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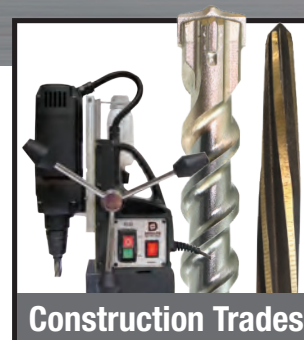


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# Product Catalog



**DRILLCO**  
CUTTING TOOLS

# **DRILLCO** CUTTING TOOLS

**PREMIUM QUALITY CUTTING TOOLS FOR INDUSTRY**

Product Catalog



DRILLS • TAPS • DIES • ANNULAR CUTTERS • CARBIDE BURS  
REAMERS • END MILLS • COUNTERSINKS

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# Jobber Length Drills

**HIGH SPEED STEEL**  
Fractional / Black Oxide & Bright



**PACKAGING:**  
1/64" thru 19/64" - 12 per pack  
5/16" thru 1/2" - 6 per pack

## Series 200 & 200B

118° POINT / STRAIGHT SHANK

Designed for general purpose drilling under a wide range of drilling conditions. It can drill various materials such as cast iron, steel, and steel forging. The surface treatment prevents chip welding, improves chip flow and increases abrasion resistance. Available in bulk packaging. See table below for quantities.



200 - Black Oxide



200B - Bright

Size	Flute Length	Overall Length	200 EDP No.	200B EDP No.
1/64"	3/16"	3/4"	200A101	200B101
1/32"	1/2"	1-3/8"	200A102	200B102
3/64"	3/4"	1-3/4"	200A103	200B103
1/16"	7/8"	1-7/8"	200A104	200B104
5/64"	1"	2"	200A105	200B105
3/32"	1-1/4"	2-1/4"	200A106	200B106
7/64"	1-1/2"	2-5/8"	200A107	200B107
1/8"	1-5/8"	2-3/4"	200A108	200B108
9/64"	1-3/4"	2-7/8"	200A109	200B109
5/32"	2"	3-1/8"	200A110	200B110
11/64"	2-1/8"	3-1/4"	200A111	200B111
3/16"	2-5/16"	3-1/2"	200A112	200B112
13/64"	2-7/16"	3-5/8"	200A113	200B113
7/32"	2-1/2"	3-3/4"	200A114	200B114
15/64"	2-5/8"	3-7/8"	200A115	200B115
1/4"	2-3/4"	4"	200A116	200B116

Size	Flute Length	Overall Length	200 EDP No.	200B EDP No.
17/64"	2-7/8"	4-1/8"	200A117	200B117
9/32"	2-15/16"	4-1/4"	200A118	200B118
19/64"	3-1/16"	4-3/8"	200A119	200B119
5/16"	3-3/16"	4-1/2"	200A120	200B120
21/64"	3-5/16"	4-5/8"	200A121	200B121
11/32"	3-7/16"	4-3/4"	200A122	200B122
23/64"	3-1/2"	4-7/8"	200A123	200B123
3/8"	3-5/8"	5"	200A124	200B124
25/64"	3-3/4"	5-1/8"	200A125	200B125
13/32"	3-7/8"	5-1/4"	200A126	200B126
27/64"	3-15/16"	5-3/8"	200A127	200B127
7/16"	4-1/16"	5-1/2"	200A128	200B128
29/64"	4-3/16"	5-5/8"	200A129	200B129
15/32"	4-5/16"	5-3/4"	200A130	200B130
31/64"	4-3/8"	5-7/8"	200A131	200B131
1/2"	4-1/2"	6"	200A132	200B132

Sizes	Bulk Quantity
1/16" - 1/8" & #60 - #30	504
9/64" - 13/64" & #29 - #6	252
7/32" - 5/16" & #5 - #1 & A - N	132
21/64" - 1/2" & O - Z	72



# Jobber Length Drills

**HIGH SPEED STEEL**  
Letter / Black Oxide & Bright



**PACKAGING:**  
"A" thru "L" - 12 per pack  
"M" thru "Z" - 6 per pack

## Series 240 & 240B

118° POINT / STRAIGHT SHANK

Designed for general purpose drilling under a wide range of drilling conditions. It can drill various materials such as cast iron, steel, and steel forging. The surface treatment prevents chip welding, improves chip flow and increases abrasion resistance. Available in bulk packaging. See table on previous page for quantities.



240 - Black Oxide



240B - Bright

Size	Flute Length	Overall Length	240 EDP No.	240B EDP No.
A	2-5/8"	3-7/8"	240A501	240B501
B	2-3/4"	4"	240A502	240B502
C	2-3/4"	4"	240A503	240B503
D	2-3/4"	4"	240A504	240B504
E	2-3/4"	4"	240A505	240B505
F	2-7/8"	4-1/8"	240A506	240B506
G	2-7/8"	4-1/8"	240A507	240B507
H	2-7/8"	4-1/8"	240A508	240B508
I	2-7/8"	4-1/8"	240A509	240B509
J	2-7/8"	4-1/8"	240A510	240B510
K	2-15/16"	4-1/4"	240A511	240B511
L	2-15/16"	4-1/4"	240A512	240B512
M	3-1/16"	4-3/8"	240A513	240B513

Size	Flute Length	Overall Length	240 EDP No.	240B EDP No.
N	3-1/16"	4-3/8"	240A514	240B514
O	3-3/16"	4-1/2"	240A515	240B515
P	3-5/16"	4-5/8"	240A516	240B516
Q	3-7/16"	4-3/4"	240A517	240B517
R	3-7/16"	4-3/4"	240A518	240B518
S	3-1/2"	4-7/8"	240A519	240B519
T	3-1/2"	4-7/8"	240A520	240B520
U	3-5/8"	5"	240A521	240B521
V	3-5/8"	5"	240A522	240B522
W	3-3/4"	5-1/8"	240A523	240B523
X	3-3/4"	5-1/8"	240A524	240B524
Y	3-7/8"	5-1/4"	240A525	240B525
Z	3-7/8"	5-1/4"	240A526	240B526

No. of Pcs.	Description	EDP No.	EDP No.
<b>200/240/280 &amp; 200B/240B/280B Series Jobber Drill Sets</b>			
13	1/16" - 1/4" BY 64ths	200A13	200B13
15	1/16" - 1/2" BY 32nds	200A15	200B15
19	Maintenance Set - 1/16, 5/64, 3/32, 1/8, #29, #25, 5/32, #21, 3/16, #7, 7/32, 1/4, F, 5/16, U, 3/8, 27/64, 7/16, 1/2	200A19	200B19
20	#61 - #80	200A20	-
21	1/16" - 3/8" BY 64ths	200A21	200B21
21	1/16" - 1/4" BY 64ths & 9/32" - 1/2" BY 32nds	200A21V	200B21V
26	A - Z	200A26	200B26
29	1/16" - 1/2" BY 64ths	200A29	200B29
29	DRILL PAL 1/16" - 1/2" BY 64ths	200AW29	-
60	#1 - #60	200A60	200B60
115	1/16" - 1/2" BY 64ths, #1 - 60, A - Z	200A0115	200B0115



200B29



200AW29

Drills

# Jobber Length Drills

**HIGH SPEED STEEL**  
Number / Black Oxide & Bright



**PACKAGING:**  
#1 thru #80 - 12 per pack

## Series 280 & 280B

118° POINT / STRAIGHT SHANK

Designed for general purpose drilling under a wide range of drilling conditions. It can drill various materials such as cast iron, steel, and steel forging. The surface treatment prevents chip welding, improves chip flow and increases abrasion resistance. Available in bulk packaging. See table below for quantities.



280 - Black Oxide



280B - Bright

Sets on previous page

Size	Flute Length	Overall Length	280 EDP No.	280B EDP No.
1	2-5/8"	3-7/8"	280A001	280B001
2	2-1/2"	3-7/8"	280A002	280B002
3	2-1/2"	3-3/4"	280A003	280B003
4	2-1/2"	3-3/4"	280A004	280B004
5	2-1/2"	3-3/4"	280A005	280B005
6	2-1/2"	3-3/4"	280A006	280B006
7	2-7/16"	3-5/8"	280A007	280B007
8	2-7/16"	3-5/8"	280A008	280B008
9	2-7/16"	3-5/8"	280A009	280B009
10	2-7/16"	3-5/8"	280A010	280B010
11	2-5/16"	3-1/2"	280A011	280B011
12	2-5/16"	3-1/2"	280A012	280B012
13	2-5/16"	3-1/2"	280A013	280B013
14	2-3/16"	3-3/8"	280A014	280B014
15	2-3/16"	3-3/8"	280A015	280B015
16	2-3/16"	3-3/8"	280A016	280B016
17	2-3/16"	3-3/8"	280A017	280B017
18	2-1/8"	3-1/4"	280A018	280B018
19	2-1/8"	3-1/4"	280A019	280B019
20	2-1/8"	3-1/4"	280A020	280B020

Size	Flute Length	Overall Length	280 EDP No.	280B EDP No.
21	2-1/8"	3-1/4"	280A021	280B021
22	2"	3-1/8"	280A022	280B022
23	2"	3-1/8"	280A023	280B023
24	2"	3-1/8"	280A024	280B024
25	1-7/8"	3"	280A025	280B025
26	1-7/8"	3"	280A026	280B026
27	1-7/8"	3"	280A027	280B027
28	1-3/4"	2-7/8"	280A028	280B028
29	1-3/4"	2-7/8"	280A029	280B029
30	1-5/8"	2-3/4"	280A030	280B030
31	1-5/8"	2-3/4"	280A031	280B031
32	1-5/8"	2-3/4"	280A032	280B032
33	1-1/2"	2-5/8"	280A033	280B033
34	1-1/2"	2-5/8"	280A034	280B034
35	1-1/2"	2-5/8"	280A035	280B035
36	1-7/16"	2-1/2"	280A036	280B036
37	1-7/16"	2-1/2"	280A037	280B037
38	1-7/16"	2-1/2"	280A038	280B038
39	1-3/8"	2-3/8"	280A039	280B039
40	1-3/8"	2-3/8"	280A040	280B040

Sizes	Bulk Quantity
1/16" - 1/8" & #60 - #30	504
9/64" - 13/64" & #29 - #6	252
7/32" - 5/16" & #5 - #1 & A - N	132
21/64" - 1/2" & O - Z	72

Continued on next page

# Jobber Length Drills

**HIGH SPEED STEEL**  
Number / Black Oxide & Bright



**PACKAGING:**  
#1 thru #80 - 12 per pack

## Series 280 & 280B continued

118° POINT / STRAIGHT SHANK

Designed for general purpose drilling under a wide range of drilling conditions. It can drill various materials such as cast iron, steel, and steel forging. The surface treatment prevents chip welding, improves chip flow and increases abrasion resistance. Available in bulk packaging. See table below for quantities.

Sets on page #3

Size	Flute Length	Overall Length	280 EDP No.	280B EDP No.
41	1-3/8"	2-3/8"	280A041	280B041
42	1-1/4"	2-1/4"	280A042	280B042
43	1-1/4"	2-1/4"	280A043	280B043
44	1-1/8"	2-1/8"	280A044	280B044
45	1-1/8"	2-1/8"	280A045	280B045
46	1-1/8"	2-1/8"	280A046	280B046
47	1"	2"	280A047	280B047
48	1"	2"	280A048	280B048
49	1"	2"	280A049	280B049
50	1"	2"	280A050	280B050
51	1"	2"	280A051	280B051
52	7/8"	1-7/8"	280A052	280B052
53	7/8"	1-7/8"	280A053	280B053
54	7/8"	1-7/8"	280A054	280B054
55	7/8"	1-7/8"	280A055	280B055
56	3/4"	1-3/4"	280A056	280B056
57	3/4"	1-3/4"	280A057	280B057
58	11/16"	1-5/8"	280A058	280B058
59	11/16"	1-5/8"	280A059	280B059
60	11/16"	1-5/8"	280A060	280B060

Size	Flute Length	Overall Length	280 EDP No.	280B EDP No.
61	11/16"	1-5/8"	280A061	280B061
62	5/8"	1-1/2"	280A062	280B062
63	5/8"	1-1/2"	280A063	280B063
64	5/8"	1-1/2"	280A064	280B064
65	5/8"	1-1/2"	280A065	280B065
66	1/2"	1-3/8"	280A066	280B066
67	1/2"	1-3/8"	280A067	280B067
68	1/2"	1-3/8"	280A068	280B068
69	1/2"	1-3/8"	280A069	280B069
70	3/8"	1-1/4"	280A070	280B070
71	3/8"	1-1/4"	280A071	280B071
72	5/16"	1-1/8"	280A072	280B072
73	5/16"	1-1/8"	280A073	280B073
74	1/4"	1"	280A074	280B074
75	1/4"	1"	280A075	280B075
76	3/16"	7/8"	280A076	280B076
77	3/16"	7/8"	280A077	280B077
78	3/16"	7/8"	280A078	280B078
79	1/8"	3/4"	280A079	280B079
80	1/8"	3/4"	280A080	280B080

Sizes	Bulk Quantity
1/16" - 1/8" & #60 - #30	504
9/64" - 13/64" & #29 - #6	252
7/32" - 5/16" & #5 - #1 & A - N	132
21/64" - 1/2" & O - Z	72





# TiN Tipped Jobber Length Drills

**HIGH SPEED STEEL**  
Fractional & Number / TiN Tip Coated

**PACKAGING:**  
3/64" thru 19/64" & #1 thru #60 - 12 per pack  
5/16" thru 1/2" - 6 per pack

## Series 450T

135° SPLIT POINT / STRAIGHT SHANK

TiN coating is applied to the "working" part of the drill. This allows for all of the benefits that the user receives from a fully TiN coated product, but at a reduced price when compared to a drill that is fully coated. The TiN (Titanium Nitride) coating provides a super hard surface with high lubricity and longer tool life, as the heat is deflected away from the drill. These drills can be used in a wide range of materials including steel, stainless steel, titanium, nickel and aluminum.



450T

Sets on next page

Size	Flute Length	Overall Length	450T EDP No.
1/16"	7/8"	1-7/8"	450T104
5/64"	1"	2"	450T105
3/32"	1-1/4"	2-1/4"	450T106
7/64"	1-1/2"	2-5/8"	450T107
1/8"	1-5/8"	2-3/4"	450T108
9/64"	1-3/4"	2-7/8"	450T109
5/32"	2"	3-1/8"	450T110
11/64"	2-1/8"	3-1/4"	450T111
3/16"	2-5/16"	3-1/2"	450T112
13/64"	2-7/16"	3-5/8"	450T113
7/32"	2-1/2"	3-3/4"	450T114
15/64"	2-5/8"	3-7/8"	450T115
1/4"	2-3/4"	4"	450T116
17/64"	2-7/8"	4-1/8"	450T117
9/32"	2-15/16"	4-1/4"	450T118
19/64"	3-1/16"	4-3/8"	450T119
5/16"	3-3/16"	4-1/2"	450T120
21/64"	3-5/16"	4-5/8"	450T121
11/32"	3-7/16"	4-3/4"	450T122
23/64"	3-1/2"	4-7/8"	450T123
3/8"	3-5/8"	5"	450T124

Size	Flute Length	Overall Length	450T EDP No.
25/64"	3-3/4"	5-1/8"	450T125
13/32"	3-7/8"	5-1/4"	450T126
27/64"	3-15/16"	5-3/8"	450T127
7/16"	4-1/16"	5-1/2"	450T128
29/64"	4-3/16"	5-5/8"	450T129
15/32"	4-5/16"	5-3/4"	450T130
31/64"	4-3/8"	5-7/8"	450T131
1/2"	4-1/2"	6"	450T132
1	2-5/8"	3-7/8"	450T001
2	2-5/8"	3-7/8"	450T002
3	2-1/2"	3-3/4"	450T003
4	2-1/2"	3-3/4"	450T004
5	2-1/2"	3-3/4"	450T005
6	2-1/2"	3-3/4"	450T006
7	2-7/16"	3-5/8"	450T007
8	2-7/16"	3-5/8"	450T008
9	2-7/16"	3-5/8"	450T009
10	2-7/16"	3-5/8"	450T010
11	2-5/16"	3-1/2"	450T011
12	2-5/16"	3-1/2"	450T012
13	2-5/16"	3-1/2"	450T013
14	2-3/16"	3-3/8"	450T014

Continued on next page

# TiN Tipped Jobber Length Drills

**HIGH SPEED STEEL**  
Number / TiN Tip Coated

**PACKAGING:**  
#1 thru #60 - 12 per pack

**Series 450T** continued

135° SPLIT POINT / STRAIGHT SHANK

TiN coating is applied to the “working” part of the drill. This allows for all of the benefits that the user receives from a fully TiN coated product, but at a reduced price when compared to a drill that is fully coated. The TiN (Titanium Nitride) coating provides a super hard surface with high lubricity and longer tool life, as the heat is deflected away from the drill. These drills can be used in a wide range of materials including steel, stainless steel, titanium, nickel and aluminum.

Size	Flute Length	Overall Length	450T EDP No.
15	2-3/16"	3-3/8"	450T015
16	2-3/16"	3-3/8"	450T016
17	2-3/16"	3-3/8"	450T017
18	2-1/8"	3-1/4"	450T018
19	2-1/8"	3-1/4"	450T019
20	2-1/8"	3-1/4"	450T020
21	2-1/8"	3-1/4"	450T021
22	2"	3-1/8"	450T022
23	2"	3-1/8"	450T023
24	2"	3-1/8"	450T024
25	1-7/8"	3"	450T025
26	1-7/8"	3"	450T026
27	1-7/8"	3"	450T027
28	1-3/4"	2-7/8"	450T028
29	1-3/4"	2-7/8"	450T029
30	1-5/8"	2-3/4"	450T030
31	1-5/8"	2-3/4"	450T031
32	1-5/8"	2-3/4"	450T032
33	1-1/2"	2-5/8"	450T033
34	1-1/2"	2-5/8"	450T034
35	1-1/2"	2-5/8"	450T035
36	1-7/16"	2-1/2"	450T036
37	1-7/16"	2-1/2"	450T037
38	1-7/16"	2-1/2"	450T038
39	1-3/8"	2-3/8"	450T039

Size	Flute Length	Overall Length	450T EDP No.
40	1-3/8"	2-3/8"	450T040
41	1-3/8"	2-3/8"	450T041
42	1-1/4"	2-1/4"	450T042
43	1-1/4"	2-1/4"	450T043
44	1-1/8"	2-1/8"	450T044
45	1-1/8"	2-1/8"	450T045
46	1-1/8"	2-1/8"	450T046
47	1"	2"	450T047
48	1"	2"	450T048
49	1"	2"	450T049
50	1"	2"	450T050
51	1"	2"	450T051
52	7/8"	1-7/8"	450T052
53	7/8"	1-7/8"	450T053
54	7/8"	1-7/8"	450T054
55	7/8"	1-7/8"	450T055
56	3/4"	1-3/4"	450T056
57	3/4"	1-3/4"	450T057
58	11/16"	1-5/8"	450T058
59	11/16"	1-5/8"	450T059
60	11/16"	1-5/8"	450T060



450T21

No. of Pcs.	Description	EDP No.
<b>450T Series Jobber Drill Sets</b>		
13	1/16" - 1/4" BY 64ths	450T13
15	1/16" - 1/2" BY 32nds	450T15
21	1/16" - 3/8" BY 64ths	450T21
29	1/16" - 1/2" BY 64ths	450T29
60	#1 - 60	450T60

# Jobber Length Drills

**HIGH SPEED STEEL**  
Fractional / Black Oxide

**PACKAGING:**  
1/16" thru 19/64" - 12 per pack  
5/16" thru 1/2" - 6 per pack

## Series 100SE

118° POINT / STRAIGHT SHANK

The 100SE Series drill is ground from solid, similar to the 200 Series drill. This drill is designed for general purpose drilling under a wide range of drilling conditions. It can drill various materials such as cast iron, steel, and steel forging. The surface treatment prevents chip welding, improves chip flow and increases abrasion resistance.



100SE

Size	Flute Length	Overall Length	100SE EDP No.
1/16"	7/8"	1-7/8"	100SE104
5/64"	1"	2"	100SE105
3/32"	1-1/4"	2-1/4"	100SE106
7/64"	1-1/2"	2-5/8"	100SE107
1/8"	1-5/8"	2-3/4"	100SE108
9/64"	1-3/4"	2-7/8"	100SE109
5/32"	2"	3-1/8"	100SE110
11/64"	2-1/8"	3-1/4"	100SE111
3/16"	2-5/16"	3-1/2"	100SE112
13/64"	2-7/16"	3-5/8"	100SE113
7/32"	2-1/2"	3-3/4"	100SE114
15/64"	2-5/8"	3-7/8"	100SE115
1/4"	2-3/4"	4"	100SE116
17/64"	2-7/8"	4-1/8"	100SE117
9/32"	2-15/16"	4-1/4"	100SE118

Size	Flute Length	Overall Length	100SE EDP No.
19/64"	3-1/16"	4-3/8"	100SE119
5/16"	3-3/16"	4-1/2"	100SE120
21/64"	3-5/16"	4-5/8"	100SE121
11/32"	3-7/16"	4-3/4"	100SE122
23/64"	3-1/2"	4-7/8"	100SE123
3/8"	3-5/8"	5"	100SE124
25/64"	3-3/4"	5-1/8"	100SE125
13/32"	3-7/8"	5-1/4"	100SE126
27/64"	3-15/16"	5-3/8"	100SE127
7/16"	4-1/16"	5-1/2"	100SE128
29/64"	4-3/16"	5-5/8"	100SE129
15/32"	4-5/16"	5-3/4"	100SE130
31/64"	4-3/8"	5-7/8"	100SE131
1/2"	4-1/2"	6"	100SE132

No. of Pcs.	Description	EDP No.
<b>100SE Series Jobber Drill Sets</b>		
13	1/16" - 1/4" BY 64ths	100SE13
15	1/16" - 1/2" BY 32nds	100SE15
21	1/16" - 3/8" BY 64ths	100SE21
21	1/16" - 1/4" BY 64ths & 9/32" - 1/2" BY 32nds	100SE21V
29	DRILL PAL 1/16" - 1/2" BY 64ths	100SEW29
29	1/16" - 1/2" BY 64ths	100SE29



100SE15



# Jobber Length Drills

**HIGH SPEED STEEL**  
Number / Black Oxide

**PACKAGING:**  
#1 thru #40 - 12 per pack

## Series 180SE

118° POINT / STRAIGHT SHANK

The 180SE Series drill is ground from solid, similar to the 200 Series drill. This drill is designed for general purpose drilling under a wide range of drilling conditions. It can drill various materials such as cast iron, steel, and steel forging. The surface treatment prevents chip welding, improves chip flow and increases abrasion resistance.



180SE

Size	Flute Length	Overall Length	180SE EDP No.
1	2-5/8"	3-7/8"	180SE001
2	2-1/2"	3-7/8"	180SE002
3	2-1/2"	3-3/4"	180SE003
4	2-1/2"	3-3/4"	180SE004
5	2-1/2"	3-3/4"	180SE005
6	2-1/2"	3-3/4"	180SE006
7	2-7/16"	3-5/8"	180SE007
8	2-7/16"	3-5/8"	180SE008
9	2-7/16"	3-5/8"	180SE009
10	2-7/16"	3-5/8"	180SE010
11	2-5/16"	3-1/2"	180SE011
12	2-5/16"	3-1/2"	180SE012
13	2-5/16"	3-1/2"	180SE013
14	2-3/16"	3-3/8"	180SE014
15	2-3/16"	3-3/8"	180SE015
16	2-3/16"	3-3/8"	180SE016
17	2-3/16"	3-3/8"	180SE017
18	2-1/8"	3-1/4"	180SE018
19	2-1/8"	3-1/4"	180SE019
20	2-1/8"	3-1/4"	180SE020

Size	Flute Length	Overall Length	180SE EDP No.
21	2-1/8"	3-1/4"	180SE021
22	2"	3-1/8"	180SE022
23	2"	3-1/8"	180SE023
24	2"	3-1/8"	180SE024
25	1-7/8"	3"	180SE025
26	1-7/8"	3"	180SE026
27	1-7/8"	3"	180SE027
28	1-3/4"	2-7/8"	180SE028
29	1-3/4"	2-7/8"	180SE029
30	1-5/8"	2-3/4"	180SE030
31	1-5/8"	2-3/4"	180SE031
32	1-5/8"	2-3/4"	180SE032
33	1-1/2"	2-5/8"	180SE033
34	1-1/2"	2-5/8"	180SE034
35	1-1/2"	2-5/8"	180SE035
36	1-7/16"	2-1/2"	180SE036
37	1-7/16"	2-1/2"	180SE037
38	1-7/16"	2-1/2"	180SE038
39	1-3/8"	2-3/8"	180SE039
40	1-3/8"	2-3/8"	180SE040

# Jobber Length Drills

**HIGH SPEED STEEL**  
Fractional / Black & Gold

**PACKAGING:**  
1/16" thru 19/64" - 12 per pack  
5/16" thru 1/2" - 6 per pack

## Series 400F

140° SPLIT POINT / 3-FLATS

140° Split Point reduces walking at the drill point and makes these drills ideal for both hand held and CNC Operations. Black & Gold surface treatment for maximum lubricity. Usable in a wide range of materials including difficult to machine materials such as stainless steel. Jobber length for extra reach. 3-flat shank helps reduce slippage in the drill chuck.



400F

Size	Flute Length	Overall Length	400F EDP No.
1/16"	7/8"	1-7/8"	400F104
5/64"	1"	2"	400F105
3/32"	1-1/4"	2-1/4"	400F106
7/64"	1-1/2"	2-5/8"	400F107
1/8"	1-5/8"	2-3/4"	400F108
9/64"	1-3/4"	2-7/8"	400F109
5/32"	2"	3-1/8"	400F110
11/64"	2-1/8"	3-1/4"	400F111
3/16"	2-5/16"	3-1/2"	400F112
13/64"	2-7/16"	3-5/8"	400F113
7/32"	2-1/2"	3-3/4"	400F114
15/64"	2-5/8"	3-7/8"	400F115
1/4"	2-3/4"	4"	400F116
17/64"	2-7/8"	4-1/8"	400F117
9/32"	2-15/16"	4-1/4"	400F118

Size	Flute Length	Overall Length	400F EDP No.
19/64"	3-1/16"	4-3/8"	400F119
5/16"	3-3/16"	4-1/2"	400F120
21/64"	3-5/16"	4-5/8"	400F121
11/32"	3-7/16"	4-3/4"	400F122
23/64"	3-1/2"	4-7/8"	400F123
3/8"	3-5/8"	5"	400F124
25/64"	3-3/4"	5-1/8"	400F125
13/32"	3-7/8"	5-1/4"	400F126
27/64"	3-15/16"	5-3/8"	400F127
7/16"	4-1/16"	5-1/2"	400F128
29/64"	4-3/16"	5-5/8"	400F129
15/32"	4-5/16"	5-3/4"	400F130
31/64"	4-3/8"	5-7/8"	400F131
1/2"	4-1/2"	6"	400F132

Flats start at 3/16"

No. of Pcs.	Description	EDP No.
<b>400F Series Jobber Drill Sets</b>		
21	1/16" - 3/8" BY 64ths	400F21
29	1/16" - 1/2" BY 64ths	400F29
29	DRILL PAL 1/16" - 1/2" BY 64ths	400FW29



400F29

# Left Hand Jobber Length Drills

**HIGH SPEED STEEL**  
Fractional / Bright



**PACKAGING:**  
1/16" thru 19/64" - 12 per pack  
5/16" thru 1/2" - 6 per pack

## Series 200LH

118° POINT / STRAIGHT SHANK

Used in close center multiple spindle gear driven drilling heads, where adjacent spindles operate alternately left and right hand. They are also used in left hand screw machines. Can be used to drill out broken bolts.



200LH

Size	Flute Length	Overall Length	200LH EDP No.
1/16"	7/8"	1-7/8"	200LH104
5/64"	1"	2"	200LH105
3/32"	1-1/4"	2-1/4"	200LH106
7/64"	1-1/2"	2-5/8"	200LH107
1/8"	1-5/8"	2-3/4"	200LH108
9/64"	1-3/4"	2-7/8"	200LH109
5/32"	2"	3-1/8"	200LH110
11/64"	2-1/8"	3-1/4"	200LH111
3/16"	2-5/16"	3-1/2"	200LH112
13/64"	2-7/16"	3-5/8"	200LH113
7/32"	2-1/2"	3-3/4"	200LH114
15/64"	2-5/8"	3-7/8"	200LH115
1/4"	2-3/4"	4"	200LH116
17/64"	2-7/8"	4-1/8"	200LH117
9/32"	2-15/16"	4-1/4"	200LH118

Size	Flute Length	Overall Length	200LH EDP No.
19/64"	3-1/16"	4-3/8"	200LH119
5/16"	3-3/16"	4-1/2"	200LH120
21/64"	3-5/16"	4-5/8"	200LH121
11/32"	3-7/16"	4-3/4"	200LH122
23/64"	3-1/2"	4-7/8"	200LH123
3/8"	3-5/8"	5"	200LH124
25/64"	3-3/4"	5-1/8"	200LH125
13/32"	3-7/8"	5-1/4"	200LH126
27/64"	3-15/16"	5-3/8"	200LH127
7/16"	4-1/16"	5-1/2"	200LH128
29/64"	4-3/16"	5-5/8"	200LH129
15/32"	4-5/16"	5-3/4"	200LH130
31/64"	4-3/8"	5-7/8"	200LH131
1/2"	4-1/2"	6"	200LH132



200LH29

No. of Pcs.	Description	EDP No.
<b>200LH Series Left Hand Jobber Drill Sets</b>		
13	1/16" - 1/4" BY 64ths	200LH13
15	1/16" - 1/2" BY 32nds	200LH15
21	1/16" - 3/8" BY 64ths	200LH21
21	1/16" - 1/4" BY 64ths & 9/32" - 1/2" BY 32nds	200LH21V
29	1/16" - 1/2" BY 64ths	200LH29

**HIGH SPEED STEEL**  
Fractional / Black & Gold



**PACKAGING:**  
1/16" thru 19/64" - 12 per pack  
5/16" thru 1/2" - 6 per pack

## Series 400N

135° SPLIT POINT / STRAIGHT SHANK

**Nitro®** drills (NAS Type B) offer superior performance over conventional HSS drills. Their Nitride treated, heavy-duty construction increases tool life and performance. 135° Split Point reduces walking at the drill point and makes these drills ideal for both hand held and CNC Operations. Black & Gold surface treatment for maximum lubricity. Usable in a wide range of materials including difficult to machine materials such as stainless steel. Jobber length for extra reach. Available in bulk packaging. See table below for quantities.



400N

Sets on next page

Size	Flute Length	Overall Length	400N EDP No.
1/16"	7/8"	1-7/8"	400N104
5/64"	1"	2"	400N105
3/32"	1-1/4"	2-1/4"	400N106
7/64"	1-1/2"	2-5/8"	400N107
1/8"	1-5/8"	2-3/4"	400N108
9/64"	1-3/4"	2-7/8"	400N109
5/32"	2"	3-1/8"	400N110
11/64"	2-1/8"	3-1/4"	400N111
3/16"	2-5/16"	3-1/2"	400N112
13/64"	2-7/16"	3-5/8"	400N113
7/32"	2-1/2"	3-3/4"	400N114
15/64"	2-5/8"	3-7/8"	400N115
1/4"	2-3/4"	4"	400N116
17/64"	2-7/8"	4-1/8"	400N117
9/32"	2-15/16"	4-1/4"	400N118

Size	Flute Length	Overall Length	400N EDP No.
19/64"	3-1/16"	4-3/8"	400N119
5/16"	3-3/16"	4-1/2"	400N120
21/64"	3-5/16"	4-5/8"	400N121
11/32"	3-7/16"	4-3/4"	400N122
23/64"	3-1/2"	4-7/8"	400N123
3/8"	3-5/8"	5"	400N124
25/64"	3-3/4"	5-1/8"	400N125
13/32"	3-7/8"	5-1/4"	400N126
27/64"	3-15/16"	5-3/8"	400N127
7/16"	4-1/16"	5-1/2"	400N128
29/64"	4-3/16"	5-5/8"	400N129
15/32"	4-5/16"	5-3/4"	400N130
31/64"	4-3/8"	5-7/8"	400N131
1/2"	4-1/2"	6"	400N132

Sizes	Bulk Quantity
1/16" - 1/8" & #60 - #30	504
9/64" - 13/64" & #29 - #6	252
7/32" - 5/16" & #5 - #1 & A - N	132
21/64" - 1/2" & O - Z	72

**HIGH SPEED STEEL**  
Letter / Black & Gold



**PACKAGING:**  
'A' thru 'L' - 12 per pack  
'M' thru 'Z' - 6 per pack

## Series 440N

135° SPLIT POINT / STRAIGHT SHANK

Nitro® drills (NAS Type B) offer superior performance over conventional HSS drills. Their Nitride treated, heavy-duty construction increases tool life and performance. 135° Split Point reduces walking at the drill point and makes these drills ideal for both hand held and CNC Operations. Black & Gold surface treatment for maximum lubricity. Usable in a wide range of materials including difficult to machine materials such as stainless steel. Jobber length for extra reach. Available in bulk packaging. See table on previous page for quantities.



440N

Size	Flute Length	Overall Length	440N EDP No.
A	2-5/8"	3-7/8"	440N501
B	2-3/4"	4"	440N502
C	2-3/4"	4"	440N503
D	2-3/4"	4"	440N504
E	2-3/4"	4"	440N505
F	2-7/8"	4-1/8"	440N506
G	2-7/8"	4-1/8"	440N507
H	2-7/8"	4-1/8"	440N508
I	2-7/8"	4-1/8"	440N509
J	2-7/8"	4-1/8"	440N510
K	2-15/16"	4-1/4"	440N511
L	2-15/16"	4-1/4"	440N512
M	3-1/16"	4-3/8"	440N513

Size	Flute Length	Overall Length	440N EDP No.
N	3-1/16"	4-3/8"	440N514
O	3-3/16"	4-1/2"	440N515
P	3-5/16"	4-5/8"	440N516
Q	3-7/16"	4-3/4"	440N517
R	3-7/16"	4-3/4"	440N518
S	3-1/2"	4-7/8"	440N519
T	3-1/2"	4-7/8"	440N520
U	3-5/8"	5"	440N521
V	3-5/8"	5"	440N522
W	3-3/4"	5-1/8"	440N523
X	3-3/4"	5-1/8"	440N524
Y	3-7/8"	5-1/4"	440N525
Z	3-7/8"	5-1/4"	440N526

No. of Pcs.	Description	EDP No.
<b>400N/440N/480N Series Nitro® Heavy Duty Jobber Drill Sets</b>		
13	1/16" - 1/4" BY 64ths	400N13
15	1/16" - 1/2" BY 32nds	400N15
19	Maintenance Set - 1/16, 5/64, 3/32, 1/8, #29, #25, 5/32, #21, 3/16, #7, 7/32, 1/4, F, 5/16, U, 3/8, 27/64, 7/16, 1/2	400N19
21	1/16" - 3/8" BY 64ths	400N21
21	1/16" - 1/4" BY 64ths & 9/32" - 1/2" BY 32nds	400N21V
26	A - Z	400N26
29	1/16" - 1/2" BY 64ths	400N29
29	DRILL PAL 1/16" - 1/2" BY 64ths	400NW29
60	#1 - #60	400N60
115	1/16" - 1/2" BY 64ths, #1 - 60, A - Z	400N0115



400N29



**HIGH SPEED STEEL**  
Number / Black & Gold



**PACKAGING:**  
#1 thru #60 - 12 per pack

## Series 480N

135° SPLIT POINT / STRAIGHT SHANK

**Nitro®** drills (NAS Type B) offer superior performance over conventional HSS drills. Their Nitride treated, heavy-duty construction increases tool life and performance. 135° Split Point reduces walking at the drill point and makes these drills ideal for both hand held and CNC Operations. Black & Gold surface treatment for maximum lubricity. Usable in a wide range of materials including difficult to machine materials such as stainless steel. Jobber length for extra reach. Available in bulk packaging. See table on page 12 for quantities.



Sets on previous page

480N

Size	Flute Length	Overall Length	480N EDP No.
1	2-5/8"	3-7/8"	480N001
2	2-1/2"	3-7/8"	480N002
3	2-1/2"	3-3/4"	480N003
4	2-1/2"	3-3/4"	480N004
5	2-1/2"	3-3/4"	480N005
6	2-1/2"	3-3/4"	480N006
7	2-7/16"	3-5/8"	480N007
8	2-7/16"	3-5/8"	480N008
9	2-7/16"	3-5/8"	480N009
10	2-7/16"	3-5/8"	480N010
11	2-5/16"	3-1/2"	480N011
12	2-5/16"	3-1/2"	480N012
13	2-5/16"	3-1/2"	480N013
14	2-3/16"	3-3/8"	480N014
15	2-3/16"	3-3/8"	480N015
16	2-3/16"	3-3/8"	480N016
17	2-3/16"	3-3/8"	480N017
18	2-1/8"	3-1/4"	480N018
19	2-1/8"	3-1/4"	480N019
20	2-1/8"	3-1/4"	480N020
21	2-1/8"	3-1/4"	480N021
22	2"	3-1/8"	480N022
23	2"	3-1/8"	480N023
24	2"	3-1/8"	480N024
25	1-7/8"	3"	480N025
26	1-7/8"	3"	480N026
27	1-7/8"	3"	480N027
28	1-3/4"	2-7/8"	480N028
29	1-3/4"	2-7/8"	480N029
30	1-5/8"	2-3/4"	480N030

Size	Flute Length	Overall Length	480N EDP No.
31	1-5/8"	2-3/4"	480N031
32	1-5/8"	2-3/4"	480N032
33	1-1/2"	2-5/8"	480N033
34	1-1/2"	2-5/8"	480N034
35	1-1/2"	2-5/8"	480N035
36	1-7/16"	2-1/2"	480N036
37	1-7/16"	2-1/2"	480N037
38	1-7/16"	2-1/2"	480N038
39	1-3/8"	2-3/8"	480N039
40	1-3/8"	2-3/8"	480N040
41	1-3/8"	2-3/8"	480N041
42	1-1/4"	2-1/4"	480N042
43	1-1/4"	2-1/4"	480N043
44	1-1/8"	2-1/8"	480N044
45	1-1/8"	2-1/8"	480N045
46	1-1/8"	2-1/8"	480N046
47	1"	2"	480N047
48	1"	2"	480N048
49	1"	2"	480N049
50	1"	2"	480N050
51	1"	2"	480N051
52	7/8"	1-7/8"	480N052
53*	7/8"	1-7/8"	480N053
54*	7/8"	1-7/8"	480N054
55*	7/8"	1-7/8"	480N055
56*	3/4"	1-3/4"	480N056
57*	3/4"	1-3/4"	480N057
58*	11/16"	1-5/8"	480N058
59*	11/16"	1-5/8"	480N059
60*	11/16"	1-5/8"	480N060

\* Not Split Point

# Heavy-Duty Jobber Drills

**HIGH SPEED STEEL**  
Fractional / Black Oxide



**PACKAGING:**  
1/16" thru 19/64" - 12 per pack  
5/16" thru 1/2" - 6 per pack

## Series 400

135° SPLIT POINT / STRAIGHT SHANK

NAS Type B. Web construction is heavier than general purpose construction making these drills suitable for more demanding applications. Designed for efficient drilling in stainless steel and tougher ferrous materials. The 135° split point reduces the thrust requirements and minimizes walking. Steam Oxide surface treatment for increased wear resistance & lubricity. Available in bulk packaging. See table below for quantities.



Sets on page #18

400

Size	Flute Length	Overall Length	400 EDP No.
1/16"	7/8"	1-7/8"	400A104
5/64"	1"	2"	400A105
3/32"	1-1/4"	2-1/4"	400A106
7/64"	1-1/2"	2-5/8"	400A107
1/8"	1-5/8"	2-3/4"	400A108
9/64"	1-3/4"	2-7/8"	400A109
5/32"	2"	3-1/8"	400A110
11/64"	2-1/8"	3-1/4"	400A111
3/16"	2-5/16"	3-1/2"	400A112
13/64"	2-7/16"	3-5/8"	400A113
7/32"	2-1/2"	3-3/4"	400A114
15/64"	2-5/8"	3-7/8"	400A115
1/4"	2-3/4"	4"	400A116
17/64"	2-7/8"	4-1/8"	400A117
9/32"	2-15/16"	4-1/4"	400A118

Size	Flute Length	Overall Length	400 EDP No.
19/64"	3-1/16"	4-3/8"	400A119
5/16"	3-3/16"	4-1/2"	400A120
21/64"	3-5/16"	4-5/8"	400A121
11/32"	3-7/16"	4-3/4"	400A122
23/64"	3-1/2"	4-7/8"	400A123
3/8"	3-5/8"	5"	400A124
25/64"	3-3/4"	5-1/8"	400A125
13/32"	3-7/8"	5-1/4"	400A126
27/64"	3-15/16"	5-3/8"	400A127
7/16"	4-1/16"	5-1/2"	400A128
29/64"	4-3/16"	5-5/8"	400A129
15/32"	4-5/16"	5-3/4"	400A130
31/64"	4-3/8"	5-7/8"	400A131
1/2"	4-1/2"	6"	400A132

Sizes	Bulk Quantity
1/16" - 1/8" & #60 - #30	504
9/64" - 13/64" & #29 - #6	252
7/32" - 5/16" & #5 - #1 & A - N	132
21/64" - 1/2" & O - Z	72

**HIGH SPEED STEEL**  
Letter / Black Oxide



**PACKAGING:**  
"A" thru "L" - 12 per pack  
"M" thru "Z" - 6 per pack

## Series 440

135° SPLIT POINT / STRAIGHT SHANK

NAS Type B. Web construction is heavier than general purpose construction making these drills suitable for more demanding applications. Designed for efficient drilling in stainless steel and tougher ferrous materials. The 135° split point reduces the thrust requirements and minimizes walking. Steam Oxide surface treatment for increased wear resistance & lubricity. Available in bulk packaging. See table below for quantities.



440

Sets on page #18

Size	Flute Length	Overall Length	440 EDP No.
A	2-5/8"	3-7/8"	440A501
B	2-3/4"	4"	440A502
C	2-3/4"	4"	440A503
D	2-3/4"	4"	440A504
E	2-3/4"	4"	440A505
F	2-7/8"	4-1/8"	440A506
G	2-7/8"	4-1/8"	440A507
H	2-7/8"	4-1/8"	440A508
I	2-7/8"	4-1/8"	440A509
J	2-7/8"	4-1/8"	440A510
K	2-15/16"	4-1/4"	440A511
L	2-15/16"	4-1/4"	440A512
M	3-1/16"	4-3/8"	440A513

Size	Flute Length	Overall Length	440 EDP No.
N	3-1/16"	4-3/8"	440A514
O	3-3/16"	4-1/2"	440A515
P	3-5/16"	4-5/8"	440A516
Q	3-7/16"	4-3/4"	440A517
R	3-7/16"	4-3/4"	440A518
S	3-1/2"	4-7/8"	440A519
T	3-1/2"	4-7/8"	440A520
U	3-5/8"	5"	440A521
V	3-5/8"	5"	440A522
W	3-3/4"	5-1/8"	440A523
X	3-3/4"	5-1/8"	440A524
Y	3-7/8"	5-1/4"	440A525
Z	3-7/8"	5-1/4"	440A526

Sizes	Bulk Quantity
1/16" - 1/8" & #60 - #30	504
9/64" - 13/64" & #29 - #6	252
7/32" - 5/16" & #5 - #1 & A - N	132
21/64" - 1/2" & O - Z	72

# Heavy-Duty Jobber Drills

**HIGH SPEED STEEL**  
Number / Black Oxide



**PACKAGING:**  
#1 thru #60 - 12 per pack

## Series 480

135° SPLIT POINT / STRAIGHT SHANK

NAS Type B. Web construction is heavier than general purpose construction making these drills suitable for more demanding applications. Designed for efficient drilling in stainless steel and tougher ferrous materials. The 135° split point reduces the thrust requirements and minimizes walking. Steam Oxide surface treatment for increased wear resistance & lubricity. Available in bulk packaging. See table below for quantities.



Sets on next page

480

Size	Flute Length	Overall Length	480 EDP No.
1	2-5/8"	3-7/8"	480A001
2	2-1/2"	3-7/8"	480A002
3	2-1/2"	3-3/4"	480A003
4	2-1/2"	3-3/4"	480A004
5	2-1/2"	3-3/4"	480A005
6	2-1/2"	3-3/4"	480A006
7	2-7/16"	3-5/8"	480A007
8	2-7/16"	3-5/8"	480A008
9	2-7/16"	3-5/8"	480A009
10	2-7/16"	3-5/8"	480A010
11	2-5/16"	3-1/2"	480A011
12	2-5/16"	3-1/2"	480A012
13	2-5/16"	3-1/2"	480A013
14	2-3/16"	3-3/8"	480A014
15	2-3/16"	3-3/8"	480A015
16	2-3/16"	3-3/8"	480A016
17	2-3/16"	3-3/8"	480A017
18	2-1/8"	3-1/4"	480A018
19	2-1/8"	3-1/4"	480A019
20	2-1/8"	3-1/4"	480A020
21	2-1/8"	3-1/4"	480A021
22	2"	3-1/8"	480A022
23	2"	3-1/8"	480A023
24	2"	3-1/8"	480A024

Size	Flute Length	Overall Length	480 EDP No.
25	1-7/8"	3"	480A025
26	1-7/8"	3"	480A026
27	1-7/8"	3"	480A027
28	1-3/4"	2-7/8"	480A028
29	1-3/4"	2-7/8"	480A029
30	1-5/8"	2-3/4"	480A030
31	1-5/8"	2-3/4"	480A031
32	1-5/8"	2-3/4"	480A032
33	1-1/2"	2-5/8"	480A033
34	1-1/2"	2-5/8"	480A034
35	1-1/2"	2-5/8"	480A035
36	1-7/16"	2-1/2"	480A036
37	1-7/16"	2-1/2"	480A037
38	1-7/16"	2-1/2"	480A038
39	1-3/8"	2-3/8"	480A039
40	1-3/8"	2-3/8"	480A040
41	1-3/8"	2-3/8"	480A041
42	1-1/4"	2-1/4"	480A042
43	1-1/4"	2-1/4"	480A043
44	1-1/8"	2-1/8"	480A044
45	1-1/8"	2-1/8"	480A045
46	1-1/8"	2-1/8"	480A046
47	1"	2"	480A047
48	1"	2"	480A048

Sizes	Bulk Quantity
1/16" - 1/8" & #60 - #30	504
9/64" - 13/64" & #29 - #6	252
7/32" - 5/16" & #5 - #1 & A - N	132
21/64" - 1/2" & O - Z	72

Continued on next page



**HIGH SPEED STEEL**  
Number / Black Oxide



**PACKAGING:**  
#1 thru #60 - 12 per pack

**Series 480** continued

135° SPLIT POINT / STRAIGHT SHANK

NAS Type B. Web construction is heavier than general purpose construction making these drills suitable for more demanding applications. Designed for efficient drilling in stainless steel and tougher ferrous materials. The 135° split point reduces the thrust requirements and minimizes walking. Steam Oxide surface treatment for increased wear resistance & lubricity. Available in bulk packaging. See table on previous page for quantities.

Size	Flute Length	Overall Length	480 EDP No.
49	1"	2"	480A049
50	1"	2"	480A050
51	1"	2"	480A051
52	7/8"	1-7/8"	480A052
53*	7/8"	1-7/8"	480A053
54*	7/8"	1-7/8"	480A054

Size	Flute Length	Overall Length	480 EDP No.
55*	7/8"	1-7/8"	480A055
56*	3/4"	1-3/4"	480A056
57*	3/4"	1-3/4"	480A057
58*	11/16"	1-5/8"	480A058
59*	11/16"	1-5/8"	480A059
60*	11/16"	1-5/8"	480A060

\* Not Split Point

No. of Pcs.	Description	EDP No.
<b>400/440/480 &amp; 400E Series Heavy-Duty Jobber Drill Sets</b>		
13	1/16" - 1/4" BY 64ths	400HD13
15	1/16" - 1/2" BY 32nds	400HD15
19	Maintenance Set - 1/16, 5/64, 3/32, 1/8, #29, #25, 5/32, #21, 3/16, #7, 7/32, 1/4, F, 5/16, U, 3/8, 27/64, 7/16, 1/2	400A19
21	1/16" - 3/8" BY 64ths	400HD21
21	1/16" - 1/4" BY 64ths & 9/32" - 1/2" BY 32nds	400HD21V
26	A - Z	400HD26
29	1/16" - 1/2" BY 64ths	400HD29
29	DRILL PAL 1/16" - 1/2" BY 64ths	400AW29
60	#1 - #60	400HD60
115	1/16" - 1/2" BY 64ths, #1 - 60, A - Z	400HD0115
13	1/16" - 1/4" BY 64ths	400HDE13
15	1/16" - 1/2" BY 32nds	400HDE15
21	1/16" - 3/8" BY 64ths	400HDE21
21	1/16" - 1/4" BY 64ths & 9/32" - 1/2" BY 32nds	400HDE21V
29	1/16" - 1/2" BY 64ths	400HDE29
29	DRILL PAL 1/16" - 1/2" BY 64ths	400EW29



400HD21



# Jobber Length Drills

**HIGH SPEED STEEL**  
Fractional / TiN

**PACKAGING:**  
1/16" thru 19/64" - 12 per pack  
5/16" thru 1/2" - 6 per pack

## Series 400T

135° SPLIT POINT / STRAIGHT SHANK

The TiN (Titanium Nitrite) coating provides a super hard surface with high lubricity. The tool life may be extended 500% or more in high wear or very abrasive drilling applications. The heavy duty construction makes it ideal for hard metals, work hardened stainless and other difficult to drill materials.



400T

Size	Flute Length	Overall Length	400T EDP No.
1/16"	7/8"	1-7/8"	400T104
5/64"	1"	2"	400T105
3/32"	1-1/4"	2-1/4"	400T106
7/64"	1-1/2"	2-5/8"	400T107
1/8"	1-5/8"	2-3/4"	400T108
9/64"	1-3/4"	2-7/8"	400T109
5/32"	2"	3-1/8"	400T110
11/64"	2-1/8"	3-1/4"	400T111
3/16"	2-5/16"	3-1/2"	400T112
13/64"	2-7/16"	3-5/8"	400T113
7/32"	2-1/2"	3-3/4"	400T114
15/64"	2-5/8"	3-7/8"	400T115
1/4"	2-3/4"	4"	400T116
17/64"	2-7/8"	4-1/8"	400T117
9/32"	2-15/16"	4-1/4"	400T118

Size	Flute Length	Overall Length	400T EDP No.
19/64"	3-1/16"	4-3/8"	400T119
5/16"	3-3/16"	4-1/2"	400T120
21/64"	3-5/16"	4-5/8"	400T121
11/32"	3-7/16"	4-3/4"	400T122
23/64"	3-1/2"	4-7/8"	400T123
3/8"	3-5/8"	5"	400T124
25/64"	3-3/4"	5-1/8"	400T125
13/32"	3-7/8"	5-1/4"	400T126
27/64"	3-15/16"	5-3/8"	400T127
7/16"	4-1/16"	5-1/2"	400T128
29/64"	4-3/16"	5-5/8"	400T129
15/32"	4-5/16"	5-3/4"	400T130
31/64"	4-3/8"	5-7/8"	400T131
1/2"	4-1/2"	6"	400T132



400T29

No. of Pcs.	Description	EDP No.
<b>400T Series Heavy-Duty Jobber Drill Sets</b>		
29	1/16" - 1/2" BY 64ths	400T29

## HIGH SPEED STEEL

Fractional & Number / Black & Gold

### PACKAGING:

1/16" thru 19/64" and #1 thru #60 - 12 per pack  
5/16" thru 1/2" - 6 per pack

### Series 400E

135° SPLIT POINT / STRAIGHT SHANK

The heavy construction affords efficient portable drilling in medium strength alloy materials. The split point reduces the thrust requirements and minimizes walking. This is a suitable drill for the construction industry.



400E

Sets on page #18

Size	Flute Length	Overall Length	400E EDP No.
1/16"	7/8"	1-7/8"	400E104
5/64"	1"	2"	400E105
3/32"	1-1/4"	2-1/4"	400E106
7/64"	1-1/2"	2-5/8"	400E107
1/8"	1-5/8"	2-3/4"	400E108
9/64"	1-3/4"	2-7/8"	400E109
5/32"	2"	3-1/8"	400E110
11/64"	2-1/8"	3-1/4"	400E111
3/16"	2-5/16"	3-1/2"	400E112
13/64"	2-7/16"	3-5/8"	400E113
7/32"	2-1/2"	3-3/4"	400E114
15/64"	2-5/8"	3-7/8"	400E115
1/4"	2-3/4"	4"	400E116
17/64"	2-7/8"	4-1/8"	400E117
9/32"	2-15/16"	4-1/4"	400E118

Size	Flute Length	Overall Length	400E EDP No.
19/64"	3-1/16"	4-3/8"	400E119
5/16"	3-3/16"	4-1/2"	400E120
21/64"	3-5/16"	4-5/8"	400E121
11/32"	3-7/16"	4-3/4"	400E122
23/64"	3-1/2"	4-7/8"	400E123
3/8"	3-5/8"	5"	400E124
25/64"	3-3/4"	5-1/8"	400E125
13/32"	3-7/8"	5-1/4"	400E126
27/64"	3-15/16"	5-3/8"	400E127
7/16"	4-1/16"	5-1/2"	400E128
29/64"	4-3/16"	5-5/8"	400E129
15/32"	4-5/16"	5-3/4"	400E130
31/64"	4-3/8"	5-7/8"	400E131
1/2"	4-1/2"	6"	400E132

### Series 480E

135° SPLIT POINT / STRAIGHT SHANK

The heavy construction affords efficient portable drilling in medium strength alloy materials. The split point reduces the thrust requirements and minimizes walking. This is a suitable drill for the construction industry.



480E

Size	Flute Length	Overall Length	480E EDP No.
1	2-5/8"	3-7/8"	480E001
2	2-1/2"	3-7/8"	480E002

Size	Flute Length	Overall Length	480E EDP No.
3	2-1/2"	3-3/4"	480E003
4	2-1/2"	3-3/4"	480E004

# Heavy-Duty Jobber Drills

**HIGH SPEED STEEL**  
Numbers / Black & Gold

**PACKAGING:**  
#1 thru #60 - 12 per pack

**Series 480E** continued

135° SPLIT POINT / STRAIGHT SHANK

The heavy construction affords efficient portable drilling in medium strength alloy materials. The split point reduces the thrust requirements and minimizes walking. This is a suitable drill for the construction industry.

Sets on page #18

Size	Flute Length	Overall Length	480E EDP No.
5	2-1/2"	3-3/4"	480E005
6	2-1/2"	3-3/4"	480E006
7	2-7/16"	3-5/8"	480E007
8	2-7/16"	3-5/8"	480E008
9	2-7/16"	3-5/8"	480E009
10	2-7/16"	3-5/8"	480E010
11	2-5/16"	3-1/2"	480E011
12	2-5/16"	3-1/2"	480E012
13	2-5/16"	3-1/2"	480E013
14	2-3/16"	3-3/8"	480E014
15	2-3/16"	3-3/8"	480E015
16	2-3/16"	3-3/8"	480E016
17	2-3/16"	3-3/8"	480E017
18	2-1/8"	3-1/4"	480E018
19	2-1/8"	3-1/4"	480E019
20	2-1/8"	3-1/4"	480E020
21	2-1/8"	3-1/4"	480E021
22	2"	3-1/8"	480E022
23	2"	3-1/8"	480E023
24	2"	3-1/8"	480E024
25	1-7/8"	3"	480E025
26	1-7/8"	3"	480E026
27	1-7/8"	3"	480E027
28	1-3/4"	2-7/8"	480E028
29	1-3/4"	2-7/8"	480E029
30	1-5/8"	2-3/4"	480E030
31	1-5/8"	2-3/4"	480E031
32	1-5/8"	2-3/4"	480E032

Size	Flute Length	Overall Length	480E EDP No.
33	1-1/2"	2-5/8"	480E033
34	1-1/2"	2-5/8"	480E034
35	1-1/2"	2-5/8"	480E035
36	1-7/16"	2-1/2"	480E036
37	1-7/16"	2-1/2"	480E037
38	1-7/16"	2-1/2"	480E038
39	1-3/8"	2-3/8"	480E039
40	1-3/8"	2-3/8"	480E040
41	1-3/8"	2-3/8"	480E041
42	1-1/4"	2-1/4"	480E042
43	1-1/4"	2-1/4"	480E043
44	1-1/8"	2-1/8"	480E044
45	1-1/8"	2-1/8"	480E045
46	1-1/8"	2-1/8"	480E046
47	1"	2"	480E047
48	1"	2"	480E048
49	1"	2"	480E049
50	1"	2"	480E050
51	1"	2"	480E051
52	7/8"	1-7/8"	480E052
53*	7/8"	1-7/8"	480E053
54*	7/8"	1-7/8"	480E054
55*	7/8"	1-7/8"	480E055
56*	3/4"	1-3/4"	480E056
57*	3/4"	1-3/4"	480E057
58*	11/16"	1-5/8"	480E058
59*	11/16"	1-5/8"	480E059
60*	11/16"	1-5/8"	480E060

\* Not Split Point

# Heavy-Duty Jobber Drills

**HIGH SPEED STEEL**  
Metric / Black & Gold

**PACKAGING:** 0.35 mm thru 6.60 mm - 12 pack  
6.70 mm thru 12.50 mm - 6 pack  
13.0 mm - packaged individually

**Series 800**

135° SPLIT POINT / STRAIGHT SHANK

Web construction is heavier than general purpose construction making these drills suitable for more demanding applications. Designed for efficient drilling in stainless steel and tougher ferrous materials. The 135° split point reduces the thrust requirements and minimizes walking. Black & Gold surface treatment for increased wear resistance & lubricity.



800

Sets on page #24

Size (mm)	Flute Length (mm)	Overall Length (mm)	800 EDP No.
.35	3	19	800A0035
.40	5	19	800A0040
.45	5	22	800A0045
.50	5	22	800A0050
.55	6	25	800A0055
.60	8	29	800A0060
.65	10	32	800A0065
.70	10	32	800A0070
.75	13	35	800A0075
.80	13	35	800A0080
.85	16	38	800A0085
.90	16	38	800A0090
.95	16	38	800A0095
1.00	17	41	800A0100
1.05	17	41	800A0105
1.10	19	44	800A0110
1.15	19	44	800A0115
1.20	22	48	800A0120
1.25	22	48	800A0125
1.30	22	48	800A0130
1.35	22	49	800A0135
1.40	22	48	800A0140
1.45	22	48	800A0145
1.50	22	48	800A0150
1.55	22	48	800A0155

Size (mm)	Flute Length (mm)	Overall Length (mm)	800 EDP No.
1.60	22	48	800A0160
1.65	25	51	800A0165
1.70	25	51	800A0170
1.75	25	51	800A0175
1.80	25	51	800A0180
1.85	25	51	800A0185
1.90	25	51	800A0190
1.95	25	51	800A0195
2.00	25	51	800A0200
2.05	29	54	800A0205
2.10	29	54	800A0210
2.15	29	54	800A0215
2.20	32	57	800A0220
2.25	32	57	800A0225
2.30	32	57	800A0230
2.35	32	57	800A0235
2.40	35	60	800A0240
2.45	35	60	800A0245
2.50	35	60	800A0250
2.60	37	64	800A0260
2.70	37	64	800A0270
2.75	37	64	800A0275
2.80	38	67	800A0280
2.90	41	70	800A0290
3.00	41	70	800A0300

Continued on next page

# Heavy-Duty Jobber Drills

**HIGH SPEED STEEL**  
Metric / Black & Gold

**PACKAGING:** 0.35 mm thru 6.60 mm - 12 pack  
6.70 mm thru 12.50 mm - 6 pack  
13.0 mm - packaged individually

**Series 800** continued

135° SPLIT POINT / STRAIGHT SHANK

Web construction is heavier than general purpose construction making these drills suitable for more demanding applications. Designed for efficient drilling in stainless steel and tougher ferrous materials. The 135° split point reduces the thrust requirements and minimizes walking. Black & Gold surface treatment for increased wear resistance & lubricity.

Sets on next page

Size (mm)	Flute Length (mm)	Overall Length (mm)	800 EDP No.
3.10	41	70	800A0310
3.20	41	70	800A0320
3.25	41	70	800A0325
3.30	44	73	800A0330
3.40	44	73	800A0340
3.50	44	73	800A0350
3.60	48	76	800A0360
3.70	48	76	800A0370
3.75	48	76	800A0375
3.80	48	76	800A0380
3.90	51	79	800A0390
4.00	54	83	800A0400
4.10	54	83	800A0410
4.20	54	83	800A0420
4.25	54	83	800A0425
4.30	54	83	800A0430
4.40	56	86	800A0440
4.50	56	86	800A0450
4.60	56	86	800A0460
4.70	59	89	800A0470
4.75	59	89	800A0475
4.80	59	89	800A0480
4.90	62	92	800A0490
5.00	62	92	800A0500
5.10	62	92	800A0510
5.20	64	95	800A0520
5.25	64	95	800A0525
5.30	64	95	800A0530
5.40	64	95	800A0540
5.50	64	95	800A0550

Size (mm)	Flute Length (mm)	Overall Length (mm)	800 EDP No.
5.60	67	98	800A0560
5.70	67	98	800A0570
5.75	67	98	800A0575
5.80	67	98	800A0580
5.90	67	98	800A0590
6.00	70	102	800A0600
6.10	70	102	800A0610
6.20	70	102	800A0620
6.25	70	102	800A0625
6.30	70	102	800A0630
6.40	73	105	800A0640
6.50	73	105	800A0650
6.60	73	105	800A0660
6.70	73	105	800A0670
6.75	73	105	800A0675
6.80	73	105	800A0680
6.90	73	105	800A0690
7.00	73	105	800A0700
7.10	75	108	800A0710
7.20	75	108	800A0720
7.25	75	108	800A0725
7.30	75	108	800A0730
7.40	78	111	800A0740
7.50	78	111	800A0750
7.60	78	111	800A0760
7.70	81	114	800A0770
7.75	81	114	800A0775
7.80	81	114	800A0780
7.90	81	114	800A0790
8.00	81	114	800A0800

Continued on next page

Drills



# Heavy-Duty Jobber Drills

**HIGH SPEED STEEL**  
Metric / Black & Gold

**PACKAGING:** 0.35 mm thru 6.60 mm - 12 pack  
6.70 mm thru 12.50 mm - 6 pack  
13.0 mm - packaged individually

**Series 800** continued

135° SPLIT POINT / STRAIGHT SHANK

Web construction is heavier than general purpose construction making these drills suitable for more demanding applications. Designed for efficient drilling in stainless steel and tougher ferrous materials. The 135° split point reduces the thrust requirements and minimizes walking. Black & Gold surface treatment for increased wear resistance & lubricity.

Size (mm)	Flute Length (mm)	Overall Length (mm)	800 EDP No.
8.10	84	117	800A0810
8.20	84	117	800A0820
8.25	84	117	800A0825
8.30	84	117	800A0830
8.40	87	121	800A0840
8.50	87	121	800A0850
8.60	87	121	800A0860
8.70	87	121	800A0870
8.75	87	121	800A0875
8.80	89	124	800A0880
8.90	89	124	800A0890
9.00	89	124	800A0900
9.10	89	124	800A0910
9.20	92	127	800A0920
9.25	92	127	800A0925

Size (mm)	Flute Length (mm)	Overall Length (mm)	800 EDP No.
9.30	92	127	800A0930
9.40	92	127	800A0940
9.50	92	127	800A0950
9.60	95	130	800A0960
9.70	95	130	800A0970
9.75	95	130	800A0975
9.80	95	130	800A0980
9.90	95	130	800A0990
10.00	95	130	800A1000
10.50	98	133	800A1050
11.00	103	140	800A1100
11.50	106	143	800A1150
12.00	111	149	800A1200
12.50	114	152	800A1250
13.00	114	152	800A1300



800A13

No. of Pcs.	Description	EDP No.
<b>800 Series Metric Jobber Drill Sets</b>		
13	1mm - 7mm BY 0.5mm	800A13
19	1mm - 10mm BY 0.5mm	800A19
25	1mm - 13mm BY 0.5mm	800A25

# Cobalt Jobber Drills

## COBALT

Fractional & Letter / Bronze



### PACKAGING:

3/64" thru 19/64" and "A" thru "L" - 12 per pack  
5/16" thru 1/2" and "M" thru "Z" - 6 per pack

### Series 500

135° SPLIT POINT / STRAIGHT SHANK

Heavy duty construction made to NAS Type J aircraft specifications. Used for drilling holes in hard, tough materials such as stainless steel, titanium high temperature and high strength alloys. High red hardness of cobalt permits speeds 30% greater than HSS drills. Available in bulk packaging. See table on next page for quantities.



500

Sets on next page

Size	Flute Length	Overall Length	500 EDP No.
3/64"	3/4"	1-3/4"	500A103
1/16"	7/8"	1-7/8"	500A104
5/64"	1"	2"	500A105
3/32"	1-1/4"	2-1/4"	500A106
7/64"	1-1/2"	2-5/8"	500A107
1/8"	1-5/8"	2-3/4"	500A108
9/64"	1-3/4"	2-7/8"	500A109
5/32"	2"	3-1/8"	500A110
11/64"	2-1/8"	3-1/4"	500A111
3/16"	2-5/16"	3-1/2"	500A112
13/64"	2-7/16"	3-5/8"	500A113
7/32"	2-1/2"	3-3/4"	500A114
15/64"	2-5/8"	3-7/8"	500A115
1/4"	2-3/4"	4"	500A116
17/64"	2-7/8"	4-1/8"	500A117

Size	Flute Length	Overall Length	500 EDP No.
9/32"	2-15/16"	4-1/4"	500A118
19/64"	3-1/16"	4-3/8"	500A119
5/16"	3-3/16"	4-1/2"	500A120
21/64"	3-5/16"	4-5/8"	500A121
11/32"	3-7/16"	4-3/4"	500A122
23/64"	3-1/2"	4-7/8"	500A123
3/8"	3-5/8"	5"	500A124
25/64"	3-3/4"	5-1/8"	500A125
13/32"	3-7/8"	5-1/4"	500A126
27/64"	3-15/16"	5-3/8"	500A127
7/16"	4-1/16"	5-1/2"	500A128
29/64"	4-3/16"	5-5/8"	500A129
15/32"	4-5/16"	5-3/4"	500A130
31/64"	4-3/8"	5-7/8"	500A131
1/2"	4-1/2"	6"	500A132

### Series 540

135° SPLIT POINT / STRAIGHT SHANK

Heavy duty construction made to NAS Type J aircraft specifications. Used for drilling holes in hard, tough materials such as stainless steel, titanium high temperature and high strength alloys. High red hardness of cobalt permits speeds 30% greater than HSS drills. Available in bulk packaging. See table on next page for quantities.



540

Sets on next page

Size	Flute Length	Overall Length	540 EDP No.
A	2-5/8"	3-7/8"	540A501
B	2-3/4"	4"	540A502
C	2-3/4"	4"	540A503

Size	Flute Length	Overall Length	540 EDP No.
D	2-3/4"	4"	540A504
E	2-3/4"	4"	540A505
F	2-7/8"	4-1/8"	540A506

Continued on next page

**COBALT**  
Letter / Bronze



**PACKAGING:**  
"A" thru "L" - 12 per pack  
"M" thru "Z" - 6 per pack

**Series 540** continued

135° SPLIT POINT / STRAIGHT SHANK

Heavy duty construction made to NAS Type J aircraft specifications. Used for drilling holes in hard, tough materials such as stainless steel, titanium high temperature and high strength alloys. High red hardness of cobalt permits speeds 30% greater than HSS drills. Available in bulk packaging. See quantities in table below.

Size	Flute Length	Overall Length	540 EDP No.
G	2-7/8"	4-1/8"	540A507
H	2-7/8"	4-1/8"	540A508
I	2-7/8"	4-1/8"	540A509
J	2-7/8"	4-1/8"	540A510
K	2-15/16"	4-1/4"	540A511
L	2-15/16"	4-1/4"	540A512
M	3-1/16"	4-3/8"	540A513
N	3-1/16"	4-3/8"	540A514
O	3-3/16"	4-1/2"	540A515
P	3-5/16"	4-5/8"	540A516

Size	Flute Length	Overall Length	540 EDP No.
Q	3-7/16"	4-3/4"	540A517
R	3-7/16"	4-3/4"	540A518
S	3-1/2"	4-7/8"	540A519
T	3-1/2"	4-7/8"	540A520
U	3-5/8"	5"	540A521
V	3-5/8"	5"	540A522
W	3-3/4"	5-1/8"	540A523
X	3-3/4"	5-1/8"	540A524
Y	3-7/8"	5-1/4"	540A525
Z	3-7/8"	5-1/4"	540A526

Sizes	Bulk Quantity
1/16" - 1/8" & #60 - #30	504
9/64" - 13/64" & #29 - #6	252
7/32" - 5/16" & #5 - #1 & A - N	132
21/64" - 1/2" & O - Z	72

No. of Pcs.	Description	EDP No.
<b>500/540/580 &amp; 500E/580E Series Cobalt Heavy-Duty Jobber Drill Sets</b>		
13	1/16" - 1/4" BY 64ths	500A13
15	1/16" - 1/2" BY 32nds	500A15
21	1/16" - 3/8" BY 64ths	500A21
21	1/16" - 1/4" BY 64ths & 9/32" - 1/2" BY 32nds	500A21V
26	A - Z	500A26
29	1/16" - 1/2" BY 64ths	500A29
29	DRILL PAL 1/16" - 1/2" BY 64ths	500AW29
60	#1 - #60	500A60
115	1/16" - 1/2" BY 64ths, #1 - 60, A - Z	500A0115



500A29

# Cobalt Jobber Drills



**COBALT**  
Number / Bronze



**PACKAGING:**  
#1 thru #60 - 12 per pack

## Series 580

135° SPLIT POINT / STRAIGHT SHANK

Heavy duty construction made to NAS Type J aircraft specifications. Used for drilling holes in hard, tough materials such as stainless steel, titanium high temperature and high strength alloys. High red hardness of cobalt permits speeds 30% greater than HSS drills. Available in bulk packaging. See table on previous page for quantities.



Sets on previous page

580

Size	Flute Length	Overall Length	580 EDP No.
1	2-5/8"	3-7/8"	580A001
2	2-1/2"	3-7/8"	580A002
3	2-1/2"	3-3/4"	580A003
4	2-1/2"	3-3/4"	580A004
5	2-1/2"	3-3/4"	580A005
6	2-1/2"	3-3/4"	580A006
7	2-7/16"	3-5/8"	580A007
8	2-7/16"	3-5/8"	580A008
9	2-7/16"	3-5/8"	580A009
10	2-7/16"	3-5/8"	580A010
11	2-5/16"	3-1/2"	580A011
12	2-5/16"	3-1/2"	580A012
13	2-5/16"	3-1/2"	580A013
14	2-3/16"	3-3/8"	580A014
15	2-3/16"	3-3/8"	580A015
16	2-3/16"	3-3/8"	580A016
17	2-3/16"	3-3/8"	580A017
18	2-1/8"	3-1/4"	580A018
19	2-1/8"	3-1/4"	580A019
20	2-1/8"	3-1/4"	580A020
21	2-1/8"	3-1/4"	580A021
22	2"	3-1/8"	580A022
23	2"	3-1/8"	580A023
24	2"	3-1/8"	580A024
25	1-7/8"	3"	580A025
26	1-7/8"	3"	580A026
27	1-7/8"	3"	580A027
28	1-3/4"	2-7/8"	580A028
29	1-3/4"	2-7/8"	580A029
30	1-5/8"	2-3/4"	580A030

Size	Flute Length	Overall Length	580 EDP No.
31	1-5/8"	2-3/4"	580A031
32	1-5/8"	2-3/4"	580A032
33	1-1/2"	2-5/8"	580A033
34	1-1/2"	2-5/8"	580A034
35	1-1/2"	2-5/8"	580A035
36	1-7/16"	2-1/2"	580A036
37	1-7/16"	2-1/2"	580A037
38	1-7/16"	2-1/2"	580A038
39	1-3/8"	2-3/8"	580A039
40	1-3/8"	2-3/8"	580A040
41	1-3/8"	2-3/8"	580A041
42	1-1/4"	2-1/4"	580A042
43	1-1/4"	2-1/4"	580A043
44	1-1/8"	2-1/8"	580A044
45	1-1/8"	2-1/8"	580A045
46	1-1/8"	2-1/8"	580A046
47	1"	2"	580A047
48	1"	2"	580A048
49	1"	2"	580A049
50	1"	2"	580A050
51	1"	2"	580A051
52	7/8"	1-7/8"	580A052
53*	7/8"	1-7/8"	580A053
54*	7/8"	1-7/8"	580A054
55*	7/8"	1-7/8"	580A055
56*	3/4"	1-3/4"	580A056
57*	3/4"	1-3/4"	580A057
58*	11/16"	1-5/8"	580A058
59*	11/16"	1-5/8"	580A059
60*	11/16"	1-5/8"	580A060

\* Not Split Point



## COBALT Fractional / Bronze

**PACKAGING:**  
1/16" thru 19/64" - 12 per pack.  
5/16" thru 1/2" - 6 per pack.

### Series 500E

135° SPLIT POINT / STRAIGHT SHANK

Heavy duty construction made to NAS Type J aircraft specifications. Used for drilling holes in hard, tough materials such as stainless steel, titanium high temperature and high strength alloys. High red hardness of cobalt permits speeds 30% greater than HSS drills.

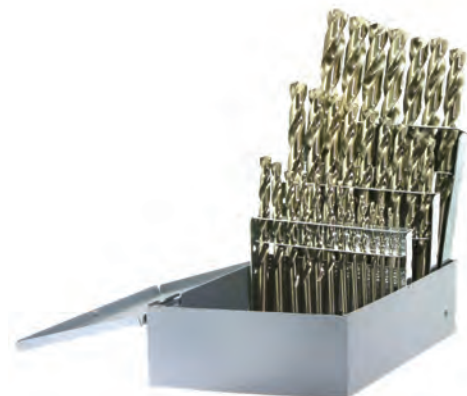


500E

Size	Flute Length	Overall Length	500E EDP No.
1/16"	7/8"	1-7/8"	500E104
5/64"	1"	2"	500E105
3/32"	1-1/4"	2-1/4"	500E106
7/64"	1-1/2"	2-5/8"	500E107
1/8"	1-5/8"	2-3/4"	500E108
9/64"	1-3/4"	2-7/8"	500E109
5/32"	2"	3-1/8"	500E110
11/64"	2-1/8"	3-1/4"	500E111
3/16"	2-5/16"	3-1/2"	500E112
13/64"	2-7/16"	3-5/8"	500E113
7/32"	2-1/2"	3-3/4"	500E114
15/64"	2-5/8"	3-7/8"	500E115
1/4"	2-3/4"	4"	500E116
17/64"	2-7/8"	4-1/8"	500E117
9/32"	2-15/16"	4-1/4"	500E118

Size	Flute Length	Overall Length	500E EDP No.
19/64"	3-1/16"	4-3/8"	500E119
5/16"	3-3/16"	4-1/2"	500E120
21/64"	3-5/16"	4-5/8"	500E121
11/32"	3-7/16"	4-3/4"	500E122
23/64"	3-1/2"	4-7/8"	500E123
3/8"	3-5/8"	5"	500E124
25/64"	3-3/4"	5-1/8"	500E125
13/32"	3-7/8"	5-1/4"	500E126
27/64"	3-15/16"	5-3/8"	500E127
7/16"	4-1/16"	5-1/2"	500E128
29/64"	4-3/16"	5-5/8"	500E129
15/32"	4-5/16"	5-3/4"	500E130
31/64"	4-3/8"	5-7/8"	500E131
1/2"	4-1/2"	6"	500E132

No. of Pcs.	Description	EDP No.
<b>500E/580E Series Cobalt Heavy-Duty Jobber Drill Sets</b>		
13	1/16" - 1/4" BY 64ths	500E13
15	1/16" - 1/2" BY 32nds	500E15
21	1/16" - 3/8" BY 64ths	500E21
21	1/16" - 1/4" BY 64ths & 9/32" - 1/2" BY 32nds	500E21V
29	1/16" - 1/2" BY 64ths	500E29
60	#1 - #60	500E60



500E29



# Cobalt Jobber Drills

**COBALT**  
Number / Bronze

**PACKAGING:**  
#1 thru #60 - 12 per pack

## Series 580E

135° SPLIT POINT / STRAIGHT SHANK

Heavy duty construction made to NAS Type J aircraft specifications. Used for drilling holes in hard, tough materials such as stainless steel, titanium high temperature and high strength alloys. High red hardness of cobalt permits speeds 30% greater than HSS drills.



