/8	7/16	2-3/16	4	**723-5720**	**723-6720**
3/8	3/8	3/4	2-1/2	4	**723-5721**	**723-6721**
3/8	3/8	7/8	2-5/8	4	**723-5722**	**723-6722**
3/8	3/8	1-1/8	2-15/16	4	**723-5726**	**723-6726**
3/8	3/8	1-1/2	3-1/4	4	**723-5723**	**723-6723**
3/8	3/8	1-5/8	3-3/16	4	**723-5724**	**723-6724**
13/32	3/8	1	2-11/16	4	**723-5735**	**723-6735**
7/16	3/8	1	2-11/16	4	**723-5727**	**723-6727**
15/32	1/2	1-1/4	3-1/4	4	**723-5728**	**723-6728**
1/2	1/2	1/2	2-1/2	3	**723-5730**	**723-6730**
1/2	1/2	1/2	2-1/2	4	**723-5952**	**723-6952**
1/2	1/2	5/8	2-5/8	4	**723-5731**	**723-6731**
1/2	1/2	1	3	4	**723-5732**	**723-6732**
1/2	1/2	1-1/4	3-1/4	4	**723-5733**	**723-6733**
1/2	1/2	1-5/8	3-5/8	4	**723-5734**	**723-6734**
1/2	1/2	2	4	4	**723-5736**	**723-6736**
1/2	1/2	2-1/2	4-1/2	4	**723-5738**	**723-6738**
1/2	1/2	3	5	4	**723-5739**	**723-6739**
9/16	1/2	1-3/8	3-3/8	4	**723-5742**	**723-6742**
5/8	5/8	5/8	2-3/4	3	**723-5745**	**723-6745**
5/8	5/8	5/8	2-3/4	4	**723-5746**	**723-6746**
5/8	5/8	3/4	2-7/8	4	**723-5747**	**723-6747**
5/8	5/8	1-1/4	3-3/8	4	**723-5743**	**723-6743**
5/8	5/8	1-5/8	3-3/4	4	**723-5748**	**723-6748**
5/8	5/8	2	4-1/8	4	**723-5749**	**723-6749**
5/8	5/8	2-1/8	4-1/4	4	**723-5750**	**723-6750**
5/8	5/8	2-1/2	4-5/8	4	**723-5751**	**723-6751**
5/8	5/8	3	5-1/4	4	**723-5754**	**723-6754**
5/8	5/8	3-1/8	5-1/4	4	**723-5757**	**723-6757**
11/16	5/8	1-5/8	3-3/4	4	**723-5760**	**723-6760**
3/4	5/8	1-5/8	3-3/4	4	**723-5766**	**723-6766**
3/4	5/8	1-5/8	3-7/8	4	**723-5761**	**723-6761**
3/4	3/4	3/4	2-7/8	3	**723-5763**	**723-6763**
3/4	3/4	7/8	3-1/8	3	**723-5765**	**723-6765**
3/4	3/4	1-1/2	3-3/4	3	**723-5768**	**723-6768**
3/4	3/4	3/4	2-7/8	4	**723-5764**	**723-6764**
3/4	3/4	3/4	3	4	**723-5762**	**723-6762**
3/4	3/4	1-1/4	3-1/2	4	**723-5767**	**723-6767**
3/4	3/4	1-5/8	3-3/4	4	**723-5769**	**723-6769**
3/4	3/4	1-5/8	3-7/8	4	**723-5770**	**723-6770**
3/4	3/4	2-1/4	4-1/2	4	**723-5771**	**723-6771**
3/4	3/4	2-1/2	4-5/8	4	**723-5772**	**723-6772**
3/4	3/4	2-1/2	4-3/4	4	**723-5773**	**723-6773**
3/4	3/4	3	5-1/4	4	**723-5775**	**723-6775**
3/4	3/4	4-1/8	6-3/8	4	**723-5776**	**723-6776**
13/16	3/4	1-7/8	4-1/8	4	**723-5777**	**723-6777**
7/8	3/4	7/8	3-1/8	3	**723-5778**	**723-6778**
7/8	3/4	1	3-1/4	3	**723-5779**	**723-6779**

Size	Shank Dia.	Flute Length	Overall Length	No. of Flute	Uncoated Order No.	TiN Coated Order No.
7/8"	3/4"	1-1/8"	3-3/8"	5	**723-5780**	**723-6780**
7/8	3/4	1-7/8	4-1/8	5	**723-5781**	**723-6781**
7/8	3/4	3-1/2	5-3/4	5	**723-5782**	**723-6782**
7/8	3/4	3-1/2	5-5/8	5	**723-5784**	**723-6784**
7/8	7/8	1-1/8	3-3/8	5	**723-5786**	**723-6786**
7/8	7/8	1-7/8	4-1/8	5	**723-5787**	**723-6787**
7/8	7/8	3-1/2	5-3/4	5	**723-5789**	**723-6789**
7/8	1	1-3/4	5	3	**723-5955**	**723-6955**
1	3/4	1-1/8	3-3/8	5	**723-5792**	**723-6792**
1	3/4	1-1/2	3-3/8	5	**723-5791**	**723-6791**
1	3/4	1-1/2	3-3/4	5	**723-5794**	**723-6794**
1	3/4	1-7/8	4-1/8	5	**723-5793**	**723-6793**
1	3/4	2	4-1/4	5	**723-5795**	**723-6795**
1	3/4	3	5-1/4	5	**723-5796**	**723-6796**
1	3/4	4	6-1/4	5	**723-5797**	**723-6797**
1	3/4	1-1/8	3-3/8	6	**723-5790**	**723-6790**
1	1	1	3-1/2	3	**723-5799**	**723-6799**
1	1	1-3/4	5	3	**723-5958**	**723-6958**
1	1	1	3-1/2	5	**723-5800**	**723-6800**
1	1	1-1/8	3-5/8	5	**723-5801**	**723-6801**
1	1	1-5/8	4-1/8	5	**723-5798**	**723-6798**
1	1	2	4-1/2	5	**723-5802**	**723-6802**
1	1	3	5-1/2	5	**723-5805**	**723-6805**
1	1	4	6-1/2	5	**723-5808**	**723-6808**
1	1	6	8-1/2	5	**723-5811**	**723-6811**
1-1/8	3/4	1-1/8	3-3/8	6	**723-5814**	**723-6814**
1-1/8	3/4	2	4-1/4	6	**723-5817**	**723-6817**
1-1/8	1	2	4-1/2	6	**723-5820**	**723-6820**
1-1/8	1	3-1/2	6	6	**723-5823**	**723-6823**
1-1/4	3/4	1-1/8	3-3/8	6	**723-5826**	**723-6826**
1-1/4	3/4	2	4-1/4	6	**723-5829**	**723-6829**
1-1/4	1-1/4	2	5-1/4	3	**723-5836**	**723-6836**
1-1/4	1-1/4	1-1/4	4	4	**723-5833**	**723-6833**
1-1/4	1-1/4	1-3/8	3-7/8	6	**723-5834**	**723-6834**
1-1/4	1-1/4	2	4-1/2	6	**723-5835**	**723-6835**
1-1/4	1-1/4	3	5-1/2	6	**723-5838**	**723-6838**
1-1/4	1-1/4	4	6-1/2	6	**723-5841**	**723-6841**
1-1/4	1-1/4	6	8-1/2	6	**723-5844**	**723-6844**
1-3/8	3/4	1-1/8	3-3/8	6	**723-5847**	**723-6847**
1-3/8	3/4	2	4-1/4	6	**723-5850**	**723-6850**
1-1/2	3/4	1-1/8	3-3/8	6	**723-5853**	**723-6853**
1-1/2	3/4	1-1/2	3-3/4	6	**723-5854**	**723-6854**
1-1/2	3/4	2	4-1/4	6	**723-5856**	**723-6856**
1-1/2	3/4	4	6-1/4	6	**723-5858**	**723-6858**
1-1/2	1-1/4	2	4-1/2	6	**723-5859**	**723-6859**
1-1/2	1-1/4	3	5-1/2	6	**723-5862**	**723-6862**
1-1/2	1-1/4	4	6-1/2	6	**723-5865**	**723-6865**
1-1/2	1-1/4	5	7-1/2	6	**723-5868**	**723-6868**
1-1/2	1-1/4	6	8-1/2	6	**723-5871**	**723-6871**
1-1/2	1-1/4	6-1/8	8-5/8	6	**723-5869**	**723-6869**
1-3/4	3/4	1-1/8	3-3/8	6	**723-5874**	**723-6874**
1-3/4	3/4	2	4-1/4	6	**723-5877**	**723-6877**
1-3/4	1-1/4	2	4-1/2	6	**723-5880**	**723-6880**
1-3/4	1-1/4	4	6-1/2	6	**723-5883**	**723-6883**
2	3/4	1-1/8	3-3/8	8	**723-5886**	**723-6886**
2	3/4	2	4-1/2	8	**723-5889**	**723-6889**
2	1-1/4	2	4-1/2	8	**723-5892**	**723-6892**
2	1-1/4	3-1/8	5-5/8	8	**723-5893**	**723-6893**
2	1-1/4	4	6-1/2	8	**723-5895**	**723-6895**
2	1-1/4	6-1/8	8-5/8	8	**723-5896**	**723-6896**
2	2	3	6-3/4	6	**723-5899**	**723-6899**
2	2	4	7-3/4	6	**723-5902**	**723-6902**
2	2	6	9-3/4	6	**723-5908**	**723-6908**
2	2	2	5-3/4	8	**723-5898**	**723-6898**
2	2	3	6-3/4	8	**723-5901**	**723-6901**
2	2	4	7-3/4	8	**723-5904**	**723-6904**
2	2	5	8-3/4	8	**723-5907**	**723-6907**
2	2	6	9-3/4	8	**723-5910**	**723-6910**
2	2	7	10-3/4	8	**723-5911**	**723-6911**
2	2	8	11-3/4	8	**723-5913**	**723-6913**
2	2	10	13-3/4	8	**723-5916**	**723-6916**
2	2	12	15-3/4	8	**723-5919**	**723-6919**

M42 8% Cobalt Coarse Pitch Roughing End Mills

Center Cutting





Size	Shank Dia.	Flute Length	Overall Length	No. of Flute	Uncoated Order No.	TiN Coated Order No.
3/16"	3/8"	1/2"	2-3/8"	4	**724-0008**	**724-1008**
1/4	3/8	1/4	2-1/16	3	**724-0011**	**724-1011**
1/4	3/8	5/16	2-1/8	3	**724-0014**	**724-1014**
1/4	3/8	1/4	2-1/16	3	**724-0017**	**724-1017**
1/4	3/8	5/8	2-7/16	3	**724-0020**	**724-1020**
1/4	3/8	5/8	2-7/16	4	**724-0023**	**724-1023**
1/4	3/8	7/8	2-11/16	3	**724-0026**	**724-1026**
1/4	3/8	3/4	2-1/2	4	**724-0029**	**724-1029**
1/4	3/8	1-1/8	2-15/16	4	**724-0032**	**724-1032**
1/4	3/8	1-1/4	3-1/16	4	**724-0035**	**724-1035**
1/4	3/8	1-1/4	3-1/8	4	**724-0038**	**724-1038**
1/4	3/8	1-3/8	3-1/8	3	**724-0041**	**724-1041**
9/32	3/8	3/4	2-1/2	3	**724-0044**	**724-1044**
5/16	3/8	7/16	2-3/16	3	**724-0047**	**724-1047**
5/16	3/8	3/4	2-1/2	3	**724-0050**	**724-1050**
5/16	3/8	3/4	2-1/2	4	**724-0053**	**724-1053**
5/16	3/8	1-1/8	2-15/16	3	**724-0056**	**724-1056**
5/16	3/8	1-3/8	3-1/8	4	**724-0059**	**724-1059**
11/32	3/8	3/4	2-1/2	3	**724-0062**	**724-1062**
3/8	3/8	3/8	2-5/32	3	**724-0065**	**724-1065**
3/8	3/8	3/8	2-5/32	4	**724-0068**	**724-1068**
3/8	3/8	7/16	2-3/16	4	**724-0071**	**724-1071**
3/8	3/8	1/2	2-5/16	3	**724-0074**	**724-1074**
3/8	3/8	3/4	2-1/2	4	**724-0077**	**724-1077**
3/8	3/8	7/8	2-5/8	4	**724-0080**	**724-1080**
3/8	3/8	7/8	2-7/8	3	**724-0083**	**724-1083**
3/8	3/8	1-1/8	2-15/16	4	**724-0086**	**724-1086**
3/8	3/8	1-1/2	3-1/4	4	**724-0089**	**724-1089**
3/8	3/8	1-5/8	3-3/16	4	**724-0092**	**724-1092**
7/16	3/8	1	2-11/16	4	**724-0095**	**724-1095**
15/32	1/2	1-1/4	3-1/4	4	**724-0098**	**724-1098**
1/2	1/2	1/2	2-1/2	3	**724-0101**	**724-1101**
1/2	1/2	1/2	2-1/2	4	**724-0104**	**724-1104**
1/2	1/2	5/8	2-5/8	4	**724-0110**	**724-1110**
1/2	1/2	1	3	4	**724-0113**	**724-1113**
1/2	1/2	1-1/4	3-1/4	4	**724-0116**	**724-1116**
1/2	1/2	1-5/8	3-5/8	4	**724-0119**	**724-1119**
1/2	1/2	2	4	4	**724-0122**	**724-1122**
1/2	1/2	2-1/2	4-1/2	4	**724-0125**	**724-1125**
1/2	1/2	3	5	4	**724-0128**	**724-1128**
9/16	1/2	1-3/8	3-3/8	4	**724-0131**	**724-1131**
5/8	5/8	5/8	2-3/4	3	**724-0134**	**724-1134**
5/8	5/8	5/8	2-3/4	4	**724-0137**	**724-1137**
5/8	5/8	3/4	2-7/8	4	**724-0140**	**724-1140**
5/8	5/8	1-1/4	3-3/8	4	**724-0143**	**724-1143**
5/8	5/8	1-5/8	3-3/4	4	**724-0146**	**724-1146**
5/8	5/8	2	4-1/8	4	**724-0149**	**724-1149**
5/8	5/8	2-1/8	4-1/4	4	**724-0152**	**724-1152**
5/8	5/8	2-1/2	4-5/8	4	**724-0155**	**724-1155**
5/8	5/8	3	5-1/4	4	**724-0158**	**724-1158**
5/8	5/8	3-1/8	5-1/4	4	**724-0161**	**724-1161**
11/16	5/8	1-5/8	3-3/4	4	**724-0164**	**724-1164**
3/4	5/8	1-5/8	3-3/4	4	**724-0167**	**724-1167**
3/4	3/4	3/4	2-7/8	3	**724-0170**	**724-1170**
3/4	3/4	3/4	3	4	**724-0173**	**724-1173**
3/4	3/4	7/8	3-1/8	3	**724-0176**	**724-1176**
3/4	3/4	1-1/4	3-1/2	4	**724-0179**	**724-1179**
3/4	3/4	1-1/2	3-3/4	3	**724-0182**	**724-1182**
3/4	3/4	1-5/8	3-3/4	4	**724-0185**	**724-1185**
3/4	3/4	1-5/8	3-7/8	4	**724-0187**	**724-1187**
3/4	3/4	2-1/4	4-1/2	4	**724-0188**	**724-1188**
3/4	3/4	2-1/2	4-5/8	4	**724-0191**	**724-1191**
3/4	3/4	3	5-1/4	4	**724-0194**	**724-1194**
3/4	3/4	4-1/8	6-3/8	4	**724-0197**	**724-1197**
13/16	3/4	1-7/8	4-1/8	4	**724-0200**	**724-1200**
7/8	3/4	7/8	3-1/8	3	**724-0203**	**724-1203**
7/8	3/4	1	3-1/4	3	**724-0206**	**724-1206**

Size	Shank Dia.	Flute Length	Overall Length	No. of Flute	Uncoated Order No.	TiN Coated Order No.
7/8"	3/4"	1-1/8"	3-3/8"	5	**724-0209**	**724-1209**
7/8	3/4	1-7/8	4-1/8	5	**724-0212**	**724-1212**
7/8	3/4	3-1/2	5-5/8	5	**724-0215**	**724-1215**
7/8	7/8	1-1/8	3-3/8	5	**724-0218**	**724-1218**
7/8	7/8	1-7/8	4-1/8	5	**724-0221**	**724-1221**
7/8	7/8	3-1/2	5-3/4	5	**724-0224**	**724-1224**
7/8	1	1-3/4	5	3	**724-0227**	**724-1227**
1	3/4	1-1/8	3-3/8	6	**724-0230**	**724-1230**
1	3/4	1-1/2	3-3/8	5	**724-0233**	**724-1233**
1	3/4	1-7/8	4-1/8	5	**724-0236**	**724-1236**
1	3/4	2	4-1/4	5	**724-0239**	**724-1239**
1	3/4	3	5-1/4	5	**724-0242**	**724-1242**
1	3/4	4	6-1/4	5	**724-0245**	**724-1245**
1	1	1	3-1/2	3	**724-0248**	**724-1248**
1	1	1	3-1/2	5	**724-0251**	**724-1251**
1	1	1-1/8	3-5/8	5	**724-0254**	**724-1254**
1	1	1-5/8	4-1/8	5	**724-0257**	**724-1257**
1	1	1-3/4	5	3	**724-0260**	**724-1260**
1	1	2	4-1/2	5	**724-0263**	**724-1263**
1	1	3	5-1/2	5	**724-0266**	**724-1266**
1	1	4	6-1/2	5	**724-0269**	**724-1269**
1	1	6	8-1/2	5	**724-0272**	**724-1272**
1-1/8	3/4	1-1/8	3-3/8	6	**724-0275**	**724-1275**
1-1/8	3/4	2	4-1/4	6	**724-0278**	**724-1278**
1-1/8	1	2	4-1/2	6	**724-0281**	**724-1281**
1-1/8	1	3-1/2	6	6	**724-0284**	**724-1284**
1-1/4	3/4	1-1/8	3-3/8	6	**724-0287**	**724-1287**
1-1/4	3/4	2	4-1/4	6	**724-0290**	**724-1290**
1-1/4	1-1/4	1-1/4	4	4	**724-0296**	**724-1296**
1-1/4	1-1/4	1-3/8	3-7/8	6	**724-0299**	**724-1299**
1-1/4	1-1/4	2	4-1/2	6	**724-0302**	**724-1302**
1-1/4	1-1/4	2	5-1/4	3	**724-0305**	**724-1305**
1-1/4	1-1/4	3	5-1/2	6	**724-0308**	**724-1308**
1-1/4	1-1/4	4	6-1/2	6	**724-0311**	**724-1311**
1-1/4	1-1/4	6	8-1/2	6	**724-0314**	**724-1314**
1-3/8	3/4	1-1/8	3-3/8	6	**724-0317**	**724-1317**
1-3/8	3/4	2	4-1/4	6	**724-0320**	**724-1320**
1-1/2	3/4	1-1/8	3-3/8	6	**724-0323**	**724-1323**
1-1/2	3/4	1-1/2	3-3/4	6	**724-0326**	**724-1326**
1-1/2	3/4	2	4-1/4	6	**724-0329**	**724-1329**
1-1/2	3/4	4	6-1/4	6	**724-0332**	**724-1332**
1-1/2	1-1/4	2	4-1/2	6	**724-0335**	**724-1335**
1-1/2	1-1/4	3	5-1/2	6	**724-0338**	**724-1338**
1-1/2	1-1/4	4	6-1/2	6	**724-0341**	**724-1341**
1-1/2	1-1/4	5	7-1/2	6	**724-0344**	**724-1344**
1-1/2	1-1/4	6	8-1/2	6	**724-0347**	**724-1347**
1-3/4	3/4	1-1/8	3-3/8	6	**724-0350**	**724-1350**
1-3/4	3/4	2	4-1/4	6	**724-0353**	**724-1353**
1-3/4	1-1/4	2	4-1/2	6	**724-0356**	**724-1356**
1-3/4	1-1/4	4	6-1/2	6	**724-0359**	**724-1359**
2	3/4	1-1/8	3-3/8	8	**724-0362**	**724-1362**
2	3/4	2	4-1/2	8	**724-0365**	**724-1365**
2	1-1/4	2	4-1/2	8	**724-0368**	**724-1368**
2	1-1/4	4	6-1/2	8	**724-0371**	**724-1371**
2	1-1/4	6-1/8	8-5/8	8	**724-0374**	**724-1374**
2	2	2	5-3/4	8	**724-0377**	**724-1377**
2	2	3	6-3/4	6	**724-0380**	**724-1380**
2	2	3	6-3/4	8	**724-0383**	**724-1383**
2	2	4	7-3/4	6	**724-0386**	**724-1386**
2	2	4	7-3/4	8	**724-0389**	**724-1389**
2	2	5	8-3/4	8	**724-0392**	**724-1392**
2	2	6	9-3/4	6	**724-0395**	**724-1395**
2	2	6	9-3/4	8	**724-0398**	**724-1398**
2	2	7	10-3/4	8	**724-0401**	**724-1401**
2	2	8	11-3/4	8	**724-0404**	**724-1404**
2	2	10	13-3/4	8	**724-0407**	**724-1407**
2	2	12	15-3/4	8	**724-0410**	**724-1410**

M42 8% Cobalt Fine Pitch Roughing End Mills

Non Center Cutting

- For use in high production milling in variety of exotic materials.
- Coating improves tool life and allows for higher speeds and feeds.
- Fine pitch design provides a better finish than coarse pitch end mills and eliminates chipping in harder materials.



Size	Shank Dia.	Flute Length	Overall Length	No. of Flute	Uncoated Order No.	TiN Coated Order No.
3/16"	3/8"	1/2"	2-3/8"	4	**724-2008**	**724-3008**
1/4	3/8	1/4	2-1/16	3	**724-2011**	**724-3011**
1/4	3/8	5/16	2-1/8	3	**724-2014**	**724-3014**
1/4	3/8	1/4	2-1/16	3	**724-2017**	**724-3017**
1/4	3/8	5/8	2-7/16	3	**724-2020**	**724-3020**
1/4	3/8	5/8	2-7/16	4	**724-2023**	**724-3023**
1/4	3/8	7/8	2-11/16	3	**724-2026**	**724-3026**
1/4	3/8	3/4	2-1/2	4	**724-2029**	**724-3029**
1/4	3/8	1-1/	2-15/16	4	**724-2032**	**724-3032**
1/4	3/8	1-1/8	3-1/8	4	**724-2033**	**724-3033**
1/4	3/8	1-1/4	3-1/16	4	**724-2035**	**724-3035**
1/4	3/8	1-1/4	3-1/8	4	**724-2038**	**724-3038**
1/4	3/8	1-3/8	3-1/8	3	**724-2041**	**724-3041**
9/32	3/8	3/4	2-1/2	3	**724-2044**	**724-3044**
5/16	3/8	7/16	2-3/16	3	**724-2047**	**724-3047**
5/16	3/8	3/4	2-1/2	3	**724-2050**	**724-3050**
5/16	3/8	3/4	2-1/2	4	**724-2053**	**724-3053**
5/16	3/8	1-1/8	2-15/16	3	**724-2056**	**724-3056**
5/16	3/8	1-3/8	3-1/8	4	**724-2059**	**724-3059**
11/32	3/8	3/4	2-1/2	3	**724-2062**	**724-3062**
3/8	3/8	3/8	2-5/32	3	**724-2065**	**724-3065**
3/8	3/8	3/8	2-5/32	4	**724-2068**	**724-3068**
3/8	3/8	7/16	2-3/16	4	**724-2071**	**724-3071**
3/8	3/8	1/2	2-5/16	3	**724-2074**	**724-3074**
3/8	3/8	3/4	2-1/2	4	**724-2077**	**724-3077**
3/8	3/8	7/8	2-5/8	4	**724-2080**	**724-3080**
3/8	3/8	7/8	2-7/8	3	**724-2083**	**724-3083**
3/8	3/8	1-1/8	2-15/16	4	**724-2086**	**724-3086**
3/8	3/8	1-1/2	3-1/4	4	**724-2089**	**724-3089**
3/8	3/8	1-5/8	3-3/16	4	**724-2092**	**724-3092**
7/16	3/8	1	2-5/16	3	**724-2093**	**724-3093**
7/16	3/8	1	2-5/16	4	**724-2094**	**724-3094**
7/16	3/8	1	2-11/16	4	**724-2095**	**724-3095**
15/32	1/2	1-1/4	3-1/4	4	**724-2098**	**724-3098**
1/2	1/2	1/2	2-1/2	3	**724-2101**	**724-3101**
1/2	1/2	1/2	2-1/2	4	**724-2107**	**724-3107**
1/2	1/2	5/8	2-5/8	4	**724-2110**	**724-3110**
1/2	1/2	1	3	4	**724-2113**	**724-3113**
1/2	1/2	1-1/4	3-1/4	4	**724-2116**	**724-3116**
1/2	1/2	1-5/8	3-5/8	4	**724-2119**	**724-3119**
1/2	1/2	2	4	4	**724-2122**	**724-3122**
1/2	1/2	2-1/2	4-1/2	4	**724-2125**	**724-3125**
1/2	1/2	3	5	4	**724-2128**	**724-3128**
9/16	1/2	1-3/8	3-3/8	4	**724-2131**	**724-3131**
5/8	5/8	5/8	2-3/4	3	**724-2134**	**724-3134**
5/8	5/8	5/8	2-3/4	4	**724-2137**	**724-3137**
5/8	5/8	3/4	2-7/8	4	**724-2140**	**724-3140**
5/8	5/8	1-1/4	3-3/8	4	**724-2143**	**724-3143**
5/8	5/8	1-5/8	3-3/4	4	**724-2146**	**724-3146**
5/8	5/8	2	4-1/8	4	**724-2149**	**724-3149**
5/8	5/8	2-1/8	4-1/4	4	**724-2152**	**724-3152**
5/8	5/8	2-1/2	4-5/8	4	**724-2155**	**724-3155**
5/8	5/8	3	5-1/4	4	**724-2158**	**724-3158**
5/8	5/8	3-1/8	5-1/4	4	**724-2161**	**724-3161**
11/16	5/8	1-5/8	3-3/4	4	**724-2164**	**724-3164**
3/4	5/8	1-5/8	3-3/4	4	**724-2167**	**724-3167**
3/4	3/4	3/4	2-7/8	3	**724-2170**	**724-3170**
3/4	3/4	3/4	3	4	**724-2173**	**724-3173**
3/4	3/4	7/8	3-1/8	3	**724-2176**	**724-3176**
3/4	3/4	1-1/4	3-1/2	4	**724-2179**	**724-3179**
3/4	3/4	1-1/2	3-3/4	3	**724-2182**	**724-3182**
3/4	3/4	1-5/8	3-3/4	4	**724-2185**	**724-3185**
3/4	3/4	2-1/4	4-1/2	4	**724-2188**	**724-3188**
3/4	3/4	2-1/2	4-5/8	4	**724-2191**	**724-3191**
3/4	3/4	3	5-1/4	4	**724-2194**	**724-3194**
3/4	3/4	4-1/8	6-3/8	4	**724-2197**	**724-3197**
13/16	3/4	1-7/8	4-1/8	4	**724-2200**	**724-3200**
7/8	3/4	7/8	3-1/8	3	**724-2203**	**724-3203**
7/8	3/4	1	3-1/4	3	**724-2206**	**724-3206**

Size	Shank Dia.	Flute Length	Overall Length	No. of Flute	Uncoated Order No.	TiN Coated Order No.
7/8"	3/4"	1-1/8"	3-3/8"	5	**724-2209**	**724-3209**
7/8	3/4	1-7/8	4-1/8	5	**724-2212**	**724-3212**
7/8	3/4	3-1/2	5-5/8	5	**724-2215**	**724-3215**
7/8	7/8	1-1/8	3-3/8	5	**724-2218**	**724-3218**
7/8	7/8	1-7/8	4-1/8	5	**724-2221**	**724-3221**
7/8	7/8	3-1/2	5-3/4	5	**724-2224**	**724-3224**
7/8	1	1-3/4	5	3	**724-2227**	**724-3227**
1	3/4	1-1/8	3-3/8	5	**724-2229**	**724-3229**
1	3/4	1-1/8	3-3/8	6	**724-2230**	**724-3230**
1	3/4	1-1/2	3-3/8	5	**724-2233**	**724-3233**
1	3/4	1-7/8	4-1/8	5	**724-2236**	**724-3236**
1	3/4	2	4-1/4	5	**724-2239**	**724-3239**
1	3/4	3	5-1/4	5	**724-2242**	**724-3242**
1	3/4	4	6-1/4	5	**724-2245**	**724-3245**
1	1	1	3-1/2	3	**724-2248**	**724-3248**
1	1	1	3-1/2	5	**724-2251**	**724-3251**
1	1	1-1/8	3-5/8	5	**724-2254**	**724-3254**
1	1	1-5/8	4-1/8	5	**724-2257**	**724-3257**
1	1	1-3/4	5	3	**724-2260**	**724-3260**
1	1	2	4-1/2	5	**724-2263**	**724-3263**
1	1	3	5-1/2	5	**724-2266**	**724-3266**
1	1	4	6-1/2	5	**724-2269**	**724-3269**
1	1	6	8-1/2	5	**724-2272**	**724-3272**
1-1/8	3/4	1-1/8	3-3/8	6	**724-2275**	**724-3275**
1-1/8	3/4	2	4-1/4	6	**724-2278**	**724-3278**
1-1/8	1	2	4-1/2	6	**724-2281**	**724-3281**
1-1/8	1	3-1/2	6	6	**724-2284**	**724-3284**
1-1/4	3/4	1-1/8	3-3/8	6	**724-2287**	**724-3287**
1-1/4	3/4	2	4-1/4	6	**724-2290**	**724-3290**
1-1/4	1-1/4	1-1/4	4	4	**724-2296**	**724-3296**
1-1/4	1-1/4	1-3/8	3-7/8	6	**724-2299**	**724-3299**
1-1/4	1-1/4	2	4-1/2	6	**724-2302**	**724-3302**
1-1/4	1-1/4	2	5-1/4	3	**724-2305**	**724-3305**
1-1/4	1-1/4	3	5-1/2	6	**724-2308**	**724-3308**
1-1/4	1-1/4	4	6-1/2	6	**724-2311**	**724-3311**
1-1/4	1-1/4	6	8-1/2	6	**724-2314**	**724-3314**
1-3/8	3/4	1-1/8	3-3/8	6	**724-2317**	**724-3317**
1-3/8	3/4	2	4-1/4	6	**724-2320**	**724-3320**
1-1/2	3/4	1-1/8	3-3/8	6	**724-2323**	**724-3323**
1-1/2	3/4	1-1/2	3-3/4	6	**724-2326**	**724-3326**
1-1/2	3/4	2	4-1/4	6	**724-2329**	**724-3329**
1-1/2	3/4	4	6-1/4	6	**724-2332**	**724-3332**
1-1/2	1-1/4	2	4-1/2	6	**724-2335**	**724-3335**
1-1/2	1-1/4	3	5-1/2	6	**724-2338**	**724-3338**
1-1/2	1-1/4	4	6-1/2	6	**724-2341**	**724-3341**
1-1/2	1-1/4	5	7-1/2	6	**724-2344**	**724-3344**
1-1/2	1-1/4	6	8-1/2	6	**724-2347**	**724-3347**
1-3/4	3/4	1-1/8	3-3/8	6	**724-2350**	**724-3350**
1-3/4	3/4	2	4-1/4	6	**724-2353**	**724-3353**
1-3/4	1-1/4	2	4-1/2	6	**724-2356**	**724-3356**
1-3/4	1-1/4	4	6-1/2	6	**724-2359**	**724-3359**
2	3/4	1-1/8	3-3/8	8	**724-2362**	**724-3362**
2	3/4	2	4-1/2	8	**724-2365**	**724-3365**
2	1-1/4	2	4-1/2	8	**724-2368**	**724-3368**
2	1-1/4	4	6-1/2	8	**724-2371**	**724-3371**
2	1-1/4	6-1/8	8-5/8	8	**724-2374**	**724-3374**
2	2	2	5-3/4	8	**724-2377**	**724-3377**
2	2	3	6-3/4	6	**724-2380**	**724-3380**
2	2	3	6-3/4	8	**724-2383**	**724-3383**
2	2	4	7-3/4	6	**724-2386**	**724-3386**
2	2	4	7-3/4	8	**724-2389**	**724-3389**
2	2	5	8-3/4	8	**724-2392**	**724-3392**
2	2	6	9-3/4	6	**724-2395**	**724-3395**
2	2	6	9-3/4	8	**724-2398**	**724-3398**
2	2	7	10-3/4	8	**724-2401**	**724-3401**
2	2	8	11-3/4	8	**724-2404**	**724-3404**
2	2	10	13-3/4	8	**724-2407**	**724-3407**
2	2	12	15-3/4	8	**724-2410**	**724-3410**

M42 8% Cobalt Fine Pitch Roughing End Mills

Center Cutting



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Size	Shank Dia.	Flute Length	Overall Length	No. of Flute	Uncoate Order No.	TiN Coated Order No.
3/16"	3/8"	1/2"	2-3/8"	4	**724-0508**	**724-1508**
1/4	3/8	1/4	2-1/16	3	**724-0511**	**724-1511**
1/4	3/8	5/16	2-1/8	3	**724-0514**	**724-1514**
1/4	3/8	5/8	2-7/16	3	**724-0520**	**724-1520**
1/4	3/8	5/8	2-7/16	4	**724-0523**	**724-1523**
1/4	3/8	7/8	2-11/16	3	**724-0526**	**724-1526**
1/4	3/8	3/4	2-1/2	4	**724-0529**	**724-1529**
1/4	3/8	1-1/8	2-15/16	4	**724-0532**	**724-1532**
1/4	3/8	1-1/4	3-1/16	4	**724-0535**	**724-1535**
1/4	3/8	1-1/4	3-1/8	4	**724-0538**	**724-1538**
1/4	3/8	1-3/8	3-1/8	3	**724-0541**	**724-1541**
9/32	3/8	3/4	2-1/2	3	**724-0544**	**724-1544**
5/16	3/8	7/16	2-3/16	3	**724-0547**	**724-1547**
5/16	3/8	3/4	2-1/2	3	**724-0550**	**724-1550**
5/16	3/8	3/4	2-1/2	4	**724-0553**	**724-1553**
5/16	3/8	1-1/8	2-15/16	3	**724-0556**	**724-1556**
5/16	3/8	1-3/8	3-1/8	4	**724-0559**	**724-1559**
11/32	3/8	3/4	2-1/2	3	**724-0562**	**724-1562**
3/8	3/8	3/8	2-5/32	3	**724-0565**	**724-1565**
3/8	3/8	3/8	2-5/32	4	**724-0568**	**724-1568**
3/8	3/8	7/16	2-3/16	4	**724-0571**	**724-1571**
3/8	3/8	1/2	2-5/16	3	**724-0574**	**724-1574**
3/8	3/8	3/4	2-1/2	4	**724-0577**	**724-1577**
3/8	3/8	7/8	2-5/8	4	**724-0580**	**724-1580**
3/8	3/8	7/8	2-7/8	3	**724-0583**	**724-1583**
3/8	3/8	1-1/8	2-15/16	4	**724-0586**	**724-1586**
3/8	3/8	1-1/2	3-1/4	4	**724-0589**	**724-1589**
3/8	3/8	1-5/8	3-3/16	4	**724-0592**	**724-1592**
7/16	3/8	1	2-11/16	4	**724-0595**	**724-1595**
15/32	1/2	1-1/4	3-1/4	4	**724-0598**	**724-1598**
1/2	1/2	1/2	2-1/2	3	**724-0601**	**724-1601**
1/2	1/2	1/2	2-1/2	4	**724-0607**	**724-1607**
1/2	1/2	5/8	2-5/8	4	**724-0610**	**724-1610**
1/2	1/2	1	3	4	**724-0613**	**724-1613**
1/2	1/2	1-1/4	3-1/4	4	**724-0616**	**724-1616**
1/2	1/2	1-5/8	3-5/8	4	**724-0619**	**724-1619**
1/2	1/2	2	4	4	**724-0622**	**724-1622**
1/2	1/2	2-1/2	4-1/2	4	**724-0625**	**724-1625**
1/2	1/2	3	5	4	**724-0628**	**724-1628**
9/16	1/2	1-3/8	3-3/8	4	**724-0631**	**724-1631**
5/8	5/8	5/8	2-3/4	3	**724-0634**	**724-1634**
5/8	5/8	5/8	2-3/4	4	**724-0637**	**724-1637**
5/8	5/8	3/4	2-7/8	4	**724-0640**	**724-1640**
5/8	5/8	1-1/4	3-3/8	4	**724-0643**	**724-1643**
5/8	5/8	1-5/8	3-3/4	4	**724-0646**	**724-1646**
5/8	5/8	2	4-1/8	4	**724-0649**	**724-1649**
5/8	5/8	2-1/8	4-1/4	4	**724-0652**	**724-1652**
5/8	5/8	2-1/2	4-5/8	4	**724-0655**	**724-1655**
5/8	5/8	3	5-1/4	4	**724-0658**	**724-1658**
5/8	5/8	3-1/8	5-1/4	4	**724-0661**	**724-1661**
11/16	5/8	1-5/8	3-3/4	4	**724-0664**	**724-1664**
3/4	5/8	1-5/8	3-3/4	4	**724-0667**	**724-1667**
3/4	3/4	3/4	2-7/8	3	**724-0670**	**724-1670**
3/4	3/4	3/4	2-7/8	4	**724-0673**	**724-1673**
3/4	3/4	7/8	3-1/8	3	**724-0676**	**724-1676**
3/4	3/4	1-1/4	3-1/2	4	**724-0679**	**724-1679**
3/4	3/4	1-1/2	3-3/4	3	**724-0682**	**724-1682**
3/4	3/4	1-5/8	3-3/4	4	**724-0685**	**724-1685**
3/4	3/4	2-1/4	4-1/2	4	**724-0688**	**724-1688**
3/4	3/4	2-1/2	4-5/8	4	**724-0691**	**724-1691**
3/4	3/4	3	5-1/4	4	**724-0694**	**724-1694**
3/4	3/4	4-1/8	6-3/8	4	**724-0697**	**724-1697**
13/16	3/4	1-7/8	4-1/8	4	**724-0700**	**724-1700**
7/8	3/4	7/8	3-1/8	3	**724-0703**	**724-1703**
7/8	3/4	1	3-1/4	3	**724-0706**	**724-1706**
7/8	3/8	1-7/8	3-3/8	5	**724-0709**	**724-1709**

Size	Shank Dia.	Flute Length	Overall Length	No. of Flute	Uncoated Order No.	TiN Coated Order No.
7/8"	3/4"	1-7/8"	4-1/8"	5	**724-0712**	**724-1712**
7/8	3/4	3-1/2	5-5/8	5	**724-0715**	**724-1715**
7/8	7/8	1-1/8	3-3/8	5	**724-0718**	**724-1718**
7/8	7/8	1-7/8	4-1/8	5	**724-0721**	**724-1721**
7/8	7/8	3-1/2	5-3/4	5	**724-0724**	**724-1724**
7/8	1	1-3/4	5	3	**724-0727**	**724-1727**
1	3/4	1-1/8	3-3/8	6	**724-0730**	**724-1730**
1	3/4	1-1/2	3-3/8	5	**724-0733**	**724-1733**
1	3/4	1-7/8	4-1/8	5	**724-0736**	**724-1736**
1	3/4	2	4-1/4	5	**724-0739**	**724-1739**
1	3/4	3	5-1/4	5	**724-0742**	**724-1742**
1	3/4	4	6-1/4	5	**724-0745**	**724-1745**
1	1	1	3-1/2	3	**724-0748**	**724-1748**
1	1	1	3-1/2	5	**724-0751**	**724-1751**
1	1	1-1/8	3-5/8	5	**724-0754**	**724-1754**
1	1	1-5/8	4-1/8	5	**724-0757**	**724-1757**
1	1	1-3/4	5	3	**724-0760**	**724-1760**
1	1	2	4-1/2	5	**724-0763**	**724-1763**
1	1	3	5-1/2	5	**724-0766**	**724-1766**
1	1	4	6-1/2	5	**724-0769**	**724-1769**
1	1	6	8-1/2	5	**724-0772**	**724-1772**
1-1/8	3/4	1-1/8	3-3/8	6	**724-0775**	**724-1775**
1-1/8	3/4	2	4-1/4	6	**724-0778**	**724-1778**
1-1/8	1	2	4-1/2	6	**724-0781**	**724-1781**
1-1/8	1	3-1/2	6	6	**724-0784**	**724-1784**
1-1/4	3/4	1-1/8	3-3/8	6	**724-0787**	**724-1787**
1-1/4	3/4	2	4-1/4	6	**724-0790**	**724-1790**
1-1/4	1-1/4	1-1/4	4	4	**724-0796**	**724-1796**
1-1/4	1-1/4	1-3/8	3-7/8	6	**724-0799**	**724-1799**
1-1/4	1-1/4	2	4-1/2	6	**724-0802**	**724-1802**
1-1/4	1-1/4	2	5-1/4	3	**724-0805**	**724-1805**
1-1/4	1-1/4	3	5-1/2	6	**724-0808**	**724-1808**
1-1/4	1-1/4	4	6-1/2	6	**724-0811**	**724-1811**
1-1/4	1-1/4	6	8-1/2	6	**724-0814**	**724-1814**
1-3/8	3/4	1-1/8	3-3/8	6	**724-0817**	**724-1817**
1-3/8	3/4	2	4-1/4	6	**724-0820**	**724-1820**
1-1/2	3/4	1-1/8	3-3/8	6	**724-0823**	**724-1823**
1-1/2	3/4	1-1/2	3-3/4	6	**724-0826**	**724-1826**
1-1/2	3/4	2	4-1/4	6	**724-0829**	**724-1829**
1-1/2	3/4	4	6-1/4	6	**724-0832**	**724-1832**
1-1/2	1-1/4	2	4-1/2	6	**724-0835**	**724-1835**
1-1/2	1-1/4	3	5-1/2	6	**724-0838**	**724-1838**
1-1/2	1-1/4	4	6-1/2	6	**724-0841**	**724-1841**
1-1/2	1-1/4	5	7-1/2	6	**724-0844**	**724-1844**
1-1/2	1-1/4	6	8-1/2	6	**724-0847**	**724-1847**
1-3/4	3/4	1-1/8	3-3/8	6	**724-0850**	**724-1850**
1-3/4	3/4	2	4-1/4	6	**724-0853**	**724-1853**
1-3/4	1-1/4	2	4-1/2	6	**724-0856**	**724-1856**
1-3/4	1-1/4	4	6-1/2	6	**724-0859**	**724-1859**
2	3/4	1-1/8	3-3/8	8	**724-0862**	**724-1862**
2	3/4	2	4-1/2	8	**724-0865**	**724-1865**
2	1-1/4	2	4-1/2	8	**724-0868**	**724-1868**
2	1-1/4	4	6-1/2	8	**724-0871**	**724-1871**
2	1-1/4	6-1/8	8-5/8	8	**724-0874**	**724-1874**
2	2	2	5-3/4	8	**724-0877**	**724-1877**
2	2	3	6-3/4	6	**724-0880**	**724-1880**
2	2	3	6-3/4	8	**724-0883**	**724-1883**
2	2	4	7-3/4	6	**724-0886**	**724-1886**
2	2	4	7-3/4	8	**724-0889**	**724-1889**
2	2	5	8-3/4	8	**724-0892**	**724-1892**
2	2	6	9-3/4	6	**724-0895**	**724-1895**
2	2	6	9-3/4	8	**724-0898**	**724-1898**
2	2	7	10-3/4	8	**724-0901**	**724-1901**
2	2	8	11-3/4	8	**724-0904**	**724-1904**
2	2	10	13-3/4	8	**724-0907**	**724-1907**
2	2	12	15-3/4	8	**724-0910**	**724-1910**