580E

Sets on previous page

Size	Flute Length	Overall Length	580E EDP No.
1	2-5/8"	3-7/8"	580E001
2	2-1/2"	3-7/8"	580E002
3	2-1/2"	3-3/4"	580E003
4	2-1/2"	3-3/4"	580E004
5	2-1/2"	3-3/4"	580E005
6	2-1/2"	3-3/4"	580E006
7	2-7/16"	3-5/8"	580E007
8	2-7/16"	3-5/8"	580E008
9	2-7/16"	3-5/8"	580E009
10	2-7/16"	3-5/8"	580E010
11	2-5/16"	3-1/2"	580E011
12	2-5/16"	3-1/2"	580E012
13	2-5/16"	3-1/2"	580E013
14	2-3/16"	3-3/8"	580E014
15	2-3/16"	3-3/8"	580E015
16	2-3/16"	3-1/4"	580E016
17	2-3/16"	3-1/4"	580E017
18	2-1/8"	3-1/4"	580E018
19	2-1/8"	3-1/4"	580E019
20	2-1/8"	3-1/4"	580E020
21	2-1/8"	3-1/4"	580E021
22	2"	3-1/8"	580E022
23	2"	3-1/8"	580E023
24	2"	3-1/8"	580E024
25	1-7/8"	3"	580E025
26	1-7/8"	3"	580E026
27	1-7/8"	3"	580E027
28	1-3/4"	2-7/8"	580E028
29	1-3/4"	2-7/8"	580E029
30	1-5/8"	2-3/4"	580E030

Size	Flute Length	Overall Length	580E EDP No.
31	1-5/8"	2-3/4"	580E031
32	1-5/8"	2-3/4"	580E032
33	1-1/2"	2-5/8"	580E033
34	1-1/2"	2-5/8"	580E034
35	1-1/2"	2-5/8"	580E035
36	1-7/16"	2-1/2"	580E036
37	1-7/16"	2-1/2"	580E037
38	1-7/16"	2-1/2"	580E038
39	1-3/8"	2-3/8"	580E039
40	1-3/8"	2-3/8"	580E040
41	1-3/8"	2-3/8"	580E041
42	1-1/4"	2-1/4"	580E042
43	1-1/4"	2-1/4"	580E043
44	1-1/8"	2-1/8"	580E044
45	1-1/8"	2-1/8"	580E045
46	1-1/8"	2-1/8"	580E046
47	1"	2"	580E047
48	1"	2"	580E048
49	1"	2"	580E049
50	1"	2"	580E050
51	1"	2"	580E051
52	7/8"	1-7/8"	580E052
53*	7/8"	1-7/8"	580E053
54*	7/8"	1-7/8"	580E054
55*	7/8"	1-7/8"	580E055
56*	3/4"	1-3/4"	580E056
57*	3/4"	1-3/4"	580E057
58*	11/16"	1-5/8"	580E058
59*	11/16"	1-5/8"	580E059
60*	11/16"	1-5/8"	580E060

\* Not Split Point

Drills

**CARBIDE TIP**  
Fractional / Bright



**PACKAGING:**  
All sizes are individually packaged.

## Series 600

118° POINT / STRAIGHT SHANK

Carbide Tipped jobbers length drills are primarily for drilling cast iron, cast steel, bronze, hard copper, aluminium and hard non-ferrous materials which have a high degree of abrasiveness and which requires a sturdy drill for strength.



600

Size	Flute Length	Overall Length	600 EDP No.
7/64"	1-1/2"	2-5/8"	600A107
1/8"	1-5/8"	2-3/4"	600A108
9/64"	1-3/4"	2-7/8"	600A109
5/32"	2"	3-1/8"	600A110
11/64"	2-1/8"	3-1/4"	600A111
3/16"	2-5/16"	3-1/2"	600A112
13/64"	2-7/16"	3-5/8"	600A113
7/32"	2-1/2"	3-3/4"	600A114
15/64"	2-5/8"	3-7/8"	600A115
1/4"	2-3/4"	4"	600A116
17/64"	2-7/8"	4-1/8"	600A117
9/32"	2-15/16"	4-1/4"	600A118
19/64"	3-1/16"	4-3/8"	600A119
5/16"	3-3/16"	4-1/2"	600A120
21/64"	3-5/16"	4-5/8"	600A121
11/32"	3-7/16"	4-3/4"	600A122
23/64"	3-1/2"	4-7/8"	600A123
3/8"	3-5/8"	5"	600A124
25/64"	3-3/4"	5-1/8"	600A125

Size	Flute Length	Overall Length	600 EDP No.
13/32"	3-7/8"	5-1/4"	600A126
27/64"	3-15/16"	5-3/8"	600A127
7/16"	4-1/16"	5-1/2"	600A128
29/64"	4-3/16"	5-5/8"	600A129
15/32"	4-5/16"	5-3/4"	600A130
31/64"	4-3/8"	5-7/8"	600A131
1/2"	4-1/2"	6"	600A132
33/64"	4-13/16"	6-5/8"	600A133
17/32"	4-13/16"	6-5/8"	600A134
35/64"	4-13/16"	6-5/8"	600A135
9/16"	4-13/16"	6-5/8"	600A136
37/64"	4-13/16"	6-5/8"	600A137
19/32"	5-3/16"	7-1/8"	600A138
39/64"	5-3/16"	7-1/8"	600A139
5/8"	5-3/16"	7-1/8"	600A140
41/64"	5-3/16"	7-1/8"	600A141
21/32"	5-3/16"	7-1/8"	600A142
43/64"	5-5/8"	7-5/8"	600A143
11/16"	5-5/8"	7-5/8"	600A144

# Jobber Drills

**CARBIDE TIP**  
Number / Bright



**PACKAGING:**  
All sizes are individually packaged.

## Series 680

118° POINT / STRAIGHT SHANK

Carbide Tipped jobbers length drills are primarily for drilling cast iron, cast steel, bronze, hard copper, aluminium and hard non-ferrous materials which have a high degree of abrasiveness and which requires a sturdy drill for strength.



680

Size	Flute Length	Overall Length	680 EDP No.
1	2-5/8"	3-7/8"	680A001
2	2-5/8"	3-7/8"	680A002
3	2-1/2"	3-3/4"	680A003
4	2-1/2"	3-3/4"	680A004
5	2-1/2"	3-3/4"	680A005
6	2-1/2"	3-3/4"	680A006
7	2-7/16"	3-5/8"	680A007
8	2-7/16"	3-5/8"	680A008
9	2-7/16"	3-5/8"	680A009
10	2-7/16"	3-5/8"	680A010
11	2-5/16"	3-1/2"	680A011
12	2-5/16"	3-1/2"	680A012
13	2-5/16"	3-1/2"	680A013
14	2-3/16"	3-3/8"	680A014
15	2-3/16"	3-3/8"	680A015
16	2-3/16"	3-3/8"	680A016

Size	Flute Length	Overall Length	680 EDP No.
17	2-3/16"	3-3/8"	680A017
18	2-1/8"	3-1/4"	680A018
19	2-1/8"	3-1/4"	680A019
20	2-1/8"	3-1/4"	680A020
21	2-1/8"	3-1/4"	680A021
22	2"	3-1/8"	680A022
23	2"	3-1/8"	680A023
24	2"	3-1/8"	680A024
25	1-7/8"	3"	680A025
26	1-7/8"	3"	680A026
27	1-7/8"	3"	680A027
28	1-3/4"	2-7/8"	680A028
29	1-3/4"	2-7/8"	680A029
30	1-5/8"	2-3/4"	680A030
31	1-5/8"	2-3/4"	680A031
32	1-5/8"	2-3/4"	680A032

**HIGH SPEED STEEL**  
Fractional / Black & Gold



**PACKAGING:**  
1/16" thru 19/64" - 12 per pack.  
5/16" thru 1/2" - 6 per pack.

## Series 350N

135° SPLIT POINT / 3-FLATS

Nitro® drills offer superior performance over conventional HSS drills. Their Nitride treated, heavy-duty construction increases tool life and performance. 135° Split Point reduces walking at the drill point and makes these drills ideal for both hand held and CNC Operations. Black & Gold surface treatment for maximum lubricity. Usable in a wide range of materials including difficult to machine materials such as stainless steel. Mechanic's length drill lengths are in-between jobber length and screw machine (stub) length. 3-flat shank helps to reduce slippage in the drill chuck. Available in bulk packaging. See table below for quantities.



350N

Size	Flute Length	Overall Length	350N EDP No.
1/16"	7/8"	1-7/8"	350N104
5/64"	1"	2"	350N105
3/32"	1-1/4"	2-1/4"	350N106
7/64"	1-5/16"	2-3/8"	350N107
1/8"	1-7/16"	2-1/2"	350N108
9/64"	1-9/16"	2-5/8"	350N109
5/32"	1-11/16"	2-3/4"	350N110
11/64"	1-13/16"	2-7/8"	350N111
3/16"	1-7/8"	3"	350N112
13/64"	1-15/16"	3-1/8"	350N113
7/32"	2"	3-1/4"	350N114
15/64"	2-1/16"	3-3/8"	350N115
1/4"	2-3/32"	3-1/2"	350N116
17/64"	2-1/8"	3-5/8"	350N117

Size	Flute Length	Overall Length	350N EDP No.
9/32"	2-1/4"	3-3/4"	350N118
19/64"	2-3/8"	3-7/8"	350N119
5/16"	2-1/2"	4"	350N120
21/64"	2-9/16"	4-1/16"	350N121
11/32"	2-5/8"	4-1/8"	350N122
23/64"	2-11/16"	4-3/16"	350N123
3/8"	2-11/16"	4-1/4"	350N124
25/64"	2-3/4"	4-5/16"	350N125
13/32"	2-13/16"	4-3/8"	350N126
27/64"	2-7/8"	4-7/16"	350N127
7/16"	2-15/16"	4-1/2"	350N128
29/64"	3"	4-5/8"	350N129
15/32"	3-1/8"	4-3/4"	350N130
31/64"	3-1/4"	4-7/8"	350N131
1/2"	3-3/8"	5"	350N132

No flats on sizes smaller than 3/16"

Sizes	Bulk Quantity
1/16" - 1/8"	504
9/64" - 13/64"	252
7/32" - 5/16"	132
21/64" - 1/2"	72



350N21

No. of Pcs.	Description	EDP No.
<b>350N Series Nitro® Mechanics Length Drill Sets</b>		
13	1/16" - 1/4" BY 64ths	350N13
15	1/16" - 1/2" BY 32nds	350N15
21	1/16" - 3/8" BY 64ths	350N21
21	1/16" - 1/4" BY 64ths & 9/32" - 1/2" BY 32nds	350N21V
29	1/16" - 1/2" BY 64ths	350N29
29	DRILL PAL 1/16" - 1/2" BY 64ths	350NW29

# NITRO Screw Machine Length Drills



**HIGH SPEED STEEL**  
Fractional / Black & Gold



**PACKAGING:**  
1/16" thru 19/64" - 12 per pack.  
5/16" thru 1/2" - 6 per pack.

## Series 300N

135° SPLIT POINT / STRAIGHT SHANK

Nitro® drills (NAS Type C) offer superior performance over conventional HSS drills. Their Nitride treated, heavy-duty construction increases tool life and performance. 135° Split Point reduces walking at the drill point and makes these drills ideal for both hand held and CNC Operations. Black & Gold surface treatment for maximum lubricity. Usable in a wide range of materials including difficult to machine materials such as stainless steel.



300N

Size	Flute Length	Overall Length	300N EDP No.
1/16"	5/8"	1-5/8"	300N104
5/64"	11/16"	1-11/16"	300N105
3/32"	3/4"	1-3/4"	300N106
7/64"	13/16"	1-13/16"	300N107
1/8"	7/8"	1-7/8"	300N108
9/64"	15/16"	1-15/16"	300N109
5/32"	1"	2-1/16"	300N110
11/64"	1-1/16"	2-1/8"	300N111
3/16"	1-1/8"	2-3/16"	300N112
13/64"	1-3/16"	2-1/4"	300N113
7/32"	1-1/4"	2-3/8"	300N114
15/64"	1-5/16"	2-7/16"	300N115
1/4"	1-3/8"	2-1/2"	300N116
17/64"	1-7/16"	2-5/8"	300N117
9/32"	1-1/2"	2-11/16"	300N118

Size	Flute Length	Overall Length	300N EDP No.
19/64"	1-9/16"	2-3/4"	300N119
5/16"	1-5/8"	2-13/16"	300N120
21/64"	1-11/16"	2-15/16"	300N121
11/32"	1-11/16"	3"	300N122
23/64"	1-3/4"	3-1/16"	300N123
3/8"	1-13/16"	3-1/8"	300N124
25/64"	1-7/8"	3-1/4"	300N125
13/32"	1-15/16"	3-5/16"	300N126
27/64"	2"	3-3/8"	300N127
7/16"	2-1/16"	3-7/16"	300N128
29/64"	2-1/8"	3-9/16"	300N129
15/32"	2-1/8"	3-5/8"	300N130
31/64"	2-3/16"	3-11/16"	300N131
1/2"	2-1/4"	3-3/4"	300N132



300N29

No. of Pcs.	Description	EDP No.
<b>300N Series Screw Machine (Stub) Length Heavy-Duty Drill Sets</b>		
29	1/16" - 1/2" BY 64ths	300N29





# Screw Machine Length Drills

**HIGH SPEED STEEL**  
Fractional / Black Oxide



**PACKAGING:**  
1/16" thru 19/64" - 12 per pack.  
5/16" thru 1/2" - 6 per pack.

## Series 300

135° SPLIT POINT / STRAIGHT SHANK

NAS Type C. Screw Machine Drills are designed for use in machines and portable drilling in hard sheet metal alloys such as stainless and titanium. Because of their heavy-duty construction, and ease of penetration stemming from the split point with which they are furnished, wide applications have been found in machine and portable drilling. Available in bulk packaging. See table below for quantities.



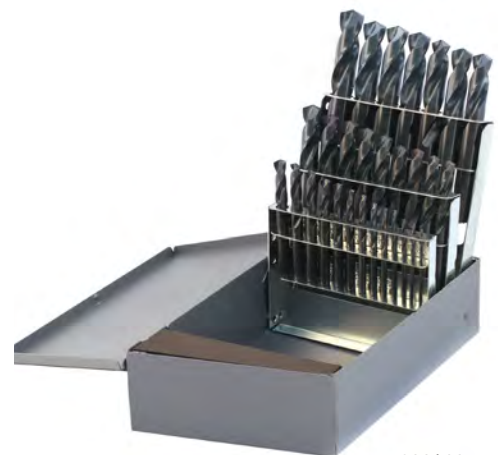
300

Size	Flute Length	Overall Length	300 EDP No.
1/16"	5/8"	1-5/8"	300A104
5/64"	11/16"	1-11/16"	300A105
3/32"	3/4"	1-3/4"	300A106
7/64"	13/16"	1-13/16"	300A107
1/8"	7/8"	1-7/8"	300A108
9/64"	15/16"	1-15/16"	300A109
5/32"	1"	2-1/16"	300A110
11/64"	1-1/16"	2-1/8"	300A111
3/16"	1-1/8"	2-3/16"	300A112
13/64"	1-3/16"	2-1/4"	300A113
7/32"	1-1/4"	2-3/8"	300A114
15/64"	1-5/16"	2-7/16"	300A115
1/4"	1-3/8"	2-1/2"	300A116
17/64"	1-7/16"	2-5/8"	300A117
9/32"	1-1/2"	2-11/16"	300A118

Size	Flute Length	Overall Length	300 EDP No.
19/64"	1-9/16"	2-3/4"	300A119
5/16"	1-5/8"	2-13/16"	300A120
21/64"	1-11/16"	2-15/16"	300A121
11/32"	1-11/16"	3"	300A122
23/64"	1-3/4"	3-1/16"	300A123
3/8"	1-13/16"	3-1/8"	300A124
25/64"	1-7/8"	3-1/4"	300A125
13/32"	1-15/16"	3-5/16"	300A126
27/64"	2"	3-3/8"	300A127
7/16"	2-1/16"	3-7/16"	300A128
29/64"	2-1/8"	3-9/16"	300A129
15/32"	2-1/8"	3-5/8"	300A130
31/64"	2-3/16"	3-11/16"	300A131
1/2"	2-1/4"	3-3/4"	300A132

Sizes	Bulk Quantity
1/16" - 1/8" & #60 - #30	504
9/64" - 13/64" & #29 - #6	252
7/32" - 5/16" & #5 - #1 & A - N	132
21/64" - 1/2" & O - Z	72

No. of Pcs.	Description	EDP No.
<b>300 Series Screw Machine (Stub) Length Drill Sets</b>		
29	1/16" - 1/2" BY 64ths	300A29



300A29

# Screw Machine Length Drills

**HIGH SPEED STEEL**  
Letter / Black Oxide

**PACKAGING:**  
A - Z - 12 per pack

## Series 340

135° SPLIT POINT / STRAIGHT SHANK

NAS Type C. Screw Machine Drills are designed for use in machines and portable drilling in hard sheet metal alloys such as stainless and titanium. Because of their heavy-duty construction, and ease of penetration stemming from the split point with which they are furnished, wide applications have been found in machine and portable drilling. Available in bulk packaging. See table below for quantities.



340



Size	Flute Length	Overall Length	340A EDP No.
A	1-5/16"	2-7/16"	340A501
B	1-3/8"	2-1/2"	340A502
C	1-3/8"	2-1/2"	340A503
D	1-3/8"	2-1/2"	340A504
E	1-3/8"	2-1/2"	340A505
F	1-7/16"	2-5/8"	340A506
G	1-7/16"	2-5/8"	340A507
H	1-1/2"	2-11/16"	340A508
I	1-1/2"	2-11/16"	340A509
J	1-1/2"	2-11/16"	340A510
K	1-1/2"	2-11/16"	340A511
L	1-9/16"	2-3/4"	340A512
M	1-9/16"	2-3/4"	340A513

Size	Flute Length	Overall Length	340A EDP No.
N	1-5/8"	2-13/16"	340A514
O	1-11/16"	2-15/16"	340A515
P	1-11/16"	2-15/16"	340A516
Q	1-11/16"	3"	340A517
R	1-11/16"	3"	340A518
S	1-3/4"	3-1/16"	340A519
T	1-3/4"	3-1/16"	340A520
U	1-13/16"	3-1/8"	340A521
V	1-7/8"	3-1/4"	340A522
W	1-7/8"	3-1/4"	340A523
X	1-15/16"	3-5/16"	340A524
Y	1-15/16"	3-5/16"	340A525
Z	2"	3-3/8"	340A526

Sizes	Bulk Quantity
1/16" - 1/8" & #60 - #30	504
9/64" - 13/64" & #29 - #6	252
7/32" - 5/16" & #5 - #1 & A - N	132
21/64" - 1/2" & O - Z	72

Drills

# Screw Machine Length Drills

**HIGH SPEED STEEL**  
Number / Black Oxide



**PACKAGING:**  
#1 thru #60 - 12 per pack

## Series 380

135° SPLIT POINT / STRAIGHT SHANK

NAS Type C. Screw Machine Drills are designed for use in machines and portable drilling in hard sheet metal alloys such as stainless and titanium. Because of their heavy-duty construction, and ease of penetration stemming from the split point with which they are furnished, wide applications have been found in machine and portable drilling. Available in bulk packaging. See table on previous page for quantities.



380

Size	Flute Length	Overall Length	380 EDP No.
1	1-5/16"	2-7/16"	380A001
2	1-5/16"	2-7/16"	380A002
3	1-1/4"	2-3/8"	380A003
4	1-1/4"	2-3/8"	380A004
5	1-1/4"	2-3/8"	380A005
6	1-1/4"	2-3/8"	380A006
7	1-3/16"	2-1/4"	380A007
8	1-3/16"	2-1/4"	380A008
9	1-3/16"	2-1/4"	380A009
10	1-3/16"	2-1/4"	380A010
11	1-3/16"	2-1/4"	380A011
12	1-3/16"	2-1/4"	380A012
13	1-1/8"	2-3/16"	380A013
14	1-1/8"	2-3/16"	380A014
15	1-1/8"	2-3/16"	380A015
16	1-1/8"	2-3/16"	380A016
17	1-1/8"	2-3/16"	380A017
18	1-1/16"	2-1/8"	380A018
19	1-1/16"	2-1/8"	380A019
20	1-1/16"	2-1/8"	380A020
21	1-1/16"	2-1/8"	380A021
22	1-1/16"	2-1/8"	380A022
23	1"	2-1/16"	380A023
24	1"	2-1/16"	380A024
25	1"	2-1/16"	380A025
26	1"	2-1/16"	380A026
27	1"	2-1/16"	380A027
28	15/16"	1-15/16"	380A028
29	15/16"	1-15/16"	380A029
30	15/16"	1-15/16"	380A030

Size	Flute Length	Overall Length	380 EDP No.
31	7/8"	1-7/8"	380A031
32	7/8"	1-7/8"	380A032
33	7/8"	1-7/8"	380A033
34	7/8"	1-7/8"	380A034
35	7/8"	1-7/8"	380A035
36	13/16"	1-13/16"	380A036
37	13/16"	1-13/16"	380A037
38	13/16"	1-13/16"	380A038
39	13/16"	1-13/16"	380A039
40	13/16"	1-13/16"	380A040
41	13/16"	1-13/16"	380A041
42	3/4"	1-3/4"	380A042
43	3/4"	1-3/4"	380A043
44	3/4"	1-3/4"	380A044
45	3/4"	1-3/4"	380A045
46	3/4"	1-3/4"	380A046
47	11/16"	1-11/16"	380A047
48	11/16"	1-11/16"	380A048
49	11/16"	1-11/16"	380A049
50	11/16"	1-11/16"	380A050
51	11/16"	1-11/16"	380A051
52	11/16"	1-11/16"	380A052
53*	5/8"	1-5/8"	380A053
54*	5/8"	1-5/8"	380A054
55*	5/8"	1-5/8"	380A055
56*	1/2"	1-3/8"	380A056
57*	1/2"	1-3/8"	380A057
58*	1/2"	1-3/8"	380A058
59*	1/2"	1-3/8"	380A059
60*	1/2"	1-3/8"	380A060

\* Not Split Point

# Screw Machine Length Drills

**HIGH SPEED STEEL**  
Fractional / Black Oxide

**PACKAGING:**  
1/16" thru 19/64" - 12 per pack  
5/16" thru 1/2" - 6 per pack

## Series 300E

135° SPLIT POINT / STRAIGHT SHANK

NAS Type C. Screw Machine Drills are designed for use in machines and portable drilling in hard sheet metal alloys such as stainless and titanium. Because of their heavy-duty construction, and ease of penetration stemming from the split point with which they are furnished, wide applications have been found in machine and portable drilling.



300E

Size	Flute Length	Overall Length	300E EDP No.
1/16"	5/8"	1-5/8"	300E104
5/64"	11/16"	1-11/16"	300E105
3/32"	3/4"	1-3/4"	300E106
7/64"	13/16"	1-13/16"	300E107
1/8"	7/8"	1-7/8"	300E108
9/64"	15/16"	1-15/16"	300E109
5/32"	1"	2-1/16"	300E110
11/64"	1-1/16"	2-1/8"	300E111
3/16"	1-1/8"	2-3/16"	300E112
13/64"	1-3/16"	2-1/4"	300E113
7/32"	1-1/4"	2-3/8"	300E114
15/64"	1-5/16"	2-7/16"	300E115
1/4"	1-3/8"	2-1/2"	300E116
17/64"	1-7/16"	2-5/8"	300E117
9/32"	1-1/2"	2-11/16"	300E118

Size	Flute Length	Overall Length	300E EDP No.
19/64"	1-9/16"	2-3/4"	300E119
5/16"	1-5/8"	2-13/16"	300E120
21/64"	1-11/16"	2-15/16"	300E121
11/32"	1-11/16"	3"	300E122
23/64"	1-3/4"	3-1/16"	300E123
3/8"	1-13/16"	3-1/8"	300E124
25/64"	1-7/8"	3-1/4"	300E125
13/32"	1-15/16"	3-5/16"	300E126
27/64"	2"	3-3/8"	300E127
7/16"	2-1/16"	3-7/16"	300E128
29/64"	2-1/8"	3-9/16"	300E129
15/32"	2-1/8"	3-5/8"	300E130
31/64"	2-3/16"	3-11/16"	300E131
1/2"	2-1/4"	3-3/4"	300E132

# Screw Machine Length Drills

**COBALT**  
Fractional / Bronze



**PACKAGING:**  
1/16" thru 19/64" - 12 per pack  
5/16" thru 1/2" - 6 per pack

## Series 300C

135° SPLIT POINT / STRAIGHT SHANK

Screw Machine Drills are designed for use in machines and portable drilling in hard sheet metal alloys such as stainless and titanium. Because of their heavy-duty construction, and ease of penetration stemming from the split point with which they are furnished, wide applications have been found in machine and portable drilling.



300C

Size	Flute Length	Overall Length	300C EDP No.
1/16"	5/8"	1-5/8"	300C104
5/64"	11/16"	1-11/16"	300C105
3/32"	3/4"	1-3/4"	300C106
7/64"	13/16"	1-13/16"	300C107
1/8"	7/8"	1-7/8"	300C108
9/64"	15/16"	1-15/16"	300C109
5/32"	1"	2-1/16"	300C110
11/64"	1-1/16"	2-1/8"	300C111
3/16"	1-1/8"	2-3/16"	300C112
13/64"	1-3/16"	2-1/4"	300C113
7/32"	1-1/4"	2-3/8"	300C114
15/64"	1-5/16"	2-7/16"	300C115
1/4"	1-3/8"	2-1/2"	300C116
17/64"	1-7/16"	2-5/8"	300C117
9/32"	1-1/2"	2-11/16"	300C118

Size	Flute Length	Overall Length	300C EDP No.
19/64"	1-9/16"	2-3/4"	300C119
5/16"	1-5/8"	2-13/16"	300C120
21/64"	1-11/16"	2-15/16"	300C121
11/32"	1-11/16"	3"	300C122
23/64"	1-3/4"	3-1/16"	300C123
3/8"	1-13/16"	3-1/8"	300C124
25/64"	1-7/8"	3-1/4"	300C125
13/32"	1-15/16"	3-5/16"	300C126
27/64"	2"	3-3/8"	300C127
7/16"	2-1/16"	3-7/16"	300C128
29/64"	2-1/8"	3-9/16"	300C129
15/32"	2-1/8"	3-5/8"	300C130
31/64"	2-3/16"	3-11/16"	300C131
1/2"	2-1/4"	3-3/4"	300C132



300C29

No. of Pcs.	Description	EDP No.
300C Series Cobalt Screw Machine (Stub) Length Drill Sets		
29	1/16" - 1/2" BY 64ths	300C29



# Screw Machine Length Drills

**COBALT**  
Number / Bronze



**PACKAGING:**  
#1 thru #40 - 12 per pack

## Series 380C

135° SPLIT POINT / STRAIGHT SHANK

Screw Machine Drills are designed for use in machines and portable drilling in hard sheet metal alloys such as stainless and titanium. Because of their heavy-duty construction, and ease of penetration stemming from the split point with which they are furnished, wide applications have been found in machine and portable drilling.



380C

Size	Flute Length	Overall Length	380C EDP No.
1	1-5/16"	2-7/16"	380C001
2	1-5/16"	2-7/16"	380C002
3	1-1/4"	2-3/8"	380C003
4	1-1/4"	2-3/8"	380C004
5	1-1/4"	2-3/8"	380C005
6	1-1/4"	2-3/8"	380C006
7	1-3/16"	2-1/4"	380C007
8	1-3/16"	2-1/4"	380C008
9	1-3/16"	2-1/4"	380C009
10	1-3/16"	2-1/4"	380C010
11	1-3/16"	2-1/4"	380C011
12	1-3/16"	2-1/4"	380C012
13	1-1/8"	2-3/16"	380C013
14	1-1/8"	2-3/16"	380C014
15	1-1/8"	2-3/16"	380C015
16	1-1/8"	2-3/16"	380C016
17	1-1/8"	2-3/16"	380C017
18	1-1/16"	2-1/8"	380C018
19	1-1/16"	2-1/8"	380C019
20	1-1/16"	2-1/8"	380C020

Size	Flute Length	Overall Length	380C EDP No.
21	1-1/16"	2-1/8"	380C021
22	1-1/16"	2-1/8"	380C022
23	1"	2-1/16"	380C023
24	1"	2-1/16"	380C024
25	1"	2-1/16"	380C025
26	1"	2-1/16"	380C026
27	1"	2-1/16"	380C027
28	15/16"	1-15/16"	380C028
29	15/16"	1-15/16"	380C029
30	15/16"	1-15/16"	380C030
31	7/8"	1-7/8"	380C031
32	7/8"	1-7/8"	380C032
33	7/8"	1-7/8"	380C033
34	7/8"	1-7/8"	380C034
35	7/8"	1-7/8"	380C035
36	13/16"	1-13/16"	380C036
37	13/16"	1-13/16"	380C037
38	13/16"	1-13/16"	380C038
39	13/16"	1-13/16"	380C039
40	13/16"	1-13/16"	380C040

Drills

**COBALT**  
Fractional / Bronze



**PACKAGING:**  
1/16" thru 9/32" - 12 per pack  
5/16" thru 3/8" - 6 per pack

## Series 300LH

135° SPLIT POINT / 3-FLAT SHANK

Constructed of M-42 Cobalt High Speed Steel for super abrasive resistance in tough metals. They are used in left hand screw machines and with screw extractors. Can be used to drill out broken bolts and other hardened fasteners. Sizes 3/16" and above have a 3-flat shank which reduces slippage in the drill chuck.

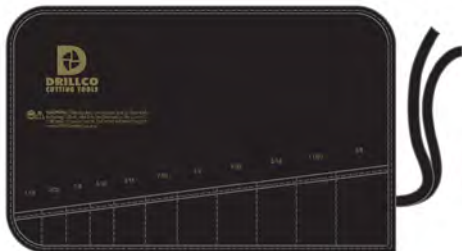


300LH



Size	Flute Length	Overall Length	300LH EDP No.
1/16"	5/8"	1-5/8"	300LH104
3/32"	3/4"	1-3/4"	300LH106
1/8"	7/8"	1-7/8"	300LH108
5/32"	1"	2-1/16"	300LH110
3/16"	1-1/8"	2-3/16"	300LH112

Size	Flute Length	Overall Length	300LH EDP No.
7/32"	1-1/4"	2-3/8"	300LH114
1/4"	1-3/8"	2-1/2"	300LH116
9/32"	1-1/2"	2-11/16"	300LH118
5/16"	1-5/8"	2-13/16"	300LH120
11/32"	1-11/16"	3"	300LH122
3/8"	1-13/16"	3-1/8"	300LH124



No. of Pcs.	Description	EDP No.
<b>300LH Series Cobalt Screw Machine (Stub) Length Drill Sets</b>		
11	1/16" - 3/8" BY 32nds	300LH11

# Double End Drills

**HIGH SPEED STEEL**  
Fractional & Number / Black Oxide



**PACKAGING:**  
12 per pack

## Series 330

118° POINT

These drills have flutes and cutting points on both ends. This allows the user to reverse the drill and utilize both ends.



330

Size	Flute Length	Overall Length	330 EDP No.
#11	1/2"	2-1/4"	330A011
#20	1/2"	2-1/8"	330A020
#30	1/2"	2"	330A030
7/64"	1/2"	1-7/8"	330A107
1/8"	1/2"	2"	330A108

Size	Flute Length	Overall Length	330 EDP No.
9/64"	1/2"	2"	330A109
5/32"	1/2"	2-1/16"	330A110
3/16"	1/2"	2-3/16"	330A112
7/32"	1/2"	2-3/8"	330A114
1/4"	1/2"	2-1/2"	330A116

Drills

# Taper Length Drills

**HIGH SPEED STEEL**  
Fractional / Black Oxide



**PACKAGING:**  
All sizes are individually packaged.

## Series 900

118° POINT / STRAIGHT SHANK

Straight shank taper length drills are standard for general purpose work in relatively deep holes. Shanks are the same diameter as the drill body.



900

Size	Flute Length	Overall Length	900 EDP No.
1/4"	3-3/4"	6-1/8"	900A116
9/32"	3-7/8"	6-1/4"	900A118
5/16"	4"	6-3/8"	900A120
11/32"	4-1/8"	6-1/2"	900A122
23/64"	4-1/4"	6-3/4"	900A123
3/8"	4-1/4"	6-3/4"	900A124
25/64"	4-3/8"	7"	900A125
13/32"	4-3/8"	7"	900A126
27/64"	4-5/8"	7-1/4"	900A127
7/16"	4-5/8"	7-1/4"	900A128
29/64"	4-3/4"	7-1/2"	900A129
15/32"	4-3/4"	7-1/2"	900A130
31/64"	4-3/4"	7-3/4"	900A131
1/2"	4-3/4"	7-3/4"	900A132
33/64"	4-3/4"	8"	900A133
17/32"	4-3/4"	8"	900A134
35/64"	4-7/8"	8-1/4"	900A135
9/16"	4-7/8"	8-1/4"	900A136
37/64"	4-7/8"	8-3/4"	900A137
19/32"	4-7/8"	8-3/4"	900A138
39/64"	4-7/8"	8-3/4"	900A139
5/8"	4-7/8"	8-3/4"	900A140
41/64"	5-1/8"	9"	900A141

Size	Flute Length	Overall Length	900 EDP No.
21/32"	5-1/8"	9"	900A142
43/64"	5-3/8"	9-1/4"	900A143
11/16"	5-3/8"	9-1/4"	900A144
45/64"	5-5/8"	9-1/2"	900A145
23/32"	5-5/8"	9-1/2"	900A146
47/64"	5-7/8"	9-3/4"	900A147
3/4"	5-7/8"	9-3/4"	900A148
49/64"	6"	9-7/8"	900A149
25/32"	6"	9-7/8"	900A150
51/64"	6-1/8"	10"	900A151
13/16"	6-1/8"	10"	900A152
53/64"	6-1/8"	10"	900A153
27/32"	6-1/8"	10"	900A154
55/64"	6-1/8"	10"	900A155
7/8"	6-1/8"	10"	900A156
57/64"	6-1/8"	10"	900A157
29/32"	6-1/8"	10"	900A158
59/64"	6-1/8"	10-3/4"	900A159
15/16"	6-1/8"	10-3/4"	900A160
61/64"	6-3/8"	11"	900A161
31/32"	6-3/8"	11"	900A162
63/64"	6-3/8"	11"	900A163
1"	6-3/8"	11"	900A164

# 6" Aircraft Extension Drills

**HIGH SPEED STEEL**  
Fractional / Black Oxide

**PACKAGING:**  
1/16" thru 1/2" - 6 per pack

## Series 1100

135° SPLIT POINT / STRAIGHT SHANK

Manufactured to NAS 907 Type B specifications, 135° split point, surface treated with jobber flute lengths for drilling holes in hard to reach places. Heavy-duty construction for portable or machine drilling in high tensile strength alloy steels.



1100

Size	Flute Length	Overall Length	1100 EDP No.
1/16"	7/8"	6"	1100A104
5/64"	1"	6"	1100A105
3/32"	1-1/4"	6"	1100A106
7/64"	1-1/2"	6"	1100A107
1/8"	1-5/8"	6"	1100A108
9/64"	1-3/4"	6"	1100A109
5/32"	2"	6"	1100A110
11/64"	2-1/8"	6"	1100A111
3/16"	2-5/16"	6"	1100A112
13/64"	2-7/16"	6"	1100A113
7/32"	2-1/2"	6"	1100A114
15/64"	2-5/8"	6"	1100A115
1/4"	2-3/4"	6"	1100A116
17/64"	2-7/8"	6"	1100A117
9/32"	2-15/16"	6"	1100A118

Size	Flute Length	Overall Length	1100 EDP No.
19/64"	3-1/16"	6"	1100A119
5/16"	3-3/16"	6"	1100A120
21/64"	3-5/16"	6"	1100A121
11/32"	3-7/16"	6"	1100A122
23/64"	3-1/2"	6"	1100A123
3/8"	3-5/8"	6"	1100A124
25/64"	3-3/4"	6"	1100A125
13/32"	3-7/8"	6"	1100A126
27/64"	3-15/16"	6"	1100A127
7/16"	4-1/16"	6"	1100A128
29/64"	4-3/16"	6"	1100A129
15/32"	4-5/16"	6"	1100A130
31/64"	4-3/8"	6"	1100A131
1/2"	4-1/2"	6"	1100A132



# 6" Aircraft Extension Drills

**HIGH SPEED STEEL**  
Number / Black Oxide

**PACKAGING:**  
#1 thru #40 - 6 per pack

## Series 1180

135° SPLIT POINT / STRAIGHT SHANK

Manufactured to NAS 907 Type B specifications, 135° split point, surface treated with jobber flute lengths for drilling holes in hard to reach places. Heavy-duty construction for portable or machine drilling in high tensile strength alloy steels.



1180

Size	Flute Length	Overall Length	1180 EDP No.
1	2-5/8"	6"	1180A001
2	2-5/8"	6"	1180A002
3	2-1/2"	6"	1180A003
4	2-1/2"	6"	1180A004
5	2-1/2"	6"	1180A005
6	2-1/2"	6"	1180A006
7	2-7/16"	6"	1180A007
8	2-7/16"	6"	1180A008
9	2-7/16"	6"	1180A009
10	2-7/16"	6"	1180A010
11	2-5/16"	6"	1180A011
12	2-5/16"	6"	1180A012
13	2-5/16"	6"	1180A013
14	2-3/16"	6"	1180A014
15	2-3/16"	6"	1180A015
16	2-3/16"	6"	1180A016
17	2-3/16"	6"	1180A017
18	2-1/8"	6"	1180A018
19	2-1/8"	6"	1180A019
20	2-1/8"	6"	1180A020

Size	Flute Length	Overall Length	1180 EDP No.
21	2-1/8"	6"	1180A021
22	2"	6"	1180A022
23	2"	6"	1180A023
24	2"	6"	1180A024
25	1-7/8"	6"	1180A025
26	1-7/8"	6"	1180A026
27	1-7/8"	6"	1180A027
28	1-3/4"	6"	1180A028
29	1-3/4"	6"	1180A029
30	1-5/8"	6"	1180A030
31	1-5/8"	6"	1180A031
32	1-5/8"	6"	1180A032
33	1-1/2"	6"	1180A033
34	1-1/2"	6"	1180A034
35	1-1/2"	6"	1180A035
36	1-7/16"	6"	1180A036
37	1-7/16"	6"	1180A037
38	1-7/16"	6"	1180A038
39	1-3/8"	6"	1180A039
40	1-3/8"	6"	1180A040

# 12" Aircraft Extension Drills

**HIGH SPEED STEEL**  
Fractional / Black Oxide

**PACKAGING:**  
1/16" thru 19/64" - 6 per pack  
5/16" thru 1/2" - 3 per pack

## Series 1200

135° SPLIT POINT / STRAIGHT SHANK

Manufactured to NAS 907 Type B specifications, 135° split point, surface treated with jobber flute lengths for drilling holes in hard to reach places. Heavy-duty construction for portable or machine drilling in high tensile strength alloy steels.



1200

Size	Flute Length	Overall Length	1200 EDP No.
1/16"	7/8"	12"	1200A104
5/64"	1"	12"	1200A105
3/32"	1-1/4"	12"	1200A106
7/64"	1-1/2"	12"	1200A107
1/8"	1-5/8"	12"	1200A108
9/64"	1-3/4"	12"	1200A109
5/32"	2"	12"	1200A110
11/64"	2-1/8"	12"	1200A111
3/16"	2-5/16"	12"	1200A112
13/64"	2-7/16"	12"	1200A113
7/32"	2-1/2"	12"	1200A114
15/64"	2-5/8"	12"	1200A115
1/4"	2-3/4"	12"	1200A116
17/64"	2-7/8"	12"	1200A117
9/32"	2-15/16"	12"	1200A118

Size	Flute Length	Overall Length	1200 EDP No.
19/64"	3-1/16"	12"	1200A119
5/16"	3-3/16"	12"	1200A120
21/64"	3-5/16"	12"	1200A121
11/32"	3-7/16"	12"	1200A122
23/64"	3-1/2"	12"	1200A123
3/8"	3-5/8"	12"	1200A124
25/64"	3-3/4"	12"	1200A125
13/32"	3-7/8"	12"	1200A126
27/64"	3-15/16"	12"	1200A127
7/16"	4-1/16"	12"	1200A128
29/64"	4-3/16"	12"	1200A129
15/32"	4-5/16"	12"	1200A130
31/64"	4-3/8"	12"	1200A131
1/2"	4-1/2"	12"	1200A132



# 12" Aircraft Extension Drills

**HIGH SPEED STEEL**  
Number / Black Oxide

**PACKAGING:**  
#1 thru #40 - 6 per pack

## Series 1280

135° SPLIT POINT / STRAIGHT SHANK

Manufactured to NAS 907 Type B specifications, 135° split point, surface treated with jobber flute lengths for drilling holes in hard to reach places. Heavy-duty construction for portable or machine drilling in high tensile strength alloy steels.



1280

Size	Flute Length	Overall Length	1280 EDP No.
1	2-5/8"	12"	1280A001
2	2-5/8"	12"	1280A002
3	2-1/2"	12"	1280A003
4	2-1/2"	12"	1280A004
5	2-1/2"	12"	1280A005
6	2-1/2"	12"	1280A006
7	2-7/16"	12"	1280A007
8	2-7/16"	12"	1280A008
9	2-7/16"	12"	1280A009
10	2-7/16"	12"	1280A010
11	2-5/16"	12"	1280A011
12	2-5/16"	12"	1280A012
13	2-5/16"	12"	1280A013
14	2-3/16"	12"	1280A014
15	2-3/16"	12"	1280A015
16	2-3/16"	12"	1280A016
17	2-3/16"	12"	1280A017
18	2-1/8"	12"	1280A018
19	2-1/8"	12"	1280A019
20	2-1/8"	12"	1280A020

Size	Flute Length	Overall Length	1280 EDP No.
21	2-1/8"	12"	1280A021
22	2"	12"	1280A022
23	2"	12"	1280A023
24	2"	12"	1280A024
25	1-7/8"	12"	1280A025
26	1-7/8"	12"	1280A026
27	1-7/8"	12"	1280A027
28	1-3/4"	12"	1280A028
29	1-3/4"	12"	1280A029
30	1-5/8"	12"	1280A030
31	1-5/8"	12"	1280A031
32	1-5/8"	12"	1280A032
33	1-1/2"	12"	1280A033
34	1-1/2"	12"	1280A034
35	1-1/2"	12"	1280A035
36	1-7/16"	12"	1280A036
37	1-7/16"	12"	1280A037
38	1-7/16"	12"	1280A038
39	1-3/8"	12"	1280A039
40	1-3/8"	12"	1280A040

# 6" Aircraft Extension Drills

## COBALT

Fractional & Number/ Bronze

### PACKAGING:

1/16" thru 3/8" - 6 per pack  
#1 thru #40 - 6 per pack

### Series 1100C/1180C

135° SPLIT POINT / STRAIGHT SHANK

Manufactured to NAS 907 Type J specifications, 135° split point, surface treated with jobber flute lengths for drilling holes in hard to reach places. Heavy-duty construction for portable or machine drilling in high tensile strength alloy steels, stainless steels, titanium, and other difficult to machine materials.



1100C

Size	Flute Length	Overall Length	1100C EDP No.
1/16"	7/8"	6"	1100C104
5/64"	1"	6"	1100C105
3/32"	1-1/4"	6"	1100C106
7/64"	1-1/2"	6"	1100C107
1/8"	1-5/8"	6"	1100C108
9/64"	1-3/4"	6"	1100C109
5/32"	2"	6"	1100C110
11/64"	2-1/8"	6"	1100C111

Size	Flute Length	Overall Length	1100C EDP No.
3/16"	2-5/16"	6"	1100C112
13/64"	2-7/16"	6"	1100C113
7/32"	2-1/2"	6"	1100C114
15/64"	2-5/8"	6"	1100C115
1/4"	2-3/4"	6"	1100C116
9/32"	2-15/16"	6"	1100C118
5/16"	3-3/16"	6"	1100C120
3/8"	3-5/8"	6"	1100C124

Size	Flute Length	Overall Length	1180C EDP No.
1	2-5/8"	6"	1180C001
2	2-5/8"	6"	1180C002
3	2-1/2"	6"	1180C003
4	2-1/2"	6"	1180C004
5	2-1/2"	6"	1180C005
6	2-1/2"	6"	1180C006
7	2-7/16"	6"	1180C007
8	2-7/16"	6"	1180C008
9	2-7/16"	6"	1180C009
10	2-7/16"	6"	1180C010
11	2-5/16"	6"	1180C011
12	2-5/16"	6"	1180C012
13	2-5/16"	6"	1180C013
14	2-3/16"	6"	1180C014
15	2-3/16"	6"	1180C015
16	2-3/16"	6"	1180C016
17	2-3/16"	6"	1180C017
18	2-1/8"	6"	1180C018
19	2-1/8"	6"	1180C019
20	2-1/8"	6"	1180C020

Size	Flute Length	Overall Length	1180C EDP No.
21	2-1/8"	6"	1180C021
22	2"	6"	1180C022
23	2"	6"	1180C023
24	2"	6"	1180C024
25	1-7/8"	6"	1180C025
26	1-7/8"	6"	1180C026
27	1-7/8"	6"	1180C027
28	1-3/4"	6"	1180C028
29	1-3/4"	6"	1180C029
30	1-5/8"	6"	1180C030
31	1-5/8"	6"	1180C031
32	1-5/8"	6"	1180C032
33	1-1/2"	6"	1180C033
34	1-1/2"	6"	1180C034
35	1-1/2"	6"	1180C035
36	1-7/16"	6"	1180C036
37	1-7/16"	6"	1180C037
38	1-7/16"	6"	1180C038
39	1-3/8"	6"	1180C039
40	1-3/8"	6"	1180C040



# 12" Aircraft Extension Drills

**COBALT**  
Fractional / Bronze

**PACKAGING:**  
1/16" thru 19/64" - 6 per pack  
5/16" thru 1/2" - 3 per pack

## Series 1200C

135° SPLIT POINT / STRAIGHT SHANK

Manufactured to NAS 907 Type J specifications, 135° split point, surface treated with jobber flute lengths for drilling holes in hard to reach places. Heavy-duty construction for portable or machine drilling in high tensile strength alloy steels, stainless steels, titanium, and other difficult to machine materials.



1200C

Size	Flute Length	Overall Length	1200C EDP No.
1/16"	7/8"	12"	1200C104
5/64"	1"	12"	1200C105
3/32"	1-1/4"	12"	1200C106
7/64"	1-1/2"	12"	1200C107
1/8"	1-5/8"	12"	1200C108
9/64"	1-3/4"	12"	1200C109
5/32"	2"	12"	1200C110
11/64"	2-1/8"	12"	1200C111
3/16"	2-5/16"	12"	1200C112
13/64"	2-7/16"	12"	1200C113
7/32"	2-1/2"	12"	1200C114
15/64"	2-5/8"	12"	1200C115
1/4"	2-3/4"	12"	1200C116
17/64"	2-7/8"	12"	1200C117
9/32"	2-15/16"	12"	1200C118

Size	Flute Length	Overall Length	1200C EDP No.
19/64"	3-1/16"	12"	1200C119
5/16"	3-3/16"	12"	1200C120
21/64"	3-5/16"	12"	1200C121
11/32"	3-7/16"	12"	1200C122
23/64"	3-1/2"	12"	1200C123
3/8"	3-5/8"	12"	1200C124
25/64"	3-3/4"	12"	1200C125
13/32"	3-7/8"	12"	1200C126
27/64"	3-15/16"	12"	1200C127
7/16"	4-1/16"	12"	1200C128
29/64"	4-3/16"	12"	1200C129
15/32"	4-5/16"	12"	1200C130
31/64"	4-3/8"	12"	1200C131
1/2"	4-1/2"	12"	1200C132



# 12" Aircraft Extension Drills

**COBALT**  
Number / Bronze

**PACKAGING:**  
#1 thru #40 - 6 per pack

## Series 1280C

135° SPLIT POINT / STRAIGHT SHANK

Manufactured to NAS 907 Type J specifications, 135° split point, surface treated with jobber flute lengths for drilling holes in hard to reach places. Heavy-duty construction for portable or machine drilling in high tensile strength alloy steels, stainless steels, titanium, and other difficult to machine materials.



1280C

Size	Flute Length	Overall Length	1280C EDP No.
1	2-5/8"	12"	1280C001
2	2-5/8"	12"	1280C002
3	2-1/2"	12"	1280C003
4	2-1/2"	12"	1280C004
5	2-1/2"	12"	1280C005
6	2-1/2"	12"	1280C006
7	2-7/16"	12"	1280C007
8	2-7/16"	12"	1280C008
9	2-7/16"	12"	1280C009
10	2-7/16"	12"	1280C010
11	2-5/16"	12"	1280C011
12	2-5/16"	12"	1280C012
13	2-5/16"	12"	1280C013
14	2-3/16"	12"	1280C014
15	2-3/16"	12"	1280C015
16	2-3/16"	12"	1280C016
17	2-3/16"	12"	1280C017
18	2-1/8"	12"	1280C018
19	2-1/8"	12"	1280C019
20	2-1/8"	12"	1280C020

Size	Flute Length	Overall Length	1280C EDP No.
21	2-1/8"	12"	1280C021
22	2"	12"	1280C022
23	2"	12"	1280C023
24	2"	12"	1280C024
25	1-7/8"	12"	1280C025
26	1-7/8"	12"	1280C026
27	1-7/8"	12"	1280C027
28	1-3/4"	12"	1280C028
29	1-3/4"	12"	1280C029
30	1-5/8"	12"	1280C030
31	1-5/8"	12"	1280C031
32	1-5/8"	12"	1280C032
33	1-1/2"	12"	1280C033
34	1-1/2"	12"	1280C034
35	1-1/2"	12"	1280C035
36	1-7/16"	12"	1280C036
37	1-7/16"	12"	1280C037
38	1-7/16"	12"	1280C038
39	1-3/8"	12"	1280C039
40	1-3/8"	12"	1280C040

# 8" Extra Length Drills

**HIGH SPEED STEEL**  
Fractional / Black Oxide

**PACKAGING:**  
All sizes are individually packaged.

## Series 1308

118° POINT / STRAIGHT SHANK

Because of the inaccessibility or the extreme depth of a hole, it is often found that even long series drills are not long enough. The drilling of such holes generally requires the use of an Extra Length Drill. The drills are made with a general purpose flute design which will perform well under the widest range of operating conditions and materials.



1308

Size	Flute Length	Overall Length	1308 EDP No.
1/8"	6"	8"	1308A108
9/64"	6"	8"	1308A109
5/32"	6"	8"	1308A110
11/64"	6"	8"	1308A111
3/16"	6"	8"	1308A112
13/64"	6"	8"	1308A113
7/32"	6"	8"	1308A114
15/64"	6"	8"	1308A115
1/4"	6"	8"	1308A116
17/64"	6"	8"	1308A117
9/32"	6"	8"	1308A118
19/64"	6"	8"	1308A119
5/16"	6"	8"	1308A120

Size	Flute Length	Overall Length	1308 EDP No.
21/64"	6"	8"	1308A121
11/32"	6"	8"	1308A122
23/64"	6"	8"	1308A123
3/8"	6"	8"	1308A124
25/64"	6"	8"	1308A125
13/32"	6"	8"	1308A126
27/64"	6"	8"	1308A127
7/16"	6"	8"	1308A128
29/64"	6"	8"	1308A129
15/32"	6"	8"	1308A130
31/64"	6"	8"	1308A131
1/2"	6"	8"	1308A132

# 12" Extra Length Drills

**HIGH SPEED STEEL**  
Fractional / Black Oxide

**PACKAGING:**  
All sizes are individually packaged.

## Series 1312 / 1312R

118° POINT / STRAIGHT & REDUCED SHANKS

Because of the inaccessibility or the extreme depth of a hole, it is often found that even long series drills are not long enough. The drilling of such holes generally requires the use of an Extra Length Drill. The drills are made with a general purpose flute design which will perform well under the widest range of operating conditions and materials.



1312 - Straight Shank



1312R - 1/2" Reduced Shank

Size	Flute Length	Overall Length	1312 EDP No.
1/8"	9"	12"	1312A108
9/64"	9"	12"	1312A109
5/32"	9"	12"	1312A110
11/64"	9"	12"	1312A111
3/16"	9"	12"	1312A112
13/64"	9"	12"	1312A113
7/32"	9"	12"	1312A114
15/64"	9"	12"	1312A115
1/4"	9"	12"	1312A116
17/64"	9"	12"	1312A117
9/32"	9"	12"	1312A118
19/64"	9"	12"	1312A119
5/16"	9"	12"	1312A120
21/64"	9"	12"	1312A121
11/32"	9"	12"	1312A122
23/64"	9"	12"	1312A123
3/8"	9"	12"	1312A124
25/64"	9"	12"	1312A125
13/32"	9"	12"	1312A126
27/64"	9"	12"	1312A127
7/16"	9"	12"	1312A128

Size	Flute Length	Overall Length	1312 EDP No.	1312R EDP No.
29/64"	9"	12"	1312A129	–
15/32"	9"	12"	1312A130	–
31/64"	9"	12"	1312A131	–
1/2"	9"	12"	1312A132	–
33/64"	9"	12"	1312A133	1312AR133
17/32"	9"	12"	1312A134	1312AR134
35/64"	9"	12"	1312A135	1312AR135
9/16"	9"	12"	1312A136	1312AR136
37/64"	9"	12"	1312A137	1312AR137
19/32"	9"	12"	1312A138	1312AR138
39/64"	9"	12"	1312A139	1312AR139
5/8"	9"	12"	1312A140	1312AR140
41/64"	9"	12"	1312A141	1312AR141
21/32"	9"	12"	1312A142	1312AR142
43/64"	9"	12"	1312A143	1312AR143
11/16"	9"	12"	1312A144	1312AR144
45/64"	9"	12"	1312A145	1312AR145
23/32"	9"	12"	1312A146	1312AR146
47/64"	9"	12"	1312A147	1312AR147
3/4"	9"	12"	1312A148	1312AR148

# 18" Extra Length Drills

**HIGH SPEED STEEL**  
Fractional / Black Oxide

**PACKAGING:**  
All sizes are individually packaged.

## Series 1318 & 1318R

118° POINT / STRAIGHT & REDUCED SHANKS

Because of the inaccessibility or the extreme depth of a hole, it is often found that even long series drills are not long enough. The drilling of such holes generally requires the use of an Extra Length Drill. The drills are made with a general purpose flute design which will perform well under the widest range of operating conditions and materials.



1318- Straight Shank



1318R - 1/2" Reduced Shank

Size	Flute Length	Overall Length	1318 EDP No.
1/4"	13"	18"	1318A116
17/64"	13"	18"	1318A117
9/32"	13"	18"	1318A118
19/64"	13"	18"	1318A119
5/16"	13"	18"	1318A120
21/64"	13"	18"	1318A121
11/32"	13"	18"	1318A122
23/64"	13"	18"	1318A123
3/8"	13"	18"	1318A124
25/64"	13"	18"	1318A125
13/32"	13"	18"	1318A126
27/64"	13"	18"	1318A127
7/16"	13"	18"	1318A128
29/64"	13"	18"	1318A129
15/32"	13"	18"	1318A130
31/64"	13"	18"	1318A131
1/2"	13"	18"	1318A132

Size	Flute Length	Overall Length	1318 EDP No.	1318R EDP No.
33/64"	13"	18"	1318A133	1318AR133
17/32"	13"	18"	1318A134	1318AR134
35/64"	13"	18"	1318A135	1318AR135
9/16"	13"	18"	1318A136	1318AR136
37/64"	13"	18"	1318A137	1318AR137
19/32"	13"	18"	1318A138	1318AR138
39/64"	13"	18"	1318A139	1318AR139
5/8"	13"	18"	1318A140	1318AR140
21/32"	13"	18"	1318A142	1318AR142
11/16"	13"	18"	1318A144	1318AR144
23/32"	13"	18"	1318A146	1318AR146
3/4"	13"	18"	1318A148	1318AR148
25/32"	13"	18"	1318A150	1318AR150
13/16"	13"	18"	1318A152	1318AR152
27/32"	13"	18"	1318A154	1318AR154
7/8"	13"	18"	1318A156	1318AR156
29/32"	13"	18"	1318A158	1318AR158
15/16"	13"	18"	1318A160	1318AR160
31/32"	13"	18"	1318A162	1318AR162
1"	13"	18"	1318A164	1318AR164

# NITRO 1/2" Shank S & D Drills



**HIGH SPEED STEEL**  
Fractional / Black & Gold



**PACKAGING:**  
All sizes are individually packaged.

## Series 1000N

118° SPLIT POINT / 1/2" REDUCED SHANK / FLATTED SHANK

Nitro® drills offer superior performance over conventional HSS drills. Their Nitride treated, heavy-duty construction increases tool life and performance. 118° Split Point reduces walking at the drill point and makes these drills ideal for both hand held and CNC Operations. Black & Gold surface treatment for maximum lubricity. Usable in a wide range of materials including difficult to machine materials such as stainless steel. S&D drills expand the size range capacity of a 1/2" portable drill chuck.



1000N

Size	Flute Length	Overall Length	1000N EDP No.
33/64"	3"	6"	1000N133
17/32"	3"	6"	1000N134
35/64"	3"	6"	1000N135
9/16"	3"	6"	1000N136
37/64"	3"	6"	1000N137
19/32"	3"	6"	1000N138
39/64"	3"	6"	1000N139
5/8"	3"	6"	1000N140
41/64"	3"	6"	1000N141
21/32"	3"	6"	1000N142
43/64"	3"	6"	1000N143
11/16"	3"	6"	1000N144
45/64"	3"	6"	1000N145
23/32"	3"	6"	1000N146
47/64"	3"	6"	1000N147
3/4"	3"	6"	1000N148

Size	Flute Length	Overall Length	1000N EDP No.
49/64"	3"	6"	1000N149
25/32"	3"	6"	1000N150
51/64"	3"	6"	1000N151
13/16"	3"	6"	1000N152
53/64"	3"	6"	1000N153
27/32"	3"	6"	1000N154
55/64"	3"	6"	1000N155
7/8"	3"	6"	1000N156
57/64"	3"	6"	1000N157
29/32"	3"	6"	1000N158
59/64"	3"	6"	1000N159
15/16"	3"	6"	1000N160
61/64"	3"	6"	1000N161
31/32"	3"	6"	1000N162
63/64"	3"	6"	1000N163
1"	3"	6"	1000N164

No. of Pcs.	Description	EDP No.
<b>1000N Series 1/2" Shank S&amp;D Drill Sets</b>		
5	9/16" - 1" BY 8ths	1000N5
8	9/16" - 1" BY 16ths	1000N8
32	STAND 1/2" - 1" BY 64ths W/DRILLS	1000N32



1000N32



**HIGH SPEED STEEL**  
Fractional / Black & Gold



**PACKAGING:**  
25/64" - 1/2" - 6 per pack  
17/32" - 3/4" - 1 per pack

## Series 1035N

135° SPLIT POINT / 3/8" REDUCED SHANK

**Nitro®** drills offer superior performance over conventional HSS drills. Their Nitride treated, heavy-duty construction increases tool life and performance. 135° Split Point reduces walking at the drill point and makes these drills ideal for both hand held and CNC Operations. Black & Gold surface treatment for maximum lubricity. Usable in a wide range of materials including difficult to machine materials such as stainless steel. S&D drills expand the size range capacity of a 3/8" portable drill chuck.



1035N

Size	Flute Length	Overall Length	1035N EDP No.
25/64"	3"	6"	1035N125
13/32"	3"	6"	1035N126
27/64"	3"	6"	1035N127
7/16"	3"	6"	1035N128
29/64"	3"	6"	1035N129
15/32"	3"	6"	1035N130
31/64"	3"	6"	1035N131

Size	Flute Length	Overall Length	1035N EDP No.
1/2"	3"	6"	1035N132
17/32"	3"	6"	1035N134
9/16"	3"	6"	1035N136
5/8"	3"	6"	1035N140
11/16"	3"	6"	1035N144
3/4"	3"	6"	1035N148

Sets on next page



# NITRO 3/8" Reduced Shank Drills



**HIGH SPEED STEEL**  
Fractional / Black & Gold



**PACKAGING:**  
6 per pack

## Series 1045N

MECHANICS LENGTH / 135° SPLIT POINT / 3/8" REDUCED SHANK

Nitro® drills offer superior performance over conventional HSS drills. Their Nitride treated, heavy-duty construction increases tool life and performance. 135° Split Point reduces walking at the drill point and makes these drills ideal for both hand held and CNC Operations. Black & Gold surface treatment for maximum lubricity. Usable in a wide range of materials including difficult to machine materials such as stainless steel. S&D drills expand the size range capacity of a 3/8" portable drill chuck.



1045N

Size	Flute Length	Overall Length	1045N EDP No.
25/64"	2-3/4"	4-5/16"	1045N125
13/32"	2-13/16"	4-3/8"	1045N126
27/64"	2-7/8"	4-7/16"	1045N127
7/16"	2-15/16"	4-1/2"	1045N128

Size	Flute Length	Overall Length	1045N EDP No.
29/64"	3"	4-5/8"	1045N129
15/32"	3-1/8"	4-3/4"	1045N130
31/64"	3-1/4"	4-7/8"	1045N131
1/2"	3-3/8"	5"	1045N132



1035N15

No. of Pcs.	Description	EDP No.
<b>1035N &amp; 1045N Series Reduced Shank Drill Sets</b>		
15	1/16" - 1/2" BY 32nds	1035N15
29	1/16" - 1/2" BY 64ths	1035N29
15	1/16" - 1/2" BY 32nds	1045N15
29	1/16" - 1/2" BY 64ths	1045N29

Drills



# 1/2" Shank S & D Drills

**HIGH SPEED STEEL**  
Fractional / Bright & Black

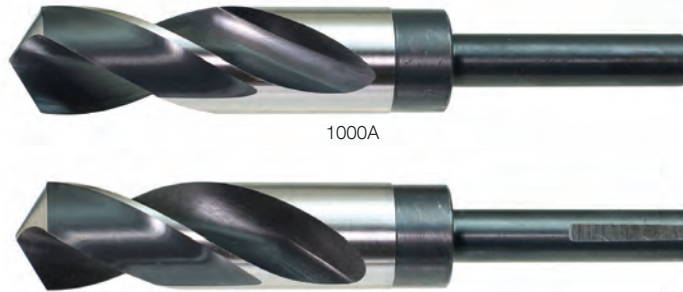


**PACKAGING:**  
All sizes are individually packaged.

## Series 1000A / 1000F

118° POINT / REDUCED SHANK / 3-FLATS on 1000F

Expands the size range capacity of a 1/2" portable drill chuck. Common flute and overall length for minimal adjustment during tool changes. Precision ground for a high degree of concentricity between shank and body diameter. Ideal for drilling low and medium tensile strength materials.



1000A

1000F - 3 Flat Shank

Sets on next page

Size	Flute Length	Overall Length	1000A EDP No.	1000F EDP No.
33/64"	3"	6"	1000A133	1000F133
17/32"	3"	6"	1000A134	1000F134
35/64"	3"	6"	1000A135	1000F135
9/16"	3"	6"	1000A136	1000F136
37/64"	3"	6"	1000A137	1000F137
19/32"	3"	6"	1000A138	1000F138
39/64"	3"	6"	1000A139	1000F139
5/8"	3"	6"	1000A140	1000F140
41/64"	3"	6"	1000A141	1000F141
21/32"	3"	6"	1000A142	1000F142
43/64"	3"	6"	1000A143	1000F143
11/16"	3"	6"	1000A144	1000F144
45/64"	3"	6"	1000A145	1000F145
23/32"	3"	6"	1000A146	1000F146
47/64"	3"	6"	1000A147	1000F147
3/4"	3"	6"	1000A148	1000F148
49/64"	3"	6"	1000A149	1000F149
25/32"	3"	6"	1000A150	1000F150
51/64"	3"	6"	1000A151	1000F151
13/16"	3"	6"	1000A152	1000F152
53/64"	3"	6"	1000A153	1000F153
27/32"	3"	6"	1000A154	1000F154

Size	Flute Length	Overall Length	1000A EDP No.	1000F EDP No.
55/64"	3"	6"	1000A155	1000F155
7/8"	3"	6"	1000A156	1000F156
57/64"	3"	6"	1000A157	1000F157
29/32"	3"	6"	1000A158	1000F158
59/64"	3"	6"	1000A159	1000F159
15/16"	3"	6"	1000A160	1000F160
61/64"	3"	6"	1000A161	1000F161
31/32"	3"	6"	1000A162	1000F162
63/64"	3"	6"	1000A163	1000F163
1"	3"	6"	1000A164	1000F164
1-1/64"	3"	6"	1000A201	-
1-1/32"	3"	6"	1000A202	1000F202
1-3/64"	3"	6"	1000A203	-
1-1/16"	3"	6"	1000A204	1000F204
1-5/64"	3"	6"	1000A205	-
1-3/32"	3"	6"	1000A206	1000F206
1-7/64"	3"	6"	1000A207	-
1-1/8"	3"	6"	1000A208	1000F208
1-9/64"	3"	6"	1000A209	-
1-5/32"	3"	6"	1000A210	1000F210
1-11/64"	3"	6"	1000A211	-
1-3/16"	3"	6"	1000A212	1000F212

Continued on next page

# 1/2" Shank S & D Drills

**HIGH SPEED STEEL**  
Fractional / Bright & Black



**PACKAGING:**  
All sizes are individually packaged.

## Series 1000A / 1000F continued

118° POINT / REDUCED SHANK / 3-FLATS on 1000F

Expands the size range capacity of a 1/2" portable drill chuck. Common flute and overall length for minimal adjustment during tool changes. Precision ground for a high degree of concentricity between shank and body diameter. Ideal for drilling low and medium tensile strength materials.

Size	Flute Length	Overall Length	1000A EDP No.	1000F EDP No.
1-13/64"	3"	6"	1000A213	—
1-7/32"	3"	6"	1000A214	1000F214
1-15/64"	3"	6"	1000A215	—
1-1/4"	3"	6"	1000A216	1000F216
1-9/32"	3"	6"	1000A218	—

Size	Flute Length	Overall Length	1000A EDP No.	1000F EDP No.
1-5/16"	3"	6"	1000A220	1000F220
1-3/8"	3"	6"	1000A224	1000F224
1-7/16"	3"	6"	1000A228	1000F228
1-1/2"	3"	6"	1000A232	1000F232

No. of Pcs.	Description	EDP No.
<b>1000A Series 1/2" Shank S&amp;D Drill Sets</b>		
5	9/16" - 1" BY 8ths	1000A5
8	9/16" - 1" BY 16ths	1000A8
32	STAND 1/2" - 1" BY 64ths W/DRILLS	1000A32



1000A8

No. of Pcs.	Description	EDP No.
<b>1000F Series 1/2" Shank S&amp;D Drill Sets</b>		
5	9/16" - 1" BY 8ths	1000F5
8	9/16" - 1" BY 16ths	1000F8
32	STAND 1/2" - 1" BY 64ths W/DRILLS	1000F32



# 1/2" Shank S & D Drills

**HIGH SPEED STEEL**  
Fractional / Bright & Black

**PACKAGING:**  
All sizes are individually packaged.

## Series 1000E

118° POINT / 3 FLATS, REDUCED SHANK

Expands the size range capacity of a 1/2" portable drill chuck. Common flute and overall length for minimal adjustment during tool changes. Precision ground for a high degree of concentricity between shank and body diameter. Ideal for drilling low and medium tensile strength materials.



1000E

Sets on next page

Size	Flute Length	Overall Length	1000E EDP No.
33/64"	3"	6"	1000E133
17/32"	3"	6"	1000E134
35/64"	3"	6"	1000E135
9/16"	3"	6"	1000E136
37/64"	3"	6"	1000E137
19/32"	3"	6"	1000E138
39/64"	3"	6"	1000E139
5/8"	3"	6"	1000E140
41/64"	3"	6"	1000E141
21/32"	3"	6"	1000E142
43/64"	3"	6"	1000E143
11/16"	3"	6"	1000E144
45/64"	3"	6"	1000E145
23/32"	3"	6"	1000E146
47/64"	3"	6"	1000E147
3/4"	3"	6"	1000E148

Size	Flute Length	Overall Length	1000E EDP No.
49/64"	3"	6"	1000E149
25/32"	3"	6"	1000E150
51/64"	3"	6"	1000E151
13/16"	3"	6"	1000E152
53/64"	3"	6"	1000E153
27/32"	3"	6"	1000E154
55/64"	3"	6"	1000E155
7/8"	3"	6"	1000E156
57/64"	3"	6"	1000E157
29/32"	3"	6"	1000E158
59/64"	3"	6"	1000E159
15/16"	3"	6"	1000E160
61/64"	3"	6"	1000E161
31/32"	3"	6"	1000E162
63/64"	3"	6"	1000E163
1"	3"	6"	1000E164

Continued on next page

# 1/2" Shank S & D Drills

**HIGH SPEED STEEL**  
Fractional / Bright & Black

**PACKAGING:**  
All sizes are individually packaged.

**Series 1000E** continued

118° POINT / 3 FLATS, REDUCED SHANK

Expands the size range capacity of a 1/2" portable drill chuck. Common flute and overall length for minimal adjustment during tool changes. Precision ground for a high degree of concentricity between shank and body diameter. Ideal for drilling low and medium tensile strength materials.

Drills

Size	Flute Length	Overall Length	1000E EDP No.
1-1/64"	3"	6"	1000E201
1-1/32"	3"	6"	1000E202
1-3/64"	3"	6"	1000E203
1-1/16"	3"	6"	1000E204
1-5/64"	3"	6"	1000E205
1-3/32"	3"	6"	1000E206
1-7/64"	3"	6"	1000E207
1-1/8"	3"	6"	1000E208
1-9/64"	3"	6"	1000E209
1-5/32"	3"	6"	1000E210
1-11/64"	3"	6"	1000E211
1-3/16"	3"	6"	1000E212
1-13/64"	3"	6"	1000E213
1-7/32"	3"	6"	1000E214
1-15/64"	3"	6"	1000E215
1-1/4"	3"	6"	1000E216

Size	Flute Length	Overall Length	1000E EDP No.
1-17/64"	3"	6"	1000E217
1-9/32"	3"	6"	1000E218
1-19/64"	3"	6"	1000E219
1-5/16"	3"	6"	1000E220
1-21/64"	3"	6"	1000E221
1-11/32"	3"	6"	1000E222
1-23/64"	3"	6"	1000E223
1-3/8"	3"	6"	1000E224
1-25/64"	3"	6"	1000E225
1-13/32"	3"	6"	1000E226
1-27/64"	3"	6"	1000E227
1-7/16"	3"	6"	1000E228
1-29/64"	3"	6"	1000E229
1-15/32"	3"	6"	1000E230
1-31/64"	3"	6"	1000E231
1-1/2"	3"	6"	1000E232

No. of Pcs.	Description	EDP No.
<b>1000E Series 1/2" Shank S&amp;D Drill Sets</b>		
5	9/16" - 1" BY 8ths	1000E5
8	9/16" - 1" BY 16ths	1000E8
32	STAND 1/2" - 1" BY 64ths W/DRILLS	1000E32



# 1/2" Shank S & D Drills

**HIGH SPEED STEEL**  
Fractional / Black & Gold

**PACKAGING:**  
All sizes are individually packaged.

## Series 1000EF

135° SPLIT POINT / 3 FLATS, REDUCED SHANK

General purpose flute design. All sizes have a 1/2" by 2-1/4" long shank. The maximum overall length is 6" and the flute length is 3". This makes them short drills in the larger sizes and thus well suited to use in portable electric drills equipped with 1/2" chucks. They are highly effective in tough, high tensile strength materials. The 135° split point reduces thrust and eliminates walking at the drill point.



1000EF

Size	Flute Length	Overall Length	1000EF EDP No.
33/64"	3"	6"	1000EF133
17/32"	3"	6"	1000EF134
35/64"	3"	6"	1000EF135
9/16"	3"	6"	1000EF136
37/64"	3"	6"	1000EF137
19/32"	3"	6"	1000EF138
39/64"	3"	6"	1000EF139
5/8"	3"	6"	1000EF140
41/64"	3"	6"	1000EF141
21/32"	3"	6"	1000EF142
43/64"	3"	6"	1000EF143
11/16"	3"	6"	1000EF144
45/64"	3"	6"	1000EF145
23/32"	3"	6"	1000EF146
47/64"	3"	6"	1000EF147
3/4"	3"	6"	1000EF148
49/64"	3"	6"	1000EF149
25/32"	3"	6"	1000EF150
51/64"	3"	6"	1000EF151
13/16"	3"	6"	1000EF152
53/64"	3"	6"	1000EF153
27/32"	3"	6"	1000EF154
55/64"	3"	6"	1000EF155
7/8"	3"	6"	1000EF156

Size	Flute Length	Overall Length	1000EF EDP No.
57/64"	3"	6"	1000EF157
29/32"	3"	6"	1000EF158
59/64"	3"	6"	1000EF159
15/16"	3"	6"	1000EF160
61/64"	3"	6"	1000EF161
31/32"	3"	6"	1000EF162
63/64"	3"	6"	1000EF163
1"	3"	6"	1000EF164
1-1/32"	3"	6"	1000EF202
1-1/16"	3"	6"	1000EF204
1-3/32"	3"	6"	1000EF206
1-1/8"	3"	6"	1000EF208
1-5/32"	3"	6"	1000EF210
1-3/16"	3"	6"	1000EF212
1-7/32"	3"	6"	1000EF214
1-1/4"	3"	6"	1000EF216
1-9/32"	3"	6"	1000EF218
1-5/16"	3"	6"	1000EF220
1-11/32"	3"	6"	1000EF222
1-3/8"	3"	6"	1000EF224
1-13/32"	3"	6"	1000EF226
1-7/16"	3"	6"	1000EF228
1-15/32"	3"	6"	1000EF230
1-1/2"	3"	6"	1000EF232



No. of Pcs.	Description	EDP No.
<b>1000EF Series 1/2" Shank S&amp;D Drill Sets</b>		
5	9/16" - 1" BY 8ths	1000EF5
8	9/16" - 1" BY 16ths	1000EF8
32	STAND 1/2" - 1" BY 64ths W/DRILLS	1000EF32



# 1/2" Shank S & D Drills

**COBALT**  
Fractional / Black & Gold



**PACKAGING:**  
All sizes are individually packaged.

## Series 1000C

118° SPLIT POINT / REDUCED SHANK

General purpose flute design. All sizes have a 1/2" by 2-1/4" long shank. The maximum overall length is 6" and the flute length is 3". This makes them short drills in the larger sizes and thus well suited to use in portable electric drills equipped with 1/2" chucks. They are highly effective in tough, high tensile strength materials. The 118° split point reduces thrust and eliminates walking at the drill point.



1000C

Size	Flute Length	Overall Length	1000C EDP No.
33/64"	3"	6"	1000C133
17/32"	3"	6"	1000C134
35/64"	3"	6"	1000C135
9/16"	3"	6"	1000C136
37/64"	3"	6"	1000C137
19/32"	3"	6"	1000C138
39/64"	3"	6"	1000C139
5/8"	3"	6"	1000C140
41/64"	3"	6"	1000C141
21/32"	3"	6"	1000C142
43/64"	3"	6"	1000C143
11/16"	3"	6"	1000C144
45/64"	3"	6"	1000C145
23/32"	3"	6"	1000C146
47/64"	3"	6"	1000C147
3/4"	3"	6"	1000C148

Size	Flute Length	Overall Length	1000C EDP No.
49/64"	3"	6"	1000C149
25/32"	3"	6"	1000C150
51/64"	3"	6"	1000C151
13/16"	3"	6"	1000C152
53/64"	3"	6"	1000C153
27/32"	3"	6"	1000C154
55/64"	3"	6"	1000C155
7/8"	3"	6"	1000C156
57/64"	3"	6"	1000C157
29/32"	3"	6"	1000C158
59/64"	3"	6"	1000C159
15/16"	3"	6"	1000C160
61/64"	3"	6"	1000C161
31/32"	3"	6"	1000C162
63/64"	3"	6"	1000C163
1"	3"	6"	1000C164



1000C8

No. of Pcs.	Description	EDP No.
<b>1000C Series 1/2" Shank S&amp;D Drill Sets</b>		
5	9/16" - 1" BY 8ths	1000C5
8	9/16" - 1" BY 16ths	1000C8
32	STAND 1/2" - 1" BY 64ths W/DRILLS	1000C32

# 1/2" Shank S & D Drills

**COBALT**  
Fractional / Bronze

**PACKAGING:**  
All sizes are individually packaged.

## Series 1000EC

135° SPLIT POINT / REDUCED SHANK

Expands the size range capacity of a 1/2" portable drill chuck. Common flute and overall length for minimal adjustment during tool changes. Precision ground for high degree of concentricity between shank and body diameter. Ideal for drilling in tough, high tensile strength materials. The 135° split point reduces thrust and eliminates walking at the drill point.



1000EC

Size	Flute Length	Overall Length	1000EC EDP No.
33/64"	3"	6"	1000EC133
17/32"	3"	6"	1000EC134
35/64"	3"	6"	1000EC135
9/16"	3"	6"	1000EC136
37/64"	3"	6"	1000EC137
19/32"	3"	6"	1000EC138
39/64"	3"	6"	1000EC139
5/8"	3"	6"	1000EC140
41/64"	3"	6"	1000EC141
21/32"	3"	6"	1000EC142
43/64"	3"	6"	1000EC143
11/16"	3"	6"	1000EC144
45/64"	3"	6"	1000EC145
23/32"	3"	6"	1000EC146
47/64"	3"	6"	1000EC147
3/4"	3"	6"	1000EC148
49/64"	3"	6"	1000EC149
25/32"	3"	6"	1000EC150
51/64"	3"	6"	1000EC151
13/16"	3"	6"	1000EC152
53/64"	3"	6"	1000EC153
27/32"	3"	6"	1000EC154
55/64"	3"	6"	1000EC155
7/8"	3"	6"	1000EC156

Size	Flute Length	Overall Length	1000EC EDP No.
57/64"	3"	6"	1000EC157
29/32"	3"	6"	1000EC158
59/64"	3"	6"	1000EC159
15/16"	3"	6"	1000EC160
61/64"	3"	6"	1000EC161
31/32"	3"	6"	1000EC162
63/64"	3"	6"	1000EC163
1"	3"	6"	1000EC164
1-1/32"	3"	6"	1000EC202
1-1/16"	3"	6"	1000EC204
1-3/32"	3"	6"	1000EC206
1-1/8"	3"	6"	1000EC208
1-5/32"	3"	6"	1000EC210
1-3/16"	3"	6"	1000EC212
1-7/32"	3"	6"	1000EC214
1-1/4"	3"	6"	1000EC216
1-9/32"	3"	6"	1000EC218
1-5/16"	3"	6"	1000EC220
1-11/32"	3"	6"	1000EC222
1-3/8"	3"	6"	1000EC224
1-13/32"	3"	6"	1000EC226
1-7/16"	3"	6"	1000EC228
1-15/32"	3"	6"	1000EC230
1-1/2"	3"	6"	1000EC232



1000EC5

No. of Pcs.	Description	EDP No.
<b>1000EC Series 1/2" Shank S&amp;D Drill Sets</b>		
5	9/16" - 1" BY 8ths	1000EC5
8	9/16" - 1" BY 16ths	1000EC8
32	STAND 1/2" - 1" BY 64ths W/DRILLS	1000EC32

# Taper Shank Drills

**HIGH SPEED STEEL**  
Fractional / Black Oxide



**PACKAGING:**  
All sizes are individually packaged.

## Series 1400

118° POINT / TAPER SHANK

For general purpose use in a wide range of materials.

**1400** – American Standard Taper Shanks

**1450** – Smaller than normal Taper Shanks

**1475** – Larger than normal Taper Shanks



1400

Size	Morse Taper	Flute Length	Overall Length	1400 EDP No.
1/8"	1	1-7/8"	5-1/8"	1400A108
9/64"	1	2-1/8"	5-3/8"	1400A109
5/32"	1	2-1/8"	5-3/8"	1400A110
11/64"	1	2-1/2"	5-3/4"	1400A111
3/16"	1	2-1/2"	5-3/4"	1400A112
13/64"	1	2-3/4"	6"	1400A113
7/32"	1	2-3/4"	6"	1400A114
15/64"	1	2-7/8"	6-1/8"	1400A115
1/4"	1	2-7/8"	6-1/8"	1400A116
17/64"	1	3"	6-1/4"	1400A117
9/32"	1	3"	6-1/4"	1400A118
19/64"	1	3-1/8"	6-3/8"	1400A119
5/16"	1	3-1/8"	6-3/8"	1400A120
21/64"	1	3-1/4"	6-1/2"	1400A121
11/32"	1	3-1/4"	6-1/2"	1400A122
23/64"	1	3-1/2"	6-3/4"	1400A123
3/8"	1	3-1/2"	6-3/4"	1400A124
25/64"	1	3-5/8"	7"	1400A125
13/32"	1	3-5/8"	7"	1400A126
27/64"	1	3-7/8"	7-1/4"	1400A127
7/16"	1	3-7/8"	7-1/4"	1400A128
29/64"	1	4-1/8"	7-1/2"	1400A129
15/32"	1	4-1/8"	7-1/2"	1400A130
31/64"	2	4-3/8"	8-1/4"	1400A131
1/2"	2	4-3/8"	8-1/4"	1400A132
33/64"	2	4-5/8"	8-1/2"	1400A133

Size	Morse Taper	Flute Length	Overall Length	1400 EDP No.
17/32"	2	4-5/8"	8-1/2"	1400A134
35/64"	2	4-7/8"	8-3/4"	1400A135
9/16"	2	4-7/8"	8-3/4"	1400A136
37/64"	2	4-7/8"	8-3/4"	1400A137
19/32"	2	4-7/8"	8-3/4"	1400A138
39/64"	2	4-7/8"	8-3/4"	1400A139
5/8"	2	4-7/8"	8-3/4"	1400A140
41/64"	2	5-1/8"	9"	1400A141
21/32"	2	5-1/8"	9"	1400A142
43/64"	2	5-3/8"	9-1/4"	1400A143
11/16"	2	5-3/8"	9-1/4"	1400A144
45/64"	2	5-5/8"	9-1/2"	1400A145
23/32"	2	5-5/8"	9-1/2"	1400A146
47/64"	2	5-7/8"	9-3/4"	1400A147
3/4"	2	5-7/8"	9-3/4"	1400A148
49/64"	2	6"	9-7/8"	1400A149
25/32"	2	6"	9-7/8"	1400A150
51/64"	3	6-1/8"	10-3/4"	1400A151
13/16"	3	6-1/8"	10-3/4"	1400A152
53/64"	3	6-1/8"	10-3/4"	1400A153
27/32"	3	6-1/8"	10-3/4"	1400A154
55/64"	3	6-1/8"	10-3/4"	1400A155
7/8"	3	6-1/8"	10-3/4"	1400A156
57/64"	3	6-1/8"	10-3/4"	1400A157
29/32"	3	6-1/8"	10-3/4"	1400A158
59/64"	3	6-1/8"	10-3/4"	1400A159

**HIGH SPEED STEEL**  
Fractional / Black Oxide



**PACKAGING:**  
All sizes are individually packaged.

**Series 1400** continued

118° POINT / TAPER SHANK

For general purpose use in a wide range of materials.

**1400** – American Standard Taper Shanks

**1450** – Smaller than normal Taper Shanks

**1475** – Larger than normal Taper Shanks

Size	Morse Taper	Flute Length	Overall Length	1400 EDP No.
15/16"	3	6-1/8"	10-3/4"	1400A160
61/64"	3	6-3/8"	11"	1400A161
31/32"	3	6-3/8"	11"	1400A162
63/64"	3	6-3/8"	11"	1400A163
1"	3	6-3/8"	11"	1400A164
1-1/64"	3	6-1/2"	11-1/8"	1400A201
1-1/32"	3	6-1/2"	11-1/8"	1400A202
1-3/64"	3	6-5/8"	11-1/4"	1400A203
1-1/16"	3	6-5/8"	11-1/4"	1400A204
1-5/64"	4	6-7/8"	12-1/2"	1400A205
1-3/32"	4	6-7/8"	12-1/2"	1400A206
1-7/64"	4	7-1/8"	12-3/4"	1400A207
1-1/8"	4	7-1/8"	12-3/4"	1400A208
1-9/64"	4	7-1/4"	12-7/8"	1400A209
1-5/32"	4	7-1/4"	12-7/8"	1400A210
1-11/64"	4	7-3/8"	13"	1400A211
1-3/16"	4	7-3/8"	13"	1400A212
1-13/64"	4	7-1/2"	13-1/8"	1400A213
1-7/32"	4	7-1/2"	13-1/8"	1400A214
1-15/64"	4	7-7/8"	13-1/2"	1400A215
1-1/4"	4	7-7/8"	13-1/2"	1400A216
1-17/64"	4	8-1/2"	14-1/8"	1400A217
1-9/32"	4	8-1/2"	14-1/8"	1400A218
1-19/64"	4	8-1/2"	14-1/4"	1400A219
1-5/16"	4	8-5/8"	14-1/4"	1400A220

Size	Morse Taper	Flute Length	Overall Length	1400 EDP No.
1-21/64"	4	8-3/4"	14-3/8"	1400A221
1-11/32"	4	8-3/4"	14-3/8"	1400A222
1-23/64"	4	8-7/8"	14-1/2"	1400A223
1-3/8"	4	8-7/8"	14-1/2"	1400A224
1-25/64"	4	9"	14-5/8"	1400A225
1-13/32"	4	9"	14-5/8"	1400A226
1-27/64"	4	9-1/8"	14-3/4"	1400A227
1-7/16"	4	9-1/8"	14-3/4"	1400A228
1-29/64"	4	9-1/4"	14-7/8"	1400A229
1-15/32"	4	9-1/4"	14-7/8"	1400A230
1-31/64"	4	9-3/8"	15"	1400A231
1-1/2"	4	9-3/8"	15"	1400A232
1-17/32"	5	9-3/8"	16-3/8"	1400A234
1-9/16"	5	9-5/8"	16-5/8"	1400A236
1-19/32"	5	9-7/8"	16-7/8"	1400A238
1-5/8"	5	10"	17"	1400A240
1-21/32"	5	10-1/8"	17-1/8"	1400A242
1-11/16"	5	10-1/8"	17-1/8"	1400A244
1-23/32"	5	10-1/8"	17-1/8"	1400A246
1-3/4"	5	10-1/8"	17-1/8"	1400A248
1-25/32"	5	10-1/8"	17-1/8"	1400A250
1-13/16"	5	10-1/8"	17-1/8"	1400A252
1-27/32"	5	10-1/8"	17-1/8"	1400A254
1-7/8"	5	10-3/8"	17-3/8"	1400A256
1-29/32"	5	10-3/8"	17-3/8"	1400A258

Continued on next page

# Taper Shank Drills

**HIGH SPEED STEEL**  
Fractional / Black Oxide



**PACKAGING:**  
All sizes are individually packaged.

## Series 1400 continued

118° POINT / TAPER SHANK

For general purpose use in a wide range of materials.

**1400** – American Standard Taper Shanks

**1450** – Smaller than normal Taper Shanks

**1475** – Larger than normal Taper Shanks

Size	Morse Taper	Flute Length	Overall Length	1400 EDP No.
1-15/16"	5	10-3/8"	17-3/8"	1400A260
1-31/32"	5	10-3/8"	17-3/8"	1400A262
2"	5	10-3/8"	17-3/8"	1400A264
2-1/32"	5	10-3/8"	17-3/8"	1400A302
2-1/16"	5	10-1/4"	17-3/8"	1400A304
2-3/32"	5	10-1/4"	17-3/8"	1400A306
2-1/8"	5	10-1/4"	17-3/8"	1400A308
2-5/32"	5	10-1/4"	17-3/8"	1400A310
2-3/16"	5	10-1/4"	17-3/8"	1400A312
2-7/32"	5	10-1/8"	17-3/8"	1400A314
2-1/4"	5	10-1/8"	17-3/8"	1400A316
2-5/16"	5	10-1/8"	17-3/8"	1400A320
2-3/8"	5	10-1/8"	17-3/8"	1400A324
2-7/16"	5	11-1/4"	18-3/4"	1400A328
2-1/2"	5	11-1/4"	18-3/4"	1400A332
2-9/16"	5	11-7/8"	19-1/2"	1400A336
2-5/8"	5	12-3/4"	19-1/2"	1400A340
2-11/16"	5	12-3/4"	20-3/8"	1400A344
2-3/4"	5	12-3/4"	20-3/8"	1400A348
2-13/16"	5	13-3/8"	21-1/8"	1400A352
2-7/8"	5	13-3/8"	21-1/8"	1400A356
2-15/16"	5	14"	21-3/4"	1400A360
3"	5	14"	21-3/4"	1400A364

# Taper Shank Drills, Shanks Smaller

**HIGH SPEED STEEL**  
Fractional / Black Oxide



**PACKAGING:**  
All sizes are individually packaged.

## Series 1450

118° POINT / TAPER SHANK

For general purpose use in a wide range of materials.

**1400** – American Standard Taper Shanks

**1450** – Smaller than normal Taper Shanks

**1475** – Larger than normal Taper Shanks



1450

Size	Morse Taper	Flute Length	Overall Length	1450 EDP No.
31/64"	1	4-3/8"	7-3/4"	1450A131
1/2"	1	4-3/8"	7-3/4"	1450A132
33/64"	1	4-5/8"	8"	1450A133
17/32"	1	4-5/8"	8"	1450A134
35/64"	1	4-7/8"	8-1/4"	1450A135
9/16"	1	4-7/8"	8-1/4"	1450A136
51/64"	2	6-1/8"	10"	1450A151
13/16"	2	6-1/8"	10"	1450A152
53/64"	2	6-1/8"	10"	1450A153
27/32"	2	6-1/8"	10"	1450A154
55/64"	2	6-1/8"	10"	1450A155
7/8"	2	6-1/8"	10"	1450A156
57/64"	2	6-1/8"	10"	1450A157
29/32"	2	6-1/8"	10"	1450A158
1-5/64"	3	6-7/8"	11-1/2"	1450A205
1-3/32"	3	6-7/8"	11-1/2"	1450A206
1-7/64"	3	7-1/8"	11-3/4"	1450A207
1-1/8"	3	7-1/8"	11-3/4"	1450A208
1-9/64"	3	7-1/4"	11-7/8"	1450A209
1-5/32"	3	7-1/4"	11-7/8"	1450A210
1-11/64"	3	7-3/8"	12"	1450A211
1-3/16"	3	7-3/8"	12"	1450A212
1-13/64"	3	7-1/2"	12-1/8"	1450A213
1-7/32"	3	7-1/2"	12-1/8"	1450A214
1-15/64"	3	7-7/8"	12-1/2"	1450A215

Size	Morse Taper	Flute Length	Overall Length	1450 EDP No.
1-1/4"	3	7-7/8"	12-1/2"	1450A216
1-33/64"	4	9-3/8"	15"	1450A233
1-17/32"	4	9-3/8"	15"	1450A234
1-35/64"	4	9-5/8"	15-1/4"	1450A235
1-9/16"	4	9-5/8"	15-1/4"	1450A236
1-37/64"	4	9-7/8"	15-1/2"	1450A237
1-19/32"	4	9-7/8"	15-1/2"	1450A238
1-39/64"	4	10"	15-5/8"	1450A239
1-5/8"	4	10"	15-5/8"	1450A240
1-41/64"	4	10-1/8"	15-3/4"	1450A241
1-21/32"	4	10-1/8"	15-3/4"	1450A242
1-43/64"	4	10-1/8"	15-3/4"	1450A243
1-11/16"	4	10-1/8"	15-3/4"	1450A244
1-45/64"	4	10-1/8"	15-3/4"	1450A245
1-23/32"	4	10-1/8"	15-3/4"	1450A246
1-47/64"	4	10-3/8"	16-1/4"	1450A247
1-3/4"	4	10-3/8"	16-1/4"	1450A248
1-25/32"	4	10-3/8"	16-1/4"	1450A250
1-13/16"	4	10-3/8"	16-1/4"	1450A252
1-27/32"	4	10-3/8"	16-1/4"	1450A254
1-7/8"	4	10-1/2"	16-1/2"	1450A256
1-29/32"	4	10-1/2"	16-1/2"	1450A258
1-15/16"	4	10-5/8"	16-5/8"	1450A260
1-31/32"	4	10-5/8"	16-5/8"	1450A262
2"	4	10-5/8"	16-5/8"	1450A264



# Taper Shank Drills, Shanks Larger

**HIGH SPEED STEEL**  
Fractional / Black Oxide



**PACKAGING:**  
All sizes are individually packaged.

## Series 1475

118° POINT / TAPER SHANK

For general purpose use in a wide range of materials.

**1400** – American Standard Taper Shanks

**1450** – Smaller than normal Taper Shanks

**1475** – Larger than normal Taper Shanks



1475

Size	Morse Taper	Flute Length	Overall Length	1475 EDP No.
3/8"	2	3-1/2"	7-3/8"	1475A124
25/64"	2	3-5/8"	7-1/2"	1475A125
13/32"	2	3-5/8"	7-1/2"	1475A126
27/64"	2	3-7/8"	7-3/4"	1475A127
7/16"	2	3-7/8"	7-3/4"	1475A128
29/64"	2	4-1/8"	8"	1475A129
15/32"	2	4-1/8"	8"	1475A130
41/64"	3	5-1/8"	9-3/4"	1475A141
21/32"	3	5-1/8"	9-3/4"	1475A142
43/64"	3	5-3/8"	10"	1475A143

Size	Morse Taper	Flute Length	Overall Length	1475 EDP No.
11/16"	3	5-3/8"	10"	1475A144
45/64"	3	5-3/8"	10-1/4"	1475A145
23/32"	3	5-7/8"	10-1/4"	1475A146
47/64"	3	5-7/8"	10-1/2"	1475A147
3/4"	3	6"	10-1/2"	1475A148
49/64"	3	6"	10-5/8"	1475A149
25/32"	3	6-3/8"	10-5/8"	1475A150
1"	4	6-3/8"	12"	1475A164
1-1/32"	4	6-1/2"	12-1/8"	1475A202
1-1/16"	4	6-5/8"	12-1/4"	1475A204

# Solid Carbide Jobber Length Drills

**SOLID CARBIDE**  
Fractional & Letter / Bright



**PACKAGING:**  
All sizes are individually packaged.

## Series 700

118° POINT / STRAIGHT SHANK

Solid carbide drills have the ability to retain hardness and a sharp edge at high temperature. Their excellent abrasion-resistant qualities make them advantageous for use in drilling abrasive materials such as cast iron, non-ferrous alloys, high silicon aluminum, hard rubber, and plexiglas. Carbide drills are run at higher speeds than standard High Speed Steel drills. They offer the advantage of extreme rigidity for greater drilling accuracy.



700

Size	Flute Length	Overall Length	700 EDP No.
1/32"	3/8"	1-1/8"	700A102
3/64"	3/4"	1-1/2"	700A103
1/16"	3/4"	1-1/2"	700A104
5/64"	7/8"	1-3/4"	700A105
3/32"	1"	2"	700A106
7/64"	1-1/4"	2-1/4"	700A107
1/8"	1-1/4"	2-1/4"	700A108
9/64"	1-3/8"	2-1/2"	700A109
5/32"	1-3/8"	2-1/2"	700A110
11/64"	1-5/8"	2-3/4"	700A111
3/16"	1-5/8"	2-3/4"	700A112
13/64"	1-3/4"	3"	700A113
7/32	1-3/4"	3"	700A114
15/64"	2"	3-1/4"	700A115
1/4"	2"	3-1/4"	700A116
17/64"	2-1/8"	3-1/2"	700A117
9/32"	2-1/8"	3-1/2"	700A118
19/64"	2-3/8"	3-3/4"	700A119
5/16"	2-3/8"	3-3/4"	700A120
21/64"	2-1/2"	4"	700A121
11/32"	2-1/2"	4"	700A122
23/64"	2-1/2"	4"	700A123
3/8"	2-3/4"	4-1/4"	700A124
25/64"	2-7/8"	4-1/2"	700A125
13/32"	2-7/8"	4-1/2"	700A126
27/64"	2-7/8"	4-1/2"	700A127
7/16"	2-7/8"	4-1/2"	700A128
29/64"	3"	4-3/4"	700A129
15/32"	3"	4-3/4"	700A130

Size	Flute Length	Overall Length	700 EDP No.
31/64"	3"	4-3/4"	700A131
1/2"	3"	4-3/4"	700A132
A	2"	3-1/4"	700A501
B	2"	3-1/4"	700A502
C	2"	3-1/4"	700A503
D	2"	3-1/4"	700A504
E	2"	3-1/4"	700A505
F	2"	3-1/4"	700A506
G	2-1/8"	3-1/2"	700A507
H	2-1/8"	3-1/2"	700A508
I	2-1/8"	3-1/2"	700A509
J	2-1/8"	3-1/2"	700A510
K	2-1/8"	3-1/2"	700A511
L	2-1/8"	3-1/2"	700A512
M	2-3/8"	3-3/4"	700A513
N	2-3/8"	3-3/4"	700A514
O	2-3/8"	3-3/4"	700A515
P	2-3/8"	3-3/4"	700A516
Q	2-1/2"	4"	700A517
R	2-1/2"	4"	700A518
S	2-1/2"	4"	700A519
T	2-1/2"	4"	700A520
U	2-3/4"	4-1/4"	700A521
V	2-3/4"	4-1/4"	700A522
W	2-7/8"	4-1/4"	700A523
X	2-7/8"	4-1/4"	700A524
Y	2-7/8"	4-1/4"	700A525
Z	2-7/8"	4-1/4"	700A526

Continued on next page

# Solid Carbide Jobber Length Drills



**SOLID CARBIDE**  
Number / Bright



**PACKAGING:**  
All sizes are individually packaged.

**Series 700** continued

118° POINT / STRAIGHT SHANK

Size	Flute Length	Overall Length	700 EDP No.
1	1-3/4"	3"	700A001
2	1-3/4"	3"	700A002
3	1-3/4"	3"	700A003
4	1-3/4"	3"	700A004
5	1-3/4"	3"	700A005
6	1-3/4"	3"	700A006
7	1-3/4"	3"	700A007
8	1-3/4"	3"	700A008
9	1-5/8"	2-3/4"	700A009
10	1-5/8"	2-3/4"	700A010
11	1-5/8"	2-3/4"	700A011
12	1-5/8"	2-3/4"	700A012
13	1-5/8"	2-3/4"	700A013
14	1-5/8"	2-3/4"	700A014
15	1-5/8"	2-3/4"	700A015
16	1-5/8"	2-3/4"	700A016
17	1-5/8"	2-3/4"	700A017
18	1-5/8"	2-3/4"	700A018
19	1-5/8"	2-3/4"	700A019
20	1-3/8"	2-1/2"	700A020
21	1-3/8"	2-1/2"	700A021
22	1-3/8"	2-1/2"	700A022
23	1-3/8"	2-1/2"	700A023
24	1-3/8"	2-1/2"	700A024
25	1-3/8"	2-1/2"	700A025
26	1-3/8"	2-1/2"	700A026
27	1-3/8"	2-1/2"	700A027
28	1-3/8"	2-1/2"	700A028
29	1-3/8"	2-1/2"	700A029
30	1-1/4"	2-1/4"	700A030

Size	Flute Length	Overall Length	700 EDP No.
31	1-1/4"	2-1/4"	700A031
32	1-1/4"	2-1/4"	700A032
33	1-1/4"	2-1/4"	700A033
34	1-1/4"	2-1/4"	700A034
35	1-1/4"	2-1/4"	700A035
36	1-1/4"	2-1/4"	700A036
37	1-1/4"	2-1/4"	700A037
38	1-1/4"	2-1/4"	700A038
39	1-1/4"	2-1/4"	700A039
40	1"	2"	700A040
41	1"	2"	700A041
42	1"	2"	700A042
43	1"	2"	700A043
44	1"	2"	700A044
45	7/8"	2"	700A045
46	7/8"	1-3/4"	700A046
47	7/8"	1-3/4"	700A047
48	7/8"	1-3/4"	700A048
49	7/8"	1-3/4"	700A049
50	7/8"	1-3/4"	700A050
51	3/4"	1-1/2"	700A051
52	3/4"	1-1/2"	700A052
53	3/4"	1-1/2"	700A053
54	3/4"	1-1/2"	700A054
55	3/4"	1-1/2"	700A055
56	3/4"	1-1/2"	700A056
57	3/4"	1-1/2"	700A057
58	3/4"	1-1/2"	700A058
59	3/4"	1-1/2"	700A059
60	3/4"	1-1/2"	700A060

Drills



# Solid Carbide Straight Flute Drills

**SOLID CARBIDE**  
Fractional & Letter / Bright



**PACKAGING:**  
All sizes are individually packaged.

## Series 710

140° SPLIT POINT / STRAIGHT SHANK

The straight flute design of these Solid Carbide drills increases edge strength, produces good size control, and hole surface finish. The 140° split point provides ease of penetration. Straight flute Solid Carbide drills are used to drill difficult materials (up to Rc 60) including nickel alloys, chrome alloys, steel weldments, titanium alloys, high temperature alloys, and stainless steel weldments. Suitable for drilling out broken drills, taps, bolts, screws, studs, weldments and more!



710

Size	Flute Length	Overall Length	710 EDP No.
3/64"	1/2"	1-3/8"	710A103
1/16"	5/8"	1-5/8"	710A104
5/64"	11/16"	1-11/16"	710A105
3/32"	3/4"	1-3/4"	710A106
7/64"	13/16"	1-13/16"	710A107
1/8"	7/8"	1-7/8"	710A108
9/64"	15/16"	1-15/16"	710A109
5/32"	1"	2-1/16"	710A110
11/64"	1-1/16"	2-1/8"	710A111
3/16"	1-1/8"	2-3/16"	710A112
13/64"	1-3/16"	2-1/4"	710A113
7/32"	1-1/4"	2-3/8"	710A114
15/64"	1-5/16"	2-7/16"	710A115
1/4"	1-3/8"	2-1/2"	710A116
17/64"	1-7/16"	2-5/8"	710A117
9/32"	1-1/2"	2-11/16"	710A118
19/64"	1-9/16"	2-3/4"	710A119
5/16"	1-5/8"	2-13/16"	710A120
21/64"	1-11/16"	2-15/16"	710A121
11/32"	1-11/16"	3"	710A122
23/64"	1-3/4"	3-1/16"	710A123
3/8"	1-13/16"	3-1/8"	710A124
25/64"	1-7/8"	3-1/4"	710A125
13/32"	1-15/16"	3-5/16"	710A126
27/64"	2"	3-3/8"	710A127
7/16"	2-1/16"	3-7/16"	710A128
29/64"	2-1/8"	3-9/16"	710A129
15/32"	2-1/8"	3-5/8"	710A130

Size	Flute Length	Overall Length	710 EDP No.
31/64"	2-3/16"	3-11/16"	710A131
1/2"	2-1/4"	3-3/4"	710A132
A	1-5/16"	2-7/16"	710A501
B	1-3/8"	2-1/2"	710A502
C	1-3/8"	2-1/2"	710A503
D	1-3/8"	2-1/2"	710A504
E	1-3/8"	2-1/2"	710A505
F	1-7/16"	2-5/8"	710A506
G	1-7/16"	2-5/8"	710A507
H	1-1/2"	2-11/16"	710A508
I	1-1/2"	2-11/16"	710A509
J	1-1/2"	2-11/16"	710A510
K	1-1/2"	2-11/16"	710A511
L	1-9/16"	2-3/4"	710A512
M	1-9/16"	2-3/4"	710A513
N	1-5/8"	2-13/16"	710A514
O	1-11/16"	2-15/16"	710A515
P	1-11/16"	2-15/16"	710A516
Q	1-11/16"	3"	710A517
R	1-11/16"	3"	710A518
S	1-3/4"	3-1/16"	710A519
T	1-3/4"	3-1/16"	710A520
U	1-13/16"	3-1/8"	710A521
V	1-7/8"	3-1/4"	710A522
W	1-7/8"	3-1/4"	710A523
X	1-15/16"	3-5/16"	710A524
Y	1-15/16"	3-5/16"	710A525
Z	2"	3-3/8"	710A526

Continued on next page

# Solid Carbide Straight Flute Drills



**SOLID CARBIDE**  
Number / Bright



**PACKAGING:**  
All sizes are individually packaged.

## Series 710 continued

140° SPLIT POINT / STRAIGHT SHANK

Size	Flute Length	Overall Length	710 EDP No.
1	1-5/16"	2-7/16"	710A001
2	1-5/16"	2-7/16"	710A002
3	1-1/4"	2-3/8"	710A003
4	1-1/4"	2-3/8"	710A004
5	1-1/4"	2-3/8"	710A005
6	1-1/4"	2-3/8"	710A006
7	1-3/16"	2-1/4"	710A007
8	1-3/16"	2-1/4"	710A008
9	1-3/16"	2-1/4"	710A009
10	1-3/16"	2-1/4"	710A010
11	1-3/16"	2-1/4"	710A011
12	1-3/16"	2-1/4"	710A012
13	1-1/8"	2-3/16"	710A013
14	1-1/8"	2-3/16"	710A014
15	1-1/8"	2-3/16"	710A015
16	1-1/8"	2-3/16"	710A016
17	1-1/8"	2-3/16"	710A017
18	1-1/16"	2-1/8"	710A018
19	1-1/16"	2-1/8"	710A019
20	1-1/16"	2-1/8"	710A020
21	1-1/16"	2-1/8"	710A021
22	1-1/16"	2-1/8"	710A022
23	1"	2-1/16"	710A023
24	1"	2-1/16"	710A024
25	1"	2-1/16"	710A025
26	1"	2-1/16"	710A026
27	1"	2-1/16"	710A027
28	15/16"	1-15/16"	710A028
29	15/16"	1-15/16"	710A029
30	15/16"	1-15/16"	710A030

Size	Flute Length	Overall Length	710 EDP No.
31	7/8"	1-7/8"	710A031
32	7/8"	1-7/8"	710A032
33	7/8"	1-7/8"	710A033
34	7/8"	1-7/8"	710A034
35	7/8"	1-7/8"	710A035
36	13/16"	1-13/16"	710A036
37	13/16"	1-13/16"	710A037
38	13/16"	1-13/16"	710A038
39	13/16"	1-13/16"	710A039
40	13/16"	1-13/16"	710A040
41	13/16"	1-13/16"	710A041
42	3/4"	1-3/4"	710A042
43	3/4"	1-3/4"	710A043
44	3/4"	1-3/4"	710A044
45	3/4"	1-3/4"	710A045
46	3/4"	1-3/4"	710A046
47	3/4"	1-3/4"	710A047
48	11/16"	1-11/16"	710A048
49	11/16"	1-11/16"	710A049
50	11/16"	1-11/16"	710A050
51	11/16"	1-11/16"	710A051
52	11/16"	1-11/16"	710A052
53	5/8"	1-1/2"	710A053
54	5/8"	1-1/2"	710A054
55	5/8"	1-1/2"	710A055
56	1/2"	1-3/8"	710A056
57	1/2"	1-3/8"	710A057
58	1/2"	1-3/8"	710A058
59	1/2"	1-3/8"	710A059
60	1/2"	1-3/8"	710A060



710A5

No. of Pcs.	Description	EDP No.
<b>710 Series Solid Carbide Straight Flute Sets</b>		
5	1/8, 3/16, 1/4, 5/16, 3/8	710A5



# Solid Carbide Screw Machine Length Drills

**SOLID CARBIDE**  
Fractional & Letter / Bright



**PACKAGING:**  
All sizes are individually packaged.

## Series 720

135° SPLIT POINT / STRAIGHT SHANK / SLOW HELIX

Slow helix 135° split point provides ease of penetration and increases edge strength. Heavy-duty web, short flute and overall lengths increase strength and rigidity. Suited for drilling difficult materials (up to Rc 60), including nickel alloys, chrome alloys, steel weldments, titanium alloys, high temperature alloys, and stainless steel weldments.



720

Size	Flute Length	Overall Length	720 EDP No.
3/64"	1/2"	1-3/8"	720A103
1/16"	5/8"	1-5/8"	720A104
5/64"	11/16"	1-11/16"	720A105
3/32"	3/4"	1-3/4"	720A106
7/64"	13/16"	1-13/16"	720A107
1/8"	7/8"	1-7/8"	720A108
9/64"	15/16"	1-15/16"	720A109
5/32"	1"	2-1/16"	720A110
11/64"	1-1/16"	2-1/8"	720A111
3/16"	1-1/8"	2-3/16"	720A112
13/64"	1-3/16"	2-1/4"	720A113
7/32"	1-1/4"	2-3/8"	720A114
15/64"	1-5/16"	2-7/16"	720A115
1/4"	1-3/8"	2-1/2"	720A116
17/64"	1-7/16"	2-5/8"	720A117
9/32"	1-1/2"	2-11/16"	720A118
19/64"	1-9/16"	2-3/4"	720A119
5/16"	1-5/8"	2-13/16"	720A120
21/64"	1-11/16"	2-15/16"	720A121
11/32"	1-11/16"	3"	720A122
23/64"	1-3/4"	3-1/16"	720A123
3/8"	1-13/16"	3-1/8"	720A124
25/64"	1-7/8"	3-1/4"	720A125
13/32"	1-15/16"	3-5/16"	720A126
27/64"	2"	3-3/8"	720A127
7/16"	2-1/16"	3-7/16"	720A128
29/64"	2-1/8"	3-9/16"	720A129
15/32"	2-1/8"	3-5/8"	720A130

Size	Flute Length	Overall Length	720 EDP No.
31/64"	2-3/16"	3-11/16"	720A131
1/2"	2-1/4"	3-3/4"	720A132
A	1-5/16"	2-7/16"	720A501
B	1-3/8"	2-1/2"	720A502
C	1-3/8"	2-1/2"	720A503
D	1-3/8"	2-1/2"	720A504
E	1-3/8"	2-1/2"	720A505
F	1-7/16"	2-5/8"	720A506
G	1-7/16"	2-5/8"	720A507
H	1-1/2"	2-11/16"	720A508
I	1-1/2"	2-11/16"	720A509
J	1-1/2"	2-11/16"	720A510
K	1-1/2"	2-11/16"	720A511
L	1-9/16"	2-3/4"	720A512
M	1-9/16"	2-3/4"	720A513
N	1-5/8"	2-13/16"	720A514
O	1-11/16"	2-15/16"	720A515
P	1-11/16"	2-15/16"	720A516
Q	1-11/16"	3"	720A517
R	1-11/16"	3"	720A518
S	1-3/4"	3-1/16"	720A519
T	1-3/4"	3-1/16"	720A520
U	1-13/16"	3-1/8"	720A521
V	1-7/8"	3-1/4"	720A522
W	1-7/8"	3-1/4"	720A523
X	1-15/16"	3-5/16"	720A524
Y	1-15/16"	3-5/16"	720A525
Z	2"	3-3/8"	720A526

Continued on next page



# Solid Carbide Screw Machine Length Drills



**SOLID CARBIDE**  
Number / Bright



**PACKAGING:**  
All sizes are individually packaged.

**Series 720** continued

135° SPLIT POINT / STRAIGHT SHANK / SLOW HELIX

Slow helix 135° split point provides ease of penetration and increases edge strength. Heavy-duty web, short flute and overall lengths increase strength and rigidity. Suited for drilling difficult materials (up to Rc 60), including nickel alloys, chrome alloys, steel weldments, titanium alloys, high temperature alloys, and stainless steel weldments.

Drills

Size	Flute Length	Overall Length	720 EDP No.
1	1-5/16"	2-7/16"	720A001
2	1-5/16"	2-7/16"	720A002
3	1-1/4"	2-3/8"	720A003
4	1-1/4"	2-3/8"	720A004
5	1-1/4"	2-3/8"	720A005
6	1-1/4"	2-3/8"	720A006
7	1-3/16"	2-1/4"	720A007
8	1-3/16"	2-1/4"	720A008
9	1-3/16"	2-1/4"	720A009
10	1-3/16"	2-1/4"	720A010
11	1-3/16"	2-1/4"	720A011
12	1-3/16"	2-1/4"	720A012
13	1-1/8"	2-3/16"	720A013
14	1-1/8"	2-3/16"	720A014
15	1-1/8"	2-3/16"	720A015
16	1-1/8"	2-3/16"	720A016
17	1-1/8"	2-3/16"	720A017
18	1-1/16"	2-1/8"	720A018
19	1-1/16"	2-1/8"	720A019
20	1-1/16"	2-1/8"	720A020
21	1-1/16"	2-1/8"	720A021
22	1-1/16"	2-1/8"	720A022
23	1"	2-1/16"	720A023
24	1"	2-1/16"	720A024
25	1"	2-1/16"	720A025
26	1"	2-1/16"	720A026
27	1"	2-1/16"	720A027
28	15/16"	1-15/16"	720A028
29	15/16"	1-15/16"	720A029
30	15/16"	1-15/16"	720A030

Size	Flute Length	Overall Length	720 EDP No.
31	7/8"	1-7/8"	720A031
32	7/8"	1-7/8"	720A032
33	7/8"	1-7/8"	720A033
34	7/8"	1-7/8"	720A034
35	7/8"	1-7/8"	720A035
36	13/16"	1-13/16"	720A036
37	13/16"	1-13/16"	720A037
38	13/16"	1-13/16"	720A038
39	13/16"	1-13/16"	720A039
40	13/16"	1-13/16"	720A040
41	13/16"	1-13/16"	720A041
42	3/4"	1-3/4"	720A042
43	3/4"	1-3/4"	720A043
44	3/4"	1-3/4"	720A044
45	3/4"	1-3/4"	720A045
46	3/4"	1-3/4"	720A046
47	3/4"	1-3/4"	720A047
48	11/16"	1-11/16"	720A048
49	11/16"	1-11/16"	720A049
50	11/16"	1-11/16"	720A050
51	11/16"	1-11/16"	720A051
52	11/16"	1-11/16"	720A052
53	5/8"	1-1/2"	720A053
54	5/8"	1-1/2"	720A054
55	5/8"	1-1/2"	720A055
56	1/2"	1-3/8"	720A056
57	1/2"	1-3/8"	720A057
58	1/2"	1-3/8"	720A058
59	1/2"	1-3/8"	720A059
60	1/2"	1-3/8"	720A060



# Solid Carbide 3-Flute Drills

**SOLID CARBIDE**  
Fractional & Metric / Bright



**PACKAGING:**  
All sizes are individually packaged.

## Series 730

150° POINT / STRAIGHT SHANK

3-Flute Solid Carbide drills can be used for centering, spotting, core drilling, or drilling. This tool provides precise hole size, finish, and higher productivity. Applications include titanium, cast iron, low alloy steel, and high silicon aluminum.



730

Size	Flute Length	Overall Length	730 EDP No.
3.0 (mm)	1-1/4"	2-1/4"	730A003
6.0 (mm)	2"	3-1/4"	730A006
8.0 (mm)	2-3/8"	3-3/4"	730A008
10.0 (mm)	2-7/8"	4-1/2"	730A010
12.0 (mm)	3"	4-3/4"	730A012
14.0 (mm)	3-1/2"	5-3/4"	730A014
16.0 (mm)	3-1/2"	5-3/4"	730A016
1/8"	1-1/4"	2-1/4"	730A108
9/64"	1-3/8"	2-1/2"	730A109
5/32"	1-3/8"	2-1/2"	730A110
11/64"	1-5/8"	2-3/4"	730A111
3/16"	1-5/8"	2-3/4"	730A112
13/64"	1-3/4"	3"	730A113
7/32"	1-3/4"	3"	730A114
15/64"	2"	3-1/4"	730A115
1/4"	2"	3-1/4"	730A116
17/64"	2-1/8"	3-1/2"	730A117
9/32"	2-1/8"	3-1/2"	730A118

Size	Flute Length	Overall Length	730 EDP No.
19/64"	2-3/8"	3-3/4"	730A119
5/16"	2-3/8"	3-3/4"	730A120
21/64"	2-1/2"	4"	730A121
11/32"	2-1/2"	4"	730A122
23/64"	2-1/2"	4"	730A123
3/8"	2-3/4"	4-1/2"	730A124
25/64"	2-7/8"	4-1/2"	730A125
13/32"	2-7/8"	4-1/2"	730A126
27/64"	2-7/8"	4-1/2"	730A127
7/16"	2-7/8"	4-1/2"	730A128
29/64"	3"	4-1/2"	730A129
15/32"	3"	4-3/4"	730A130
31/64"	3"	4-3/4"	730A131
1/2"	3"	4-3/4"	730A132
17/32"	3"	4-3/4"	730A134
9/16"	3-1/2"	5-3/4"	730A136
5/8"	3-1/2"	5-3/4"	730A140
3/4"	4-1/4"	5-3/4"	730A148

# Solid Carbide Spade Drills

**SOLID CARBIDE**  
Fractional / Bright



**PACKAGING:**  
All sizes are individually packaged.

## Series 750

118° POINT / STRAIGHT SHANK

Solid Carbide spade drills perform well in hard to machine materials (up to Rc 60), high strength alloys, plastic, and glass. They can be used in thin sheet metal and spotting applications. Drilling depth should not exceed 2x the drill diameter.



750

Size	Flute Length	Overall Length	Shank Size	750 EDP No.
1/32"	3/16"	1-1/2"	1/8"	750A102
3/64"	7/32"	1-1/2"	1/8"	750A103
1/16"	5/16"	1-1/2"	1/8"	750A104
5/64"	7/16"	1-1/2"	1/8"	750A105
3/32"	7/16"	1-1/2"	1/8"	750A106
7/64"	7/16"	1-1/2"	1/8"	750A107
1/8"	1/2"	1-1/2"	1/8"	750A108
9/64"	1/2"	2"	3/16"	750A109
5/32"	9/16"	2"	3/16"	750A110
11/64"	9/16"	2"	3/16"	750A111
3/16"	11/16"	2"	3/16"	750A112

Size	Flute Length	Overall Length	Shank Size	750 EDP No.
7/32"	19/32"	2-1/2"	1/4"	750A114
1/4"	11/16"	2-1/2"	1/4"	750A116
9/32"	3/4"	2-1/2"	5/16"	750A118
5/16"	7/8"	2-1/2"	5/16"	750A120
11/32"	15/16"	2-1/2"	3/8"	750A122
3/8"	1-1/8"	2-1/2"	3/8"	750A124
13/32"	1-1/8"	2-1/2"	1/2"	750A126
7/16"	1-3/16"	3"	1/2"	750A128
15/32"	1-3/16"	3"	1/2"	750A130
1/2"	1-3/16"	3"	1/2"	750A132

# Combined **Drill & Countersink** (Center Drill)

**SOLID CARBIDE**  
Bright



**PACKAGING:**  
All sizes are individually packaged.

## Series 3500C

60° ANGLE

Solid Carbide Combination Drill & Countersinks (also known as Center Drills) have strong shanks and flutes, making them ideal for drilling and countersinking in difficult materials. They may also be used in high production applications where tolerance, finish, and machine down-times are considered. Included angle is 60°. Other angles are available upon request.



3500C

Size	Body Dia.	Overall Length	Drill Dia.	3500C EDP No.
00	1/8"	1-1/4"	0.025	350CA00A
0	1/8"	1-1/4"	1/32"	350CAB0A
1	1/8"	1-1/4"	3/64"	350C001A
2	3/16"	1-7/8"	5/64"	350C002A
3	1/4"	2"	7/64"	350C003A
4	5/16"	2-1/8"	1/8"	350C004A
5	7/16"	2-3/4"	3/16"	350C005A
6	1/2"	3"	7/32"	350C006A

## CARBIDE TIP Fractional / Gold & Silver

**PACKAGING:**  
All sizes are individually packaged.

### Series 1600N

STRAIGHT SHANK

This masonry drill is used to drill Concrete, Natural Stone, Aerated Concrete, Masonry, Brick, Block, and Lime Sandstone. Self Centering Tip for easy spot drilling. Chisel Shaped Head Geometry-for faster drilling progress. Hardened Steel Body-for increased impact resistance. Large Volume Flute creates cupping effect for efficient dust extraction.



1600N

Size	Flute Length	Overall Length	Shank Size	1600N EDP No.
1/8"	1-3/8"	2-1/2"	1/8"	160N108
5/32"	1-1/2"	3"	5/32"	160N110
3/16"	2"	3-1/2"	3/16"	160N112
7/32"	2"	3-1/2"	7/32"	160N114
1/4"	2-3/8"	4"	1/4"	160N116
9/32"	2-3/8"	4"	9/32"	160N118

Size	Flute Length	Overall Length	Shank Size	1600N EDP No.
5/16"	3"	5"	5/16"	160N120
3/8"	3"	5"	3/8"	160N124
7/16"	3-1/2"	6"	7/16"	160N128
15/32"	3-1/2"	6"	15/32"	160N130
1/2"	3-1/2"	6"	1/2"	160N132
9/16"	3-1/2"	6"	1/2"	160N136

## CARBIDE TIP

Fractional / Black & Gold Tipped

### PACKAGING:

All sizes are individually packaged.

### Series 1600A

ROTARY PERCUSSION & HAMMER DRILLING, ROUND SHANK

The combination of rotation and percussion helps the drill achieve a cutting and grinding (rotary) action at the same time as a chipping (percussive) action, chipping away at rock to produce a hole. Usually these motions are hydraulically or pneumatically driven.



1600A

Size	Flute Length	Overall Length	Shank Size	1600A EDP No.
1/8"	1-1/2"	3"	1/8"	160A1083
5/32"	1-1/2"	3"	5/32"	160A1103
3/16"	2"	4"	3/16"	160A1124
3/16"	3-1/2"	6"	3/16"	160A1126
3/16"	4-3/4"	8"	3/16"	160A1128
7/32"	2"	4"	7/32"	160A1144
1/4"	2"	4"	1/4"	160A1164
1/4"	3-1/2"	6"	1/4"	160A1166
1/4"	6-5/8"	12"	1/4"	160A11612
1/4"	10"	16"	1/4"	160A11616
1/4"	18-1/2"	24"	1/4"	160A11624
5/16"	2-1/2"	5"	1/4"	160A1205
5/16"	3-1/2"	6"	1/4"	160A1206
5/16"	4-3/4"	8"	1/4"	160A1208
5/16"	6-5/8"	12"	1/4"	160A12012
5/16"	10"	16"	1/4"	160A12016
5/16"	18-1/2"	24"	1/4"	160A12024
11/32"	2-1/2"	5"	1/4"	160A1225
3/8"	2-1/2"	5"	5/16"	160A1245
3/8"	3-1/2"	6"	5/16"	160A1246A
3/8"	4-3/4"	8"	5/16"	160A1248A
3/8"	6-5/8"	12"	5/16"	160A12412A
3/8"	10"	16"	5/16"	160A12416A
3/8"	18-1/2"	24"	5/16"	160A12424A
7/16"	3-1/2"	6"	3/8"	160A1286A
15/32"	4-3/4"	8"	3/8"	160A1308A

Size	Flute Length	Overall Length	Shank Size	1600A EDP No.
1/2"	3-1/2"	6"	3/8"	160A1326A
1/2"	4-3/4"	8"	3/8"	160A1328A
1/2"	6-5/8"	12"	3/8"	160A13212A
1/2"	10"	16"	3/8"	160A13216A
1/2"	18-1/2"	24"	3/8"	160A13224A
9/16"	3-1/2"	6"	3/8"	160A1366A
9/16"	4-3/4"	8"	3/8"	160A1368A
9/16"	10"	16"	3/8"	160A13616B
19/32"	3-1/2"	6"	1/2"	160A1386B
5/8"	3-1/2"	6"	1/2"	160A1406B
5/8"	4-3/4"	8"	1/2"	160A1408A
5/8"	10"	16"	1/2"	160A14016B
5/8"	18-1/2"	24"	1/2"	160A14024B
3/4"	4"	6-1/2"	1/2"	160A1486B
3/4"	6-5/8"	12"	1/2"	160A14812B
3/4"	10"	16"	1/2"	160A14816B
3/4"	18-1/2"	24"	1/2"	160A14824B
7/8"	4"	6-1/2"	1/2"	160A1566B
7/8"	6-5/8"	12"	1/2"	160A15612B
7/8"	10"	16"	1/2"	160A15616B
7/8"	18-1/2"	24"	1/2"	160A15624B
1"	4"	6-1/2"	1/2"	160A1646B
1"	6-5/8"	12"	1/2"	160A16412B
1"	10"	16"	1/2"	160A16416B
1"	18-1/2"	24"	1/2"	160A16424B



# Masonry Drills

## CARBIDE TIP Fractional / Bright

**PACKAGING:**  
All sizes are individually packaged.

### Series 1700A

SDS PLUS

Short head to flute entrance allows debris to quickly channel down the flute for faster drilling progress. Chisel shaped head geometry for faster drilling progress. Self Centering Tip for easy spot drilling. Reinforced flute geometry reduces vibrations, increases breakage resistance, & transfers more energy from power tool motor to tip of the drill bit. Rebar Chamfer prevents carbide head from cracking in the event of contact with reinforced concrete (product not intended for use in reinforced concrete).



1700A

Size	Flute Length	Overall Length	1700A EDP No.
5/32"	2"	4-1/4"	170A1104
5/32"	4"	6-1/4"	170A1106
3/16"	2"	4-1/2"	170A1124
3/16"	4"	6-1/2"	170A1126
3/16"	6"	8-1/2"	170A1128
3/16"	10"	12-1/2"	170A11212
7/32"	2"	4-1/2"	170A1144
7/32"	4"	6-1/2"	170A1146
7/32"	6"	8-1/2"	170A1148
7/32"	14"	16"	170A11416
1/4"	2"	4-1/2"	170A1164
1/4"	4"	6-1/2"	170A1166
1/4"	6"	8-1/2"	170A1168
1/4"	9"	10-1/2"	170A11612
1/4"	18"	20"	170A11618
5/16"	4"	6-1/2"	170A1206
5/16"	6"	8-1/2"	170A1208
5/16"	10"	12-1/2"	170A12012
3/8"	4"	6-1/2"	170A1246
3/8"	6"	8-1/2"	170A1248
3/8"	10"	12-1/2"	170A12412
3/8"	16"	18"	170A12418
3/8"	22"	24"	170A12424
7/16"	4"	6-1/2"	170A1286

Size	Flute Length	Overall Length	1700A EDP No.
7/16"	10"	12-1/2"	170A12812
1/2"	4"	6-1/2"	170A1326
1/2"	8"	10-1/2"	170A13210
1/2"	10"	12-1/2"	170A13212
1/2"	16"	18"	170A13218
1/2"	22"	24"	170A13224
9/16"	4"	6-1/4"	170A1366
9/16"	10"	12-1/4"	170A13612
9/16"	16"	18"	170A13618
5/8"	4"	6-1/4"	170A1406
5/8"	6"	8-1/4"	170A1408
5/8"	10"	12-1/4"	170A14012
5/8"	16"	18"	170A14018
5/8"	22"	24"	170A14024
11/16"	6"	8"	170A1448
3/4"	6"	8"	170A1488
3/4"	10"	12"	170A14812
3/4"	16"	18"	170A14818
7/8"	8"	10"	170A15610
7/8"	10"	12"	170A15612
7/8"	16"	18"	170A15618
1"	10"	12"	170A16412
1"	16"	18"	170A16418

## CARBIDE TIP Fractional / Bright

**1700B PACKAGING:**  
5/32" thru 3/8" - 25 per pack  
1/2" thru 5/8" - 15 per pack

**1730 PACKAGING:**  
All sizes are individually packaged.

### Series 1700B (Bulk Packaging)

SDS PLUS

1700A series in bulk packs.

5/32" - 3/8" = Packs of 25 pieces

1/2" - 5/8" = Packs of 15 pieces



1700B

Size	Flute Length	Overall Length	1700B EDP No.
5/32"	2"	4-1/4"	170B1104
5/32"	4"	6-1/4"	170B1106
3/16"	2"	4-1/2"	170B1124
3/16"	4"	6-1/2"	170B1126
3/16"	6"	8-1/2"	170B1128
7/32"	4"	6-1/2"	170B1146
7/32"	6"	8-1/2"	170B1148

Size	Flute Length	Overall Length	1700B EDP No.
1/4"	2"	4-1/2"	170B1164
1/4"	4"	6-1/2"	170B1166
1/4"	6"	8-1/2"	170B1168
5/16"	4"	6-1/2"	170B1206
3/8"	4"	6-1/2"	170B1246
3/8"	6"	8-1/2"	170B1248
1/2"	10"	12-1/2"	170B13212
5/8"	6"	8-1/4"	170B1408

# Masonry Drills

**CARBIDE TIP**  
Fractional / Bright

**PACKAGING:**  
All sizes are individually packaged.

## Series 1820

SPLINE SHANK

Chisel shaped head geometry for fast penetration into material. Large volume flute transports debris quickly from hole for faster drilling progress. Short head to flute entrances allow dust to evacuate quickly to the flute.



1820

Size	Flute Length	Overall Length	1820 EDP No.
3/8"	5"	10"	182F12410
3/8"	8"	13"	182F12413
3/8"	11"	16"	182F12416
7/16"	8"	13"	182F12813
1/2"	5"	10"	182F13210
1/2"	8"	13"	182F13213
1/2"	11"	16"	182F13216
1/2"	17"	22"	182F13223
1/2"	24"	29"	182F13227
1/2"	31"	36"	182F13236
9/16"	8"	13"	182F13613
5/8"	5"	10"	182F14010
5/8"	8"	13"	182F14013
5/8"	11"	16"	182F14016
5/8"	17"	22"	182F14023
5/8"	24"	29"	182F14027
5/8"	31"	36"	182F14036
3/4"	8"	13"	182F14813

Size	Flute Length	Overall Length	1820 EDP No.
3/4"	11"	16"	182F14816
3/4"	17"	22"	182F14823
3/4"	31"	36"	182F14836
7/8"	11"	16"	182F15616
7/8"	17"	22"	182F15623
1"	11"	16"	182F16416
1"	17"	22"	182F16423
1"	31"	36"	182F16436
1-1/8"	11"	16"	182F20816
1-1/8"	17"	22"	182F20823
1-1/4"	11"	16"	182F21616
1-1/4"	17"	22"	182F21623
1-1/4"	31"	36"	182F21636
1-3/8"	11"	16"	182F22416
1-3/8"	17"	22"	182F22423
1-1/2"	17"	22"	182F23223
1-3/4"	17"	22"	182F24824
2"	17"	22"	182F26424

## CARBIDE TIP Fractional / Bright

**PACKAGING:**  
All sizes are individually packaged.

### Series 1830

SPLINE DRIVE SHANK

Short head to flute entrance allows debris to quickly channel down the flute for faster drilling progress. Chisel shaped head geometry for faster drilling progress. Self Centering Tip for easy spot drilling. Reinforced flute geometry reduces vibrations, increases breakage resistance, & transfers more energy from power tool motor to tip of the drill bit. Rebar Chamfer prevents carbide head from cracking in the event of contact with reinforced concrete (product not intended for use in reinforced concrete).



1830

Size	Flute Length	Overall Length	1830 EDP No.
5/8"	5"	10"	183F14010
5/8"	11"	16"	183F14016
5/8"	17"	22"	183F14023
5/8"	24"	29"	183F14027
5/8"	31"	36"	183F14036
3/4"	5"	10"	183F14810
3/4"	11"	16"	183F14816
3/4"	17"	22"	183F14823
3/4"	31"	36"	183F14836
7/8"	11"	16"	183F15616
7/8"	17"	22"	183F15623

Size	Flute Length	Overall Length	1830 EDP No.
1"	11"	16"	183F16416
1"	17"	22"	183F16423
1"	31"	36"	183F16436
1-1/8"	11"	16"	183F20816
1-1/8"	17"	22"	183F20823
1-1/4"	11"	16"	183F21616
1-1/4"	17"	22"	183F21623
1-1/4"	31"	36"	183F21636
1-3/8"	17"	21"	183F22421
1-1/2"	17"	22"	183F23223

### Series 1720

SDS PLUS DURA-TIP

4 x 90 head geometry prevents locking when hitting rebar on the side. Bit is designed for longer life when drilling in concrete. As an additional benefit, it can crush through and pulverize rebar when drilling in reinforced concrete applications. 4 fluted reinforced flute geometry uniformly distributes the dust through the flute for even flute wear. The reinforced geometry reduces vibrations and transfer more energy from the power tool motor to the tip of the drill bit.



1720

Size	Flute Length	Overall Length	1720 EDP No.
3/16"	2"	4-1/4"	172F1124
3/16"	4"	6-1/2"	172F1126
3/16"	6"	8-1/2"	172F1128
3/16"	8"	10-1/2"	172F11210
3/16"	10"	12-1/2"	172F11212
1/4"	2"	4-1/2"	172F1164
1/4"	4"	6-1/2"	172F1166

Size	Flute Length	Overall Length	1720 EDP No.
1/4"	6"	8-1/2"	172F1168
1/4"	8"	10-1/2"	172F11610
1/4"	10"	12-1/2"	172F11612
5/16"	4"	6-1/2"	172F1206
5/16"	10"	12-1/2"	172F12012
5/16"	16"	18"	172F12018
3/8"	4"	6-1/4"	172F1246

Continued on next page

# Masonry Drills

## CARBIDE TIP Fractional / Bright

**PACKAGING:**  
All sizes are individually packaged.

### Series 1720 continued

SDS PLUS DURA-TIP

Size	Flute Length	Overall Length	1720 EDP No.
3/8"	10"	12-1/4"	172F12412
3/8"	16"	18"	172F12418
7/16"	4"	6-1/4"	172F1286
7/16"	10"	12-1/4"	172F12812
7/16"	16"	18"	172F12818
1/2"	4"	6-1/4"	172F1326
1/2"	10"	12-1/4"	172F13212
1/2"	16"	18"	172F13218

**1720 BULK PACKAGING:**  
3/16" thru 5/16" - 15 per pack  
3/8" thru 1/2" - 10 per pack

Size	Flute Length	Overall Length	1720 EDP No.
9/16"	4"	6-1/4"	172F1366
9/16"	10"	12-1/4"	172F13612
9/16"	16"	18"	172F13618
5/8"	8"	10-1/4"	172F14010
5/8"	10"	12-1/4"	172F14012
3/4"	8"	10"	172F14810
3/4"	10"	12"	172F14812

Size	Flute Length	Overall Length	1720 BULK EDP No.
3/16"	4"	6-1/2"	172B1126
1/4"	4"	6-1/2"	172B1166
5/16"	4"	6-1/2"	172B1206
3/8"	4"	6-1/4"	172B1246
1/2"	4"	6-1/4"	172B1326

### Series 1740

SDS MAX

Designed for longer life in concrete and reinforced concrete applications. 4 x 90 head geometry prevents locking when hitting rebar on the side. As an additional benefit, it can crush through and pulverize rebar when drilling in reinforced concrete applications. Reinforced flute geometry reduces vibrations & transfers more impact energy from the head to the tip of the drill bit. Rebar Chamfers to prevent carbide head from cracking when in contact with reinforced concrete. More mass in secondary carbide cutters for longer life.



1740

Size	Flute Length	Overall Length	1740 EDP No.
1/2"	7-1/2"	13"	174F13213*
1/2"	15-1/2"	21"	174F13221*
9/16"	7-1/2"	13"	174F13613*
9/16"	15-1/2"	21"	174F13621*
5/8"	7-1/2"	13"	174F14013
5/8"	15-1/2"	21"	174F14021
5/8"	31"	36"	174F14036
3/4"	7-1/2"	13"	174F14813
3/4"	17"	21"	174F14821
3/4"	31"	36"	174F14836
7/8"	8"	13"	174F15613

Size	Flute Length	Overall Length	1740 EDP No.
7/8"	17"	21"	174F15621
1"	8"	13"	174F16413
1"	17"	21"	174F16421
1"	31"	36"	174F16436
1-1/8"	12"	17"	174F20817
1-1/8"	17"	21"	174F20821
1-1/4"	9-1/2"	15"	174F21615
1-1/4"	18"	23"	174F21623
1-1/4"	31"	36"	174F21636
1-3/8"	18"	23"	174F22423
1-1/2"	18"	23"	174F23223

\*1/2" and 9/16" are 2 flute



## CARBIDE TIP

Fractional / Black with Gold Tip

### PACKAGING:

All sizes are individually packaged.

### Series 1800A

TAPCON® SCREW TYPE ANCHOR DRILLS

The Tapcon® drill bit is specially designed to be used with the Tapcon® masonry fastener and installation kit.



1800A

Size	Overall Length	Screw Size	1800A EDP No.
5/32"	3-1/2"	12	180A1103
5/32"	4-1/2"	12	180A1104
5/32"	5-1/2"	12	180A1105
3/16"	3-1/2"	14	180A1123
3/16"	4-1/2"	14	180A1124
3/16"	5-1/2"	14	180A1125
3/16"	6-1/2"	14	180A1126
3/16"	7-1/2"	14	180A1127

### Series 1800E

TAPCON® SCREW TYPE ANCHOR DRILLS

The Tapcon® drill bit is specially designed to be used with the Tapcon® masonry fastener and installation kit.



1800E

Size	Overall Length	Screw Size	1800E EDP No.
5/32"	3-1/2"	12	180E1103
5/32"	4-1/2"	12	180E1104
5/32"	5-1/2"	12	180E1105
3/16"	3-1/2"	14	180E1123
3/16"	4-1/2"	14	180E1124
3/16"	5-1/2"	14	180E1125



# Masonry / Glass Drills

**CARBIDE TIP**  
Fractional / Bright

**PACKAGING:**  
All sizes are individually packaged.

## Series 1750

TAPCON® SDS-HEX TYPE SCREW ANCHOR DRILLS

Same design features and benefits as the 1700A Series, but with Hex shaft for attachment to sleeve driver to drive tapcon® screws.



1750

Size	Flute Length	Overall Length	1750 EDP No.
5/32"	2-3/8"	5"	175F1105
5/32"	4-1/8"	7"	175F1107
3/16"	2-3/8"	5"	175F1125
3/16"	4-1/8"	7"	175F1127

## Series 1840

STRAIGHT SHANK

For the drilling of glass, tile, and ceramics. Can be used with or without water or coolant; water is the preferred & best way. For use in rotary motors (not to be confused or used with rotary percussion motors).



1840

Size	Overall Length	1840 EDP No.
1/8"	3-1/2"	184F108
3/16"	3-1/2"	184F112
1/4"	3-1/2"	184F116
5/16"	3-3/4"	184F120
3/8"	4"	184F124
1/2"	4"	184F132

**PACKAGING:**  
All sizes are individually packaged.

## Series 1850



1850 Gouging Chisel



1850 Pointed Chisel



1850 Flat Chisel



1850 Toothed Chisel aka Slotting Tool



1850 Mortar Chisel aka Seam Tool



1850 Tile Chisel

Description	Overall Length	Shank Type	Length of Cut	1850 EDP No.
BULL POINT CHISEL SDS-PLUS SHANK 10"	10"	SDS PLUS	-	185FCB05
BULL POINT CHISEL SDS-MAX 12"	12"	SDS MAX	-	185FCB06
BULL POINT CHISEL SDS-MAX 18"	18"	SDS MAX	-	185FCB07
BUSHING TOOL SDS-MAX 1-7/8"	9-1/2"	SDS MAX	-	185FCB29
FLAT CHISEL SDS-PLUS 3/4"	10"	SDS PLUS	13/16"	185FCF11
FLAT CHISEL SDS-MAX 1"	12"	SDS MAX	15/16"	185FCF13
FLAT CHISEL SDS-MAX 1"	18"	SDS MAX	15/16"	185FCF14
FLAT CHISEL SPLINE SHANK 1"	12"	SPLINE SHANK	15/16"	185FCF18
FLAT CHISEL SPLINE SHANK 1"	18"	SPLINE SHANK	15/16"	185FCF19
FLAT CHISEL 3/4"	18"	3/4"	15/16"	185FCF22
GOUGING CHISEL SDS-PLUS 7/8"	10"	SDS PLUS	-	185FCG27
GOUGING CHISEL SDS-MAX 1"	12"	SDS MAX	-	185FCG28
MOIL POINT CHISEL 1-1/8"	20"	1-1/8"	-	185FCM01
MOIL POINT CHISEL 3/4"	12"	3/4"	-	185FCM02
MOIL POINT CHISEL 3/4"	18"	3/4"	-	185FCM03
MOIL POINT CHISEL SPLINE SHANK 12"	12"	SPLINE SHANK	-	185FCM09
MOIL POINT CHISEL SPLINE SHANK 18"	18"	SPLINE SHANK	-	185FCM10
MORTAR/SEAM SDS-MAX 1 1/8"	12"	SDS MAX	-	185FCM26
SCALING CHISEL SDS-PLUS 1-1/2"	10"	SDS PLUS	1-9/16"	185FCS12
SCALING CHISEL SDS-MAX 2"	12"	SDS MAX	2"	185FCS15
SCALING CHISEL SDS-MAX 3"	12"	SDS MAX	3-3/16"	185FCS16
SCALING CHISEL SPLINE SHANK 2"	12"	SPLINE SHANK	2"	185FCS20
SCALING CHISEL SPLINE SHANK 3 X 12"	12"	SPLINE SHANK	3-3/16"	185FCS21
SCALING CHISEL 3/4"	12"	3/4"	3-3/16"	185FCS23
SLOTTING CHISEL SDS-MAX 1-1/8"	12"	SDS MAX	1-9/16"	185FCS25
TILE SCALING CHISEL SDS- PLUS 3"	6-1/2"	SDS PLUS	1-9/16"	185FCT23
TILE SCALING CHISEL SDS- MAX 2"	12"	SDS MAX	1-31/32"	185FCT24

**PACKAGING:**  
All sizes are individually packaged.

## Series 1860



1860 - ADAPTER



1860 - SCRIBER

Description	Overall Length	Shank Type	1860 EDP No.
SDS-PLUS ADAPTER SDS-MAX SHANK 8"	8"	SDS MAX	186FA01
CHUCK ADAPTER SDS-PLUS SHANK 2"	2"	SDS PLUS	186FA02
CHUCK ADAPTER SDS-PLUS SHANK 2-1/2"	2-1/2"	SDS PLUS	186FA03
CARBIDE TIPPED SCRIBER HEXAGONAL SHANK	-	HEXAGONAL	186FA04

## HIGH SPEED STEEL Fractional / Bright

**PACKAGING:**  
All sizes are individually packaged.

### Series 1900E

SHIP AUGER BIT - HEX SHANK

Ship Auger Bits are used to make long holes in thick pieces of lumber. They can cut through nails without damaging the bit. It is also capable of drilling through vinyl and plastic. Ideal for electricians, plumbers, utilities and any trade requiring fast hole drilling in clean or nail-embedded wood.



1900E

Size	Overall Length	1900E EDP No.
1/4"	7-1/2"	19E116A
3/8"	7-1/2"	19E124A
3/8"	18"	19E124B
7/16"	7-1/2"	19E128A
7/16"	18"	19E128B
1/2"	7-1/2"	19E132A
1/2"	18"	19E132B
9/16"	7-1/2"	19E136A
9/16"	18"	19E136B
5/8"	7-1/2"	19E140A
5/8"	18"	19E140B

Size	Overall Length	1900E EDP No.
11/16"	7-1/2"	19E144A
11/16"	18"	19E144B
3/4"	7-1/2"	19E148A
3/4"	18"	19E148B
7/8"	7-1/2"	19E156A
7/8"	18"	19E156B
1"	7-1/2"	19E164A
1"	18"	19E164B
1-1/8"	18"	19E208B
1-1/4"	18"	19E216B

### Series 1950E

PADDLE BITS - BALL GROOVE SHANK

Ball groove hex shank helps reduce slippage in the drill chuck.



1950E

Size	Overall Length	1950E EDP No.
1/4"	6"	195E116
5/16"	6"	195E120
3/8"	6"	195E124
1/2"	6"	195E132
9/16"	6"	195E136
5/8"	6"	195E140
11/16"	6"	195E144
3/4"	6"	195E148

Size	Overall Length	1950E EDP No.
7/8"	6"	195E156
15/16"	6"	195E160
1"	6"	195E164
1-1/8"	6"	195E208
1-1/4"	6"	195E216
1-3/8"	6"	195E224
1-1/2"	6"	195E232

# Combined Drill & Countersink (Center Drill)



**HIGH SPEED STEEL**  
Bright

**PACKAGING:**  
All sizes are individually packaged.

## Series 3500

PLAIN TYPE / 60° ANGLE

When metal parts are machined on centers, as in turning or cylindrical grinding, it is always necessary to drill and countersink the center holes to serve as seats or bearings in the machine centers. Plain Type is the most commonly used combined drill & countersink.



3500

Size	Body Dia.	Overall Length	Drill Size	3500 EDP No.
00	1/8"	1-1/4"	.025	350AA00
1	1/8"	1-1/4"	3/64"	350A001
2	3/16"	1-7/8"	5/64"	350A002
3	1/4"	2"	7/64"	350A003

Size	Body Dia.	Overall Length	Drill Size	3500 EDP No.
4	5/16"	2-1/8"	1/8"	350A004
5	7/16"	2-3/4"	3/16"	350A005
6	1/2"	3"	7/32"	350A006
7	5/8"	3-1/4"	1/4"	350A007
8	3/4"	3-1/2"	5/16"	350A008

## Series 3500E

PLAIN & BELL TYPE / 60° ANGLE

When metal parts are machined on centers, as in turning or cylindrical grinding, it is always necessary to drill and countersink the center holes to serve as seats or bearings in the machine centers.

Plain Type is the most commonly used combined drill & countersink.

Bell Type is used if the parts to be machined are to pass through a number of subsequent handlings, where there is danger of marring the edges of the center holes. They have an additional small 120° chamfer to protect the edges of the 60° hole.



3500E Plain



3500E Bell Type

Size	Body Dia.	Overall Length	Drill Size	Plain EDP No.
1	1/8"	1-1/4"	3/64"	350E001
2	3/16"	1-7/8"	5/64"	350E002
3	1/4"	2"	7/64"	350E003
4	5/16"	2-1/8"	1/8"	350E004
5	7/16"	2-3/4"	3/16"	350E005
6	1/2"	3"	7/32"	350E006
7	5/8"	3-1/4"	1/4"	350E007
8	3/4"	3-1/2"	5/16"	350E008

Size	Body Dia.	Overall Length	Drill Size	Bell EDP No.
11	1/8"	1-1/4"	3/64"	350E011
12	3/16"	1-7/8"	1/16"	350E012
13	1/4"	2"	3/32"	350E013
14	5/16"	2-1/8"	7/64"	350E014
15	7/16"	2-3/4"	5/32"	350E015
16	1/2"	3"	3/16"	350E016
17	5/8"	3-1/4"	7/32"	350E017
18	3/4"	3-1/2"	1/4"	350E018



**DRILLCO**  
CUTTING TOOLS

Premium Quality Cutting Tools

**HIGH SPEED STEEL**  
Bright

**PACKAGING:**  
All sizes are individually packaged.

## Series 3575E

60° ANGLE

When metal parts are machined on centers, as in turning or cylindrical grinding, it is always necessary to drill and countersink the center holes to serve as seats or bearings in the machine centers.

**3575E** – Plain Type Long Series is used where extra reach is required.



3575E

Size	Body Dia.	Overall Length	Drill Size	3575E EDP No.
1	1/8"	3"	3/64"	35E001A
1	1/8"	4"	3/64"	35E001B
1	1/8"	5"	3/64"	35E001C
1	1/8"	6"	3/64"	35E001D
2	3/16"	4"	5/64"	35E002A
2	3/16"	5"	5/64"	35E002B
2	3/16"	6"	5/64"	35E002C
3	1/4"	4"	7/64"	35E003A
3	1/4"	5"	7/64"	35E003B
3	1/4"	6"	7/64"	35E003C
4	5/16"	4"	1/8"	35E004A
4	5/16"	5"	1/8"	35E004B

Size	Body Dia.	Overall Length	Drill Size	3575E EDP No.
4	5/16"	6"	1/8"	35E004C
4-1/2	3/8"	4"	9/64"	35E045A
4-1/2	3/8"	5"	9/64"	35E045B
4-1/2	3/8"	6"	9/64"	35E045C
5	7/16"	4"	3/16"	35E005A
5	7/16"	5"	3/16"	35E005B
6	1/2"	5"	7/32"	35E006B
6	1/2"	6"	7/32"	35E006C
7	5/8"	5"	1/4"	35E007A
7	5/8"	6"	1/4"	35E007B
8	3/4"	6"	5/16"	35E008A



# Pilot for Holesaws & Multi Step Drill



**HIGH SPEED STEEL**  
Fractional

**PACKAGING:**  
All sizes are individually packaged.

## Series 400P



BLACK OXIDE / 118° SPLIT POINT / 3-FLATS

Pilot drills have a self centering 118° split point and are designed to fit most styles of hole saw arbors. Pilot drills have 3 notches ground into the shank to allow adjustment for varying depth hole saws.



400P

Size	Flute Length	Overall Length	400P EDP No.
1/4"	1-5/16"	4"	400P116

## Series 8900

BRIGHT / STRAIGHT SHANK

**Multi Step Drill** – 50 Hole sizes with only 5 Step Drills. For sheet metal and other thin material such as plastic, PVC pipe, and wood. Ideal for electricians and other skilled trades.



8900

Size	Shank Size	Max. Size	Min. Size	Step Increment	Number of Steps	Tool Number	8900 EDP No.
1	1/4"	1/2"	1/8"	1/32"	13	1	890A001
2	1/4"	1/2"	3/16"	1/16"	6	2	890A002
3	3/8"	3/4"	1/4"	1/16"	9	3	890A003
4	3/8"	7/8"	3/16"	1/16"	12	4	890A004
5	1/2"	1-3/8"	1/4"	1/16"	10	5	890A005

Drills



**CARBON**  
Bright

**PACKAGING:**  
All sizes are individually packaged.

## Series 9000E

As the name implies, screw extractors are a tool designed to remove a broken or seized screw. The screw must first be "drilled out" to the proper size in order for the screw extractor to fit properly. The screw extractor is turned counter-clockwise using a tap wrench. Available individually, in a 5pc set, or in a 5pc set with corresponding required drill.



9000E

Size	Screw Size	Pipe Size	Drill Size	9000E EDP No.
1	3/16"	-	5/64"	9000E001
2	1/4"	-	7/64"	9000E002
3	5/16"	-	5/32"	9000E003
4	7/16" - 9/16"	-	1/4"	9000E004
5	9/16-3/4"	1/8"	17/64"	9000E005
6	3/4"	3/8"	13/32"	9000E006
7	1" - 1-3/8"	1/2"	17/32"	9000E007
8	1-3/8"	3/4"	13/16"	9000E008
9	1-3/4"	1"	1-1/16"	9000E009



9000ESET



9000EDS

Description	Drills	EDP No.
<b>9000E Series Screw Extractor Sets with 100SE Drills</b>		
#1-5 with Drills	5/64, 7/64, 5/32, 1/4, 17/64	9000EDS
<b>9000E Series Screw Extractor Sets</b>		
#1-5 no Drills	N/A	9000ESET

# Hardened Drill Sleeve

Bright

**PACKAGING:**  
All sizes are individually packaged.

## Series 1420

HARDENED

Regular Length. For adapting Morse Taper Shank tools to larger Morse taper holders.

**Hardened Sleeves (1420)** – Case hardened throughout & ground internally and externally



1420

Size	Inside Morse Taper	Morse Taper Outside	1420 EDP No.
12	1	2	142E012H
13	1	3	142E013H
14	1	4	142E014H
23	2	3	142E023H
24	2	4	142E024H
25	2	5	142E025H

Size	Inside Morse Taper	Morse Taper Outside	1420 EDP No.
34	3	4	142E034H
35	3	5	142E035H
45	4	5	142E045H
46	4	6	142E046H
56	5	6	142E056H

## Series 1440

HARDENED

Extension Length. For adapting Morse Taper Shank tools to larger or smaller Morse taper holders. Can also be used to extend the length of taper shank tools.

**Hardened Sleeves (1440)** – Case hardened throughout & ground internally and externally



1440

Size	Inside Morse Taper	Morse Taper Outside	1440 EDP No.	Size	Morse Taper	Morse Taper Outside	1440 EDP No.	Size	Inside Morse Taper	Morse Taper Outside	1440 EDP No.
12	1	2	144E012H	24	2	4	144E024H	44	4	4	144E044H
13	1	3	144E013H	32	3	2	144E032H	45	4	5	144E045H
21	2	1	144E021H	33	3	3	144E033H	54	5	4	144E054H
22	2	2	144E022H	34	3	4	144E034H	55	5	5	144E055H
23	2	3	144E023H	43	4	3	144E043H	56	5	6	144E056H

**PACKAGING:**  
All sizes are individually packaged.

Bright

## Series 1470

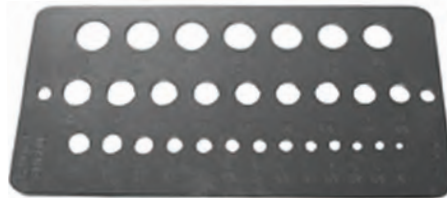
DRILL DRIFTS

For ejecting taper shank tools out of Morse Taper sleeves and sockets. Fully drop forged.