M42 8% Cobalt Roughing & Finishing End Mills

Non Center Cutting

Cobalt



Size	Shank Dia.	Flute Length	Overall Length	No. of Flute	Uncoated Order No.	TiN Coated Order No.
3/16"	3/8"	1/2"	2-3/8"	3	**724-4008**	**724-5008**
1/4	3/8	1/4	2-1/16	3	**724-4011**	**724-5011**
1/4	3/8	5/16	2-1/8	4	**724-4014**	**724-5014**
1/4	3/8	1/4	2-1/16	3	**724-4017**	**724-5017**
1/4	3/8	5/8	2-7/16	3	**724-4020**	**724-5020**
1/4	3/8	5/8	2-7/16	4	**724-4023**	**724-5023**
1/4	3/8	7/8	2-11/16	4	**724-4026**	**724-5026**
1/4	3/8	3/4	2-1/2	4	**724-4029**	**724-5029**
1/4	3/8	1-1/8	2-15/16	4	**724-4032**	**724-5032**
1/4	3/8	1-1/4	3-1/16	4	**724-4035**	**724-5035**
1/4	3/8	1-1/4	3-1/8	4	**724-4038**	**724-5038**
1/4	3/8	1-3/8	3-1/8	3	**724-4041**	**724-5041**
9/32	3/8	3/4	2-1/2	3	**724-4044**	**724-5044**
5/16	3/8	7/16	2-3/16	4	**724-4047**	**724-5047**
5/16	3/8	3/4	2-1/2	3	**724-4050**	**724-5050**
5/16	3/8	3/4	2-1/2	4	**724-4053**	**724-5053**
5/16	3/8	1-1/8	2-15/16	4	**724-4056**	**724-5056**
5/16	3/8	1-3/8	3-1/8	3	**724-4058**	**724-5058**
5/16	3/8	1-3/8	3-1/8	4	**724-4059**	**724-5059**
11/32	3/8	3/4	2-1/2	3	**724-4062**	**724-5062**
3/8	3/8	3/8	2-5/32	3	**724-4065**	**724-5065**
3/8	3/8	3/8	2-5/32	4	**724-4068**	**724-5068**
3/8	3/8	7/16	2-3/16	4	**724-4071**	**724-5071**
3/8	3/8	1/2	2-5/16	3	**724-4074**	**724-5074**
3/8	3/8	3/4	2-1/2	3	**724-4076**	**724-5076**
3/8	3/8	3/4	2-1/2	4	**724-4077**	**724-5077**
3/8	3/8	7/8	2-5/8	4	**724-4080**	**724-5080**
3/8	3/8	7/8	2-7/8	3	**724-4083**	**724-5083**
3/8	3/8	1-1/8	2-15/16	4	**724-4086**	**724-5086**
3/8	3/8	1-3/8	3-3/16	4	**724-4088**	**724-5088**
3/8	3/8	1-1/2	3-1/4	4	**724-4089**	**724-5089**
3/8	3/8	1-5/8	3-3/16	4	**724-4092**	**724-5092**
7/16	3/8	1	2-11/16	4	**724-4095**	**724-5095**
15/32	1/2	1-1/4	3-1/4	4	**724-4098**	**724-5098**
1/2	1/2	1/2	2-1/2	3	**724-4101**	**724-5101**
1/2	1/2	1/2	2-1/2	3	**724-4104**	**724-5104**
1/2	1/2	1/2	2-1/2	4	**724-4107**	**724-5107**
1/2	1/2	5/8	2-5/8	4	**724-4110**	**724-5110**
1/2	1/2	1	3	4	**724-4113**	**724-5113**
1/2	1/2	1-1/4	3-1/4	3	**724-4115**	**724-5115**
1/2	1/2	1-1/4	3-1/4	4	**724-4116**	**724-5116**
1/2	1/2	1-5/8	3-5/8	4	**724-4119**	**724-5119**
1/2	1/2	2	4	3	**724-4121**	**724-5121**
1/2	1/2	2	4	4	**724-4122**	**724-5122**
1/2	1/2	2-1/2	4-1/2	4	**724-4125**	**724-5125**
1/2	1/2	3	5	4	**724-4128**	**724-5128**
9/16	1/2	1-3/8	3-3/8	4	**724-4131**	**724-5131**
5/8	5/8	5/8	2-3/4	3	**724-4134**	**724-5134**
5/8	5/8	5/8	2-3/4	4	**724-4137**	**724-5137**
5/8	5/8	3/4	2-7/8	4	**724-4140**	**724-5140**
5/8	5/8	1-1/4	3-3/8	4	**724-4143**	**724-5143**
5/8	5/8	1-5/8	3-3/4	3	**724-4145**	**724-5145**
5/8	5/8	1-5/8	3-3/4	4	**724-4146**	**724-5146**
5/8	5/8	2	4-1/8	4	**724-4149**	**724-5149**
5/8	5/8	2-1/8	4-1/4	4	**724-4152**	**724-5152**
5/8	5/8	2-1/2	4-5/8	3	**724-4154**	**724-5154**
5/8	5/8	2-1/2	4-5/8	4	**724-4155**	**724-5155**
5/8	5/8	3	5-1/4	4	**724-4158**	**724-5158**
5/8	5/8	3-1/8	5-1/4	4	**724-4161**	**724-5161**
11/16	5/8	1-5/8	3-3/4	4	**724-4164**	**724-5164**
3/4	5/8	1-5/8	3-3/4	4	**724-4167**	**724-5167**

Size	Shank Dia.	Flute Length	Overall Length	No. of Flute	Uncoated Order No.	TiN Coated Order No.
3/4	3/4	3/4	2-7/8	3	**724-4170**	**724-5170**
3/4	3/4	3/4	3	4	**724-4173**	**724-5173**
3/4	3/4	7/8	3-1/8	3	**724-4176**	**724-5176**
3/4	3/4	1-1/4	3-1/2	4	**724-4179**	**724-5179**
3/4	3/4	1-1/2	3-3/4	3	**724-4182**	**724-5182**
3/4	3/4	1-5/8	3-3/4	4	**724-4185**	**724-5185**
3/4	3/4	1-5/8	3-7/8	3	**724-4186**	**724-5186**
3/4	3/4	2-1/4	4-1/2	4	**724-4188**	**724-5188**
3/4	3/4	2-1/2	4-5/8	4	**724-4191**	**724-5191**
3/4	3/4	3	5-1/4	3	**724-4193**	**724-5193**
3/4	3/4	3	5-1/4	4	**724-4194**	**724-5194**
2	2	6	9-3/4	6	**724-4395**	**724-5395**
2	2	6	9-3/4	8	**724-4398**	**724-5398**
2	2	7	10-3/4	8	**724-4401**	**724-5401**
2	2	8	11-3/4	8	**724-4404**	**724-5404**
2	2	10	13-3/4	8	**724-4407**	**724-5407**
2	2	12	15-3/4	8	**724-4410**	**724-5410**
3/4"	3/4"	4-1/8"	6-3/8"	4	**724-4197**	**724-5197**
13/16	3/4	1-7/8	4-1/8	5	**724-4200**	**724-5200**
7/8	3/4	7/8	3-1/8	3	**724-4203**	**724-5203**
7/8	3/4	1	3-1/4	3	**724-4206**	**724-5206**
7/8	3/4	1-1/8	3-3/8	5	**724-4209**	**724-5209**
7/8	3/4	1-3/4	4	3	**724-4211**	**724-5211**
7/8	3/4	1-7/8	4-1/8	5	**724-4212**	**724-5212**
7/8	3/4	3-1/2	5-5/8	5	**724-4215**	**724-5215**
7/8	7/8	1-1/8	3-3/8	5	**724-4218**	**724-5218**
7/8	7/8	1-7/8	4-1/8	5	**724-4221**	**724-5221**
7/8	7/8	3-1/2	5-3/4	5	**724-4224**	**724-5224**
7/8	1	1-3/4	5	3	**724-4227**	**724-5227**
1	3/4	1-1/8	3-3/8	6	**724-4230**	**724-5230**
1	3/4	1-1/2	3-3/8	5	**724-4233**	**724-5233**
1	3/4	1-1/2	3-3/4	3	**724-4234**	**724-5234**
1	3/4	1-7/8	4-1/8	5	**724-4236**	**724-5236**
1	3/4	2	4-1/4	5	**724-4239**	**724-5239**
1	3/4	3	5-1/4	5	**724-4242**	**724-5242**
1	3/4	4	6-1/4	4	**724-4245**	**724-5245**
1	1	1	3-1/2	3	**724-4248**	**724-5248**
1	1	1	3-1/2	5	**724-4251**	**724-5251**
1	1	1-1/8	3-5/8	6	**724-4254**	**724-5254**
1	1	1-5/8	4-1/8	6	**724-4257**	**724-5257**
1	1	1-3/4	5	3	**724-4260**	**724-5260**
1	1	2	4-1/2	3	**724-4262**	**724-5262**
1	1	2	4-1/2	6	**724-4263**	**724-5263**
1	1	3	5-1/2	5	**724-4266**	**724-5266**
1	1	4	6-1/2	3	**724-4268**	**724-5268**
1	1	4	6-1/2	5	**724-4269**	**724-5269**
1	1	6	8-1/2	5	**724-4272**	**724-5272**
1-1/8	3/4	1-1/8	3-3/8	6	**724-4275**	**724-5275**
1-1/8	3/4	2	4-1/4	6	**724-4278**	**724-5278**
1-1/8	1	2	4-1/2	6	**724-4281**	**724-5281**
1-1/8	1	3-1/2	6	6	**724-4284**	**724-5284**
1-1/4	3/4	1-1/8	3-3/8	6	**724-4287**	**724-5287**
1-1/4	3/4	1-1/2	3-3/4	3	**724-4289**	**724-5289**
1-1/4	3/4	2	4-1/4	6	**724-4290**	**724-5290**
1-1/4	3/4	2	4-1/2	6	**724-4293**	**724-5293**
1-1/4	1-1/4	1-1/4	4	4	**724-4296**	**724-5296**
1-1/4	1-1/4	1-3/8	3-7/8	6	**724-4299**	**724-5299**
1-1/4	1-1/4	2	4-1/2	3	**724-4301**	**724-5301**
1-1/4	1-1/4	2	4-1/2	6	**724-4302**	**724-5302**
1-1/4	1-1/4	2	5-1/4	3	**724-4305**	**724-5305**
1-1/4	1-1/4	3	5-1/2	6	**724-4308**	**724-5308**

M42 8% Cobalt Roughing & Finishing End Mills Continued

Size	Shank Dia.	Flute Length	Overall Length	No. of Flute	Uncoated Order No.	TiN Coated Order No.
1-1/4	1-1/4	4	6-1/2	3	**724-4310**	**724-5311**
1-1/4	1-1/4	4	6-1/2	6	**724-4311**	**724-5314**
1-1/4	1-1/4	6	8-1/2	6	**724-4314**	**724-5317**
1-3/8	3/4	1-1/8	3-3/8	6	**724-4317**	**724-5320**
1-3/8	3/4	2	4-1/4	6	**724-4320**	**724-5323**
1-1/2	3/4	1-1/8	3-3/8	6	**724-4323**	**724-5326**
1-1/2	3/4	1-1/2	3-3/4	6	**724-4326**	**724-5329**
1-1/2	3/4	2	4-1/2	6	**724-4329**	**724-5332**
1-1/2	3/4	4	6-1/4	6	**724-4332**	**724-5334**
1-1/2	1-1/4	2	4-1/2	3	**724-4334**	**724-5335**
1-1/2	1-1/4	2	4-1/2	6	**724-4335**	**724-5338**
1-1/2	1-1/4	3	5-1/2	6	**724-4338**	**724-5340**
1-1/2	1-1/4	4	6-1/2	3	**724-4340**	**724-5341**
1-1/2	1-1/4	4	6-1/2	6	**724-4341**	**724-5344**
1-1/2	1-1/4	5	7-1/2	6	**724-4344**	**724-5347**
1-1/2	1-1/4	6	8-1/2	6	**724-4347**	**724-5350**
1-3/4	3/4	1-1/8	3-3/8	6	**724-4350**	**724-5353**

Size	Shank Dia.	Flute Length	Overall Length	No. of Flute	Uncoated Order No.	TiN Coated Order No.
1-3/4	3/4	2	4-1/4	6	**724-4353**	**724-5353**
1-3/4	1-1/4	2	4-1/2	6	**724-4356**	**724-5356**
1-3/4	1-1/4	4	6-1/2	6	**724-4359**	**724-5359**
2	3/4	1-1/8	3-3/8	8	**724-4362**	**724-5362**
2	3/4	2	4-1/2	8	**724-4365**	**724-5365**
2	1-1/4	2	4-1/2	3	**724-4367**	**724-5367**
2	1-1/4	2	4-1/2	8	**724-4368**	**724-5368**
2	1-1/4	4	6-1/2	3	**724-4370**	**724-5370**
2	1-1/4	4	6-1/2	8	**724-4371**	**724-5371**
2	1-1/4	6-1/8	8-5/8	8	**724-4374**	**724-5374**
2	2	2	5-3/4	8	**724-4377**	**724-5377**
2	2	3	6-3/4	6	**724-4380**	**724-5380**
2	2	3	6-3/4	8	**724-4383**	**724-5383**
2	2	4	7-3/4	6	**724-4386**	**724-5386**
2	2	4	7-3/4	8	**724-4389**	**724-5389**
2	2	5	8-3/4	8	**724-4392**	**724-5392**

M42 8% Cobalt 3 Flute Roughing End Mills For Aluminum

Coarse Pitch, Center Cutting



Size	Shank Dia.	Flute Length	Overall Length	Uncoated Order No.	TiN-Coated Order No.
3/16"	3/8"	1/2"	2-3/8"	**723-4403**	**724-6403**
1/4	3/8	5/8	2-7/16	**723-4406**	**724-6406**
1/4	3/8	1-1/8	2-15/16	**723-4409**	**724-6409**
1/4	3/8	1-3/8	3-1/8	**723-4412**	**724-6412**
9/32	3/8	3/4	2-1/2	**723-4415**	**724-6415**
5/16	3/8	3/4	2-1/2	**723-4418**	**724-6418**
5/16	3/8	1-1/8	2-15/16	**723-4421**	**724-6421**
5/16	3/8	1-3/8	3-1/8	**723-4424**	**724-6424**
11/32	3/8	3/4	2-1/2	**723-4427**	**724-6427**
3/8	3/8	7/16	2-3/16	**723-4430**	**724-6430**
3/8	3/8	3/4	2-1/2	**723-4433**	**724-6433**
3/8	3/8	1-1/8	2-13/16	**723-4436**	**724-6436**
3/8	3/8	1-1/2	3-1/4	**723-4439**	**724-6439**
3/8	3/8	1-5/8	3-3/16	**723-4442**	**724-6442**
7/16	3/8	1	2-11/16	**723-4445**	**724-6445**
15/32	1/2	1-1/4	3-1/4	**723-4448**	**724-6448**
1/2	1/2	5/8	2-5/8	**723-4451**	**724-6451**
1/2	1/2	1	3	**723-4454**	**724-6454**
1/2	1/2	1-1/4	3-1/4	**723-4457**	**724-6457**
1/2	1/2	1-5/8	3-5/8	**723-4460**	**724-6460**
1/2	1/2	2	4	**723-4463**	**724-6463**
1/2	1/2	2-1/2	4-1/2	**723-4466**	**724-6466**
1/2	1/2	3	5	**723-4469**	**724-6469**
9/16	1/2	1-3/8	3-3/8	**723-4472**	**724-6472**
5/8	5/8	3/4	2-7/8	**723-4475**	**724-6475**
5/8	5/8	1-1/4	3-3/8	**723-4478**	**724-6478**
5/8	5/8	1-5/8	3-3/4	**723-4481**	**724-6481**
5/8	5/8	2	4-1/8	**723-4484**	**724-6484**
5/8	5/8	2-1/8	4-1/4	**723-4487**	**724-6487**
5/8	5/8	2-1/2	4-5/8	**723-4490**	**724-6490**
5/8	5/8	3	5-1/8	**723-4493**	**724-6493**
5/8	5/8	3-1/8	5-1/4	**723-4496**	**724-6496**
11/16	5/8	1-5/8	3-3/4	**723-4499**	**724-6499**
3/4	5/8	1-5/8	3-3/4	**723-4502**	**724-6502**
3/4	3/4	3/4	3	**723-4505**	**724-6505**
3/4	3/4	1-1/4	3-1/2	**723-4508**	**724-6508**
3/4	3/4	1-5/8	3-3/4	**723-4511**	**724-6511**
3/4	3/4	1-5/8	3-7/8	**723-4514**	**724-6514**
3/4	3/4	2	4-1/4	**723-4517**	**724-6517**
3/4	3/4	2-1/4	4-1/2	**723-4520**	**724-6520**
3/4	3/4	2-1/2	4-3/4	**723-4523**	**724-6523**
3/4	3/4	3	5-1/4	**723-4526**	**724-6526**
3/4	3/4	4	6-1/4	**723-4529**	**724-6529**
3/4	3/4	4-1/8	6-3/8	**723-4532**	**724-6532**
7/8	3/4	1-1/8	3-3/8	**723-4535**	**724-6535**
7/8	3/4	1-1/2	3-3/4	**723-4538**	**724-6538**
7/8	3/4	1-7/8	4-1/8	**723-4541**	**724-6541**

Size	Shank Dia.	Flute Length	Overall Length	Uncoated Order No.	TiN-Coated Order No.
7/8"	3/4"	3-1/2"	5-5/8"	**723-4544**	**724-6544**
7/8	7/8	1-1/8	3-3/8	**723-4547**	**724-6547**
7/8	7/8	1-7/8	4-1/8	**723-4550**	**724-6550**
1	3/4	1-1/8	3-3/8	**723-4553**	**724-6553**
1	3/4	1-1/2	3-3/4	**723-4556**	**724-6556**
1	3/4	2	4-1/4	**723-4559**	**724-6559**
1	3/4	3	5-1/4	**723-4562**	**724-6562**
1	3/4	4	6-1/4	**723-4565**	**724-6565**
1	1	1-1/8	3-5/8	**723-4568**	**724-6568**
1	1	1-5/8	4-1/8	**723-4571**	**724-6571**
1	1	2	4-1/2	**723-4574**	**724-6574**
1	1	3	5-1/2	**723-4577**	**724-6577**
1	1	4	6-1/2	**723-4580**	**724-6580**
1	1	6	8-1/2	**723-4583**	**724-6583**
1-1/8	3/4	1-1/8	3-3/8	**723-4586**	**724-6586**
1-1/4	3/4	1-1/2	3-3/4	**723-4589**	**724-6589**
1-1/4	3/4	2	4-1/4	**723-4592**	**724-6592**
1-1/4	1-1/4	2	4-1/2	**723-4595**	**724-6595**
1-1/4	1-1/4	3	5-1/2	**723-4598**	**724-6598**
1-1/4	1-1/4	4	6-1/2	**723-4601**	**724-6601**
1-1/4	1-1/4	6	8-1/2	**723-4604**	**724-6604**
1-3/8	3/4	2	4-1/4	**723-4607**	**724-6607**
1-1/2	3/4	1-1/2	3-3/4	**723-4610**	**724-6610**
1-1/2	3/4	2	4-1/4	**723-4613**	**724-6613**
1-1/2	1-1/4	2	4-1/2	**723-4616**	**724-6616**
1-1/2	1-1/4	3	5-1/2	**723-4619**	**724-6619**
1-1/2	1-1/4	4	6-1/2	**723-4622**	**724-6622**
1-1/2	1-1/4	5	7-1/2	**723-4625**	**724-6625**
1-1/2	1-1/4	6	8-1/2	**723-4628**	**724-6628**
1-1/2	1-1/4	8	10-1/2	**723-4631**	**724-6631**
1-3/4	1-1/4	2	4-1/2	**723-4634**	**724-6634**
1-3/4	1-1/4	4	6-1/2	**723-4637**	**724-6637**
2	3/4	3/4	3	**723-4640**	**724-6640**
2	3/4	1-1/8	3-1/2	**723-4643**	**724-6643**
2	3/4	2	4-1/2	**723-4646**	**724-6646**
2	1-1/4	2	4-1/2	**723-4649**	**724-6649**
2	1-1/4	4	6-1/2	**723-4652**	**724-6652**
2	2	2	5-3/4	**723-4655**	**724-6655**
2	2	2	6-3/4	**723-4658**	**724-6658**
2	2	3	6-3/4	**723-4661**	**724-6661**
2	2	4	7-3/4	**723-4664**	**724-6664**
2	2	5	7-3/4	**723-4667**	**724-6667**
2	2	6	8-3/4	**723-4670**	**724-6670**
2	2	6	9-3/4	**723-4673**	**724-6673**
2	2	7	9-3/4	**723-4676**	**724-6676**
2	2	8	11-3/4	**723-4679**	**724-6679**

M42 8% Cobalt 3 Flute Fine Pitch 45° Roughing End Mills For Aluminum

Center Cutting

Cobalt



Size	Shank Dia.	Flute Length	Overall Length	Uncoated Order No.	TiN-Coated Order No.	Size	Shank Dia.	Flute Length	Overall Length	Uncoated Order No.	TiN-Coated Order No.
1/4"	3/8"	5/8"	2-7/16"	**723-5304**	**723-6304**	1"	3/4"	2"	4-1/2"	**723-5348**	**723-6348**
5/16	3/8	3/4	2-1/2	**723-5308**	**723-6308**	1	1	2	4-1/2	**723-5352**	**723-6352**
3/8	3/8	3/4	2-1/2	**723-5312**	**723-6312**	1	1	4	6-1/2	**723-5356**	**723-6356**
1/2	1/2	1-1/4	3-1/4	**723-5316**	**723-6316**	1-1/8	3/4	2	4-1/2	**723-5360**	**723-6360**
1/2	1/2	2	4	**723-5320**	**723-6320**	1-1/4	1-1/4	2	4-1/2	**723-5364**	**723-6364**
5/8	5/8	1-5/8	3-3/4	**723-5324**	**723-6324**	1-1/4	1-1/4	4	6-1/2	**723-5368**	**723-6368**
5/8	5/8	2-1/2	4-5/8	**723-5328**	**723-6328**	1-1/2	1-1/4	2	4-1/2	**723-5372**	**723-6372**
3/4	3/4	1-5/8	3-3/4	**723-5332**	**723-6332**	1-3/4	1-1/4	2	4-1/2	**723-5376**	**723-6376**
3/4	3/4	3	5-1/4	**723-5336**	**723-6336**	2	1-1/4	2	4-1/2	**723-5380**	**723-6380**
7/8	3/4	1-7/8	4-1/8	**723-5340**	**723-6340**	2	1-1/4	4	6-1/2	**723-5384**	**723-6384**
7/8	3/4	3-1/2	5-3/4	**723-5344**	**723-6344**						

M42 8% Cobalt 3 Flute Coarse Pitch Roughing End Mills For Aluminum

Non Center Cutting

Cobalt



Size	Shank Dia.	Flute Length	Overall Length	Uncoated Order No.	TiN-Coated Order No.	Size	Shank Dia.	Flute Length	Overall Length	Uncoated Order No.	TiN-Coated Order No.
3/8"	3/8"	3/4"	2-1/2"	**723-7304**	**723-8304**	1-1/4"	3/4"	1-1/2"	3-3/4"	**723-7364**	**723-8364**
3/8	3/8	7/8	2-5/8	**723-7308**	**723-8308**	1-1/4	3/4	2	4-1/4	**723-7368**	**723-8368**
1/2	1/2	1-1/4	3-1/4	**723-7312**	**723-8312**	1-1/4	1-1/4	2	4-1/2	**723-7372**	**723-8372**
1/2	1/2	2	4	**723-7316**	**723-8316**	1-1/4	1-1/4	3	5-1/2	**723-7376**	**723-8376**
5/8	5/8	1-5/8	3-3/4	**723-7320**	**723-8320**	1-1/4	1-1/4	4	6-1/2	**723-7380**	**723-8380**
5/8	5/8	2-1/2	4-5/8	**723-7324**	**723-8324**	1-1/2	3/4	1-1/2	3-3/4	**723-7384**	**723-8384**
3/4	3/4	1-5/8	3-7/8	**723-7328**	**723-8328**	1-1/2	3/4	2	4-1/2	**723-7388**	**723-8388**
3/4	3/4	2	4-1/4	**723-7332**	**723-8332**	1-1/2	1-1/4	2	4-1/2	**723-7392**	**723-8392**
3/4	3/4	3	5-1/4	**723-7336**	**723-8336**	1-1/2	1-1/4	3	5-1/2	**723-7396**	**723-8396**
7/8	3/4	1-7/8	4-1/8	**723-7340**	**723-8340**	2	3/4	3/4	3	**723-7400**	**723-8400**
1	3/4	1-1/2	3-3/4	**723-7344**	**723-8344**	2	1-1/4	2	4-1/2	**723-7404**	**723-8404**
1	3/4	2	4-1/4	**723-7348**	**723-8348**	2	1-1/4	4	6-1/2	**723-7408**	**723-8408**
1	1	2	4-1/2	**723-7352**	**723-8352**	2	2	2	5-3/4	**723-7412**	**723-8412**
1	1	3	5-1/2	**723-7356**	**723-8356**	2	2	4	7-3/4	**723-7416**	**723-8416**
1	1	4	6-1/2	**723-7360**	**723-8360**						

M42 8% Cobalt Ball Nose Roughing End Mills

- Designed for heavy cuts and high stock removal in radius bottom slots, fillets and special contours.
- Coarse pitch profile can remove metal at the same rate as conventional end mills with considerably less defection.

Fine Pitch

Cobalt

Size	Shank Dia.	Flute Length	Overall Length	No.of Flute	Uncoated Order No.	TiN-Coated Order No.
3/8"	3/8"	3/4"	2-1/2"	4	**724-2502**	**724-2702**
1/2	1/2	1-1/4	3-1/4	4	**724-2511**	**724-2711**
1/2	1/2	2	4	4	**724-2520**	**724-2720**
5/8	5/8	1-5/8	3-3/4	4	**724-2529**	**724-2729**
5/8	5/8	2	4-1/8	4	**724-2538**	**724-2738**
5/8	5/8	2-1/2	4-5/8	4	**724-2547**	**724-2747**
3/4	3/4	1-5/8	3-7/8	4	**724-2556**	**724-2756**
3/4	3/4	1-3/4	4	4	**724-2565**	**724-2765**
3/4	3/4	2-1/4	4-1/2	4	**724-2574**	**724-2774**
3/4	3/4	3	5-1/4	4	**724-2583**	**724-2783**
7/8	7/8	1-7/8	4-1/8	5	**724-2592**	**724-2792**
1	1	2	4-1/2	5	**724-2601**	**724-2801**
1	1	3	5-1/2	5	**724-2610**	**724-2810**
1	1	4	6-1/2	5	**724-2619**	**724-2819**
1-1/4	1-1/4	2	4-1/2	6	**724-2628**	**724-2828**
1-1/4	1-1/4	3	5-1/2	6	**724-2637**	**724-2837**
1-1/4	1-1/4	4	6-1/2	6	**724-2646**	**724-2846**
1-1/2	1-1/4	2	4-1/2	6	**724-2655**	**724-2855**
2	2	2	5-3/4	6	**724-2664**	**724-2864**
2	2	4	6-3/4	6	**724-2673**	**724-2873**
2	2	4	9-3/4	6	**724-2682**	**724-2882**

Coarse Pitch



Size	Shank Dia.	Flute Length	Overall Length	No. Of Flute	Uncoated Order No.	TiN-Coated Order No.
1/4"	3/8"	5/8"	2-7/16"	3	**723-5503**	**723-5603**
1/4	3/8	5/8	2-1/2	3	**723-5505**	**723-5605**
5/16	3/8	3/4	2-1/2	3	**723-5510**	**723-5610**
3/8	3/8	3/4	2-1/2	4	**723-5515**	**723-5615**
1/2	1/2	1-1/4	3-1/4	4	**723-5520**	**723-5620**
1/2	1/2	2-1/2	4-1/2	4	**723-5522**	**723-5622**
5/8	5/8	1-5/8	3-3/4	4	**723-5525**	**723-5625**
5/8	5/8	2-1/2	4-5/8	4	**723-5527**	**723-5627**
3/4	3/4	1-5/8	3-7/8	4	**723-5530**	**723-5630**
3/4	3/4	1-3/4	4	4	**723-5531**	**723-5631**
3/4	3/4	3	5-1/4	4	**723-5532**	**723-5632**
1	3/4	2	4-1/2	5	**723-5533**	**723-5633**
1	1	2	4-1/2	5	**723-5534**	**723-5634**
1	1	2	4-1/2	6	**723-5535**	**723-5635**
1	1	4	6-1/2	5	**723-5537**	**723-5637**
1-1/4	3/4	2	4-1/2	6	**723-5538**	**723-5638**
1-1/4	1-1/4	2	4-1/2	6	**723-5540**	**723-5640**
1-1/4	1-1/4	4	6-1/2	6	**723-5542**	**723-5642**
1-1/2	3/4	2	4-1/2	6	**723-5544**	**723-5644**
1-1/2	1-1/4	2	4-1/2	6	**723-5545**	**723-5645**
1-1/2	1-1/2	2	4-1/2	6	**723-5546**	**723-5646**
1-1/2	1-1/2	4	6-1/2	6	**723-5547**	**723-5647**
2	2	4	7-3/4	6	**723-5550**	**723-5650**
2	1-1/4	4	7-3/4	8	**723-5555**	**723-5655**
2	2	4	7-3/4	8	**723-5556**	**723-5656**

2 Flute Ball Nose Single End Mills

High Speed Steel

- Designed for milling radius bottom slots, fillets and special contours.
- Center cutting design is used to plunge into solid material at the beginning of a slotting cut.
- 2 Flute design provides excellent chip evacuation.



Regular Length

Size	Shank Dia.	Flute Length	Overall Length	M2 Order No.	M2Al Order No.	TiN-Coated Order No.
1/8"	3/8"	3/8"	2-5/16"	**720-1401**	**721-1401**	**722-1401**
5/32	3/8	7/16	2-5/16	**720-1402**	**721-1402**	**722-1402**
3/16	3/8	1/2	2-3/8	**720-1403**	**721-1403**	**722-1403**
7/32	3/8	1/2	2-3/8	**720-1404**	**721-1404**	**722-1404**
1/4	3/8	5/8	2-7/16	**720-1405**	**721-1405**	**722-1405**
9/32	3/8	9/16	2-3/8	**720-1406**	**721-1406**	**722-1406**
5/16	3/8	3/4	2-1/2	**720-1407**	**721-1407**	**722-1407**
11/32	3/8	3/4	2-1/2	**720-1408**	**721-1408**	**722-1408**
3/8	3/8	3/4	2-1/2	**720-1409**	**721-1409**	**722-1409**
7/16	1/2	1	3	**720-1411**	**721-1411**	**722-1411**
1/2	1/2	1	3	**720-1413**	**721-1413**	**722-1413**
9/16	1/2	1	3	**720-1415**	**721-1415**	**722-1415**
5/8	1/2	1-1/8	3-1/8	**720-1417**	**721-1417**	**722-1417**
5/8	5/8	1-3/8	3-3/8	**720-1419**	**721-1419**	**722-1419**
3/4"	1/2"	1-5/8"	3-5/8"	**720-1421**	**721-1421**	**722-1421**
3/4	3/4	1-5/8	3-7/8	**720-1423**	**721-1423**	**722-1423**
13/16	3/4	2	4-1/4	**720-1425**	**721-1425**	**722-1425**
7/8	3/4	2	4-1/4	**720-1427**	**721-1427**	**722-1427**
7/8	7/8	2	4-1/4	**720-1429**	**721-1429**	**722-1429**
15/16	3/4	2-1/4	4-1/2	**720-1431**	**721-1431**	**722-1431**
1	3/4	2-1/4	4-9/16	**720-1433**	**721-1433**	**722-1433**
1	1	2-1/4	4-3/4	**720-1435**	**721-1435**	**722-1435**
1-1/8	1	2-1/4	4-3/4	**720-1437**	**721-1437**	**722-1437**
1-1/4	1-1/4	2-1/2	5	**720-1439**	**721-1439**	**722-1439**
1-3/8	1-1/4	2-1/2	5	**720-1441**	**721-1441**	**722-1441**
1-1/2	1-1/4	2-1/2	5	**720-1443**	**721-1443**	**722-1443**
2	1-1/4	2-1/2	5	**720-1445**	**721-1445**	**722-1445**

2 Flute Ball Nose Single End Mills For Aluminum

Regular long & Extra Long Flute Length

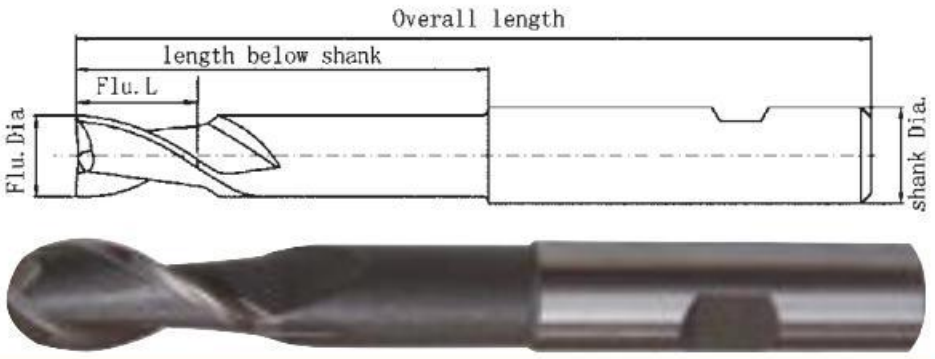
- Recommended for mill radius bottom slots and special contours in aluminum and other non-ferrous materials.
- The high helix angle shears the material cleanly and helps eliminate chatter.
- TiN coating add lubricity to minimize chip packing in th flutes.



Size	Shank Dia.	Flute Length	Overall Length	M2 Order No.	M2Al Order No.	TiN-Coated Order No.
1/4"	3/8"	5/8"	2-1/2"	**720-1601**	**721-1601**	**722-1601**
1/4	3/8	1-1/4	3-1/8	**720-1603**	**721-1603**	**722-1603**
1/4	3/8	1-3/4	3-1/2	**720-1605**	**721-1605**	**722-1605**
5/16	3/8	3/4	2-1/2	**720-1607**	**721-1607**	**722-1607**
5/16	3/8	1-3/8	3-1/8	**720-1609**	**721-1609**	**722-1609**
5/16	3/8	2	3-3/4	**720-1611**	**721-1611**	**722-1611**
3/8	3/8	3/4	2-1/2	**720-1613**	**721-1613**	**722-1613**
3/8	3/8	1-1/2	3-1/4	**720-1615**	**721-1615**	**722-1615**
3/8	3/8	2-1/2	4-1/4	**720-1617**	**721-1617**	**722-1617**
7/16	3/8	1	2-11/16	**720-1619**	**721-1619**	**722-1619**
7/16	1/2	1-3/4	3-3/4	**720-1621**	**721-1621**	**722-1621**
7/16	1/2	2-3/4	4-3/4	**720-1623**	**721-1623**	**722-1623**
1/2	1/2	1	3-1/4	**720-1625**	**721-1625**	**722-1625**
1/2	1/2	2	4	**720-1627**	**721-1627**	**722-1627**
1/2"	1/2"	3"	5"	**720-1629**	**721-1629**	**722-1629**
5/8	5/8	1-5/8	3-3/4	**720-1631**	**721-1631**	**722-1631**
5/8	5/8	2-1/2	4-5/8	**720-1633**	**721-1633**	**722-1633**
5/8	5/8	4	6-1/8	**720-1635**	**721-1635**	**722-1635**
3/4	3/4	1-5/8	3-7/8	**720-1637**	**721-1637**	**722-1637**
3/4	3/4	3	5-1/4	**720-1639**	**721-1639**	**722-1639**
3/4	3/4	4	6-1/4	**720-1641**	**721-1641**	**722-1641**
7/8	1-7/8	1-7/8	4-1/8	**720-1643**	**721-1643**	**722-1643**
7/8	7/8	3-1/2	5-3/4	**720-1645**	**721-1645**	**722-1645**
7/8	7/8	5	7-1/4	**720-1647**	**721-1647**	**722-1647**
1	3/4	1-7/8	4-1/8	**720-1651**	**721-1651**	**722-1651**
1	1	2	4-1/2	**720-1653**	**721-1653**	**722-1653**
1	1	4	6-1/2	**720-1655**	**721-1655**	**722-1655**
1	1	6	8-1/2	**720-1657**	**721-1657**	**722-1657**

2 Flute Ball Nose Single End Mills

Extended Shank



Size	Shank Dia	Length Below Shank	Flute Length	OAL	M2 Order No.	M2Al Order No.	TiN-Coated Order No.
1/8"	3/8"	13/16"	3/8"	2-3/8"	**720-1451**	**721-1451**	**722-1451**
3/16	3/8	1-1/8	1/2	2-11/16	**720-1453**	**721-1453**	**722-1453**
1/4	3/8	1-1/2	5/8	3-1/16	**720-1455**	**721-1455**	**722-1455**
5/16	3/8	1-3/4	3/4	3-5/16	**720-1457**	**721-1457**	**722-1457**
3/87/	3/8	1-3/4	3/4	3-5/16	**720-1459**	**721-1459**	**722-1459**
16	1/2	1-7/8	1	3-11/16	**720-1461**	**721-1461**	**722-1461**
1/2	1/2	2-1/4	1	4	**720-1463**	**721-1463**	**722-1463**
5/8	5/8	2-3/4	1-3/8	4-5/8	**720-1465**	**721-1465**	**722-1465**
3/4	3/4	3-3/8	1-5/8	5-3/8	**720-1467**	**721-1467**	**722-1467**
1	1	5	2-1/2	7-1/4	**720-1469**	**721-1469**	**722-1469**

4 Flute Ball Nose Single End Mills

High Speed Steel



Size	Shank Dia.	Flute Length	OAL	Order No.	Size	Shank Dia.	Flute Length	OAL	Order No.
1/4"	3/8"	3/4"	2-9/16"	**320-3700**	5/8"	5/8"	1-5/8"	3-3/4"	**320-3750**
1/4	3/8	5/8	2-1/2	**320-3705**	5/8	5/8	2-1/2	4-5/8	**320-3758**
1/4	3/8	1-1/4	3-1/16	**320-3708**	3/4	3/4	1-5/8	3-7/8	**320-3760**
5/16	3/8	3/4	2-1/2	**320-3715**	3/4	3/4	3	5-1/4	**320-3768**
5/16	3/8	1	2-3/4	**320-3710**	7/8	7/8	1-7/8	4-1/8	**320-3765**
5/16	3/8	1-1/2	3-1/4	**320-3718**	1	1	2	4-1/2	**320-3775**
3/8	3/8	3/4	2-1/2	**320-3725**	1	1	2-1/4	4-3/4	**320-3770**
3/8	3/8	1	2-3/4	**320-3720**	1	1	4	6-1/2	**320-3778**
3/8	3/8	1-1/2	3-1/4	**320-3728**	1-1/4	1-1/4	2	4-1/2	**320-3785**
1/2	1/2	1	2-3/4	**320-3730**	1-1/4	1-1/4	2-1/2	5	**320-3780**
1/2	1/2	1-1/4	3-1/4	**320-3735**	1-1/2	1-1/4	2	4-1/2	**320-3795**
1/2	1/2	1-1/2	3-1/4	**320-3740**	1-1/2	1-1/4	2-1/2	5	**320-3790**
1/2	1/2	2	4	**320-3748**					

2 Flute Ball Nose Double End Mills



High Speed Steel

- Designed for milling radius bottom slots, fillets and special contours.
- Center cutting design is used to plunge into solid material ath the beginning of a slotting cut.
- 2 Flute design provides excellent chip evacuation.