Size	Overall Length	Morse Taper	Drifts EDP No.
1	4-1/2"	#1	147E001
2	5-1/4"	#2	147E002
3	6"	#3	147E003
4	7"	#4, 5 and 6	147E004

## DRILL GAUGES



Size	Gauges EDP No.
Fractional	29G0000
33/64" - 1"	32G0000
Wire #1 - 60	60G0000

# Drill Sets

## 1/2" Reduced Shank S & D Drill Sets, 118° Point



Drills

1/2" Reduced Shank S & D Drill Sets						
No. of Pieces	Brand	Material	Coating/Finish	Point Angle	Description	EDP No.
<b>1000N Series 1/2" Shank S &amp; D Drill Sets</b>						
5	Nitro®	High Speed Steel	Black & Gold	118°	9/16" - 1" BY 8ths	1000N5
8	Nitro®	High Speed Steel	Black & Gold	118°	9/16" - 1" BY 16ths	1000N8
32	Nitro®	High Speed Steel	Black & Gold	118°	STAND 1/2" - 1" BY 64ths W/DRILLS	1000N32
<b>1000 Series 1/2" Shank S &amp; D Drill Sets</b>						
5	USA	High Speed Steel	Bright & Black	118°	9/16" - 1" BY 8ths	1000A5
8	USA	High Speed Steel	Bright & Black	118°	9/16" - 1" BY 16ths	1000A8
32	USA	High Speed Steel	Bright & Black	118°	STAND 1/2" - 1" BY 64ths W/DRILLS	1000A32
<b>1000C Series 1/2" Shank S &amp; D Drill Sets</b>						
5	USA	Cobalt	Black & Gold	118°	9/16" - 1" BY 8ths	1000C5
8	USA	Cobalt	Black & Gold	118°	9/16" - 1" BY 16ths	1000C8
32	USA	Cobalt	Black & Gold	118°	STAND 1/2" - 1" BY 64ths W/DRILLS	1000C32
<b>1000F Series 1/2" Shank S &amp; D Drill Set</b>						
5	USA	High Speed Steel	Bright & Black	118°	9/16" - 1" BY 8ths	1000F5
8	USA	High Speed Steel	Bright & Black	118°	9/16" - 1" BY 16ths	1000F8
32	USA	High Speed Steel	Bright & Black	118°	STAND 1/2" - 1" BY 64ths W/DRILLS	1000F32

## 1/2" Reduced Shank S & D Drill Sets & Reduced Shank Drill Sets



1000A8



1000N32

### 1/2" & 3/8" Reduced Shank S & D / Reduced Shank Drill Sets

No. of Pieces	Brand	Material	Coating/Finish	Point Angle	Description	EDP No.
<b>1000EC Series 1/2" Shank S &amp; D Drill Sets</b>						
5	–	Cobalt	Bronze	135°	9/16" - 1" BY 8ths	1000EC5
8	–	Cobalt	Bronze	135°	9/16" - 1" BY 16ths	1000EC8
32	–	Cobalt	Bronze	135°	STAND 1/2" - 1" BY 64ths W/DRILLS	1000CE32
<b>1000EF Series 1/2" Shank S &amp; D Drill Sets</b>						
5	–	High Speed Steel	Black & Gold	135°	9/16" - 1" BY 8ths	1000EF5
8	–	High Speed Steel	Black & Gold	135°	9/16" - 1" BY 16ths	1000EF8
32	–	High Speed Steel	Black & Gold	135°	STAND 1/2" - 1" BY 64ths W/DRILLS	1000EF32
<b>1000E Series 1/2" Shank S &amp; D Drill Sets</b>						
5	–	High Speed Steel	Bright & Black	118°	9/16" - 1" BY 8ths	1000E5
8	–	High Speed Steel	Bright & Black	118°	9/16" - 1" BY 16ths	1000E8
32	–	High Speed Steel	Bright & Black	118°	STAND 1/2" - 1" BY 64ths W/DRILLS	1000E32
<b>1035N &amp; 1045N Series 3/8" Reduced Shank Drill Sets</b>						
15	Nitro®	High Speed Steel	Black & Gold	135°	1/16" - 1/2" BY 32nds	1035N15
29	Nitro®	High Speed Steel	Black & Gold	135°	1/16" - 1/2" BY 64ths	1035N29
15	Nitro®	High Speed Steel	Black & Gold	135°	1/16" - 1/2" BY 32nds	1045N15
29	Nitro®	High Speed Steel	Black & Gold	135°	1/16" - 1/2" BY 64ths	1045N29



# Drill Sets

## Jobber Drill Sets



400N29



450TW29



100SE15

Drills

### Jobber Drill Sets

No. of Pieces	Brand	Material	Coating/Finish	Point Angle	Description	EDP No.
<b>400N/440N/480N Series Nitro® Heavy-Duty Jobber Drill Sets</b>						
13	Nitro®	High Speed Steel	Black & Gold	135°	1/16" - 1/4" BY 64ths	400N13
15	Nitro®	High Speed Steel	Black & Gold	135°	1/16" - 1/2" BY 32nds	400N15
19	Nitro®	High Speed Steel	Black & Gold	135°	Maintenance Set - 1/16, 5/64, 3/32, 1/8, #29, #25, 5/32, #21, 3/16, #7, 7/32, 1/4, F, 5/16, U, 3/8, 27/64, 7/16, 1/2	400N19
21	Nitro®	High Speed Steel	Black & Gold	135°	1/16" - 3/8" BY 64ths	400N21
21	Nitro®	High Speed Steel	Black & Gold	135°	1/16" - 1/4" BY 64ths & 9/32" - 1/2" BY 32nds	400N21V
26	Nitro®	High Speed Steel	Black & Gold	135°	A - Z	400N26
29	Nitro®	High Speed Steel	Black & Gold	135°	1/16" - 1/2" BY 64ths	400N29
29	Nitro®	High Speed Steel	Black & Gold	135°	DRILL PAL 1/16" - 1/2" BY 64ths	400NW29
60	Nitro®	High Speed Steel	Black & Gold	135°	#1 - #60	400N60
115	Nitro®	High Speed Steel	Black & Gold	135°	1/16" - 1/2" BY 64ths, #1 - 60, A - Z	400N0115
<b>450T Series Jobber Drill Sets</b>						
13		High Speed Steel	TiN Tipped	135°	1/16" - 1/4" BY 64ths	450T13
15		High Speed Steel	TiN Tipped	135°	1/16" - 1/2" BY 32nds	450T15
21		High Speed Steel	TiN Tipped	135°	1/16" - 3/8" BY 64ths	450T21
29		High Speed Steel	TiN Tipped	135°	1/16" - 1/2" BY 64ths	450T29
29		High Speed Steel	TiN Tipped	135°	DRILL PAL 1/16" - 1/2" BY 64ths	450TW29
60		High Speed Steel	TiN Tipped	135°	#1 - 60	450T60
<b>100SE Series Jobber Drill Sets</b>						
13		High Speed Steel	Black Oxide	118°	1/16" - 1/4" BY 64ths	100SE13
15		High Speed Steel	Black Oxide	118°	1/16" - 1/2" BY 32nds	100SE15
21		High Speed Steel	Black Oxide	118°	1/16" - 3/8" BY 64ths	100SE21
21		High Speed Steel	Black Oxide	118°	1/16" - 1/4" BY 64ths & 9/32" - 1/2" BY 32nds	100SE21V
29		High Speed Steel	Black Oxide	118°	DRILL PAL 1/16" - 1/2" BY 64ths	100SEW29
29		High Speed Steel	Black Oxide	118°	1/16" - 1/2" BY 64ths	100SE29

## Jobber Drill Sets



200B29

### Jobber Drill Sets

No. of Pieces	Brand	Material	Coating/Finish	Point Angle	Description	EDP No.
<b>200/240/280 Series Jobber Drill Sets</b>						
13	USA	High Speed Steel	Black Oxide	118°	1/16" - 1/4" BY 64ths	200A13
15	USA	High Speed Steel	Black Oxide	118°	1/16" - 1/2" BY 32nds	200A15
19	USA	High Speed Steel	Black Oxide	118°	Maintenance Set - 1/16, 5/64, 3/32, 1/8, #29, #25, 5/32, #21, 3/16, #7, 7/32, 1/4, F, 5/16, U, 3/8, 27/64, 7/16, 1/2	200A19
20	USA	High Speed Steel	Black Oxide	118°	#61 - #80	200A20
21	USA	High Speed Steel	Black Oxide	118°	1/16" - 3/8" BY 64ths	200A21
21	USA	High Speed Steel	Black Oxide	118°	1/16" - 1/4" BY 64ths & 9/32" - 1/2" BY 32nds	200A21V
26	USA	High Speed Steel	Black Oxide	118°	A - Z	200A26
29	USA	High Speed Steel	Black Oxide	118°	1/16" - 1/2" BY 64ths	200A29
29	USA	High Speed Steel	Black Oxide	118°	DRILL PAL 1/16" - 1/2" BY 64ths	200AW29
60	USA	High Speed Steel	Black Oxide	118°	#1 - #60	200A60
115	USA	High Speed Steel	Black Oxide	118°	1/16" - 1/2" BY 64ths, #1 - 60, A - Z	200A0115
<b>200B/240B/280B Series Jobber Drill Sets</b>						
13	USA	High Speed Steel	Bright	118°	1/16" - 1/4" BY 64ths	200B13
15	USA	High Speed Steel	Bright	118°	1/16" - 1/2" BY 32nds	200B15
19	USA	High Speed Steel	Bright	118°	Maintenance Set - 1/16, 5/64, 3/32, 1/8, #29, #25, 5/32, #21, 3/16, #7, 7/32, 1/4, F, 5/16, U, 3/8, 27/64, 7/16, 1/2	200B19
21	USA	High Speed Steel	Bright	118°	1/16" - 3/8" BY 64ths	200B21
21	USA	High Speed Steel	Bright	118°	1/16" - 1/4" BY 64ths & 9/32" - 1/2" BY 32nds	200B21V
26	USA	High Speed Steel	Bright	118°	A - Z	200B26
29	USA	High Speed Steel	Bright	118°	1/16" - 1/2" BY 64ths	200B29
60	USA	High Speed Steel	Bright	118°	#1 - #60	200B60
115	USA	High Speed Steel	Bright	118°	1/16" - 1/2" BY 64ths, #1 - 60, A - Z	200B0115

## Jobber Drill Sets

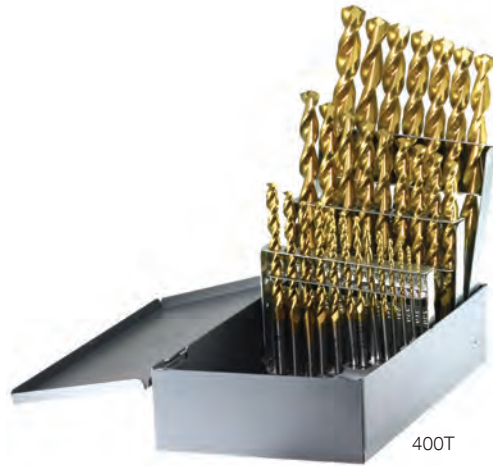


400HD21

Drills

Jobber Drill Sets						
No. of Pieces	Brand	Material	Coating/Finish	Point Angle	Description	EDP No.
400/440/480 & 400E Series Heavy-Duty Jobber Drill Sets						
13	USA	High Speed Steel	Black Oxide	135°	1/16" - 1/4" BY 64ths	400HD13
15	USA	High Speed Steel	Black Oxide	135°	1/16" - 1/2" BY 32nds	400HD15
19	USA	High Speed Steel	Black Oxide	135°	Maintenance Set - 1/16, 5/64, 3/32, 1/8, #29, #25, 5/32, #21, 3/16, #7, 7/32, 1/4, F, 5/16, U, 3/8, 27/64, 7/16, 1/2	400A19
21	USA	High Speed Steel	Black Oxide	135°	1/16" - 3/8" BY 64ths	400HD21
21	USA	High Speed Steel	Black Oxide	135°	1/16" - 1/4" BY 64ths & 9/32" - 1/2" BY 32nds	400HD21V
26	USA	High Speed Steel	Black Oxide	135°	A - Z	400HD26
29	USA	High Speed Steel	Black Oxide	135°	1/16" - 1/2" BY 64ths	400HD29
29	USA	High Speed Steel	Black Oxide	135°	DRILL PAL 1/16" - 1/2" BY 64ths	400AW29
60	USA	High Speed Steel	Black Oxide	135°	#1 - #60	400HD60
115	USA	High Speed Steel	Black Oxide	135°	1/16" - 1/2" BY 64ths, #1 - 60, A - Z	400HD0115
13		High Speed Steel	Black & Gold	135°	1/16" - 1/4" BY 64ths	400HDE13
15		High Speed Steel	Black & Gold	135°	1/16" - 1/2" BY 32nds	400HDE15
21		High Speed Steel	Black & Gold	135°	1/16" - 3/8" BY 64ths	400HDE21
21		High Speed Steel	Black & Gold	135°	1/16" - 1/4" BY 64ths & 9/32" - 1/2" BY 32nds	400HDE21V
29		High Speed Steel	Black & Gold	135°	1/16" - 1/2" BY 64ths	400HDE29
29		High Speed Steel	Black & Gold	135°	DRILL PAL 1/16" - 1/2" BY 64ths	400EW29

## Jobber Drill Sets



400T



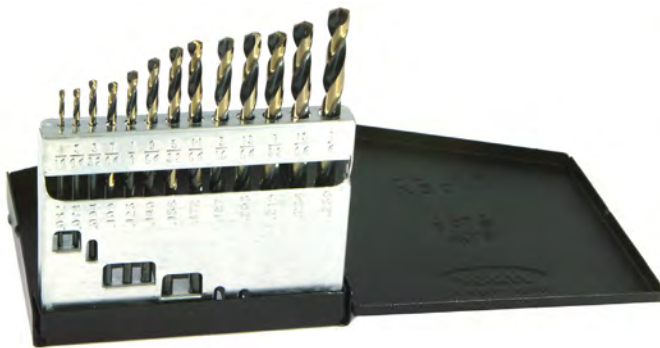
500

### Jobber Drill Sets

No. of Pieces	Brand	Material	Coating/Finish	Point Angle	Description	EDP No.
<b>400T Series Heavy-Duty Jobber Drill Sets</b>						
29	USA	High Speed Steel	TiN	135°	1/16" - 1/2" BY 64ths	400T29
<b>500/540/580 &amp; 500E/580E Series Cobalt Heavy-Duty Jobber Drill Sets</b>						
13	USA	Cobalt	Bronze	135°	1/16" - 1/4" BY 64ths	500A13
15	USA	Cobalt	Bronze	135°	1/16" - 1/2" BY 32nds	500A15
21	USA	Cobalt	Bronze	135°	1/16" - 3/8" BY 64ths	500A21
21	USA	Cobalt	Bronze	135°	1/16" - 1/4" BY 64ths & 9/32" - 1/2" BY 32nds	500A21V
26	USA	Cobalt	Bronze	135°	A - Z	500A26
29	USA	Cobalt	Bronze	135°	1/16" - 1/2" BY 64ths	500A29
29	USA	Cobalt	Bronze	135°	DRILL PAL 1/16" - 1/2" BY 64ths	500AW29
60	USA	Cobalt	Bronze	135°	#1 - #60	500A60
115	USA	Cobalt	Bronze	135°	1/16" - 1/2" BY 64ths, #1 - 60, A - Z	500A0115
13		Cobalt	Bronze	135°	1/16" - 1/4" BY 64ths	500E13
15		Cobalt	Bronze	135°	1/16" - 1/2" BY 32nds	500E15
21		Cobalt	Bronze	135°	1/16" - 3/8" BY 64ths	500E21
21		Cobalt	Bronze	135°	1/16" - 1/4" BY 64ths & 9/32" - 1/2" BY 32nds	500E21V
29		Cobalt	Bronze	135°	1/16" - 1/2" BY 64ths	500E29
60		Cobalt	Bronze	135°	#1 - #60	500E60

## Jobber Drill Sets

Drills



800A13



200LH29

Jobber Drill Sets						
No. of Pieces	Brand	Material	Coating/Finish	Point Angle	Description	EDP No.
<b>800 Series Metric Jobber Drill Sets</b>						
13		High Speed Steel	Black & Gold	135°	1mm - 7mm BY 0.5mm	800A13
19		High Speed Steel	Black & Gold	135°	1mm - 10mm BY 0.5mm	800A19
25		High Speed Steel	Black & Gold	135°	1mm - 13mm BY 0.5mm	800A25
<b>200LH Series Left Hand Jobber Drill Sets</b>						
13	USA	High Speed Steel	Bright	118°	1/16" - 1/4" BY 64ths	200LH13
15	USA	High Speed Steel	Bright	118°	1/16" - 1/2" BY 32nds	200LH15
21	USA	High Speed Steel	Bright	118°	1/16" - 3/8" BY 64ths	200LH21
21	USA	High Speed Steel	Bright	118°	1/16" - 1/4" BY 64ths & 9/32" - 1/2" BY 32nds	200LH21V
29	USA	High Speed Steel	Bright	118°	1/16" - 1/2" BY 64ths	200LH29



## Screw Machine Length Sets & Mechanics Length Drill Sets



300N

### Screw Machine (Stub) Length Drill Sets

No. of Pieces	Brand	Material	Coating/Finish	Point Angle	Description	EDP No.
<b>300N Series Nitro® Screw Machine (Stub) Length Heavy-Duty Drill Sets</b>						
29	Nitro®	High Speed Steel	Black & Gold	135°	1/16" - 1/2" BY 64ths	300N29
<b>300 Series Screw Machine (Stub) Length Drill Sets</b>						
29	USA	High Speed Steel	Black Oxide	135°	1/16" - 1/2" BY 64ths	300A29
<b>300C Series Cobalt Screw Machine (Stub) Length Drill Sets</b>						
29	USA	Cobalt	Bronze	135°	1/16" - 1/2" BY 64ths	300C29



350NW29

### Mechanics Length Drill Sets

No. of Pieces	Brand	Material	Coating/Finish	Point Angle	Description	EDP No.
<b>350N Series Nitro® Mechanics Length Drill Sets</b>						
13	Nitro®	High Speed Steel	Black & Gold	135°	1/16" - 1/4" BY 64ths	350N13
15	Nitro®	High Speed Steel	Black & Gold	135°	1/16" - 1/2" BY 32nds	350N15
21	Nitro®	High Speed Steel	Black & Gold	135°	1/16" - 3/8" BY 64ths	350N21
21	Nitro®	High Speed Steel	Black & Gold	135°	1/16" - 1/4" BY 64ths & 9/32" - 1/2" BY 32nds	350N21V
29	Nitro®	High Speed Steel	Black & Gold	135°	1/16" - 1/2" BY 64ths	350N29
29	Nitro®	High Speed Steel	Black & Gold	135°	DRILL PAL 1/16" - 1/2" BY 64ths	350NW29



# Displays, Dispensers, Indexes



540DX



115DX



29IDX

Drills

No. of Pieces	Series	Description	EDP No.
<b>Drill Display Case - Counter Top Display</b>			
540	200		200A540C
	200B		200B540C
	200LH		200LH540C
	300	(24) 1/16, (24) 5/64, (24) 3/32, (24) 7/64, (60) 1/8, (24) 9/64, (24) 5/32,	300A540C
	300N	(24) 11/64, (48) 3/16, (24) 13/64, (24) 7/32, (24) 15/64, (60) 1/4, (12)	300N540C
	300C	17/64, (12) 9/32, (12) 19/64, (12) 5/16, (6) 21/64, (6) 11/32, (6) 23/64,	300C540C
	350N	(12) 3/8, (6) 25/64, (6) 13/32, (6) 27/64, (12) 7/16, (6) 29/64, (6) 15/32,	350N540C
	400	(6) 31/64, (6) 1/2	400A540C
	400N		400N540C
	400T		400T540C
<b>Drill Dispensers (Empty)</b>			
Jobber Drill Dispensers	–	270PC FRACTIONAL SIZES	270DX
Jobber Drill Dispensers	–	720PC WIRE SIZES	720DX
Jobber Drill Dispensers	–	240PC LETTER SIZES	240DX
Jobber Drill Dispensers	–	MASTER DRILL DISPENSER	115DX
Jobber Drill Dispensers	–	234PC METRIC SIZES	800DX
<b>Drill Index (Empty)</b>			
13	–	13PC DRILL BIT INDEX 1/16" - 1/4" BY 64ths	13IDX
15	–	15PC DRILL BIT INDEX 1/16" - 1/2" BY 32nds	15IDX
21	–	21PC DRILL BIT INDEX 1/16" - 3/8" BY 64ths	21IDX
26	–	26PC DRILL BIT INDEX A-Z	26IDX
29	–	29PC DRILL BIT INDEX 1/16" - 1/2" BY 64ths	29IDX
29	–	29PC DRILL BIT INDEX 1/16" - 1/2" BY 64ths, "DRILL PAL"	29WIDX
60	–	60PC DRILL BIT INDEX #1-60	60IDX

## Series TDF



DRILLING & TAPPING FLUID

- **Heavy-duty fluid** is designed to aid in drilling and tapping, while increasing productivity, promoting excellent finish, and extending tool life
- For use on all metals including both ferrous and non-ferrous materials. Wide range of operations- drilling, tapping, reaming, boring, milling, sawing, and other machine operations
- Fluid is environmentally safe
- **Wax stick** can be used in lieu of fluids; the wax sticks to the tool while withstanding high heat
- **Foamy aerosol** coats the tool without contaminating existing coolant
- **Water based fluid** for use in a wide range of materials. Excellent for use in automated lubrication system found on Drillco magnetic drilling machines. Runs clean and leaves a soft, non-oily residue



Size	Description	Packaging	EDP No.
16 oz	Water based drilling & tapping fluid	Clear Bottle	WSTDF-16
4 oz	Heavy-duty drilling & tapping fluid	White Bottle	TDF-4
16 oz	Heavy-duty drilling & tapping fluid	Clear Bottle	TDF-16
1 Gallon	Heavy-duty drilling & tapping fluid	White Bottle	TDF-128
20 oz	Foamy aerosol drilling & tapping fluid	Aerosol Can	TDF-20
1 lb	Wax stick	Stick	TDF-WS1

\* Please see our website for MSDS information: [www.drillco-inc.com/products.php](http://www.drillco-inc.com/products.php)

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### 2's

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### Sets

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**HIGH SPEED STEEL**  
Machine Screw / Black Oxide



**PACKAGING:**  
All sizes are individually packaged.

## 2000N

TAPER, PLUG & BOTTOMING / THROUGH OR BLIND HOLE

Straight Flute "Hand Taps" are the most popular and versatile style of taps in general machine tapping operations. They are for general use in production tapping or hand operations in a wide range of application material groups.

**Taper** – 7-10 pitch chamfer length. Starts the thread square with the workpiece

**Plug** – 3-5 pitch chamfer length. Generally used in through holes

**Bottoming** – 1-2 pitch chamfer length. Generates the thread to the bottom

**Sets** – Contains 1 each of Taper, Plug, and Bottoming



2000N

For Tap/Drill sizes, please see chart on page 242

Size	NC	NF	Overall Length	Length of Thread	No. of Flutes	Pitch Dia. Limits	2000N EDP No.			
							Taper	Plug	Bottoming	Sets
0	-	80	1-11/16"	3/8"	2	H1	20N000FT	20N000FP	20N000FB	20N000FS
1	64	-	1-11/16"	3/8"	2	H1	20N001CT	20N001CP	20N001CB	20N001CS
1	-	72	1-11/16"	3/8"	2	H1	20N001FT	20N001FP	20N001FB	20N001FS
2	56	-	1-3/4"	7/16"	3	H2	20N002CT	20N002CP	20N002CB	20N002CS
2	-	64	1-3/4"	7/16"	3	H2	20N002FT	20N002FP	20N002FB	20N002FS
3	48	-	1-13/16"	1/2"	3	H2	20N003CT	20N003CP	20N003CB	20N003CS
3	-	56	1-13/16"	1/2"	3	H2	20N003FT	20N003FP	20N003FB	20N003FS
4	40	-	1-7/8"	9/16"	3	H2	20N004CT	20N004CP	20N004CB	20N004CS
4	-	36	1-7/8"	9/16"	3	H2	20N004ST	20N004SP	20N004SB	20N004SS
4	-	48	1-7/8"	9/16"	3	H2	20N004FT	20N004FP	20N004FB	20N004FS
5	40	-	1-15/16"	5/8"	3	H2	20N005CT	20N005CP	20N005CB	20N005CS
5	-	44	1-15/16"	5/8"	3	H2	20N005FT	20N005FP	20N005FB	20N005FS
6	32	-	2"	11/16"	3	H3	20N006CT	20N006CP	20N006CB	20N006CS
6	-	40	2"	11/16"	3	H2	20N006FT	20N006FP	20N006FB	20N006FS
8	32	-	2-1/8"	3/4"	4	H3	20N008CT	20N008CP	20N008CB	20N008CS
8	-	36	2-1/8"	3/4"	4	H2	20N008FT	20N008FP	20N008FB	20N008FS
10	24	-	2-3/8"	7/8"	4	H3	20N010CT	20N010CP	20N010CB	20N010CS
10	-	32	2-3/8"	7/8"	4	H3	20N010FT	20N010FP	20N010FB	20N010FS
12	24	-	2-3/8"	15/16"	4	H3	20N012CT	20N012CP	20N012CB	20N012CS
12	-	28	2-3/8"	15/16"	4	H3	20N012FT	20N012FP	20N012FB	20N012FS

Continued on next page

# NITRO Hand Taps



**HIGH SPEED STEEL**  
Fractional / Black Oxide



**PACKAGING:**  
All sizes are individually packaged.

**2000N** continued

TAPER, PLUG & BOTTOMING / THROUGH OR BLIND HOLE

For Tap/Drill sizes, please see chart on page 242

Size	NC	NF	Overall Length	Length of Thread	No. of Flutes	Pitch Dia. Limits	2000N EDP No.			
							Taper	Plug	Bottoming	Sets
1/4"	20	-	2-1/2"	1"	4	H3	20N116CT	20N116CP	20N116CB	20N116CS
1/4"	-	28	2-1/2"	1"	4	H3	20N116FT	20N116FP	20N116FB	20N116FS
5/16"	18	-	2-23/32"	1-1/8"	4	H3	20N120CT	20N120CP	20N120CB	20N120CS
5/16"	-	24	2-23/32"	1-1/8"	4	H3	20N120FT	20N120FP	20N120FB	20N120FS
3/8"	16	-	2-15/16"	1-1/4"	4	H3	20N124CT	20N124CP	20N124CB	20N124CS
3/8"	-	24	2-15/16"	1-1/4"	4	H3	20N124FT	20N124FP	20N124FB	20N124FS
7/16"	14	-	3-5/32"	1-7/16"	4	H3	20N128CT	20N128CP	20N128CB	20N128CS
7/16"	-	20	3-5/32"	1-7/16"	4	H3	20N128FT	20N128FP	20N128FB	20N128FS
1/2"	13	-	3-3/8"	1-21/32"	4	H3	20N132CT	20N132CP	20N132CB	20N132CS
1/2"	-	20	3-3/8"	1-21/32"	4	H3	20N132FT	20N132FP	20N132FB	20N132FS
9/16"	12	-	3-19/32"	1-21/32"	4	H3	20N136CT	20N136CP	20N136CB	20N136CS
9/16"	-	18	3-19/32"	1-21/32"	4	H3	20N136FT	20N136FP	20N136FB	20N136FS
5/8"	11	-	3-13/16"	1-13/16"	4	H3	20N140CT	20N140CP	20N140CB	20N140CS
5/8"	-	18	3-13/16"	1-13/16"	4	H3	20N140FT	20N140FP	20N140FB	20N140FS
11/16"	11	-	4-1/32"	1-13/16"	4	H3	20N144CT	20N144CP	20N144CB	20N144CS
11/16"	-	16	4-1/32"	1-13/16"	4	H3	20N144FT	20N144FP	20N144FB	20N144FS
3/4"	10	-	4-1/4"	2"	4	H3	20N148CT	20N148CP	20N148CB	20N148CS
3/4"	-	16	4-1/4"	2"	4	H3	20N148FT	20N148FP	20N148FB	20N148FS
7/8"	9	-	4-11/16"	2-7/32"	4	H4	20N156CT	20N156CP	20N156CB	20N156CS
7/8"	-	14	4-11/16"	2-7/32"	4	H4	20N156FT	20N156FP	20N156FB	20N156FS
1"	8	-	5-1/8"	2-1/2"	4	H4	20N164CT	20N164CP	20N164CB	20N164CS
1"	-	12	5-1/8"	2-1/2"	4	H4	20N164FT	20N164FP	20N164FB	20N164FS
1"	-	14	5-1/8"	2-1/2"	4	H4	20N164ST	20N164SP	20N164SB	20N164SS
1-1/8"	7	-	5-7/16"	2-9/16"	4	H4	20N208CT	20N208CP	20N208CB	20N208CS
1-1/8"	-	12	5-7/16"	2-9/16"	4	H4	20N208FT	20N208FP	20N208FB	20N208FS
1-1/4"	7	-	5-3/4"	2-9/16"	4	H4	20N216CT	20N216CP	20N216CB	20N216CS
1-1/4"	-	12	5-3/4"	2-9/16"	6	H4	20N216FT	20N216FP	20N216FB	20N216FS
1-3/8"	6	-	6-1/16"	3"	4	H4	20N224CT	20N224CP	20N224CB	20N224CS
1-3/8"	-	12	6-1/16"	3"	6	H4	20N224FT	20N224FP	20N224FB	20N224FS
1-1/2"	6	-	6-3/8"	3"	4	H4	20N232CT	20N232CP	20N232CB	20N232CS
1-1/2"	-	12	6-3/8"	3"	6	H4	20N232FT	20N232FP	20N232FB	20N232FS

Taps



# Hand Taps

**HIGH SPEED STEEL**  
Machine Screw / Bright



**PACKAGING:**  
All sizes are individually packaged.

## 2000

TAPER, PLUG & BOTTOMING / THROUGH OR BLIND HOLE

Straight Flute "Hand Taps" are the most popular and versatile style of taps in general machine tapping operations. They are for general use in production tapping or hand operations in a wide range of application material groups.

**Taper** – 7-10 pitch chamfer length. Starts the thread square with the workpiece

**Plug** – 3-5 pitch chamfer length. Generally used in through holes

**Bottoming** – 1-2 pitch chamfer length. Generates the thread to the bottom

**Sets** – Contains 1 each of Taper, Plug, and Bottoming



2000

For Tap/Drill sizes, please see chart on page 242

Size	NC	NF	Overall Length	Length of Thread	No. of Flutes	Pitch Dia. Limits	2000 EDP No.			
							Taper	Plug	Bottoming	Sets
0	-	80	1-5/8"	5/16"	2	H1	20A000FT	20A000FP	20A000FB	20A000FS
1	64	-	1-11/16"	3/8"	2	H1	20A001CT	20A001CP	20A001CB	20A001CS
1	-	72	1-11/16"	3/8"	2	H1	20A001FT	20A001FP	20A001FB	20A001FS
2	56	-	1-3/4"	7/16"	3	H2	20A002CT	20A002CP	20A002CB	20A002CS
2	-	64	1-3/4"	7/16"	3	H2	20A002FT	20A002FP	20A002FB	20A002FS
3	48	-	1-13/16"	1/2"	3	H2	20A003CT	20A003CP	20A003CB	20A003CS
3	-	56	1-13/16"	1/2"	3	H2	20A003FT	20A003FP	20A003FB	20A003FS
4	40	-	1-7/8"	9/16"	3	H2	20A004CT	20A004CP	20A004CB	20A004CS
4	-	36	1-7/8"	9/16"	3	H2	20A004ST	20A004SP	20A004SB	20A004SS
4	-	48	1-7/8"	9/16"	3	H2	20A004FT	20A004FP	20A004FB	20A004FS
5	40	-	1-15/16"	5/8"	3	H2	20A005CT	20A005CP	20A005CB	20A005CS
5	-	44	1-15/16"	5/8"	3	H2	20A005FT	20A005FP	20A005FB	20A005FS
6	32	-	2"	11/16"	3	H3	20A006CT	20A006CP	20A006CB	20A006CS
6	-	40	2"	11/16"	3	H2	20A006FT	20A006FP	20A006FB	20A006FS
8	32	-	2-1/8"	3/4"	4	H3	20A008CT	20A008CP	20A008CB	20A008CS
8	-	36	2-1/8"	3/4"	4	H2	20A008FT	20A008FP	20A008FB	20A008FS
10	24	-	2-3/8"	7/8"	4	H3	20A010CT	20A010CP	20A010CB	20A010CS
10	-	32	2-3/8"	7/8"	4	H3	20A010FT	20A010FP	20A010FB	20A010FS
12	24	-	2-3/8"	15/16"	4	H3	20A012CT	20A012CP	20A012CB	20A012CS
12	-	28	2-3/8"	15/16"	4	H3	20A012FT	20A012FP	20A012FB	20A012FS

Continued on next page



# Hand Taps



**HIGH SPEED STEEL**  
Fractional / Bright



**PACKAGING:**  
All sizes are individually packaged.

**2000** continued

TAPER, PLUG, BOTTOMING / THROUGH OR BLIND HOLE

For Tap/Drill sizes, please see chart on page 242

Size	NC	NF	Overall Length	Length of Thread	No. of Flutes	Pitch Dia. Limits	2000 EDP No.			
							Taper	Plug	Bottoming	Sets
1/4"	20	-	2-1/2"	1"	4	H3	20A116CT	20A116CP	20A116CB	20A116CS
1/4"	-	28	2-1/2"	1"	4	H3	20A116FT	20A116FP	20A116FB	20A116FS
5/16"	18	-	2-23/32"	1-1/8"	4	H3	20A120CT	20A120CP	20A120CB	20A120CS
5/16"	-	24	2-23/32"	1-1/8"	4	H3	20A120FT	20A120FP	20A120FB	20A120FS
3/8"	16	-	2-15/16"	1-1/4"	4	H3	20A124CT	20A124CP	20A124CB	20A124CS
3/8"	-	24	2-15/16"	1-1/4"	4	H3	20A124FT	20A124FP	20A124FB	20A124FS
7/16"	14	-	3-5/32"	1-7/16"	4	H3	20A128CT	20A128CP	20A128CB	20A128CS
7/16"	-	20	3-5/32"	1-7/16"	4	H3	20A128FT	20A128FP	20A128FB	20A128FS
1/2"	13	-	3-3/8"	1-21/32"	4	H3	20A132CT	20A132CP	20A132CB	20A132CS
1/2"	-	20	3-3/8"	1-21/32"	4	H3	20A132FT	20A132FP	20A132FB	20A132FS
9/16"	12	-	9/16"	1-21/32"	4	H3	20A136CT	20A136CP	20A136CB	20A136CS
9/16"	-	18	9/16"	1-21/32"	4	H3	20A136FT	20A136FP	20A136FB	20A136FS
5/8"	11	-	3-13/16"	1-13/16"	4	H3	20A140CT	20A140CP	20A140CB	20A140CS
5/8"	-	18	3-13/16"	1-13/16"	4	H3	20A140FT	20A140FP	20A140FB	20A140FS
11/16"	11	-	4-1/32"	1-13/16"	4	H3	20A144CT	20A144CP	20A144CB	20A144CS
11/16"	-	16	4-1/32"	1-13/16"	4	H3	20A144FT	20A144FP	20A144FB	20A144FS
3/4"	10	-	4-1/4"	2"	4	H3	20A148CT	20A148CP	20A148CB	20A148CS
3/4"	-	16	4-1/4"	2"	4	H3	20A148FT	20A148FP	20A148FB	20A148FS
7/8"	9	-	4-11/16"	2-7/32"	4	H4	20A156CT	20A156CP	20A156CB	20A156CS
7/8"	-	14	4-11/16"	2-7/32"	4	H4	20A156FT	20A156FP	20A156FB	20A156FS
1"	8	-	5-1/8"	2-1/2"	4	H4	20A164CT	20A164CP	20A164CB	20A164CS
1"	-	12	5-1/8"	2-1/2"	4	H4	20A164FT	20A164FP	20A164FB	20A164FS
1"	-	14	5-1/8"	2-1/2"	4	H4	20A164ST	20A164SP	20A164SB	20A164SS
1-1/8"	7	-	5-7/16"	2-9/16"	4	H4	20A208CT	20A208CP	20A208CB	20A208CS
1-1/8"	-	12	5-7/16"	2-9/16"	4	H4	20A208FT	20A208FP	20A208FB	20A208FS
1-1/4"	7	-	5-3/4"	2-9/16"	4	H4	20A216CT	20A216CP	20A216CB	20A216CS
1-1/4"	-	12	5-3/4"	2-9/16"	6	H4	20A216FT	20A216FP	20A216FB	20A216FS
1-3/8"	6	-	6-1/16"	3"	4	H4	20A224CT	20A224CP	20A224CB	20A224CS
1-3/8"	-	12	6-1/16"	3"	6	H4	20A224FT	20A224FP	20A224FB	20A224FS
1-1/2"	6	-	6-3/8"	3"	4	H4	20A232CT	20A232CP	20A232CB	20A232CS
1-1/2"	-	12	6-3/8"	3"	6	H4	20A232FT	20A232FP	20A232FB	20A232FS

Taps



# Hand Taps

## HIGH SPEED STEEL Machine Screw / Bright

### PACKAGING:

#0 thru 1/4" - 12 per pack

5/16" thru 1/2" - 6 per pack

9/16" thru 1" - 3 per pack

1-1/8" and up - individually packaged

## 2000E

TAPER, PLUG & BOTTOMING / THROUGH OR BLIND HOLE

Straight Flute "Hand Taps" are the most popular and versatile style of taps in general machine tapping operations. They are for general use in production tapping or hand operations in a wide range of application material groups.

**Taper** – 7-10 pitch chamfer length. Starts the thread square with the workpiece

**Plug** – 3-5 pitch chamfer length. Generally used in through holes

**Bottoming** – 1-2 pitch chamfer length. Generates the thread to the bottom

**Sets** – Contains 1 each of Taper, Plug, and Bottoming



2000E

For Tap/Drill sizes, please see chart on page 242

Size	NC	NF	Overall Length	Length of Thread	No. of Flutes	Pitch Dia. Limits	2000E EDP No.			
							Taper	Plug	Bottoming	Sets
0	-	80	1-5/8"	5/16"	2	H1	20E000FT	20E000FP	20E000FB	20E000FS
1	64	-	1-11/16"	3/8"	2	H1	20E001CT	20E001CP	20E001CB	20E001CS
1	-	72	1-11/16"	3/8"	2	H1	20E001FT	20E001FP	20E001FB	20E001FS
2	56	-	1-3/4"	7/16"	3	H2	20E002CT	20E002CP	20E002CB	20E002CS
2	-	64	1-3/4"	7/16"	3	H2	20E002FT	20E002FP	20E002FB	20E002FS
3	48	-	1-13/16"	1/2"	3	H2	20E003CT	20E003CP	20E003CB	20E003CS
3	-	56	1-13/16"	1/2"	3	H2	20E003FT	20E003FP	20E003FB	20E003FS
4	40	-	1-7/8"	9/16"	3	H2	20E004CT	20E004CP	20E004CB	20E004CS
4	-	36	1-7/8"	9/16"	3	H2	20E004ST	20E004SP	20E004SB	20E004SS
4	-	48	1-7/8"	9/16"	3	H2	20E004FT	20E004FP	20E004FB	20E004FS
5	40	-	1-15/16"	5/8"	3	H2	20E005CT	20E005CP	20E005CB	20E005CS
5	-	44	1-15/16"	5/8"	3	H2	20E005FT	20E005FP	20E005FB	20E005FS
6	32	-	2"	11/16"	3	H3	20E006CT	20E006CP	20E006CB	20E006CS
6	-	40	2"	11/16"	3	H2	20E006FT	20E006FP	20E006FB	20E006FS
8	32	-	2-1/8"	3/4"	4	H3	20E008CT	20E008CP	20E008CB	20E008CS
8	-	36	2-1/8"	3/4"	4	H2	20E008FT	20E008FP	20E008FB	20E008FS
10	24	-	2-3/8"	7/8"	4	H3	20E010CT	20E010CP	20E010CB	20E010CS
10	-	32	2-3/8"	7/8"	4	H3	20E010FT	20E010FP	20E010FB	20E010FS
12	24	-	2-3/8"	15/16"	4	H3	20E012CT	20E012CP	20E012CB	20E012CS
12	-	28	2-3/8"	15/16"	4	H3	20E012FT	20E012FP	20E012FB	20E012FS

Continued on next page

# Hand Taps



## HIGH SPEED STEEL Fractional / Bright

### PACKAGING:

#0 thru 1/4" - 12 per pack      9/16" thru 1" - 3 per pack  
5/16" thru 1/2" - 6 per pack      1-1/8" and up - individually packaged

**2000E** continued

TAPER, PLUG, BOTTOMING / THROUGH OR BLIND HOLE

For Tap/Drill sizes, please see chart on page 242

Size	NC	NF	Overall Length	Length of Thread	No. of Flutes	Pitch Dia. Limits	2000E EDP No.			
							Taper	Plug	Bottoming	Sets
1/4"	20	-	2-1/2"	1"	4	H3	20E116CT	20E116CP	20E116CB	20E116CS
1/4"	-	28	2-1/2"	1"	4	H3	20E116FT	20E116FP	20E116FB	20E116FS
5/16"	18	-	2-23/32"	1-1/8"	4	H3	20E120CT	20E120CP	20E120CB	20E120CS
5/16"	-	24	2-23/32"	1-1/8"	4	H3	20E120FT	20E120FP	20E120FB	20E120FS
3/8"	16	-	2-15/16"	1-1/4"	4	H3	20E124CT	20E124CP	20E124CB	20E124CS
3/8"	-	24	2-15/16"	1-1/4"	4	H3	20E124FT	20E124FP	20E124FB	20E124FS
7/16"	14	-	3-5/32"	1-7/16"	4	H3	20E128CT	20E128CP	20E128CB	20E128CS
7/16"	-	20	3-5/32"	1-7/16"	4	H3	20E128FT	20E128FP	20E128FB	20E128FS
1/2"	13	-	3-3/8"	1-21/32"	4	H3	20E132CT	20E132CP	20E132CB	20E132CS
1/2"	-	20	3-3/8"	1-21/32"	4	H3	20E132FT	20E132FP	20E132FB	20E132FS
9/16"	12	-	3-19/32"	1-21/32"	4	H3	20E136CT	20E136CP	20E136CB	20E136CS
9/16"	-	18	3-19/32"	1-21/32"	4	H3	20E136FT	20E136FP	20E136FB	20E136FS
5/8"	11	-	3-13/16"	1-13/16"	4	H3	20E140CT	20E140CP	20E140CB	20E140CS
5/8"	-	18	3-13/16"	1-13/16"	4	H3	20E140FT	20E140FP	20E140FB	20E140FS
11/16"	11	-	4-1/32"	1-13/16"	4	H3	20E144CT	20E144CP	20E144CB	20E144CS
11/16"	-	16	4-1/32"	1-13/16"	4	H3	20E144FT	20E144FP	20E144FB	20E144FS
3/4"	10	-	4-1/4"	2"	4	H3	20E148CT	20E148CP	20E148CB	20E148CS
3/4"	-	16	4-1/4"	2"	4	H3	20E148FT	20E148FP	20E148FB	20E148FS
7/8"	9	-	4-11/16"	2-7/32"	4	H4	20E156CT	20E156CP	20E156CB	20E156CS
7/8"	-	14	4-11/16"	2-7/32"	4	H4	20E156FT	20E156FP	20E156FB	20E156FS
1"	8	-	5-1/8"	2-1/2"	4	H4	20E164CT	20E164CP	20E164CB	20E164CS
1"	-	12	5-1/8"	2-1/2"	4	H4	20E164FT	20E164FP	20E164FB	20E164FS
1"	-	14	5-1/8"	2-1/2"	4	H4	20E164ST	20E164SP	20E164SB	20E164SS
1-1/8"	7	-	5-7/16"	2-9/16"	4	H4	20E208CT	20E208CP	20E208CB	20E208CS
1-1/8"	-	12	5-7/16"	2-9/16"	4	H4	20E208FT	20E208FP	20E208FB	20E208FS
1-1/4"	7	-	5-3/4"	2-9/16"	6	H4	20E216CT	20E216CP	20E216CB	20E216CS
1-1/4"	-	12	5-3/4"	2-9/16"	6	H4	20E216FT	20E216FP	20E216FB	20E216FS
1-3/8"	6	-	6-1/16"	3"	4	H4	20E224CT	20E224CP	20E224CB	20E224CS
1-3/8"	-	12	6-1/16"	3"	6	H4	20E224FT	20E224FP	20E224FB	20E224FS
1-1/2"	6	-	6-3/8"	3"	4	H4	20E232CT	20E232CP	20E232CB	20E232CS
1-1/2"	-	12	6-3/8"	3"	6	H4	20E232FT	20E232FP	20E232FB	20E232FS

Taps



# Hand Taps

**HIGH SPEED STEEL**  
Metric / Bright



**PACKAGING:**  
All sizes are individually packaged.

## 2800

TAPER, PLUG & BOTTOMING / THROUGH OR BLIND HOLE

Straight Flute “Hand Taps” are the most popular and versatile style of taps in general machine tapping operations. They are for general use in production tapping or hand operations in a wide range of application material groups.

**Taper** – 7-10 pitch chamfer length. Starts the thread square with the workpiece

**Plug** – 3-5 pitch chamfer length. Generally used in through holes

**Bottoming** – 1-2 pitch chamfer length. Generates the thread to the bottom

**Sets** – Contains 1 each of Taper, Plug, and Bottoming



2800

For Tap/Drill sizes, please see chart on page 242

Size (mm)	Pitch Dia. (mm)	No. of Flutes	Dia. Limits	2800 EDP No.			
				Taper	Plug	Bottoming	Sets
1.6	0.35	2	D3	28A016AT	28A016AP	28A016AB	28A016AS
1.8	0.35	2	D3	28A018AT	28A018AP	28A018AB	28A018AS
2	0.40	3	D3	28A020AT	28A020AP	28A020AB	28A020AS
2.2	0.45	3	D3	28A022AT	28A022AP	28A022AB	28A022AS
2.5	0.45	3	D3	28A025AT	28A025AP	28A025AB	28A025AS
3	0.50	3	D3	28A030AT	28A030AP	28A030AB	28A030AS
3.5	0.60	3	D4	28A035AT	28A035AP	28A035AB	28A035AS
4	0.70	4	D4	28A040AT	28A040AP	28A040AB	28A040AS
4.5	0.75	4	D4	28A045AT	28A045AP	28A045AB	28A045AS
5	0.80	4	D4	28A050AT	28A050AP	28A050AB	28A050AS
6	1.00	4	D5	28A060AT	28A060AP	28A060AB	28A060AS
6.3	1.00	4	D5	28A063AT	28A063AP	28A063AB	28A063AS
7	1.00	4	D5	28A070AT	28A070AP	28A070AB	28A070AS
8	1.00	4	D5	28A080BT	28A080BP	28A080BB	28A080BS
8	1.25	4	D5	28A080AT	28A080AP	28A080AB	28A080AS
10	1.25	4	D5	28A100BT	28A100BP	28A100BB	28A100BS
10	1.50	4	D5	28A100AT	28A100AP	28A100AB	28A100AS

Continued on next page

# Hand Taps



**HIGH SPEED STEEL**  
Metric / Bright



**PACKAGING:**  
All sizes are individually packaged.

**2800** continued

TAPER, PLUG, BOTTOMING / THROUGH OR BLIND HOLE

Straight Flute “Hand Taps” are the most popular and versatile style of taps in general machine tapping operations. They are for general use in production tapping or hand operations in a wide range of application material groups.

**Taper** – 7-10 pitch chamfer length. Starts the thread square with the workpiece

**Plug** – 3-5 pitch chamfer length. Generally used in through holes

**Bottoming** – 1-2 pitch chamfer length. Generates the thread to the bottom

**Sets** – Contains 1 each of Taper, Plug, and Bottoming

For Tap/Drill sizes, please see chart on page 242

Size (mm)	Pitch Dia. (mm)	No. of Flutes	Dia. Limits	2800 EDP No.			
				Taper	Plug	Bottoming	Sets
12	1.25	4	D5	28A120CT	28A120CP	28A120CB	28A120CS
12	1.75	4	D6	28A120AT	28A120AP	28A120AB	28A120AS
14	1.50	4	D6	28A140BT	28A140BP	28A140BB	28A140BS
14	2.00	4	D7	28A140AT	28A140AP	28A140AB	28A140AS
16	1.50	4	D6	28A160BT	28A160BP	28A160BB	28A160BS
16	2.00	4	D7	28A160AT	28A160AP	28A160AB	28A160AS
18	1.50	4	D6	28A180DT	28A180DP	28A180DB	28A180DS
18	2.00	4	D6	28A180CT	28A180CP	28A180CB	28A180CS
18	2.50	4	D7	28A180AT	28A180AP	28A180AB	28A180AS
20	1.50	4	D6	28A200BT	28A200BP	28A200BB	28A200BS
20	2.50	4	D7	28A200AT	28A200AP	28A200AB	28A200AS
22	1.50	4	D6	28A220BT	28A220BP	28A220BB	28A220BS
22	2.50	4	D7	28A220AT	28A220AP	28A220AB	28A220AS
24	2.00	4	D7	28A240BT	28A240BP	28A240BB	28A240BS
24	3.00	4	D8	28A240AT	28A240AP	28A240AB	28A240AS
27	2.00	4	D7	28A270BT	28A270BP	28A270BB	28A270BS
27	3.00	4	D8	28A270AT	28A270AP	28A270AB	28A270AS
30	2.00	4	D7	28A300BT	28A300BP	28A300BB	28A300BS
30	3.50	4	D9	28A300AT	28A300AP	28A300AB	28A300AS
33	2.00	4	D7	28A330BT	28A330BP	28A330BB	28A330BS
33	3.50	4	D9	28A330AT	28A330AP	28A330AB	28A330AS
36	3.00	4	D8	28A360BT	28A360BP	28A360BB	28A360BS
36	4.00	4	D9	28A360AT	28A360AP	28A360AB	28A360AS
39	3.00	6	D8	28A390BT	28A390BP	28A390BB	28A390BS
39	4.00	6	D9	28A390AT	28A390AP	28A390AB	28A390AS

Taps



## HIGH SPEED STEEL Metric / Bright

### PACKAGING:

1.6 mm thru 6.3 mm - 12 per pack  
7 mm thru 12 mm - 6 per pack

14 mm thru 27 mm - 3 per pack  
30 mm and up - individually packaged

## 2800E

TAPER, PLUG & BOTTOMING / THROUGH OR BLIND HOLE

Straight Flute “Hand Taps” are the most popular and versatile style of taps in general machine tapping operations. They are for general use in production tapping or hand operations in a wide range of application material groups.

**Taper** – 7-10 pitch chamfer length. Starts the thread square with the workpiece

**Plug** – 3-5 pitch chamfer length. Generally used in through holes

**Bottoming** – 1-2 pitch chamfer length. Generates the thread to the bottom

**Sets** – Contains 1 each of Taper, Plug, and Bottoming



2800E

For Tap/Drill sizes, please see chart on page 242

Size (mm)	Pitch Dia. (mm)	No. of Flutes	2800E EDP No.			
			Taper	Plug	Bottoming	Sets
1.5	0.35	2	28E015AT	28E015AP	28E015AB	28E015AS
1.6	0.35	2	28E016AT	28E016AP	28E016AB	28E016AS
1.8	0.35	2	28E018AT	28E018AP	28E018AB	28E018AS
2	0.40	3	28E020AT	28E020AP	28E020AB	28E020AS
2	0.45	3	28E020BT	28E020BP	28E020BB	28E020BS
2.2	0.45	3	28E022AT	28E022AP	28E022AB	28E022AS
2.3	0.40	3	28E023AT	28E023AP	28E023AB	28E023AS
2.5	0.45	3	28E025AT	28E025AP	28E025AB	28E025AS
2.6	0.45	3	28E026AT	28E026AP	28E026AB	28E026AS
3	0.50	3	28E030AT	28E030AP	28E030AB	28E030AS
3	0.60	3	28E030BT	28E030BP	28E030BB	28E030BS
3.5	0.60	3	28E035AT	28E035AP	28E035AB	28E035AS
4	0.50	4	28E040BT	28E040BP	28E040BB	28E040BS
4	0.70	4	28E040AT	28E040AP	28E040AB	28E040AS
4.5	0.75	4	28E045AT	28E045AP	28E045AB	28E045AS
5	0.50	4	28E050CT	28E050CP	28E050CB	28E050CS
5	0.80	4	28E050AT	28E050AP	28E050AB	28E050AS
5	0.90	4	28E050BT	28E050BP	28E050BB	28E050BS
5.5	0.90	4	28E055AT	28E055AP	28E055AB	28E055AS
6	0.75	4	28E060BT	28E060BP	28E060BB	28E060BS

Continued on next page



# Hand Taps

## HIGH SPEED STEEL Metric / Bright

### PACKAGING:

1.6 mm thru 6.3 mm - 12 per pack    14 mm thru 27 mm - 3 per pack  
7 mm thru 12 mm - 6 per pack        30 mm and up - individually packaged

### 2800E continued

TAPER, PLUG, BOTTOMING / THROUGH OR BLIND HOLE

Straight Flute "Hand Taps" are the most popular and versatile style of taps in general machine tapping operations. They are for general use in production tapping or hand operations in a wide range of application material groups.

**Taper** – 7-10 pitch chamfer length. Starts the thread square with the workpiece

**Plug** – 3-5 pitch chamfer length. Generally used in through holes

**Bottoming** – 1-2 pitch chamfer length. Generates the thread to the bottom

**Sets** – Contains 1 each of Taper, Plug, and Bottoming

For Tap/Drill sizes, please see chart on page 242

Size (mm)	Pitch Dia. (mm)	No. of Flutes	2800E EDP No.			
			Taper	Plug	Bottoming	Sets
6	1.00	4	28E060AT	28E060AP	28E060AB	28E060AS
6.3	1.00	4	28E063AT	28E063AP	28E063AB	28E063AS
7	1.00	4	28E070AT	28E070AP	28E070AB	28E070AS
8	1.00	4	28E080BT	28E080BP	28E080BB	28E080BS
8	1.25	4	28E080AT	28E080AP	28E080AB	28E080AS
10	1.00	4	28E100CT	28E100CP	28E100CB	28E100CS
10	1.25	4	28E100BT	28E100BP	28E100BB	28E100BS
10	1.50	4	28E100AT	28E100AP	28E100AB	28E100AS
11	1.50	4	28E110AT	28E110AP	28E110AB	28E110AS
12	1.25	4	28E120CT	28E120CP	28E120CB	28E120CS
12	1.50	4	28E120BT	28E120BP	28E120BB	28E120BS
12	1.75	4	28E120AT	28E120AP	28E120AB	28E120AS
14	1.25	4	28E140CT	28E140CP	28E140CB	28E140CS
14	1.50	4	28E140BT	28E140BP	28E140BB	28E140BS
14	2.00	4	28E140AT	28E140AP	28E140AB	28E140AS
16	1.50	4	28E160BT	28E160BP	28E160BB	28E160BS
16	2.00	4	28E160AT	28E160AP	28E160AB	28E160AS
18	1.00	4	28E180CT	28E180CP	28E180CB	28E180CS
18	1.50	4	28E180DT	28E180DP	28E180DB	28E180DS
18	2.00	4	28E180BT	28E180BP	28E180BB	28E180BS
18	2.50	4	28E180AT	28E180AP	28E180AB	28E180AS
20	1.00	4	28E200CT	28E200CP	28E200CB	28E200CS
20	1.50	4	28E200BT	28E200BP	28E200BB	28E200BS
20	2.00	4	28E200DT	28E200DP	28E200DB	28E200DS
20	2.50	4	28E200AT	28E200AP	28E200AB	28E200AS

Continued on next page

Taps

## HIGH SPEED STEEL Metric / Bright

### PACKAGING:

1.6 mm thru 6.3 mm - 12 per pack

7 mm thru 12 mm - 6 per pack

14 mm thru 27 mm - 3 per pack

30 mm and up - individually packaged

### 2800E continued

### TAPER, PLUG & BOTTOMING / THROUGH OR BLIND HOLE

Straight Flute "Hand Taps" are the most popular and versatile style of taps in general machine tapping operations. They are for general use in production tapping or hand operations in a wide range of application material groups.

**Taper** – 7-10 pitch chamfer length. Starts the thread square with the workpiece

**Plug** – 3-5 pitch chamfer length. Generally used in through holes

**Bottoming** – 1-2 pitch chamfer length. Generates the thread to the bottom

**Sets** – Contains 1 each of Taper, Plug, and Bottoming

For Tap/Drill sizes, please see chart on page 242

Size (mm)	Pitch Dia. (mm)	No. of Flutes	2800E EDP No.			
			Taper	Plug	Bottoming	Sets
22	1.50	4	28E220BT	28E220BP	28E220BB	28E220BS
22	2.50	4	28E220AT	28E220AP	28E220AB	28E220AS
24	1.50	4	28E240CT	28E240CP	28E240CB	28E240CS
24	2.00	4	28E240BT	28E240BP	28E240BB	28E240BS
24	3.00	4	28E240AT	28E240AP	28E240AB	28E240AS
27	2.00	4	28E270BT	28E270BP	28E270BB	28E270BS
27	3.00	4	28E270AT	28E270AP	28E270AB	28E270AS
30	1.50	4	28E300CT	28E300CP	28E300CB	28E300CS
30	2.00	4	28E300BT	28E300BP	28E300BB	28E300BS
30	3.50	4	28E300AT	28E300AP	28E300AB	28E300AS
32	2.00	4	28E320AT	28E320AP	28E320AB	28E320AS
33	2.00	4	28E330BT	28E330BP	28E330BB	28E330BS
33	3.50	4	28E330AT	28E330AP	28E330AB	28E330AS
36	3.00	4	28E360BT	28E360BP	28E360BB	28E360BS
36	4.00	4	28E360AT	28E360AP	28E360AB	28E360AS
39	3.00	6	28E390BT	28E390BP	28E390BB	28E390BS
39	4.00	6	28E390AT	28E390AP	28E390AB	28E390AS
42	1.50	6	28E420BT	28E420BP	28E420BB	28E420BS
42	4.50	6	28E420AT	28E420AP	28E420AB	28E420AS
45	1.50	6	28E450BT	28E450BP	28E450BB	28E450BS
45	4.50	6	28E450AT	28E450AP	28E450AB	28E450AS
48	1.50	6	28E480BT	28E480BP	28E480BB	28E480BS
48	5.00	6	28E480AT	28E480AP	28E480AB	28E480AS
52	1.50	6	28E520BT	28E520BP	28E520BB	28E520BS
52	5.00	6	28E520AT	28E520AP	28E520AB	28E520AS

# Hand Taps

## CARBON Machine Screw & Fractional / Bright

**PACKAGING:**  
#0 thru 1/4" - 12 per pack    9/16" thru 1" - 3 per pack  
5/16" thru 1/2" - 6 per pack    1-1/8" and up - individually packaged

### 2000C

TAPER, PLUG, BOTTOMING / THROUGH OR BLIND HOLE

Carbon Steel Taps are used to rethread damaged or jammed threads, or to thread mild steels.

They can be used for either through or blind holes.

**Taper** – 7-10 pitch chamfer length. Starts the thread square with the workpiece

**Plug** – 3-5 pitch chamfer length. Generally used in through holes

**Bottoming** – 1-2 pitch chamfer length. Generates the thread to the bottom



2000C

For Tap/Drill sizes, please see chart on page 242

Size	NC	NF	Overall Length	Length of Thread	No. of Flutes	2000C EDP No.		
						Taper	Plug	Bottoming
0	-	80	1-5/8"	5/16"	2	20C000FT	20C000FP	20C000FB
1	64	-	1-11/16"	3/8"	2	20C001CT	20C001CP	20C001CB
1	-	72	1-11/16"	3/8"	2	20C001FT	20C001FP	20C001FB
2	56	-	1-3/4"	7/16"	3	20C002CT	20C002CP	20C002CB
2	-	64	1-3/4"	7/16"	3	20C002FT	20C002FP	20C002FB
3	48	-	1-13/16"	1/2"	3	20C003CT	20C003CP	20C003CB
3	-	56	1-13/16"	1/2"	3	20C003FT	20C003FP	20C003FB
4	36	-	1-7/8"	9/16"	3	20C004AT	20C004AP	20C004AB
4	-	40	1-7/8"	9/16"	3	20C004CT	20C004CP	20C004CB
4	-	48	1-7/8"	9/16"	3	20C004FT	20C004FP	20C004FB
5	40	-	1-15/16"	5/8"	3	20C005CT	20C005CP	20C005CB
5	-	44	1-15/16"	5/8"	3	20C005FT	20C005FP	20C005FB
6	32	-	2"	11/16"	3	20C006CT	20C006CP	20C006CB
6	-	40	2"	11/16"	3	20C006FT	20C006FP	20C006FB
8	32	-	2-1/8"	3/4"	4	20C008CT	20C008CP	20C008CB
8	-	36	2-1/8"	3/4"	4	20C008FT	20C008FP	20C008FB
10	24	-	2-3/8"	7/8"	4	20C010CT	20C010CP	20C010CB
10	-	32	2-3/8"	7/8"	4	20C010FT	20C010FP	20C010FB
12	24	-	2-3/8"	15/16"	4	20C012CT	20C012CP	20C012CB
12	-	28	2-3/8"	15/16"	4	20C012FT	20C012FP	20C012FB
1/4"	20	-	2-1/2"	1"	4	20C116CT	20C116CP	20C116CB
1/4"	-	28	2-1/2"	1"	4	20C116FT	20C116FP	20C116FB
5/16"	18	-	2-23/32"	1-1/8"	4	20C120CT	20C120CP	20C120CB
5/16"	-	24	2-23/32"	1-1/8"	4	20C120FT	20C120FP	20C120FB
3/8"	16	-	2-15/16"	1-1/4"	4	20C124CT	20C124CP	20C124CB
3/8"	-	24	2-15/16"	1-1/4"	4	20C124FT	20C124FP	20C124FB

Continued on next page

# Hand Taps

## CARBON

Machine Screw, Fractional & Metric / Bright

**PACKAGING:** 4 mm thru 6 mm - 12 per pack  
8 mm thru 12 mm - 6 per pack  
13 mm and up - individually packaged

**2000C** continued

TAPER, PLUG & BOTTOMING / THROUGH OR BLIND HOLE

Size	NC	NF	Overall Length	Length of Thread	No. of Flutes	2000C EDP No.		
						Taper	Plug	Bottoming
7/16"	14	-	3-5/32"	1-7/16"	4	20C128CT	20C128CP	20C128CB
7/16"	-	20	3-5/32"	1-7/16"	4	20C128FT	20C128FP	20C128FB
1/2"	13	-	3-3/8"	1-21/32"	4	20C132CT	20C132CP	20C132CB
1/2"	-	20	3-3/8"	1-21/32"	4	20C132FT	20C132FP	20C132FB
9/16"	12	-	3-19/32"	1-21/32"	4	20C136CT	20C136CP	20C136CB
9/16"	-	18	3-19/32"	1-21/32"	4	20C136FT	20C136FP	20C136FB
5/8"	11	-	3-13/16"	1-13/16"	4	20C140CT	20C140CP	20C140CB
5/8"	-	18	3-13/16"	1-13/16"	4	20C140FT	20C140FP	20C140FB
3/4"	10	-	4-1/4"	2"	4	20C148CT	20C148CP	20C148CB
3/4"	-	16	4-1/4"	2"	4	20C148FT	20C148FP	20C148FB
7/8"	9	-	4-11/16"	2-7/32"	4	20C156CT	20C156CP	20C156CB
7/8"	-	14	4-11/16"	2-7/32"	4	20C156FT	20C156FP	20C156FB
1"	8	-	5-1/8"	2-1/2"	4	20C164CT	20C164CP	20C164CB
1"	-	12	5-1/8"	2-1/2"	4	20C164FT	20C164FP	20C164FB
1-1/8"	7	-	5-7/16"	2-9/16"	4	20C208CT	20C208CP	20C208CB
1-1/8"	-	12	5-7/16"	2-9/16"	4	20C208FT	20C208FP	20C208FB
1-1/4"	7	-	5-3/4"	2-9/16"	4	20C216CT	20C216CP	20C216CB
1-1/4"	-	12	5-3/4"	2-9/16"	6	20C216FT	20C216FP	20C216FB
1-3/8"	6	-	6-1/16"	3"	6	20C224CT	20C224CP	20C224CB
1-3/8"	-	12	6-1/16"	3"	6	20C224FT	20C224FP	20C224FB
1-1/2"	6	-	6-3/8"	3"	6	20C232CT	20C232CP	20C232CB
1-1/2"	-	12	6-3/8"	3"	6	20C232FT	20C232FP	20C232FB
Size (mm)	Pitch (mm)		Overall Length	Length of Thread	No. of Flutes	Taper	Plug	Bottoming
4	0.70	-	2-1/4"	5/16"	4	20C040AT	20C040AP	20C040AB
5	0.80	-	2-1/2"	3/8"	4	20C050AT	20C050AP	20C050AB
6	1.00	-	2-1/2"	3/8"	4	20C060AT	20C060AP	20C060AB
8	1.00	-	2-3/4"	7/16"	4	20C080AT	20C080AP	20C080AB
8	1.25	-	2-3/4"	7/16"	4	20C080BT	20C080BP	20C080BB
10	1.00	-	3"	1/2"	4	20C100AT	20C100AP	20C100AB
10	1.25	-	3"	1/2"	4	20C100BT	20C100BP	20C100BB
10	1.50	-	3"	9/16"	4	20C100CT	20C100CP	20C100CB
12	1.50	-	3-1/4"	9/16"	4	20C120AT	20C120AP	20C120AB
12	1.75	-	3-1/4"	9/16"	4	20C120BT	20C120BP	20C120BB
14	2.00	-	3-5/8"	5/8"	4	20C140AT	20C140AP	20C140AB
16	2.00	-	3-3/4"	11/16"	4	20C160AT	20C160AP	20C160AB

# Left Hand Taps

**HIGH SPEED STEEL**  
Machine Screw & Fractional / Bright



**PACKAGING:**  
All sizes are individually packaged.

## 2300

TAPER, PLUG & BOTTOMING / THROUGH OR BLIND HOLE

Straight Flute "Hand Taps" are the most popular and versatile style of taps in general machine tapping operations. They are for general use in production tapping or hand operations in a wide range of application material groups.

**Taper** – 7-10 pitch chamfer length. Starts the thread square with the workpiece

**Plug** – 3-5 pitch chamfer length. Generally used in through holes

**Bottoming** – 1-2 pitch chamfer length. Generates the thread to the bottom



2300

For Tap/Drill sizes, please see chart on page 242

Size	NC	NF	Overall Length	No. of Flutes	Pitch Dia. Limits	2300 EDP No.		
						Taper	Plug	Bottoming
6	32	-	2"	4	H3	23A006CT	23A006CP	23A006CB
8	32	-	2-1/8"	4	H3	23A008CT	23A008CP	23A008CB
10	24	-	2-3/8"	4	H3	23A010CT	23A010CP	23A010CB
10	-	32	2-3/8"	4	H3	23A010FT	23A010FP	23A010FB
1/4"	20	-	2-1/2"	4	H3	23A116CT	23A116CP	23A116CB
1/4"	-	28	2-1/2"	4	H3	23A116FT	23A116FP	23A116FB
5/16"	18	-	2-23/32"	4	H3	23A120CT	23A120CP	23A120CB
5/16"	-	24	2-23/32"	4	H3	23A120FT	23A120FP	23A120FB
3/8"	16	-	2-5/16"	4	H3	23A124CT	23A124CP	23A124CB
3/8"	-	24	2-5/16"	4	H3	23A124FT	23A124FP	23A124FB
7/16"	14	-	3-5/32"	4	H3	23A128CT	23A128CP	23A128CB
7/16"	-	20	3-5/32"	4	H3	23A128FT	23A128FP	23A128FB
1/2"	13	-	3-3/8"	4	H3	23A132CT	23A132CP	23A132CB

Continued on next page

## HIGH SPEED STEEL Machine Screw / Fractional / Bright



**PACKAGING:**  
All sizes are individually packaged.

**2300** continued

TAPER, PLUG, BOTTOMING / THROUGH OR BLIND HOLE

Straight Flute "Hand Taps" are the most popular and versatile style of taps in general machine tapping operations. They are for general use in production tapping or hand operations in a wide range of application material groups.

**Taper** – 7-10 pitch chamfer length. Starts the thread square with the workpiece

**Plug** – 3-5 pitch chamfer length. Generally used in through holes

**Bottoming** – 1-2 pitch chamfer length. Generates the thread to the bottom

For Tap/Drill sizes, please see chart on page 242

Size	NC	NF	Overall Length	No. of Flutes	Pitch Dia. Limits	2300 EDP No.		
						Taper	Plug	Bottoming
1/2"	–	20	3-3/8"	4	H3	23A132FT	23A132FP	23A132FB
9/16"	12	–	3-19/32"	4	H3	23A136CT	23A136CP	23A136CB
9/16"	–	18	3-19/32"	4	H3	23A136FT	23A136FP	23A136FB
5/8"	11	–	3-3/16"	4	H3	23A140CT	23A140CP	23A140CB
5/8"	–	18	3-3/16"	4	H3	23A140FT	23A140FP	23A140FB
3/4"	10	–	4-1/4"	4	H3	23A148CT	23A148CP	23A148CB
3/4"	–	16	4-1/4"	4	H3	23A148FT	23A148FP	23A148FB
7/8"	9	–	4-11/16"	4	H4	23A156CT	23A156CP	23A156CB
7/8"	–	14	4-11/16"	4	H4	23A156FT	23A156FP	23A156FB
1"	8	–	5-1/8"	4	H4	23A164CT	23A164CP	23A164CB
1"	–	12	5-1/8"	4	H4	23A164FT	23A164FP	23A164FB
1"	–	14	5-1/8"	4	H4	23A164ST	23A164SP	23A164SB
1-1/8"	7	–	5-7/16"	4	H4	23A208CT	23A208CP	23A208CB
1-1/8"	–	12	5-7/16"	4	H4	23A208FT	23A208FP	23A208FB
1-1/4"	7	–	5-3/4"	4	H4	23A216CT	23A216CP	23A216CB
1-1/4"	–	12	5-3/4"	6	H4	23A216FT	23A216FP	23A216FB
1-3/8"	6	–	6"	4	H4	23A224CT	23A224CP	23A224CB
1-3/8"	–	12	6"	6	H4	23A224FT	23A224FP	23A224FB
1-1/2"	6	–	6-1/4"	4	H4	23A232CT	23A232CP	23A232CB
1-1/2"	–	12	6-1/4"	6	H4	23A232FT	23A232FP	23A232FB



# 8-Pitch Hand Taps

**HIGH SPEED STEEL**  
Fractional / Bright



**PACKAGING:**  
All sizes are individually packaged.

**2500**

TAPER, PLUG & BOTTOMING / THROUGH OR BLIND HOLE

8-pitch hand taps are mainly used in oil field, gas exploration equipment, and power generation plants. They are of a larger diameter, with standard sizes up to 4".

**Taper** – 7-10 pitch chamfer length. Starts the thread square with the workpiece

**Plug** – 3-5 pitch chamfer length. Generally used in through holes

**Bottoming** – 1-2 pitch chamfer length. Generates the thread to the bottom



2500

For Tap/Drill sizes, please see chart on page 242

Size	NS	No. of Flutes	2500 EDP No.		
			Taper	Plug	Bottoming
1-1/8"	8	4	25A208T	25A208P	25A208B
1-1/4"	8	4	25A216T	25A216P	25A216B
1-3/8"	8	4	25A224T	25A224P	25A224B
1-1/2"	8	4	25A232T	25A232P	25A232B
1-5/8"	8	6	25A240T	25A240P	25A240B
1-3/4"	8	6	25A248T	25A248P	25A248B
1-7/8"	8	6	25A256T	25A256P	25A256B
2"	8	6	25A264T	25A264P	25A264B
2-1/8"	8	6	25A308T	25A308P	25A308B
2-1/4"	8	6	25A316T	25A316P	25A316B
2-3/8"	8	6	25A324T	25A324P	25A324B
2-1/2"	8	6	25A332T	25A332P	25A332B
2-5/8"	8	6	25A340T	25A340P	25A340B
2-3/4"	8	6	25A348T	25A348P	25A348B
2-7/8"	8	6	25A356T	25A356P	25A356B
3"	8	6	25A364T	25A364P	25A364B
3-1/4"	8	6	25A416T	25A416P	25A416B
3-1/2"	8	6	25A432T	25A432P	25A432B
3-3/4"	8	6	25A448T	25A448P	25A448B
4"	8	8	25A464T	25A464P	25A464B

Taps

# Oversized Hand Taps

**HIGH SPEED STEEL**  
Machine Screw & Fractional / Bright



**PACKAGING:**  
All sizes are individually packaged.

## 2003

.003" OVERSIZE / PLUG, BOTTOMING / THROUGH OR BLIND HOLE

Oversize taps are similar in design to a standard taps, but with a pitch diameter that is usually 0.003" to 0.005" larger than standard. Oversize taps are used primarily where a part will be plated or treated after tapping. Available in H7 or H11 limits, in hand taps (2003 and 2005 series) or spiral point (2103 and 2105 series).



2003

For Tap/Drill sizes, please see chart on page 242

Size	NC	Pitch Dia. Limits	No. of Flutes	2003 EDP No.	
				Plug	Bottoming
8	32	H7	3	203A008CP	203A008CB
10	24	H7	4	203A010CP	203A010CB
10	32	H7	4	203A010FP	203A010FB

## 2005

.005" OVERSIZE / PLUG, BOTTOMING / THROUGH OR BLIND HOLE

Oversize taps are similar in design to a standard taps, but with a pitch diameter that is usually 0.003" to 0.005" larger than standard. Oversize taps are used primarily where a part will be plated or treated after tapping. Available in H7 or H11 limits, in hand taps (2003 and 2005 series) or spiral point (2103 and 2105 series).



2005

For Tap/Drill sizes, please see chart on page 242

Size	NC	Pitch Dia. Limits	No. of Flutes	2005 EDP No.	
				Plug	Bottoming
1/4"	20	H11	4	205A116CP	-
5/16"	18	H11	4	205A120CP	205A120CB
3/8"	16	H11	4	205A124CP	205A124CB
7/16"	14	H11	4	205A128CP	205A128CB
1/2"	13	H11	4	205A132CP	205A132CB
5/8"	11	H11	4	205A140CP	205A140CB

# INTRODUCING NITRO-MAX™

## MULTI-APPLICATION TAPS & THREADFORMERS



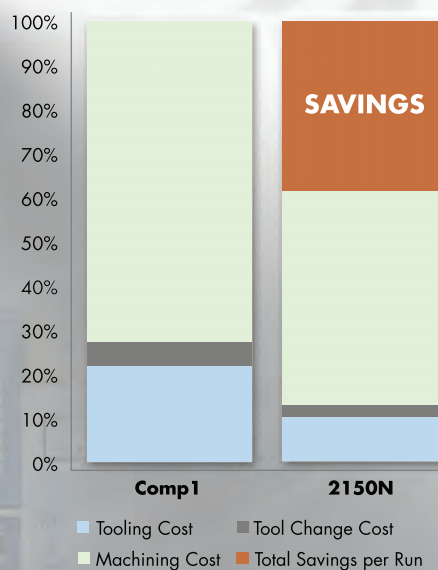
- **MULTI-APPLICATION** - Engineered for production threading in a wide range of materials
- **REDUCE TOOLING COSTS** - No need to stock multiple taps for each different material
- **M35 COBALT** - Modified and enhanced M35 Cobalt Substrate, with high Vanadium content, provides increased edge strength and heat resistance
- **WIDE OFFERING** - Available in ANSI/ANSI with Black Oxide surface treatment in spiral point and spiral flute AND DIN/ANSI with TiCN coating in spiral point, spiral flute, and threadformer in machine screw, fractional, and metric sizes

### The Proof is in the Results!

Nitro-Max was extensively tested at several large end users across North America against several major competitor taps. These results are one example.

- Product: Drillco 2150N Spiral Point ANSI/ANSI Tap
- Machine: Haas VF3 Cat 40, Vertical
- Material: 1045 Steel
- Tapping Conditions: 60 SFM, Emulsion Coolant
- Hole Type: Through Hole

Our competitor's tap was pulled after 631 holes and showed extreme wear. The 2150N Nitro-Max tap was pulled after 1,000 holes and showed only slight wear.



## COBALT (HSS-E) Machine Screw, Fractional & Metric / Black Oxide



**PACKAGING:**  
All sizes are individually packaged.

### 2150N

SPIRAL POINT / PLUG CHAMFER / THROUGH HOLE

Nitro®-Max ANSI/ANSI taps are produced with a reduced neck to allow for longer reach, improved coolant flow, and easier chip evacuation. Manufactured from M35 Cobalt (HSS-E) with a high vanadium content, these taps offer higher heat resistance and red hardness over conventional High Speed Steel taps. They can be used for production threading with both conventional or CNC equipment, in a wide range of material groups, including difficult to machine materials such as High Tensile Strength Steels and Stainless Steel. Black Oxide surface treatment provides improved lubricity and helps prevent the formation of built up edge. Spiral Point taps are designed for producing through holes in a work piece. The 2150N is manufactured to industry recognized USCTI 302A Standards.



	Size	NC	NF	Overall Length	Square Size	No. of Flutes	Pitch Dia. Limits	Tap/Drill Size (75%)	2150N EDP No.
Machine Screw & Fractional Sizes	6	32	-	2"	0.110"	2	H3	#36	215N006C
	8	32	-	2-1/8"	0.131"	3	H3	#29	215N008C
	10	24	-	2-3/8"	0.152"	3	H3	#25	215N010C
	10	-	32	2-3/8"	0.152"	3	H3	#21	215N010F
	1/4"	20	-	2-1/2"	0.191"	3	H3	#7	215N116C
	1/4"	-	28	2-1/2"	0.191"	3	H3	#3	215N116F
	5/16"	18	-	2-23/32"	0.238"	3	H3	F	215N120C
	5/16"	-	24	2-23/32"	0.238"	3	H3	I	215N120F
	3/8"	16	-	2-15/16"	0.286"	3	H3	5/16"	215N124C
	3/8"	-	24	2-15/16"	0.286"	3	H3	Q	215N124F
	7/16"	14	-	3-5/32"	0.242"	3	H3	U	215N128C
	7/16"	-	20	3-5/32"	0.242"	3	H3	W	215N128F
	1/2"	13	-	3-3/8"	0.275"	3	H3	27/64"	215N132C
	1/2"	-	20	3-3/8"	0.275"	3	H3	29/64"	215N132F
	5/8"	11	-	3-13/16"	0.360"	3	H3	17/32"	215N140C
	5/8"	-	18	3-13/16"	0.360"	3	H3	37/64"	215N140F
	3/4"	10	-	4-1/4"	0.442"	3	H3	21/32"	215N148C
	3/4"	-	16	4-1/4"	0.442"	3	H3	11/16"	215N148F

	Size	Pitch (mm)	Overall Length	Square Size	No. of Flutes	Pitch Dia. Limits	Tap/Drill Size (75%)	2150N EDP No.
Metric Sizes	M4	0.7	2-1/8"	0.131"	3	D4	#30	215N040A
	M5	0.8	2-3/8"	0.152"	3	D4	#19	215N050A
	M6	1.0	2-1/2"	0.191"	3	D5	#9	215N060A
	M8	1.25	2-23/32"	0.238"	3	D5	H	215N080A
	M10	1.5	2-15/16"	0.286"	3	D6	Q	215N100A
	M12	1.75	3-3/8"	0.275"	3	D6	Y	215N120A





## COBALT (HSS-E) Machine Screw, Fractional & Metric / TiCN Coated

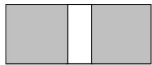


**PACKAGING:**  
All sizes are individually packaged.

### 2250N

SPIRAL POINT / PLUG CHAMFER / THROUGH HOLE

Nitro®-Max taps are manufactured to DIN/ANSI specifications, with DIN lengths to allow for longer reach and deeper threading in a single pass. The ANSI shanks and squares are common to North American toolholding systems. TiCN (Titanium Carbide Nitride) coating helps to reduce galling, microwelding, seizing and adhesive wear. It allows for a smoother threading operation. TiCN helps to hold sharp edges and reduces the coefficient of friction. Manufactured from M35 Cobalt (HSS-E) with a high Vanadium content, these taps offer higher heat resistance and red hardness over conventional High Speed Steel taps.



Taps

	Size	NC	NF	Overall Length	Square Size	No. of Flutes	Pitch Dia. Limits	Tap/Drill Size (75%)	2250N EDP No.
Machine Screw & Fractional Sizes	4	40	–	2.21"	0.110"	2	H2	#43	225N004C
	6	32	–	2.21"	0.110"	2	H3	#36	225N006C
	8	32	–	2.48"	0.131"	3	H3	#29	225N008C
	10	24	–	2.76"	0.152"	3	H3	#25	225N010C
	10	–	32	2.76"	0.152"	3	H3	#21	225N010F
	1/4"	20	–	3.15"	0.191"	3	H3	#7	225N116C
	1/4"	–	28	3.15"	0.191"	3	H3	#3	225N116F
	5/16"	18	–	3.54"	0.238"	3	H3	F	225N120C
	5/16"	–	24	3.54"	0.238"	3	H3	I	225N120F
	3/8"	16	–	3.94"	0.286"	3	H3	5/16"	225N124C
	3/8"	–	24	3.94"	0.286"	3	H3	Q	225N124F
	7/16"	14	–	3.94"	0.242"	3	H3	U	225N128C
	7/16"	–	20	3.94"	0.242"	3	H3	W	225N128F
	1/2"	13	–	4.33"	0.275"	3	H3	27/64"	225N132C
	1/2"	–	20	4.33"	0.275"	3	H3	29/64"	225N132F
	5/8"	11	–	4.33"	0.360"	3	H3	17/32"	225N140C
	5/8"	–	18	4.33"	0.360"	3	H3	37/64"	225N140F
	3/4"	10	–	4.92"	0.442"	3	H3	21/32"	225N148C
3/4"	–	16	4.92"	0.442"	3	H3	11/16"	225N148F	

	Size	Pitch (mm)	Overall Length	Square Size	No. of Flutes	Pitch Dia. Limits	Tap/Drill Size (75%)	2250N EDP No.
Metric Sizes	M4	0.7	2.48"	0.131"	3	D4	#30	225N040A
	M5	0.8	2.76"	0.152"	3	D4	#19	225N050A
	M6	1.0	3.15"	0.191"	3	D5	#9	225N060A
	M8	1.25	3.54"	0.238"	3	D5	H	225N080A
	M10	1.5	3.94"	0.286"	3	D6	Q	225N100A
	M12	1.75	4.33"	0.275"	3	D6	Y	225N120A
	M16	2.0	4.33"	0.360"	3	D7	35/64"	225N160A



**HIGH SPEED STEEL**  
Machine Screw & Fractional / Black Oxide



**PACKAGING:**  
All sizes are individually packaged.

## 2100N

PLUG / THROUGH HOLE

The angular flutes at the front end of these taps propel the chips ahead of the tap. This reduce loading and clogging in the flutes. Spiral Point taps are ideal for production tapping thru holes. Sometimes referred to as "Gun Taps", spiral point taps "shoot" the chips ahead of the tap.



2100N

For Tap/Drill sizes, please see chart on page 242

Size	NC	NF	Overall Length	Length of Thread	No. of Flutes	Pitch Dia. Limits	2100N EDP No.
							Plug
0	-	80	1-5/8"	5/16"	2	H1	21N000FP
1	64	-	1-11/16"	3/8"	2	H1	21N001CP
1	-	72	1-11/16"	3/8"	2	H1	21N001FP
2	56	-	1-3/4"	7/16"	2	H2	21N002CP
2	-	64	1-3/4"	7/16"	2	H2	21N002FP
3	48	-	1-13/16"	1/2"	2	H2	21N003CP
3	-	56	1-13/16"	1/2"	2	H2	21N003FP
4	40	-	1-7/8"	9/16"	2	H2	21N004CP
4	-	48	1-7/8"	9/16"	2	H2	21N004FP
4	-	36	1-7/8"	9/16"	2	H2	21N004SP
5	40	-	1-15/16"	5/8"	2	H2	21N005CP
5	-	44	1-15/16"	5/8"	2	H2	21N005FP
6	32	-	2"	11/16"	2	H3	21N006CP
6	-	40	2"	11/16"	2	H2	21N006FP
8	32	-	2-1/8"	3/4"	2	H3	21N008CP
8	-	36	2-1/8"	3/4"	2	H2	21N008FP
10	24	-	2-3/8"	7/8"	2	H3	21N010CP
10	-	32	2-3/8"	7/8"	2	H3	21N010FP
12	24	-	2-3/8"	15/16"	2	H3	21N012CP
12	-	28	2-3/8"	15/16"	2	H3	21N012FP

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# NITRO Spiral Point Taps



**HIGH SPEED STEEL**  
Fractional / Black Oxide



**PACKAGING:**  
All sizes are individually packaged.

**2100N** continued

PLUG / THROUGH HOLE

The angular flutes at the front end of these taps propel the chips ahead of the tap. This reduce loading and clogging in the flutes. Spiral Point taps are ideal for production tapping thru holes. Sometimes referred to as "Gun Taps", spiral point taps "shoot" the chips ahead of the tap.

For Tap/Drill sizes, please see chart on page 242

Size	NC	NF	Overall Length	Length of Thread	No. of Flutes	Pitch Dia. Limits	2100N EDP No.
							Plug
1/4"	20	-	2-1/2"	1"	2	H3	21N116CP
1/4"	-	28	2-1/2"	1"	2	H3	21N116FP
5/16"	18	-	2-23/32"	1-1/8"	2	H3	21N120CP
5/16"	-	24	2-23/32"	1-1/8"	2	H3	21N120FP
3/8"	16	-	2-15/16"	1-1/4"	3	H3	21N124CP
3/8"	-	24	2-15/16"	1-1/4"	3	H3	21N124FP
7/16"	14	-	3-5/32"	1-7/16"	3	H3	21N128CP
7/16"	-	20	3-5/32"	1-7/16"	3	H3	21N128FP
1/2"	13	-	3-3/8"	1-21/32"	3	H3	21N132CP
1/2"	-	20	3-3/8"	1-21/32"	3	H3	21N132FP
9/16"	12	-	3-19/32"	1-21/32"	3	H3	21N136CP
9/16"	-	18	3-19/32"	1-21/32"	3	H3	21N136FP
5/8"	11	-	3-13/16"	1-13/16"	3	H3	21N140CP
5/8"	-	18	3-13/16"	1-13/16"	3	H3	21N140FP
3/4"	10	-	4-1/4"	2"	3	H3	21N148CP
3/4"	-	16	4-1/4"	2"	3	H3	21N148FP

Taps



# Spiral Point Taps

**HIGH SPEED STEEL**  
Machine Screw / Bright



**PACKAGING:**  
All sizes are individually packaged.

## 2100

PLUG / THROUGH HOLE

The angular flutes at the front end of these taps propel the chips ahead of the tap. This reduce loading and clogging in the flutes. Spiral Point taps are ideal for production tapping thru holes. Sometimes referred to as "Gun Taps", spiral point taps "shoot" the chips ahead of the tap.



2100

For Tap/Drill sizes, please see chart on page 242

Size	NC	NF	Overall Length	Length of Thread	No. of Flutes	Pitch Dia. Limits	2100 EDP No.
							Plug
0	-	80	1-5/8"	5/16"	2	H1	21A000FP
1	64	-	1-11/16"	3/8"	2	H1	21A001CP
1	-	72	1-11/16"	3/8"	2	H1	21A001FP
2	56	-	1-3/4"	7/16"	2	H2	21A002CP
2	-	64	1-3/4"	7/16"	2	H2	21A002FP
3	48	-	1-13/16"	1/2"	2	H2	21A003CP
3	-	56	1-13/16"	1/2"	2	H2	21A003FP
4	40	-	1-7/8"	9/16"	2	H2	21A004CP
4	-	48	1-7/8"	9/16"	2	H2	21A004FP
4	-	36	1-7/8"	9/16"	2	H2	21A004SP
5	40	-	1-15/16"	5/8"	2	H2	21A005CP
5	-	44	1-15/16"	5/8"	2	H2	21A005FP
6	32	-	2"	11/16"	2	H3	21A006CP
6	-	40	2"	11/16"	2	H2	21A006FP
8	32	-	2-1/8"	3/4"	2	H3	21A008CP
8	-	36	2-1/8"	3/4"	2	H2	21A008FP
10	24	-	2-3/8"	7/8"	2	H3	21A010CP
10	-	32	2-3/8"	7/8"	2	H3	21A010FP
12	24	-	2-3/8"	15/16"	2	H3	21A012CP
12	-	28	2-3/8"	15/16"	2	H3	21A012FP

Continued on next page

# Spiral Point Taps

**HIGH SPEED STEEL**  
Fractional / Bright



**PACKAGING:**  
All sizes are individually packaged.

**2100** continued

PLUG / THROUGH HOLE

The angular flutes at the front end of these taps propel the chips ahead of the tap. This reduce loading and clogging in the flutes. Spiral Point taps are ideal for production tapping thru holes. Sometimes referred to as “Gun Taps”, spiral point taps “shoot” the chips ahead of the tap.

Taps

For Tap/Drill sizes, please see chart on page 242

Size	NC	NF	Overall Length	Length of Thread	No. of Flutes	Pitch Dia. Limits	2100 EDP No.
							Plug
1/4"	20	–	2-1/2"	1"	2	H3	21A116CP
1/4"	–	28	2-1/2"	1"	2	H3	21A116FP
5/16"	18	–	2-23/32"	1-1/8"	2	H3	21A120CP
5/16"	–	24	2-23/32"	1-1/8"	2	H3	21A120FP
3/8"	16	–	2-15/16"	1-1/4"	3	H3	21A124CP
3/8"	–	24	2-15/16"	1-1/4"	3	H3	21A124FP
7/16"	14	–	3-5/32"	1-7/16"	3	H3	21A128CP
7/16"	–	20	3-5/32"	1-7/16"	3	H3	21A128FP
1/2"	13	–	3-3/8"	1-21/32"	3	H3	21A132CP
1/2"	–	20	3-3/8"	1-21/32"	3	H3	21A132FP
9/16"	12	–	3-19/32"	1-21/32"	3	H3	21A136CP
9/16"	–	18	3-19/32"	1 21/32	3	H3	21A136FP
5/8"	11	–	3-13/16"	1-13/16"	3	H3	21A140CP
5/8"	–	18	3-13/16"	1-13/16"	3	H3	21A140FP
3/4"	10	–	4-1/4"	2"	3	H3	21A148CP
3/4"	–	16	4-1/4"	2"	3	H3	21A148FP

# Spiral Point Taps

**HIGH SPEED STEEL**  
Machine Screw / Bright

**PACKAGING:** #0 thru 1/4" - 12 per pack  
5/16" thru 1/2" - 6 per pack  
9/16" thru 1" - 3 per pack

**2100E**

PLUG / THROUGH HOLE

The angular flutes at the front end of these taps propel the chips ahead of the tap. This reduce loading and clogging in the flutes. Spiral Point taps are ideal for production tapping thru holes. Sometimes referred to as "Gun Taps", spiral point taps "shoot" the chips ahead of the tap.



2100E

For Tap/Drill sizes, please see chart on page 242

Size	NC	NF	Overall Length	Length of Thread	No. of Flutes	Pitch Dia. Limits	2100E EDP No.
							Plug
0	-	80	1-5/8"	5/16"	2	H1	21E000FP
1	64	-	1-11/16"	3/8"	2	H1	21E001CP
1	-	72	1-11/16"	3/8"	2	H1	21E001FP
2	56	-	1-3/4"	7/16"	2	H2	21E002CP
2	-	64	1-3/4"	7/16"	2	H2	21E002FP
3	48	-	1-13/16"	1/2"	2	H2	21E003CP
3	-	56	1-13/16"	1/2"	2	H2	21E003FP
4	40	-	1-7/8"	9/16"	2	H2	21E004CP
4	-	36	1-7/8"	9/16"	2	H2	21E004SP
4	-	48	1-7/8"	9/16"	2	H2	21E004FP
5	40	-	1-15/16"	5/8"	2	H2	21E005CP
5	-	44	1-15/16"	5/8"	2	H2	21E005FP
6	32	-	2"	11/16"	2	H3	21E006CP
6	-	40	2"	11/16"	2	H2	21E006FP
8	32	-	2-1/8"	3/4"	2	H3	21E008CP
8	-	36	2-1/8"	3/4"	2	H2	21E008FP
10	24	-	2-3/8"	7/8"	2	H3	21E010CP
10	-	32	2-3/8"	7/8"	2	H3	21E010FP
12	24	-	2-3/8"	15/16"	2	H3	21E012CP
12	-	28	2-3/8"	15/16"	2	H3	21E012FP

Continued on next page

# Spiral Point Taps

**HIGH SPEED STEEL**  
Fractional / Bright

**PACKAGING:** #0 thru 1/4" - 12 per pack  
5/16" thru 1/2" - 6 per pack  
9/16" thru 1" - 3 per pack

**2100E** continued

PLUG / THROUGH HOLE

The angular flutes at the front end of these taps propel the chips ahead of the tap. This reduce loading and clogging in the flutes. Spiral Point taps are ideal for production tapping thru holes. Sometimes referred to as "Gun Taps", spiral point taps "shoot" the chips ahead of the tap.

Taps

For Tap/Drill sizes, please see chart on page 242

Size	NC	NF	Overall Length	Length of Thread	No. of Flutes	Pitch Dia. Limits	2100E EDP No.
							Plug
1/4"	20	-	2-1/2"	1"	2	H3	21E116CP
1/4"	-	28	2-1/2"	1"	2	H3	21E116FP
5/16"	18	-	2-23/32"	1-1/8"	2	H3	21E120CP
5/16"	-	24	2-23/32"	1-1/8"	2	H3	21E120FP
3/8"	16	-	2-15/16"	1-1/4"	3	H3	21E124CP
3/8"	-	24	2-15/16"	1-1/4"	3	H3	21E124FP
7/16"	14	-	3-5/32"	1-7/16"	3	H3	21E128CP
7/16"	-	20	3-5/32"	1-7/16"	3	H3	21E128FP
1/2"	13	-	3-3/8"	1-21/32"	3	H3	21E132CP
1/2"	-	20	3-3/8"	1-21/32"	3	H3	21E132FP
9/16"	12	-	3-19/32"	1-21/32"	3	H3	21E136CP
9/16"	-	18	3-19/32"	1-21/32"	3	H3	21E136FP
5/8"	11	-	3-13/16"	1-13/16"	3	H3	21E140CP
5/8"	-	18	3-13/16"	1-13/16"	3	H3	21E140FP
3/4"	10	-	4-1/4"	2"	3	H3	21E148CP
3/4"	-	16	4-1/4"	2"	3	H3	21E148FP
7/8"	9	-	4-11/16"	2-7/32"	3	H4	21E156CP
7/8"	-	14	4-11/16"	2-7/32"	3	H4	21E156FP
1"	8	-	5-1/8"	2-1/2"	3	H4	21E164CP
1"	-	12	5-1/8"	2-1/2"	3	H4	21E164FP
1"	-	14	5-1/8"	2-1/2"	3	H4	21E164SP

## HIGH SPEED STEEL Machine Screw & Fractional / Bright

**PACKAGING:**  
All sizes are individually packaged.

### 2100PS

PLUG / THROUGH HOLE

These taps are designed for machine tapping in a wide range of material groups, including difficult to machine materials such as stainless steel. The *Nitro*® multi-application tap improves thread quality, and aids in chip evacuation, eliminating bird nesting. They are available in both spiral point and spiral flute designs, in fractional and metric sizes.



2100PS

For Tap/Drill sizes, please see chart on page 242

Size	NC	NF	Number of Flutes	Pitch Dia. Limits	2100PS EDP No.
4	40	-	2	H2	21PS004C
4	-	48	2	H2	21PS004F
5	40	-	3	H2	21PS005C
5	-	44	3	H2	21PS005F
6	32	-	3	H3	21PS006C
6	-	40	3	H2	21PS006F
8	32	-	3	H3	21PS008C
8	-	36	3	H2	21PS008F
10	24	-	3	H3	21PS010C
10	-	32	3	H3	21PS010F
12	24	-	3	H3	21PS012C
12	-	28	3	H3	21PS012F
1/4"	20	-	3	H3	21PS116C
1/4"	-	28	3	H3	21PS116F
5/16"	18	-	3	H3	21PS120C
5/16"	-	24	3	H5	21PS120F

Size	NC	NF	Number of Flutes	Pitch Dia. Limits	2100PS EDP No.
3/8"	16	-	3	H3	21PS124C
3/8"	-	24	3	H3	21PS124F
7/16"	14	-	3	H3	21PS128C
7/16"	-	20	3	H3	21PS128F
1/2"	13	-	3	H5	21PS132C
1/2"	-	20	3	H5	21PS132F
9/16"	12	-	3	H5	21PS136C
9/16"	-	18	3	H5	21PS136F
5/8"	11	-	3	H5	21PS140C
5/8"	-	18	3	H5	21PS140F
3/4"	10	-	3	H5	21PS148C
3/4"	-	16	3	H5	21PS148F
7/8"	9	-	3	H6	21PS156C
7/8"	-	14	3	H6	21PS156F
1"	8	-	3	H6	21PS164C
1"	-	12	3	H6	21PS164F



## HIGH SPEED STEEL Metric / Bright

**PACKAGING:**  
All sizes are individually packaged.

### 2100PS continued

PLUG / THROUGH HOLE

These taps are designed for machine tapping in a wide range of material groups, including difficult to machine materials such as stainless steel. The **Nitro®** multi-application tap improves thread quality, and aids in chip evacuation, eliminating bird nesting. They are available in both spiral point and spiral flute designs, in fractional and metric sizes.



2100PS

For Tap/Drill sizes, please see chart on page 242

Size	Pitch (mm)	Number of Flutes	Pitch Dia. Limits	2100PS EDP No.
M3	0.5	3	D3	21PS030A
M3.5	0.6	3	D4	21PS035A
M4	0.7	3	D4	21PS040A
M5	0.8	3	D4	21PS050A
M6	1.0	3	D5	21PS060A
M7	1.0	3	D5	21PS070A
M8	1.25	3	D5	21PS080A
M8	1.0	3	D5	21PS080B
M10	1.5	3	D6	21PS100A
M12	1.75	3	D6	21PS120A
M12	1.25	3	D5	21PS120B
M14	2.0	3	D7	21PS140A
M14	1.5	3	D6	21PS140B
M16	2.0	3	D7	21PS160A
M16	1.5	3	D6	21PS160B
M18	2.5	3	D7	21PS180A
M18	1.5	3	D6	21PS180D
M20	2.5	3	D7	21PS200A
M20	1.5	3	D6	21PS200B
M22	2.5	3	D7	21PS220A
M22	1.5	3	D6	21PS220B
M24	3.0	3	D8	21PS240A

# Spiral Point Taps

**HIGH SPEED STEEL**  
Metric / Bright



**PACKAGING:**  
All sizes are individually packaged.

## 2850

PLUG / THROUGH HOLE

The angular flutes at the front end of these taps propel the chips ahead of the tap. This reduce loading and clogging in the flutes. Spiral Point taps are ideal for production tapping thru holes. Sometimes referred to as “Gun Taps”, spiral point taps “shoot” the chips ahead of the tap.



2850

For Tap/Drill sizes, please see chart on page 242

Size (mm)	Pitch Dia. (mm)	No. of Flutes	Pitch Dia. Limits	2850 EDP No.
				Plug
1.6	0.35	2	D3	285A016A
1.8	0.35	2	D3	285A018A
2.0	0.40	2	D3	285A020A
2.2	0.45	2	D3	285A022A
2.5	0.45	2	D3	285A025A
3.0	0.50	2	D3	285A030A
3.5	0.60	2	D4	285A035A
4.0	0.70	2	D4	285A040A
4.5	0.75	2	D4	285A045A
5.0	0.80	2	D4	285A050A
6.0	1.00	2	D5	285A060A
6.3	1.00	2	D5	285A063A
7.0	1.00	2	D5	285A070A
8.0	1.25	2	D5	285A080A
8.0	1.00	2	D5	285A080B
10	1.50	3	D6	285A100A
10	1.25	3	D5	285A100B
12	1.75	3	D6	285A120A
12	1.25	3	D5	285A120C
14	2.00	3	D7	285A140A
14	1.50	3	D6	285A140B
16	2.00	3	D7	285A160A
16	1.50	3	D6	285A160B
18	2.50	4	D7	285A180A
20	2.50	4	D7	285A200A
20	1.50	4	D6	285A200B

# Spiral Point Taps, Oversize

**HIGH SPEED STEEL**  
Machine Screw & Fractional / Bright



**PACKAGING:**  
All sizes are individually packaged.

## 2103

.003" OVERSIZE / PLUG / THROUGH HOLE

Oversize taps are similar in design to a standard taps, but with a pitch diameter that is usually 0.003" to 0.005" larger than standard. Oversize taps are used primarily where a part will be plated or treated after tapping. Available in H7 or H11 limits, in hand taps (2003 and 2005 series) or spiral point (2103 and 2105 series).



2103

For Tap/Drill sizes, please see chart on page 242

Size	NC	NF	No. of Flutes	2103 EDP No.
				Plug
8	32	–	2	213A008CP
10	24	–	2	213A010CP
10	–	32	2	213A010FP

## 2105

.005" OVERSIZE / PLUG / THROUGH HOLE

Oversize taps are similar in design to a standard taps, but with a pitch diameter that is usually 0.003" to 0.005" larger than standard. Oversize taps are used primarily where a part will be plated or treated after tapping. Available in H7 or H11 limits, in hand taps (2003 and 2005 series) or spiral point (2103 and 2105 series).



2105

Size	NC	NF	No. of Flutes	2105 EDP No.
				Plug
5/16"	18	–	2	215A120CP
3/8"	16	–	3	215A124CP
7/16"	14	–	3	215A128CP
1/2"	13	–	3	215A132CP
5/8"	11	–	3	215A140CP

## COBALT (HSS-E) Machine Screw, Fractional & Metric / Black Oxide

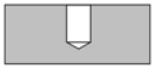


**PACKAGING:**  
All sizes are individually packaged.

### 2160N

HIGH SPIRAL FLUTE / BOTTOMING CHAMFER / BLIND HOLE

Nitro®-Max ANSI/ANSI taps are produced with a reduced neck to allow for longer reach, improved coolant flow, and easier chip evacuation. Manufactured from M35 Cobalt (HSS-E) with a high vanadium content, these taps offer higher heat resistance and red hardness over conventional High Speed Steel taps. They can be used for production threading in both conventional or CNC equipment, in a wide range of material groups, including difficult to machine materials such as High Tensile Strength Steels and Stainless Steel. Black Oxide surface treatment provides improved lubricity and helps prevent the formation of built up edge. Spiral Flute taps are designed for producing blind holes in a work piece. The 2160N is manufactured to industry recognized USCTI 302A Standards.



	Size	NC	NF	Overall Length	Square Size	No. of Flutes	Pitch Dia. Limits	Tap/Drill Size (75%)	2160N EDP No.
Machine Screw & Fractional Sizes	6	32	–	2"	0.110"	3	H3	#36	216N006C
	8	32	–	2-1/8"	0.131"	3	H3	#29	216N008C
	10	24	–	2-3/8"	0.152"	3	H3	#25	216N010C
	10	–	32	2-3/8"	0.152"	3	H3	#21	216N010F
	1/4"	20	–	2-1/2"	0.191"	3	H3	#7	216N116C
	1/4"	–	28	2-1/2"	0.191"	3	H3	#3	216N116F
	5/16"	18	–	2-23/32"	0.238"	3	H3	F	216N120C
	5/16"	–	24	2-23/32"	0.238"	3	H3	I	216N120F
	3/8"	16	–	2-15/16"	0.286"	3	H3	5/16"	216N124C
	3/8"	–	24	2-15/16"	0.286"	3	H3	Q	216N124F
	7/16"	14	–	3-5/32"	0.242"	3	H3	U	216N128C
	7/16"	–	20	3-5/32"	0.242"	3	H3	W	216N128F
	1/2"	13	–	3-3/8"	0.275"	3	H3	27/64"	216N132C
	1/2"	–	20	3-3/8"	0.275"	3	H3	29/64"	216N132F
	5/8"	11	–	3-13/16"	0.360"	4	H3	17/32"	216N140C
	5/8"	–	18	3-13/16"	0.360"	4	H3	37/64"	216N140F
3/4"	10	–	4-1/4"	0.442"	4	H3	21/32"	216N148C	
3/4"	–	16	4-1/4"	0.442"	4	H3	11/16"	216N148F	

	Size	Pitch (mm)	Overall Length	Square Size	No. of Flutes	Pitch Dia. Limits	Tap/Drill Size (75%)	2160N EDP No.
Metric Sizes	M4	0.7	2-1/8"	0.131"	3	D4	#30	216N040A
	M5	0.8	2-3/8"	0.152"	3	D4	#19	216N050A
	M6	1.0	2.1/2"	0.191"	3	D5	#9	216N060A
	M8	1.25	2.23/32"	0.238"	3	D5	H	216N080A
	M10	1.5	2.15/16"	0.286"	3	D6	Q	216N100A
	M12	1.75	3.3/8"	0.275"	3	D6	Y	216N120A



## COBALT (HSS-E) Machine Screw, Fractional & Metric / TiCN Coated



**PACKAGING:**  
All sizes are individually packaged.

### 2260N

HIGH SPIRAL FLUTE / BOTTOMING CHAMFER / BLIND HOLE

Nitro®-Max taps are manufactured to DIN/ANSI specifications, with DIN lengths to allow for longer reach and deeper threading in a single pass. The ANSI shanks and squares are common to North American toolholding systems. TiCN (Titanium Carbo Nitride) coating helps to reduce galling, microwelding, seizing and adhesive wear. It allows for a smoother threading operation. TiCN helps to hold sharp edges and reduces the coefficient of friction. Manufactured from M35 Cobalt (HSS-E) with a high Vanadium content, these taps offer higher heat resistance and red hardness over conventional High Speed Steel taps.



	Size	NC	NF	Overall Length	Square Size	No. of Flutes	Pitch Dia. Limits	Tap/Drill Size (75%)	2260N EDP No.
Machine Screw & Fractional Sizes	4	40	–	2.21"	0.110"	3	H2	#43	226N004C
	6	32	–	2.21"	0.110"	3	H3	#36	226N006C
	8	32	–	2.48"	0.131"	3	H3	#29	226N008C
	10	24	–	2.76"	0.152"	3	H3	#25	226N010C
	10	–	32	2.76"	0.152"	3	H3	#21	226N010F
	1/4"	20	–	3.15"	0.191"	3	H3	#7	226N116C
	1/4"	–	28	3.15"	0.191"	3	H3	#3	226N116F
	5/16"	18	–	3.54"	0.238"	3	H3	F	226N120C
	5/16"	–	24	3.54"	0.238"	3	H3	I	226N120F
	3/8"	16	–	3.94"	0.286"	3	H3	5/16"	226N124C
	3/8"	–	24	3.94"	0.286"	3	H3	Q	226N124F
	7/16"	14	–	3.94"	0.242"	3	H3	U	226N128C
	7/16"	–	20	3.94"	0.242"	3	H3	W	226N128F
	1/2"	13	–	4.33"	0.275"	3	H3	27/64"	226N132C
	1/2"	–	20	4.33"	0.275"	3	H3	29/64"	226N132F
	5/8"	11	–	4.33"	0.360"	4	H3	17/32"	226N140C
	5/8"	–	18	4.33"	0.360"	4	H3	37/64"	226N140F
	3/4"	10	–	4.92"	0.442"	4	H3	21/32"	226N148C
3/4"	–	16	4.92"	0.442"	4	H3	11/16"	226N148F	
Metric Sizes	M4	0.7	2.48"	0.131"	3	D4	#30	226N040A	
	M5	0.8	2.76"	0.152"	3	D4	#19	226N050A	
	M6	1.0	3.15"	0.191"	3	D5	#9	226N060A	
	M8	1.25	3.54"	0.238"	3	D5	H	226N080A	
	M10	1.5	3.94"	0.286"	3	D6	Q	226N100A	
	M12	1.75	4.33"	0.275"	3	D6	Y	226N120A	
	M16	2.0	4.33"	0.360"	4	D7	35/64"	226N160A	

## HIGH SPEED STEEL Machine Screw & Fractional / Bright

**PACKAGING:**  
All sizes are individually packaged.

### 2000PF

BOTTOMING / BLIND HOLE

These taps are designed for machine tapping in a wide range of material groups, including difficult to machine materials such as stainless steel. The *Nitro*® multi-application tap improves thread quality, and aids in chip evacuation, eliminating bird nesting. They are available in both spiral point and spiral flute designs, in fractional and metric sizes.



2000PF

For Tap/Drill sizes, please see chart on page 242

Size	NC	NF	No. of Flutes	Pitch Dia. Limits	2000PF EDP No.
4	40	-	2	H2	20PF004C
4	-	48	2	H2	20PF004F
6	32	-	3	H3	20PF006C
8	32	-	3	H3	20PF008C
10	24	-	3	H3	20PF010C
10	-	32	3	H3	20PF010F
12	24	-	3	H3	20PF012C
12	-	28	3	H3	20PF012F
1/4"	20	-	3	H3	20PF116C
1/4"	-	28	3	H3	20PF116F
5/16"	18	-	3	H3	20PF120C
5/16"	-	24	3	H5	20PF120F
3/8"	16	-	3	H3	20PF124C
3/8"	-	24	3	H3	20PF124F

Size	NC	NF	No. of Flutes	Pitch Dia. Limits	2000PF EDP No.
7/16"	14	-	3	H3	20PF128C
7/16"	-	20	3	H3	20PF128F
1/2"	13	-	3	H5	20PF132C
1/2"	-	20	3	H5	20PF132F
9/16"	12	-	3	H5	20PF136C
9/16"	-	18	3	H5	20PF136F
5/8"	11	-	4	H5	20PF140C
5/8"	-	18	4	H5	20PF140F
3/4"	10	-	4	H5	20PF148C
3/4"	-	16	4	H5	20PF148F
7/8"	9	-	4	H6	20PF156C
7/8"	-	14	4	H6	20PF156F
1"	8	-	4	H6	20PF164C
1"	-	12	4	H6	20PF164F



## HIGH SPEED STEEL Metric / Bright

**PACKAGING:**  
All sizes are individually packaged.

### 2000PF

BOTTOMING / BLIND HOLE

These taps are designed for machine tapping in a wide range of material groups, including difficult to machine materials such as stainless steel. The *Nitro*® multi-application tap improves thread quality, and aids in chip evacuation, eliminating bird nesting. They are available in both spiral point and spiral flute designs, in fractional and metric sizes.



2000PF

For Tap/Drill sizes, please see chart on page 242

Size	Pitch (mm)	No. of Flutes	Pitch Dia. Limits	2000PF EDP No.
M3	0.5	3	D3	20PF030A
M3.5	0.6	3	D4	20PF035A
M4	0.7	3	D4	20PF040A
M5	0.8	3	D4	20PF050A
M6	1.0	3	D5	20PF060A
M7	1.0	3	D5	20PF070A
M8	1.25	3	D5	20PF080A
M8	1.0	3	D5	20PF080B
M10	1.5	3	D6	20PF100A
M12	1.75	3	D6	20PF120A
M12	1.25	3	D5	20PF120B
M14	2.0	3	D7	20PF140A
M14	1.5	3	D6	20PF140B
M16	2.0	3	D7	20PF160A
M16	1.5	3	D6	20PF160B
M18	2.5	4	D7	20PF180A
M18	1.5	4	D6	20PF180D
M20	2.5	4	D7	20PF200A
M20	1.5	4	D6	20PF200B
M22	2.5	4	D7	20PF220A
M22	1.5	4	D6	20PF220B
M24	3.0	4	D8	20PF240A

Taps

# Spiral Flute Taps

**HIGH SPEED STEEL**  
Machine Screw & Fractional / Bright



**PACKAGING:**  
All sizes are individually packaged.

## 2000F

PLUG & BOTTOMING / BLIND HOLE

Designed for precision tapping of the modern difficult to machine materials. Fast spiral flutes provide new efficiency in chip removal. These taps have continuous fast spiral flutes to lift and discharge chips from deep blind holes.



2000F

For Tap/Drill sizes, please see chart on page 242

Size	NC	NF	Length of Thread	No. of Flutes	2000F EDP No.	
					Plug	Bottoming
3	48	-	1/2"	2	20F003CP	20F003CB
4	40	-	9/16"	2	20F004CP	20F004CB
4	-	48	9/16"	2	20F004FP	20F004FB
5	40	-	5/8"	2	20F005CP	20F005CB
5	-	44	5/8"	2	20F005FP	20F005FB
6	32	-	11/16"	2	20F006CP	20F006CB
6	-	40	11/16"	2	20F006FP	20F006FB
8	32	-	3/4"	3	20F008CP	20F008CB
8	-	36	3/4"	3	20F008FP	20F008FB
10	24	-	7/8"	3	20F010CP	20F010CB
10	-	32	7/8"	3	20F010FP	20F010FB
12	24	-	1"	3	20F012CP	20F012CB
12	-	28	1"	3	20F012FP	20F012FB
1/4"	20	-	1"	3	20F116CP	20F116CB
1/4"	-	28	1"	3	20F116FP	20F116FB
5/16"	18	-	1-1/8"	3	20F120CP	20F120CB
5/16"	-	24	1-1/8"	3	20F120FP	20F120FB
3/8"	16	-	1-5/16"	3	20F124CP	20F124CB
3/8"	-	24	1-5/16"	3	20F124FP	20F124FB
7/16"	14	-	1-7/16"	3	20F128CP	20F128CB
7/16"	-	20	1-7/16"	3	20F128FP	20F128FB
1/2"	13	-	1-21/32"	3	20F132CP	20F132CB
1/2"	-	20	1-21/32"	3	20F132FP	20F132FB
5/8"	11	-	1-13/16"	4	20F140CP	20F140CB
3/4"	10	-	2-1/16"	4	20F148CP	20F148CB

# NITRO-MAX Thread Formers

**COBALT (HSS-E)**  
Machine Screw, Fractional & Metric / TiCN Coated

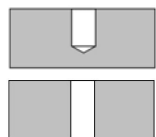


**PACKAGING:**  
All sizes are individually packaged.

## 2270N

FLUTELESS / BOTTOMING CHAMFER / THROUGH OR BLIND HOLE

Nitro®-Max threadformers are manufactured to DIN/ANSI specifications, with DIN lengths to allow for longer reach and deeper threading in a single pass. The ANSI shanks and squares are common to North American toolholding systems. TiCN (Titanium Carbo Nitride) coating helps to reduce galling, microwelding, seizing and adhesive wear. It allows for a smoother threading operation. TiCN helps to hold sharp edges and reduces the coefficient of friction. Manufactured from M35 Cobalt (HSS-E) with a high Vanadium content, these taps offer higher heat resistance and red hardness over conventional High Speed Steel taps. Thread forming taps "form" the thread in malleable materials without cutting, eliminating chips. This allows for increased speeds & feeds, and a cleaner threading environment.



For Tap/Drill sizes, please see chart on page 243

	Size	NC	NF	Overall Length	Square Size	No. of Flutes	Pitch Dia. Limits	Tap/Drill Size (65%)	2270N EDP No.
Machine Screw & Fractional Sizes	4	40	-	2.21"	0.110"	0	H5	#39	227N004C
	6	32	-	2.21"	0.110"	0	H5	1/8"	227N006C
	8	32	-	2.48"	0.131"	0	H5	#25	227N008C
	10	24	-	2.76"	0.152"	0	H6	11/64"	227N010C
	10	-	32	2.76"	0.152"	0	H6	#16	227N010F
	1/4"	20	-	3.15"	0.191"	0	H6	#1	227N116C
	1/4"	-	28	3.15"	0.191"	0	H6	A	227N116F
	5/16"	18	-	3.54"	0.238"	0	H7	7.3 mm	227N120C
	5/16"	-	24	3.54"	0.238"	0	H7	M	227N120F
	3/8"	16	-	3.94"	0.286"	0	H7	S	227N124C
3/8"	-	24	3.94"	0.286"	0	H7	T	227N124F	

	Size	Pitch (mm)	Overall Length	Square Size	No. of Flutes	Pitch Dia. Limits	Tap/Drill Size (65%)	2270N EDP No.
Metric Sizes	M4	0.7	2.48"	0.131"	0	D7	#27	227N040A
	M5	0.8	2.76"	0.152"	0	D8	#14	227N050A
	M6	1.0	3.15"	0.191"	0	D9	7/32"	227N060A
	M8	1.25	3.54"	0.238"	0	D10	M	227N080A
	M10	1.5	3.94"	0.286"	0	D11	U	227N100A

Taps

# Thread Forming Taps

**HIGH SPEED STEEL**  
Machine Screw & Fractional / Bright



**PACKAGING:**  
All sizes are individually packaged.

## 2090

PLUG & BOTTOMING / THROUGH OR BLIND HOLE

Thread forming taps “form” the thread rather than cut it, which allows the thread to be created without producing any chips. Thread forming taps can run at faster operating rates than standard cut taps, and generally have a longer tool life, sometimes up to 5x longer in some applications. Ideal in materials such as aluminum, brass, copper, low carbon steels, zinc, and 302-303 stainless steel.



2090

For Tap/Drill sizes, please see chart on page 243

Size	NC	NF	2090 EDP No.	
			Plug	Bottoming
0	-	80	-	209A000FB
1	64	-	-	209A001CB
1	-	72	-	209A001FB
2	56	-	-	209A002CB
2	-	64	-	209A002FB
3	48	-	-	209A003CB
3	-	56	209A003FP	209A003FB
4	40	-	209A004CP	209A004CB
4	-	48	209A004FP	209A004FB
5	40	-	209A005CP	209A005CB
5	-	44	209A005FP	209A005FB
6	32	-	209A006CP	209A006CB
6	-	40	209A006FP	209A006FB
8	32	-	209A008CP	209A008CB
8	-	36	209A008FP	209A008FB
10	24	-	209A010CP	209A010CB
10	-	32	209A010FP	209A010FB

Size	NC	NF	2090 EDP No.	
			Plug	Bottoming
12	24	-	209A012CP	209A012CB
12	-	28	209A012FP	209A012FB
1/4"	20	-	209A116CP	209A116CB
1/4"	-	28	209A116FP	209A116FB
5/16"	18	-	209A120CP	209A120CB
5/16"	-	24	209A120FP	209A120FB
3/8"	16	-	209A124CP	209A124CB
3/8"	-	24	209A124FP	209A124FB
7/16"	14	-	209A128CP	209A128CB
7/16"	-	20	209A128FP	209A128FB
1/2"	13	-	209A132CP	209A132CB
1/2"	-	20	209A132FP	209A132FB
5/8"	11	-	209A140CP	209A140CB
5/8"	-	18	209A140FP	209A140FB
3/4"	10	-	209A148CP	209A148CB
3/4"	-	16	-	209A148FB

# Pipe Taps, Taper Pipe (NPT)

**HIGH SPEED STEEL**  
Fractional / Bright



**PACKAGING:**  
All sizes are individually packaged.

## 2900

THROUGH OR BLIND HOLE

The nominal size of a Taper Pipe Tap (NPT) is that of the pipe fitting to be tapped, not the actual size of the tap.  
The Interrupted Thread Pipe Taps have every other thread removed except for the first few at the point.  
They are used for tapping tough metals or those which have a tendency to load the tap teeth.  
Straight Pipe Taps (NPS) are used for hand or machine tapping of straight pipe threads.



2900

For Tap/Drill sizes, please see chart on page 242

Size	TPI	Overall Length	Length of Thread	No. of Flutes	2900 EDP No.
1/16"	27	2-1/8"	11/16"	4	290A104
1/8"	27	2-1/8"	3/4"	4	290A108
1/4"	18	2-7/16"	1-1/16"	4	290A116
3/8"	18	2-9/16"	1-1/16"	4	290A124
1/2"	14	3-1/8"	1-3/8"	4	290A132
3/4"	14	3-1/4"	1-3/8"	5	290A148
1"	11-1/2	3-3/4"	1-3/4"	5	290A164
1-1/4"	11-1/2	4"	1-3/4"	5	290A216
1-1/2"	11-1/2	4-1/4"	1-3/4"	7	290A232
2"	11-1/2	4-1/4"	1-3/4"	7	290A264
2-1/2"	8	5-1/2"	2-9/16"	8	290A332
3"	8	6"	2-5/8"	8	290A364
3-1/2"	8	6-1/2"	2-11/16"	8	290A432
4"	8	6-3/4"	2-3/4"	8	290A464

# Pipe Taps, Taper Pipe (NPT)

**HIGH SPEED STEEL**  
Fractional / Bright

**PACKAGING:**  
All sizes are individually packaged.

## 2900E

THROUGH OR BLIND HOLE

The nominal size of a Taper Pipe Tap (NPT) is that of the pipe fitting to be tapped, not the actual size of the tap.

The Interrupted Thread Pipe Taps have every other thread removed except for the first few at the point.

They are used for tapping tough metals or those which have a tendency to load the tap teeth.

Straight Pipe Taps (NPS) are used for hand or machine tapping of straight pipe threads.



2900E

For Tap/Drill sizes, please see chart on page 242

Size	TPI	Overall Length	Length of Thread	No. of Flutes	2900E EDP No.
1/16"	27	2-1/8"	11/16"	4	290E104
1/8"	27	2-1/8"	3/4"	4	290E108
1/4"	18	2-7/16"	1-1/16"	4	290E116
3/8"	18	2-9/16"	1-1/16"	4	290E124
1/2"	14	3-1/8"	1-3/8"	4	290E132
3/4"	14	3-1/4"	1-3/8"	5	290E148
1"	11-1/2	3-3/4"	1-3/4"	5	290E164
1-1/4"	11-1/2	4"	1-3/4"	5	290E216
1-1/2"	11-1/2	4-1/4"	1-3/4"	7	290E232
2"	11-1/2	4-1/2"	1-3/4"	7	290E264
2-1/2"	8	5-1/2"	2-9/16"	8	290E332
3"	8	6"	2-5/8"	8	290E364
3-1/2"	8	6-1/2"	2-11/16"	8	290E432
4"	8	6-3/4"	2-3/4"	8	290E464



# Pipe Taps, Taper Pipe (NPT)

**CARBON**  
Fractional / Bright

**PACKAGING:**  
All sizes are individually packaged.

## 2700E

THROUGH OR BLIND HOLE

The nominal size of a Taper Pipe Tap (NPT) is that of the pipe fitting to be tapped, not the actual size of the tap.  
The Interrupted Thread Pipe Taps have every other thread removed except for the first few at the point.  
They are used for tapping tough metals or those which have a tendency to load the tap teeth.  
Straight Pipe Taps (NPS) are used for hand or machine tapping of straight pipe threads.



2700E

For Tap/Drill sizes, please see chart on page 242

Size	TPI	Overall Length	2700E EDP No.
1/16"	27	2-1/8"	2700E104
1/8"	27	2-1/8"	2700E108
1/4"	18	2-7/16"	2700E116
3/8"	18	2-9/16"	2700E124
1/2"	14	3-1/8"	2700E132
3/4"	14	3-1/4"	2700E148
1"	11-1/2	3-3/4"	2700E164
1-1/4"	11-1/2	4"	2700E216
1-1/2"	11-1/2	4-1/4"	2700E232
2"	11-1/2	4-1/2"	2700E264

**HIGH SPEED STEEL**  
Fractional / Bright



**PACKAGING:**  
All sizes are individually packaged.

## 2930 Interrupted Thread

THROUGH OR BLIND HOLE

The nominal size of a Taper Pipe Tap (NPT) is that of the pipe fitting to be tapped, not the actual size of the tap.  
The Interrupted Thread Pipe Taps have every other thread removed except for the first few at the point.  
They are used for tapping tough metals or those which have a tendency to load the tap teeth.  
Straight Pipe Taps (NPS) are used for hand or machine tapping of straight pipe threads.



2930

For Tap/Drill sizes, please see chart on page 242

Size	TPI	Length of Thread	No. of Flutes	2930 EDP No.
1/8"	27	3/4"	5	293A108
1/4"	18	1-1/16"	5	293A116
3/8"	18	1-1/16"	5	293A124
1/2"	14	1-3/8"	5	293A132
3/4"	14	1-3/8"	5	293A148
1"	11-1/2	1-3/4"	5	293A164
1-1/4"	11-1/2	1-3/4"	5	293A216
1-1/2"	11-1/2	1-3/4"	7	293A232
2"	11-1/2	1-3/4"	7	293A264

## 2950 Straight Pipe (NPS)

THROUGH OR BLIND HOLE



2950

For Tap/Drill sizes, please see chart on page 242

Size	TPI	Length of Thread	No. of Flutes	2950 EDP No.
1/8"	27	3/4"	4	295A108
1/4"	18	1-1/16"	4	295A116
3/8"	18	1-1/16"	4	295A124
1/2"	14	1-3/8"	4	295A132
3/4"	14	1-3/8"	5	295A148
1"	11-1/2	1-3/4"	5	295A164

# Hand Taps, Screw Thread Insert (STI)

**HIGH SPEED STEEL**  
Machine Screw & Fractional / Bright



**PACKAGING:**  
All sizes are individually packaged.

## 2020

PLUG & BOTTOMING / THROUGH OR BLIND HOLE

Screw Thread Insert (STI) taps are dimensionally oversize and utilize a larger tap drill size so that thread they produce will accommodate a helical screw thread insert.



2020

For Tap/Drill sizes, please see chart on page 242

Size	NC	NF	No. of Flutes	2020 EDP No.	
				Plug	Bottoming
4	40	-	3	202A004CP	202A004CB
6	32	-	3	202A006CP	202A006CB
8	32	-	3	202A008CP	202A008CB
10	24	-	3	202A010CP	202A010CB
10	-	32	3	202A010FP	202A010FB
1/4"	20	-	3	202A116CP	202A116CB
1/4"	-	28	3	202A116FP	202A116FB
5/16"	18	-	4	202A120CP	202A120CB
5/16"	-	24	4	202A120FP	202A120FB
3/8"	16	-	4	202A124CP	202A124CB
3/8"	-	24	4	202A124FP	202A124FB
1/2"	13	-	4	202A132CP	202A132CB
1/2"	-	20	4	202A132FP	202A132FB

# Hand Taps, Pulley Style

**HIGH SPEED STEEL**  
Fractional / Bright & Black



**PACKAGING:**  
All sizes are individually packaged.

**2400**

PLUG / THROUGH OR BLIND HOLE

Pulley taps are used for tapping the hubs of pulleys for oil caps or set screws. The long shank is also ideal for reaching holes inaccessible with standard length taps. The thread length is the same length as a standard tap.



2400

For Tap/Drill sizes, please see chart on page 242

Size	NC	Flute Length	Overall Length	2400 EDP No.
				Plug
1/4"	20	1"	6"	24A116C6
1/4"	20	1"	8"	24A116C8
5/16"	18	1-1/8"	6"	24A120C6
5/16"	18	1-1/8"	8"	24A120C8
3/8"	16	1-1/4"	10"	24A124C10
3/8"	16	1-1/4"	6"	24A124C6
3/8"	16	1-1/4"	8"	24A124C8
7/16"	14	1-7/16"	6"	24A128C6
7/16"	14	1-7/16"	8"	24A128C8
1/2"	13	1-21/32"	10"	24A132C10
1/2"	13	1-21/32"	12"	24A132C12
1/2"	13	1-21/32"	6"	24A132C6
1/2"	13	1-21/32"	8"	24A132C8
5/8"	11	1-13/16"	10"	24A140C10
5/8"	11	1-13/16"	12"	24A140C12
5/8"	11	1-13/16"	6"	24A140C6
5/8"	11	1-13/16"	8"	24A140C8
3/4"	10	2"	10"	24A148C10
3/4"	10	2"	12"	24A148C12

# Hand Taps, 6" Extension

**HIGH SPEED STEEL**  
Machine Screw & Fractional / Bright & Black



**PACKAGING:**  
All sizes are individually packaged.

## 2060

PLUG & BOTTOMING / THROUGH OR BLIND HOLE

The long shank is ideal for reaching holes inaccessible with standard length taps. The thread length is the same length as a standard tap.



2060

For Tap/Drill sizes, please see chart on page 242

Size	NC	NF	No. of Flutes	2060 EDP No.	
				Plug	Bottoming
6	32	-	3	206A006CP	206A006CB
8	32	-	4	206A008CP	206A008CB
10	24	-	4	206A010CP	206A010CB
10	-	32	4	206A010FP	206A010FB
1/4"	20	-	4	206A116CP	206A116CB
* 1/4"	20	-	4	206A116SP	-
1/4"	-	28	4	206A116FP	206A116FB
5/16"	18	-	4	206A120CP	206A120CB
* 5/16"	18	-	4	206A120SP	-
5/16"	-	24	4	206A120FP	206A120FB
3/8"	16	-	4	206A124CP	206A124CB
* 3/8"	16	-	4	206A124SP	-
3/8"	-	24	4	206A124FP	206A124FB
7/16"	14	-	4	206A128CP	206A128CB
7/16"	-	20	4	206A128FP	206A128FB
1/2"	13	-	4	206A132CP	206A132CB
1/2"	-	20	4	206A132FP	-

\* Small Shank

Taps

# Combined Tap and Drill

**HIGH SPEED STEEL**  
Machine Screw & Fractional / Bright



**PACKAGING:**  
All sizes are individually packaged.

**2050** THROUGH OR BLIND HOLE

Drills and Taps in a single pass, reducing cycle time, and therefore reducing the manufacturing cost of a part. Self-Centering point eliminates the need for center drilling or center punching. The drill part of the tool produces a hole correctly sized for approximately 75% of thread. Can be used in a hand held power tool, or a fixed spindle machine tool.



2050

Size	NC	NF	Length of Thread	2050 EDP No.
4	40	-	9/16"	205A004C
4	-	48	9/16"	205A004F
5	40	-	5/8"	205A005C
5	-	44	5/8"	205A005F
6	32	-	11/16"	205A006C
6	-	40	11/16"	205A006F
8	32	-	3/4"	205A008C
8	-	36	3/4"	205A008F
10	24	-	7/8"	205A010C
10	-	32	7/8"	205A010F
12	24	-	7/8"	205A012C
12	-	28	7/8"	205A012F
1/4"	20	-	15/16"	205A116C
1/4"	-	28	15/16"	205A116F
5/16"	18	-	1-1/8"	205A120C
5/16"	-	24	1-1/8"	205A120F
3/8"	16	-	1-1/4"	205A124C
3/8"	-	24	1-1/4"	205A124F
7/16"	14	-	1-7/16"	205A128C
7/16"	-	20	1-7/16"	205A128F
1/2"	13	-	1-21/32"	205A132C
1/2"	-	20	1-21/32"	205A132F

- **Electrical Contractors**
- **Maintenance Depts.**
- **Utility Crews**
- **Mechanics**
- **Installation Crews**



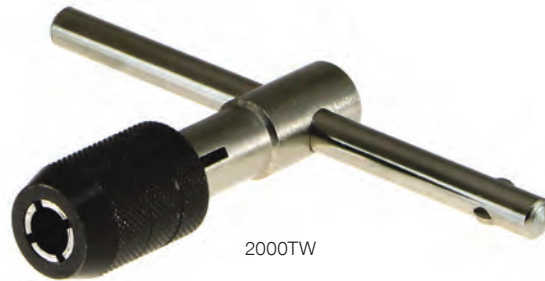
205A6

No. of Pcs.	Description	EDP No.
<b>2050 Series Combined Tap and Drill Sets</b>		
6	6-32, 8-32, 10-24, 10-32, 12-24, 1/4-20	205A6



# Tap and Reamer Accessories

**PACKAGING:**  
All sizes are individually packaged.



2000TW



2000AW

Tap Capacity	Pipe Tap Capacity	Reamer Capacity	Overall Length	EDP No.
<b>2000TW T-Handle Tap Wrenches</b>				
#0 – 3/16"	–	–	–	2000TW1
#0 – 1/4"	–	–	–	2000TW2
#10 – 3/8"	–	–	–	2000TW3
1/4" – 1/2"	–	–	–	2000TW4
<b>2000AW Tap &amp; Reamer Wrenches</b>				
1/64" – 1/4"	–	1/8" – 21/64"	7"	2000AW0
5/32" – 1/2"	1/8"	11/64" – 7/16"	11"	2000AW5
5/32" – 3/4"	1/8" – 1/4"	11/16" – 41/64"	15"	2000AW6
1/4" – 1-1/8"	1/8" – 3/4"	9/32" – 29/32"	19"	2000AW7
1/2" – 1-3/8"	1/8" – 1"	3/8" – 1.5/32"	31"	2000AW7A
3/4" – 1-5/8"	3/8" – 1-1/4"	37/64" – 1-11/32"	40"	2000AW8

Taps



2000N10



400NC2018

No. of Pieces	Brand	Material	Coating/Finishing	Includes	EDP No.
<b>2000N &amp; 2000 Series Hand Taps</b>					
10	Nitro®	High Speed Steel	Black Oxide	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"	2000N10
10	USA	High Speed Steel	Bright	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	2000A10
<b>2100N &amp; 2100 Series Spiral Point Tap Sets</b>					
10	Nitro®	High Speed Steel	Black Oxide	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	2100N10
10	USA	High Speed Steel	Bright	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	2100A10
<b>2000N &amp; 2000 Series Tap &amp; Drill Sets</b>					
18	Nitro®	High Speed Steel	Black Oxide	Taps: 6-32, 8-32, 10-24, 10-32, 1/4-20, 5/16-18, 3/8-16, 7/16-14, 1/2-13 w/ corresponding 400N series drills	400NC2018
18	Nitro®	High Speed Steel	Black Oxide	Taps: 6-40, 8-36, 10-24, 10-32, 1/4-28, 5/16-24, 3/8-24, 7/16-20, 1/2-20 w/ corresponding 400N series drills	400NF2018
18	USA	High Speed Steel	Bright	Taps: 6-32, 8-32, 10-24, 10-32, 1/4-20, 5/16-18, 3/8-16, 7/16-14, 1/2-13 w/ corresponding 200 series drills	200C2018
18	USA	High Speed Steel	Bright	Taps: 6-40, 8-36, 10-24, 10-32, 1/4-28, 5/16-24, 3/8-24, 7/16-20, 1/2-20 w/ corresponding 200 series drills	200F2018
<b>2800 Series Tap &amp; Drill Sets</b>					
18	USA	High Speed Steel	Bright	Taps: M2.5, M3.0, M3.5, M4.0, M5.0, M6.0, M8.0, M10.0, M12.0 w/ corresponding 800 series drills	800A2018

# Displays, Dispensers, Indexes



Description	Sizes	EDP No.
<b>Tap Dispensers (Empty)</b>		
Fractional Tap Dispenser	1/4" – 1"	2000FDX
Metric Tap Dispenser	3 mm - 24 mm	2800DX



Pieces	Description	EDP No.
<b>Tap Index Cases (Empty)</b>		
10	TAP INDEX	10TDX
18	UNC TAP & DRILL INDEX	18CDX
18	UNF TAP & DRILL INDEX	18FDX
18	METRIC TAP & DRILL INDEX	18MDX

Taps





# **SPECIAL THREAD TAPS**

**Now available from Drillco, a range of semi-standard special thread hand taps. This service can be used to help solve delivery issues that arise with requests for taps with unique TPI requirements:**

- Taps are manufactured in the USA
- Shipments within 24-48 hours of receipt on most items
- Available with bright finish. Other coatings available with longer delivery times
- Size range available #0 – 4"

**Call us today for price and delivery!**

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### Sets

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# Dies Adjustable Round Split

**HIGH SPEED STEEL**  
Machine Screw-Fractional / Bright

**PACKAGING:**  
All sizes are individually packaged.

## 3000E

The round split adjustable die may be adjusted through the screws on the holder. Adjustment on the open type is done by turning the three screws on the holder. A die holder or handle is needed for proper operation of round split adjustable dies.

Size (Inches)	Outer Diameter (O.D.)			
	13/16" EDP No.	1" EDP No.	1-1/2" EDP No.	2" EDP No.
0 - 80	30E000FA	-	-	-
1 - 64	30E001CA	-	-	-
1 - 72	30E001FA	-	-	-
2 - 56	30E002CA	-	-	-
2 - 64	30E002FA	-	-	-
3 - 48	30E003CA	-	-	-
3 - 56	30E003FA	-	-	-
4 - 40	30E004CA	30E004CB	-	-
4 - 48	30E004FA	30E004FB	-	-
5 - 40	30E005CA	30E005CB	-	-
5 - 44	30E005FA	-	-	-
6 - 32	30E006CA	30E006CB	-	-
6 - 40	30E006FA	30E006FB	-	-
8 - 32	30E008CA	30E008CB	-	-
8 - 36	30E008FA	30E008FB	-	-
10 - 24	30E010CA	30E010CB	-	-
10 - 32	30E010FA	30E010FB	-	-
12 - 24	30E012CA	30E012CB	-	-
12 - 28	30E012FA	30E012FB	-	-
1/4 - 20	30E116CA	30E116CB	30E116CC	30E116CD
1/4 - 28	30E116FA	30E116FB	30E116FC	30E116FD
5/16 - 18	30E120CA	30E120CB	30E120CC	30E120CD
5/16 - 24	30E120FA	30E120FB	30E120FC	30E120FD
3/8 - 16	-	30E124CB	30E124CC	30E124CD
3/8 - 24	-	30E124FB	30E124FC	30E124FD
7/16 - 14	-	30E128CB	30E128CC	30E128CD
7/16 - 20	-	30E128FB	30E128FC	30E128FD
1/2 - 13	-	30E132CB	30E132CC	30E132CD
1/2 - 20	-	30E132FB	30E132FC	30E132FD
9/16 - 12	-	-	30E136CC	30E136CD
9/16 - 18	-	-	30E136FC	30E136FD
5/8 - 11	-	-	30E140CC	30E140CD
5/8 - 18	-	-	30E140FC	30E140FD



3000E



# Dies Adjustable Round Split

**HIGH SPEED STEEL**  
Machine Screw-Fractional / Bright

**PACKAGING:**  
All sizes are individually packaged.

## 3000E continued

Size (Inches)	Outer Diameter (O.D.)			
	1-1/2" EDP No.	2" EDP No.	2-1/2" EDP No.	3" EDP No.
3/4 - 10	30E148CC	30E148CD	-	-
3/4 - 16	30E148FC	30E148FD	-	-
7/8 - 9	-	30E156CD	-	-
7/8 - 14	-	30E156FD	-	-
1 - 8	-	30E164CD	-	30E164CF
1 - 12	-	30E164FD	-	-
1 - 14	-	30E164SD	-	30E164SF
1-1/8 - 7	-	-	30E208CE	30E208CF
1-1/8 - 12	-	-	30E208FE	30E208FF
1-1/4 - 7	-	-	30E216CE	30E216CF
1-1/4 - 12	-	-	30E216FE	30E216FF
1-3/8 - 6	-	-	30E224CE	30E224CF
1-3/8 - 12	-	-	30E224FE	30E224FF
1-1/2 - 6	-	-	30E232CE	30E232CF
1-1/2 - 12	-	-	30E232FE	30E232FF
1-5/8 (5-1/2)	-	-	-	30E240CF
1-5/8 - 12	-	-	-	30E240FF
1-3/4 - 5	-	-	-	30E248CF
1-3/4 - 12	-	-	-	30E248FF
1-7/8 - 5	-	-	-	30E256CF
1-7/8 - 12	-	-	-	30E256FF
2 (4-1/2)	-	-	-	30E264CF
2 - 12	-	-	-	30E264FF

## 3050E Pipe Dies (NPT)



3050E

Size (Inches)	Outer Diameter (O.D.)				
	1" EDP No.	1-1/2" EDP No.	2" EDP No.	2-1/2" EDP No.	3" EDP No.
1/16 - 24	305E104B	-	-	-	-
1/8 - 27	305E108B	305E108C	-	-	-
1/4 - 18	-	305E116C	-	-	-
3/8 - 18	-	-	305E124D	-	-
1/2 - 14	-	-	305E132D	-	-
3/4 - 14	-	-	305E148D	-	-
1 - 11-1/2	-	-	-	305E164E	-
1-1/4 - 11-1/2	-	-	-	-	305E216F
1-1/2 - 11-1/2	-	-	-	-	305E232F

# Dies Adjustable Round Split

**HIGH SPEED STEEL**  
Metric / Bright

**PACKAGING:**  
All sizes are individually packaged.

## 3100E

The round split adjustable die may be adjusted through the screws on the holder. Adjustment on the open type is done by turning the three screws on the holder. A die holder or handle is needed for proper operation of round split adjustable dies.

Size (mm)	Outer Diameter (O.D.)		
	13/16" EDP No.	1" EDP No.	1-1/2" EDP No.
1.6 x 0.35	31E016AA	—	—
2 x 0.40	31E020AA	31E020AB	—
2.2 x 0.45	—	31E022AB	—
2.3 x 0.40	—	31E023AB	—
2.5 x 0.45	31E025AA	31E025AB	—
2.6 x 0.45	—	31E026AB	—
3 x 0.50	—	31E030AB	—
3.5 x 0.50	—	31E035AB	—
3.5 x 0.60	—	31E035BB	—
4 x 0.50	31E040AA	31E040AB	—
4 x 0.70	31E040BA	31E040BB	—
4.5 x 0.50	—	31E045AB	—
4.5 x 0.75	—	31E045BB	—
5 x 0.50	—	31E050AB	—
5 x 0.80	31E050BA	31E050BB	—
5 x 1	—	31E050CB	—
6 x 0.50	—	31E060AB	—
6 x 0.75	—	31E060BB	—
6 x 1	—	31E060CB	—
7 x 0.75	—	31E070AB	—
7 x 1	—	31E070BB	—
8 x 0.75	—	31E080AB	—
8 x 1	—	31E080BB	—
8 x 1.25	—	31E080CB	—
9 x 1	—	—	31E090AC
9 x 1.25	—	31E090BB	31E090BC
10 x 0.75	—	31E100AB	31E100AC
10 x 1	—	31E100BB	31E100BC
10 x 1.25	—	31E100CB	—



3100E

# Dies Adjustable Round Split

**HIGH SPEED STEEL**  
Metric / Bright

**PACKAGING:**  
All sizes are individually packaged.

**3100E** cont.

Size (mm)	Outer Diameter (O.D.)				
	1" EDP No.	1-1/2" EDP No.	2" EDP No.	2-1/2" EDP No.	3" EDP No.
10 x 1.5	31E100DB	31E100DC	-	-	-
11 x 1	-	31E110AC	-	-	-
11 x 1.5	31E110BB	31E110BC	-	-	-
12 x 1	-	31E120AC	-	-	-
12 x 1.25	-	31E120BC	-	-	-
12 x 1.5	-	31E120CC	-	-	-
12 x 1.75	-	31E120DC	-	-	-
14 x 1	-	31E140AC	-	-	-
14 x 1.25	-	31E140BC	-	-	-
14 x 1.5	-	31E140CC	-	-	-
14 x 2	-	31E140DC	-	-	-
15 x 1.5	-	31E150AC	-	-	-
16 x 1	-	31E160AC	-	-	-
16 x 1.5	-	31E160BC	-	-	-
16 x 2	-	31E160CC	-	-	-
17 x 1.5	-	31E170AC	-	-	-
18 x 1.5	-	31E180BC	-	-	-
18 x 2	-	31E180CC	-	-	-
18 x 2.5	-	31E180DC	-	-	-
20 x 1	-	31E200AC	31E200AD	-	-
20 x 1.5	-	31E200BC	31E200BD	-	-
20 x 2	-	-	31E200CD	-	-
20 x 2.5	-	-	31E200DD	-	-
22 x 1	-	-	31E220AD	-	-
22 x 1.5	-	-	31E220BD	-	-
22 x 2	-	-	31E220CD	-	-
22 x 2.5	-	-	31E220DD	-	-
24 x 1.5	-	-	31E240AD	-	-
24 x 2	-	-	31E240BD	-	-
24 x 3	-	-	31E240CD	-	-
26 x 1.5	-	-	31E260AD	-	-
30 x 2	-	-	31E300BD	-	-
33 x 2	-	-	-	31E330AE	-
45 x 4.5	-	-	-	-	31E450AF

Dies

**HIGH SPEED STEEL**  
Machine Screw & Fractional / Bright

**PACKAGING:**  
All sizes are individually packaged.

## 3300E

THREADING DIES

Hexagon Threading Dies are multi-edged, internally threaded tools used for cutting external threads. Hexagon dies are the same size as standard Hex Nuts.



3300E

Size	Threads Per Inch	Width A/F	3300E EDP No.
4	40	19/32"	33E004C
6	32	19/32"	33E006C
8	32	19/32"	33E008C
10	24	19/32"	33E010C
10	32	19/32"	33E010F
12	24	19/32"	33E012C
1/4"	20	19/32"	33E116C
1/4"	28	19/32"	33E116F
5/16"	18	11/16"	33E120C
5/16"	24	11/16"	33E120F
3/8"	16	25/32"	33E124C
3/8"	24	25/32"	33E124F
7/16"	14	7/8"	33E128C
7/16"	20	7/8"	33E128F

Size	Threads Per Inch	Width A/F	3300E EDP No.
1/2"	13	1-1/16"	33E132C
1/2"	20	1-1/16"	33E132F
9/16"	12	1-1/16"	33E136C
9/16"	18	1-1/16"	33E136F
5/8"	11	1-1/4"	33E140C
5/8"	18	1-1/4"	33E140F
3/4"	10	1-7/16"	33E148C
3/4"	16	1-7/16"	33E148F
7/8"	9	1-5/8"	33E156C
7/8"	14	1-5/8"	33E156F
1"	8	1-13/16"	33E164C
1"	12	1-13/16"	33E164F
1"	14	1-13/16"	33E164S

# Dies Hexagon

## CARBON Machine Screw & Fractional / Bright

**PACKAGING:**  
All sizes are individually packaged.

### 3350E

### RETHREADING DIES

Hexagon Rethreading Dies are precision high carbon steel dies, not to be confused with standard Series 3300E Hexagon Dies. Rethreading Dies are extra thick to permit user to rethread damaged or jammed threads and are not intended for producing new threads on unthreaded bar, bolts, or pipes. Dies are same size as standard Hex Nuts.



3350E

Size	Threads Per Inch	Width A/F	3350E EDP No.	Size	Threads Per Inch	Width A/F	3350E EDP No.	Size	Threads Per Inch	Width A/F	3350E EDP No.
4	40	19/32"	335E004C	9/16"	18	1-1/16"	335E136F	1-3/4"	12	3-1/8"	335E248F
4	48	19/32"	335E004F	5/8"	11	1-1/4"	335E140C	1-7/8"	5	3-1/8"	335E256C
5	40	19/32"	335E005C	5/8"	18	1-1/4"	335E140F	1-7/8"	12	3-1/8"	335E256F
5	44	19/32"	335E005F	11/16"	11	1-7/16"	335E144C	2"	4-1/2	3-1/2"	335E264C
6	32	19/32"	335E006C	11/16"	16	1-7/16"	335E144F	2"	12	3-1/2"	335E264F
6	40	19/32"	335E006F	3/4"	10	1-7/16"	335E148C	2-1/4"	4-1/2	3-1/2"	335E316C
8	32	19/32"	335E008C	3/4"	16	1-7/16"	335E148F	2-1/4"	12	3-1/2"	335E316F
8	36	19/32"	335E008F	7/8"	9	1-5/8"	335E156C	2-1/2"	4	4-1/2"	335E332C
10	24	19/32"	335E010C	7/8"	14	1-5/8"	335E156F	2-1/2"	12	4-1/2"	335E332F
10	32	19/32"	335E010F	1"	8	1-13/16"	335E164C	2-3/4"	4	4-1/2"	335E348C
12	24	19/32"	335E012C	1"	12	1-13/16"	335E164F	2-3/4"	12	4-1/2"	335E348F
12	28	19/32"	335E012F	1"	14	1-13/16"	335E164S	3"	4	5"	335E364C
1/4"	20	19/32"	335E116C	1-1/8"	7	2"	335E208C	3"	12	5"	335E364F
1/4"	28	19/32"	335E116F	1-1/8"	12	2"	335E208F	3-1/4"	4	5"	335E416C
5/16"	18	11/16"	335E120C	1-1/4"	7	2-3/16"	335E216C	3-1/4"	12	5"	335E416F
5/16"	24	11/16"	335E120F	1-1/4"	12	2-3/16"	335E216F	3-1/2"	4	5"	335E432C
3/8"	16	25/32"	335E124C	1-3/8"	6	2-3/8"	335E224C	3-1/2"	12	5"	335E432F
3/8"	24	25/32"	335E124F	1-3/8"	12	2-3/8"	335E224F	3-3/4"	4	6"	335E448C
7/16"	14	7/8"	335E128C	1-1/2"	6	2-9/16"	335E232C	3-3/4"	12	6"	335E448F
7/16"	20	7/8"	335E128F	1-1/2"	12	2-9/16"	335E232F	4"	4	6"	335E464C
1/2"	13	1-1/16"	335E132C	1-5/8"	5-1/2	3-1/8"	335E240C	4"	12	6"	335E464F
1/2"	20	1-1/16"	335E132F	1-5/8"	12	3-1/8"	335E240F				
9/16"	12	1-1/16"	335E136C	1-3/4"	5	3-1/8"	335E248C				

Dies

**CARBON**  
Fractional / Bright

**PACKAGING:**  
All sizes are individually packaged.

## 3350E 8-Pitch

RETHREADING DIES



3350E

Size	Threads Per Inch	Width A/F	3350E EDP No.
1-1/8"	8	2"	335E208N
1-1/4"	8	2"	335E216N
1-3/8"	8	2-3/16"	335E224N
1-1/2"	8	2-3/16"	335E232N
1-5/8"	8	2-3/8"	335E240N
1-3/4"	8	2-3/8"	335E248N
1-7/8"	8	2-9/16"	335E256N
2"	8	2-9/16"	335E264N
2-1/4"	8	3-1/8"	335E316N
2-3/8"	8	3-1/8"	335E324N

Size	Threads Per Inch	Width A/F	3350E EDP No.
2-1/2"	8	3-1/8"	335E332N
2-5/8"	8	3-1/8"	335E340N
2-3/4"	8	3-1/8"	335E348N
2-7/8"	8	3-1/8"	335E356N
3"	8	3-1/2"	335E364N
3-1/4"	8	3-1/2"	335E416N
3-1/2"	8	3-1/2"	335E432N
3-3/4"	8	3-1/2"	335E448N
4"	8	4-1/2"	335E464N

## 3380E Pipe Dies (NPT)

RETHREADING DIES

Size	Threads Per Inch	Width A/F	3380E EDP No.
1/8"	27	25/32"	338E108
1/4"	18	1-1/16"	338E116
3/8"	18	1-1/4"	338E124
1/2"	14	1-5/8"	338E132
3/4"	14	1-13/16"	338E148
1"	11-1/2	2-3/16"	338E164
1-1/4"	11-1/2	3-1/8"	338E216
1-1/2"	11-1/2	3-1/8"	338E232
2"	11-1/2	4"	338E264



3380E



# Dies Hexagon

**CARBON**  
Metric / Bright

**PACKAGING:**  
All sizes are individually packaged.

## 3360E

RETHREADING DIES

Hexagon Rethreading Dies are precision high carbon steel dies, not to be confused with standard Series 3300E Hexagon Dies. Rethreading Dies are extra thick to permit user to rethread damaged or jammed threads and are not intended for producing new threads on unthreaded bar, bolts, or pipes. Dies are same size as standard Hex Nuts.



3360E

Size (mm)	Pitch (mm)	Width A/F	3360E EDP No.
3	0.5	19/32"	336E030A
3	0.6	19/32"	336E030B
3.5	0.6	19/32"	336E035A
4	0.7	19/32"	336E040A
4	0.75	19/32"	336E040B
4.5	0.75	19/32"	336E045A
5	0.8	19/32"	336E050A
5	0.9	19/32"	336E050B
6	1	19/32"	336E060A
6	0.75	19/32"	336E060B
6.3	1	19/32"	336E063A
7	1	11/16"	336E070A
8	1	11/16"	336E080A
8	1.25	11/16"	336E080B
9	1	25/32"	336E090A
9	1.25	25/32"	336E090B
10	1.25	7/8"	336E100A
10	1.5	7/8"	336E100B
11	1.5	7/8"	336E110A
12	1.25	1-1/16"	336E120A
12	1.5	1-1/16"	336E120B
12	1.75	1-1/16"	336E120C
14	1.5	1-1/16"	336E140A
14	2	1-1/16"	336E140B
16	1.5	1-1/4"	336E160A
16	2	1-1/4"	336E160B

Size (mm)	Pitch (mm)	Width A/F	3360E EDP No.
18	1.5	1-7/16"	336E180A
18	2.5	1-7/16"	336E180B
18	2	1-7/16"	336E180C
20	1.5	1-5/8"	336E200A
20	2.5	1-5/8"	336E200B
22	1.5	1-5/8"	336E220A
22	2.5	1-5/8"	336E220B
24	2	1-13/16"	336E240A
24	3	1-13/16"	336E240B
26	1.5	2"	336E260A
27	2	2"	336E270A
27	3	2"	336E270B
28	1.5	2"	336E280A
30	2	2-3/16"	336E300A
33	2	2-3/8"	336E330A
33	3.5	2-3/8"	336E330B
36	3	2-9/16"	336E360A
36	4	2-9/16"	336E360B
39	3	3-1/8"	336E390A
39	4	3-1/8"	336E390B
40	1.5	3-1/8"	336E400A
42	4.5	3-1/8"	336E420B
45	1.5	3-1/4"	336E450A
45	4.5	3-1/4"	336E450B
48	1.5	3-1/4"	336E480A
52	1.5	3-1/2"	336E520A
52	5	3-1/2"	336E520B

Dies

Material	Pieces	Includes	Case	EDP No.
<b>Tap &amp; Hexagon Die Set</b>				
<b>TAPS:</b> HSS (USA) <b>DIES:</b> Carbon (Import)	23 pcs (UNC & UNF)	Taps & Dies: 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, 1-12 & 1/4-18 (NPT). Also: 1/4" to 1" Adjustable Tap Wrench.	Wood	2000H25
<b>TAPS:</b> HSS (USA) <b>DIES:</b> Carbon (Import)	36 pcs (UNC & UNF)	Taps & Dies: 4-40, 6-32, 8-32, 10-24, 10-32, 12-24, 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, & 1/8-27 (NPT). Also: 1/4" to 1" Adjustable Tap Wrench, #0 to 3/8" T-Handle Tap Wrench.	Wood	2000H38
<b>TAPS:</b> HSS (USA) <b>DIES:</b> Carbon (Import)	58 pcs (UNC & UNF)	Taps & Dies: 4-40, 6-32, 8-32, 10-24, 10-32, 12-24, 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, 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, 1-12, & 1/8-27, 1/4-18 (NPT). Also: #7 to 1/2" & 1/4" to 1" Adjustable Tap Wrench, #0 to 3/8" T-Handle Tap Wrench.	Wood	2000H63
<b>TAPS:</b> HSS (USA) <b>DIES:</b> Carbon (Import)	18 pcs (UNC)	Taps & Dies: 1/4, 5/16, 3/8, 7/16, 1/2, 9/16, 5/8, 3/4. Also: #7 to 1/2 Adjustable Tap Wrench, #12 to 1/2" T-Handle Tap Wrench.	Wood	2000HC20
<b>TAPS:</b> HSS (USA) <b>DIES:</b> Carbon (Import)	18 pcs (UNF)	Taps & Dies: 1/4, 5/16, 3/8, 7/16, 1/2, 9/16, 5/8, 3/4. Also: #7 to 1/2 Adjustable Tap Wrench, #12 to 1/2" T-Handle Tap Wrench.	Wood	2000HF20
<b>Tap &amp; Round Adjustable Die Set</b>				
High Speed Steel <b>TAPS:</b> USA <b>DIES:</b> Import	25 pcs (UNC & UNF)	Taps & Dies: 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, 1-12 & 1/4-18 (NPT). Also: 2" Round Die Stock, 1/4" to 1" Adjustable Tap Wrench, and 1 Screwdriver.	Wood	2000R25
High Speed Steel <b>TAPS:</b> USA <b>DIES:</b> Import	38 pcs (UNC & UNF)	Taps & Dies: 4-40, 6-32, 8-32, 10-24, 10-32, 12-24, 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 & 1/8-27 (NPT). Also: 1" Round Die Stock, 1/4" to 1" Adjustable Tap Wrench, #0 to 3/8" T-Handle Tap Wrench and 1 Screwdriver.	Wood	2000R38
High Speed Steel <b>TAPS:</b> USA <b>DIES:</b> Import	63 pcs (UNC & UNF)	Taps & Dies: 4-40, 6-32, 8-32, 10-24, 10-32, 12-24, 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, 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, 1-12, & 1/8-27, 1/4-18 (NPT). Also: 1" & 2" Round Die Stock, #7 to 1/2" & 1/4" to 1" Adjustable Tap Wrench, #0 to 3/8" T-Handle Tap Wrench and 2 Screwdrivers.	Wood	2000R63
High Speed Steel <b>TAPS:</b> USA <b>DIES:</b> Import	20 pcs (UNC)	Taps & Dies: 1/4, 5/16, 3/8, 7/16, 1/2, 9/16, 5/8, 3/4. Also: 1-1/2" Round Die Stock, #7 to 1/2 Adjustable Tap Wrench, #12 to 1/2" T-Handle Tap Wrench, and 1 Screwdriver.	Wood	2000RC20
High Speed Steel <b>TAPS:</b> USA <b>DIES:</b> Import	20 pcs (UNF)	Taps & Dies: 1/4, 5/16, 3/8, 7/16, 1/2, 9/16, 5/8, 3/4. Also: 1-1/2" Round Die Stock, #7 to 1/2 Adjustable Tap Wrench, #12 to 1/2" T-Handle Tap Wrench, and 1 Screwdriver.	Wood	2000RF20

# Tap & Die Sets



2000H38



2800E36

Material	Pieces	Includes	Case	EDP No.
<b>Pipe Tap &amp; Die Set</b>				
Carbon	12 pcs (NPT)	Taper Pipe Taps: 1/8-27, 1/4-18, 3/8-18, 1/2-14, 3/4-14, 1 - 11-1/2. Hexagon Pipe Dies: 1/8-27, 1/4-18, 3/8-18, 1/2-14, 3/4-14, 1 - 11-1/2.	Plastic	2700C12
<b>Tap &amp; Die Set</b>				
High Speed Steel	40 pcs (UNC & UNF)	4-40 thru 1/2", Round Adjustable Dies	Plastic	2000E40
Carbon	36 pcs (Metric)	5mm thru 12mm, Round Adjustable and Hex Dies	Plastic	2800C36
High Speed Steel	36 pcs (Metric)	5mm thru 12mm, Round Adjustable Dies	Plastic	2800E36
<b>Hexagon Die Sets (Dies Only)</b>				
High Speed Steel	20 pcs (UNC & UNF)	1/4, 5/16, 3/8, 7/16, 1/2, 9/16, 5/8, 3/4, 7/8, & 1"	Wood	3300E20
High Speed Steel	10 pcs (UNC)	1/4, 5/16, 3/8, 7/16, 1/2, 9/16, 5/8, 3/4, 7/8, & 1"	Wood	3300EC10
High Speed Steel	10 pcs (UNF)	1/4, 5/16, 3/8, 7/16, 1/2, 9/16, 5/8, 3/4, 7/8, & 1"	Wood	3300EF10
Carbon	20 pcs (UNC & UNF)	1/4, 5/16, 3/8, 7/16, 1/2, 9/16, 5/8, 3/4, 7/8, & 1"	Wood	3350C20
Carbon	10 pcs (UNC)	1/4, 5/16, 3/8, 7/16, 1/2, 9/16, 5/8, 3/4, 7/8, & 1"	Wood	3350CC10
Carbon	10 pcs (UNF)	1/4, 5/16, 3/8, 7/16, 1/2, 9/16, 5/8, 3/4, 7/8, & 1"	Wood	3350CF10



3300EC10



3350C20

Dies

## 3000DS Die Stocks, 3 Screw Type

Designed for use with round adjustable split dies.