Size	Shank Dia.	Flute Length	Overall Length	M2 Order No.	M2Al Order No.	TiN-Coated Order No.
1/8"	3/8"	3/8"	3-3/16"	**720-2100**	**721-2100**	**722-2100**
9/64	3/8	7/16	3-1/8	**720-2105**	**721-2105**	**722-2105**
5/32	3/8	1/2	3-1/8	**720-2110**	**721-2110**	**722-2110**
11/64	3/8	7/16	3-1/8	**720-2115**	**721-2115**	**722-2115**
3/16	3/8	7/16	3-1/8	**720-2120**	**721-2120**	**722-2120**
13/64	3/8	1/2	3-1/8	**720-2125**	**721-2125**	**722-2125**
7/32	3/8	1/2	3-1/8	**720-2130**	**721-2130**	**722-2130**
15/64	3/8	1/2	3-1/8	**720-2135**	**721-2135**	**722-2135**
1/4	3/8	1/2	3-1/8	**720-2140**	**721-2140**	**722-2140**
17/64	3/8	9/16	3-1/8	**720-2145**	**721-2145**	**722-2145**
9/32	3/8	9/16	3-1/8	**720-2150**	**721-2150**	**722-2150**
19/64	3/8	9/16	3-1/8	**720-2155**	**721-2155**	**722-2155**
5/16	3/8	9/16	3-1/8	**720-2160**	**721-2160**	**722-2160**
21/64	3/8	9/16	3-1/8	**720-2161**	**721-2161**	**722-2161**
11/32	3/8	9/16	3-1/8	**720-2162**	**721-2162**	**722-2162**
23/64	1/2	9/16	3-1/8	**720-2163**	**721-2163**	**722-2163**
3/8	3/8	9/16	3-1/8	**720-2165**	**721-2165**	**722-2165**
13/32	1/2	13/16	3-3/4	**720-2168**	**721-2168**	**722-2168**
7/16	1/2	13/16	3-3/4	**720-2170**	**721-2170**	**722-2170**
1/2	1/2	13/16	3-3/4	**720-2174**	**721-2174**	**722-2174**
5/8	5/8	1-1/8	4-1/2	**720-2185**	**721-2185**	**722-2185**
3/4	3/4	1-5/16	5	**720-2188**	**721-2188**	**722-2188**
7/8	7/8	1-9/16	5-1/2	**720-2190**	**721-2190**	**722-2190**
1	1	1-5/8	5-7/8	**720-2192**	**721-2192**	**722-2192**

2 Flute High Helix Ball Nose Double End Mills for Aluminum



High Speed Steel

Size	Shank Dia.	Flute Length	Overall Length	M2 Order No.	M2Al Order No.	TiN-Coated Order No.
1/8"	3/8"	3/8"	3-1/16"	**720-2202**	**721-2202**	**722-2202**
3/16	3/8	7/16	3-1/4	**720-2204**	**721-2204**	**722-2204**
1/4	3/8	1/2	3-3/8	**720-2206**	**721-2206**	**722-2206**
5/16	3/8	9/16	3-1/2	**720-2208**	**721-2208**	**722-2208**
3/8	3/8	9/16	3-1/2	**720-2210**	**721-2210**	**722-2210**
7/16	1/2	13/16	4-1/8	**720-2212**	**721-2212**	**722-2212**
1/2	1/2	13/16	4-1/8	**720-2214**	**721-2214**	**722-2214**
9/16	5/8	1-1/8	5	**720-2216**	**721-2216**	**722-2216**
5/8	5/8	1-1/8	5	**720-2218**	**721-2218**	**722-2218**
11/16	3/4	1-5/16	5-5/8	**720-2220**	**721-2220**	**722-2220**
3/4	3/4	1-5/16	5-5/8	**720-2222**	**721-2222**	**722-2222**
13/16	7/8	1-9/16	6-1/8	**720-2224**	**721-2224**	**722-2224**
7/8	7/8	1-9/16	6-1/8	**720-2226**	**721-2226**	**722-2226**
15/16	1	1-5/8	6-3/8	**720-2228**	**721-2228**	**722-2228**
1	1	1-5/8	6-3/8	**720-2230**	**721-2230**	**722-2230**

M42 8% Cobalt 2 Flute Ball Nose Single End Mills

Extended Shank

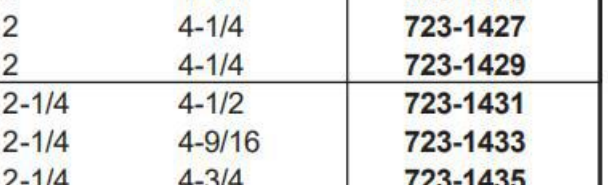




Size	Shank Dia	Length Below Shank	Flute Length	Overall Length	Order No.
1/8"	3/8"	13/16"	3/8"	2-3/8"	**723-1451**
3/16	3/8	1-1/8	1/2	2-11/16	**723-1453**
1/4	3/8	1-1/2	5/8	3-1/16	**723-1455**
5/16	3/8	1-3/4	3/4	3-5/16	**723-1457**
3/8	3/8	1-3/4	3/4	3-5/16	**723-1459**
7/16	1/2	1-7/8	1	3-11/16	**723-1461**
1/2	1/2	2-1/4	1	4	**723-1463**
5/8	5/8	2-3/4	1-3/8	4-5/8	**723-1465**
3/4	3/4	3-3/8	1-5/8	5-3/8	**723-1467**
1	1	5	2-1/2	7-1/4	**723-1469**

M42 8% Cobalt 2 Flute Ball Nose Single End Mills

- Designed for milling radius bottom slots, fillets and special contours.
- Center cutting design is used to plunge into solid material at the beginning of a slotting cut.
- 2 Flute design provides excellent chip evacuation.



Regular Length

Size	Shank Dia.	Flute Length	Overall Length	Order No.
1/8"	3/8"	3/8"	2-5/16"	**723-1401**
5/32	3/8	7/16	2-5/16	**723-1402**
3/16	3/8	1/2	2-3/8	**723-1403**
7/32	3/8	1/2	2-3/8	**723-1404**
1/4	3/8	5/8	2-7/16	**723-1405**
9/32	3/8	9/16	2-3/8	**723-1406**
5/16	3/8	3/4	2-1/2	**723-1407**
11/32	3/8	3/4	2-1/2	**723-1408**
3/8	3/8	3/4	2-1/2	**723-1409**
7/16	1/2	1	3	**723-1411**
1/2	1/2	1	3	**723-1413**
9/16	1/2	1	3	**723-1415**
5/8	1/2	1-1/8	3-1/8	**723-1417**
5/8	5/8	1-3/8	3-3/8	**723-1419**
3/4	1/2	1-5/8	3-5/8	**723-1421**
3/4	3/4	1-5/8	3-7/8	**723-1423**
13/16	3/4	2	4-1/4	**723-1425**
7/8	3/4	2	4-1/4	**723-1427**
7/8	7/8	2	4-1/4	**723-1429**
15/16	3/4	2-1/4	4-1/2	**723-1431**
1	3/4	2-1/4	4-9/16	**723-1433**
1	1	2-1/4	4-3/4	**723-1435**
1-1/8	1	2-1/4	4-3/4	**723-1437**
1-1/4	1-1/4	2-1/2	5	**723-1439**
1-3/8	1-1/4	2-1/2	5	**723-1441**
1-1/2	1-1/4	2-1/2	5	**723-1443**
2	1-1/4	2-1/2	5	**723-1445**

M42 8% Cobalt 4 Flute Ball Nose Single End Mills





Size	Shank Dia.	Flute Length	Overall Length	Order No.
1/8"	3/8"	3/8"	2-5/16"	**723-3700**
3/16	3/8	1/2	2-3/8	**723-3702**
1/4	3/8	5/8	2-1/2	**723-3705**
1/4	3/8	1-1/4	3-1/16	**723-3708**
5/16	3/8	3/4	2-1/2	**723-3715**
5/16	3/8	1	2-3/4	**723-3710**
5/16	3/8	1-1/2	3-1/4	**723-3718**
3/8	3/8	3/4	2-1/2	**723-3725**
3/8	3/8	1	2-3/4	**723-3720**
3/8	3/8	1-1/2	3-1/4	**723-3728**
1/2	1/2	1	2-3/4	**723-3730**
1/2	1/2	1-1/4	3-1/4	**723-3735**
1/2	1/2	1-1/2	3-1/4	**723-3740**
1/2	1/2	2	4	**723-3748**
5/8	5/8	1-5/8	3-3/4	**723-3750**
5/8	5/8	2-1/2	4-5/8	**723-3758**
3/4	3/4	1-5/8	3-7/8	**723-3760**
3/4	3/4	3	5-1/4	**723-3768**
7/8	7/8	1-7/8	4-1/8	**723-3765**
1	1	2	4-1/2	**723-3775**
1	1	2-1/4	4-3/4	**723-3770**
1	1	4	6-1/2	**723-3778**
1-1/4	1-1/4	2	4-1/2	**723-3785**
1-1/4	1-1/4	2-1/2	5	**723-3780**
1-1/2	1-1/4	2	4-1/2	**723-3795**
1-1/2	1-1/4	2-1/2	5	**723-3790**

M42 8% Cobalt 2 Flute Ball Nose Double End Mills





Size	Shank Dia.	Flute Length	Overall Length	Order No.
1/8"	3/8"	3/8"	3-3/16"	**723-2100**
9/64	3/8	7/16	3-1/8	**723-2105**
5/32	3/8	1/2	3-1/8	**723-2110**
11/64	3/8	7/16	3-1/8	**723-2115**
3/16	3/8	7/16	3-1/8	**723-2120**
13/64	3/8	1/2	3-1/8	**723-2125**
7/32	3/8	1/2	3-1/8	**723-2130**
15/64	3/8	1/2	3-1/8	**723-2135**
1/4	3/8	1/2	3-1/8	**723-2140**
17/64	3/8	9/16	3-1/8	**723-2145**
9/32	3/8	9/16	3-1/8	**723-2150**
19/64	3/8	9/16	3-1/8	**723-2155**
5/16	3/8	9/16	3-1/8	**723-2160**
21/64	3/8	9/16	3-1/8	**723-2161**
11/32	3/8	9/16	3-1/8	**723-2162**
23/64	1/2	9/16	3-1/8	**723-2163**
3/8	3/8	9/16	3-1/8	**723-2165**
13/32	1/2	13/16	3-3/4	**723-2168**
7/16	1/2	13/16	3-3/4	**723-2170**
1/2	1/2	13/16	3-3/4	**723-2174**
5/8	5/8	1-1/8	4-1/2	**723-2185**
3/4	3/4	1-5/16	5	**723-2188**
7/8	7/8	1-9/16	5-1/2	**723-2190**
1	1	1-5/8	5-7/8	**723-2192**

2 Flute Inch Shank Metric Size Single End Mills



Size	Shank Dia.	Flute Length	Overall Length	M2 Order No.	M2Al Order No.	TiN-Coated Order No.
5mm	3/8"	1/2"	2-5/16"	**720-9050**	**721-9050**	**722-9050**
6mm	3/8	1/2	2-5/16	**720-9060**	**721-9060**	**722-9060**
7mm	3/8	9/16	2-5/16	**720-9070**	**721-9070**	**722-9070**
8mm	3/8	9/16	2-5/16	**720-9080**	**721-9080**	**722-9080**
9mm	3/8	9/16	2-5/16	**720-9090**	**721-9090**	**722-9090**
10mm	3/8	13/16	2-1/2	**720-9100**	**721-9100**	**722-9100**
11mm	3/8	13/16	2-1/2	**720-9110**	**721-9110**	**722-9110**
12mm	1/2	1	3	**720-9120**	**721-9120**	**722-9120**
13mm	1/2	1-1/8	3-1/8	**720-9130**	**721-9130**	**722-9130**
14mm	1/2	1-1/8	3-1/8	**720-9140**	**721-9140**	**722-9140**
15mm	1/2	1-1/8	3-1/8	**720-9150**	**721-9150**	**722-9150**
16mm	1/2	1-5/16	3-5/16	**720-9160**	**721-9160**	**722-9160**
18mm	1/2	1-5/16	3-5/16	**720-9180**	**721-9180**	**722-9180**
20mm	3/4	1-1/2	3-3/4	**720-9200**	**721-9200**	**722-9200**
22mm	3/4	1-1/2	3-3/4	**720-9222**	**721-9222**	**722-9222**
24mm	3/4	1-1/2	3-3/4	**720-9240**	**721-9240**	**722-9240**
25mm	1	1-5/8	4-1/8	**720-9250**	**721-9250**	**722-9250**

4 Flute Inch Shank Metric Size Single End Mills

Center Cutting



Size	Shank Dia.	Flute Length	Overall Length	M2 Order No.	M2Al Order No.	TiN-Coated Order No.
5mm	3/8"	9/16"	2-7/16"	**720-8050**	**721-8050**	**722-8050**
6mm	3/8	5/8	2-1/2	**720-8060**	**721-8060**	**722-8060**
7mm	3/8	5/8	2-1/2	**720-8070**	**721-8070**	**722-8070**
8mm	3/8	3/4	2-1/2	**720-8080**	**721-8080**	**722-8080**
9mm	3/8	3/4	2-1/2	**720-8090**	**721-8090**	**722-8090**
10mm	3/8	3/4	2-1/2	**720-8100**	**721-8100**	**722-8100**
11mm	3/8	1	2-11/16	**720-8110**	**721-8110**	**722-8110**
12mm	3/8	1	2-11/16	**720-8120**	**721-8120**	**722-8120**
13mm	1/2	1-1/4	3-1/4	**720-8130**	**721-8130**	**722-8130**
14mm	1/2	1-3/8	3-3/8	**720-8140**	**721-8140**	**722-8140**
15mm	1/2	1-3/8	3-3/8	**720-8150**	**721-8150**	**722-8150**
16mm	5/8	1-5/8	3-3/4	**720-8160**	**721-8160**	**722-8160**
18mm	3/4	1-5/8	3-3/4	**720-8180**	**721-8180**	**722-8180**
20mm	3/4	1-7/8	4-1/8	**720-8200**	**721-8200**	**722-8200**
22mm	7/8	1-7/8	4-1/8	**720-8220**	**721-8220**	**722-8220**
24mm	7/8	1-7/8	4-1/8	**720-8240**	**721-8240**	**722-8240**
25mm	1	2	4-1/2	**720-8250**	**721-8250**	**722-8250**

Metric 2 Flute Single End Mills

DIN327, High Speed Steel



Size	Shank Dia.	Flute Length	Overall Length	M2 Order No.	M2Al Order No.	TiN-Coated Order No.
3mm	6	6	50	**720-2303**	**721-2303**	**722-2303**
4mm	6	7	51	**720-2304**	**721-2304**	**722-2304**
5mm	6	8	52	**720-2305**	**721-2305**	**722-2305**
6mm	6	8	52	**720-2306**	**721-2306**	**722-2306**
7mm	10	10	60	**720-2307**	**721-2307**	**722-2307**
8mm	10	11	61	**720-2308**	**721-2308**	**722-2308**
10mm	10	13	63	**720-2310**	**721-2310**	**722-2310**
12mm	12	16	73	**720-2312**	**721-2312**	**722-2312**
14mm	12	16	73	**720-2314**	**721-2314**	**722-2314**
16mm	16	19	79	**720-2316**	**721-2316**	**722-2316**
18mm	16	19	79	**720-2318**	**721-2318**	**722-2318**
20mm	20	22	88	**720-2320**	**721-2320**	**722-2320**
22mm	20	22	88	**720-2322**	**721-2322**	**722-2322**
24mm	25	26	102	**720-2324**	**721-2324**	**722-2324**
25mm	25	26	102	**720-2325**	**721-2325**	**722-2325**

Metric 4 Flute Single End Mills

DIN844B, High Speed Steel



Size	Shank Dia.	Flute Length	Overall Length	M2 Order No.	M2Al Order No.	TiN-Coated Order No.
3mm	6	8	52	**720-4903**	**721-4903**	**722-4903**
4mm	6	11	55	**720-4904**	**721-4904**	**722-4904**
5mm	6	13	57	**720-4905**	**721-4905**	**722-4905**
6mm	6	13	57	**720-4906**	**721-4906**	**722-4906**
7mm	10	16	66	**720-4907**	**721-4907**	**722-4907**
8mm	10	19	63	**720-4908**	**721-4908**	**722-4908**
10mm	10	22	72	**720-4910**	**721-4910**	**722-4910**
12mm	12	26	83	**720-4912**	**721-4912**	**722-4912**
14mm	12	26	83	**720-4914**	**721-4914**	**722-4914**
16mm	16	32	92	**720-4916**	**721-4916**	**722-4916**
18mm	16	32	92	**720-4918**	**721-4918**	**722-4918**
20mm	20	38	104	**720-4920**	**721-4920**	**722-4920**
22mm	20	38	104	**720-4922**	**721-4922**	**722-4922**
25mm	25	45	121	**720-4925**	**721-4925**	**722-4925**
28mm	25	45	121	**720-4928**	**721-4928**	**722-4928**
30mm	25	45	121	**720-4930**	**721-4930**	**722-4930**

Metric 4 Flute Single End Mills

DIN844B, High Speed Steel, Long Length



Size	Shank Dia.	Flute Length	Overall Length	M2 Order No.	M2Al Order No.	TiN-Coated Order No.
3mm	6	12	56	**720-4503**	**721-4503**	**722-4503**
4mm	6	19	63	**720-4504**	**721-4504**	**722-4504**
5mm	6	24	68	**720-4505**	**721-4505**	**722-4505**
6mm	6	24	68	**720-4506**	**721-4506**	**722-4506**
7mm	10	30	80	**720-4507**	**721-4507**	**722-4507**
8mm	10	38	88	**720-4508**	**721-4508**	**722-4508**
10mm	10	45	95	**720-4510**	**721-4510**	**722-4510**
12mm	12	53	110	**720-4512**	**721-4512**	**722-4512**
14mm	12	53	110	**720-4514**	**721-4514**	**722-4514**
16mm	16	63	123	**720-4516**	**721-4516**	**722-4516**
18mm	16	63	123	**720-4518**	**721-4518**	**722-4518**
20mm	20	75	141	**720-4520**	**721-4520**	**722-4520**
22mm	20	75	141	**720-4522**	**721-4522**	**722-4522**
25mm	25	90	166	**720-4525**	**721-4525**	**722-4525**

M42 8% Cobalt 2 Flute Inch Shank Metric Size Single End Mills

F.Y.I

M-42 cobalt end mills are more economocal than high speed steel end mills. They stay sharper longer to alow more cuts between grinds and reduce downtime to give you lower cost per machined workpiece!





Size	Shank Dia.	Flute Length	Overall Length	Order No.	Size	Shank Dia.	Flute Length	Overall Length	Order No.	Size	Shank Dia.	Flute Length	Overall Length	Order No.
3mm	3/8"	5/16"	2-5/16"	**723-9029**	10mm	3/8	13/16	2-1/2	**723-9100**	18mm	5/8	1-5/16	3-5/16	**723-9180**
3mm	3/8	3/8"	2-5/16	**723-9030**	10.5mm	3/8	13/16	2-1/2	**723-9105**	19mm	3/4	1-5/8	3-7/8	**723-9190**
3.5mm	3/8	7/16	2-5/16	**723-9035**	11mm	3/8	13/16	2-1/2	**723-9110**	20mm	3/4	1-1/2	3-3/4	**723-9200**
4.0mm	3/8	7/16	2-5/16	**723-9040**	11.5mm	3/8	13/16	2-1/2	**723-9115**	21mm	3/4	1-1/2	3-3/4	**723-9210**
4.5mm	3/8	7/16	2-5/16	**723-9045**	11.5MM	3/8	13/16	2-1/2	**723-9119**	22mm	7/8	1-1/2	3-3/4	**723-9220**
5mm	3/8	1/2	2-5/16	**723-9050**	12mm	1/2	1	3	**723-9120**	23mm	7/8	1-7/8	4-1/8	**723-9230**
5.5mm	3/8	1/2	2-3/8	**723-9055**	12.5mm	1/2	1	3	**723-9125**	24mm	1/2	1-1/2	3-1/2	**723-9240**
6mm	3/8	1/2	2-5/16	**723-9060**	13mm	1/2	1-1/8	3-1/8	**723-9130**	25mm	1	1-5/8	4-1/8	**723-9250**
6.5mm	3/8	9/16	2-3/8	**723-9065**	13.5mm	1/2	1-1/8	3-1/8	**723-9135**	28mm	1	2	4-1/2	**723-9280**
7mm	3/8	9/16	2-5/16	**723-9070**	14mm	1/2	1-1/8	3-1/8	**723-9140**	32mm	1	2	4-1/2	**723-9320**
7.5mm	3/8	9/16	2-5/16	**723-9075**	14.5mm	1/2	1-1/8	3-1/8	**723-9145**	35mm	1	2	4-1/2	**723-9350**
8mm	3/8	9/16	2-5/16	**723-9080**	15mm	1/2	1-1/8	3-1/8	**723-9150**	36mm	1	2	4-1/2	**723-9360**
8.5mm	3/8	9/16	2-5/16	**723-9085**	16mm	1/2	1-5/16	3-5/16	**723-9160**	40mm	1-1/4	2	4-1/2	**723-9400**
9mm	3/8	9/16	2-5/16	**723-9090**	17mm	5/8	1-5/16	3-7/16	**723-9170**	45mm	1-1/4	2	4-1/2	**723-9450**
9.5mm	3/8	9/16	2-5/16	**723-9095**										

M42 8% Cobalt 4 Flute Inch Shank Metric Size Single End Mills

Center Cutting





Size	Shank Dia.	Flute Length	Overall Length	Order No.	Size	Shank Dia.	Flute Length	Overall Length	Order No.	Size	Shank Dia.	Flute Length	Overall Length	Order No.
3mm	3/8"	3/8"	2-5/16"	**723-8610**	10mm	3/8	3/4	2-1/2	**723-8653**	19mm	3/4	1-5/8	3-7/8	**723-8695**
3.5mm	3/8	7/16	2-5/16	**723-8613**	10.5mm	3/8	1	2-11/16	**723-8656**	20mm	3/4	1-7/8	4-1/8	**723-8698**
4mm	3/8	1/2	2-3/8	**723-8616**	11mm	3/8	1	2-11/16	**723-8659**	21mm	3/4	1-7/8	4-1/8	**723-8701**
4.5mm	3/8	7/16	2-5/16	**723-8619**	11.5mm	3/8	1	2-11/16	**723-8662**	22mm	7/8	1-7/8	4-1/8	**723-8704**
5mm	3/8	9/16	2-7/16	**723-8622**	12mm	3/8	1	2-11/16	**723-8665**	23mm	7/8	1-7/8	4-1/8	**723-8707**
5.5mm	3/8	5/8	2-1/2	**723-8625**	12.5mm	1/2	1-1/4	3-1/4	**723-8668**	24mm	7/8	1-7/8	4-1/8	**723-8710**
6mm	3/8	5/8	2-1/2	**723-8628**	13mm	1/2	1-1/4	3-1/4	**723-8671**	25mm	1	2	4-1/2	**723-8713**
6.5mm	3/8	11/16	2-1/2	**723-8631**	13.5mm	1/2"	1-3/8"	3-3/8"	**723-8674**	28mm	1	2	4-1/2	**723-8718**
7mm	3/8	5/8	2-1/2	**723-8634**	14mm	1/2	1-3/8	3-3/8	**723-8677**	32mm	1	2	4-1/2	**723-8725**
7.5mm	3/8	3/4	2-1/2	**723-8637**	14.5mm	1/2	1-3/8	3-3/8	**723-8680**	35mm	1	2	4-1/2	**723-8729**
8mm	3/8	3/4	2-1/2	**723-8641**	15mm	1/2	1-3/8	3-3/8	**723-8683**	36mm	1	2	4-1/2	**723-8732**
8.5mm	3/8	3/4	2-1/2	**723-8644**	16mm	5/8	1-5/8	3-3/4	**723-8686**	40mm	1-1/4	2	4-1/2	**723-8739**
9mm	3/8	3/4	2-1/2	**723-8647**	17mm	5/8	1-5/8	3-3/4	**723-8689**	45mm	1-1/4	2	4-1/2	**723-8747**
9.5mm	3/8	3/4	2-1/2	**723-8650**	18mm	3/4	1-5/8	3-3/4	**723-8692**					

M42 8% Cobalt Metric 2 Flute Single End Mills

DIN327





Size	Shank Dia.	Flute Length	OAL	Order No.	Size	Shank Dia.	Flute Length	OAL	Order No.	Size	Shank Dia.	Flute Length	OAL	Order No.
2mm	6	4	48	**723-2302**	11mm	12	16	73	**723-2311**	20mm	20	22	88	**723-2320**
3mm	6	5	49	**723-2303**	12mm	12	16	73	**723-2312**	21mm	20	22	88	**723-2321**
4mm	6	7	51	**723-2304**	13mm	12	16	73	**723-2313**	22mm	20	22	88	**723-2322**
5mm	6	8	52	**723-2305**	14mm	12	16	73	**723-2314**	23mm	20	22	88	**723-2323**
6mm	6	8	52	**723-2306**	15mm	12	16	73	**723-2315**	24mm	25	26	102	**723-2324**
7mm	10	10	60	**723-2307**	16mm	16	19	79	**723-2316**	25mm	25	26	102	**723-2325**
8mm	10	11	61	**723-2308**	17mm	16	19	79	**723-2317**	26mm	25	26	102	**723-2326**
9mm	10	13	63	**723-2309**	18mm	16	19	79	**723-2318**	28mm	25	26	102	**723-2328**
10mm	10	13	63	**723-2310**	19mm	16	19	79	**723-2319**					

M42 8% Cobalt Metric 4 Flute Single End Mills

DIN844



Size	Shank Dia.	Flute Length	OAL	Order No.	Size	Shank Dia.	Flute Length	OAL	Order No.	Size	Shank Dia.	Flute Length	OAL	Order No.
2mm	6	7	51	**723-4902**	12mm	12	26	83	**723-4912**	21mm	20	38	104	**723-4921**
3mm	6	8	52	**723-4903**	13mm	12	26	83	**723-4913**	22mm	20	38	104	**723-4922**
4mm	6	11	55	**723-4904**	14mm	12	26	83	**723-4914**	23mm	20	38	104	**723-4923**
5mm	6	13	57	**723-4905**	15mm	12	2	83	**723-4915**	24mm	25	45	121	**723-4924**
6mm	6	13	57	**723-4906**	16mm	16	32	92	**723-4916**	25mm	25	45	121	**723-4925**
7mm	10	16	66	**723-4907**	17mm	16	32	92	**723-4917**	26mm	25	45	121	**723-4926**
8mm	10	19	63	**723-4908**	18mm	16	32	92	**723-4918**	28mm	25	45	121	**723-4928**
9mm	10	19	69	**723-4909**	19mm	16	32	92	**723-4919**	30mm	25	45	121	**723-4930**
10mm	10	22	72	**723-4910**	20mm	20	38	104	**723-4920**	32mm	32	53	133	**723-4932**
11mm	12	26	83	**723-4911**										

Metric Roughing End Mills

High Speed Steel



Size (mm)	Shank Dia.	Flute L	OAL	No. of Flute	Order No.	Tin-coated Order No.	Size (mm)	Shank Dia.	Flute L	OAL	No. of Flute	Order No.	Tin-coated Order No.	Size (mm)	Shank Dia.	Flute L	OAL	No. of Flute	Order No.	Tin-coated Order No.
6	6	13	57	4	**720-5806**	**722-5806**	20	20	38	104	4	**720-5820**	**722-5820**	38	32	53	133	6	**720-5838**	**722-5838**
8	10	19	69	4	**720-5808**	**722-5808**	22	20	38	104	4	**720-5822**	**722-5822**	40	40	63	155	6	**720-5840**	**722-5840**
10	10	22	72	4	**720-5810**	**722-5810**	22	20	38	104	5	**720-5823**	**722-5823**	40	40	63	155	8	**720-5841**	**722-5841**
11	12	22	79	4	**720-5811**	**722-5811**	24	25	45	121	4	**720-5824**	**722-5824**	45	40	63	155	6	**720-5845**	**722-5845**
12	12	26	83	4	**720-5812**	**722-5812**	25	25	45	121	4	**720-5825**	**722-5825**	45	40	63	155	8	**720-5846**	**722-5846**
13	12	26	83	4	**720-5813**	**722-5813**	25	25	45	121	5	**720-5826**	**722-5826**	50	50	75	177	6	**720-5850**	**722-5850**
14	12	26	83	4	**720-5814**	**722-5814**	26	25	45	121	6	**720-5827**	**722-5827**	50	50	75	177	8	**720-5851**	**722-5851**
15	12	26	83	4	**720-5815**	**722-5815**	28	25	45	121	6	**720-5828**	**722-5828**	55	50	75	177	6	**720-5855**	**722-5855**
16	16	32	92	4	**720-5816**	**722-5816**	30	25	45	121	5	**720-5830**	**722-5830**	55	50	75	177	8	**720-5856**	**722-5856**
17	16	32	92	4	**720-5817**	**722-5817**	30	25	45	121	6	**720-5831**	**722-5831**	63	63	90	202	6	**720-5863**	**722-5863**
18	16	32	92	4	**720-5818**	**722-5818**	32	32	53	133	5	**720-5832**	**722-5832**	63	63	90	202	8	**720-5864**	**722-5864**
19	16	32	92	4	**720-5819**	**722-5819**	32	32	53	133	6	**720-5833**	**722-5833**	71	63	90	202	8	**720-5871**	**722-5871**

Solid Carbide End Mills

Four Flute End Mills: Produce finer finishes, recommend for finishing operation.

***Two Flute End Mills*:** Allow maximum chip ejection compare to four flute, recommend for roughing operation.

- Made of micro-grain tungsten carbide material.
- Suitable for general purpose of machining cast Iron, alloy steel, stainless steel, non-ferrous and non-metals material.
- Center cutting allows for three axis profile milling and plunge cutting.
- 30° Helix Flutes for both nonferrous and ferrous materials.
- Better surface finish on work piece.
- Higher feed rates and long tool life.

Tolerance

Shank Diameter :..... -0.0000"/-0.0005"

Cutter Diameter:

1/32" thru 1/4".....+0.000"/-0.002"

9/32" thru 1" .....+0.000"/-0.003"

2 Flute Single End Mills



4 Flute Single End Mills



Size	Shank Dia.	Flute Length	Overall Length	2 Flute Order No.	4Flute Order No.
1/16"	1/8"	3/16"	1-1/2"	**244-2204**	**244-2404**
3/32	1/8	3/8	1-1/2	**244-2210**	**244-2410**
1/8	1/8	1/2	1-1/2	**244-2216**	**244-2416**
5/32	3/16	9/16	2	**244-2222**	**244-2422**
3/16	3/16	5/8	2	**244-2228**	**244-2428**
7/32	1/4	5/8	2-1/2	**244-2234**	**244-2434**
1/4	1/4	3/4	2-1/2	**244-2240**	**244-2440**
9/32	5/16	7/8	2-1/2	**244-2246**	**244-2446**
5/16	5/16	3/4	2-1/2	**244-2252**	**244-2452**
3/8	3/8	7/8	2-1/2	**244-2258**	**244-2458**
7/16	7/16	7/8	2-1/2	**244-2264**	**244-2464**
1/2	1/2	1	3	**244-2270**	**244-2470**
9/16	9/16	1-3/8	3	**244-2276**	**244-2476**
5/8	5/8	1-3/8	3-1/2	**244-2282**	**244-2482**
11/16	3/4	1-1/2	4	**244-2288**	**244-2488**
3/4	3/4	1-1/2	4	**244-2294**	**244-2494**
7/8	7/8	1-1/2	4	**244-2300**	**244-2500**
1	1	1-1/2	4	**244-2306**	**244-2506**
1	1	3	6		**244-2512**

2 Flute Double End Mills



4 Flute Double End Mills



Size	Shank Dia.	Flute Length	Overall Length	2 Flute Order No.	4 Flute Order No.
1/16"	1/8"	1/8"	1-1/2"	**244-2604**	**244-2804**
3/32	1/8	3/16	1-1/2	**244-2610**	**244-2810**
1/8	1/8	1/4	1-1/2	**244-2616**	**244-2816**
5/32	3/16	5/16	2	**244-2622**	**244-2822**
3/16	3/16	3/8	2	**244-2628**	**244-2828**
7/32	1/4	1/2	2-1/2	**244-2634**	**244-2834**
1/4	1/4	1/2	2-1/2	**244-2640**	**244-2840**
5/16	5/16	1/2	2-1/2	**244-2652**	**244-2852**
3/8	3/8	9/16	2-1/2	**244-2658**	**244-2858**
7/16	7/16	5/8	3	**244-2664**	**244-2864**
1/2	1/2	5/8	3	**244-2670**	**244-2870**

Carbide Tipped End Mills

Carbide Tipped Single End Mills For Mild Steel

Spiral Flute, Right Hand, Straight Shank



Size	Shank Dia.	Flute Length	Overall Length	No. of Flutes	Order No.	Size	Shank Dia.	Flute Length	Overall Length	No. of Flutes	Order No.
1/4"	3/8"	1/2"	2-1/2"	2	**243-0020**	1"	1"	1-3/4"	4-3/4"	4	**243-0205**
5/16	3/8	5/8	2-1/2	2	**243-0040**	1-1/8	1	1-1/4	4-1/4	4	**243-0220**
3/8	3/8	5/8	2-1/2	2	**243-0060**	1-1/8	1	1-3/4	4-3/4	4	**243-0225**
7/16	3/8	1	2-11/16	2	**243-0080**	1-1/4	1	1-1/4	4-1/4	4	**243-0240**
1/2	1/2	1	3-1/4	2	**243-0100**	1-1/4	1-1/4	2-1/8	5-1/4	4	**243-0245**
9/16	1/2	1	3-3/8	2	**243-0120**	1-3/8	1-1/4	2-1/8	5-1/4	4	**243-0250**
5/8	1/2	1	3-3/8	4	**243-0140**	1-1/2	1-1/4	1-1/2	4-1/2	4	**243-0260**
5/8	5/8	1-1/4	3-5/8	3	**243-0145**	1-1/2	1-1/2	2-1/2	6-1/8	4	**243-0265**
3/4	5/8	1	3-5/8	4	**243-0160**	1-3/4	1-1/2	2-1/2	6-1/8	4	**243-0270**
3/4	3/4	1-1/2	4-1/8	3	**243-0165**	2	1-1/4	1-1/2	4-1/2	6	**243-0300**
7/8	5/8	1-1/4	4	4	**243-0180**	2	2	3	7	6	**243-0305**
1	7/8	1-1/4	4	4	**243-0200**						

Carbide Tipped Single End Mills For Cast Iron

Spiral Flute, Right Hand, Straight Shank



Size	Shank Dia.	Flute Length	Overall Length	No. of Flutes	Spiral Flute Order No.	Straight Flute Order No.	Size	Shank Dia.	Flute Length	Overall Length	No. of Flutes	Spiral Flute Order No.	Straight Flute Order No.
1/4"	3/8"	1/2"	2-1/2"	4	**243-1020**	**243-1316**	7/8"	5/8"	1-1/4"	4"	4	**243-1180**	**243-1356**
5/16	3/8	5/8	2-1/2	4	**243-1040**	**243-1320**	1	7/8	1-1/4	4	4	**243-1200**	**243-1364**
3/8	3/8	5/8	2-1/2	4	**243-1060**	**243-1324**	1-1/8	1	1-1/4	4-1/4	4	**243-1220**	**243-1368**
7/16	3/8	1	2-11/16	4	**243-1080**	**243-1328**	1-1/4	1	1-1/4	4-1/4	4	**243-1240**	**243-1380**
1/2	1/2	1	3-1/4	4	**243-1100**	**243-1332**	1-1/2	1-1/4	1-1/2	4-1/2	4	**243-1260**	**243-1396**
9/16	1/2	1	3-3/8	4	**243-1120**	**243-1336**	1-3/4	1-1/4	1-1/2	4-1/2	6	**243-1280**	**243-1412**
5/8	1/2	1	3-3/8	4	**243-1140**	**243-1340**	2	1-1/4	1-1/2	4-1/2	6	**243-1300**	**243-1428**
3/4	5/8	1	3-5/8	4	**243-1160**	**243-1348**							

Carbide Tipped 2 Flute Single End Mills

Straight Flute, Positive Rake, 90° Square Shoulder



- Used for N.C. machines and standard millers.
- Ideal for use in key-way slotting, slab milling, 90° shoulder milling.

Size	Shank Dia.	Flute Length	Overall Length	No. of Flutes	Order No.	Size	Shank Dia.	Flute Length	Overall Length	No. of Flutes	Order No.
5/16"	3/8"	1/2"	2-3/8"	2	**243-0312**	9/16"	5/8"	3/4"	2-7/8"	2	**243-0562**
3/8	3/8	5/8	2-5/8	2	**243-0375**	5/8	5/8	3/4	2-7/8	2	**243-0625**
1/2	1/2	5/8	2-3/4	2	**243-0500**	3/4	3/4	1	3-5/32	2	**243-0750**

Carbide Tipped Heavy Duty End Mills

- All material can be machined with these ultra micrograin end mills at high or low cutting speeds, and feeds with increased wear resistance.
- Specially designed with a 25° right hand helix.
- Tough carbide grade allows high speed milling operations.
- Ultra Fine. For General Purpose.

Two Flute Center Cutting



- Suited for the rough machining, heavy cutting and grooving machining as this allows larger chip pocket and increased feeding.

Three Flute Center Cutting



- Especially three flutes type vibrates less when entering and as result can increase feed rate over two flutes type.

Four Flute Center Cutting



- Allows better balance for machining.
- Suited for finish and side surface machining as this is less likely to tilt.

Size	Shank Dia.	Flute Length	Overall Length	Two Flute Order No.	Three Flute Order No.	Four Flute Order No.
5/8"	5/8"	1-3/16"	3-1/2"	**243-2040**	**243-2240**	
3/4	3/4	1-27/64	3-3/4	**243-2048**	**243-2248**	**243-2448**
7/8	3/4	1-27/64	3-3/4	**243-2056**	**243-2256**	**243-2456**
1	1	1-29/64	4-1/8	**243-2064**	**243-2264**	**243-2464**
1-1/8	1	1-9/16	4-1/2	**243-2072**	**243-2272**	
1-1/4	1-1/4	1-27/32	5-1/8	**243-2080**	**243-2280**	**243-2480**
1-1/2	1-1/4	2-1/4	5-1/2	**243-2096**	**243-2296**	**243-2496**
1-3/4	1-1/4	2-5/8	6-1/8	**243-2112**	**243-2312**	**243-2512**
2	1-1/4	2-5/8	6-1/8	**243-2128**	**243-2328**	**243-2528**

2 Flute Carbide Tipped End Mills

with Weldon Shank



- 2 flutes are used for machining aluminum alloys, magnesium alloys etc.
- Center Cutting suitable for plunge cutting.
- Carbide tipped cutting edge can be resharped with diamond grinding wheel.

Center Cutting

Size	Shank Dia.	Flute Length	Overall Length	No. of Flute	Order No.
5/8"	5/8"	1-5/16"	3-11/16"	2	**244-1109**
5/8	5/8	1-3/8	4-5/8	2	**244-1112**
11/16	5/8	1-5/16	3-11/16	2	**244-1115**
3/4	5/8	1-5/16	3-27/32	2	**244-1118**
3/4	3/4	1-5/8	5-3/8	2	**244-1121**
13/16	5/8	1-1/2	4-1/32	2	**244-1124**
7/8	7/8	1-1/2	4-5/16	2	**244-1127**
1	7/8	1-1/2	4-5/16	2	**244-1130**
1	1	1-5/8	4-11/16	2	**244-1133**
1	1	2-1/2	7-1/4	2	**244-1136**
1-1/8	1	1-5/8	4-11/16	2	**244-1139**
1-1/4	1-1/4	1-5/8	4-11/16	2	**244-1142**
1-1/4	1-1/4	3	7-1/4	2	**244-1145**
1-3/8	1	1-5/8	4-11/16	2	**244-1148**
1-1/2	1-1/4	1-5/8	4-25/32	2	**244-1151**
1-3/4	1-1/4	1-5/8	4-25/32	2	**244-1154**
2	1-1/4	1-5/8	4-25/32	2	**244-1157**

Non Center Cutting

Size	Shank Dia.	Flute Length	Overall Length	No. of Flute	Order No.
1/2"	1/2"	1"	3-1/4"	2	**244-1003**
9/16	1/2	1-1/8	3-3/8	2	**244-1006**
5/8	5/8	1-5/16	3-11/16	2	**244-1009**
5/8	5/8	1-3/8	4-5/8	2	**244-1012**
11/16	5/8	1-5/16	3-11/16	2	**244-1015**
3/4	5/8	1-5/16	3-27/32	2	**244-1018**
3/4	3/4	1-5/8	5-3/8	2	**244-1021**
13/16	5/8	1-1/2	4-1/32	2	**244-1024**
7/8	7/8	1-1/2	4-5/16	2	**244-1027**
1	7/8	1-1/2	4-5/16	2	**244-1030**
1	1	1-5/8	4-11/16	2	**244-1033**
1	1	2-1/2	7-1/4	2	**244-1036**
1-1/8	1	1-5/8	4-11/16	2	**244-1039**
1-1/4	1-1/4	1-5/8	4-11/16	2	**244-1042**
1-1/4	1-1/4	3	7-1/4	2	**244-1045**
1-3/8	1	1-5/8	4-11/16	2	**244-1048**
1-1/2	1-1/4	1-5/8	4-25/32	2	**244-1051**
1-3/4	1-1/4	1-5/8	4-25/32	2	**244-1054**
2	1-1/4	1-5/8	4-25/32	2	**244-1057**

3 Flute Carbide Tipped End Mills with Weldon Shank

- Use in finishing operation.
- Three flute's vibration is less than two flute when milling.



Size	Shank Dia.	Flute Length	Overall Length	No. of Flute	Order No.	Size	Shank Dia.	Flute Length	Overall Length	No. of Flute	Order No.
1/2"	1/2"	1-1/4"	3-1/2"	3	**244-1203**	13/16"	5/8"	1-7/8"	4-27/64"	3	**244-1236**
1/2	1/2	2	4-1/4	3	**244-1206**	7/8	7/8	1-7/8	4-17/32	3	**244-1239**
1/2	1/2	3	5-1/4	3	**244-1209**	7/8	7/8	3-1/2	6-5/32	3	**244-1242**
9/16	1/2	1-3/8	3-5/8	3	**244-1212**	7/8	7/8	5	7-21/32	3	**244-1245**
5/8	5/8	1-5/8	4	3	**244-1215**	1	7/8	1-7/8	4-11/16	3	**244-1248**
5/8	5/8	2-1/2	4-7/8	3	**244-1218**	1	1	2	5-1/16	3	**244-1251**
5/8	5/8	4	6-3/8	3	**244-1221**	1	1	4	7-1/16	3	**244-1254**
11/16	5/8	1-5/8	4	3	**244-1224**	1	1	6	9-1/16	3	**244-1257**
3/4	5/8	1-5/8	4-5/32	3	**244-1227**	1-1/8	1	2	5-1/16	3	**244-1260**
3/4	3/4	3	5-21/32	3	**244-1230**	1-1/8	1	4	7-1/16	3	**244-1263**
3/4	3/4	4	6-21/32	3	**244-1233**						

Multiple Flute Carbide Tipped End Mills

- Use in finishing operation
- multi-flute can efficiently mill a wide range of materials:
  non ferrous materials and ferrous materials, including titanium alloy, cast iron, alloy steel, stainless steel, plastic and magnetic material etc.
- Heavy duty machining.