3000DS

Size	Overall Length	3000DS EDP No.
13/16"	7"	3000DS1
1"	8 1/4"	3000DS2
1-1/2"	11 3/4"	3000DS3
2"	15 1/2"	3000DS4
2-1/2"	19"	3000DS5
3"	22 1/2"	3000DS6



## LIST NUMBER INDEX



# MAGNUM Solid Carbide Burs

*Proudly made in the U.S.A.*

### • PREMIUM CARBIDE SUBSTRATE

For use in a wide range of materials including Steel, Stainless Steel, Aluminum, Magnesium, Cast Iron, Brass, Copper, and Plastic.

### • MADE IN THE U.S.A.

Our burs are manufactured at our own state-of-the-art manufacturing facility, located in Baton Rouge, LA. Our manufacturing processes are modern, utilizing the newest technologies and CNC machinery available today.

### • COMPLETE LINE OF BURS

Single Cut, Double Cut, Long Series, Miniature, and Non-Ferrous Cut in all the different shapes.

### • SERVICE AND RELIABILITY

Backed by our strong 97% delivery security and the service you have come to expect from Drillco.



## DRILLCO CUTTING TOOLS



Burs

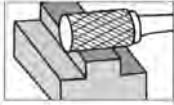
7's		7000GX		8's		Sets	
LIST NUMBER	PAGE #			LIST NUMBER	PAGE #	LIST NUMBER	PAGE #
7000A	168	7000H	171	8000	178	DISPLAY- BURS	177
7000AAL	175	7000HX	171	8100	178	SETS - BURS	176
7000AX	168	7000J	172	8300	178		
7000B	168	7000K	172	8400	178		
7000C	169	7000L	173				
7000CAL	175	7000LAL	175				
7000CX	169	7000LX	173				
7000D	169	7000M	173				
7000DAL	175	7000N	174				
7000DX	169	7000NE	174				
7000E	170						
7000EAL	175						
7000EX	170						
7000F	170						
7000FAL	175						
7000FX	170						
7000G	171						

## SOLID CARBIDE Magnum



**PACKAGING:**  
All sizes are individually packaged.

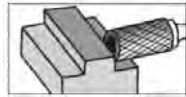
Carbide burs are one of the most widely used and versatile cutting tools, used in virtually every industry. Manufactured from Tungsten Carbide, they are primarily used to remove burrs (the small flakes of metal) that often remain on the workpiece after the machining process. Burs are available in standard lengths, long series (for hard to reach applications), and in miniature sizes (for use in pencil grinders).



SA Bur Profile

### 7000A/7000AX 7000B

DEBURRING  
INTERIOR CONTOUR WORK



SB Bur Profile

Tool No.	Cutter Dia.	Shank Dia.	Length of Cut	Single Cut EDP No.	Double Cut EDP No.
<b>SERIES 7000A</b>			<b>CYLINDRICAL</b>		
SA-11	1/8"	1/4"	1/2"	7A108BSC	7A108BDC
SA-12	1/8"	1/4"	5/8"	7A108ASC	7A108ADC
SA-14	3/16"	1/4"	5/8"	7A112ASC	7A112ADC
SA-1	1/4"	1/4"	5/8"	7A116ASC	7A116ADC
SA-1L	1/4"	1/4"	1"	7A116BSC	7A116BDC
SA-2	5/16"	1/4"	3/4"	7A120ASC	7A120ADC
SA-2L	5/16"	1/4"	1"	7A120BSC	7A120BDC
SA-3	3/8"	1/4"	3/4"	7A124ASC	7A124ADC
SA-3L	3/8"	1/4"	1"	7A124BSC	7A124BDC
SA-3XL	3/8"	1/4"	1-1/2"	7A124CSC	7A124CDC
SA-4	7/16"	1/4"	1"	7A128BSC	7A128BDC
SA-5	1/2"	1/4"	1"	7A132BSC	7A132BDC
SA-6	5/8"	1/4"	1"	7A140BSC	7A140BDC
SA-16	3/4"	1/4"	3/4"	7A148ASC	7A148ADC
SA-7	3/4"	1/4"	1"	7A148BSC	7A148BDC
SA-9	1"	1/4"	1"	7A164BSC	7A164BDC
<b>SERIES 7000A</b>			<b>MINIATURE</b>		
SA-41	1/16"	1/8"	1/4"	70A041SC	70A041DC
SA-42	3/32"	1/8"	7/16"	70A042SC	70A042DC
SA-43	1/8"	1/8"	9/16"	70A043SC	70A043DC
SA-51	1/4"	1/8"	1/2"	70A051SC	70A051DC
SA-52	5/32"	1/8"	1/2"	70A052SC	70A052DC
SA-53	3/16"	1/8"	1/2"	70A053SC	70A053DC
SA-61	1/16"	3/32"	1/4"	70A061SC	70A061DC
SA-63	3/32"	3/32"	3/8"	70A063SC	70A063DC
SA-81	3/16"	3/16"	1/2"	70A081SC	70A081DC
SA-43L2	1/8"	1/8"	9/16"	7A43L2SC	7A43L2DC
SA-43L3	1/8"	1/8"	9/16"	7A43L3SC	7A43L3DC
<b>SERIES 7000AX</b>			<b>6" EXTRA LONG</b>		
SA-1L6	1/4"	1/4"	1/2"	7AX116SC	7AX116DC
SA-3L6	3/8"	1/4"	3/4"	7AX124SC	7AX124DC
SA-5L6	1/2"	1/4"	1"	7AX132SC	7AX132DC

Tool No.	Cutter Dia.	Shank Dia.	Length of Cut	Single Cut EDP No.	Double Cut EDP No.
<b>SERIES 7000B</b>			<b>CYLINDRICAL WITH END CUT</b>		
SB-12	1/8"	1/4"	5/8"	7B108ASC	7B108ADC
SB-11	1/8"	1/4"	1/2"	7B108BSC	7B108BDC
SB-14	3/16"	1/4"	5/8"	7B112ASC	7B112ADC
SB-1	1/4"	1/4"	5/8"	7B116ASC	7B116ADC
SB-1L	1/4"	1/4"	1"	7B116BSC	7B116BDC
SB-2	5/16"	1/4"	3/4"	7B120ASC	7B120ADC
SB-2L	5/16"	1/4"	1"	7B120BSC	7B120BDC
SB-3	3/8"	1/4"	3/4"	7B124ASC	7B124ADC
SB-3L	3/8"	1/4"	1"	7B124BSC	7B124BDC
SB-3XL	3/8"	1/4"	1-1/2"	7B124CSC	7B124CDC
SB-4	7/16"	1/4"	1"	7B128BSC	7B128BDC
SB-5	1/2"	1/4"	1"	7B132BSC	7B132BDC
SB-6	5/8"	1/4"	1"	7B140BSC	7B140BDC
SB-16	3/4"	1/4"	3/4"	7B148ASC	7B148ADC
SB-7	3/4"	1/4"	1"	7B148BSC	7B148BDC
SB-9	1"	1/4"	1"	7B164BSC	7B164BDC
<b>SERIES 7000B</b>			<b>MINIATURE</b>		
SB-43	1/8"	1/8"	9/16"	70B043SC	70B043DC
SB-51	1/4"	1/8"	3/16"	70B051SC	70B051DC
SB-ECO	1/8"	1/8"	-	70BECOSC	70BECODC



# Burs

## SOLID CARBIDE Magnum

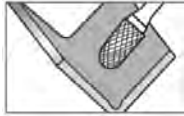


**PACKAGING:**  
All sizes are individually packaged.

### 7000C/7000CX 7000D/7000DX

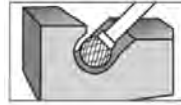
SURFACE MILLING & CONTOUR WORK  
SURFACE MILLING, DEBURRING & CONTOUR WORK

Description and applications as 7000A.



SC Bur Profile

Tool No.	Cutter Dia.	Shank Dia.	Length of Cut	Single Cut EDP No.	Double Cut EDP No.
<b>SERIES 7000C CYLINDRICAL BALL NOSE</b>					
SC-11	1/8"	1/4"	1/2"	7C108BSC	7C108BDC
SC-12	1/8"	1/4"	5/8"	7C108ASC	7C108ADC
SC-14	3/16"	1/4"	5/8"	7C112ASC	7C112ADC
SC-1	1/4"	1/4"	5/8"	7C116ASC	7C116ADC
SC-1L	1/4"	1/4"	1"	7C116BSC	7C116BDC
SC-2	5/16"	1/4"	3/4"	7C120ASC	7C120ADC
SC-2L	5/16"	1/4"	1"	7C120BSC	7C120BDC
SC-3	3/8"	1/4"	3/4"	7C124ASC	7C124ADC
SC-3L	3/8"	1/4"	1"	7C124BSC	7C124BDC
SC-3XL	3/8"	1/4"	1-1/2"	7C124CSC	7C124CDC
SC-4	7/16"	1/4"	1"	7C128BSC	7C128BDC
SC-5	1/2"	1/4"	1"	7C132BSC	7C132BDC
SC-6	5/8"	1/4"	1"	7C140BSC	7C140BDC
SC-7	3/4"	1/4"	1"	7C148BSC	7C148BDC
SC-9	1"	1/4"	1"	7C164BSC	7C164BDC
<b>SERIES 7000C MINIATURE</b>					
SC-41	3/32"	1/8"	7/16"	70C041SC	70C041DC
SC-42	1/8"	1/8"	9/16"	70C042SC	70C042DC
SC-51	1/4"	1/8"	1/2"	70C051SC	70C051DC
SC-52	5/32"	1/8"	1/2"	70C052SC	70C052DC
SC-53	3/16"	1/8"	1/2"	70C053SC	70C053DC
SC-61	3/32"	3/32"	3/8"	70C061SC	70C061DC
SC-81	3/16"	3/16"	1/2"	70C081SC	70C081DC
SC-42L2	1/8"	1/8"	9/16"	7C42L2SC	7C42L2DC
SC-42L3	1/8"	1/8"	9/16"	7C42L3SC	7C42L3DC
<b>SERIES 7000CX 6" EXTRA LONG</b>					
SC-1L6	1/4"	1/4"	1/2"	7CX116SC	7CX116DC
SC-3L6	3/8"	1/4"	3/4"	7CX124SC	7CX124DC
SC-5L6	1/2"	1/4"	1"	7CX132SC	7CX132DC



SD Bur Profile

Tool No.	Cutter Dia.	Shank Dia.	Length of Cut	Single Cut EDP No.	Double Cut EDP No.
<b>SERIES 7000D BALL SHAPE</b>					
SD-12	1/8"	1/4"	1/8"	7D108ASC	7D108ADC
SD-14	3/16"	1/4"	3/16"	7D112ASC	7D112ADC
SD-1	1/4"	1/4"	1/4"	7D116ASC	7D116ADC
SD-2	5/16"	1/4"	5/16"	7D120ASC	7D120ADC
SD-3	3/8"	1/4"	3/8"	7D124ASC	7D124ADC
SD-4	7/16"	1/4"	7/16"	7D128ASC	7D128ADC
SD-5	1/2"	1/4"	1/2"	7D132ASC	7D132ADC
SD-6	5/8"	1/4"	5/8"	7D140ASC	7D140ADC
SD-7	3/4"	1/4"	3/4"	7D148ASC	7D148ADC
SD-9	1"	1/4"	1"	7D164ASC	7D164ADC
<b>SERIES 7000D MINIATURE</b>					
SD-41	3/32"	1/8"	3/32"	70D041SC	70D041DC
SD-42	1/8"	1/8"	1/8"	70D042SC	70D042DC
SD-51	1/4"	1/8"	7/32"	70D051SC	70D051DC
SD-53	3/16"	1/8"	5/32"	70D053SC	70D053DC
SD-61	3/32"	3/32"	3/32"	70D061SC	70D061DC
SD-81	3/16"	3/16"	5/32"	7D42L2SC	7D081DC
SD-42L2	1/8"	1/8"	1/8"	7D42L3SC	7D42L2DC
<b>SERIES 7000DX 6" EXTRA LONG</b>					
SD-1L6	1/4"	1/4"	7/32"	7DX116SC	7DX116DC
SD-3L6	3/8"	1/4"	5/16"	7DX124SC	7DX124DC
SD-5L6	1/2"	1/4"	7/16"	7DX132SC	7DX132DC

Burs

## SOLID CARBIDE Magnum

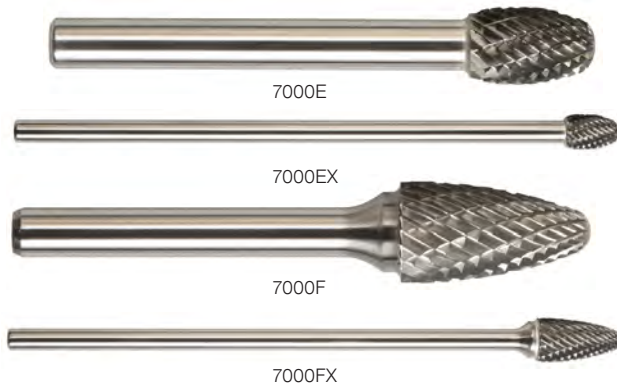


**PACKAGING:**  
All sizes are individually packaged.

### 7000E/7000EX 7000F/7000FX

CONTOUR WORK  
NARROW CONTOUR WORK

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SE Bur Profile



SF Bur Profile

Tool No.	Cutter Dia.	Shank Dia.	Length of Cut	Single Cut EDP No.	Double Cut EDP No.
<b>SERIES 7000E OVAL SHAPE</b>					
SE-11	3/16"	1/4"	5/16"	7E112ASC	7E112ADC
SE-1	1/4"	1/4"	3/8"	7E116ASC	7E116ADC
SE-2	5/16"	1/4"	5/8"	7E120ASC	7E120ADC
SE-3	3/8"	1/4"	5/8"	7E124ASC	7E124ADC
SE-5	1/2"	1/4"	7/8"	7E132ASC	7E132ADC
SE-6	5/8"	1/4"	1"	7E140ASC	7E140ADC
SE-7	3/4"	1/4"	1"	7E148ASC	7E148ADC
<b>SERIES 7000E MINIATURE</b>					
SE-41	1/8"	1/8"	7/32"	70E041SC	70E041DC
SE-51	1/4"	1/8"	3/8"	70E051SC	70E051DC
SE-53	3/16"	1/8"	9/32"	70E053SC	70E053DC
SE-61	3/32"	3/32"	1/8"	70E061SC	70E061DC
SE-81	3/16"	3/16"	9/32"	70E081SC	70E081DC
SE-41L2	1/8"	1/8"	7/32"	7E41L2SC	7E41L2DC
SE-41L3	1/8"	1/8"	7/32"	7E41L3SC	7E41L3DC
<b>SERIES 7000EX 6" EXTRA LONG</b>					
SE-1L6	1/4"	1/4"	3/8"	7EX116SC	7EX116DC
SE-3L6	3/8"	1/4"	5/8"	7EX124SC	7EX124DC
SE-5L6	1/2"	1/4"	7/8"	7EX132SC	7EX132DC

Tool No.	Cutter Dia.	Shank Dia.	Length of Cut	Single Cut EDP No.	Double Cut EDP No.
<b>SERIES 7000F ROUND TREE SHAPE</b>					
SF-11	1/8"	1/4"	5/8"	7F108BSC	7F108BDC
SF-12	1/8"	1/4"	1/2"	7F108ASC	7F108ADC
SF-1	1/4"	1/4"	5/8"	7F116ASC	7F116ADC
SF-1L	1/4"	1/4"	3/4"	7F116BSC	7F116BDC
SF-3	3/8"	1/4"	3/4"	7F124ASC	7F124ADC
SF-4	7/16"	1/4"	1"	7F128ASC	7F128ADC
SF-13	1/2"	1/4"	3/4"	7F132ASC	7F132ADC
SF-5	1/2"	1/4"	1"	7F132BSC	7F132BDC
SF-6	5/8"	1/4"	1"	7F140ASC	7F140ADC
SF-7	3/4"	1/4"	1"	7F148ASC	7F148ADC
SF-14	3/4"	1/4"	1-1/4"	7F148BSC	7F148BDC
SF-15	3/4"	1/4"	1-1/2"	7F148CSC	7F148CDC
<b>SERIES 7000F MINIATURE</b>					
SF-41	1/8"	1/8"	1/4"	70F041SC	70F041DC
SF-42	1/8"	1/8"	1/2"	70F042SC	70F042DC
SF-51	1/4"	1/8"	1/2"	70F051SC	70F051DC
SF-53	3/16"	1/8"	1/2"	70F053SC	70F053DC
SF-61	3/32"	3/32"	1/4"	70F061SC	70F061DC
SF-81	3/16"	3/16"	1/2"	70F081SC	70F081DC
SF-42L2	1/8"	1/8"	1/2"	7F42L2SC	7F42L2DC
SF-42L3	1/8"	1/8"	1/2"	7F42L3SC	7F42L3DC
<b>SERIES 7000FX 6" EXTRA LONG</b>					
SF-1L6	1/4"	1/4"	1/2"	7FX116SC	7FX116DC
SF-3L6	3/8"	1/4"	3/4"	7FX124SC	7FX124DC
SF-5L6	1/2"	1/4"	1"	7FX132SC	7FX132DC

# Burs

## SOLID CARBIDE Magnum

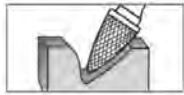


**PACKAGING:**  
All sizes are individually packaged.

### 7000G/7000GX 7000H/7000HX

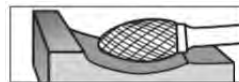
SURFACE MILLING & NARROW CONTOUR WORK  
CONTOUR WORK

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SG Bur Profile

Tool No.	Cutter Dia.	Shank Dia.	Length of Cut	Single Cut EDP No.	Double Cut EDP No.
<b>SERIES 7000G POINTED TREE SHAPE</b>					
SG-1	1/4"	1/4"	5/8"	7G116ASC	7G116ADC
SG-1L	1/4"	1/4"	3/4"	7G116BSC	7G116BDC
SG-2	5/16"	1/4"	3/4"	7G120ASC	7G120ADC
SG-3	3/8"	1/4"	3/4"	7G124ASC	7G124ADC
SG-13	1/2"	1/4"	3/4"	7G132ASC	7G132ADC
SG-5	1/2"	1/4"	1"	7G132BSC	7G132BDC
SG-6	5/8"	1/4"	1"	7G140ASC	7G140ADC
SG-7	3/4"	1/4"	1"	7G148ASC	7G148ADC
SG-15	3/4"	1/4"	1-1/2"	7G148BSC	7G148BDC
<b>SERIES 7000G MINIATURE</b>					
SG-41	1/8"	1/8"	1/4"	70G041SC	70G041DC
SG-42	1/8"	1/8"	5/16"	70G042SC	70G042DC
SG-43	1/8"	1/8"	3/8"	70G043SC	70G043DC
SG-44	1/8"	1/8"	1/2"	70G044SC	70G044DC
SG-51	1/4"	1/8"	1/2"	70G051SC	70G051DC
SG-53	3/16"	1/8"	1/2"	70G053SC	70G053DC
SG-61	3/32"	3/32"	1/4"	70G061SC	70G061DC
SG-81	3/16"	3/16"	1/2"	70G081SC	70G081DC
SG-44L2	1/8"	1/8"	1/2"	7G44L2SC	7G44L2DC
SG-44L3	1/8"	1/8"	1/2"	7G44L3SC	7G44L3DC
<b>SERIES 7000GX 6" EXTRA LONG</b>					
SG-1L6	1/4"	1/4"	1/2"	7GX116SC	7GX116DC
SG-3L6	3/8"	1/4"	3/4"	7GX124SC	7GX124DC
SG-5L6	1/2"	1/4"	1"	7GX132SC	7GX132DC



SH Bur Profile

Tool No.	Cutter Dia.	Shank Dia.	Length of Cut	Single Cut EDP No.	Double Cut EDP No.
<b>SERIES 7000H FLAME SHAPE</b>					
SH-1	1/4"	1/4"	1/2"	7H116ASC	7H116ADC
SH-2	5/16"	1/4"	3/4"	7H120ASC	7H120ADC
SH-5	1/2"	1/4"	1-1/4"	7H132ASC	7H132ADC
SH-6	5/8"	1/4"	1-7/16"	7H140ASC	7H140ADC
SH-7	3/4"	1/4"	1-5/8"	7H148ASC	7H148ADC
<b>SERIES 7000H MINIATURE</b>					
SH-41	1/8"	1/8"	1/4"	70H041SC	70H041DC
SH-53	3/16"	1/8"	3/8"	70H053SC	70H053DC
SH-41L2	1/8"	1/8"	1/4"	7H41L2SC	7H41L2DC
SH-41L3	1/8"	1/8"	1/4"	7H41L3SC	7H41L3DC
<b>SERIES 7000HX 6" EXTRA LONG</b>					
SH-2L6	5/16"	1/4"	3/4"	7HX120SC	7HX120DC
SH-5L6	1/2"	1/4"	1-1/4"	7HX132SC	7HX132DC

Burs

## SOLID CARBIDE Magnum



**PACKAGING:**  
All sizes are individually packaged.

### 7000J

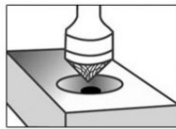
MACHINING OF ACUTE ANGLE AREAS & COUNTERSINKING

Carbide burs are one of the most widely used and versatile cutting tools, used in virtually every industry. Manufactured from Tungsten Carbide, they are primarily used to remove burrs (the small flakes of metal) that often remain on the workpiece after the machining process. Burs are available in standard lengths, long series (for hard to reach applications), and in miniature sizes (for use in pencil grinders).



7000J

SJ Bur Profile

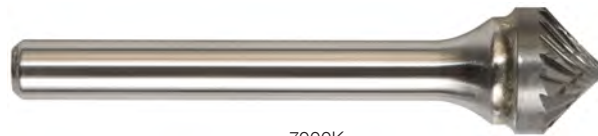


Tool No.	Cutter Dia.	Shank Dia.	Length of Cut	Single Cut EDP No.	Double Cut EDP No.
<b>SERIES 7000J</b>			<b>60° INCLUDED ANGLE</b>		
SJ-1	3/16"	1/4"	3/16"	7J116ASC	7J116ADC
SJ-2	1/4"	1/4"	1/4"	7J120ASC	7J120ADC
SJ-3	5/16"	1/4"	1/4"	7J124ASC	7J124ADC
SJ-5	3/8"	1/4"	7/16"	7J132ASC	7J132ADC
SJ-6	1/2"	1/4"	1/2"	7J140ASC	7J140ADC
SJ-7	5/8"	1/4"	5/8"	7J148ASC	7J148ADC
SJ-9	3/4"	1/4"	3/4"	7J164ASC	7J164ADC
<b>SERIES 7000J</b>			<b>MINIATURE</b>		
SJ-42	1/8"	1/8"	3/32"	70J042SC	70J042DC

### 7000K

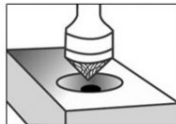
MACHINING OF ACUTE ANGLE AREAS & COUNTERSINKING

Description and applications as 7000J.



7000K

SK Bur Profile



Tool No.	Cutter Dia.	Shank Dia.	Length of Cut	Single Cut EDP No.	Double Cut EDP No.
<b>SERIES 7000K</b>			<b>90° INCLUDED ANGLE</b>		
SK-1	1/4"	1/4"	1/8"	7K116ASC	7K116ADC
SK-2	5/16"	1/4"	3/16"	7K120ASC	7K120ADC
SK-3	3/8"	1/4"	3/16"	7K124ASC	7K124ADC
SK-5	1/2"	1/4"	1/4"	7K132ASC	7K132ADC
SK-6	5/8"	1/4"	5/16"	7K140ASC	7K140ADC
SK-7	3/4"	1/4"	3/8"	7K148ASC	7K148ADC
SK-9	1"	1/4"	1/2"	7K164ASC	7K164ADC
<b>SERIES 7000K</b>			<b>MINIATURE</b>		
SK-42	1/8"	1/8"	7/32"	70K042SC	70K042DC



# Burs

## SOLID CARBIDE Magnum



**PACKAGING:**  
All sizes are individually packaged.

### 7000L/7000LX 7000M

SURFACE MACHINING & NARROW CONTOUR WORK  
SURFACE MACHINING & NARROW CONTOUR WORK

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SL Bur Profile



SM Bur Profile



Tool No.	Cutter Dia.	Shank Dia.	Length of Cut	Single Cut EDP No.	Double Cut EDP No.
<b>SERIES 7000L</b>			<b>14° INCLUDED ANGLE</b>		
SL-1	1/4"	1/4"	5/8"	7L116ASC	7L116ADC
SL-2	5/16"	1/4"	7/8"	7L120ASC	7L120ADC
SL-3	3/8"	1/4"	1-1/16"	7L124ASC	7L124ADC
SL-4	1/2"	1/4"	1-1/8"	7L132ASC	7L132ADC
SL-5	5/8"	1/4"	1-3/16"	7L140ASC	7L140ADC
SL-6	5/8"	1/4"	1-5/16"	7L140BSC	7L140BDC
SL-7	3/4"	1/4"	1-1/2"	7L148ASC	7L148ADC
<b>SERIES 7000L</b>			<b>MINIATURE</b>		
SL-41	1/8"	1/8"	3/8"	70L041SC	70L041DC
SL-42	1/8"	1/8"	1/2"	70L042SC	70L042DC
SL-53	3/16"	1/8"	1/2"	70L053SC	70L053DC
SL-81	3/16"	3/16"	7/16"	70L081SC	70L081DC
SL-42L2	1/8"	1/8"	1/2"	7L42L2SC	7L42L2DC
SL-42L3	1/8"	1/8"	1/2"	7L42L3SC	7L42L3DC
<b>SERIES 7000LX</b>			<b>6" EXTRA LONG</b>		
SL-1L6	1/4"	1/4"	5/8"	7LX116SC	7LX116DC
SL-3L6	3/8"	1/4"	1-1/16"	7LX124SC	7LX124DC
SL-4L6	1/2"	1/4"	1-1/8"	7LX132SC	7LX132DC

Tool No.	Cutter Dia.	Shank Dia.	Length of Cut	Single Cut EDP No.	Double Cut EDP No.
<b>SERIES 7000M</b>			<b>CONE SHAPE</b>		
SM-1	1/4"	1/4"	1/2"	7M116ASC	7M116ADC
SM-2	1/4"	1/4"	3/4"	7M116BSC	7M116BDC
SM-3	1/4"	1/4"	1"	7M116CSC	7M116CDC
SM-3L	1/4"	1/4"	1-1/4"	7M116DSC	7M116DDC
SM-4	3/8"	1/4"	5/8"	7M124ASC	7M124ADC
SM-4L	3/8"	1/4"	1"	7M124BSC	7M124BDC
SM-5	1/2"	1/4"	7/8"	7M132ASC	7M132ADC
SM-6	5/8"	1/4"	1"	7M140ASC	7M140ADC
<b>SERIES 7000M</b>			<b>MINIATURE</b>		
SM-41	1/8"	1/8"	11/32"	70M041SC	70M041DC
SM-42	1/8"	1/8"	7/16"	70M042SC	70M042DC
SM-43	1/8"	1/8"	1/2"	70M043SC	70M043DC
SM-51	1/4"	1/8"	1/2"	70M051SC	70M051DC
SM-53	3/16"	1/8"	1/2"	70M053SC	70M053DC
SM-61	3/32"	3/32"	1/4"	70M061SC	70M061DC
SM-42L2	1/8"	1/8"	7/16"	7M42L2SC	7M42L2DC
SM-42L3	1/8"	1/8"	7/16"	7M42L3SC	7M42L3DC

## SOLID CARBIDE Magnum



**PACKAGING:**  
All sizes are individually packaged.

### 7000N/7000NE

MACHINING FROM THE REAR IN HARD TO REACH AREAS

Carbide burs are one of the most widely used and versatile cutting tools, used in virtually every industry. Manufactured from Tungsten Carbide, they are primarily used to remove burrs (the small flakes of metal) that often remain on the workpiece after the machining process. Burs are available in standard lengths, long series (for hard to reach applications), and in miniature sizes (for use in pencil grinders).



SN Bur Profile



Tool No.	Cutter Dia.	Shank Dia.	Length of Cut	Single Cut EDP No.	Double Cut EDP No.
<b>SERIES 7000N</b>			<b>INVERTED CONE</b>		
SN-1	1/4"	1/4"	5/16"	7N116ASC	7N116ADC
SN-2	3/8"	1/4"	3/8"	7N124ASC	7N124ADC
SN-4	1/2"	1/4"	1/2"	7N132ASC	7N132ADC
SN-6	5/8"	1/4"	3/4"	7N140ASC	7N140ADC
SN-7	3/4"	1/4"	5/8"	7N148ASC	7N148ADC
<b>SERIES 7000N</b>			<b>MINIATURE</b>		
SN-41	1/8"	1/8"	1/8"	70N041SC	70N041DC
SN-42	1/8"	1/8"	3/16"	70N042SC	70N042DC
SN-51	1/4"	1/8"	1/4"	70N051SC	70N051DC
SN-53	3/16"	1/8"	1/4"	70N053SC	70N053DC
SN-61	3/32"	3/32"	1/8"	70N061SC	70N061DC
SN-81	3/16"	3/16"	1/4"	70N081SC	70N081DC
<b>SERIES 7000NE</b>			<b>INVERTED CONE WITH END CUT</b>		
SN-1E	1/4"	1/4"	5/16"	7N116ESC	7N116EDC
SN-2E	3/8"	1/4"	3/8"	7N124ESC	7N124EDC
SN-4E	1/2"	1/4"	1/2"	7N132ESC	7N132EDC
SN-7E	3/4"	1/4"	5/8"	7N148ESC	7N148EDC



# Burs Aluminum/Non-Ferrous Cut

## SOLID CARBIDE Magnum



**PACKAGING:**  
All sizes are individually packaged.

Aluminum cut burs have more aggressive cutting edges for rapid stock removal with minimum chip. Ideal for aluminum and other non-ferrous materials.



7000AAL



7000CAL

Tool No.	Cutter Dia.	Shank Dia.	Length of Cut	EDP No.
SERIES 7000AAL		CYLINDRICAL		
SA-1NF	1/4"	1/4"	3/4"	7AAL116
SA-3NF	3/8"	1/4"	3/4"	7AAL124
SA-5NF	1/2"	1/4"	1"	7AAL132
SA-6NF	5/8"	1/4"	1"	7AAL140
SA-7NF	3/4"	1/4"	1"	7AAL148

Tool No.	Cutter Dia.	Shank Dia.	Length of Cut	EDP No.
SERIES 7000CAL		CYLINDRICAL BALL NOSE		
SC-1NF	1/4"	1/4"	3/4"	7CAL116
SC-3NF	3/8"	1/4"	3/4"	7CAL124
SC-5NF	1/2"	1/4"	1"	7CAL132
SC-6NF	5/8"	1/4"	1"	7CAL140
SC-7NF	3/4"	1/4"	1"	7CAL148



7000DAL



7000EAL

Tool No.	Cutter Dia.	Shank Dia.	Length of Cut	EDP No.
SERIES 7000DAL		BALL SHAPE		
SD-1NF	1/4"	1/4"	7/32"	7DAL116
SD-3NF	3/8"	1/4"	5/16"	7DAL124
SD-5NF	1/2"	1/4"	7/16"	7DAL132
SD-6NF	5/8"	1/4"	9/16"	7DAL140
SD-7NF	3/4"	1/4"	11/16"	7DAL148

Tool No.	Cutter Dia.	Shank Dia.	Length of Cut	EDP No.
SERIES 7000EAL		OVAL SHAPE		
SE-1NF	1/4"	1/4"	7/32"	7EAL116
SE-3NF	3/8"	1/4"	5/16"	7EAL124
SE-5NF	1/2"	1/4"	7/16"	7EAL132
SE-6NF	5/8"	1/4"	9/16"	7EAL140
SE-7NF	3/4"	1/4"	11/16"	7EAL148



7000FAL



7000LAL

Tool No.	Cutter Dia.	Shank Dia.	Length of Cut	EDP No.
SERIES 7000FAL		ROUND TREE SHAPE		
SF-1NF	1/4"	1/4"	3/4"	7FAL116
SF-3NF	3/8"	1/4"	3/4"	7FAL124
SF-5NF	1/2"	1/4"	1"	7FAL132
SF-6NF	5/8"	1/4"	1"	7FAL140
SF-14NF	3/4"	1/4"	1-1/4"	7FAL148

Tool No.	Cutter Dia.	Shank Dia.	Length of Cut	EDP No.
SERIES 7000LAL		14° INCLUDED ANGLE		
SL-1NF	1/4"	1/4"	5/8"	7LAL116
SL-3NF	3/8"	1/4"	1-1/16"	7LAL124
SL-4NF	1/2"	1/4"	1-1/8"	7LAL132
SL-5NF	5/8"	1/4"	1-3/16"	7LAL140
SL-6NF	5/8"	1/4"	1-5/16"	7LAL140A

Burs

# Burs Sets

## SOLID CARBIDE Magnum



Carbide burs are one of the most widely used and versatile cutting tools, used in virtually every industry. Manufactured from Tungsten Carbide, they are primarily used to remove burrs (the small flakes of metal) that often remain on the workpiece after the machining process. Burs are available in standard lengths, long series (for hard to reach applications), and in miniature sizes (for use in pencil grinders).



70S004DC

Set No.	No. of Pieces	Includes	Single Cut EDP No.	Double Cut EDP No.
<b>Carbide Bur Sets</b>				
1	8	SA-1, SC-1, SD-1, SE-1, SF-1, SG-1, SL-1, SM-1	70S001SC	70S001DC
2	8	SA-3, SC-3, SD-3, SE-3, SF-3, SG-3, SL-3, SM-4	70S002SC	70S002DC
3	8	SA-5, SC-5, SD-5, SE-5, SF-5, SG-5, SL-4, SM-5	70S003SC	70S003DC
4	10	SA-1, SA-3, SA-5, SC-1, SC-3, SC-5, SD-3, SF-3, SF-5, SH-1	70S004SC	70S004DC
5	10	SA-5, SC-3, SC-5, SD-5, SE-3, SF-3, SF-5, SG-3, SG-5, SL-4	70S005SC	70S005DC
6	8	SA-43, SC-42, SD-42, SE-41, SF-42, SG-42, SL-41, SN-42	70S006SC	70S006DC
7	8	SA-51, SB-51, SC-51, SD-51, SE-51, SF-51, SG-51, SM-51	70S007SC	70S007DC

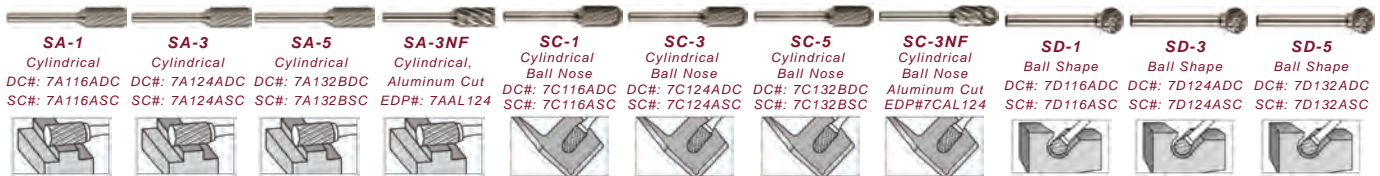
# Burs Displays

## SOLID CARBIDE Magnum



Storage drawer in back of display

- Burs are **“Made in the USA”** at our own state-of-the-art manufacturing facility
- A wide range of popular styles and sizes
- Comes complete with attractive, compact and light-weight acrylic display, ideal for your showroom and managing your inventory
- Display has a lock for added security. There is a shelf hidden in the back for holding additional replenishment inventory, or empty packages
- Available in 33, 66, or 99 pieces. The display will hold 33 pieces (1 of each). The 66 piece display will provide you with an extra piece of each for replenishment of the display. The 99 piece display will provide you with 2 extra pieces of each.
- Detailed labels (sample pictured below) make filling the display simple and easy



Displays	Each Set Contains The Following DC & NF Burs:	Single Cut EDP No.	Double Cut EDP No.
33 Piece Display (1 of Each Bur)	SA-1, SA-3, SA-5, SA-3NF, SC-1, SC-3, SC-5, SC-3NF, SD-1, SD-3, SD-5, SE-1, SE-3, SE-5,	70S033SC	70S033DC
66 Piece Display (2 of Each Bur)	SE-3NF, SF-1, SF-3, SF-5, SF-3NF, SG-1, SG-3, SG-5, SH-1, SH-5, SJ-1, SJ-3, SL-1, SL-3, SL-4,	70S066SC	70S066DC
99 Piece Display (3 of Each Bur)	SL-3NF, SM-1, SM-4, SM-5	70S099SC	70S099DC

Burs

# Burs Fiberglass Routers

**SOLID CARBIDE**  
Fractional



**PACKAGING:**  
All sizes are individually packaged.

For use in graphite composite laminates, polyester glass reinforced products, and phenolic epoxy parts. Routers have a single end with a 30 degree left hand helix, right hand cut, and straight shank.

**AVAILABLE AS SPECIALS. PLEASE CALL FOR PRICE AND DELIVERY.**



8000



8100

Tool No.	Cutter Dia.	Shank Dia.	Flute Length	Overall Length	8000 EDP No.
<b>SERIES 8000 NO END CUT</b>					
FGR 1	1/16"	1/8"	3/16"	1-1/2"	80A104
FGR 1-1	3/32"	1/8"	3/8"	1-1/2"	80A106
FGR 2	1/8"	1/8"	1/2"	1-1/2"	80A108
FGR 3	3/16"	3/16"	5/8"	2"	80A112
FGR 4	3/16"	1/4"	5/8"	2"	80A112A
FGR 5	1/4"	1/4"	3/4"	2"	80A116
FGR 6	1/4"	1/4"	3/4"	2-1/2"	80A116A
FGR 6-1	1/4"	1/4"	1"	3"	80A116B
FGR 7	5/16"	5/16"	1"	2-1/2"	80A120
FGR 8	3/8"	3/8"	1"	2-1/2"	80A124
FGR 9	1/2"	1/2"	1"	3"	80A132

Tool No.	Cutter Dia.	Shank Dia.	Flute Length	Overall Length	8100 EDP No.
<b>SERIES 8100 END MILL END</b>					
FGR 1	1/16"	1/8"	3/16"	1-1/2"	81A104
FGR 1-1	3/32"	1/8"	3/8"	1-1/2"	81A106
FGR 2	1/8"	1/8"	1/2"	1-1/2"	81A108
FGR 3	3/16"	3/16"	5/8"	2"	81A112
FGR 4	3/16"	1/4"	5/8"	2"	81A112A
FGR 5	1/4"	1/4"	3/4"	2"	81A116
FGR 6	1/4"	1/4"	3/4"	2-1/2"	81A116A
FGR 6-1	1/4"	1/4"	1"	3"	81A116B
FGR 7	5/16"	5/16"	1"	2-1/2"	81A120
FGR 8	3/8"	3/8"	1"	2-1/2"	81A124
FGR 9	1/2"	1/2"	1"	3"	81A132



8300



8400

Tool No.	Cutter Dia.	Shank Dia.	Flute Length	Overall Length	8300 EDP No.
<b>SERIES 8300 BUR END</b>					
FGR 1	1/16"	1/8"	3/16"	1-1/2"	83A104
FGR 1-1	3/32"	1/8"	3/8"	1-1/2"	83A106
FGR 2	1/8"	1/8"	1/2"	1-1/2"	83A108
FGR 3	3/16"	3/16"	5/8"	2"	83A112
FGR 4	3/16"	1/4"	5/8"	2"	83A112A
FGR 5	1/4"	1/4"	3/4"	2"	83A116
FGR 6	1/4"	1/4"	3/4"	2-1/2"	83A116A
FGR 6-1	1/4"	1/4"	1"	3"	83A116B
FGR 7	5/16"	5/16"	1"	2-1/2"	83A120
FGR 8	3/8"	3/8"	1"	2-1/2"	83A124
FGR 9	1/2"	1/2"	1"	3"	83A132

Tool No.	Cutter Dia.	Shank Dia.	Flute Length	Overall Length	8400 EDP No.
<b>SERIES 8400 DRILL END</b>					
FGR 1	1/16"	1/8"	3/16"	1-1/2"	84A104
FGR 1-1	3/32"	1/8"	3/8"	1-1/2"	84A106
FGR 2	1/8"	1/8"	1/2"	1-1/2"	84A108
FGR 3	3/16"	3/16"	5/8"	2"	84A112
FGR 4	3/16"	1/4"	5/8"	2"	84A112A
FGR 5	1/4"	1/4"	3/4"	2"	84A116
FGR 6	1/4"	1/4"	3/4"	2-1/2"	84A116A
FGR 6-1	1/4"	1/4"	1"	3"	84A116B
FGR 7	5/16"	5/16"	1"	2-1/2"	84A120
FGR 8	3/8"	3/8"	1"	2-1/2"	84A124
FGR 9	1/2"	1/2"	1"	3"	84A132

# Annular Cutters/Mag Drills

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# Annular Cutters 1" Depth of Cut

**HIGH SPEED STEEL / *NITRO* COBALT / CARBIDE TIPPED**

**PACKAGING:**  
All sizes are individually packaged.

## 9100SE/9100N/9100CT Annular Cutters

**3/4" SHANK**

Broach cutting using Drillco cutters means you can produce large diameter holes efficiently and quickly with less energy, faster penetration and less thrust. Rather than drilling out the metal with a solid drill, Drillco cutters remove only the periphery of the hole, ejecting a slug at the end of the cut. Tests show that a solid drill will take 3 minutes, 45 seconds to drill a 1-1/4" hole in 3/4" plate. A Drillco cutter can do the same job in 35 seconds. 9100SE series cutters are available pre-packaged with corresponding pin on sizes 7/16" - 1-1/2".

The *Nitro*® ranges of Annular Cutters are made from Cobalt, offering even better performance over the standard High Speed Steel ranges.

Carbide Tipped Annular Cutters maximize the performance of any Magnetic Drill Machine, delivering reamed-quality, bur free holes in a fraction of the time of standard HSS Annular Cutters. Eliminates the need for costly pilot holes & step drilling. 3/4" shanks are universal and fit most magnetic drilling machines including those with tool-less arbors and set-screw arbors. Larger diameters and depths on our Carbide Tipped Cutters are available by special order with short lead times. Contact us for details.



9100SE - 1" Depth of Cut - HSS



9100N - 1" Depth of Cut - Cobalt



9100CT - 1.3/8" Depth of Cut - Carbide Tipped

Size	HSS 9100SE EDP No.	HSS 9100SE WITH PINS	Nitro® 9100N EDP No.	Carbide Tip 9100CT EDP No.	Size	HSS 9100SE EDP No.	HSS 9100SE WITH PINS	Nitro® 9100N EDP No.	Carbide Tip 9100CT EDP No.
7/16"	91SE128	91SE128K	91N128	-	1-3/8"	91SE224	91SE224K	91N224	91CT224
1/2"	91SE132	91SE132K	91N132	-	1-7/16"	91SE228	91SE228K	91N228	-
9/16"	91SE136	91SE136K	91N136	91CT136	1-1/2"	91SE232	91SE232K	91N232	-
5/8"	91SE140	91SE140K	91N140	91CT140	1-9/16"	91SE236	-	91N236	-
11/16"	91SE144	91SE144K	91N144	91CT144	1-5/8"	91SE240	-	91N240	-
3/4"	91SE148	91SE148K	91N148	91CT148	1-11/16"	91SE244	-	91N244	-
13/16"	91SE152	91SE152K	91N152	91CT152	1-3/4"	91SE248	-	91N248	-
7/8"	91SE156	91SE156K	91N156	91CT156	1-13/16"	91SE252	-	91N252	-
15/16"	91SE160	91SE160K	91N160	91CT160	1-7/8"	91SE256	-	91N256	-
1"	91SE164	91SE164K	91N164	91CT164	1-15/16"	91SE260	-	91N260	-
1-1/16"	91SE204	91SE204K	91N204	91CT204	2"	91SE264	-	91N264	-
1-1/8"	91SE208	91SE208K	91N208	91CT208	2-1/16"	91SE304	-	91N304	-
1-3/16"	91SE212	91SE212K	91N212	91CT212	2-1/8"	91SE308	-	91N308	-
1-1/4"	91SE216	91SE216K	91N216	91CT216	2-3/16"	91SE312	-	91N312	-
1-5/16"	91SE220	91SE220K	91N220	91CT220	2-1/4"	91SE316	-	91N316	-

Continued on next page



# Annular Cutters 1" Depth of Cut



**HIGH SPEED STEEL / *NITRO* COBALT**  
Fractional

**PACKAGING:**  
All sizes are individually packaged.

## 9100SE/9100N Annular Cutters continued

**1-1/4" SHANK**

Broach cutting using Drillco cutters means you can produce large diameter holes efficiently and quickly with less energy, faster penetration and less thrust. Rather than drilling out the metal with a solid drill, Drillco cutters remove only the periphery of the hole, ejecting a slug at the end of the cut.

Tests show that a solid drill will take 3 minutes, 45 seconds to drill a 1-1/4" hole in 3/4" plate.

A Drillco cutter can do the same job in 35 seconds.

The *Nitro*® ranges of Annular Cutters are made from Cobalt, offering even better performance over the standard High Speed Steel ranges.



9100SE - HSS



9100N - Cobalt

Size	HSS 9100SE EDP No.	Nitro® 9100N EDP No.
2-5/16"	91SE320	91N320
2-3/8"	91SE324	91N324
2-7/16"	91SE328	91N328
2-1/2"	91SE332	91N332
2-9/16"	91SE336	-
2-5/8"	91SE340	-
2-11/16"	91SE344	-
2-3/4"	91SE348	-
2-13/16"	91SE352	-
2-7/8"	91SE356	-
2-15/16"	91SE360	-
3"	91SE364	-
3-1/16"	91SE404	-
3-1/8"	91SE408	-

Size	HSS 9100SE EDP No.	Nitro® 9100N EDP No.
3-3/16"	91SE412	-
3-1/4"	91SE416	-
3-5/16"	91SE420	-
3-3/8"	91SE424	-
3-7/16"	91SE428	-
3-1/2"	91SE432	-
3-9/16"	91SE436	-
3-5/8"	91SE440	-
3-11/16"	91SE444	-
3-3/4"	91SE448	-
3-13/16"	91SE452	-
3-7/8"	91SE456	-
3-15/16"	91SE460	-
4"	91SE464	-

Description	EDP No.
<b>HSS &amp; Cobalt Annular Cutter Pilot Pins</b>	
1" depth of cut pilot pin for 1/2" – 2-1/4"	91SE001
1" depth of cut pilot pin for 7/16"	91SE002
1" depth of cut pilot pin for 2-5/16" & larger sizes	91SE003

Description	EDP No.
<b>CT Annular Cutter Pilot Pins</b>	
1-3/8" depth of cut pilot pin for 3/4" and above	91CT001
1-3/8" depth of cut pilot pin for 9/16" - 11/16"	91CT002



Annular Cutters



# Annular Cutters 2" Depth of Cut

**HIGH SPEED STEEL / *NITRO* COBALT/  
CARBIDE TIPPED Fractional**

**PACKAGING:**  
All sizes are individually packaged.

## 9200SE/9200N/9200CT Annular Cutters

**3/4" SHANK**

Broach cutting using Drillco cutters means you can produce large diameter holes efficiently and quickly with less energy, faster penetration and less thrust. Rather than drilling out the metal with a solid drill, Drillco cutters remove only the periphery of the hole, ejecting a slug at the end of the cut. Tests show that a solid drill will take 3 minutes, 45 seconds to drill a 1-1/4" hole in 3/4" plate. A Drillco cutter can do the same job in 35 seconds. 9200SE series cutters are available pre-packaged with corresponding pin on sizes 7/16" - 1-1/2".

The *Nitro*® ranges of Annular Cutters are made from Cobalt, offering even better performance over the standard High Speed Steel ranges.

Carbide Tipped Annular Cutters maximize the performance of any Magnetic Drill Machine, delivering reamed-quality, bur free holes in a fraction of the time of standard HSS Annular Cutters. Eliminates the need for costly pilot holes & step drilling. 3/4" shanks are universal and fit most magnetic drilling machines including those with tool-less arbors and set-screw arbors. Larger diameters and depths on our Carbide Tipped Cutters are available by special order with short lead times. Contact us for details.



9200SE - HSS



9200N- Cobalt



9200CT - Carbide Tipped

Size	HSS 9200SE EDP No.	HSS 9200SE WITH PINS	Nitro® 9200N EDP No.	Carbide Tip 9200CT EDP No.	Size	HSS 9200SE EDP No.	HSS 9200SE WITH PINS	Nitro® 9200N EDP No.	Carbide Tip 9200CT EDP No.
7/16"	92SE128	92SE128K	92N128	-	1-3/8"	92SE224	92SE224K	92N224	92CT224
1/2"	92SE132	92SE132K	92N132	-	1-7/16"	92SE228	92SE228K	92N228	92CT228
9/16"	92SE136	92SE136K	92N136	92CT136	1-1/2"	92SE232	92SE232K	92N232	92CT232
5/8"	92SE140	92SE140K	92N140	92CT140	1-9/16"	92SE236	-	92N236	92CT236
11/16"	92SE144	92SE144K	92N144	92CT144	1-5/8"	92SE240	-	92N240	92CT240
3/4"	92SE148	92SE148K	92N148	92CT148	1-11/16"	92SE244	-	92N244	92CT244
13/16"	92SE152	92SE152K	92N152	92CT152	1-3/4"	92SE248	-	92N248	92CT248
7/8"	92SE156	92SE156K	92N156	92CT156	1-13/16"	92SE252	-	92N252	92CT252
15/16"	92SE160	92SE160K	92N160	92CT160	1-7/8"	92SE256	-	92N256	92CT256
1"	92SE164	92SE164K	92N164	92CT164	1-15/16"	92SE260	-	92N260	92CT260
1-1/16"	92SE204	92SE204K	92N204	92CT204	2"	92SE264	-	92N264	92CT264
1-1/8"	92SE208	92SE208K	92N208	92CT208	2-1/16"	92SE304	-	92N304	-
1-3/16"	92SE212	92SE212K	92N212	92CT212	2-1/8"	92SE308	-	92N308	92CT308
1-1/4"	92SE216	92SE216K	92N216	92CT216	2-3/16"	92SE312	-	92N312	-
1-5/16"	92SE220	92SE220K	92N220	92CT220	2-1/4"	92SE316	-	92N316	92CT316

Continued on next page

# Annular Cutters 2" Depth of Cut



**HIGH SPEED STEEL/CARBIDE TIPPED**  
Fractional

**PACKAGING:**  
All sizes are individually packaged.

## 9200SE/9200CT Annular Cutters continued

**1-1/4" SHANK**

Broach cutting using Drillco cutters means you can produce large diameter holes efficiently and quickly with less energy, faster penetration and less thrust. Rather than drilling out the metal with a solid drill, Drillco cutters remove only the periphery of the hole, ejecting a slug at the end of the cut.

Tests show that a solid drill will take 3 minutes, 45 seconds to drill a 1-1/4" hole in 3/4" plate. A Drillco cutter can do the same job in 35 seconds.

Carbide Tipped Annular Cutters maximize the performance of any Magnetic Drill Machine, delivering reamed-quality, bur free holes in a fraction of the time of standard HSS Annular Cutters. Eliminates the need for costly pilot holes & step drilling. 3/4" shanks are universal and fit most magnetic drilling machines including those with tool-less arbors and set-screw arbors. Larger diameters and depths on our Carbide Tipped Cutters are available by special order with short lead times. Contact us for details.



9200SE - HSS



9200CT - Carbide Tipped

Size	9200SE EDP No.	9200CT EDP No.
2-5/16"	92SE320	-
2-3/8"	92SE324	92CT324*
2-7/16"	92SE328	-
2-1/2"	92SE332	-
2-9/16"	92SE336	-
2-5/8"	92SE340	-
2-11/16"	92SE344	-
2-3/4"	92SE348	-
2-13/16"	92SE352	-
2-7/8"	92SE356	-
2-15/16"	92SE360	-
3"	92SE364	-
3-1/16"	92SE404	-
3-1/8"	92SE408	-

Size	9200SE EDP No.
3-3/16"	92SE412
3-1/4"	92SE416
3-5/16"	92SE420
3-3/8"	92SE424
3-7/16"	92SE428
3-1/2"	92SE432
3-9/16"	92SE436
3-5/8"	92SE440
3-11/16"	92SE444
3-3/4"	92SE448
3-13/16"	92SE452
3-7/8"	92SE456
3-15/16"	92SE460
4"	92SE464

Description	EDP No.
<b>HSS &amp; Cobalt Annular Cutter Pilot Pins</b>	
2" depth of cut pilot pin for 1/2" – 2-1/4"	92SE001
2" depth of cut pilot pin for 7/16" only	92SE002
2" depth of cut pilot pin for 2-5/16" & larger sizes	92SE003

Description	EDP No.
<b>CT Annular Cutter Pilot Pins</b>	
2" depth of cut pilot pin for 3/4" and above	92CT001
2" depth of cut pilot pin for 9/16" - 11/16"	92CT002

\*3/4" shank



Annular Cutters



# Annular Cutters 3" Depth of Cut

**HIGH SPEED STEEL / *NITRO* COBALT**  
Fractional

**PACKAGING:**  
All sizes are individually packaged.

## 9300SE/9300N Annular Cutters

**3/4" SHANK**

Broach cutting using Drillco cutters means you can produce large diameter holes efficiently and quickly with less energy, faster penetration and less thrust. Rather than drilling out the metal with a solid drill, Drillco cutters remove only the periphery of the hole, ejecting a slug at the end of the cut.

Tests show that a solid drill will take 3 minutes, 45 seconds to drill a 1-1/4" hole in 3/4" plate. A Drillco cutter can do the same job in 35 seconds.

The *Nitro*® ranges of Annular Cutters are made from Cobalt, offering even better performance over the standard High Speed Steel ranges.



9300SE - HSS



9300N - Cobalt

Size	HSS 9300SE EDP No.	Nitro® 9300N EDP No.
3/4"	93SE148	93N148
13/16"	93SE152	93N152
7/8"	93SE156	93N156
15/16"	93SE160	93N160
1"	93SE164	93N164
1-1/16"	93SE204	93N204
1-1/8"	93SE208	93N208
1-3/16"	93SE212	93N212
1-1/4"	93SE216	93N216
1-5/16"	93SE220	93N220
1-3/8"	93SE224	93N224
1-7/16"	93SE228	93N228
1-1/2"	93SE232	93N232

Size	HSS 9300SE EDP No.	Nitro® 9300N EDP No.
1-9/16"	93SE236	93N236
1-5/8"	93SE240	93N240
1-11/16"	93SE244	93N244
1-3/4"	93SE248	93N248
1-13/16"	93SE252	93N252
1-7/8"	93SE256	93N256
1-15/16"	93SE260	93N260
2"	93SE264	93N264
2-1/16"	93SE304	93N304
2-1/8"	93SE308	93N308
2-3/16"	93SE312	93N312
2-1/4"	93SE316	93N316

Description	EDP No.
<b>Annular Cutter Pilot Pin</b>	
3" depth of cut pilot pin for 1/2" – 2-1/4"	93SE001

Continued on next page



# Annular Cutters 3" Depth of Cut



**HIGH SPEED STEEL**  
Fractional

**PACKAGING:**  
All sizes are individually packaged.

## 9300SE Annular Cutters continued

**1-1/4" SHANK**

Broach cutting using Drillco cutters means you can produce large diameter holes efficiently and quickly with less energy, faster penetration and less thrust. Rather than drilling out the metal with a solid drill, Drillco cutters remove only the periphery of the hole, ejecting a slug at the end of the cut.

Tests show that a solid drill will take 3 minutes, 45 seconds to drill a 1-1/4" hole in 3/4" plate. A Drillco cutter can do the same job in 35 seconds.



9300SE - HSS

Size	9300SE EDP No.
2-5/16"	93SE320
2-3/8"	93SE324
2-7/16"	93SE328
2-1/2"	93SE332
2-9/16"	93SE336
2-5/8"	93SE340
2-11/16"	93SE344
2-3/4"	93SE348
2-13/16"	93SE352
2-7/8"	93SE356
2-15/16"	93SE360
3"	93SE364
3-1/16"	93SE404
3-1/8"	93SE408

Size	9300SE EDP No.
3-3/16"	93SE412
3-1/4"	93SE416
3-5/16"	93SE420
3-3/8"	93SE424
3-7/16"	93SE428
3-1/2"	93SE432
3-9/16"	93SE436
3-5/8"	93SE440
3-11/16"	93SE444
3-3/4"	93SE448
3-13/16"	93SE452
3-7/8"	93SE456
3-15/16"	93SE460
4"	93SE464

Description	EDP No.
<b>Annular Cutter Pilot Pin</b>	
3" depth of cut pilot pin for 2-5/16" & larger sizes	93SE003



Annular Cutters





# Annular Cutters 4" Depth of Cut

**HIGH SPEED STEEL**  
Fractional

**PACKAGING:**  
All sizes are individually packaged.

## 9400SE Annular Cutters

**3/4" SHANK**

Broach cutting using Drillco cutters means you can produce large diameter holes efficiently and quickly with less energy, faster penetration and less thrust. Rather than drilling out the metal with a solid drill, Drillco cutters remove only the periphery of the hole, ejecting a slug at the end of the cut.

Tests show that a solid drill will take 3 minutes, 45 seconds to drill a 1-1/4" hole in 3/4" plate. A Drillco cutter can do the same job in 35 seconds.



9400SE - HSS

Size	9400SE EDP No.	Size	9400SE EDP No.	Size	9400SE EDP No.	Size	9400SE EDP No.
3/4"	94SE148	15/16"	94SE160	1-1/8"	94SE208	1-5/16"	94SE220
13/16"	94SE152	1"	94SE164	1-3/16"	94SE212	1-3/8"	94SE224
7/8"	94SE156	1-1/16"	94SE204	1-1/4"	94SE216	1-7/16"	94SE228

## 9400SE Annular Cutters

**1-1/4" SHANK**

Size	9400SE EDP No.	Size	9400SE EDP No.	Size	9400SE EDP No.	Description	EDP No.
1-1/2"	94SE232	2-3/8"	94SE324	3-1/4"	94SE416	<b>Annular Cutter Pilot Pin</b>	
1-9/16"	94SE236	2-7/16"	94SE328	3-5/16"	94SE420	4" depth of cut pilot pin for 1/2" thru 1-7/16" sizes	94SE001
1-5/8"	94SE240	2-1/2"	94SE332	3-3/8"	94SE424	4" depth of cut pilot pin for 1-1/2" and larger sizes	94SE003
1-11/16"	94SE244	2-9/16"	94SE336	3-7/16"	94SE428		
1-3/4"	94SE248	2-5/8"	94SE340	3-1/2"	94SE432		
1-13/16"	94SE252	2-11/16"	94SE344	3-9/16"	94SE436		
1-7/8"	94SE256	2-3/4"	94SE348	3-5/8"	94SE440		
1-15/16"	94SE260	2-13/16"	94SE352	3-11/16"	94SE444		
2"	94SE264	2-7/8"	94SE356	3-3/4"	94SE448		
2-1/16"	94SE304	2-15/16"	94SE360	3-13/16"	94SE452		
2-1/8"	94SE308	3"	94SE364	3-7/8"	94SE456		
2-3/16"	94SE312	3-1/16"	94SE404	3-15/16"	94SE460		
2-1/4"	94SE316	3-1/8"	94SE408	4"	94SE464		
2-5/16"	94SE320	3-3/16"	94SE412				





# Annular Cutters Displays/Sets

## Annular Cutter Displays/Sets



91SE7S



912SE32D

Material	Series	Includes	EDP No.
<b>32 pc. Fractional Sizes Display</b>			
Nitro® (Cobalt)	9100N & 9200N	1 each of the following: 1/2, 5/8, 11/16, 3/4, 13/16, 7/8, 15/16, 1, 1-1/16, 1-1/8, and 6 pins.	912N32D
Carbide Tipped	9100CT & 9200CT	1 each of the following: 9/16, 5/8, 11/16, 3/4, 13/16, 7/8, 15/16, 1, 1-1/16, 1-1/8, and 6 pins.	912CT32D
High Speed Steel	9100SE & 9200SE	1 each of the following: 1/2, 5/8, 11/16, 3/4, 13/16, 7/8, 15/16, 1, 1-1/16, 1-1/8, and 6 pins.	912SE32D
<b>52 pc. Fractional Sizes Display</b>			
Nitro® (Cobalt)	9100N & 9200N	2 each of the following: 1/2, 5/8, 11/16, 3/4, 13/16, 7/8, 15/16, 1, 1-1/16, 1-1/8, and 6 pins.	912N52D
Carbide Tipped	9100CT & 9200CT	2 each of the following: 9/16, 5/8, 11/16, 3/4, 13/16, 7/8, 15/16, 1, 1-1/16, 1-1/8, and 6 pins.	912CT52D
High Speed Steel	9100SE & 9200SE	2 each of the following: 1/2, 5/8, 11/16, 3/4, 13/16, 7/8, 15/16, 1, 1-1/16, 1-1/8, and 6 pins.	912SE52D
<b>72 pc. Fractional Sizes Display</b>			
Nitro® (Cobalt)	9100N & 9200N	3 each of the following: 1/2, 5/8, 11/16, 3/4, 13/16, 7/8, 15/16, 1, 1-1/16, 1-1/8, and 6 pins.	912N72D
Carbide Tipped	9100CT & 9200CT	3 each of the following: 9/16, 5/8, 11/16, 3/4, 13/16, 7/8, 15/16, 1, 1-1/16, 1-1/8, and 6 pins.	912CT72D
High Speed Steel	9100SE & 9200SE	3 each of the following: 1/2, 5/8, 11/16, 3/4, 13/16, 7/8, 15/16, 1, 1-1/16, 1-1/8, and 6 pins.	912SE72D
<b>Annular Cutter Sets, 7 pc.</b>			
Nitro® (Cobalt)	9100N	9/16, 5/8, 11/16, 3/4, 13/16, 15/16, and 1 pin.	91N7S
High Speed Steel	9100SE	9/16, 5/8, 11/16, 3/4, 13/16, 15/16, and 1 pin.	91SE7S



## ANNULAR CUTTER RESHARPENING PROGRAM



- Get the most out of your investment by resharpening your cutter at a fraction of the original cost
- Annular cutters can be resharpened up to 3 times
- No set-up or minimum quantity charges
- Tools are resharpened at our own state of the art facility, ensuring consistent quality and enabling an extremely quick turnaround time upon receipt
- Resharpening available on our entire offering
- Competitively priced, with quality guaranteed
- *Call today to take advantage of this exceptional service offer from Drillco!*

**EFFICIENT, CONVENIENT,  
RELIABLE**

**Quick Turnaround Time!**

# Annular Cutters Accessories



MA000



RSA002




MTA003

Description	EDP No.
<b>Machine Accessories</b>	
1/2" chuck to annular adapter	MA000
<b>Annular Cutter Reduced &amp; Morse Taper Shank Holders</b>	
<b>1/2" Shank Adapters w/ 3 Flats</b>	
7/16" thru 2-1/4" Dia. x 1" LOC	RSA001
1/2" thru 2-1/4" Dia. x 2" LOC	RSA002
1/2" thru 2-1/4" Dia. x 3" LOC	RSA003
1/2" thru 2-1/4" Dia. x 4" LOC	RSA004
<b>3/4" Shank Adapters w/ 3 Flats</b>	
2-5/16" thru 4" Dia. x 1" LOC	RSA005
2-5/16" thru 4" Dia. x 2" LOC	RSA006
2-5/16" thru 4" Dia. x 3" LOC	RSA007
2-5/16" thru 4" Dia. x 4" LOC	RSA008
<b>#2 Morse Taper Shank Adapters</b>	
7/16" thru 2-1/4" Dia. x 1" & 2" LOC	MTA001
1/2" thru 2-1/4" Dia. x 3" & 4" LOC	MTA002
<b>#3 Morse Taper Shank Adapters</b>	
7/16" thru 2-1/4" Dia. x 1" & 2" LOC	MTA003
1/2" thru 2-1/4" Dia. x 3" & 4" LOC	MTA004
2-5/16" thru 4" Dia. x 1" & 2" LOC	MTA005
2-5/16" thru 4" Dia. x 3" & 4" LOC	MTA006
<b>#4 Morse Taper Shank Adapters</b>	
2-5/16" thru 4" Dia. x 1" & 2" LOC	MTA007
2-5/16" thru 4" Dia. x 3" & 4" LOC	MTA008


# Mag Drill Machines

## ELECTRO-MAGNETIC DRILLING MACHINES

Model	Features	Specifications																				
<b>DC35</b>																						
	<p>One of the most powerful mag base machines for its size.</p> <p>Extremely compact and light-weight, which makes it easy to manoeuver and ideal for the work site.</p> <p>Mag drill arbor is easily replaced with 1/2" chuck for twist drills.</p> <p>Adjustable reach for twist drills and for drilling deeper holes.</p> <p>LED light in the base of the machine lights the pilot point. Beneficial when drilling in low light areas!</p>	<table border="1"> <tr> <td>Cutter capacity</td> <td>1/2" - 1.3/8" x 2"</td> </tr> <tr> <td>Twist drill capacity</td> <td>1/2"</td> </tr> <tr> <td>Chuck capacity</td> <td>1/2"</td> </tr> <tr> <td>"No load" speed</td> <td>450 rpm</td> </tr> <tr> <td>Power consumption</td> <td>1050W</td> </tr> <tr> <td>Clamping force</td> <td>1,750 psi</td> </tr> <tr> <td>L x H x W</td> <td>10.5" x 13" x 6.5"</td> </tr> <tr> <td>Weight</td> <td>25.5 lbs.</td> </tr> <tr> <td>Stroke</td> <td>4.1"</td> </tr> <tr> <td>Voltage</td> <td>110V or 220-240V</td> </tr> </table>	Cutter capacity	1/2" - 1.3/8" x 2"	Twist drill capacity	1/2"	Chuck capacity	1/2"	"No load" speed	450 rpm	Power consumption	1050W	Clamping force	1,750 psi	L x H x W	10.5" x 13" x 6.5"	Weight	25.5 lbs.	Stroke	4.1"	Voltage	110V or 220-240V
		Cutter capacity	1/2" - 1.3/8" x 2"																			
Twist drill capacity	1/2"																					
Chuck capacity	1/2"																					
"No load" speed	450 rpm																					
Power consumption	1050W																					
Clamping force	1,750 psi																					
L x H x W	10.5" x 13" x 6.5"																					
Weight	25.5 lbs.																					
Stroke	4.1"																					
Voltage	110V or 220-240V																					
<p><b>Includes:</b> Integral oilfeed system, warranty, carrying case, Allen keys, safety strap and guard, cutting fluid.</p>																						
<b>DC50</b>																						
	<p>Powerful new light weight motor unit.</p> <p>Integral automatic lubrication system.</p> <p>Electronic controls with safety interlocks and audible warnings.</p> <p>Outstanding performance.</p> <p>#2 Morse Taper adapter included</p>	<table border="1"> <tr> <td>Cutter capacity</td> <td>7/16" - 2" x 2"</td> </tr> <tr> <td>Twist drill capacity</td> <td>3/4"</td> </tr> <tr> <td>Chuck capacity</td> <td>5/8"</td> </tr> <tr> <td>"No-load" speed</td> <td>280/500 rpm</td> </tr> <tr> <td>Power consumption</td> <td>1150W</td> </tr> <tr> <td>Clamping force</td> <td>2,000 psi</td> </tr> <tr> <td>L x H x W</td> <td>11.5" x 18" x 5"</td> </tr> <tr> <td>Weight</td> <td>40 lbs.</td> </tr> <tr> <td>Stroke</td> <td>6-5/8"</td> </tr> <tr> <td>Voltage</td> <td>110V or 220-240V</td> </tr> </table>	Cutter capacity	7/16" - 2" x 2"	Twist drill capacity	3/4"	Chuck capacity	5/8"	"No-load" speed	280/500 rpm	Power consumption	1150W	Clamping force	2,000 psi	L x H x W	11.5" x 18" x 5"	Weight	40 lbs.	Stroke	6-5/8"	Voltage	110V or 220-240V
		Cutter capacity	7/16" - 2" x 2"																			
Twist drill capacity	3/4"																					
Chuck capacity	5/8"																					
"No-load" speed	280/500 rpm																					
Power consumption	1150W																					
Clamping force	2,000 psi																					
L x H x W	11.5" x 18" x 5"																					
Weight	40 lbs.																					
Stroke	6-5/8"																					
Voltage	110V or 220-240V																					
<p><b>Includes:</b> Warranty, carrying case, Allen keys, safety strap and guard, cutting fluid.</p>																						

# Mag Drill Machines

## ELECTRO-MAGNETIC DRILLING MACHINES

Model	Features	Specifications	
<b>DC100</b>			
	<p>2 Speed Variable</p> <p>Overload Protection</p> <p>Automatic integral lubrication system</p> <p>Up to 4" Cutter capacity</p> <p>Standard arbor</p> <p>#3 Morse taper adapter included</p>	Cutter capacity	7/16" - 4" x 3"
		Twist drill capacity	1-1/2" (#3 MTS)
		Chuck capacity	3/4"
		"No load" speeds	40-130/145-430 rpm
		Power consumption	1850W
		Clamping force	4,000 psi
		L x H x W	15" x 20" x 5"
		Weight	58 lbs.
		Stroke	9.4"
		Voltage	110V
		<p><b>Includes:</b> Warranty, carrying case, Allen keys, safety strap and guard, cutting fluid.</p>	

**NOTE:** All Drillco magnetic drill machines come with a chuck that can hold 3/4" shank annular cutters. For cutters with a larger shank diameter than 3/4", you will require an adapter to hold the tool.

## Ask about our ***SAFETY FIRST*** Magnetic Drilling Machines

Our "Safety First" Magnetic Drilling Machines have all the same features as our standard machines, but include an automatic shutoff mechanism in the event the magnet loses contact with the material.

The Safety First sensors protect both the machine and the operator and is a requirement in many applications.

These machines are available with a short lead time. Please call our customer service team for price and delivery.

Annular Cutters

# Annular Cutters

## Feeds and Speeds for Annular Cutters

Material To Be Drilled				HSS Cutter	Nitro® Cutter	CT Cutter	Material To Be Drilled				HSS Cutter	Nitro® Cutter	CT Cutter	Cutter Dia.	Feed Ins./Rev.		
Cutting Speed In Feet/Min. (SFPM)				Speed In Feet/Min. (SFPM)				Operating Feed*									
Steel	Freecutting-Leaded	100	150	175	Aluminum				150	250	450-600	7/16" to 9/16"		.002 to .006			
	Up To 180 Brinell	80 to 110	130	165	Brass	Ordinary	150	250	250-550	5/8" to 3/4"		.003 to .003					
	A-36	80 to 110	130	165		Leaded	200	300	300-600	1-3/16" - 1-1/16"		.004 to .008					
	180 To 285 Brinell	45 to 70	80	90	Bronze	Ordinary	100	200	200-500	1-1/8" - 1-7/16"		.006 to .010					
	285 To 375 Brinell	30 to 45	55	60		Hi-tensile	70	100	100-200	1-1/2" to 2"		.008 to .012					
	375 & Up Brinell	15 to 25	35	40	Cast Iron	Soft	100	150	175	2" to 2-1/2"		.012 to .025					
	Manganese (low)	15 to 20	25	30		Medium	80	90	100								
	Stainless-Freecutting	30 to 60	70	100		Hard	50	70	80								
	Stainless 304,316, 320 & Tougher	20 to 40	50	60		Chilled	25	35	40								
	Inconel, Hastelloy				25 to 40	55	70	Copper				100	200	250			
Inconel - X				20 to 25	35	45	Magnesium				Up to 300	400	400-800				
Titanium				30 to 40	50	60	Malleable Iron				70	80	100-130				
A-286				25 to 35	50	60	Monel				40	50	50				

\*Always commence operations at the lower end of RPM.

CUTTING SPEEDS (SFPM)	7/16"	1/2"	9/16"	5/8"	11/16"	3/4"	13/16"	7/8"	15/16"	1"	1-1/8"	1-1/4"	1-3/8"	1-1/2"	1-5/8"	1-3/4"	2"	2-1/4"	2-1/2"
	10	87	76	68	61	56	51	47	44	41	38	34	31	28	25	24	22	19	17
20	175	153	136	122	111	102	94	87	82	76	68	61	56	51	47	44	38	34	31
30	262	229	204	183	167	153	141	131	122	115	102	92	83	76	71	65	57	51	46
40	349	306	272	245	222	204	188	175	163	153	136	122	111	102	94	87	76	68	61
50	437	382	339	306	278	255	235	218	204	191	170	153	140	127	118	109	95	85	76
60	524	458	407	367	333	306	282	253	245	229	204	183	167	153	141	131	115	102	92
70	611	535	475	428	389	357	329	306	285	267	238	214	194	178	165	153	134	119	107
80	700	611	543	489	444	408	376	350	326	306	272	244	222	204	188	175	153	136	122
90	786	688	611	550	500	458	426	393	367	344	306	275	250	229	212	196	172	153	138
100	873	764	679	611	556	509	470	436	408	382	340	306	278	255	235	218	191	170	153
120	1048	917	815	733	667	611	564	524	489	458	407	367	333	306	282	262	229	204	183
140	1222	1070	950	856	778	713	658	611	571	535	475	428	390	356	329	306	267	238	214
150	1310	1146	1018	917	833	764	705	655	611	573	509	458	417	382	353	327	286	255	229
160	1397	1222	1086	978	889	815	752	698	652	611	543	490	444	407	376	350	306	272	244
180	1572	1375	1222	1100	1000	917	846	786	734	688	611	550	500	458	423	393	344	306	275
200	1747	1528	1358	1222	1111	1020	940	874	815	764	680	611	556	510	470	437	382	340	306
220	1920	1681	1494	1345	1222	1121	1034	960	897	840	747	672	611	560	517	480	420	374	336
240	2096	1833	1630	1467	1333	1222	1128	1048	978	917	815	733	667	611	564	524	458	407	367
250	2183	1910	1697	1528	1389	1274	1175	1091	1020	955	850	764	694	637	588	546	477	424	382
260	2270	1986	1765	1590	1444	1325	1221	1135	1060	993	883	795	722	662	611	568	497	441	397
280	2445	2140	1900	1712	1556	1426	1316	1222	1140	1070	950	856	778	713	658	611	535	475	428
300	2620	2292	2037	1834	1667	1528	1410	1310	1222	1146	1020	917	833	7	705	655	573	510	458

### SPEED AND FEED FORMULAS

SPEED OF CUTTER IN SURFACE FEET PER MINUTE (SFM)

$$SFM = D \times .26 \times RPM$$

REVOLUTIONS PER MINUTE (RPM)

$$RPM = SFM \times 3.82 \text{ divided by Dia.}$$

FEED IN INCHES PER MINUTE (IPM) OR (F)

$$F = f \times T \times RPM$$



## LIST NUMBER INDEX

**NITRO SAFETY FIRST**  
**Construction Reamers**

- Manufactured by Drillco from M2 premium grade High Speed Steel. Body clearance are Black & Gold surface treated for maximum lubricity and wear resistance.
- Specifically engineered for Heavy-Duty reaming and hole alignment in the fabrication of structural steel assemblies, bridge erection, and ship construction.
- Compatible socket size for both reamer and structural bolt assemblies.
- Designed with safety and jobsite accident prevention in mind. Meets OSHA 29CFR Part 1926.759 (falling objects prevention).

Two Embedded NEO40 MAGNETS secure reamer in socket for safety!

**DRILLCO CUTTING TOOLS**

1's	
LIST NUMBER	PAGE #
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125HX	200
125SF	198
150H	202
150HX	201
175H	202

4's	
LIST NUMBER	PAGE #
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4250	194
4275	196
4275E	196
4275N	195
4285	197
4285N	195
4290	199
4290E	199
4290N	198
4300E	203
4350E	204
4375E	203
4400E	205
4450E	205
4500E	206
4550E	206
4570E	206

# Bridge Reamers

**HIGH SPEED STEEL**  
Fractional / Black Oxide



**PACKAGING:**  
All sizes are individually packaged.

## 4200/4250 Bridge Reamers

TAPER SHANK

Commonly used on bridgework, ship construction and structural steel fabrication where extreme accuracy of diameter is important. Reamers have pilot type points for alignment purposes and easy entry into small and off-center holes.



4200 Straight Flute



4250 Spiral Flute

Size	Point Dia.	Flute Length	Overall Length	Morse Taper	Straight Flute 4200 EDP No.	Spiral Flute 4250 EDP No.
5/16"	11/64"	4-3/8"	8-1/4"	2	420A120	425A120
11/32"	11/64"	4-3/8"	8-1/4"	2	420A122	425A122
3/8"	7/32"	4-3/8"	8-1/4"	2	420A124	425A124
13/32"	7/32"	4-3/8"	8-1/4"	2	420A126	425A126
7/16"	17/64"	4-3/8"	8-1/4"	2	420A128	425A128
15/32"	9/32"	5-1/8"	9"	2	420A130	425A130
1/2"	5/16"	5-1/8"	9"	2	420A132	425A132
17/32"	11/32"	5-1/8"	9"	2	420A134	425A134
9/16"	3/8"	5-1/8"	9"	2	420A136	425A136
19/32"	3/8"	5-1/8"	9"	2	420A138	425A138
5/8"	25/64"	6-1/8"	10"	2	420A140	425A140
21/32"	25/64"	7-1/8"	11-3/4"	3	420A142	425A142
11/16"	13/32"	7-1/8"	11-3/4"	3	420A144	425A144
3/4"	15/32"	7-3/8"	12"	3	420A148	425A148
25/32"	15/32"	7-3/8"	12"	3	420A150	425A150
13/16"	35/64"	7-3/8"	12"	3	420A152	425A152
27/32"	35/64"	7-3/8"	12"	3	420A154	425A154

Size	Point Dia.	Flute Length	Overall Length	Morse Taper	Straight Flute 4200 EDP No.	Spiral Flute 4250 EDP No.
7/8"	39/64"	7-3/8"	12"	3	420A156	425A156
29/32"	39/64"	7-3/8"	12"	3	420A158	425A158
15/16"	43/64"	7-3/8"	12"	3	420A160	425A160
31/32"	5/8"	7-3/8"	12"	3	-	425A162
1"	47/64"	7-3/8"	12"	3	420A164	425A164
1-1/32"	47/64"	7-3/8"	12"	3	420A202	425A202
1-1/16"	13/16"	7-3/8"	12"	3	420A204	425A204
1-1/8"	55/64"	7-3/8"	12"	3	420A208	425A208
1-3/16"	59/64"	7-3/8"	12"	3	420A212	425A212
1-1/4"	63/64"	7-3/8"	13"	4	420A216	425A216
1-5/16"	1-1/16"	7-3/8"	13"	4	420A220	425A220
1-3/8"	1-1/8"	7-3/8"	13"	4	420A224	425A224
1-7/16"	1-3/16"	7-3/8"	13"	4	420A228	425A228
1-1/2"	1-1/4"	7-3/8"	13"	4	420A232	425A232
1-9/16"	1-1/4"	7-3/8"	13"	4	420A236	425A236
1-5/8"	1-3/8"	7-3/8"	13"	4	420A240	425A240

# NITRO Construction Reamers



**HIGH SPEED STEEL**  
Fractional / Black & Gold



**PACKAGING:**  
All sizes are individually packaged.

## 4275N/4285N Construction Reamers

3-FLATS REDUCED SHANK

Construction or Car Reamers are especially adapted for heavy duty reaming as encountered in the fabrication of structural steel assemblies. They are tapered at the point to facilitate entering of holes which are out of alignment. Available in Spiral Flute and High Spiral Flute designs with 3-Flat Straight Shanks, or with Hex Nut Shanks.



4275N Spiral Flute



4285N High Spiral Flute

Size	Shank Dia.	Flute Length	Overall Length	Spiral Flute 4275N EDP No.	High Spiral Flute 4285N EDP No.
1/4"	1/4"	2-1/2"	4-3/8"	427N116	428N116
5/16"	5/16"	2-3/4"	4-5/8"	427N120	428N120
3/8"	3/8"	2-3/4"	4-5/8"	427N124	428N124
13/32"	13/32"	3-1/2"	5-3/8"	427N126	428N126
7/16"	7/16"	3-1/2"	5-3/8"	427N128	428N128
15/32"	15/32"	3-3/4"	5-7/8"	427N130	428N130
1/2"	1/2"	4"	5-7/8"	427N132	428N132
17/32"	1/2"	4"	5-7/8"	427N134	428N134
9/16"	1/2"	4"	5-7/8"	427N136	428N136
19/32"	1/2"	4-1/2"	6-3/8"	427N138	428N138
5/8"	1/2"	4-1/2"	6-3/8"	427N140	428N140
.652	1/2"	4-1/2"	6-3/8"	427N141	428N141
21/32"	1/2"	4-1/2"	6-3/8"	427N142	428N142
11/16"	1/2"	4-1/2"	6-3/8"	427N144	428N144
23/32"	1/2"	4-1/2"	6-3/8"	427N146	428N146
3/4"	1/2"	5"	6-7/8"	427N148	428N148
.776	1/2"	5"	6-7/8"	427N149	428N149

Size	Shank Dia.	Flute Length	Overall Length	Spiral Flute 4275N EDP No.	High Spiral Flute 4285N EDP No.
25/32"	1/2"	5"	6-7/8"	427N150	428N150
13/16"	1/2"	5"	6-7/8"	427N152	428N152
27/32"	1/2"	5"	6-7/8"	427N154	428N154
7/8"	1/2"	5"	6-7/8"	427N156	428N156
29/32"	1/2"	5"	6-7/8"	427N158	428N158
15/16"	1/2"	5"	6-7/8"	427N160	428N160
31/32"	1/2"	5"	6-7/8"	427N162	428N162
1"	1/2"	5"	6-7/8"	427N164	428N164
1.027	1/2"	5"	6-7/8"	427N201	428N201
1-1/16"	1/2"	5"	6-7/8"	427N204	428N204
1-1/8"	3/4"	5"	6-7/8"	427N208	428N208
1-3/16"	3/4"	5"	6-7/8"	427N212	428N212
1-1/4"	3/4"	5"	6-7/8"	427N216	428N216
1-5/16"	3/4"	5"	6-7/8"	427N220	428N220
1-3/8"	3/4"	5"	6-7/8"	427N224	428N224
1-7/16"	3/4"	5"	6-7/8"	427N228	428N228
1-1/2"	3/4"	5"	6-7/8"	427N232	428N232

Sizes 1-1/8" and above also available with 1/2" shank. Please call for price and availability.



No. of Pcs.	Sizes	4275N EDP No.	4285N EDP No.
<b>Nitro® Construction Reamer Display Sets</b>			
8	1 each of: 3/8, 7/16, 1/2, 9/16, 5/8, 11/16, 3/4, 13/16	427N8D	428N8D
16	2 each of: 3/8, 7/16, 1/2, 9/16, 5/8, 11/16, 3/4, 13/16	427N16D	428N16D
24	3 each of: 3/8, 7/16, 1/2, 9/16, 5/8, 11/16, 3/4, 13/16	427N24D	428N24D

Reamers



# Construction Reamers

**HIGH SPEED STEEL**  
Fractional / Black Oxide

**PACKAGING:**  
All sizes are individually packaged.

**4275  /4275E Construction Reamers**

SPIRAL FLUTE / 3-FLATS REDUCED SHANK

Construction or Car Reamers are especially adapted for heavy duty reaming as encountered in the fabrication of structural steel assemblies. They are tapered at the point to facilitate entering of holes which are out of alignment. Available in Spiral Flute and High Spiral Flute designs with 3-Flat Straight Shanks, or with Hex Nut Shanks.



4275

Size	Shank Dia.	Flute Length	Overall Length	4275 EDP No.	4275E EDP No.
1/4"	1/4"	2-1/2"	4-3/8"	427A116	-
5/16"	5/16"	2-3/4"	4-5/8"	427A120	427E120
3/8"	3/8"	2-3/4"	4-5/8"	427A124	427E124
13/32"	13/32"	3-1/2"	5-3/8"	427A126	-
7/16"	7/16"	3-1/2"	5-3/8"	427A128	427E128
1/2"	1/2"	4"	5-7/8"	427A132	427E132
17/32"	1/2"	3-3/4"	5-7/8"	427A134	-
9/16"	1/2"	4"	5-7/8"	427A136	427E136
19/32"	1/2"	4-1/4"	6-3/8"	427A138	-
39/64"	1/2"	4-1/4"	6-3/8"	427A139	-
5/8"	1/2"	4-1/2"	6-3/8"	427A140	427E140
.652	1/2"	4-1/2"	6-3/8"	427A141	-
21/32"	1/2"	4-1/2"	6-3/8"	427A142	-
11/16"	1/2"	4-1/2"	6-3/8"	427A144	427E144
23/32"	1/2"	4-1/2"	6-3/8"	427A146	-
3/4"	1/2"	5"	6-7/8"	427A148	427E148

Size	Shank Dia.	Flute Length	Overall Length	4275 EDP No.	4275E EDP No.
.776"	1/2"	5"	6-7/8"	427A149	-
25/32"	1/2"	5"	6-7/8"	427A150	-
13/16"	1/2"	5"	6-7/8"	427A152	427E152
7/8"	1/2"	5"	6-7/8"	427A156	427E156
15/16"	1/2"	5"	6-7/8"	427A160	427E160
1"	1/2"	5"	6-7/8"	427A164	427E164
1-027	1/2"	5"	6-7/8"	427A201	-
1-1/16"	1/2"	5"	6-7/8"	427A204	427E204
1-3/32"	1/2"	5"	6-7/8"	427A206	-
1-1/8"	3/4"	5"	6-7/8"	427A208	-
1-3/16"	3/4"	5"	6-7/8"	427A212	-
1-1/4"	3/4"	5"	6-7/8"	427A216	-
1-5/16"	3/4"	5"	6-7/8"	427A220	-
1-3/8"	3/4"	5"	6-7/8"	427A224	-
1-7/16"	3/4"	5"	6-7/8"	427A228	-
1-1/2"	3/4"	5"	6-7/8"	427A232	-

Sizes 1-1/8" and above also available with 1/2" shank. Please call for price and availability.



# Construction Reamers

**HIGH SPEED STEEL**  
Fractional / Black Oxide



**PACKAGING:**  
All sizes are individually packaged.

## 4285 Construction Reamers

HIGH SPIRAL FLUTE / 3-FLATS REDUCED SHANK

Construction or Car Reamers are especially adapted for heavy duty reaming as encountered in the fabrication of structural steel assemblies. They are tapered at the point to facilitate entering of holes which are out of alignment. Available in Spiral Flute and High Spiral Flute designs with 3-Flat Straight Shanks, or with Hex Nut Shanks.



4285

Size	Shank Dia.	Flute Length	Overall Length	4285 EDP No.
1/4"	1/4"	2-1/2"	4-3/8"	428A116
5/16"	5/16"	2-3/4"	4-5/8"	428A120
3/8"	3/8"	2-3/4"	4-5/8"	428A124
13/32"	13/32"	3-1/2"	5-3/8"	428A126
7/16"	7/16"	3-1/2"	5-3/8"	428A128
15/32"	15/32"	3-3/4"	5-7/8"	428A130
1/2"	1/2"	4"	5-7/8"	428A132
17/32"	1/2"	4"	5-7/8"	428A134
9/16"	1/2"	4"	5-7/8"	428A136
19/32"	1/2"	4-1/2"	6-3/8"	428A138
5/8"	1/2"	4-1/2"	6-3/8"	428A140
.652	1/2"	4-1/2"	6-3/8"	428A141
21/32"	1/2"	4-1/2"	6-3/8"	428A142
11/16"	1/2"	4-1/2"	6-3/8"	428A144
23/32"	1/2"	4-1/2"	6-3/8"	428A146
3/4"	1/2"	5"	6-7/8"	428A148
.776	1/2"	5"	6-7/8"	428A149

Size	Shank Dia.	Flute Length	Overall Length	4285 EDP No.
25/32"	1/2"	5"	6-7/8"	428A150
13/16"	1/2"	5"	6-7/8"	428A152
27/32"	1/2"	5"	6-7/8"	428A154
7/8"	1/2"	5"	6-7/8"	428A156
15/16"	1/2"	5"	6-7/8"	428A160
1"	1/2"	5"	6-7/8"	428A164
1.027	1/2"	5"	6-7/8"	428A201
1-1/32"	1/2"	5"	6-7/8"	428A202
1-1/16"	1/2"	5"	6-7/8"	428A204
1-1/8"	3/4"	5"	6-7/8"	428A208
1-3/16"	3/4"	5"	6-7/8"	428A212
1-1/4"	3/4"	5"	6-7/8"	428A216
1-5/16"	3/4"	5"	6-7/8"	428A220
1-3/8"	3/4"	5"	6-7/8"	428A224
1-7/16"	3/4"	5"	6-7/8"	428A228
1-1/2"	3/4"	5"	6-7/8"	428A232

Sizes 1-1/8" and above also available with 1/2" shank.  
Please call for price and availability.

**HIGH SPEED STEEL**  
Fractional / Black & Gold



**PACKAGING:**  
All sizes are individually packaged.

## 125SF Nitro® Safety First Construction Reamers SPIRAL FLUTE / HEX NUT / BRIDGE LENGTH

Manufactured from a premium grade of high speed steel. Body and clearance are gold and black surface treated for maximum lubricity.

Construction or Car Reamers are especially adapted for heavy duty reaming as encountered in the fabrication of structural steel assemblies. They are tapered at the point to facilitate entering of holes which are out of alignment.

Two NE040 Magnets are placed 180 degrees apart in hex nut to reduce the risk of the reamer falling out of the socket while in use.

Drillco's Nitro® Safety First Hex Shank Reamers have been designed to protect against the danger and loss of a falling reamer. The Nitro® meets OSHA 29CFR Part 1926.759 (falling objects protection).



125SF

Size	Hex Dia.	Flute Length	Overall Length	125SF EDP No.
9/16"	1-1/16"	5-1/8"	6-7/8"	125SF136
5/8"	1-1/16"	6-1/8"	7-7/8"	125SF140
11/16"	1-1/16"	7-1/8"	9-1/4"	125SF144
3/4"	1-1/4"	7-3/8"	9-3/8"	125SF148
13/16"	1-1/4"	7-3/8"	9-3/8"	125SF152
7/8"	1-7/16"	7-3/8"	9-3/8"	125SF156
15/16"	1-7/16"	7-3/8"	9-3/8"	125SF160
1"	1-7/16"	7-3/8"	9-3/8"	125SF164
1-1/16"	1-5/8"	7-3/8"	9-3/8"	125SF204

Size	Hex Dia.	Flute Length	Overall Length	125SF EDP No.
1-1/8"	1-5/8"	7-3/8"	9-3/8"	125SF208
1-3/16"	1-13/16"	7-3/8"	9-3/8"	125SF212
1-1/4"	1-13/16"	7-3/8"	9-3/8"	125SF216
1-5/16"	2"	7-3/8"	10"	125SF220
1-3/8"	2"	7-3/8"	10"	125SF224
1-7/16"	2"	7-3/8"	10"	125SF228
1-1/2"	2"	7-3/8"	10"	125SF232
1-9/16"	2"	7-3/8"	10"	125SF236
1-5/8"	2"	7-3/8"	10"	125SF240

## 4290N Nitro® Safety First Construction Reamers SPIRAL FLUTE / HEX NUT / CAR LENGTH



4290N

Size	Hex Dia.	Flute Length	Overall Length	4290N EDP No.
1/2"	1-1/16"	4"	5-1/2"	429N132
9/16"	1-1/16"	4"	5-7/8"	429N136
5/8"	1-1/16"	4-1/2"	6"	429N140
11/16"	1-1/16"	4-1/2"	6-3/8"	429N144
3/4"	1-1/4"	5"	7"	429N148
13/16"	1-1/4"	5"	7"	429N152
7/8"	1-7/16"	5"	7"	429N156

Size	Hex Dia.	Flute Length	Overall Length	4290N EDP No.
15/16"	1-7/16"	5"	7"	429N160
1"	1-7/16"	5"	7"	429N164
1-1/16"	1-5/8"	5"	7"	429N204
1-1/8"	1-5/8"	5"	7"	429N208
1-3/16"	1-13/16"	5"	7"	429N212
1-1/4"	1-13/16"	5"	7"	429N216
1-5/16"	2"	5"	7-7/8"	429N220



# Construction Reamers

**HIGH SPEED STEEL**  
Fractional / Black Oxide

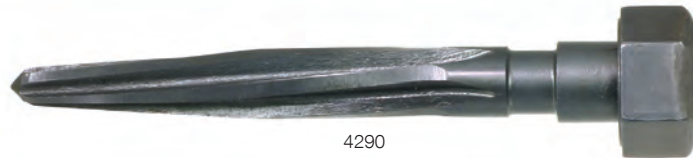
**PACKAGING:**  
All sizes are individually packaged.

## 4290 Construction Reamers



SPIRAL FLUTE / HEX NUT / CAR LENGTH

Construction or Car Reamers are especially adapted for heavy duty reaming as encountered in the fabrication of structural steel assemblies. They are tapered at the point to facilitate entering of holes which are out of alignment. Available in Spiral Flute and High Spiral Flute designs with 3-Flat Straight Shanks, or with Hex Nut Shanks.



4290

Size	Hex Dia.	Flute Length	Overall Length	4290 EDP No.
1/2"	1-1/16"	4"	5-1/2"	429A132
9/16"	1-1/16"	4"	5-7/8"	429A136
5/8"	1-1/16"	4-1/2"	6"	429A140
11/16"	1-1/16"	4-1/2"	6-3/8"	429A144
3/4"	1-1/4"	5"	7"	429A148
13/16"	1-1/4"	5"	7"	429A152
7/8"	1-7/16"	5"	7"	429A156
15/16"	1-7/16"	5"	7"	429A160
1"	1-7/16"	5"	7"	429A164

Size	Hex Dia.	Flute Length	Overall Length	4290 EDP No.
1-1/16"	1-5/8"	5"	7"	429A204
1-1/8"	1-5/8"	5"	5"	429A208
1-3/16"	1-13/16"	5"	7"	429A212
1-1/4"	1-13/16"	5"	7"	429A216
1-5/16"	2"	5"	7-7/8"	429A220
1-3/8"	2"	5"	7-7/8"	429A224
1-7/16"	2"	5"	7-7/8"	429A228
1-1/2"	2"	5"	7-7/8"	429A232
1-9/16"	2"	5"	7-7/8"	429A236

## 4290E Construction Reamers

SPIRAL FLUTE / HEX NUT / CAR LENGTH

Construction or Car Reamers are especially adapted for heavy duty reaming as encountered in the fabrication of structural steel assemblies. They are tapered at the point to facilitate entering of holes which are out of alignment. Available in Spiral Flute and High Spiral Flute designs with 3-Flat Straight Shanks, or with Hex Nut Shanks.



4290E

Size	Hex Dia.	Flute Length	Overall Length	4290E EDP No.
11/16"	1-1/16"	4-1/2"	5-7/8"	429E144
13/16"	1-1/4"	5"	6-3/8"	429E152
15/16"	1-7/16"	5"	6-3/8"	429E160
1-1/16"	1-5/8"	5"	6-7/8"	429E204

# Construction Reamers

**HIGH SPEED STEEL**  
Fractional / Black Oxide



**PACKAGING:**  
All sizes are individually packaged.

## 125HX Construction Reamers

SPIRAL FLUTE / HEX NUT / BRIDGE LENGTH

Construction or Car Reamers are especially adapted for heavy duty reaming as encountered in the fabrication of structural steel assemblies. They are tapered at the point to facilitate entering of holes which are out of alignment. Available in Spiral Flute and High Spiral Flute designs with 3-Flat Straight Shanks, or with Hex Nut Shanks.



125HX

Size	Hex Dia.	Flute Length	Overall Length	125HX EDP No.
9/16"	1-1/16"	5-1/8"	6-7/8"	125HX136
5/8"	1-1/16"	6-1/8"	7-7/8"	125HX140
11/16"	1-1/16"	7-1/8"	9-1/4"	125HX144
3/4"	1-1/4"	7-3/8"	9-3/8"	125HX148
13/16"	1-1/4"	7-3/8"	9-3/8"	125HX152
7/8"	1-7/16"	7-3/8"	9-3/8"	125HX156
15/16"	1-7/16"	7-3/8"	9-3/8"	125HX160
1"	1-7/16"	7-3/8"	9-3/8"	125HX164
1-1/16"	1-5/8"	7-3/8"	9-3/8"	125HX204

Size	Hex Dia.	Flute Length	Overall Length	125HX EDP No.
1-1/8"	1-5/8"	7-3/8"	9-3/8"	125HX208
1-3/16"	1-13/16"	7-3/8"	9-3/8"	125HX212
1-1/4"	1-13/16"	7-3/8"	9-3/8"	125HX216
1-5/16"	2"	7-3/8"	10"	125HX220
1-3/8"	2"	7-3/8"	10"	125HX224
1-7/16"	2"	7-3/8"	10"	125HX228
1-1/2"	2"	7-3/8"	10"	125HX232
1-9/16"	2"	7-3/8"	10"	125HX236
1-5/8"	2"	7-3/8"	10"	125HX240

# Construction Reamers

**HIGH SPEED STEEL**  
Fractional / Black Oxide



**PACKAGING:**  
All sizes are individually packaged.

## 100HX Construction Reamers

STRAIGHT FLUTE / HEX NUT / BRIDGE LENGTH

Construction or Car Reamers are especially adapted for heavy duty reaming as encountered in the fabrication of structural steel assemblies. They are tapered at the point to facilitate entering of holes which are out of alignment. Available in Straight Flute, Spiral Flute, and High Spiral Flute designs with 3-Flat Straight Shanks, or with Hex Nut Shanks.



100HX

Size	Hex Dia.	Flute Length	Overall Length	100HX EDP No.
9/16"	1-1/16"	5-1/8"	6-7/8"	100HX136
5/8"	1-1/16"	6-1/8"	7-7/8"	100HX140
11/16"	1-1/16"	7-1/8"	9-1/4"	100HX144
3/4"	1-1/4"	7-3/8"	9-3/8"	100HX148
13/16"	1-1/4"	7-3/8"	9-3/8"	100HX152
7/8"	1-7/16"	7-3/8"	9-3/8"	100HX156
15/16"	1-7/16"	7-3/8"	9-3/8"	100HX160
1"	1-7/16"	7-3/8"	9-3/8"	100HX164
1-1/16"	1-5/8"	7-3/8"	9-3/8"	100HX204

Size	Hex Dia.	Flute Length	Overall Length	100HX EDP No.
1-1/8"	1-5/8"	7-3/8"	9-3/8"	100HX208
1-3/16"	1-13/16"	7-3/8"	9-3/8"	100HX212
1-1/4"	1-13/16"	7-3/8"	9-3/8"	100HX216
1-5/16"	2"	7-3/8"	10"	100HX220
1-3/8"	2"	7-3/8"	10"	100HX224
1-7/16"	2"	7-3/8"	10"	100HX228
1-1/2"	2"	7-3/8"	10"	100HX232
1-9/16"	2"	7-3/8"	10"	100HX236
1-5/8"	2"	7-3/8"	10"	100HX240

## 150HX Construction Reamers

STRAIGHT FLUTE / HEX NUT / CAR LENGTH

Construction or Car Reamers are especially adapted for heavy duty reaming as encountered in the fabrication of structural steel assemblies. They are tapered at the point to facilitate entering of holes which are out of alignment. Available in Straight Flute, Spiral Flute, and High Spiral Flute designs with 3-Flat Straight Shanks, or with Hex Nut Shanks.



150HX

Size	Hex Dia.	Flute Length	Overall Length	150HX EDP No.
1/2"	1-1/16"	4"	5-1/2"	150HX132
9/16"	1-1/16"	4"	5-1/2"	150HX136
5/8"	1-1/16"	4-1/2"	6"	150HX140
11/16"	1-1/16"	4-1/2"	6-3/8"	150HX144
3/4"	1-1/4"	5"	7"	150HX148
13/16"	1-1/4"	5"	7"	150HX152
7/8"	1-7/16"	5"	7"	150HX156

Size	Hex Dia.	Flute Length	Overall Length	150HX EDP No.
15/16"	1-7/16"	5"	7"	150HX160
1"	1-7/16"	5"	7"	150HX164
1-1/16"	1-5/8"	5"	7"	150HX204
1-1/8"	1-5/8"	5"	7"	150HX208
1-3/16"	1-13/16"	5"	7"	150HX212
1-1/4"	1-13/16"	5"	7"	150HX216
1-5/16"	2"	5"	7-7/8"	150HX220

# Car Reamers

**HIGH SPEED STEEL**  
Fractional / Black Oxide



**PACKAGING:**  
All sizes are individually packaged.

## 150H/175H Car Reamers

STRAIGHT FLUTE / SPIRAL FLUTE / TAPER SHANK

Car Reamers are of similar design to Bridge Reamers except that they have shorter flutes and overall lengths. The shorter length permits their use in cramped quarters where Bridge Reamers cannot enter. The approximate length of the tapered section is 50% of the total flute length. The normal tolerance on the full diameter is greater than that used for other types of machine reamers.



150H Straight Flute



175H Spiral Flute

Size	Flute Length	Overall Length	Morse Taper	Straight Flute 150H EDP No.	Spiral Flute 175H EDP No.
1/4"	2-1/2"	5-7/16"	1	150H116	175H116
9/32"	2-1/2"	5-7/16"	1	150H118	175H118
5/16"	2-3/4"	5-11/16"	1	150H120	175H120
11/32"	2-3/4"	5-11/16"	1	150H122	175H122
3/8"	2-3/4"	5-11/16"	1	150H124	175H124
13/32"	3-1/2"	6-15/16"	2	150H126	175H126
7/16"	3-1/2"	6-15/16"	2	150H128	175H128
15/32"	3-1/2"	7-1/16"	2	150H130	175H130
1/2"	4"	7-9/16"	2	150H132	175H132
17/32"	4"	7-9/16"	2	150H134	175H134
9/16"	4"	7-9/16"	2	150H136	175H136
19/32"	4-1/2"	8-1/16"	2	150H138	175H138
5/8"	4-1/2"	8-1/16"	2	150H140	175H140
21/32"	4-1/2"	8-13/16"	3	150H142	175H142
11/16"	4-1/2"	8-13/16"	3	150H144	175H144
23/32"	4-1/2"	8-13/16"	3	150H146	175H146
3/4"	5"	9-1/2"	3	150H148	175H148
25/32"	5"	9-1/2"	3	150H150	175H150

Size	Flute Length	Overall Length	Morse Taper	Straight Flute 150H EDP No.	Spiral Flute 175H EDP No.
13/16"	5"	9-1/2"	3	150H152	175H152
27/32"	5"	9-1/2"	3	150H154	175H154
7/8"	5"	9-1/2"	3	150H156	175H156
29/32"	5"	9-1/2"	3	150H158	175H158
15/16"	5"	9-1/2"	3	150H160	175H160
31/32"	5"	9-1/2"	3	150H162	175H162
1"	5"	9-1/2"	3	150H164	175H164
1-1/32"	5"	9-1/2"	3	150H202	175H202
1-1/16"	5"	9-1/2"	3	150H204	175H204
1-1/8"	5"	9-1/2"	3	150H208	175H208
1-3/16"	5"	9-1/2"	3	150H212	175H212
1-1/4"	5"	9-1/2"	3	150H216	175H216
1-5/16"	5"	10-1/2"	4	150H220	175H220
1-3/8"	5"	10-1/2"	4	150H224	175H224
1-7/16"	5"	10-1/2"	4	150H228	175H228
1-1/2"	5"	10-1/2"	4	150H232	175H232
1-9/16"	5"	10-1/2"	4	150H236	175H236
1-5/8"	5"	10-1/2"	4	150H240	175H240

# Chucking Reamers

**HIGH SPEED STEEL**  
Fractional / Bright & Black

**PACKAGING:**  
All sizes are individually packaged.

## 4300E/4375E Chucking Reamers

STRAIGHT SHANK / RIGHT HAND CUT

Straight Shank Chucking Reamers are designed for general purpose reaming in machines such as drill presses, turret lathes, and screw machines. They have shorter and deeper flutes than hand reamers. They are regularly pointed with a 45° chamfer and are suitable for machine reaming a wide range of materials.



4300E Straight Flute



4375E Spiral Flute

Size	Flute Length	Overall Length	Straight Flute 4300E EDP No.	Spiral Flute 4375E EDP No.
1/8"	7/8"	3-1/2"	430E108	437E108
9/64"	1"	3-1/2"	430E109	437E109
5/32"	1"	4"	430E110	437E110
11/64"	1-1/8"	4"	430E111	437E111
3/16"	1-1/8"	4-1/2"	430E112	437E112
13/64"	1-1/4"	4-1/2"	430E113	437E113
7/32"	1-1/4"	5"	430E114	437E114
15/64"	1-1/2"	5"	430E115	437E115
1/4"	1-1/2"	6"	430E116	437E116
17/64"	1-1/2"	6"	430E117	437E117
9/32"	1-1/2"	6"	430E118	437E118
19/64"	1-1/2"	6"	430E119	437E119
5/16"	1-1/2"	6"	430E120	437E120
21/64"	1-1/2"	6"	430E121	437E121
11/32"	1-1/2"	6"	430E122	437E122
23/64"	1-3/4"	6"	430E123	437E123
3/8"	1-3/4"	7"	430E124	437E124
25/64"	1-3/4"	7"	430E125	437E125
13/32"	1-3/4"	7"	430E126	437E126
27/64"	1-3/4"	7"	430E127	437E127
7/16"	1-3/4"	7"	430E128	437E128
15/32"	1-3/4"	7"	430E130	437E130
1/2"	2"	8"	430E132	437E132
17/32"	2"	8"	430E134	437E134
9/16"	2"	8"	430E136	437E136

Size	Flute Length	Overall Length	Straight Flute 4300E EDP No.	Spiral Flute 4375E EDP No.
19/32"	2"	8"	430E138	437E138
5/8"	2-1/4"	9"	430E140	437E140
21/32"	2-1/4"	9"	430E142	437E142
11/16"	2-1/4"	9"	430E144	437E144
23/32"	2-1/4"	9"	430E146	437E146
3/4"	2-1/2"	9-1/2"	430E148	437E148
25/32"	2-1/2"	9-1/2"	430E150	437E150
13/16"	2-1/2"	9-1/2"	430E152	437E152
27/32"	2-1/2"	9-1/2"	430E154	437E154
7/8"	2-5/8"	10"	430E156	437E156
29/32"	2-5/8"	10"	430E158	437E158
15/16"	2-5/8"	10"	430E160	437E160
31/32"	2-5/8"	10"	430E162	437E162
1"	2-3/4"	10-1/2"	430E164	437E164
1-1/32"	2-3/4"	10-1/2"	430E202	-
1-1/16"	2-3/4"	10-1/2"	430E204	437E204
1-3/32"	2-3/4"	10-1/2"	430E206	-
1-1/8"	2-7/8"	11"	430E208	437E208
1-5/32"	2-7/8"	11"	430E210	-
1-3/16"	2-7/8"	11"	430E212	437E212
1-1/4"	3"	11-1/2"	430E216	437E216
1-5/16"	3"	11-1/2"	430E220	437E220
1-3/8"	3-1/4"	12"	430E224	437E224
1-7/16"	3-1/4"	12-1/2"	430E228	437E228
1-1/2"	3-1/2"	12-1/2"	430E232	437E232

# Chucking Reamers

**HIGH SPEED STEEL**  
Metric / Bright & Black

**PACKAGING:**  
All sizes are individually packaged.

## 4350E Chucking Reamers

STRAIGHT FLUTE / STRAIGHT SHANK / RIGHT HAND CUT

Straight Shank Chucking Reamers are designed for general purpose reaming in machines such as drill presses, turret lathes, and screw machines. They have shorter and deeper flutes than hand reamers. They are regularly pointed with a 45° chamfer and are suitable for machine reaming a wide range of materials.



4350E

Size (mm)	Shank Dia.	Flute Length	Overall Length	4350E EDP No.
2.5	2.5	20	70	435E025
3.0	3.0	20	70	435E030
3.2	3.2	22	80	435E032
3.5	3.5	22	80	435E035
4.0	4.0	22	80	435E040
4.5	4.5	22	80	435E045
5.0	5.0	25	90	435E050
6.0	6.0	28	100	435E060
7.0	7.0	30	110	435E070
8.0	8.0	32	120	435E080
9.0	9.0	36	130	435E090
10.0	10.0	40	140	435E110
11.0	9.0	40	145	435E111

Size (mm)	Shank Dia.	Flute Length	Overall Length	4350E EDP No.
12.0	10.0	40	155	435E112
13.0	11.0	45	160	435E113
14.0	11.0	45	170	435E114
15.0	13.0	45	175	435E115
16.0	13.0	45	180	435E116
17.0	14.0	50	190	435E117
18.0	14.0	50	195	435E118
19.0	16.0	50	205	435E119
20.0	16.0	50	210	435E120
21.0	18.0	55	215	435E121
22.0	18.0	55	225	435E122
23.0	18.0	60	230	435E123
24.0	20.0	60	240	435E124



# Hand Reamers

**HIGH SPEED STEEL**  
Fractional / Bright & Black

**PACKAGING:**  
All sizes are individually packaged.

## 4400E/4450E Hand Reamers

STRAIGHT SHANK WITH SQUARE

Hand Reamers are widely used for final sizing of drilled holes. The square on the shank end is suitable for holding in a tap wrench or vise. The cutting edge is ground with a starting taper to provide easy entry. The helical reamer is preferred where there is an interruption to the cut, such as a keyway.



4400E Straight Flute



4450E Spiral Flute

Size	Flute Length	Overall Length	Straight Flute 4400E EDP No.	Spiral Flute 4450E EDP No.
1/8"	1-1/2"	3"	440E108	445E108
5/32"	1-5/8"	3-1/4"	440E110	445E110
11/64"	1-3/4"	3-1/2"	440E111	-
3/16"	1-3/4"	3-1/2"	440E112	445E112
7/32"	1-7/8"	3-3/4"	440E114	445E114
1/4"	2"	4"	440E116	445E116
9/32"	2-1/8"	4-1/4"	440E118	445E118
5/16"	2-1/4"	4-1/2"	440E120	445E120
11/32"	2-3/8"	4-3/4"	440E122	445E122
3/8"	2-1/2"	5"	440E124	445E124
13/32"	2-5/8"	5-1/4"	440E126	445E126
7/16"	2-3/4"	5-1/2"	440E128	445E128
15/32"	2-7/8"	5-3/4"	440E130	445E130
1/2"	3"	6"	440E132	445E132
17/32"	3-1/8"	6-1/4"	440E134	445E134
9/16"	3-1/4"	6-1/2"	440E136	445E136
19/32"	3-3/8"	6-3/4"	440E138	445E138
5/8"	3-1/2"	7"	440E140	445E140
21/32"	3-11/16"	7-3/8"	440E142	445E142

Size	Flute Length	Overall Length	Straight Flute 4400E EDP No.	Spiral Flute 4450E EDP No.
11/16"	3-7/8"	7-3/4"	440E144	445E144
23/32"	4-1/16"	8-1/8"	440E146	445E146
3/4"	4-3/16"	8-3/4"	440E148	445E148
25/32"	4-3/8"	8-3/4"	440E150	445E150
13/16"	4-9/16"	9-1/8"	440E152	445E152
27/32"	4-11/16"	9-3/8"	440E154	445E154
7/8"	4-7/8"	9-3/4"	440E156	445E156
29/32"	5"	10"	440E158	445E158
15/16"	5-1/8"	10-1/4"	440E160	445E160
31/32"	5-5/16"	10-5/8"	440E162	445E162
1"	5-7/16"	10-7/8"	440E164	445E164
1-1/16"	5-5/8"	11-1/4"	440E204	445E204
1-1/8"	5-13/16"	11-5/8"	440E208	445E208
1-3/16"	6"	12"	440E212	445E212
1-1/4"	6-1/8"	12-1/4"	440E216	445E216
1-5/16"	6-1/4"	12-1/2"	440E220	445E220
1-3/8"	6-5/16"	12-5/8"	440E224	445E224
1-7/16"	6-7/16"	12-7/8"	440E228	445E228
1-1/2"	6-1/2"	13"	440E232	445E232

Reamers

# Taper Pin Reamers

**HIGH SPEED STEEL**  
Fractional / Bright & Black

**PACKAGING:**  
All sizes are individually packaged.

## 4500E/4550E/4570E Taper Pin Reamers

STRAIGHT SHANK with SQUARE

Taper Pin Reamers are manufactured with a taper of 1/4" per foot. They are used to ream holes into which standard taper pins will fit. The point of each reamer will enter hole reamed by the next smaller size. Hole to be reamed should be a few thousands smaller than the small diameter of the finished reamed hole. Square shank allows hand (straight and spiral flute) reamers to be held in a tap wrench or vise, depending on whether the reamer or the part is rotated.

**STRAIGHT FLUTE** – for hand use in easy to ream materials

**SPIRAL FLUTE** – for hand use in hard to ream materials

**HELICAL FLUTE** – for machine reaming on a production basis. Helical design throws the chips forward to relieve packing of the flutes.



4500E Straight Flute



4550E Spiral Flute



4570E Helical Flute

Size	Shank Dia.	Flute Length	Overall Length	Small End Dia.	Large End Dia.	Straight Flute 4500E EDP No.	Spiral Flute 4550E EDP No.	Helical Flute 4570E EDP No.
0	11/64"	1-11/16"	2-15/16"	.1287	.1638	450E000	455E000	457E000
2/0	5/32"	1-9/16"	2-9/16"	.1137	.1462	450E002	455E002	457E002
3/0	9/64"	1-5/16"	2-5/16"	.1029	.1302	450E003	455E003	457E003
4/0	1/8"	1-5/16"	2-5/16"	.0869	.1142	450E004	455E004	457E004
5/0	7/64"	1-3/16"	2-3/16"	.0719	.0966	450E005	455E005	457E005
6/0	3/32"	15/16"	1-15/16"	.0611	.0806	450E006	455E006	457E006
7/0	5/64"	13/16"	1-13/16"	.0497	.0666	450E007	455E007	457E007
1	3/16"	1-11/16"	2-15/16"	.1447	.1798	450E010	455E010	457E010
2	13/64"	1-15/16"	3-3/16"	.1605	.2008	450E020	455E020	457E020
3	15/64"	2-5/16"	3-11/16"	.1813	.2294	450E030	455E030	457E030
4	17/64"	2-9/16"	4-1/16"	.2071	.2604	450E040	455E040	457E040
5	5/16"	2-13/16"	4-5/16"	.2409	.2994	450E050	455E050	457E050
6	23/64"	3-11/16"	5-7/16"	.2773	.3540	450E060	455E060	457E060
7	13/32"	4-7/16"	6-5/16"	.3297	.4220	450E070	455E070	457E070
8	7/16"	5-3/16"	7-3/16"	.3971	.505	450E080	455E080	457E080
9	9/16"	6-1/16"	8-5/16"	.4805	.6066	450E090	455E090	457E090
10	5/8"	6-13/16"	9-5/16"	.5799	.7219	450E100	455E100	457E100

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# End Mills 2 & 4 Flute Finishing

**SOLID CARBIDE**  
Fractional / Bright



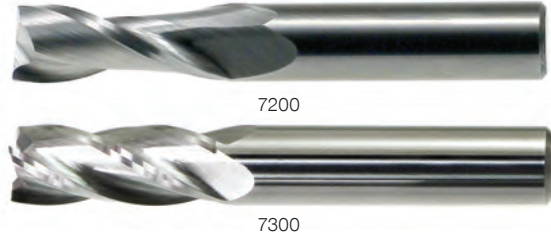
**PACKAGING:**  
All sizes are individually packaged.

## 7200/7300 2 & 4 Flute Finishing End Mills

REGULAR LENGTH / CENTER CUTTING / SINGLE END

Solid carbide end mills run at extremely impressive feed and speed rates. In some cases, they can be run at 3x the rates of HSS end mills. Using solid carbide end mills results in better surface finish on the workpiece and extended tool life over conventional HSS and Cobalt end mills.

Size	Shank Dia.	Length of Cut	Overall Length	2 Flutes 7200 EDP No.	4 Flutes 7300 EDP No.
1/32"	1/8"	5/64"	1-1/2"	72A102C	73A102C
3/64"	1/8"	7/64"	1-1/2"	72A103C	73A103C
1/16"	1/8"	3/16"	1-1/2"	72A104C	73A104C
5/64"	1/8"	3/16"	1-1/2"	72A105C	73A105C
3/32"	1/8"	9/32"	1-1/2"	72A106C	73A106C
7/64"	1/8"	3/8"	1-1/2"	72A107C	73A107C
1/8"	1/8"	3/8"	1-1/2"	72A108C	73A108C
9/64"	3/16"	1/2"	2"	72A109C	73A109C
5/32"	3/16"	1/2"	2"	72A110C	73A110C
11/64"	3/16"	5/8"	2"	72A111C	73A111C
3/16"	3/16"	5/8"	2"	72A112C	73A112C
7/32"	1/4"	5/8"	2-1/2"	72A114C	73A114C
1/4"	1/4"	3/4"	2-1/2"	72A116C	73A116C
9/32"	5/16"	3/4"	2-1/2"	72A118C	73A118C
5/16"	5/16"	13/16"	2-1/2"	72A120C	73A120C
11/32"	3/8"	1"	2-1/2"	72A122C	73A122C



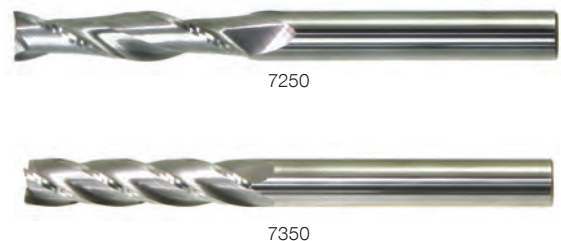
Size	Shank Dia.	Length of Cut	Overall Length	2 Flutes 7200 EDP No.	4 Flutes 7300 EDP No.
3/8"	3/8"	1"	2-1/2"	72A124C	73A124C
13/32"	7/16"	1"	2-3/4"	72A126C	73A126C
7/16"	7/16"	1"	2-3/4"	72A128C	73A128C
15/32"	1/2"	1"	3"	72A130C	73A130C
1/2"	1/2"	1"	3"	72A132C	73A132C
9/16"	9/16"	1-1/8"	3-1/2"	72A136C	73A136C
5/8"	5/8"	1-1/4"	3-1/2"	72A140C	73A140C
11/16"	3/4"	1-3/8"	4"	72A144C	73A144C
3/4"	3/4"	1-1/2"	4"	72A148C	73A148C
7/8"	7/8"	1-1/2"	4"	72A156C	73A156C
1"	1"	1-1/2"	4"	72A164C	73A164C

## 7250/7350 2 & 4 Flute Finishing End Mills

EXTRA LONG LENGTH / CENTER CUTTING / SINGLE END

Size	Shank Dia.	Length of Cut	Overall Length	2 Flutes 7250 EDP No.	4 Flutes 7350 EDP No.
1/8"	1/8"	1"	3"	725A108C	735A108C
3/16"	3/16"	1-1/8"	3"	725A112C	735A112C
1/4"	1/4"	1-1/2"	4"	725A116C	735A116C
5/16"	5/16"	1-5/8"	4"	725A120C	735A120C
3/8"	3/8"	1-3/4"	4"	725A124C	735A124C
7/16"	7/16"	3"	6"	725A128C	735A128C
1/2"	1/2"	3"	6"	725A132C	735A132C
5/8"	5/8"	3"	6"	725A140C	735A140C
3/4"	3/4"	3"	6"	725A148C	735A148C
1"	1"	3"	6"	725A164C	735A164C

Solid carbide end mills run at extremely impressive feed and speed rates. In some cases, they can be run at 3x the rates of HSS end mills. Using solid carbide end mills results in better surface finish on the workpiece and extended tool life over conventional HSS and Cobalt end mills.



# End Mills Ball Nose

**SOLID CARBIDE**  
Fractional / Bright



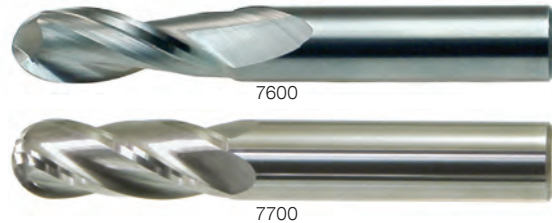
**PACKAGING:**  
All sizes are individually packaged.

## 7600/7700 Ball Nose End Mills

REGULAR LENGTH / CENTER CUTTING / SINGLE END

Size	Shank Dia.	Length of Cut	Overall Length	2 Flutes 7600 EDP No.	4 Flutes 7700 EDP No.
1/32"	1/8"	5/64"	1-1/2"	76A102C	77A102C
3/64"	1/8"	7/64"	1-1/2"	76A103C	77A103C
1/16"	1/8"	3/16"	1-1/2"	76A104C	77A104C
5/64"	1/8"	3/16"	1-1/2"	76A105C	77A105C
3/32"	1/8"	9/32"	1-1/2"	76A106C	77A106C
7/64"	1/8"	3/8"	1-1/2"	76A107C	77A107C
1/8"	1/8"	3/8"	1-1/2"	76A108C	77A108C
9/64"	3/16"	1/2"	2"	76A109C	77A109C
5/32"	3/16"	1/2"	2"	76A110C	77A110C
11/64"	3/16"	5/8"	2"	76A111C	77A111C
3/16"	3/16"	5/8"	2"	76A112C	77A112C
7/32"	1/4"	5/8"	2-1/2"	76A114C	77A114C
1/4"	1/4"	3/4"	2-1/2"	76A116C	77A116C
9/32"	5/16"	3/4"	2-1/2"	76A118C	77A118C
5/16"	5/16"	1"	2-1/2"	76A120C	77A120C
11/32"	3/8"	1"	2-1/2"	76A122C	77A122C
3/8"	3/8"	1"	2-1/2"	76A124C	77A124C
13/32"	7/16"	1"	2-3/4"	76A126C	77A126C
7/16"	7/16"	1"	2-3/4"	76A128C	77A128C

Solid carbide end mills run at extremely impressive feed and speed rates. In some cases, they can be run at 3x the rates of HSS end mills. Using solid carbide end mills results in better surface finish on the workpiece and extended tool life over conventional HSS and Cobalt end mills.

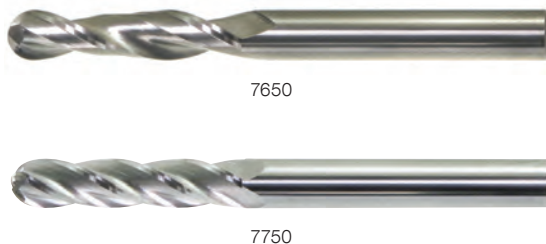


Size	Shank Dia.	Length of Cut	Overall Length	2 Flutes 7600 EDP No.	4 Flutes 7700 EDP No.
15/32"	1/2"	1"	3"	76A130C	77A130C
1/2"	1/2"	1"	3"	76A132C	77A132C
9/16"	9/16"	1-1/8"	3-1/2"	76A136C	77A136C
5/8"	5/8"	1-1/4"	3-1/2"	76A140C	77A140C
11/16"	3/4"	1-3/8"	4"	76A144C	77A144C
3/4"	3/4"	1-1/2"	4"	76A148C	77A148C
7/8"	7/8"	1-1/2"	4"	76A156C	77A156C
1"	1"	1-1/2"	4"	76A164C	77A164C

## 7650/7750 Ball Nose End Mills

EXTRA LONG LENGTH / CENTER CUTTING / SINGLE END

Solid carbide end mills run at extremely impressive feed and speed rates. In some cases, they can be run at 3x the rates of HSS end mills. Using solid carbide end mills results in better surface finish on the workpiece and extended tool life over conventional HSS and Cobalt end mills.



Size	Shank Dia.	Length of Cut	Overall Length	2 Flutes 7650 EDP No.	4 Flutes 7750 EDP No.
1/8"	1/8"	1"	3"	765A108C	775A108C
3/16"	3/16"	1-1/8"	3"	765A112C	775A112C
1/4"	1/4"	1-1/2"	4"	765A116C	775A116C
5/16"	5/16"	1-5/8"	4"	765A120C	775A120C
3/8"	3/8"	1-3/4"	4"	765A124C	775A124C
7/16"	7/16"	3"	6"	765A128C	775A128C
1/2"	1/2"	3"	6"	765A132C	775A132C
5/8"	5/8"	3"	6"	765A140C	775A140C
3/4"	3/4"	3"	6"	765A148C	775A148C
1"	1"	3"	6"	765A164C	775A164C

End Mills



# End Mills 2 & 4 Flute Finishing

**SOLID CARBIDE**  
Fractional / Bright



**PACKAGING:**  
All sizes are individually packaged.

## 7400/7500 2 & 4 Flute Finishing End Mills

STUB LENGTH / CENTER CUTTING / DOUBLE END

Size	Shank Dia.	Length of Cut	Overall Length	2 Flutes 7400 EDP No.	4 Flutes 7500 EDP No.
1/32"	1/8"	5/64"	1-1/2"	74A102C	75A102C
3/64"	1/8"	3/32"	1-1/2"	74A103C	75A103C
1/16"	1/8"	1/8"	1-1/2"	74A104C	75A104C
5/64"	1/8"	5/32"	1-1/2"	74A105C	75A105C
3/32"	1/8"	3/16"	1-1/2"	74A106C	75A106C
7/64"	1/8"	7/32"	1-1/2"	74A107C	75A107C
1/8"	1/8"	1/4"	1-1/2"	74A108C	75A108C
9/64"	3/16"	9/32"	2"	74A109C	75A109C
5/32"	3/16"	5/16"	2"	74A110C	75A110C
3/16"	3/16"	3/8"	2"	74A112C	75A112C
7/32"	1/4"	1/2"	2-1/2"	74A114C	75A114C
1/4"	1/4"	1/2"	2-1/2"	74A116C	75A116C
5/16"	5/16"	1/2"	2-1/2"	74A120C	75A120C
3/8"	3/8"	1/2"	2-1/2"	74A124C	75A124C
7/16"	7/16"	9/16"	2-3/4"	74A128C	75A128C
1/2"	1/2"	5/8"	3"	74A132C	75A132C

Solid carbide end mills run at extremely impressive feed and speed rates. In some cases, they can be run at 3x the rates of HSS end mills. Using solid carbide end mills results in better surface finish on the workpiece and extended tool life over conventional HSS and Cobalt end mills.



7400



7500



# End Mills 2 Flute Finishing

**HIGH SPEED STEEL**  
Fractional / Bright



**PACKAGING:**  
All sizes are individually packaged.

## 5075A 2-Flute Finishing End Mills

LONG LENGTH / CENTER CUTTING / SINGLE END

For general purpose end milling in all types of materials, where the location of the operation requires the additional overall and flute lengths of this design.



Size	Shank Dia.	Length of Cut	Overall Length	No. of Flutes	5075A EDP No.
1/4"	3/8"	1-1/4"	3-1/16"	2	507A116A
5/16"	3/8"	1-3/8"	3-1/8"	2	507A120A
3/8"	3/8"	1-1/2"	3-1/4"	2	507A124A
1/2"	1/2"	2"	4"	2	507A132B

# End Mills 2 Flute Finishing

**HIGH SPEED STEEL**  
Fractional / Bright



**PACKAGING:**  
All sizes are individually packaged.

## 5000A 2-Flute Finishing End Mills

REGULAR LENGTH / CENTER CUTTING / SINGLE END

The two-flute end mill is a hard working center cutting tool and can be used for multiple operations, plunge cutting and slotting, drilling and profiling, which can minimize the number of tools required to complete a given job. Since these end mills have only two cutting edges, the flutes are deeper and longer than end mills with more cutting edges, providing more chip carrying capacity. The two-flute end mill is an ideal tool for milling operations that begin with a plunge cut and, in general, heavy cuts where the tool is "buried" in the work and chip removal is a problem.



5000A

Size	Shank Dia.	Length of Cut	Overall Length	No. of Flutes	5000A EDP No.
1/8"	3/8"	3/8"	2-5/16"	2	50A108A
11/64"	3/8"	7/16"	2-5/16"	2	50A111A
3/16"	3/8"	7/16"	2-5/16"	2	50A112A
13/64"	3/8"	1/2"	2-5/16"	2	50A113A
7/32"	3/8"	1/2"	2-5/16"	2	50A114A
15/64"	3/8"	1/2"	2-5/16"	2	50A115A
1/4"	3/8"	1/2"	2-5/16"	2	50A116A
17/64"	3/8"	9/16"	2-5/16"	2	50A117A
9/32"	3/8"	9/16"	2-5/16"	2	50A118A
19/64"	3/8"	9/16"	2-5/16"	2	50A119A
5/16"	3/8"	9/16"	2-5/16"	2	50A120A
21/64"	3/8"	9/16"	2-5/16"	2	50A121A
11/32"	3/8"	9/16"	2-5/16"	2	50A122A

Size	Shank Dia.	Length of Cut	Overall Length	No. of Flutes	5000A EDP No.
23/64"	3/8"	9/16"	2-5/16"	2	50A123A
3/8"	3/8"	9/16"	2-5/16"	2	50A124A
25/64"	3/8"	13/16"	2-1/2"	2	50A125A
13/32"	3/8"	13/16"	2-1/2"	2	50A126A
27/64"	3/8"	13/16"	2-1/2"	2	50A127A
7/16"	3/8"	13/16"	2-1/2"	2	50A128A
29/64"	3/8"	13/16"	2-1/2"	2	50A129A
15/32"	3/8"	13/16"	2-1/2"	2	50A130A
1/2"	3/8"	13/16"	2-1/2"	2	50A132A
1/2"	1/2"	1"	3"	2	50A132B
17/32"	1/2"	1-1/8"	3-1/8"	2	50A134B
9/16"	1/2"	1-1/8"	3-1/8"	2	50A136B
19/32"	1/2"	1-1/8"	3-1/8"	2	50A138B

Continued on next page

# End Mills 2 Flute Finishing

**HIGH SPEED STEEL**  
Fractional / Bright



**PACKAGING:**  
All sizes are individually packaged.

## 5000A 2-Flute Finishing End Mills continued

REGULAR LENGTH / CENTER CUTTING / SINGLE END



5000A

Size	Shank Dia.	Length of Cut	Overall Length	No. of Flutes	5000A EDP No.
5/8"	1/2"	1-1/8"	3-1/8"	2	50A140B
5/8"	5/8"	1-5/16"	3-7/16"	2	50A140C
21/32"	5/8"	1-5/16"	3-5/16"	2	50A142C
11/16"	1/2"	1-5/16"	3-5/16"	2	50A144B
11/16"	5/8"	1-5/16"	3-7/16"	2	50A144C
23/32"	3/4"	1-5/16"	3-5/16"	2	50A146D
3/4"	1/2"	1-5/16"	3-5/16"	2	50A148B
3/4"	5/8"	1-5/16"	3-7/16"	2	50A148C
3/4"	3/4"	1-5/16"	3-7/16"	2	50A148D
25/32"	3/4"	1-1/2"	3-5/8"	2	50A150D
13/16"	5/8"	1-1/2"	3-5/8"	2	50A152C
13/16"	3/4"	1-1/2"	3-3/4"	2	50A152D
27/32"	7/8"	1-1/2"	3-5/8"	2	50A154E
7/8"	5/8"	1-1/2"	3-5/8"	2	50A156C
7/8"	3/4"	1-1/2"	3-3/4"	2	50A156D
7/8"	7/8"	1-1/2"	3-3/4"	2	50A156E
29/32"	7/8"	1-1/2"	3-3/4"	2	50A158E
15/16"	5/8"	1-1/2"	3-5/8"	2	50A160C
15/16"	3/4"	1-1/2"	3-3/4"	2	50A160D
15/16"	7/8"	1-1/2"	3-3/4"	2	50A160E
31/32"	1"	1-1/2"	3-3/4"	2	50A162F
1"	5/8"	1-1/2"	3-5/8"	2	50A164C

Size	Shank Dia.	Length of Cut	Overall Length	No. of Flutes	5000A EDP No.
1"	3/4"	1-1/2"	3-3/4"	2	50A164D
1"	7/8"	1-1/2"	3-3/4"	2	50A164E
1"	1"	1-5/8"	4-1/8"	2	50A164F
1-1/16"	3/4"	1-5/8"	3-7/8"	2	50A204D
1-1/8"	3/4"	1-5/8"	3-7/8"	2	50A208D
1-1/8"	1"	1-5/8"	4-1/8"	2	50A208F
1-3/16"	3/4"	1-5/8"	3-7/8"	2	50A212D
1-1/4"	3/4"	1-5/8"	3-7/8"	2	50A216D
1-1/4"	7/8"	1-5/8"	3-7/8"	2	50A216E
1-1/4"	1"	1-5/8"	4-1/8"	2	50A216F
1-1/4"	1-1/4"	1-5/8"	4-1/8"	2	50A216G
1-3/8"	3/4"	1-5/8"	3-7/8"	2	50A224D
1-3/8"	1"	1-5/8"	4-1/8"	2	50A224F
1-1/2"	3/4"	1-5/8"	4-1/8"	2	50A232D
1-1/2"	1"	1-5/8"	4-1/8"	2	50A232F
1-1/2"	1-1/4"	1-5/8"	4-1/8"	2	50A232G
1-5/8"	1-1/4"	1-5/8"	4-1/8"	2	50A240G
1-3/4"	3/4"	1-5/8"	4-1/8"	2	50A248D
1-3/4"	1-1/4"	1-5/8"	4-1/8"	2	50A248G
1-7/8"	1-1/4"	1-5/8"	4-1/8"	2	50A256G
2"	3/4"	1-5/8"	4-1/8"	2	50A264D
2"	1-1/4"	1-5/8"	4-1/8"	2	50A264G

# End Mills 2 Flute Finishing

**HIGH SPEED STEEL**  
Metric / Bright



**PACKAGING:**  
All sizes are individually packaged.

## 5600A 2-Flute Finishing End Mills

REGULAR LENGTH / CENTER CUTTING / SINGLE END

The two-flute end mill is a hard working center cutting tool and can be used for multiple operations, plunge cutting and slotting, drilling and profiling, which can minimize the number of tools required to complete a given job. Since these end mills have only two cutting edges, the flutes are deeper and longer than end mills with more cutting edges, providing more chip carrying capacity. The two-flute end mill is an ideal tool for milling operations that begin with a plunge cut and, in general, heavy cuts where the tool is "buried" in the work and chip removal is a problem.



5600A

Size (mm)	Shank Dia.	Length of Cut	Overall Length	No. of Flutes	5600A EDP No.
3.0	3/8"	5/16"	2-5/16"	2	560A030
3.5	3/8"	7/16"	2-5/16"	2	560A035
4.0	3/8"	7/16"	2-5/16"	2	560A040
4.5	3/8"	1/2"	2-5/16"	2	560A045
5.0	3/8"	1/2"	2-5/16"	2	560A050
5.5	3/8"	1/2"	2-5/16"	2	560A055
6.0	3/8"	1/2"	2-5/16"	2	560A060
6.5	3/8"	9/16"	2-5/16"	2	560A065
7.0	3/8"	9/16"	2-5/16"	2	560A070
8.0	3/8"	9/16"	2-5/16"	2	560A080
9.0	3/8"	9/16"	2-5/16"	2	560A090
10.0	3/8"	13/16"	2-1/2"	2	560A100
10.5	3/8"	13/16"	2-1/2"	2	560A105
11.0	3/8"	13/16"	2-1/2"	2	560A110
12.0	3/8"	13/16"	2-1/2"	2	560A120

Size (mm)	Shank Dia.	Length of Cut	Overall Length	No. of Flutes	5600A EDP No.
12.5	1/2"	1-1/8"	3-1/8"	2	560A125
13.0	1/2"	1-1/8"	3-1/8"	2	560A130
13.5	1/2"	1-1/8"	3-1/8"	2	560A135
14.0	1/2"	1-1/8"	3-3/8"	2	560A140
14.5	1/2"	1-1/8"	3-1/8"	2	560A145
15.0	1/2"	1-1/8"	3-1/2"	2	560A150
16.0	5/8"	1-5/16"	3-7/16"	2	560A160
18.0	5/8"	1-5/16"	3-7/16"	2	560A180
20.0	5/8"	1-1/2"	3-3/4"	2	560A200
22.0	3/4"	1-1/2"	3-3/4"	2	560A220
23.0	7/8"	1-1/2"	3-3/4"	2	560A230
24.0	3/4"	2"	4-1/2"	2	560A240
25.0	1"	2"	4-1/2"	2	560A250
32.0	1"	2"	4-1/2"	2	560A320
36.0	1"	2"	4-1/2"	2	560A360

# End Mills 2 Flute Finishing

**HIGH SPEED STEEL**  
Fractional / Bright



**PACKAGING:**  
All sizes are individually packaged.

## 5400A 2-Flute Finishing End Mills

REGULAR LENGTH / CENTER CUTTING / DOUBLE END

The two-flute end mill is a hard working center cutting tool and can be used for multiple operations, plunge cutting and slotting, drilling and profiling, which can minimize the number of tools required to complete a given job. Since these end mills have only two cutting edges, the flutes are deeper and longer than end mills with more cutting edges, providing more chip carrying capacity. The two-flute end mill is an ideal tool for milling operations that begin with a plunge cut and, in general, heavy cuts where the tool is "buried" in the work and chip removal is a problem.



5400A

Size	Shank Dia.	Length of Cut	Overall Length	No. of Flutes	5400A EDP No.
1/8"	3/8"	3/8"	3-1/16"	2	54A108A
5/32"	3/8"	7/16"	3-1/8"	2	54A110A
3/16"	3/8"	7/16"	3-1/8"	2	54A112A
7/32"	3/8"	1/2"	3-1/8"	2	54A114A
1/4"	3/8"	1/2"	3-1/8"	2	54A116A
9/32"	3/8"	9/16"	3-1/8"	2	54A118A
5/16"	3/8"	9/16"	3-1/8"	2	54A120A
11/32"	3/8"	9/16"	3-1/8"	2	54A122A
3/8"	3/8"	9/16"	3-1/8"	2	54A124A
13/32"	1/2"	13/16"	3-3/4"	2	54A126B
7/16"	1/2"	13/16"	3-3/4"	2	54A128B

Size	Shank Dia.	Length of Cut	Overall Length	No. of Flutes	5400A EDP No.
15/32"	1/2"	13/16"	3-3/4"	2	54A130B
1/2"	1/2"	13/16"	3-3/4"	2	54A132B
9/16"	5/8"	1-1/8"	4-1/2"	2	54A136C
5/8"	5/8"	1-1/8"	4-1/2"	2	54A140C
11/16"	3/4"	1-5/16"	5"	2	54A144D
3/4"	3/4"	1-5/16"	5"	2	54A148D
13/16"	7/8"	1-9/16"	5-1/2"	2	54A152E
7/8"	7/8"	1-9/16"	5-1/2"	2	54A156E
15/16"	1"	1-5/8"	5-7/8"	2	54A160F
1"	1"	1-5/8"	5-7/8"	2	54A164F

# End Mills 2 Flute Finishing

**COBALT**  
Fractional / Bright



**PACKAGING:**  
All sizes are individually packaged.

## 6500A 2-Flute Finishing End Mills

REGULAR LENGTH / CENTER CUTTING / SINGLE END

The greater red hardness of M-42 Cobalt end mills enables these tools to run about 10% faster than conventional HSS end mills. This translates to shorter machining times and permits fuller utilization of available machine horsepower. While Cobalt end mills are initially more expensive than HSS, they retain their sharpness for longer, providing more cuts between grinds and less machine downtime, resulting in lower end mill tooling costs.



6500A

Size	Shank Dia.	Length of Cut	Overall Length	No. of Flutes	6500A EDP No.
1/8"	3/8"	3/8"	2-5/16"	2	650A108A
3/16"	3/8"	7/16"	2-5/16"	2	650A112A
1/4"	3/8"	1/2"	2-5/16"	2	650A116A
5/16"	3/8"	9/16"	2-5/16"	2	650A120A
3/8"	3/8"	9/16"	2-5/16"	2	650A124A
7/16"	3/8"	13/16"	2-1/2"	2	650A128A

Size	Shank Dia.	Length of Cut	Overall Length	No. of Flutes	6500A EDP No.
1/2"	1/2"	1"	3"	2	650A132B
5/8"	5/8"	1-5/16"	3-7/16"	2	650A140C
3/4"	3/4"	2-1/4"	4-1/2"	2	650A148C
3/4"	3/4"	1-5/16"	3-7/16"	2	650A148D
1"	1"	1-5/8"	4-1/8"	2	650A164F

## 6900A 2-Flute Finishing End Mills

REGULAR LENGTH / CENTER CUTTING / DOUBLE END

The greater red hardness of M-42 Cobalt end mills enables these tools to run about 10% faster than conventional HSS end mills. This translates to shorter machining times and permits fuller utilization of available machine horsepower. While Cobalt end mills are initially more expensive than HSS, they retain their sharpness for longer, providing more cuts between grinds and less machine downtime, resulting in lower end mill tooling costs.



6900A

Size	Shank Dia.	Length of Cut	Overall Length	No. of Flutes	6900A EDP No.
1/8"	3/8"	3/8"	3-1/16"	2	690A108A
5/32"	3/8"	7/16"	3-1/8"	2	690A110A
3/16"	3/8"	7/16"	3-1/8"	2	690A112A
7/32"	3/8"	1/2"	3-1/4"	2	690A114A
1/4"	3/8"	1/2"	3-3/8"	2	690A116A
9/32"	3/8"	9/16"	3-3/8"	2	690A118A

Size	Shank Dia.	Length of Cut	Overall Length	No. of Flutes	6900A EDP No.
5/16"	3/8"	9/16"	3-1/2"	2	690A120A
3/8"	3/8"	9/16"	3-1/2"	2	690A124A
1/2"	1/2"	13/16"	3-3/4"	2	690A132B
5/8"	5/8"	1-1/8"	4-1/2"	2	690A140C
3/4"	3/4"	1-5/16"	5"	2	690A148D



# End Mills Multi-Flute Finishing

**HIGH SPEED STEEL**  
Fractional / Bright



**PACKAGING:**  
All sizes are individually packaged.

## 5150A Multi-Flute Finishing End Mills

REGULAR LENGTH / CENTER CUTTING / SINGLE END

The multi-flute end mill has a better finishing capability than the 2-flute end mill. At any given instance, at least one and often two of the teeth are solidly in the cut. The cutting action is smoother than that of the 2-flute end mill, with less chatter and flutter. The multi-flute end mill has ample chip carrying capacity, and at the same time the finish is usually fine enough that a second finishing cut is unnecessary.



5150A

Size	Shank Dia.	Length of Cut	Overall Length	No. of Flutes	5150A EDP No.
1/8"	3/8"	3/8"	2-5/16"	4	515A108A
3/16"	3/8"	1/2"	2-3/8"	4	515A112A
7/32"	3/8"	5/8"	2-7/16"	4	515A114A
1/4"	3/8"	5/8"	2-7/16"	4	515A116A
9/32"	3/8"	11/16"	2-1/2"	4	515A118A
5/16"	3/8"	3/4"	2-1/2"	4	515A120A
11/32"	3/8"	3/4"	2-1/2"	4	515A122A
3/8"	3/8"	3/4"	2-1/2"	4	515A124A
13/32"	3/8"	1"	2-11/16"	4	515A126A
7/16"	3/8"	1"	2-11/16"	4	515A128A
15/32"	3/8"	1"	2-11/16"	4	515A130A
1/2"	1/2"	1-1/4"	3-1/4"	4	515A132B
9/16"	1/2"	1-3/8"	3-3/8"	4	515A136B
5/8"	1/2"	1-3/8"	3-3/8"	4	515A140B
5/8"	5/8"	1-5/8"	3-3/4"	4	515A140C

Size	Shank Dia.	Length of Cut	Overall Length	No. of Flutes	5150A EDP No.
11/16"	5/8"	1-5/8"	3-3/4"	4	515A144C
3/4"	3/4"	1-5/8"	3-7/8"	4	515A148D
3/4"	3/4"	1-5/8"	3-7/8"	6	515A148E
13/16"	3/4"	1-7/8"	4-1/8"	4	515A152D
7/8"	7/8"	1-7/8"	4-1/8"	4	515A156E
15/16"	3/4"	1-7/8"	4-1/8"	4	515A160E
1"	1"	2"	4-1/2"	4	515A164F
1"	1"	2"	4-1/2"	6	515A164G
1-1/8"	1"	2"	4-1/2"	4	515A208F
1-1/8"	1"	2"	4-1/2"	6	515A208G
1-1/4"	1-1/4"	2"	4-1/2"	6	515A216H
1-1/2"	1-1/4"	2"	4-1/2"	4	515A232G
1-1/2"	1-1/4"	2"	4-1/2"	6	515A232H
1-3/4"	1-1/4"	2"	4-1/2"	6	515A248G
2"	1-1/4"	2"	4-1/2"	6	515A264G

# End Mills Multi-Flute Finishing

**HIGH SPEED STEEL**  
Fractional / Bright



**PACKAGING:**  
All sizes are individually packaged.

## 5100A Multi-Flute Finishing End Mills

REGULAR LENGTH / NON-CENTER CUTTING / SINGLE END

The multi-flute end mill has a better finishing capability than the 2-flute end mill. At any given instance, at least one and often two of the teeth are solidly in the cut. The cutting action is smoother than that of the 2-flute end mill, with less chatter and flutter. The multi-flute end mill has ample chip carrying capacity, and at the same time the finish is usually fine enough that a second finishing cut is unnecessary.



5100A

Size	Shank Dia.	Length of Cut	Overall Length	No. of Flutes	5100A EDP No.
1/8"	3/8"	3/8"	2-5/16"	4	51A108A
11/64"	3/8"	1/2"	2-3/8"	4	51A111A
3/16"	3/8"	1/2"	2-3/8"	4	51A112A
13/64"	3/8"	9/16"	2-7/16"	4	51A113A
7/32"	3/8"	9/16"	2-7/16"	4	51A114A
15/64"	3/8"	5/8"	2-7/16"	4	51A115A
1/4"	3/8"	5/8"	2-7/16"	4	51A116A
17/64"	3/8"	11/16"	2-7/16"	4	51A117A
9/32"	3/8"	11/16"	2-7/16"	4	51A118A
19/64"	3/8"	3/4"	2-1/2"	4	51A119A
5/16"	3/8"	3/4"	2-1/2"	4	51A120A
21/64"	3/8"	3/4"	2-1/2"	4	51A121A
11/32"	3/8"	3/4"	2-1/2"	4	51A122A
23/64"	3/8"	3/4"	2-1/2"	4	51A123A
3/8"	3/8"	3/4"	2-1/2"	4	51A124A
25/64"	3/8"	1"	2-11/16"	4	51A125A
13/32"	3/8"	1"	2-11/16"	4	51A126A
27/64"	3/8"	1"	2-11/16"	4	51A127A
7/16"	3/8"	1"	2-11/16"	4	51A128A
29/64"	1/2"	1-1/4"	3-1/4"	4	51A129A
15/32"	1/2"	1-1/4"	3-1/4"	4	51A130A
31/64"	1/2"	1-1/4"	3-1/4"	4	51A131A
1/2"	3/8"	1"	2-11/16"	4	51A132A

Size	Shank Dia.	Length of Cut	Overall Length	No. of Flutes	5100A EDP No.
1/2"	1/2"	1-1/4"	3-1/4"	4	51A132B
17/32"	1/2"	1-3/8"	3-3/8"	4	51A134B
9/16"	1/2"	1-3/8"	3-3/8"	4	51A136B
19/32"	1/2"	1-3/8"	3-3/8"	4	51A138B
5/8"	1/2"	1-3/8"	3-3/8"	4	51A140B
5/8"	5/8"	1-5/8"	3-3/4"	4	51A140C
21/32"	5/8"	1-5/8"	3-3/4"	4	51A142C
11/16"	1/2"	1-5/8"	3-5/8"	4	51A144B
11/16"	5/8"	1-5/8"	3-3/4"	4	51A144C
23/32"	3/4"	1-5/8"	3-7/8"	4	51A146D
3/4"	1/2"	1-5/8"	3-5/8"	4	51A148B
3/4"	5/8"	1-5/8"	3-3/4"	4	51A148C
3/4"	3/4"	1-5/8"	3-7/8"	4	51A148D
25/32"	3/4"	1-7/8"	4-1/8"	4	51A150D
13/16"	5/8"	1-7/8"	4"	6	51A152C
13/16"	3/4"	1-7/8"	4-1/8"	4	51A152D
27/32"	5/8"	1-7/8"	4"	4	51A154E
7/8"	1/2"	1-5/8"	3-5/8"	4	51A156B
7/8"	5/8"	1-7/8"	4"	6	51A156C
7/8"	3/4"	1-7/8"	4-1/8"	4	51A156D
7/8"	7/8"	1-7/8"	4-1/8"	4	51A156E
29/32"	7/8"	1-7/8"	4-1/8"	6	51A158E

Continued on next page

# End Mills Multi-Flute Finishing

**HIGH SPEED STEEL**  
Fractional / Bright



**PACKAGING:**  
All sizes are individually packaged.

## 5100A Multi-Flute Finishing End Mills cont. REGULAR LENGTH / NON-CENTER CUTTING / SINGLE END

The multi-flute end mill has a better finishing capability than the 2-flute end mill. At any given instance, at least one and often two of the teeth are solidly in the cut. The cutting action is smoother than that of the 2-flute end mill, with less chatter and flutter. The multi-flute end mill has ample chip carrying capacity, and at the same time the finish is usually fine enough that a second finishing cut is unnecessary.



5100A

Size	Shank Dia.	Length of Cut	Overall Length	No. of Flutes	5100A EDP No.
15/16"	5/8"	1-7/8"	4"	6	51A160C
15/16"	3/4"	1-7/8"	4-1/8"	4	51A160D
15/16"	7/8"	1-7/8"	4-1/8"	4	51A160E
1"	5/8"	1-7/8"	4"	6	51A164C
1"	3/4"	1-7/8"	4-1/8"	4	51A164D
1"	7/8"	1-7/8"	4-1/8"	4	51A164E
1"	1"	2"	4-1/2"	4	51A164F
1-1/16"	3/4"	2"	4-1/4"	6	51A204D
1-1/8"	3/4"	2"	4-1/4"	6	51A208D
1-1/8"	7/8"	2"	4-1/2"	6	51A208E
1-1/8"	1"	2"	4-1/2"	6	51A208F
1-1/4"	3/4"	2"	4-1/4"	6	51A216D
1-1/4"	7/8"	2"	4-1/2"	6	51A216E
1-1/4"	1"	2"	4-1/2"	6	51A216F

Size	Shank Dia.	Length of Cut	Overall Length	No. of Flutes	5100A EDP No.
1-1/4"	1-1/4"	2"	4-1/2"	6	51A216G
1-3/8"	3/4"	2"	4-1/4"	6	51A224D
1-3/8"	1"	2"	4-1/2"	6	51A224F
1-1/2"	1"	2"	4-1/2"	6	51A232F
1-1/2"	1-1/4"	2"	4-1/2"	4	51A232G
1-1/2"	1-1/4"	2"	4-1/2"	6	51A232H
1-5/8"	1-1/4"	2"	4-1/2"	6	51A240G
1-3/4"	1-1/4"	2"	4-1/2"	4	51A248G
1-3/4"	1-1/4"	2"	4-1/2"	6	51A248H
1-7/8"	1-1/4"	2"	4-1/2"	6	51A256H
2"	3/4"	2"	4-1/2"	8	51A264D
2"	1-1/4"	2"	4-1/2"	6	51A264G
2"	1-1/4"	2"	4-1/2"	8	51A264H

# End Mills Multi-Flute Finishing

**HIGH SPEED STEEL**  
Fractional / Bright



**PACKAGING:**  
All sizes are individually packaged.

## 5250A Multi-Flute Finishing End Mills

LONG LENGTH / CENTER CUTTING / SINGLE END

The multi-flute end mill has a better finishing capability than the 2-flute end mill. At any given instance, at least one and often two of the teeth are solidly in the cut. The cutting action is smoother than that of the 2-flute end mill, with less chatter and flutter. The multi-flute end mill has ample chip carrying capacity, and at the same time the finish is usually fine enough that a second finishing cut is unnecessary.