Combination Shank

Size	Shank Dia.	Flute Length	Overall Length	No. of Flute	Order No.	Size	Shank Dia.	Flute Length	Overall Length	No. of Flute	Order No.
1-1/2"	1-1/2"	2-1/2"	6-1/8"	4	**244-1406**	2"	2"	6"	10"	4"	**244-1424**
2	2	3	7	6	**244-1409**	2	2	6	10	6	**244-1427**
2	2	4	8	4	**244-1412**	2	2	8	12	4	**244-1430**
2	2	4	8	6	**244-1415**	2	2	8	12	6	**244-1433**
2	2	5	9	4	**244-1418**	2	2	10	14	6	**244-1436**
2	2	5	9	6	**244-1421**						

Multiple Flute Carbide Tipped End Mills

Weldon Shank

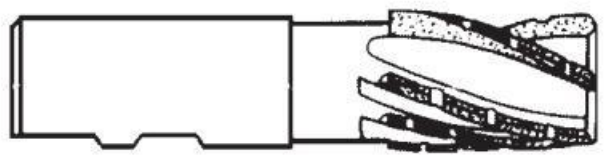


- Use in finishing operation
- multi-flute can efficiently mill a wide range of materials: non ferrous materials and ferrous materials, including titanium alloy, cast iron, alloy steel, stainless steel, plastic and magnetic material etc.
- Heavy duty machining.

Size	Shank Dia.	Flute Length	Overall Length	No. of Flute	Order No.	Size	Shank Dia.	Flute Length	Overall Length	No. of Flute	Order No.
1"	7/8"	1-7/8"	4-11/16"	4	**244-1303**	1-1/2"	1-1/4"	4"	7-5/32"	4	**244-1336**
1	1	2	5-1/16	4	**244-1306**	1-1/2	1-1/4	8	11-5/32	4	**244-1339**
1	1	4	7-1/16	4	**244-1309**	1-3/4	1-1/4	2	5-5/32	4	**244-1342**
1	1	6	9-1/16	4	**244-1312**	1-3/4	1-1/4	2	5-5/32	6	**244-1345**
1-1/8	1	2	5-1/16	4	**244-1315**	1-3/4	1-1/4	4	7-5/32	4	**244-1348**
1-1/8	1	4	7-1/16	4	**244-1318**	1-3/4	1-1/4	4	7-5/32	6	**244-1351**
1-1/4	1-1/4	2	5-1/16	4	**244-1321**	2	1-1/4	2	5-5/32	4	**244-1354**
1-1/4	1-1/4	4	7-1/16	4	**244-1324**	2	1-1/4	2	5-5/32	6	**244-1357**
1-1/4	1-1/4	6	9-1/16	4	**244-1327**	2	1-1/4	4	7-5/32	4	**244-1360**
1-3/8	1	2	5-1/16	4	**244-1330**	2	1-1/4	4	7-5/32	6	**244-1363**
1-1/2	1-1/4	2	5-5/32	4	**244-1333**						

"CHIPBREAKER" Cutting Edge Carbide Tipped End Mills

4&6 Flute with Weldon Shank



- Use in semi-finishing operation.
- multi-flute can efficiently mill a wide range of materials: non ferrous materials and ferrous materials, including titanium alloy, cast iron, alloy steel, stainless steel, plastic and magnetic material etc.
- Heavy duty machining.

Size	Shank Dia.	Flute Length	Overall Length	No. of Flute	Order No.	Size	Shank Dia.	Flute Length	Overall Length	No. of Flute	Order No.
1"	7/8"	1-7/8"	4-11/16"	4	**244-1803**	1-1/2"	1-1/4"	4"	7-5/32"	4	**244-1836**
1	1	2	5-1/16	4	**244-1806**	1-1/2	1-1/4	8	11-5/32	4	**244-1839**
1	1	4	7-1/16	4	**244-1809**	1-3/4	1-1/4	2	5-5/32	4	**244-1842**
1	1	6	9-1/16	4	**244-1812**	1-3/4	1-1/4	2	5-5/32	6	**244-1845**
1-1/8	1	2	5-1/16	4	**244-1815**	1-3/4	1-1/4	4	7-5/32	4	**244-1848**
1-1/8	1	4	7-1/16	4	**244-1818**	1-3/4	1-1/4	4	7-5/32	6	**244-1851**
1-1/4	1-1/4	2	5-1/16	4	**244-1821**	2	1-1/4	2	5-5/32	4	**244-1854**
1-1/4	1-1/4	4	7-1/16	4	**244-1824**	2	1-1/4	2	5-5/32	6	**244-1857**
1-1/4	1-1/4	6	9-1/16	4	**244-1827**	2	1-1/4	4	7-5/32	4	**244-1860**
1-3/8	1	2	5-1/16	4	**244-1830**	2	1-1/4	4	7-5/32	6	**244-1863**
1-1/2	1-1/4	2	5-5/32	4	**244-1833**						

"CREST" Cutting Edge Carbide Tipped End Mills

3 Flute with Weldon Shank



- Use in roughing milling operation.
- Machining carbon steel, cast iron, alloy steel.
- Heavy duty machining.
- Crest cutting edges compensate cutting forces, minimum vibration and chatter ,and offer maximum end mills life.

Size	Shank Dia.	Flute Length	Overall Length	No. of Flute	Order No.	Size	Shank Dia.	Flute Length	Overall Length	No. of Flute	Order No.
5/8"	5/8"	1-5/8"	4"	3	**244-1515**	7/8"	7/8"	3-1/2"	6-5/32"	3	**244-1542**
5/8	5/8	2-1/2	4-7/8	3	**244-1518**	7/8	7/8	5	7-21/32	3	**244-1545**
5/8	5/8	4	6-3/8	3	**244-1521**	1	7/8	1-7/8	4-11/16	3	**244-1548**
11/16	5/8	1-5/8	4	3	**244-1524**	1	1	2	5-1/16	3	**244-1551**
3/4	5/8	1-5/8	4-5/32	3	**244-1527**	1	1	4	7-1/16	3	**244-1554**
3/4	3/4	3	5-21/32	3	**244-1530**	1	1	6	9-1/16	3	**244-1557**
3/4	3/4	4	6-21/32	3	**244-1533**	1-1/8	1	2	5-1/16	3	**244-1560**
13/16	5/8	1-7/8	4-27/64	3	**244-1536**	1-1/8	1	4	7-1/16	3	**244-1563**
7/8	7/8	1-7/8	4-17/32	3	**244-1539**						

"CREST" Cutting Edge Carbide Tipped End Mills

- Use in roughing milling operation.
- Machining carbon steel, cast iron, alloy steel.
- Heavy duty machining.
- Crest cutting edges compensate cutting forces, minimum vibration and chatter ,and offer maximum end mills life.



4 & 6 Flute with Combination Shank

Size	Shank Dia.	Flute Length	Overall Length	No. of Flute	Order No.
1-1/2"	1-1/2"	2-1/2"	6-1/8"	4	**244-1706**
2	2	3	7	6	**244-1709**
2	2	4	8	4	**244-1712**
2	2	4	8	6	**244-1715**
2	2	5	9	4	**244-1718**
2	2	5	9	6	**244-1721**
2	2	6	10	4	**244-1724**
2	2	6	10	6	**244-1727**
2	2	8	12	4	**244-1730**
2	2	8	12	6	**244-1733**
2	2	10	14	6	**244-1736**

4 & 6 Flute with Weldon Shank

Size	Shank Dia.	Flute Length	Overall Length	No. of Flute	Order No.
1"	7/8"	1-7/8"	4-11/16"	4	**244-1603**
1	1	2	5-1/16	4	**244-1606**
1	1	4	7-1/16	4	**244-1609**
1	1	6	9-1/16	4	**244-1612**
1-1/8	1	2	5-1/16	4	**244-1615**
1-1/8	1	4	7-1/16	4	**244-1618**
1-1/4	1-1/4	2	5-1/16	4	**244-1621**
1-1/4	1-1/4	4	7-1/16	4	**244-1624**
1-1/4	1-1/4	6	9-1/16	4	**244-1627**
1-3/8	1	2	5-1/16	4	**244-1630**
1-1/2	1-1/4	2	5-5/32	4	**244-1633**
1-1/2	1-1/4	4	7-5/32	4	**244-1636**
1-1/2	1-1/4	8	11-5/32	4	**244-1639**
1-3/4	1-1/4	2	5-5/32	4	**244-1642**
1-3/4	1-1/4	2	5-5/32	6	**244-1645**
1-3/4	1-1/4	4	7-5/32	4	**244-1648**
1-3/4	1-1/4	4	7-5/32	6	**244-1651**
2	1-1/4	2	5-5/32	4	**244-1654**
2	1-1/4	2	5-5/32	6	**244-1657**
2	1-1/4	4	7-5/32	4	**244-1660**
2	1-1/4	4	7-5/32	6	**244-1663**

Corner Rounding End Mill Sets





- Used to mill rounded cormers.
- From reieved for longer tool life.
- May be resharpened repeatedly without changing form.
- Ideal for your Bridgeport type machines.

4Pcs/set, Wooden Stand

Pieces	Size	Materials	Order No.
4	1/2,9/16,5/8,3/4 have 3/4"shank	M2	**182-6908**
4	1/2,9/16,5/8,3/4 have 3/4"shank	M2AL	**181-6908**
4	1/2,9/16,5/8,3/4 have 3/4"shank	Tin-Coated	**183-6908**

8Pcs/set, Wooden Stand

Pieces	Size	Shank Dia.	M2 Order No.	M2 TiN Order No.	M2 Al Orderl No.
8	1/16,3/32"	3/8	**182-6006**		
	1/8,5/32,3/16,1/4,5/16,3/8	1/2			
8	1/16,3/321/8"	3/8	**182-6007**	**183-6007**	**181-6007**
	5/32,3/16,1/4,5/16,3/8	1/2			
8	3/16,1/4,5/16,3/8,7/16,1/2,5/8,3/4	3/4	**182-6008**	**183-6008**	**181-6008**

M42 8% Cobalt
Corner Rounding End Mill Sets

Pieces	Size	Shank Dia.	Order No.
4	1/2,9/16,5/8,3/4"	3/4	**723-6684**
8	1/16,3/32	3/8	**723-6686**
	1/8,5/32,3/16,1/4,5/16,3/8	1/2	
	1/16,3/32,1/8	3/8	**723-6687**
	5/32,3/16,1/4,5/16,3/8	1/2	
8	3/16,1/4,5/16,3/8,7/16,1/2,5/8,3/4	3/4	**723-6688**

Corner Rounding End Mills

4 Flute Corner Rounding End Mills

- Used to mill rounded cormers.
- From reieved for longer tool lifee.
- May be resharpened repeatedly without changing form.
- Ideal for your Bridgeport type machines.





Radius Size	Shank Dia.	Cutter Dia.	Overall Length	M2 OrderNo.	M2AL Order No.	TiN-Coated Order No.	Radius Size	Shank Dia.	Cutter Dia.	Overall Length	M2 Order No.	M2AL Order No.	TiN-Coated Order No.
1/32"	3/8"	3/8"	2-1/2"	**182-6023**	**181-6023**	**183-6023**	3/8"	3/4"	1-1/4"	3-1/2"	**182-6783**	**181-6783**	**183-6783**
3/64	3/8	7/16	2-1/2	**182-6031**	**181-6031**	**183-6031**	3/8	7/8	1-1/4	3-3/4	**182-6254**	**181-6254**	**183-6254**
1/16	3/8	7/16	2-1/2	**182-6049**	**181-6049**	**183-6049**	13/32	3/4	1-1/4	3-1/2	**182-6262**	**181-6262**	**183-6262**
5/64	3/8	1/2	2-1/2	**182-6056**	**181-6056**	**183-6056**	7/16	3/4	1-3/8	3-3/4	**182-6825**	**181-6825**	**183-6825**
3/32	3/8	1/2	2-1/2	**182-6064**	**181-6064**	**183-6064**	7/16	3/4	1-3/8	4	**182-6280**	**181-6280**	**183-6280**
3/32	1/2	1/2	2-1/2	**182-6809**	**181-6809**	**182-6809**	7/16	1	1-3/8	4	**182-6288**	**181-6288**	**183-6288**
7/64	3/8	5/8	2-1/2	**182-6072**	**181-6072**	**183-6072**	15/32	3/4	1-3/8	3-3/4	**182-6304**	**181-6304**	**183-6304**
1/8	1/2	5/8	3	**182-6080**	**181-6080**	**183-6080**	1/2	1/2	1-1/2	3-7/8	**182-6833**	**181-6833**	**183-6833**
1/8	3/8	5/8	3	**182-6668**	**181-6668**	**183-6668**	1/2	3/4	1-1/2	3-7/8	**182-6791**	**181-6791**	**183-6791**
1/8	3/4	5/8	3	**182-6817**	**181-6817**	**183-6817**	1/2	1	1-1/2	4-1/8	**182-6320**	**181-6320**	**183-6320**
9/64	1/2	3/4	3	**182-6098**	**181-6098**	**183-6098**	17/32	3/4	1-1/2	3-7/8	**182-6338**	**181-6338**	**183-6338**
5/32	1/2	3/4	3	**182-6106**	**181-6106**	**183-6106**	17/32	1	1-1/2	4-1/8	**182-6346**	**181-6346**	**183-6346**
11/64	1/2	3/4	3	**182-6114**	**181-6114**	**183-6114**	9/16	3/4	1-15/16	4	**182-6353**	**181-6353**	**183-6353**
3/16	1/2	7/8	2-15/16	**182-6121**	**181-6121**	**183-6121**	9/16	1	1-15/16	4-1/4	**182-6361**	**181-6361**	**183-6361**
3/16	1/2	7/8	3	**182-6122**	**181-6122**	**183-6122**	19/32	3/4	1-15/16	4	**182-6379**	**181-6379**	**183-6379**
3/16	3/4	7/8	3-1/8	**182-6130**	**181-6130**	**183-6130**	19/32	1	1-15/16	4-1/4	**182-6387**	**181-6387**	**183-6387**
13/64	1/2	7/8	3-1/8	**182-6676**	**181-6676**	**183-6676**	5/8	3/4	1-15/16	4	**182-6403**	**181-6403**	**183-6403**
13/64	3/4	7/8	3-1/8	**182-6684**	**181-6684**	**183-6684**	5/8	1	1-15/16	4-1/4	**182-6395**	**181-6395**	**183-6395**
7/32	3/4	7/8	3-1/4	**182-6692**	**181-6692**	**183-6692**	21/32	3/4	1-15/16	4	**182-6411**	**181-6411**	**183-6411**
7/32	1/2	7/8	3-1/4	**182-6148**	**181-6148**	**183-6148**	21/32	1	1-15/16	4-1/4	**182-6429**	**181-6429**	**183-6429**
15/64	1/2	7/8	3-1/8	**182-6155**	**181-6155**	**183-6155**	11/16	3/4	2-1/4	4-1/8	**182-6437**	**181-6437**	**183-6437**
1/4	1/2	1	3	**182-6162**	**181-6162**	**183-6162**	11/16	1	2-1/4	4-5/16	**182-6445**	**181-6445**	**183-6445**
1/4	1/2	1	3-1/8	**182-6163**	**181-6163**	**183-6163**	23/32	3/4	2-1/4	4-1/8	**182-6452**	**181-6452**	**183-6452**
1/4	3/4	1	3-1/4	**182-6171**	**181-6171**	**183-6171**	23/32	1	2-1/4	4-5/16	**182-6460**	**181-6460**	**183-6460**
17/64	1/2	1	3-1/8	**182-6700**	**181-6700**	**183-6700**	3/4	3/4	1-7/8	4	**182-6486**	**181-6486**	**183-6486**
17/64	3/4	1	3-1/8	**182-6718**	**181-6718**	**183-6718**	3/4	3/4	2-1/4	4-1/8	**182-6481**	**181-6481**	**183-6481**
9/32	1/2	1-1/8	3-1/4	**182-6189**	**181-6189**	**183-6189**	3/4	1	2-1/4	4-5/16	**182-6478**	**181-6478**	**183-6478**
9/32	5/8	1	3	**182-6190**	**181-6190**	**183-6190**	25/32	3/4	2-1/4	4-1/8	**182-6494**	**181-6494**	**183-6494**
9/32	3/4	1-1/8	3-1/4	**182-6197**	**181-6197**	**183-6197**	25/32	1	2-1/4	4-5/16	**182-6502**	**181-6502**	**183-6502**
19/64	1/2	1-1/8	3-1/4	**182-6726**	**181-6726**	**183-6726**	13/16	3/4	2-1/4	4-1/8	**182-6510**	**181-6510**	**183-6510**
19/64	3/4	1-1/8	3-1/4	**182-6734**	**181-6734**	**183-6734**	13/16	1	2-1/4	4-5/16	**182-6528**	**181-6528**	**183-6528**
5/16	1/2	1-1/8	3-1/4	**182-6205**	**181-6205**	**183-6205**	27/32	3/4	2-1/2	4-1/2	**182-6536**	**181-6536**	**183-6536**
5/16	3/4	1-1/8	3-1/4	**182-6742**	**181-6742**	**183-6742**	27/32	1	2-1/2	4-1/2	**182-6544**	**181-6544**	**183-6544**
5/16	5/8	1-1/8	3-1/2	**182-6215**	**181-6215**	**183-6215**	7/8	3/4	2-1/2	4-1/2	**182-6551**	**181-6551**	**183-6551**
5/16	7/8	1-1/8	3-1/2	**182-6213**	**181-6213**	**183-6213**	7/8	1	2-1/2	4-1/2	**182-6569**	**181-6569**	**183-6569**
21/64	1/2	1-1/8	3-1/4	**182-6759**	**181-6759**	**183-6759**	15/16	3/4	2-5/8	4-1/2	**182-6593**	**181-6593**	**183-6593**
21/64	3/4	1-1/8	3-1/4	**182-6767**	**181-6767**	**183-6767**	15/16	1	2-5/8	4-3/4	**182-6601**	**181-6601**	**183-6601**
11/32	1/2	1-1/8	3-1/2	**182-6221**	**181-6221**	**183-6221**	1	3/4	2-5/8	4-1/2	**182-6635**	**181-6635**	**183-6635**
11/32	3/4	1-1/8	3-1/2	**182-6775**	**181-6775**	**183-6775**	1	1	2-5/8	4-3/4	**182-6643**	**181-6643**	**183-6643**
3/8	1/2	1-1/4	3-1/2	**182-6247**	**181-6247**	**183-6247**							

Corner Rounding End Mill Sets

4Pcs/set, Wooden Stand

Pieces	Size	Materials	Order No.
4	1/2,9/16,5/8,3/4 have 3/4"shank	M2	**182-6908**
4	1/2,9/16,5/8,3/4 have 3/4"shank	M2AL	**181-6908**
4	1/2,9/16,5/8,3/4 have 3/4"shank	Tin-Coated	**183-6908**



M42 8% Cobalt 4 Flute Corner Rounding End Mills

- M-42 8% cobalt end mills are designed to cut difficult to machine materials.



Radius Size	Shank Dia.	Cutter Dia.	Overall Length	Order No.
1/32"	3/8"	3/8"	2-1/2"	**723-6405**
3/64	3/8	7/16	2-1/2	**723-6408**
1/16	3/8	7/16	2-1/2	**723-6411**
5/64	3/8	1/2	2-1/2	**723-6414**
3/32	3/8	1/2	2-1/2	**723-6417**
3/32	1/2	1/2	2-1/2	**723-6420**
7/64	3/8	5/8	2-1/2	**723-6423**
1/8	3/8	5/8	3	**723-6426**
1/8	1/2	5/8	3	**723-6429**
1/8	3/4	5/8	3	**723-6432**
9/64	1/2	3/4	3	**723-6435**
5/32	1/2	3/4	3	**723-6438**
11/64	1/2	3/4	3	**723-6441**
3/16	1/2	7/8	3	**723-6444**
3/16	3/4	7/8	3-1/8	**723-6447**
13/64	1/2	7/8	3-1/8	**723-6450**
13/64	3/4	7/8	3-1/8	**723-6453**
7/32	1/2	7/8	3-1/4	**723-6456**
7/32	3/4	7/8	3-1/4	**723-6459**
15/64	1/2	7/8	3-1/8	**723-6462**
1/4	1/2	1	3-1/8	**723-6465**
1/4	3/4	1	3-1/4	**723-6468**
17/64	1/2	1	3-1/8	**723-6471**
17/64	3/4	1	3-1/8	**723-6474**
9/32	1/2	1-1/8	3-1/4	**723-6477**
9/32	3/4	1-1/8	3-1/4	**723-6480**
19/64	1/2	1-1/8	3-1/4	**723-6483**
19/64	3/4	1-1/8	3-1/4	**723-6486**
5/16	1/2	1-1/8	3-1/4	**723-6489**
5/16	3/4	1-1/8	3-1/4	**723-6492**
5/16	7/8	1-1/8	3-1/2	**723-6495**
21/64	1/2	1-1/8	3-1/4	**723-6498**
21/64	3/4	1-1/8	3-1/4	**723-6501**
11/32	1/2	1-1/8	3-1/2	**723-6504**
11/32	3/4	1-1/8	3-1/2	**723-6507**
3/8	1/2	1-1/4	3-1/2	**723-6510**

Radius Size	Shank Dia.	Cutter Dia.	Overall Length	Order No.
3/8"	3/4"	1-1/4"	3-1/2"	**723-6513**
3/8	7/8	1-1/4	3-1/4	**723-6516**
13/32	3/4	1-1/4	3-1/2	**723-6519**
7/16	3/4	1-3/8	4-3/4	**723-6522**
7/16	1	1-3/8	4	**723-6525**
15/32	3/4	1-3/8	3-3/4	**723-6528**
1/2	1/2	1-1/2	3-7/8	**723-6531**
1/2	3/4	1-1/2	3-7/8	**723-6534**
1/2	1	1-1/2	4-1/8	**723-6537**
17/32	3/4	1-1/2	3-7/8	**723-6540**
17/32	1	1-1/2	4-1/8	**723-6543**
9/16	3/4	1-15/16	4	**723-6546**
9/16	1	1-15/16	4-1/4	**723-6549**
19/32	3/4	1-15/16	4	**723-6552**
5/8	3/4	1-15/16	4	**723-6555**
5/8	1	1-15/16	4-1/4	**723-6558**
21/32	3/4	1-15/16	4	**723-6561**
21/32	1	1-15/16	4-1/4	**723-6564**
11/16	3/4	2-1/4	4-1/8	**723-6567**
11/16	1	2-1/4	4-5/16	**723-6570**
23/32	3/4	2-1/4	4-1/8	**723-6573**
23/32	1	2-1/4	4-5/16	**723-6576**
3/4	3/4	2-1/4	4-1/8	**723-6579**
3/4	1	2-1/4	4-5/16	**723-6582**
25/32	3/4	2-1/4	4-1/8	**723-6585**
25/32	1	2-1/4	4-5/16	**723-6588**
13/16	3/4	2-1/4	4-1/8	**723-6591**
13/16	1	2-1/4	4-5/16	**723-6594**
27/32	3/4	2-1/2	4-1/2	**723-6597**
7/8	3/4	2-1/2	4-1/2	**723-6603**
7/8	1	2-1/2	4-1/2	**723-6606**
15/16	3/4	2-5/8	4-1/2	**723-6609**
15/16	1	2-5/8	4-3/4	**723-6612**
1	3/4	2-5/8	4-1/2	**723-6615**
1	1	2-5/8	4-3/4	**723-6618**

M42 8% Cobalt Corner Rounding End Mill Sets

Pieces	Size	Shank Dia.	Order No.
4	1/2,9/16,5/8,3/4"	3/4	**723-6684**
8	1/16,3/32,1/8	3/8	**723-6687**
	5/32,3/16,1/4,5/16,3/8	1/2	
8	3/16,1/4,5/16,3/8,7/16,1/2,5/8,3/4	3/4	**723-6688**



Corner Rounding Milling Cutters

High Speed Steel

Use for radius milling

Radius of Circle	Diameter	Hole Size	Right Hand Order No.	Left Hand Order No.	Radius of Circle	Diameter	Hole Size	Right Hand Order No.	Left Hand Order No.
1/8"	2"	7/8"	**317-5080**	**317-6088**	7/16"	3-1/4"	1"	**317-5288**	**317-6286**
1/8	2-1/2	1	**317-5098**	**317-6096**	1/2	3-1/4	1	**317-5320**	**317-6328**
3/16	2-1/2	1	**317-5122**	**317-6120**	1/2	4-1/4	1-1/4	**317-5338**	**317-6336**
1/4	2-1/4	7/8	**317-5163**	**317-6161**	9/16	3-1/2	1	**317-5361**	**317-6369**
1/4	3	1	**317-5171**	**317-6179**	5/8	3-1/2	1	**317-5403**	**317-6401**
5/16	2-3/4	1	**317-5205**	**317-6203**	5/8	4-1/4	1-1/4	**317-5411**	**317-6419**
5/16	3	1	**317-5209**	**317-6209**	3/4	3-3/4	1	**317-5486**	**317-6484**
3/8	3	1	**317-5247**	**317-6245**	7/8	4-1/2	1-1/4	**317-5569**	**317-6567**
3/8	3-3/4	1-1/4	**317-5254**	**317-6252**	1	4-1/2	1-1/4	**317-5643**	**317-6641**



1/2” Shank Woodruff Keyseat Cutters

High Speed Steel or M42 Cobalt, Staggered & Straight Tooth

Designed for using together with normal end mills for milling standard woodruff keyseat, slots.



American Standard	Cutter Dia.	Face Width	Overall Length	High Speed Steel Straight Tooth Order No.	High Speed Steel Staggered Tooth Order No.	M42 Cobalt Straight Tooth Order No.	M42 Cobalt Staggered Tooth Order No.
202	1/4”	1/16”	2-1/16”	**296-2016**	**297-2016**	**295-2016**	**299-2016**
202-1/2	5/16	1/16	2-1/16	**296-2065**	**297-2065**	**295-2065**	**299-2065**
302-1/2	5/16	3/32	2-3/32	**296-2073**	**297-2073**	**295-2073**	**299-2073**
203	3/8	1/16	2-1/16	**296-2115**	**297-2115**	**295-2115**	**299-2115**
303	3/8	3/32	2-3/32	**296-2123**	**297-2123**	**295-2123**	**299-2123**
403	3/8	1/8	2-1/8	**296-2131**	**297-2131**	**295-2131**	**299-2131**
204	1/2	1/16	2-1/16	**296-0010**	**297-0010**	**295-0010**	**299-0010**
304	1/2	3/32	2-3/32	**296-0028**	**297-0028**	**295-0028**	**299-0028**
404	1/2	1/8	2-1/8	**296-0036**	**297-0036**	**295-0036**	**299-0036**
305	5/8	3/32	2-3/32	**296-0044**	**297-0044**	**295-0044**	**299-0044**
405	5/8	1/8	2-1/8	**296-0051**	**297-0051**	**295-0051**	**299-0051**
505	5/8	5/32	2-5/32	**296-0069**	**297-0069**	**295-0069**	**299-0069**
605	5/8	3/16	2-3/16	**296-0614**	**297-0614**	**295-0614**	**299-0614**
406	3/4	1/8	2-1/8	**296-0077**	**297-0077**	**295-0077**	**299-0077**
506	3/4	5/32	2-5/32	**296-0085**	**297-0085**	**295-0085**	**299-0085**
606	3/4	3/16	2-3/16	**296-0093**	**297-0093**	**295-0093**	**299-0093**
806	3/4	1/4	2-1/4	**296-0911**	**297-0911**	**295-0911**	**299-0911**
507	7/8	5/32	2-5/32	**296-0101**	**297-0101**	**295-0101**	**299-0101**
607	7/8	3/16	2-3/16	**296-0119**	**297-0119**	**295-0119**	**299-0119**
707	7/8	7/32	2-7/32	**296-0127**	**297-0127**	**295-0127**	**299-0127**
807	7/8	1/4	2-1/4	**296-9011**	**297-9011**	**295-9011**	**299-9011**
608	1	3/16	2-3/16	**296-0135**	**297-0135**	**295-0135**	**299-0135**
708	1	7/32	2-7/32	**296-0143**	**297-0143**	**295-0143**	**299-0143**
808	1	1/4	2-1/4	**296-0150**	**297-0150**	**295-0150**	**299-0150**
1008	1	5/16	2-5/16	**296-9029**	**297-9029**	**295-9029**	**299-9029**
1208	1	3/8	2-3/8	**296-1521**	**297-1521**	**295-1521**	**299-1521**
609	1-1/8	3/16	2-3/16	**296-0168**	**297-0168**	**295-0168**	**299-0168**
709	1-1/8	7/32	2-7/32	**296-0176**	**297-0176**	**295-0176**	**299-0176**
809	1-1/8	1/4	2-1/4	**296-0184**	**297-0184**	**295-0184**	**299-0184**
1009	1-1/8	5/16	2-5/16	**296-9037**	**297-9037**	**295-9037**	**299-9037**
610	1-1/4	3/16	2-3/16	**296-0192**	**297-0192**	**295-0192**	**299-0192**
710	1-1/4	7/32	2-7/32	**296-0200**	**297-0200**	**295-0200**	**299-0200**
810	1-1/4	1/4	2-1/4	**296-0218**	**297-0218**	**295-0218**	**299-0218**
1010	1-1/4	5/16	2-5/16	**296-9045**	**297-9045**	**295-9045**	**299-9045**
1210	1-1/4	3/8	2-3/8	**296-9052**	**297-9052**	**295-9052**	**299-9052**
811	1-3/8	1/4	2-1/4	**296-0226**	**297-0226**	**295-0226**	**299-0226**
1011	1-3/8	5/16	2-5/16	**296-0234**	**297-0234**	**295-0234**	**299-0234**
1211	1-3/8	3/8	2-3/8	**296-9060**	**297-9060**	**295-9060**	**299-9060**
812	1-1/2	1/4	2-1/4	**296-0242**	**297-0242**	**295-0242**	**299-0242**
1012	1-1/2	5/16	2-5/16	**296-0259**	**297-0259**	**295-0259**	**299-0259**
1212	1-1/2	3/8	2-3/8	**296-9078**	**297-9078**	**295-9078**	**299-9078**

1/2” Shank Woodruff Keyseat Cutter Sets

High Speed Steel or M42 Cobalt, Staggered & Straight Tooth



Pieces	American Standard	High Speed Steel Straight Tooth Order No.	High Speed Steel Staggered Tooth Order No.	M42 Cobalt Straight Tooth Order No.	M42 Cobalt Staggered Tooth Order No.
10	403,204,404,305,505,406,606,806, 608,808	**296-9810**	**296-9910**	**296-9811**	**296-9911**
41	202 thru 1212	**296-9841**	**297-9941**	**296-9842**	**297-9942**
8	204,304,305,406,605,606,608,806	**396-9808**	**297-9908**		



T-Slot Cutters

High Speed Steel, M35 or M42 Cobalt



- H.S.S. and M35/M42 cobalt T-slot cutters are a rugged design with free cutting features.
- Cutters have positive radial rake, right and left hand sprial,with alternate side cutting teeth for maximum chip clearance.



Bolt Size	Cutter Dia.	Cutter Width	Neck Dia.	Shank Dia.	Undercut Length	Overall Length	Tooth	HSS Order No.	M35 Order No.	M42 Order No.	Tin Coated Order No.
1/4"	9/16"	15/64"	17/64"	1/2"	35/64"	2-19/32"	6	**298-6016**	**298-7016**	**298-7316**	**298-7516**
5/16	21/32	17/64	21/64	1/2	39/64	2-11/16	6	**298-6020**	**298-7020**	**298-7320**	**298-7520**
3/8	25/32	21/64	13/32	3/4	3/4	3-1/4	8	**298-6024**	**298-7024**	**298-7324**	**298-7524**
1/2	31/32	25/64	17/32	3/4	3/4	3-7/16	8	**298-6032**	**298-7032**	**298-7332**	**298-7532**
5/8	1-1/4	31/64	21/32	1	1-9/64	3-15/16	8	**298-6040**	**298-7040**	**298-7340**	**298-7540**
3/4	1-15/32	5/8	25/32	1	1-1/2	4-7/16	10	**298-6048**	**298-7048**	**298-7348**	**298-7548**
1	1-27/32	53/64	1-1/32	1-1/4	1-43/64	4-13/16	10	**298-6064**	**298-7064**	**298-7364**	**298-7564**
1-1/4	2-7/32	1-3/32	1-9/32	1-1/4	1-31/32	5-3/8	10	**298-6080**	**298-7080**	**298-7380**	**298-7580**
1-1/2	2-21/32	1-11/32	1-17/32	1-1/4	2-1/8	5-29/32	10	**298-6096**	**298-7096**	**298-7396**	**298-7596**

Cobalt Roughing T-Slot Cutters

M35 or M42 Cobalt

- Faster Machining than regular T-Slot cutters,
- Roughing tooth design than permits faster cutting and minimizes vibration and chatter





Bolt Size	Cutter Dia.	Cutter Width	Neck Diameter	Shank Diameter	Overall Length	M35 Order No.	M42 Order No.
1/2"	31/32"	25/64"	17/32"	3/4"	3-7/16"	**298-8032**	**298-8332**
5/8	1-1/4	31/64	21/32	1	3-15/16	**298-8040**	**298-8340**
3/4	1-15/32	5/8	25/32	1	4-7/16	**298-8048**	**298-8348**
1	1-27/32	53/64	1-1/32	1-1/4	4-13/16	**298-8064**	**298-8364**
1-1/4	2-7/32	1-3/32	1-9/32	1-1/4	5-3/8	**298-8080**	**298-8380**
1-1/2	2-21/32	1-11/32	1-17/32	1-1/4	5-29/32	**298-8096**	**298-8396**

Long Shank T-Slot Milling Cutters

High Speed Steel & M42, Staggered Tooth

- Used for milling when greater depth is required.



Cutter Dia.	Cutter Width	Shank Dia.	Overall Length	Tooth	HSS Order No.	M42 Order No.	Cutter Dia.	Cutter Width	Shank Dia.	Overall Length	Tooth	HSS Order No.	M42 Order No.
1"	1/8"	5/8"	4-15/16"	8	**298-4100**	**298-4500**	1-1/2	1/8	1	5-5/16	8	**298-4142**	**298-4542**
1	3/16	5/8	4-15/16	8	**298-4103**	**298-4503**	1-1/2	3/16	1	5-5/16	8	**298-4145**	**298-4545**
1	1/4	5/8	4-15/16	8	**298-4106**	**298-4506**	1-1/2	1/4	1	5-5/16	8	**298-4148**	**298-4548**
1	5/16	5/8	4-15/16	8	**298-4109**	**298-4509**	1-1/2	5/16	1	5-5/16	8	**298-4151**	**298-4551**
1	3/8	5/8	4-15/16	8	**298-4112**	**298-4512**	1-1/2	3/8	1	5-5/16	8	**298-4154**	**298-4554**
1	1/2	5/8	4-15/16	8	**298-4115**	**298-4515**	1-1/2	1/2	1	5-5/16	8	**298-4157**	**298-4557**
1	5/8	5/8	4-15/16	8	**298-4118**	**298-4518**	1-1/2	5/8	1	5-5/16	8	**298-4160**	**298-4560**
1-1/4	1/8	3/4	5-1/8	8	**298-4121**	**298-4521**	2	3/16	1	5-11/16	10	**298-4163**	**298-4563**
1-1/4	3/16	3/4	5-1/8	8	**298-4124**	**298-4524**	2	1/4	1	5-11/16	10	**298-4166**	**298-4566**
1-1/4	1/4	3/4	5-1/8	8	**298-4127**	**298-4527**	2	5/16	1	5-11/16	10	**298-4169**	**298-4569**
1-1/4	5/16	3/4	5-1/8	8	**298-4130**	**298-4530**	2	3/8	1	5-11/16	10	**298-4172**	**298-4572**
1-1/4	3/8	3/4	5-1/8	8	**298-4133**	**298-4533**	2	1/2	1	5-11/16	10	**298-4175**	**298-4575**
1-1/4	1/2	3/4	5-1/8	8	**298-4136**	**298-4536**	2	5/8	1	5-11/16	10	**298-4178**	**298-4578**
1-1/4	5/8	3/4	5-1/8	8	**298-4139**	**298-4539**	2	3/4	1	5-11/16	10	**298-4181**	**298-4581**

Straight Tooth Side Milling Cutters

High Speed Steel



- Used in slotting, light-duty side milling and straddle milling for where deep cutting is required.