5250A

Size	Shank Dia.	Length of Cut	Overall Length	No. of Flutes	5250A EDP No.
1/4"	3/8"	1-1/4"	3-1/16"	4	525A116A
5/16"	3/8"	1-3/8"	3-1/8"	4	525A120A
3/8"	3/8"	1-1/2"	3-1/4"	4	525A124A
1/2"	1/2"	2"	4"	4	525A132B
5/8"	5/8"	2-1/2"	4-5/8"	4	525A140C
3/4"	3/4"	3"	5-1/4"	4	525A148D
3/4"	3/4"	3"	5-1/4"	6	525A148H
7/8"	7/8"	3-1/2"	5-3/4"	4	525A156E
7/8"	7/8"	3-1/2"	5-3/4"	6	525A156H

Size	Shank Dia.	Length of Cut	Overall Length	No. of Flutes	5250A EDP No.
1"	1"	4"	6-1/2"	4	525A164F
1"	1"	4"	6-1/2"	6	525A164H
1-1/4"	1-1/4"	4"	6-1/2"	4	525A216G
1-1/4"	1-1/4"	4"	6-1/2"	6	525A216H
1-1/2"	1-1/4"	4"	6-1/2"	4	525A232G
1-1/2"	1-1/4"	4"	6-1/2"	6	525A232H
2"	1-1/4"	4"	6-1/2"	6	525A264G
2"	2"	6"	9-3/4"	6	525A264J

## 5350A Multi-Flute Finishing End Mills

EXTRA-LONG LENGTH / CENTER CUTTING / SINGLE END

The multi-flute end mill has a better finishing capability than the 2-flute end mill. At any given instance, at least one and often two of the teeth are solidly in the cut. The cutting action is smoother than that of the 2-flute end mill, with less chatter and flutter. The multi-flute end mill has ample chip carrying capacity, and at the same time the finish is usually fine enough that a second finishing cut is unnecessary.



5350A

Size	Shank Dia.	Length of Cut	Overall Length	No. of Flutes	5350A EDP No.
1/4"	3/8"	1-3/4"	3-9/16"	4	535A116A
5/16"	3/8"	2"	3-3/4"	4	535A120A
3/8"	3/8"	2-1/2"	4-1/4"	4	535A124A
15/32"	1/2"	3"	5"	4	535A130A
1/2"	1/2"	3"	5"	4	535A132B
5/8"	5/8"	4"	6-1/8"	4	535A140C
3/4"	3/4"	4"	6-1/4"	4	535A148D
3/4"	3/4"	4"	6-1/4"	6	535A148H

Size	Shank Dia.	Length of Cut	Overall Length	No. of Flutes	5350A EDP No.
7/8"	7/8"	5"	7-1/4"	4	535A156E
7/8"	7/8"	5"	7-1/4"	6	535A156H
1"	1"	6"	8-1/2"	4	535A164F
1"	1"	6"	8-1/2"	6	535A164H
1-1/4"	1-1/4"	6"	8-1/2"	6	535A216H
2"	2"	6"	9-3/4"	6	535A264G

# End Mills Multi-Flute Finishing

**HIGH SPEED STEEL**  
Bright



**PACKAGING:**  
All sizes are individually packaged.

## 5650A Multi-Flute Finishing End Mills

REGULAR LENGTH / CENTER CUTTING / SINGLE END

The multi-flute end mill has a better finishing capability than the 2-flute end mill. At any given instance, at least one and often two of the teeth are solidly in the cut. The cutting action is smoother than that of the 2-flute end mill, with less chatter and flutter. The multi-flute end mill has ample chip carrying capacity, and at the same time the finish is usually fine enough that a second finishing cut is unnecessary.



5650A

Size (mm)	Shank Dia.	Length of Cut	Overall Length	No. of Flutes	5650A EDP No.
3.0	3/8"	3/8"	2-5/16"	4	565A030
3.5	3/8"	1/2"	2-3/8"	4	565A035
4.0	3/8"	1/2"	2-3/8"	4	565A040
4.5	3/8"	9/16"	2-1/2"	4	565A045
5.0	3/8"	9/16"	2-1/2"	4	565A050
5.5	3/8"	5/8"	2-1/2"	4	565A055
6.0	3/8"	5/8"	2-1/2"	4	565A060
7.0	3/8"	11/16"	2-1/2"	4	565A070
8.0	3/8"	3/4"	2-1/2"	4	565A080
8.5	3/8"	3/4"	2-1/2"	4	565A085
9.0	3/8"	3/4"	2-1/2"	4	565A090
10.0	3/8"	1"	2-11/16"	4	565A100
10.5	3/8"	1"	2-11/16"	4	565A105
11.0	3/8"	1"	2-11/16"	4	565A110
12.0	1/2"	1"	2-11/16"	4	565A120
12.5	1/2"	1-1/4"	3-1/4"	4	565A125

Size (mm)	Shank Dia.	Length of Cut	Overall Length	No. of Flutes	5650A EDP No.
13.0	1/2"	1-1/4"	3-1/4"	4	565A130
14.0	1/2"	1-3/8"	3-3/8"	4	565A140
15.0	1/2"	1-1/8"	3-3/8"	4	565A150
16.0	5/8"	1-5/8"	3-3/4"	4	565A160
18.0	5/8"	1-5/8"	3-3/4"	4	565A180
20.0	5/8"	1-7/8"	4-1/8"	4	565A200
21.0	5/8"	1-7/8"	4-1/8"	4	565A210
22.0	7/8"	1-7/8"	4-1/8"	4	565A220
23.0	7/8"	1-7/8"	4-1/8"	4	565A230
24.0	7/8"	2"	4-1/2"	4	565A240
25.0	7/8"	2"	4-1/2"	4	565A250
32.0	7/8"	2"	4-1/2"	4	565A320
36.0	7/8"	2"	4-1/2"	4	565A360
40.0	1-1/4"	2"	4-1/2"	4	565A400
45.0	1-1/4"	2"	4-1/2"	4	565A450

## 5500A Multi-Flute Finishing End Mills

REGULAR LENGTH / CENTER CUTTING / DOUBLE END



5500A

Size	Shank Dia.	Length of Cut	Overall Length	No. of Flutes	5500A EDP No.
1/8"	3/8"	3/8"	3-1/16"	4	55A108A
5/32"	3/8"	7/16"	3-1/8"	4	55A110A
3/16"	3/8"	1/2"	3-1/4"	4	55A112A
7/32"	3/8"	9/16"	3-1/4"	4	55A114A
1/4"	3/8"	5/8"	3-3/8"	4	55A116A
9/32"	3/8"	11/16"	3-3/8"	4	55A118A
5/16"	3/8"	3/4"	3-1/2"	4	55A120A
11/32"	3/8"	3/4"	3-1/2"	4	55A122A
3/8"	3/8"	3/4"	3-1/2"	4	55A124A

Size	Shank Dia.	Length of Cut	Overall Length	No. of Flutes	5500A EDP No.
13/32"	1/2"	1"	4-1/8"	4	55A126B
7/16"	1/2"	1"	4-1/8"	4	55A128B
15/32"	1/2"	1"	4-1/8"	4	55A130B
1/2"	1/2"	1"	4-1/8"	4	55A132B
5/8"	5/8"	1-3/8"	5"	4	55A140C
3/4"	3/4"	1-5/8"	5-5/8"	4	55A148D
7/8"	7/8"	1-7/8"	6-1/8"	4	55A156E
1"	1"	1-7/8"	6-3/8"	4	55A164F



# End Mills Multi-Flute Finishing

**COBALT**  
Fractional / Bright



**PACKAGING:**  
All sizes are individually packaged.

## 6700A Multi-Flute Finishing End Mills

REGULAR LENGTH / CENTER CUTTING / SINGLE END

Size	Shank Dia.	Length of Cut	Overall Length	No. of Flutes	6700A EDP No.
1/8"	3/8"	3/8"	2-5/16"	4	670A108A
3/16"	3/8"	1/2"	2-3/8"	4	670A112A
1/4"	3/8"	5/8"	2-7/16"	4	670A116A
5/16"	3/8"	3/4"	2-1/2"	4	670A120A
3/8"	3/8"	3/4"	2-1/2"	4	670A124A
1/2"	1/2"	1-1/4"	3-1/4"	4	670A132B
5/8"	5/8"	1-5/8"	3-3/4"	4	670A140C
3/4"	3/4"	1-5/8"	3-7/8"	4	670A148D
3/4"	3/4"	1-5/8"	3-7/8"	6	670A148J
1"	1"	2"	4-1/2"	4	670A164F
1-1/4"	1-1/4"	2"	4-1/2"	4	670A216G
1-1/4"	1-1/4"	2"	4-1/2"	6	670A216J
1-1/2"	1-1/4"	2"	4-1/2"	4	670A232G
1-1/2"	1-1/4"	2"	4-1/2"	6	670A232J
2"	1-1/4"	2"	4-1/2"	6	670A264G

The greater red hardness of M-42 Cobalt end mills enables these tools to run about 10% faster than conventional HSS end mills. This translates to shorter machining times and permits fuller utilization of available machine horsepower. While Cobalt end mills are initially more expensive than HSS, they retain their sharpness for longer, providing more cuts between grinds and less machine downtime, resulting in lower end mill tooling costs.



6700A

## 6725A Multi-Flute Finishing End Mills

MEDIUM LENGTH / CENTER CUTTING / SINGLE END

Size	Shank Dia.	Length of Cut	Overall Length	No. of Flutes	6725A EDP No.
3/8"	3/8"	1-1/2"	3-1/4"	4	672A124A
1/2"	1/2"	2"	4"	4	672A132B
5/8"	5/8"	2-1/2"	4-5/8"	4	672A140C

The greater red hardness of M-42 Cobalt end mills enables these tools to run about 10% faster than conventional HSS end mills. This translates to shorter machining times and permits fuller utilization of available machine horsepower. While Cobalt end mills are initially more expensive than HSS, they retain their sharpness for longer, providing more cuts between grinds and less machine downtime, resulting in lower end mill tooling costs.



6725A



# End Mills Multi-Flute Finishing

**COBALT**  
Fractional / Bright



**PACKAGING:**  
All sizes are individually packaged.

## 6750A Multi-Flute Finishing End Mills

LONG LENGTH / CENTER CUTTING / SINGLE END

The greater red hardness of M-42 Cobalt end mills enables these tools to run about 10% faster than conventional HSS end mills. This translates to shorter machining times and permits fuller utilization of available machine horsepower. While Cobalt end mills are initially more expensive than HSS, they retain their sharpness for longer, providing more cuts between grinds and less machine downtime, resulting in lower end mill tooling costs.

Size	Shank Dia.	Length of Cut	Overall Length	No. of Flutes	6750A EDP No.
3/8"	3/8"	2-1/2"	4-1/2"	4	675A124A
1/2"	1/2"	3"	5"	4	675A132B
3/4"	3/4"	3"	5-1/4"	4	675A148D
1"	1"	4"	6-1/2"	4	675A164F
1-1/4"	1-1/4"	4"	6-1/2"	6	675A216G



6750A

## 6950A 4-Flute Finishing End Mills

REGULAR LENGTH / CENTER CUTTING / DOUBLE END

The greater red hardness of M-42 Cobalt end mills enables these tools to run about 10% faster than conventional HSS end mills. This translates to shorter machining times and permits fuller utilization of available machine horsepower. While Cobalt end mills are initially more expensive than HSS, they retain their sharpness for longer, providing more cuts between grinds and less machine downtime, resulting in lower end mill tooling costs.

Size	Shank Dia.	Length of Cut	Overall Length	No. of Flutes	6950A EDP No.
1/8"	3/8"	3/8"	3-1/16"	4	695A108A
3/16"	3/8"	1/2"	3-1/4"	4	695A112A
1/4"	3/8"	5/8"	3-3/8"	4	695A116A
5/16"	3/8"	3/4"	3-1/2"	4	695A120A
3/8"	3/8"	3/4"	3-1/2"	4	695A124A
1/2"	1/2"	1"	4-1/8"	4	695A132B
5/8"	5/8"	1-3/8"	5"	4	695A140C
3/4"	3/4"	1-5/8"	5-5/8"	4	695A148D



6950A

# End Mills Ball Nose

**HIGH SPEED STEEL**  
Fractional / Bright



**PACKAGING:**  
All sizes are individually packaged.

## 6400A 2-Flute Ball Nose End Mills

REGULAR LENGTH / CENTER CUTTING / SINGLE END

Ball-Nose end mills have rounded end cutting edges. This style of end mill is available as a center cutting tool only. It is used where rounded details must be machined in a part (for example, a slot with a rounded bottom). It is also used where sharp machined corners must be avoided. Ball nose end mills are also widely used for delicate cuts on contoured surfaces of molds and dies.

Size	Shank Dia.	Length of Cut	Overall Length	No. of Flutes	6400A EDP No.
1/8"	3/8"	3/8"	2-5/16"	2	640A108A
3/16"	3/8"	1/2"	2-3/8"	2	640A112A
1/4"	3/8"	5/8"	2-7/16"	2	640A116A
5/16"	3/8"	3/4"	2-1/2"	2	640A120A
3/8"	3/8"	3/4"	2-1/2"	2	640A124A
7/16"	1/2"	1"	3"	2	640A128B
1/2"	1/2"	1"	3"	2	640A132B
9/16"	1/2"	1-1/8"	3-1/8"	2	640A136B
5/8"	1/2"	1-1/8"	3-1/8"	2	640A140B
5/8"	5/8"	1-3/8"	3-1/2"	2	640A140C
3/4"	1/2"	1-5/16"	3-5/16"	2	640A148B
3/4"	3/4"	1-5/8"	3-7/8"	2	640A148D
13/16"	3/4"	2"	4-1/4"	2	640A152D
7/8"	3/4"	2"	4-1/4"	2	640A156D



6400A

Size	Shank Dia.	Length of Cut	Overall Length	No. of Flutes	6400A EDP No.
7/8"	7/8"	2"	4-1/4"	2	640A156E
15/16"	3/4"	2-1/4"	4-1/2"	2	640A160D
1"	3/4"	2-1/4"	4-1/2"	2	640A164D
1"	1"	2-1/4"	4-3/4"	2	640A164F
1-1/8"	1"	2-1/4"	4-3/4"	2	640A208F
1-1/4"	1-1/4"	2-1/2"	5"	2	640A216G
1-1/2"	1-1/4"	2-1/2"	5"	2	640A232G

## 6420A 4-Flute Ball Nose End Mills (HSS)

REGULAR LENGTH / CENTER CUTTING / SINGLE END

Ball-Nose end mills have rounded end cutting edges. This style of end mill is available as a center cutting tool only. It is used where rounded details must be machined in a part (for example, a slot with a rounded bottom). It is also used where sharp machined corners must be avoided. Ball nose end mills are also widely used for delicate cuts on contoured surfaces of molds and dies.

Size	Shank Dia.	Length of Cut	Overall Length	No. of Flutes	6420A EDP No.
1/4"	3/8"	5/8"	2-7/16"	4	642A116A
5/16"	3/8"	3/4"	2-1/2"	4	642A120A
3/8"	3/8"	3/4"	2-1/2"	4	642A124A
1/2"	1/2"	1-1/4"	3-1/4"	4	642A132B
5/8"	5/8"	1-5/8"	3-3/4"	4	642A140C
3/4"	3/4"	1-5/8"	3-7/8"	4	642A148D
1"	1"	2"	4-1/2"	4	642A164F



6420A

# End Mills Ball Nose

## COBALT

Fractional / Single End / Bright



### PACKAGING:

All sizes are individually packaged.

### 6650A Multi-Flute Ball Nose End Mills

REGULAR LENGTH / CENTER CUTTING / SINGLE END

The greater red hardness of M-42 Cobalt end mills enables these tools to run about 10% faster than conventional HSS end mills. This translates to shorter machining times and permits fuller utilization of available machine horsepower. While Cobalt end mills are initially more expensive than HSS, they retain their sharpness for longer, providing more cuts between grinds and less machine downtime, resulting in lower end mill tooling costs.

Ball-Nose end mills have rounded end cutting edges. This style of end mill is available as a center cutting tool only. It is used where rounded details must be machined in a part (for example, a slot with a rounded bottom). It is also used where sharp machined corners must be avoided. Ball nose end mills are also widely used for delicate cuts on contoured surfaces of molds and dies.



6650A

Size	Shank Dia.	Length of Cut	Overall Length	No. of Flutes	6650A EDP No.
1/8"	3/8"	3/8"	2-5/16"	4	665A108A
3/16"	3/8"	1/2"	2-3/8"	4	665A112A
1/4"	3/8"	5/8"	2-7/16"	4	665A116A
5/16"	3/8"	3/4"	2-1/2"	4	665A120A
3/8"	3/8"	3/4"	2-1/2"	4	665A124A
1/2"	1/2"	1-1/4"	3-1/4"	4	665A132B
5/8"	5/8"	1-5/8"	3-3/4"	4	665A140C
3/4"	3/4"	1-5/8"	3-7/8"	4	665A148D
1"	1"	2"	4-1/2"	4	665A164F
1-1/4"	1-1/4"	2"	4-1/2"	6	665A216G

# End Mills Roughing

**COBALT**  
Fractional / Bright



**PACKAGING:**  
All sizes are individually packaged.

## 7140 Multi-Flute Roughing End Mills

REGULAR LENGTH / CENTER CUTTING / SINGLE END

Roughing end mills are designed for extremely rapid stock removal. These end mills can remove material up to 3x the rate of regular end mills. Designed to machine low alloy, high strength steels at faster feed and speed rates.



7140

Size	Shank Dia.	Length of Cut	Overall Length	No. of Flutes	7140 EDP No.
1/2"	1/2"	1-1/4"	3-1/4"	4	714A132B
1/2"	1/2"	2"	4"	4	714A132M
1/2"	1/2"	3"	5"	4	714A132L
5/8"	5/8"	3/4"	2-7/8"	4	714A140C
5/8"	5/8"	1-5/8"	3-3/4"	4	714A140M
5/8"	5/8"	3-1/8"	5-1/4"	4	714A140L
11/16"	5/8"	1-5/8"	3-3/4"	4	714A144C
3/4"	5/8"	1-5/8"	3-3/4"	4	714A148C
3/4"	3/4"	1-1/4"	3-1/2"	4	714A148D
3/4"	3/4"	2-1/2"	4-5/8"	4	714A148M
3/4"	3/4"	3"	5-1/4"	4	714A148L
13/16"	3/4"	1-7/8"	4-1/8"	5	714A152D
7/8"	3/4"	1-1/8"	3-3/8"	5	714A156D
7/8"	3/4"	1-7/8"	4-1/8"	5	714A156M
7/8"	3/4"	3-1/2"	5-5/8"	5	714A156L
7/8"	7/8"	1-1/8"	3-3/8"	5	714A156E
1"	3/4"	1-1/2"	3-3/8"	5	714A164D

Size	Shank Dia.	Length of Cut	Overall Length	No. of Flutes	7140 EDP No.
1"	3/4"	2"	4-1/4"	5	714A164M
1"	3/4"	4"	6-1/4"	5	714A164L
1"	1"	2"	4-1/2"	5	714A164F
1"	1"	6"	8-1/2"	5	714A164N
1-1/8"	3/4"	2"	4-1/4"	6	714A208D
1-1/8"	1"	2"	4-1/2"	6	714A208F
1-1/8"	1"	3-1/2"	6"	6	714A208L
1-1/4"	3/4"	1-1/8"	3-3/8"	6	714A216D
1-1/4"	3/4"	2"	4-1/4"	6	714A216M
1-1/4"	1-1/4"	3"	5-1/2"	6	714A216G
1-1/4"	1-1/4"	6"	8-1/2"	6	714A216N
1-3/8"	3/4"	2"	4-1/4"	6	714A224D
1-1/2"	3/4"	1-1/8"	3-3/8"	6	714A232D
1-1/2"	3/4"	2"	4-1/4"	6	714A232M
1-1/2"	1-1/4"	2"	4-1/2"	6	714A232G
1-1/2"	1-1/4"	3"	5-1/2"	6	714A232N
1-1/2"	1-1/4"	4"	6-1/2"	6	714A232L

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# Countersinks

**HIGH SPEED STEEL**  
Fractional / Bright

**PACKAGING:**  
All sizes are individually packaged.

## 3600E Countersink

SINGLE FLUTE

Single Flute Countersinks should be used when multi-flute countersinks chatter or the hole is too small for a multi-flute countersink to enter. 60° Countersinks are used for centering. 82° Countersinks are used for Countersinking flathead screws. 90° Countersinks are used for chamfering and deburring. 100° Countersinks are used to make screw and rivet holes.



3600E

Size	Shank Dia.	Overall Length	No. of Flutes	60° EDP No.	82° EDP No.	90° EDP No.	100° EDP No.
3/16"	3/16"	1-1/2"	1	36E112A	36E112B	36E112C	36E112D
1/4"	1/4"	2"	1	36E116A	36E116B	36E116C	36E116D
5/16"	1/4"	2"	1	36E120A	36E120B	36E120C	36E120D
3/8"	1/4"	2"	1	36E124A	36E124B	36E124C	36E124D
1/2"	1/4"	2"	1	36E132A	36E132B	36E132C	36E132D
5/8"	1/2"	2-3/4"	1	36E140A	36E140B	36E140C	36E140D
3/4"	1/2"	2-3/4"	1	36E148A	36E148B	36E148C	36E148D
7/8"	1/2"	2-3/4"	1	36E156A	36E156B	36E156C	36E156D
1"	1/2"	2-3/4"	1	36E164A	36E164B	36E164C	36E164D
1-1/4"	3/4"	3-3/8"	1	36E216A	36E216B	36E216C	36E216D
1-1/2"	3/4"	3-3/8"	1	36E232A	36E232B	36E232C	36E232D
2"	3/4"	3-3/8"	1	36E264A	36E264B	36E264C	36E264D

## 3700E Center Reamer

3-FLUTE

Center Reamers are designed for countersinking holes for flathead screws and rivets, in portable drilling applications.



3700E

Size	Shank Dia.	Shank Length	Overall Length	No. of Flutes	60° EDP No.	82° EDP No.	90° EDP No.	100° EDP No.
1/4"	3/16"	3/4"	1-1/2"	3	37E116A	37E116B	37E116C	37E116D
3/8"	1/4"	7/8"	1-3/4"	3	37E124A	37E124B	37E124C	37E124D
1/2"	3/8"	1"	2"	3	37E132A	37E132B	37E132C	37E132D
5/8"	3/8"	1"	2-1/4"	3	37E140A	37E140B	37E140C	37E140D
3/4"	1/2"	1-1/4"	2-5/8"	3	37E148A	37E148B	37E148C	37E148D
1"	1/2"	1-1/4"	3-1/2"	3	37E164A	37E164B	37E164C	37E164D
1-1/4"	3/4"	1-1/2"	3-1/2"	3	37E216A	37E216B	37E216C	37E216D
1-1/2"	3/4"	1-1/2"	3-1/2"	3	37E232A	37E232B	37E232C	37E232D
2"	3/4"	1-1/2"	3-3/4"	3	37E264A	37E264B	37E264C	37E264D



# Countersinks

**HIGH SPEED STEEL**  
Fractional / Bright

**PACKAGING:**  
All sizes are individually packaged.

## 3800E Machine Countersink

4-FLUTE

Four Flute Machine

Countersinks have a longer shank to use in Turret lathes and for screw machine work.



3800E

Size	Shank Dia.	Shank Length	Overall Length	No. of Flutes	60° EDP No.	82° EDP No.	90° EDP No.
1/2"	1/2"	2-1/4"	3-7/8"	4	38E132A	38E132B	38E132C
5/8"	1/2"	2-1/4"	4"	4	38E140A	38E140B	38E140C
3/4"	1/2"	2-1/4"	4-1/8"	4	38E148A	38E148B	38E148C
7/8"	1/2"	2-1/4"	4-1/4"	4	38E156A	38E156B	38E156C
1"	1/2"	2-1/4"	4-3/8"	4	38E164A	38E164B	38E164C
1-1/4"	1/2"	2-1/4"	5"	4	38E216A	38E216B	38E216C
1-1/2"	1/2"	2-1/4"	5-3/8"	4	38E232A	38E232B	38E232C

## 3900E Chatterless Countersink

6-FLUTE

Six Flute Chatterless

Countersinks are designed for fast shearing cuts.



3900E

Size	Shank Dia.	Shank Length	Overall Length	No. of Flutes	60° EDP No.	82° EDP No.	90° EDP No.
3/16"	3/16"	1"	1-1/2"	6	39E112A	39E112B	39E112C
1/4"	1/4"	1"	2"	6	39E116A	39E116B	39E116C
5/16"	1/4"	1"	2"	6	39E120A	39E120B	39E120C
3/8"	1/4"	1"	2"	6	39E124A	39E124B	39E124C
1/2"	1/4"	1"	2"	6	39E132A	39E132B	39E132C
5/8"	1/2"	1-1/8"	2-3/4"	6	39E140A	39E140B	39E140C
3/4"	1/2"	1-5/16"	2-3/4"	6	39E148A	39E148B	39E148C
7/8"	1/2"	1-5/16"	2-3/4"	6	39E156A	39E156B	39E156C
1"	1/2"	1-5/16"	2-3/4"	6	39E164A	39E164B	39E164C
1-1/4"	3/4"	1-5/8"	3-3/8"	6	39E216A	39E216B	39E216C
1-1/2"	3/4"	1-5/8"	3-1/2"	6	39E232A	39E232B	39E232C
1-3/4"	1"	2-1/8"	4-1/4"	6	39E248A	39E248B	39E248C
2"	1"	2-1/8"	4-3/8"	6	39E264A	39E264B	39E264C

Counter-  
sinks

**HIGH SPEED STEEL**  
Fractional / Bright

**PACKAGING:**  
All sizes are individually packaged.

## 4000E Deburring Tools

FLUTELESS



4000E

Size	Inch Dia.	Shank Dia.	60° EDP No.	82° EDP No.	90° EDP No.
0	1/16" - 15/64"	1/4"	40E000A	40E000B	40E000C
1	5/32" - 13/32"	1/4"	40E001A	40E001B	40E001C
2	3/16" - 17/32"	1/4"	40E002A	40E002B	40E002C
3	5/16" - 25/32"	1/2"	40E003A	40E003B	40E003C
4	9/16" - 1-1/16"	1/2"	40E004A	40E004B	40E004C
5	5/8" - 1-15/32"	1/2"	-	40E005B	-
6	3/4" - 1-3/4"	5/8"	-	40E006B	-
7	1" - 2"	5/8"	-	40E007B	-
8	1.1/4" - 2-1/2"	3/4"	-	40E008B	-
#0 - #4SET	-	-	40ESETA	40ESETB	40ESETC

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# Drill Feeds and Speeds

Material	Hardness	Drill Type	Point Style	Point Angle	Speed (SFM)	Feed	Coolant
Aluminum / Aluminum Alloys	–	High Helix	Standard	118°	200-300	Medium to Heavy	Water Soluble
Aluminum Bronze	–	High Helix	Standard	118°	50-100	Medium to Heavy	Water Soluble
Brass, Free Machining	–	Low Helix	Standard	118°	100-250	Medium to Heavy	Water Soluble
Bronze, Soft Medium	Below 200	General Purpose	Standard	118°	70-150	Medium to Heavy	Water Soluble
Bronze, High Tensile	–	Low Helix or Half RD	Standard	118°	50-100	Medium to Heavy	Water Soluble
Cooper / Cooper Alloys	–	General Purpose	Standard	118°	100-200	Medium	Water Soluble
High Temp. Alloys, Cobalt Base	180-300	Cobalt	Split Point	135°	5-20	Medium	Activated Oils
High Temp. Alloys, Iron Base	180-300	Cobalt	Split Point	135°	5-20	Medium	Activated Oils
High Temp. Alloys, Nickel Base	180-300	Nitro® or Cobalt	Split Point	135°	5-15	Medium	Activated Oils
Iron, Soft Case	Up to 150	Heavy Duty or Nitro®	Split Point	135°	75-150	Medium	Dry / Air
Iron, Medium Case	150-250	Heavy Duty or Nitro®	Split Point	135°	50-100	Medium	Dry / Air
Iron, Hard Case	Over 250	Carbide	Standard	118°	40-75	Light to Medium	Dry / Air
Plastic & Related Materials	–	Low Helix	Low Angle	90°	100-200	Medium to Heavy	Dry / Air
Steel, Alloyed Low Carbon	125-275	General Purpose	Standard	118°	50-70	Medium	Water Soluble
Steel, Alloyed Medium Carbon	275-325	Heavy Duty or Nitro®	Split Point	135°	40-55	Medium	Water Soluble
Steel, Alloyed High Carbon	Over 325	Cobalt	Split Point	135°	30-50	Medium	Water Soluble
Steel Low & Medium carbon	Below 175	General Purpose	Standard	118°	45-95	Medium to Heavy	Water Soluble
Steel High Carbon	175-225	General Purpose	Standard	118°	45-65	Medium	Water Soluble
Stainless Steel, Austenitic	Below 300	Heavy Duty or Nitro®	Split Point	135°	40-60	Medium to Heavy	Water Soluble
Stainless Steel Precipitation	Over 300	Cobalt	Split Point	135°	20-40	Medium	Cutting Oil

Drill Dia.	Light	Medium	Heavy
<b>Feed Per Drill Revolution</b>			
1/16" to 1/8"	.0005 - .0010	.0010 - .0020	.0020 - .0040
1/8" to 1/4"	.0010 - .0030	.0030 - .0050	.0040 - .0060
1/4" to 3/8"	.0030 - .0050	.0050 - .0070	.0060 - .0100
3/8" to 1/2"	.0040 - .0060	.0050 - .0080	.0080 - .0120
1/2" to 3/4"	.0050 - .0070	.0070 - .0100	.0090 - .0140
3/4" to 1"	.0070 - .0100	.0090 - .0140	.0140 - .0200

**Feeds** – Feed rates for drilling are governed by the drill diameter, machinability of materials and depth of hole.

**Speeds** – The speed of a drill is determined by the rate which the outer periphery of the tool rotates in relation to material being cut. In general, the SFM at which a drill will operate is within a range based upon the workpiece material, its condition, hardness and depth of hole. It is usually advisable to start the drilling process at a slower SFM and then increase to the maximum.

$$\text{RPM} = \frac{\text{SFM}}{\text{TD}} \times 3.82 = \text{Revolutions Per Minute}$$

$$\text{SFM} = \text{RPM} \times \text{TD} \times .26 = \text{Surface Feet Per Minute}$$

**TD** – Tool diameter in inches

# 710 Drill Feeds and Speeds



Workpiece Material Groups	Hardness	Speed (SFM)	1/32"	1/16"	1/8"	1/4"	3/8"	1/2"	5/8"	3/4"
<b>Free Machining &amp; Low Carbon Steels</b> 1006, 1008, 1015, 1018, 1020, 1022, 1025, 1117, 1140, 1141, 11L08, 11L14, 1213, 12L13, 12L14, 1215, 1330	up to 28 Rc	330	0.0010	0.0020	0.0030	0.0060	0.0080	0.0100	0.0110	0.0120
<b>Medium Carbon &amp; High Carbon Steels, Alloy Steels &amp; Easy to Machine Tool Steels</b> 1030, 1035, 1040, 1045, 1050, 1052, 1055, 1060, 1085, 1095, 1541, 1551, 9255, 2515, 3135, 3415, 4130, 4137, 4140, 4150, 4320, 4340, 4520, 5015, 5115, 5120, 5132, 5140, 5155, 6150, 8620, 9262, 9840, 52100, 01, 02, 06, S2, W1 to W310	28 to 38 Rc	265	0.0010	0.0020	0.0030	0.0060	0.0080	0.0100	0.0110	0.0120
<b>Tool Steels &amp; Die Steels</b> 07, M1, M2, M3, M4, M7, T1, T2, T4, T5, T8, T15, A2, A3, A6, A7, H10, H11, H12, H13, H19, H21, L3, L6, L7, P2, P20, S1, S5, S7, 52100, A 128, D2, D3, D4, D5, D7	28 to 44 Rc	230	0.0010	0.0020	0.0030	0.0060	0.0080	0.0100	0.0110	0.0120
<b>Hardened Steel</b>	45 to 65 Rc	50	0.0003	0.0010	0.0010	0.0010	0.0020	0.0020	0.0020	0.0030
<b>Stainless Steel - Moderately Difficult</b> 301, 302, 303 High Tensile, 304, 304L, 305, 420, 15-5PH, 17-4PH, 17-7PH	up to 28 Rc	150	0.0010	0.0020	0.0030	0.0060	0.0080	0.0100	0.0110	0.0120
<b>Stainless Steel - Difficult to Machine</b> 302B, 304B, 309, 310, 316, 316B, 316L, 316Ti, 317, 317L, 321, PH13-8Mo, Nitronics	up to 28 Rc	100	0.0003	0.0005	0.0020	0.0040	0.0050	0.0060	0.0080	0.0100
<b>High Temp Alloys</b> Nimonic, Inconel, Monel, Hastelloy	up to 42 Rc	70	0.0003	0.0005	0.0020	0.0040	0.0050	0.0060	0.0080	0.0100
<b>Titanium Alloys</b> 6Al-4V, 5Al-2.5 Sn, 6Al-2 Sn-4Zr-6Mo, 3Al-8V-6Cr4Mo-4Zr, 10V-2Fe-3Al, 13V-11Cr-3Al	up to 42 Rc	180	0.0003	0.0005	0.0020	0.0040	0.0050	0.0060	0.0080	0.0100
<b>Cast-Iron - Gray CG,</b> ASTM A48, CLASS 20, 25, 30, 35, SAE J431C, GRADES G1800, G3000, G3500, GG 10, 15, 20, 25, 30, 35, 40	up to 240 HB	365	0.0010	0.0020	0.0030	0.0060	0.0080	0.0100	0.0110	0.0120
<b>Cast Iron - Ductile &amp; Malleable CGI</b> 60-40-18, 65-45-12, D4018, D4512, D5506, 32510, 35108, M3210, M4504, M5503, 250, 300, 350, 400, 450	over 240 HB	365	0.0010	0.0020	0.0030	0.0060	0.0080	0.0100	0.0110	0.0120
<b>Plastics</b>		300	0.0010	0.0020	0.0030	0.0060	0.0080	0.0100	0.0110	0.0120
<b>Kevlar</b>		300	0.0010	0.0020	0.0030	0.0060	0.0080	0.0100	0.0110	0.0120



# Annular Cutters

## Feeds and Speeds for Annular Cutters

Material To Be Drilled		HSS Cutter	Nitro® Cutter	CT Cutter
<b>Cutting Speed In Feet/Min. (SFPM)</b>				
Steel	Freecutting-Leaded	100	150	175
	Up To 180 Brinell	80 to 110	130	165
	A-36	80 to 110	130	165
	180 To 285 Brinell	45 to 70	80	90
	285 To 375 Brinell	30 to 45	55	60
	375 & Up Brinell	15 to 25	35	40
	Manganese (low)	15 to 20	25	30
	Stainless-Freecutting	30 to 60	70	100
	Stainless 304,316,	-	-	-
	320 & Tougher	20 to 40	50	60
Inconel, Hastelloy		25 to 40	55	70
Inconel - X		20 to 25	35	45
Titanium		30 to 40	50	60
A-286		25 to 35	50	60

Material To Be Drilled		HSS Cutter	Nitro® Cutter	CT Cutter
<b>Speed In Feet/Min. (SFPM)</b>				
Aluminum		150	250	450-600
Brass	Ordinary	150	250	250-550
	Leaded	200	300	300-600
Bronze	Ordinary	100	200	200-500
	Hi-tensile	70	100	100-200
Cast Iron	Soft	100	150	175
	Medium	80	90	100
	Hard	50	70	80
	Chilled	25	35	40
Copper		100	200	250
Magnesium		Up to 300	400	400-800
Malleable Iron		70	80	100-130
Monel		40	50	50

Cutter Dia.	Feed Ins./Rev.
<b>Operating Feed*</b>	
7/16" to 9/16"	.002 to .006
5/8" to 3/4"	.003 to .003
1-3/16" - 1-1/16"	.004 to .008
1-1/8" - 1-7/16"	.006 to .010
1-1/2" to 2"	.008 to .012
2" to 2-1/2"	.012 to .025

\*Always commence operations at the lower end of RPM.

CUTTING SPEEDS (SFPM)	7/16"	1/2"	9/16"	5/8"	11/16"	3/4"	13/16"	7/8"	15/16"	1"	1-1/8"	1-1/4"	1-3/8"	1-1/2"	1-5/8"	1-3/4"	2"	2-1/4"	2-1/2"
	10	87	76	68	61	56	51	47	44	41	38	34	31	28	25	24	22	19	17
20	175	153	136	122	111	102	94	87	82	76	68	61	56	51	47	44	38	34	31
30	262	229	204	183	167	153	141	131	122	115	102	92	83	76	71	65	57	51	46
40	349	306	272	245	222	204	188	175	163	153	136	122	111	102	94	87	76	68	61
50	437	382	339	306	278	255	235	218	204	191	170	153	140	127	118	109	95	85	76
60	524	458	407	367	333	306	282	353	245	229	204	183	167	153	141	131	115	102	92
70	611	535	475	428	389	357	329	306	285	267	238	214	194	178	165	153	134	119	107
80	700	611	543	489	444	408	376	350	326	306	272	244	222	204	188	175	153	136	122
90	786	688	611	550	500	458	426	393	367	344	306	275	250	229	212	196	172	153	138
100	873	764	679	611	556	509	470	436	408	382	340	306	278	255	235	218	191	170	153
120	1048	917	815	733	667	611	564	524	489	458	407	367	333	306	282	262	229	204	183
140	1222	1070	950	856	778	713	658	611	571	535	475	428	390	356	329	306	267	238	214
150	1310	1146	1018	917	833	764	705	655	611	573	509	458	417	382	353	327	286	255	229
160	1397	1222	1086	978	889	815	752	698	652	611	543	490	444	407	376	350	306	272	244
180	1572	1375	1222	1100	1000	917	846	786	734	688	611	550	500	458	423	393	344	306	275
200	1747	1528	1358	1222	1111	1020	940	874	815	764	680	611	556	510	470	437	382	340	306
220	1920	1681	1494	1345	1222	1121	1034	960	897	840	747	672	611	560	517	480	420	374	336
240	2096	1833	1630	1467	1333	1222	1128	1048	978	917	815	733	667	611	564	524	458	407	367
250	2183	1910	1697	1528	1389	1274	1175	1091	1020	955	850	764	694	637	588	546	477	424	382
260	2270	1986	1765	1590	1444	1325	1221	1135	1060	993	883	795	722	662	611	568	497	441	397
280	2445	2140	1900	1712	1556	1426	1316	1222	1140	1070	950	856	778	713	658	611	535	475	428
300	2620	2292	2037	1834	1667	1528	1410	1310	1222	1146	1020	917	833	7	705	655	573	510	458

### SPEED AND FEED FORMULAS

SPEED OF CUTTER IN SURFACE FEET PER MINUTE (SFM)

$$SFM = D \times .26 \times RPM$$

REVOLUTIONS PER MINUTE (RPM)

$$RPM = SFM \times 3.82 \text{ divided by Dia.}$$

FEED IN INCHES PER MINUTE (IPM) OR (F)

$$F = f \times T \times RPM$$



# End Mill Speeds & Feeds



Workpiece Material	Slotting			Peripheral			Roughing		
	Tool Geometry	Speed (SFM)	Feed Range	Tool Geometry	Speed (SFM)	Feed Range	Tool Geometry	Speed (SFM)	Feed Range
Aluminum, Wood	A	200 - 600	1	A	200 - 600	1	D	200 - 600	1
Brass, Bronze, Alloyed Aluminum	A	100 - 200	2	A	100 - 200	2	D	150 - 400	2
Mild Steel, Cast Iron	B	80 - 100	3	B	80 - 100	3	E	90 - 110	3
Mild Steel Forgings (100 - 195 BNH)	B	60 - 80	3	B	60 - 80	3	E	60 - 80	3
Stainless Steel, Alloy Steel (195 - 260)	B	40 - 60	4	B	40 - 60	4	E	40 - 60	4
High Strength Stainless, Alloy Steels (260 - 310 BNH)	C	20 - 40	4	C	20 - 40	4	E	25 - 40	4
Nickel Base Alloys, High Strength Titanium Alloys	C	15 - 20	5	C	15 - 20	5	E	15 - 20	5
Alloy Steels (320 - 345 BHN)	C	10 - 15	6	C	10 - 15	6	E	10 - 20	6
Alloy Steels (345 - 375 BHN)	C	5 - 10	6	C	5 - 10	6	E	10 - 20	6
2 or 3 Flute Axial = 1/2 Diameter Radial = 1/2 Diameter			4 + Flutes Axial = 1-1/2 Diameter Radial = .1 Diameter			4 + Flutes Axial = 1 Diameter Radial = 1/2 Diameter Slot = 1/2 Diameter Axial			

- A = Aluminum
- B = GP - HSS
- C = GP - Cobalt
- D = 3-flute High Helix Cobalt Rougher
- E = Cobalt Rougher - Square Cut/Knuckle

## Feed Range (inches/tooth)

Dia. Size	1/16" - 3/32"	1/8" - 3/16"	1/4" - 1/2"	9/16" - 11/16"	3/4" - 1"	1-1/8" - 1-3/4"	2" - 3"
1	.0002 - .0005	.0002 - .001	.0005 - .002	.0005 - .003	.001 - .004	.002 - .004	.003 - .006
2	.0002 - .0005	.0002 - .001	.0005 - .003	.0005 - .004	.001 - .006	.002 - .004	.003 - .006
3	.0002 - .0005	.0002 - .001	.0005 - .003	.001 - .004	.002 - .006	.003 - .004	.003 - .006
4	.0002 - .0005	.0002 - .0005	.0005 - .003	.001 - .004	.002 - .006	.002 - .004	.003 - .006
5	-	.0002 - .0005	.0003 - .002	.0005 - .002	.001 - .004	.002 - .004	.003 - .005
6	-	-	.0002 - .002	.0005 - .002	.001 - .003	.002 - .004	.002 - .004

Technical



# Drill Surface Treatments

Chemical Compositions of High Speed Steels						
	Drills	Taps	Reamers	End Mills		
Type	Chemical Composition					Term
	Carbon %	Tungsten %	Molybdenum	Chromium %	Vanadium %	
M.50	.83	0.10	4.25	4.00	1.00	HSS
M1	.80	1.50	8.00	4.00	1.00	HSS
M2	.85	6.00	5.00	4.00	2.00	HSS
M7	1.00	1.75	8.75	4.00	2.00	HSS
M35	.80	6.00	5.00	4.00	2.00	5% Cobalt
M42	1.0	1.50	9.50	3.75	1.05	8% Cobalt

## Surface Treatments

Surface treatments for high speed steel tools function to condition them, so in certain applications they will outperform tools that have not been treated. Surface treatments do not, however, alter the functional structure of the tool itself.

**Black Oxide** - This treatment is applied to finished tools and produces a thin black iron oxide surface coating. It also provides additional tempering and stress relieving. This coating reduces galling and chip welding and also increases the ability of the tool to retain lubricants. Recommended in iron and steel drilling applications. It should not be used in non-ferrous metals such as aluminum because it increases the loading tendencies of the tool.

**Nitride** - This treatment produces a hard case which is highly resistant to abrasion. It also retards the tendency of softer materials to cling or load on tools. Recommended for tools that are used for ferrous, non-ferrous, and non-metallic materials which are abrasive and have loading characteristics.

**Nitride and Oxide** - Combines the advantages of the lubricity of oxide with the abrasion resistance of nitriding. Recommended for abrasive ferrous applications. Not recommended for soft materials such as aluminum, magnesium or similar non-ferrous applications.

**Chrome Plating** - This treatment deposits an extremely thin layer of chromium on the surface of tools. It reduces the coefficient of friction, and resists chip weld and abrasion. Recommended for non-ferrous and non-metallic materials.

**Titanium Nitride** - This surface treatment improves tool life by acting as a wear resistant and thermal barrier. It also gives the tool a low coefficient of friction and very high surface hardness. It reduces friction and chip welding and acts as a thermal insulator between the chip and the tool. Recommended for use in ferrous materials below Rc 40 and in non-ferrous materials.

## Drill Points

**Conventional Point** - Conventional points with 118° included point angles are the most commonly used because they provide satisfactory results in a wide variety of materials. A possible limitation is that the straight chisel edge contributes to walking at the drill point, often making it necessary to spot the hole for improved accuracy.

**Split Point** - Split points were originally developed for use on drills designed for deep oil holes in automotive crankshafts. Since its inception, the split point has gained widespread use and is applied to both 118° and 135° included point angles. Its main advantages are the ability to reduce thrust and eliminate walking at the drill point. This is a distinct advantage when the drill is used in a portable drill or in drilling applications where busings cannot be used. The split point also has two positive rake cutting edges extending the center of the drill, which can assist as a chipbreaker to produce small chips which can readily be ejected.

**Notched Point** - Notched points were developed for drilling tough alloys. Commonly incorporated on heavy web drills, which allow the point to withstand the higher thrust loads required in drilling these materials. As with the split point, the notched point contains two additional positive rake cutting edges extending toward the center of the drill. These secondary cutting lips, which extend no further than half the original cutting lip, can assist in chip control and reduce the torque required in drilling tough materials. Notched points can be incorporated on both 118° and 135° included point angles, making them suitable for drilling a broad variety of materials.

**Helical Point** - Helical points change the flat blunt chisel to a "S" contour with a radiused crown effect which has its highest point at the center of the drill axis. This crown contour creates a continuous cutting edge from margin to margin across the web. The advantage is its self-centering ability which allows the chisel to cut and enables the drill to cut closer to actual drill diameter. Helical Points are not available under 1/16" diameter.

**Reduced Rake Point** - Reduced rake points are generated by flatterring or dubbing both cutting lips from the outer periphery to the chisel. This reduces the effective axial rake to 0–5, positive which translates to a plowing rather than shearing action. This reduction in shearing is an effective method of preventing the drill from grabbing in low tensile strength materials such as brass. Reducing the rake also strengthens the cutting lip and can assist in breaking chips.

# Decimal Equivalent Chart



Drill Size	MM	Decimal Inches	Drill Size	MM	Decimal Inches	Drill Size	MM	Decimal Inches	Drill Size	MM	Decimal Inches
-	0.10	.0039	<b>45</b>	2.08	.0820	<b>5</b>	5.22	.2055	<b>7/16</b>	11.11	.4375
-	0.20	.0079	<b>44</b>	2.18	.0860	<b>4</b>	5.31	.2090	<b>29/64</b>	11.15	.4531
-	0.25	.0098	<b>43</b>	2.26	.0890	<b>3</b>	5.41	.2130	<b>15/32</b>	11.91	.4688
-	0.30	.0118	<b>42</b>	2.37	.0935	<b>7/32</b>	5.56	.2188	-	12.00	.4724
<b>80</b>	0.34	.0135	<b>3/32</b>	2.38	.0938	<b>2</b>	5.61	.2210	<b>31/64</b>	12.30	.4844
<b>79</b>	0.37	.0145	<b>41</b>	2.44	.0960	<b>1</b>	5.79	.2280	<b>1/2</b>	12.70	.5000
<b>1/64</b>	0.40	.0156	<b>40</b>	2.50	.0980	<b>A</b>	5.94	.2340	-	13.00	.5118
<b>78</b>	0.41	.0160	<b>39</b>	2.53	.0995	<b>15/64</b>	5.95	.2344	<b>33/64</b>	13.10	.5156
<b>77</b>	0.46	.0180	<b>38</b>	2.58	.1015	-	6.00	.2360	<b>17/32</b>	13.49	.5312
-	0.50	.0197	<b>37</b>	2.64	.1040	<b>B</b>	6.05	.2380	<b>35/64</b>	13.89	.5469
<b>76</b>	0.51	.0200	<b>36</b>	2.71	.1065	<b>C</b>	6.15	.2420	-	14.00	.5512
<b>75</b>	0.53	.0210	<b>7/64</b>	2.78	.1094	<b>D</b>	6.25	.2460	<b>9/16</b>	14.29	.5625
<b>74</b>	0.57	.0225	<b>35</b>	2.79	.1100	<b>1/4</b>	6.35	.2500	<b>37/64</b>	14.68	.5781
-	0.60	.0236	<b>34</b>	2.82	.1110	<b>E</b>	6.35	.2500	-	15.00	.5906
<b>73</b>	0.61	.0240	<b>33</b>	2.87	.1130	<b>F</b>	6.53	.2570	<b>19/32</b>	15.08	.5938
<b>72</b>	0.64	.0250	<b>32</b>	2.95	.1160	<b>G</b>	6.63	.2610	<b>39/64</b>	15.48	.6094
<b>71</b>	0.66	.0260	-	3.00	.1181	<b>17/64</b>	6.75	.2656	<b>5/8</b>	15.88	.6250
-	0.70	.0276	<b>31</b>	3.05	.1200	<b>H</b>	6.76	.2660	-	16.00	.6299
<b>70</b>	0.71	.0280	<b>1/8</b>	3.18	.1250	<b>I</b>	6.91	.2720	<b>41/64</b>	16.27	.6406
<b>69</b>	0.74	.0282	<b>30</b>	3.26	.1285	-	7.00	.2756	<b>21/32</b>	16.67	.6562
-	0.75	.0295	<b>29</b>	3.45	.1360	<b>J</b>	7.04	.2770	-	17.00	.6693
<b>68</b>	0.79	.0310	<b>28</b>	3.57	.1405	<b>K</b>	7.14	.2810	<b>43/64</b>	17.07	.6719
<b>1/32</b>	0.79	.0313	<b>9/64</b>	3.57	.1406	<b>9/32</b>	7.14	.2812	<b>11/16</b>	17.46	.6875
-	0.80	.0315	<b>27</b>	3.66	.1440	<b>L</b>	7.37	.2900	<b>45/64</b>	17.86	.7031
<b>67</b>	0.81	.0320	<b>26</b>	3.73	.1470	<b>M</b>	7.49	.2950	-	18.00	.7087
<b>66</b>	0.84	.0330	<b>25</b>	3.80	.1495	<b>19/64</b>	7.54	.2969	<b>23/32</b>	18.26	.7188
<b>65</b>	0.89	.0350	<b>24</b>	3.86	.1520	<b>N</b>	7.67	.3020	<b>47/64</b>	18.65	.7344
-	0.90	.0354	<b>23</b>	3.91	.1540	<b>5/16</b>	7.94	.3125	-	19.00	.7480
<b>64</b>	0.91	.0360	<b>5/32</b>	3.97	.1562	-	8.00	.3150	<b>3/4</b>	19.05	.7500
<b>63</b>	0.94	.0370	<b>22</b>	3.99	.1570	<b>O</b>	8.03	.3160	<b>49/64</b>	19.45	.7656
<b>62</b>	0.97	.0380	-	4.00	.1575	<b>P</b>	8.20	.3230	<b>25/32</b>	19.84	.7812
<b>61</b>	0.99	.0390	<b>21</b>	4.04	.1590	<b>21/64</b>	8.33	.3281	-	20.00	.7874
-	1.00	.0394	<b>20</b>	4.09	.1610	<b>Q</b>	8.43	.3320	<b>51/64</b>	20.24	.7969
<b>60</b>	1.02	.0400	<b>19</b>	4.22	.1660	<b>R</b>	8.61	.3390	<b>13/16</b>	20.64	.8125
<b>59</b>	1.04	.0410	<b>18</b>	4.31	.1695	<b>11/32</b>	8.73	.3438	-	21.00	.8268
<b>58</b>	1.07	.0420	<b>11/64</b>	4.37	.1719	<b>S</b>	8.84	.3480	<b>53/64</b>	21.03	.8281
<b>57</b>	1.09	.0430	<b>17</b>	4.39	.1730	-	9.00	.3543	<b>27/32</b>	21.43	.8438
<b>56</b>	1.18	.0465	<b>16</b>	4.50	.1770	<b>T</b>	9.09	.3580	<b>55/64</b>	21.84	.8594
<b>3/64</b>	1.19	.0469	<b>15</b>	4.57	.1800	<b>23/64</b>	9.13	.3594	-	22.00	.8661
<b>55</b>	1.32	.0520	<b>14</b>	4.62	.1820	<b>U</b>	9.35	.3680	<b>7/8</b>	22.23	.8750
<b>54</b>	1.40	.0550	<b>13</b>	4.70	.1850	<b>3/8</b>	9.53	.3750	<b>57/64</b>	22.62	.8906
<b>53</b>	1.51	.0595	<b>3/16</b>	4.76	.1875	<b>V</b>	9.56	.3770	-	23.00	.9055
<b>1/16</b>	1.59	.0625	<b>12</b>	4.80	.1890	<b>W</b>	9.80	.3860	<b>29/32</b>	23.02	.9062
<b>52</b>	1.61	.0635	<b>11</b>	4.85	.1910	<b>25/64</b>	9.92	.3906	<b>59/64</b>	23.42	.9219
<b>51</b>	1.70	.0670	<b>10</b>	4.91	.1935	-	10.00	.3937	<b>15/16</b>	23.81	.9375
<b>50</b>	1.78	.0700	<b>9</b>	4.98	.1960	<b>X</b>	10.08	.3970	-	24.00	.9449
<b>49</b>	1.85	.0730	-	5.00	.1968	<b>Y</b>	10.26	.4040	<b>61/64</b>	24.21	.9531
<b>48</b>	1.93	.0760	<b>8</b>	5.05	.1990	<b>13/32</b>	10.32	.4062	<b>31/32</b>	24.61	.9688
<b>5/64</b>	1.98	.0781	<b>7</b>	5.11	.2010	<b>Z</b>	10.49	.4130	-	25.00	.9843
<b>47</b>	1.99	.0785	<b>13/64</b>	5.16	.2031	<b>27/64</b>	10.72	.4219	<b>63/64</b>	25.00	.9844
-	2.00	.0787	<b>6</b>	5.18	.2040	-	11.00	.4331	<b>1"</b>	25.40	1.0000
<b>46</b>	2.06	.0810	-	-	-	-	-	-	-	-	-

Technical



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

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

**Body Clearance Diameter** - The portion of the land that has been cut away so it will not bind against the walls of the hole

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

**Chisel Edge** - The edge at the end of the web that connects the cutting lips

**Chisel Edge Angle** - The angle between the chisel edge and cutting lip, as viewed from the end of a drill

**Cobalt Steel** - A heat-resistant steel that produces increased drill life

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

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

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

**Flute Length** - The distance from the outer edges of the cutting lips to the extreme back of the flutes

**Helix Angle** - The angle formed between the leading edge of the land and the axis of a drill

**High Speed Steel** - The high quality steel used in drills for most maintenance and industrial applications

**IPM** - Feed rate in Inches Per Minute = IPR X RPM

**IPR** - Inches Per Revolution (Feed)

**Land** - The outer portion of the body between two adjacent flutes

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

**Lip Relief Angle** - The relief angle at the outer corner of the lip

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

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

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

**Overall Length** - The length from the end of the shank to the outer corners of the cutting lip

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

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

**RPM** - Revolutions Per Minute =  $\frac{\text{SFM}}{\text{Dia.}} \times 3.83$

**SFM** - Surface Feet Per Minute = RPM X Dia. X .26

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

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

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

**Split Point** - A special point configuration that eliminates "walking" so holes stay on center

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







**Web Thickness** - The thickness of the web at the point, unless otherwise specified

# Drill Troubleshooting Guide



## Use this chart to help you find the best drill for your job

Simply choose your material and then the corresponding tool

Works Best in This Material	Nitro® Black and Gold	TiN	Heavy-Duty Black Oxide	Heavy-Duty Cobalt Bronze Oxide	General Purpose Bright	General Purpose Black Oxide
Aluminum/Aluminum Alloys; Bronze, Soft and Medium		•			•	
Iron, Cast	•	•	•	•		•
Steel, Low and Medium Carbon	•	•	•	•		•
Steel, High Alloy	•	•	•	•		
Steel, Stainless and PH	•	•		•		•
Tough, Medium and High-Tensile Strength Alloys	•	•	•	•		
Wood and Plastic		•		•	•	
						
<b>Point:</b>	135° Split	135° Split	135° Split	135° Split	118°	118°

## Drill Troubleshooting Guide

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

Technical



**Angle of Thread** - The angle included between the flanks of the thread measured in an axial plane

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

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

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

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

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

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

**Cutting Face** - The leading side of the land in the direction of rotation for cutting on which the chip impinges

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

**Height of Thread** - The distance between the crest and the base of a thread measured normal to the axis

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

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

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

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

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

**Rake** - Any deviation of a straight cutting face of the tooth from a radial line. *Positive Rake* means that the crest of the cutting face is angularly advanced ahead of the balance of the face of the tooth. *Negative Rake* means that the same point is angularly behind the balance of the cutting face of the tooth.

*Zero Rake* means that the cutting face is directly on the center line

**Spiral Point (Chip Driver)** - A supplementary angular fluting cut in the cutting face of the land at the chamfer end. It is slightly longer than the chamfer on the tap, and of the opposite hand to that of rotation

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

**Threads Per Inch** - The number of threads in one inch of length



# Tap Troubleshooting Guide

Trouble	Possible Causes	Corrections
<b>Oversize Pitch Diameter</b>	Incorrect tap	Use correct "H" limit Use longer chamfered tap
	Chip packing	Use spiral pointed tap Use larger drill size Shorten length of thread in blind holes
	Galling	Reduce tapping speed Use lubricants
<b>Torn or Rough Threads</b>	Dull tap	Resharpen or replace
	Chamfer too short	Increase chamfer length
	Galling	Use lubricant Reduce speed Use larger drill
<b>Breakage</b>	Incorrect tap selection	Increase chamfer length Use spiral pointed taps in through holes Tapping too deep
	Excessive tapping torque	Increase hole size Shorten thread length Increase chamfer length
	Operating conditions	Reduce tapping speed Avoid bottoming out the tap
<b>Chipping</b>	Incorrect tap selection	Increase chamfer length Avoid chip packing in flutes
	Operating conditions	Reduce tapping speed Use larger drill Ensure adequate lubricant
<b>Excessive Wear</b>	Incorrect tap selection	Increase chamfer length
	Operating conditions	Reduce tapping speed Ensure adequate lubricant Use larger drill

# Tap Drill Sizes - Cut Taps

Tap Size	Drill Size	Probable % Thread	Tap Size	Drill Size	Probable % Thread	Tap Size	Drill Size	Probable % Thread
<b>0-80</b>	3/64"	71-81	<b>10-32</b>	#21	68-76	<b>5/8-18</b>	37/64"	58-65
<b>M1.6-.35</b>	1.25 MM	69-77	<b>M5 x .8</b>	4.2 MM	69-77	<b>M16 x 2</b>	35/64"	76-81
<b>1-64</b>	#53	59-67	<b>12-24</b>	#16	66-72	<b>3/4-10</b>	21/32"	68-72
<b>M2 x .4</b>	1/16"	72-79	<b>12-28</b>	#15	70-78	<b>3/4-16</b>	11/16"	71-77
<b>1-72</b>	#53	67-75	<b>M6 x 1</b>	#10	76-84	<b>M20 x 2.5</b>	11/16"	74-78
<b>2-56</b>	#50	62-69	<b>1/4-20</b>	#7	70-75	<b>7/8-9</b>	49/64"	72-76
<b>2-64</b>	#50	70-79	<b>1/4-28</b>	#3	72-80	<b>7/8-14</b>	13/16"	62-67
<b>M2 x .45</b>	2.05 MM	69-77	<b>5/16-18</b>	F	72-77	<b>M24 x 3</b>	53/64"	72-76
<b>3-48</b>	5/64"	70-77	<b>5/16-24</b>	I	67-75	<b>1" -8</b>	7/8"	73-77
<b>3-56</b>	#46	69-78	<b>M8 x 1.25</b>	6.7 MM	74-80	<b>1" - 12</b>	59/64"	67-72
<b>4-40</b>	#43	65-71	<b>3/8-16</b>	5/16"	72-77	<b>1" - 14</b>	15/16"	61-67
<b>4-48</b>	#42	61-68	<b>3/8-24</b>	Q	71-79	<b>1-1/8" - 7</b>	63/64"	72-76
<b>M3 x .5</b>	#40	70-79	<b>M10 x 1.5</b>	8.4 MM	76-82	<b>1-1/8-12</b>	1-3/64"	66-72
<b>5-40</b>	#38	65-72	<b>7/16-14</b>	U	70-75	<b>M30 x 3.5</b>	1-3/64"	75
<b>5-44</b>	#37	63-71	<b>7/16-20</b>	25/64"	65-72	<b>1-1/4 - 7</b>	1-7/64"	76
<b>M3.5 x .6</b>	#33	72-81	<b>M12 x 1.7</b>	13/32"	69-74	<b>1-1/4-12</b>	1-11/64"	72
<b>6-32</b>	#36	71-78	<b>1/2-13</b>	27/64"	73-78	<b>1-3/8 - 6</b>	1-7/32"	72
<b>6-40</b>	#33	69-77	<b>1/2-20</b>	29/64"	65-72	<b>1-3/8-12</b>	1-19/64"	72
<b>M4 x .7</b>	3.25 MM	74-82	<b>M14 x 2</b>	15/32"	76-81	<b>M36 x 4</b>	1-1/4"	82
<b>8-32</b>	#29	62-69	<b>9/16-12</b>	31/64"	68-72	<b>1-1/2 - 6</b>	1-11/32"	72
<b>8-36</b>	#29	70-78	<b>9/16-18</b>	33/64"	58-65	<b>1-1/2-12</b>	1-27/64"	72
<b>10-24</b>	#25	69-75	<b>5/8-11</b>	17/32"	75-79	-	-	-

Tap Size	Taperpipe NPF & NPTF	Decimal Equivalent	Straight Pipe NPS	Decimal Equivalent
<b>1/8-27</b>	Q	.3320	11/32	.3438
<b>1/4-18</b>	7/16	.4375	7/16	.7375
<b>3/8-18</b>	9/16	.5625	37/64	.5781
<b>1/2-14</b>	45/64	.7031	23/32	.7188
<b>3/4-14</b>	29/32	.9062	59/64	.9219
<b>1" - 11-1/2</b>	1-9/64	1.1406	1-5/32	1.1562
<b>1-1/4" - 11-1/2</b>	1-31/64	1.4844	1-1/2	1.5000
<b>1-1/2" - 11-1/2</b>	1-23/32	1.7188	1-3/4	1.7500
<b>2" - 11-1/2</b>	2-3/16	2.1875	2-7/32	2.2188
<b>2-1/2" - 8</b>	2-39/64	2.6094	2-21/32	2.6562
<b>3" - 8</b>	3-15/64	3.2344	3.2344	33/64

# Tap Drill Sizes – Thread Formers



**Note:** Recommended thread percentage for various (Inch standard) tap sizes is shown in the “60% Thread “ columns below. This is also the average percentage that is desirable for metric sizes. Use the “Probable Percent of Thread” column in the “Metric Sizes” tables below.

Machine Screw Sizes	75% Thread		70% Thread		65% Thread		60% Thread		55% Thread		50% Thread	
	Theor. Hole Size	Nearest Drill Size	Theor. Hole Size	Nearest Drill Size	Theor. Hole Size	Nearest Drill Size	Theor. Hole Size	Nearest Drill Size	Theor. Hole Size	Nearest Drill Size	Theor. Hole Size	Nearest Drill Size
0-80	0.0536	1.35 mm	0.0540	1.35 mm	0.0545	–	0.0549	54	0.0554	54	0.0558	1.0 mm
1-64	0.0650	1.65 mm	0.0655	1.65 mm	0.0661	–	0.0666	–	0.0672	51	0.0677	51
1-72	0.0659	1.65 mm	0.0663	–	0.0669	1.7 mm	0.0673	51	0.0679	51	0.0683	–
2-56	0.0769	1.65 mm	0.0774	1.95 mm	0.0669	23498	0.0787	47	0.0794	2.0 mm	0.0799	–
2-64	0.0780	5/64	0.0785	47	0.0791	2.0 mm	0.0796	2.0 mm	0.0802	–	0.0807	2.05 mm
3-48	0.0884	2.25 mm	0.0890	43	0.0898	43	0.0905	2.3 mm	0.0913	2.3 mm	0.0919	–
3-56	0.0899	43	0.0904	–	0.0911	2.3 mm	0.0917	2.8 mm	0.0924	2.35 mm	0.0929	2.35 mm
4-40	0.0993	2.5 mm	0.1000	39	0.1010	39	0.1018	38	0.1028	2.6 mm	0.1035	2.6 mm
4-48	0.1014	38	0.1020	38	0.1028	2.6 mm	0.1035	2.6 mm	0.1043	37	0.1049	37
5-40	0.1123	34	0.1130	33	0.1140	33	0.1148	2.9 mm	0.1158	32	0.1165	32
5-44	0.1134	33	0.1130	2.9 mm	0.1150	2.9 mm	0.1157	–	0.1166	32	0.1173	32
6-32	0.1221	3.1mm	0.1230	3.1 mm	0.1243	–	0.1252	40916	0.1264	3.2 mm	0.1274	–
6-40	0.1253	1/8	0.1260	3.2 mm	0.1270	2.9 mm	0.1278	3.25 mm	0.1288	30	0.1295	30
8-32	0.1481	3.75 mm	0.1490	–	0.1503	25	0.1512	3.8 mm	0.1524	24	0.1534	3.9 mm
8-36	0.1481	25	0.1507	3.8 mm	0.1518	25	0.1526	24	0.1537	3.9 mm	0.1546	23
10-24	0.1481	–	0.1507	18	0.1717	23682	0.1729	23682	0.1746	–	0.1758	–
10-32	0.1481	17	0.1750	–	0.1763	–	0.1772	16	0.1784	4.5 mm	0.1794	–
12-24	0.1481	10	0.1960	9	0.1977	5.0 mm	0.1989	8	0.2006	5.1 mm	0.2018	7
12-28	0.1481	5.0 mm	0.1989	8	0.2003	8	0.1989	7	0.2028	–	0.2039	13/16

Fractional Sizes	75% Thread		70% Thread		65% Thread		60% Thread		55% Thread		50% Thread	
	Theor. Hole Size	Nearest Drill Size	Theor. Hole Size	Nearest Drill Size	Theor. Hole Size	Nearest Drill Size	Theor. Hole Size	Nearest Drill Size	Theor. Hole Size	Nearest Drill Size	Theor. Hole Size	Nearest Drill Size
1/4-20	.2245	5.7 mm	.2260	–	.2280	1	.2295	1	.2315	–	.2330	5.9 mm
1/4-28	.2318	–	.2329	5.9 mm	.2343	A	.2354	15/64	.2368	6.0 mm	.2379	B
5/16-18	0.2842	7.2 mm	.2861	7.25 mm	.2879	7.3 mm	.2898	L	.2917	7.4 mm	.2936	–
5/16-24	0.2912	7.4 mm	.2927	–	.2941	M	.2955	7.5 mm	.2969	19/64	.2983	7.6 mm
3/8-16	.3431	11/32	.3452	8.75 mm	.3474	S	.3495	8.9 mm	.3516	–	.3537	9.0 mm
3/8-24	.3537	9.0 mm	.3552	9.0 mm	.3566	–	.3580	T	.3594	23/64	.3608	–
7/16-14	.4011	–	.4035	Y	.4059	13/32	.4084	–	.4108	–	.4132	Z
7/16-20	0.4120	Z	.4137	10.5 mm	.4154	–	.4171	–	.4188	–	.4205	–
1/2-13	.4608	–	.4634	–	.4660	–	.4686	15/32	.4712	12 mm	.4738	12 mm
1/2-20	.4745	–	.4762	–	.4779	–	.4796	–	.4712	–	.4830	31/64

Metric Sizes	Metric Tap Size	Tap Drill Size	Decimal Equiv. of Tap Drill (inches)	Theoretical Percentage of thread %	Probable Mean Oversize (inches)	Probable Hole Size (inches)	Probable Percent of Thread %
	M3 x 0.5	36	0.1065	86	.0026	.1091	67
–	2.7 mm	0.1062	88	.0026	.1088	70	
M4 x 0.7	27	0.1440	72	.0032	.1472	54	
–	3.6 mm	.1417	84	.0032	.1449	67	
–	9/64	.1406	90	.0032	.1438	73	
M5 x 0.8	14	0.1820	69	.0035	.1855	53	
–	4.6 mm	.1811	74	.0035	.1846	57	
–	15	.1800	79	.0035	.1835	62	
–	16	0.1770	92	.0035	.1805	76	
M6 x 1	7/32	.2188	65	.0038	.2226	51	
–	5.4 mm	.2126	88	.0038	.2164	74	

Metric Tap Size	Tap Drill Size	Decimal Equiv. of Tap Drill (inches)	Theoretical Percentage of thread %	Probable Mean Oversize (inches)	Probable Hole Size (inches)	Probable Percent of Thread %
	M8 x 1.25	7.4 mm	0.2910	71	.0042	.2952
–	L	0.2900	75	.0042	.2942	62
–	7.3 mm	.2874	82	.0042	.2916	70
M10 x 1.5	U	0.3680	64	.0046	.3726	53
–	9.3 mm	0.3660	69	.0046	.3706	58
–	9.2 mm	0.3620	78	.0046	.3666	67
–	23/64	.3594	85	.0046	.3640	74
M12 x 1.5	11.3 mm	.4449	70	.0047	.4496	57
–	7/16	.4375	86	.0047	.4422	75
M12 x 1.75	7/16	.4375	75	.0047	.4422	65
–	11 mm	.4331	84	.0047	.4378	73

Technical



## Material & Speed Recommendations

Nitro<sup>®</sup>-Max can be used in a wide range of materials. CNC type equipment is recommended to achieve maximum performance of the taps.

Conditions that effect SFM:

- Rigidity of fixture
- Spindle runout
- Coolant flow
- Feed mechanism

Workpiece Material	2150N (Sp.Pt)	2160N (Sp.FI)	2250N (Sp.Pt)	2260N (Sp.FI)	2270N (T.F)
	Speed (SFM)	Speed (SFM)	Speed (SFM)	Speed (SFM)	Speed (SFM)
<b>A. Stainless Steel (Free Machining)</b>	25-50	25-50	50-80	40-70	60-100
<b>B. Carbon Steels</b>					
Low Carbon	50-80	40-70	50-80	30-60	80-120
Medium Carbon	30-60	20-50	30-60	15-40	60-90
High Carbon	10-30	10-20	10-30	10-20	20-50
<b>C. Non-Ferrous Materials</b>					
Zinc Die Cast	75-100	60-90	80-120	80-120	150-200
Copper	70-120	60-110	80-120	80-120	100-150
Brass	75-100	60-90	80-120	80-120	100-150
Plastic	40-80	40-80	60-100	60-100	80-120
<b>D. Aluminum Alloys</b>					
Wrought	75-100	60-90	80-120	80-120	150-200
Cast	60-100	60-100	80-120	80-120	120-180
Unalloyed	75-100	75-100	80-120	80-120	150-200

# Carbide Bur Selection & Use

Series	Head Style	Description	Use	Picture
7000A	SA	Cylindrical	Deburring	
7000B	SB	Cylindrical with end cut	Interior Contour Work	
7000C	SC	Cylindrical Ball Nose	Surface Milling & Contour Work	
7000D	SD	Ball Shape	Surface Milling, Deburring, & Contour Work	
7000E	SE	Oval Shape	Contour Work	
7000F	SF	Round Tree Shape	Narrow Contour Work	
7000G	SG	Pointed Tree Shape	Surface Milling & Narrow Contour Work	
7000H	SH	Flame Shape	Contour Work	
7000J	SJ	60° Included Angle	Machining of Acute Angle Areas & Countersinking	
7000K	SK	90° Included Angle	Machining of Acute Angle Areas & Countersinking	
7000L	SL	14° Included Angle	Surface Machining & Narrow Contour Work	
7000M	SM	Cone Shape	Surface Machining & Narrow Contour Work	
7000N	SN	Inverted Cone	Machining from the Rear in hard to reach areas	
7000NE	SNE	Inverted Cone with end cut	Machining from the Rear in hard to reach areas	

# Carbide Bur Selection & Use



## Single Cut

Drillco's Single Cut produces a smooth finish for general purpose use on steel, cast iron and other ferrous and non-ferrous materials. Most of Drillco's Carbide Burs are available in the Single Cut right hand spiral design.



## Double Cut

Drillco's Double Cut, with it's chisel type cutting edge, is a machine ground tool built to exacting tolerances of concentricity, size and shape. This accuracy, when combined with precision grinders, results in smooth running, fast metal removal and fine finishes.

The right and left hand helical flutes combined to produce an chisel type cutting tooth. This results in faster penetration and stock removal with minimal bounce or chatter. The Double Cut design also produces an easy to handle granular type chip, in most metals, as opposed to the conventional sliver type chips. Throughout it's life, the Double Cut gives faster stock removal, less operator fatigue, and maintains a good finish on the widest possible variety of materials.



## Chip Breaker

The addition of a chip breaker will reduce sliver size and improve operator control at a slightly reduced surface finish. Available as a special.



## Diamond Cut

The Diamond Cut is very effective in heat treated and tough alloy steels, producing extremely small chips. It offers very good operator control with good stock removal at the sacrifice of finish. The diamond grind will reduce tool life, however. Available as a special.



## Aluminum Cut

Drillco's Aluminum Cut burs are outstanding on soft or nonferrous type materials. Use the Aluminum Cut design on aluminum, magnesium, brass, lead and most plastics.

## RPM Chart

Bur Diameter	RPM	Bur Diameter	RPM	Bur Diameter	RPM
1/16	60,000 - 90,000	3/8	20,000 - 40,000	1	7,500 - 20,000
1/8	40,000 - 70,000	7/16	15,000 - 40,000	1-1/8	7,000 - 13,000
3/16	35,000 - 60,000	1/2	15,000 - 40,000	1-1/2	5,000 - 10,000
1/4	30,000 - 50,000	5/8	12,000 - 25,000	1-3/4	4,500 - 9,000
5/16	20,000 - 40,000	3/4	10,000 - 20,000	2	4,000 - 8,000

## Speed

High speeds are essential for efficient and economical use of a carbide bur. At high speeds there will be less tendency for chips to build up in the flute. Also, the bur will cut more freely in corners or pockets, and reduce the chances of jamming or wedging.

The selection of operating speeds for a carbide bur is usually less exacting than for most other cutting tools. Rather than specify a different grinder speed for every bur diameter used, one grinder will normally be used for many different bur sizes. However, for most efficient operations, the grinder should be specified with consideration given to diameter of the burs that will be used.

Carbide burs should operate between 1,500 and 3,000 surface feet per minute. Using these guidelines, a grinder can be selected that will efficiently work with a fairly broad range of bur sizes. For example, a 30,000 RPM grinder can be used with a 3/16" to a 3/8" diameter bur. A 22,000 RPM grinder will be satisfactory for burs ranging from 1/4" to 1/2".

Speeds are an important factor in achieving desired stock removal rates and workpiece finish. Increasing the speed will improve finishes, while lower speeds will remove material more rapidly.



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# Terms and Conditions

## Freight Policy

Freight prepaid via economical route of our choice on individual orders valued at \$300 net (\$500 to Canada) billing or more, within the continental US (except Alaska). It is the responsibility of the consignee to check shipment for damage and notify the shipper within 5 days.

## Payment Terms

Net 30 days. Special terms printed on customer's orders will not be recognized where they differ from our terms. Discounts taken on remittance not meeting Drillco terms will be considered unearned and will remain on statement as a past due balance until subsequent payment is received. Accounts that are not maintained in accord with accounts receivable policy are subject to being placed on C.O.D.

## Minimum Billing

Minimum billing is \$25.00 net.  
\$5.00 under minimum fee.

## Pricing Policy

All orders accepted are subject to prices in effect on the day the order is received. Our representatives have no authority to quote special prices. Prices and discounts are subject to change without notice. Any item not listed in our Price List, once ordered, is non-cancellable and non-returnable.

## Warranty

Drillco, Inc (THE COMPANY) warrants to distributors of its products that each new product manufactured by the Company shall be free from material defects and workmanship for one year after delivery by the Company. The Company's exclusive obligation under this warranty is limited to furnishing a replacement for, repairing, or issuing credit for, any product which is determined by the Company to be materially defective in material or workmanship.

The warranty does not apply to tools deemed to have been misused, altered without authorization, or operated with improper conditions. The company may request information regarding their operation during the inspection process. All defective products returned to the Company under this warranty shall be the Company's property.

No sales representative of the Company, Distributor of the Company's products, or other entity may make claims on product warranty that supersede the terms found in this written warranty.

The Company's sole liability of any claim of any kind, whether in contract, tort, or otherwise, for any loss or damage arising out of, connected with, or resulting from the manufacture, sale, delivery or use of the products sold hereunder shall in no case exceed the amount actually paid to the Company for the applicable products. Our liability is limited to replacement of the tools sold by us.

## California PROP 65

Drillco Cobalt and Solid Carbide tools both contain Cobalt, which is listed as a cancer causing ingredient on California's Proposition 65 list. This warning does not apply to High Speed Steel (HSS) tools, as they do not contain cobalt or any other ingredients found on California's Proposition 65 list.

All Drillco Solid Carbide and Cobalt tools are labelled with the following:



WARNING: This product can expose you to chemicals including Cobalt, which is [are] known to the State of California to cause cancer. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)

## Sales Policy

All Drillco products are sold exclusively through authorized distributors. Possession of our catalogs and or price list does not infer intent to sell.

## Returned Merchandise Policy

Prior authorization covering specific items and quantities must be obtained before any goods are returned to the factory for credit. Authorized returns are subject to a 15% restocking charge. No returns for specials will be accepted unless merchandise is found to be defective in quality or workmanship.

## Broken Package Charges

Orders will be shipped in standard packaging units. Orders for less than standard packs will be increased to standard packs. Please refer to standard packaging on each page of catalog. Tools are packaged in standard packs unless your purchase order specifically stated "broken package required"; an additional 15% charge will apply to these orders. Tools are packaged in envelopes and tubes unless otherwise indicated.

## Claims

All claims must be made within 5 days after receipt of goods. Any exterior damage is responsibility of carrier.