Dia.	Face Width	Hole Size	Order No.
2"	3/16"	1/2"	**301-2127**
2	1/4	1/2	**301-2168**
2	5/16	1/2	**301-2200**
2	3/8	1/2	**301-2242**
2	3/16	5/8	**301-2135**
2	1/4	5/8	**301-2176**
2	5/16	5/8	**301-2218**
2	3/8	5/8	**301-2259**
2	1/4	7/8	**301-2182**
2	5/16	7/8	**301-2268**
2	3/8	7/8	**301-2262**
2	7/16	7/8	**301-2285**
2-1/2	3/16	7/8	**301-2506**
2-1/2	1/4	7/8	**301-2515**
2-1/2	5/16	7/8	**301-2523**
2-1/2	3/8	7/8	**301-2531**
2-1/2	7/16	7/8	**301-2538**
2-1/2	1/2	7/8	**301-2556**
2-1/2	3/16	1	**301-2614**
2-1/2	1/4	1	**301-2622**
2-1/2	5/16	1	**301-2630**
2-1/2	3/8	1	**301-2648**
2-1/2	7/16	1	**301-2655**
2-1/2	1/2	1	**301-2663**
2-1/2	5/8	1	**301-2671**
3	3/16	1	**301-3125**
3	7/32	1	**301-3141**
3	1/4	1	**301-3166**
3	9/32	1	**301-3182**
3	5/16	1	**301-3208**
3	11/32	1	**301-3224**
3	3/8	1	**301-3240**
3	13/32	1	**301-3259**
3	13/32	1	**301-3265**
3	7/16	1	**301-3263**
3	1/2	1	**301-3323**
3	9/16	1	**301-3335**
3	5/8	1	**301-3336**
3	11/16	1	**301-3341**
3	3/4	1	**301-3343**
3	13/16	1	**301-3347**
3	7/8	1	**301-3348**
3	15/16	1	**301-3604**
3	1	1	**301-3646**
3	1/4	1-1/4	**301-3174**
3	5/16	1-1/4	**301-3216**
3	3/8	1-1/4	**301-3257**
3	7/16	1-1/4	**301-3263**
3	1/2	1-1/4	**301-3331**
3	5/8	1-1/4	**301-3339**
3	3/4	1-1/4	**301-3346**
3	7/8	1-1/4	**301-3349**
3	1	1-1/4	**301-3356**
3-1/2	3/16	1	**301-3506**
3-1/2	1/4	1	**301-3513**
3-1/2	5/16	1	**301-3521**
3-1/2	3/8	1	**301-3539**
3-1/2	7/16	1	**301-3547**
3-1/2	1/2	1	**301-3554**

Dia.	Face Width	Hole Size	Order No.
3-1/2"	5/8"	1"	**301-3570**
3-1/2	3/4	1	**301-3580**
3-1/2	1	1	**301-3590**
3-1/2	3/8	1-1/4	**301-3540**
3-1/2	7/16	1-1/4	**301-3544**
3-1/2	1/2	1-1/4	**301-3559**
3-1/2	5/8	1-1/4	**301-3575**
4	3/16	1	**301-4123**
4	7/32	1	**301-4149**
4	1/4	1	**301-4164**
4	9/32	1	**301-4180**
4	5/16	1	**301-4206**
4	11/32	1	**301-4222**
4	3/8	1	**301-4248**
4	13/32	1	**301-4263**
4	7/16	1	**301-4289**
4	1/2	1	**301-4321**
4	9/16	1	**301-4340**
4	5/8	1	**301-4404**
4	11/16	1	**301-4446**
4	3/4	1	**301-4487**
4	13/16	1	**301-4529**
4	7/8	1	**301-4560**
4	15/16	1	**301-4602**
4	1	1	**301-4583**
4	3/16	1-1/4	**301-4131**
4	7/32	1-1/4	**301-4152**
4	1/4	1-1/4	**301-4172**
4	9/32	1-1/4	**301-4198**
4	5/16	1-1/4	**301-4214**
4	11/32	1-1/4	**301-4235**
4	3/8	1-1/4	**301-4255**
4	13/32	1-1/4	**301-4269**
4	7/16	1-1/4	**301-4262**
4	1/2	1-1/4	**301-4339**
4	9/16	1-1/4	**301-4342**
4	5/8	1-1/4	**301-4412**
4	11/16	1-1/4	**301-4423**
4	3/4	1-1/4	**301-4495**
4	13/16	1-1/4	**301-4503**
4	7/8	1-1/4	**301-4578**
4	15/16	1-1/4	**301-4605**
4	1	1-1/4	**301-4586**
4	1-1/8	1-1/4	**301-4701**
4	1-1/4	1-1/4	**301-4743**
4	1-1/2	1-1/4	**301-4749**
4-1/2	3/8	1	**301-4840**
4-1/2	1/2	1	**301-4865**
4-1/2	3/8	1-1/4	**301-4842**
4-1/2	1/2	1-1/4	**301-4867**
5	1/4	1	**301-5161**
5	9/32	1	**301-5187**
5	5/16	1	**301-5203**
5	11/32	1	**301-5328**
5	3/8	1	**301-5369**
5	13/32	1	**301-5229**
5	7/16	1	**301-5245**
5	1/2	1	**301-5260**
5	9/16	1	**301-5261**

Dia.	Face Width	Hole Size	Order No.
5	5/8	1	**301-5401**
5	11/16	1	**301-5423**
5	3/4	1	**301-5484**
5	13/16	1	**301-5500**
5	7/8	1	**301-5513**
5	15/16	1	**301-5520**
5	1	1	**301-5616**
5	1/4	1-1/4	**301-5179**
5	9/32	1-1/4	**301-5195**
5	5/16	1-1/4	**301-5211**
5	11/32	1-1/4	**301-5231**
5	3/8	1-1/4	**301-5252**
5	13/32	1-1/4	**301-5259**
5	7/16	1-1/4	**301-5263**
5	1/2	1-1/4	**301-5336**
5	9/16	1-1/4	**301-5342**
5	5/8	1-1/4	**301-5419**
5	11/16	1-1/4	**301-5426**
5	3/4	1-1/4	**301-5492**
5	13/16	1-1/4	**301-5501**
5	7/8	1-1/4	**301-5516**
5	15/16	1-1/4	**301-5522**
5	1	1-1/4	**301-5641**
5	1-1/4	1-1/4	**301-5656**
6	1/4	1	**301-6169**
6	5/16	1	**301-6201**
6	3/8	1	**301-6243**
6	7/16	1	**301-6251**
6	1/2	1	**301-6326**
6	9/16	1	**301-6332**
6	5/8	1	**301-6345**
6	11/16	1	**301-6352**
6	3/4	1	**301-6482**
6	13/16	1	**301-6486**
6	7/8	1	**301-6492**
6	15/16	1	**301-6494**
6	1	1	**301-6496**
6	1-1/4	1	**301-6654**
6	1/4	1-1/4	**301-6177**
6	9/32	1-1/4	**301-6193**
6	5/16	1-1/4	**301-6219**
6	11/32	1-1/4	**301-6222**
6	3/8	1-1/4	**301-6250**
6	13/32	1-1/4	**301-6256**
6	7/16	1-1/4	**301-6253**
6	1/2	1-1/4	**301-6328**
6	9/16	1-1/4	**301-6334**
6	5/8	1-1/4	**301-6347**
6	11/16	1-1/4	**301-6355**
6	3/4	1-1/4	**301-6483**
6	3/4	1-1/4	**301-6490**
6	13/16	1-1/4	**301-6488**
6	7/8	1-1/4	**301-6493**
6	15/16	1-1/4	**301-6495**
6	1	1-1/4	**301-6497**
6	1-1/8	1-1/4	**301-6652**
6	1-1/4	1-1/4	**301-6659**

Dia.	Face Width	Hole Size	Order No.
7	1/4	1-1/4	**301-7167**
7	5/16	1-1/4	**301-7209**
7	3/8	1-1/4	**301-7241**
7	7/16	1-1/4	**301-7282**
7	1/2	1-1/4	**301-7324**
7	9/16	1-1/4	**301-7328**
7	5/8	1-1/4	**301-7407**
7	11/16	1-1/4	**301-7415**
7	3/4	1-1/4	**301-7480**
7	13/16	1-1/4	**301-7482**
7	7/8	1-1/4	**301-7486**
7	15/16	1-1/4	**301-7489**
7	1	1-1/4	**301-7647**
8	1/4	1	**301-8165**
8	5/16	1	**301-8207**
8	3/8	1	**301-8249**
8	7/16	1	**301-8260**
8	7/16	1	**301-8280**
8	1/2	1	**301-8322**
8	1/4	1-1/4	**301-8173**
8	5/16	1-1/4	**301-8215**
8	3/8	1-1/4	**301-8256**
8	7/16	1-1/4	**301-8262**
8	1/2	1-1/4	**301-8330**
8	9/16	1-1/4	**301-8363**
8	5/8	1-1/4	**301-8405**
8	11/16	1-1/4	**301-8447**
8	3/4	1-1/4	**301-8488**
8	13/16	1-1/4	**301-8520**
8	7/8	1-1/4	**301-8561**
8	15/16	1-1/4	**301-8603**
8	1	1-1/4	**301-8645**
8	1/4	1-1/2	**301-8175**
9	1/4	1-1/4	**301-9002**
9	3/8	1-1/4	**301-9004**
9	1/2	1-1/4	**301-9006**
9	5/8	1-1/4	**301-9008**
9	3/4	1-1/4	**301-9012**
9	1	1-1/4	**301-9014**
10	5/8	1-1/4	**301-9160**
10	3/4	1-1/4	**301-9162**
10	1/4	1-1/2	**301-9163**
10	5/16	1-1/2	**301-9205**
10	3/8	1-1/2	**301-9247**
10	7/16	1-1/2	**301-9249**
10	1/2	1-1/2	**301-9320**
10	9/16	1-1/2	**301-9326**
10	5/8	1-1/2	**301-9403**
10	11/16	1-1/2	**301-9416**
10	3/4	1-1/2	**301-9486**
10	13/16	1-1/2	**301-9492**
10	7/8	1-1/2	**301-9569**
10	1	1-1/2	**301-9643**
10	1-1/4	1-1/2	**301-9651**
10	1-1/2	1-1/2	**301-9660**

Straight Tooth Side Milling Cutters



Cobalt, M35

- Used in slotting, light-duty side milling and straddle milling



Dia. (In.)	Face W.(In.)	Hole Size(In.)	Order No.
2”	3/16”	1/2”	**321-2127**
2	3/16	5/8	**321-2135**
2	1/4	1/2	**321-2168**
2	1/4	5/8	**321-2176**
2	5/16	1/2	**321-2200**
2	5/16	5/8	**321-2218**
2	3/8	1/2	**321-2242**
2	3/8	5/8	**321-2259**
2-1/2	3/16	7/8	**321-2506**
2-1/2	1/4	7/8	**321-2515**
2-1/2	5/16	7/8	**321-2523**
2-1/2	3/8	7/8	**321-2531**
2-1/2	1/2	7/8	**321-2556**
2-1/2	3/16	1	**321-2614**
2-1/2	1/4	1	**321-2622**
2-1/2	5/16	1	**321-2630**
2-1/2	3/8	1	**321-2648**
2-1/2	7/16	1	**321-2655**
2-1/2	1/2	1	**321-2663**
2-1/2	5/8	1	**321-2671**
3	3/16	1	**321-3125**
3	7/32	1	**321-3141**
3	1/4	1	**321-3166**
3	1/4	1-1/4	**321-3174**
3	9/32	1	**321-3182**
3	5/16	1	**321-3208**
3	5/16	1-1/4	**321-3216**
3	11/32	1	**321-3224**
3	3/8	1	**321-3240**
3	3/8	1-1/4	**321-3257**
3	13/32	1	**321-3265**
3	7/16	1	**321-3281**
3	1/2	1	**321-3323**
3	1/2	1-1/4	**321-3331**
3	5/8	1	**321-3406**
3	3/4	1	**321-3489**
3	13/16	1	**321-3497**
3	7/8	1	**321-3498**
3	15/16	1	**321-3352**
3	1	1	**321-3354**
3-1/2	1/4	1	**321-3513**
3-1/2	5/16	1	**321-3521**
3-1/2	3/8	1	**321-3539**
3-1/2	7/16	1	**321-3547**
3-1/2	1/2	1	**321-3554**
3-1/2	5/8	1	**321-3570**
4	3/16	1	**321-4123**
4	3/16	1-1/4	**321-4131**
4	7/32	1	**321-4149**
4	1/4	1	**321-4164**
4	1/4	1-1/4	**321-4172**
4	9/32	1	**321-4180**
4	9/32	1-1/4	**321-4198**
4	5/16	1	**321-4206**
4	5/16	1-1/4	**321-4214**
4	11/32	1	**321-4222**
4	3/8	1	**321-4248**

Dia. (In.)	Face W.(In.)	Hole Size(In.)	Order No.
4	3/8	1-1/4	**321-4255**
4	13/32	1	**321-4263**
4	7/16	1	**321-4289**
4	1/2	1	**321-4321**
4	1/2	1-1/4	**321-4339**
4	9/16	1	**321-4362**
4	5/8	1	**321-4404**
4	5/8	1-1/4	**321-4412**
4	11/16	1	**321-4446**
4	3/4	1	**321-4487**
4	3/4	1-1/4	**321-4495**
4	13/16	1	**321-4529**
4	7/8	1	**321-4560**
4	7/8	1-1/4	**321-4578**
4	15/16	1	**321-4602**
4	1	1	**321-4644**
4	1-1/8	1-1/4	**321-4701**
4	1-1/4	1-1/4	**321-4743**
4-1/2	3/8	1-1/4	**321-4842**
4-1/2	1/2	1-1/4	**321-4867**
5	1/4	1	**321-5161**
5	1/4	1-1/4	**321-5179**
5	9/32	1	**321-5187**
5	9/32	1-1/4	**321-5195**
5	5/16	1	**321-5203**
5	5/16	1-1/4	**321-5211**
5	11/32	1	**321-5229**
5	3/8	1	**321-5245**
5	3/8	1-1/4	**321-5252**
5	13/32	1	**321-5260**
5	7/16	1	**321-5286**
5	1/2	1	**321-5328**
5	1/2	1-1/4	**321-5336**
5	9/16	1	**321-5369**
5	5/8	1	**321-5401**
5	5/8	1-1/4	**321-5419**
5	11/16	1	**321-5443**
5	3/4	1	**321-5484**
5	3/4	1-1/4	**321-5492**
5	13/16	1	**321-5526**
5	7/8	1	**321-5567**
5	15/16	1	**321-5609**
5	1	1-1/4	**321-5641**
6	1/4	1	**321-6169**
6	1/4	1-1/4	**321-6177**
6	9/32	1-1/4	**321-6193**
6	5/16	1	**321-6201**
6	5/16	1-1/4	**321-6219**
6	3/8	1	**321-6243**
6	3/8	1-1/4	**321-6250**
6	7/16	1-1/4	**321-6284**
6	1/2	1	**321-6326**
6	1/2	1-1/4	**321-6328**
6	9/16	1-1/4	**321-6334**
6	5/8	1-1/4	**321-6409**
6	11/16	1-1/4	**321-6441**
6	3/4	1	**321-6482**

Dia. (In.)	Face W.(In.)	Hole Size(In.)	Order No.
6	3/4	1-1/4	**321-6490**
6	13/16	1-1/4	**321-6524**
6	7/8	1-1/4	**321-6565**
6	15/16	1-1/4	**321-6607**
6	1	1-1/4	**321-6649**
7	1/4	1-1/4	**321-7167**
7	5/16	1-1/4	**321-7209**
7	3/8	1-1/4	**321-7241**
7	7/16	1-1/4	**321-7282**
7	1/2	1-1/4	**321-7324**
7	5/8	1-1/4	**321-7407**
7	3/4	1-1/4	**321-7480**
7	1	1-1/4	**321-7647**
8	1/4	1	**321-8165**
8	1/4	1-1/4	**321-8173**
8	5/16	1	**321-8207**
8	5/16	1-1/4	**321-8215**
8	3/8	1	**321-8249**
8	3/8	1-1/4	**321-8256**
8	7/16	1	**321-8280**
8	1/2	1	**321-8322**
8	1/2	1-1/4	**321-8330**
8	9/16	1-1/4	**321-8363**
8	5/8	1-1/4	**321-8405**
8	11/16	1-1/4	**321-8447**
8	3/4	1-1/4	**321-8488**
8	13/16	1-1/4	**321-8520**
8	7/8	1-1/4	**321-8561**
8	15/16	1-1/4	**321-8603**
8	1	1-1/4	**321-8645**
10	1/4	1-1/2	**321-9163**
10	5/16	1-1/2	**321-9205**
10	3/8	1-1/2	**321-9247**
10	1/2	1-1/2	**321-9320**
10	5/8	1-1/2	**321-9403**
10	3/4	1-1/2	**321-9486**
10	7/8	1-1/2	**321-9569**
10	1	1-1/2	**321-9643**

Staggered Tooth Side Milling Cutters

Cobalt, M35



- Used in deep slotting, and heavy-duty side milling

Cobalt

Dia. (In.)	Face W.(In.)	Hole Size(In.)	Order No.
2”	3/16”	1/2”	**326-2125**
2	3/16	5/8	**326-2133**
2	1/4	1/2	**326-2166**
2	1/4	5/8	**326-2174**
2	5/16	1/2	**326-2198**
2	5/16	5/8	**326-2216**
2	3/8	1/2	**326-2240**
2	3/8	5/8	**326-2257**
2-1/8	3/16	3/4	**326-2290**
2-1/8	3/8	3/4	**326-2294**
2-1/2	3/16	7/8	**326-2504**
2-1/2	1/4	7/8	**326-2513**
2-1/2	5/16	7/8	**326-2521**
2-1/2	3/8	7/8	**326-2539**
2-1/2	1/2	7/8	**326-2554**
2-1/2	3/16	1	**326-2612**
2-1/2	1/4	1	**326-2620**
2-1/2	5/16	1	**326-2628**
2-1/2	3/8	1	**326-2646**
2-1/2	7/16	1	**326-2653**
2-1/2	1/2	1	**326-2661**
2-1/2	5/8	1	**326-2669**
2-3/4	1/4	1	**326-2711**
2-3/4	5/16	1	**326-2729**
2-3/4	3/8	1	**326-2737**
2-3/4	7/16	1	**326-2745**
2-3/4	1/2	1	**326-2752**
3	1/8	1	**326-2900**
3	5/32	1	**326-3107**
3	3/16	1	**326-3123**
3	7/32	1	**326-3149**
3	1/4	1	**326-3164**
3	1/4	1-1/4	**326-3172**
3	9/32	1	**326-3180**
3	5/16	1	**326-3208**
3	5/16	1-1/4	**326-3214**
3	11/32	1	**326-3222**
3	3/8	1	**326-3248**
3	3/8	1-1/4	**326-3255**
3	13/32	1	**326-3263**
3	7/16	1	**326-3289**
3	1/2	1	**326-3313**
3	1/2	1-1/4	**326-3321**
3	9/16	1	**326-3336**
3	5/8	1	**326-3393**
3	5/8	1-1/4	**326-3404**
3	3/4	1	**326-3485**
3	3/4	1-1/4	**326-3487**
3	13/16	1	**326-3495**
3	7/8	1	**326-3496**
3	15/16	1	**326-3350**
3	1	1	**326-3352**
3-1/2	1/4	1	**326-3511**
3-1/2	5/16	1	**326-3519**
3-1/2	3/8	1	**326-3537**
3-1/2	7/16	1	**326-3545**
3-1/2	1/2	1	**326-3552**
3-1/2	5/8	1	**326-3568**
4	1/8	1	**326-4100**
4	5/32	1	**326-4102**
4	3/16	1	**326-4121**
4	3/16	1-1/4	**326-4139**
4	7/32	1	**326-4147**
4	1/4	1	**326-4154**
4	1/4	1-1/4	**326-4162**
4	9/32	1	**326-4178**
4	9/32	1-1/4	**326-4188**
4	5/16	1	**326-4196**
4	5/16	1-1/4	**326-4204**
4	11/32	1	**326-4220**
4	3/8	1	**326-4238**
4	3/8	1-1/4	**326-4246**
4	13/32	1	**326-4261**
4	7/16	1	**326-4295**
4	1/2	1	**326-4311**
4	1/2	1-1/4	**326-4329**
4	9/16	1	**326-4352**
4	9/16	1-1/4	**326-4360**
4	5/8	1	**326-4378**
4	5/8	1-1/4	**326-4402**
4	11/16	1	**326-4444**
4	3/4	1	**326-4477**
4	3/4	1-1/4	**326-4485**
4	13/16	1	**326-4527**
4	7/8	1	**326-4558**
4	7/8	1-1/4	**326-4576**
4	15/16	1	**326-4600**
4	1	1	**326-4640**
4	1	1	**326-4642**
4	1-1/8	1-1/4	**326-4699**
4	1-1/4	1-1/4	**326-4741**
4-1/2	3/8	1-1/4	**326-4840**
4-1/2	1/2	1-1/4	**326-4865**
5	1/8	1-1/4	**326-5036**
5	5/32	1-1/4	**326-5089**
5	3/16	1-1/4	**326-5118**
5	7/32	1-1/4	**326-5134**
5	1/4	1	**326-5159**
5	1/4	1-1/4	**326-5169**
5	9/32	1	**326-5174**
5	9/32	1-1/4	**326-5176**
5	5/16	1	**326-5193**
5	5/16	1-1/4	**326-5201**
5	11/32	1	**326-5227**
5	3/8	1	**326-5243**
5	3/8	1-1/4	**326-5243**
5	13/32	1	**326-5258**
5	7/16	1	**326-5284**
5	1/2	1	**326-5318**
5	1/2	1-1/4	**326-5326**
5	9/16	1	**326-5367**
5	5/8	1	**326-5391**
5	5/8	1-1/4	**326-5409**
5	11/16	1	**326-5442**
5	3/4	1	**326-5474**
5	3/4	1-1/4	**326-5482**
5	13/16	1	**326-5516**
5	7/8	1	**326-5557**
5	15/16	1	**326-5599**
5	1	1-1/4	**326-5631**
5	1	1-1/4	**326-5649**
6	1/8	1-1/4	**326-6016**
6	5/32	1-1/4	**326-6087**
6	3/16	1-1/4	**326-6136**
6	1/4	1	**326-6159**
6	1/4	1-1/4	**326-6167**
6	9/32	1-1/4	**326-6191**
6	5/16	1	**326-6199**
6	5/16	1-1/4	**326-6209**
6	3/8	1	**326-6233**
6	3/8	1-1/4	**326-6241**
6	7/16	1-1/4	**326-6282**
6	1/2	1	**326-6316**
6	1/2	1-1/4	**326-6324**
6	9/16	1-1/4	**321-6332**
6	5/8	1-1/4	**326-6407**
6	11/16	1-1/4	**326-6431**
6	3/4	1	**326-6472**
6	3/4	1-1/4	**326-6480**
6	13/16	1-1/4	**321-6522**
6	7/8	1-1/4	**326-6563**
6	15/16	1-1/4	**326-6605**
6	1	1-1/4	**326-6647**
7	1/4	1-1/4	**326-7165**
7	5/16	1-1/4	**326-7207**
7	3/8	1-1/4	**326-7231**
7	7/16	1-1/4	**326-7280**
7	1/2	1-1/4	**326-7322**
7	5/8	1-1/4	**326-7405**
7	3/4	1-1/4	**326-7478**
7	1	1-1/4	**326-7645**
8	1/4	1	**326-8155**
8	1/4	1-1/4	**326-8163**
8	5/16	1	**326-8197**
8	5/16	1-1/4	**326-8205**
8	3/8	1	**326-8237**
8	3/8	1-1/4	**326-8254**
8	7/16	1	**326-8278**
8	1/2	1	**326-8312**
8	1/2	1-1/4	**326-8318**
8	9/16	1-1/4	**326-8361**
8	5/8	1-1/4	**326-8395**
8	11/16	1-1/4	**326-8445**
8	3/4	1-1/4	**326-8478**
8	13/16	1-1/4	**326-8518**
8	7/8	1-1/4	**326-8559**
8	15/16	1-1/4	**326-8601**
8	1	1-1/4	**326-8643**
10	1/4	1-1/2	**326-9161**
10	5/16	1-1/2	**326-9203**
10	3/8	1-1/2	**326-9245**
10	1/2	1-1/2	**326-9318**
10	5/8	1-1/2	**326-9401**
10	3/4	1-1/2	**326-9484**
10	7/8	1-1/2	**326-9567**
10	1	1-1/2	**326-9641**

Staggered Tooth Side Milling Cutters

High Speed Steel



- For milling deep slots, grooves and the other operations where either or both the peripheral or side cuttingedges are used for machining.
- Arbor mounted with mounting holes having standardized size and made to suit a variety of machine arbors.
- Well suited for use in a variety of ferrous and non-ferrous materials.
- Ground from solid.
- Bright and black finish.

Dia.	Width of Face	Hole Size	Order No.
2-1/8"	3/16"	3/4"	**306-1127**
2-1/8	1/4	3/4	**306-1168**
2-1/8	5/16	3/4	**306-1200**
2-1/8	3/8	3/4	**306-1242**
2-1/2	3/16	7/8	**306-2505**
2-1/2	1/4	7/8	**306-2513**
2-1/2	5/16	7/8	**306-2521**
2-1/2	3/8	7/8	**306-2539**
2-1/2	1/2	7/8	**306-2554**
2-3/4	1/4	1	**306-2711**
2-3/4	5/16	1	**306-2729**
2-3/4	3/8	1	**306-2737**
2-3/4	7/16	1	**306-2745**
2-3/4	1/2	1	**306-2752**
3	1/8	1	**306-2900**
3	5/32	1	**306-3107**
3	3/16	1	**306-3123**
3	3/16	1-1/4	**306-3131**
3	7/32	1	**306-3149**
3	1/4	1	**306-3164**
3	1/4	1-1/4	**306-3172**
3	9/32	1	**306-3180**
3	5/16	1	**306-3206**
3	5/16	1-1/4	**306-3214**
3	11/32	1	**306-3222**
3	3/8	1	**306-3248**
3	3/8	1-1/4	**306-3255**
3	13/32	1	**306-3263**
3	7/16	1	**306-3289**
3	1/2	1	**306-3313**
3	1/2	1-1/4	**306-3321**
3	9/16	1	**306-3336**
3	9/16	1-1/4	**306-3362**
3	5/8	1	**306-3378**
3	5/8	1-1/4	**306-3404**
3	3/4	1-1/4	**306-3487**
3	7/8	1-1/4	**306-3560**
3	1	1-1/4	**306-3644**
3-1/2	7/32	1	**306-3670**
3-1/2	1/4	1	**306-3685**
3-1/2	9/32	1	**306-3701**
3-1/2	5/16	1	**306-3727**
3-1/2	3/8	1	**306-3735**
3-1/2	7/16	1	**306-3743**
3-1/2	1/2	1	**306-3750**
3-1/2	9/16	1	**306-3768**
3-1/2	5/8	1	**306-3776**
3-1/2	11/16	1	**306-3784**
3-1/2	3/4	1	**306-3792**
4	1/8	1	**306-3856**
4	3/16	1	**306-4121**
4	3/16	1-1/4	**306-4139**
4	7/32	1-1/4	**306-4147**
4"	1/4"	1"	**306-4145**
4	1/4	1-1/4	**306-4162**
4	9/32	1-1/4	**306-4188**
4	5/16	1	**306-4196**
4	5/16	1-1/4	**306-4204**
4	11/32	1-1/4	**306-4220**
4	3/8	1	**306-4238**
4	3/8	1-1/4	**306-4246**
4	13/32	1-1/4	**306-4261**
4	7/16	1-1/4	**306-4287**
4	7/16	1	**306-4295**
4	1/2	1	**306-4311**
4	1/2	1-1/4	**306-4329**
4	9/16	1-1/4	**306-4360**
4	5/8	1	**306-4378**
4	5/8	1-1/4	**306-4402**
4	3/4	1	**306-4477**
4	3/4	1-1/4	**306-4485**
4	7/8	1-1/4	**306-4568**
4	1/8	1	**306-4579**
4	5/32	1	**306-4586**
4	1	1-1/4	**306-4642**
4	1-1/8	1-1/4	**306-4709**
4	1-1/4	1-1/4	**306-4741**
5	1-1/2	1-1/4	**306-4824**
5	1/8	1-1/4	**306-5036**
5	5/32	1-1/4	**306-5089**
5	3/16	1-1/4	**306-5118**
5	7/32	1-1/4	**306-5134**
5	1/4	1	**306-5151**
5	1/4	1-1/4	**306-5169**
5	9/32	1-1/4	**306-5176**
5	5/16	1	**306-5193**
5	5/16	1-1/4	**306-5201**
5	3/8	1-1/4	**306-5243**
5	3/8	1	**306-5250**
5	7/16	1-1/4	**306-5284**
5	1/2	1	**306-5318**
5	1/2	1-1/4	**306-5326**
5	5/8	1-1/4	**306-5409**
5	3/4	1-1/4	**306-5482**
5	1"	1-1/4	**306-5649**
6	1/8	1-1/4	**306-6016**
6	5/32	1-1/4	**306-6087**
6	3/16	1-1/4	**306-6136**
6	7/32	1-1/4	**306-6151**
6	1/4	1	**306-6159**
6	1/4	1-1/4	**306-6167**
6	9/32	1-1/4	**306-6183**
6	5/16	1	**306-6191**
6	5/16	1-1/4	**306-6209**
6	3/8	1	**306-6233**
6	3/8	1-1/4	**306-6241**
6"	7/16"	1-1/4"	**306-6282**
6	1/2	1	**306-6316**
6	1/2	1-1/4	**306-6324**
6	9/16	1-1/4	**306-6365**
6	5/8	1-1/4	**306-6407**
6	11/16	1-1/4	**306-6449**
6	3/4	1-1/4	**306-6480**
6	13/16	1-1/4	**306-6522**
6	7/8	1-1/4	**306-6563**
6	15/16	1-1/4	**306-6605**
6	1	1-1/4	**306-6647**
6	1-1/8	1-1/4	**306-6704**
6	1-1/4	1-1/4	**306-6746**
6	1-1/2	1-1/4	**306-6829**
7	1/4	1-1/4	**306-7165**
7	5/16	1-1/4	**306-7207**
7	3/8	1-1/4	**306-7249**
7	7/16	1-1/4	**306-7280**
7	1/2	1-1/4	**306-7322**
7	9/16	1-1/4	**306-7363**
7	5/8	1-1/4	**306-7405**
7	11/16	1-1/4	**306-7447**
7	3/4	1-1/4	**306-7488**
7	7/8	1-1/4	**306-7561**
7	1	1-1/4	**306-7645**
8	1/4	1-1/4	**306-8163**
8	5/16	1-1/4	**306-8205**
8	3/8	1-1/2	**306-8247**
8	7/16	1-1/2	**306-8288**
8	1/2	1-1/2	**306-8320**
8	9/16	1-1/2	**306-8361**
8	5/8	1-1/2	**306-8403**
8	11/16	1-1/2	**306-8445**
8	3/4	1-1/2	**306-8486**
8	13/16	1-1/2	**306-8528**
8	7/8	1-1/2	**306-8569**
8	1	1-1/2	**306-8643**
8	1-1/8	1-1/2	**306-8700**
8	1-1/4	1-1/2	**306-8742**
8	1-1/2	1-1/2	**306-8825**
10	1/4	1-1/2	**306-9161**
10	5/16	1-1/2	**306-9203**
10	3/8	1-1/2	**306-9245**
10	7/16	1-1/2	**306-9286**
10	1/2	1-1/2	**306-9328**
10	9/16	1-1/2	**306-9369**
10	5/8	1-1/2	**306-9401**
10	3/4	1-1/2	**306-9484**
10	7/8	1-1/2	**306-9567**
10	1	1-1/2	**306-9641**
10	1-1/8	1-1/2	**306-9708**
10	1-1/4	1-1/2	**306-9740**
10	1-1/2	1-1/2	**306-9823**

Metric Side Milling Cutters

DIN 885, High Speed Steel

- For milling deep slots, grooves and the other opeerations where either or both the peripheral or side cutting edges are used for machining.
- Arbor mounted with mounting holes having standardized size and made to suit a variety of machine arbors.
- Well suited for use in a variety of ferrous and non-ferrous materials.
- Ground from solid.
- Bright and black finish.

Straight Tooth

- Used in slotting, light-duty side milling and straddle milling for where deep cutting is required.



Staggered Tooth

- Used for heavy duty side cutting and straddle milling operations.



Cutter Dia.	Hole Size	Face Width	Straight Tooth Order No.	Staggered Tooth Order No.
50mm	16	4	**364-0504**	**364-3504**
50 mm	16	5	**364-0505**	**364-3505**
50 mm	16	6	**364-0506**	**364-3506**
50 mm	16	8	**364-0508**	**364-3508**
50 mm	16	10	**364-0510**	**364-3510**
63 mm	22	4	**364-0604**	**364-3604**
63 mm	22	5	**364-0605**	**364-3605**
63 mm	22	6	**364-0606**	**364-3606**
63 mm	22	8	**364-0608**	**364-3608**
63 mm	22	10	**364-0610**	**364-3610**
63 mm	22	12	**364-0612**	**364-3612**
63 mm	22	14	**364-0614**	**364-3614**
63 mm	22	16	**364-0616**	**364-3616**
80 mm	27	5	**364-0805**	**364-3805**
80 mm	27	6	**364-0806**	**364-3806**
80 mm	27	8	**364-0808**	**364-3808**
80 mm	27	10	**364-0810**	**364-3810**
80 mm	27	12	**364-0812**	**364-3812**
80 mm	27	14	**364-0814**	**364-3814**
80 mm	27	16	**364-0816**	**364-3816**
80 mm	27	18	**364-0818**	**364-3818**
80 mm	27	20	**364-0820**	**364-3820**
100 mm	32	5	**364-1005**	**364-4005**
100 mm	32	6	**364-1006**	**364-4006**
100 mm	32	8	**364-1008**	**364-4008**
100 mm	32	10	**364-1010**	**364-4010**
100 mm	32	12	**364-1012**	**364-4012**
100 mm	32	14	**364-1014**	**364-4014**
100 mm	32	16	**364-1016**	**364-4016**
100 mm	32	18	**364-1018**	**364-4018**
100mm	32	20	**364-1020**	**364-4020**
100 mm	32	22	**364-1022**	**364-4022**
100 mm	32	25	**364-1025**	**364-4025**
125 mm	32	8	**364-1208**	**364-4208**
125 mm	32	10	**364-1210**	**364-4210**
125 mm	32	12	**364-1212**	**364-4212**
125 mm	32	14	**364-1214**	**364-4214**
125 mm	32	16	**364-1216**	**364-4216**

Cutter Dia.	Hole Size	Face Width	Straight Tooth Order No.	Staggered Tooth Order No.
125 mm	32	18	**364-1218**	**364-4218**
125 mm	32	20	**364-1220**	**364-4220**
125 mm	32	22	**364-1222**	**364-4222**
125 mm	32	25	**364-1225**	**364-4225**
125 mm	32	28	**364-1228**	**364-4228**
160 mm	40	8	**364-1608**	**364-4608**
160 mm	40	10	**364-1610**	**364-4610**
160 mm	40	12	**364-1612**	**364-4612**
160 mm	40	14	**364-1614**	**364-4614**
160 mm	40	16	**364-1616**	**364-4616**
160 mm	40	18	**364-1618**	**364-4618**
160 mm	40	20	**364-1620**	**364-4620**
160 mm	40	22	**364-1622**	**364-4622**
160 mm	40	25	**364-1625**	**364-4625**
160 mm	40	28	**364-1628**	**364-4628**
160 mm	40	32	**364-1632**	**364-4632**
200 mm	40	8	**364-2008**	**364-5008**
200 mm	40	10	**364-2010**	**364-5010**
200 mm	40	12	**364-2012**	**364-5012**
200 mm	40	14	**364-2014**	**364-5014**
200 mm	40	16	**364-2016**	**364-5016**
200 mm	40	18	**364-2018**	**364-5018**
200 mm	40	20	**364-2020**	**364-5020**
200 mm	40	22	**364-2022**	**364-5022**
200 mm	40	25	**364-2025**	**364-5025**
200 mm	40	28	**364-2028**	**364-5028**
200 mm	40	32	**364-2032**	**364-5032**
250 mm	40	10	**364-2510**	**364-5510**
250 mm	40	12	**364-2512**	**364-5512**
250 mm	40	14	**364-2514**	**364-5514**
250 mm	40	16	**364-2516**	**364-5516**
250 mm	40	18	**364-2518**	**364-5518**
250 mm	40	20	**364-2520**	**364-5520**
250 mm	40	22	**364-2522**	**364-5522**
250 mm	40	25	**364-2525**	**364-5525**
250 mm	40	28	**364-2528**	**364-5528**
250 mm	40	32	**364-2532**	**364-5532**

Carbide Tipped Side Milling Cutters



For Steel



For Non-Ferrous Materials



For Cast Iron



For Stainless Steel

Cutter Dia.	Face Width	Arbor Hole	For Steel No. of Teeth	For Steel Order No.	For Non-Ferrous No. of Teeth	For Non-Ferrous Order No.	For Stainless Steel No. of Teeth	For Stainless Steel Order No.
3"	3/32"	1"					8	245-6671
3	1/8	1					8	245-6672
3	3/16	1					8	245-6673
4	3/32	1			6	245-6501	10	245-6674
4	1/8	1	8	245-6546	6	245-6502	10	245-6675
4	3/16	1	8	245-6547	6	245-6503	10	245-6676
5	3/32	1					12	245-6677
5	3/16	1					12	245-6678
6	1/8	1-1/4	12	245-6548	8	245-6504		245-6680
6	3/16	1-1/4	12	245-6549			14	245-6681
6	1/4	1-1/4	12	245-6550			14	245-6682
8	1/8	1-1/4			10	245-6505	14	

Straight Tooth

Cutter Dia.	Face Width	Arbor Hole	For Steel No.of Teeth	For Steel Order No.	For Non-Ferrous No.of Teeth	For Non-Ferrous Order No.	For Cast Iron No.of Teeth	For Cast Iron Order No.	For Stainless Steel No.of Teeth	For Stainless Steel Order No.
3"	1/4"	1"a	6	245-7001	4	245-6801	6	245-6901	8	245-6601
3	5/16	1	6	245-7002	4	245-6802	6	245-6902	8	245-6602
3	3/8	1	6	245-7003	4	245-6803	6	245-6903	8	245-6603
3	7/16	1	6	245-7004	4	245-6804	6	245-6904		
3	1/2	1	6	245-7005	4	245-6805	6	245-6905	8	245-6604
4	1/4	1	8	245-7006	4	245-6806	8	245-6906	10	245-6605
4	5/16	1	8	245-7007	4	245-6807	8	245-6907	10	245-6606
4	3/8	1	8	245-7008	4	245-6808	8	245-6908	10	245-6607
4	3/8	1-1/4	8	245-7009	4	245-6809	8	245-6909	10	245-6608
4	1/2	1	8	245-7011	4	245-6811	8	245-6911	10	245-6609
4	1/2	1-1/4	8	245-7012	4	245-6812	8	245-6912	10	245-6610
4	5/8	1	8	245-7014	4	245-6814	8	245-6914	10	245-6611
4	5/8	1-1/4			4	245-6815	8	245-6915	10	245-6612
4	3/4	1			4	245-6816	8	245-6916	10	245-6613
4	3/4	1-1/4			4	245-6817	8	245-6917	10	245-6614
5	1/2	1	10	245-7017	6	245-6819	10	245-6919	12	245-6615
5	1/2	1-1/4	10	245-7018	6	245-6820	10	245-6920	12	245-6616
5	5/8	1-1/4	10	245-7020	6	245-6822	10	245-6922	12	245-6617
5	3/4	1			6	245-6823	10	245-6923	12	245-6618
5	3/4	1-1/4			6	245-6824	10	245-6924	12	245-6619
6	1/2	1			6	245-6825	12	245-6925	14	245-6620
6	1/2	1-1/4			6	245-6826	12	245-6926	14	245-6621
6	5/8	1-1/4			6	245-6827	12	245-6927	14	245-6622
6	3/4	1			6	245-6828	12	245-6928	14	245-6623
6	3/4	1-1/4			6	245-6829	12	245-6929	14	245-6624
7	3/4	1-1/4			8	245-6830	12	245-6930		
8	3/4	1-1/4			8	245-6831	12	245-6931		
8	3/4	1-1/2			8	245-6832	12	245-6932		

Staggered Tooth for Steel

Cutter Dia.	Face Width	Arbor Hole	No. Of Teeth	Order No.
4"	3/4"	1"	8	245-7044
4	3/4	1-1/4	8	245-7045
5	3/4	1	10	245-7046
6	3/4	1	12	245-7049
6	1	1-1/4	12	245-7051

Staggered Tooth for Non- Ferrous and Cast Iron

Cutter Dia.	Face Width	Arbor Hole	For Non-Ferrous No. Of Teeth	For Non-Ferrous Order No.	For Cast Iron No.Of Teeth	For Cast Iron Order No.
5"	1"	1-1/4"	8	245-6855	10	245-6955
6	1	1-1/4	8	245-6856	12	245-6956

Carbide Tipped Shell End Mills



- Used for end milling applicationa requiring larger diameter cutters.
- Suit for non-ferrous materals, cast iron and steel.
- Must be used with shell mill holder.
- Bright and black finish.

Mill Dia	Hole Dia	Overall Length	No. of Teeth	Straight Flute Cast Iron Order No.	Right hand Helix Non-Ferrous Order No.	Left Hand Helix Steel Order No.
1-1/4"	1"	1/2"	4	244-8701	244-8601	244-8801
1-1/2	1-1/8	1/2	4	244-8702	244-8602	244-8802
1-3/4	1-1/4	3/4	4	244-8703	244-8603	244-8803
2	1-3/8	3/4	4	244-8704	244-8604	244-8804
2-1/4	1-1/2	1	6	244-8705	244-8605	244-8805
2-1/2	1-5/8	1	6	244-8706	244-8606	244-8806
2-3/4	1-5/8	1	6	244-8707	244-8607	244-8807
3	1-3/4	1-1/4	6	244-8708	244-8608	244-8808
3-1/2	1-7/8	1-1/4	6	244-8709	244-8609	244-8809
4	2-1/4	1-1/2	6	244-8710	244-8610	244-8810

HSS Shell End Mills

Right Hand & Left Hand



For use with standard shell end mill arbors

Mill Dia.(In.)	Hole Dia.(In.)	LOC (In.)	Right Hand Order No.	Left Hand Order No.
1-1/4	1/2	1	306-0005	306-0205
1-1/2	1/2	1-1/8	306-0010	306-0210
1-3/4	3/4	1-1/4	306-0015	306-0215
2	3/4	1-3/8	306-0020	306-0220
2-1/4	1	1-1/2	306-0025	306-0225
2-1/2	1	1-5/8	306-0030	306-0230
2-3/4	1	1-5/8	306-0035	306-0235
3	1-1/4	1-3/4	306-0040	306-0240
3-1/2	1-1/4	1-7/8	306-0045	306-0245
4	1-1/2	2-1/4	306-0050	306-0250
4-1/2	1-1/2	2-1/4	306-0055	306-0255
5	1-1/2	2-1/4	306-0060	306-0260
5-1/2	2	2-1/4	306-0065	306-0265
6	2	2-1/4	306-0070	306-0270

HSS Shell End Mill for Aluminum

25 Deg Helix



For use with standard shell end mill arbors

Mill Dia.	Hole Dia.(In.)	LOC (In.)	Order No.
1-1/4"	1/2"	1"	306-0105
1-1/2	1/2	1-1/8	306-0110
1-3/4	3/4	1-1/4	306-0115
2	3/4	1-3/8	306-0120
2-1/4	1	1-1/2	306-0125
2-1/2	1	1-5/8	306-0130
2-3/4	1	1-5/8	306-0135
3	1-1/4	1-3/4	306-0140
3-1/2	1-1/4	1-7/8	306-0145
4	1-1/2	2-1/4	306-0150
4-1/2	1-1/2	2-1/4	306-0155
5	1-1/2	2-1/4	306-0160
5-1/2	2	2-1/4	306-0165
6	2	2-1/4	306-0170

M42 Cobalt Heavy-Duty Shell End Mills

Right Hand



For use with standard shell end mill arbors



Mill Dia.	Hole Dia.	LOC (In.)	Order No.	Mill Dia.	Hole Dia.	LOC (In.)	Order No.
1-1/4"	1/2"	1	326-0001	3	1-1/4	1-3/4	326-0013
1-1/2	1/2	1-1/8	326-0002	3-1/2	1-1/4	1-7/8	326-0015
1-3/4	3/4	1-1/4	326-0003	4	1-1/2	2-1/4	326-0016
2	3/4	1-3/8	326-0005	4-1/2	1-1/2	2-1/4	326-0017
2-1/4	1	1-1/2	326-0007	5	1-1/2	2-1/4	326-0018
2-1/2	1	1-5/8	326-0009	6	2	2-1/4	326-0019
2-3/4	1	1-5/8	326-0011				

M42 Cobalt Mutiple Flute Rough Shell End MIlls





Mill Dia.	Hole Dia.	OAL (In.)	No.of Flutes	Order No.	Mill Dia.	Hole Dia.	OAL (In.)	No.of Flutes	Order No.
2"	3/4"	2	8	326-0020	4	1-1/2	2-1/4	10	326-0032
2-1/4	1	2	8	326-0022	4-1/2	1-1/2	2-1/4	12	326-0034
2-1/2	1	1-5/8	8	326-0024	5	1-1/2	2-1/4	12	326-0036
2-3/4	1	2	10	326-0026	5-1/2	2	2-1/4	14	326-0038
3	1-1/4	2	10	326-0028	6	2	2-1/4	14	326-0040
3-1/2	1-1/4	2	10	326-0030					

High Helical Plain Milling Cutters

High Speed Steel



- Cutters have high 45° helix left hand spiral and right hand cut.
- All cutters feature 10° radial rake.

Size	Face Width	Hole Size	Ordr No.	Size	Face Width	Hole Size	Ordr No.
3"	4"	1-1/4"	304-7347	4	6	1-1/2	304-7467
3	6	1-1/4	304-7362	4	8	1-1/2	304-7487
4	3	1-1/2	304-7437	4-1/2	6	2	304-7560
4	4	1-1/2	304-7447				

Plain Milling Cutters-Heavy Duty

High Speed Steel



- Cutters have 45° helix left hand spiral and right hand cut.
- All cutters feature 10° radial rake.

Size	Face Width	Hole Size	Ordr No.	Size	Face Width	Hole Size	Ordr No.
2-1/2"	2"	1"	304-2967	3	2-1/2	1-1/4	304-3957
2-1/2	3	1	304-2978	3	3	1-1/4	304-3973
2-1/2	4	1	304-2983	3	4	1-1/4	304-3981
3	1/2	1	304-3325	3	6	1-1/4	304-3999
3	3/4	1	304-3475	4	2	1-1/2	304-4963
3	1	1	304-3645	4	3	1-1/2	304-4971
3	1-1/4	1-1/4	304-3805	4	4	1-1/2	304-4989
3	1-1/2	1-1/4	304-3815	4	6	1-1/2	304-4997
3	2	1-1/4	304-3940	4-1/2	6	2	304-5994

Plain Milling Cutters-Light Duty

High Speed Steel



- Cutters less than 3/4" width have straight teeth, 3/4" or wider have an 18° left hand helix and right hand cut.
- All cutters feature 10° radial rake.

Size	Width of Face	Hole Size	Order No.	Size	Width of Face	Hole Size	Order No.
2-1/4"	1/4"	7/8"	**304-1223**	3"	3/4"	1-1/4"	**304-3485**
2-1/4	1/2	7/8	**304-1323**	3	7/8	1-1/4	**304-3568**
2-1/4	1	7/8	**304-1646**	3	1	1	**304-3588**
2-1/2	3/16	1	**304-2123**	3	1	1-1/4	**304-3642**
2-1/2	1/4	1	**304-2164**	3	1-1/4	1-1/4	**304-3741**
2-1/2	5/16	1	**304-2206**	3	1-1/2	1-1/4	**304-3824**
2-1/2	3/8	1	**304-2248**	3	2	1-1/4	**304-3964**
2-1/2	7/16	1	**304-2289**	3	2-1/2	1-1/4	**304-3968**
2-1/2	1/2	1	**304-2321**	3	3	1-1/4	**304-3972**
2-1/2	5/8	1	**304-2404**	4	1/4	1	**304-4160**
2-1/2	3/4	1	**304-2487**	4	1/4	1-1/4	**304-4178**
2-1/2	1	1	**304-2644**	4	5/16	1	**304-4202**
2-1/2	1-1/2	1	**304-2826**	4	3/8	1	**304-4244**
2-1/2	2	1	**304-2909**	4	1	1	**304-4247**
2-1/2	2-1/2	1	**304-2958**	4	3/8	1-1/4	**304-4251**
2-1/2	3	1	**304-2974**	4	1/2	1-1/4	**304-4327**
3	3/16	1	**304-3121**	4	5/8	1-1/4	**304-4400**
3	1/4	1	**304-3162**	4	3/4	1-1/4	**304-4483**
3	5/16	1	**304-3204**	4	1	1-1/4	**304-4640**
3	3/8	1	**304-3246**	4	1-1/2	1-1/4	**304-4822**
3	3/8	1-1/4	**304-3253**	4	2	1-1/4	**304-4962**
3	7/16	1-1/4	**304-3287**	4	3	1-1/4	**304-4970**
3	1/2	1-1/4	**304-3329**	4	4	1-1/4	**304-4988**
3	5/8	1-1/4	**304-3402**				

Single Angle Milling Cutters

High Speed Steel, 45° or 60° Angle



Use for dovetails cutting

Size	Width of Face	Hole Dia.	45° Right Hand Order No.	45° Left hand Order No.	60° Right Hand Order No.	60° Left Hand Order No.
2-1/2	1/2	7/8	**328-0110**	**328-1110**	**328-2110**	**328-3110**
2-3/4	1/2	1	**328-0219**	**328-1219**	**328-2219**	**328-3219**
3	1/2	1	**328-0316**	**328-1316**	**328-2316**	**328-3316**
3	1/2	1-1/4	**328-0318**	**328-1318**	**328-2318**	**328-3318**
3	5/8	1	**328-0326**	**328-1326**	**328-2326**	**328-3326**
3	3/4	1	**328-0334**	**328-1334**	**328-2334**	**328-3334**
4	1/2	1	**328-0417**	**328-1417**	**328-2417**	**328-3417**
4	1/2	1-1/4	**328-0419**	**328-1419**	**328-2419**	**328-3419**
4	3/4	1	**328-0433**	**328-1433**	**328-2433**	**328-3433**
4	3/4	1-1/4	**328-0436**	**328-1436**	**328-2436**	**328-3436**
4	1	1-1/4	**328-0441**	**328-1441**	**328-2441**	**328-3441**
5	3/4	1-1/4	**328-0532**	**328-1532**	**328-2532**	**328-3532**
5	1	1-1/4	**328-0540**	**328-1540**	**328-2540**	**328-3540**
6	3/4	1-1/4	**328-0631**	**328-1631**	**328-2631**	**328-3631**
6	1	1-1/4	**328-0649**	**328-1649**	**328-2649**	**328-3649**

Convex Milling Cutters

High Speed Steel

Use for milling female half circle

- Teeth are from relieved and straight gashed.
- Cutting sufsces may be resharperened on face without changing contour or from for increased tool life.



Concave Milling Cutters

High Speed Steel

Use for milling male half circle

- Teeth are from relieved and straight gashed.
- Cutting sufsces may be resharperened on face without changing contour or from for increased tool life.



Circle Dia.	Cutter Dia.	Hole Size	Order No.	Circle Dia.	Cutter Dia.	Hole Size	Order No.
1/16"	2-1/4"	1"	**316-0041**	9/16	2-3/4	1	**316-0358**
3/32	2-1/4	1	**316-0066**	9/16	3	1	**316-0363**
1/8	2	7/8	**316-0090**	5/8	2-3/4	1	**316-0378**
1/8	2-1/4	1	**316-0098**	5/8	3-1/2	1-1/4	**316-0413**
5/32	2-1/4	1	**316-0108**	11/16	3	1	**316-0447**
3/16	2	7/8	**316-0116**	3/4	3	1	**316-0488**
3/16	2-1/4	1	**316-0132**	3/4	3-3/4	1-1/4	**316-0496**
7/32	2-1/4	1	**316-0140**	13/16	3-1/4	1-1/4	**316-0539**
1/4	2	7/8	**316-0165**	7/8	3-1/4	1	**316-0561**
1/4	2-1/2	1	**316-0173**	7/8	4	1-1/4'	**316-0579**
9/32	2-1/2	1	**316-0181**	15/16	3-1/2	1	**316-0603**
5/16	2-1/2	7/8	**316-0195**	1	3-1/4	1	**316-0645**
5/16	2-3/4	1	**316-0215**	1	4-1/4	1-1/4	**316-0652**
11/32	2-3/4	1	**316-0223**	1-1/8	4	1-1/4	**316-1080**
3/8	2-1/4	7/8	**316-0249**	1-1/4	4	1-1/4	**316-1163**
3/8	2-3/4	1	**316-0256**	1-3/8	4-1/4	1-1/4	**316-1247**
13/32	2-3/4	1	**316-0264**	1-1/2	4-1/4	1-1/4	**316-1320**
7/16	2-1/4	7/8	**316-0280**	1-5/8	5-1/2	1-1/4	**316-1403**
7/16	3	1	**316-0298**	1-3/4	5-1/2	1-1/4	**316-1486**
1/2	2-1/4	7/8	**316-0322**	1-7/8	6	1-1/2	**316-1569**
1/2	3	1	**316-0330**	2	6	1-1/2	**316-2005**

Circle Dia.	Cutter Dia.	Hole Size	Order No.	Circle Dia.	Cutter Dia.	Hole Size	Order No.
1/16"	2-1/4"	1"	**317-0041**	9/16	3	1	**317-0389**
3/32	2-1/4	1	**317-0065**	5/8	2-3/4	1	**317-0404**
1/8	2	7/8	**317-0081**	5/8	3-1/2	1-1/4	**317-0412**
1/8	2-1/4	1	**317-0099**	11/16	3	1	**317-0446**
5/32	2-1/4	1	**317-0107**	3/4	3	1	**317-0487**
3/16	2	7/8	**317-0123**	3/4	3-3/4	1-1/4	**317-0495**
3/16	2-1/4	1	**317-0131**	13/16	3-1/4	1	**317-0529**
7/32	2-1/4	1	**317-0149**	13/16	3-1/4	1-1/4	**317-0536**
1/4	2	7/8	**317-0164**	7/8	3-1/4	1	**317-0569**
1/4	2-1/2	1	**317-0172**	7/8	4	1-1/4	**317-0578**
9/32	2-1/2	1	**317-0180**	15/16	3-1/2	1	**317-0602**
5/16	2-1/4	7/8	**317-0206**	1	3-1/4	1	**317-0644**
5/16	2-3/4	1	**317-0214**	1	4-1/4	1-1/4	**317-0651**
11/32	2-3/4	1	**317-0222**	1-1/8	4	1-1/4	**317-1089**
3/8	2-1/4	7/8	**317-0248**	1-1/4	4	1-1/4	**317-1162**
3/8	2-3/4	1	**317-0255**	1-3/8	4-1/4	1-1/4'	**317-1246**
13/32	2-3/4	1	**317-0263**	1-1/2	4-1/4	1-1/4'	**317-1329**
7/16	2-1/4	7/8	**317-0278**	1-5/8	5-1/2	1-1/4'	**317-1402**
7/16	3	1	**317-0297**	1-3/4	5-1/2	1-1/4'	**317-1485**
1/2	2-1/4	7/8	**317-0321**	1-7/8	6	1-1/2	**317-1568**
1/2	3	1	**317-0339**	2	6	1-1/2	**317-2004**
9/16	2-3/4	1	**317-0362**				

Concave Milling Cutters -Shank Type

High Speed Steel



Use for milling male half circle

- Teeth are from relieved and straight gashed.
- Cutting sufsces may be resharperened on face without changing contour or from for increased tool life.

Cutter Radius	Shank Dia.	Dia.	OAL	Order No.	Cutter Radius	Shank Dia.	Dia.	OAL	Order No.
1/32"	3/4"	1/2"	3"	**316-3028**	3/16	1	3/4	3-1/2	**316-3127**
1/16	3/4	1/2	3	**316-3044**	1/4	1-1/4	3/4	4	**316-3168**
3/32	3/4	1/2	3	**316-3069**	5/16	1-1/4	3/4	4	**316-3200**
1/8	1	3/4	3-1/2	**316-3085**	3/8	1-1/2	3/4	4-3/16	**316-3242**
5/32	1	3/4	3-1/2	**316-3101**					

Convex Milling Cutters -Shank Type

High Speed Steel



Use for milling female half circle

- Teeth are from relieved and straight gashed.
- Cutting sufsces may be resharperened on face without changing contour or from for increased tool life.

Cutter Radius	Shank Dia.	Dia.	OAL	Order No.	Cutter Radius	Shank Dia.	Dia.	OAL	Order No.
1/32"	3/4"	1/2"	3"	**317-4026**	3/16	1-3/8	3/4	3-1/2	**317-4125**
1/16	3/4	1/2	3	**317-4042**	1/4	1-1/2	3/4	4	**317-4166**
3/32	7/8	1/2	3	**317-4067**	5/16	1-5/8	3/4	4	**317-4208**
1/8	1-1/4	3/4	3-1/2	**317-4083**	3/8	1-3/4	3/4	4	**317-4240**
5/32	1-5/16	3/4	3-1/2	**317-4109**					

Double Angle Milling Cutters

High Speed Steel, 45° , 60° or 90° Angle



Use for milling threads, notches, V-grooves, angles, serrations and chamfers

Size	Width of Face	Hole Dia.	45° Angle Order No.	60° Angle Order No.	90° Angle Order No.
2-3/4"	1/2"	1"	**328-4211**	**328-5211**	**328-6211**
3	5/8	1	**328-4328**	**328-5328**	**328-6328**
3	3/4	1	**328-4366**	**328-5366**	**328-6366**
4	1/2	1-1/4	**328-4427**	**328-5427**	**328-6427**
4	3/4	1	**328-4435**	**328-5435**	**328-6435**
4	3/4	1-1/4	**328-4446**	**328-5446**	**328-6446**
4	1	1-1/4	**328-4468**	**328-5468**	**328-6468**
5	3/4	1-1/4	**328-4534**	**328-5534**	**328-6534**
5	1	1-1/4	**328-4542**	**328-5542**	**328-6542**
6	3/4	1-1/4	**328-4633**	**328-5633**	**328-6633**
6	1	1-1/4	**328-4641**	**328-5641**	**328-6641**
6	1-1/4	1-1/4	**328-4649**	**328-5649**	**328-6649**
6	1-1/2	1-1/4	**328-4658**	**328-5658**	**328-6658**

Face Angle Milling Cutters-Shank Type

High Speed Steel or M35 Cobalt, Right Hand

Use for angular machine operations



60° Angle

Large Cutting Diameter	Small Cutting Diameter	Face Width	Shank Diameter	Overall Length	No. of Teeth	HSS Order No.
3/4"	5/16"	17/32"	3/8"	2-3/32"	8	**316-8048**
1	3/8	11/16	1/2	2-13/32	8	**316-8064**
1-1/4	1/2	25/32	5/8	2-21/32	10	**316-8080**
1-5/8	5/8	1-1/16	3/4	3-1/16	10	**316-8104**

Cobalt

Large Cutting Diameter	Small Cutting Diameter	Face Width	Shank Diameter	Overall Length	No. of Teeth	M35 Order No.
3/4"	5/16"	17/32"	3/8"	2-3/32"	8	**327-4048**
1	3/8	11/16	1/2	2-13/32	8	**327-4064**
1-1/4	1/2	25/32	5/8	2-21/32	10	**327-4080**
1-5/8	5/8	1-1/16	3/4	3-1/16	10	**327-4104**

90° Angle

Large Cutting Diameter	Small Cutting Diameter	Face Width	Shank Diameter	Overall Length	No. of Teeth	HSS Order No.
3/4"	5/16"	17/32"	3/8"	1-15/16"	8	**317-8048**
1	3/8	11/16	1/2	2-3/16	8	**317-8064**
1-1/4	1/2	25/32	5/8	2-13/32	10	**317-8080**
1-5/8	5/8	1-1/16	3/4	2-11/16	10	**317-8104**

Cobalt

Large Cutting Diameter	Small Cutting Diameter	Face Width	Shank Diameter	Overall Length	No. of Teeth	M35 Order No.
3/4"	5/16"	17/32"	3/8"	1-15/16"	8	**327-6048**
1	3/8	11/16	1/2	2-3/16	8	**327-6064**
1-1/4	1/2	25/32	5/8	2-13/32	10	**327-6080**
1-5/8	5/8	1-1/16	3/4	2-11/16	10	**327-6104**

Single Angle Chamfering Cutters

High Speed Steel, Right Hand

Use for chamfering and angle milling operations.



45° Chamfer Angle

Cutter Diameter	Face Width	Shank Diameter	Overall Length	Order No.
1/2"	1/8"	3/8"	2-1/8"	**328-7321**
3/4	3/16	3/8	2-1/8	**328-7487**
1	5/16	1/2	2-1/2	**328-7644**
1-1/2	1/2	3/4	2-3/4	**328-7826**

60° Chamfer Angle

Cutter Diameter	Face Width	Shank Diameter	Overall Length	Order No.
1/2"	7/32"	3/8"	2-1/8"	**328-8329**
3/4	5/16	3/8	2-1/8	**328-8485**
1	7/16	1/2	2-1/2	**328-8642**
1-1/2	5/8	3/4	2-3/4	**328-8824**

Double Angle Shank Type Cutters



M42 Cobalt

- General purpose use
- Extends tools life
- Used for aggressive machining of steels

Cobalt

Cut. Dia.	Cut. Thick.	Shank Dia.	Overall Length	60° Order No.	90° Order No.
3/4”	3/16”	3/8”	2-3/8”	**327-7052**	**327-0050**
1	5/16	1/2	2-27/32	**327-7102**	**327-0100**
1-3/8	7/16	5/8	3-7/32	**327-7151**	**327-0159**
1-1/2	1/2	5/8	3-3/8	**327-7201**	**327-0209**
1-7/8	5/8	3/4	3-25/32	**327-7250**	**327-0258**
2-1/4	3/4	7/8	4-5/32	**327-7300**	**327-0308**

High Speed Steel & M35 Cobalt



60° Double

Cutter Dia.	Face Width	Shank Dia.	Overall Length	HSS Order No.	M35 Order No.
3/4”	3/16”	3/8”	2-3/8"	**328-8052**	**327-8052**
1	5/16	1/2	2-27/32"	**328-8102**	**327-8102**
1-3/8	7/16	5/8	3-7/32"	**328-8151**	**327-8151**
1-1/2	1/2	5/8	3-3/8"	**328-8201**	**327-8201**
1-7/8	5/8	3/4	3-25/32"	**328-8250**	**327-8250**
2-1/4	3/4	7/8	4-5/32"	**328-8300**	**327-8300**

90° Double

Cutter Dia.	Face Width	Shank Dia.	Overall Length	HSS Order No.	M35 Order No.
3/4”	1/4”	3/8”	2-7/16"	**328-9050**	**327-9050**
1	3/8	1/2	2-29/32	**328-9100**	**327-9100**
1-3/8	1/2	5/8	3-9/32	**328-9159**	**327-9159**
1-1/2	9/16	5/8	3-7/16	**328-9209**	**327-9209**
1-7/8	5/8	3/4	3-25/32	**328-9258**	**327-9258**
2-1/4	3/4	7/8	4-5/32	**328-9308**	**327-9308**

Single Angle Chamfering Cutters

M42, High Speed Steel, Right Hand Cut

- General purpose use
- Extends tools life
- Used for aggressive machining of steels



45° Chamfer Angle

Cut. Dia.	Cut. Width	Shank Dia.	Overall Length	Order No.
1/2”	1/8”	3/8”	2-1/8”	**327-1321**
3/4	3/16	3/8	2-1/8	**327-1487**
1	5/16	1/2	2-1/2	**327-1644**
1-1/2	1/2	3/4	2-3/4	**327-1826**

60° Chamfer Angle

Cut. Dia.	Cut. Width	Shank Dia.	Overall Length	Order No.
1/2”	7/32”	3/8”	2-1/8”	**327-2329**
3/4	5/16	3/8	2-1/8	**327-2485**
1	7/16	1/2	2-1/2	**327-2642**
1-1/2	5/8	3/4	2-3/4	**327-2824**

60° Dovetail Cutters

High Speed Steel &Cobalt



Cut Dia.(In.)	Cut W.(In.)	Shank Dia.(In.)	OAL (In.)	HSS Order No.	Cobalt Order No.
3/8	3/16	3/8	2-1/8	**243-6005**	**243-8005**
1/2	1/4	3/8	2-1/8	**243-6010**	**243-8010**
3/4	5/16	3/8	2-1/8	**243-6015**	**243-8015**
1	7/16	1/2	2-1/2	**243-6020**	**243-8020**
1-3/8	9/16	5/8	2-7/8	**243-6025**	**243-8025**
1-7/8	13/16	7/8	3-1/4	**243-6030**	**243-8030**
2-1/4	1-1/16	1	3-1/4	**243-6035**	**243-8035**
2-1/2	1-1/8	1	3-3/4	**243-6040**	**243-8040**
3/8,1/2,3/4,1-3/8, 4pcs/set HSS 60deg w/stand.				**243-6001**	**243-8001**

45° Dovetail Cutters

High Speed Steel & M42 Cobalt



Cut Dia.(In.)	Cut W.(In.)	Shank Dia.(In.)	Shank L(In.)	OAL (In.)	HSS Order No.
3/8	1/8	3/8	1-15/16	2-1/8	**243-4005**
1/2	5/32	3/8	1-7/8	2-1/8	**243-4010**
3/4	1/4	3/8	1-13/16	2-1/8	**243-4015**
1	1/4	1/2		2-1/2	**243-4020**
1-3/8	7/16	5/8	2-5/16	2-7/8	**243-4025**
1-7/8	9/16	7/8	2-7/16	3-1/4	**243-4030**
2-1/4	5/8	1	2-11/16	3-1/4	**243-4035**
2-1/2	3/4	1		3-3/4	**243-4040**
3/8,1/2,3/4,1-3/8, 4pcs/set HSS 45deg w/stand.					**243-4001**

Cobalt

Cut Dia.(In.)	Cut W.(In.)	Shank Dia.(In.)	Shank L(In.)	OAL (In.)	M42 Order No.
3/8	1/8	3/8	1-15/16	2-1/8	**243-7005**
1/2	5/32	3/8	1-7/8	2-1/8	**243-7010**
3/4	1/4	3/8	1-13/16	2-1/8	**243-7015**
1	1/4	1/2		2-1/2	**243-4020**
1-3/8	7/16	5/8	2-5/16	2-7/8	**243-7025**
1-7/8	9/16	7/8	2-7/16	3-1/4	**243-7030**
2-1/4	5/8	1	2-11/16	3-1/4	**243-7035**
2-1/2	3/4	1		3-3/4	**243-7040**
3/8,1/2,3/4,1-3/8, 4pcs/set HSS 45deg w/stand.					**243-7001**

Carbide Tipped Dovetail Cutters

Straight Shank

- Used for all dovetail work.
- Convenient for production and tool room work.



Cutter Dia.	Shank Dia.	Overall Length	No. of Teeth	Cutter Width	45° Order No.	60° Order No.
3/4”	3/8”	2-1/4”	3	1/4	**243-5048**	**243-5248**
1	1/2	2-1/2	4	5/16	**243-5064**	**243-5264**
1-1/4	5/8	2-3/4	4	3/8	**243-5080**	**243-5280**
1-1/2	3/4	3-1/4	4	1/2	**243-5096**	**243-5296**
2	1	4-1/4	6	5/8	**243-5128**	**243-5328**
2-1/2	1-1/4	4-3/8	6	3/4	**243-5160**	**243-5360**
3	1-1/4	4-1/2	6	1	**243-5192**	**243-5392**

Inverted Dovetail Cutters

M2 HSS, Screwed Shank

NEW



Inch

Cutter Dia.	Cutter Angle	Cutter Width	Overall Length	Shank Dia.	No. of Teeth	M2 Order No.
1"	45°	5/16"	2-3/4"	1/2"	6	**243-4364**
1-1/2	45°	13-32	3-5/32	1	8	**243-4396**
1	60°	15/32	2-3/4	1/2	6	**243-4464**
1-1/2	60°	5/8	3-3/8	1	8	**243-4496**

Metric

Cutter Dia.	Cutter Angle	Cutter Width	Overall Length	Shank Dia.	No. of Teeth	M2 Order No.
16mm	45°	4.0mm	66.5mm	12mm	6	**243-4116**
19	45°	5.5	66.5	12	6	**243-4119**
22	45°	6.5	68.5	12	6	**243-4122**
25	45°	7.5	70.0	12	6	**243-4125**
28	45°	8.5	71.5	16	6	**243-4128**
32	45°	8.5	74.5	16	8	**243-4132**
19	60°	7.0	66.5	12	6	**243-4219**
22	60°	9.5	68.5	12	6	**243-4222**
25	60°	12.0	70.0	12	6	**243-4225**
28	60°	12.5	71.5	16	6	**243-4228**
32	60°	13.5	74.5	16	8	**243-4232**

Metric Module Involute Gear Cutters

High Speed Steel, 20° Pressure Angle

Applications:

- Specialty cutting tools designed or milling gears.
- For cutting the teech to suit a special gear shape called an involute form
- Designed as arbor mounted cutters for machine tools.
- Well suited for use in a variety of ferrous and non-ferrous materials.
- For optimal performance and the best tools life the correct cutting speeds and feeds must be used and suitable lubricating/cutting oils or appropriate coolant fluids are recommended.



Cutter Number	Range of Teeth Cut
# 1	12-13
# 2	14-16
# 3	17-20
# 4	21-25
# 5	26-34
# 6	35-54
# 7	55-134
# 8	135 to rack

Features:

- For finishing with a 20° pressure angle
- 8 Cutters are made for each module.
- Form relieved to allow resharpening many times without changing the form.

Technical Data:

- Manufactured from high speed steel.
- Ground from solid
- Straight teech on periphery of cutters.
- Bright finish.
- Cutter sets can accommodate gears form 12 teeeh to a rack gear.

Module	Cutter Diameter	Arbor Hole	#1 Order No.	#2 Order No.	#3 Order No.	#4 Order No.	#5 Order No.	#6 Order No.	#7 Order No.	#8 Order No.
0.3	40	16	**317-1601**	**317-1602**	**317-1603**	**317-1604**	**317-1605**	**317-1606**	**317-1607**	**317-1608**
0.35	40	16	**317-1611**	**317-1612**	**317-1613**	**317-1614**	**317-1615**	**317-1616**	**317-1617**	**317-1618**
0.4	40	16	**317-1621**	**317-1622**	**317-1623**	**317-1624**	**317-1625**	**317-1626**	**317-1627**	**317-1628**
0.5	40	16	**317-1631**	**317-1632**	**317-1633**	**317-1634**	**317-1635**	**317-1636**	**317-1637**	**317-1638**
0.6	40	16	**317-1641**	**317-1642**	**317-1643**	**317-1644**	**317-1645**	**317-1646**	**317-1647**	**317-1648**
0.7	40	16	**317-1651**	**317-1652**	**317-1653**	**317-1654**	**317-1655**	**317-1656**	**317-1657**	**317-1658**
0.8	40	16	**317-1661**	**317-1662**	**317-1663**	**317-1664**	**317-1665**	**317-1666**	**317-1667**	**317-1668**
0.9	40	16	**317-1671**	**317-1672**	**317-1673**	**317-1674**	**317-1675**	**317-1676**	**317-1677**	**317-1678**
1	50	22	**317-1681**	**317-1682**	**317-1683**	**317-1684**	**317-1885**	**317-1686**	**317-1687**	**317-1688**
1.25	50	22	**317-1691**	**317-1692**	**317-1693**	**317-1694**	**317-1695**	**317-1696**	**317-1697**	**317-1698**
1.5	55	22	**317-1701**	**317-1702**	**317-1703**	**317-1704**	**317-1705**	**317-1706**	**317-1707**	**317-1708**
1.75	60	22	**317-1711**	**317-1712**	**317-1713**	**317-1714**	**317-1715**	**317-1716**	**317-1717**	**317-1718**
2	60	22	**317-1721**	**317-1722**	**317-1723**	**317-1724**	**317-1725**	**317-1726**	**317-1727**	**317-1728**
2.25	60	22	**317-1731**	**317-1732**	**317-1733**	**317-1734**	**317-1735**	**317-1736**	**317-1737**	**317-1738**
2.5	65	22	**317-1741**	**317-1742**	**317-1743**	**317-1744**	**317-1745**	**317-1746**	**317-1747**	**317-1748**
2.75	70	27	**317-1751**	**317-1752**	**317-1753**	**317-1754**	**317-1755**	**317-1756**	**317-1757**	**317-1758**
3	70	27	**317-1761**	**317-1762**	**317-1763**	**317-1764**	**317-1765**	**317-1766**	**317-1767**	**317-1768**
3.25	75	27	**317-1771**	**317-1772**	**317-1773**	**317-1774**	**317-1775**	**317-1776**	**317-1777**	**317-1778**
3.5	75	27	**317-1781**	**317-1782**	**317-1783**	**317-1784**	**317-1785**	**317-1786**	**317-1787**	**317-1788**
3.75	75	27	**317-1791**	**317-1792**	**317-1793**	**317-1794**	**317-1795**	**317-1796**	**317-1797**	**317-1798**
4	80	27	**317-1801**	**317-1802**	**317-1803**	**317-1804**	**317-1805**	**317-1806**	**317-1807**	**317-1808**
4.5	80	27	**317-1811**	**317-1812**	**317-1813**	**317-1814**	**317-1815**	**317-1816**	**317-1817**	**317-1818**
5	90	32	**317-1821**	**317-1822**	**317-1823**	**317-1824**	**317-1825**	**317-1826**	**317-1827**	**317-1828**
5.5	95	32	**317-1831**	**317-1832**	**317-1833**	**317-1834**	**317-1835**	**317-1836**	**317-1837**	**317-1838**
6	100	32	**317-1841**	**317-1842**	**317-1843**	**317-1844**	**317-1845**	**317-1846**	**317-1847**	**317-1848**
6.5	105	32	**317-1851**	**317-1852**	**317-1853**	**317-1854**	**317-1855**	**317-1856**	**317-1857**	**317-1858**
7	105	32	**317-1861**	**317-1862**	**317-1863**	**317-1864**	**317-1865**	**317-1866**	**317-1867**	**317-1868**
8	110	32	**317-1871**	**317-1872**	**317-1873**	**317-1874**	**317-1875**	**317-1876**	**317-1877**	**317-1878**
9	115	32	**317-1881**	**317-1882**	**317-1883**	**317-1884**	**317-1885**	**317-1886**	**317-1887**	**317-1888**
10	120	32	**317-1891**	**317-1892**	**317-1893**	**317-1894**	**317-1895**	**317-1896**	**317-1897**	**317-1898**
11	135	40	**317-1901**	**317-1902**	**317-1903**	**317-1904**	**317-1905**	**317-1906**	**317-1907**	**317-1908**
12	145	40	**317-1911**	**317-1912**	**317-1913**	**317-1914**	**317-1915**	**317-1916**	**317-1917**	**317-1918**
14	160	40	**317-1921**	**317-1922**	**317-1923**	**317-1924**	**317-1925**	**317-1926**	**317-1927**	**317-1928**
16	170	40	**317-1931**	**317-1932**	**317-1933**	**317-1934**	**317-1935**	**317-1936**	**317-1937**	**317-1938**

Module Involute Gear Cutters

High Speed Steel



Cutter Number	Range of Teeth Cut
# 1	135 to rack
# 2	55-134
# 3	35-54
# 4	26-34
# 5	21-25
# 6	17-20
# 7	14-16
# 8	12-13

Applications:

- Specialty cutting tools designed or milling gears.
- For cutting the teech to suit a special gear shape called an involute form
- Designed as arbor mounted cutters for machine tools.
- Well suited for use in a variety of ferrous and non-ferrous materials.
- For optimal performance and the best tools life the correct cutting speeds and feeds must be used and suitable lubricating/cutting oils or appropriate coolant fluids are recommended.

Features:

- For finishing with a 14-1/2° or 20° pressure angle
- 8 Cutters are made for each module.
- Form relieved to allow resharpening many times without changing the form.

Technical Data:

- Manufactured from high speed steel.
- Ground from solid
- Straight teech on periphery of cutters.
- Made to suit pitch diameters of 2" to 48" for either 14-1/2° or 20° pressure angle gears.
- Cutter sets can accommodate gears form 12 teeeh to a rack gear.
- Bright finish.

14-1/2° Pressure Angle Module Involute Gear Cutters

Module	Cutter Diameter	Arbor Hole	#1 Order No.	#2 Order No.	#3 Order No.	#4 Order No.	#5 Order No.	#6 Order No.	#7 Order No.	#8 Order No.
1"	2"	1"	318-1701	318-1702	318-1703	318-1704	318-1705	318-1706	318-1707	318-1708
1-1/4	2	1	318-1711	318-1712	318-1713	318-1714	318-1715	318-1716	318-1717	318-1718
1-1/2	2	1	318-1721	318-1722	318-1723	318-1724	318-1725	318-1726	318-1727	318-1728
1-3/4	2-1/4	1	318-1731	318-1732	318-1733	318-1734	318-1735	318-1736	318-1737	318-1738
2	2-1/2	1	318-1741	318-1742	318-1743	318-1744	318-1745	318-1746	318-1747	318-1748
2-1/4	2-1/2	1	318-1751	318-1752	318-1753	318-1754	318-1755	318-1756	318-1757	318-1758
2-1/2	2-1/2	1	318-1761	318-1762	318-1763	318-1764	318-1765	318-1766	318-1767	318-1768
2-3/4	2-1/2	1	318-1771	318-1772	318-1773	318-1774	318-1775	318-1776	318-1777	318-1778
3	2-1/2	1	318-1781	318-1782	318-1783	318-1784	318-1785	318-1786	318-1787	318-1788
3-1/4	2-1/2	1-1/4	318-1791	318-1792	318-1793	318-1794	318-1795	318-1796	318-1797	318-1798
3-1/2	2-1/2	1-1/4	318-1801	318-1802	318-1803	318-1804	318-1805	318-1806	318-1807	318-1808
4	3	1	318-1891	318-1892	318-1893	318-1894	318-1895	318-1896	318-1897	318-1898

20° Pressure Angle Module Involute Gear Cutters

Module	Cutter Diameter	Arbor Hole	#1 Order No.	#2 Order No.	#3 Order No.	#4 Order No.	#5 Order No.	#6 Order No.	#7 Order No.	#8 Order No.
1"	2"	1"	318-1291	318-1292	318-1293	318-1294	318-1295	318-1296	318-1297	318-1298
1-1/4	2	1	318-1301	318-1302	318-1303	318-1304	318-1305	318-1306	318-1307	318-1308
1-1/2	2-1/4	1	318-1311	318-1312	318-1313	318-1314	318-1315	318-1316	318-1317	318-1318
1-3/4	2-1/4	1	318-1321	318-1322	318-1323	318-1324	318-1325	318-1326	318-1327	318-1328
2	2-1/2	1	318-1331	318-1332	318-1333	318-1334	318-1335	318-1336	318-1337	318-1338
2-1/4	2-5/8	1	318-1341	318-1342	318-1343	318-1344	318-1345	318-1346	318-1347	318-1348
2-1/2	2-3/4	1	318-1351	318-1352	318-1353	318-1354	318-1355	318-1356	318-1357	318-1358
2-3/4	2-7/8	1	318-1361	318-1362	318-1363	318-1364	318-1365	318-1366	318-1367	318-1368
3	2-7/8	1	318-1371	318-1372	318-1373	318-1374	318-1375	318-1376	318-1377	318-1378
3-1/4	3	1	318-1381	318-1382	318-1383	318-1384	318-1385	318-1386	318-1387	318-1388
3-1/2	3	1	318-1391	318-1392	318-1393	318-1394	318-1395	318-1396	318-1397	318-1398
3-3/4	3-1/4	1	318-1401	318-1402	318-1403	318-1404	318-1405	318-1406	318-1407	318-1408
4	3-1/4	1	318-1501	318-1502	318-1503	318-1504	318-1505	318-1506	318-1507	318-1508
4-1/4	4	1	318-1511	318-1512	318-1513	318-1514	318-1515	318-1516	318-1517	318-1518
4-1/2	4	1	318-1521	318-1522	318-1523	318-1524	318-1525	318-1526	318-1527	318-1528
5	4	1	318-1531	318-1532	318-1533	318-1534	318-1535	318-1536	318-1537	318-1538
5-1/2	4	1	318-1541	318-1542	318-1543	318-1544	318-1545	318-1546	318-1547	318-1548
6	4	1	318-1551	318-1552	318-1553	318-1554	318-1555	318-1556	318-1557	318-1558
7	4-3/4	1-1/4	318-1561	318-1562	318-1563	318-1564	318-1565	318-1566	318-1567	318-1568
8	4-3/4	1-1/4	318-1571	318-1572	318-1573	318-1574	318-1575	318-1576	318-1577	318-1578
8-1/2	5-1/4	1-1/2	318-1581	318-1582	318-1583	318-1584	318-1585	318-1586	318-1587	318-1588
9	5-1/4	1-1/2	318-1591	318-1592	318-1593	318-1594	318-1595	318-1596	318-1597	318-1598
9-1/2	5-1/2	1-1/2	318-1601	318-1602	318-1603	318-1604	318-1605	318-1606	318-1607	318-1608
10	5-1/2	1-1/2	318-1691	318-1692	318-1693	318-1694	318-1695	318-1696	318-1697	318-1698

14-1/2° Pressure Angle Involute Gear Cutters

High Speed Steel

- For spur gears with 14-1/2°.
- 8 Cutters are made for each pitch.
- Form relieved to allow resharpening many times without changing the form.



Cutter Number	Range of Teeth Cut
# 1	135 to rack
# 2	55-134
# 3	35-54
# 4	26-34

Cutter Number	Range of Teeth Cut
# 5	21-25
# 6	17-20
# 7	14-16
# 8	12-13

Pitch	Cutter Diameter	Arbor Hole	#1 Order No.	#2 Order No.	#3 Order No.	#4 Order No.	#5 Order No.	#6 Order No.	#7 Order No.	#8 Order No.
2	5-3/4"	1-1/2"	319-0014	319-0022	319-0030	319-0048	319-0055	319-0063	319-0071	319-0089
2-1/2	5-3/4	1-1/2	319-0113	319-0121	319-0139	319-0147	319-0154	319-0162	319-0170	319-0188
2-1/2	5-3/4	1	319-0115	319-0125	319-0135	319-0145	319-0155	319-0165	319-0175	319-0185
3	5-3/4	1-1/2	319-0310	319-0320	319-0330	319-0340	319-0350	319-0363	319-0370	319-0380
3	5-1/4	1-1/2	319-0314	319-0324	319-0334	319-0344	319-0354	319-0364	319-0374	319-0384
3	5-1/4	1-1/4	319-0311	319-0329	319-0337	319-0345	319-0352	319-0360	319-0378	319-0386
3	4-3/4	1-1/4	319-0319	319-0328	319-0339	319-0349	319-0359	319-0369	319-0379	319-0389
4	4-1/2	1-1/2	319-0413	319-0423	319-0433	319-0443	319-0453	319-0463	319-0473	319-0483
4	4-1/4	1-1/4	319-0410	319-0428	319-0436	319-0444	319-0451	319-0469	319-0477	319-0485
4	3-5/8	1	319-0412	319-0422	319-0432	319-0442	319-0452	319-0462	319-0472	319-0482
4	3-3/8	1	319-0414	319-0394	319-0402	319-0445	319-0454	319-0464	319-0474	319-0484
5	3-3/4	1-1/4	319-0511	319-0521	319-0531	319-0541	319-0551	319-0561	319-0571	319-0581
5	3-5/8	1	319-0519	319-0527	319-0535	319-0543	319-0550	319-0568	319-0576	319-0584
5	3-5/8	1-1/4	319-0512	319-0522	319-0532	319-0542	319-0552	319-0562	319-0572	319-0582
5	3-3/8	1	319-0516	319-0526	319-0536	319-0546	319-0556	319-0566	319-0577	319-0586
6	3-1/2	1-1/4	319-0610	319-0620	319-0630	319-0640	319-0650	319-0660	319-0670	319-0680
6	3-1/8	1-1/4	319-0611	319-0621	319-0631	319-0641	319-0651	319-0661	319-0671	319-0681
6	3-1/8	1	319-0618	319-0626	319-0634	319-0642	319-0659	319-0667	319-0675	319-0683
7	3-3/8	1-1/4	319-0719	319-0729	319-0739	319-0749	319-0759	319-0769	319-0779	319-0789
7	2-7/8	1	319-0717	319-0725	319-0733	319-0741	319-0758	319-0766	319-0774	319-0782
8	3-1/4	1-1/4	319-0818	319-0828	319-0838	319-0848	319-0858	319-0868	319-0878	319-0888
8	2-7/8	1	319-0816	319-0824	319-0832	319-0840	319-0857	319-0865	319-0873	319-0881
9	3-1/8	1-1/4	319-0917	319-0927	319-0937	319-0947	319-0957	319-0967	319-0977	319-0987
9	2-3/4	1	319-0915	319-0923	319-0931	319-0949	319-0956	319-0964	319-0972	319-0980
10	2-3/4	1	319-1012	319-1020	319-1038	319-1046	319-1053	319-1061	319-1079	319-1087
10	2-3/8	7/8	319-1014	319-1024	319-1034	319-1044	319-1054	319-1064	319-1074	319-1084
11	2-5/8	1	319-1114	319-1124	319-1134	3191144	319-1154	319-1164	319-1174	319-1184
11	2-3/8	7/8	319-1111	319-1129	319-1137	319-1145	319-1152	319-1160	319-1178	319-1186
12	2-5/8	1	319-1210	319-1228	319-1236	319-1244	319-1251	319-1269	319-1277	319-1285
12	2-1/4	7/8	319-1213	319-1223	319-1233	319-1243	319-1253	319-1263	319-1273	319-1283
13	2-5/8	1	319-1310	319-1320	319-1330	319-1340	319-1350	319-1360	319-1370	319-1380
13	2-1/4	7/8	319-1317	319-1327	319-1337	319-1347	319-1357	319-1367	319-1377	319-1387
14	2-1/2	1	319-1418	319-1426	319-1434	319-1442	319-1459	319-1467	319-1475	319-1483
14	2-1/8	7/8	319-1411	319-1421	319-1431	319-1441	319-1451	319-1461	319-1471	319-1481
16	2-1/2	1	319-1618	319-1628	319-1638	319-1648	319-1658	319-1668	319-1678	319-1688
16	2-1/8	1	319-1615	319-1626	319-1636	319-1646	319-1656	319-1666	319-1676	319-1686
16	2-1/8	7/8	319-1619	319-1629	319-1639	319-1649	319-1659	319-1669	319-1679	319-1689
16	2-3/8	1	319-1616	319-1624	319-1632	319-1640	319-1657	319-1665	319-1673	319-1681
18	2-3/8	1	319-1814	319-1822	319-1830	319-1848	319-1855	319-1863	319-1871	319-1889
18	2	7/8	319-1816	319-1826	319-1836	319-1846	319-1856	319-1866	319-1876	319-1886
20	2-3/8	1	319-2010	319-2028	319-2036	319-2044	319-2051	319-2069	319-2077	319-2085
20	2	7/8	319-2012	319-2022	319-2032	319-2042	319-2052	319-2062	319-2072	319-2082
22	2-1/4	1	319-2211	319-2221	319-2231	319-2241	319-2251	319-2261	319-2271	319-2281
22	2	7/8	319-2218	319-2226	319-2234	319-2242	319-2259	319-2267	319-2275	319-2283
24	2-1/4	1	319-2418	319-2428	319-2438	319-2448	319-2458	319-2468	319-2478	319-2488
24	1-3/4	7/8	319-2416	319-2424	319-2432	319-2440	319-2457	319-2465	319-2473	319-2481
26	2-1/2	1	319-2616	319-2626	319-2636	319-2646	319-2656	319-2666	319-2676	319-2686
26	2-1/4	1	319-2613	319-2623	319-2633	319-2643	319-2653	319-2663	319-2673	319-2683
26	1-3/4	7/8	319-2614	319-2622	319-2630	319-2648	319-2655	319-2661	319-2671	319-2689
28	2-1/4	1	319-2815	319-2825	319-2835	319-2845	319-2855	319-2865	319-2875	319-2885
28	1-3/4	7/8	319-2812	319-2820	319-2836	319-2846	319-2853	319-2861	319-2879	319-2887
30	2-1/4	1	319-3011	319-3021	319-3031	319-3041	319-3051	319-3061	319-3071	319-3081
30	1-3/4	7/8	319-3018	319-3026	319-3034	319-3042	319-3059	319-3067	319-3075	319-3083
32	2-1/4	1	319-3218	319-3228	319-3238	319-3248	319-3258	319-3268	319-3278	319-3288
32	2-1/4	7/8	319-3219	319-3229	319-3239	319-3249	319-3259	319-3269	319-3279	319-3289
32	1-3/4	7/8	319-3216	319-3224	319-3232	319-3240	319-3257	319-3265	319-3273	319-3281
34	2-1/4	1	319-3411	319-3421	319-3431	319-3441	319-3451	319-3461	319-3471	319-3481
34	1-3/4	7/8	319-3415	319-3425	319-3435	319-3445	319-3455	319-3465	319-3475	319-3485
36	2-1/4	1	319-3615	319-3625	319-3635	319-3645	319-3655	319-3665	319-3675	319-3685
36	1-3/4	7/8	319-3612	319-3620	319-3638	319-3646	319-3653	319-3661	319-3679	319-3687
40	2-1/4	1	319-4018	319-4028	319-4038	319-4048	319-4058	319-4068	319-4078	319-4088
40	1-3/4	7/8	319-4016	319-4024	319-4032	319-4040	319-4057	319-4065	319-4073	319-4081
48	2-1/4	1	319-4810	319-4820	319-4830	319-4840	319-4850	319-4860	319-4870	319-4880
48	1-3/4	7/8	319-4818	319-4826	319-4834	319-4842	319-4859	319-4867	319-4875	319-4883

20° Pressure Angle Involute Gear Cutters

High Speed Steel

Applications:

- Specialty cutting tools designed or milling gears.
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- Designed as arbor mounted cutters for machine tools.
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# 6	17-20
# 7	14-16
# 8	12-13

- For spur gears with 20°.
- 8 Cutters are made for each pitch.
- Form relieved to allow resharpening many times without changing the form.

Technical Data:

- Manufactured from high speed steel.
- Ground from solid
- Straight teech on periphery of cutters.
- Made to suit pitch diameters of 2" to 48" for either 14-1/2° or 20° pressure angle gears.
- Cutter sets can accommodate gears form 12 teeeh to a rack gear.
- Bright finish.

Pitch	Cutter Diameter	Arbor Hole	#1 Order No.	#2 Order No.	#3 Order No.	#4 Order No.	#5 Order No.	#6 Order No.	#7 Order No.	#8 Order No.
4"	4-1/4"	1-1/4"	318-0414	318-0424	318-0434	318-0444	318-0454	318-0464	318-0474	318-0484
4	3-5/8	1	318-0415	318-0425	318-0435	318-0449	318-0455	318-0465	318-0475	318-0485
4	3-1/2	1-1/4"	318-0413	318-0423	318-0433	318-0443	318-0453	318-0463	318-0473	318-0483
4	3-1/2	1	318-0411	318-0429	318-0437	318-0445	318-0452	318-0460	318-0478	318-0486
5	3-3/4	1-1/4	318-0513	318-0523	318-0533	318-0543	318-0553	318-0563	318-0573	318-0583
5	3-3/8	1	318-0510	318-0528	318-0536	318-0544	318-0551	318-0569	318-0577	318-0585
6	3-1/2	1-1/4	318-0612	318-0622	318-0632	318-0642	318-0652	318-0662	318-0672	318-0682
6	3-1/8	1	318-0619	318-0627	318-0635	318-0643	318-0650	318-0668	318-0676	318-0684
7	2-7/8	1	318-0718	318-0726	318-0734	318-0742	318-0759	318-0767	318-0775	318-0783
8	3-1/4	1-1/4	318-0819	318-0829	318-0839	318-0849	318-0859	318-0869	318-0879	318-0889
8	2-7/8	1	318-0817	318-0825	318-0833	318-0841	318-0858	318-0866	318-0874	318-0882
9	2-3/4	1	318-0916	318-0924	318-0932	318-0940	318-0957	318-0965	318-0973	318-0981
10	2-3/4	1	318-1013	318-1021	318-1039	318-1047	318-1054	318-1062	318-1070	318-1088
10	2-3/8	7/8	318-1015	318-1025	318-1035	318-1045	318-1055	318-1065	318-1075	318-1085
11	2-5/8	1	318-1111	318-1121	318-1131	318-1141	318-1151	318-1161	318-1171	318-1181
12	2-5/8	1	318-1211	318-1229	318-1237	318-1245	318-1252	318-1260	318-1278	318-1286
12	2-1/4	7/8	318-1213	318-1223	318-1233	318-1243	318-1253	318-1263	318-1273	318-1283
14	2-1/2	1	318-1419	318-1427	318-1435	318-1443	318-1450	318-1468	318-1476	318-1484
14	2-1/8	7/8	318-1412	318-1422	318-1432	318-1442	318-1452	318-1462	318-1472	318-1482
16	2-1/2	1	318-1617	318-1625	318-1633	318-1641	318-1658	318-1666	318-1674	318-1682
16	2-1/8	7/8	318-1619	318-1629	318-1639	318-1649	318-1659	318-1669	318-1679	318-1689
18	2-3/8	1	318-1815	318-1823	318-1831	318-1849	318-1856	318-1864	318-1872	318-1880
18	2	7/8	318-1817	318-1827	318-1837	318-1847	318-1857	318-1867	318-1877	318-1887
20	2-3/8	1	318-2111	318-2129	318-2137	318-2145	318-2152	318-2160	318-2178	318-2186
20	2	7/8	318-2113	318-2123	318-2133	318-2143	318-2153	318-2163	318-2173	318-2183
22	2-1/4	1	318-2212	318-2222	318-2232	318-2242	318-2252	318-2262	318-2272	318-2212
22	2	1	318-2213	318-2223	318-2233	318-2243	318-2253	318-2263	318-2273	318-2283
22	2	7/8	318-2214	318-2224	318-2234	318-2244	318-2254	318-2264	318-2274	318-2284
24	2-1/4	1	318-2417	318-2425	318-2433	318-2441	318-2458	318-2466	318-2474	318-2482
24	1-3/4	7/8	318-2419	318-2429	318-2439	318-2449	318-2459	318-2469	318-2479	318-2489
26	2-1/4	1	318-2611	318-2621	318-2631	318-2641	318-2651	318-2661	318-2671	318-2681
26	1-3/4	7/8	318-2617	318-2627	318-2637	318-2647	318-2657	318-2667	318-2677	318-2687
28	2-1/4	1	318-2812	318-2822	318-2832	318-2842	318-2852	318-2862	318-2872	318-2882
28	1-3/4	7/8	318-2817	318-2827	318-2837	318-2847	318-2857	318-2867	318-2877	318-2887
30	2-1/4	1	318-3112	318-3122	318-3132	318-3142	318-3152	318-3162	318-3172	318-3182
30	1-3/4	7/8	318-3117	318-3127	318-3137	318-3147	318-3157	318-3167	318-3177	318-3187
32	2-1/4	1	318-3118	318-3128	318-3138	318-3148	318-3158	318-3168	318-3178	318-3188
32	1-3/4	7/8	318-3217	318-3225	318-3233	318-3241	318-3258	318-3266	318-3274	318-3282
36	2-1/4	1	318-3611	318-3621	318-3631	318-3641	318-3651	318-3661	318-3671	318-3681
36	1-3/4	7/8	318-3617	318-3627	318-3637	318-3647	318-3657	318-3667	318-3677	318-3687
40	2-1/4	1	318-4019	318-4029	318-4039	318-4049	318-4059	318-4069	318-4079	318-4089
40	1-3/4	7/8	318-4017	318-4025	318-4033	318-4041	318-4058	318-4066	318-4074	318-4082
44	1-3/4	7/8	318-4417	318-4427	318-4437	318-4447	318-4457	318-4467	318-4477	318-4487
48	2-1/4	1	318-4811	318-4821	318-4831	318-4841	318-4851	318-4861	318-4871	318-4881
48	1-3/4	7/8	318-4819	318-4827	318-4835	318-4843	318-4850	318-4868	318-4876	318-4884

Plain Metal Slitting Saws



High Speed Steel

- Used in slitting and slotting.
- Sides are concave for clearance.
- Supplied with Keyway.

Cut Dia.	Face Width	Hole Size	No. of Teeth	Order No.	Cut Dia.	Face Width	Hole Size	No. of Teeth	Order No.
2"	1/16"	1/2"	28	**370-4004**	4-1/2"	3/32"	1"	36	**370-4506**
2	1/8	1/2	28	**370-4008**	4-1/2	1/8	1	36	**370-4508**
2-1/2	3/64	3/8	28	**370-4013**	5	3/64	1	40	**370-4603**
2-1/2	1/32	7/8	28	**370-4102**	5	1/16	1	40	**370-4604**
2-1/2	3/ 64	7/8	28	**370-4103**	5	5/64	1	40	**370-4605**
2-1/2	1/16	7/8	28	**370-4104**	5	3/32	1	40	**370-4606**
2-1/2	3/32	7/8	28	**370-4106**	5	7/64	1	40	**370-4607**
2-1/2	1/8	7/8	28	**370-4108**	5	1/8	1	40	**370-4608**
3	1/64	1	30	**370-4201**	5	9/64	1	40	**370-4609**
3	1/32	1	30	**370-4202**	5	5/32	1	40	**370-4610**
3	3/64	1	30	**370-4203**	5	3/16	1	40	**370-4612**
3	1/16	1	30	**370-4204**	5	1/16	1-1/4	40	**370-4704**
3	5/64	1	30	**370-4205**	5	3/32	1-1/4	40	**370-4706**
3	3/32	1	30	**370-4206**	5	1/8	1-1/4	40	**370-4708**
3	7/64	1	30	**370-4207**	5	5/32	1-1/4	40	**370-4710**
3	1/8	1	30	**370-4208**	5	3/16	1-1/4	40	**370-4712**
3	9/64	1	30	**370-4209**	6	3/64	1	42	**370-4803**
3	5/32	1	30	**370-4210**	6	1/16	1	42	**370-4804**
3-1/2	1/32	1	30	**370-4302**	6	5/64	1	42	**370-4805**
3-1/2	3/64	1	30	**370-4303**	6	3/32	1	42	**370-4806**
3-1/2	1/16	1	30	**370-4304**	6	7/64	1	42	**370-4807**
3-1/2	5/64	1	30	**370-4305**	6	1/8	1	42	**370-4808**
3-1/2	3/32	1	30	**370-4306**	6	9/64	1	42	**370-4809**
3-1/2	1/8	1	30	**370-4308**	6	5/32	1	42	**370-4810**
4	1/64	1	36	**370-4401**	6	3/16	1	42	**370-4812**
4	1/32	1	36	**370-4402**	6	1/16	1-1/4	42	**370-4904**
4	3/64	1	36	**370-4403**	6	3/32	1-1/4	42	**370-4906**
4	1/16	1	36	**370-4404**	6	1/8	1-1/4	42	**370-4908**
4	5/64	1	36	**370-4405**	6	5/32	1-1/4	42	**370-4910**
4	3/32	1	36	**370-4406**	6	3/16	1-1/4	42	**370-4912**
4	7/64	1	36	**370-4407**	8	1/8	1	48	**370-5008**
4	1/8	1	36	**370-4408**	8	3/16	1	48	**370-5012**
4	9/64	1	36	**370-4409**	8	3/32	1-1/4	48	**370-5106**
4	5/32	1	36	**370-4410**	8	1/8	1-1/4	48	**370-5108**
4	3/16	1	36	**370-4412**	8	3/16	1-1/4	48	**370-5112**
4-1/2	1/32	1	36	**370-4502**	10	1/8	1-1/4	56	**370-5208**
4-1/2	3/64	1	36	**370-4503**	10	3/16	1-1/4	56	**370-5212**
4-1/2	1/16	1	36	**370-4504**					

Circular Saw Arbors & Sets

Use with saw blades .001" to 3/16" thick. black oxide finish

Circular Saw Arbor Set

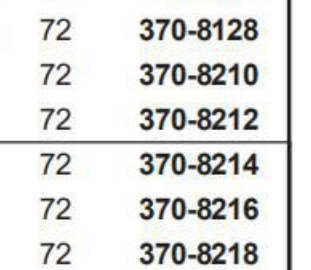
3pcs /set:
1/2",5/8",3/4"
in wooden stand
Order No.712-0300



Individuals

Flange Size	Shank Dia.	Inside Hole Dia.	Order No.
1/2"	1/2"	1/4"	**712-0205**
5/8	1/2	3/8	**712-0210**
3/4	1/2	1/2	**712-0215**
1	5/8	5/8	**712-0220**

Screw Slotting Saws



High Speed Steel

- Used in slotting sheets and tubing.
- Good for shallow cuts and screw heads.
- Supplied with key-way.

Cut Dia.	Thick-ness	Hole Size	No. of Teeth	Order No.	Cut Dia.	Thick-ness	Hole Size	No. of Teeth	Order No.
1-3/4"	.006"	5/8"	90	**370-7006**	2-3/4	.032	3/4	72	**370-8032**
1-3/4	.008	5/8	90	**370-7008**	2-3/4	.036	3/4	72	**370-8036**
1-3/4	.010	5/8	90	**370-7010**	2-3/4	.040	3/4	72	**370-8040**
1-3/4	.012	5/8	90	**370-7012**	2-3/4	.045	3/4	72	**370-8045**
1-3/4	.014	5/8	90	**370-7014**	2-3/4	.051	3/4	72	**370-8051**
1-3/4	.016	5/8	90	**370-7016**	2-3/4	.057	3/4	72	**370-8057**
1-3/4	.018	5/8	90	**370-7018**	2-3/4	.064	3/4	72	**370-8064**
1-3/4	.020	5/8	90	**370-7020**	2-3/4	.072	3/4	72	**370-8072**
1-3/4	.023	5/8	90	**370-7023**	2-3/4	.081	3/4	72	**370-8081**
1-3/4	.025	5/8	90	**370-7025**	2-3/4	.091	3/4	72	**370-8091**
1-3/4	.028	5/8	90	**370-7028**	2-3/4	.102	3/4	72	**370-8102**
1-3/4	.032	5/8	90	**370-7032**	2-3/4	.114	3/4	72	**370-8114**
1-3/4	.036	5/8	90	**370-7036**	2-3/4	.128	3/4	72	**370-8128**
1-3/4	.040	5/8	90	**370-7040**	2-3/4	.010	1	72	**370-8210**
1-3/4	.045	5/8	90	**370-7045**	2-3/4	.012	1	72	**370-8212**
1-3/4	.051	5/8	90	**370-7051**	2-3/4	.014	1	72	**370-8214**
1-3/4	.057	5/8	90	**370-7057**	2-3/4	.016	1	72	**370-8216**
1-3/4	.064	5/8	90	**370-7064**	2-3/4	.018	1	72	**370-8218**
2-1/4	.010	5/8	60	**370-7110**	2-3/4	.020	1	72	**370-8220**
2-1/4	.012	5/8	60	**370-7112**	2-3/4	.023	1	72	**370-8223**
2-1/4	.014	5/8	60	**370-7114**	2-3/4	.025	1	72	**370-8225**
2-1/4	.016	5/8	60	**370-7116**	2-3/4	.028	1	72	**370-8228**
2-1/4	.018	5/8	60	**370-7118**	2-3/4	.032	1	72	**370-8232**
2-1/4	.020	5/8	60	**370-7120**	2-3/4	.036	1	72	**370-8236**
2-1/4	.023	5/8	60	**370-7123**	2-3/4	.040	1	72	**370-8240**
2-1/4	.025	5/8	60	**370-7125**	2-3/4	.045	1	72	**370-8245**
2-1/4	.028	5/8	60	**370-7128**	2-3/4	.051	1	72	**370-8251**
2-1/4	.032	5/8	60	**370-7132**	2-3/4	.057	1	72	**370-8257**
2-1/4	.036	5/8	60	**370-7136**	2-3/4	.064	1	72	**370-8264**
2-1/4	.040	5/8	60	**370-7140**	2-3/4	.072	1	72	**370-8272**
2-1/4	.045	5/8	60	**370-7145**	2-3/4	.081	1	72	**370-8281**
2-1/4	.051	5/8	60	**370-7151**	2-3/4	.091	1	72	**370-8291**
2-1/4	.057	5/8	60	**370-7157**	2-3/4	.102	1	72	**370-8302**
2-1/4	.064	5/8	60	**370-7164**	2-3/4	.114	1	72	**370-8314**
2-1/4	.072	5/8	60	**370-7172**	2-3/4	.128	1	72	**370-8328**
2-1/4	.081	5/8	60	**370-7181**	2-3/4	.144	1	72	**370-8344**
2-1/4	.091	5/8	60	**370-7191**	2-3/4	.162	1	72	**370-8362**
2-1/4	.102	5/8	60	**370-7202**	2-3/4	.182	1	72	**370-8382**
2-3/4	.010	3/4	72	**370-8010**	2-3/4	.0250	1	56	**370-8525**
2-3/4	.012	3/4	72	**370-8012**	2-3/4	.0280	1	56	**370-8528**
2-3/4	.014	3/4	72	**370-8014**	2-3/4	.0320	1	56	**370-8532**
2-3/4	.016	3/4	72	**370-8016**	2-3/4	.0360	1	56	**370-8536**
2-3/4	.018	3/4	72	**370-8018**	2-3/4	.0400	1	56	**370-8540**
2-3/4"	.020	3/4"	72	**370-8020**	2-3/4	.0450	1	56	**370-8545**
2-3/4	.023	3/4	72	**370-8023**	2-3/4	.0510	1	56	**370-8551**
2-3/4	.025	3/4	72	**370-8025**	2-3/4	.0570	1	56	**370-8557**
2-3/4	.028	3/4	72	**370-8028**	2-3/4	.0640	1	56	**370-8564**

Slitting & Slotting Saw Arbors

- Spring loaded mechanism readily accepts saw blades with hole diameters from 1/2" to 1".
- Black oxide finish.
- A hex head screw makes saws firmly in position.



Shank Dia.	Overall Length	Inside Hole Dia.	Order No.
1/2"	2-9/16"	1/2, 5/8, 3/4, 7/8, 1"	**712-0005**
1/2	4-3/4	3/8"	**712-1010**
R8	5-3/32	1/2, 5/8, 3/4, 7/8, 1"	**712-0010**

Jewelers Saws

High Speed Steel



For using in slotting, sheeting and tubing operations.

Dia.	Thickness	Hole	No. of Teeth	Order No.
1"	.010"	1/4"	98	**370-0110**
1	.012	1/4	98	**370-0112**
1	.014	1/4	76	**370-0114**
1	.016	1/4	76	**370-0116**
1	.018	1/4	76	**370-0118**
1	.020	1/4	76	**370-0120**
1	.023	1/4	76	**370-0123**
1	.025	1/4	76	**370-0125**
1	.028	1/4	76	**370-0128**
1	.032	1/4	76	**370-0132**
1	.008	3/8	98	**370-0208**
1	.010	3/8	98	**370-0210**
1	.012	3/8	98	**370-0212**
1	.014	3/8	76	**370-0214**
1	.016	3/8	76	**370-0216**
1	.018	3/8	76	**370-0218**
1	.020	3/8	76	**370-0220**
1	.023	3/8	76	**370-0223**
1	.025	3/8	76	**370-0225**
1	.028	3/8	76	**370-0228**
1	.032	3/8	76	**370-0232**
1-1/4	.008	3/8	114	**370-0408**
1-1/4	.010	3/8	114	**370-0410**
1-1/4	.012	3/8	114	**370-0412**
1-1/4	.014	3/8	98	**370-0414**
1-1/4	.016	3/8	98	**370-0416**
1-1/4	.018	3/8	98	**370-0418**
1-1/4	.020	3/8	98	**370-0420**
1-1/4	.023	3/8	98	**370-0423**
1-1/4	.025	3/8	98	**370-0425**
1-1/4	.028	3/8	98	**370-0428**
1-1/4	.032	3/8	98	**370-0432**
1-1/2	.008	3/8	140	**370-0608**
1-1/2	.010	3/8	140	**370-0610**
1-1/2	.012	3/8	140	**370-0612**
1-1/2	.014	3/8	110	**370-0614**
1-1/2	.016	3/8	110	**370-0616**
1-1/2	.018	3/8	110	**370-0618**
1-1/2	.020	3/8	110	**370-0620**
1-1/2	.023	3/8	110	**370-0623**
1-1/2	.025	3/8	110	**370-0625**
1-1/2	.028	3/8	110	**370-0628**
1-1/2	.032	3/8	110	**370-0632**
1-1/2	.008	1/2	140	**370-0708**
1-1/2	.010	1/2	140	**370-0710**
1-1/2	.012	1/2	140	**370-0712**
1-1/2	.014	1/2	110	**370-0714**
1-1/2	.016	1/2	110	**370-0716**
1-1/2	.018	1/2	110	**370-0718**
1-1/2	.020	1/2	110	**370-0720**
1-1/2	.023	1/2	110	**370-0723**
1-1/2	.025	1/2	110	**370-0725**
1-1/2	.028	1/2	110	**370-0728**
1-1/2	.032	1/2	110	**370-0732**
1-3/4	.008	1/2	160	**370-0908**
1-3/4	.010	1/2	160	**370-0910**
1-3/4	.012	1/2	160	**370-0912**
1-3/4	.014	1/2	132	**370-0914**
1-3/4	.016	1/2	132	**370-0916**
1-3/4	.018	1/2	132	**370-0918**
1-3/4	.020	1/2	132	**370-0920**
1-3/4	.023	1/2	132	**370-0923**
1-3/4	.025	1/2	132	**370-0925**
1-3/4	.028	1/2	132	**370-0928**
1-3/4	.032	1/2	132	**370-0932**
2	.008	3/8	190	**370-1108**
2	.010	3/8	190	**370-1110**
2	.012	3/8	190	**370-1112**
2	.014	3/8	152	**370-1114**

Dia.	Thickness	Hole	No. of Teeth	Order No.
2"	.016"	3/8"	152	**370-1116**
2	.018	3/8	152	**370-1118**
2	.020	3/8	152	**370-1120**
2	.023	3/8	152	**370-1123**
2	.025	3/8	152	**370-1125**
2	.028	3/8	152	**370-1128**
2	.032	3/8	110	**370-1132**
2	.035	3/8	110	**370-1135**
2	.040	3/8	110	**370-1140**
2	.045	3/8	110	**370-1145**
2	.051	3/8	110	**370-1151**
2	.057	3/8	110	**370-1157**
2	.010	1/2	190	**370-1210**
2	.012	1/2	190	**370-1212**
2	.014	1/2	152	**370-1214**
2	.016	1/2	152	**370-1216**
2	.018	1/2	152	**370-1218**
2	.020	1/2	152	**370-1220**
2	.023	1/2	152	**370-1223**
2	.025	1/2	152	**370-1225**
2	.028	1/2	152	**370-1228**
2	.032	1/2	110	**370-1232**
2	.035	1/2	110	**370-1235**
2	.040	1/2	110	**370-1240**
2	.045	1/2	110	**370-1245**
2	.051	1/2	110	**370-1251**
2	.057	1/2	110	**370-1257**
2-1/4	.010	1/2	210	**370-1310**
2-1/4	.012	1/2	210	**370-1312**
2-1/2	.010	1/2	240	**370-1410**
2-1/2	.012	1/2	240	**370-1412**
2-1/2	.014	1/2	190	**370-1414**
2-1/2	.016	1/2	190	**370-1416**
2-1/2	.018	1/2	190	**370-1418**
2-1/2	.020	1/2	190	**370-1420**
2-1/2	.023	1/2	190	**370-1423**
2-1/2	.025	1/2	190	**370-1425**
2-1/2	.028	1/2	190	**370-1428**
2-1/2	.032	1/2	140	**370-1432**
2-1/2	.035	1/2	140	**370-1435**
2-1/2	.040	1/2	140	**370-1440**
2-1/2	.045	1/2	140	**370-1445**
2-1/2	.051	1/2	140	**370-1451**
2-1/2	.057	1/2	140	**370-1457**
3	.010	1/2	280	**370-1610**
3	.012	1/2	280	**370-1612**
3	.014	1/2	230	**370-1614**
3	.016	1/2	230	**370-1616**
3	.018	1/2	230	**370-1618**
3	.020	1/2	230	**370-1620**
3	.023	1/2	230	**370-1623**
3	.025	1/2	230	**370-1625**
3	.028	1/2	230	**370-1628**
3	.032	1/2	168	**370-1632**
3	.035	1/2	168	**370-1635**
3	.040	1/2	168	**370-1640**
3	.045	1/2	168	**370-1645**
3	.051	1/2	168	**370-1651**
3	.057	1/2	168	**370-1657**
3	.010	1	280	**370-1710**
3	.012	1	280	**370-1712**
3	.014	1	230	**370-1714**
3	.016	1	230	**370-1716**
3	.018	1	230	**370-1718**
3	.020	1	230	**370-1720**
3	.023	1	230	**370-1723**
3	.025	1	230	**370-1725**
3	.028	1	230	**370-1728**

Dia.	Thickness	Hole	No. of Teeth	Order No.
3"	.032"	1"	168	**370-1732**
3	.035	1	168	**370-1735**
3	.040	1	168	**370-1740**
3	.045	1	168	**370-1745**
3	.051	1	168	**370-1751**
4	.057	1	168	**370-1757**
4	.016	1/2	310	**370-1816**
4	.018	1/2	310	**370-1818**
4	.020	1/2	310	**370-1820**
4	.023	1/2	310	**370-1823**
4	.025	1/2	310	**370-1825**
4	.028	1/2	310	**370-1828**
4	.032	1/2	220	**370-1832**
4	.035	1/2	220	**370-1835**
4	.040	1/2	220	**370-1840**
4	.045	1/2	220	**370-1845**
4	.051	1/2	220	**370-1851**
4	.057	1/2	220	**370-1857**
4	.064	1/2	220	**370-1864**
4	.016	1	310	**370-1916**
4	.018	1	310	**370-1918**
4	.020	1	310	**370-1920**
4	.023	1	310	**370-1923**
4	.025	1	310	**370-1925**
4	.028	1	310	**370-1928**
4	.032	1	220	**370-1932**
4	.035	1	220	**370-1935**
4	.040	1	220	**370-1940**
4	.045	1	220	**370-1945**
4	.051	1	220	**370-1951**
4	.057	1	220	**370-1957**
4	.064	1	220	**370-1964**
5	.018	1/2	380	**370-2118**
5	.025	1/2	380	**370-2125**
5	.028	1/2	280	**370-2128**
5	.032	1/2	280	**370-2132**
5	.035	1/2	280	**370-2135**
5	.040	1/2	280	**370-2140**
5	.045	1/2	280	**370-2145**
5	.051	1/2	280	**370-2151**
5	.057	1/2	280	**370-2157**
5	.064	1/2	280	**370-2164**
5	.025	1	380	**370-2225**
5	.028	1	280	**370-2228**
5	.032	1	280	**370-2232**
5	.035	1	280	**370-2235**
5	.040	1	280	**370-2240**
5	.045	1	280	**370-2245**
5	.051	1	280	**370-2251**
5	.057	1	280	**370-2257**
5	.064	1	280	**370-2264**
6	.035	1/2	340	**370-2435**
6	.040	1/2	340	**370-2440**
6	.045	1/2	340	**370-2445**
6	.051	1/2	232	**370-2451**
6	.057	1/2	232	**370-2457**
6	.064	1/2	232	**370-2464**
6	.035	1	340	**370-2535**
6	.040	1	340	**370-2540**
6	.045	1	340	**370-2545**
6	.051	1	232	**370-2551**
6	.057	1	232	**370-2557**
6	.064	1	232	**370-2564**
6	.072	1	232	**370-2572**
6	.081	1	232	**370-2581**
6	.091	1	232	**370-2591**
6	.102	1	232	**370-2602**
6	.114	1	232	**370-2614**
6	.128	1	232	**370-2628**

Metric Plain Metal Slotting Saws

DIN 1837 A

High Speed Steel

- For general purpose slotting and cut-off operations.
- The number of teeth given is the standard number which is supplied for general purpose work.



Cutter Dia	Arbor Dia	Width of Face	No. of Teeth	Order No.
20mm	5	0.2	80	**373-1201**
20mm	5	0.25	64	**373-1202**
20mm	5	0.3	64	**373-1203**
20mm	5	0.4	64	**373-1204**
20mm	5	0.5	48	**373-1205**
20mm	5	0.6	48	**373-1206**
20mm	5	0.8	48	**373-1208**
20mm	5	1.0	40	**373-1210**
20mm	5	1.2	40	**373-1212**
20mm	5	1.6	40	**373-1216**
20mm	5	2.0	32	**373-1220**
20mm	5	2.5	32	**373-1225**
20mm	5	3.0	32	**373-1230**
20mm	5	4.0	24	**373-1240**
20mm	5	5.0	24	**373-1250**
20mm	5	6.0	24	**373-1260**
25mm	8	0.2	80	**373-1301**
25mm	8	0.25	80	**373-1302**
25mm	8	0.3	80	**373-1303**
25mm	8	0.4	64	**373-1304**
25mm	8	0.5	64	**373-1305**
25mm	8	0.6	64	**373-1306**
25mm	8	0.8	48	**373-1308**
25mm	8	1.0	48	**373-1310**
25mm	8	1.2	48	**373-1312**
25mm	8	1.6	40	**373-1316**
25mm	8	2.0	40	**373-1320**
25mm	8	2.5	40	**373-1325**
25mm	8	3.0	32	**373-1330**
25mm	8	4.0	32	**373-1340**
25mm	8	5.0	32	**373-1350**
25mm	8	6.0	24	**373-1360**
32mm	8	0.2	100	**373-1401**
32mm	8	0.25	100	**373-1402**
32mm	8	0.3	80	**373-1403**
32mm	8	0.4	80	**373-1404**
32mm	8	0.5	80	**373-1405**
32mm	8	0.6	64	**373-1406**
32mm	8	0.8	64	**373-1408**
32mm	8	1.0	64	**373-1410**
32mm	8	1.2	48	**373-1412**
32mm	8	1.6	48	**373-1416**
32mm	8	2.0	48	**373-1420**
32mm	8	2.5	40	**373-1425**
32mm	8	3.0	40	**373-1430**
32mm	8	4.0	40	**373-1440**
32mm	8	5.0	32	**373-1450**
32mm	8	6.0	32	**373-1460**
40mm	10	0.2	128	**373-1501**
40mm	10	0.25	100	**373-1502**
40mm	10	0.3	100	**373-1503**
40mm	10	0.4	100	**373-1504**
40mm	10	0.5	80	**373-1505**
40mm	10	0.6	80	**373-1506**
40mm	10	0.8	80	**373-1508**
40mm	10	1.0	64	**373-1510**
40mm	10	1.2	64	**373-1512**
40mm	10	1.6	64	**373-1516**
40mm	10	2.0	48	**373-1520**
40mm	10	2.5	48	**373-1525**
40mm	10	3.0	48	**373-1530**
40mm	10	4.0	40	**373-1540**
40mm	10	5.0	40	**373-1550**
40mm	10	6.0	40	**373-1560**
50mm	13	0.2	128	**373-1601**

Cutter Dia	Arbor Dia	Width Of Face	No. of Teeth	Order No.
50mm	13	0.25	128	**373-1602**
50mm	13	0.3	128	**373-1603**
50mm	13	0.4	100	**373-1604**
50mm	13	0.5	100	**373-1605**
50mm	13	0.6	100	**373-1606**
50mm	13	0.8	80	**373-1608**
50mm	13	1.0	80	**373-1610**
50mm	13	1.2	80	**373-1612**
50mm	13	1.6	64	**373-1616**
50mm	13	2.0	64	**373-1620**
50mm	13	2.5	64	**373-1625**
50mm	13	3.0	48	**373-1630**
50mm	13	4.0	48	**373-1640**
50mm	13	5.0	48	**373-1650**
50mm	13	6.0	40	**373-1660**
63mm	16	0.25	160	**373-1702**
63mm	16	0.3	128	**373-1703**
63mm	16	0.4	128	**373-1704**
63mm	16	0.5	128	**373-1705**
63mm	16	0.6	100	**373-1706**
63mm	16	0.8	100	**373-1708**
63mm	16	1.0	100	**373-1710**
63mm	16	1.2	80	**373-1712**
63mm	16	1.6	80	**373-1716**
63mm	16	1.7	80	**373-1717**
63mm	16	2.0	80	**373-1720**
63mm	16	2.5	64	**373-1725**
63mm	16	3.0	64	**373-1730**
63mm	16	4.0	64	**373-1740**
63mm	16	5.0	48	**373-1750**
63mm	16	6.0	48	**373-1760**
80mm	22	0.3	160	**373-1803**
80mm	22	0.4	160	**373-1804**
80mm	22	0.5	128	**373-1805**
80mm	22	0.6	128	**373-1806**
80mm	22	0.8	128	**373-1808**
80mm	22	1.0	100	**373-1810**
80mm	22	1.2	100	**373-1812**
80mm	22	1.6	100	**373-1816**
80mm	22	2.0	80	**373-1820**
80mm	22	2.5	80	**373-1825**
80mm	22	3.0	80	**373-1830**
80mm	22	4.0	64	**373-1840**
80mm	22	5.0	64	**373-1850**
80mm	22	6.0	64	**373-1860**
80mm	27	0.5	128	**373-1905**
80mm	27	0.6	128	**373-1906**
80mm	27	0.8	128	**373-1908**
80mm	27	1.0	100	**373-1910**
80mm	27	1.2	100	**373-1912**
80mm	27	1.6	100	**373-1916**
80mm	27	2.0	80	**373-1920**
80mm	27	2.5	80	**373-1925**
80mm	27	3.0	80	**373-1930**
80mm	27	4.0	64	**373-1940**
100mm	22	0.5	160	**373-2005**
100mm	22	0.6	160	**373-2006**
100mm	22	0.8	128	**373-2008**
100mm	22	1.0	128	**373-2010**
100mm	22	1.2	128	**373-2012**
100mm	22	1.6	100	**373-2016**
100mm	22	2.0	100	**373-2020**
100mm	22	2.5	100	**373-2025**
100mm	22	3.0	80	**373-2030**

Cutter Dia	Arbor Dia	Width Of Face	No. of Teeth	Order No.
100mm	22	4.0	80	**373-2040**
100mm	22	5.0	80	**373-2050**
100mm	22	6.0	64	**373-2060**
100mm	27	0.5	160	**373-2105**
100mm	27	0.6	160	**373-2106**
100mm	27	0.8	128	**373-2108**
100mm	27	1.0	128	**373-2110**
100mm	27	1.2	128	**373-2112**
100mm	27	1.6	100	**373-2116**
100mm	27	2.0	100	**373-2120**
100mm	27	2.5	100	**373-2125**
100mm	27	3.0	80	**373-2130**
100mm	27	4.0	80	**373-2140**
100mm	27	5.0	80	**373-2150**
125mm	22	0.6	160	**373-2206**
125mm	22	0.8	160	**373-2208**
125mm	22	1.0	160	**373-2210**
125mm	22	1.2	128	**373-2212**
125mm	22	1.6	128	**373-2216**
125mm	22	2.0	128	**373-2220**
125mm	22	2.5	100	**373-2225**
125mm	22	3.0	100	**373-2230**
125mm	22	4.0	100	**373-2240**
125mm	22	5.0	80	**373-2250**
125mm	22	6.0	80	**373-2260**
125mm	27	0.8	80	**373-2308**
125mm	27	1.0	80	**373-2310**
125mm	27	1.2	64	**373-2312**
125mm	27	1.6	64	**373-2316**
125mm	27	2.0	64	**373-2320**
125mm	27	2.5	48	**373-2325**
125mm	27	3.0	48	**373-2330**
125mm	27	4.0	48	**373-2340**
125mm	27	5.0	40	**373-2350**
160mm	32	1.0	160	**373-2410**
160mm	32	1.2	160	**373-2412**
160mm	32	1.6	160	**373-2416**
160mm	32	2.0	128	**373-2420**
160mm	32	2.5	128	**373-2425**
160mm	32	3.0	128	**373-2430**
160mm	32	4.0	100	**373-2440**
160mm	32	5.0	100	**373-2450**
160mm	32	6.0	100	**373-2460**
200mm	32	1.0	200	**373-2510**
200mm	32	1.2	200	**373-2512**
200mm	32	1.6	160	**373-2516**
200mm	32	2.0	160	**373-2520**
200mm	32	2.5	160	**373-2525**
200mm	32	3.0	128	**373-2530**
200mm	32	4.0	128	**373-2540**
200mm	32	5.0	128	**373-2550**
200mm	32	6.0	100	**373-2560**
250mm	32	1.6	200	**373-2616**
250mm	32	2.0	200	**373-2620**
250mm	32	2.5	160	**373-2625**
250mm	32	3.0	160	**373-2630**
250mm	32	4.0	160	**373-2640**
250mm	32	5.0	128	**373-2650**
250mm	32	6.0	128	**373-2660**
315mm	40	2.0	200	**373-2720**
315mm	40	3.0	200	**373-2730**
315mm	40	4.0	160	**373-2740**
315mm	40	5.0	160	**373-2750**
315mm	40	6.0	160	**373-2760**

Metric Plain Metal Slotting Saws

DIN 1838B
High Speed Steel

- For general purpose slotting and cut-off operations.
- The number of teeth given is the standard number which is supplied for general purpose work.



Cutter Dia.	Arbor Dia	Face Width	No. of Teeth	Order No.	Cutter Dia.	Arbor Dia	Face Width	No. of Teeth	Order No.
50mm	13	0.3	48	**373-0003**	100	22	6.0	32	**373-0460**
50mm	13	0.4	48	**373-0004**	100	27	0.8	64	**373-0508**
50mm	13	0.5	48	**373-0005**	100	27	1.0	64	**373-0510**
50mm	13	0.6	48	**373-0006**	100	27	1.2	64	**373-0512**
50mm	13	0.8	40	**373-0008**	100	27	1.6	48	**373-0516**
50mm	13	1.0	40	**373-0010**	100	27	2.0	48	**373-0520**
50mm	13	1.2	40	**373-0012**	100	27	2.5	48	**373-0525**
50mm	13	1.6	32	**373-0016**	100	27	3.0	40	**373-0530**
50mm	13	2.0	32	**373-0020**	100	27	4.0	40	**373-0540**
50mm	13	2.5	32	**373-0025**	100	27	5.0	40	**373-0550**
50mm	13	3.0	24	**373-0030**	125	22	0.8	80	**373-0608**
50mm	13	4.0	24	**373-0040**	125	22	1.0	80	**373-0610**
50mm	13	5.0	24	**373-0050**	125	22	1.2	64	**373-0612**
50mm	13	6.0	20	**373-0060**	125	22	1.6	64	**373-0616**
63mm	16	0.5	64	**373-0105**	125	22	2.0	64	**373-0620**
63mm	16	0.6	48	**373-0106**	125	22	2.5	48	**373-0625**
63mm	16	0.8	48	**373-0108**	125	22	3.0	48	**373-0630**
63mm	16	1.0	48	**373-0110**	125	22	4.0	48	**373-0640**
63mm	16	1.2	40	**373-0112**	125	22	5.0	40	**373-0650**
63mm	16	1.6	40	**373-0116**	125	22	6.0	40	**373-0660**
63mm	16	1.7	40	**373-0117**	125	27	0.8	80	**373-0708**
63mm	16	2.0	40	**373-0120**	125	27	1.0	80	**373-0710**
63mm	16	2.5	32	**373-0125**	125	27	1.2	64	**373-0712**
63mm	16	3.0	32	**373-0130**	125	27	1.6	64	**373-0716**
63mm	16	4.0	32	**373-0140**	125	27	2.0	64	**373-0720**
63mm	16	5.0	24	**373-0150**	125	27	2.5	48	**373-0725**
63mm	16	6.0	24	**373-0160**	125	27	3.0	48	**373-0730**
80mm	22	0.5	64	**373-0205**	125	27	4.0	48	**373-0740**
80mm	22	0.6	64	**373-0206**	125	27	5.0	40	**373-0750**
80mm	22	0.8	64	**373-0208**	160	32	1.0	80	**373-0810**
80mm	22	1.0	48	**373-0210**	160	32	1.2	80	**373-0812**
80mm	22	1.2	48	**373-0212**	160	32	1.6	80	**373-0816**
80mm	22	1.6	48	**373-0216**	160	32	2.0	64	**373-0820**
80mm	22	2.0	40	**373-0220**	160	32	2.5	64	**373-0825**
80mm	22	2.5	40	**373-0225**	160	32	3.0	64	**373-0830**
80mm	22	3.0	40	**373-0230**	160	32	4.0	48	**373-0840**
80mm	22	4.0	32	**373-0240**	160	32	5.0	48	**373-0850**
80mm	22	5.0	32	**373-0250**	160	32	6.0	48	**373-0860**
80mm	22	6.0	32	**373-0260**	200	32	1.2	100	**373-0912**
80mm	27	0.6	64	**373-0306**	200	32	1.6	80	**373-0916**
80mm	27	0.8	64	**373-0308**	200	32	2.0	80	**373-0920**
80mm	27	1.0	48	**373-0310**	200	32	2.5	80	**373-0925**
80mm	27	1.2	48	**373-0312**	200	32	3.0	64	**373-0930**
80mm	27	1.6	48	**373-0316**	200	32	4.0	64	**373-0940**
80mm	27	2.0	40	**373-0320**	200	32	5.0	64	**373-0950**
80mm	27	2.5	40	**373-0325**	200	32	6.0	48	**373-0960**
80mm	27	3.0	40	**373-0330**	250	32	1.6	100	**373-1016**
80mm	27	4.0	32	**373-0340**	250	32	2.0	100	**373-1020**
100mm	22	0.6	80	**373-0406**	250	32	2.5	80	**373-1025**
100mm	22	0.8	64	**373-0408**	250	32	3.0	80	**373-1030**
100mm	22	1.0	64	**373-0410**	250	32	4.0	80	**373-1040**
100mm	22	1.2	64	**373-0412**	250	32	5.0	64	**373-1050**
100mm	22	1.6	48	**373-0416**	250	32	6.0	64	**373-1060**
100mm	22	2.0	48	**373-0420**	315	40	2.5	100	**373-1125**
100mm	22	2.5	48	**373-0425**	315	40	3.0	100	**373-1130**
100mm	22	3.0	40	**373-0430**	315	40	4.0	80	**373-1140**
100mm	22	4.0	40	**373-0440**	315	40	5.0	80	**373-1150**
100mm	22	5.0	40	**373-0450**	315	40	6.0	80	**373-1160**

Bi-metal Hole Saw Kits

Designed for professional trades



Pieces	Specification	Order No.
7pcs	3/4,7/8,1,1-3/8,1-1/2", drill 1/4",Arbor	**402-0295**
12pcs	3/4,7/8,1-1/8,1-3/8,1-1/2,1-3/4,2,2-1/4,2-1/2", drill 1/4",2pcs Arbor	**402-0296**
15pcs	3/4,7/8,1,1-1/8,1-3/8,1-1/2,1-3/4,2,2-1/4,2-1/2,3", drill 1/4",2pcs Arbor	**402-0297**

Bi-metal Hole Saws

Patented tooth design. Results in sharp teeth, fast cutting and long blade life in a wide variety of applications, ranging from wood to stainless steel.



Saw Dia. (In/mm)	Order No.	M42 Order No.	Saw Dia. (In/mm)	Order No.	M42 Order No.
9/16(14)	**402-0302**	**402-0402**	2-1/4(57)	**402-0352**	**402-0452**
5/8(16)	**402-0304**	**402-0404**	2-5/16(59)	**402-0354**	**402-0454**
11/16(17)	**402-0306**	**402-0406**	2-3/8(60)	**402-0356**	**402-0456**
3/4(19)	**402-0308**	**402-0408**	2-1/2(64)	**402-0358**	**402-0458**
25/32(20)	**402-0309**	**402-0409**	2-9/16(65)	**402-0360**	**402-0460**
13/16(21)	**402-0310**	**402-0410**	2-5/8(67)	**402-0362**	**402-0462**
7/8(22)	**402-0312**	**402-0412**	2-11/16(68)	**402-0364**	**402-0464**
15/16(24)	**402-0314**	**402-0414**	2-3/4(70)	**402-0366**	**402-0466**
1(25)	**402-0316**	**402-0416**	2-7/8(73)	**402-0368**	**402-0468**
1-1/16(27)	**402-0318**	**402-0418**	3(76)	**402-0370**	**402-0470**
1-1/8(28)	**402-0320**	**402-0420**	3-1/8(79)	**402-0372**	**402-0472**
1-9/64(29)	**402-0321**	**402-0421**	3-1/4(83)	**402-0374**	**402-0474**
1-3/16(30)	**402-0322**	**402-0422**	3-3/8(86)	**402-0376**	**402-0476**
1-1/4(32)	**402-0324**	**402-0424**	3-1/2(89)	**402-0378**	**402-0478**
1-5/16(33)	**402-0326**	**402-0426**	3-5/8(92)	**402-0380**	**402-0480**
1-3/8(35)	**402-0328**	**402-0428**	3-3/4(95)	**402-0382**	**402-0482**
1-7/16(37)	**402-0330**	**402-0430**	3-7/8(98)	**402-0384**	**402-0484**
1-1/2(38)	**402-0332**	**402-0432**	4(102)	**402-0386**	**402-0486**
1-9/16(40)	**402-0334**	**402-0434**	4-1/8(105)	**402-0388**	**402-0488**
1-5/8(41)	**402-0336**	**402-0436**	4-1/4(108)	**402-0390**	**402-0490**
1-11/16(43)	**402-0338**	**402-0438**	4-3/8(111)	**402-0391**	**402-0491**
1-3/4(44)	**402-0340**	**402-0440**	4-1/2(114)	**402-0392**	**402-0492**
1-13/16(46)	**402-0342**	**402-0442**	4-3/4(121)	**402-0394**	**402-0494**
1-7/8(48)	**402-0344**	**402-0444**	5(127)	**402-0395**	**402-0495**
2(51)	**402-0346**	**402-0446**	5-1/2(140)	**402-0396**	**402-0496**
2-1/16(52)	**402-0348**	**402-0448**	6(152)	**402-0398**	**402-0498**
2-1/8(54)	**402-0350**	**402-0450**			

Annular Cutters

- Cut clean, burr free periphery holes
- Pilot pin eject the center as a plug of steel
- Suitable for drilling in hard-cutting materisls



Size	Shank Diameter	M35 1" Depth of Cut Order No.	M35 2" Depth of Cut Order No.	M35 3" Depth of Cut Order No.	M2 1" Depth of Cut Order No.	M2 2" Depth of Cut Order No.	M2 3" Depth of Cut Order No.
7/16''	3/4”	402-1028	402-1328	402-1628	402-2028	402-2328	402-2628
1/2''	3/4”	402-1032	402-1332	402-1632	402-2032	402-2332	402-2632
9/16''	3/4”	402-1036	402-1336	402-1636	402-2036	402-2336	402-2636
19/32''	3/4”	402-1038	402-1338	402-1638	402-2038	402-2338	402-2638
5/8''	3/4”	402-1040	402-1340	402-1640	402-2040	402-2340	402-2640
11/16''	3/4”	402-1044	402-1344	402-1644	402-2044	402-2344	402-2644
23/32''	3/4”	402-1046	402-1346	402-1646	402-2046	402-2346	402-2646
3/4''	3/4”	402-1048	402-1348	402-1648	402-2048	402-2348	402-2648
25/32''	3/4”	402-1050	402-1350	402-1650	402-2050	402-2350	402-2650
13/16''	3/4”	402-1052	402-1352	402-1652	402-2052	402-2352	402-2652
7/8''	3/4”	402-1056	402-1356	402-1656	402-2056	402-2356	402-2656
29/32''	3/4”	402-1058	402-1358	402-1658	402-2058	402-2358	402-2658
15/16''	3/4”	402-1060	402-1360	402-1660	402-2060	402-2360	402-2660
1''	3/4”	402-1064	402-1364	402-1664	402-2064	402-2364	402-2664
1-1/32”	3/4”	402-1102	402-1402	402-1702	402-2102	402-2402	402-2702
1-1/16”	3/4”	402-1104	402-1404	402-1704	402-2104	402-2404	402-2704
1-3/32”	3/4”	402-1106	402-1406	402-1706	402-2106	402-2406	402-2706
1-1/8”	3/4”	402-1108	402-1408	402-1708	402-2108	402-2408	402-2708
1-3/16”	3/4”	402-1112	402-1412	402-1712	402-2112	402-2412	402-2712
1-7/32”	3/4”	402-1114	402-1414	402-1714	402-2114	402-2414	402-2714
1-1/4”	3/4”	402-1116	402-1416	402-1716	402-2116	402-2416	402-2716
1-9/32”	3/4”	402-1118	402-1418	402-1718	402-2118	402-2418	402-2718
1-5/16”	3/4”	402-1120	402-1420	402-1720	402-2120	402-2420	402-2720
1-3/8”	3/4”	402-1124	402-1424	402-1724	402-2124	402-2424	402-2724
1-13/32”	3/4”	402-1126	402-1426	402-1726	402-2126	402-2426	402-2726
1-7/16”	3/4”	402-1128	402-1428	402-1728	402-2128	402-2428	402-2728
1-1/2”	3/4”	402-1132	402-1432	402-1732	402-2132	402-2432	402-2732
1-17/32”	3/4”	402-1134	402-1434	402-1734	402-2134	402-2434	402-2734
1-9/16”	3/4”	402-1136	402-1436	402-1736	402-2136	402-2436	402-2736
1-5/8”	3/4”	402-1140	402-1440	402-1740	402-2140	402-2440	402-2740
1-21/32”	3/4”	402-1142	402-1442	402-1742	402-2142	402-2442	402-2742
1-11/16”	3/4”	402-1144	402-1444	402-1744	402-2144	402-2444	402-2744
1-23/32”	3/4”	402-1146	402-1446	402-1746	402-2146	402-2446	402-2746
1-3/4”	3/4”	402-1148	402-1448	402-1748	402-2148	402-2448	402-2748
1-13/16”	3/4”	402-1152	402-1452	402-1752	402-2152	402-2452	402-2752
1-27/32”	3/4”	402-1154	402-1454	402-1754	402-2154	402-2454	402-2754
1-7/8”	3/4”	402-1156	402-1456	402-1756	402-2156	402-2456	402-2756
1-15/16”	3/4”	402-1160	402-1460	402-1760	402-2160	402-2460	402-2760
1-31/32”	3/4”	402-1162	402-1462	402-1762	402-2162	402-2462	402-2762
2”	3/4”	402-1164	402-1464	402-1764	402-2164	402-2464	402-2764
2-1/32”	3/4”	402-1202	402-1502	402-1802	402-2202	402-2502	402-2802
2-1/16”	3/4”	402-1204	402-1504	402-1804	402-2204	402-2504	402-2804
2-1/8”	3/4”	402-1208	402-1508	402-1808	402-2208	402-2508	402-2808
2-5/32”	3/4”	402-1210	402-1510	402-1810	402-2210	402-2510	402-2810
2-3/16”	3/4”	402-1212	402-1512	402-1812	402-2212	402-2512	402-2812
2-7/32”	3/4”	402-1214	402-1514	402-1814	402-2214	402-2514	402-2814
2-1/4”	3/4”	402-1216	402-1516	402-1816	402-2216	402-2516	402-2816
2-5/16”	3/4”	402-1220	402-1520	402-1820	402-2220	402-2520	402-2820
2-11/32”	3/4”	402-1222	402-1522	402-1822	402-2222	402-2522	402-2822

Metric Annular Cutters

- Cut clean, burr free Periphery holes
- Pilot pin eject the center as a plug of steel
- Suitable for drilling in hard-cutting materisls



		M35			M2		
Size	Shank Diameter	1" Depth of Cut Order No.	2" Depth of Cut Order No.	3" Depth of Cut Order No.	1" Depth of Cut Order No.	2" Depth of Cut Order No.	3" Depth of Cut Order No.
12mm	19.05mm	402-3028	402-3328	402-3628	402-6028	402-6328	402-6628
13	19.05mm	402-3032	402-3332	402-3632	402-6032	402-6332	402-6632
14	19.05mm	402-3036	402-3336	402-3636	402-6036	402-6336	402-6636
15	19.05mm	402-3038	402-3338	402-3638	402-6038	402-6338	402-6638
16	19.05mm	402-3040	402-3340	402-3640	402-6040	402-6340	402-6640
17	19.05mm	402-3044	402-3344	402-3644	402-6044	402-6344	402-6644
18	19.05mm	402-3046	402-3346	402-3646	402-6046	402-6346	402-6646
19	19.05mm	402-3048	402-3348	402-3648	402-6048	402-6348	402-6648
20	19.05mm	402-3050	402-3350	402-3650	402-6050	402-6350	402-6650
21	19.05mm	402-3052	402-3352	402-3652	402-6052	402-6352	402-6652
22	19.05mm	402-3056	402-3356	402-3656	402-6056	402-6356	402-6656
23	19.05mm	402-3058	402-3358	402-3658	402-6058	402-6358	402-6658
24	19.05mm	402-3060	402-3360	402-3660	402-6060	402-6360	402-6660
25	19.05mm	402-3064	402-3364	402-3664	402-6064	402-6364	402-6664
26	19.05mm	402-3102	402-3402	402-3702	402-6102	402-6402	402-6702
27	19.05mm	402-3104	402-3404	402-3704	402-6104	402-6404	402-6704
28	19.05mm	402-3106	402-3406	402-3706	402-6106	402-6406	402-6706
29	19.05mm	402-3108	402-3408	402-3708	402-6108	402-6408	402-6708
30	19.05mm	402-3112	402-3412	402-3712	402-6112	402-6412	402-6712
31	19.05mm	402-3114	402-3414	402-3714	402-6114	402-6414	402-6714
32	19.05mm	402-3116	402-3416	402-3716	402-6116	402-6416	402-6716
33	19.05mm	402-3118	402-3418	402-3718	402-6118	402-6418	402-6718
34	19.05mm	402-3120	402-3420	402-3720	402-6120	402-6420	402-6720
35	19.05mm	402-3124	402-3424	402-3724	402-6124	402-6424	402-6724
36	19.05mm	402-3126	402-3426	402-3726	402-6126	402-6426	402-6726
37	19.05mm	402-3128	402-3428	402-3728	402-6128	402-6428	402-6728
38	19.05mm	402-3132	402-3432	402-3732	402-6132	402-6432	402-6732
39	19.05mm	402-3134	402-3434	402-3734	402-6134	402-6434	402-6734
40	19.05mm	402-3136	402-3436	402-3736	402-6136	402-6436	402-6736
41	19.05mm	402-3140	402-3440	402-3740	402-6140	402-6440	402-6740
42	19.05mm	402-3142	402-3442	402-3742	402-6142	402-6442	402-6742
43	19.05mm	402-3144	402-3444	402-3744	402-6144	402-6444	402-6744
44	19.05mm	402-3146	402-3446	402-3746	402-6146	402-6446	402-6746
45	19.05mm	402-3148	402-3448	402-3748	402-6148	402-6448	402-6748
46	19.05mm	402-3152	402-3452	402-3752	402-6152	402-6452	402-6752
47	19.05mm	402-3154	402-3454	402-3754	402-6154	402-6454	402-6754
48	19.05mm	402-3156	402-3456	402-3756	402-6156	402-6456	402-6756
49	19.05mm	402-3160	402-3460	402-3760	402-6160	402-6460	402-6760
50	19.05mm	402-3162	402-3462	402-3762	402-6162	402-6462	402-6762
51	19.05mm	402-3164	402-3464	402-3764	402-6164	402-6464	402-6764
52	19.05mm	402-3202	402-3502	402-3802	402-6202	402-6502	402-6802
53	19.05mm	402-3204	402-3504	402-3804	402-6204	402-6504	402-6804
54	19.05mm	402-3208	402-3508	402-3808	402-6208	402-6508	402-6808
55	19.05mm	402-3210	402-3510	402-3810	402-6210	402-6510	402-6810
56	19.05mm	402-3212	402-3512	402-3812	402-6212	402-6512	402-6812
57	19.05mm	402-3214	402-3514	402-3814	402-6214	402-6514	402-6814
58	19.05mm	402-3216	402-3516	402-3816	402-6216	402-6516	402-6816
59	19.05mm	402-3220	402-3520	402-3820	402-6220	402-6520	402-6820
60	19.05mm	402-3222	402-3522	402-3822	402-6222	402-6522	402-6822

Carbide Tip Annular Cutters



- Cut clean, burr free Periphery holes
- Pilot pin eject the center as a plug of steel
- Suitable for drilling in hard-cutting materisls

Shank Diameter: Metric 19.05mm/Inch 3/4".

Inch 3/4" Shank Dia.				Metric 19.05mm Shank Dia.			
Size	1" Depth of Cut Order No.	2" Depth of Cut Order No.	3" Depth of Cut Order No.	Size	1" Depth of Cut Order No.	2" Depth of Cut Order No.	3" Depth of Cut Order No.
7/16"	**402-9028**	**402-9328**	402-9628	12mm	**402-5028**	**402-5328**	**402-5628**
1/2"	**402-9032**	**402-9332**	402-9632	13	**402-5032**	**402-5332**	**402-5632**
9/16"	**402-9036**	**402-9336**	402-9636	14	**402-5036**	**402-5336**	**402-5636**
19/32"	**402-9038**	**402-9338**	402-9638	15	**402-5038**	**402-5338**	**402-5638**
5/8"	**402-9040**	**402-9340**	402-9640	16	**402-5040**	**402-5340**	**402-5640**
11/16"	**402-9044**	**402-9344**	402-9644	17	**402-5044**	**402-5344**	**402-5644**
23/32"	**402-9046**	**402-9346**	402-9646	18	**402-5046**	**402-5346**	**402-5646**
3/4"	**402-9048**	**402-9348**	402-9648	19	**402-5048**	**402-5348**	**402-5648**
25/32"	**402-9050**	**402-9350**	402-9650	20	**402-5050**	**402-5350**	**402-5650**
13/16"	**402-9052**	**402-9352**	402-9652	21	**402-5052**	**402-5352**	**402-5652**
7/8"	**402-9056**	**402-9356**	402-9656	22	**402-5056**	**402-5356**	**402-5656**
29/32"	**402-9058**	**402-8358**	402-9658	23	**402-5058**	**402-5358**	**402-5658**
15/16"	**402-9060**	**402-9360**	402-9660	24	**402-5060**	**402-5360**	**402-5660**
1"	**402-9064**	**402-9364**	402-9664	25	**402-5064**	**402-5364**	**402-5664**
1-1/32"	**402-9102**	**402-9402**	402-9702	26	**402-5102**	**402-5402**	**402-5702**
1-1/16"	**402-9104**	**402-9404**	402-9704	27	**402-5104**	**402-5404**	**402-5704**
1-3/32"	**402-9106**	**402-9406**	402-9706	28	**402-5106**	**402-5406**	**402-5706**
1-1/8"	**402-9108**	**402-9408**	402-9708	29	**402-5108**	**402-5408**	**402-5708**
1-3/16"	**402-9112**	**402-9412**	402-9712	30	**402-5112**	**402-5412**	**402-5712**
1-7/32"	**402-9114**	**402-9414**	402-9714	31	**402-5114**	**402-5414**	**402-5714**
1-1/4"	**402-9116**	**402-9416**	402-9716	32	**402-5116**	**402-5416**	**402-5716**
1-9/32"	**402-9118**	**402-9418**	402-9718	33	**402-5118**	**402-5418**	**402-5718**
1-5/16"	**402-9120**	**402-9420**	402-9720	34	**402-5120**	**402-5420**	**402-5720**
1-3/8"	**402-9124**	**402-9424**	402-9724	35	**402-5124**	**402-5424**	**402-5724**
1-13/32"	**402-9126**	**402-9426**	402-9726	36	**402-5126**	**402-5426**	**402-5726**
1-7/16"	**402-9128**	**402-9428**	402-9728	37	**402-5128**	**402-5428**	**402-5728**
1-1/2"	**402-9132**	**402-9432**	402-9732	38	**402-5132**	**402-5432**	**402-5732**
1-17/32"	**402-9134**	**402-9434**	402-9734	39	**402-5134**	**402-5434**	**402-5734**
1-9/16"	**402-9136**	**402-9436**	402-9736	40	**402-5136**	**402-5436**	**402-5736**
1-5/8"	**402-9140**	**402-9440**	402-9740	41	**402-5140**	**402-5440**	**402-5740**
1-21/32"	**402-9142**	**402-9442**	402-9742	42	**402-5142**	**402-5442**	**402-5742**
1-11/16"	**402-9144**	**402-9444**	402-9744	43	**402-5144**	**402-5444**	**402-5744**
1-23/32"	**402-9146**	**402-9446**	402-9746	44	**402-5146**	**402-5446**	**402-5746**
1-3/4"	**402-9148**	**402-9448**	402-9748	45	**402-5148**	**402-5448**	**402-5748**
1-13/16"	**402-9152**	**402-9452**	402-9752	46	**402-5152**	**402-5452**	**402-5752**
1-27/32"	**402-9154**	**402-9454**	402-9754	47	**402-5154**	**402-5454**	**402-5754**
1-7/8"	**402-9156**	**402-9456**	402-9756	48	**402-5156**	**402-5456**	**402-5756**
1-15/16"	**402-9160**	**402-9460**	402-9760	49	**402-5160**	**402-5460**	**402-5760**
1-31/32"	**402-9162**	**402-9462**	402-9762	50	**402-5162**	**402-5462**	**402-5762**
2"	**402-9164**	**402-9464**	402-9764	51	**402-5164**	**402-5464**	**402-5764**
2-1/32"	**402-9202**	**402-9502**	402-9802	52	**402-5202**	**402-5502**	**402-5802**
2-1/16"	**402-9204**	**402-9504**	402-9804	53	**402-5204**	**402-5504**	**402-5804**
2-1/8"	**402-9208**	**402-9508**	402-9808	54	**402-5208**	**402-5508**	**402-5808**
2-5/32"	**402-9210**	**402-9510**	402-9810	55	**402-5210**	**402-5510**	**402-5810**
2-3/16"	**402-9212**	**402-9512**	402-9812	56	**402-5212**	**402-5512**	**402-5812**
2-7/32"	**402-9214**	**402-9514**	402-9814	57	**402-5214**	**402-5514**	**402-5814**
2-1/4"	**402-9216**	**402-9516**	402-9816	58	**402-5216**	**402-5516**	**402-5816**
2-5/16"	**402-9220**	**402-9520**	402-9820	59	**402-5220**	**402-5520**	**402-5820**
2-11/32"	**402-9222**	**402-9522**	402-9822	60	**402-9522**	**402-5522**	**402-5822**

Keyway Broach Sets

9pc No.00 Precision Set

Keyway Sizes	Broach Style	Collared Bushing Diameters	No.of Shim	Keyway Comb.	Order No.
1/16, 3/32, 1/8	A	1/4,5/16,3/8,7/16,1/2"	1	15	**395-0109**

18pc No.10 Standard Set

Keyway Sizes	Broach Style	Collared Bushing Diameters	No.of Shim	Keyway Comb.	Order No.
1/8,3/16	B	1/2,5/8,3/4,7/8"	5	18	**395-0718**
1/4, 3/8	C	1,1-1/8,1-1/4,1-3/8,1-1/2"			

18pc No.10A Standard Set

Keyway Sizes	Broach Style	Collared Bushing Diameters	No.of Shim	Keyway Comb.	Order No.
1/8,3/16	B	9/16,11/16,13/16"	5	18	
1/4, 3/8	C	15/16,1-1/16,1-3/16, 1-5/16,1-7/16,1-9/16"			**395-0719**

27pc No.10-10A Standard Set

Keyway Sizes	Broach Style	Collared Bushing Diameters	No.of Shim	Keyway Comb.	Order No.
1/8	B	1/2,9/16,5/8,11/16"	5	36	
3/16	B	3/4,13/16,7/8"			**395-0727**
1/4	C	15/16,1,1-1/16,1-1/8,1-3/16,1-1/4"			
3/8	C	1-5/16,1-3/8,1-7/16,1-1/2,1-9/16"			

30pc No.20 Combination Set

Keyway Sizes	Broach Style	Collared Bushing Diameters	No.of Shim	Keyway Comb.	Order No.
1/8	B	1/2,9/16,5/8,11/16"	7	47	
3/16	B	3/4,13/16,7/8"			
1/4	C	15/16,1,1-1/16,1-1/8"			**395-0730**
5/16	C	1-3/16,1-1/4,1-5/16,1-3/8"			
3/8	C	1-7/16,1-1/2,1-9/16"			

15pc No.30 Standard Set

Keyway Sizes	Broach Style	Collared Bushing Diameters	No.of Shim	Keyway Comb.	Order No.
1/8	B	1/2,5/8,3/4"	3	15	**395-0717**
3/16, 1/4"	C	7/8, 1,1-1/8,1-1/4,1-3/8,1-1/2"			

22pc No.40 Set

Keyway Sizes	Broach Style	Plain Bushing Diameters	No.of Shim	Keyway Comb.	Order No.
5/16,3/8	D	1-7/16,1-9/16,1-11/16,1-13/16"	10	32	**395-0322**
7/16,1/2	D	1-15/16,2-3/16,2-7/16,2-15/16"			

22pc No.40A Set

Keyway Sizes	Broach Style	Plain Bushing Diameters	No.of Shim	Keyway Comb.	Order No.
5/16,3/8	D	1-1/2,1-5/8,1-3/4,1-7/8"	10	32	**395-0323**
7/16,1/2	D	2, 2-1/8,2-1/4,2-1/2"			

17pc No.40-1/2 Heavy Duty Set

Keyway Sizes	Broach Style	Plain Bushing Diameters	No.of Shim	Keyway Comb.	Order No.
5/8	E	2-5/16,2-7/16,2-9/16"	9	12	**395-0217**
3/4	E	2-11/16,2-13/16,2-15/16"			

17pc No.40-1/2A Heavy Duty Set

Keyway Sizes	Broach Style	Plain Bushing Diameters	No.of Shim	Keyway Comb.	Order No.
5/8	E	2-3/8,2-1/2,2-5/8"	9	12	**395-0218**
3/4	E	2-3/4,2-7/8,3"			



32pc No.50 Heavy Duty Set

Keyway Sizes	Broach Style	Plain Bushing Diameters	No.of Shim	Keyway Comb.	Order No.
1/2	D	2, 2-1/16, 2-1/8, 2-3/16, 2-1/4"	12	29	
5/8	E	2-5/16,2-3/8, 2-7/16,2-1/2, 2-9/16, 2-5/8"			**395-0432**
3/4	E	2-11/16,2-3/4, 2-13/16, 2-7/8, 2-15/16, 3"			



Large Size Wooden Case

6pc No.60 Metric Set

Keyway Sizes	Broach Style	Collared Bushing Diameters	No.of Shim	Keyway Comb.	Order No.
2mm, 3mm	A	6,8,10mm	1	6	**395-0806**

22pc No.70 Metric Set

Keyway Sizes	Broach Style	Collared Bushing Diameters	No.of Shim	Keyway Comb.	Order No.
4, 5mm	B1	12,14,15,16mm	5	26	
6mm	C1	18,19,20,22mm			**395-0822**
8mm	C1	24,25,26,28,30mm			

21pc No.80 Metric Set

Keyway Sizes	Broach Style	Plain Bushing Diameters	No.of Shim	Keyway Comb.	Order No.
10mm	D1	32,34,35,36mm	6	36	
12mm	D1	38,40,42,44mm			**395-0821**
14mm	D1	45,46,48,50mm			

16pc No.90 Metric Set

Keyway Sizes	Broach Style	Plain Bushing Diameters	No.of Shim	Keyway Comb.	Order No.
16mm	E1	52,54,55,56mm	6	16	**395-0816**
18mm	E1	58,60,62,65mm			

18pc Metric Set

Keyway Sizes	Broach Style	Collared Bushing Diameters	No.of Shim	Keyway Comb.	Order No.
4, 5mm	B1	12,14,16mm	5	18	**395-0818**
6, 8mm	C1	18,20,22,24,26,28mm			

75pc No.100 Heavy Duty Combination Set

Keyway Sizes	Broach Style	B-C Collared/D-E Plain Bushing Dia.	No.of Shim	Keyway Comb.	Order No.
1/8"	B	1/2,9/16,5/8,11/16"	22	102	
3/16	B	3/4,13/16,7/8"			
1/4	C	15/16,1,1-1/16,1-1/8,1-3/16,1-1/4"			
5/16	C	1-5/16,1-3/8,1-7/16,1-1/2,1-9/16"			
3/8	D	1-7/16,1-1/2,1-9/16,1-5/8,1-11/16"			**395-0575**
7/16	D	1-3/4,1-13/16,1-7/8,1-15/16,2"			
1/2	D	2-1/16,2-1/8,2-3/16,2-1/4"			
5/8	E	2-5/16,2-3/8,2-7/16,2-1/2,2-9/16,2-5/8"			
3/4	E	2-11/16,2-3/4,2-13/16,2-7/8,2-15/16,3"			

Keyway Broaches with Shims

High Speed Steel

- Specialty tools designed for cutting keyways in machined holes.
- Well suited for use in a variety of ferrous and non-ferrous materials.
- Hardened and ground bars with cutting teeth on one side.
- Size and proportioned to afford a good cutting range and ample rinidity.
- Replacement shima are also available.
- Broach is tapered, allowing teeth to cut keyway toproper depth.
- Made to cut either inch or millimer size keyways.
- Bright finish.



Inch Size

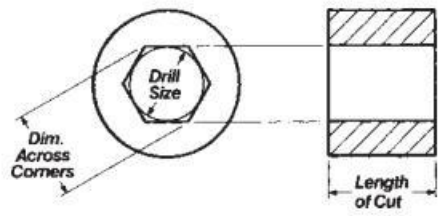
Broach Size	Type	Broach Dimensions	Shims Required	Length of Cut Min.	Length of Cut Max.	Tolerances	Order No.	TIN-Coated Order No.
1/16”	A	1/8x5”	0	13/64”	1-1/8”	.0625-.0635	**395-1004**	**396-1004**
3/32	A	1/8x5	0	13/64	1-1/8	.0938-.0948	**395-1006**	**396-1006**
1/8	A	1/8x5	1	13/64	1-1/8	.1252-.1262	**395-1008**	**396-1008**
3/32	B	3/16x6-3/4	0	19/64	1-11/16	.0937-.0947	**395-1106**	**396-1106**
1/8	B	3/16x6-3/4	1	19/64	1-11/16	.1252-.1262	**395-1108**	**396-1108**
5/32	B	3/16x6-3/4	1	19/64	1-11/16	.1564-.1574	**395-1110**	**396-1110**
3/16	B	3/16x6-3/4	1	19/64	1-11/16	.1877-.1887	**395-1112**	**396-1112**
3/16	C	3/8x11-3/4	1	25/64	2-1/2	.1877-.1887	**395-1212**	**396-1212**
1/4	C	3/8x11-3/4	1	25/64	2-1/2	.2502-.2512	**395-1216**	**396-1216**
5/16	C	3/8x11-3/4	2	25/64	2-1/2	.3127-.3137	**395-1220**	**396-1220**
3/8	C	3/8x11-3/4	2	25/64	2-1/2	.3755-.3765	**395-1224**	**396-1224**
5/16	D	9/16x13-7/8	2	1	6	.3127-.3137	**395-1324**	**396-1324**
3/8	D	9/16x13-7/8	2	1	6	.3755-.3765	**395-1328**	**396-1328**
7/16	D	9/16x13-7/8	3	1	6	.4380-.4390	**395-1332**	**396-1332**
1/2	D	9/16x13-7/8	3	1	6	.5006-.5016	**395-1336**	**396-1336**
5/8	E	3/4x15-1/2	4	1	6	.6260-.6270	**395-1440**	**396-1440**
3/4	E	3/4x15-1/2	5	1	6	.7515-.7525	**395-1448**	**396-1448**
7/8	F	1x20-1/4	6	1	6	.8765-.8775	**395-1556**	**396-1556**
1	F	1x20-1/4	7	1	6	1.0015-1.0025	**395-1564**	**396-1564**
1-1/8		1-1/8x20-1/4	8	1	6	1.1265-1.1275	**395-1570**	**396-1570**
1-1/4		1-1/4x20-1/4	9	1-1/2	8	1.2520-1.2530	**395-1572**	**396-1572**
1-3/8		1-3/8x20-1/4	10	1-1/2	8	1.3770-1.3780	**395-1574**	**396-1574**
1-1/2		1-1/2x20-1/4	11	1-1/2	8	1.5020-1.5030	**395-1576**	**396-1576**

Metric Size

Size	S.Keys	Piece of Shim	Dimension	Tooth Pitch	Teeth	Length of Cut Min.	Length of cut Max.	Tolerance	Order No.	TIN-Coated Order No.
2mm-A	2x2		1/8x5”	3/16”	18	13/64”	1-1/8”	.0782-.0791	**395-2006**	**396-2006**
3mm-A	3x3	1	1/8x5	3/16	18	13/64	1-1/8	.1176-.1185	**395-2008**	**396-2008**
4mm-B-1	4x4	1	1/4x6-3/4	9/32	16	19/64	1-11/16	.1569-.1579	**395-2110**	**396-2110**
5mm-B-1	5x5	1	1/4x6-3/4	9/32	16	19/64	1-11/16	.1963-.1972	**395-2112**	**396-2112**
5mm-C	5x5	1	3/8x11-3/4	3/8	22	25/64	2-1/2	.1963-.1972	**395-2212**	**396-2212**
6mm-C-1	6x6	1	3/8x11-3/4	3/8	22	25/64	2-1/2	.2356-.2366	**395-2216**	**396-2216**
8mm-C-1	8x7	2	3/8x11-3/4	3/8	22	25/64	2-1/2	.3143-.3155	**395-2220**	**396-2220**
10mm-D-1	10x8	2	9/16x13-7/8	5/8	17	1	6	.3930-.3942	**395-2224**	**396-2224**
12mm-D-1	12x8	2	9/16x13-7/8	5/8	17	1	6	.4716-.4730	**395-2324**	**396-2324**
14mm-D-1	14x9	2	9/16x13-7/8	5/8	17	1	6	.5503-.5517	**395-2328**	**396-2328**
16mm-E-1	16x10	3	3/4x15-1/2	5/8	20	1	6	.6290-.6304	**395-2332**	**396-2332**
18mm-E-1	18x11	3	3/4x15-1/2	5/8	20	1	6	.7078-.7092	**395-2336**	**396-2336**
20mm-F-1	20x12	3	1x20-1/4	5/8	26	1	6	.7864-.7880	**395-2440**	**396-2440**
22mm-F-1	22x14	4	1x20-1/4	5/8	26	1	6	.8651-.8667	**395-2448**	**396-2448**
24mm-F	24x14	5	1x20-1/4	5/8	26	1	6	.9439-.9455	**395-2556**	**396-2556**
25mm-F-1	25x14	4	1x20-1/4	5/8	26	1	6	.9832-.9848	**395-2564**	**396-2564**

Hexagon Push Broaches

- For cutting hexagonal shaped hole in round machined holes.
- Used to re-cut a round hole into a hole having a hexagonal shape in a single pass through the workpiece.
- Well suited for use in a variety of ferrous and non-ferrous materials.
- Broach is tapered, allowing teeth to cut hole to proper depth and width.
- Bright finish.

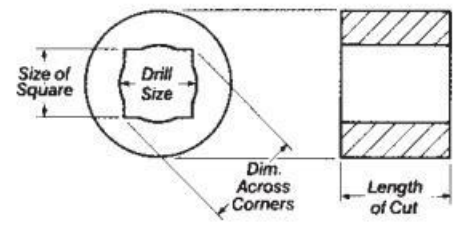




Broach Size	Broach Length	Pilot Dia.	Drill Size	Length of Cut Min.	Length of Cut Max.	Tolerance	Order No.
1/8"	4-1/8"	1/8"	1/8"	3/16"	3/8"	.1255-.1260	**395-5996**
5/32	4-15/16	5/32	5/32	1/4	1/2	.1565-.1570	**395-5998**
3/16	5-1/16	3/16	3/16	1/4	5/8	.1880-.1890	**395-6002**
7/32	5-3/8	7/32	7/32	1/4	3/4	.2190-.2200	**395-6004**
1/4	6	1/4	1/4	1/4	3/4	.2505-.2515	**395-6006**
9/32	7-1/4	9/32	9/32	5/16	1	.2815-.2825	**395-6008**
5/16	7-3/4	5/16	5/16	3/8	1	.3130-.3140	**395-6010**
11/32	7-3/4	11/32	11/32	3/8	1-1/4	.3440-.3450	**395-6012**
3/8	8-1/2	3/8	3/8	3/8	1-1/4	.3755-.3765	**395-6014**
13/32	9-5/8	13/32	13/32	1/2	1-3/8	.4065-.4075	**395-6016**
7/16	10-5/8	7/16	7/16	1/2	1-3/8	.4385-.4395	**395-6018**
15/32	11-7/8	15/32	15/32	1/2	1-3/8	.4690-.4700	**395-6020**
1/2	11-7/8	1/2	1/2	1/2	1-3/8	.5005-.5015	**395-6022**
9/16	13-3/4	9/16	9/16	1/2	1-5/8	.5630-.5640	**395-6024**
5/8	16-1/4	5/8	5/8	5/8	2	.6260-.6270	**395-6026**
11/16	16-3/4	11/16	11/16	5/8	2	.6880-.6890	**395-6030**
3/4	17-1/4	3/4	3/4	5/8	2	.7510-.7520	**395-6032**
7/8	18-1/2	7/8	7/8	5/8	2	.8765-.8775	**395-6034**
1	19-3/4	1	1	5/8	2	1.002-1.003	**395-6038**

Square Push Broaches

- For cutting hexagonal shaped hole in round pilot holes.
- Used to re-cut a round hole into a hole having a square shape in a single pass through the workpiece.
- Well suited for use in a variety of ferrous and non-ferrous materials.
- Broach is tapered, allowing teeth to cut hole to proper depth and width.
- Bright finish.





Broach Size	Broach Length	Pilot Dia.	Drill Size	Length of Cut Min.	Length of Cut Max.	Tolerance	Order No.
1/8"	4-1/8 "	.1285"	#30	3/16"	1/2"	.1250-.1260	**395-4002**
5/32	5-1/8	.1590	#21	1/4	1/2	.1565-.1575	**395-4004**
3/16	5-9/16	.1935	#10	1/4	5/8	.1880-.1890	**395-4006**
7/32	6-3/8	.2280	#1	1/4	3/4	.2190-.2200	**395-4010**
1/4	6-1/2	17/64	17/64	1/4	3/4	.2505-.2515	**395-4014**
9/32	7-3/4	19/64	19/64	5/16	1	.2815-.2825	**395-4016**
5/16	7-7/8	21/64	21/64	5/16	1	.3130-.3140	**395-4018**
11/32	9-3/8	23/64	23/64	3/8	1-1/4	.3440-.3450	**395-4020**
3/8	9-3/8	25/64	25/64	3/8	1-1/4	.3755-.3765	**395-4022**
13/32	10-5/8	27/64	27/64	1/2	1-3/8	.4065-.4075	**395-4023**
7/16	10-7/8	29/64	29/64	1/2	1-3/8	.4385-.4395	**395-4024**
15/32	12	1/2	1/2	1/2	1-3/8	.4690-.4700	**395-4025**
1/2	12	17/32	17/32	1/2	1-3/8	.5005-.5015	**395-4026**
9/16	14-3/4	19/32	19/32	1/2	1-1/2	.5630-.5640	**395-4028**
5/8	16-5/16	21/32	21/32	5/8	1-5/8	.6260-.6270	**395-4030**
11/16	17-3/4	3/4	3/4	5/8	1-5/8	.6885-.6895	**395-4034**
3/4	17-3/4	13/16	13/16	5/8	1-5/8	.7510-.7520	**395-4038**
7/8	22-3/4	15/16	15/16	1/2	2	.8765-.8775	**395-4056**
1	24-1/8	1-3/32	1-3/32	1/2	2	1.0020-1.0030	**395-4064**

Broach Bushings

Standard Keyway Bushings

Different size bushings enable the individual keyway broaches to be used in a variety of bore sizes.

Broaches and bushings with the same letter signify same size of broache width and bushing opening, please use bushings with the same letter designated broaches,

D,E Style: Plain
A,B,C Style: Collared



Inch Bushings

Bushing Type	Diameter	Order No.	Bushing Type	Diameter	Order No.
A	1/4"	**395-3102**	D	1-13/16"	**395-3212**
A	5/16	**395-3104**	D	1-7/8	**395-3214**
A	3/8	**395-3106**	D	1-15/16	**395-3216**
A	7/16	**395-3108**	D	2	**395-3218**
A	1/2	**395-3110**	D	2-1/16	**395-3220**
B	1/2	**395-3120**	D	2-1/8	**395-3222**
B	9/16	**395-3122**	D	2-3/16	**395-3224**
B	5/8	**395-3124**	D	2-1/4	**395-3226**
B	11/16	**395-3126**	D	2-5/16	**395-3228**
B	3/4	**395-3128**	D	2-3/8	**395-3230**
B	13/16	**395-3130**	D	2-7/16	**395-3232**
B	7/8	**395-3132**	D	2-1/2	**395-3234**
C	3/4	**395-3140**	D	2-9/16	**395-3236**
C	13/16	**395-3142**	D	2-5/8	**395-3238**
C	7/8	**395-3144**	D	2-11/16	**395-3240**
C	15/16	**395-3146**	D	2-3/4	**395-3242**
C	1	**395-3148**	D	2-13/16	**395-3244**
C	1-1/16	**395-3150**	D	2-7/8	**395-3246**
C	1-1/8	**395-3152**	D	2-15/16	**395-3248**
C	1-3/16	**395-3154**	E	2-5/16	**395-3270**
C	1-1/4	**395-3156**	E	2-3/8	**395-3272**
C	1-5/16	**395-3158**	E	2-7/16	**395-3274**
C	1-3/8	**395-3160**	E	2-1/2	**395-3276**
C	1-7/16	**395-3162**	E	2-9/16	**395-3278**
C	1-1/2	**395-3164**	E	2-5/8	**395-3280**
C	1-9/16	**395-3166**	E	2-11/16	**395-3282**
D	1-7/16	**395-3200**	E	2-3/4	**395-3284**
D	1-1/2	**395-3202**	E	2-13/16	**395-3286**
D	1-9/16	**395-3204**	E	2-7/8	**395-3288**
D	1-5/8	**395-3206**	E	2-15/16	**395-3290**
D	1-11/16	**395-3208**	E	3	**395-3292**
D	1-3/4	**395-3210**			

Metric Bushings

Bushing Type	Diameter	Order No.	Bushing Type	Diameter	OrderNo.
A	6mm	**395-3300**	D	35mm	**395-3404**
A	8mm	**395-3302**	D	36mm	**395-3406**
A	10mm	**395-3304**	D	38mm	**395-3408**
A	12mm	**395-3306**	D	40mm	**395-3410**
A	15mm	**395-3308**	D	42mm	**395-3412**
B-1	12mm	**395-3320**	D	44mm	**395-3414**
B-1	14mm	**395-3322**	D	45mm	**395-3416**
B-1	15mm	**395-3324**	D	46mm	**395-3418**
B-1	16mm	**395-3326**	D	48mm	**395-3420**
B-1	17mm	**395-3328**	D	50mm	**395-3422**
B-1	18mm	**395-3330**	D	52mm	**395-3424**
B-1	19mm	**395-3332**	D	54mm	**395-3426**
C	18mm	**395-3340**	D	56mm	**395-3428**
C	19mm	**395-3342**	E	52mm	**395-3470**
C	20mm	**395-3344**	E	54mm	**395-3472**
C	22mm	**395-3346**	E	55mm	**395-3474**
C	24mm	**395-3348**	E	56mm	**395-3476**
C	25mm	**395-3350**	E	58mm	**395-3478**
C	26mm	**395-3352**	E	60mm	**395-3480**
C	28mm	**395-3354**	E	62mm	**395-3482**
C	30mm	**395-3356**	E	63mm	**395-3484**
C	32mm	**395-3358**	E	64mm	**395-3486**
C	34mm	**395-3360**	E	65mm	**395-3488**
C	35mm	**395-3362**	E	66mm	**395-3490**
C	36mm	**395-3364**	E	68mm	**395-3492**
D	32mm	**395-3400**	E	70mm	**395-3494**
D	34mm	**395-3402**	E	72mm	**395-3496**

Shims For Keyway Broaches



Inch & Metric

Size	Order No.
A 1/8"&A 3mm	**395-4208**
B 1/8"	**395-4212**
B 5/32"	**395-4216**
B-1 4mm	**395-4220**
B 3/16"	**395-4224**
B-1 5mm	**395-4228**
C 3/16"	**395-4232**
C 5mm	**395-4236**
C 1/4 & 3/8", C-1 6mm	**395-4240**
C 5/16 & C-1 8mm	**395-4244**
D 5/16"	**395-4248**
D 3/8 & 1/2", D-1 14mm	**395-4252**
D-1 10 & 12mm	**395-4256**
D 7/16"	**395-4260**
E 5/8,3/4" E-1 16&18mm	**395-4264**
F 7/8&1" F-1 20-25mm	**395-4268**

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Arbor Presses

